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THE JOURNAL

OF THE

American Medical Association

A MEDICAL JOURNAL CONTAINING THE

OFFICIAL RECORD OF THE PROCEEDINGS OF THE ASSOCIATION, AND THE PAPERS READ AT THE ANNUAL MEETING, IN THE SEVERAL SECTIONS, TOGETHER WITH THE

MEDICAL LITERATURE OF THE PERIOD

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BY

GEORGE H. SIMMONS, M.D.

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Addresses.

POVERTY AND DEGENERACY: THEIR CAUSE, PREVENTION AND CURE.*

N. S. DAVIS, M.D.,

President American Medical Temperance Association.

CHICAGO.

Members of the American Medical Temperance Association: Though not retaining sufficient physical strength to be with you at your present annual meeting, I nevertheless send you cordial greeting, and ask your patient attention to the following subjects at this beginning of the twentieth century of the Christian era. During the last few months the literature of Christendom, and especially that of our own country, has been filled with eulogistic notices of the remarkable progress made in every department of literature, the sciences, arts, industries, and facilities for intercourse during the century just closed. The general correctness of these eulogistic notices, so far as they relate to discoveries in science and their practical application to improvements in every department of human industry and intercourse, is universally admitted. While it is thus freely admitted that the application of steam and electricity have made neighbors of the most distant nations, and multiplied many times the products of human industry; and the application of the facts and principles of sanitary science, evolved by our own profession, have so far limited the prevalence of epidemics and infectious diseases as to add one-third to the average duration of human life, it is very generally conceded that poverty, imbecility, epilepsy, insanity, criminality, and other diseases of degeneracy have been increasing faster than the increase of populations. So true is this that human degeneracy, both physical and mental, has become a subject of frequent discussions by sociologists, physicians and legislative assemblies, and many remedies have been suggested. As nearly all the writers on the subject allege poverty with its environments and heredity as the chief causes, so all their remedies have for their object the improvement of the first, and the prevention of transmission by the second. We are told to improve the tenement houses and ensure for them more light and air, more cleanliness and ventilation, and already millions of dollars have been expended in such work in the larger cities of this and other countries.

And to prevent the propagation of degenerates hereditarily, we are advised to prohibit by legal enactments the marriage of the feeble-minded, the epileptic and the insane, and to render impotent by surgical operations convicted criminals of both sexes. And some have even suggested that the modern care bestowed upon the defective classes in providing for them hospitals, asylums and charitable support, and for the criminals comparatively comfortable prisons, has been an important cause of their continued increase and corrupting influence upon the body politic. Careful examination will show that nearly all the remedies proposed are aimed at the removal of the effects of degeneracy instead of their causes. It is true that poverty is prone to create an environment of dirty streets; small, overcrowded and ill-ventilated houses, that favors the prevalence of typhoid fever, tuberculosis and other infectious diseases, by which the ratio of mortality is increased. But simple poverty, aided even by dirty and overcrowded tenements, has no more tendency to create either mental or physical degeneracy than do the mansions and palaces filled with all the luxuries of the rich. True degeneracy, whether mental, as manifested by the different grades of mental impairment and disorder; or physical, as seen in defects and deformities of body or limbs, or in simple defective vitality, is the result of causes capable of directly impairing the vital properties of the protoplasm and corpuscular elements of the blood and tissues of which the living body is composed; causes, therefore, that enter into the system and either remain or are repeated daily through considerable periods of time.

Consequently they do not exist in the environments of either poverty or riches. Neither are they to be found as elements of any variety of true food. Simple food, whether solid or liquid, satisfies the appetite in about the same quantity through life; and if too much is taken it produces not degeneracy, but indigestion or other temporary sickness.

There are, however, a large number of well-known substances, which, when taken into the living body in small doses, are neither digested, assimilated or used to repair the natural waste of the tissues, nor to evolve any known natural force or energy, but are soon eliminated through the various secreting or eliminating organs either unchanged or in a state of oxidation. While these substances are in the system they exert a modifying influence on the metabolic processes and functions either of particular organs or of the system as a whole, and consequently are always injurious to persons in health. If given in large doses, or in moderate doses through long periods of time, they cause tissue degenerations or even death. Therefore by chemists and toxicologists they are classed as poisons. But physicians, by using them in small doses and for brief periods of time, can and do avail themselves of their power to modify the vital processes in such manner as to correct morbid conditions of disease, and thereby classify them as medicines. But every intelligent physician knows that if he gives real medicine to persons in good health it only helps to make them sick, in strict accordance with the ancient proverb: "The well need not the physician, but only those who are sick." Clear and definite as are the foregoing distinctions and rela-

* Read at the annual meeting of the American Medical Temperance Association, at St. Paul, June 6, 1901.

tions between food, poisons, and medicines, we are still compelled, even at this commencement of the twentieth century of the Christian era, to witness their confusion and practical intermixture by large portions of both the profession and the community. Thus we see on the dining tables of many in all grades of society, and still more in the social banqueting halls, not only food, but a variety of anesthetic and narcotic substances also, that the chemist calls poisons and the physician calls medicines. The substances thus used all belong to the anesthetic and narcotic classes, as opium, cocain, tobacco, ether and alcohol, all of which when taken internally either by the stomach, lungs, or hypodermically, directly diminish cerebral and nerve sensibility, muscular strength, tissue metabolism, and protoplasmic vitality in the direct proportion to the quantity used. By directly and quickly lessening the cerebral sensibility, which is man's seat of consciousness, they lessen his consciousness of all mental impressions, whether of heat, cold, pain, strength or weakness. And this is the true secret of their deceptive and destructive influence over the human race. While they thus lessen the man's ability to judge correctly, either of his own condition or of the condition of his environment, they are equally retarding and perverting the vital processes of cell growth, nutrition, disintegration and secretion, and if continued for any considerable period of time, inevitably lead to physical and mental degenerations in both parent and offspring. By the people of Asia and the East Indies opium is the chief agent used, while in Europe and America, alcohol and tobacco take precedence in all grades of society. But what is the real difference between the Chinaman's opium siesta, and the European or American's banquet of food and alcoholic drinks in an atmosphere blue with tobaco smoke; or his modern after-dinner "smoker"? As a mode of speedily getting into the land of dreams with the material world shut out, the Chinaman's method is doubtless superior.

However, as a mode of overcoming man's sense of propriety and self-control and of materially depressing all his vital functions without actually destroying his ability to find his way home some time before the next morning, the European and American plan succeeds best. Both are deliberate indulgences in the use of subtle poisons that deteriorate health and morals in direct proportion to the quantity used.

That the daily or habitual use of alcoholic drinks, even in moderate doses, not only impairs both health and morals and leads to slow tissue degenerations, but also so impairs the metabolic and nutritive processes as to render the individual more liable to attacks of all acute infectious diseases, and more liable to die when attacked, has been fully demonstrated not only in the laboratory of the scientists, but also in every field of human labor and in every variety of climate.

The experiments of Doyen, Abbot, Ridge, Verlaguss, Ranelleti, and Goldberg, the annual reports of the registrar-general of Great Britain, and the records of life insurance companies, all prove this so completely as to leave no room for doubt or cavil. And by thus diminishing the vital resistance and promoting tissue degenerations, the alcoholic liquors equally diminish the vitality and promote both the physical and mental degeneration of their children, as was shown in a paper presented to this society, by me, in 1899. Then why longer waste time and money in efforts to renovate the tenements of the poor; in obtaining laws for securing sanitary marriages; and in devising surgical operations for rendering both degenerates and criminals incapable of extending their hereditary influence; and yet leave the causes of seven-tenths of all pauperism, crime and degeneracy that afflict the people of this country and of Europe in the form of alcoholic drinks, tobacco and other narcotic poisons, untouched or even fostered by governments for the sake of the revenue they yield? It is a striking example of economic inconsistency when municipalities and governments issue a license to sell alcoholic liquors and tobacco for a money fee, in aid of the public revenues, when the use of those same articles results in compelling the same municipalities and governments to pay out for the support of the resulting pauperism, insanity, crime and degeneracy ten dollars for every one dollar received as license fee, without counting the $2,000,000,000 paid by the consumers in our country annually without getting in return the value of a loaf of bread or of a shirt to cover their nakedness. It is more than sixty years since my mind was compelled by the inexorable rules of logic, to adopt the conclusion that if alcoholic liquors are legitimate articles of commerce and popular use, the traffic in them should be free to all, rich and poor alike; or if they are really subtle, deceptive and dangerous poisons they should be placed on the statutes of the several states with arsenic, corrosive sublimate, strychnin and other poisons, to be sold and used under the same regulations as the other articles named. It is puerile in the extreme to admit the truth of the ancient proverb that "wine is a mocker, and strong drink is raging, and whosoever is deceived thereby is not wise," and yet talk of both as stimulant, restorative and even nourishing, and to be licensed for general use. It is still more puerile to freely admit the poisonous and destructive influence of alcohol, as it exists in fermented and distilled liquors, and yet for a paltry money bribe for the public conscience, license its general use under the pretense that the influence can not be wholly suppressed, and therefore it is better to *regulate* it by a license. On the same basis licenses should be issued to a sufficient number of men to do all the stealing and murdering according to legal regulation, because both have been continued throughout the history of our race in defiance of the prohibitory laws of both God and man. The paramount question before the intelligent men and women of Christendom to-day, is not one of politics or of political parties or of social classes; but one solely pertaining to public health and morals.

It is, whether alcohol and other well-known narcotic drugs are really wholesome articles of drink or food, safe for general use; or are they absolutely subtle, deceptive and dangerous poisons, stealthily destroying both public health and morals, and constantly multiplying hereditary degenerates in all classes of human society? If the former, they are entitled to the same treatment as other articles of commerce and general use. If the latter, then their regulation belongs exclusively to the police and sanitary authorities, aided by the courts. They can not be both. That the alcohol, as it exists in fermented and distilled liquors, is a positive protoplasmic poison, directly impairing every natural structure and function of the living body in proportion to the quantity used, and the length of time its use is continued, is proved by the results of every experimental investigation concerning it, instituted by eminent scientific men, both in this country and Europe.

Their verdict is abundantly confirmed by the history and condition of the inmates of every asylum for the poor, the feeble-minded, the epileptics, the insane and

the inebriates; those of every reformatory and prison; by the records of every police and criminal court; and by the details of every well-kept registry of vital statistics. As concerns danger to human life, every intelligent reader of the public press knows that the ordinary use of alcoholic liquors by persons claiming to be in health, is the direct cause of more suicides, homicides and murders every month, than is produced by all the other poisons known to toxicologists in a year. Then why not now, at the beginning of this twentieth century of the Christian era, cease calling alcoholic liquors stimulants or restoratives, and not only speak of them as subtle and dangerous poisons in every household, but also concentrate all the facts of science, clinical experience, and of economic and criminal records, in favor of having alcohol and all liquids containing 2 per cent. or more of it, placed on the statutes of the several states along with arsenic, strychnin, etc., to be sold and used under the same regulations and penalties as other poisons dangerous to the public health and morals? If this were accomplished it would soon remove one of the chief corrupting influences from the field of politics, and place it under the domain of the police and health authorities, aided by the courts, where it legitimately belongs. And it would do more to prevent tuberculosis and all forms of human degeneraey than all the other measures combined.

SECTION ON STOMATOLOGY.

ADDRESS OF CHAIRMAN DELIVERED AT THE FIFTY-SECOND ANNUAL MEETING OF THE A. M. A., HELD AT ST. PAUL, MINN., JUNE 4-7, 1901.

R. R. ANDREWS, A.M., D.D.S.
CAMBRIDGE, MASS.

For the second time you have honored me by making me your chairman. I appreciate the courtesy and kindly feeling which has prompted this action, and thank you for it. In reviewing some of the more important matters which have been presented to our profession during the past year, it seems to me that the symposium on dental education presented before this Section at its last meeting is one of considerable importance as an educational factor. The time was ripe for such a discussion, and we are already beginning to see its good results. At the beginning of this twentieth century we find that advanced conditions call for a higher educational and professional standard. Some of our schools are already recognizing this, and have decided that another year should be added to their course of study, making it of four years, and they also have under consideration the requirement of a degree in letters, or its equivalent, for entrance to their schools. Necessity for such action arises from the fact that this is an age of progression; the material development and enterprise of the time is irresistible. The man who would succeed in a profession must now grasp every legitimate opportunity. His equipment should be larger and his education broader than formerly. Success in the future is to come to him who shall be educated to do a thing as well as it is possible to do it; that is, he must become a specialist in some department of his chosen profession. I have been informed that President Eliot, of Harvard University, after reading the symposium on dental education, writes to our Secretary that he is favorable to the establishment of a medical university where all the medical specialties, including dentistry, shall be taught under one head, and that a common degree shall be given to all. President Capen, of Tufts College, writes me under date of February 21, 1901: "I have received your pamphlet containing an account of the proceedings of the Section on Stomatology of the AMERICAN MEDICAL ASSOCIATION. I have read not only your own paper with great interest and profit, but have examined the other papers sufficiently to get the drift of the sentiment of the Association. I was surprised to find it so strongly in accord with my own views. I may add that I find now, both in our medical and dental faculties, an opinion strongly favoring a four years' course for dental students, as well as medical students, and the common degree of M.D. for all.

Some of the criticisms against this common degree come from eminent professors in our special schools, who are earnest, able and conscientious men, sincerely believing that if we are to educate our students in medicine, they will become theorists, as are most of the educated dentists from the schools of Europe; and that the practical technical training, which in the past has made the name of the American dentist honored all over the world, will no longer be acquired; that under this new system American dentists will become thinkers rather than operators, scientists rather than practical men.

Such opinions are to be respected, but, on the other hand, the four years' course could be systematically arranged to give the technical training fully equal to that given to-day in our best special schools, together with the necessary medical education that shall warrant the common degree. We should demand the same medical education that is required in other medical specialties, with all, or more, of the practical training that shall teach the hand as well as the head. Such a system has never yet been tried, but it is reasonable to suppose that two men, being equal otherwise, the one with this advanced education must necessarily be the broader man, and the profession must necessarily be benefited by such a training.

Another subject nearly as important is in relation to the many problems now before our profession, and as to the best methods of solving them. This has recently been considered by the Dental Society of the State of New York, and should receive our cordial coöperation. In considering these problems, will it be wisest to have the individual investigator proceed in his own way, paying his own expenses in solving our problems, or will it be better for national or state societies to establish commissions, whose duty shall be to oversee and encourage research work, propose problems to be worked out, and also have it in their power to furnish the necessary funds for carrying out this work? If such a commission were established, is it not reasonable to suppose that the profession would be greatly benefited, and result in a more uniform practice? Such a commission should be composed, not merely of eminent practitioners, but of men of judicial minds and training, whose duty should be to collect the facts, weigh the evidence, and give rulings on disputed points.

Among the students in our special schools there are always to be found a few who have the inborn faculty of investigation. While building up a practice they give a very considerable amount of time in solving some of the scientific problems which appeal to them. Some of these men become well known to the profession, others do not. There is a very considerable expense attending many of these investigations, and research work would be better done if they could afford suitable apparatus. Work of this nature is of value to the whole profession, and it seems as though it would be wise to establish the

commission suggested. Investigators could then devote a certain portion of time to solving problems, and receiving therefor adequate compensation. Our schools also should encourage research work, and a department for it should be established, where men who are capable should be given the opportunity to work along lines congenial to them. This may lead to a career of much value to themselves and of great good to their profession.

There are one or two important matters which I think would be wise to consider in regard to the subject of State Boards of Dental Examiners, which is to be presented in a series of papers for our consideration and discussion at this session. This subject is an important one, and will, I am sure, receive careful attention in broad and generous criticism. We are all mindful of the fact that in many of the states the Board of Dental Examiners has been largely instrumental in raising the professional standard and of influencing in no small degree the necessity for a higher educational qualification in our special schools. With all this there is yet something to be desired. An appointment to the board should never be a political gift. The nomination of suitable persons to fill vacancies on such a board should be made to the appointing power by nominating committees from the state societies elected for this purpose. This plan works admirably in Massachusetts. A standard should be established by the National Board of Dental Registration for the boards of the different states, that shall make it possible for a person who has once passed a successful examination to practice his profession in any other state, without further examination. And again, in justice to the older members of our profession, discretionary powers should be given the boards of the several states to guide them in granting certificates to those who have for years been active in honorable practice, and who are not, by reason of advancing years, fitted to pass the same examination as should be demanded of recent graduates.

In the department of prophylaxis the future is bright with possibilities. Recent investigation is opening up a field that gives promise soon of successful treatment. J. Leon Williams, in his brilliant paper on "The Bacteria of the Human Mouth," has demonstrated beyond a doubt that there exists upon the teeth of persons predisposed to caries, a hardened gelatinous film, which is a culture medium for the growth of myriads of microorganisms. This film he calls the gelatinous microbic plaque. The organisms found here are largely the leptothrix racemosus, together with the leptothrix buccalis. The leptothrix racemosus is, like the leptothrix buccalis, a thread-like form, but differs in having myriads of spores growing from an extremity, where they multiply with marvelous rapidity. They are benign or malignant, according to their environment, and the saliva in an abnormal condition is the exciting cause of dental caries.

Prof. J. P. Michaels, of Paris, who has given the results of his recent brilliant investigations of human saliva at the International Dental Congress, tells us that, as a result of over-activity of the liver, a superabundance of glycogen may be found in the saliva, giving it an alkaline reaction; but upon coming in contact with the ptyalin, which is always present in the saliva, a reduction occurs of the glycogen, first to glucose and then to lactic acid, which unites with the lime of the tooth. He has experimented with ptyalin and glycogen (either alone giving a neutral solution) and put them in separate bottles containing distilled water, then connected the liquids in the two bottles by a piece of cord, which formed a loop around, and in contact with, a chalk crayon. By capillarity the liquids came together at the chalk, which dissolved away wherever touched by the cord. He asks: "Does not this tend to show how decay of the teeth may occur even in an alkaline saliva, and independent of microbic influences?"

Michaels has also shown that exciting and pathological conditions can be found, and are positively recognizable in the saliva. He has been able to determine the histochemical condition of saliva of those who are not affected with carious teeth, and suggests that nutrition may establish vital conditions so desirable in securing immunity from decay.

A paper of special interest on treatment to prevent the decay of the teeth has been presented by Dr. D. D. Smith, of Philadelphia, and should command our serious attention, when considered from the standpoint of recent investigation. The simple method is to place in a suitable carrier a piece of orange-wood sharpened to a chisel point for using on the flat surfaces of the teeth, and another shaped to a pencil point to be used between them. These points are to be renewed as often as they become frayed. Before using they are dipped in water and then in pumice, and with them the surfaces of the teeth are polished well up into the festooning of the gum, using enough force to stimulate, and cleansing what may appear to be clean teeth, going over all surfaces thoroughly, outside, inside, between, and on the occlusal surfaces. This work should be done as thoroughly as it is possible to do it, leaving the teeth in a polished and smooth condition. Such action has a stimulating influence, and under this stimulation the internal vital function seems roused to new activities. Treatment is to be given once a month, the patients are instructed to thoroughly care for their teeth daily, using fine salt once a week. It produces stimulation of the gum tissue, of the alveolar tissue, and of the whole oral structure. This simple, but vigorous, treatment, by removing the gelatinous microbic plaque which Williams describes, induces the most attractive and apparently most perfect condition of the mouth attainable.

Another subject of particular interest to this body is the law creating a dental service in the United States Army, and enacted by Congress since our last session. Although the law, as enacted, is not all that we asked for, it is an entering wedge which may result in more satisfactory legislation in the future. Dr. Maynard, of Washington, somewhere about the year 1850, was very considerably interested in the enactment of such a law, and used his influence with the President and Secretary of War to have it passed, but without success. In July, 1858, the late Dr. H. J. McKellops, of St. Louis, offered a resolution, with the idea of establishing such a law, before the Western Dental Society, at Quincy, Ill. It may thus be seen that the movement is not a new one, but that, with the growth of public appreciation of dental services, which is justly regarded as one of the common necessities of life, the demand has been created and recognized. Dr. John S. Marshall, of Chicago, one of our most esteemed and valued members, has been appointed President of the Examining Board of Dental Surgeons of the United States Army. He is a man in every way eminently fitted for this position. The high standard which is demanded for the appointment of contract dental surgeons under the new law may be recognized from the fact that out of fourteen candidates only two successfully passed the examinations. Dr. Marshall, in a communication, says: "It is to be hoped, therefore, that our dental schools will not recommend

any young men to come before this board who are not thoroughly well qualified, theoretically and practically, in all the branches comprising the curriculum of our best dental schools."

In the department of biology, science has made some of her most remarkable advances. The work of the investigator has opened up new vistas of relations, of which many of us have never dreamed. In an article entitled "Aspects of Recent Biological Research," recently published in the International Monthly, from which my allotted time will allow only the very briefest quotations, Prof. E. B. Wilson, of Columbia University, says: "Chemical analysis proves that protoplasm is not a single chemical substance, but a highly complex mixture of many highly complex organic compounds, which undergo continual chemical transformations—indeed, a living cell is doubtless the area of the most complex chemical operations taking place in nature. . . . . In the fertilization of the egg, a single cell derived from the father (the spermatozoön) unites with a single cell (the egg) derived from the mother, while the paternal nucleus unites with the maternal. By continued division of the single cell thus formed, arise all the cells of the body. If now we examine the details of this process, we find one remarkable difference between the egg and spermatozoön, namely, that while the two contribute equally to the nucleus of the fertilized germ, the whole, or very nearly the whole, of the remaining cell substance (protoplasm) is supplied by the egg. We have thus a substantial basis for the conclusion that the protoplasm of the embryo is derived wholly or mainly from the mother, while the nuclei are equally divided from both parents. If this result be placed beside those derived from microscopical vivisection, we gain for the first time a clear, if superficial, view of the mechanism of inheritance, and can form a definite mental picture of the manner in which it is effected. As the paternal and maternal nuclei approach each other within the egg, each undergoes a complicated metamorphosis, and finally resolves itself into a number of rod-like or worm-like bodies known as chromosomes, which are exactly equal in number and similar in form in the two. At this period, therefore, the egg no longer contains two nuclei, but in their place two precisely similar groups of chromosomes, which are respectively paternal and maternal in origin. As the egg undergoes its first division to form the first two cells of the embryo, every chromosome in each group splits lengthwise into two exactly similar halves, which separate and pass, one to each of the daughter cells. Each of the latter, therefore, receives two similar groups of daughter chromosomes, paternal and maternal, which are exactly reduplicated in the other cells; and from these two groups, in each cell is built up a daughter nucleus, shown by its mode of origin to be equally derived from both parents. At the second division, the chromosomes reappear, again split lengthwise, and the halves are again equally distributed to the daughter nuclei, and so on throughout the entire life of the animal."

Among other facts noted in this article by Prof. Wilson is the following: "The egg may be fertilized by chemical stimulus, without participation of the male element. If, for example, the eggs of sea-urchins be allowed to develop in sea water containing a very slight excess of potassic chlorid, the development of the embryo is greatly altered, no skeleton is formed, and a larva results which, though living and vigorous, is of widely different form from the normal ones. If, in place of potassic chlorid, lithium chlorid be added to the water, the changes are still more remarkable, the embryo never infolding the cells which normally give rise to the alimentary canal, but developing, as it were, inside out. These monstrous forms are, of course, incapable of nourishing themselves, and ultimately perish; but the result is of high interest, as opening the possibility of creating wholly new organic forms by varying slightly the conditions of development. . . . Certainly new growths of the highest interest, relating to the chemical conditions in the living matter, may be looked for along the lines of research thus opened. . . . Experiments on insects, frogs, and rotifers have already given good ground for the conclusion that sex is in these cases determined by conditions of nutrition, which again in the long run are reducible to chemical conditions. The possibility is thus opened that we may yet succeed, not only in fertilizing the egg by chemical means, but also in rendering the organism male or female, by analogous methods."

In closing, I regret that I have not been able to offer any research work, and that the time allotted for this address will not permit the review of many important papers offered to the profession during the last year. I would suggest that the leading symposium for our next year's session be "Prophylaxis." Our section is well fitted to consider this subject, and the recent investigations should stimulate us to earnest and serious work.

Original Articles.

THE APPOINTMENT OF STATE BOARDS OF MEDICAL AND DENTAL EXAMINERS.*

WILLIAM CARR, M.D.

NEW YORK CITY.

Not many years ago it seemed to the majority, as it now seems to some of those interested in the advancement of medical and dental education, that diplomas from chartered colleges or schools gave sufficient assurance that their possessors were qualified to practice in the general or special fields of medicine in which degrees had been conferred upon them, and that the diplomas granted served as an adequate standard for license. This view assumed that instruction in such schools was faithfully given, by competent teachers, during a period of sufficient length to qualify students for the commencement of their careers, and also assumed that diplomas were conferred only upon those who, at the completion of such a period of study, had demonstrated, upon examination, their qualifications. It also assumed that charters would not be recklessly granted to professional schools, and that such charters would be revoked upon proof of their abuse. Experience has demonstrated the fallaciousness of such assumptions. Legislatures have passed incorporating acts most improvidently. So-called colleges have been created at the solicitation of charlatans having no other purpose in view than the manufacture and sale of parchments conferring degrees *in absentia*, without any safeguard or state supervision. The Buchanan and Delavan diplomas are fair types of the product of these factories, which became a stench in the nostrils of decent men.

An attempt was made to remedy this evil, so far as it affected medical license in the State of New York, by a provision requiring that diplomas granted outside

* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

the state should be endorsed by our own schools. But this plan proved of little avail. Not only did respectable colleges endorse fraudulent and valueless papers, but the diploma business was carried on by certain of our native corporations.

It therefore became necessary to do away altogether with the diploma standard, for the reason that it could not be higher than that of the poorest institution authorized to confer a degree.

The plan of creating State Examination Boards, with power to supervise licenses, next suggested itself. Today such boards exist in nearly all of the states and territories, but with varying powers and standards, which will be found set forth in detail in the carefully prepared bulletins issued by the University of the State of New York, and in the publications of the National Bureau of Education.

At the commencement of the experiment it seemed to those resorting to the plan that to empower these boards to list the "reputable" schools and to accord to their diplomas only the licensing power, would meet the needs of the situation. In many jurisdictions such listing is still the chief function of the state board, and diplomas of the colleges classified as reputable afford therein a license to practice. But this plan has not proved successful, and the refusal of state boards to list certain of the so-called colleges has given rise to no small amount of litigation, especially in the West, where the right of a state board to exclude graduates of schools refused listing by the board has been vigorously attacked in mandamus proceedings.

In twenty-three states, however, the diplomas of even the best schools no longer afford a license to those upon whom they are conferred, but only serve as one of the qualifications of candidates for examination before state boards. This separation of the licensing power from the diploma has proved beneficial to the really reputable schools, some of whom strenuously opposed it. When the diploma constituted a license, faculties seem to have been swayed, insensibly perhaps, by a feeling that the payment of fees on the part of a student, especially if he were somewhat diligent, established a contract right on his part to receive collegiate authority to practice upon the public, and, as a consequence, the standard of education was low, compared with the standard of today. With the abolition of this right to license, which was an apparent, not a real, privilege, the value of a diploma was presently perceived to be proportionate to the reputation of the institution conferring it, which, in turn, was incited by self-interest as well as love of scholarship, to raise its standard and confer its degree only upon those earning it. The period of study has been extended, and if the medical and dental laws have accomplished no other result than the raising of college standards, they find in that alone their ample justification.

The examination of candidates for license being vested in a state board, it is of the first importance that such a body should be properly constituted. In the first place, it goes without saying that its members should not only be honest and competent, but independent of extraneous influences, and with eyes single to the performance of their sole duty, namely, the admission to the profession of men competent to practice, and the exclusion of incompetents from its ranks. In order to command respect and authority, it is equally clear that the board should be composed of men of standing in the community and in their profession. Its members should be abreast of the science of the day in its application to their calling, for the rule of liability in malpractice cases takes into consideration the advanced state of science. Without being identified with teaching bodies, these examiners should be conversant with the arts of instruction and examination, able to frame questions of a nature to elicit the candidate's knowledge, and ascertain his ability to apply it. Unless the minds of the examiners and of the examined meet; unless each understands the other's aim, examinations are fruitless, impediments rather than aids.

Again, the office of examiner should be, and is, when proper tests are regarded in filling it, a post of honor. For that very reason, it should never be filled by one whose appointment is not made because of his competency to perform the duty with which he is to be charged, but for the sake of conferring honor upon the incumbent. It is but natural that the post should be sought for the honor it confers, and yet a conscientious man, apprehending and purposing to perform faithfully its duties, will be slow to seek it. The position of an examiner upon a negligent or incompetent board is the reverse of honorable, and no man of professional pride and standing would suffer himself to be appointed to such a body.

Unhappily, there have been instances of late—let us be thankful that they did not occur, and could not have occurred under the system adopted in the State of New York—of the appointment for personal and political reasons of conspicuously unfit boards. These appointments have been made through the heads of political divisions of the country, and it is but fair to presume that the successful candidates sought the places rather through political influence than by demonstration of their own fitness.

In our State of New York such scandals are not possible. I do not say this to praise our own state board, or to claim for it especial excellence on account of the individuals who compose it. To do so would merely be an exhibition of bad taste, and I certainly have no desire to underestimate the many excellent, able and learned men who honor the examining boards of other states. But what I mean to say is, that those very men are wronged and handicapped when the appointing power, for political reasons, associates them with men of lesser qualifications, and this is what has happened elsewhere, but can not happen in the State of New York, for the following reasons.

The University of the State of New York is not a teaching body, nor yet a political body, but is created for purposes of examination and supervision. It has been assailed and criticized from time to time by politicians who would abolish it, and thereby make way for some substitute which would afford patronage, through themselves. Fortunately, such efforts have hitherto failed, and whatever other criticism may have been made upon the Board of Regents, we have yet to hear any one suggest that its actions have been animated by political or partisan motives.

I sincerely hope that the day is not far distant when each state will have a board of regents, possessing the powers of the Regents of the University of the State of New York, or, as suggested by President Henry Wade Rogers, that "there should be established in each state a council of education, which should be invested with powers similar to those of the Regents of the University of the State of New York, and it should be composed of the most eminent men of the state, without any reference to political considerations. No degree-conferring

power or no degree-conferring institution should be incorporated without the approval of the Council of Education."

If such a condition could be made National there would be no further cause for criticism by foreign nations, who now claim that the degree-conferring power in America is without proper supervision.

With the University lies the power of appointing our boards of medical and dental examiners, from candidates nominated by the state societies. The dental board is divided into four classes, the term of one class expiring on July 31 in each year. Prior to the second Tuesday in June of each year, the state society is empowered to nominate from its membership twice as many candidates for filling vacancies to occur on the board as there shall be such vacancies, and from these nominees the regents appoint.

Thus it is sought not only to remove the constitution of our examining board from state politics, but to take it out of professional politics. The state society, the purpose of whose incorporation is to assemble together men to whom the interest of the profession, its advancement and honor are dear, and membership in which is open to all who are of good standing in the profession and chosen from their districts as representative men. has power to say to the regents: "We submit to you the following names of men who, in the opinion of the dental profession throughout the state, are fit and worthy to represent it. But we can not appoint, we can not by intrigue constitute the board; that must be done by the regents, and with them rests the responsibility for ill-advised selection, limited only by our responsibility in submitting poor material for their choice." Thus there is a double responsibility created; we are responsible for our nominees, and the regents for their appointments, and thus it is that we have removed. so far as human ingenuity could do so, the constitution of our board from the hands of the politicians; and, if I have spoken of our system of licensing dentists as good. I have still spoken less strongly than Dr. Allen, secretary of the advisory committee of the National Association of Dental Faculties, who, writing under date of Nov. 15, 1899, for "A Comprehensive Report from the New York Examiners," was kind enough to say of the body to which he belonged, "the entire committee regard the New York Dental Law as the best in the country."[1]

Before the board thus constituted come the candidates for license, after satisfying the board of regents that they have been graduated from the professional schools after receiving the proper preliminary education. But the examiners do not know the candidates who appear before them or the schools from which they come. To guard against any possible favoritism candidates are examined by number, and it has even happened that men have appeared before the board who have slipped by the outposts and have passed the professional examination without having satisfied the preliminary requirements. with the result that their success in passing the state board has yet failed to license them to practice within the State of New York. by reason of their failure to comply with the preliminary requirements.

The success of our system, therefore, depends upon the existence in the State of New York of our University, which, while controlling all educating bodies, does not itself possess a teaching faculty; thereby have we been able to keep our board out of politics and have been able to create a double responsibility for its appointments.

1. Regents' Bulletin 9, February, 1900, Dentistry, p. 751, Note.

That we have excluded from the profession all incompetents would be claiming to be something more than human; what we can safely maintain, however, is that we have guarded the entrance to the profession, not only with sentinels, but with watchmen over the sentinels.

REVENUE FOR CONDUCTING THE WORK OF STATE BOARDS OF DENTAL EXAMINERS.*

GEO. L. PARMELE, M.D.

HARTFORD, CONN.

In this "Symposium on State Boards of Dental Examiners in Their Relations to the Profession and the Colleges," I am asked to deal simply with the subdivision: How Shall the Revenue for Conducting the Work of the Boards of Examiners Be Obtained? 1. By taxation of the people? 2. By fees from the candidates? 3. By taxation of the profession?

Naturally our first inquiry would be as to the causes bringing about dental legislation, and the purpose of such laws.

The majority of the dental world labor under the idea that these dental laws were passed to protect the dentist from the dentist; that is, to bar out the dental parlor man and admit to practice only those who will live up to the code of ethics, but notwithstanding the fact that more or less selfishness on the part of the dental profession prompted their advocacy of such enactments, the laws are for the safety and welfare of the people. This being the case, you say, let the people pay.

No doubt there are many good reasons why the people should pay; for example, were the people taxed, then many worthy, but financially embarrassed young candidates, who have expended at college their last hard-earned dollar, would not be required to wait until they could earn enough to satisfy the demands of the state boards, although I think all candidates would be better off if they would serve as assistants with some successful practitioner. There they would gain experience, not only in the manipulation necessary to the care of the dental organs, but learn, what is vastly of more importance to them at the outset, how to deal with people and to meet the many petty but important details of daily routine in a successful professional office. Were there no other objection to the people being taxed and the state paying these expenses. the fact confronts us that in most states it would be impossible to obtain adequate legislation for such expenditure, from the fact that the average legislator, on account of his peculiar ideas concerning false economy, in appropriating state funds, would never vote for such expenditure. when he was confronted with the fact that in every other walk of life he who dances pays the fiddler. It would be waste of time to deal further with Subdivision 1.

Let us leave Subdivision 2, "fees from the candidate," while we quickly dispose of Subdivision 3, "taxation of the profession."

In our professional ranks there are many generous, whole-souled, self-sacrificing men, but when we talk of securing the revenue by taxing the profession it means the whole profession, and judging from my own experience with the average dentist it would be a greater task to get the dental profession to allow itself to be taxed, so that other dentists might enter into competition with them, than it would be to get the people, the

* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

free and enlightened voter, to submit to taxation in order that another voter might carry on his business.

This brings us to the only other source of revenue, 2, "the candidate."

When I was requested to prepare this paper there came upon me a sudden elation, for it seemed that for once I knew where to go for the desired information.

In a chat with a lawyer along the lines of dental legislation, he gave me the impression that the state should pay the costs of examination, but alas, when I hastened to him, note-book in hand, I found that I had misunderstood his remarks. Our talk had been of a certain retroactive clause in a proposed dental bill, and that which he had intended to say was, that if this bill should pass it would be a hardship to compel certain ones to pay a second fee, and in justice the state in this case should be responsible.

Continuing the conversation after I had stated the question I was to deal with, the attorney assured me that so far as he was informed of the various license-granting powers, there could be but one answer to the question. Later investigation has convinced me of the soundness of his opinion.

In the work of various other boards, for example, health, forestry, and fisheries, the expenses justly come from the public funds, as the benefit is not for individuals, but for the people; but in the case of a license to carry on some trade or profession, whereby an individual is allowed certain privileges, the individual should pay the costs, notwithstanding the fact that the laws governing such cases are enacted for public protection.

Let us glance for a moment along the various walks in life where licenses are required before one can enter the ranks, and see by actual reference to a few state laws, from what source the revenue is obtained: Georgia, state board of embalmers, license $5, from the candidate; Ohio, physicians, dentists and druggists, fee $25, from the candidate; South Carolina, homeopathic board, fee $5, from the candidate; New Hampshire, plumbers, fee $1, for examination, 50 cents every year, from the candidate; Virginia, medicine and surgery, fee $10, from the candidate; Nebraska, barbers, examination $1, and annually $1, from the candidate; Michigan, barbers, examination $5, and annually 50 cents, from the candidate; barbers in business at passage of law, $1, and annually 50 cents, from the candidate; Tennessee, osteopathy, fee from candidate for recording diploma from one named college, $1, and all not so recorded, fine $100.

This list could be continued indefinitely, and would still have the refrain, "from the candidate."

"Where the successful prosecution of a calling requires a certain amount of technical knowledge and professional skill, and the lack of them in the practitioner will result in material damage to the one who employs him, it is a legitimate exercise of police power to prohibit any one from engaging in the calling who has not previously been examined by the lawfully constituted authority and received a certificate in testimony of his qualification to practice the profession." "It is the common custom in all the towns and cities of the United States to require the payment of a certain sum of money as a license fee, for the privilege of prosecuting one's profession or calling. The license is required indiscriminately of all kinds of occupations, whatever may be their character, whether harmful or innocent, whether the license is required for the protection of the public or not. . . . It is either a license, strictly so-called, imposed in the exercise of the ordinary police power of the state, or it is a tax laid in the exercise of the power of taxation. In many cases it becomes exceedingly important to determine under which power the particular license is imposed. For example, if the license is a tax, the bill must originate in the House of Representatives, according to the almost universal requirements of constitutional law. But if it is a police regulation, the bill providing for it is constitutional in whichever house it was introduced." "It is one of the 'ways and means' of defraying current expenses."[1] A license tax has been held to be reasonable when imposed upon vendors of milk, hucksters, pedlars, vendors of cigarettes, upon attorneys, physicians, bankers, hacks and drays and other vehicles. So likewise may such tax be exacted of keepers of places of amusement, of dealers in second-hand articles, pawnshops, insurance brokers, auctioneers. In short, the state has the power to impose a license fee as a tax or a police license upon every kind of business.

"In the regulation of all such occupations, it is constitutional to require those who apply for a license to pay a reasonable sum to defray the expenses of issuing the license, and what is a reasonable sum must be determined by the facts in the case."

"When a municipal corporation is given the power to license useful trades or occupations, it can not use the license as a tax to raise revenue, nor is it authorized to entirely prohibit the exercise of the trade or occupation by any excessive license fee."[2] Mr. Justice Manning says:

"A proper license tax is not a tax at all within the meaning of the Constitution or even within the ordinary signification of the word, tax. . . . The imposition of a license tax is in the nature of the sale of a benefit, or privilege to the party who would not otherwise be entitled to the same. The imposition of an ordinary tax is in the nature of the requisition of a contribution from that which the party taxed already rightfully possesses."

I have examined all state laws concerning dentistry, numerous other laws and legal authorities, and so far I have not succeeded in finding a single case where the costs did not fall upon the applicant, therefore in answer to the query: How shall the revenue for conducting the work of the state boards be obtained? I reply: From the candidate.

REVENUE FOR CONDUCTING THE WORK OF BOARDS OF DENTAL EXAMINERS.*

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BY TAXATION OF THE PEOPLE.

Although one of the main objects of examining persons wishing to commence the practice is to secure protection for the people from inferior dental service, and it would seem for such immunity the people should be taxed as they are for any other protection which the law affords. This is doubtless the correct principle, as the members of the state boards are state officers, it would seem most rational that they should be paid as other state officers.

But there would be great difficulty in influencing legislation, as any proposed enactment relating to dental surgery or any branch of medicine, which carried with it a draft upon the treasury of a state, would excite the

1. Tiedeman's Police Regulation of Skilled Trades and Professions.

2. American and English Encyclopedia of Law.

* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

opposition of the average legislator. It would not be expedient to ask this, as it would be fatal to any further amendment to our present dental laws. In fact, in some of the states, it is specially provided that under no circumstances shall these dental enactments be of any expense to the state.

BY FEES FROM THE EXAMINATION OF CANDIDATES.

All things considered, the most satisfactory plan of securing compensation for the service rendered by members of the state examining boards should be derived from the fees received from the applicants for license. All legislation prescribing and controlling the standard of qualifications of licentiates in dental surgery has been effected through the influence of state dental societies, and every one will concede that such enactments are of great benefit not only to the public but to all reputable practitioners in maintaining a higher standard of professional attainments, which gives more dignity and a higher consideration among the other professions as well as the public.

It is for these reasons, to a great extent, that it is most earnestly desired that the incompetent and unworthy should be excluded from the practice.

The amount of compensation should be to some extent commensurate with a reasonable expectation of income to be derived from these fees. Of course, in some states it would be larger than in others, but a per diem of $10 or $15 and 3 cents mileage would not be extravagant remuneration for members of examining boards, except the secretary, who should be paid $25 per annum additional.

If these and such other legitimate expenses should aggregate less than the amount of fees received, the balance should be turned over to the state society for conducting scientific research or other educational purposes. If these amounts should aggregate more than the fees, then the state society should supply the deficit. It should not be asked of any competent practitioner to attend these meetings and make these examinations for less compensation than the amount mentioned.

In addition to these duties, each member must prepare suitable question lists before the meeting and examine the replies after, in order to give the proper grading to each applicant examined, and both of these require the exercise of much thought and judgment.

BY TAXATION OF THE PROFESSION.

If this should be necessary, then the profession should not hesitate to bear that burden for the sake of the benefit which is derived from a proper discrimination between the worthy and qualified and the unworthy and incompetent; and in order to prevent the lowering of the standards of professional equipment and to provide against the advent of those who pursue the calling as a hustling business rather than a learned and dignified profession.

Hydrotherapy Without Water or Cold.—Winternitz, the professor of hydrotherapy at Vienna, states that in the local application of alcohol compresses we have an effective hydrotherapy without water and without cold. First introduced by Salzwedel for phlegmonous inflammations of the skin, Winternitz has found them extremely beneficial in herpes zoster, in the gangrenous as well as the hemorrhagic form. The pain vanishes almost immediately after the application of the alcohol, and the process arrested and cured. The compress is made of six to eight layers of absorbent gauze dipped in 65 per cent. alcohol, covered air tight and left for twenty-four hours.

THE DENTAL COLLEGE STANDARD.*

1. IS IT WHAT IT SHOULD BE? 2. IF NOT, WHAT IMPROVEMENTS SHOULD BE MADE? 3. HOW MAY THE REQUIREMENTS BE IMPROVED?

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In order to intelligently consider the subject in hand it will be well to first define, if possible, what is the dental college educational standard as at present accepted in this country.

Much agitation and discussion of the subject has for the past two or three years occupied the attention of the journals and the various dental societies, from the national bodies down to the smaller local organizations, as to what the standard should be, but the average practitioner would be at a loss to define what the present situation is if asked to do so. The fact is the whole matter is in a state of evolution just now, the general trend and consensus of opinion seeming to be that high school graduation is the probable goal within the next few years. The fact also is that until 1899 there never was any established standard in this country, each school being a law unto itself as to whom it should matriculate and graduate. The National Examiners sought for years to induce National Faculties to establish a minimum standard as a basis from which to go forward, but it was not until an open rupture, based on a standard demanded by the Examiners as a criterion of reputability and recommendation of schools to the various boards, brought the two national bodies together at Niagara Falls in 1899 in a conference which resulted in the following code of rules being placed on the records of the Faculties Association:

"The minimum preliminary educational requirement of colleges of the association, for the session of 1899-1900, shall be a certificate of entrance into the second year of a high school, or its equivalent, the preliminary examination to be placed in the hands of any state or county superintendent of public instruction."

Amended Rule VIII. National Association Dental Examiners, Sec. 2.—"The following preliminary examination shall be required of students seeking admission to colleges recommended by this association: The minimum preliminary educational requirements of colleges of this association for the session of 1900-1901 shall be certificate of entrance in the second year of a high school, or its equivalent; the preliminary examination to be placed in the hands of the State Superintendent of Public Instruction, as adopted by the State Board of Missouri."

Also, "the minimum preliminary educational requirement of the colleges of this Association, beginning with the session of the year 1902-1903, shall be a certificate of entrance into the third year of high school, or its equivalent. The preliminary examination to be placed in the hands of the State Superintendent of Public Instruction. Nothing in this rule shall be construed to interfere with colleges of this association that are able to maintain a higher standard of preliminary education."

The above represents the exact situation at this time, to-wit: present standard, one year of high school, promised standard for 1902, two years of high school, with the agreement between the two bodies that all schools

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* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

belonging to the National Association of Dental Faculties and living up to its standards and requirements as laid down, shall be accepted as reputable by the examiners and recommended to the various state boards for recognition. The regents of Michigan, under the advice of the venerable dean, Jonathan Taft (to whom be all honor), took the initiative in setting the pace and required high school graduation for 1900. The regents of New York will, in 1902, culminate a progressive advance in requirements to full high school standard. At the World's Dental Congress in Paris last summer high school graduation was made the international standard for entering dental colleges. So it would seem quite certain that, viewed at large, high school graduation is accepted as our *Ultima Thule*.

The National Association of Dental Faculties is a body composed of the membership of 51 dental schools, all of which accept and agree to conform to the regulations and rules formulated by that body in the conduct of their schools. However much these schools may vary in their equipment, faculty and general effectiveness as educational institutions, yet, as long as they retain membership in that body, all, by special agreement with the examiners, command the same privileges and recognition, subject to the various dental laws in nearly all the states—membership in that body now being accepted by all state boards as the criterion of reputability before the law. This association, backed at all times by the National Association of Dental Examiners in its every forward move, has in the eighteen years of its existence wrought wonders in the development and unification of curricula, the evolution of dental technics, lengthening course of study and special training, and in a hundred ways making the advantages offered for obtaining a complete dental education and equipment almost ideal; so that the student who comes to the dental college to-day prepared and fitted to assimilate and appropriate what may be his own for the mere taking—has no excuse for leaving school unprepared to enter successfully on the practice of dentistry.

The code of rules and standing resolutions formulated by this association for the government of its members in the conduct of their schools is a monument of sense, wisdom and ethics which would redound to the credit of any deliberative body of men having the interest of their calling at heart—and yet strange to say, never, through all the years of its existence has it seemed to occur to it to effectively inaugurate and establish any given educational preparation as a minimum standard requirement for entering the dental college course—until the regulation of one year of high school above quoted was adopted, and that only after the demonstration of much friction on the subject between the examiners and faculties. The query arises naturally why this important subject was so long ignored. But one logical answer suggests itself, namely: The different schools, or at least a majority of them, preferred to retain in their own hands the decision, without dictation from any source, as to the fitness of an applicant for matriculation. This power of discretion was safely lodged in schools that were state institutions with equipment and financial resource sufficient to meet all current expenses and salaries, regardless of the number of students matriculating—and those with assured attendance large enough to leave out any temptation to admit applicants for financial reasons only. But only a small proportion of the schools have been thus situated. Indeed, most of them must have a given number of students to keep them from bankruptcy, and so at least there was a door of temptation open for the acceptance of credentials that ought to have been better than they often were. In fact at Niagara in 1899 the chief argument used by college representatives against the fixing of the two-year high school minimum requirement was that it would prove the financial ruin of one-half the schools of this country. But what is the fact? Since the first bar was put up the attendance in dental schools has not only diminished but has increased—at least in all the better equipped schools. The experience of the Medical Department of Johns Hopkins is a great object lesson in this regard. Some years ago, because of the increasing size of its classes, and in the hope of restricting them, the entrance requirement was raised first to high school graduation, and then to the possession of an academic degree, all of which only served to increase the number of applicants for matriculation—thus proving a well-known axiom, that the more highly one holds his wares the more eagerly they are sought.

There is probably no doubt that if the higher standard could be successfully inaugurated and established it would work a very marked improvement in the quality of student material entering our schools, a consummation, from the standpoint of us all, most "devoutly to be wished."

The capacity, education, fitness, integrity and even general intelligence of the average examiner, so glibly and frequently brought into question in our current literature, may be far from ideal, and yet, even he is often startled into protest against much of the graduated product that has been sent out from many of our schools in the past few years.

Accepting, from what appears to be the inevitable tendency of events, the high school graduation standard as a condition to be desired, the question at once presents: How can it be inaugurated without working injury to the college interest? The answer is that the colleges, by joining forces with the boards whose duty it is to enforce the dental laws, can at once establish and maintain, without friction or disturbance to the interest of all concerned, an immediate advance of matriculation standards to high school graduation. This as a general proposition will stand.

However doubtful may be the comparative power and strength, legally and morally, of the faculties and examiners when at variance with each other, there is nevertheless no limit to their power and ability to maintain any given standard of educational requirement within reason—as a basis of accepted reputability before the public—made and provided these two representative forces agree to work honestly together to that end. This fact has been lost sight of too long by the colleges. No matter if the appointment of examiners is dominated by political pulls, or if many of their men are incompetent, dull-headed and far from fit representatives of our ideals (as has often been charged), still it must be always remembered that these men represent and are entrusted with the administration of the law, and the law always dignifies its chosen administrators. No matter if the many state laws bear evidence of weakness and inefficiency and are apparently at great variance with each other in their provisions and standards, if scrutinized carefully they will all be found to demand that colleges shall be reputable. This one feature of uniformity in ethics makes it possible for the teachers and examiners, backed by the moral support of the profession at large, to establish and maintain in every state of the Union

any educational as well as ethical standards on which they are agreed to be of one mind.

While the Faculties Association's rules give the individual college absolute control over the behavior, standing, advancement and transfer of the entered students —thus making it impossible for one of them who has fallen short of passing muster in one college to be admitted to another school without the full consent of his alma mater—while, I say, all this obtains after a student has matriculated and been given standing, there is at present nothing to absolutely prevent a man whose credentials have been refused by one school, bobbing up serenely before the dean of another school, and having standing given him on the same credentials. This commercial and competitive temptation, which is the chief obstacle in the way of successfully establishing a uniform advanced standard requirement, can easily and only be overcome by such wise and careful legislation on the part of the Faculties Association as has distinguished it in handling many other no less delicate questions. In the many discussions of this subject of preliminary education the argument has been made, and stoutly supported by facts, that a large number of the most eminently successful of our professions are men who had practically no educational opportunities before embarking on a professional career, and, therefore, that to set a fixed and arbitrary standard would in effect often bar out those who might become, with opportunity, shining lights. Of course, all will admit that such men would be much better equipped with proper educational preparation, and indeed for such very good reason every fixed standard that has been agreed upon or that is contemplated for the future, is modified by the words, "or its equivalent," to give the aspiring student his chance—no matter if his educational opportunities have been curtailed by environment.

How shall a fair, honest judgment as to what constitutes the equivalent of any given standard be secured, and who shall pass such judgment? On this question being properly answered hinges the successful establishment of any prerequisite standard. All will admit that however well equipped a man may be as instructor in any branch of dental education, yet, by that very fact, he is sure to be at least rusty and out of practice on public school examinations, and certainly the college teacher will admit that the politically appointed examiner is likely to be fully as unfitted as himself. Did you ever have opportunity to examine a bunch of material filed with a college dean, called matriculation credentials? It is a startling object lesson, and a few samples will exemplify the plausible expedients resorted to (and, it is to be feared, too often successfully) by men wholly unqualified to meet the published standards of the schools they wish to enter. Ambiguous letters from interested teachers and complacent county superintendents, carefully framed to seem to cover the standard demanded, but really as untruthful as the serpent's reply to Mother Eve, "Yea, hath God said."

Mind, the new Rule VIII, jointly adopted at Niagara in 1899, provides thus: "The preliminary examination to be placed in the hands of the State Superintendent of Public Instruction, as adopted by the State Board of Missouri." Manifestly—since it is not to be presumed that the dental profession has the power to prescribe special duties for any state officer—the intention and expectation was that the State Superintendent of Public Instruction for each state having dental schools should be requested to select and appoint some person specially fitted, in his judgment, to pass upon credentials and properly conduct the preliminary examinations of intending dental matriculants in the colleges of that state. Of course the State Superintendent is a "political creation," but his special appointee for this particular work may practically be satisfactorily agreed upon between the college and the state board. Thus would the college dean be relieved from the ever-perplexing responsibility of passing upon all sorts of so-called credentials, such as every dean has presented to him—credentials many of them so plausible as to easily pass muster if only casually scanned, and which the dean feels certain, should he refuse them, would be cheerfully accepted, along with the student and the fee, by another dean somewhere.

Eliminate all this. Make it absolutely impossible that a matriculant can be given standing in any college on credentials, until these credentials shall have been passed upon, 1, by the accredited representative of the State Superintendent, and then, finally, accepted or rejected by the joint conference committee of college and board. Make their decision, in the interstate and intercollegiate sense, final, and add, if you choose, a reasonable probationary clause providing the applicant a way to make up his shortcomings without abandoning the study of dentistry. In other words, make the general rule jointly accepted at Niagara, practically effective and universal by the two National bodies formulating specific rules for its application in every state, territory and district where a dental school exists. This plan has been successfully operated in more than one state and if it, or some other one equally practicable, could be inaugurated and applied to all schools alike, one of the chief temptations to commercialism and competition rather than emulation, would be eliminated and each school would stand or fall accordingly as its intrinsic merits command recognition.

LICENSING.

I. BY EXAMINATION. II. BY DIPLOMA.*

J. A. LIBBEY, D.D.S.,
PITTSBURG, PA.

There should be no other requirement for entering upon professional work than a diploma from a college chartered by the state for the purpose of educating students, whether it be a classical course or upon some special branch, employing well-qualified teachers, who are thoroughly in earnest in their work and loyal to their profession, and are desirous to see only those who are thoroughly competent, enter it; who count the qualities of the student of more value than the profits of the institution.

It is evident that the schools are not all conducted on a basis like this, for the reason that there must be sufficient funds to defray all expenses, including the assistants' salaries, and sufficient dividend to justify the faculty or incorporators for the valuable time taken from their practice: not considering the added tone and dignity of being called "professor"—which is frequently used for profit.

The question arises: "How many students can we get at a certain rate each?" If one hundred are secured it will be difficult to get sufficient clinics for demonstration; how will this be accomplished? The usual way is to urge the students to solicit, not among the poor and

* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

needy, but among their own class of people, who are usually able to pay a fair fee, to a young man who is struggling to build up a practice; and as this business or commercial spirit increases the higher motive of professional education is lost sight of. What is more unprofessional than this manner of solicitation?

"A chain is no stronger than the weakest link." If license by diploma is accepted then the poorest school sets the standard for all. Hence the necessity for licensing by examination.

The necessity for examination is not a new idea; it can scarcely be called a modern one, for in 1700 a French writer urges the necessity of examinations in France for the practice of dentistry.

The history of reform in the dental profession in England, by Hill, conclusively shows, not only the necessity requiring examinations, but also the advancement from a scientific and professional standpoint, by which the people were the beneficiaries. On page 86 he quotes the remarks of the president of the Odontological Society (the late S. Cartwright): "It can not be doubted that a liberal education is of the greatest advantage to those engaged in practice, and the more education is extended in all ranks of society the more it becomes necessary that the members of our profession qualify themselves as highly as they can. For those who employ their services in these days have a right to look, and do look, to the qualities of the mind as well as mechanical adroitness of the fingers."

The main object of the above society was to unite members of the dental profession into a recognized body and provide a means of professional education and examination.

In nearly every criticism on dental legislation, or State Board of Examiners, the author gives the impression that the laws were passed for the benefit of the profession; if such were the case they should be repealed, as class legislation is in direct opposition to the principles of our government. The laws were made for the people.

Most of the Christian denominations require examinations for license; the medical laws are similar to ours, and the profession of law requires the same. In the writer's state (Pennsylvania) a law student must pass a preliminary, and after graduation must pass an examination before a board appointed by the court, the only persons competent to appoint that board.

The representatives of the people recognize the necessity of passing laws for their protection from the incompetent practitioners.

The best means possible should be adopted to test the qualifications of the aspirant to professional practice, and the most important is a judicious selection of competent examiners. As stated above, the court appoints the examiners for the law—they are the most competent to perform that duty, but would prove themselves unqualified were it required of them to appoint a medical board.

No one is competent to appoint a board for professional examinations except members in good standing in that profession. The difficulty of securing competent men for examiners in our profession arises from the necessity of their being appointed by the governor, thus making them officers of the state, and he being authorized to appoint, may be ill advised in the selection.

As the court is the representative body of the profession of law, and is competent, the only representative body of the dental or medical profession in the state is the state society, it should be a state society in fact as well as in name, which is not the case in some states. It must be chartered by the state, and to be a representative body must be made up of representatives (or delegates) from the local societies throughout the state. Act of 1897, Pennsylvania, gives the power of appointment to the governor and the selection to the state society (which is a representative body). Section 5: "The Pennsylvania State Dental Society may, at its annual meeting in 1897, and annually hereafter at said meeting, select as nominees the names of double the number of examiners required, who shall be members in good standing of the society, and transmit such names to the governor under its seal and signed by its secretary. From this list of nominees the governor shall, during the month of August, Anno Domini 1897, appoint a board of dental examiners. In case of failure of the said Pennsylvania State Dental Society to submit such list, as aforesaid, the governor shall appoint members in good standing of the said society without other restrictions. Each one of the said appointees must be a registered, bona fide practitioner of dentistry in good standing, and shall have practiced dentistry under the laws of this state for a period of not less than ten years. No member of a Dental College Faculty shall be eligible to appointment upon the State Board of Dental Examiners, but this shall not apply to membership in the Dental Council. The governor shall fill vacancies by death or otherwise for the unexpired term of said examiners, from the list of names submitted to him by the Dental Society."

Since the present law went into effect 823 applicants have been examined; these were graduates from 18 different schools. Of this number, 711 passed successfully and received licenses from the dental council; 112 failed to receive the required average. A fraction over 13.5 per cent. considering[1] "The measure had an *ex post facto* character, inasmuch as when it was passed many students had already spent two years in the dental schools, and in recognition of this fact the Board of Examiners has been lenient in the examination of applicants. This has no doubt aided in fostering good will toward the law. The influence of the work of the Board of Examiners has been beneficial, in that it has given a stimulus to the teaching in the schools and has induced stricter scrutiny of the acquirements of candidates for diplomas. Formerly students often sought the schools from which they could be graduated most easily, but now they prefer those that require a higher standard."

If the Board had marked the first two years, as they have since, the percentage of failures would have been doubled, as fully that number barely passed the required average—75 per cent.

Dr. John Sayre Marshall, president of the Board of Examiners for the Army, reported to the journals that out of a class of 14 applicants (the first to be examined) only 2 passed.

Is this not sufficient evidence that there should be a reform in the system of educating students for our profession? When the profession and the people realize the condition that now exists there will be no difficulty in getting laws passed that will be a real protection against quackery and contribute to hastening the time when the stomatologist will take the degree of M.D., leaving the name "dentist" to designate those who do only mechanical work.

1. Extract from report to the Governor.

DISCUSSION ON PAPERS OF DRS. CARR, PARMELE, TURNER, CHITTENDEN AND LIBBEY.

DR. EUGENE S. TALBOT, Chicago—One important part of dental education consists in the appointment of state boards, as well as the quality of the men upon these boards. A great responsibility not only rests upon them, but also great power. These men should be selected from the state dental societies. Twice the number of men required should be selected and appointed (at least the number required by law) by the governor of the state. Good men are thus secured, their appointment is legal and it places the responsibility. The proper men can wield a great power, and they do as it is, but if they were qualified men, of high ideals, of education, the specialty would be placed where it belongs. I believe these men can control the colleges and place the entrance and financial examinations exactly where they should be. That the graduates are not up to the standard has already been shown in the examinations made in the army through the National Examining Board for the Army and Navy. I have received a letter from Dr. Marshall in which he says 42 graduates have been examined and only 11 have passed. This shows the graduates of our dental schools are certainly lacking in some particulars. This has already been noted in an editorial in one of the journals, showing great interest in the symposium of last year. Dr. Marshall's report shows something more is lacking, and no doubt the agitation of these subjects will be productive of much good at the next meeting of the National Association in Milwaukee. This editorial hoped the men would not return to their homes without advocating the introduction of a four-year course in every dental college and I believe the time is coming when a four-year course will be demanded, thus giving the student a firm foundation for his life career.

A four-year course will necessitate a better understanding of the subjects the teacher has under discussion. Pathology, of which the student and the profession alike know very little, will and should become one of the principal branches. The bacteriology of the mouth, a great factor in diagnosis, is really a department of dentistry, and yet the first principles are scarcely taught or understood The etiology of diseases of the mouth is yet in its infancy, and the coming dentist must not only be a "plugger of teeth" but an all round pathologist.

DR. VIDA A. LATHAM, Rogers Park, Ill.—I think the solving of the whole question comes with the preliminary education—registration. The candidate enters the Northwestern University, the Chicago Dental School, or any other dental college. The candidate applies for entrance just as those Dr. Chittenden has mentioned, and is permitted to register, let us say, on a high school or university diploma. The city of A has a good high school whose certificate indicates a sufficient preliminary English education. But another candidate with a diploma from the schools of the town of C can perhaps hardly do more than write her own name! There are all kinds of universities and high schools, unfortunately. Compare the schools and universities of Duluth, Chicago, and New York with those in certain other places. How can you make them equal in subjects or standard? Yet any of their graduates might register in a dental or medical college on these diplomas, however unequal their qualifications. The trouble is in standardizing the elementary requirements in every case.

There is another thing to be brought out in this connection. Supposing I advertise; supposing I am a quack! The College and state board do not take my diplomas away for misdemeanor! I can move into another state and practice again! These are the things that should not be tolerated in this country, especially as it is doing damage to our colleges. We meet with this matter of diploma everywhere.

DR. R. R. ANDREWS, Cambridge, Mass.—There are a few words I wish to say in regard to raising the standard of the examinations of the boards of registration of the different states. In New England they are trying to equalize the examination in each state, so that a student may take the examination in one state, and practice his profession without taking another examination in any of the New England states where he may wish to practice. This reciprocity among the states is what the profession at large will demand. Public opinion in the profession is strongly in favor of such a movement, and if the National body will adopt a standard and live up to it, a man who shall once pass a state board can have the privilege of practicing in any state in the Union without further examinations.

As the law stands to-day, a man may pass a creditable examination in all points. At the end of five or ten years, on account of sickness or something else, he is compelled to go to another state, where he expects to practice his profession. He has his diploma, which he has earned, and his certificate from his state board, stating that he has been examined and found worthy. He has passed five or ten years in honorable practice, and with this record he should be allowed to continue without further examination; but as the law stands to-day, this man, with all his experience, has got to go before the board of that state and pass an examination, the same as the young man just graduating. What we want, and what the profession will soon demand, is that a man having once passed a creditable examination of the state examining board in one state, shall be allowed thereafter to practice in any.

The National Board should consider the matter of giving to the different state boards certain rights, in considering cases where a man has been engaged in honorable practice for twenty or thirty years, and who is obliged through illness to go where he is ordered by his physician to regain health. I have in mind the case of one of the founders of the Harvard Dental School, a man of thirty-years' active and honorable practice, one of the most able operators in the city of Boston, and respected by all who knew him. He was ordered West by his physician. After awhile he was called before the state board of examiners and candidly confessed that he could not pass their examination in chemistry, bacteriology, and other scientific courses presented, but stated that he could give them abundant testimony of his ability to practice his profession. He did not take the examination, but came North, and took a college course which admitted him to practice. The board is established to protect the public; can anyone doubt that with this gentleman's high standing, eminent ability, and years of experience, he was unable to fulfill every demand?

I have in mind the case of another who was graduated from one of our special schools in Boston. He went to Germany, and was in practice with his brother for a number of years. He is a fine operator; he is so good a mechanical operator that he is to-day employed as one of the instructors in that department of one of our schools. He is a very nervous man, who is easily rattled by an examination. Coming back to this country, and wishing to practice, he went before the board, but became so nervous that he could not pass the examination. In this case, there is no question but what the public would be well treated if he had been registered. I am myself an advocate for a good solid examination, but the examinations given by some of our boards, especially by new men who have recently come in, have in some cases been severe, with catch questions. It has been acknowledged by members of the board in our own state that it would be very difficult for them to pass their own examinations. It is a fact that a member of the board of a neighboring state was compelled to move to Massachusetts, tried the examination and was turned down. This question is one of great importance. There must be reciprocity between the states, and the sooner this matter is considered by the National Board, the better.

DR. CHARLES CHITTENDEN, Madison, Wis.—I think there is scarcely a board in existence that does not consider the number of years a man has had in practice. In Wisconsin our Board has in its code of rules a rule something like this: "Candidates having had ten years or upwards of practice immediately before applying for this examination shall be required to pass only a 50 per cent. examination." I think that rule applies in a majority of the states.

DR. GEORGE J. DENNIS, Chicago.—I am not actively engaged in the work of dentistry at the present time, but the raising of the standard of dentistry is something that always appeals to me. The question came to my mind as I listened to a paper that was recently read, and it also appeared recently in the papers, as to what would be the remedies for raising the stand-

ard of dental education. We have talked about dental education for years, and I believe the subject has been often brought up in this Section. Is it to be remedied by law or simply by the good intent of the majority of those who have this matter in charge? By that, I mean the faculties of the different schools or the members of the state examining boards.

The matter of requiring a dentist going from one state to another and failing to pass the examination of the board of that state, it seems to me, is entirely wrong on the part of our examining boards. They seem to fail to recognize that years of labor and years of reputable standing in a community count for very little compared with the examination simply. Examinations of a dentist's ability, as a rule, do not amount to much. I think that is recognized by medical men generally. Oftentimes an examination shows but very little of what a man is capable. This is recognized by examining boards in hospitals. Often in connection with the examination they will take into consideration not merely the quality of the paper that is presented, but the quality of the man, his moral standing, his standing in the community, and his ability in lines outside of mere memory, and the actual tests by presenting human cases of his ability. It seems to me that a dentist who has worked for years in one state ought to be valued for his manipulative ability very much more than to have his standing judged entirely by a written paper.

In regard to the matter advocated in one of the papers, of paying for the work of the examining board by fees from the candidates for examination, I think that method has been so thoroughly tested and proven a failure that it seems to me entirely out of the question to consider it here. The people are the ones who should bear the burden of expense. They are the ones who are being protected by the examining board, and they should bear the expense of the examination.

DR. J. R. CURRENS, Two Rivers, Wis.—I am not a dentist, but I am a member of the Examining Board of Wisconsin. We had a meeting of the representatives of the Examining Boards of the United States yesterday in which these matters came up, and what impressed me here to-day is in regard to reciprocity between the different boards. I think if something can be arrived at, and if our laws can be so framed that they give the boards the power to recognize licenses from other states, I can not see but what it is the right thing to do. In the medical profession we have a little more difficulty than you dentists have. We have three or four schools to contend with, and the situation is a great deal more mixed. We have on our board two regulars, two homeopaths, and two eclectics. After July 1 we will have to take on one of our manipulative friends. In regard to this reciprocity business, there are many men who have grown old in the profession, their family surroundings are such, the condition of their health is such that they have to have a climatic change, and it is a great hardship to those men to put them through an examination. The matter of diplomas and examinations came up here this afternoon, and I believe in the medical line we are worse off than you are in the dental line. It is very hard for the State Board of Wisconsin to tell about the standing of a medical college in Alabama or Tennessee. For example, these schools will get out a curriculum that one will read with admiration, but they will take almost anything in the way of entrance requirements. Under our law we can require a diploma and examination both, and we will have such under direct control. It is all right to use a diploma if you know it is from a reputable school, but you can not have a class legislation, and there are very few boards that are allowed to use their discretion unless they have an investigation, which is a rather difficult piece of business. Most boards have to be self-sustaining, and it would be an admirable thing if they could prevail upon the legislators to make the concession, but it is difficult to make them believe that it would be for the benefit of the people instead of the medical men and the dentists. They want us to be self-sustaining, and it places us in a rather bad position sometimes. There was a flaw in our law in the revision of the statutes, so that we could not even send a man out to investigate a case without calling the whole Board together. We had a reserve fund of $1200, and the result was that we had to turn it into the treasury. We tried to get it back, but could not do it. We had no money to investigate anything; the state has the money, and it will stay there.

To my mind, the solution of the whole matter would be this: In the first place, raise the standard high. See that the primary education is brought up to a high standard. In regard to the high school standard which has been referred to, we have a clause in our medical law which provides that the high school standard must be up to the high school standard of our state. In that way any difficulty can be obviated very easily. One medical college fought very hard against the high school standard, and we had to cut it down to the junior year, but we expect to raise it two years from now. We have got to go slow in these things, and in this reciprocity business try to get the state laws on the same plane, and if we all join hands the matter can be accomplished. The laws are queer things to handle. There is that word "reputable" that is in the law. If a man is from a reputable college, the board has some discretionary powers, but if you get too particular about it, the board may decide you are a little too strict. It is a hard thing to learn the ways of the law. We had a case before our Board. Our law of 1897 was a very fair law. A disreputable individual took several courses in some Omaha medical college, and they refused him graduation. They pretended he did not come up to the standard. The fact was he passed a good examination, but it was on account of his moral character they refused to graduate him. The result was he went to St. Louis and graduated from the Barnes Medical College. He then went to North Dakota, and the Secretary of the State Board of North Dakota wrote to our secretary that the man was disreputable and doing all kinds of dishonorable things. He ran a lightning-rod business. He would go to a farmer with twelve children and tell him if he would give him a note for $100, he would take care of his children for twelve years. He took notes and sold them to some banks. He did the same thing in Iowa and Nebraska. Then he came to our state and wanted a license, and we refused him. We supposed our law was all right, but there was a revision of the laws in 1898. Our Board was a little afraid about those session laws of 1898, but we supposed they were all right, but they changed the wording somewhat and the punctuation, thinking it would come out all right, but if you take these things before a jury they do not always come out as expected. The case came before a jury and the fact of the matter was he beat us and we were obliged to license him. Now, he threatens us with personal damage suits.

DR. R. H. NONES, Philadelphia—I am interested in the symposium and the various talks I have heard, and the whole question is a matter of cause and effect without arriving at the proper remedy. There are some apparent remedies, but to select one that would answer every case is a difficult thing to do. If we do seemingly find a remedy, one problem succeeds another until we find it is impracticable. How would you take care of the older practitioner if he wanted to move from one state to another? That would immediately be fought in some states that did not want a man to come over from another state, and that brings up the question of the survival of the fittest. It is a very well-known fact, yet a very sad one, that if a man has been in practice for some years, and he may be a young man, too, he neglects many of the theoretical branches which the examining board compels him to take. Now, if that man has not taken such an examination that is demanded of the younger men, I do not see how you could get a state board to pass him. It would be somewhat retro-active, to my mind, because he has had the opportunity to have had those qualifications which should fit him to go on in advance of this younger man. It acts in this way, you may say. Many a young man who, as has been suggested, might make a very competent dentist if he had those qualifications in later years. Why should not that young man have this same privilege to enter and bring up the necessary qualifications as the older man has, where you give him credit for forgetting his earlier qualifications? I say this problem and many similar problems have come to me. We have tried to get too many things instead of getting one good thing at a time. We started with too many things we wanted, and received nothing. I believe had the Association of Dental Faculties incorporated into their act or law, or whatever it was that was passed, a curriculum that should have been passed by the

student, his preliminary education would have been much better than by grading the standard to one, two or three years, whatever it may be, of high school. With all the careful thought of these gentlemen they little, I suppose, thought that immediately it was entered upon the question would come up: What is one year of the high school in one state or another? Immediately that trouble arose, and it has been one of the very hardest things to contend with in colleges.

I can verify Dr. Chittenden's remarks in regard to qualifications; I have seen them in all forms. When students presented credentials to me, I have invariably taken their credentials from them and told them I would send them to the Superintendent of Public Instruction to have them passed upon. I think by immediately taking his credentials from a man you can settle the matter for all time. If that credential comes back, I can follow him up in any other school and tell them they have no right to take that man. That is a thing for the deans to look into. The other gentleman who spoke made the point of a faculty being liable to be mandamused. That is a very strong point, indeed. You think you are treading on safe ground when your state board says to a graduate that he is not a graduate from a reputable institution. The question comes up: What is a reputable institution? In order to emphasize that point I will cite the case of the school I am connected with—the Dental College of Philadelphia. We had some difficulty to get our dental college into the faculty. They refused us admission, and we went to teaching dentistry under the charter of the medical college. We sent our students before the State Board, and they refused to examine them. We threatened them with mándamus proceedings, and after consultation with the attorney-general, they were compelled to examine our students; they passed the Board, and shortly after that we were admitted to the Association of Faculties. Other states refused to do the same thing, but they soon fell into line. We were in perfect harmony with the faculty, but the question arises: What is a reputable school? This is a very serious question, particularly the point of getting men whom you would like to see on the state board. Those men, as a rule, are very busy men; men who can not afford to give their time to such a work as this. It is not a pleasure. I have seen a great deal of it. I am acquainted with the State Board of Pennsylvania, and I know the amount of work they have to do. I say there is absolutely no pleasure attached to it. In regard to the matter as to how the men on the state board should be recompensed, that is a difficult problem. The class of men that should be on the board are difficult to obtain, because their time is of a great deal more value to themselves than the recompense they get from the state. I see no other plan except that of the fee being paid by the applicant. It is a matter of the utmost folly to ask the public to pay for such services by taxation. The question is whether they want protection. The general public does not want protection, as a rule. I went through one of the large department stores in Chicago, and it was a matter of surprise to me that in this large department store they are doing dentistry work at "Fair" prices. They claim to do crown and bridge work and such things, and that in the second city in the Union. If the public does not want protection in the large cities, what could you expect in the smaller towns, where you would expect to tax the people for this protection? Would they want it? I say most assuredly not.

There is another point that struck me while listening to these papers, and that is in regard to the matter of Dr. Marshall not passing some twelve out of fourteen. That casts somewhat of a reflection at first thought on the various schools throughout the United States. To my mind, it does not, because I look at it in this light, that the greater majority of those students that are passed upon by the examining boards have made up from one to two years, and you can see at once that it makes it difficult for those men to pass. Again, I say without any hesitation, I believe the majority of the state boards of the United States could not pass their own examination. I say that without casting any reflection, but I do not think these gentlemen have kept up with the various theoretical subjects. It is out of the question to expect them to do such a thing, and I think it would be a point of much interest had Dr. Marshall told us whether it was the theoretical or practical branch in which they were lacking. I have always tried to find out the weak points of my students when they appeared before the state board, and tried to strengthen them on those points in college. I think that is a point the various state boards should give out. It would benefit the schools materially, and in that way the profession at large would be benefited.

DR. A. H. PECK, Chicago— Dr. Talbot has stated that state examining boards have power to regulate some phases of the individual college work, such as the preliminary requirements, etc. If Dr. Talbot's judgment is correct, and in a measure it is, I do hope the day is not far distant when the state dental examining boards may be placed in position where, by special legislation or advancement of public sentiment, or whatever the means, they may be able to successfully use the power that is placed in their hands that the entrance of students to our various colleges may be regulated and placed in the condition it should be, because we all know that the entrance of students to our colleges has not been what it should be. In other words, not to cast any reflections upon any institution, all colleges are pretty much alike in this respect. They pay very little attention, as a rule, to credentials presented by students. Many of them are private institutions, and are in the field for private gain, and whether or not the student who applies for admission possesses the necessary qualifications to carry him through lies with the powers that be. This is a demoralizing condition of things in this phase of dental education, and may the day be hastened when this condition may be eliminated and our institutions placed on their proper plane.

DR. CHARLES CHITTENDEN (closing the discussion).—There is no question about the power of examining boards, provided they have the dental colleges and the dental profession at their backs. Examining boards can do anything it is desired should be done for the dental profession in the matter of standards. As I tried to exemplify in my paper, there is no question but that the boards and the colleges together can do all that there is to be done in this matter. The difficulty has been in the past with the colleges and the faculties associations. For sixteen or seventeen years we have waited for the National Association of Faculties, who said that they would fix the standard; that they could be trusted, and that as soon as they had all schools in they would see that the standard was raised to where it should be, and that all these evils were corrected; but I think now, if the members of the Association were asked, they would admit that they have in the Association many schools that ought not to be recognized. Last year there was a school examined by a special committee of the Faculties Association, and a report brought in, which I had the honor of being permitted to see, prepared to be presented to the Faculties Association, but it was so scathing in many of its criticisms of the school that had been examined, that the report was withheld. I hope to see that report brought forward some day and the school properly dealt with. The Faculties Association feels it has a lot of weak schools represented, but it does not want to cause a disturbance, and the result is they have nothing by which to hold up the standard. They do not seem to remember that they should come to the examiners and join hands together and settle upon a standard; they do not stop to think that there might be a more successful method.

A gentleman said he would like to know in what branches the students were most likely to fall down. Our experience has been that students fall down first in simple anatomy. Next, they will fail on a dozen questions that almost any child in a common ward school should answer. That has been our general experience.

I desire to append the following letters, which speak for themselves:

Wisconsin, July 29, 1899.

"Gentlemen of the School of Dental Surgery.

"The bearer, ———, of this city, is a young man of good moral character and a very good student. In the year 1896 he was qualified to hold a second grade certificate to teach

school in ———, which was equivalent to a three-year course in the high school of this city.

"Supt. of —— School from 1894 to 1896."

"Dr. ———, Chicago, Ill., Dear Sir:

"Mr. ———, the bearer, impresses me as a young man in every sense qualified to take a dental course.

"He states that he completed the graded-school course and a portion of the first year of the high school course in the city of ———. Since then he has had several years of practical experience in a telegraph office in this city.

"Respectfully,

"Asst. State Superintendent.."

POST-OPERATIVE HEMORRHAGE.*

A. H. CORDIER, M.D.

President of the Mississippi Valley Medical Association; Professor of Abdominal Surgery, University Medical College.

KANSAS CITY, MO.

I know of no condition in my work that is more horrifying than to realize that a patient upon whom I have just performed an abdominal operation is bleeding dangerously. I know of no condition under which the surgeon will more quickly realize the importance of his work and appreciate more fully the great responsibility existing in every abdominal operation.

An avoidable accident to a patient that may result in the death of that patient is a very serious matter and should not be passed over as a trifling affair by the surgeon. Trying to give contentment to the sorrowing family and friends by assuring them that the all-wise Providence willed it thus may satisfy the unsuspecting and confiding family circle; but does it relieve the mind of the surgeon or save the patient?

The use of unstable ligature material on large pedicles and in localities where the same is quickly absorbed has cost quite a number of patients their lives from post-operative bleeding. It has been my misfortune to lose one patient from a post-operative hemorrhage, the cause being the use of a catgut ligature. After a large series of cases in which I used silk (I use it altogether now) without an accident of this character, I was persuaded to use catgut in a simple and easy case. This case was in a private residence in a distant city. Three hours after the operation my patient died from hemorrhage, the result of a slipped catgut ligature. I know that the ligature was responsible for this death. It should have been avoided. Dispensations of Providence are garments that may be used to hide the naked truths from an ever-credulous public, but before the eyes of the conscientious surgeon he sees the slanderous injustice of hiding his blunders under such sacred raiment.

That many fatal post-operative hemorrhages are unavoidable no one will deny, and it has been the experience of almost every surgeon to have had such. The recognition of the possibility of a patient's bleeding to death following an operation should only make the surgeon more careful to avoid it and to resort to the best method of speedily checking it when it has taken place.

There is no condition in which quick surgery is more essential; I mean by quick surgery, not alone getting at the work quickly, but rapid work after the secondary operation has begun. A patient who a few hours previously has gone through a severe operation, probably of long duration, or of a character to produce shock, is not a very good subject to be given an anesthetic and undergo a reopening of the peritoneum. If the surgeon does not recognize this, the majority of his patients who are reoperated upon will die. No chronic or deliberate surgery can be tolerated by such a patient.

The use of the Trendelenburg position, while it enables the surgeon to see the bleeding points and to tie them most efficiently, may by gravity, in a patient with a weakened heart, keep a vessel from bleeding during the operation that may bleed profusely on the patient's assuming the horizontal position when placed in bed. This is especially true of capillary oozing from adhesions.

The drainage, as has been urged by Price and others, is not only valuable as a sentinel, but has a direct hemostatic power. All recognize the necessity of a clot, firm in character, to control oozing or even bleeding from larger vessels. Blood in the air-tight peritoneum, in the presence of a peritoneal temperature and abundance of lymph, will not coagulate quickly or at all firmly, as all will agree who have opened the peritoneum in cases of ruptured tubal-gestation or other conditions where there has been a free intraperitoneal bleeding.

A drainage tube in suspected cases for a few hours will do no harm and will surely give the indications of a hemorrhage. If the bleeding is from small vessels, the keeping of the peritoneum dry will be a potent factor in controlling the bleeding. Of course, the tube should not be used unless some reason is present for its use.

While the tube is of much use in suspected cases, its utility is lost in the case where a hemorrhage occurs in a patient in which such an accident is not expected. Thus, my three post-operative hemorrhages have been in easy cases where such was least expected. My other secondary operations for bleeding have been in patients of other surgeons. I was called in their absence, saving the patients in each instance.

The symptoms of a concealed hemorrhage are very much like those attending shock, and, if the symptoms alone were relied upon to make a diagnosis, many errors would result. The pulse is increased in frequency in both, and diminished in force equally in the two conditions. There is a sighing respiration in each, the features are pinched and the surface is blanched in the two, the skin is clammy in both, the patient is comfortable and indifferent in each, the pupils are dilated and respond slowly in either condition.

How is the diagnosis best made? Take, for instance, a fairly strong patient, remove an ovarian tumor from that patient, occupying from fifteen to twenty minutes in the operation. There are no adhesions, there is a small pedicle, a silk ligature is used, and the patient is put to bed in good condition at 9 a. m., with the pulse 80, the temperature 98 F., and with no shock. Now visit this patient at 3 p. m. the same day, and find her with pupils dilated, features pinched, free from pain, the skin white as marble, the lips shrunken and pale, the pulse 160 and very compressible, with a cold, clammy perspiration, all symptoms of shock or hemorrhage. Analyze the history of this case, and experience will say that a patient leaving the table in the condition of this patient, having had no evidence of shock or anything done to produce shock: has an internal bleeding from a broken or slipped ligature: the doubt, if any existed, should be quickly dispelled by cutting a suture and introducing a tube or an artery forcep.

Take another case: Extensive bowel adhesions have been separated in enucleating a growth, the operation is

* Read in the Section on Obstetrics and Diseases of Women, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

a very long one, the patient is more or less shocked at the completion of the operation, this condition continues until it assumes an alarming state, and the question arises: Is this a continuance of the shock, or is it in part, or altogether, due to a bleeding? If a tube had been introduced, no doubt need exist, but in the absence of the tube there is nothing absolutely reliable to guide us but the cutting of a suture and opening a small portion of the wound. This can be done with absolute safety.

On the other hand, if this patient had left the table in good condition and a few hours later presented the shock-hemorrhage picture, it would be quite safe to diagnosticate hemorrhage and act accordingly. As a rule, the first evidences of shock begin during the operation, and many cases of secondary shock in reality are cases of post-operative hemorrhage. Each case is an individual; the experience of the operator and his knowledge of what was done, and who did it, will lend much aid in determining the cause of the symptoms manifested, as well as the probable location of the same, if from a bleeding surface or vessel.

If convinced that the patient is bleeding and that the loss of blood will prove fatal, the surgeon's only duty is plain, and he should not shirk it, while giving strychnin, using hot applications, etc. The patient is not safe until the bleeding is controlled. I do not mean a slight oozing such as we often see in the tube in adhesion cases, but by hemorrhage a loss of blood that *quickly* shows its dangers by the rapid failure of the patient's vital forces.

It has been my misfortune to lose one patient operated on from a hemorrhage coming on a few hours after ligating a small pedicle with catgut. The abdomen was reopened, but the patient was dead or had ceased breathing when I had begun. The abdomen was full of blood. I have reopened the abdomen in two of my cases besides this fatal one; in both large quantities of blood were lost, but in both recovery followed. In two cases in the practice of other surgeons I reopened the abdomen, saving both patients.

The proper use of the deci-normal saline solution in restoring patients in cases of shock and loss of blood is one of the most valuable additions to our work within the last few years. Its application is so simple and easy and its powers for good are so large that I am surprised that it is not more extensively employed by the profession. The introduction of air into the vein at time of infusion should be avoided, yet the danger from this source is not so great as is generally supposed. In one of my cases a faulty apparatus permitted a large amount of air to enter the vein. This was done by one of the nurses handling the bulb of the apparatus in such a manner that it let in air. Not a symptom was produced by this accident. I have in all my cases, save this one, used an ordinary fountain syringe and the cannula of an aspirating outfit or, as in one case, the glass nozzle of an ordinary medicine dropper. Everything about the apparatus must be carefully sterilized. The salt should be baked and the water, when possible, filtered and always boiled. The height of the fountain will govern the pressure. Usually a 3-foot pressure is all that is necessary. The fluid must be kept at a uniform temperature of 112 F. in the bag. A lower temperature will frequently cause the patient to "chill." I think it best to introduce the fluid in two sittings where a large amount is necessary. About 90 grains of common salt to a quart of water is approximately a "deci-normal saline solution."

CONCLUSIONS.

1. In diagnosticating post-operative hemorrhage the operative history will aid much.
2. The symptoms of shock and those of hemorrhage are very similar.
3. In suspected cases the cutting of a single stitch in the incision will tell.
4. The surgery must be quick and decisive in these cases.
5. In cases in which bleeding is expected the tube should be used.
6. Large quantities of deci-normal saline solution will save many patients. This should be used both per rectum and by injection into the veins.
7. Strychnin, belladonna, etc., will not control bleeding from a uterine or ovarian artery any better than from any other artery.
8. The surgeon should do what his surgical conscience tells him is right. Late researches in hematology make it appear that an internal concealed hemorrhage may be demonstrated by a careful blood-count. This, it is stated, will show a decrease in the red cells and an increase in the white.

Very similar symptoms accompany shock from various causes, such as internal hernia, etc., none of which produce a change in the red cells. If an operation was performed for the relief of an inflammatory process, this test would lose its value in part, as there would exist at the time of operating a leucocytosis. Saline infusions apparently increase the white cells at first.

DISCUSSION.

DR. L. S. MCMURTRY, Louisville.—In my brief remarks I shall allude to the prevention, diagnosis, and treatment of this condition. We all recognize that post-operative hemorrhage is due to either a broken or a slipped ligature. In my judgment, it is rarely due to the former, and almost invariably due to the latter. I must disagree with the essayist that the ligature material used has much to do with the causation of hemorrhage. I myself, like the essayist, prefer silk, but I recognize the fact that there are gentlemen present who use catgut uniformly, and they can show just as few instances of post-operative hemorrhage as can those who use silk exclusively. After all, it is not so much the material used as the method of application. The man who is in the habit of using one kind of ligature gets accustomed to it and applies that ligature with more celerity and security than if he changes his method frequently. A man who is in the habit of applying catgut to a pedicle or vessels will succeed just as well as he would with silk. Care must be observed in the application of a ligature. For example, in the operation for the removal of uterine fibromata the broad ligaments are usually in a state of great tension, and if the ligatures are then applied and divided, you are inviting the accident of slip ligature, because just as soon as you relieve the tension, the tissue shrinks and the pedicle is apt to slip out of the grasp of the ligature. This accident can be prevented by securing the broad ligament with clamps, and then when there is no tension apply the ligature, place it carefully home, and make sure that it is of good and tested material. As to the prevention of this accident, then, it depends for the most part on the care and surgical precision with which the ligature is applied.

The diagnosis is to me a matter of great difficulty, and the importance of it can not possibly be exaggerated. Secondary operations in the abdomen are fraught with the greatest peril. A patient who has had an operation performed on one day and is obliged to submit to another on the next day can not be expected to bear up under the severe strain and shock. These patients will usually collapse and die, even though the post-operative hemorrhage,

for which the operation is performed, may have been very slight. You can take a woman with a ruptured tubal pregnancy and with the abdomen full of blood, open the abdomen, occupying nearly an hour, perhaps, in doing so, and she will not have the same amount of shock. The question of interference for the prevention of post-operative hemorrhage is the most difficult, in my judgment, that the surgeon has to decide. Lives have been lost by deciding to do it, and lives have been lost by deciding not to do it. The question must be decided with great care and deliberation. In neurotic women, the circulation and respiration are markedly increased in rapidity after abdominal operations, and it will test the judgment of the most experienced surgeon. Patients with rapid pulse, sighing respiration, neurotic temperament, exhibiting the symptoms the result of neurotic influences, will so simulate post-operative hemorrhage that it will require the greatest care and judgment when making a diagnosis. Therefore, it must not be decided hastily.

The intravenous injection of normal salt solution should never be done when it is possible that the hemorrhage is still going on, because it will be increased on account of the open vessel. The treatment should consist in operative interference decided carefully and judiciously, and which should be executed promptly and rapidly. I do not believe with the essayist that the amount of blood lost should be an indication for or against the interference in post-operative hemorrhage. Oftentimes you will find profound collapse and death occurring from the loss of almost an insignificant quantity of blood. On opening the abdomen of a woman who has had one operation which was followed by symptoms of hemorrhage, you will sometimes be surprised to see how little blood has been lost. There may be just oozing from the venous surfaces, and which will lead to disatrous result. I have opened abdomens and found pedicles intact, but on the side of the pelvis where the adhesions were severed, there was a little trickling of venous blood, and the patient almost gone.

Prompt hemostasis must be performed, and you can not expect to tie vessels when there is oozing, but arrest hemorrhage by quickly packing the entire cavity with gauze. There is no procedure in this department of surgery that requires the exercise of such good judgment and judicious action as is required in the treatment of post-operative hemorrhage.

DR. SETH C. GORDON, Portland, Maine—Since 1884 I have used no suture or ligature except catgut, with the single exception of silkworm gut, for the closure of abdominal wounds. I believe the time is coming when we are all going to use absorbable sutures and ligatures. In my own experience, I still have to see the first intraperitoneal hemorrhage. I never tie off the pedicle without using a needle, threading one end of a long ligature and carrying it through the pedicle below the ligature, then double-wrapping and firmly tying it. In all cases of hysterectomy, where I am to remove everything, I ligature with the needle as described. I put on the clamp and commence my first ligature by tying the ovarian artery tightly, then carry my needle below that, make another knot, which prevents hemorrhage. The rest is the same, over and over, down to where I cut off the uterus. It is all done with one suture. I certainly would not use a drainage tube in order that I might be protected against pelvic hemorrhage.

DR. HOWARD A. KELLY, Baltimore—I am very glad to hear this timely subject brought up for discussion. My former associate in the Johns Hopkins Hospital, Dr. Clark, who is here, will probably recall a case we had some six years ago, where eight days after the operation a woman died from hemorrhage from the right uterine artery, which autopsy showed to be due to the absorption of catgut. Since that time I have preferred to use absorbable ligatures upon what I call cardinal vessels, the two ovarian and uterine arteries. Furthermore, I see no reason why we should desire any other material than fine silk aseptically used: with that, and with gloves worn at the operation, the ligatures will never trouble you afterwards. It is of extreme importance in this work to avoid the antiquated method of tying the pedicle by a ligature which transfixes it and is then tied both ways. The proper ligation of the ovarian pedicle is one ligature at the brim of the pelvis, and the other at the uterine cornu. It is as a rule best to put two ligatures upon all the principal vessels. The most important step of all in the avoidance of hemorrhage is the thorough systematic review of the entire field of operation before closing the abdomen, looking over all ties, and pronouncing a definite judgment on each step of the operation.

The best assurance that there is not going to be any hemorrhage lies in the satisfactory conduction of the operation, so that when the patient lies later in a collapsed condition, and the assistant or nurse is rather doubtful as to whether there is any hemorrhage, the operator can say with positive assurance that he knows there is none. The operator and his assistants ought to inspect the patient carefully as she leaves the table; to examine the pulse and the mucosæ, to get an exact idea of her condition, and in order to make comparisons later to determine whether much blood has been lost. If the operator is unable to say whether or not there is hemorrhage, open up the patient at once, and see. If the patient is a collapsed neurotic, it will not hurt her; but if she has hemorrhage, prompt action will save life.

I give salt solution under the breasts, and as the patient goes onto the table. Do not stop to pick out the exact seat of the hemorrhage. You know which vessels it may come from; therefore, go down into the pelvis with fingers and clamps, catch them all, both uterine and ovarian, then clean out the blood and search for the particular source of the hemorrhage.

DR. HENRY O. MARCY, Boston—I believe that hemorrhage is usually the fault of defective technique. First, the vessels should be sought for and ligated. Then, it is important to suture the tissues over the vessels of these larger wounds so as to have additional control over the ligatures. I earnestly advise the folding of the peritoneum over the stump, as it also prevents hemorrhage, and the possible subsequent adhesions, which otherwise may result. I emphasize this from the standpoint of experience. I believe my best contribution to surgery is the buried animal suture, which I first employed in 1870, and have used it almost daily since. Until 1882 I used only catgut, and with reasonably satisfactory results, but in the long experimental studies that I made on animals, I found that catgut was absorbed much too rapidly, and that the knot is not satisfactory. Then I introduced the tendon suture, as a substitute, which I consider in every way superior.

I take issue with Dr. Kelly in regard to the rubber gloves and the silk, as they do not always prevent the condition he speaks of. I have often found that silk ligatures give rise to irritation and serious subsequent trouble. I am convinced that we should use only absorbable ligatures and sutures, and in such a way that we may be doubly sure that we have control of hemorrhage before the patient leaves the table. We should intrafold all abraded surfaces in pelvic or abdominal wounds, so that we may not have the condition Dr. McMurtry referred to, namely, oozing surfaces. Faulty technique is undoubtedly the most frequent cause for the occurrence of complications of any kind. I have used buried animal sutures in fully three thousand cases of abdominal operations, and I assure you that I have yet to see any reason why I should not be more than ever an enthusiastic advocate of their general adoption in all aseptic surgery.

DR. FREDERICK HOLME WIGGIN, New York City—I have found chromicized catgut No. 1, or No. 2, to be a much more satisfactory material for ligature or suture than silk. In former years much trouble frequently resulted from the use of silk for this purpose, not only in my own work, but in that of others. Frequently, in the course of my service at the City Hospital in New York, in past years, I have had occasion to remove silk ligatures and sutures employed by other surgeons at previous operations, but at the present time, since the use of catgut for suture and ligature material has become to be more generally used, these operations are becoming infrequent. If chromicized catgut is used, taken direct from the alcohol in which it is preserved, there should be no trouble

in its being absorbed too soon or of its infecting the tissues. It has been my practice, whenever possible, to pass ligatures around the vessels to be tied by the aid of a needle, and when this is done and the catgut properly tied, there is no possibility, in my opinion, of their slipping. One of the causes why ligatures of catgut or other material slip is that there is too much tension applied to the parts when the ligature is being tied. Another reason why operators often fear to use catgut ligatures is because they find when they tie them the knot frequently comes undone. This is because they do not understand how to make the knot. They tie the catgut ligature as they would one of silk, namely, with a double loop first, followed by a single one. When the knot is tied in this way, it will very often become undone. Some years ago, Dr. C. C. Frederick, of Buffalo, called my attention to the fact that catgut, tied first with a single knot and then with a double surgical knot, the ends of the catgut being left reasonably long, would never slip. Since that time I have used catgut for ligatures entirely in my work, and have had no reason to regret its use.

The surgeon should aim, in my opinion, to tie the vessels as directly as possible, including as little other tissue as is absolutely necessary.

I would like to call attention to the following important point: Where abdominal operations are performed on patients in the Trendelenburg posture often when the operation is completed there is apparently no hemorrhage, but in many cases when the patient is lowered into the horizontal position, you will find on looking about the pelvis, bleeding points. I have often found that if I had not been careful in looking over the field of operation after the patient had been lowered into a horizontal position, I would probably have lost the patient from hemorrhage.

I believe that when catgut is probably used, there is no danger of hemorrhage occurring from vessels tied off with it.

DR. C. C. FREDERICK, Buffalo—I have used catgut exclusively for ten years, and in nearly a thousand cases, and I had only one case of slip ligature. That was in a vaginal hysterectomy where the pedicle had been pulled down a great deal during the operation. I believe that was the cause for the ligature slipping.

As to the point made by Dr. Kelly, that the catgut absorbs too rapidly, and that the plug occluding the vessel may be extruded by arterial pressure, and then have hemorrhage, I think that possibly may be true. Formerly, the catgut was sterilized by the Cumol method or alcohol under pressure, being raised to a temperature of 212 and above, rendering it rapidly absorbable. With the modern method of sterilizing, however, I am positive that the catgut is rendered more durable in the tissues. I refer to the formalin process. I know positively that the catgut so prepared is not absorbed until two or three weeks afterwards, hence Dr. Kelly's objection to it cannot be sustained.

Insure against slipping of the ligature by drawing the first knot up tight, and then make the double knot. Do not cut the ends of your ligature too short. There is absolutely no objection to leaving one-half or even three-quarters of an inch of catgut. It aids in preventing the slipping. That is the method I have followed in all my cases.

DR. M. L. HARRIS, Chicago—I wish to enter my protest against the ligation *en masse* of large pedicles. There is scarcely a place nor time in abdominal or pelvic surgery where this is necessary. In most cases where secondary hemorrhage has occurred it will be found that the ligature has been applied to the pedicle *en masse*. We should invariably follow the sound surgical rule of applying the ligature directly to the artery or the bleeding vessel. If we ligate *en masse*, the tissue about the vessel may shrink, releasing the vessel, and hemorrhage is sure to follow. In all cases where there is a large mass which bleeds, this should always be closed by a suture, passed with a needle, and in a continuous manner. This will prevent not only the hemorrhage from the vessels, but also the oozing. I think there is no time or place in abdominal or pelvic surgery in which the mass ligature should be applied.

DR. G. B. MASSEY, Philadelphia—It seems to me that one side of this question has been somewhat neglected, namely, the future effect on the patient of the material used as a suture. The question of secondary hemorrhage brings up that of the relative value of absorbable and non-absorbable suture materials, but the discussion has been neglected on that side of the question which comes closest home to those of us who are not surgeons, and who see these cases after they leave the surgeon, sometimes years afterwards. I allude to cases of so-called post-operative neuroses. I have seen many of them, and have one under treatment now, in which the suffering seems to have been caused by some irritable focus situated in the uterus, which is partly removed. There is a tender mass in the situation of the remainder of this organ about the size of half a walnut. This patient was operated on six years ago, and since then she has been obliged to spend her mornings recumbent. I do not know what kind of sutures were used, and I merely wish to emphasize that there must be some reason why the surgeons are changing their suture material. I do not believe that non-absorbable material should be left in the body if it can be avoided. Something ought to be used that will disappear by absorption.

DR. CORDIER (closing the discussion)—The principal object of my paper was to call attention to the fact that we must not trust too much to nature in controlling hemorrhage. It is surprising how much we do risk in these cases when we would not think of risking anything in the axilla or popliteal space. Frequently, in abdominal operations, we let oozing go on and trust to nature.

Another point is the question of diagnosis. You find that they will frequently say that the patient was placed back on the table and the incision reopened in order to determine the existence of hemorrhage. This is useless. If the question is whether you have an intraperitoneal hemorrhage, it is necessary to have everything thoroughly sterilized and keep the patient in bed, so as not to disturb her. Clip a stitch and introduce a long sterilized forceps into the wound and detect the hemorrhage. That is the easiest and safest way in which to determine it.

I would never think of using a saline solution while the operation is going on, as the vessels are all widely open and it would simply increase the hemorrhage. However, the hot solution thrown into the rectum is very beneficial in these cases. It matters not what ligature material you use. We always find a diversity of opinion on that subject. A number of gentlemen have talked about absorbable material, and each one has a different opinion as to what should be used, and how. We are dealing with an uncertainty, as regards hemorrhage, when we tie a pedicle with catgut ligature. I have seen them absorb in three days, which is certainly too soon. In regard to the mass ligatures, I do not know how we can get around it; we sometimes have a very broad pedicle and time is an important factor. If you want to undertake and divide these tissues, picking out the individual vessels, you will take up a great deal of time. I do not see any reason why we should not use the mass ligature. One of the safe courses in the use of silk is to tie in a mass ligature, so that the structures will overlap the ligature, and the two surfaces above and below come in contact, and the pedicle remain alive. It will get up an anastomotic circulation, and the ligature will remain clean. When you get silk infected you can not tell what will become of it. The same applies to chromicized catgut, tendon, etc. I have seen it working out of a hernia case twelve and fifteen months after the operation, and I am sure that it is less certain than silk. Where you use silk, you do not have to dance around and see how to use it. Put on a good stout piece of sterilized silk, and in the majority of cases you will have no hemorrhage.

Hemostasis of the Liver.—Baldassari inserted wedge-shaped fragments of decalcified bone between the lips of the wound in the liver, in his experimental research on dogs. The wound was then sutured, including the intermediate bone in the stitches. When the animals were killed later there were no evidences of the slightest oozing of blood or hemorrhage from the wound, and the bone was absorbed, cicatricial tissue taking its place. The bones were rinsed in an acid, then in 50 per cent. alcohol containing a little sublimate, and finally soaked in a hot saline solution to remove the sublimate and soften them.

THE ADVANTAGES AND DISADVANTAGES OF DRAINAGE AFTER ABDOMINAL OPERATIONS.*

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If the short paper which I present to you to-day is productive of any good results, personally, I look for them not so much from the paper itself as from the discussion which I hope it will inaugurate—"many men, many minds." I do not expect that all my hearers will agree with the opinions which I have formed after some years' experience, and I trust that to-day the views of not a few will be freely expressed in order that the subject may be thoroughly thrashed out. In short it would seem advisable for us to hold what may be termed an "experience meeting" and my remarks may simply be looked upon as prefatory to what I hope may be a full and fruitful discussion. I shall speak briefly of work done by others and by myself sometime ago, and shall supplement this by my own experience in two series of cases, in the first of which there were 114 and in the second 108 consecutive, unselected, abdominal sections without a death.

During the past few years our ideas regarding the necessity for and the efficacy of drainage in abdominal surgery have undergone the most radical changes. Not so very long ago we did not venture to close the wound of any abdominal section absolutely but left in a large tube which reached well down among the tissues. It was then thought that infected cases—such, for instance, as pelvic abscess—could never recover without drainage, and that even in the cleanest cases it was always well to insert the tube for at least a few hours until the so-called serous oozing had ceased, in order not to tax too severely the absorptive power of the peritoneum.

In a paper published in 1890 I summarized the indications for drainage as follows: 1, to provide a means of escape for the serous oozing which follows the separation of broad adherent surfaces; 2, to guard against septic peritonitis from retained pus from the tube, ovary, or other viscus; 3, to remove fluid in cases of persistent capillary hemorrhage; 4, to provide against hemorrhage in cases of hysterectomy when the pedicle is dropped; 5, to drain the peritoneal cavity and starve out the disease in cases of chronic or tubercular peritonitis.

But after our attention had been called to the importance of taking more pains with the minute operative details; after we had recognized the necessity of checking all hemorrhage, even from the smaller bleeding points, of avoiding any infection of the field from the contents of abscesses or of the intestines, and of making a careful peritoneal toilette; above all, since we have understood the effects of any rough handling of the tissues, we have come to look upon the necessity for drainage as being the exception rather than the rule.

Again, in 1891, after having made a series of bacteriologic examinations of the secretions found in the drainage tube and upon the gauze placed in the tube for drainage, we became convinced that the drainage-tube was frequently the avenue through which septic infection took place. In many instances the fluids in and around the tube would contain few or no bacteria at the first examination, whereas upon a second or third examination many micro-organisms were found in the secretions thus examined. As a consequence of these and similar results the objections to the insertion of drainage-tubes were formulated by Professor Welch of the Johns Hopkins Hospital as follows:

"1. They tend to remove bacteria which may have gotten into a wound from the bactericidal influence of the tissues and animal juices. 2. Bacteria may travel by continuous growth or in other ways down the sides of a drainage-tube, and so penetrate into a wound which they otherwise would not enter. We have repeatedly been able to demonstrate this mode of entrance into a wound of the white staphylococcus found so commonly in the epidermis. The danger of leaving any part of the drainage-tube exposed to the air is too evident to require mention. 3. The changing of dressings necessitated by the presence of drainage-tubes increases in proportion to its frequency the chances of accidental infection. 4. The drainage-tube keeps asunder tissues which might otherwise immediately unite. 5. Its presence as a foreign body is an irritant and increases exudation. 6. The withdrawal of tubes left for any considerable time in wounds breaks up forming granulations—a circumstance which both prolongs the process of repair and opens the way for infection. Granulation tissue is an obstacle to the invasion of pathogenic bacteria from the surface, as has been proved by experiment. 7. After the removal of the tube there is left a track prone to suppurate and often slow in healing." To these Professor Halsted has added: 8. "Tissues which have been exposed to the drainage-tube are suffering from an insult which more or less impairs their vitality and hence their ability to destroy or inhibit organisms."

But besides increasing the chances of infection, drainage not infrequently gives rise to various post-operative complications. Of these Clark mentions, 1, obstruction of the bowel; 2, fecal fistulæ; 3, vesical complications; 4, post-operative herniæ.

When an abdominal wound became infected subsequently to an operation, it was formerly thought that this result was due to micro-organisms already present, it might be in a pelvic abscess or in the secretions about the uterine adnexa. Undoubtedly this mode of wound-infection may occur, but it should be remembered that in a very large proportion of the cases of pyosalpinx the pus found in the tubes or ovaries is sterile, any organisms which had before been present being dead. This fact has been proved many times by examination of smear cover-glass preparations and the study of cultures made at the time of the operation.

Moreover, in cases in which pus is found at the time of operation we must never forget the *vis naturæ medicatrix,* more especially when we are dealing with the peritoneum. It is a well-known fact, and one proved by the most conclusive experiments, that under normal conditions the peritoneum can dispose of pyogenic organisms in no inconsiderable quantities without the occurrence of peritonitis. Nor must it be forgotten that our drainage does not by any means always remove all foreign fluids and infectious matter, so that in not a few cases its employment will offer all the many disadvantages referred to above, without effecting our main object. Thus Clark says: "By the introduction of the drainage material the peritoneum is handicapped in three ways; 1, the normal peritoneal currents are disturbed, consequently the circulation of fluids and foreign matter toward the diaphragm is retarded; 2,

* Read in the Section on Obstetrics and Diseases of Women, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

a reactive inflammation is set up about the drain, limiting and impeding the action of the peritoneum; and, 3, within a few hours the general peritoneum is cut off from all participation in the work of absorption by the wall of adhesions around the drain. In place of the natural agencies the work is thrown upon an agent which at best can only remove the fluid from a small pocket. The old illustration cited in favor of drainage, of the gauze wick emptying a bowl of water by capillary attraction, is delusive. The syrup-like serous or bloody fluid, which quickly coagulates and fills up the meshes of the gauze, almost entirely checks the capillary action. A limited quantity of fluid will be removed during the first two hours, but after that the drain acts like a plug by preventing the outflow of fluid, which then accumulates in the dependent pockets. In many instances we have found these encapsulated collections of infected matter within a half-centimeter of a drained tract."

The methods for prevention or the removal of infective material without the employment of drainage may be summarized as follows: 1, a thoroughly aseptic technique; 2, the controlling of all hemorrhage and oozing as far as possible; 3, careful manipulation, so that all unnecessary bruising of the tissues is avoided; 4, a perfect toilette of the peritoneal cavity; 5, the removal as far as possible of infectious foci; 6, the use of irrigations with salt solution; 7, if necessary the reopening and thorough cleansing of the cavity; 8, proper after-care of the patient.

In my clinic we have practically abandoned the employment of drainage in abdominal cases, and for the past seven years we have not used a glass drainage-tube. We have, however, drained by means of gauze on several occasions in which it has been impossible to control the bleeding, and also in those cases in which we have met with a rupture of the bowel during the operation, and it has been an exceedingly difficult task to close the tear.

If symptoms should arise after an abdominal section as the result of the absorption of septic material that has been introduced at the time of the operation, or from remnants of the original diseased foci, we have plenty of time, as a rule, to reopen the abdomen and wash it out again and then if necessary to institute drainage in order to prevent the absorption of more septic material into the general circulation. Such cases are, however, fortunately very rare, and if we employ drainage as a routine in order to anticipate such a condition, we run many risks of infecting the patient. In 222 consecutive cases we used drainage in only one instance, and in this case we punctured and drained through the vagina and also placed one piece of gauze in the lower angle of the incision in the abdomen. A large pus sac was present, which it was impossible to remove; it communicated with the peritoneal cavity and the vagina at the same time. In attempting to open the sac through the vagina an opening was also made into the peritoneal cavity, and since the sac would have drained into the peritoneal cavity we evacuated the contents by the vaginal puncture. Even in this case I do not consider that it was absolutely necessary to have drained through the abdomen.

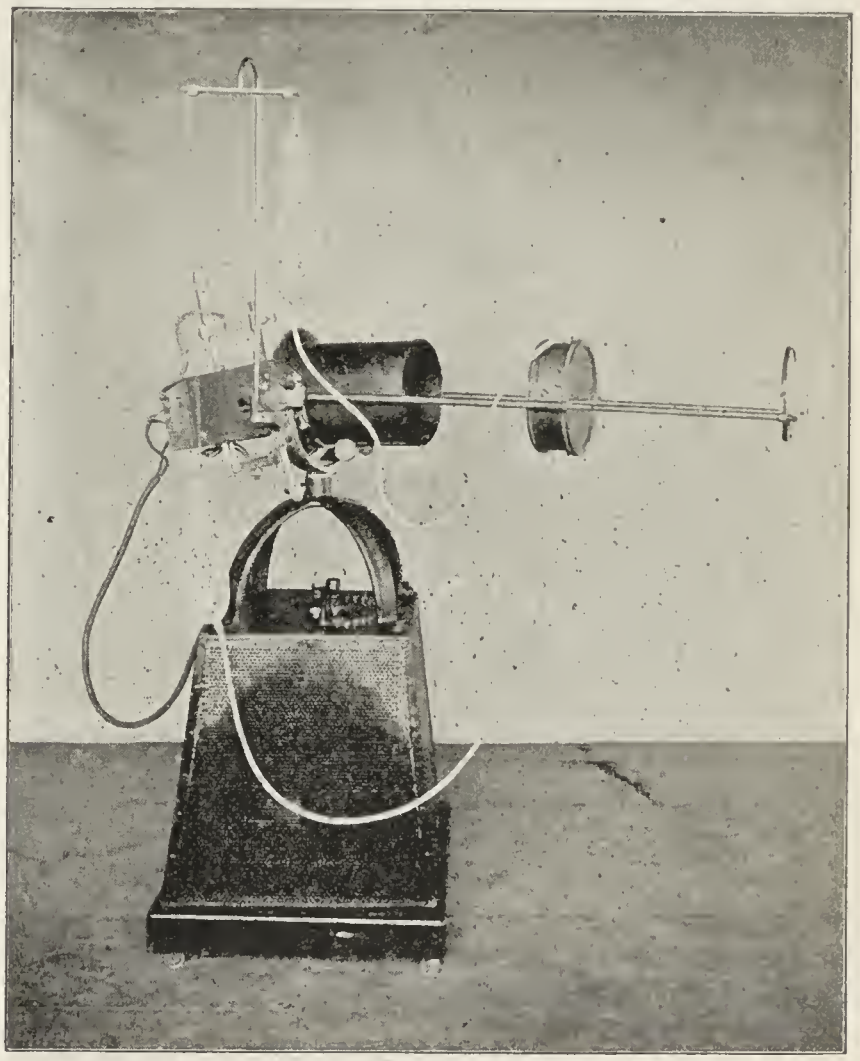
With this single exception—in 222 cases—we have closed the abdomen in every instance, without drainage. In these two series of 222 cases we have met with pus in 65 cases (28 per cent.), varying in quantity from a few cubic centimeters to several liters. After having drained from 15 to 75 per cent. of cases previous to 1893, and for the past seven years having practically abandoned drainage, my observations lead me to emphatically state that patients certainly, as a rule, do very much better if drainage is not used. Not only have the immediate results been better, but the ultimate results, such as the occurrence of hernia and intestinal adhesions, have been avoided.

ACTINOTHERAPY IN CUTANEOUS MEDICINE —A PRELIMINARY COMMUNICATION.

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The employment of light as a therapeutic agent is no new thing in medicine. The best term to employ for the treatment in general is Phototherapy. The use of that especial form, the discovery of which has immortalized the name of Roentgen, is generally known as Radiotherapy. Actinotherapy seems to be the most suitable designation for the employment of the ordinary



THE ACTINOLYTE.

sun or arc light, or portions of their rays. It is to this latter that I desire to call attention.

To go no further back than the time of General Pleasanton, most of us recollect the "blue glass craze" that swept over the land. Wonderful therapeutic results were attributed to its use; and isolated specimens of the blue glass panes that then appeared in so many windows may still be seen. But Pleasanton and his followers truly saw "as through a glass darkly"; their method was not only empirical, but was developed largely by persons who had no medical knowledge; and it never, therefore, obtained the general recognition of the profession.

The bactericide action of light is now an established and well-known fact. Cultures of many virulent and pathogenic microbes die in a short time when exposed to properly concentrated light. Axel L. Larsen[1] has

1. Mittheilungen aus Finsens Medicinske Lysinstitut, 1900.

lately gone over the ground again with the pus organisms, the colon and typhoid bacilli, etc., and has endeavored to determine with exactitude the time required to weaken and destroy them with given concentrations of light.

But this is by no means its only action, and probably not even its chief one. It irritates the cutaneous nerves and so affects the central nervous system. It increases the oxidation processes in the cells and the amount of hemaglobin in the blood. The heightened tissue metamorphosis is possibly the factor on which its future therapeutic application will be based.

The ordinary phenomena of transillumination show that light penetrates the skin. Contact photographs have repeatedly been made by means of light that has passed through the human body, notably by Kime, of Fort Dodge, and H. L. Mason, of New York. Glass tubes containing sensitive silver salts have been introduced under the skin of animals, and have shown the charaeteristic effects of light penetration on removal.

To Niels R. Finsen of Copenhagen, however, belongs the credit of developing the light treatment and placing it upon a scientific basis. Since the time, now several years ago, when he recorded the good effects that he had gotten in variola from the employment of red light, he has been an indefatigable worker in this field; and to-day his Actinotherapeutic Institute in Copenhagen has a world-wide reputation and enjoys the active support of the Danish government.

I shall leave out of account, as foreign to the object of this preliminary paper, the work that has been done in other than dermatological fields with the new treatment, or an account of the various forms of apparatus that are employed. Suffice it to say that Helm,[2] Gerson,[3] Morris,[4] and Finsen, Bie and their collaborators in numerous publications have employed it in many varied dermatoses with a large proportion of good results. Besides lupus and the various dermal tuberculoses, in which it is possibly destined to be the treatment par exeellence, it has been used in lupus erythematosus, psoriasis, epithelioma, acne vulgaris, rosacea, alopecia areata, eczema, ringworm, contagious impetigo, and various ulcerations, with success.

Either sunlight or the electric arc can be employed; but the former is too uncertain in most parts of our country to be relied upon. The chemical or actinic rays of the more refrangible end of the spectrum are the elements from which therapeutic effects may be expected; and we have fortunately in the electric arc a source of light which is accessible in all our large centers at any time, and which is especially rich in them. Sunlight is cheaper, of course, but it is only in regions like California or New Mexico, where it can be relied upon for a great part of the year, that the expense of installing a sunlight apparatus would be warranted. The arc light can be employed on cloudy days, or in the evening, and this leads me to mention and dispose of one apparent disadvantage of the proeess.

The actinotherapeutic treatment takes time; of that there can be no doubt. But I am convinced that it does not even now require the hourly sessions every day which Finsen gives his patients. Were that the case, then, no matter what its advantages, it would have to be relegated to institutions where the neeessary elaborate arrangements for the simultaneous treatment of a number of patients could be made. Increase of the amperage employed, and the reflexion and concentration of all the available rays upon the area to be treated has enabled me already to reduce it very materially, and I have no doubt that further progress in that direction will very shortly be made. I now give half-hourly sittings every other day. The question is solely one of actinic light intensity.

I employ the instrument manufactured by a firm of this city, and called by them the Actinolyte. It consists essentially of an arc light with the necessary arrangements for automatic action, enclosed in an iron hood. In front of the arc is a double convex condenser, adjustable for focusing purposes by means of a rack and pinion. On rods that project in front from each side of the hood is a double convex focusing lens, also adjustable. By means of these condensers a circle of light of any size can be readily obtained; of course the smaller it is the more intense is the illumination. The hood is swung in such a way that it can be raised or lowered, and swung laterally and vertically, thus making it possible to project the light spot with exactitude upon the area that is to be treated.

On the front bars and between the hood and focusing lens is a cell for the purpose of containing the fluid to cut off the heat rays. This can be filled with distilled water, or methylene-blue or alum solution, or it may be connected with the two water-bags for which arrangement is made, so that a continuous stream of heat-absorbing fluid may flow through the cell. So far I have found plain cold water without continuous flow quite sufficient to prevent any unpleasant heat effects from the concentrated light.

The base of the instrument contains a suitable rheostat, with a selector on top. Either the continuous or alternating current may be employed, and from 25 to 55 amperes of current can be used. The candle power varies, of course, with the amperage. With a concentrated circle of light it runs from 20,000 to 60,000.

I am not prepared as yet to make a definite statement of the results obtained with the treatment, save in two cases. In one extensive lupus vulgaris they promise to be brilliant. The one area that has been treated, some 2 inches square, presents a marked contrast to other locations where the disease is progressing. It is almost white, only two or three lupoid nodules remain, and they are disappearing. This has been accomplished without ulceration, or even inflammation, the process has been entirely one of interstitial absorption. All the other areas are characteristically infiltrated and scaling. The patient has had absolutely no other treatment.

The second case was one of obstinate tertiary syphilitic ulceration of the leg. The light had an apparently good effect in stimulating the indolent glazed ulcer, so that it is now nearly healed, after resisting other internal and local treatment for weeks.

The advantages of the method are: 1. It is eminently conservative. It causes no radiodermatitis, ulceration, or loss of hair, such as too often, though sometimes necessarily, occurs under the Roentgen treatment. I do not know of the record of any serious trouble from its employment. Finsen rightly lays stress upon this point, and to dermatologists it is of especial importance, since many of the affections that they are called upon to treat occur upon the face. 2. It is entirely painless. This is a great desideratum, more especially in dealing with women and children. 3. It is effective. New as the method is, there is already concurrent testimony from a sufficient number of competent observers to

2. Deutsche Medicinal-Zeitung, No. 100, 1900.
3. Archiv für Lichttherapie, i. No. 3.
4. British Journal of Dermatology, August, 1900.

demonstrate that we possess a powerful therapeutic agent in concentrated light.

Leaving to others the study of the effects of actinotherapy in the general conditions and affections of the internal organs in which it may prove useful, it is to be presumed that by dermatologists it may be employed in the various skin affections that are dependent upon micro-organic or parasitic infection, or where increased tissue metamorphosis is a desideratum. Lupus vulgaris, lupus erythematosus, mycotic eczema, trichophytosis, favus, impetigo, furunculosis, tuberculosis cutis, epithelioma, mycosis fungoides, blastomycosis, actinomycosis, and similar affections are the diseases in which it is likely to prove useful.

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A NEW OPERATION FOR REMOVAL OF CANCER OF THE RECTUM.*

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The situation of the rectum, placed as it is deep in the bony pelvis, makes it very difficult of access for surgical purposes. Thus far, three routes have been proposed for its removal. As yet no definite decision has been arrived at as to which of these is the best. Each has its advantages and disadvantages, and each has its advocates. The posterior operation, as Murphy very properly says, is difficult, dangerous, and in many respects unsatisfactory; the mortality, he quotes as 21.2 per cent.

The latest proposal for professional favor is that made by Dr. J. B. Murphy.[1] His operation is the resection of the rectum through the vagina. Although the idea of operating by this route is not original with him, yet for the perfected form of the operation we must give him the credit. Murphy's operation seems to have many advantages over the transsacral method. There are no objections attending it except the technical difficulties. These must be very great, but differ, no doubt, with different cases. In an old nullipara they must be almost insurmountable; but when the vagina is roomy and the growth quite low in the rectum, it is probably the best operation which has yet been suggested.

Curiously enough, nobody has yet proposed the resection of the rectum from above.[2] The nearest approach to it which I have been able to find, is the operation done by J. Price, in which, after removal of the neoplasm, he has united the cut end of the rectum with the vagina. This necessitates defecation through the vagina without any sphincter to give control.

The plan which I have to suggest is suitable for cases in which the growth is too high to be easily reached through the vagina, and has the great advantage of leaving the sphincter intact and the movements of the bowels in their natural course uninterfered with. The possibility of the operation depends on the fact that, by the aid of the Trendelenburg position, the pelvis can be emptied of all the intestines, even the rectum and the sigmoid. This gives plenty of space to work, and makes the operation possible.

I was first led to do it by a mistake in diagnosis. A patient came to me with a small mass behind the uterus. She complained of some difficulty and pain on defecation. I thought the mass, which was freely movable, was a prolapsed ovary, as it was about the right size, and that the pain in defecation was caused by the pressure upon the ovary. I, therefore, opened the abdomen with a view to the removal of the ovary; but, on passing my finger into Douglas's pouch, I was surprised to find nothing there. While palpating the parts, I discovered the growth in the rectum. I determined at once to resect, believing that the growth was probably malignant and the cause of her trouble. After removing the growth, I found very great difficulty in sewing together the cut ends of the rectum, but finally succeeded quite easily in placing a Murphy button. Then, with one finger in the rectum and the hand in the pelvis above, I had no trouble in uniting the two halves of the button.

The patient made an uninterrupted recovery, and was examined some time after her return home, and found to be in a perfectly healthy condition.

An account of this operation was published in the *American Medical Quarterly* for 1899, as well as the history of two other cases. In that paper I drew attention to the abdominal method of attacking carcinoma of the rectum, but it does not seem to have attracted any notice. I shall,therefore, draw somewhat upon what I have written before, especially upon the reports of cases.

The second case on which I operated was one of stricture of the rectum due to inflammatory exudate. I had previously resected the patient's small intestine, and one year later she came with a recurrence of the old symptoms. At the time of the first operation, I had noticed inflammatory trouble in the pelvic cavity, but her condition did not warrant its removal. I diagnosed stricture from this cause, and proceeded to resect the rectum at the very bottom of the cul-de-sac, exactly as in the case before. In this case the button came away on the eleventh day, and convalescence was complete. The patient has remained well up to the present time, a period of three years.

My next case was not so fortunate. There was a large mass behind the uterus, half as large as one's fist. On opening the abdomen, I found the mass adherent to the posterior wall of the pelvis. It was easily loosened, and in the Trendelenburg position was cut away, both above and below, and four inches of intestine resected. No difficulty was found in pulling up the rectum and in placing a Murphy button. With the finger of an assistant in the rectum, to steady the lower button, the two halves were easily pushed together. A glass drainage-tube was placed from above, the pelvis having been previously thoroughly washed out with salt solution.

The patient did well for four days. During my absence from town attempts were made to remove the button, but were unsuccessful. Following this the patient developed a general peritonitis, from which she died.

Since this case, I have had two others, both of which were successful. In one of them the growth extended below the posterior edge of the cervix uteri. In order to get it out, it was necessary to cut the peritoneum at the bottom of Douglas's pouch, and to pull the rectum up above its peritoneal investiture. The difficulties of placing the lower half of the Murphy button were greater than in the other cases, but did not offer any insurmountable obstacles. In this case the disease recurred within eight months.

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* Read in the Section on Obstetrics and Diseases of Women, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

1. Phila. Med. Jour., Feb. 23, 1901, p. 383.

2. The operation of W. R. Pryor (Gyn. Trans., 1900), although done partially through the abdomen, is for carcinoma of the vagina and rectum, and is, therefore, applicable to a different class of cases.

The last case was about the same as the previous one, the carcinoma being easily reached by the finger in the rectum. The patient remains well at present, after a period of five months.

The technic of the operation, as I have now developed it, is as follows: The rectum and vagina should first be thoroughly cleansed. The abdomen being opened, and the patient placed in the Trendelenburg position, the rectum just above the growth is clamped with a long hemastatic forceps and cut off. The sigmoid flexure and rectum are then pulled out of the pelvis, the meso-rectum being slightly cut away if necessary. This leaves the pelvis entirely free for manipulation of the lower end. If the growth be above the peritoneal investment—that is, above the bottom of Douglas's pouch—it should be cut off low enough to secure all the malignant tissue. The diseased portion is then entirely removed, all bleeding vessels being tied. One or two large arteries usually show themselves at this point. The lower end of the rectum is next seized and drawn up, care being taken not to injure it, as it is very easily torn. It is surprising how much this can be pulled up, and how easily it can be manipulated. It has no peritoneal envelop. There is no difficulty in getting plenty of slack to pull down that portion of the rectum above the resection, even after several inches have been removed, for, as Murphy has correctly stated, "the normal position of the sigmoid is in the pelvis, and not in the left iliac fossa, as is generally supposed."

With a short, round, curved needle—the Emmet vesicovaginal fistula needle is the one I use—a silk suture can be run around the end of the gut. The Murphy button is then placed, the piece with the long projection being preferably put in this position. After this step is completed, the other end of the button is placed in the upper cut end of the intestine and the two are brought together. To accomplish this, the lower end of the button must be held by one or two fingers of one hand in the rectum.

If thought advisable, drainage through the posterior cul-de-sac into the vagina may be made, and a rubber drainage-tube placed in this position. In my last case I resorted to this expedient, and believe that it is a valuable addition to the technic of the operation. The abdomen is closed in the usual way.

If the growth extends below the bottom of Douglas's pouch, the peritoneum must be cut close to the uterus, and the incision carried around the rectum. The rectum, with the portion of peritoneum adherent, can then be pulled well up and incised below the growth. The deeper the growth the harder it is to place the Murphy button; and if the growth extends down as low as the level of the external os, then the difficulties will be found to be very great. This, however, should not weigh, because all operations on the rectum are difficult, no matter what the way of approach may be.

I use the Murphy button for the reason that the making of a tight joint by sewing down in the bottom of the pelvis I find to be very troublesome. It may be objected that where the button is placed in the rectum deprived of its peritoneal envelop, union will not take place. I find, however, that this objection is not valid, as in three of my cases the button was applied to the portion of the rectum below the resection, where it was denuded of peritoneum, and yet two were successful.

The cases in which this operation would seem to be especially indicated are those in which the growth is all above the bottom of Douglas's pouch, though I would not restrict it wholly to such cases. The nearer to the brim of the pelvis, the stronger are the indications for the operation. In one case—a man—I resected in the sigmoid, using the button as before. This, however, I do not count among the cases of resection of the rectum.

Senn, in his work on intestinal surgery, states that resection in the bottom of the pelvis is impossible, and that, for the same anatomic reasons, lateral anastomosis can not be made. My cases would seem to show that Senn's estimate of the difficulties of resecting deep in the pelvis is too high. The Trendelenburg position and the button have made a great change; without them the operation would not be feasible. The usual objections to the button certainly do not count here, as in most cases it is within easy reach, and can be extracted if it does not come away of itself. In my last case I was obliged to remove it, as it seemed to settle into a kind of a pocket and to show no disposition to come away, the bowels, however, moving freely through it.

An instrument which I have found to be of great use in this, and in other operations where the patient is put in the Trendelenburg position, is the self-retaining retractor. In a favorable case, with a moderately long incision, the way in which the interior of the pelvis is made accessible to sight and touch is remarkable.

The Cleveland operating-table is another adjunct which is a great help. This table is so arranged that the operator has easy access to the vagina and rectum while the patient is in the Trendelenburg position.

My friend, Dr. Eugene Smith, surgeon to the Buffalo Charity Hospital, after having seen me operate, has performed the operation once, on a man, and reports that he met with no special difficulties, and that he is pleased with the procedure.

If called upon to limit the indications for this operation, I would say, do Murphy's operation when the lower edge of the growth is less than about one and a half inches from the inner edge of the anus, and in all other cases open above and resect.

I do not claim that this operation is easy under the best of circumstances, but what operation for carcinoma of the rectum is? However, I do maintain that it is feasible and that it gives the best chance to make a clean and complete removal of the neoplasm, and will, therefore, in proper cases give the best attainable results.

DISCUSSION.

DR. HENRY O. MARCY, Boston—I have had no experience in the resection of the lower bowel through an abdominal section. In 1893 I resected the sigmoid for cancer, uniting the segments by a large-sized Murphy button. It came away the twelfth day. I removed a portion of the sacrum and entered the peritoneal cavity from below. The patient died the following year from a return of the disease. This was, so far as I know, the first time the Murphy button had been used in the resection of the lower bowel. My friend, Dr. H. O. Walker, of Detroit, had suggested to me this method of approximation.

DR. J. WESLEY BOVEE, Washington, D.C.—I heard Dr. Edebohls read his paper on this subject. The operation was done in a case of cancer of the rectum associated with a pregnant uterus. The operation was preceded by an abdominal hysterectomy, and I would suggest in doing this work in women that a hysterectomy will in most cases be advantageous, inasmuch as it gives the larger field of operation. Dr. Edebohls' case was a successful one. I believe Dr. Mann's conclusions are correct. These cases where the cancer is fairly well up do better by being removed from above than from below.

DR. MANN, closing the discussion—The subject can not be discussed, as most men have had no experience with it. I think

Dr. Edeboh's' suggestion may be of service in some cases by giving a larger field of operation, but in a case of a small uterus I do not think it would be sufficiently in the way to make its removal necessary. A pregnant uterus would, of course, be very much in the way.

THE ACCIDENTS AND COMPLICATIONS OF PELVIC SURGERY AND THEIR TREATMENT.*

J. B. DEAVER, M.D.,
PHILADELPHIA.

The necessity for a thorough knowledge of the pelvic viscera, their topographical relations, and the pathology of their diseases, is of paramount importance in dealing with the diseased organs intelligently.

The ordinary procedures of complicated pelvic operations may cause so much damage that even the expert may be taxed to the utmost in dealing with them, e. g., the enucleation of an adherent intraligamentary cyst, or where one or other ureter is involved, a careful dissection may be necessary to free it. The ureter may be damaged to the degree that repair can only be accomplished by an anastomosis, or implantation; or where there is tronblesome bleeding, for the control of which the uterine arteries may have to be exposed.

The common occurrence of adhesion, the result of inflammatory process involving the pelvic viscera, are of sufficient importance to call for our careful consideration.

The character of the adhesions vary; some are easily separated, while the old and organized ones will call for considerable manipulation to liberate them.

In this connection, the writer begs to state that only by thorough work can the patient be expected to recover, by which, I mean, get permanently well and remain well. The bane of the abdominal surgeon is the formation of post-operative adhesions, therefore it goes without saying, the fewer left at operation, the better the patient's chances against post-operative pain, etc. The ability to do better, safer and more thorough work by the abdominal than by the vaginal route can not be better demonstrated than by raising the question of the importance of disposing of all adhesions in any given case. The vaginal operation has been spoken of as "the dismal swamp procedure," and rightly, too, I think.

I fear that too many operators are content with simple removal of the lesion. This is only makeshift work. A true artist does not consider a piece of work done until finished, that is, until the structures involved in the disease have been returned to their normal condition, or as nearly so as finished surgical technique can accomplish it. The evacuation of a collection of pus in the pelvis by vaginal puncture, or the evacuation of an appendiceal abscess by simple incision, or the removal of stones from the gall-bladder, leaving a stone or stones in the common duct, can in but few cases be sanctioned by the surgeon. The thorough liberation of adhesions, the covering in of abraded or torn surfaces by peritoneum, I can not be too strong in advocating, for I see many patients who suffer from incomplete work, to conscientiously do otherwise. To finish up a case by undoing the bad work of a previous operation speaks for itself. I am sure, too, that many cases which are subjected to incomplete operation had better not have been operated at all, as the last state is worse than the first. The practice of filling the abdominal cavity with normal salt solution, does not, in my judgment, prevent adhesions, as it is too quickly absorbed.

The pelvic wall, floor, the rectum, sigmoid, cecum, vermiform appendix, small bowel, omentum or mesentery, bladder, ureter and uterus may be involved singly, or they may all be included in an inflammatory mass or in conjunction with and adherent to a tumor.

The breaking up of adhesions involving the pelvic walls or floor does not entail as great a liability to serious injury as is likely to occur when freeing the viscera; I will, therefore, merely mention the method employed in dealing therewith. The parts having been thoroughly exposed, a point is selected which seems to offer the best point to attack the mass of adhesions and an attempt is made to peel them off, which, in some instances, is accomplished without much difficulty. In others the mass can only be broken through after considerable force has been exerted. Again, it may be found necessary to divide the adhesions with a scalpel.

The terminal portion of the sigmoid flexure, but more particularly the rectum, both from the depth of the latter and its small range of mobility, offer great difficulties, in the process of enucleation, from a mass of adhesions or from a growth, and owing to its fixed position does not permit the same freedom for manipulation as does the sigmoid flexure above it.

In adhesions to these viscera an effort is made to find some point of attack, as in separating adhesions of the wall or floor of the pelvis and working gently away from the imprisoned bowel, which at times, even with the utmost caution observed, is torn, owing to its softened condition, from the inflammatory process. If the bowel has been torn, or the integrity of its wall impaired, the rent should be closed at once, or if too large to permit of this, the opening must be temporarily plugged with gauze until the remaining portion of the operation is completed, when the gauze plug is removed and the opening packed off from the peritoneal cavity with gauze, the gauze end being brought out at the lower part of the abdominal wound, thus favoring the establishment of a fecal fistula. It has been suggested under these circumstances to divide the bowel across and invaginate the proximal end into the distal end, retaining it by a continuous Lembert suture. This I have practiced when the distal end of the bowel was not softened to a degree which would render the procedure useless.

The sigmoid, like the rectum, is liable to be included in an inflammatory mass, but not to the same extent. Adhesion of this portion of the alimentary tract occurs in connection, most commonly, with pelvic tumors, fibroids of the uterus, ovarian or parovarian cysts and some cases of pyosalpinx. Extensive injury of the sigmoid flexure or of the mesosigmoid should not embarrass the operator, as resection and end-to-end union is easily done. The omentum, on account of its wide area of distribution, will be found adherent in a large percentage of the cases requiring abdominal section. It is often found surrounding a purulent collection, or forming a part of its limiting wall, or spread out fan fashion and attached to a pelvis mass. It is, therefore, safer to ligate the adherent structure previous to its separation, with preferably silk ligatures. The omentum is not ligatured en masse, but in sections. In dealing in this manner with the great omentum in elderly people, where the blood vessels have undergone senile change,

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it is of the greatest importance to include in the ligature but small sections, thus lessening the chances of secondary bleeding.

The small intestine and the mesentery are frequently found adherent to a pelvic mass. This is particularly so in the acute inflammatory diseases of the Fallopian tubes, and of the vermiform appendix. It is not unusual to find the small bowel and its mesentery forming a part of the abscess wall, especially in the iliac fossa.

When the adhesions are filamentous they may be broken up with impunity; where, however, they are spread out over a broad surface, as is seen when extensive plastic exudate has become organized, then the dissection must be carried out with care, to avoid tearing the bowel.

Injury to the peritoneal coat of the bowel does not, in itself, present any formidable condition, but where the muscular coat has been torn an effort should be made to suture the torn coat together, providing that the caliber of the bowel will not be impinged upon too much.

The bladder when in its normal relation is frequently found adherent to the omentum, and presents but few difficulties in the disposal thereof; ligatures applied successively one after another until the omental mass has been securely tied off and removed, will dispose of this complication.

A bladder adherent to the prolapsed fundus of a uterus and adherent to some other pelvic viscus will at times present a difficult problem to solve, and a tear under these circumstances is more likely to occur than under any other condition. If the peritoneal coat is torn a few interrupted sutures will close the torn surface; if the cavity of the bladder has been opened a series of fine silk sutures closely applied, including the peritoneal and muscular coats alone, will, in the majority of instances, suffice. After the repair of a complete rent in the bladder wall, the organ should be distended with a boric acid solution, or with normal salt solution, to determine if the wound has been securely closed.

The displacement upward, to which the bladder is liable in the presence of a large growth or cyst, makes it possible to injure that viscus in making the abdominal incision.

The ureter, unlike the other occupants of the pelvis, being behind the peritoneum, is not liable to adhesion, except from subperitoneal growths, and is, therefore, not nearly so likely to be damaged. It is most often damaged in the course of an operation for the removal of a large uterine fibroid, and particularly in the application of the ligature to the uterine artery. It is also liable to injury in the process of enucleation of a large parovarian or intraligamentary cyst or growth, particularly if the ureter overrides a portion of the tumor, and is masked by a mass of superimposed lymph. Preliminary catheterization aids in avoiding this accident.

The uterus and its adnexa form the origin of the bulk of the pelvic tumors that attain sufficient proportions to produce distortion of the other pelvic viscera, or occasion serious complications in the attempt at their removal. The complication incident to tumors of the uterus may be summed up into those which are due to the growth in the uterus, to pyosalpinx, ovarian or tubo-ovarian abscess, suppurating dermoid, a sloughing fibroid, or even suppuration within the uterus itself.

Peritonitis in association with fibroids is rare in comparison to that of ovarian tumors and the inflammatory affections of the uterine appendages. Following an attack of peritonitis, there may be, and frequently is, an agglutination of the pelvic viscera, and the first of these to receive the benefit of the inflammatory process is usually the tubes and ovaries, which become tied down, either to the uterus or to the pelvic walls or floor. The difficulties encountered in delivering some large growths are familiar to all, and in many instances this is occasioned by the adhesion of the tubes and ovaries to the pelvic wall or floor, and it is often impossible to deliver the tumor into the wound until they have been freed. In addition to the adherent tube and ovary, on the right side, an adherent appendix or cecum may add to the difficulties of the case, while on the left side the same may be true of the sigmoid.

If, in connection with the above complications, pus is present, it is only after the most careful walling off of the peritoneal cavity that any attempt should be made to remove the uterus with its tumor.

In addition to the bowel complications, the ureter will be found displaced in some instances to the degree of overriding a part of the fibroid, tumor or inflammatory mass. If the ureter is recognized before an attempt is made to deliver the enlarged uterus, or prior to the ligation of the ovarian vessels, it will be a very simple matter to dispose of the peritoneum so as to free the ureter and lift it out of the way to a place of safety until the fibroid uterus has been disposed of.

The vermiform appendix when adherent to the uterus is disposed of by the removal of the appendix, excising it from the cecum and closing the opening in the bowel with continuous Lembert sutures.

The removal of cysts, and inflammatory masses, while presenting difficulties in the shape of extensive adhesions to the pelvis and to adjacent viscera, do not offer the same difficulties, owing to the fact that a portion of the growth, if not malignant in nature, can be left behind if there is any danger of doing too much damage to the structure to which it is attached. When a large cyst of the ovary is intimately adherent to the bladder, bowel, or to the pelvic wall, and there is danger of tearing the bowel, bladder or ureter, a small portion of the cyst wall can be left behind, searing its cut surface with the cautery to prevent oozing from its cut surface.

Malignant growths of the uterus and its adnexa, or of the alimentary tract contained in the pelvis, or of the bladder by the extension of the malignant process beyond the primary seat of invasion are inoperable cases.

The most common complications of rupture of an extra-uterine gestation have been, in my experience, hemorrhage, adhesions and appendicitis. Of the former much can not be said, other than it is necessary to rapidly discover the bleeding point and secure it with a ligature. Upon opening the abdomen of a case of ruptured extra-uterine pregnancy large quantities of blood and clots make their escape from the incision, and as rapidly as possible the affected tube should be seized, brought into sight and tied off, subsequent to which the blood and blood clots can be removed. If the rupture has occurred some time previously and the mass has become adherent to adjacent coils of intestines, then as much of the mass can be removed as will not interfere with the integrity of the bowel. If the placenta has become firmly attached to the intestines it is safer not to attempt to remove it, but to wall it off with gauze and allow it to separate spontaneously.

When appendicitis and extra-uterine pregnancy are

found present together the latter usually involves the tube of the right side. It is only in the presence of a sepsis that much danger can accrue from the combined lesion. Here the danger of an infection of the general peritoneal cavity can easily take place, and only the most careful protection of the general peritoneal cavity by gauze packing, isolating the right iliac fossa completely, will secure immunity from infection.

Of all the serious pelvic conditions to which the surgeons are brought face to face, purulent collections in the pelvis, especially those of appendical origin, are, in the writer's mind, the most dangerous and trying ones to deal with. The immediate danger to which the patient is subjected, and the liabilities of remote consequences, make this probably the most important question in abdominal surgery to-day. To decide upon the best means of preventing infection of the peritoneal cavity and the proper disposal of the pathological lesion requires that the surgeon not only possess the utmost skill, but the greatest experience in this class of work.

The source of abdominal hemorrhage following the removal of some pelvic lesion is at times difficult to discover and to control; if, however, the intestines have been kept free from the field of operation by gauze packing, there should not be very much trouble to discover the bleeding points and secure them with ligatures.

The points where hemorrhage is most likely to take its origin are, from the omentum, the ovarian, uterine, the appendical and the mesenteric vessels.

The most serious complication of the removal of uterine fibroid is hemorrhage, therefore, why one of our most prominent abdominal surgeons clings to the extraperitoneal treatment of the stump. Myomectomy, while applicable to a few cases, is doubtless open to the same objection. We will agree that post-operative peritonitis ranks highest in the fatality of pelvic operations. In the absence of infected lesions peritonitis should not occur, yet with all care it unfortunately continues to cost a small percentage of lives. Simple, thorough technique, including the use of rubber gloves by all who assist at the operation, offers the patient the safety against this dangerous complication. The gloves should be worn throughout the operation and not taken off when a difficult part of the operation is reached.

A recital of the accidents and complications of pelvic surgery would be incomplete without touching upon the danger of and accidents due to operations on the uterus per vaginam consequent to a dilatation and curettage or to a repair of a lacerated cervix.

Before any operative procedure on the uterus or cervix is attempted there should be some very strong indications calling for its performance, and what is of greater importance, the absence of any pathological condition of the tubes or the ovaries must be eliminated. The existence of a salpingitis, a pyosalpinx, or of adhesions, would be the strongest contraindication to any measures for operation per vaginam, unless an abdominal section was contemplated in connection therewith, so as to be able to deal with the intra-pelvic conditions at the same time.

The possibilities of introducing a peritoneal infection by means of the comparatively harmless procedures which the average family doctor and occasional operator considers his province, dilatation, curettage, or a repair of a torn cervix, can only be appreciated by those who see the numerous invalids and physical wrecks consequent upon these very harmful measures.

Let us consider the accidents which may occur in the simple operation of curettage: Perforation of the uterus, the lighting up of a salpingitis, the breaking up of adhesions and the ever present danger of peritonitis. Let me state here that the liability to perforation of the uterus, even in the hands of the most expert, is great, and that in some instances this occurs so unexpectedly that a loop of bowel may either be torn or dragged down into the uterus before a perforation is even suspected. I have seen several instances of this kind, where patients were brought to the hospital with severe uterine hemorrhage and a loop of intestine found prolapsed into the cavity of the uterus, calling for an immediate abdominal section to restore the bowel to the cavity and to repair the perforation of the uterus.

The importance of observing thorough asepsis in any operation per vaginam is imperative if we wish to eliminate the infections. When we consider the great opportunity for infection from an active or latent gonorrhea, from the presence of the many micro-organisms found in the uterus, and the possibility of opening up new fields for their activity as a result of the exposure of fresh surface by the use of the curette, it is remarkable that there are not more cases of salpingitis after this dangerous operation. The mucous lining of the Fallopian tubes is continuous with the lining membrane of the uterus, and the same condition often exists in the tubes as is found in the uterus; it is, therefore, not only a useless procedure but a most harmful one in most cases, to curette the cavity of the uterus without being able to correct the disease in the Fallopian tubes. The practice of plugging the uterine canal with gauze for purposes other than drainage is vicious and is a prolific source of salpingitis.

The same objections and dangers are attendant upon dilatation of the cervix uteri as in curettage. This operation has a limited field of usefulness and is indicated only in those cases of dysmenorrhea which are not associated with tubal or ovarian disease, pelvic inflammation or of fixation of the uterus. The operation is a disappointing one in many instances, and the dangers of lighting up a latent pelvic lesion so great that I would class this as a dangerous procedure, and not to be attempted by those who are unfamiliar with ordinary pelvic technique, on account of the necessity for thorough surgical cleanliness and the ability to recognize the various pelvic lesions, whether acute or latent, which contraindicate the operation of dilatation.

The treatment of a lacerated cervix, to my mind, calls for as great a display of good judgment and skill as does any of the major operations on the pelvic viscera. Here again we have the same possibilities and risks to contend with as in the operation of dilatation and curettage, viz., the lighting up of a salpingitis, of a peritonitis or some peri-uterine pelvic inflammatory process. In the absence of any contraindications from the pelvic viscera, tubes or ovaries, and with the condition of the laceration of the cervix warranting interference, the operation, being done under strict aseptic precautions, is generally under these circumstances not unattended by danger, if we are not careful to leave sufficient room in stitching up the laceration to permit free drainage of the uterine canal, and I may add that this is one of the most fruitful sources of subsequent salpingeal disease.

DISCUSSION.

DR. FRANK CARY, Chicago—I wish to ask the Doctor whether he said that he did not believe that there are any cases of women who have borne children and have not a lacerated cervix.

DR. DEAVER—I did.

DR. CARY—Then I wish to say that either the gentleman has had a very limited experience, or his patients have been exceedingly unfortunate in their obstetricians.

DR. PHILANDER A. HARRIS, Paterson, N. J.—I have established to my own satisfaction that a certain number of cases with pus in the pelvis can be operated on more easily and cured more rapidly per vaginam. It is not easy to judge just what cases can be most safely operated on from below, but those who do a great deal of vaginal section work for puerperal sepsis are in a better position to judge. Occasionally you find exudates which appear rather suddenly and which may, or may not fluctuate, and yet, if you make an incision in the cul-de-sac, you effectually reach and discharge the pus, and the patient is symptomatically cured. We know that unless our incision has been properly made, we have afforded our patient only temporary relief. No person who has not employed this method, and who has not had a great deal of experience with it, has any right to condemn it. He who has had experience with it will recommend it. I am well satisfied that I have lost two cases by operating from above, which I might have saved by operating by the vaginal route. One, a case of pelvic hematocele which I saw five weeks after the rupture of a tubal pregnancy, had a clot which was so firmly organized that I could not distinguish it from a fibroid tumor, which the pelvis also contained. I operated by suprapubic section, and opened the hematocele, in the interior of it were two or three ounces of pus. That patient died very quickly from sepsis. If in that case I had made only a vaginal section, I would have had no trouble in recognizing the conditions present. I would have reached the cavity of the hematocele, discharged it through the vagina, stopped the considerable sepsis, and she would have been afforded a good chance of getting well.

DR. FRANK WARNER, Columbus—I understood Dr. Deaver to say that many cases of lacerated cervix are operated on which should not be. As highly as I esteem Dr. Deaver, I must say that this is vicious teaching. We are apt to go home and leave many of these cases alone that should be operated on. Dr. Deaver has had a wonderful experience in abdominal surgery, but I question whether his experience has been broad in obstetric work. What harm do these operations do? They are very slight operations, and if they do not harm, why should we not restore the cervix to its original condition? He makes one exception, the development of cancer. I would like to ask him what case of appendicitis can he say will not develop into a cancerous appendicitis, and equally so which of these cases of lacerated cervix is going to develop into a cancerous cervix? Is it only those cases having a cancerous or hereditary tendency? I take issue with the Doctor, and say that these cases should be operated on; they should be restored to their normal condition. We can not possibly do any harm in operating on these cases.

DR. EDWIN RICKETTS, Cincinnati—Dr. Deaver speaks of the vaginal route as a dismal swamp, and that vaginal puncture is not a surgical procedure. I wish to say that all he needs is more light in his "dismal swamp," and he will do better work. Take most of these post-delivery cases, in which there is an infection and accumulation of pus within the pelvis, with high temperature, rapid pulse, and you do not see that patient until rather late; I want to say that if you drain according to the older obstetricians, and give that patient relief by the vaginal route, you give her a better chance for her life than by operating by the abdominal route. There is something that the older obstetricians taught us that we are getting a little too far away from, and that is, to deal with pus as in the manner described. I say this, with all due respect to the general surgeon, who claims that he is better able to handle pus in the pelvis than the gynecologist and abdominal surgeon. I can call to mind several cases in which vaginal puncture was resorted to, a primary procedure, and those patients went on to recovery and in time bore children. Many similar cases are on record, and will help us out in this difficulty of abdominal versus vaginal incision. I recollect two cases in the earlier part of my work, when I was an enthusiast over the abdominal method, and they did not recover. Since I have adopted the plan of vaginal puncture in selected cases, I have had better results. If necessary, you can follow with the abdominal operation as a secondary procedure. This is the little light which my friend Deaver needs. He is very positive in his assertions. There is a happy medium which none knows better than the older obstetricians. If there is pus frequently it is better to let it out by the vaginal route, and do anything that may be necessary later on. Often no other procedure will be necessary.

As to drainage after abdominal section, if you open the abdomen and find the pus sac with thick walls, you can enucleate it, but if the walls are thin and fragile, it is better to puncture from below and drain rather than enucleate it through the abdominal incision. By this you prevent the extending of the infection. Extra-uterine pregnancy is always best dealt with through the abdominal incision.

DR. W. O. HENRY, Omaha—Dr. Deaver is always very positive, but I think he is too dogmatic. His statements will not always bear careful investigation. The matter of drainage is one of them. The man who opens the abdominal cavity in these acute cases will lose a large majority of them, whereas the man who first opens by the vaginal route will save nearly all of them. He says that all women who bear children have a lacerated cervix. A large proportion of them do not have a lacerated cervix. When he says that not one in fifty of those who have lacerated cervices needs to be repaired, he is greatly mistaken. It is true, some do not need it, but the large majority of them ought to be repaired. We know very well that a large majority of women with cancer of the uterus have it begin in a lacerated cervix. When it starts there, it rapidly spreads out into the broad ligaments. The latest statistics seem to show that not even 5 per cent. of them can be permanently cured, even if operated on. Women who have had a lacerated cervix are more liable to cancer than those who have not, and we owe it to our patients, our profession, and to society, to repair these cervices before cancer begins, and thus prevent its development.

DR. ANDREW SMITH, Portland, Ore.—Dr. Deaver has referred very derogatorily to the operation of curettage. Nevertheless, I consider this the most valuable conservative operation in the entire domain of gynecology. I do not think that it is ever pardonable to perforate, except rarely in post-puerperal cases, where one should not handle a curette as he would a stiletto. The uterus has been perforated frequently by abortionists, but only rarely by cautious operators accustomed to the use of the curette. Curettage accomplishes more in gynecology, I believe, than all other conservative treatments combined. I will admit that it is bad surgery to curette promiscuously and carelessly in all cases, especially of salpingitis, and that it is not always an easy matter to determine just where these contraindications exist. But if due caution is exercised, curettage is of great value in removing endometric infection, and promoting uterine drainage.

DR. D. A. K. STEELE, Chicago—I can not agree with Dr. Deaver in regard to the abandonment of the vaginal route. I quite agree with Dr. Ricketts as to the many cases in which a vaginal section will evacuate pus, and render unnecessary any further surgical operation. I have had considerable experience with both routes, and had patients die after an abdominal operation who, I believe, would have lived had I used the vaginal route. In many cases of acute infections of the Fallopian tubes, complicated with localized collections of pus in the pelvic connective tissues, adjacent to the tubes, it is the part of wisdom and sound surgical practice to evacuate the pus collection that is extratubal by a vaginal section, and later to laparotomize the patient and extirpate the tube when it can be done with comparative safety.

DR. THOMAS J. WATKINS, Chicago—Dr. Deaver has made so many sweeping statements that it is impossible to discuss all of them. The statement about the incision of pelvic abscesses ought not to go by without very severe criticism. Since 1894 I have operated on probably 200 cases of pelvic abscess by vaginal section and drainage, about 5 per cent. of which recurred. If I had operated all of these cases by

the abdominal route, the mortality would certainly have been from 10 to 25 per cent. Another thing struck me as being rather odd—namely, that he should encounter so many intestinal complications. In my experience in three hospitals, and in private practice, I almost never have an intestinal complication that requires much attention. It seems to me that in all inflammatory diseases of the uterus, ovaries, and tubes, if we are extremely careful in our manipulations, we can avoid the intestinal complications which have been mentioned. A resection of the bowel after a severe abdominal section for a suppurative disease is certainly of great importance.

DR. DEAVER (closing the discussion)—Dr. Cary said I made a mistake by saying that there are too many lacerated cervices. I repeat that if every woman who has borne children be examined carefully, with an anatomical and not an obstetrical eye, she will be found to have a torn cervix. It is not in the the condition it was before she became pregnant, although it may not have a tear or erosion.

As to Dr. Harris, the strongest argument he presented is that he is not capable of telling which of the two operations to do, and, therefore, his patients are not in safe hands. He speaks of a symptomatic cure. I do not know what that means. I know what a cure means.

DR. HARRIS—My symptomatic cure—a cure of pain and symptoms complained of.

DR. DEAVER—As to hematocele, these cases are being operated on to-day, and I have seen them recover. Several of the gentlemen have misunderstood me about lacerated cervix, curettage and dilatation. I did not say that these operations should never be done, but that they are done entirely too frequently by the occasional operator and the family doctor. I stand by that statement. I mean, furthermore, that in the presence of a lacerated cervix and tubal disease, the cervix had better be left unrepaired than repaired. You arrest the drainage from that uterus, and you convert a latent into an active salpingitis. I am sure that every surgeon of experience will agree with me in this.

Dr. Ricketts raised the question as to my experience in obstetrics. For some years I was an obstetrician, but I am one no longer. I confine myself to surgery. I see plenty of cases of puerperal infection, but I see very few cases of so-called pelvic cellulitis with abscess formation. I defy Dr. Ricketts or any other man to thoroughly evacuate pus tubes by vaginal puncture without doing more damage than good. I practice vaginal puncture; I have plenty of patients appear in the hospital with a fluctuating mass in the pelvis, elevated temperature, and without ether I take the knife and slice the roof of the vagina, evacuating a quart or more of pus. I do not call that an operation. My gynecologic friends would certainly call it an operation. I would like these gentlemen to understand that my friend, Dr. Price (who is not here to defend himself), and myself use discrimination in the selection of our cases. We do use vaginal puncture, and we operate through the vagina; therefore, I know that I have been misunderstood by many of the gentlemen present.

Dr. Ricketts refers to lighting the dismal swamp. I know of no light that will be of any aid in that operation. I do not speak of vaginal puncture, but I mean an operation in the sense that you are going to deal with these pus tubes as thoroughly and as effectively as you can from above.

Dr. Smith also attacked me on lacerated cervix. I hope he distinctly understands that I believe that a woman with a badly lacerated cervix, or a second-degree lacerated cervix, if she comes from a carcinomatous family, should certainly be operated on, but I do not believe that a mild degree of laceration of the cervix will, if operated on, prevent a carcinoma. A surgeon with twenty-five years' experience is not going to give up what he has learned from practice for what he is taught by theory. I amputate as many breasts as the majority of surgeons, and 33 per cent. come from a cancerous family. I find in my experience that in the majority of cases of carcinoma of the uterus I see—and I see a fair proportion—I have no trouble in eliciting an hereditary history, either in the mother, grandmother, or great-grandmother. I believe that a lacerated cervix of any degree should be repaired if for no other reason than to prevent the possible likelihood of a cancer. I wrote the latter part of that paper for the purpose of exciting just such a discussion as has been excited.

Dr. Smith talks about office treatment. I wish there was not a doctor in this country to-day who makes an iodin or carbolic acid or tampon treatment in his office. I have seen more disturbances of the pelvis in patients who have been subjected to such treatment. The object of my paper has served its purpose. Of course, I do not expect gynecologists to make these errors, but it is a warning that the gynecologist as well as the surgeon must give to the family physician and the occasional operator, who feels he is capable of discriminating.

Clinical Report.

CIRRHOSIS OF LIVER—REPORT OF A CASE.

C. S. MUSCROFT, M.D.; H. A. INGALLS, M.D.
CINCINNATI, OHIO.

G. H., aged 45, had been a user of wine, beer, and whisky since early manhood, but family history was good, and he never had syphilis. The patient was seen by Dr. Muscroft about April 15, and presented the typical signs of cirrhosis of the liver: jaundice, abdomen greatly distended with fluid, feet and legs edematous, pulse rapid and weak. The liver could not be outlined owing to abdominal distention. Paracentesis was advised, but rejected. The condition was not materially improved by the administration of diuretics, laxatives, regulation of diet, baths, etc. On May 1 the patient was tapped, and 370 ounces of fluid withdrawn. Percussion revealed a very small area of liver dulness. The tapping was followed by an improvement of all his symptoms; medication was continued and the edema of the feet and legs was much reduced.

The improvement was of short duration and in ten days the condition was as bad as when first seen; the toxic symptoms being more pronounced. A urinary examination was made, but no albumin or casts found. On consultation, the toxemia becoming more marked, it was decided to offer the patient the benefit of the Talma-Morison operation, and the patient was removed to the Presbyterian Hospital, where we operated on the morning of May 11. The usual technique was followed: two incisions, a large one above and a small one below the umbilicus, were made, and a drainage tube inserted into the pelvic cavity through the smaller opening. The table was then elevated to gravitate the fluid to the pelvis, so that drainage could take place while other work was being done. The liver was found to be a typical "hob-nail," thus confirming the previous diagnosis. With dry gauze sponges the visceral and parietal peritoneum were irritated and the omentum sutured to the anterior abdominal wall. Continuous drainage was decided upon, so the tube was allowed to remain in the lower opening. The wounds being closed and dressed, the peritoneal surfaces were held in contact by means of adhesive straps across the abdomen.

At the beginning of the operation the pulse was 150 and weak. At the close of the operation pulse was 116 and stronger. Dr. Allan Ramsey, who administered the chloroform, states that but a small amount was necessary. The patient rallied without nausea, and took sixteen ounces of liquid nourishment during the afternoon and night. The symptoms of toxemia became very pronounced during the night and the patient gradually sank in spite of transfusion and stimulants, and died about thirty hours after the operation.

The writer saw this operation performed under cocain anesthesia about three years ago, but the result was the same, death from toxemia. From observation of the two cases mentioned and a study of the literature, the following deductions are made: 1. The prognosis is very bad in those cases of long standing presenting toxic symptoms. 2. Results under both general and local anesthetics are about equal. Theoretically, local anesthesia should be used. 3. Shock is not noticed, these patients being in better condition after than before operation, due, no doubt, to the briefness of the operation and the inhibitory action of the bile. 4. Transfusion should be practiced at the time of operation. 5. Early operation should be advised.

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THE PATHOLOGIC EXHIBIT AT ST. PAUL.

No sooner was the Section on Pathology and Bacteriology of the Association formed than it had placed upon it the responsibility of the management of the Pathologic Exhibit. This was entrusted to a special committee, of which Dr. Frank B. Wynn was made Chairman, and in order to defray certain necessary expenses the sum of $500 was set aside for the use of this committee. Hence, the Exhibit at St. Paul was the first official attempt of this kind. Surely no one who visited and inspected the large, conveniently displayed collection of varied and interesting nature, in the Ryan Annex, but will agree that the committee had done its work very successfully and that the money expended was put to good use.

The Exhibit was interesting from various view-points. Perhaps the beautiful preservation of natural colors seen in many of the specimens preserved for museum purposes by Kaiserling's method, or some modification thereof, would attract the special attention of the more hurried and superficial inspector. But even the expert pathological anatomist could not but admire the perfect result demonstrated by some of the exhibitors. And the general practitioner had here a splendid opportunity to see the gross lesions of many of the diseases, rare and otherwise, which he sees more or less frequently clinically. The instructiveness and suggestiveness of the pathological specimens were surely of much value to many. A series of bacterial cultures, mounted in a novel manner, attracted considerable notice because of their value for demonstration and instruction.

In the second place there was a large number of exhibits illustrative of original work in anatomy, normal and pathologic, and in bacteriology, consisting of gross and microscopic specimens and photographs. Perhaps the exhibits of this character were not so immediately attractive as the more showy and more purely museum preparations already referred to; but the significance and value of the specimens illustrative of scientific work grew apace on closer study. The specimens constituted the public documentation of work already published or in the course of publication; many were accompanied with full written or printed explanations and drawings. Among the more striking exhibits of this character mention may be made of a series of successful transplantations of sarcoma in white rats, showing the growths in various parts of the animal, and the collection of photographs illustrative of the various aspects of blastomycetic dermatitis, clinical, histologic, and mycologic. Some of the papers read before the Pathologic Section were illustrated by means of demonstrations of specimens of this kind.

In the third place, a beginning was made in illustrating methods of teaching by the exhibition of a number of student note-books and drawings from laboratory courses—an excellent idea that ought to lead to larger exhibits of this or allied nature in the future. There were also a number of miscellaneous exhibits of historic and other interest. It is quite evident that the term "Pathologic Exhibit" hardly expresses the scope and varied nature of the material brought together. Scientific Exhibit would be better. As expected, the institutions in the region naturally tributary to the meeting place furnished the larger bulk of the exhibit. Some specimens were brought from considerable distances, however.

As to suggestions for the future, the most important because of such general character, would be that efforts should be continued to extend the scientific tendencies noted in the St. Paul Exhibit. Material illustrating original work, demonstrations of special technical methods, of methods and results of teaching and practical demonstrations of various kinds should be secured. Anatomical specimens of all kinds, always welcome, may well begin to share the attention with exhibits of a physiological and chemical character. Probably the fusion of the Section on Physiology and Dietetics with that of Pathology and Bacteriology will lead to a better representation of scientific physiology, not only in the exhibit, but also in the Association at large. The St. Paul Exhibit was gratifying also because of the absence of all commercial taint on the part of the exhibitors and because there was no evidence of the presence of morbid curiosity seekers.

MEDICAL ORGANIZATION.

It seems from an editorial in the *Lancet*,[1] that the members of the medical profession of Great Britain, in their attempt at organization, have the same arguments to meet that we have in this country. One of these, and the most often used, sometimes by physicians themselves, is that we are forming trade-unions. The *Lancet* very correctly states that while we do not decry trade-unions, there is a decided difference between such and the organization of medical men which is being so slowly accomplished. There is no denying that trade-unions have sometimes been animated by nobler sentiments than the desire to extract from the employer of labor the maximum of pay for a minimum of work. If the tyranny of capital has been replaced by the tyranny of labor, the situation is one that usually adjusts itself. But admitting this, professional union means something more than this; we can not rid our-

1. June 15.

selves of our higher ideals, and the very existence of a system of medical ethics as a living force in the profession gives the lie to those who would compare medical organization to trade unionism. The fact that this is done by English politicians and lawyers like Chamberlain and Grimthorpe, shows either their utter lack of principle or how superficially they have regarded the subject.

The ideal organization of the profession is along ethical lines and no other is intended. It is daily becoming more plain that it is only by some combination and organized effort that the true ethical spirit of the profession can be preserved and that violation and perversion of its mission by individuals and cliques can be avoided. Especially is it needed to prevent our exploitation by other organizations whose methods and aims are the reverse of ethical in any sense of the word. We can not keep up our elevated standards by subordinating ourselves and them to outside selfish interests. The need of some movement in this direction is not less in this country than in Great Britain, though each country may have its special problems to meet.

That our British confrères are awake to the situation is shown by the editorial referred to, and also by other evidences. One of these is given in a letter published in the *British Medical Journal* of the same date, referring to the reorganization of the British Medical Association:

"Five pounds a year and consent to the discipline of combination would not be too much to give, if through the British Medical Association the medical profession could become organized, self-protecting, and consequently self-respecting and respectable. In these days of organization in all callings, the only one not doing so will naturally go to the wall, and its position become intolerable. One thing is certain, that conservatives, liberals, radicals, anti-Boers, pro-Boers, millionaires, and workingmen, Chamberlains and Steads, are all quite agreed on one point, namely, to exploit the medical profession to the utmost of their power, and on submission, laugh in their sleeves when referring to 'the noble profession,' 'the patriotism of the profession,' a profession which for the most part receives a beggarly pittance, considering the time, energy, and money spent in obtaining a degree or diploma; not to say that it is without honor in our own country, which has been practically shown twice over lately, when ministers of the government have held us up to derision in the House of Commons. The position, bad as it is, will get worse so long as we remain 'an unorganized mob.' We must follow the general example; combine professionally, and take a more active share in politics."

If the American profession, as well as that in Great Britain, is to become duly respected it must protect itself; it must become "organized, self-protecting, and consequently self-respecting and respectable."

TREATMENT OF GONORRHEA WITH NITRIC ACID.

In the presence of disease the object of treatment is the repression of the morbid process and the prevention of complications and sequelæ. There are few specifics, the indications for therapeutic measures being in most instances either physiologic or empiric. Notwithstanding the many remedies recommended at different times in the treatment of gonorrhea, silver nitrate still remains one of the best, if not the best, for this purpose. Its use, however, is attended with the disadvantage of being followed by unpleasant burning of such a degree that many patients are fearful of its employment. Inasmuch as argentic albuminate and proteid combinations of nitric acid result from the application, Popper[1] was led to make urethral injections of a solution of nitric acid in order to avoid the generation of heat caused by the chemic decomposition of silver nitrate. Cocain or eucain may be added to the solution for anesthetic purposes. In cases of acute gonorrheal urethritis a 10 or 15 per cent. solution of pure concentrated nitric acid was injected from three to five times daily, the fluid being permitted to remain in the urethra for one or two minutes. In the course of from twenty-four to forty-eight hours the character of the copious discharge will have changed. The urine becomes clear and contains only fibers. The secretion is viscid and considerably diminished. In the course of five or six days at times only a small drop can be expressed; later only in the morning. In the course of a week in most instances the discharge is even still less. The gonococci also rapidly diminish in number in the course of a day and disappear wholly in from five to eight days. The mucous discharge contains many epithelial cells, which are in part filled with gonococci. For three or four days after the gonococci have no longer been demonstrable the injections are made but twice a day and then but once a day. After from twelve to fourteen days astringents are prescribed for the purpose of causing the disappearance of any filaments that may yet be present. If the discharge is not increased following a seminal emission, or gonococci do not appear, the injections are gradually discontinued, so that the treatment shall be concluded in from fifteen to thirty days. In chronic cases or in the presence of posterior urethritis, a 25 per cent. solution of nitric acid is injected once daily by means of Guyon's syringe. At times the strength of the solution is increased and the injections are made less frequently.

The opinion is expressed that the good effects resulting from the employment of silver nitrate and copper sulphate in the treatment of gonorrheal urethritis are attributable to their coagulating action, while the newer combinations of casein, albumin and peptone with silver, which are precipitated when injected into the urethra, exert only a mechanical influence like pure water, solutions of boric acid and physiologic salt solution. It is believed further that nitric acid is not the only agent

1. Centralbl. für die Krankheiten der Harn- und Sexual-Organe, B. xii, H. 4, p. 184.

capable of yielding the admirable results described, but that other coagulating substances, such as chromic acid and picric acid, have a like action, the acid reaction of the solution also possibly contributing to the bactericidal effect.

In explanation of the results obtained it is suggested that the epithelial cells injured by the toxins generated are attacked by the nitric acid and their desquamation thereby favored. The method described has been on trial for two years, and experience has shown it to be more rapid and milder in action than the use of silver nitrate. If in the course of treatment the discharge does not become thin and serous, if the mucous membrane becomes sensitive and erections painful, the treatment is continued by means of astringents. Often the urine becomes entirely clear. Sometimes, however, filaments that contain no gonococci persist for several weeks or months.

TUBERCULIN.

The furor excited among physicians and laity, in 1890, by the announcement that Koch, the discoverer of the tubercle bacillus, had also discovered in tuberculin a cure for tuberculosis, will not soon be forgotten. The disappointment, not to say disgust, that followed when Virchow and others proclaimed the dangers attending the use of the new remedy, will likewise long be remembered. Physicians and laity feared to employ the remedy and it was generally discarded. A very few used it cautiously for purposes of diagnosis. A still smaller number, including several Americans, employed it as a curative agent. Among these was Goetsch, of Slawentzitz, who now, at the end of ten years, and at the solicitation of Koch, publishes his statistics.[1] He tells us in plain and simple language, having the ring of honesty and the marks of scientific accuracy, that from 1890 to 1900 he has treated 175 cases of tuberculosis with Koch's tuberculin with a percentage of cure of 71, that is, 125 have been cured and 50 improved. The record is startling, even when we consider that his cases are carefully selected ones, where the process is not far advanced, and where mixed infection has presumably not occurred.

Goetsch makes his diagnoses by the history and physical signs, but has called no case tuberculous unless tubercle bacilli have been found, or unless there is an unmistakable reaction to tuberculin; and he calls no case cured unless bacilli disappear and the patient tolerates without reaction a large dose, even up to one gram, of the old tuberculin.

He lays down three rules that should be followed: 1. The treatment should only be begun when the patient is free from fever. 2. The dose should not be increased until the last dose is tolerated without reaction. 3. The patient, on the day of the injection, as well as on the day following, must remain in bed.

His illustrative cases seem convincing, and those who have all along hoped that in tuberculin there was an agent that, rightly employed, might rank with quinin and diphtheria antitoxin as a specific, will again take courage from this contribution to the subject, and will await eagerly for confirmation from other quarters of the remarkable results reported by Goetsch. For, as said before, even granting that he selects only the favorable cases, the incipient ones, the results seem marvelous and, if supported by other investigators, will go far toward restoring to favor the despised tuberculin.

1. Deut. Med. Wochenschrift, June 20, 1901.

MEDICAL EDUCATION AND ITS RECOGNITION BY THE RICH.

It is satisfactory to see things coming our way at last. The recent donation of a million dollars to Harvard University, the Carnegie fund for the Scottish schools, the Rockefeller fund for medical research, and still other donations and endowments for medical instruction, indicate that the branch of scientific education which pertains to prevention and cure of disease is at last being considered. It is to be hoped that this is only the beginning of better things and that the endowment of medical research and medical education will soon be the rule and not the very rare exception, as has been the case heretofore.

THE ILLINOIS MEDICAL PRACTICE ACT.

The Illinois Supreme Court, by what seems a rather technical decision, has interpreted the Illinois medical practice act in such a way that it is impossible to discipline for unprofessional conduct any one whose certificate antedates the passage of the present law in 1899. It was certainly not the intention of those who framed the law to have this interpretation put upon it, but in the redundancy of their legal phraseology they make it open to this construction, which the court adopts. The result is that any one licensed before July 1, 1899, is free to practice any kind of quackery without any recourse on the part of the state. Only licensees under the law now in force can be disciplined. The court, according to the press reports of the decision, makes the suggestion that the defect in the law can be corrected by legislation, which it is hoped is the case. It is also to be hoped that the amendment can be so drawn up as to carry out the intentions of the makers beyond all possibility of any annulment by court decision.

AN EXAMPLE OF THE EDDY LITERATURE.

As an example of how words can be thrown together in such a manner as to sound sweet and beautiful, and at the same time mean nothing, Mrs. Eddy's "Key to the Scriptures" is a magnificent example. What is needed by the ordinary mortal is a key to the "Key," to unlock the mysterious secrets covered up by the verbiage in that money-making and awe-inspiring book. On a small scale, however, Mrs. Eddy's recently delivered speech, which we have no doubt is appreciated and understood by her followers, is another charming illustration of what she can do with words when she tries. The newspapers announce that at the recent gathering of her pilgrims Mrs. Eddy appeared on the balcony

and said: "Beloved brethren"—nearly all present were women—"My joy in meeting with you, is my present text. When we shall meet again, will be my next. I think you will agree with me that you have heard sufficiently from me in my message. I will only look upon your faces and then return again to my studio." We would advise those interested to take this "speech" to some shady, secluded spot, beside a cool and babbling brook and study and ponder over it. Its secret meaning shall be revealed. There is a hidden meaning, although the non-adepts may not be able to discover it, especially just what is hidden in the first two sentences.

SYPHILITIC FEVER.

The fact that physicians do not seem to be sufficiently alive to the general fact that syphilis may be the cause of obscure forms of fever, which yield only to proper antisyphilitic treatment, leads Futcher[1] to report three interesting cases of this kind. The most obscure cases of this category are those in which there are no evident outward manifestations of syphilis. Futcher points out that fever in syphilis sometimes, though rarely, occurs so long as three or four weeks before the appearance of the eruption; it may occur just previously to or coincident with the secondary eruption, constituting then the so-called "fever of invasion"; and the fever may come on at any time during the secondary or tertiary stages. In one of Futcher's cases it appeared twenty-nine years after the initial lesion. Syphilitic fever may be continuous and mild, of a remittent type, and of a definite intermittent type, being often mistaken for malaria, typhoid, sepsis, etc. Janeway has cited a number of cases of syphilitic fever which had been diagnosed and treated as tuberculosis, some of the patients having been sent to sanatoria for the tuberculous, and yet the fever and other symptoms promptly disappeared with specific treatment. Enough has been said to emphasize that all cases of fever of obscure origin should be studied with syphilis in view. Evidences of tertiary lues should be sought for in such obscure fevers the exact cause of which is absolutely unknown.

A DECAYING RACE.

According to the Honolulu *Commercial Advertiser*, the Hawaiian race is progressing rapidly toward extinction. This is not strictly news, for it has been long well known to be the fact, but it appears that there has been a decided acceleration of the process within the past two or three years, and matters are more likely to be worse than better. The causes hitherto effective, the neglect of infants by native mothers, the gradual diminution of the *poi* and fish supply, and the spread of loathsome disease, have been reinforced by the newly-acquired vice of opium-smoking. The increasing cheapness of the drug has placed it within the reach of even the poorer Hawaiians and they have the natural disposition to indulge in it. They lack, however, the racial vitality and self-control of the Asiatic consumers, and the results are, therefore, the more disastrous. Their natural improvidence and carelessness of the future is also against them; they see the precipice ahead, but the desire for the present indulgence is imperative and they do not care. The paper quoted says that there are probably now living men of voting age who will see the last full-blooded Hawaiian native, "but that long before that the race will have become a negligible quantity." There is something tragic in the utter annihilation of a race, especially one so amiable in many respects as are the Hawaiians, and it is to be hoped that something may be done even yet to check the tendencies that are causing their decay.

1 New York Medical Journal, June 22, 1901, The Journal A. M. A., page 63.

THE UNSENTIMENTAL NURSE.

The trained nurse is a much belauded personage, especially in her graduation addresses, but she also comes in for her share of criticism. Dr. Malcolm Morris and others find her often conceited and too unconscious of the due subordination she owes to the medical profession, of which she is a sort of useful parasite. Others have criticised also, but in a recent issue of a lay journal we find even her merits, from a physician's point of view, are taken exception to by those who endure her ministrations. It objects to her noiseless efficiency, her conscientious regularity, her simulated amiability, her mechanical perfection in the performance of duties; her emotional impassibility, it says, spoils all the pleasures of illness; the patient can make no appeal to her sympathy and she only aggravates his irritability. What the average inexperienced male "who wants to enjoy the pleasures of illness," desires, the newspaper says, "is a ministering angel with actual human sympathies, whose feelings will be touched by human suffering, whose gentle hand will smooth the pillow and cool the fevered brow, and all that sort of sentimental thing," not a self-contained and unimpressionable female, as methodic as a machine and "as dead to his personality as a wooden Indian." Personally, we do not know what the pleasure of illness is, something, we suppose, like the dying of a rose in aromatic pain, etc., but we can appreciate the nurse's position when in unavoidable attendance upon a patient of that type, so far as our fancy can reproduce him. It may be that some nurses are wooden in their ways and obtrusive in their lack of sympathy. If so, it is an error, but one that is on the whole less likely to do mischief than the opposite extreme. To be a philanthropist, as Dr. Sevier says, one must be cold-hearted, and most certainly an inflammable-hearted female philanthropist in a hospital, or even in a sick room, is a dangerous thing. When a nurse can, with all her other requirements met, steer clear of the Scylla of emotionalism on the one hand and the Charybdis of indifference on the other, she is a wonderful creature, common as she may be, and then if she is still criticised one ought to love her for the enemies she has made.

LANDRY'S PARALYSIS OF DESCENDING TYPE.

Although the nature of so-called acute ascending paralysis is not definitely known, there is ground for believing that the condition is dependent on some morbid process, probably infectious-toxic, expending its influence upon the lower motor neuron, that is, upon the gang-

lion-cells of the anterior horn of the spinal cord or the peripheral motor nerves or both. That no lesions are demonstrable would seem to indicate that the action is essentially a toxic one short of inflammation or degeneration. As a rule the symptoms of the disorder are of ascending character, paralysis appearing first in the lower extremities, then in the trunk and finally in the upper extremities. So common is this mode of invasion that it has come to be considered distinctive. That this is not so would seem to be shown by a case reported by Leonard A. Rowden.[1] The patient was 10 years old, and fell a distance of ten feet into an excavation, without apparent bad results. On the following day he did not feel well and held his head as if he had a slightly stiff neck, and he vomited once after taking some light food. During the night he was rather restless, and on the following day he complained of slight headache and pain in the neck. The succeeding night he was again restless and there appeared to be slight fever. A day later the temperature was found to be almost 103, the pulse 100 and good and respiration normal. The head could not be voluntarily turned to either side, but there was no difficulty in passive movement. There was also inability to raise either arm at the shoulder-joint. The grasp of each hand was fair, the forearms could be readily flexed and extended at the elbow-joint and the legs could be kicked about briskly. On the next day there was complete paralysis of the muscles of both upper extremities and of the trunk and also of the intercostal muscles, with total paralysis of the lower extremities. There was no headache, no rigidity, nor twitching of the muscles, no loss of sensibility, and the mental powers were preserved, as was also control of the sphincters. In the further progress of the case the paralysis of the legs became more advanced and the muscles of deglutition seemed somewhat involved. The knee-jerks were lost, and the facial muscles were later involved and speech became indistinct. The pulse grew rapid and weak, the heart failed, cyanosis developed and death ensued after an interval of five days. Unfortunately, an autopsy could not be secured, but the symptoms and the course are sufficiently distinctive to justify a diagnosis of Landry's paralysis of descending type.

MISUSE OF THE NATION'S NAME.

The New York State authorities have issued a certificate of incorporation to a concern styling itself "The United States Board of Health," whose business is announced to be the issue of certificates setting forth the purity or harmlessness of food products and patent medicines. Its name is claimed to have been copyrighted by the trick of printing a report bearing same. The official who issued the copyright is said to have "raised a question," as well he might, as to the name; but he issued it nevertheless. Of course the undisguised intention is to sell, to all those who will pay for them, certificates which to all appearance come from a government board of health, guaranteeing their products as having been analyzed and found fit for food by United States officials. The authorization of such a corporation, under such a name, is an outrage upon the people of the entire nation, compared with which the "use of the flag for advertising purposes" sinks to nothingness. There was a time when the coupling of the name of the United States, or some particular state or city, with a private enterprise was regarded as simply a token of patriotism or of state or local pride. "United States" or "New York" or "Minnesota" banks, insurance companies or hotels, were, in this view, quite unobjectionable. But latterly a class of unscrupulous adventurers in various lines of business have taken to using such names for purposes of deception and fraud; and they find numerous victims among the less informed members of the community. Evidently the time has come when some department of the Government should be clothed by Congress with the power to prohibit the use of the name "United States" for any purpose of fraud or deception.

The above is from the St. Paul *Pioneer-Press* of June 18. With the facts as above given the matter is one that interests the medical profession and might well be considered by the Committee on National Legislation of the AMERICAN MEDICAL ASSOCIATION. If Armstrong or Buchanan should ask for a certificate of incorporation for the United States Government Medical College, they could probably obtain it under the laws of some of the states. For our credit abroad, as well as for our welfare at home, we should most decidedly abridge this liberty.

1. British Med. Jour., May 4, 1901, p. 1076.

Medical News.

ILLINOIS.

St. Francis Hospital, Evanston, was formally opened, June 29. The hospital has accommodation for 20 patients.

Dr. Arvid E. Kohler, Moline, has been elected physician for the poor of that city.

Sterling physicians recently held a meeting at the office of Dr. Frank Anthony and adjusted and revised the fee-table.

Drs. Louis H. Clampit and William C. Cole, Jacksonville, have been appointed to the medical staff of the Illinois Central Hospital for the Insane at that place.

New Hospital at Quincy.—The trustees of the Illinois Soldiers' and Sailors' Home at Quincy have approved plans for a new hospital for the institution. An appropriation of $24,000 was made by the state legislature for this purpose. The hospital will accommodate 90 patients.

Chicago.

Jenner Medical College held its commencement exercises, June 20.

Dr. and Mrs. James M. Fraser sailed for Liverpool, June 11, on the *Servia*.

Dr. John A. Robison has resigned as professor of medicine in Rush Medical College.

Dr. C. Pruyn Stringfield has been appointed a colonel on the staff of Governor Yates.

Dr. E. J. Senn has been appointed assistant professor of surgery in Rush Medical College.

Dr. Ernest A. Matthaei and Dr. Paul R. Welcker and wife sailed June 8 on the *Patricia* for Hamburg.

Prof. Nicholas Senn was given the degree of Master of Surgery by the University of Chicago, June 21.

Prof. L. Hektoen left last week for a three months' holiday in Sweden. He will devote all his time to recreation and pleasure.

Dr. John M. Dodson was elected president of the Alumni Association of the University of Wisconsin, at the annual meeting, June 19.

Dowieites Appeal Denied.—Judge Clifford has dismissed the appeal of Henrika Bratsch, a deaconess in the Zion church, who was fined $100 by Justice Everett for practicing medicine without a license.

Globe-Circlers.—Drs. Nicholas Senn, Jacob Frank and Daniel R. Brower and W. M. Maston, of Mobile, Ala., have sailed for Europe. They are to make an eastward trip around the world via Berlin, Moscow, Siberia, Vladivostock, Corea, Japan and Vancouver, reaching Chicago about October 1.

St. Mary's Hospital.—The cornerstone of the Hospital of St. Mary's, which is to occupy an entire block, bounded by Haddon and North Hoyne avenues and North Leavitt and

Thomas streets, was laid with appropriate ceremonies, June 16. The foundations have been laid and the building will cost about $200,000.

Wesley Hospital, at Dearborn and Twenty-fifth streets, was informally opened, June 17. The formal dedication is deferred until $25,000, the balance of the $250,000 required for the purchase of land and the erection of the building, has been raised. The building is six stories in height and contains 250 rooms.

St. Francis Hospital, Evanston, has been established by the Sisters of St. Francis in the Kirk mansion on Ridge avenue. Its staff is as follows: Dr. John B. Murphy, consulting surgeon; Drs. William A. Kimmit and William Hessert, surgeons; Drs. Edward H. Webster, William A. Phillips, William B. Parkes, Evanston, and George Sintzel, Niles Center, physicians; and Dr. Shobal V. Clevenger, nervous and mental diseases.

Fire at the College of Physicians and Surgeons.—A fire, started by lightning, damaged the College of Physicians and Surgeons to the extent of at least $40,000, June 25. As the West Side Hospital, which adjoins the college building, appeared to be in danger, the 69 patients were removed to the County and Presbyterian hospitals, where they were cared for. The removal was accomplished without any casualty, thanks to the discipline and coolness of the nurses of the hospital. The two upper floors of the college building sustained the most damage. The library, many microscopes and the fine pathological exhibit made by Dr. W. T. Eckley at the meeting of the ASSOCIATION in St. Paul, were destroyed beyond repair. The building was fully insured. It will be repaired and equipped for the use of the dental department of the University of Illinois; the medical school will remove to the recently acquired West Division High School property, which is now being remodeled for that purpose.

KANSAS.

Dr. Henry O'Donnell, Ellsworth, has been appointed surgeon-general of the Kansas National Guard.

A hospital for colored people will soon be erected in Leavenworth. Much of the money needed has been subscribed.

The State Board of Medical Registration and Examination completed its organization, May 21, and elected Dr. George F. Johnson, Lakin, president, and Dr. W. H. Roby, Topeka, secretary.

Registration.—Under the new law, Kansas physicians will have till September 1 to file with the secretary of the examining board their authority to practice. If the authority is sufficient, the board will issue certificates. After September it will be an offense to practice medicine without a certificate from the state board. The penalty is a fine of from $1 to $200. The examination fee is fixed at $15. The fee for certificates to physicians who do not take the examination is $2.

KENTUCKY.

A new hospital is to be erected in Louisville at a cost of $50,000 by the Franciscan Sisters.

Quarantine Against Carlisle.—The health officers of Bath County on May 30 proclaimed the establishment of an absolute quarantine against Carlisle on account of the prevalence of smallpox in that town.

Smallpox at Cynthiana.—Dr. N. W. Moore, health officer of Cynthiana, has sent the following report of the smallpox condition at Cynthiana, on May 21. Since April 6 there have been 54 cases and no deaths. Two large pest-houses—one for whites and one for colored, have been erected and contained 6 cases at the time of the report. There were then only 4 cases in the immediate town, and several cases were distributed through the county.

LOUISIANA.

Dr. Guy A. Darcantel, New Orleans, has been appointed by the State Board of Health, resident physician at Rio Coele, Colombia, Central America.

Dr. A. B. Brown, New Orleans, has been appointed one of the physicians of the United Fruit Company and has been assigned to the steamer *Jamaica*.

Dr. Arthur Weber, newly appointed member of the New Orleans Board of Health, has had his claim to membership confirmed by Judge John St. Paul, who has issued a peremptory mandamus compelling the board to accept Dr. Weber.

New Quarantine Station.—The proposed establishment of a quarantine station by the State Board of Health at Lake Borgne Canal as soon as it is opened to traffic, is meeting with general approval. There will be need of a health station at that point on account of its direct communication with Mississippi sound.

MARYLAND.

New Course at Johns Hopkins.—During October a limited number of physicians will be admitted to a special class for the study of the important tropical diseases met with in this region, especial attention being given to malaria, dysentery and typhoid fever. Preference will be given to officers of the medical departments of the army and navy.

The Maryland Medical Journal Company, at its annual meeting in Baltimore, June 13, elected Dr. Robert T. Wilson, vice-president. Dr. Horace M. Simmons, secretary and general manager; Drs. William Osler, William H. Welch, John D. Blake, Wilmer Brinton, Hiram Woods, Jr., and Julius H. Wyman, directors; Dr. John S. Fulton, editor, and Dr. Thomas R. Brown, associate editor.

Preventive Treatment of Rabies.—The Department for the Preventive Treatment of Rabies (Pasteur method) at the City Hospital, Baltimore, has published a detailed report of the 209 cases treated. But one death is reported, and this is considered to have been due to delay in resorting to treatment. Of the 209 patients 15 were bitten on the face and neck by animals proven by inoculation to be rabid. Some of these bites were very severe, but none resulted fatally.

Baltimore.

Kerosene for Mosquitoes.—Health Commissioner Bosley has issued a proclamation to the people, asking their co-operation in the extermination of the mosquito. He advises every householder to pour one gill of kerosene oil into all wells and a proportionate quantity into all pools and drains where stagnant water may collect at least once every two weeks.

MICHIGAN.

Dr. Herbert M. King, Grand Rapids, sailed for England, July 2.

Dr. Conrad Georg, Jr., has been appointed city physician of Ann Arbor.

The Medical Department of the University of Michigan graduated a class of 75, on June 20.

Mr. Frederick Stearns, of Detroit, eminent as a conchologist and pharmacist, and formerly president of the American Pharmaceutical Association, has been given the degree of Master of Arts by the University of Michigan.

MINNESOTA.

The State Board of Medical Examiners issued license to practice to 33 applicants, June 15.

A hospital in connection with the State School for the Feeble-Minded at Faribault is to be constructed, to cost about $11,000.

Hamline University Medical Department held its annual commencement exercises at Minneapolis, June 3, graduating a class of twenty-four. Rev. Marion D. Shutter delivered the address to the class on "Progress and Problems of Medicine."

MISSOURI.

Dr. Frank J. Lutz, St. Louis, has been appointed surgeon-general of Missouri, with the rank of brigadier general.

Dr. William H. Heidorn, Bridgeton, has been appointed a member of the pension examining board vice Dr. Samuel J. Will, Mehlville, resigned.

A hospital is to be built on the grounds of the Confederate Home of Missouri, Higginsville, for the use of inmates of that institution. The legislature has appropriated $15,000 for this purpose, $12,000 of which is to be devoted to the expense of construction and the balance to equipping the hospital.

NEW YORK.

Dr. William Carr, New York City, will sail for Europe July 6.

Dr. F. J. Wagner has been appointed house physician at Riverside Hospital, Buffalo.

New Laboratory.—A new laboratory will be built for and adjoining the New York Medical College and Hospital for Women.

Dr. Frank L. Christian, New York City, has been appointed medical superintendent of the Elmira Reformatory. The salary is $3500 with a residence.

Dr. D. Bryson Delavan has been appointed consulting surgeon, department of laryngology, St. Luke's Hospital, in place of Dr. George M. Lefferts, resigned.

Dr. Paul F. Munde, New York City, who has been for many years professor of gynecology at Dartmouth Medical College, has resigned and has been elected professor emeritus of gynecology.

Smallpox on the Increase.—According to the report of the New York City Board of Health smallpox is on the increase in that city. Twenty-two new cases and one death were reported June 12.

Dr. Theodore Walser, New Brighton, who has rendered such efficient service to Staten Island in the prevention and limitation of epidemic disease, has been appointed sanitary superintendent of the Borough of Richmond.

The Lewis Memorial Cottage Hospital, at New Dorp, Borough of Richmond, given to St. John's Guild, was recently dedicated. The building is of wood, 103 feet long and 34 feet, 10 inches wide. It is intended for the reception of infants that are seriously ill, and the two wards will each accommodate eight infants. The cost of building and equipping the hospital was $10,000.

OHIO.

Dr. Alexander Erwin, Mansfield, has returned from a six months' tour of Egypt and Europe.

A so-called magnetic healer was arrested for illegal practice at Rockford, Mercer County, June 19, and was held to the grand jury in the sum of $500. A man charged with practicing medicine illegally was arrested at Findlay, June 15.

The State Board of Medical Registration and Examination examined thirty-nine candidates for license at Columbus, the regular examination on June 11, 12 and 13. The result of the examination will be made known after the regular meeting of the board in July.

College Changes.—Dr. J. C. Oliver has been made dean of Miami College in place of Dr. N. P. Dandridge, resigned, and Dr. Frank W. Langdon has been elected professor of neurology. Dr. D. I. Wolfstein has been made professor of neurology and Dr. Mark A. Brown, professor of clinical medicine in Cincinnati Medical College. Dr. H. J. Whitacre has been made professor of pathology; Dr. William Muhlberg, professor of physiology and Dr. Fred Forchheimer, professor of practice of medicine, taking the chair of the late Dr. J. T. Whittaker, in Ohio Medical College.

Memorial Volume on the Late Dr. James T. Whittaker.—At the meeting of the Academy of Medicine on June 25, 1900, resolutions of regret at the death of Dr. James T. Whittaker were adopted and ordered printed, together with a memorial volume setting forth the principal events in the life of the distinguished physician. This volume has just been distributed among the members of the Academy. It contains a biographical sketch by Dr. A. G. Drury, editor; also reminescent sketches by Drs. P. S. Connor, Thad A. Reamy, J. L. Cleveland, Joseph Ransohoff, C. D. Palmer, S. C. Ayres, A. Ravogli, S. P. Kramer, John Withrow, C. P. Judkins, T. C. Minor, J. C. McMechan, Kochler, Howard A. Kelly, of Baltimore, and others.

SOUTH CAROLINA.

The Medical College of the State of South Carolina, Charleston, held its seventy-second annual commencement exercises, April 2. A class of thirty-two was graduated, the address to the class being made by Major J. C. Hemphill.

Discrimination in favor of the graduates of the Charleston Medical College, as shown in the bill recently passed by the legislature, which exempts from examination graduates of that college, is strongly condemned by the representative profession of the state, which has been successful in checking the ratification of the bill.

The State Board of Medical Examiners, at its May session, examined 46 applicants, 11 of whom failed to pass. The board unanimously adopted the following resolution: "As the law relating to the practice of medicine in South Carolina is being frequently violated, therefore, be it resolved, that we appeal to the legally licensed physicians of the state and to its intelligent citizens to report all said violations to the board."

TENNESSEE.

Dr. Richard Douglas, Nashville, has resigned from the faculty of Vanderbilt University Medical Department.

Dr. James A. Delaney, Bristol, has been appointed division surgeon on the staff of the commander of the Tennessee Division, Sons of Confederate Veterans.

Memphis Hospital Medical College held its commencement exercises April 26, graduating a class of 190. Prof. J. L. Minor delivered the doctorate address.

Grant University Medical College.—The contract for the construction of the new medical college was let June 12, for $22,622.05. The building is to be completed, April 1, 1902.

The legislature has passed the bill creating a State Board of Medical Examiners and requiring the registration of all physicians. The osteopaths and "Christian Scientists" are exempted from the provisions of the act supposedly because they are not physicians.

TEXAS.

Dallas Medical College, which was recently made the medical department of Trinity University, graduated a class of eight at its exercises, June 18.

The Medical Department of the University of Texas held its eleventh annual commencement exercises at Galveston, June 15, graduating a class of six.

The State Medical Association of Texas has been incorporated with principal office at Austin, and without capital stock, by Drs. Berthold E. Hadra, Taylor Hudson, Robert F. Miller, Henry P. Cooke and Hamilton A. West.

Quarantine in Grayson County.—Acting on authority of the commissioners' court and with the approval of State Health Officer Blunt, County Physician Thomas S. Freeman, of Sherman, declared a quarantine against all houses in which there is smallpox.

WEST VIRGINIA.

Drs. James F. Means and C. Edgar Kahle, Sistersville, have sailed for Germany, where they expect to remain for several months.

Dr. Augustus J. Lyons, Parkersburg, has been elected superintendent of the Second Hospital for the Insane, Spencer, vice Dr. L. V. Guthrie, resigned.

State Board of Health.—Governor White has recently appointed the following gentlemen on the State Board of Health: Drs. D. H. Taylor, Wheeling; D. P. Morgan, Clarksburg; T. F. Lanham, Grafton; S. N. Myers, Martinsburg; J. E. Robins, Claremont; A. G. Staunton, Charleston; A. N. Frame, Parkersburg; W. Varner, Glenville, and A. R. Barbee, Point Pleasant. At the annual session held in Charleston, June 11, Dr. S. A. Myers, Martinsburg, was elected president, and A. R. Barbee, Point Pleasant, secretary. Fifty-four applicants presented themselves for examination. The next session will be held in Huntington, November 11.

GENERAL.

Dr. S. Weir Mitchell, with his wife and daughter, reached San Francisco June 24, after a trip round the world. He has been greatly benefited by the rest and change.

Cuba Has No Yellow Fever.—Yellow fever has been combated with such vigor that not a single death has been reported this year. There has not been a fresh case in Havana for nearly two months; neither are there any cases in other parts of the island.

A Foreign Tribute to the Late Dr. Mergler.—The *Gazette Méd. de Paris* publishes an extended obituary notice of the late Dr. Marie J. Mergler, of Chicago, emphasizing her success in abdominal surgery, and stating that Europe has not yet produced a woman operator of that stamp.

Gift to Harvard.—J. Pierpont Morgan has promised to build three of the five buildings desired by Harvard Medical School. This will involve the expenditure of a million dollars, and the buildings are to be devoted to applied biological research. They are erected as a memorial to the late Julius Spencer Morgan, a native of Massachusetts, and a banker of London, the father of the donor.

Prize Essays on Subjects Connected with Tropical Diseases.—1. A prize of the value of £10 entitled the Sivewright Prize, presented by the Hon. Sir James Sivewright, will be given for the best article on "The Duration of the Latency of Malaria After Primary Infection, as Proved by Tertian or Quartan Periodicity or Demonstration of the Parasite in the Blood." 2. A prize of the value of £10 entitled the Belilios Prize, presented by the Hon. E. R. Belilios, will be given for the best article on "The Spread of Plague from Rat to Rat, and from Rat to Man by the Rat-flea." 3. A prize of the value of £10 entitled the Lady Macgregor Prize, presented by Lady Macgregor, will be given for the best article on "The Best Method of the Administration of Quinin as a Preventive of Malarial Fever." The papers are to be sent to the editors of *The Journal of Tropical Medicine*, 83-89, Great Titchfield Street, London, W., by Dec. 1, 1901. All papers sent

in become the property of the *Journal*, and will be published as the editors decide. The competition is open to qualified medical practitioners of all denominations and every nationality. The papers may be written in English, French, German, Italian or Spanish. The names of the prize winners will be announced in January, 1902. The judges are Surgeon-General Roe Hooper, Professor Kenneth MacLeod, and Dr. Patrick Manson.

CANADA.

Outbreak of Smallpox.—Between twenty and thirty cases of smallpox have just been discovered in a small village near Brantford, Ontario. The disease is mild in character and occurs among berry-pickers. Dr. Hodgetts, of Toronto, will have charge of the outbreak.

Appointment.—Dr. W. W. Ford, of McGill College, has been appointed to the new Rockefeller fellowship in the medical faculty of McGill. He will be engaged on some subject connected with the study of preventable diseases, under the direction of Professor J. George Adami. Dr. Ford will spend the coming six months at the Pasteur Institute, Paris.

Toronto General Hospital.—The patients at the Toronto General Hospital on Saturday, June 29, numbered 123 males and 68 females. Admitted during the week: Males, 27; females, 24. Discharged: Males, 38; females, 30. Decrease, 17. Average number of male patients during quarter, 163; female, 78.40. Admission during last quarter: Males, 458; females, 365. Discharged: Males, 444; females, 340.

Resolution re Ontario $2 Assessment.—At the recent meeting of the Ontario Medical Association, a resolution was passed unanimously amid hearty applause, and without a single dissenting voice congratulating the Ontario Medical Council on their determination to make practitioners pay this fee, and approving of its being levied in the future. This action of this important body will strengthen the hands of the Ontario Medical Council and enable it to relegate this bone of contention to oblivion.

New Buildings at McGill.—A graduate of the medical department of McGill University three years ago would hardly recognize the old familiar quarters if he were to return to Montreal to-day. During the past year a complete transformation has been made in the structure. The pathologic department is one of the brightest and best equipped of all the departments in the university, and will become a worthy home for the research work which will be carried on at McGill under the direction of the Rockefeller Institute.

Drinking Decreasing in Ontario.—In 1889 the convictions for drunkenness in Ontario amounted to 4797. In 1899 this had dropped to 1892, a decrease of 2905, or over 60 per cent. In 1889 there was one conviction for drunkenness for every 295 persons, and in 1899 one for every 826. The number of persons to each conviction in the provinces of Canada for the year 1899 is as follows: Ontario, 826; Quebec, 461; Nova Scotia, 448; New Brunswick, 253; Manitoba, 355; British Columbia, 207; Prince Edward Island, 341; the Territories, 180.

Infant Mortality in Montreal.—Ninety-one infants died in Montreal during the week ending Saturday, June 22, and this heavy mortality so early in the summer caused much concern among the members of the Health Committee. For the corresponding week of 1900 the number reached sixty-four and that was considered abnormally high. The principal reasons for this heavy mortality among the infant population of Montreal every summer is given as ignorance on the part of mothers as to how to feed and take care of infants; overcrowding is another cause; want of fresh air is said to be another, and noxious privy pits is set down as another cause. In 1891 Montreal contained 8528 of the privy pits, and now 5201 are in existence. Of one hundred cities in America from which statistics could be secured, Three Rivers, Quebec, has the highest death-rate and Hamilton the lowest. The death-rate in Montreal in 1900 was 24 per thousand. This is equal to New Orleans, at 24.8. The rate of Three Rivers is 36.1; of Hamilton, 12.9.

Manitoba University Prosperous.—Four hundred and seventy-three students wrote this past spring on the examinations of Manitoba University in arts, medicine and law, showing that this, the youngest university in Canada, is forging ahead at a rapid rate. Last January the university opened its new science building, which cost $60,000, where the science faculty now lecture to classes formed of the students of the five affiliated colleges. This university receives a very small grant from the Manitoba government and retains the right to appoint its own professors. Belonging to the university are some 150,000 acres of Manitoba prairie lands, which are now valued at from $750,000 to $1,000,000, and it is from the proceeds of the sales of portions of these lands that funds were secured for the new science building.

Toronto Hospital Notes.—The house surgeons for the coming year were appointed on June 28, for the Toronto General and St. Michael's hospitals. A new feature of these appointments is to be found in the selection of two and possibly three women for the staffs of the two hospitals and one for the Hospital for Sick Children. Dr. Helen MacMurchy has been appointed on the staff of the General, while Dr. Margaret MacCallum has received a similar appointment on the Sick Children's. This would seem to indicate that the women physicians had found a permanent footing in the hospitals of the city of Toronto. The members of the new staff of the General are as follows: From Toronto University—F. A. Cleland, W. H. Cromyn, H. S. Hutchison, A. J. Macdougal and J. H. Trout. From Trinity Medical College—Duncan Anderson, James E. Martin, W. J. Macdonald, E. S. Ryerson, and W. G. Collison. To the staff of St. Michael's have been appointed P. W. O'Brien, R. H. Parent and C. R. Elliott.

Executive Health Officers of Ontario.—The annual meeting of this Association was held at Brantford, Ont., on June 25 and 26, the president, Dr. W. T. Connell, pathologist of Queen's University, in the chair. Smallpox was a theme which received careful attention and school sanitation was also carefully considered. One health officer strongly condemned the kissing habit, while another moved for the appointment of county inspectors. A strong committee was formed, consisting of one member from each county in the province who will endeavor, through local committees, to have by-laws submitted to the people for the establishment of country sanatoria. Prof. J. A. Amyot, of Toronto, contributed an important paper on the "Value of Examinations of Throat Swabs as a Test of Freedom from Diphtheria." Mr. Thomas MacFarlane, chief Dominion Government analyst, contributed a paper on "Moss Purification of Closets." The following were the officers elected: President, Dr. E. E. Kitchen, St. George; vice-president, Mr. Thomas MacFarlane, Ottawa; executive committee, Dr. Pearson, of Brantford, Dr. Hoare, of Walkerville, Dr. D. Dunton, of Paris, Dr. John Herald, of Kingston, and Dr. W. J. Arnatt, of Berlin; secretary, P. H. Bryce, Toronto.

Dominion Registration.—A new suggestion to this scheme of interprovincial registration has been adopted by the Ontario Medical Council. At one of their sessions, Dr. T. G. Roddick, M.P., was present, and delivered an address upon the progress the measure had made in Parliament. The matter was referred to a special committee to report on, and a suggestion brought in by Dr. Britton appealed so strongly to the committee, and subsequently to the whole Council, that it was adopted. This may fairly be set down as the policy of the Ontario Medical Council with regard to this question of Dominion registration. The first 100 or fraction of 100 medical practitioners in each province shall be entitled to one representative. The second 100 or fraction of 100 over 50 per cent. shall be entitled to one representative, and for each subsequent 600 one representative shall be allowed. One representative shall be appointed for each province by the Governor-General in Council, and there shall also be three members elected by such practitioners in Canada as are now recognized by the laws of any province as forming a particular and distinct school of the practice of medicine, and as such are entitled to representation on the Medical Council of the Province. There shall further be one representative for each university having a teaching faculty in medicine or a medical college in affiliation with it.

FOREIGN.

Deaths Abroad.—Among the deaths reported abroad are those of Professor Langenbuch of Berlin, of H. Baner, privat docent at Giessen, and of Dr. Assmus, the founder of the Samaritan emergency corps at Liepsic.

Smallpox in Paris.—The prophylactic measures taken in Paris against the epidemic of smallpox that has been prevailing there since the Exposition, seem to have little effect, as 1790 cases have occurred since the first of the year, with a mortality of 13 per cent.

The sewage farms around Berlin have had no cases of typhoid or malarial fever during the past year, and only 34 deaths to a population of 40,287. Recent official tests failed to disclose any pathogenic germs in the springs of drinking water or in the outflowing drains.

Plague in India.—The blue book on India, just issued, gives the plague mortality for the five years ended March, 1901, as nearly 600,000. The census shows, for the decade, an increase of less than 6,000,000, instead of the normal 19,000,000. This loss is due to famine and disease.

Professor Panas, of Paris, delivered his last clinical lecture June 17; the hall was crowded with his friends and pupils. Twenty-two years previously on that date he assumed the duties of the newly-created chair of ophthalmology, and to his efforts since is due in great measure the progress of this branch of medicine in France.

Honors to Porro.—May 21 was the twenty-fifth anniversary of the day when Eduardo Porro, of Pavia, performed for the first time the operation that bears his name. Laparotomy was rare in those days and Cesarean section was considered extremely dangerous. Porro was considered a reckless enthusiast and actually threatened with criminal proceedings. His friends and pupils celebrated the anniversary by presenting the master with a gold medal and commemorating the event in other ways.

Medical Chemistry Course at the Institut Pasteur.—A new service has been created at the Pasteur Institute of Paris, called "Service d'analyse et de chimie appliqué à l'hygiène." A course is given which is intended for physicians, pharmacists, and for chemists desiring to familiarize themselves with the manipulations of medical chemistry, analysis of food-stuffs and industrial chemistry where the biological phenomena play a part. The lectures and laboratory work continue during six months, entitling the student to a certificate for the work passed. The course begins in November, 1901, and those desiring to enroll themselves can do so by writing to the Pasteur Institute, Paris.

Germany Lowers the Medical Standard.—The German Bundesrath has officially approved the measure admitting graduates of the technical schools to the medical courses in the universities, in spite of the protests of the profession throughout the country. The *Deutsche Med. Woch.* calls upon physicians to do all in their power to nullify the probable evils of the measure. This, it believes, can best be accomplished by informing the public of the deplorable pecuniary condition of the medical fraternity by addresses at suitable places, articles in the lay press, and especially by a prize pamphlet for wide distribution among parents, like the pamphlet on the evils of quackery, of which 28,000 copies had been distributed up to last October. Medical associations are urged to consider the matter at once. The new measure admits graduates of the Realgymnasien unconditionally, but graduates of the Oberrealschulen have to pass an examination in Latin.

British Congress on Tuberculosis.—This congress will be held at the Queen's Hall, London, from Monday, July 22, to Friday, July 26. There will be four sections: 1, State and Municipal, president, Sir Herbert Maxwell; 2, Medical, including Climatology and Sanatoria, president, Sir Richard Douglas Powell; 3, Pathology, including Bacteriology, president, Prof. G. Sims Woodhead; 4, Veterinary (Tuberculosis in Animals), president, Sir Geo. Brown. The following public addresses will be given to the whole Congress: On Tuesday, by Prof. Koch of Berlin; on Wednesday, by Professor Brouardel of Paris, and on Thursday by Professor McFadyean of the Royal Veterinary College. On the concluding day there will be a final meeting to pass resolutions arising out of the work of the Congress. A number of receptions, excursions, etc., have been planned and a large attendance on the Congress is anticipated. It is possible that on this account the general meetings will be held in St. James Hall, as that is specified in the circular of invitation.

German Congress of Dermatology.—The seventh annual congress of German dermatologists was held at Breslau, the last of May, and was principally devoted to demonstrations and discussions. Neisser exhibited plaster casts of an exanthem resembling in every respect a typical papular syphilid, taken from a pig inoculated with syphilis. Wolff has also had similar success in experimental inoculation. Riehl advocated treating pregnant syphilitics with a local suppository containing 1 gm. of blue ointment, as supplementary to general specific measures. By this means he has succeeded in preventing abortions and syphilitic degeneration in the offspring. Schaeffer reported that the local application of heat to inflammatory cutaneous processes arrested the leucocytosis and transformed the process to a mere serous impregnation and hyperemia. Plato lauded the antiphlogistic action of alcohol compresses. Loewenhardt confirmed the diagnostic value of Roemann's method of testing the functions of the kidneys by the electric conductibility of the urine. Scholz and several others described the remarkable benefits derived from thiosamin in the correction of scar-formation and sclerodermia. The former injects ten parts of thiosamin to twenty parts glycerin and seventy parts water, and exhibited a case of extensive lupus which had threatened deforming contraction of the mouth and nose from the cicatrices until the morbid tendency was arrested by the injections. The sensation of the congress, however, was the presentation of a number of patients cured of lupus at Finsen's "Light Institute." Some were under treatment for an hour a day for a year, in others the cure was more rapid.

PARIS LETTER.

Sanatoria for Consumptives.

The question of sanatoria for consumptives has occupied the attention of the medical public in France to a considerable extent during the last two or three years, and efforts have been made to find the funds necessary to erect a certain number of them. One of the latest constructions of this kind is the sanatorium of Agincourt, which was inaugurated in October last and which has room for 70 inmates. A recent investigation made by the director of the Hauteville sanatorium has shown that there are numerous defects in the organization of this institution. Architecturally the buildings are quite imposing, and perhaps too much stress has been laid on this. The whole of the ground floor has been sacrificed to the hydrotherapic establishment of the medical service, and the storehouse. On the other hand, as not enough room for the patients could be found on the other floors, the attics have been arranged for them. The veranda is not well disposed, being exposed to both wind and rain, but there are several parlors where the patients can congregate, and the dining-room, though perhaps too small, is well aired. Several other defects were noticed, such as the distance at which the kitchen has been placed from the dining-room. The German idea of having a physician as director of the establishment, taking a fatherly interest in the condition of his patients, and being able to watch the nurses and attendants at all times, has not been carried out, and it would certainly be much better to have it done, so that the life at a sanatorium should not resemble too much that in a hospital.

Waldeck-Rousseau's Circular on Antidiphtheric Serum.

It is generally supposed that antidiphtheric serum containing any slight deposit is not so efficacious as the perfectly clear serum, and a certain number of physicians refuse to use any such, as they feel they may cause some harm by doing so. Mr. Waldeck-Rousseau, the Minister of the Interior, has sent a circular to the sanitary inspectors concerning this matter. He remarks that the statistics published by the different inspectors give variable results as to the mortality from diphtheria, and this must be due in part to the treatment followed out. Some physicians are unwilling to use old serum, and lose precious time while waiting for some new. Recent experiments have shown that the properties of serum are still intact after a year, and as for the deposit so often seen, it is in nowise an indication that the serum is worthless. If the injection is made the day the false membranes appear, the death-rate is only 2 per cent., the second day it goes up to 6 per cent., the third day it goes up to 30 per cent., and it is 50 or 60 per cent. the fourth day. Dr. Chantemesse, who is in charge of the hospital for diphtheritic patients, spoke on the same subject at a recent meeting of the Medical Society of the Hospitals. He remarked that physicians had been frightened by the reports of accidents that had taken place as a result of the use of these injections, and he wished to say that there had been a good deal of exaggeration about this. In six years time he had never had occasion to notice any in any infant service he had had. He had noticed that only 5 per cent. had received an injection. From March, 1896, to March, 1901, he received into his service 476 children suffering from diphtheria, and 70 per cent. of them died, which is a mortality of 16.80 per cent.; most of these died the first three days, having been already in a very serious condition. It should be laid down as a rule that one should not wait until a bacteriological examination has been made, but inject all suspicious cases. Dr. Chantemesse's experience has shown him that serum containing a slight deposit was just as active.

Widal's Sero-Diagnosis—New Statistics.

A Danish physician, Dr. Tobiesen, has just published some important statistics on Widal's sero-diagnosis in typhoid fever, founded on 350 cases. There was a positive result in 329 cases with a 1 in 10 solution. Seventeen gave a result with dilutions varying from 1 in 10 to 1 in 25. In two cases there was no

result, and in two others with one in five. In thirty cases of death followed by an autopsy, the clinical and bacteriological diagnosis was confirmed by the autopsy. Out of 36 deaths the sero-diagnosis was positive in 35 cases, in the thirty-sixth case it was hardly perceptible with a 1 in 10 solution. As a means of diagnosis this method is excellent, as applied to 289 patients forty hours after admission, it was positive in 215 cases. Dr. Tobiosen examined also a certain number of other patients, 151 in all, and obtained a 1 to 10 reaction in 25 cases and a 1 to 25 in 4 others. Sixty-one healthy subjects gave 8 positive reactions at 1 to 10, and 1 at 1 to 25. It would seem to the author that the sero-diagnosis was only of value in case 1 to 50 dilutions gave a result.

Mercurial Injections.

Dr. Dienpart has just published a work on the treatment of syphilis by injections, in which he analyzes the results of 1062 observations, most of which have been collected in the service of Dr. DuCastel. Seventy-eight injections of calomel were followed by rather indifferent therapeutic results, and gave rise to such complications as pain, inflammatory nodi, but there was neither stomatitis nor diarrhea. One hundred and fifty injections of salicylate of mercury were made according to the formula of Dr. Hallopeau, 14 centigrams being used each time. No serious accidents occurred, but the curative action hardly seemed sufficient. Three hundred and nineteen injections of gray oil were followed by frequent stomatitis, and only cured slight cases, and their use in ordinary practice is rather difficult. Fifteen observations were furnished by Professor Dieulafoy where the solution of biniodid and oil was employed. The results were excellent, especially in visceral syphilis, but a daily visit is found necessary in such cases. The best preparation is the bichlorid serum of Cheron, which only needs to be injected once a week. There is a special tonic action due to the use of the saline solution. The results were most satisfactory.

Pozzi's Speech at Opening of Gynecological Course.

Dr. Pozzi, who has been named professor of gynecology, gave his first lecture at the Broca hospital two weeks ago. He showed in his speeech how difficult it had been to obtain the creation of a professorship of gynecology in Paris, and how he had been working to achieve this during the last seventeen years. It was after a trip to Freiburg in Breisgau, where he visited Professor Hegar's service, that he made out a report which he sent into the faculty, which refused to consider his proposal to deliver lectures. In 1887 he was able to give a supplementary course, and he had always tried to obtain for gynecology a better footing than that which it had at first enjoyed. Specialists were looked upon with some disfavor at first, in France, and the services they could render were but tardily acknowledged. Dr. Pozzi gave a short history of the progress of surgical science, and spoke of the conservative tendencies which were beginning to be felt.

Correspondence.

The Canteen.

HARTFORD, CONN., June 27, 1901.

To the Editor:—I have received some letters from members of the Association who were not present at the St. Paul meeting inquiring if the canteen resolutions passed expressed the judgment of the Association at this meeting. I answer, emphatically, "No." No reliable grouping of facts and conclusions on a question on the good or the bad results from the canteen can be settled from six months' experience or the personal observation of any small number of men, and no question of practical science should ever be forced on the Association in the last hour of its session as if afraid of an open, fair discussion. Beyond this the passage of these resolutions was dangerously revolutionary, indicating the possibility of committing the Association to the indorsement of theories and conclusions which any group of men may formulate and shrewdly wait for an opportunity to have them passed. From the earliest time this Association has refused to sell its influence and prestige for the advancement of any partisan or disputed questions. Almost every year resolutions have been offered indorsing various disputed questions of science and hygiene, some of which were of great interest. These resolutions have always been sent back from the committees to whom they were referred as inexpedient and unwise to be recognized formally by the Association. It is apparent to everyone that it would be suicidal for the Association to take part in controversies on unsettled questions where good men equally competent differ widely as to the facts and their meaning. The Association should always represent the best judgment and convictions of facts that are beyond the range of partisan controversy, and should never be at the mercy of a few men who may force their indorsement of any theory or resolution, particularly by methods that are unusual and in the spirit of dogmatism. All such resolutions point out a source of weakness in the organization, and also indicate a recklessness on the part of partisans who take advantage of this fact. It is very evident that at the next meeting some important changes in the constitution and by-laws should be passed to make it impossible for any faction to commit the Association to the indorsement of views and theories which they wish to formulate. If these canteen resolutions are sustained as the experience of the American Medical Association, the door is open for any supporters of other radical theories or statements which may be offered and pressed to a final vote of acceptance at the right moment by shrewd promoters. I am positive in the assertion that these resolutions utterly fail to represent the conservative judgment of the Association, for the reason that there are medical men as competent to judge, and authorities as reliable, who denounce the canteen and all efforts to reinstate it. In this conflict of theory and opinion the great army of the profession refused to be committed to any one view, but hold themselves open for farther and more conclusive evidence. All scientific sense and good judgment is outraged by immature conclusions and attempts to force opinions and secure their indorsement as final. While the Association as a body is always open to hear the evidence offered by both sides, its final judgment and conclusion to be of any value must be of slow growth and be above all possible suspicion of bias and feeling. If these resolutions do nothing more than awaken the Association to the need of providing against any farther possibility of its prestige and influence being bought and sold to the shrewd manipulator with some motive behind, they will have accomplished a great work.

Outside of the merits of this question, all such resolutions commit the Association to battle grounds of partisanships from which nothing but evil can come. The recognition and acceptance of facts is as inevitable as the growth of the seasons, and no controversy or indorsement is needed, and the canteen or anti-canteen will be decided higher up, and on a very different plane from that of its present partisans.

T. D. CROTHERS, M.D.

"A New Operative Method for Exposing the Seminal Vesicles and Prostate for Extirpation"—A Reply.

NEW YORK CITY, June 29, 1901.

To the Editor:—I am very sorry that Dr. Pyle in his letter in the issue of June 15, questioning my claim to originality with reference to the above operative procedure which appeared in THE JOURNAL of May 4, did not incorporate my reply to the letter he had previously sent me on the subject; had he done so I should not now have occasion to continue the correspondence.

On May 24, I received the following communication from Dr. Pyle:

[Copy] "TOLEDO, OHIO, May 23, 1901.

"*Dr. Eugene Fuller, New York:*

"*Dear Doctor:*—I have had the pleasure of reading your article in THE JOURNAL of the A. M. A., upon a supposed "New Method" of removing the prostate gland, etc. I am somewhat surprised to see from New York sources so many slight modifications of the same operation which I performed and fully laid claim to over eight years ago. About every year some surgeon in or about New York brings out a modification of my operation and claims it as his own without even a mention of my publication or claims. This is, indeed, unjust and unprofessional if the facts are known to the new claimants. I hope that you will make known to the readers of the AMERICAN MEDICAL ASSOCIATION JOURNAL that you have advanced no new ideas,

unless it is changing my dorsal position into a ventral. I have thoroughly covered every claim for the operation which you make and gave this information to the medical profession as early as May, 1892. Look the matter up. I inclose a reprint from the *Philadelphia Medical Journal* that will afford all the data necessary. Very truly,

[Signed] "JOHN S. PYLE."

To the above letter I sent the following reply:

"NEW YORK, May 24, 1901.

"*Dr. John S. Pyle:*

"*Dear Sir:*—In reply to your letter I would state that while writing my recent article I was already cognizant of what you had published. As, however, the operative method you reported in 1892 belonged to Zuckerkandl, who first published it in 1889 *(Wein. Med. Presse)*, I saw no good reason for mentioning you among the original workers in the field. I really do not see that I have anything to apologize to you for. If I were in your place, however, I should feel like making an apology to Zuckerkandl. Yours truly,

[Signed] "EUGENE FULLER."

Dr. Samuel Alexander of this city tells me that some time ago Dr. Pyle wrote him also, complaining that something he (Alexander) had written in connection with perineal prostatectomy encroached on his (Pyle's) operative territory. Dr. Alexander further informed me that he at the time wrote Dr. Pyle, giving references to the literature on the subject which showed that Dr. Pyle's operation was not original with him. Dr. Pyle's photograph in his article which appeared in the *Philadelphia Med. Journal*, April 1, 1899, shows that his incision is an exact copy of the Zuckerkandl incision.

In the light of my letter to Dr. Pyle, and of Dr. Alexander's correspondence with him, it hardly seems to me that that gentleman has any justification in still ignoring Zuckerkandl and in persisting in his claim to originality. In referring to such action, Dr. Pyle in his letter to me states:

"This is, indeed, unjust and unprofessional if the facts are known to the new claimants."

I have given Zuckerkandl full credit in my article for his work. I am perfectly willing to leave to the medical profession the settlement of the question of credit in this connection. If one will try both the Zuckerkandl operation (the one Dr. Pyle does) and the one I have advocated, he will then be in the proper position to see the radical difference between the two procedures. Yours respectfully,

EUGENE FULLER, M.D.

Normal versus Decinormal Salt Solution.

AFTON, IND. TER., June 20, 1901.

To the Editor:—In THE JOURNAL of June 15 is a communication from Dr. C. S. Minnich on normal salt solution; he concludes that the solution meant is the "decinormal," not "normal." "Normal" means "the rule," the general average; if a man, a horse, or a cow has the normal number of teeth, it has the number which is the rule for the species; if a man has in his blood-serum sodium chlorid to the amount of 0.6 to 0.8 per cent., then he has the normal amount; normal for a chemist's test solution or reagent, and normal for human blood are two wholly different "normals;" universal agreement could be made whereby the normal and decinormal of the chemist could be changed; but environment has been unable to change the blood serum of terrestrial animals very much from the sea water, which was their original habitat.

Professor Fish, of Cornell, in his recent article on the blood, in the "Reference Hand-Book of the Medical Sciences," places the soluble inorganic salts at 6.4 parts per 1000, "the principal salt is the chlorid of sodium;" (Edition of 1901, vol. ii, p. 35.) Flint, "Physiology," Fourth Edition, p. 21, places the inorganic salts at 6 to 8 parts per 1000. Samuel M. Brinckner, in "Foster's Reference-Book of Practical Therapeutics," vol ii, p. 321, says: "In the serum of the normal (not decinormal) human body sodium chlorid is found in the proportion of 0.6 per cent. This has been named the normal or physiological salt solution." Now, assuming that the general average, the standard, or the *normal* is 0.6 per cent. and the weight of a pint of distilled water at 60 F. is 7291 grains, then 0.6 per cent. is 43.746 grains of sodium chlorid to make a "physiological" or "normal" salt solution; this is 87.5 grains to a quart, which *happens* to be nearly the same as Dr. Minnich's "decinormal" solution of 89.9 grains, but he again proves himself inexact, for 89.9 grains is the amount for a liter, and a liter is 1.0565 of a quart; more, by nearly 6 per cent. Chemical knowledge is a fine thing, but one must not try to impose arbitrary chemical standards on nature, who fixed her "normals" at a time when the memory of man "runneth not to the contrary." Very respectfully,

R. H. HARPER, M.D.

The X-Ray in Quackery.

To the Editor:—In the issue of March 2, there was published an interesting editorial headed: "The *X*-ray in Quackery," which was quite prophetic. Here is the essence of a letter sent me by an upright, intelligent physician from Iowa, which explains itself: "Within a few miles from my office lives a priest-physician who claims to have an improved *x*-ray machine by means of which he told a patient that he had an attack of cystitis, and another that he had a cancer in the stomach and that a few nodules had developed within the last ten days, etc."

The physician, who is anxious to do good work and desired to secure the best apparatus to become as perfect a diagnostician as possible, consulted me concerning the possibilities of the *x*-ray. It is scarcely necessary to inform you that I denounced the priest as a quack and assured my medical friend that there is no machine discovered as yet, which can "transform a human being into glass."

The time is not far distant when the following "Ad." will appear in the newspapers:

"The Microscope outlived! By means of our special improved *x*-ray machines, in a few seconds we can watch how your food is digested in the stomach and how the cells in the brain collapse! Do you suffer from indigestion or headache—come to our laboratory—we will let you see yourself as if you were made of glass!"

What a bad world to live in! Barnum was right: The people want to be humbugged—the quacks are accumulating bank accounts, while the scientific and conscientious practitioner is probably worrying how to meet his rent.

This is all abnormal. There are ways and means to crush quackery if the American physicians were united, but that, so far, is an Utopian dream. *Sic transit gloria mundi!*

Respectfully yours,

GUSTAVUS M. BLECH, M.D.

The Virchow Fund.

NEW YORK CITY, July 1, 1901.

To the Editor:—Some months ago a committee consisting of Dr. Reed, President of the American Medical Association, Dr. Bowditch, President of the Congress of American Physicians and Surgeons, Dr. Weir, President of the New York Academy of Medicine, Dr. Welch, of Johns Hopkins University, and the undersigned secretary, published an appeal to the American medical profession requesting contributions to the Virchow fund which was established ten years ago in honor of Rudolf Virchow's 70th birthday, which was reached Oct. 13, 1891. The fund was created for the purpose of fostering biological, anthropological and general medical research. A large German Committee, with national committees formed all over the globe, has undertaken to increase this fund in honor of the coming 80th birthday of the great medical reformer.

Whatever contributions will be raised should be sent to Germany on the first day of September in order to be received and acknowledged by the central committee in due time. As our former notices may have been overlooked by such as are anxious to show their appreciation of the great master and to aid the cause represented by his life-long labors, we herewith repeat our appeal. A. JACOBI, M.D., Secretary,

110 West 34th Street.

Book Notices.

ATLAS AND EPITOME OF THE NERVOUS SYSTEM AND ITS DISEASES. By Professor Dr. Christfried Jakob, of Erlangen. From the Second Revised German Edition. Edited by Edward D. Fisher, M.D., Professor of Diseases of the Nervous System, University and Bellevue Hospital Medical College, New York. With 83 plates and copious text. Cloth, $3.50 net. Philadelphia and London: W. B. Saunders & Company. 1901.

This work has been for some time known to students in its German edition and this authorized translation under the direction of Dr. Fisher will widely increase the knowledge of its advantages. As the Editor says and we can thoroughly agree with him, there is, so far as known, no work in which so much is compressed within so small a space, and it fills a place in the literature that has long needed such filling. The illustrations are well selected and exceedingly good. The explanations are clear and ample. The book is divided into six parts: 1, the morphology of the nervous system; 2, its development in structure and histology; 3, the anatomy and physiology of the more important nerve pathways; 4, general pathology and treatment of diseases of the nervous system; 5, special pathology; it concludes with some remarks on autopsy and microscopic examinations. The book has an excellent though not too extensive index. The translation, so far as we have been able to examine the work, seems to be a satisfactory one; and the book being one of the series known as Saunders' Medical Hand-Atlases, nothing need be said as to the beauty of the illustrations.

ATLAS AND EPITOME OF LABOR AND OPERATIVE OBSTETRICS. By Dr. O. Schaeffer, of Heidelberg. From the Fifth Revised German Edition. Edited by J. Clifton Edgar, M. D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 14 lithographic plates, in colors, and 139 other illustrations. Cloth. Price, $2.00 net. Philadelphia and London; W. B. Saunders & Company. 1901.

Outside of anatomy there is no branch of medicine and surgery that is as difficult to demonstrate as that of obstetrics, and it might be said with truth, as regards many colleges, that there is no important part of the physician's duty that is so poorly taught as midwifery. Hence, the young physician, anxious to understand and to be prepared for the various complications in this part of his work, will be more than gratified at the graphic and practical illustrations contained in this little book. These illustrations in colors are works of art, and cover all the various positions, normal and abnormal, and illustrate all the operations in midwifery, including Cesarean section. While sufficient text accompanies the illustrations to explain them, the book is not intended as a text-book; but as a companion to the ordinary text-book on obstetrics it will be a great help to the beginner.

THE EXTRA PHARMACOPEIA. By William Martindale, F.L.S., F.C.S., Late President and Examiner of the Pharmaceutical Society, and W. Wynn Westcott, M.B., Lond., D.P.H., Coroner for Northeast London. Tenth Edition. Cloth. Pp. 688. Price, 10 shillings, 6 pence. London: H. K. Lewis. 1901.

This little book has been brought up to date, including the results obtained through revisions of the various Pharmacopeias since the last edition of the British Pharmacopeia. It is conveniently arranged, and contains all the preparations of the British Pharmacopeia, with references to therapeutic experience from various sources. It embodies a list of the drugs, as well as the sections on antitoxin and organotherapy, analytical memoranda with chemical tests, etc., and a therapeutic index of diseases and symptoms. The journals referred to are largely British, though a few American ones are included. A rather significant and useful table gives the 121 preparations most commonly ordered in the total of 25,000 prescriptions, which forms, as the author says, a therapeutic reflex of British medical practice. The addenda generally are very convenient for reference, and as the preparations of the British Pharmacopeia are often referred to in American medical literature, the usefulness of the work to American readers can be readily appreciated.

ORAL SURGERY. A Text-Book on General Medicine and Surgery as Applied to Dentistry. By Stewart Le Roy McCurdy, A.M., M.D., Professor of Anatomy and Surgery, Pittsburg Dental College. Cloth. Pp. 368. Price, $3.00 net. Pittsburg, Pa.: The Calumet Publishing Co. 1891.

This little volume is intended especially for the "practicing dentist." The author says that "general pathology can in no way differ from pathological changes in the mouth up to a certain period, etc." While the clumsily expressed principle outlined herein is to a certain extent correct, still the subject is treated in a very superficial manner. Special works on general medical subjects for the dental practitioner were once needed, but since the specialty is a department of medicine such works are no longer required. The author offsets unsound dictum by the remark that "some knowledge of all these subjects, however, is necessary." Dental specialists, however, require as much medical training as ophthalmologists, rhinologists, otologists, etc.

The oral surgeon will gain no general knowledge from this book, at least not sufficient to pay for the time lost in its perusal. The oral or dental surgeon is hungry for general pathology and underlying principles, but these must be obtained from standard works upon practice and pathology.

APHORISMS, DEFINITIONS, REFLECTIONS, AND PARADOXES, Medical, Surgical and Dietetic. By A. Rabagliati, M.A., M.D., F.R.C.S. Ed., Late President of the Leeds and West Riding Medico-Chirurgical Society. Cloth. Pp. 291. Price, $2.50. New York: Wm. Wood & Co. 1901.

This work is a series of reflections on medical subjects; largely on the importance of diet and its errors in the production of disease. The author is a neologist from the beginning, though the additions to our language which he makes are not so numerous as they are prominent in this book. It is a thoughtful work that almost any physician can pick up and read with interest, though he may occasionally find some minor point where he may disagree with the author. Nearly all disorders, according to the author's views, arise from errors in the diet; eating too much, or eating too often, or what he calls polysiteism and pollaki-siteism. The book belongs to a class that is perhaps less common at the present time than it was earlier in the history of medicine, but that does not mean that it is a work behind the times. It contains a great deal of valuable matter that is suggestive where it may not be directly instructive, and it often is both.

PATHOLOGY AND MORBID ANATOMY. By T. Henry Green, M.D., F.R.C.P., Physician and Special Lecturer on Clinical Medicine at Charing Cross Hospital. Revised and Enlarged by H. Montague Murray, M.D., F.R.C.P., Physician to Out-patients and Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital. Ninth American Revised from the Ninth English Edition by Walton Martin, Ph.B., M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons, Columbia University. With 4 colored plates and 339 illustrations. Cloth. Pp. 585. Price, $3.25. Philadelphia and New York: Lea Brothers & Company. 1900.

Green's pathology has been before the student public of this country so long and is so well and favorably known, that a new and thoroughly revised edition should be welcomed. In this volume, the English edition has been thoroughly revised by Dr. H. Montague Murray, a large part of the subject matter rewritten, and the American edition has been edited by Dr. Walton Martin, who has supplied special chapters. The work in its present form deserves to fully retain the favor that it has heretofore received.

A MEDICOLEGAL MANUAL. By William W. Keysor, Lecturer on Medical Jurisprudence in the Omaha Medical College, and Judge of the District Court, Omaha, Neb. Cloth. Pp. 316. Price, $2.00. Omaha: The H. J. Penfold Co. 1901.

This work is the production of a lawyer rather than a physician, and therefore, we may look for some errors on the purely medical side. For example, in defining delusion, the author seems to have a very imperfect appreciation of the meaning of the word. Another instance is in his mention of certain forms of monomania so-called, among which he includes puerperal mania as a disposition of women recently delivered to destroy

their off-spring. The legal side of the work, however, we can not criticise, and presume that it is correct and reliable as regards special legal points where medical questions are not especially involved, at least as of first importance. While we can not advise it as a perfectly correct and safe manual to follow on medical questions, on other points it may be and probably is satisfactory.

ATLAS AND EPITOME OF OBSTETRIC DIAGNOSIS AND TREATMENT. By Dr. O. Schaeffer, of Heidelberg. From the Second Revised German Edition. Edited by J. Clinton Edgar, M.D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 122 colored figures on 56 plates, 38 other illustrations, and 317 pages of text. Cloth. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Company. 1901.

This volume is really a companion to the volume referred to above, and all that is said of that volume could be repeated here. The book now before us is, however, more pretentious, is more of a text-book and has a greater didactic value. The illustrations are of the same high order that has characterized this series of Medical Hand-Atlases. The extremely low price at which such books can be sold is possible only from the fact that the plates are used to print not only the series published in this, but a similar series in several other countries.

A SHORT PRACTICE OF GYNECOLOGY. By Henry Jellett, B.A., M.D., B.Ch., B.A.O. (Dublin University), F.R.C.P.I., L.M., Late Assistant Master, Rotunda Hospital. With 125 Illustrations. Cloth. Pp. 436. Price, $2.63. London: J. & A. Churchill, Philadelphia: P. Blakiston's Son & Co. 1900.

This work was written, as the author says, for the object of affording a concise account of gynecologic diseases and their treatment. He has certainly condensed within its four hundred and odd pages a large amount of information. He has used material from various sources, both in the selection of illustrations and by consulting authorities. There is nothing theoretic about it; various conditions and operations are described in a brief, concise way, and the illustrations are generally well selected for the purpose of illustrating the conditions. We would not advise it as a text-book to supplant the larger and more thorough works, of which there are so many, but in its small way it will fill a useful place.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN, for the Use of Students and Practitioners. By James Nevins Hyde, A. M., M. D., Professor of Skin, Genito-Urinary and Venereal Diseases, Rush Medical College, and Frank Hugh Montgomery, M. D., Associate Professor of Skin, Genito-Urinary and Venereal Diseases, Rush Medical College. Sixth and Revised Edition. Illustrated with 107 engravings and 27 plates in colors and monochrome. Cloth. Pp. 828. Price, $4.50. Philadelphia and New York: Lea Brothers & Co. 1901.

Sufficient evidence of the popularity of this treatise is given by the fact that this, the sixth edition, follows the fifth in practically a year. The authors have taken advantage of the opportunity for further revision of the work and brought it down to date, many of the chapters being entirely or partly rewritten, with the addition of some new plates and engravings.

OBSTETRICS. A MANUAL FOR STUDENTS AND PRACTITIONERS. By David James Evans, M.D., Lecturer on Obstetrics and Diseases of Infancy, McGill University, Montreal, Canada. Series Edited by Bern B. Gallaudet, M.D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York. Illustrated with 149 engravings. Cloth. Pp. 430. Price, $1.75. Philadelphia and New York: Lea Brothers & Company.

This is one of Lea Brothers' pocket text-books requiring a rather large pocket, but it appears to be one that will fill a useful place and be a convenient reference handbook on obstetrics. The book is well illustrated and clearly written, and is apparently all that it pretends to be.

LESSONS IN THE ANATOMY, PHYSIOLOGY AND HYGIENE OF INFANCY AND CHILDHOOD, for Junior Students. By Alfred C. Cotton, A.M., M.D. Cloth. Pp. 174. Illustrated. Price, $1.50. Chicago: Chicago Medical Book Company. 1901.

This volume comprises extracts from lectures delivered by the author at Rush Medical College, on the anatomy, growth, physiology and hygiene and nourishment, of the new-born, with chapters on milk analysis, weaning, foods, etc. The work is fully illustrated and contains much practical information on the subjects treated.

ECZEMA, with an Analysis of Eight Thousand Cases of the Disease. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital. Third Edition of Eczema and its Management entirely Rewritten. Cloth. Pp. 368. Price, $1.25. New York and London: G. P. Putnam's Sons. 1901.

The third edition shows a vast amount of creditable work, but hardly reaches the standard of the preceding edition. Condensation would have added materially to the value of the volume.

A COMPEND OF DISEASES OF THE SKIN. By Jay F. Schamberg, A.B., M.D., Professor of Diseases of the Skin, Philadelphia Polyclinic and College for Graduates in Medicine. Second Edition, Revised and Enlarged. With 105 Illustrations. Cloth. Pp. 291. Price, $0.80. Philadelphia: P. Blakiston's Son & Co. 1900.

This little work is a successful compilation and a very useful volume to the student.

Married.

C. H. WAITE, M.D., to Miss Constance Webber, of Ann Arbor, June 20.

ALBERT A. WHITE, M.D., Trinidad, Colo., to Miss Bixler, of Denver, June 12.

CHARLES E. HUMISTON, M.D., Chicago, to Miss Myrtle J. Wheeler, June 17.

CHARLES EMIL BRACK, M.D., to Miss Mary A. Grob, both of Baltimore, June 9.

WILLIAM E. BURTON, M.D., to Miss Blanche V. Dougherty, at Baltimore, June 12.

HERBERT W. RAYNER, M.D., to Miss S. Lois McChesney, of Minonk, Ill., June 24.

WILLIAM ALBERT NITZE, M.D., to Miss Annina Hilken, both of Baltimore, June 8.

JOHN D. DAMERON, M.D., to Miss Ella Wheeler, both of Stockton, Cal., June 12.

HERMAN S. JUDD, M.D., Lead, S. D., to Miss Marie Norton, of Topeka, Kan., July 3.

ARNOLD A. D'ANCONA, M.D., to Mrs. Lillian D'Ancona, both of San Francisco, June 10.

JOHN MANN, M.D., to Miss Nannie Caskie Scott, both of Petersburg, Va., June 19.

CARL RAVER, M.D., Sacramento, Cal., to Miss Tina Masten, of Ann Arbor, Mich., June 21.

LESLIE W. SNOW, M.D., to Mrs. Ida Daynes Cannon, both of Salt Lake City, Utah, June 11.

JOHN B. SLICER, M.D., to Miss Eva Cecilia England, at Elkton, Cecil County, Md., June 12.

PERCY LOUIS KAYE, M.D., Philadelphia, to Miss Marie L. Waltham, of Baltimore, June 20.

JAMES FOSTER SCOTT, JR., M.D., to Miss Fannie George, of Blooming Grove, Texas, June 12.

ALFRED O. PETERSON, M.D., Omaha, Neb., to Miss Eva Newbie Bolshaw, of Lincoln, Neb., June 12.

ALEXANDER J. SLAVEN, M.D., to Miss Tassie Katherine Ohmer, both of Dayton, Ohio, June 10.

FRED JACKSON JARVIS, M.D., Delta, Iowa, to Miss Irene E. Parsons, of Iowa City, Iowa, June 20.

UPTON DARBY NOURSE, M.D., to Miss Alice Windsor, at Darnestown, Montgomery County, Md.

WILLIAM R. MARSDEN, M.D., Utica, N. Y., to Miss Rose Olive Stevens, at Whitesboro, N. Y., June 12.

MELVIN C. MILLET, M.D., Rochester, Minn., to Miss Mary Albertine Frick, of Minneapolis, June 12.

WILLIAM BULLOCK, M.D., Grundy Center, Iowa, to Miss Nellie Kessler, of Solon, Iowa, June 19.

EDWARD T. BURNHAM, M.D., Wilmington, Del., to Miss Elma Cecilia Sheppard, of Baltimore, June 19.

FRED HARWOOD POWERS, M.D., to Miss Celeste Webb, at Vienna, Dorchester County, Md., June 19.

THEODORE STUART HART, M.D., to Miss Mary Ayers Wolcott Robbins, both of New York City, June 26.

JAMES FRANCIS MCKERNON, M.D., to Miss Anna Madeline Wittmeyer, both of New York City, June 26.

SAMUEL BOYCE CRATON, M.D., to Miss Annie Fairbanks Hutchinson, both of Syracuse, N. Y., June 12.

WILLIAM T. BARRY, M.D., Salinas, Cal., to Miss Julia V. Morse, of Chicago, at San Francisco, May 28.

CHARLES A. SINSEL, M.D., Grafton, W. Va., to Miss Mary Davidson, of Taylor County, W. Va., June 19.

WILLIAM H. HARRISON, M.D., Houston, Texas, to Miss Nannie J. Robinson, of Chattanooga, Tenn., at Houston, June 19.

ERASMUS MORTIMER GARROTT, M.D., to Miss Mary Kretzer Adams, both of Sharpsburg, Washington County, Md., June 12.

HARVEY MOORE WALLACE, M.D., Spottswood, Augusta County, Va., to Miss Lucy Waddell Baker, of Staunton, Va., June 5.

ALEXANDER F. MAGRUDER, M.D., a retired naval officer with the rank of inspector, of Washington, D. C., to Mrs. Ida Newton Gulick, of New York, at Baltimore, June 20.

SIDNEY O. HEISKELL, M.D., assistant health commissioner and superintendent of the quarantine station, Baltimore, to Dr. Doralyn Bryan, formerly head nurse at Baltimore University Hospital, at Philadelphia, June 11.

Deaths and Obituaries.

Erastus J. Buck, M.D., Jefferson Medical College, Philadelphia, 1854, who was injured in a runaway accident June 7, died at his home in Platteville, Wis., June 21, aged 72. He was a member of the Wisconsin legislature in 1860-1861, raised a company of sharpshooters in 1861, served as first lieutenant, then resigned to become surgeon, and in this capacity served throughout the war. He had practiced in Platteville since 1868. He was a member of the American Medical Association.

Edwin E. Waite, M.D., Bellevue Hospital Medical College, New York, 1877, a well-known practitioner and some-time physician to the overseers of the poor, and city physician of New Bedford, Mass., died at his home in that city, June 20, from pulmonary hemorrhage, after a long illness, aged 43.

Robert J. Martin, M.D., New York University, 1887, a leading young physician of Augusta, Me., and surgeon of the Second Infantry, N. G. S. M., lost his life, June 16, while endeavoring to save a woman from drowning at Belgrade Lakes, near Augusta. He was 36 years of age.

George W. Beal, M.D., Ohio Medical College, Cincinnati, 1863, a pioneer of Montana, died June 8 at his home in German Gulch, Mont., from shock consequent on injuries received by a fall from his wagon, aged 75. He was mayor of Butte in 1881 and prominent in territorial politics.

Ludwell G. Thacker, M.D., Bellevue Hospital Medical College, New York, 1866, a prominent physician of Northwestern Ohio, and a member of the American Medical Association, died at his home in Defiance, June 20, from consumption, aged 48.

Charles P. Chesley, M.D., Cooper Medical College, San Francisco, 1870, an esteemed practitioner of San Francisco, and a member of the American Medical Association, died June 14, from Bright's disease, after an illness of two years, aged 67.

George Hosmer Magness, M.D., Bellevue Hospital Medical College, New York, 1876, died at his home in White Plains, N. Y., aged 50. He was president of the Health Board, and a member of the Weschester County Medical Society.

William Irving, M.D., Trinity Medical College, Toronto, Ont., 1874, an old and highly respected practitioner of St. Mary's, Ont., died at his home in that place, June 19, from pneumonia following inflammatory rheumatism.

William Conrad Smith, M.D., University of Pennsylvania, Philadelphia, 1850, who had practiced at and around Linglestown, Pa., for more than half a century, died suddenly at his home in that place, June 16, aged 72.

William L. Nichol, M.D., University of Pennsylvania, Philadelphia, 1849, an old practitioner of Nashville, Tenn., and formerly surgeon in the United States Navy, died at his home in Nashville, June 23, aged 73.

Timothy Newell, M.D., Vermont Medical College, Woodstock, 1850, practitioner in Providence for nearly half a century, and a surgeon in the Civil War, died at his home in Providence, June 20, aged 81.

William J. Campbell, M.D., Harvard Medical School, Boston, 1900, house physician at the Worcester City Hospital, died June 14, aged 26, of smallpox contracted from a patient for whom he was caring.

Aaron Lewis, M.D., Indiana Medical College, La Porte, Ind., 1846, for many years a practitioner of Waukegan, Ill., died at the home of his daughter in Louisa, Va., June 24, aged 83.

Andrew F. Wright, M.D., Kentucky School of Medicine, Louisville, 1859, died at his home in Sherman, Texas, where he had practiced for twenty-five years, June 14, aged 76.

Benjamin F. Reynolds, M.D., Jefferson Medical College, Philadelphia, for many years a practitioner of Pittsburg, Pa., died at his home in Hulton, Pa., June 12, aged 67.

Westervelt Banta, M.D., Niagara University, Buffalo, N. Y., 1888, died at his home in Buffalo, N. Y., June 17, from cancer of the stomach, after an illness of two months.

Achbor J. Baker, M.D., University of Michigan, 1886, of Grafton, W. Va., was drowned, June 24, in an ineffectual attempt to save his 8-year-old son from drowning.

William H. Briggs, M.D., Geneva Medical College, Geneva, N. Y., 1844, for many years a practitioner of Rochester, N. Y., died at his home in that city, June 14, aged 79.

Van Buren Dixon, M.D., who was committed to Montevue Hospital for the Insane, at Frederick, Md., February, 1899, died there, June 8, from paralysis, aged 62.

Arthur J. Dresser, M.D., one of the physicians at the State Hospital at Tewkesbury, died at that place, June 11, from typhoid fever, after a long illness, aged 26.

George H. Preston, M.D., New York University, 1879, a practitioner of Kane, Pa., ever since his graduation, died at his home in that place, June 11, aged 45.

Edward L. Groess, M.D., University of Buffalo, 1893, of Buffalo, died at his home in Black Rock, June 19, from paralysis of the heart, aged 38.

Lee Wood, M.D., University of Tennessee, Nashville, 1890, of Abbeville, La., died at Warsaw, Ark., June 14, after a prolonged illness.

Alanson T. Smith, M.D., New York University, 1885, of Brooklyn, N. Y., died at his home in that place, June 17.

James M. Cole, M.D., a charter member of the Winona County (Minn.) Medical Society, died recently.

John Bryan, M.D., an old physician of Cincinnati, died at his home in that city, June 11, aged 75.

Societies.

Baltimore and Ohio Association of Railway Surgeons.—At the annual meeting of this Society, held in Chicago, May 31 and June 1, Dr. Thomas H. White, Connellsville, Pa., was elected president. The next meeting will be held in Atlantic City, N. J., in June, 1902.

Manchester (N. H.) Medical Association.—At the annual meeting of this Society, held June 14, Dr. James S. Brown was elected president; Dr. J. Franklin Robinson, vice-president; Dr. Arthur F. Wheat, secretary; Dr. William H. Pattee, treasurer, and Dr. Walter T. Crosby, pathologist.

Des Moines Valley (Iowa) Medical Association.—The thirtieth annual meeting of this Association was held at Ottumwa, June 20. Dr. France C. Roberts, Fort Madison, was elected president; Dr. Henry C. Eschbach, Albia, vice-president, and Dr. Murdock B. Bannister, Ottumwa, secretary-treasurer.

Dorchester (S. C.) Medical Association.—This Association was organized at St. George, Dorchester County, S. C., June 10, and elected the following officers: Dr. P. L. Horn, St. George, president; Dr. F. Julian Carroll, Summerville, vice-president; Dr. J. B. Johnson, secretary, and Dr. Perry M. Judy, St. George, treasurer.

Hennepin County (Minn.) Medical Society.—At the annual meeting of this Society, held at Minneapolis, June 17, Dr. Henry L. Staples was elected president; Dr. Frank C. Todd, vice-president; Dr. Arthur E. Benjamin, secretary; Dr. William H. Condit, treasurer, and Dr. George D. Head, librarian, all of Minneapolis.

Central District (Iowa) Medical Society.—At the meeting of this Society at Greenwood Park, Des Moines, June 18, Dr. Josiah D. McVay, Lake City, was elected president; Dr. John I. Hostetter, Colo, vice-president, and Dr. George H. Stanger, Boone, secretary-treasurer. The next meeting will be held at Boone in December.

Aberdeen District (S. Dak.) Medical Association.—The fourth quarterly meeting of this Society was held at Aberdeen, June 18. The following officers were elected: Dr. William E. Edwards, Bowdle, president; Dr. Frank Miller, Aberdeen, vice-president, and Dr. George E. Countryman, Aberdeen, secretary and treasurer.

West Chicago Medical Society.—This Society was organized June 18, and the following officers were elected: Dr. Emil D. St. Cyr, president: Dr. Oscar G. Wernicke, vice-president; Dr. George M. Silverberg, treasurer; Dr. Gustavus M. Blech, secretary, and Drs. Arthur M. Shabad, Frederick W. Henkel, Julius M. Abelio and S. Brownstein, executive council.

South Dakota Medical Society.—The annual meeting of this Society was held in Huron June 11 and 12. The following officers were elected: Dr. Cheney C. Gross, Yankton, president; Drs. John Owen Duguid, Springfield, and Byron A. Bobb, Mitchell, vice-presidents; Dr. James L. Stewart, Irene, secretary and treasurer, and Dr. Henry B. Scofield, Scotland, assistant secretary. The Society will meet next year in Scotland.

Alumnae Association of the Northwestern University Woman's Medical School.—The annual meeting of this Association was held at the college, June 20. The following officers were elected: Dr. Annie White Sage, president; Drs. Vira A. Brockway and Catherine Angell Warthern, vice-presidents; Dr. Eliza H. Root, secretary; Dr. Mary Gilruth McEwen, assistant secretary, and Dr. Mary C. Hollister, treasurer.

Alumni Association of the Medical College of the State of South Carolina.—The Association held its annual meeting at the close of the graduation exercises of the college and elected the following officers: Dr. Julius A. Mood, Sumter, president; Drs. Robert L. Brodie, of Charleston, W. D. Ferguson, of Laurens, P. Gourdrin DeSaussure, of Charleston, and O. A. Matthews, of Newberry, vice-presidents, and Dr. C. Bunting Colson, Charleston, secretary and treasurer.

Illinois Association of Military Surgeons.—The annual meeting of this Association was held in Chicago, June 18. Colonel Nicholas Senn, surgeon-general, and Lieutenant-Colonel Charles Adams were re-elected president and secretary, respectively, and Major Thomas J. Sullivan, surgeon Seventh Infantry, I. N. G., was elected vice-president to succeed Major Truman W. Miller, deceased. The Association will hold its next meeting at Moline in October.

American Orthopedic Association.—At the meeting of this Association, held at Niagara Falls, N. Y., May 11, 12 and 13, the following officers were elected: Dr. H. Augustus Wilson, Philadelphia, president; Drs. William J. Taylor and Gwilym G. Davis, Philadelphia, vice-presidents; Dr. John Ridlon, Chicago, secretary, and Dr. Elliott G. Brackett, Boston, treasurer. Philadelphia was chosen as the place for the next meeting in May, 1902.

Maine Medical Association.—The forty-ninth annual meeting of this Association was held in Portland, June 12, 13 and 14. The president, Dr. Edward H. Hill, Lewiston, in his address, considered at length the subject of tuberculosis. The election of officers resulted as follows: Dr. Frederic H. Gerrish, Portland, president, and Drs. Charles E. Philoon, Auburn, and J. M. Willis, Guilford, vice-presidents. The annual oration was delivered by Dr. Edward Reynolds, Boston, on "The Use of Gynecology by the General Practitioner."

Class of 1876 of the Department of Medicine of the University of Pennsylvania.—This body held its first annual banquet at the University Club, Philadelphia, June 11, and effected a permanent organization for the benefit of its alma mater. The following officers were elected: Dr. Charles A. Oliver, president; Dr. William H. Klapp, vice-president; Dr. Francis M. Perkins, secretary, and Dr. Benjamin F. Baer, treasurer, all of Philadelphia, with an executive committee of twelve which will meet at the call of the president.

North Missouri Medical Association.—This Association held its annual meeting at Monroe City, June 20 and 21. The officers for the ensuing year are as follows: Dr. S. M. Brown, Monroe City, president; Drs. W. S. Thompson, Armstrong, and W. G. Yates, Collis, vice-presidents; Dr. Robert Haley, Brookfield, treasurer; Dr. L. W. Dallas, Hunnewell, recording secretary, and Dr. William A. B. McNutt, Monroe City, corresponding secretary. The Association adjourned to meet at Macon City, June 19 and 20, 1902.

Arizona Medical Association.—The most successful meeting ever held by this body was convened in Phoenix on May 22. A large part of the time was used in reading and discussing papers upon the climatology of Arizona, with special reference to tuberculosis, and diseases of the kidneys and bladder. Seventy-six per cent. of the regular practitioners of Arizona are members of the Association. The next meeting is to be held in Tucson, May 21 and 22, 1902. The following officers were elected: Dr. H. W. Fenner, Tucson, president; Dr. H. H. Stone, Phoenix, O. E. Plath, Phoenix, and O. S. Boido, Tucson, vice-presidents; Dr. George M. Brockway, Florence, treasurer, and Dr. Charles H. Jones, Tempe, secretary.

Massachusetts Medical Society.—The 120th annual meeting of this Society was held in Boston, June 11, 12 and 13. The following officers were re-elected: Dr. Frank W. Draper, Boston, president; Dr. William W. Eaton, Danvers, vice-president; Dr. Edward M. Buckingham, Boston, treasurer; Dr. Charles W. Swan, Brookline, corresponding secretary; Dr. Francis W. Goss, Roxbury, recording secretary, and Dr. Edwin H. Brigham, Boston, librarian. Dr. David W. Cheever, president of the Boston Medical Library, presented its claims. On the new building there had been raised and expended $73,000, and there was a mortgage of $50,000. The library needed an endowment for new books, and in addition to a request for this, Dr. Cheever urged the fellows of the society to become associate members, to use the library and to support it.

Buffalo Academy of Medicine.—The annual meeting of the Academy was held June 11. The election of officers resulted as follows: Dr. Charles G. Stockton, president; Dr. Francis W. McGuire, secretary; Dr. Charles S. Jewett, treasurer, and Dr. Matthew D. Mann, trustee. The permanent funds now amount to more than $1300, and it is hoped that the Academy may some day own its building. In his address the retiring president, Dr. Marcell Hartwig, declared that free hospitals and dispensaries had nearly ruined private practice and that hospitals were often hostile to the medical profession. He also complained of persons of wealth patronizing hospitals instead of calling in their family physician. As a remedy he urged that physicians should amalgamate, and build and maintain their own hospitals so that they may be free to act and not be the tools of a lay board of trustees or managers.

Society of the Alumni of the Medical Department of the University of Pennsylvania.—At the annual meeting of this Society, June 11, a portrait of Prof. John Ashhurst, Jr., was presented by the class of 1901, and received by Dr. Frederick A. Packard on behalf of the Board of Trustees. It was announced that the Alumni medal had been awarded to Homer J. Rhode, of Kutztown, Pa. The following officers were elected: Dr. James Tyson, Philadelphia, president; Drs. Horace Y. Evans, Charles K. Mills, Samuel D. Risley and Frederick A. Packard, of Philadelphia, William W. Johnston, of Washington, D. C., Howard Kelly, of Baltimore, Grover W. Wende, of Buffalo, N. Y., and Edward Jackson, of Denver, Colo., vice-presidents; Dr. Roland Curtin, Philadelphia, historian, and Dr. Wm. J. Wadsworth Philadelphia, secretary and treasurer.

Association of American Medical Editors.—The annual meeting of this Association was held at St. Paul, June 3, 4 and 5. At the instance of Dr. Foster, a committee, consisting of Drs. George H. Simmons, editor of THE JOURNAL, George M. Gould, of *American Medicine*, and Burnside Foster, of the *St. Paul Medical Journal*, was appointed to amend the constitution and by-laws of the Association by adding certain rules concerning the nature of the advertising to be admitted to the pages of the journals in affiliation with the Association. These rules are to be binding on all members, the committee also being advised to suggest such revision of the constitution and by-laws as may be deemed advisable. The annual dinner of the Asso-

ciation was held June 3, President Stone acting as toastmaster. The officers for the ensuing year are: Dr. Alexander J. Stone, St. Paul, president; Dr. Burnside Foster, St. Paul, vice-president, and Dr. O. F. Ball, St. Louis, secretary and treasurer.

THE AMERICAN PROCTOLOGIC SOCIETY.

Third Annual Meeting, held at St. Paul, Minn., June 4 and 5, 1901.

President Dr. James P. Tuttle, New York City, in the chair.

Malignant Tumors of the Rectum.

The president, DR JAMES P. TUTTLE, New York City, delivered the Annual Address on the above subject. He divided malignant tumors into four classes: Connective, epithelial, muscular, and irregular tissue growths.

He described 43 cases from his own practice, and from the literature of the subject; of these 29 of the melanotic type and 14 of the non-melanotic. Sarcomas occur in the rectum as round or elliptical irregular deposits beneath the mucous membrane, sometimes resembling a hypertrophied tonsil. They rarely, if ever, assume the smooth plaque-like form seen in carcinoma, the surface being always rough, unequal, "muriform," and the mucous membrane being movable over the growth in its earlier stages, are conditions which distinguish them from carcinoma. They originate in the submucosa, may appear as sessile tumors, and eventually develop a distinctly polypoid shape. They may also appear as a general fibrous thickening of the wall and be mistaken for simple inflammatory stricture. The mucous membrane covering sarcomas is comparatively normal, although if the tumor becomes very large, the membrane may become congested, edematous, or ulcerated, and even adherent to the growth through inflammatory processes. Sarcomas in the rectum are either single or multiple, and vary in size from a hazel nut to a good-sized orange. Sarcomas of the rectum present a variety of colors, generally that of the normal mucous membrane, although sometimes they are dark red, grayish-black, bright red, pale-yellowish pink, or as black gangrenous masses. Often in the multiple form, the different tumors will present varying appearance. Sarcomas may occur at any portion of the rectum or sigmoid, but the majority are situated low down near the anal margin. Sarcomas differ from carcinomas by their rapid growth. Unlike sarcomas in other portions of the body, these sarcomas are said to have a distinct tendency toward ganglionic infection. Metastasis is one of the chief characteristics of sarcomas of the rectum. If the growth be primary, all possibility of metastatic deposit should be eliminated, or else the operation will be of no avail. A complete résumé of the histology was given under the following heads: Round or globe-cell sarcomas, spindle or fusiform, giant cell, alveolar, and mixed. Melanosis does not alter the type of the tumor or change the character of its component parts. It takes place in all types and may involve but one part of a tumor, or only one or two tumors where they are present in multiple form. Sarcomas of the intestine always develop from the submucosa, and ordinarily affect the mucous membrane only after pressure, tension, and ulceration, through friction and infection by fecal masses. The causes and influences which bring about the production of sarcoma are as little known as those of carcinoma. Age cannot be proved to have any direct influence, although the disease occurs more often late in life, and there is apparently no relationship between the sexes and this disease. Symptoms are at first very vague. There may be a sense of fullness, or the feeling of the presence of a foreign body, or the first symptom may be bleeding and discharge of mucus. The protrusion of sarcomatous tumors is more frequent than in case of carcinoma, but less so than in other forms of rectal neoplasms. There is no odor peculiar to sarcoma. After ulceration has occurred and there is a production of pus, the odor changes to that of decomposing tissue, but never assumes that peculiar characteristic odor which is found in carcinoma of the rectum. If the sarcoma is low down and involves the sphincter, producing traction and pressure, the patient may suffer considerable pain. But if it is high up and of an infiltrating form the patient may go to the very door of death without any knowledge of its existence. The state of the bowels in sarcoma of the rectum varies according to the type of the tumor. There may be either constipation or diarrhea. The latter may be caused by the mobility of the growth and its location near the margin of the anus. Constipation may be caused upon mechanical grounds. Flatulence, indigestion, and loss of appetite are associated with sarcoma of the rectum as they are with all other neoplasms of this organ. Cachexia is not well marked. Reflex digestive disturbances are noted. Decrease in strength, loss of flesh, swelling of the feet and abdomen rapidly succeed one another, when the sarcoma is once well developed. Dysuria is frequently present. The lungs and pleura may become affected.

The diagnosis of this condition lies between carcinoma, and villous tumor. The tumor is less sessile than carcinoma, and less pedunculated than adenoma. It is more firm than adenoma and has a less degree of induration than carcinoma. In its attachment, its roots do not spread out, producing that general infiltration of the mucous membrane that obtains in carcinoma. Its attachment is very abrupt. To the touch it is more undulating and irregular than carcinoma, but has not the granular and dendritic divisions which one finds in villous tumor and in adenoma. The latter occurs largely in children whereas sarcoma is a disease of middle or advanced life. When it is a question between sarcoma and multiple adenoma, the multiplicity of the growths, the excessive diarrhea, together with the comparatively fair condition of the patient's health, may be mentioned upon the side of adenoma. Between sarcoma and carcinoma, the distinct odor of the latter is enough to make the decision positive. In the early stages of the disease, the fact that the mucous membrane moves easily over the growth distinguishes it almost positively from carcinoma. The final test depends upon the microscopic examination of a section from the real substance of the tumor itself. Personally the essayist was opposed to making an incision to obtain the section unless the case was operable and the patient consented to an operation if the microscopic examination showed a necessity for one.

The treatment of the disease consists in the radical removal of the growth. A ligature to pedunculated sarcomas ought never to be considered. If the growth is single and in the wall of the rectum a posterior proctotomy may be done. If it is diffuse, involving the entire circumference of the rectum, total excision of the organ is the only recourse. While there is some evidence of the value of the serum therapy in the treatment of the sarcomas elsewhere, the advocates of this method lend no encouragement by their results in the treatment of this condition in the rectum. Artificial ani may give great relief in carcinoma, but it neither relieves nor checks the progress of sarcoma.

Disease of the Sigmoid.

DR. G. B. EVANS, Dayton, Ohio, discussed the question as to whether or not the rectum was the receptacle for feces, or whether the latter is arrested, detained, and accumulated in the sigmoid flexure of the colon. The reader inclined to believe that the rectum was the receptacle. From its situation and anatomical relations, the reader was convinced that the sigmoid is oftener the seat of obscure abdominal diseases than has generally been suspected. In appendicitis there is often reflected pain over the whole abdomen, often in the left iliac region over the sigmoid. Now if this is true, the converse is also true. This point was illustrated by reference to a patient who had a distinct history of appendicitis. The condition was promptly relieved by flushing the sigmoid and colon with large quantities of hot boric solution. This treatment was advised in all cases of supposed appendicitis. It can do no harm and might do good.

Recto-colitis.

DR. WILLIAM M. BEACH, Pittsburg, Pa., described recto-colitis as a condition of the rectum and colon that generates functional derangements consequent upon varying degrees of inflammation of its mucous membrane. Omitting malignant diseases, recto colitis was considered under the following stages:

Congestion, atrophic catarrh, hypertrophic catarrh, and ulceration. Simple congestion due to engorged blood-vessels may be ephemeral and express itself locally in the form of dysentery and tenesmus and the exeretion of an enormous quantity of mucus. This condition if allowed to continue becomes chronic, developing usually the hypertrophic catarrh; epithelium is shed, valves swollen and thickened, narrowing of rectal straits, diarrhea alternating with constipation. Atrophic catarrh is usually accompanied by the constipated habit; dry hard stools, and minute anal fissures. Secretions are insufficient on account of gland impairment. Atrophic recto-colitis is rare. The ulcer is the culmination of the inflammatory process, and in the experience of the reader rarely occurs above the sigmoid flexure.

Anal Pockets.

DR. LOUIS J. KROUSE, Cincinnati, first entered into a very exhaustive study of the so-called anal pockets in which he gave the results of his own observations and those of other investigators. He discovered by his researches that these pockets were present in the rectums of the living to the extent of 80 per cent., but that they were entirely absent in the dead. In conclusion he said: That the so-called anal pockets may be the cause of certain diseases located in the lower outlet of the bowel, I cannot gainsay; but I believe that they are most likely the frequent predisposing cause of an irritable ulcer of the anus. If we examine the rectum in the quiescent state, when the bowels are empty, we find that the anus is closed; the anal valve and its corresponding sac are absent. But when the bowels move, the anal canal is opened and the anal valve becomes prominent, the same as would occur had an anal speculum been introduced and opened. Should a hardened fecal mass pass through the anal outlet, with a prominent pseudo-valve protruding, then this valve would most likely be caught by the moving mass and possibly be torn, producing what might be termed an irritable ulcer of the anus.

The Treatment of Rectal Prolapse.

DR. J. RAWSON PENNINGTON, of Chicago, believes that some of the most important factors in the production of rectal prolapse are to be found within the intestinal canal and considers the plica transversalis recti et sigmonideæ as one of the most, if not the most, important causative factors. He continued by saying that various procedures have been devised for the treatment of this malady, but to be successful the operation selected must be determined by the variety and specific conditions of the prolapse, otherwise it will be a failure. Of these procedures he mentioned, 1, those having for their object the production of adhesive inflammation between the coats of the intestinal walls; 2, narrowing the anal canal; 3, amputation; 4, reposition and bony fixation; 5, reposition and intra-abdominal fixation (colopexy or sigmoidopexy); 6, Thuré Brandt massage; 7, electricity; 8, ligature.

New Method for the Removal of Hemorrhoids Under Local Anesthesia.

DR. THOMAS CHARLES MARTIN, Cleveland, stated that non-malignant anal growths could be removed painlessly without resort to general anesthesia by means of a technique which he described, provided it be performed by the trained hands of an operator who thoroughly understands the principles of infiltration anesthesia, and who, furthermore, has been sufficiently persevering to master the difficulties encountered in the application of those principles to this operation.

The following officers were elected to serve during the coming year: Dr. Thomas Charles Martin, Cleveland, president; Dr. George J. Cook, Indianapolis, vice-president; Dr. William M. Beach, Pittsburg, secretary-treasurer, and Drs. Joseph M. Mathews, Louisville, Ky., James P. Tuttle, New York City, and J. Rawson Pennington, Chicago, executive committee. Prof. Dr. Sonnenberg, Berlin, was elected to honorary membership on motion of Dr. William M. Beach, Pittsburg. The Society will meet at Saratoga, N. Y., in June, 1902.

Sun Baths for Chronic Eczema.—Winternitz reports the cure of a number of cases of chronic eczema with sun baths, the chemical rays arrested by red clothing.

PHILADELPHIA PATHOLOGICAL SOCIETY.

President, Dr. F. A. Packard, in the Chair.

Some Unusual Types of the Tubercle Bacillus.

DR. M. P. RAVENEL made some remarks on unusual types of the tubercle bacillus, to show the variability of this organism when grown upon different culture media. One of the growths was very greasy in appearance. In this specimen staining was very difficult. The specimen was derived from a goat suffering with the disease. If, as some contend, the pathogenicity depends upon the amount of fat contained, this special culture should be highly virulent, which did not seem the case. In other cultures of this micro-organism the cultures appeared greenish or blackish. In later instances the specimens were obtained from a child suffering with tubercular peritonitis.

DR. A. C. ABBOTT spoke of the work of Dr. Trudeau, who had also referred to certain peculiarities exhibited by the tubercle bacillus. In regard to the cultures presented he thought they looked like mould. He was under the impression that the work done by the speaker not only demonstrated the variability of the tubercle bacillus, but also its different microchemic reactions. It might appear that certain cultures of this micro-organism in the lower animals were pathogenic, while others were not so. The different characteristics of this micro-organism might be due to a difference in their environment.

Variola.

DR. W. M. WELCH and JAY F. SCHAMBERG presented specimens from a case of variola. The patient had been admitted to the Municipal Hospital on May 5, and was 28 years of age. He had never been vaccinated. When admitted the disease had advanced to the 5th day of the eruption. Death had occurred on the 12th day. The specimen of affected skin had been removed from the upper surface of the thigh and pubes. It vividly showed the papules and umbilicated vesicles present in this condition. At the autopsy the stomach had been found intensely congested, almost hemorrhagic, the veins being prominent, while the œsophagus was quite pale, although a few minute ulcerated spots were found. Cultures of the heart blood were made and showed numerous streptococci.

The Increase of Connective Tissue in the Lung in Chronic Passive Congestion.

DR. R. M. PEARCE referred to the various changes which had been noted in the parenchyma and interstitial tissue. He had made certain investigations using the Weigert stain, resorcin, fuchsin, sesquichlorid of iron, and passing through alcohol, and xylol. Congo red, and eosin and carmin were also found of value. He had studied the bronchi, pleura, and septa, and found that the elastica diminished gradually until it reached the terminal bronchioles. At the vestibule the elastica was found collected in distinct nobs, or nodules, where it was thickened and stained irregularly. In some sections the tissue seemed to be made up of blood vessels and elastica. The greatest increase was in the bronchi. The increase in the blood-vessel walls was in the adventitia.

DR. SIMON FLEXNER thought that the results obtained demonstrated the improvements which had recently been made in micro-chemic technic. The increased rigidity of the lungs in chronic congestion might be explained from this increased amount of elastica present.

Probable Primary Intestinal Tuberculosis in an Adult with Metastases.

DR. F. A. PACKARD, in detailing the clinical history, stated that the man had been a laborer, 30 years of age, who had died at the Pennsylvania Hospital May 17. He had been ill for several days with vomiting and diarrhea. The temperature had been 101, pulse 72. Nystagmus was also present. Plantar reflexes were increased, and Kernig's sign was marked. Lumbar puncture had been done, but no fluid obtained. No eruption had been present. It was thought that meningitis was present in this case. The specimens were exhibited to show that the primary focus might probably have been in the intestine.

DR. SIMON FLEXNER spoke of the results found at autopsy. The left lung was firmly adherent to the chest wall, and adhe-

sions were also present between the lung and pericardium. In the lung gray tubercles were found. The bronchial lymph glands were enlarged and contained caseous material. Sections of the lung were pale, and miliary tubercles were present. There were no cavities present. The intestines were distended, and along its coats miliary tubercles were found. Tubercles were found in the pelvis. The blood vessels of the bladder were injected. The vermiform appendix was enlarged, the serous membrane injected and covered with miliary tubercles. The mesenteric glands were enlarged and caseous. The adrenals were caseous, as were the retroperitoneal glands. The kidneys showed tubercles. A very large tubercle was found at the base of the brain, and tubercles were present on the ependyme. Tubercles were found microscopically in the meninges at the base of the brain. In this locality the blood vessels showed proliferation of the endothelium.

DR. W. M. COPLIN referred to a form of intestinal tuberculosis mentioned by French writers, and called the hypertrophic form. In certain of these cases, an excision had been done, resulting in a cure. They were of a chronic nature, and the growths resembled that of cancer with ulceration and cicatrization.

Teratoma of the Testicle.

DR. W. F. HENDRICKSON read a paper and presented specimens of teratoma of the testicle. The specimen had been removed from a man 25 years of age, and had involved the testicle and a portion of the cord. Two excrescences had been found externally, and adjacent to one, yellowish spots had been present. The testicle was entirely destroyed and replaced by the tumor mass composed of grayish or yellowish-white material. Microscopically the tumor showed a perivascular growth having a peculiar arrangement. About the smaller blood vessels a few giant cells were found, while other cells were of an epithelioid nature. A few giant cells were present near areas of cartilaginous tissue. In certain respects it resembled adrenal material.

Tuberculosis of the Heart.

DRS. W. S. WADSWORTH and W. F. HENDRICKSON presented a card specimen. In this case death had been sudden. At the autopsy cavities were found in the lungs, and the pericardium contained blood-stained serum. The right auricle and ventricle seemed normal. In the left ventricle were found numerous irregular grayish or reddish nodules varying in size from a pinpoint to several millimeters. These growths were also found on the intra-ventricular septum. Microscopically they were identified as miliary tubercles. No tubercle bacilli were present in any of the nodules examined.

NINTH GERMAN CONGRESS OF GYNECOLOGY.

Held at Giessen, May 29-31.

LOEHLEIN in his opening address remarked that atmocausis, angiotripsy and serum-therapy have not yet fulfilled anticipations, and that further experiences are necessary with each.

Carcinoma Uteri.

W. A. FREUND delivered the principal address on the above subject. He was able to report only two cases permanently cured in his twenty-three years of experience: one operated on for recurrence after amputation of the portio, the other for carcinoma of the cervix with a nodule in the uterus. Both patients are entirely healthy, seventeen and twenty-three years after total extirpation. He urges that the abdominal route should not be reserved exclusively for the severest cases, as on this account, it is impossible to compare the statistics of abdominal and vaginal operations. Winter claims that the only criterion of the superiority of an operation is the number of permanent cures achieved by it, always bearing in mind the co-efficient of operability. He learned, by inquiry in the various clinics of Germany, that the average mortality after abdominal extirpation with removal of the larger portion of the parametrium and the glands, is 24.6 per cent., with a record of 41.6 per cent. recurrences during the first year. Consequently he believes that the vaginal route is the operation of the future. He makes a Schuchardt vaginoperineal incision in every case. This incision starts from the perineum, is carried across and far back of the rectum, through the entire side of the vaginal wall. It allows ample access to the parametrium. Stande incises on both sides. Olshausen reports 38 per cent. permanent recoveries—that is, the patients cured for more than five years by vaginal extirpation.

Eclampsia.

The second day was devoted to this subject. None of the various theories in regard to the etiology of eclampsia can be definitely accepted, Fehling observed. Schmoral stated that he had found a characteristic anatomic picture at the autopsies of 73 eclamptic women. Schuchardt considers the anemic and hemorrhagic necrosis of the liver highly characteristic. Dienst reported that a circulus vitiosus evidently exists between mother and fetus; the same alterations in the organs are noted in each. He removed a fragment of the liver from an animal with young. It was seized with convulsions soon after. The young were born dead, and the typical eclamptic alterations, especially the liver necrosis, were found in them likewise. Strassmann stated that the experiences at the Berlin Charité indicate that compression of the ureters has some share in the production of eclampsia. The severity of the cases seems to be decreasing of late. Large cities are most affected; social conditions and even the weather, seem to have an influence on its prevalence.

Winternitz stated that he had found the streptococcus in the uterus in 63 per cent. of all his cases of puerperal fever; the staphylococcus in 6; bonococci in 6.3, and the colon bacillus in 3.1 per cent. Leopold exhibited cultures of blastomycetes originally derived from tissue taken from the neighborhood of a carcinoma. He announced that he was able to produce sarcomata as well as carcinomata in animals inoculated, and suggests that the former may be a benign form of the latter. He exhibited a rat with multiple tumors from inoculation of his cultures. Fraenkel reported that the ovary not only produces the ovum, but has a direct influence on its insertion. Hallan also confirmed the fact of the internal secretion of the ovary, stating that he had restored menstruation in monkeys after extirpation of the ovaries, by transplanting an ovary, and that the menstruation was again arrested if the transplanted organ was removed.

Amann described a new extraperitoneal method of abdominal extirpation of the uterus. He remarked that he had observed two cases in which the glands in the posterior wall of the abdomen became carcinomatous more than five years after total vaginal extirpation. His mortality with the latter has been 4 per cent. in 175 operations. By his new method it is possible to remove extensive portions of the parametrium, expose the ureters, bladder-wall and vagina as freely as desired, and yet not open the peritoneum for more than a few minutes. He has been very much pleased with the results in fourteen cases; his first was operated on in April, 1899. The ureters are exposed through a lateral incision, detached, and the uterine or hypogastric artery ligated. The peritoneum is not opened until this is done. Then it is incised, the uterus extirpated through it, and the peritoneal cavity closed again at once by suturing the vesical peritoneum to the peritoneum of the posterior pelvic wall. The parametrium is then exposed and removed as desired, with the glands, terminating with gauze drains in the vagina and abdominal wound. This method allows easy access to the point where the uterine artery and the ureter cross, allowing the implantation of the latter in the bladder if necessary.

The next congress will be held at Wuerzburg, in 1903, with Hofmeier as president. The subjects announced for discussion are "Extra-uterine Pregnancy," and "Plastic Operations with Special Regard to Their Permanent Results."

ONTARIO MEDICAL ASSOCIATION.

The Twenty-first Annual Meeting, held at Toronto, June 19 and 20, 1901.

The president, Dr. Angus McKinnon of Guelph, in the chair.

Three Recent Gall-Stone Cases.

DR. WILLIAM OLDRIGHT, of Toronto, said these cases had occurred recently in his practice. They present features of interest to the profession. The first case occurred in a woman about 55 years of age. The late Dr. Little had seen the patient and had endeavored to obtain purgation, without effect. Powerful cathartics were unavailing. About nine months previously she had a similar attack, but Dr. Oldright had heard nothing about it until this attack. The symptoms were somewhat elevated temperature, about 100 to 101, constant vomiting, obstruction, and intense pain. He supplemented Dr. Little's catharsis, but without any effect. On examination, he could map out a distinct tumor, and told her that she had a distended gall-bladder; advised her to go into the hospital, which she did that night. She was operated on in the afternoon, and removed some gall-stones, and endeavored to establish patency of the duct. He could feel no stones left behind, but there was some stenosis of the duct. There was a great deal of inflammatory action in this case. The gall-bladder was stitched into the abdominal wall and drainage established in the usual method; bile flowed freely. Patient made a good recovery. The second case was one in consultation with Dr. McLean, of Woodbridge. She was 65 years old. The prognosis was certainly death without operation. At the operation he could not locate the gall-bladder. He came to the conclusion that it was not a case for further interference. Within twenty-four hours she succumbed to the shock and probably to some hemorrhage. There was no doubt after passing the finger in, that it was malignant. If this woman had been operated on some years before, Dr. Oldright thought that malignancy would not have occurred, and her life would have been saved. The third case occurred in a woman 40 years of age. Here was a case in which there had been gall-stone symptoms, obstruction, for about eighteen months. She consented to an operation. The obstruction was in the cystic duct. He opened the gall-bladder and took out the stones. The operation occupied about forty minutes. The patient made an uneventful recovery, and left the hospital thirteen days after the operation.

Excision of Upper Jaw for Sarcoma.

DR. HERBERT A. BRUCE, of Toronto, presented this paper, whilst Dr. G. Silverthorne exhibited the specimen. Dr. Bruce also presented the patient, a woman, 34 years of age, from whom he had removed the upper jaw for sarcoma. During the last week of January of this year she felt for the first time a slight swelling over the alveolus of the left jaw, which she thought to be a gum boil. She consulted Dr. Bowles at the end of March, and Dr. Bruce saw her about the middle of April, that is, less than three months after the first symptoms. He operated upon her on April 29, exactly three months after the first symptom. On examination, he found a very hard swelling just behind the second bicuspid tooth and extending backwards to the full extent of the jaw. Internally, it had not extended to the middle line, but bulged externally to the extent of half an inch beyond the line of the teeth. It extended backwards towards the antrum, but the latter did not seem to be implicated externally. The growth in the roof of the mouth was covered by a mucous membrane. On looking into the nose, a polypoid mass was seen; and the patient had difficulty in breathing through the left nostril. The cheek on the affected side was slightly more prominent, and it moved freely over the growth. A small portion of the growth was removed under cocain, and Dr. Silverthorne reported to Dr. Bruce that it was sarcoma. The patient left the hospital on May 18 and made an uninterrupted recovery.

Dr. Silverthorne presented the specimen to the members of the Association. It was the size of a large-sized orange, containing spindle cells with a cartilaginous basis.

Ectopic Gestation.

DR. R. W. GARRATT, of Kingston, said the subject is one of vital importance to every practitioner, for at any time he might be called upon to differentiate the condition from others from which it might be confounded. The responsibility of a life was in his hands and demanded accurate diagnosis, medical acumen and judgment and ability to conduct the case to a favorable termination. He entered at considerable length as to the causation and earlier changes consequent upon ectopic gestation, and stated, that every physician is expected to make a correct diagnosis of tubal pregnancy on the occurrence of rupture: and in a fairly large proportion of cases, to make a diagnosis before the occurrence of rupture.

Theoretically, the arrest of a fructified ovum may occur first in the ovary; second, in the abdominal cavity, between the ovary and tube; third, within the tube, and fourth, between the tube and the uterus. He would direct the attention of his audience to but one kind only—arrest within the tube, or tubal pregnancy, as all other varieties are but mere developments of this kind, owing to secondary invasion of the Fallopian tube.

DR. J. F. W. ROSS thought that we ought to be able to diagnose these cases before rupture had taken place. He referred to the pain that is indefinite, not severe; not acute, but a feeling as if something were wrong. He referred to several cases recently seen in practice.

Dr. Powell referred to a case where Dr. Ross had diagnosed these conditions before rupture had occurred.

President's Address.

DR. ANGUS MCKINNON considered that it was a great honor to be elected president of this, the largest and most influential medical association in the Dominion of Canada. Having referred to the success of the meeting so far, he proceeded to contrast the state of medicine at the beginning of the last century with that of the present, and compared the last advantages we to-day possess over those of one hundred years ago. He deplored the growth in the employment of new, proprietary remedies, and thought that harm was being done to the medical profession by manufacturing firms making up pills for neuralgia, for malaria, etc. He considered that the literature and drugs sent out to medical men by these manufacturing houses had become an intolerable nuisance. The electric-belt man, the "Christian scientist," the advertising cancer-curer, the osteopath, and many other such like fakes, which hang on to the skirts of medicine he scored most unmercifully, and regretted that the public press, both secular and religious, opened their columns freely to these fulsome, untruthful, and sometimes immoral advertisements—because they pay well. There was great danger to the public in permitting "Christian scientists," the "pray-for-hire-healers," and the "Dowieites," impudently undertaking to cure infectious diseases such as diphtheria, scarlet fever, and smallpox, diseases which they are unable to recognize; and we think that we have come to a point where toleration and forbearance become criminal. The 2500 medical men in Ontario should have influence enough to obtain from the legislature an amendment to the medical act that will put an end to this trifling with human life. He directed attention to the delay that occurs in securing admission to the asylums for people, the subject of acute mania, and thought that it was high time the necessary steps in this department in the practice of medicine should be simplified.

Vaccinal Protection Against Smallpox.

DR. P. H. BRYCE, of Toronto, the Secretary of the Provincial Board of Health, presented this paper. In the introduction he expressed the belief that, although the practice of vaccination against smallpox has existed for a century, there never was a time since it was formally accepted by the profession, when there was so much expressed skepticism on the part of the laity with regard to its protective qualities, and never a time when the profession has been so indifferent as to impressing the necessity of its proper performance upon the public. In Ontario, between 1898 and 1899, there were but 22 recorded deaths from the disease. He made special reference to the art of vaccination and the quality of the lymph, and thought five separate insertions should be made in each case. The quality of the lymph was very important. He thought that a medical man going out from college did not receive sufficient practical instruction on this most important subject.

DR. J. H. CAMERON discussed Dr. Bryce's paper and stated, as a matter of fact, he had no hesitation whatever in seeing a case of smallpox himself, nor would he object to any member of his family seeing it, if he knew that they had sufficient protection in vaccination. He warned the profession against laxity in dealing with this most important subject.

DR. HARRISON, of Selkirk, stated that he had had considerable experience with smallpox, and on account of that expe-

rience he entered a vigorous protest against the prevailing carelessness in insisting on vaccination and re-vaccination in the laity as well as the profession.

Empyema.

DR. FERGUSON, of London, said that the treatment of this condition was essentially surgical, and that the medical aspects of the disease were limited to a consideration of its pathogenesis and prophylaxis. He considered that the conditions of non-purulent or primary effusion, indispensable to an understanding of the pathogenesis of empyema. He gave a description of the pleura and discussed the bacteriological aspect of purulent pleurisy, which he divided into four classes; 1, those due to pneumococci; 2. those due to streptococci (and staphylococci); 3, those to the bacilli of tuberculosis; and 4, those caused by saprogenic organisms. In nine cases, extending over eleven years in his practice, three were diagnosed tubercular, three meta-pneumonic, two due to the streptococci, and one undetermined. The prognosis varies with the microorganism present, the pneumococci being the most benign. It is the only variety of purulent empyemia that may possibly yield to treatment by mere aspiration, especially in children. Tubercular empyema is usually mixed infection. The prognosis here will depend upon the general condition of the patient, and the character of the mixed infection. We, therefore, see the importance of a bacteriological examination. As in any other debilitating disease, supporting and tonic treatment is essential. With the advent of pus, surgical means must be adopted.

DR. J. L. TURNBULL, of Goderich, said that when the presence of pus is determined it should be evacuated at once, as there is always the danger of the abscess bursting into or through the chest wall, or even through the diaphragm, and producing peritonitis. Aspiration need not be described; remember not to remove the fluid too rapidly. In this, as in an ordinary abscess, it is not necessary to open at the most dependent point. The preferable way, and the one which Dr. Turnbull always uses when a diagnosis of pus is made, is to remove a portion of a rib; an inch and a half may be cut out, preferably with the saw, under strict antiseptic precaution. Dr. Turnbull advises washing out every day when pus is offensive; and drainage tube gradually shortened until it can be removed altogether. Where a cavity and sinus remains after this operation, the sinus may become closed and a second empyema established. This requires an Estlander's operation, and one of the best ways is to carefully locate size and boundaries of cavity with a probe, and after dissecting up a flap of skin to be sure to remove enough bone. The hard fibrous tissue beneath the ribs, which is always present in quantity there, must be thoroughly removed. Dr. Turnbull advises mopping out with pure carbolic acid, then with alcohol, to prevent poisoning, and then with sterilized water, the part being carefully dried. He puts a drainage tube in the most dependent part.

Open Treatment of Disease.

DR. GEORGE H. CARVETH, of Toronto, described his method of treating different forms of disease: 1, in the house with wide-open windows; 2, in beds on the veranda; 3, in beds under tents on the lawn. At first he experienced some difficulty in getting his patients to consent to be treated in this manner, but after they had become habituated to life in the open air, they returned in-doors reluctantly. Some of the cases that he has treated in this way are iritis, cases of fracture, cases of the radical cure of hernia, rheumatoid arthritis, tubercular disease of the spine, typhoid fever, and a case of hysterectomy. His address was illustrated by lantern slide projections on the canvass, which proved very interesting to the members of the association.

Gastric Ulcer.

DR. R. D. RUDOLF, of Toronto, gave a short historical sketch of the chief literature of the subject, and said during the last 30 years only one important symptom had been added to those mentioned by previous writers: the very common occurrence of hyperchlorhydria. Avoiding the consideration of the well-known points on the subject, he propounded five questions in connection with gastric ulcer which seemed to him to specially merit discussion: 1, is there any relation between gastric ulcer and cancer? Trosseau believed that an actual antagonism existed between the two conditions, while Bebert considered that 9 per cent. of all gastric cancers so arose, and Rosenheim states that 5 to 6 per cent. of all gastric ulcers became carcinomatous. Clinically, the speaker had never seen a case of simple ulcer end in cancer, nor had he seen a case of cancer preceded by ulcer, although such cases undoubtedly occasionally occurred.

DR. HENRY HOWITT, of Guelph, first took up the procedures for dealing with the ulcer or its results, in which perforation is not a factor. In all the operative procedures it was essential to prevent infection of the wound; stomach should be thoroughly washed with aseptic water, by means of siphon tube, immediately before the anesthetic is administered. It is not necessary to make the abdominal incision extensive, the length of the incision would depend upon the amount of contraction, and it is sutured in such a manner that when closed the line of union is at right angles to the original incision. This gives excellent results when properly done. Adhesions render this ideal operation impracticable. The first successful operation in Canada was performed in Toronto, in 1894, by Dr. Atherton. Up to last September in the neighborhood of 300 operations were reported, with a mortality of a little over 45 per cent. Dr. Howitt then referred to cases in his own practice.

With regard to the treatment, Dr. Howitt said that as soon as we are satisfied that perforation has taken place, referring to acute cases, he believes it is good practice to give morphia hypodermically; and it further lessens the amount of the anesthetic in the opinion of many. Success largely depends on the shortness of time before operation; delay is dangerous. It is Dr. Howitt's practice to eviscerate the bowels; one or more small incisions in the prominent coils soon overcomes the distention, and each one is closed before another is made. Attention is now turned to the stomach and the part brought into the wound. The ulcer is incised and opening closed with two or three layers of sutures. When the trouble is in the posterior wall it may be impossible to excise it, in which case, it can be generally inverted and closed by layers of sutures. The abdominal cavity should be thoroughly flushed with a stream of saline solution. When drainage is necessary, the tubes or gauze should not be introduced through a large wound. The object should be to have primary union to take place in the incision.

Resolution of regret for non-payment of the annual $2.00 fee of the Ontario Medical Council was introduced by Dr. Ferguson, of London, seconded by Dr. Gibson, of Belleville, that some members of the profession in the province had refused payment of this annual fee.

This Association regards the imposition of this fee as most reasonable, payment of which should meet with a cheerful response on the part of every member of the profession. This was carried unanimously amid much applause, and without a dissenting voice.

Dr. Wishart, Toronto, chairman of the special committee to draw up a resolution on vaccination, presented the following:

Resolved, That the Ontario Medical Association desires hereby to reassert the opinion of the medical profession of this province.

1. That the principles of Jennerian vaccination against smallpox, which have been now attested by the experience of more than a century, are scientifically correct.

2. That in order to carry out the protection through vaccination against smallpox it is necessary that the lymph used in the operation be of normal quality, and that this can be shown only by a proper amount of systemic reaction to the vaccine, as determined by the character of the vesicles, and that the absence of a normal reaction, as shown by the presence of vesicles, is no positive evidence of the immunity of the person either against vaccinia or smallpox.

3. That this Association emphasizes the urgent necessity that the scarification of the skin be sufficiently extensive to secure such reaction, and to this end recommend that from three to five insertions each of a quarter of an inch square be made in each vaccination.

This was carried.

Medical Defense Union.

On motion of Dr. J. F. W. Ross, seconded by Dr. A. Primrose, a committee was appointed to inquire into this matter, to report at the next meeting of the Association in 1902.

The following officers were elected: President, Dr. N. A. Powell, Toronto; first vice-president, Dr. R. Ferguson, London; second vice-president, Dr. R. W. Garrett, Kingston; third vice-president, L. C. Prevost, Ottawa; fourth vice-president, R. L. Turnbull, Goderich; general secretary, Harold C. Parson, Toronto; assistant, Dr. George Elliott, Toronto;; treasurer, Dr. A. R. Gordon, Toronto.

Miscellany.

Military Precautions Against Yellow Fever in Cuba.

The military orders recently issued for the protection of the garrisons in Cuba from yellow fever differ widely from those in force heretofore. Formerly when a case of this disease was discovered in a command the patient was immediately isolated or sent to a yellow fever hospital; the barrack-room from which he was taken was temporarily vacated for a thorough cleansing and disinfection and quarantine was instituted against the locality from which the infection was supposed to have been imported. New cases occurring within five days were regarded as due, like the first, to imported infection, and cleansing and disinfection were again resorted to; but new cases occurring after the lapse of five days led to the opinion that the barracks had become infected and that a dangerous local outbreak of the disease would follow unless checked by disinfection and immediate removal to a new camp site, with a second change of camp site if needful to shake off the infection.

Now, however, the measures enjoined by the military authorities have in view the prevention of the dissemination of the yellow fever infection by mosquitoes. Well men are to be protected from the bites of infected mosquitoes and patients suffering from the fever are to be protected that uninfected mosquitoes may not become infected. Disinfection of rooms, clothing, bedding, etc., is declared unnecessary except in so far as it aims to destroy infected insects that may be present. The following circular was issued April 27, 1901, from headquarters, Department of Cuba, General Leonard Wood, commanding. General Orders No. 6, mentioned in the circular, directed the enforcement of the use of mosquito bars and the destruction of the larvæ of the mosquito by petroleum in all collections of standing water in the vicinity of military stations:

Upon the recommendation of the Chief Surgeon of the Department, the following instructions are published and will be strictly enforced at all military posts in this Department: The recent experiments made in Havana by the Medical Department of the Army having proved that yellow fever, like malarial fever, is conveyed chiefly, and probably exclusively, by the bite of infected mosquitoes, important changes in the measures used for the prevention and treatment of this disease have become necessary. 1. In order to prevent the breeding of mosquitoes and protect officers and men against their bites, the provisions of General Orders No. 6, Department of Cuba, Dec. 21, 1900, shall be carefully carried out, especially during the summer and fall. 2. So far as yellow fever is concerned, infection of a room or building simply means that it contains infected mosquitoes—that is, mosquitoes which have fed on yellow fever patients Disinfection, therefore, means the employment of measures aimed at the destruction of these mosquitoes. The most effective of these measures is fumigation, either with sulphur, formaldehyde or insect powder. The fumes of sulphur are the quickest and most effective insecticide, but are otherwise objectionable. Formaldehyde gas is quite effective if the infected rooms are kept closed and sealed for two or three hours. The smoke of insect powder has also been proved very useful; it readily stupefies mosquitoes, which drop to the floor and can then be easily destroyed. The washing of walls, ceilings and furniture with disinfectants is unnecessary. 3. At it has been demonstrated that yellow fever cannot be conveyed by fomites, such as bedding, clothing, effects and baggage, they need not be subjected to any special disinfection. Care should be taken, however, not to remove them from the infected rooms until after formaldehyde fumigation, so that they may not harbor infected mosquitoes. Medical officers taking care of yellow fever patients need not be isolated; they can attend other patients and associate with non-immunes with perfect safety to the garrison. Nurses and attendants taking care of yellow fever patients shall remain isolated, so as to avoid any possible danger of their conveying mosquitoes from patients to non-immunes. 4. The infection of mosquitoes is most likely to occur during the first two or three days of the disease. Ambulant cases—that is, patients not ill enough to take to their beds and remaining unsuspected and unprotected, are probably those most responsible for the spread of the disease. It is, therefore, essential that all fever cases should be at once isolated and so protected that no mosquitoes can possibly get access to them until the nature of the fever is positively determined. Each post shall have a "reception ward" for the admission of all fever cases and an "isolation ward" for the treatment of cases which prove to be yellow fever. Each ward shall be made mosquito-proof by wire netting over doors and windows, a ceiling of wire netting at a height of seven feet above the floor, and mosquito bars over the beds. There should be no place in it where mosquitoes can seek refuge, not readily accessible to the nurse. Both wards can be in the same building, provided they are separated by a mosquito-tight partition. 5. All persons coming from an infected locality to a post shall be kept under careful observation until the completion of five days from the time of possible infection, either in a special detention camp or in their own quarters; in either case, their temperature should be taken twice a day, during this period of observation, so that those who develop yellow fever may be placed under treatment at the very inception of the disease. 6. Malarial fever, like yellow fever, is communicated by mosquito bites, and, therefore, is just as much of an infectious disease and requires the same measures of protection against mosquitoes. On the assumption that mosquitoes remain in the vicinity of their breeding places, or never travel far, the prevalence of malarial fever at a post would indicate want of proper care and diligence on the part of the Surgeon and Commanding Officer in complying with General Orders No. 6, Department of Cuba, 1900. 7. Surgeons are again reminded of the absolute necessity, in all fever cases, to keep, from the very beginning, a complete chart of pulse and temperature, since such a chart is their best guide to a correct diagnosis and the proper treatment.

High Praise for Senn's Book.

Dr. Juan Redondo, chief surgeon of the Spanish fleet in the Spanish-American War, publishes a long and most flattering review of Dr. Senn's book, "The Medico-Surgical Aspects of the Spanish-American War," in the *Diario de la Marina*, of Madrid, May 6. The following extracts show the high esteem in which the book is held by the reviewer:

"It is very possible that the general sanitary inspections of the war and navy departments of the United States, in their reports and annual statistics, have given a minutely detailed account of the medical happenings of the campaign. But if such works exist, I for my part do not know them, and the truth is that the book of Dr. Nicholas Senn is the first work of this nature truly serious which I have received. * * * He has had opportunities to write a book which, although referring only to the military operations of the Antilles, embraces the matter completely in its military and naval aspect, whose merits I can judge perhaps better than anybody else on account of my being the only Spanish doctor, or may be, of any other nationality, who after fighting in a vessel—and I employ the word in the true sense in which a naval doctor can and should employ it—fought afterwards on land during three months as doctor of the battalion formed with what remained of the crews of an unfortunate fleet. This book which I propose to make known among the medical men of our country's army and navy, if as I hope the author will allow me to translate into Spanish, is edited with an abundance of details and the richness of engravings which Americans use sometimes in this class of work, and artistically considered is a marvel. But high as its value is on this account, its real merit is not there, but in the abundance of matter which it studies, in the multitude of observed facts, in the experiences that can be derived from it, in the highly scientific principles of its author

and in the high and liberal spirit with which all its matters are treated. * * * He does not allow himself to be carried away by unreflecting enthusiasm that breed so many errors with many American writers. As a correct and elegant writer he must have taken special pains not to wound our patriotic sentiments when in a book of nearly 400 pages I only find half a dozen words which could pain us, and which if a second edition were made it would be easy for him to change by others which without altering the sense might lessen the cruelty of the expression. This can be of easy accomplishment, since more than once he calls the conduct of our admirals heroic, praises the devotion of our sailors and soldiers to their chiefs, judges in a very flattering manner the chivalry of the military doctors with whom he became acquainted in Santiago, and praises beyond measure a Spanish military surgeon who in Porto Rico nobly attended an American volunteer who, far from his people, was a victim of sunstroke and found completely abandoned in the field. I congratulate Dr. Senn on having written his interesting book, but may not finish without giving him my opinion, contrary to his, when he sustains a point with which I can not in any way accept. I have nothing to say of the motives his nation has had the first four times she has appealed to the supreme argument of arms, but must protest with all the energy of my soul against his branding as strangers in America those who knew how to give an impulse and bring forth to the realities of life the immense continent which was formerly lost in the farthest solitudes of a tempestuous and unknown ocean, and against his saying that the United States when obliging us to go to war with them were exclusively obeying a sentiment of humanity."

Association News.

Section Papers—Non-Members

To the Editor:—I have received a number of communications from members of the Association in which complaint was made that they could not get an opportunity to read their papers at the recent meeting at St. Paul. We have every reason to believe that the meeting to be held at Saratoga from June 10 to 13, 1902, will be one of the largest in the history of the Association, and that the Sections will at a very early date be filled by members applying for permission to read papers. It is a fact well known that every year certain men read papers before several of the Sections. This is not their fault, since they are invited to do so by different Section officers, but it should be understood that if a man has accepted an invitation in one Section he should not accept an invitation to occupy any time in another Section, and as an act of justice to the larger number I would earnestly call the attention of the chairman of each Section to this matter. I would also ask attention to the necessity of being careful not to permit any names to appear upon the program of the meeting of those who are not members of the AMERICAN MEDICAL ASSOCIATION. If a careful scrutiny is made of the list as the names come before the chairman of each Section, and if in case of doubt in regard to the standing of any applicant, information should be requested from the regular organization of the county in which he resides, the facts could be readily obtained and much embarrassment avoided.

Sincerely yours,

JOHN A. WYETH, President.

Portrait of Dr. N. S. Davis.

Through the courtesy of Mr. Charles S. Raddin, chairman of the Museum and Library Committee, the portrait of Dr. N. S. Davis, painted by Zan D. Klopper, of Chicago, has been loaned to and placed in the Chicago Academy of Sciences, and is labeled as follows: "Portrait of Dr. N. S. Davis, President American Medical Association, 1864-65. Loaned by the Association." Offers to furnish the portraits of other ex-presidents of the Association have been received.

J. R. PENNINGTON,
Chairman of Committee on Portraits of Ex-Presidents.

Minutes of the Sections.

Section on Hygiene and Sanitary Science.

TUESDAY, JUNE 4—AFTERNOON SESSION.

A paper on "State Supervision of Marriage; Its Feasibility, Scope, Justification, Possibilities," by Dr. W. H. Heath, of Buffalo, N. Y., was read by Acting Secretary Dr. J. Neely, of Chicago. It was discussed by Dr. Egbert, of Philadelphia; Dr. Liston H. Montgomery, of Chicago; Dr. Tuckerman, of Iowa; Dr. Ferd C. Valentine, of New York City.

WEDNESDAY, JUNE 5.

"Pulmonary Fearlessness," was read by Dr. William T. English, of Pittsburg.

"Limitation of Venereal Diseases," was read by Dr. Denslow Lewis, of Chicago, and discussed by Dr. Ferd C. Valentine, of New York; Dr. Howard A. Kelly, of Baltimore; Dr. Toper; Dr. Reed, of Wyoming; Dr. Tuckerman; Dr. Egbert; Dr. Fuller, of Iowa; Dr. Shrader; Dr. Montgomery, of Chicago, and closed by Dr. Lewis.

THURSDAY, JUNE 6—MORNING SESSION.

"Tuberculosis in the Middle States, and Its Curability," by Dr. John A. Robison, Chicago, was read by Dr. Montgomery, of Chicago.

"Tuberculosis Sanitaria," by Dr. C. P. Ambler, of Asheville, N. C., was read by Acting Secretary Dr. Neely, of Chicago.

"Tuberculosis of Animals in Some of Its Relations to Human Tuberculosis," was read by Dr. D. E. Salmon, Washington, D. C.

"The Experience of Syracuse, N. Y., with the Compulsory Tuberculin Test of all Dairies Furnishing Milk to the City," was read by Dr. B. S. Moore, Syracuse, N. Y.

"The Climatology of Arizona with Reference to the Treatment of Pulmonary Tuberculosis," was read by Dr. R. W. Craig, Phoenix, Ariz.

"Tuberculosis in Its Relation to the Welfare of the People of the United States in General and Colorado in Particular," by Dr. Wm. M. Danner, of Denver, Colo., was read by Dr. H. M. Bracken, of Minneapolis, Secretary of the Board of Health.

The above papers were discussed by Dr. Houghton, of Detroit, Mich.; Dr. Salmon, of Washington, D. C.; Dr. M. H. Reynolds, St. Anthony Park, Minn.; Dr. Norman Bridge, Los Angeles, Cal.; Dr. H. M. Bracken, Minneapolis, Minn.; Dr. B. S. Moore, Syracuse, N. Y.

Section on Stomatology.

TUESDAY, JUNE 4—3 P. M.

The Section was called to order by the Chairman, R. R. Andrews, Cambridge, Mass., at 3 p. m., in the Ladies' Ordinary of the Hotel Ryan.

Committee on Transactions reported that 1000 copies had been printer at a cost of $159.51, and distributed among dental and medical colleges.

The Committee on Education reported progress.

The president then delivered his annual address.

The regular program was then taken up with a Symposium on State Boards of Dental Examiners in their Relation to the Profession and the Colleges. The first paper was by Wm. Carr, New York City, on the subject of "Methods of Appointment: 1, by State Universities, New York; 2, by State Boards of State Officials ex-officio, Nebraska; 3, by Governors on Recommendation of the Profession." The paper was read by the secretary. Two papers were read by the secretary, for Geo. L. Parmele, Hartford, Conn., and V. E. Turner, Raleigh, N. C., on the subject of "Revenue for Conducting the Work of the Boards of Examiners: 1, by Taxation of the People; 2, by Fees from Examination of Candidates; 3, by Taxation of the Profession." The next paper was by Charles Chittenden, Madison, Wis., "The Dental College Standard: 1, Is it What it should be? 2, If Not, What Improvements should be made? 3, How May the Requirements be Improved?" The last paper on the program was on the subject of "Licensing: 1, by Examination; 2, by Diploma;" by J. A. Libby, Pittsburg, Pa. The papers were discussed by Drs. Talbot, Latham, Nones, Andrews, Dennis, Peck, Keoms and Chittenden.

On motion of Dr. Peck, the Section adjourned until 2 p. m., June 5.

WEDNESDAY, JUNE 5—2 P. M.

Section was called to order by the Chairman.

The following papers were read in a Symposium on Degeneracy of the Pulp: "Preliminary Work," by Eugene S. Talbot, Chicago; "Literature of the Pulp," by Vida A. Latham, Rogers Park, Ill.; "Cutting, Staining, and Mounting," by Martha Anderson, Moline, Ill. The symposium was discussed by Drs. R. R. Andrews, G. V. I. Brown, E. S. Talbot, and Vida A. Latham.

Dr. Alice Steeves, for the Nominating Committee, reported the following nominations for officers of the Section for the ensuing year: Chairman, A. H. Peck, Chicago; Secretary, Eugene S. Talbot, Chicago. Members House of Delegates, G. V. I. Brown, Milwaukee; and A. E. Baldwin, Chicago.

A paper on "Infectious Diseases" was read by Dr. Alice Steeves, Chicago, and was discussed by Drs. Latham, Bush, Carpenter, Baldwin, Kiernan, Brown, Andrews and Steeves.

"Periods of Stress and their Dental Marks" was the subject of a paper by Dr. Jas. G. Kiernan, Chicago. The paper was discussed by Drs. Talbot, Latham, Brown and Kiernan.

Dr. G. V. I. Brown, Milwaukee, read a paper on "Surgical Treatment of Cleft Palate." It was discussed by Drs. Kiernan, Wylis, Carpenter and Brown.

THURSDAY, JUNE 6.

Section was called to order at 2 p. m., by the chairman.

The first paper was by M. H. Fletcher, Cincinnati, on "The Tongue as a Breeding Place for Bacteria." The paper was read by the secretary, and was discussed by Drs. Talbot, Brown and Baldwin.

"Military Dental Practice; its Modifications and Limitations," by Henry D. Hatch, New York City, and read by Dr. Baldwin. The subject was discussed in a paper by Dr. John S. Marshall, of Washington, read by the secretary. The paper was also discussed by Drs. Brown, Baldwin, Lyon, Orton, Chittenden Weirick, Latham, Talbot and Andrews.

Dr. G. V. I. Brown, Milwaukee, offered the following resolution, which on motion was unanimously adopted:

Resolved, That the secretary be instructed to write to Dr. John S. Marshall conveying to him the congratulations of this body upon his appointment, upon his paper and upon the excellent manner in which the committee has laid out the preliminary work it has undertaken, and assure him of our earnest support in that work.

"Simple Gingivitis" was the subject of a paper by Dr. Geo. T. Carpenter, of Chicago, and was discussed by Drs. Brown, Talbot, Latham, Baldwin, Carpenter and Andrews.

Adjourned *sine die*.

Section on Nervous and Mental Diseases.

TUESDAY, JUNE 4—AFTERNOON SESSION.

The meeting was called to order by Dr. H. A. Tomlinson, of St. Peter, Minn., Chairman.

Address of Chairman.

"Etiology of Paretic Dementia," by Dr. Frank P. Norbury, of Jacksonville, Ill. Discussion by Drs. Harold N. Moyer, of Chicago; E. G. Carpenter, of Columbus; Richard Dewey, of Wauwatosa, Wis.; Sidney Kuh, of Chicago; E. E. Mayer, of Pittsburg, and H. A. Tomlinson, and Frank P. Norbury.

"Symptomatology of Cerebral Hemorrhage" was read by Dr. F. Savary Pearce, of Philadelphia. Discussion by Drs. Hugh T. Patrick, of Chicago; F. W. Langdon, of Cincinnati; John Punton, of Kansas City; W. A. Jones, of Minneapolis; E. G. Carpenter, of Ohio, and F. Savary Pearce.

"What Can Be Done for the Epileptic in a Medical Way?" was read by Dr. R. H. Porter, of Chicago. Discussed by Drs. Lambert Ott, of Philadelphia; John Punton, of Kansas City; Hugh T. Patrick, of Chicago; C. Eugene Riggs, of St. Paul; Dr. Sexton, of Kansas City; F. Savary Pearce, of Philadelphia; E. E. Mayer, of Pittsburg; Warner, and Drew, of Massachusetts, and R. N. Porter, in closing.

WEDNESDAY, JUNE 5—AFTERNOON SESSION.

"The Treatment of the Acute Psychoses in Private Practice" was read by Dr. C. Eugene Riggs, of St. Paul, Minn. Discussion by Drs. Richard Dewey, of Wisconsin; John Punton, of Kansas City; Frank P. Norbury, of Jacksonville, Ill.; C. A. Drew, of Massachusetts; O. Everts, of Cincinnati; J. G. Biller, of Cherokee, Iowa; F. W. Langdon, of Cincinnati; M. B. Sexton, of Kansas City; F. Savary Pearce, of Philadelphia; Harold N. Moyer, of Chicago; H. A. Tomlinson, of Minnesota; James G. Kiernan, of Chicago, and E. Riggs, in closing.

A Symposium on Syphilis of the Brain consisted of "Nervous Manifestations," by Dr. Hugh T. Patrick, of Chicago; "The Psychosis in Cerebral Syphilis," by Dr. Richard Dewey, of Wauwatosa, Wis.; and "Syphilis of the Nervous System; Its General Pathology, with Remarks on Treatment," by Dr. F. W. Langdon, of Cincinnati. Discussion by Drs. C. B. Burr, of Flint, Mich.; H. D. Valin, of St. Peter, Minn.; E. G. Carpenter, of Columbus; John Punton, of Kansas City; E. E. Mayer, of Pittsburg; Sydney Kuh, of Chicago; Frank P. Norbury, of Illinois; and closed by Drs. Dewey and Langdon.

"Suggestions for Lessening the Frequency of Relapse After Treatment for Morphinism," was read by A. J. Pressey, of Cleveland, and discussed by Drs. T. D. Crothers, of Hartford, Conn.; John Punton, of Kansas City; Frank P. Norbury, of Illinois; Lambert Ott, of Philadelphia; and A. J. Pressey, in closing.

"Injuries, Feigned and Real, with Their Differentiation and Medicolegal Aspect," was read by Lambert Ott, of Philadelphia, and discussed by Drs. Harold N. Moyer, of Chicago; Leo M. Crafts, of Minneapolis; Richard Dewey, of Wisconsin; J. G. Biller, of Iowa; Herman Gasser, of Platteville, Wis.; F. Savary Pearce, of Philadelphia; Dr. Leaming, of Chicago, and closed by Dr. Ott.

On motion of Dr. Frank P. Norbury, a message of sympathy was sent to Dr. J. T. Eskridge, of Denver, Colo., who was detained at home by illness.

THURSDAY, JUNE 6—MORNING SESSION.

"Treatment of Neurasthenia" was read by J. G. Biller, of Iowa, and discussed by Drs. Hugh T. Patrick, of Chicago; McBride, of California; John Punton, of Kansas City; C. Eugene Riggs, of St. Paul; Harold N. Moyer, of Chicago; F. Savary Pearce, of Philadelphia; H. A. Tomlinson, and J. G. Biller.

"The Psychoses of Chorea" was read by Dr. Harold N. Moyer, of Chicago, and discussed by Drs. Riggs, of St. Paul; E. G. Carpenter, of Ohio; Edward E. Mayer, of Pittsburg; and John Punton, of Kansas City.

"Three Cases of Paralysis of the Serratus Magnus and the Trapezius: Alar Scapula," was read by Dr. Augustus A. Eshner, of Philadelphia, and discussed by Dr. Pearce, of Philadelphia.

"Mirror Writing and Inverted Vision" was read by Dr. Albert B. Hale and Sydney Kuh, of Chicago, and discussed by Drs. Sweeney, of St. Paul; Richard Dewey, of Wisconsin; Herman Gasser, of Wisconsin; and S. Kuh, in closing.

THURSDAY, JUNE 6—AFTERNOON SESSION.

"Ten Cases of Acute Infectious Multiple Neuritis" was read by Dr. W. A. Jones, of Minneapolis, and discussed by Drs. Patrick, of Chicago; H. N. Moyer, of Chicago; and W. A. Jones, in closing.

"Fear as an Element of Nervous Diseases, and Its Treatment," was read by Dr. John Punton, of Kansas City. "A Case of Localized Amnesia, with Remarks Thereon," was read by Dr. Edward E. Mayer, of Pittsburg. Discussion by Drs. T. D. Crothers, of Hartford; McBride, of California; Riggs, of St. Paul; Moyer, of Chicago; Jones, of Minneapolis; Pearce, of Philadelphia; and Mayer.

"Dementia Following Inebriety" was read by T. D. Crothers, of Hartford, and discussed by Drs. C. A. Drew, of Massachusetts, and T. D. Crothers, closing the discussion.

"The Importance of Heredity as a Cause of Insanity" was read by Dr. Arthur McGugan, of Michigan, and discussed by Drs. Mayer, of Pittsburg; Dewey, of Wisconsin; Crothers, of Connecticut; Drew, of Massachusetts; Drayton, of New York; Joseph F. Robinson, of Nevada, Mo.; Pearce, of Philadelphia; Tomlinson, and McGugan.

The Chairman announced that under the provisions of the reorganization scheme it becomes necessary for each Section to elect two delegates. This must be done at this session, as the House of Delegates will convene at the beginning of the next meeting of the Association.

Dr. Hugh T. Patrick, of Chicago, said it was designed that the retiring Chairman should be one of the two delegates. Moved and carried that the Chairman be selected as a Delegate.

Dr. W. A. Jones, of Minneapolis, moved that the selection of the second Delegate be left to the Nominating Committee. Carried.

Report of the Nominating Committee: Dr. Patrick, the Chairman of the Nominating Committee, reported that Dr. J. T. Eskridge, of Denver, had been selected as Chairman for the next year. As Dr. Eskridge is in poor health, and may not be able to attend the meeting on that account, Dr. Richard Dewey, of Wauwatosa, Wis., had been selected as Alternate. Secretary, Dr. F. Savary Pearce, of Philadelphia.

It was moved and seconded that the report of the Nominating Committee be accepted. Carried.

Dr. Harold N. Moyer, of Chicago, was selected as the second member of the House of Delegates, to serve for two years.

"Persistent Brachial Neuralgia from Hypodermic Injection—Incipient Amyotrophic Lateral Sclerosis, with Recovery," was read by Dr. Leo M. Crafts, of Minneapolis.

Section on Cutaneous Medicine and Surgery.

FIRST DAY, JUNE 4.

Address of Chairman, W. L. Baum, on "Ancient and Modern Conceptions of Syphilis."

"Pathology and Treatment of Cutaneous Cancer, with Special Reference to Its Non-Parasitic Nature," was read by Dr. M. L. Heidingsfeld. It was discussed by Drs. W. T. Corlett, W. A. Pusey, E. L. Schmidt, Joseph Zeisler, Burnside Foster, D. W. Montgomery, D. Lieberthal, C. W. Allen, A. W. Brayton, and M. L. Heidingsfeld.

"Syphilis and Its Relations to Blastomycetic Dermatitis" was read by Dr. Henry G. Anthony. It was discussed by Drs. J. Nevins Hyde, F. H. Montgomery, Joseph Zeisler, A. W. Brayton, R. R. Campbell, M. Herzog, F. H. Montgomery, and H. G. Anthony.

"Notes on a Case of Keratosis Follicularis (Porospermosis)" was read by Dr. Joseph Zeisler, and discussed by Dr. F. H. Montgomery.

The Chairman appointed as Nominating Committee, Drs. Corlett, of Cleveland; Anthony, of Chicago; and Sumney, of Omaha.

It was moved and carried that the Chairman appoint a committee of three to draft a Constitution and By-Laws for the Section, to be reported at the next annual meeting. Carried.

SECOND DAY, JUNE 5.

Dr. Burnside Foster, of St. Paul, presented a Case of Lupus Erythematosis, One of Congenital Nevus Pigmentosus. He also reported a case of Leprosy in a man who had never been outside of Minnesota. These cases were discussed by Drs. Zeisler, D. W. Montgomery, Corlett, Bulkley, Schuler, and Frick.

The Nominating Committee reported Henry W. Stelwagon, of Philadelphia, for Chairman, and R. R. Campbell, of Chicago, for Secretary. Elected by unanimous vote.

"Lantern Slide Demonstration on Skin Cancer," by Dr. M. L. Heidingsfeld, of Cincinnati, was discussed by Drs. F. H. Montgomery and J. Nevins Hyde.

J. Nevins Hyde and F. H. Montgomery demonstrated "Blastomycosis of the Skin" with lantern slides. Discussion was by Dr. Joseph Zeisler, Chicago.

Dr. W. T. Corlett, of Cleveland, demonstrated, by lantern slides, "The Exanthemata." Dr. S. Pollitzer, New York City, read a paper on "Smallpox."

Dr. David Lieberthal, of Chicago, discussed "Phototherapy in Cutaneous Medicine."

A paper by Dr. L. E. Schmidt, of Chicago, on "Epidermolysis Bullosa Hereditaria," was discussed by Drs. M. L. Heidingsfeld and F. H. Montgomery.

A paper on "Epithelioma of Long Duration," by Dr. William Frick, of Kansas City, was discussed by Drs. M. L. Heidingsfeld and Anthony.

THIRD DAY—JUNE 6.

A paper on "Rhinoscleroma," was read by Dr. Charles Warrenne Allen (by invitation), New York City, and discussed by Drs. J. Nevins Hyde, and D. Lieberthal, of Chicago; Hall, of Kansas City, and Charles W. Allen.

Drs. Charles W. Allen, of New York City, and W. L. Baum, of Chicago, were elected delegates to the House of Delegates.

Dr. David Lieberthal read a paper on "Lichen Hypertrophicus." It was discussed by Drs. Wm. Frick, Kansas City; Charles W. Allen, New York City; D. W. Montgomery, San Francisco; H. G. Anthony, Chicago; W. T. Corlett, Cleveland; L. Duncan Bulkley, New York City; R. R. Campbell, Chicago; H. C. Sumney, Omaha; M. L. Heidingsfeld, Cincinnati, and D. Lieberthal, Chicago.

A paper on "Notes on Recent Cases of Extra-genital Chancre," was read by Dr. L. Duncan Bulkley, New York City, and discussed by Drs. Baldwin, Chicago; E. L. Schmidt, Chicago; Montgomery, San Francisco; Charles W. Allen, New York City; R. R. Campbell, Chicago; D. Lieberthal, Chicago; W. T. Corlett, Cleveland, and L. Duncan Bulkley.

A case of dermatitis herpetiformis, in a physician, was demonstrated.

The Section adjourned *sine die*.

Section on Laryngology and Otology.

TUESDAY, JUNE 4—AFTERNOON SESSION.

The Section was called to order at 2:30 p. m.

There being no committees to report, the first order of business was the "Address of Chairman," by Dr. John N. Mackenzie, of Baltimore, Md.

Two members of the Executive Committee being absent, the Chairman appointed two members to fill the vacancies. The Committee was then as follows: Emil Mayer, of New York City; W. E. Casselberry, of Chicago, and J. E. Logan, of Kansas City, Mo.

The Chairman stated that the reading of papers would be limited

to twenty minutes and discussions to five minutes, and that papers not present when called would be deferred until all papers on the program for the session were called, and if not reached would then take their place at the end of a succeeding session.

The Chairman appoluted Dr. C. M. Cobb, of Lynn, Mass., on the Banquet Commlttee.

"The Treatment of Laryngitis" was read by Dr. O. T. Freer, of Chicago, and discussed by Drs. E. Fletcher Ingals, of Chicago; Robert Levy, of Denver, and the Essayist.

"Edematous Laryngitis, with Report of Case," was read by Dr. J. S. Gibb, of Philadelphia.

"Total Extirpation of Thyroid Gland" was read by Dr. G. F. Cott, of Buffalo, and discussed by Dr. J. Holinger and the Essayist.

The Chair appolnted the following Nominating Committee: E. Fletcher Ingals, of Chicago; S. E. Solly, of Colorado Springs, and Emil Mayer, of New York City.

WEDNESDAY, JUNE 5—MORNING SESSION.

The first paper read was "Types of Membranous Pharyngitis," by Dr. W. E. Casselberry, of Chicago. It was discussed by Drs. Emil Mayer, of New York City; B. R. Shurly, of Detroit; Emil Amberg, of Detroit; J. Holinger, of Chicago, and the Essayist.

"The Relation of the Middle Turbinate Body to Chronic Nasal Diseases" was read by Dr. C. S. Baker, of Bay City, Mich., and discussed by Drs. J. F. Barnhill, of Indianapolis; W. E. Casselberry, of Chicago; G. O. Woolen, of Indianapolis; C. M. Cobb, of Lynn, Mass.; D. A. Kuyk, of Richmond, Va.; E. Fletcher Ingals, of Chicago; Emil Mayer, of New York City; J. Holinger, of Chicago, and the Essayist.

"Asthma as a Result of Nasal Conditions: Treatment, etc.," was read by Dr. J. A. Farren, of Chicago, and discussed by Drs. G. N. Jack, of New York; J. F. Barnhill, of Indianapolis, and Farren, in closing.

"An Unusual Anomaly Affecting the Faucial Tonsil," by Dr. George L. Richards, of Fall River, Mass., was read by Dr. C. M. Cobb, of Lynn, Mass. "The Effect which the so-called Catarrhal Disease of the Nose and Throat may have upon the General Health" was read by Dr. C. M. Cobb, of Lynn, Mass., and the papers by Drs. Richards and Cobb were discussed by Drs. W. E. Casselberry, of Chicago; G. O. Woolen, of Indianapolis; L. C. Cline, of Indianapolis; D. Roy, Atlanta; D. A. Kuyk, of Richmond, Va.; O. T. Freer, of Chicago; J. A. Farren, of Chicago, and C. M. Cobb, in closing.

WEDNESDAY, JUNE 5—AFTERNOON SESSION.

The Section members convened at 2:15 p. m.

The report of the Nomluating Committee was received through Dr. Emil Mayer, recommending as officers of the Section: Dr. G. Hudson Makuen, of Philadelphia, as Chairman, and Dr. J. F. Barnhill, of Indianapolis, as Secretary. On motion, the Secretary cast the ballot of the Section for the election of the officers named.

On motion by Dr. E. Fletcher Ingals, of Chicago, the Section proceeded to the election of a Committee on Nominations. The following nominations of committeemen were made: Drs. E. Fletcher Ingals, of Chicago; W. E. Casselberry, of Chicago; O. T. Freer, of Chicago; C. M. Cobb, of Lynn, Mass.; S. Johnston, of Baltimore.

The Chair appointed as tellers Drs. Dickerman and Jackson. On the first ballot Drs. Ingals and Cobb were declared elected. There was a tie vote between Drs. Casselberry and Johnston. Drs. Casselberry and Johnston withdrew their names, and Dr. Casselberry nominated Dr. G. Hudson Makuen, of Philadelphia. On motion the Secretary cast the ballot of the Section for the election of Dr. Makuen.

"Empyema of the Frontal Sinus" was read by Dr. E. Fletcher Ingals, of Chicago. "Anomalies of the Frontal Sinus and their bearing on Chronic Suppurative Sinusitis," by Dr. Redmond W. Payne, of San Francisco. The papers by Drs. Ingals and Payne were discussed by Dr. Edward T. Dickerman, of Chicago, and closed by Drs. Ingals and Payne.

"Carcinoma of the Naso-Pharynx" was read by Dr. Chevaller Jackson, of Pittsburg, Pa.; "Sarcoma of Nasal Passages, with Report of Cases," by Dr. Dunbar Roy, of Atlanta, Ga.

Dr. E. Fletcher Ingals, of Chicago, reported, for the Committee on Nomination, the following nominations for members of the Nominating Committee: Drs. Emil Mayer, of New York City; George C. Stout, of Philadelphia; W. E. Casselberry, of Chicago; J. E. Logan, of Kansas City, and E. T. Dickerman, of Chicago. On ballot the following were elected a Nominating Committee: Dr. Emil Mayer, of New York City, for two years, and Dr. George C. Stout, of Philadelphia, for one year.

"Case of Epithelioma Involving the Tonsil, Faucial Pillar, Tongue and Buccal Surface, with Treatment and apparent Cure," was read by Dr. S. A. Oren, of Lanark, Ill. The papers by Drs. Jackson, Roy and Oren were discussed by Drs. O. T. Freer, of Chicago; John N. Mackenzie, Baltimore; C. N. Cobb, of Lynn, Mass.; J. Holinger, of Chicago, and Jackson, Roy and Oren, in closing.

"The Changes in the Facial Bones due to Adenoids" was read by Dr. A. T. Mitchell, of Vicksburg, Miss.

"A modified Leiter apparatus for the ear" was exhibited by Dr. Emil Amberg, of Detroit.

THURSDAY, JUNE 6—MORNING SESSION.

The members convened at 9:30 a. m.

"The Diagnosis and Treatment of Mastolditis" was read by Dr. E. B. Dench, of New York City, and discussed by Drs. J. Holinger, of Chicago; Redmond Payne, of San Francisco; Emil Amberg, of Detroit; S. A. Oren, of Lanark, Ill.; Hiram Woods, Jr., of Baltimore; Sherman, of Cleveland; C. M. Cobb, of Lynn, Mass.; J. F. Barnhill, of Indianapolis; A. E. Prince, of Springfield; Camden, of Detroit; C. H. Baker, of Bay City; D. A. Kuyk, of Richmond; Robert Levy, of Denver; Brownell, of New York, and Dench, in closing.

"Mastoldltis after Subsidence and without Recurrence of Tympanic Disease," was read by Dr. Hiram Woods, Jr., of Baltimore, and discussed by Drs. E. B. Dench, of New York City; H. Harlan, of Baltimore; Emil Amberg, of Detroit; George C. Stout, of Philadelphia; Cornelius Williams, of St. Paul, and Woods, in closing.

On motion by Dr. D. A. Kuyk, of Richmond, Va., the Secretary of the Section was instructed to send out requests for laryngologic and otologic specimens for the pathologic exhibit at the next meeting.

THURSDAY, JUNE 6—AFTERNOON SESSION.

The members convened at 2:30 p. m.

"Report of Case of Unusual and Interesting Tertiary Manifestations" was read by Dr. G. Hudson Makuen, of Philadelphia, and discussed by Drs. W. E. Casselberry, of Chicago; G. C. Stout, of Philadelphia, and Makuen, in closing.

A microscopic specimen was presented by Dr. J. Holinger, of Chicago, illustrating spongifying of the capsule of the labyrinth (sclerosis). It was discussed by Dr. C. M. Cobb, of Lynn, Mass.

The Section then adjourned *sine die*.

Section on Materia Medica, Pharmacy and Therapeutics.

TUESDAY, JUNE 4—AFTERNOON SESSION.

Chairman, Dr. N. S. Davis, Jr., called Section to order at 2 p. m

In the absence of Dr. J. M. Upshur, the Secretary, Frank Woodbury, of Philadelphia, was elected Secretary. Dr. A. B. Lyons offered motion of sympathy to Dr. Upshur in his illness, which was carried.

The Chairman appointed Drs. Hallberg, G. F. Butler and Jas. G. Kiernan to represent the Section in General Executive Committee.

Dr. W. Byron Coakley, of Chicago, read a paper on "Experimental Work in Intra-organic and Venous Injections and Blood Extracts in the Cure of Acute Organic Diseases." Dr. O. T. Osborne, New Haven, read a paper on "Therapeutic Indications Presented by the Conditions of the Blood in Disease." Discussion of both papers combined, by Coakley and Osborne.

Dr. John H. Musser, of Philadelphia, made a communication on "Chronic Myocarditis." Discussion by Drs. Henry Beates, S. E. Solly, O. F. Osborne, W. W. Tompkins, and Musser.

Dr. Heinrich Steru, New York, read a paper on "Treatment of Obesity."

Dr. Harold N. Moyer read a paper on "Treatment of Neurasthenia." Discussion by Drs. Shelly, Stern, Putney and Moyer.

On motion, the Chair appointed Nominating Committee: A. B. Lyons, of Detroit; O. T. Osborne, of New Haven; J. M. Dodsou, of Chicago.

WEDNESDAY, JUNE 5—MORNING SESSION.

Dr. F. T. Wahrer, of Fort Madison, read a paper on "A Plea for More Uniformity and Strength in Our Armamentarium." Dr. A. B. Lyons, of Detroit, read a paper on "Standardization of Crude Drugs and Galenical Preparations." Discussion by Drs. Hallberg, Walling, Wilson, Dickerson, and the Chairman.

The Chair read a communication from the American Pharmaceutical Association, announcing names of Delegates to this Section: F. J. Walling, E. Floyd Allen, Wm. A. Frost, Charles T. Hiller, Saul F. Boyce, A. B. Prescott, E. M. Houghton, F. E Stewart, S. E. Jelliffe, H. K. Mulford, H. R. Slack, C. H. G. Klie, F. S. Hereth, W. M. Sempill, G. M Beninger, C. S. N. Hallberg. On motion these delegates were invited to take part in the discussion and become members of Section for this meeting.

WEDNESDAY, JUNE 5—AFTERNOON SESSION.

Dr. S. E. Solly, of Colorado Springs, made a communication entitled "Indication for and Utility of Altitude Treatment of Pulmonary Tuberculosis." Dr. Norman Bridge, Los Angeles, read a paper on "Adaptability of Southern California and Similar Climates to the Needs of Consumptives." Dr. A. Burroughs, Asheville, read report on "Nineteen Years' Experience with Creosote in Tuberculosis." Dr. Arnold C. Klebs, Chicago, read a paper on "Specific Therapeutics in Pulmonary Tuberculosis." Dr. Norman Bridge read a paper on "Proper Management of the Tuberculous Lung." Discussion by Drs. Rochester, Bonney, Miner, More, Solly, Bridge and Hallberg.

Dr. DeLancey Rochester, of Buffalo, read a paper on "Treatment of Lobar Pneumonia." Dr. L. Dickerson, of St. Louis, on "The Abortion Treatment of Pneumonia; a Plea for the Use of Cardiac Depressants in the Treatment of the Congestion Stage of Pneumonia." Discussion by Drs. Rochester, Dickinson, Spilman, More, Caston, McCoy, Hawkins, and Chairman.

The report of the Nominating Committee was presented, naming Drs. G. F. Butler, of Alma, Mich., for Chairman, and Dr. C. N. Hallberg, of Chicago, for Secretary. On motion the report was adopted and candidates unanimously elected.

THURSDAY, JUNE 6—MORNING SESSION.

Dr. Boardman Reed, of Philadelphia, read a paper on "Influence of Certain Common Remedies upon Gastric Functions." Dr. Gustav Fuetterer, of Chicago, read a paper on "Treatment of Gastric Ulcer." Dr. Charles G. Stockton, of Buffalo, read a paper on "Treatment of Gastric Hyperesthesia." Discussion by Drs. Herrick, Tompkins, Fuetterer, Osborne, Johnson, Stern, McCoy, Westbrook, McCrae, Reed, and Stockton.

THURSDAY, JUNE 6—AFTERNOON SESSION.

On motion the Chairman was authorized to name the two representatives of this Section in the House of Delegates. The following members were appointed delegates from Section on Materia Medica, Pharmacy and Therapeutics: Drs. O. T. Osborne, of New Haven, and A. B. Lyons, of Detroit.

In the absence of the author, an abstract of a paper on "Theory and Practice of Organotherapy," by Dr. Solomon Solls-Cohen, of Philadelphia, was read by the Secretary. Dr. Sidney Kuh, of Chicago, read a paper on "Akromegaly Treated with Pituitary Body." Dr. John M. Dodson, Chicago, read the report of a case of "Treatment of Graves' Disease with Thymus Extract." Discussed by Drs. Osborne, Boardman Reed, Davis, Woodbury, Shelly, Vaughan, Stern, Kuh and Dodson.

Dr. E. F. Houghton, of Detroit, read a paper on "Pharmacology of the Suprarenal Gland and a Method of Assaying Its Products." Dr. Jokichi Takamine, of New York, read a paper on "The Active Principle of Suprarenal Glands." Discussed by Drs. Vaughan, Stern, Reed, Dodson, Houghton and Takamine.

A communication from the Business Committee was presented by Drs. Billings and Bridge relative to consolidating the Section. Dr. Osborne moved that this Section be divided and the part of Therapeutics and Pharmacy be transferred to the Section on Practice, and the Materia Medica be consolidated with Physiology and Pathology. On motion the Chairman appointed a committee

cons sting of Drs. Osborne and Lyons, to confer with the members of the Section on Physiology and Pathology to determine upon the officers of the combined Sections for the next meeting.

A vote of thanks was passed to the officers of the Section for the efficient and faithful performance of their duties.

The Section adjourned *sine die.*

Section on Physiology and Dietetics.

FIRST DAY—JUNE 4.

The meeting was called to order by Dr. W. S. Hall, of Chicago, in the absence of the Chairman.

Two vacancies in the Executive Committee were filled by the appointment of Dr. Charles Hazen, of Virginia, to fill the unexpired term of Dr. Randall Hunt, of Shreveport, La.; and of Dr. R. Harvey Cook, of Ohio, to take the place of Dr. James Weir, Jr., of Owensboro, Ky.

Communications were received from the General Executive Committee of the Association to meet with the Committee on Reorganization at 3 p. m.; and to meet the General Executive Committee each day at 5 p. m. for the general business of the Association.

The advisability of a fusion with the Section on Pathology and Bacteriology was considered and the Executive Committee directed to confer with the Executive Committee of the Section on Pathology and Bacteriology with this end in view for 1902.

Owing to the absence of two members on the program for papers, a motion to combine the programs of June 4 and 5 was carried, and the Section dismissed to meet at 2 p. m., June 5.

SECOND DAY—JUNE 5.

Section was called to order, in the absence of the Chairman, by Dr. Winfield S. Hall, of Chicago.

Dr. Hall moved that owing to the impossibility of Dr. Lee attending the meeting, Dr. Charles M. Hazen be elected Chairman for the balance of the St. Paul meeting. The motion was carried.

Dr. Hall reported that pursuant to the action of the previous day, the Executive Committee of the Section had met the Executive Committee of the Section on Pathology and Bacteriology in the interest of fusing the two Sections; and that the two committees were very easily brought to a common understanding as to how this fusion should be brought about. The members of these two committees being members of the General Executive Committee, yesterday recommended that the fusion be made, to take effect in 1902. The Section on Pathology and Bacteriology is to grant to the Section on Physiology and Dietetics one member from that Section on the Executive Committee. They accord to the physiologists the Chairman every third year; and to the pathologists and pharmacologists the other two years.

It was moved that the Chairman and Secretary represent the Section on Physiology and Dietetics in conference with the Nominating Committee of the Section on Pathology and Bacteriology to see that the physiologists shall be represented in their Executive Committee, and in the offices of the new amalgamated Section. Carried.

Dr. Hall reported that it had been proposed to him to include also in this fusion the pharmacologists so that the whole field of experimental medicine might be grouped in one section.

Dr. Winfield S. Hall read a paper on "The Evaluation of Anthropometric Data," and was discussed by Drs. John Madden, of Milwaukee, and H. S. Drayton, of New York City. Dr. Hall closed the discussion.

Dr. John Madden, of Milwaukee, read a paper on "The Education of the Degenerate—A Physicobiologic Study." It was discussed by Drs. Winfield S. Hall, of Chicago; H. S. Drayton, of New York City; James Putney, of Charleston, and John Madden, in closing.

Dr. H. S. Drayton, of New York City, read a paper on "The Nervous Relation in Diseases of the Nutritive System." It was discussed by Drs. W. S. Hall, of Chicago, and H. S. Drayton, in closing.

A paper entitled "Isolation of the Active Principles of the Suprarenal Gland—A Review of the Work," by Dr. T. B. Aldrich, of Detroit, was read by Dr. E. M. Houghton, of Detroit.

On motion, Dr. L. Duncan Bulkley, of New York City, and Dr. R. Harvey Cook, of Oxford, Ohio, were elected to represent the Section on Physiology and Dietetics in the House of Delegates, and Dr. John Madden, of Milwaukee, as alternate.

THIRD DAY—JUNE 6.

Dr. D. E. Salmon, of Washington, D. C., read a paper on "Food Products from Diseased Animals." It was discussed by Drs. Chas. M. Hazen, of Richmond, Va.; Winfield S. Hall, of Chicago; David Paulson, of Chicago; R. Harvey Cook, of Oxford, Ohio, and Salmon, in closing.

A paper, "Living on Bread," by Dr. Alexander Haig, London, Eng., was read by the Secretary, and discussed by Drs. Winfield S. Hall, of Chicago; David Paulson, of Chicago, and R. O. Beard, of Minneapolis.

The Secretary was directed to write a note of thanks to Dr. Haig for his paper.

"The Teaching of Practical Dietetics in Medical Schools" was read by Dr. R. O. Beard, of Minneapolis, and discussed by Drs. Winfield S. Hall, of Chicago; Stewart, of Michigan, and C. M. Hazen, of Richmond, and Dr. R. O. Beard, in closing.

A paper on "Ponto-Bulbar Heat Center," by Dr. Edward T. Reichert, of Philadelphia, was read by the Secretary, and discussed by Dr. Beard, of Minneapolis.

The Section adjourned *sine die.*

Section on Pathology and Bacteriology.

TUESDAY, JUNE 4—AFTERNOON SESSION.

The Section was called to order by the Chairman.

Address by the Chairman, Ludvig Hektoen, of Chicago.

The following papers were read: "Effect of Direct, Alternating and Tesla Currents and X-rays on Bacteria," by F. Robert Zeit, of Chicago; "Demonstration of Specimens, Slides and Photomicrographs of Uretero-Intestinal Anastomosis," by F. Robert Zeit, of Chicago; "Demonstration of the Van Gehuchten-Nelis Histologic Reaction for Hydrophobia and Remarks on Hydrophobia in Ohio," by A. P. Ohlmacher, of Gallipolis, Ohio; "Carcinoma of the Lung," by E. R. Le Count, of Chicago; "The Influence of Structure and Locality on Pathological Processes," by J. S. Foote, of Omaha, Neb.

It was moved by Dr. Stengel, duly seconded, that the Chairman appoint a Nominating Committee. Carried.

The Chair appointed as such Committee Drs. W. A. Evans, Frank B. Wynn, and Joseph McFarland.

It was moved by Dr. Stengel, duly seconded, that the matter of consolidating the Sections on Pathology and Bacteriology and Physiology and Dietetics be referred to the Executive Committee, with the recommendation of favorable action thereon. Carried.

On motion of Dr. Wells, duly seconded, Dr. Ohlmacher was made a member of the Executive Committee, vice Dr. W. G. Spiller, absent.

WEDNESDAY, JUNE 5—MORNING SESSION.

Section called to order by the Chairman.

The following papers were read: "The Endothelial Cells in Acute and Chronic Infections," by E. R. Le Count, of Chicago; "The Mast Cells in Acute and Chronic Infections," by Herbert U. Williams, of Buffalo (by invitation). The papers were discussed by Drs. Wells, of Chicago, and H. D. Vallens, of St. Peter. "Some Studies of Venoms and Antivenin" was read by Joseph McFarland, of Philadelphia.

WEDNESDAY, JUNE 5—AFTERNOON SESSION

Section called to order by the Chairman.

The Nominating Committee submitted the following report, and, on motion of Dr. Herzog, the same was adopted: Chairman, Frank B. Wynn, of Indianapolis; Secretary, W. T. Howard, of Cleveland. For Executive Committee: Terms to expire in 1902, A. Stengel, of Philadelphia; term to expire in 1903, W. S. Hall, of Chicago; term to expire in 1904, Ludvig Hektoen, of Chicago.

On motion of Dr. W. T. Howard, duly seconded, the General Executive Committee of the Association was urged to recommend to appropriate $500 to cover the expenses of a pathological exhibit at the meeting of 1902.

"Primary Sarcoma of the Esophagus and Stomach," was read by W. T. Howard, Cleveland, and discussed by Dr. Le Count, and, in closing, by Dr. Howard.

"A Study of a Fetal Stomach, with Special Reference to the Origin of Acid-Secreting Cells," by W. A. Evans and William Becker, Chicago.

"Report of a Case of Primary Carcinoma of the Appendix, and a Case of Lymphosarcoma of the Intestine, with a Discussion of the Etiology of the Latter," by S. M. White, Minneapolis.

"Isolation of Bacillus Typhosus from Unusual and Interesting Localization," by O. M. McDaniel, Minneapolis. Discussion was by Drs. Herzog and Westbrook.

"Notes on the Bacteriology and Morbid Histology of Cerebrospinal Meningitis," was read by L. B. Wilson, Minneapolis, and discussed by Dr. Hall.

"On the Growth of Epithelium," was read by Leo Loeb, Chicago, and discussed by Dr. Le Count.

THURSDAY, JUNE 6—MORNING SESSION.

Section called to order by Dr. Howard, in the absence of the Chairman.

Secretary-elect Howard presented his resignation as Secretary for the ensuing year, and, on motion of Dr. Stengel, the resignation was accepted.

On motion of Dr. Stengel, Dr. Joseph McFarland, of Philadelphia, was elected Secretary for the ensuing year.

The Secretary presented a bill of $184.45 for carpenter work, etc., in the pathological exhibit, and on motion of Dr. Stengel, duly seconded, the bill was referred to the Local Committee, with a demurrer as to the amount thereof.

"On the Nature and Significance of Granular Degeneration of Red Corpuscles," by Alfred Stengel, Philadelphia.

"Study of an Epidemic Among Guinea Pigs in the Laboratory," by Victor C. Vaughan, Ann Arbor, Mich.

"The Influence of Boric Acid and Borax on Milk Bacteria," by Wm. H. Veenboor, Ann Arbor, Mich.

"The Influence of Formaldehyde on Milk Bacteria," by Victor C. Vaughan, Ann Arbor, Mich.

Specimens of annular pancreas were exhibited by Dr. Edward F. Wells, of Chicago, for Dr. Theo. Tieken.

On motion of Dr. McFarland, duly seconded, the following members were elected as delegates to the House of Delegates: For one year, Dr. Alfred Stengel, Philadelphia, and for two yars, Dr. Wm A. Evans, Chicago.

On motion of Dr. Ohlmacher, Dr. Charles Hazen, of Richmond, Va., was duly elected Treasurer of the Section.

On motion of Dr. Wynn, Physiology and Pathology was adopted as the title of the consolidated Sections.

The Section adjourned *sine die.*

List of Association Members Registered in the Different Sections at St. Paul, June 4-7, 1901.

The total registration at the St. Paul meeting was 1806.

SECTION ON PRACTICE OF MEDICINE.

Allen H. B., Cloquet, Minn.
Archibald F. M., Atwater, Minn.
Allen U., Jersey City, N. J.
Ankrim L. F., Pittsburg, Pa.
Arzt C. P., St. Paul, Minn.
Aud C. Z., Cecilian, Ky.
Bennett M. R. B., New York City.
Bailey William, Louisville, Ky.
Buren C R., Modena, Mo.
Boyd C. A., Lewiston, Minn.
Beebe W. L., St. Cloud, Minn.
Burns W. B., Memphis, Tenn.
Bundy A. D., Osage, Iowa.
Bullard F. D., Los Angeles, Cal.
Bailey S., Mt. Ayr, Iowa.
Bodine J. M., Louisville, Ky.
Benjamin A. E., Minneapolis, Minn.
Brayton S., Evanston, Ill.
Brener C. H., David City, Neb.
Burroughs J., Ashville, N. Y.
Boston L. N., Philadelphia, Pa.
Bliss J. W., Saginaw, Mich.
Beck W. M., Hanley Falls, Minn.
Bushong P. W., Summer Shade, Ky.
Boyd J. P., Akron, O.
Brookings D. J., Woodward, Ia.
Blanchard L., Edgewood, Iowa.
Buchanan J. R., Nevada, Mo.
Barr Wm. H. T., Agricultural College, Miss.

Barnes H. E. W., Creston, Iowa.
Babcock R. H., Chicago, Ill.
Briggs E., Wilmington, O.
Boyd G. J., Ellwood City, Pa.
Boehm J. C., St. Cloud, Minn.
Baer A. W., Chicago, Ill.
Braysha W. J., Berlin, Ill.
Billings F., Chicago, Ill.
Boates H., Philadelphia, Pa.
Bracken Henry M., Minneapolis, Minn.
Backman C. E., Minneapolis, Minn.
Barr J. A., McKee's Rocks, Pa.
Bay, E. L., Eddyville, Iowa.
Bannister M., Ottumwa, Iowa.
Burckhardt L., Indianapolis, Ind.
Batten J. N., Downington, Pa.
Bonney S. G., Denver, Col.
Buchman A. P., Ft. Wayne, Ind.
Butler C. A., Dell Rapids, S. D.
Bradley C. H., Minneapolis, Minn.
Berry W., S. Omaha, Neb.
Bass G. W., Minneapolis, Minn.
Craig R. W., Phœnix, Ariz.
Crummer B. F., Omaha, Neb.
Clay E. M., Oronoco, Minn.
Cobb W. F., Lyle, Minn.
Chamberlain Wm. A., Waseca, Minn.
Cottle C. J., Marshalltown, Iowa.
Catlin I. J., Delano, Minn.
Crummer B. F., Omaha, Neb.
Clay E. M., Oronoco, Minn.
Coey A. J., Chicago, Ill.
Cram M. R., Rutland, Vt.
Conley A. T., Cannon Falls, Minn.
Castles W. S., Oakland, Tenn.
Clarke R. C., Pittsburg, Pa.
Coleman T. D., Augusta, Ga.
Champlin J. R., Westerly, R. I.
Crow A. M., Kansas City, Mo.
Coleman N. R., Columbus, Ohio.
Connelly J. W., Farmington, Ill.
Christie W. H., Omaha, Neb.
Chilton E. Y., Howard Lake, Minn.
Cooley Chas. O., Madelia, Minn.
Crombie J. B., Allegheny, Pa.
Caldwell S. A., Little Sioux, Iowa.
Cook J. F., Langford, S. D.
Claydon L. E., Mazeppa, Minn.
Canavan J. V., Appleton, Wis.
Chapin H. A., Whitehall, Ill.
Clark C. R., Youngstown, Ohio.
Congdon W. O., Cuba, N. Y.
Campbell W. A., Colorado Springs, Col.
Christy W. E., Shannon City, Iowa.
Calhoun C. D., Elburn, Ill.
Chambers C. L., Kasson, Minn.
Doolittle Wm H., Woodstock, Ill.
Day F. M., Minneapolis, Minn.
Dodson J. M., Chicago, Ill.
Duncan M. J., Pleasantville, Iowa
Didama H. D., Syracuse, N. Y.
Davis J. L., Cincinnati, Ohio.
Davis Thos. D., Pittsburg, Pa.
Dougall W. M. D., Joliet, Ill.
Daniels J. W., St. Peter, Minn.
Dridge H. P., Belview, Minn.
Deland J., Philadelphia, Pa.
Doan H. C., Humboldt, Iowa.
Dodin H. A., New York City, N. Y.
Dimmitt F. W., Redwing, Minn.
Dawson J. L., Charleston, S. C.
Douglas W. E., Middletown, N. Y.
Dodge F. A., LeSueur, Minn.
Duncan M. J., Pleasantville, Ia.
Dickes, P., Greenville, Ohio.
Davis N. S., Chicago, Ill.
Dodson B. F., Berlin, Wis.
Evans J. G., New Hartford, Iowa.
Eshelbey E. C., St. Paul, Minn.
Elmer H. W., Bridgeton, N. J.
Evans J. G., New Hartford, Iowa.
Edwards J., Gloversville, N. Y.
Eley E. B., Rochester, Minn.
English W. T., Pittsburg, Pa.
Evans M. M., Le Grand, Iowa.
Engle T., State Center, Iowa.
Foshay P. M., Cleveland, Ohio.
Fronfield J. H., Media, Pa.
Fullerton W. S., Minnesota Lake, Minn.
Foster W. S., Pittsburg, Pa.
Fox E. G., Wethersfield, Conn.
Fisher W. N., Washington, D. C.
Fuller Z., Sac City, Iowa.
Ford F. C., Nacogdoches, Texas.
Faber P. J., Chicago, Ill.
Fox C. J., Willimantic, Conn.
Friedlander S., Minneapolis, Minn.
Fassett Chas. W., St. Joseph, Mo.
Fellows C. D., Algona, Iowa.
Felch T. A., Ishpeming, Mich.
Fritts J. Rule, Mexico, Mo.
Flippin J. P., Rosemaik, Tenu.
Fawcett Chas. E., Stewartville, Minn
Forest Chas. G., Eagley, Minn.
Fraser J. E., Garner, Iowa.
Futterer G., Chicago, Ill.
Freeman W. W., Grand Meadow, Minn.
Futcher T. B., Baltimore, Md.
Finlayson J. A., Armstrong, Iowa.
Gones G. W., Buckenridge, Wis.
Goodkind, M. L., Chicago, Ill.
Geer E. F., St. Paul, Minn.
Golden I. J., Chicago, Ill.
Geib D., Groton, S. D.
Graham J. de Witt, Springville, Iowa.
Gilmore R., Omaha, Neb.
Gray S. T., Albia, Iowa.
Gallagher M., Bay City, Mich.
Gross C. C., Yankton, S. D.
Gyllenhammar F. M. H., Gayville, S. D.
Graves F. G., Waterbury, Conn.
Grawn F. A., Munising, Mich.
Greenley T. B., Meadow Lawu, Ky.
Gapen C., Madison, Wis.
Griswold J. B., Grand Rapids, Mich.
Greene C. L., St. Paul, Minu.
Greaves Wm., Northfield, Minn.
Hutton, Wm., Elizabeth, Ill.
Harvey Edwin B., Boston, Mass.
Hershey E. P., Denver, Col.
Holton H. D., Brattleboro, Vt.
Hunter J. W., Waco, Texas.
Hunter C. H., Minneapolis, Minn.
Hendersou A., St. Paul, Minn.
Hunt, W. A., Northfield, Minn.
Hasencamp O., Toledo, Ohio.
Hubbard G. W., Nashville, Tenn.
Happel T. J., Trenton, Tenn.
Hutchings R. K., Colorado Springs, Colo.
Holder R. E., Columbus, Ind.
Hicks C., Mt. Vernon, Ind.
Hedrack A. E., Barron, Wis.
Harison B. D., Sault St. Marie, Mich.
Hayes F. M., Allegheny, Pa.
Hall D. M., Memphis, Tenn.
Hass E. M., Detroit, Mich.
Harris T. A., Rosedale, Miss.
Hobson T. A., Parkersburg, Iowa.
Halvarson K. K., Audubon, Minn.
Harrison W. G., Talladega, Ala.
Halsey L. M., Williamstown, N. J.
Head Louis R., Madison, Wis.
Hanna J. W., Winfield, Iowa.
Herrick J. B., Chicago, Ill.
Harvey Edwin B., Boston, Mass.
Hershey E. P., Denver, Col.
Holton H. D., Brattleboro, Vt.
Hunter J. W., Waco, Texas.
Huntly E. F., Minneapolis, Minn.
Henderson A., St. Paul, Minn.
Hunt W. A., Northfield, Minn.
Hasencamp O., Toledo, Ohio.
Higbee Wm. S., Philadelphia, Pa.
Houck O., La Crosse, Wis.
Hegge O. H., Austin, Minn.
Hohf S. M., Yankton, S. D.
Hosiner M. S., Ashland, Wis.
Hildreth M. L., Lyons, Neb.
Haggard J. R., Lincoln, Neb.
Hammuu H., Bayfield, Wis.
Hart M., Le Roy, Minn.
Iseman C. N. C., Ellwood City, Pa.
James S. C., Kansas City, Mo.
Jones Talbot, St. Paul, Minn.
Johnston C. H., Grand Rapids, Mich.
Johnson A M., St. Paul, Minn.
Jones S. S., Frazee, Minn.
Jones W. H., Forest City, Iowa.
Jermain L. E., Milwaukee, Wis.
Jungblut H. C., Tripoli, Iowa.
Johnson J. P., Owatonna, Minn.
Jonsson C., Clinton, Iowa.
James R. L., Blue Island, Ill.
Johnson E J., Eden, Miss.
Jones F., Memphis, Tenn.
Jump D. W., Plainfield, Ill.
Kinne Ed., Elkhorn, Wis.
Kimball H. H., Minneapolis, Minn.
Kelsey C. A., Minneapolis, Minn.
Keyes C. R., Duluth, Minn.
Keehl F. W., Waterloo, Iowa.
Kellogg K. E., New Britain, Conn.
Kelly J. V., Manaynak, Pa.
Kistler A. S., St. Paul, Minn.
Kriesel W. A., Millbank, S. D.
Kenyon P. E., Wadena, Minn.
Kleinhans F. A., Milwaukee, Wis.
Knox W. T., Manchester, Ill.
Kriesel M. A., Millbank, S. D.
Kellogg J. H., Battle Creek, Mich.
Kenefick M., Algona, Iowa.
Knott J. M., Sioux City, Iowa.
Kessinger E. M., Sandborn, Ind.
Leech F., Washington, D. C.
Lock J. H., Philadelphia, Pa.
Learned J. B., Northampton, Mass.
Lindsay R. W., Little Rock, Ark.
Lenkler Geo., St. Paul, Minn.
LaCount D., Wausau, Wis.
Lambert A., New York City, N. Y.
Lando D. H., St. Paul, Minn.
Littig L. W., Iowa City, Iowa.
Leech W. S., Foley, Minn.
Long O. M., Harrisburg, Mo.
Long D. J., Piedmont, W. Va.
Lister F. E., Brookston, Ind.
Lillie C. W., E. St. Louis, Ill.
Lichtenstein Hans, Winona, Minn.
Louthan B. S., Sutherland, Iowa.
Merritt W. H., Pleasantville, Ia.
Murphy F. E., Kansas City, Mo.
Martin E. H., Clarksdale, Miss.
Marvel Philip, Atlantic City, N. J
Musser J. H., Philadelphia, Pa.
Malone J. W., Brooklyn, N. Y.
Mack J. A., Madison, Wis.
Marchand J. F., Canton, Ohio.
Magruder G. L., Washington, D. C.
Magee, T. L., San Diego, Cal.
Montgomery A. B., Reynolds, Ill.
Mills J., Jauesville, Wis.
Maercklin O. C., Adams, Minn.
Minor Chas. L., Asheville, N. C.
Moe A. J., Chaseburg, Wis.
Mueller N. J. A., Dyersville, Ia.
Mueller J. A. J., New Vienna, Ia.
Michell P. G., Superior, Wis.
Mitchell L. C., Minneapolis, Minn.
Mills O. P., Grant City, Mo.
Miller W. J., Johnson City, Tenn.
Moore R. C., Omaha, Neb.
Morris F., Columbus Grove, Ohio
McLanahan, Viola, Ill.
McLurg J. M., Bay City, Mich.
McCormack J. N., Bowling Green, Ky.
McGahon C. F., Aiken, S. C.
McIntire C., Easton, Pa.
McClintock C. T., Detroit, Mich.
McHenery D. D., Princeton Mo
McLarean J. M. D., Philadelphia, Pa.
McDonald H. N. M., Minneapolis, Minn.
McElroy J. B., Stovall, Miss.
MacDonald A., St. Paul, Minn.
McCoy C. D., Kentou, O.
McConnel H. S., New Brighton, Pa.
McFarlane Dan'l C., Keota, Iowa
McHench Wm. J., Brighton, Mich.
McDermott G. L., Neenah, Wis.
McCrae T., Baltimore, Md.
McIntyre C. J., Chicago, Ill.
McArthur D. S., La Crosse, Wis.
Neely J. R., Chicago, Ill.
Newhart H., New Ulm, Minn.
Nippert L. N., Minneapolis, Minn.
Nippert H. T., St. Paul, Minn.
Nusum Geo., Honey Creek, Ia.
Newton R. C., Montclair, N. J.
Nelson D. E., Chattanooga, Tenn.
Nulson W. H., Milwaukee, Wis.
Norton F. D., Petersville, Ind.
Nowell M. E., Altoona, Pa.
Noyes J. C., Oshkosh, Wis.
Neill H., Sibley, Iowa.
Oyen A. B., Chicago, Ill.
Osborne O. T., New Haven, Conn.
Oettiker J., Platteville, Wis.
O'Keefe J., Waterloo, Iowa.
Porter D. R., Kansas City, Mo.
Plessner L., Bay City, Mich.
Priestley J. T., Des Moines, Iowa.
Preble R. B., Chicago, Ill.
Potter L. A., South Superior, Wis.
Palmer Wm. L., Glenville, Minn.
Palmer W. A., Redwood Falls, Minn.
Phillips C. J., Chicago, Ill.
Palmer E. A., Hartford, Mich.
Powers J. C., Hampton, Iowa.
Portmann Wm. C., Jackson, Minn.
Patterson W. E., Greene, Iowa.
Peters R. M., Minneapolis, Minn.
Quimby C. E., New York City, N. Y.
Quine W. E., Chicago, Ill.
Rowe Jesse, Abingdon, Ill.
Reed J. H., Battle Creek, Mich.
Reed W. W., Fowler, Colo.
Reynolds W., Atlantic City, N. J.
Ringnell F., Orion, Ill.
Rochester De Lancy, Buffalo, N. Y.
Riley A. W., Omaha, Neb.
Raymond, F. S., Memphis, Tenn.
Randall B. M., Graceville, Minn.
Roberts T. S., Minneapolis, Minn.
Rice E. P., Chicago, Ill.
Rouchmand Q. M., St. Paul, Minn.
Riddle J., Oshkosh, Wis.
Sheppard P. E., Hutchinson, Minn
Sailer J. N., Philadelphia, Pa.
Stearns B. W., Long Eddy, N. Y.
Sloan M. G., Dexter, Iowa.
Salter A., Lena, Ill.
Stowell J. H., Chicago, Ill.
Stutsman C., Burlington, Iowa.
Stanton T. P., Chariton, Iowa.
Shelton G. A., Shelton, Conn.
Shallenberger H. M., Rochester, Pa.
Scott J. W., St. Charles, Minn.
Sheldon C. S., Madison, Wis.
Sourwine, J., Brazil, Ind.
Slabaugh W. H., S. Omaha, Neb.
Standly E., Linneus, Mo.
Stuckey T. H., Louisville, Ky.
Sawyer F. M., S. Bend, Ind.
Sloan R. T., Kansas City, Mo.
Sharp, M. B., Madison, Wis.
Stern H. R., New York City, N. Y.
Schrader, J. C., Iowa City, Iowa.
Stuart J. H., Minneapolis, Minu.
Sears H. B., Beaver Dam, Wis.
Sowder C. R., Pittsboro, Ind.
Simon B. F., St. Paul, Minn.
Strout E. S., Minneapolis, Minn.
Strathern F. P., St. Peter, Minn.
Stevens E. L., Des Moines, Iowa.
Scoboria C. Q., Elk River, Minn.
Stapleton F. P., Albany, Mich.
Stevenson A. F., Chicago, Ill.
Suiter A. W., Herkimer, N. Y.
Sohlberg, O., St. Paul, Minn.
Smith C. J., Pendleton, Ore.
Sauders S. F., Holdrege, Neb.
Stratton W. M., Granite Falls, Minn.
Smith W. R., Moultrie, Ga.
Strouss U. S., Beaver, Pa.
Shuell Thos. J., Parnell, Iowa.
Smith A. E., Kansas City, Mo.
Slaughter A. W., Green Bay, Wis.
Schwab L., Cincinnati, Ohio.
Stockton Chas. G., Buffalo, N. Y.
Standly Z. T., Lacledc, Mo.
Shellito, A. G., Independence, Ia.
Thonberg, W. W., Redfield, Iowa.
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Kimball, C. B., West Liberty, Iowa.
Keyes, E. D., Winona, Minn.
Knight, F. A., Minneapolis, Minn.
Kanl, Wm. M., Princeton, Ill.
King, C. F., Hudson, Wis.
Kelly, B. W., Aittsin, Minn.
Kink, J. H., Allegheny, Pa.
Knapp, A. A., Brimfield, Ill.
Lyon, M., Dewitt, Iowa.
Lankester, H., St. Panl, Minn.
Lenon, J. H., Little Rock, Ark.
Lichty, D., Rockford, Ill.
Lewis, J. M., Minneapolis, Minn.
Little, J. M., Minneapolis, Minn.
Lewis, Chas. N., Jackson, Mich.
Lyons, J. A., Welcome, Wis.
Langworthy, S. B., Leavenworth, Kan.
Lewis, W. H., Alden, Iowa.
Lee, J. F., Mt. Vernon, Ohio.
Lieberthal, D., Chicago, Ill.
Lundholm, E. M., St. Paul, Minn.
Le Count, E. R., Chicago, Ill.
Lnmley, W. A., Pennville, Minn.
Leiler, G., Altiee, Wis.
Mayland, M. L., Faribault, Minn.
Marquardt, C. H., La Crosse, Wis.
Murray, D. P., Dunkirk, Iowa.
Miller, R. W., Los Angeles, Cal.
Macdonell, A. J., Winnipeg, Cal.
Miller, T. M., Peoria, Ill.
Miller, A. W., St. Paul, Minn.
Montelins, R. W., Mt. Carmel, Pa.
Mason, Chas. H., West Superior, Wis.
Martindale, J. H., Los Angeles, Cal.
Montgomery, Ed. B., Quincy, Ill.
Mnrphy, W. B., Minneapolis, Minn.
Moriarta, D. C., Saratoga Springs, N. Y.
Markoe, J. C., St. Paul, Minn.
MacDonald, J., New York, N. Y.
Maloy, G. E., St. Cloud, Minn.
McCaskey, G. W., Fort Wayne, Ind.
McMichael, O. H., Vernon Center, Minn.
McKinnon, M., Fosston, Minn.
McKinley, J. C., Humphrey, Neb.
MacGowan, G., Los Angeles, Cal.
McNew, H. L., Honey Grove, Texas.
McDonald, E. M. Beaver Dam, Wis.
McKone, J. W., Lawler, Iowa.
McCormack, J. N., Bowling Green, Ky.
McCleary, J. D., Indianola, Iowa.
McLaren, J. M., St. Paul, Minn.
McLanghlin, J. K., Jacksonville, Ill.
McClanahan, Wm. S., Woodhull, Ill.
Nichols, G. W., Milaca, Minn.
Nead, D. W., Philadelphia, Pa.
Noble, Thos. B., Indianapolis, Ind.
Nossaman, A. J., Pella, Iowa.
Neer, H. C., Park Ridge, N. J.
Otis, N. M., Fairbury, Ill.
O'Brien, H. J., West Superior, Wis.
Orr, Geo. W., Lake Lindens, Mich.
O'Hara, J. J., Alma City, Minn.
Porter, R. H., Chicago, Ill.
Powell, W. S., Defiance, Ohio.
Pollitzer, S., New York, N. Y.
Peters, R. M., Minneapolis, Minn.
Pine, O. S., Minnehaha, Minn.
Philips, J., Stevens Point, Wis.
Phillips, Chas. W., Rocky Ford, Col.
Price, A. D., Harrodsburg, Ky.
Philips, W. H. H., Hope, N. Dak.
Pattison, I., Kenrin, Iowa.
Prltchard, J. F., Manitowoc, Wis.
Pieck, C. G., Covington, Ky.
Petras, W. T., Burt, Iowa.
Perrin, G. H., Wauzeka, Wis.
Pickering, C. R., Muscoda, Wis.
Quaine, E. P., Bismarck, N. D.
Quinn, Chas. F., Meriden, Iowa.
Rose, F., Faribault, Minn.
Rood, D., Hubbing, Minn.
Raberge, F. L., Milbank, S. Dak.
Root, P. S., Monroe, Mich.
Ristine, H. G., Fort Dodge, Iowa.
Reynold, Wm. T., Hamilton, Can.
Ritchie, P., St. Paul, Minn.
Rutledge, J. A., Elgin, Ill.
Rawls, J. A., Creston, Iowa.
Ramsay, W. E., Perth Amboy, N. J.
Roberts, J., Osceola, Iowa.
Rounsevell, A. T., Havinare, N. Dak.
Ryan, G. N., Des Moines, Iowa.
Reynolds, F. R., Eau Claire, Wis.
Riese, B. L., Chicago, Ill.
Rothrock, J. L., St. Paul, Minn.
Richardson, W. J., Fairmont, Wis.
Rnnyon, J. P., Little Rock, Ark.
Sharp, A. McF., Jacksonville, Ill.
Stewart, C. E., Battle Creek, Mich.
Sarles, W. F., Sparta, Wis.
Southwick, F. A., Stevens Point, Wis.
Stone, R. M., Omaha, Neb.
Stnart, J. H., Minneapolis, Minn.
Satterwhite, T. P., Louisville, Ky.
Stoner, R. R., Winthrop, Minn.
Smith, F. S., Nevada, Iowa.
Shipley, W. M., Attosen, Iowa.
Slocumb, J. A., Plainview, Minn.
Schlawig, J., Jr., Sioux City, Iowa.
Sanford, W. C., Chicago, Ill.
Schweer, T. J., Beardstown, Ill.
Sperry, W. P., Phillips, Wis.
Sherwood, G. E., Kimball, Minn.
Smith, E., Aurora, Iowa.
Swennon, J. G., Moline, Ill.
Sutton, E. M., Peoria, Ill.
Schock, J. L., New Ulm, Minn.
Streeper, G. M., Washington, Pa.
Swezey, A. J., Decorah, Iowa,
South, J., Ouray, Col.
Schifferle, Edward, Creston, Iowa.
Sherman, W. B., Manchester, Iowa.
Savage, J., Davenport, N. Dak.
Squibb, E. H., Brooklyn, N. Y.
Scott, C., Des Moines, Iowa.
Sanders, C., Manley, Iowa.
Schwyzer, G., St. Cloud, Minn.
Slarieff, D., Chicago, Ill.
Soper, J. E., Norwood, Minn.
Saunders, G. W., Superior, Wis.
Townsend, D. J., Lohrville, Iowa.
Tupper, E. L., Ottawa, Ohio.
Trowbridge, C. H., Viroqua, Wis.
Taylor, M. J., Jamesville, Minn.
Tibbals, F. B., Detroit, Mich.
Todd, Wm. E., Albert Lea, Minn.
Tompkins, E. D., Clarwin, Iowa.
Triplett, M. W., Dawson, Minn.
Tracy, F. M., Kansas City, Kan.
Veedey, A. T., Pittsburg, Pa.
Vance, F. E., Eddyville, Iowa.
Veline, O. J., Kerkhoven, Minn.
Warren, J. W., Sioux City, Iowa.
Williams, A. E., Minneapolis, Minn.
Williams, W. L., Minneapolis, Minn.
Williams, R. R., Manning, Iowa.
Wilcox, F. L., Walker, Minn.
Wagar, C. P., Toledo, Ohio.
Winnett, H. J., Lincoln, Neb.
Whitcomb, E. H., St. Panl, Minn.
Waterman, C. J., Council Bluffs, Iowa.
Wende, E., Bnffalo, N. Y.
Wilson, J. H., Beaver, Pa.
Whitacre, H. J., Cincinnati, Ohio.
Walsh, E. F., St. Paul, Minn.
Willard, P. S., Kansas City, Mo.
Will, W. B., Milwaukee, Wis.
Weir, R. F., New York, N. Y.
Wilmarth, A. W., Chippewa Falls, Wis.
Williston, S. N., Lawrence, Kan.
Wood, Ed. S., St. Paul, Minn.
Wiedemann, F. E., Terre Haute, Ind.
Wilcox, T. E., Chicago, Ill.
Williamson, G., L., Homer, Ill.
Wiley, F. S., Fond du Lac, Wis.
Walker, A. P., Greenfield, Mass.
Walker, A. C., Greenfield, Mass.
Windesheim, G., Kenosha, Wis.
Wismer, Wm. O., Hooper, Wis.
Whitman, C. H., Omaha, Neb.
Wilson, W., Northfield, Minn.
Wilson, Wm. G., Perth Amboy, N. J.
Wheaton, C. A., St. Paul, Minn.
Wheelwright, D. W., Wall Lake, Iowa.
Witterm G., Wellsville, N. Y.
Yarbrough, C. C., Detrolt, Mich.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Puerperal Eclampsia.

R. P. R. Lyle, of the University of Durham, in an article in the *New York Lancet*, gives three great principles to be observed in the treatment of eclampsia: 1, the purifying of the blood; 2, to control convulsions; and 3, the emptying of the uterus. The first is to be accomplished by promoting diuresis, producing purgation and diaphoresis. To meet the second principle it is necessary to allay irritability of the cerebrospinal system. Morphin in his opinion has the following advantages over other cerebrospinal depressants: 1. It controls the convulsions by allaying cerebrospinal irritability. 2. It prevents the excess of waste products from being thrown into the blood. 3. It does not weaken the patient. 4. It does not injure the child. 5. It has no effect on the kidney. 6. When the patient is under its influence labor often commences, and quickly terminates without causing more convulsions.

Dionin in Disease of the Cornea.

Dr. L. Vernies, in *Klin. Ther. Woch.*, states that he uses dionin in all corneal diseases and those of the iris and ciliary body, where it is best applied in combination with mydriatics. He uses it in solution of 5 to 10 per cent. strength. Ulcers of the cornea heal rapidly under its influence. It acts especially by increasing the flow of the lymph.

Treatment of Gout.

In painful finger joints due to chronic gout, the following is recommended by Dr. Solis Cohen:

℞.	Olei gaultheriæ		
	Guaiacoli, āā	m. xx	1 33
	Camphoræ		
	Menthol, āā	gr. xv	1
	Ol. caryophylli	m. v.	33
	Glycerini		
	Petrolati		
	Lani, āā	℥i	4

M. Sig.: Apply locally and rub in thoroughly.

He states that much larger quantities of the active ingredients, even up to saturation, may be used.

As a Tonic and Eliminant in Infectious Diseases of Children.

℞.	Ferri et ammon. citratis	℥ss	16
	Tinct. nucis vom.	℥ss	2
	Sol. potass. arsenitis	℥ss	2
	Tinct. calumbæ	℥ss	16
	Syr. limonis	℥i	32
	Aquæ, q. s. ad	℥iv	128

M. Sig.: One teaspoonful in water after each meal.

Glonoin in Angina Pectoris.

H. E. Lewis, in *Merck's Archives*, recommends glonoin in spasmodic contraction of muscular tissue. In angina pectoris it is recommended as follows:

℞.	Spts. glonoini		
	Spts. chloroformi, āā	℥ss	2
	Tinct. capsici	℥i	4
	Aq. menth. pip. q. s. ad	℥i	32

M. Sig.: A teaspoonful every four hours, with a repetition of the dose immediately at the onset of the attack.

Murrel advises that the solutions of glonoin be warmed at least to the temperature of the body as it is thus more readily absorbed.

Hyperemesis of Pregnancy.

J. W. McLane, in *Med. News*, recommends complete rest in bed; have all the food given by the nurse, and keep the patient's mind away from the stomach. He recommends as a diet, peptonized milk, beef tea, preferably unsalted eggs, and raw oysters. An enema containing a few drops of tincture of opium, and one teaspoonful of brandy is good. Examine the uterus

and if it is anteverted or retroverted or bound down with adhesions, tampon with gauze impregnated with boric acid, vaselin and glycerin. If the vomiting can not be stopped anesthetize, scoop out the ovum with the finger, curette, douche and insert a gauze drain.

Sciatica.

In sciatica, neuralgic headache and intercostal neuralgia the following is recommended as a local application:

℞. Olei gaultheriæ		
Guaiacol, āā .....m. xv	1	
Menthol .....gr. x		66
Lanolini .....℥ii	8	

M. Place in a tin tube. Sig.: A small quantity about the size of a pea to be well rubbed in over seat of pain, night and morning.

Drugs in Heart Disease.

H. A. Hare, in *Ther. Gazette*, praises very highly the value of digitalis and massa hydrargyri in certain forms of heart disease. When the heart becomes incompetent as evidenced by enlargement and tenderness of the liver, the hepatic circulation is necessarily retarded. The administration of massa hydrargyri relieves this congestion and increases the activity of the liver. Hare states that it is probable that the relief of liver engorgement is accompanied by an increased ability to destroy toxic material in the circulation or in the elimination through the bile. It is also known that mercury increases renal elimination, consequently the stasis in the portal circulation is relieved, which in turn lessens the work thrown upon the heart. In some cases, he states, digitalis fails to produce proper results till mercury in this form is freely given.

To Remove Freckles. (Lentigo).

The following lotion is recommended by *Pratico del Med.*

℞. Hydrarg. chlorid. corros. .....gr. xv	1	
Zinci sulphatis .....gr. xxx	2	
Aq. plumbi .....℥ss	2	
Aq. rosæ .....℥viii	256	

M. Sig.: Apply locally night and morning.

Treatment of Warts.

The following has been recommended, in the removal of warts, by the *New York Lancet*:

℞. Hydrarg. chloridi corros. .....gr. v		30
Acidi salicylici .....℥i	4	
Collodion q. s. ad .....℥i	32	

M. Sig.: Paint the application over the warts once a day. After a few applications the warts peel off.

Carcinoma of the Skin.

Unna, as noted in the *Post-Graduate*, places the Paquelin cautery in first rank as a therapeutic agent. This is generally used superficially, singeing the parts only. He states that he has observed a checking of the malignant process and the appearance of granulation tissue. He regards resorcin as second in efficiency used in an alcoholic solution of 5 per cent. strength, or in the form of a plaster. Resorcin seems to be more effective when combined with benzoic acid in same strength solution. He also recommends the following to be applied in the form of a plaster:

℞. Acidi arsenosi		
Ext. cannabis indicæ, āā .....gr. lxxv	5	
Acidi salicylici .....℥v	20	

M. prepare on plaster mull.

He states that under the use of this application, cancerous tissue breaks down, while the healthy skin will resist for a much longer period.

Asphyxia by Drowning.

E. H. Bayley, in *Northwestern Lancet*, emphasizes the following points, stating that the success of the treatment depends upon immediate action: 1. The patient should not be carried all around town before trying to resuscitate him. 2. The body should be inverted and the head and face should be kept down so that the tongue will fall forward, permitting the water to escape from the mouth. 3. The patient should be taken to the nearest house, the clothing is to be removed, and warmth is to be applied with hot, woolen blankets, and one is to keep at work until bodily heat is fully restored. Assistants should rub the body while the blankets are being changed. 4. Artificial respiration should be begun with head down and hips elevated. 5. Stimulants—as strychnin sulphate, aromatic spirits of ammonia and coffee—are to be given. 6. When respiration and circulation have commenced, one should lay the patient on his back, occasionally rolling him from one side to the other to lessen the danger of local congestions.

Medicolegal.

City Not Liable for Negligence of Hospital Surgeon.—The Indianapolis City Hospital is maintained and operated under a statute which provides that the department of health and charities shall be under the control of three commissioners who shall be practicing physicians, who, among other things, shall have charge of the city hospital, and are authorized and directed to prepare ordinances for the efficient regulation and management of such hospital, as may seem to them desirable. In the case of Williams vs. the City of Indianapolis, the latter was sued for damages alleged to have been sustained through the negligent and unskilful treatment given a non-paying patient with a broken arm by an alleged incompetent and unskilful physician and surgeon negligently employed in the city hospital. The Appellate Court of Indiana, however, holds that there was no liability on the part of the city. It holds that the duty imposed on the board of commissioners by the statute is governmental. The board, it says, acts for the public, not as the agent of the municipality in its corporate character. Considerable reliance, the court goes on to state, was placed on a Rhode Island decision in an action that was brought by a paying patient against a hospital administered largely as a charity, where the court seems to have treated the hospital as any other corporation. But in this case the patient being averred to have been a non-paying one and the hospital being operated by the municipality, the court holds that its exemption from liability for damages rests upon broader grounds than that of a private institution operated as a charity. It also suggests that the true doctrine, upon facts parallel with those before the Rhode Island court, is that "the damages should be paid out of the pocket of the wrongdoer, and not from the trust fund."

Commenting on Failure to Make Physician Witness.—The Supreme Court of Indiana holds, in the case of Brackney vs. Fogle, that the rule that it is proper for counsel to comment upon the failure to call accessible witnesses who know, or are supposed to know, about the facts in controversy, does not apply to the failure to call a privileged witness. This was a suit to contest a will upon the ground of mental unsoundness and undue influence. During his argument to the jury, an attorney for the contestants was permitted to comment on the exclusion as a witness, upon the objection of the administrator, of the physician who had attended the testatrix in her last illness, and he commented on the right of the administrator to waive the statute, and permit the physician to testify, and to call him as a witness. Among many other things, the attorney said, in effect, that the doctor had been with the testatrix shortly before the will was executed, knew her condition, could and would have told it, and that the witness was kept from the stand to suppress the truth. The judge, who allowed this, instructed the jury that, under the law, the administrator had the legal right to object to the physician's testifying to any facts that came to his knowledge while professionally treating the testatrix, such matters being confidential: but the administrator had the right to waive objection to such testimony, and could himself call the doctor to the stand, and his failure to do so, or permit him to testify to such facts, might rightfully be commented on by counsel, and that the jury might consider the conduct of the administrator in these respects, with all the other evidence, in deter-

mining the case. The Supreme Court holds that this was reversible error.

Damages for Loss of Arm after Amputation of Fingers.—The case of Rich vs. Moore was brought to recover damages from a physician for the loss of an arm which it was alleged that, on account of his negligence, had to be amputated above the elbow some 18 days after an injury to the hand which was so severe that it was necessary to amputate the fingers, which the defendant and another physician called by him did, after which he treated the case for 5 or 6 days, when he surrendered it, refusing to consult or act with another physician then called in. Further facts are not given. But there was a verdict and judgment for the plaintiff. This latter, however, the Supreme Court of Iowa reverses for the inadvertent use of the word "plaintiff" instead of "defendant" in the clause beginning with "but" in the following part of an instruction to the jury: "To render the defendant liable, there must not only have been negligence on his part in some manner as charged, without contributory negligence of plaintiff or others caring for him, but such negligence of plaintiff, if shown, must have been the proximate cause of the injury." As the instruction read, the court says that it was erroneous, as, under the well-settled doctrine, any negligence of the plaintiff contributing to the injury complained of would defeat his recovery of damages. Another point to which the defendant took exception was to the plaintiff being permitted to prove what he had earned, per year, before his arm was taken off, and what he had earned since. This was assigned as error, on the ground that an amputation of the fingers of the hand was conceded to have been necessary, and the difference in his earning capacity should have been confined to his condition after his fingers were removed, instead of as a sound man. This objection the court, however, does not think well taken. It says that it is not always possible to produce evidence which shall meet exact conditions. The man was a farmer and farm hand. Whether he might have produced evidence tending to show what a man with the fingers of one hand gone might have earned at that work, the court does not know; but men so afflicted are not common, and the court is satisfied with the result in this respect as it thinks the verdict returned showed that the jury gave due consideration to this difference in physical perfection, although it does not state what was the amount of the verdict.

Criminal Abortion: Its Seriousness, Proof, Punishment.—The Supreme Court of Idaho says, in the case of State vs. Alcorn, that an unnatural abortion, brought about by means of drugs or instruments, violates decency, the best interests of society, the divine law, the law of nature, the criminal statutes of that state, and is not only destructive of a life unborn, but places in jeopardy the life of a human being,—the pregnant woman. Both actors, when there are two, are guilty of felony, and ought to be punished by the law, if the woman survives; and, if she does not, then the person or persons participating in the abortion should be punished. This crime is one of grave consequences to society. The law prohibits it and prescribes severe penalties. The law ought to be strictly enforced. Furthermore, in a case of this kind, the court says that it will not notice purely technical errors, which do not prejudice the substantial rights of the accused, for the purpose of reversing the verdict returned by the jury, especially where it is satisfied that substantial justice has been done. Under the statutes of Idaho, the crime of abortion may be committed prior to the quickening of the fetus, but the rule is otherwise at the common law. Then, the corpus delicti, or substance of the offense, the court holds, may be proven by declarations and circumstances, but the order in which the evidence proving the different material facts is introduced is not material. In a prosecution upon the charge of murder, where the death of the deceased is alleged to have resulted from an operation performed for the purpose of bringing about an abortion, the pregnancy of the deceased must be proven beyond reasonable doubt, but need not be demonstrated to an absolute certainty. In case of homicide, resulting from an operation performed by the accused upon the body of the deceased to bring about an abortion, the declaration of the deceased, made at the time she was introduced to the accused, to the effect that she was pregnant, and which had direct reference to the contemplated transaction between the deceased and the accused, the court holds, is admissible in evidence as a part of the res gestæ, or essential circumstances of the transaction. It also holds that where an unnatural abortion is sought to be caused by the use of instruments and drugs, or either, and death results, an abortion not being necessary to save the life of the woman, such acts, under the statutes of Idaho, constitute the crime of murder in the second degree; and an instruction that such acts constitute the crime of murder in the second degree or manslaughter is erroneous.

Sufficient Evidence of Malpractice to go to Jury.—In the case of Degelau vs. Wight, brought against two physicians practicing in partnership to recover damages for the death of a woman which was alleged to have been caused by their negligent and unskilful treatment, the Supreme Court of Iowa has reversed a judgment entered in their favor on a directed verdict. The woman, who was 21 years of age when she died, had nearly seven months before that given birth to a child, and, although she was up again in a week or two, had thereafter been troubled with intermittent pains, finally consulted the defendants, and, on their advice, submitted to the operation of curettage of the uterus. As one witness put it, they said her trouble "was something of the afterbirth of the child." About an hour and a half was consumed in performing the operation, both physicians leaving about half an hour later and before the patient had recovered consciousness, or at about 11 a. m. During the day she became worse, suffered severe pain, and died at 10 o'clock in the evening. There was evidence tending to show that it was not probable that any part of the afterbirth could have remained in the womb so long, and also evidence from which a jury might have been justified in drawing the inference that no necessity existed for the operation of curettage. At a post-mortem examination the uterus was removed, and it was found to be torn to the extent of an inch or an inch and a half, so that the handle of a scalpel was passed through the hole. The membrane also gave evidence of having been scraped, there being three deep furrows about an eighth of an inch apart. The condition described was said to be sufficient to cause death, either directly or from the resulting shock. It was also shown that a tear like that made in curetting the uterus could have been discovered by the operator, and that a proper course, on its being known, would either be to sew it up, or give medicine to sustain the patient until the shock was over, and then permit nature to repair the wound. The foregoing was the evidence most favorable to the plaintiff, and without wishing to be understood as expressing an opinion as to its weight, nor as suggesting the conclusion that a jury should deduce from it, the Supreme Court holds that it made a case upon which a jury should pass, and that it was error to take the case from the jury, the question of negligence being one of law only when from the facts all reasonable men must draw the same conclusion. That none but the organs in the abdominal cavity were inspected at the autopsy, and none of the physicians examined as witnesses attempted to say that no other cause of death existed, the court holds, affected only the weight of their testimony.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, June 22.

1 *Syphilitic Fever, with a Report of Three Cases. Thomas B. Futcher.
2 *The Evolution of the Ophthalmoscope and What It Has Done for Medicine. Samuel Theobald.
3 An Introduction to the Psychological Study of Backward Children. William B. Noyes.
4 *Inguinal Bubo as a Complication of Malarial Fever. A. C. Smith.

Medical News (N. Y.), June 22.

5 *Psychic Epilepsy, with the Report of a Case. J. W. Courtney.
6 *The Medical Expert Evidence in the Case of the Davis Belle-

vue Hospital Homicide. R. L. Pritchard.
7 *Obstipation. Sterling B. Taylor.
8 *A Study of Some Complications and Sequelæ of Typhoid Fever. (Concluded.) H. A. Hare and H. R. M. Landis.

Medical Record (N. Y.), June 22.

9 *Hernia of the Urinary Bladder. W. S. Cheesman.
10 *The "Nauheim Treatment." H. Newton Heineman.
11 *On Nephrorrhaphy with Flap Fixation. Arnold Sturmdorf.

Cincinnati Lancet-Clinic, June 22.

12 *Intra-ligamentous Ovarian Cysts: Diagnosis and Treatment. Chauncey D. Palmer.
13 Mathematics in Medicine. H. H. Spiers.

American Medicine (Philadelphia), June 22.

14 *The Treatment of Abdominal Aortic Aneurysm by a Preliminary Exploratory Celiotomy and Peritoneal Exclusion of the Sac, followed at a Later Sitting by Wiring and Electrolysis, with the Report of Two Hitherto Unpublished Cases. (To be concluded.) Rudolph Matas.
15 *The So-called Traumatic Neuroses. Harold N. Moyer.
16 *Resection of Superior Sympathetic Cervical Ganglion for Non-inflammatory Glaucoma. Joseph Mullen.
17 *The Bacteriologic Examination of Clinical Thermometers. Randle C. Rosenberger.
18 *Atypical Pneumonia and Pulmonary Tuberculosis. W. H. Bergtold.
19 *Electrolysis in Diseases of the Skin. F. E. Wisecup.
20 *The Nervous Exhaustion Due to West Point Training. Charles E. Woodruff.

Philadelphia Medical Journal, June 22.

21 A New Hemorrhoidal Clamp. G. Milton Linticum.
22 A Needle for Silver Wire. L. J. Y. Gemella.
23 *Further Notes on a Case of Pernicious Anemia Reported at the Meeting of the Association of American Physicians in 1900: with Remarks on the Diagnosis of the Disease. Frederick P. Henry.
24 A Case of Severe Anemia, with Changes in the Spinal Cord. Wm. E. Hughes and William G. Spiller.
25 The Teaching of Chemical Pathology. Alonzo E. Taylor.
26 *Theoretical and Practical Considerations on the Treatment of Jacksonian Epilepsy by Operation; with the Report of Five Cases. (Conclusion.) James J. Putnam.
27 *What I Have Learned from 161 Operations for the Relief of Senile Hypertrophy of the Prostate Gland. (Conclusion.) Orville Horwitz.

Boston Medical and Surgical Journal, June 20.

28 A Study of the Food Consumed and Digested by Four Members of the Harvard University Boat Crew in June, 1900. (To be continued.) W. O. Atwater and F. G. Benedict.
29 *Puerperal Insanity. Edward B. Lane.
30 *The Home Treatment of Tuberculosis vs. the Climatic Treatment. Edward O. Otis.
31 A Case of Marked Cyanosis, Difficult to Explain. Sylvester F. McKeen.

American Practitioner and News (Louisville), May 1.

32 Arthritis Deformans and Its Relation to Some Diseases Due to Perverted Metabolism. Joseph W. Irwin.
33 Lupus Vulgaris. John E. Hays.
34 Arsenauro in the Treatment of Some Nerve Diseases, with Report of Cases. J. J. Wakefield.
35 Salpingo-oophorectomy for Dysmenorrhea and Neurasthenia of Ovarian Origin. J. T. Green.
36 The Electro-magnet in Ophthalmic Surgery. Yataro Ota.

Pediatrics (N. Y.), June 1.

37 *The Importance of the Early Recognition of Ear Troubles in Children. MacLeod Yearsley.
38 *The Therapeutic Value of Thermol. Edwin Rosenthal.
39 A Case of Intussusception. S. Kunz.
40 A Case of Infantile Scurvy with Recovery. I. A. Abt.

Medical Fortnightly (St. Louis), June 10.

41 Surgery at the Illinois State Medical Society. Carl E. Black.
42 An Inquiry into the Action of Heroin Hydrochlorid. C. D. Center.
43 Diagnosis in Diseases of Infancy. John Zahorsky.
44 Diseases of the Lungs and Pleura. Albert Abrams.

Cleveland Journal of Medicine, June.

45 *Report of Two Cases of Anglosarcoma of the Brain. Roger G. Perkins.
46 *The Morbid Anatomy of Epilepsy, being a Summary of the Results in 130 Autopsies. A. P. Ohlmacher.
47 Thirty-three Consecutive Abdominal Sections in General Practice. A. E. Warren.
48 A Case of Double Vagina and Uterus. Hunter Robb.
49 Gallstones. J. Robert Caywood.
50 Gallstones. Edwin Ricketts.
51 *Our Ideals in Appendicitis. N. Stone Scott.
52 A Case of Congenital Dislocation of the Hip with Unusual Family History. W. G. Stern.

The Post-Graduate (N. Y.), June.

53 The Treatment of Pneumonia. Leonard Weber.
54 A Practitioner's Treatment of Inflammatory and Ulcerative Conditions of the Larynx. H. Beaman Douglass.
55 Materials and Technique of Plaster-of-Paris Jacket. Dexter D. Ashley.
56 Report of Clinic. Dr. Wilkin.

Fort Wayne Medical Journal-Magazine, May.

57 Tetanus. G. W. Thompson.
58 Microscopic Aids in the Diagnosis and Treatment of Pneumonia. D. J. Loring.

Archives of Pediatrics, June.

59 *Congenital Occlusion of the Duodenum. Louise Cordes.
60 *Syphilis of the Liver with Large Gummata in Late Childhood. David L. Edsall.
61 A Report of Two Cases of Cancrum Oris. William S. Bainbridge.
62 Duhring's Disease in Childhood. William S. Gotthell.
63 Abscess of the Ethmoid and the Antrum of Highmore. J. Morrison Ray.

Canadian Practitioner and Review (Toronto), June.

64 Notes on Eclampsia. K. C. McIlwraith.
65 Medical Aspects of Cancer of the Breast. William Osler.
66 New Observations on the Treatment of Anemia and Chlorosis. F. Sontag.

Chicago Medical Recorder, June.

67 Further Observations on Rapid Osteoclasis for the Correction of Rachitic Deformities of the Legs. Wallace Blanchard.
68 Operation for Postmenopausal, Complete Prolapse of the Uterus; Operation for Extensive Vesicovaginal Fistula. J. Clarence Webster.
69 Abdominal Colopexy for Prolapse of the Rectum. John B. Murphy.
70 Goiter Complicated by Stenosis of the Trachea. William E. Morgan.
71 Gastrostomy. E. Wyllys Andrews.
72 Two Cases of Weak Heart. George W. Webster.
73 Medical Cases. James B. Herrick.

Journal of Nervous and Mental Disease (Nyack, N. Y.), June.

74 *A Case of Bullet Wound in the Spinal Cord; Operation Three Years Later. Joseph Sailer.
75 *The Rationale of Subjective Healing. Smith Baker.
76 An Anomalous Case of Paralysis and Dystrophy of Muscles Probably Dependent upon Both Neutral and Spinal Lesions. (Not Primary Neurotic Atrophy.) F. X. Dercum.
77 Notes of a Remarkable Case of Insomnia and Its Treatment. John E. Beebe.

Kansas City Medical Record, June.

78 Meningitis. H. O. Hanawalt.
79 Estivo-autumnal Fever. Calvin Atkins.

Medical Sentinel (Portland, Ore.), June.

80 Reciprocity Between State Medical and Licensing Boards. C. E. Worthington.
81 Report of Case of Dynamic Ileus. L. P. McCalla.
82 Post-Graduate Study in London. Warren Brown.

Annals of Otology, Rhinology and Laryngology (St. Louis), May.

83 *A Consideration of the Pathology of the So-called Neurotic Inflammations of the Mouth. J. L. Goodale.
84 The Etiology of Malignant Tumors. C. Ziem.
85 Laryngeal Disturbances in the Diseases of the Central Nervous System with Special Consideration of Laryngeal Disturbances in Tabes Dorsalis. Dr. Johann Sendziak.

Medical Bulletin (Philadelphia), June.

86 A Clinical Lecture on Three Cases of Malarial Fever: Two of the Tertian and One of the Quotidian Type. J. M. Anders.
87 Removal of Carcinomatous Breast. William L. Rodman.
88 Some Anemic Conditions. Frank D. Newton.

Medical Standard (Chicago), June.

89 Appendicitis and Its Treatment. A. J. Ochsner.
90 A Dermatological Clinic. David Lieberthal.
91 Drug Habits and Their Treatment. T. D. Crothers.
92 Differential Diagnosis of Infectious Processes in the Right Iliac Fossa. Valdemar Pleth.
93 Adaptation of Apothecaries' Weights and Measures to the Metric System. C. S. N. Hallberg.

Annals of Gynecology and Pediatry (Boston), June.

94 *Malignant Disease of the Breast. (Concluded.) J. Collins Warren.

95 Pregnancy and Tuberculosis. (Concluded.) M. Samuel Bernheim.
96 Salpingitis. Henry Matthey.

Medical Summary (Philadelphia), June.

97 Practical Experience. J. S. Leachman.
98 Morphin Habit as a Nervous Disease. C. E. Patterson.
99 Vaccination. S. A. Buchanan.
100 Justice. C. Fletcher Souder.
101 Treatment of Hypertrophied Prostate Gland. H. B. Stanley.
102 Dilated Stomach. M. G. Price.

Memphis Medical Monthly, June.

103 The Work and the Reward of the Physician. James L. Minor.
104 *Have We a Continued Fever Which Is Neither Typhoid Nor Malarial? T. J. Happel.
105 The Limitations of Medicine. G. W. Penn.
106 Unusual Case of Bright's Disease—Recovery. D. A. Walker.
107 Burns and Their Treatment. Allen E. Cox.
108 Hospital Cars for Railway Service. G. B. Thornton.

Mississippi Medical Record (Vicksburg), June.

109 A Degeneration of the Maternal Obligation. J. C. Weaver.
110 Ulcers of the Leg. J. W. Hunnicutt.

Vermont Medical Monthly (Burlington), May 25.

111 Hemianopia. A. T. M. Chisholm.
112 The Relief of Pain. Edmond J. Melville.

Bulletin of the Johns Hopkins Hospital (Baltimore), April-May-June.

113 On the Study of Anatomy. Lewellys F. Barker.
114 *On the Occurrence of Tails in Man, with a Description of the Case Reported by Dr. Watson. Ross Granville Harrison.
115 Development of the Pig's Intestine. John Bruce MacCallum.
116 *Bilateral Relations of the Cerebral Cortex. E. Lindon Mellus.
117 A New Carbon-dioxid Freezing Microtome. Charles Russell Bardeen.
118 Notes on Cervical Ribs. Clinton E. Brush, Jr.
119 On the Preservation of Anatomical Material in America by Means of Cold Storage. Abram T. Kerr.
120 *On the Development of the Nuclei Pontis During the Second and Third Months of Embryonic Life. Margaret Long.
121 *The Architecture of the Gall-bladder. Mervin T. Sudler.
122 Remarkable Cases of Hereditary Anchyloses, or Absence of Various Phalangeal Joints, with Defects of the Little and Ring Fingers. George Walker.
123 *Note on the Basement Membrane of the Tubules of the Kidney. Franklin P. Mall.
124 A Composite Study of the Axillary Artery in Man. J. M. Hitzrot.
125 On the Origin of the Lymphatics in the Liver. Franklin P. Mall.
126 Born's Method of Reconstruction by Means of Wax Plates as Used in the Anatomical Laboratory of the Johns Hopkins University. Charles R. Bardeen.
127 Model of the Nucleus Dentatus of the Cerebellum and Its Accessory Nuclei. Harry A. Fowler.
128 Use of the Material of the Dissecting Room for Scientific Purposes. Charles R. Bardeen.
129 On the Development of the Human Diaphragm. Franklin P. Mall.
130 Observations on the Pectoralis Major Muscle in Man. Warren H. Lewis.
131 On the Blood-Vessels of the Human Lymphatic Gland. W. J. Calvert.
132 Normal Menstruation and Some of the Factors Modifying It. Clelia D. Mosher.
133 Retrojection of Bile Into the Pancreas, a Cause of Acute Hemorrhagic Pancreatitis. W. S. Halsted.
134 The Etiology of Acute Hemorrhagic Pancreatitis. Eugene L. Opie.

Southern Illinois Journal of Medicine and Surgery (Metropolis), May.

135 The Good of the Association, and the Journal. A. C. Ragsdale.
136 Examination of Urine as a Method of Diagnosis. P. S. Waters.

Buffalo Medical Journal, June.

137 The Conservative Treatment of Injuries of the Extremities. Chauncey Pelton Smith.
138 Skin Grafting. F. B. Rasbach.
139 *The Making and Fitting of Spectacles and Eyeglasses from the Optician's Standpoint. P. H. Meyer.
140 Fractures of the Nose. Marshall Clinton.
141 *The Pathology of Asthma. G. N. Jack.
142 Severe Melancholia Consequent upon Pelvic Disease. L. G. Hanley.
143 Complicated Hysteromyomectomy. Chas. Banta.
144 Hypertrophic Rhinitis Treated Successfully with Adrenalin Chlorid Solution. Franklin W. Bock

Texas Medical News (Austin), April.

145 Public Hygiene—State Medicine. R. H. Harrison.
146 Circular Enterorrhaphy. F. W. Kirkham.
147 Post-operative Treatment of the Rectum. O. L. Norsworthy.
148 Location of Foreign Body in Eye with X-rays as Used in the Royal Ophthalmic Hospital, London, England. E. P. Daviss.
149 Intestinal Auto-intoxication—Report of Cases. R. W. Baird.

May.

150 Jury Trials of Insane. Marvin L. Graves.
151 Normal Salt Solution. A. C. Scott.
152 Intestinal Colic. T. J. Ratliff.

Texas Medical Journal (Austin), June.

153 Pelvic Abscess. R. M. Dunn.

International Journal of Surgery (N.Y.), June.

154 *Practical Suggestions upon the Treatment of Rectal Diseases. James P. Tuttle.
155 *Briefs on the Surgery of the Genito-urinary Organs. G. Frank Lydston.
156 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
157 Necrosis of the Cranial Bones—With an Illustrative Case. W. King.
158 Regional Minor Surgery. (Continued.) George G. Van Schaick.
159 Acute Ileus Due to Chronic Obstruction at the Splenic Flexure. Operations. Recovery. Howard Lilienthal.
160 Exostosis Preventing Flexion of the Knee—Appendicitis. Wm. L. Rodman.

Alabama Medical Journal (Birmingham), May.

161 Chronic Interstitial Nephritis—Its Diagnosis and Treatment. E. D. Bondurant.
162 The Pernicious Vomiting of Pregnancy. M. B. Cameron.
163 Fevers. M. C. Schooler.
164 Veratrum Viride. A. E. Meadow.
165 Acute Lobar Pneumonia. J. U. Ray.

New England Medical Fortnightly (Danbury, Conn.), June.

166 The Benefits of Hypnotics in Cases of Pulmonary Tuberculosis. John L. Hughes.
167 My Last Year's Experience with La Grippe. J. D. Hopper.
168 On the Use of Thialion in the Treatment of Alcoholic Gastric Catarrh. Buchanan Burr.
169 A Striking Analogy Between the Physiology of Animals and That of Plants. Edward D. McDaniel.
170 The Medical Treatment During the Adolescent Period. Edwin Rosenthal.
171 The Necessity of a More Perfect Aeration—Preliminary Statement. H. H. Spiers.

AMERICAN.

1. **Syphilitic Fever.**—After reporting three cases illustrating various points in regard to the condition, Futcher sums up the following as to be emphasized in this connection: 1. In all cases of fever of obscure origin the possibility of it being syphilitic should be borne in mind. 2. Experience has shown that physicians of reputation, as well as those of limited experience, are prone to mistake the condition for one of the acute specific fevers. 3. The affections for which syphilitic fever is most often mistaken are malaria, typhoid fever, tuberculosis, sepsis, and occasionally rheumatic fever. 4. The fever may occur as early as four weeks previous to the appearance of the secondary skin eruption, or, what is of greater importance, late in the disease after tertiary manifestations have existed probably for years. 5. The fever may be continuous, remittent, or intermittent. The remittent type is regarded as the most frequent form in the fever of invasion. The fever is often associated with chills and sweating. 6. Careful examinations of the long bones and viscera for evidences of tertiary lues should be made in all cases of fever of obscure origin.

2. **The Ophthalmoscope.**—The history of the ophthalmoscope is given very thoroughly by Theobald; he gives full credit to Babbage, who is not usually recognized by medical writers as the originator of the ophthalmoscope. He says that while Helmholtz deserves a certain amount of credit, that which was essential in his ophthalmoscope was not wholly original, and that which was original was not only distinctly not essential, but was the outcome of a misconception—a fortunate misconception as it turned out—upon his part. Within a few months of the announcement, the method of illuminating the eye which he suggested was to a great extent put aside for that of the ill-starred Mr. Babbage. Other names connected with the early history of the ophthalmoscope are mentioned, such as Spencer Wells, etc. The importance to ophthalmology of the instrument, he thinks, is best illustrated by a comparison

to a ship without a rudder, compass and sextant, and not only ophthalmology but neurology and other departments of medicine are benefited by it.

4. **Malarial Buboes.**—Smith reports five cases of inguinal buboes as complications of malarial fever, giving temperature charts and daily records. He has observed other cases and calls attention to the phenomenon as a matter of much importance and occurring without the suspicion of venereal infection and clearly dependent upon the fever. In conclusion he remarks on the reported existence in Cebu, P. I., of many cases of mild fever with glandular enlargement, and suggests that it will be interesting to know what these cases prove to be on investigation.

5. **Psychic Epilepsy.**—Courtney gives a description of the phenomena of psychic epileptic attacks and concludes that psychoses of epilepsy have very definite and immediate associations with other and irrefragible manifestations of the disease, that the plea of irresponsibility for criminal acts alleged to have been committed while the individual was suffering from epilepsy should be considered invalid unless other manifestations can be adduced, and that vague and ill-defined convulsions which date back to infancy do not constitute such other manifestations. He reports a case at some length as illustrating the intellectual petit mal. It was traumatic in its origin and presented the features of the "absences" of consciousness, amnesia and automatic acts.

6. **Medical Expert Evidence.**—The special case of the Bellevue Hospital attendant who was tried for murder of a patient and the differences of medical opinion adduced in the trial form the text of Pritchard's article. The charges made against the medical expert testimony generally he thinks are harsh and he criticizes certain points in the management of the case by the prosecution. He says medical expert testimony is more often defective from the manner of its presentation than from an assumed yielding of expert witnesses to whatever opinion is desired of him. Medical expert testimony has the indifferent witness who makes the possibilities of medical science his excuse for almost any opinion and such should be branded by the medical profession as cankers eating into their professional body. This last class of medical expert evidence is not found, however, in a trial of great public interest where the medical witnesses are the foremost members of the medical profession.

7. See abstract in THE JOURNAL, XXXV, p. 1048.

8. **Typhoid Fever.**—Hare and Landis conclude their article, reviewing the respiratory complications, the temperature in the well-developed stage, the skin lesions, eruptions, genito-urinary symptoms in the developed disease and the symptoms on the side of nervous system and alimentary canal. Typhoid without intestinal lesions is mentioned, as are also the circulatory and blood changes.

9. **Hernia of the Bladder.**—Cheesman commences his paper with a report of cases, then passes to the history of the condition, its anatomical conditions, etiology and treatment. He concludes his paper with the following conclusions: 1. That the principal cause of bladder hernia is direct traction exercised through the peritoneal coat by the weight of the hernial mass, or by pull on the sac during ligation in operations for radical cure. 2. In one-sixth of the cases symptoms occur sufficient to arouse suspicion, sometimes amounting to certainty, of the existence of the abnormality. 3. In about one-fourth of the cases it may be possible during operation to recognize the bladder and avoid injuring it; and after one hernial sac has been found, any structure resembling a second should be regarded as bladder, till proved otherwise. 4. When the bladder is wounded, the best procedure is immediate suture by two layers of catgut, and closure of the hernial wound by Bassini's method; a small drain only being left leading to the bladder suture line. The bladder wall, when thinned, may be freely resected preparatory to closure. The catheter *à demeure* is not essential to primary union of wounds thus closed. 5. Urinary fistula nearly always closes spontaneously. 6. Injuries of the bladder have been directly responsible for death in only 10 per cent. of the hernia cases in which they occurred.

10. **The Nauheim Treatment.**—Heineman is a strong advocate of the Nauheim treatment, which he finds beneficial in a very large proportion of cases. He describes the methods and the dietary advised, and gives results. He thinks it is indicated in rheumatism, gout, inflammatory exudates, functional and incipient organic spinal disorders, spinal congestion, neurasthenia and early stage of locomotor ataxia, chorea, sciatica, and certain forms of neuritis; in circulatory disorders; in the conditions produced by chlorosis, hemophilia, and Barlow's disease, early arteriosclerosis, and aneurysm only in its incipiency; also in varicose condition of the veins; in all vasomotor disturbances. In cardiac diseases, it is indicated in myocarditis, fatty heart and all forms of loss of compensation, whether dependent upon muscular changes or valvular disease; also in angina pectoris and all forms of functional cardiac disorder. Its contraindications are Bright's disease, advanced aneurysm, and serious cases of advanced arteriosclerosis in which only with the utmost conservatism and watchfulness can good results be obtained and justify treatment. He cautions against too rapidly increasing the treatment, and remarks that in selecting the character of the bath and its temperature it should be kept clearly in mind that cool baths produce different physiologic effects from warm baths. Experience with every given case will have to be the guide to treatment.

11. **Nephrorrhaphy.**—The method here described by Sturmdorf and the case reported is the same as Edebohls' method as published in his article on movable kidney in the *American Journal of Obstetrics* in 1895, as far as incision and ablation of the tissue is concerned. After that the formation of the flaps is made in the following manner: "The kidney was pushed as near to the surface as possible, and steadied there by pressure exerted through the abdominal wall by the hand of an assistant. The capsula propria was incised longitudinally, exactly in the median line to within about three-fourths of an inch from either pole. A pair of closed curved, blunt-pointed scissors was introduced beneath this capsular incision, and the capsule was carefully separated from the kidney substance for an area corresponding to the longitudinal capsular incision in length and to the lateral borders of the kidney in width. The free capsule was now raised by mouse-tooth forceps; two flaps were formed with blunt-pointed scissors by slitting the capsule laterally at each end of the longitudinal incision, as shown in the diagram. The flaps were secured in the grasp of T-shaped forceps, while two silkworm retention sutures, equidistant from each other and from either pole of the kidney, were passed through skin, superficial fat, the tendons of the abdominal muscles, the cut and trimmed edges of the perirenal fatty capsule, the fibrous capsular flaps, and the parenchyma of the kidney, at a depth of about three-fourths of an inch from its surface, and left untied for the time being. The object of these sutures was not only to aid in relieving tension but to obliterate any possible hollow spaces, thus obviating the necessity for drainage, and at the same time securing firm coaptation of broader surfaces for subsequent cicatricial union. Longitudinal slits, corresponding in location and length to the position and width of the fibrous capsular flaps, were next made through the adjacent muscular tissue, and the flaps drawn through these slits were secured in place by a running suture of fine chromicized catgut. Three interrupted sutures of No. 3 chromicized gut were next passed so as to embrace muscle and kidney substance at a level with and equidistant from the above-mentioned silkworm sutures, and tied. The final suture included skin, superficial fat, and fascia, after which the silkworm sutures, originally left hanging loose, were drawn taut by means of shot and plate. Primary union occurred, the removal of the silkworm sutures being effected on the eighth day."

12. See abstract in THE JOURNAL of June 8, p. 1649.

14. **Moore-Corradi Method.**—The essential features of this method as stated in the article consist in: 1. A thorough exploration of the tumor by celiotomy, which permits a recognition of the approximate anatomic seat and relations and

furnishes valuable information as to its characteristics—an advantage not afforded in thoracic aneurysm. 2. The safe exposure and even permanent isolation of the point of attack in the most accessible part of the tumor by the formation of adhesions between the sac and abdominal wall, diminishing the shock and liability to perineal contamination. 3. The introduction at a second sitting after adhesions have formed and the sac becomes extraperitoneal of a highly drawn fine suarled silver wire, which should not exceed a No. 28 gange (0.0085 inch) in diameter. Sterling silver will meet all the indications. 3. The wire should be fed or carried into the aneurysmal sac through a fine and carefully insulated trocar or cannula (shellac, celluloid, or rubber being used as the insulating agents, and the caliber of the canula not exceeding a No. 2 Diculafoy aspirating needle). 5. The wire should be tested, first to determine the following points: That it will coil in large irregular loops so as to be distributed over the widest possible surface. That it will not form short continuous spirals with such spring and force as to cause injurious pressure on the aneurysmal walls, or, after finding its way into the aorta through a large orifice spring as it were, into the heart itself. It is important for the quantity of wire used to be adjusted to the size of the aneurysm so that retraction after coagulation may not be interfered with by its resistance. As a rule, 10 ft. will suffice for the average aneurysm, though larger quantities are advised in certain cases. 6. The electric current should be furnished by a galvanic battery with a positive pole attached to the wire, and the negative electrode well covered with a wet cloth, to the back. A milliampere meter should be connected with the circuit, to show the strength of the current, which should not exceed 70 milliamperes, for fear of caustic effects. The intensity of the current and the duration may vary within wide limits corresponding to the condition of the patient and the effect upon the tumor. In his case reported, the sitting was prolonged four hours and twenty minutes without appreciably bad effects after the sac had been rendered extraperitoneal. 7. The coincident administration of gelatin (3 per cent.) in decinormal saline solution (7 per cent. salt) in 6 or 8 ounce doses by hypodermoclysis, as suggested by Lancereaux, may be a useful adjuvant to rest, diet, and other general measures. The question whether this method is applicable to all forms or only special anatomical conditions is raised and Matas concludes that it is evident that there may be a comparatively small percentage of cases favorable and another much larger group not amenable to this procedure and where it is contraindicated.

15. **Traumatic Neuroses.**—Moyer concludes his paper by suggesting the following points for discussion: That concussion neurosis, in all its various appellations, is an unfortunate and misleading term; that clearer understanding of functional nervous troubles renders such a term unnecessary; that pain and tenderness of the spine is rarely an evidence of change in the cord, but is usually due to fatigue of the spinal muscles, or sprains and concussions of the column; that most of the symptoms of spinal concussion, as the term is commonly used, are cerebral in origin, and that a correct diagnosis and prognosis may usually be reached by analyzing all such cases after the same manner that we do functional nervous troubles having their origin in non-traumatic causes.

16. **Sympathetic Resection in Glaucoma.**—After mentioning the opinions *pro* and *contra* and methods of performing the operation, Mullen reports a case of excision of the sclerotic superior cervical ganglion for glaucoma. He puts it on record as agreeing with one reported by Panas in being followed by declining vision and, therefore, as showing that resection of the sympathetic in glaucoma does not always produce permanent curative results.

17. **Clinical Thermometers.**—Rosenberger has examined the clinical thermometer after ordinary cleansing, for bacterial contamination in various diseases, indigestion, gout, measles, scarlet fever, tuberculosis, diphtheria and bronchitis, and sums up his results in the following conclusions: 1. It is possible for the thermometer to be laden with the usual flora of the oral cavity. 2. Such bacteria may retain their capability of growth for an indefinite time, at least 2 months, as shown by the above experiments. 3. Many pathogenic bacteria possess similar capabilities, and it is not unreasonable to assume, although the above experiments are not conclusive upon this point, that transmission of bacterial disease by the thermometer is possible. 4. Thermometers are easily disinfected. 5. Where possible each patient should be possessed of a thermometer, as much his own property, and as sacred to his own use, as his toothbrush. 6. Where for reasons of economy or otherwise it is impossible to carry out the recommendations expressed in conclusion 5, the thermometer should be disinfected before and after using. 7. The custom now prevalent in the hospitals of keeping thermometers in disinfecting solutions is to be commended.

18. **Atypical Pneumonia and Phthisis.**—The importance of an early diagnosis in phthisis is considered, and the statistics as regards the antecedents of pneumonia in this disease discussed. Bergtold believes there are many cases occurring that are diagnosed pneumonia and recognized as tuberculosis only after the malady has declared itself beyond the aid of medicine. He emphasizes the point of being suspicious of any atypical pneumonia, not that he considers all such cases tuberculous, but believes that they are under suspicion. He thinks a more thorough examination of clinical histories and literature would show a larger percentage of atypical pneumonias previous to tuberculosis than is indicated by the data he has given.

19. **Electrolysis in Skin Diseases.**—Wisecup describes the methods employed by him for removal of superfluous hair and other conditions. On account of the variations of individual resistance he does not think the milliampere meter necessary, and advises the use of the smallest possible needle, not too sharp at the point; for the other electrode he allows the patient to hold his fingers in a cup of water, connected with the other pole. The rule he follows is to insert the needle about one-fourth inch into the average hair follicle, but a smaller distance for smaller hairs. Aim to have the needle come in contact with the hair bulb, which can be told by the slight resistance met. Leave the needle inserted until a white froth bubbles around it, but there is danger of leaving it too long and a scab or scar forming. Use preferably a straight needle, as small as possible, without a bulb. Among the diseases which he has treated are nevus, though the common birthmark is unsatisfactory under this head; also moles, cavernous nevus, dilated vessels, cicatricial scar tissue, xanthoma and blackheads.

20. **West Point Neurasthenia.**—Woodruff criticises the course followed at West Point as tending to exhaust the student and to produce neurasthenic conditions in after-service. He remarks that neurasthenia is recognized in the United States as a military disease. The work is three times as much as the human brain can do. The academy must abolish the unwholesome system of rejecting the cadets, who, though very able, are not possessed of an unwholesome and abnormal brightness and quickness. He thinks by retaining them and by shortening the course the academy could supply three times the number of efficient officers it now does. Congressmen could make appointments every two years without increase in the number of cadets.

23.—See abstract in THE JOURNAL of May 11, p. 1338.

26. **Jacksonian Epilepsy.**—In this conclusion of Putnam's article he points out that it is by no means certain that in Jacksonian fits there is a discharge beginning at the point corresponding to the signal symptom. The longer the time during which the seizures due to localized irritation occur, the more widely the brain as a whole becomes involved and the co-operative action of ever-widening areas of the brain may show itself almost from the outbreak. In this case the patient with traumatic or focal epilepsy probably differs but little, if at all, from patients of idiopathic epilepsy. The theory here advocated by Putnam is what he calls the "inhibition" and "formation of new habit" theory which he considers at present the best one available. He believes that the arrest of epilepsy through surgical operation is an affair primarily of inhibition, and next the establishment of a new habit, made possible by the

temporary arrest of the morbid outbreaks. He does not think it necessary to look to a focal lesion for this. The therapeutic problem is how best to secure this inhibitory action and he thinks that possibly as much good can be done by mere exposure of the brain as by incision, or perhaps more. Whatever the operation, in his opinion, it should be considered that the arrest of the symptoms is mainly useful as affording a better opportunity for bromid medication. This part should be taken up energetically. He does not consider it necessary to give the details of bromid treatment, but suggests that the Charcot method, recently recommended by Tourette, of increasing the dose for three weeks, and then dropping to the starting point, and so on, and reinforcing the treatment by every hygienic influence that can be devised, is probably as good as any method.

27. **Prostatic Hypertrophy.**—The conclusions which Horwitz deems himself justified in forming are: 1. Success following the Bottini operation depends on having perfect instruments; a good battery; the necessary skill, and the employment of a proper technique. 2. In suitable cases the Bottini is the safest and best radical operation thus far advised for the relief of prostatic hypertrophy. 3. It is often very efficacious in advanced cases of obstruction as a palliative measure, rendering catheterism easy and painless, relieving spasm; lessening the tendency to constipation, and improving the general health. 4. It is of especial service in the beginning of obstructive symptoms due to hypertrophy of the prostate gland, and may be regarded as a means of preventing catheter life. 5. It is indicated in all forms of hypertrophy except where there is a valvular formation, or where there is an enormous overgrowth of the three lobes, associated with tumor formation giving rise to a pouch, both above and below the prostate gland. 6. Where the bladder is hopelessly damaged, together with a general atheromatous condition of the blood vessels, associated with polyuria, results are negative. 7. Pyelitis is not a contraindication to a resort to the operation. 8. The character of the prostatic growth has no bearing on the results of the operation. The ligation of the internal iliac arteries for the relief of hypertrophy of the prostate gland, first recommended by Bier, has been tried by several surgeons with very unfavorable results. The benefit derived from the operation is slight, and the mortality higher than that following prostatectomy. Thus far, the results derived from angioneurectomy have been negative. I have frequently witnessed the operation of perineal prostatectomy when performed by others, and have on various occasions resorted to it, but I have found that nothing was gained beyond the temporary improvement that might naturally be expected to follow rest and drainage.

29. **Puerperal Insanity.**—Lane's article is largely an argument against the existence of puerperal insanity as a distinct disease and gives a calculation of the number of females of child-bearing age suffering from insanity and the cases of puerperal insanity reported in the Boston Insane Hospital. He finds that the number of cases among child-bearing women are rarer than among women in general at child-bearing age. It would be a good risk to insure a pregnant woman against insanity or at least against commitment for insanity. The latter part of his paper is made up of reports of cases.

30. **Home Treatment of Tuberculosis.**—The advantages of treating tuberculosis at home are that the patient avoids the risk of double radical change and makes his recovery under conditions which can be continued. The influence of familiar surroundings are also to be considered as well as the pecuniary factors. If other things were equal, which they are not, he is inclined to believe the sanatorium treatment in the Rockies or Alps, conducted on the same line as the Dettweiler at Falkenstein, and with the same stage and class of cases, would produce better results than the sanatorium in our home climates, but the majority must, if the hygienic treatment is attempted at all, undertake it near home.

37. **Ear Troubles in Children.**—Yearsley insists on the importance of early recognition of ear troubles, especially deafness, which he thinks should be suspected whenever the child is slow in learning to talk. If it passes its first two years without acquiring a few simple words, it is probably the subject of defective hearing. Pains in the ears in a child may be very variable, but it is most important to know the condition. If the general practitioner who is first to see the case, can exclude or diagnose ear disease, he will have the satisfaction of saving the patient much possible future suffering and himself much annoyance.

38. **Thermol.**—This drug, which has its chemical composition (C_{14} H_{15} No_3), is recognized by Rosenthal in combination with other drugs as an antipyretic in fevers of children. He thinks we have in it a perfectly safe antipyretic of known value with also hypnotic and analgesic powers.

45. **Angiosarcoma of the Brain.**—After first considering the indefiniteness of pathologic symptoms in cases of brain tumor, Perkins reports a case in which the diagnosis of angiosarcoma could be definitely made but in which no trace of special connections with blood vessels, either endothelial or epithelial could be made out. The diagnosis of cerebral tumor was made from the usual symptoms. The autopsy revealed a growth of the right frontal lobe without metastases, which microscopically, from the character and arrangement of tumor cells, their lack of processes, the minimal amount of stroma and sharply defined limitations from the brain substance, resembled sarcoma; the abundance of vessels throughout the mass, suggesting angiosarcoma in the absence of infiltration; lack of nerve cells, apparent absence of glia fibers, were against the diagnosis of glioma. He concludes his paper with remarks on the nomenclature of brain tumors and a brief review of the opinions of others.

46. **Epilepsy.**—The morbid anatomy of epilepsy as illustrated by 130 autopsies is discussed by Ohlmacher. The findings seem to him to justify his elsewhere expressed opinion as to the close association between this nervous symptom and the peculiar condition known as the lymphatic constitution or lymphatism. He, however, says that one must not expect to find a complete picture of lymphatism, with the persistent hyperplastic thymus, general lymphadenoid hyperplasia, and arterial hyperplasia is not to be found in these conditions, as a rule, for it occurs only in children or young adults. In older persons or those dying of wasting diseases or epileptic exhaustion the evidences of lymphatism are masked and seen only in such ineradicable features as narrowed arteries or the osseous deformities of rickets. Of 71 cases classified as idiopathic and lymphatic epilepties a goodly number proved typical examples. The predominant brain change accompanying this class of cases is a gliosis of the cerebrum taking the form of diffuse superficial cerebral gliosis either hypertrophic or atrophic or a localized sclerosis affecting certain parts, particularly the horns of Ammon and the hipocampal gyri. He is inclined to the opinion that this is in some way related to intracranial pressure and it is pretty well established that lymphatism is one of the consequences of rickets and we may come to rickets as the ultimate basis of epilepsy and allied nervous disorders. If this be the case, the problem of dealing with idiopathic epilepsy resolves itself into one of the combating infantile rickets, which is probably a nutritious and infectious disorder, preventable by proper dietary and hygienic precautions in infancy. The other class were those of infantile cerebral paralysis, which amounted to 15 per cent. of the whole, the senile epilepsy, represented by 8 cases, showing brain lesions or other localized arterial gliosis from arterial sclerosis of the cerebral arteries or foci of cerebral softening. There were 6 cases of senile epilepsy, or 5 per cent., 3 of cardiac epilepsy, connected with advanced cardiac changes which are supposed to be of direct causal relation, 2 of paralytic dementia, 1 each of alcoholic and uremic epilepsy, and 1 due to cerebral tumor, a cystic glioma of cerebrum.

51. **Ideals in Appendicitis.**—The ideals in appendicitis operations are, according to Scott, a model patient, who must be of high intelligence and in good physical condition, and an appendix with a reasonably long mesentery allowing free motion; the disease should be limited to the structures beneath the peritoneum and at the stage not yet threatening rupture. The adipose tissue of the abdominal wall should be thin and the fascia well developed. The surroundings should be such as to insure aseptic operation with all that this implies. This

is best secured in well-appointed hospitals, and a nurse that understands the ideals to be attained and the methods of achievement. Lastly, the surgeon should be a keen diagnostician and careful even to the smallest details, must have not only a good surgical ability, but added to this, dexterity and experience, so that he can perform the operation through the smallest possible incision. When all these requisites have been obtained, the traumatism of the internal parts will be limited to a mere dimple upon the head of the colon; there will be no free raw surface to form adhesions, and no necessity of absolute quiet of the intestine for the purpose of repair in aseptic operations. The only active factor to be considered is traumatism of the abdominal wall. The rapidity of the convalescence is inversely proportional to the length of the incision in the fascia, which in these favorable cases will not be over three-fourths, perhaps not over one-half inch, the elasticity of the parts being such that it is possible to introduce the finger through the dilated incision. An illustration of these ideals he gives in his own case in which he was operated upon, leaving the hospital after four and one-half days; on the sixth day he made his hospital round, transacted business and called upon his physician.

59. **Occlusion of Duodenum.**—Cordes reports a case, the fifty-seventh, according to her researches in the literature, of congenital occlusion of the duodenum, and tabulates all the cases she has found. She discusses the symptoms and says that, whatever may be said in regard to stricture of the intestine in other regions, it seems clear that volvulus and fetal peritonitis can not explain the large number of cases of occlusion of the duodenum. A number of facts, such as the repeated occurrence of this occlusion near the site of the papilla, the existence in probably more than one case of anomalies of the duct system, the absence of Brunner's glands in one case and the striking absence of any sign of disease to which the condition is traceable and other malformations than that of the duodenum in a certain number of cases, lead her to think that an error of development not yet explained may underlie this condition.

60.—This article was abstracted in THE JOURNAL of March 2, p. 592.

74. **Bullet Wound of the Spine.**—The case reported by Sailer is that of a man struck four years ago by a Mauser bullet which passed through the spinal cord in the lumbar and sacral region. There was immediate paraplegia and some years later severe fulgurant pains in the limbs. To relieve the latter, laminectomy was performed and a greatly thickened dura was incised; the operation gave great relief. Subsequently some improvement occurred and finally there was only total anesthesia and paralysis of the right limb and lower portion of the right thigh, and total anesthesia of the left foot, movement at both hip joints and left knee joint and slight improvement of the left foot and toes; total anesthesia over the sacral area, and hyperthesia of the perineal region. Sexual reflexes of the patient were only partially impaired. The interesting features of the case are the localization of injury of the spinal cord, the satisfactory results of operation three years after receipt of injury, and a curious sensory phenomenon (allochiria) shortly after the operation, while improvement was in progress. The localization in the cord is discussed at length with considerations bearing on the physiologic centers. He is certain that the anterior cornu, or the anterior root proceeding from it, was intact on the right side of the level of the first lumbar segment. The bullet probably entered about the level of the lower portion of the second lumbar segment, involving the third and fourth and possibly the fifth lumbar segments, but not the first sacral, or any of the segments below it on the right side. On the left side the first, second and third lumbar segments were certainly intact, as shown by muscular innervation, the fourth lumbar segment was partially involved, and the fifth probably totally destroyed. A study of the sensory areas also bears out this diagnosis. There is probably hemorrhage in the central portion giving rise to disassociation of sensations. The allochiria mentioned was observed thirty-nine days after operation and lasted about three days.

75. **Subjective Healing.**—Baker discusses the fads of subjective healing and suggests that we should consider the human invalid not the mere victim of a special affection, but study the entire individual in the diagnosis. A consideration of these facts shows the uselessness of wearing people out with drugs and cultivating too much dependence on them. It also shows the dangers of extreme concentration of a purely subjective order and the psychical elation which has not been given solid basis to sustain it. The "healer" often seems to make a good start in the right direction with the individual, but soon fails from lack of knowledge of physiology and pathology. Unless the body has been remedied and the mind furnished and steadied, and conduct ordered in accordance with actual needs, no cure worthy of the name can be expected from either materialist or idealist. The neurologist and psychologist should determine how far results which are now secured haphazard can be obtained by proper scientific practice. People, especially when young, should be encouraged to most sedulously cultivate bodily endurance, mental growth and freedom, and spiritual self-reliance, faith in inductive science, rather than trust in dogmatic deduction, with the hope that where now there is such readiness to develop morbid introspection and flaccidity of the mind a better state can be produced.

83. **Oral Neuroses.**—The conditions described under this head by Goodale is divided by him into the following: 1, herpes zoster; 2, herpes buccalis and lingualis; herpes facialis; erythema exsudativum multiforme, or bullosum; 3, erythyema nodosum; purpura rheumatica; 4. stomatitis neurotica chronica of Jacobi; 5, dermatitis herpetiformis of Duhring (of doubtful position); 6, pemphigus. Of the above conditions the herpes forms, erythema nodosum and purpura rheumatica are all defined clearly, but with the erythema bullosum, dermatitis herpetiformis and stomatitis neurotica chronica much confusion exists. Erythema bullosum is an angioneurotic inflammation, generally afebrile, is characterized by eruptions of one or more vesicles upon a hyperemic basis, without characteristic grouping, enlarging rapidly by peripheral extension: it forms bullæ of one or two centimeters in diameter, the contents of which are at first clear, later cloudy, and evacuated by maceration and rupture of their epithelial covering, leaving a moderately sore, but not spontaneously painful base, which heals in from one to four weeks without a scar. Dermatitis herpetiformis is a chronic, probably infectious condition characterized by more or less general eruption upon the skin and mucous membrane of lesions of multiform type, with pronounced burning or itching sensations and having a protracted course with temporary exacerbations and remissions, and little existing disturbance. Stomatitis neurotica chronica is a chronic, afebrile affection, occurring generally in neurasthenics and characterized by more or less general outbreak of bullæ upon the oral and lingual mucous membrane preceded at times by local reddening, somewhat painful, not pruritic, and various symptoms of nervous disturbance. Pemphigus is a term applied to various forms, probably infectious and distinct, but differing in their etiology and having a common characteristic eruption of clear non-purulent bullæ on an unreddened or very slightly reddened skin or mucous membrane, in regular sequence, without angiogenic form, characteristic grouping, distribution or localization, with little or no local subjective symptoms and having an acute onset and tendency to recurrence and generally attended with marked disturbance of the general health. These characteristics given above may be regarded as representative type forms, but another source of confusion is the various meaning attached to the term herpes, pemphigus, etc. The rest of his paper is given up to a description of the herpes, erythema, and other disorders of the mouth.

94. **Malignant Disease of the Breast.**—Warren's article describes the condition and Halsted's operation for its relief. As regards the results he thinks that if examination shows no recurrence within three years the cure may be regarded as certain. Taking the average results of the present time, he says, we are safe in assuming that a cure can be affected in at least 30 per cent. of the cases operated upon, though this percentage depends upon the class of cases selected. There is a type of cases which almost always may be regarded as favor-

able, that is, those which have been under observation for several months and have made no progress. In nearly all cases of cure in his experience the microscopist has given a diagnosis of scirrhus cancer. The question whether we should try a post-operative treatment to prevent recurrence is mentioned and he suggests the use of mammary extract as possibly producing a soil antagonistic to the return of the disease. He has not yet, however, enough experience to express a definite opinion as to its value. He has seen improvement in reabsorption of recurrent nodules from the use of the thyroid extract and he says, however, as regards the subcutaneous use of alcohol and pyoktanin that we should bear in mind that cancer nodules may disappear spontaneously.

104.—This article has appeared elsewhere. See abstract in THE JOURNAL of April 6, No. 79, p. 995.

114. **Human Tails.**—The reported cases of caudal appendages in man comprises a most heterogeneous class. Anything appended to the sacral or coccygeal region is described as tails. There are, however, a great many cases, Harrison says, in which the anatomical relations are such as to indicate that the growth owes its existence to the persistence of at least part of the vestigial tail found in the human embryo. The case he reports appears to be such a one. The subject generally is discussed at length and the way in which the abnormality appears is theorized out. He concludes with Keibel that while as far as outward form is concerned the embryologic tail disappears, largely as a result of growth of the extremities and gluteal region, a certain amount of regressive change takes place in the caudal appendix itself. This is evident not only in the absorption of the caudal filament but also in the reduction of all the bone structures of the vertebral portion of the tail, that is, the vertebræ, muscles, segments of spinal ganglia and blood vessels. In this tendency to reduction the resemblance between human and mammalian tails also holds. The soft or boneless tails are clearly not due to multiplication of vertebræ or to the persistence of all which are developed in the vertebræ, but, as he first suggested, are to be regarded as persistent caudal filaments.

116. **Bilateral Relation of the Cerebral Cortex.**—Mellus reports experiments made by removal of portions of the cortex in the monkey, observing the functional lesions and studying the lateral degenerative processes. The most striking feature is the large number of degenerated fibers passing from the cortical lesions over the middle line in the corpus callosum and down the internal capsule of the opposite side. With the exception of those fibers going to the superior temporal convolution of the opposite side, the fibers in this experiment all pass into the thalamus. In a few animals in which practically the same area was extirpated some of the degenerated fibers found in the internal capsule of the opposite side can be followed through the pons and medulla into the cervical region of the cord, where they disappear. From this he concludes that a vast number of the projection fibers arising in the motor cortex end in the thalamus and especially those of the area in which more or less bilateral movements are represented. These movements are mostly facial, and he thinks this has some bearing on the function of the thalamus. It has been suggested that the thalamus is the center for reflex or emotional movements, and the facts here stated may explain the play of the features as the result of emotion when voluntary movement is impossible. In many extensive lesions of the internal capsule fibers passing into the thalamus, even on the side of the lesion, might easily escape injury, even if bilateral control of the thalamus were improbable. The presence of degenerate fibers in the lateral geniculate bodies in this case is suggested to be possibly due to these having the function of voluntary inhibition of certain visual reflexes.

120. **Nuclei Pontis.**—The summary of Long's article on the development of the nuclei pontis is given as follows: "The main nucleus pontis is situated on the central surface of the rhombencephalon at the level of the pontal flexure. In the specimens the nuclei pontis are first seen on the surface and in the ventral part of the mantle layer of the lateral part of the pons Varolii. In the second embryo the nucleus pontis ventralis extends across the middle line of the rhombencephalon and the nuclei pontis dorsales are separated from its lateral part by the ventral fiber bundle. The nuclei pontis dorsales next form two solid masses, reaching almost to the middle line. They are still separated by the ventral fiber bundle from the nucleus pontis ventralis, except at extreme lateral ends, where they are continuous with each other. Next the nucleus pontis becomes a solid shell on the ventral surface cut by a small branch from the ventral fiber bundle. After the sixth month the pons consists mainly of fibers and scattered groups of cells, which increase at the expense of the dorsal part of the nuclei while a narrow ventral nucleus or cell-mass is left on the surface.

121. **The Gall-Bladder.**—Sudler's article is chiefly devoted to a description of the lymphatic and finer blood-supply of the gall-bladder, described in detail.

123. **Liver Lymphatics.**—From the observations here reported, Mall concludes that: 1. The lymphatics of the liver arise from the perilobular lymph spaces and that these communicate directly with the perivascular lymph spaces. 2. That the lymph reaches these spaces by a process of filtration through openings which are normally present in the capillary walls of the liver. Furthermore, the fluid injected into the lymphatics from the bile duct leaves the duct as it enters the lobule and is at once taken up by the lymph radicals and perilobular lymph spaces, and from them extends, as a secondary injection, to the perivascular lymph spaces, and often into the blood capillaries of the lobule. The larger lymphatics accompanying the portal vein arise between the lobules near their bases, while those accompanying the hepatic vein do not arise within the lobule but around the larger sublobular veins.

139. **Spectacles.**—This article is of interest as giving the views of an optician in regard to the fitting of spectacles. Meyer mentions the harm coming from patients trying to fit themselves, and thinks that even few physicians and oculists realize the importance of the careful filling of their prescriptions, not only as regards perfect lenses ordered, but also the making of the frames and adjusting them to the correct position before the eye. The distress produced by inaccurately adjusted lenses, he says, is unappreciated by those who have not felt it. He gives an instance of a lady who traveled 100 miles to her oculist, suffering with headache and gastric disturbance, and was completely relieved by the prescription: "Reduce the angle of the glasses 5 degrees." The fact that the glasses tilted a few degrees more than they should gave the effect probably of a cylinder in the longitudinal meridian, producing an astigmatic effect, which she did not naturally have. He says that opticians usually do not charge for adjusting glasses when they get out of shape, as it takes only a few seconds of their time, but are amply repaid in the expression of satisfaction of those that have received the benefit. He also discusses the peculiarities of the optician's patient and believes that the average tradesman in dealing with them would consider them all cranks. The skill of the optician in meeting the demands of these is the secret of his success.

141. **Asthma.**—Jack considers asthma not a disease by itself, only a symptom of an abnormal biochemical and complex pathologic process originating usually in the intestinal canal, with long-standing indigestion, toxemia, faulty absorption, metabolism producing toxemia of lymphagenous chyle that generates an unstable blood, characterized by extremely numerous and alarming paroxysmal morphologic changes, often alternating between lymphocytosis and intestinal toxemia leucocytosis, or marked anemia; the affection is accompanied anatomically by hyperplasia of the lymphatic and glandular structures and clinically by a most wretched and agonizing dyspnea. The characteristic pathologic feature of asthma is the unstableness of its blood. The main part of his article is given to describing the different forms of asthmatic conditions, such as asthmatic lymphocytosis, intestinal toxemic leucocytosis and anemia.

154. **Rectal Prolapse.**—This article describes the method of treatment of complete rectal prolapse of the first and second degrees, when the prolapse is due to alteration in the passive supports of the lower portion of the rectum. After preparing

the patient by cleaning out the bowels, syringing the parts, and asepsis, the prolapse is drawn down and measured. While it is down the semicircular incision is made midway between the anus and coccyx and carried between the muscles of the levator ani until the retrorectal space is reached. With the finger or a pair of blunt scissors the rectum is then separated from the sacrum as high up as the distance which it protrudes from the anus. With the dull curette the fatty or cellular tissues are scraped off the anterior surface of the sacrum and the prolapse then reduced. The assistant's finger carried through the anus inverts the gut, bringing it out between the incision made between the anus and sacrum to the same extent as the prolapse. While held in this position and flattened out long silkworm gut sutures are passed from its muscular walls from one side to the other, one above the other, and transversely. The only precaution necessary is to not carry them deep enough to involve the mucous membrane while introducing them. However, the external cellular tissue should be removed. The sutures are placed about one-half an inch apart until the whole protrusion is covered, the ends being left loose. After all the sutures necessary have been introduced, each end of the higher suture is threaded with a long curved needle, which is carried upward through the division between the sacrum and rectum and brought out at the highest point of this cavity through the ligaments and fascia upon one side of the sacrum. The other is dealt with in like manner, and the lower sutures in succeeding order are also carried up through the wound and brought out at lower levels until they all have been so treated. When these sutures are made taut they will carry the rectum upward and holding it in apposition with the fresh surface edges in normal position. If it can be held here until the normal tone of the muscular supports below has been restored the cure will be permanent. The sutures are brought across the sacrum over a strip of iodoform gauze laid upon the skin in order to prevent the threads cutting into it, and left for ten days or longer. After these have been thus tied, the sphincter muscle is much relaxed; it is well to pass a kangaroo tendon around the rectum just above the margin of the external sphincter, entering it in the original wound and sutured in the same wound. After this is done the wound is closed with a chromicized catgut suture for the muscles and plain catgut or silkworm for the skin. Cases operated upon in this way have been observed for three years. Five out of the nine were old and very chronic cases, one having existed for eighteen years, and with one exception there have been no symptoms of recurrence. When prolapse occurs high up in the peritoneal portions of the rectum an abdominal sigmoidopexy is advisable and he describes the operation.

155. **Resection of Vena Dorsalis Penis.**—Lydston criticises those who have claimed to have cured patients of impotence from ligation of this vessel, and thinks we would have probably better results from its resection and that this ligation as a rule has nothing to do with the brilliant results thus reported.

FOREIGN.

British Medical Journal, June 8.

Skiagraphy and Fractures: Especially in Their Medico-legal Relation. C. H. GOLDING-BIRD.—After first mentioning the dangers of the popular misuse of the X-ray, Golding-Bird discusses the subject from the surgeon's point of view. While no one will question the value of the method in the diagnosis, its use is unnecessary in the larger proportion of cases one is called upon to treat, yet there is a certain class of doubtful cases where it is most desirable. These are of two kinds, one in which, though certain of fracture, there is a doubt as to the exact locality, its direction, or perhaps its involvement of a joint. The other, where the existence of fracture is doubtful, and while this doubt may not necessarily modify the line of treatment, yet should the patient get skiagraphed on his own account, and be able to demonstrate a fracture, a suit for malpractice might arise or other embarrassment to the surgeon. Of this second class, fractures of the fibula and vertical or transverse fractures anywhere and certain forms of fractures around the hip are examples. Thus, he mentions Pott's fracture, which may occur without characteristic deformity and be diagnosed as severe sprain. A vertical fracture involving the knee-joint, a purely transverse fracture without displacement, notably in the lower end of the tibia in which the patient is still able to stand and impacted fractures of the hip are hard to be certain of. Patients, moreover, especially private ones, insist on positive knowledge of the state of their bones after injury. People have a morbid dread of bone injuries and great comfort may be given by the mere assurance that the bone is not injured. Therefore, the skiagraph may be very useful as a diagnostic evidence to the surgeon to satisfy his patient. It would be a bad thing if the diagnosis were relegated entirely to this method, and over-reliance upon it is also to be deprecated. It is only as a subsidiary generally that the skiagraph should be employed, and even then its evidence should be received with caution, and only after due interpretation by someone whose experience warrants his speaking with authority. Another use of the X-ray is to judge the results of one's handiwork and Golding-Bird thinks this is rather unreliable. The laity, and often some physicians, have a very poor idea of the actual conditions even of successful cases of simple fracture. Functional performance may be perfect and yet the X-ray show a decided deformity. The skiagraphs show that in order to satisfy esthetic requirements almost every case should be operated upon and the bones adapted by screws, wires or by some other means. If the final appeal is not to utility, but to the beauty of the bone scar, then every case must be thus treated. Before deciding upon the value of the skiagraph, we must inquire whether it really represents things as they really are, and this is a further argument against employing it as a critic of a surgeon's work. He asks, can skiagraphs show fracture where none exists, and answers, that it can. Epiphyseal lines on the long bones, the end of the ulner for example, have been mistaken for fractures. Impacted fracture of the neck of the thigh can be imitated by taking a foreshortened view. Fracture through the base of the olecranon is simulated always where the light is directly over the bend of the elbow, the plate being posterior. The band of light is due to the rays penetrating the joint; a lateral skiagraph destroys the illusion. The acromio-clavicular joint resembles a fracture and has been mistaken for such. The appearance of gradual thickening of the bone can be produced at will. He is indebted for these and other references to the report of the American Surgical Association on the medicolegal relations of the X-ray, in the *American Journal of Medical Sciences*, for July, 1900. The second question: Is it possible to miss seeing a fracture? Yes; though rarely. Usually it is recognized by irregularity of the bone outline, but where this is not easily seen, attention to the outline of the medullary cavity generally shows it. In the ribs, especially the lower ones, because of the shadow of viscera, in the spine between the fourth and twelfth vertebræ, because of mediastinal structures, fractures may be overlooked. In the ends of very young bones centers of ossification may be mistaken for detached bone or vice versa. Anatomical depth, as in the hip, has caused trouble in recognizing fractures. The base of the skull is hardly likely to receive aid from the skiagraph. Is it possible to show fracture as still existing, though long united? He states that it is. Early callus will not show, and for the first three months the unpracticed observer might not see it distinctly. Similarly the line of union will seem to be one of separation. Can distortion be produced? Yes; by foreshortening. The appearance of gradual expansion of the bone can easily be produced by want of parallelism between the plate and limb and may be read as indicating injury. Looking at the subject from the patient's point of view the question of X-ray and fracture becomes a very serious one. It is not possible to prevent the use of the X-ray by a patient: therefore, instead of awaiting the attack, the surgeon should disarm suspicion first. He should be told, moreover, that the new photography is no measure of the cure, that the setting of fractures is not a piece of accurate cabinet-work; the people should be instructed in the uncertain indications that skiagraphy gives. The lawyer should learn that it is not a reliable

witness. It can not stand alone even for everyday practice or diagnosis, still less can its testimony be invoked for the defense or attack in a court of law.

British Medical Journal, June 15.

Hepatic Inadequacy and Its Relation to Irregular Gout. J. BURNEY YEO.—The subject of irregular gout is treated by Yeo, putting the common forms under the general head of hepatic inadequacy. The author begins by defining hepatic inadequacy, by which he means special disturbance of the function of the liver, which while stopping short of giving rise to what are generally known and accepted as diseases of the liver, lead yet to impairment of general health. In this way, he thinks, arise almost all those cases which are known as irregular gout. The uric acid theory he finds inadequate and he calls attention to the fact, as he says, that physiologic and chemical research is not always as helpful to clinical medicine as it might be, unless it is carried out in what may be called a clinical spirit without dogmatically imposing its conclusions on physiology. As instance of the failure of such research to aid the physician he calls attention to the condemnation of calomel as a cholagogue by the Edinburgh committee some years ago and shows that the practice of medicine has rejected that conclusion. Another point is the condemnation of the use of sodium salts and alkalines in the treatment of gout and the gouty state which has led to another series of practical mistakes. He quotes especially H. M. Lyman as supporting this view, that the alkalies and sodium salts are of value in the gouty states. In answer to the question what symptoms are referable to hepatic inadequacy presented by patients with irregular gout he mentions the following: In the first place the feces are often pale, from the absence of bile-coloring matter, and often very offensive. There is frequently constipation, but there may be diarrhea, and some liver enlargement, with tenderness, muddy complexion, yellowish conjunctiva and a sweet-bitter taste in the mouth with loss of appetite. The urine is highly colored and often of high specific gravity, and usually extremely acid. On boiling and adding nitric acid, various shades of mahogany color are developed and in some cases the urine looks almost as black as ink. This is very common in the gouty state. It is also commonly found in functional and malignant hepatic disease. There is another type of hepatic inadequacy, which he calls the liver of the seaside, which is hard to explain, but is observed in seaside resorts, and is relieved by change of residence. He believes that some subtle influence exists, checking the activity of the bile cells, and thus develops hepatic inadequacy. He mentions other facts which bear out this idea. There are physiologic reasons as well as clinical for incriminating the liver in the production of the gouty state. The liver is specially concerned in the metabolism of carbohydrates—its glycogenic function,—and also in the metabolism of nitrogenous material and in the formation of urea and uric acid. In the gouty the glycogenic function is often disturbed and restored by alkaline medication, and he asks, is it not reasonable to believe that another function of the liver carried on side by side with this one is also prone to be disturbed? He also finds the production of the bile disturbed in the gouty. As regards the diet of these cases he does not find a vegetable diet specially applicable, but he has seen great improvement with the exclusive or nearly exclusive diet of pounded meat and full draughts of hot water. It is the simplest diet that can be made and this is the principle which he thinks should be followed. The extremely simple food, limited in amount, causing digestive ease, means also freedom from goutiness. Nature finds some mischief still for idle food to do, paraphrasing Dr. Watts. There is much also in the quality and cooking of the food; often more than in the kind. There is a general impression that gouty people do not take enough exercise. That is not his experience. Excessive muscular activity leads to excess in food and then trouble comes. The advice to shake up the liver is bad.

On the Protection from Water-borne Disease Afforded by the Pasteur Chamberland and Berkefeld Filters. W. H. HORROCKS.—Experiments with the Berkefeld and Chamberland filters are detailed by Horrocks, who sums up his conclusions as follows: "1. Typhoid bacilli are not able to grow through the walls of a Pasteur-Chamberland candle, and if proper care be taken to prevent the direct passage of the bacilli, through flaws in the material or imperfections in the fittings, the Pasteur-Chamberland filter ought to give complete protection from water-borne enteric fever. 2. Typhoid bacilli can grow through the walls of Berkefeld candles, probably owing to the larger size of the lacunar spaces and the consequently diminished immobilizing and devitalizing influences. The time required for the typhoid bacilli to traverse a candle varies between four and eleven days, and appears to be largely dependent on the nutriment supplied to the organisms by the medium in which they exist. In order to obtain complete protection from water-borne enteric fever, when employing Berkefeld filters, it is necessary to sterilize the candles in boiling water every third day."

The Lancet, June 8.

An Explanation of the Vulnerability of the Apices in Tuberculosis of the Lungs. E. H. COLBECK AND ERIC PRITCHARD.—The vulnerability of the apices to tuberculosis is discussed at length by the authors, who find that according to their deductions, it is largely determined by alteration in the shape of the chest in conjunction with deformity or thinning of the musculature of the shoulder girdle. Woods-Hutchinson, who has worked at the subject from the side of comparative morphology and pathology,, expresses similar views. The importance of alterations in the shape of the chest and the abnormal condition of the shoulder girdle lies in the modification which these changes induce in the dynamic relations of the superior aperture of the thorax, whereby the movements of the apices become inverted in their relations to normal respiratory rhythm. It is this altered dynamic relation that furnishes the conditions which favors the lodgment of extraneous matter in the upper lobes of the lungs. The exact position of the site of the deposit is determined largely by the distance the apex rises above the border of the first rib, inasmuch as it is this extra-thoracic portion of lung which is acted upon by the forces that give rise to inverted movement. Since the apex rises from one inch to one and one-half inches above the border at the first rib, they conclude that the site of the deposit will be situated from one inch to one and one-half inches above the summit of the lung. This same method of reasoning probably explains proclivity to tuberculous disease of the basal lobe of the lung in cattle, which is also likely due to mechanical causes. The practical bearing of the theory is the enormous importance of developing the muscles of the shoulder girdle with the object of pulling the chest into shape, as Woods-Hutchinson puts it. To this end tree-climbing, ball-throwing, horizontal ladder and bar exercise and any muscular exercise should be sedulously and systematically carried out. The authors suggest that the subject is pertinent also to explain other abnormal conditions in the apex and call attention to development of emphysema in this situation.

Annales de Dermatologie (Paris), May.

Disseminated Gangrene of the Skin in Children. A. VEILLON.—A case is described and illustrated which proves that disseminated gangrene of the skin in children is not an isolated affection. From a clinical as well as a pathogenic point of view, the disease should be classed with true gangrene, and bacteriology reveals that it is due to the proliferation in the tissues of strictly anaerobic microbes, and is hence, a mortification in the tissues with a special fermentation, besides the necrobiosis. The writer has found the bacillus ramosus in all the cases of gangrene he has examined; in the present case it was associated with the staphylococcus.

Persisting Syphilitic Lesions Despite Intense Mercurialization. H. HALLOPEAU.—Syphilitic lesions on the soles of the feet or the palms of the hands are peculiarly rebellious to specific treatment, both general and local. Hallopeau describes a case and points out that the differences in structure of the skin in various parts of the body should be borne in mind in attempting to explain the pathogenesis of its alterations. In these cases the outer layer of the skin is so dense that the

mercury and iodin applied locally or brought in the circulation, are unable to penetrate the multiple rows of cells, and thus fail to reach the infectious elements in the epidermis.

Archives Gen. de Medecine (Paris), May.

Grippal Cerebrospinal Meningitis. E. SACQUÉPÉE.—The analogy is so close between the clinical picture of epidemic and grippal cerebrospinal meningitis that they can be differentiated only by bacteriologic examination. The lesions seem to be identical in nature and degree, but the grippal affection is apparently a milder infection. Six out of nine patients observed by Sacquépée recovered. Lumbar puncture had an unmistakably favorable effect on the course of the disease, and sodium salicylate and quinin also proved useful.

Bulletin Medical (Paris), May 25.

Pathogenesis of Floating Kidney. M. T. ROSENTHAL.—The displacement of the organ is not the essential cause of the disturbances in case of floating kidney, but rather a primary congestion of the organ. The digestive troubles are due to the congested and hence enlarged organ. This congestion is especially liable to occur in arthritic subjects, even in the absence of enteroptosis. The oppression and pains always appear in the two or three days preceding menstruation. In patients with insufficient menstruation the pains persist during the entire period and may outlast it. Another cause of floating kidney is an accidental displacement or luxation caused by some unusual exertion, such as lifting a heavy weight, an effort to stand on the tips of the toes or a fall on the feet. Nephropexy fails to relieve many of these cases as the recurring congestion is the real cause of the trouble. Massage is the only rational and successful method of treating it, commencing at the lower pole of the kidney and working upward. A cold compress is kept on all night, with an abdominal band during the day. Twenty to forty-five séances are usually required. The first few are liable to be painful, and should last only five or six minutes. By the twelfth séance all pain and the dragging sensation are entirely banished.

Journal de Physiologie (Paris), March.

Technique of Thyroid Grafts. H. CRISTIANI.—The secret of success in transplanting the thyroid gland is to graft it in a number of long, flat pieces, not entire. These grafts heal in place and continue to develop normally, whether implanted in the peritoneum, abdominal wall, skin of back or front of thorax. Cristiani states that his attempts have been invariably successful and in a large variety of mammals.

Serum Treatment of Glanders in Man. A. DUPUY.—A single case is reported. The patient left the hospital cured in six months, after thirteen subcutaneous injections of 20 c.c. of normal beef serum in the first three weeks of the disease.

Revue Hebd. de Laryngologie (Bordeaux), May 25.

Pathogenesis and Treatment of Nasal Hydrorrhea. BRINDEL.—Microscopic examination of the nasal mucosa in cases of spasmodic coryza with nasal hydrorrhea, shows an accumulation of round cells, epithelial desquamation, multiplication of the blood vessels and great dilatation of the veins. These changes are accompanied by extravasation of the blood in the mucosa and transudation of the serum through the meshes of the connective tissue. The hydrorrhea is therefore a kind of edema with immediate exeretion of the extravasated fluid. The mucosa becomes more or less degenerated and the most favorable treatment is by single or double turbinotomy. No glands are visible in the tissues removed, in four-fifths of the cases. Brindel has recently treated a case in which the tissues removed by the turbinotomy were tubercular, showing that a primary, non-ulcerative tuberculosis of the nasal fossa may deceptively simulate spasmodic coryza with hydrorrhea and may be cured with the same treatment, that is, partial turbinotomy.

Revue de Gynecologie (Paris), March-April.

Surgical Perforation of the Uterus. P. REBREYEND.—The progress of modern surgery enables us to view instrumental perforations with considerable equanimity now-a-days. Simple puncture does not require operative treatment, but an actual wound demands immediate repair. This should always be done through the abdomen. The uterus should not be sacrificed except in case of irreparable lesions, or for some cause foreign to the perforation. Fourteen instances of perforation of the uterus are tabulated, with three deaths. In Stickney's case, a supposed tumor was punctured twice but proved to be merely the gravid uterus, with delivery imminent and normal. Pinard has published a case in which he punctured for a supposed tumor, finding later that it was a case of twin pregnancy with dropsy of one fetus, born later macerated. Twenty liters of fluid were removed by Tillaux from the uterus at the sixth month of pregnancy in another twin pregnancy. Mackenrodt produced a perforation by traction, Zinke with the curette. The latter healed after tamponing.

Primary Malignant Disease of Fallopian Tube. A. BOURSIER.—In the 38 cases collected a malignant deciduoma was found in one case, sarcoma in 5 cases and primary epithelioma in 32. The majority of the patients were between 45 and 50, none over 60 or under 40. There is no connection evident between the menopause or menstrual disturbances and the development of the tumor. Sterility was frequently noted; 7 patients had borne one child twenty to twenty-three years previously; 3 were III-parae and the others had had one or two abortions. Evidences of preceding inflammation were noted in some cases. There is no pathognomonic sign, but the tube is usually more or less round; the size depends on the amount of fluid accumulated in it. In the personal case described the tumor had been noticed for three years. It caused at first merely hypogastric pains and a watery, blood-stained discharge from the uterus, not interfering with active occupation until late in the disease. The tumor was noticed for one to three or four years in most cases, but Tuffier's patient required operation in two months after the first symptoms, Cullingworth's within four months, and Watkins' in fourteen days. The latter patient had a fibromatous uterus and each tube contained a malignant papilloma. The sero-sanguinolent vaginal discharge is continuous if the uterine ostium is permeable, and intermittent if only permeable when the fluid attains a certain pressure. If the pains subside and the tumor diminishes in size as the discharge continues, it is evident that a pocket in the tube is being emptied. But if these signs occur in a woman between 45 and 50, whose strength has been failing, they suggest the possibility of a malignant neoplasm. There is nothing characteristic about the ascites, but in case the abdominal ostium is permeable, the fluid may escape directly into the peritoneal cavity unless it is walled off around the tube. In this case a pocket will form, and in this the "salpingian vomica" will accumulate. None of the cases on record were correctly diagnosed. Veit's patient is in good health seven years, Tuffier's and the writer's, one year, and Fearne's nineteen months after operation. In all the other cases the disease recurred, and the patients succumbed. The tumor remains inclosed in the tube for a long time and hence extirpation is comparatively easy.

Congenital Polycystic Kidney. BROUHA.—There is evidently some primary malformation as the basis of these cases, the non-coalition of the two halves, supplemented by retention of fluid secreted or transuded into the cavity of the secretory portion of the kidney. Study of a number of cases of congenital polycystic kidney has demonstrated that the secretion of urine in the fetus is by no means as insignificant as generally assumed, and that it is an important factor in the genesis of this condition.

Revue de Medecine (Paris), May.

Epidemic Character of Essential Zona. C. DOPTER.—Three cases of zona occurring in the inmates of a certain room, confirm Dopter's theory that a primary infection alone is epidemic, but the infection may attain, naturally or by acquisition, an elective affinity for a certain segment of the spinal cord, with whose nutrition it interferes in the various organisms infected simultaneously or in turn.

Malarial Polyneuritis. BOINET.—Paraplegia and atrophy followed a stage of dull and later, acute pain in the legs in the case described. The atrophy was more marked on the left side.

The anesthetic zones corresponded to the segmental distribution of nerves; the plantar reflex was exaggerated, other reflexes diminished. No vasomotor disturbances were noticed. Electrotherapy is useful in these cases, with hydrotherapy, iron and iron cacodylate. Quinin is useless except in acute malaria.

Semaine Medicale (Paris), June 5.

Early Signs of Puerperal Phlebitis. A. BOISSARD.—The variability in the appearance, course and termination of these venous affections has convinced Boissard that they are due to different or associated infectious agents and not to the streptococcus alone. Puerperal phlebitis is increasing, and it is more frequent in private than in hospital practice. It has occurred in 16 cases in the writer's experience of 4000 accouchements at the Tenon hospital. One leg was affected in 12 cases and both legs were involved in 4. In 6 instances the phlebitis appeared between the third and the eighth day, and in 10 between the twelfth and the twenty-first. The patients were febrile at the moment of delivery in the 6 cases in which the phlebitis appeared during the first week. In 5 cases the phlebitis developed after a physiologic puerperium with no elevation of temperature at any time nor during the course of the venous affection, but commencing with the phlebitis in 3. In the course of an apparently physiologic childbed, a blood-clot forms with a slow and insidious phlebitic process in some uterine sinus or periuterine venule. From this point the embolism spreads and the lesions extend to the small pelvis and the legs. This primary focus is manifested by a pain in the uterine cornu or broad ligaments, not very severe—it must be sought for. The patient notices it on movement or on digital pressure toward the hilus of the uterus. It is constant and is always accompanied by indications of pulmonary embolism; dyspnea for twenty-four to forty-eight hours, followed by a pain in the side suggesting the onset of pleurisy, the pains radiating to the shoulder, and aggravated by compression of the phrenic nerve or anterior attachment of the diaphragm. Percussion and auscultation are negative until twenty-four hours later, when a focus of sub-crepitant, moist râles is noticed from behind, in the lower third of the thorax. An apoplectic infarct has been formed and this determines a slight effusion. This pulmonary infarction is the result of the arrival of minute emboli composed of colonies of the infectious agents, rather than of blood clots. These emboli are harmless in comparison with the emboli that develop in the course of an established phlegmasia, which kill by their size or by their suppurative nature. The harmlessness of these primary emboli is shown by the fact that the temperature does not rise. Boissard has observed that all his patients recovered whose temperature remained below 38 C. This benign embolism of the lungs is followed generally in twenty-four hours by the appearance of a phlegmasia alba dolens on the same side as the pain in the thorax. Its extent and duration are by no means proportional to the intensity of the pleuro-pulmonary manifestations. Certain families seem to display a tendency to puerperal phlebitis, usually fat women of the neuro-arthritic type, although the childbed may be apparently normal and physiologic for the first two weeks.

Beitraege z. Allgemeine Pathologie (Jena), xxix, 2.

Artificially Induced Calcareous Deposits in Organs. J. V. KOSSA.—Calcareous deposits are observed in the kidney after ligature of the hilum. The calcium is evidently derived from the surrounding tissues and penetrates into the cortex through the capsule. Kossa reports experimental researches which demonstrate that this same result can be attained by chemical means. Aloin, copper sulphate, iodin and iodoform all possess this property more or less. The normal kidney can eliminate large amounts of calcium without the formation of deposits, and consequently a functional disturbance always precedes their formation. The kidney suffering from the chemical action of the poison is no longer able to excrete the total amount of the calcium brought to it in the blood, and the amount thus retained is the source of the calcium crystals visible to the naked eye in the convoluted tubules. The crystals stain yellow in a 1 to 5 per cent. solution of silver nitrate, probably from the albuminate or other organic constituents. Smaller deposits are found also in other organs.

Berliner Klinische Wochenschrift, June 3.

Segments of the Spinal Cord in the Diagnosis of Tumors. F. KRAUSE.—Three cases are described in detail—one cured by the removal of the tumor—demonstrating the valuable information derived from the study of the symptoms in reference to the segments of the spinal cord, to determine the exact site of the tumor. Of the 32 cases of spinal tumors which have been published as operated on, 14 patients died in consequence of the operation and 18 were improved or cured. In the first 20 cases there was a mortality of 10, but there have been only 4 deaths in the last 12. In the personal case described resulting in the cure of the patient, the symptoms indicated severe compression of the cord by a slowly developing tumor inside the dura, to the rear, on the right side. The presence of the knee-jerk showed retention of normal reflex function in the second, third and fourth lumbar segments, and that the lower limit of the tumor's action could not extend below the first lumbar segment. The increased tendon reflexes on the completely paralyzed right side showed that the tumor—above the second lumbar segment—had interrupted the reflex-inhibiting influence from above. This was the only information to be derived in regard to the lower limit of the tumor. It indicated that the compression could not extend below this point. The complete paralysis of the psoas and iliacus muscles indicated that the twelfth dorsal segment must suffer also from the compression. The paralysis was of the kind due to interruption of central conductibility. The injury to the pyramidal tract from the compression of the tumor was necessarily above the first lumbar segment of the spinal cord from which the psoas and iliacus derive their innervation. There was also a distinct girdle of pains, commencing in the sacrum and passing along the upper margin of the pelvis. This region derives its innervation from the twelfth and eleventh dorsal segments. The patient complained of pains in the left leg and right thigh, suggesting irritation in twelfth dorsal and first lumbar segments. The nerve roots are intimately connected with the neighboring roots and irritation of one may entail sympathetic irritation in its neighbors. In this case the symptoms of irritation might appear two roots higher than the actual location of the tumor, but this usually occurs only in case of severe pains. The evidences of interruption in the sensory tracts were diminished sensibility and pain in the region on the left innervated by the first lumbar segment, extending nearly to the iliac crest, with modified thermic sense. Still more suggestive was an oval zone of complete anesthesia on the right side at the back, between the sacrum and the trochanter major, commencing below the iliac crest and extending to a hand's breadth above it. The absolute anesthesia at this spot indicated that three neighboring root regions were paralyzed, the twelfth dorsal segment, from which its innervation was directly derived, and also the segments immediately above and below this. While the motor paralysis extended only to the first lumbar segment, the anesthetic zone included the twelfth dorsal region, and—if we agree with Bruns—the eleventh and even the tenth segments were also involved. The upper limit of the tumor was therefore diagnosed in the tenth dorsal segment, that is, at the seventh spinous process. Its lower limit could not extend below the first lumbar segment, that is, the ninth or tenth dorsal vertebra. The soft parts were incised from the sixth to the tenth dorsal vertebra and tamponed. No ligatures were required. A space from the sixth to the ninth vertebra was opened, exposing the spinal canal for 7.5 cm. The center of the tumor was at the seventh vertebral arch corresponding to the ninth dorsal segment according to Henle: to the upper edge of the tenth according to Reid and to the eighth according to Gowers. The dura above pulsated with the respiration, the spinal cord below with the heart beat. The tumor was 17 by 15 by 11.5 mm. It was easily detached from the pia but was adherent to the dura, requiring the resection of the adherent portion 40 by 17.5 mm. in size. A depression was left in the spinal cord. The tumor did not extend far enough to compress the nerve roots. The edges of the wound in the dura were coapted above and below the site of the tumor without suturing. A drain was inserted at each end of the wound. The operation was completed in

forty-five minutes. The tumor was hard as a stone, cellular, studded with numerous round calcareous deposits and round, concentrically arranged balls of cellular tissue and numerous transitional forms between these two. Considerable cerebrospinal fluid was lost, and it continued to ooze from the wound for five days, but the temperature remained normal and the patient was discharged in a month. The paralyzed limb has gradually regained its function but is still weak. There is now—a year later—no muscular paralysis, no vasomotor disturbances; the knee-jerk is normal but the plantar reflex and the abdominal wall reflex can not be induced. In the second case, the patch of absolute anesthesia was in front on the left side, at the eleventh rib, corresponding to the seventh and eighth dorsal segments. This indicated paralysis of the sixth dorsal and—according to Bruns—of the fifth dorsal segment likewise. Consequently the upper limit of the tumor must be at this point, which is opposite the fourth dorsal vertebra. The autopsy in this case confirmed the diagnosis. A carcinomatous growth was found at this point. The anesthesia was due to compression of the cord and not of the roots, in both these cases. The girdle pains in the second were at the level of the ensiform process which also harmonized with this location of the tumor. In the third case, the zone of absolute anesthesia extended in front on the left side to the sixth intercostal space; at the back, to the seventh dorsal vertebra, both pointing to the sixth dorsal segment as the portion of the spinal cord affected. On the right side, it extended in front to the eighth rib and at the back, to the tenth dorsal vertebra, pointing to the eighth dorsal segment. The autopsy disclosed that on the right side the tumor had encroached on the ligamentum denticulatum and had thus exerted direct pressure on the nerve roots in the region, especially on the sixth dorsal nerve at its root. Compression of this region produces the same phenomena of anesthesia as if the sixth dorsal segment, in which it originates, were sympathetically affected. The difficulty in the diagnosis in this case was due to the girdle pains, which corresponded to the sixth and seventh dorsal segments and extended along the costal arch to the stomach. Like the zone of hyperesthesia, the girdle pains indicate irritation of the posterior roots. The compression of the roots or of the segment is sufficient to induce irritation but not to cause suspension of conductibility. A sponge dipped in hot water and applied to the spine was felt as pain between the fifth and the ninth dorsal vertebræ on the left. The tumor was diagnosed in this region and it was found at the sixth dorsal vertebra. In the three cases the lack of correspondence between the upper boundaries of the nervous disturbances and the seat of the tumor was remarkable. In the first case the upper limit of the anesthetic zone was a hand's breadth above the iliac crest while the tumor was at the seventh vertebral arch, that is, 17 to 18 cm. higher. In the second case the carcinoma was at the level of the fourth dorsal vertebra. The girdle pains were on a level with the ensiform process, 17 cm. lower. The anesthetic zone commenced nearly 20 cm. farther down, at the eleventh rib. In the third case, the girdle pains were 12 cm. below the tumor at the sixth dorsal vertebra. The zone of anesthesia commenced at the tenth dorsal vertebra on the right side, and thus 13 cm. below the tumor, but on the left side, where the tumor—a sarcoma—had developed into the ligamentum denticulatum, and exerted direct pressure on the nerve roots, the location of the tumor was not much higher than the upper limits of the anesthetic zone, the distance from the sixth to the seventh dorsal vertebra being only 2.5 cm.

Centralblatt f. Gynecologie (Leipsic), April 27.

Yeast in the Treatment of Leucorrhea. W. ALBERT.—The disadvantages of the yeast treatment advocated recently by Landau, are all obviated by using killed cultures of yeast cells. The substance thus formed is called sterile "Dauerhefe" by the writer, which might be translated "everlasting yeast." Vaginal secretions rapidly diminish and dry up, even large erosions heal fast, and when it is injected the night before an operation, the vagina is disinfected and sterilized better than with any other preparation known to date. The yeast displays its strongest fermenting power at 35 to 40 C.—the temperature it finds in the vagina. Kossmann in a later number quotes Hippocrates to the effect that yeast was recommended in his day in gynecology. He used it cooked but Dioscorides later, preferred it uncooked. He adds "there is little new to be discovered in medicine, but as a knowledge of Greek is no longer necessary for the medical course in Germany, many wonderful new discoveries may be anticipated in the future."

May 25.

Fate of Prematurely Born, Artificially Delivered Children. F. AHLFELD.—Tracing the history of 54 children born to 56 women with deformed pelves. Ahlfeld finds that all but five survived the first year. The parents were all of the wage-earning class. This record is much above the average.

June 1.

Ultimate Fate of a Malignant Syncytioma of the Vagina. A. O. LINDFORS.—This case has been mentioned already in THE JOURNAL. One month after childbirth a malignant syncytioma was removed from the vaginal wall. There were no uterine symptoms. Lindfors reports now that the patient returned a year later with symptoms of a left pleurisy with effusion. The autopsy disclosed a large syncytioma—a malignant deciduoma—in the left lung with numerous metastases in other organs, but the genital organs were entirely free. The embolus of the placental tissue in the left lung probably arrived at the time of the vaginal lesion, but did not commence to develop until favored by a grippal catarrh a year later.

Deutsche Med. Wochenschrift (Berlin and Leipsic), June 13.

Inexplicable Intestinal Necrosis. L. BORNHAUPT.—A robust young man died after two days of severe symptoms indicating intestinal obstruction and asphyxia, although there was no tenderness nor meteorism. The autopsy showed the body normal except for a patch of necrosis without demarcation, on the ileum, 50 cm. above the cecum, with a corresponding necrotic patch on the mesentery. The right pleural cavity contained a coagulum the size of two fists. As the respiratory organs were sound in every respect the cause of this hemorrhage is a mystery. It is not impossible, however, that in consequence of this hemorrhage, some mesenteric vessel became occluded by an embolus, with consecutive necrosis. A few cases are on record in which thrombosis of the mesenteric arteries produced symptoms of intestinal occlusion and hemorrhage. The contents of the central portion of the intestines in the case described were blood-stained.

Deutsche Zeitschrift f. Chirurgie (Leipsic), March.

Intracranial Complication of Middle-Ear Disease. E. MERKEN.—High fever and rapid pulse suggest meningitis, when they accompany symptoms of irritation, and a tempestuous course, with rapid changes in the clinical picture. In the case of an abscess the temperature is nearly normal, the pulse slow, with symptoms of paralysis, and a more insidious course may be anticipated. If the abscess is on the left side, typical disturbances in the speech follow. Encephalitis is much less frequent than abscess, and puncture or incision of an encephalitic focus apparently does little harm. With meningitic symptoms great benefit or great harm may result from an operation, and hence, the surgeon should proceed step by step. Paracentesis alone may rapidly relieve the most threatening symptoms. If no signs of suppuration can be found in the mastoid process and the symptoms grow worse, the dura or sinus can be exposed. If still no pus is found, and nothing to explain the symptoms, the brain may be punctured or even incised, proceeding even to puncture of the lateral ventricle. Meningitic symptoms in children may be caused exclusively by the ear affection.

Cysts in the Pancreas. G. SEEFISCH.—The clinical symptoms in four cases were violent subjective disturbances at first, mostly gastric, ranging from a mere sensation of oppression to intense pains, vomiting and signs of retention; emaciation; development of a tumor in the epigastric region, usually towards the left; location near the posterior abdominal wall, close to the aorta and hence, aortic pulsation; little or no mobility, but in some places the influence of the respiration on the pancreas was visible, and the position of the artificially

inflated stomach and the transverse colon, in front of the tumor. Seefisch has collected 149 published cases, of which 19 were treated by total and 12 by partial extirpation. In 118 cases the cyst wall was sutured to the abdominal wound, opened and drained.

Muenchener Med. Wochenschrift, June 4.

The Present Mortality After Gall-Stone Operations. H. KEHR.—Reviewing his 585 operations for gall-stones, Kehr observes that the mortality—aside from the cases complicated with carcinoma or diffuse cholangitis—is 3.7 per cent. in all, and only 1.7 per cent. in his last 60 operations. If the pancreas is involved—and the more he operates, the more frequently he finds acute or chronic inflammations of this organ—the prognosis depends on the possibility of curing the pancreatic affection. He attributes the improvement in his results of late years to his method of leaving the hepatic duct open and merely tamponing. He mentions that in his last 100 operations, 40 per cent. of the men died and only 8 per cent. of the women. Carcinoma of the head of the pancreas, and peritonitis with adhesions, are more frequent in men; probably both are due to traumatic influences from which women are exempt. As a general thing, he finds that women bear laparotomy better than men. Scheuer has calculated that about 41.5 per cent. of the cases are cured by internal treatment, Naunyn estimates the number at 40 per cent., and Furbringer has recently stated that about 50 per cent. of the patients leave Carlsbad uncured. Surgeons, on the other hand, cure 95 to 98 per cent. of all the cases that come into their hands, and an experienced surgeon is a much better expert at diagnosis than the best practitioner, as the latter seldom or never profits by that wonderfully instructive text-book, the surgical dissection *in vivo*.

Prager Med. Wochenschrift, May 2.

Neoplastic Thrombosis. C. SPRINGER.—A sarcoma in the thyroid gland required tracheotomy, and neoplastic thrombosis was then noticed in the veins of the region. The autopsy showed that the edema in the face, and later in the arms, corresponded to the progress of the venous thrombosis from the neck toward the center and thence laterally to the subclavian. A fragment of the tumor had even found its way into the right heart, causing a peculiar murmur.

Diabetes Mellitus Simulating Gastrointestinal Affections. E. SCHUETZ.—In all chronic gastrointestinal affections from an unknown cause, the urine should be repeatedly examined for sugar. Diabetes frequently manifests itself first under the clinical picture of dyspeptic symptoms, gastralgia, colic or the gastric crises of tabes. These disturbances are usually accompanied by frequent neuralgias and paresthesia in various parts of the body, occurring simultaneously or alternately. Antidiabetic diet favorably modifies these disturbances.

Mechanism of Arsenical Treatment of Malignant Tumors. C. TRUNECEK.—The benefits of the application of arsenious acid in the treatment of epitheliomata of the face, are now established beyond further question. THE JOURNAL has frequently commented on and described the author's method. He now announces that carcinoma or sarcoma cells are directly necrosed by the action of the arsenic and their protoplasm coagulated. The stroma cells become degenerated and exudation follows, which in turn produces further changes in the tumor cells. Inflammation with demarcation is the result of the application of arsenic to the surrounding sound tissue. It gradually passes into a suppurative stage, terminating in the throwing off of the entire necrosed tumor as a foreign body. In short, the organism reacts to the arsenically treated tumor as to a foreign body and throws it off. The tumor left alone does not induce any reaction of this nature: the organism makes no effort to defend itself against it, and is in turn destroyed by it.

Sammlung Klin. Vortraege, No. 297.

Diagnosis of Puerperal Fever. P. JUNGE.—The difficulties of differentiating puerperal fever are peculiarly great when typhoid fever makes its first appearance at childbirth. Junge has had an experience of 2 cases of typhoid deceptively simulating puerperal fever, 6 of mastitis, 2 of acute arthritis, 1 of pharyngitis with a dermatitis and nephritis, and 1 of infarction of the lungs.

Wiener Klinische Rundschau, June 2.

Treatment of Bacteriuria. W. BUTTERMILCH.—In most cases of bacteriuria a preceding intestinal affection will be noted. The bacteria invade the bladder through the blood and the treatment depends on whether their presence in the bladder is favored by some local lesion or not. In one case described the treatment was directed against the helminthiasis observed, followed by .5 salol four times a day. After five days this treatment was substituted by a 5 per cent. decoction of uva ursi leaves, a teaspoonful every hour. The urine was entirely clear in three weeks. In another case with gonorrheal antecedents, the bacteriuria resisted all the usual measures for four weeks, including large doses of camphor, but yielded at once to local irrigations with a 1 to 10,000 solution of sublimate. The colon bacillus was found pure in each case. The irrigations had to be repeated four times, as the bacteria evidently developed unchecked in the intervals of treatment, before their final annihilation. In the first case catheterization showed that the infection was by way of the kidneys and consequently general treatment was indicated. The blood was sterile at the time of examination in each case.

June 9.

Idiopathic Peritonitis. H. NOTHNAGEL.—The enormous absorbing power of the peritoneum enables it to dispose of bacteria and toxins circulating in the blood and hence the peritoneum is not involved so frequently as the other serous membranes in case of acute infectious diseases, and there is no possibility of a primary, idiopathic inflammation. Rabbits can absorb without injury 3 to 8 per cent. of their weight of physiologic salt solution injected into the peritoneum. But in case of an affection in the vicinity of the peritoneum, the germs and toxins arriving in such large numbers, are liable to cause inflammation. Nothnagel denies that peritonitis can occur as a primary infection. He always traces it to some lesion in the vicinity: a catarrhal condition or laceration of the intestines, possibly some minimal traumatic lesion, allowing the passage of bacteria into the peritoneum. The only way in which microbes can reach the peritoneum in numbers sufficient to set up an inflammation, without solution of continuity, and the passage through some other tissue, is by way of the female genitalia. But in every case of the kind reported there has always been a co-incident genital affection, some focus in the vicinity from which the infection was propagated.

Wiener Klin. Wochenschrift, June 6.

Cerebral Abscesses in Connection with Affections of the Bronchial Lymph Glands. F. SCHLAGENHAUFER.—At the autopsies of three young women who had died after an acute illness of four to six days' duration, suggesting suppurative meningitis, occurring in the midst of health, multiple abscesses were found in the brain. In two cases perforation had induced a suppurative meningitis. In each case the primary focus was discovered in a suppurating lymph gland below the bifurcation of the trachea, near the right bronchus. The bronchial gland abscess communicated either with the bronchus or esophagus or with both. The primary abscess was tubercular in each case; in two there were slight pulmonary tubercular lesions; in one the lungs were sound. Two similar cases of cerebral abscess have been reported, and the five suggest an explanation for the so-called idiopathic cerebral abscesses or cryptogenetic septicopyemia. The bronchial and tracheal lymph glands should be investigated in all such cases. They also confirm Ribbert's theory that the primary localization of pulmonary tuberculosis is not the lungs but the bronchial, peritracheal glands.

Wiener Med. Wochenschrift, April 13.

Early Diagnosis of Tabes and Paralysis. J. DONATH.—A disturbance in the innervation of the iris muscles is indicated when the edges of the pupils are irregular: oval, pear-shaped,

triangular or polygonal with rounded angles or picket-shaped. These irregularities in the edges of the pupils can be seen best in a dark room by lamplight, viewed from the side, with a powerful magnifying glass. Donath considers them pathognomonic of a pre-ataxic stage, which may or may not develop into progressive paralysis or tabes. He describes one case in which complete paralysis of the sphincter of the iris and the ciliary muscles preceded by ten years the manifestations of progressive paralysis. The ocular paralysis subsided after a few months. Five years later the pupil reflex vanished on both sides and after a similar interval symptoms of paralysis developed, fatal in six months, the patient previously robust and successful in extensive financial affairs. In another case, myosis, absence of the pupil reflex, and slight atrophy of the optic nerve have persisted for fifteen years, with no apparent tendency to further symptoms. The age assists in differentiating paralysis, as it usually appears between the thirtieth and fiftieth year.

Brazil-Medico (Rio de Janeiro), May 8.

Tropa-Cocain in Spinal Analgesia. D. DE ALMEIDA.—The writer reports a series of major operations successfully performed under spinal cocainization with a 2 per cent. solution of tropa-cocain. No mydriasis, headache nor vomiting was observed in any case.

Curare. J. B. DE LACERDA.—The organizers of the recent Latin-American Congress invited Lacerda, the author of the theory of the symbiosis of the yellow fever germ with a mould, to deliver an address on the bacteriology of yellow fever. He refused, as his convictions on the subject have weakened of late and he did not feel himself competent to see clearly in the chaos at present reigning in regard to the etiology of the disease. He reported instead, some recent research on the subject of curare, which he discovered is made by the Ticunas from a mixture of plants, including Castel Ney Strychnos, a piperacea and the anomospermum grandifolia. Studying the latter alone, he found that the fluid extract possessed all the properties of curare. The progress of the paralytic phenomena is more clearly defined than even with curare, showing the succession of the symptoms, commencing with paralysis of the hind legs, then of the forelegs, muscles of the tail, ears, lids and finally of the respiratory muscles. The sensory perceptions are retained to the last.

Revista Medica de Bogota, Colombia, No. 250.

Yellow Fever. N. OSORIO.—A suspicious fever is epidemic at certain points in Colombia and Osorio appeals to the authorities to appropriate funds for the manufacture of Sanarelli's anti-yellow-fever serum, which he considers the only effective remedy to date against the disease.

Yellow Fever. J. M. ESCOBAR.—The writer's long experience with yellow fever shows that the best results are attained by the following treatment: Against the fever, cold baths and iced, acid drinks are sufficient. The same drinks are indicated in case of vomiting, alternated with small glasses of champagne mixed with equal parts of an alkaline water. If these fail, he prescribes five drops of essential oil of cajeput in an aromatic infusion, supplemented by ether or chloroform, but never by cocain. A milk diet and alkaline drinks are the best means to sustain the renal permeability, but when the amount of albumin exceeds 1.5 per 1000, the urinary insufficiency requires more immediate measures, and oxygen inhalations are indicated. In one case the albumin attained 3.5 per 1000, but had entirely vanished after four days during which twenty-four liters of oxygen had been inhaled each day. In case of hemorrhage, besides the usual hemostatic measures he administers calcium chlorid, as the change in the blood plasm is the immediate cause of the multiple hemorrhages; continuing the oxygen, which has proved so successful in hemorrhage consecutive to icterus. The diet should be restricted to coffee, champagne and milk containing an alkali, but if rectal alimentation alone is possible, water should be given copiously, brandy to stimulate the circulation and peptonized milk. Papain is preferable to pepsin for the purpose, however, as it works in an alkaline medium while the latter requires an acid.

Queries and Minor Notes.

LODGE PRACTICE.

ASHTON, R. I., June 14, 1901.

To the Editor:—By enclosed clippings from the Pawtucket, R. I., *Times* of 13th inst., you will perceive how the profession is degraded by men who allow themselves to be championed and exploited, we might say enslaved, by secret and other societies in opposition to ethical members of the profession, who are consequently insulted by municipal bodies daring to offer them a miserable dime-piece for their services, which was, no doubt, greedily clutched at.

The Medical Association of Pawtucket, numbering among its members the leaders of the profession in that city, refused to meet with those who eagerly grasped at the miserable pittances forced on them by the secret and other societies, and who have banded themselves in a rival club named the Pawtucket Medical Society, which is, I need not say, not affiliated with the State Society. Some of them come out here, a distance of five miles, to examine for an Insurance Company which flings to them the munificent dole of 25 cents per capita, as you would a bone to a dog. Comment is unnecessary.

Following is the clipping referred to: "The meeting of Court City of Pawtucket, Foresters of America, which was held last evening in St. George's Hall, Cole's Block, was of more than ordinary interest because a movement was begun to institute a boycott of the physicians of the city and vicinity who are members of the Pawtucket Medical Association, because of the stand taken by the association that no member of the association can act as physician for any lodge or social, secret or fraternal organization within the jurisdiction of the association, unless in violation of the ethics of the fraternity. It will be recalled that recently the Pawtucket Medical Association declared against any member acting as lodge physician, and this fact in due time came to the attention of the court. Last night the subject was well discussed and action was taken after the subject had been pretty well talked over and well understood. It was voted to appoint a committee of three to confer with all social, fraternal and secret organizations of Pawtucket and vicinity for the purpose of securing the united pledging of the support of the various organizations, in a movement that shall pledge every member of the lodges and societies not to employ for himself or family a member of the Pawtucket Medical Association. There was a great deal of plain talk, and it was held by some of the speakers that the stand of the association was arbitrary and there were just as good physicians out of the association as were included in the membership. The committee was authorized to act on its own discretion, but to lose no time in carrying out the instructions, which were given by unanimous vote of the court."

N. O'D. PARKS, M.D.

ANS.—We know nothing further of the merits of this particular case, but that physicians in many places are being used by organizations for the aggrandizement of these bodies is well known. It would be well if this growing evil could be recognized before it is too late and if it could be met by an organized profession, and not by a disorganized one, as seems to be the case in Pawtucket.

THE HIPPOCRATIC OATH.

ITHACA, N. Y., June, 1901.

To the Editor:—Will you kindly send me a copy of the Hippocratic oath, or tell me where I can get one? A. T. K.

THE OATH.

I swear, by Apollo the physician, and Æsculapius, and Health, and All-heal and all the gods and goddesses, that, according to my ability and judgment, I will keep this oath and this stipulation to reckon him who taught me this Art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required, to look upon his offspring in the same footing as my own brothers and to teach them this Art, if they shall wish to learn it, without fee or stipulation, and that by precept, lecture and every other mode of instruction, I will impart a knowledge of the Art to my own sons and those of my teachers, and to disciples bound by stipulation and oath, according to the law of medicine, but to none others. I will follow the system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to any one if asked, nor suggest any such counsel; and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my Art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and further from the seduction of females or males, of freemen and slaves. Whatever in connection with my professional practice or

not in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this Oath unviolated, may it be granted to me to enjoy life and the practice of the Art respected by all men in all times!

But should I trespass and violate this Oath, may the reverse be my lot!

CONGENITAL NASAL DEFORMITY.

MINNEAPOLIS, MINN., May 27, 1901.

To the Editor:—I have a patient whose face is rather disfigured by a congenital deformity of the nose, to remedy which it would be necessary to increase the height of the septum. Please tell me if such operations have proven successful and give the address of some surgeon making such operations a specialty, to whom I could refer this patient with assurance of fair treatment.

Yours truly, A. B. C.

ANS.—Such operations are being successfully performed almost daily, and the results are usually satisfactory. Each case is peculiar to itself, and just what will have to be done can only be determined by examination of the particular case. We can not recommend any particular surgeon. As it is not a specialty, all well-qualified surgeons are prepared to operate on such cases.

RHODE ISLAND STATE BOARD.

RICHMOND, VT., June 13, 1901.

To the Editor:—Please give me the name and address of the secretary of the State Board of Medical Examiners of Rhode Island.

W. T. T.

ANS.—Address Dr. Gardner T. Swarts, Secretary State Board of Health, 48 Weybosset St., Providence, R. I.

STATE BOARD EXAMINATIONS.

CARROLLTON, KY., June 17, 1901.

To the Editor:—Please give me list of states in which a graduate of a recognized medical college can practice without having to stand the state board examinations. J. H. A.

ANS.—The answer to this query appeared in THE JOURNAL of April 13, p. 1081.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., June 13 to 19, 1901, inclusive:

Lawrence C. Carr, major and surgeon, Vols., recently appointed, relieved from duty in the Department of Cuba, when his services can be spared by the general commanding that department, to proceed to San Francisco, Cal., en route for assignment to duty in the Division of the Philippines.

Henry R. Carter, Jr., contract surgeon, former orders so amended as to direct him to proceed to his home, New Orleans, La., for annulment of contract.

J. C. Garlington, contract surgeon, leave of absence granted.

Frederick C. Jackson, captain and asst.-surgeon, Vols., from temporary duty at Columbus Barracks, Ohio, to San Francisco, Cal., en route to duty in the Division of the Philippines.

Frank R. Keefer, captain and asst.-surgeon, U. S. A., leave of absence granted.

Franklin M. Kemp, lieutenant and asst.-surgeon, U. S. A., from West Point, N. Y., to San Francisco, Cal., en route to duty in the Division of the Philippines.

William L. Kneedler, major and surgeon, U. S. A., now under treatment at the U. S. General Hospital, Presidio of San Francisco, Cal., relieved from further duty in the Division of the Philippines, to proceed, on the expiration of his present sick leave, to West Point, N. Y., to relieve Lieut. Franklin M. Kemp, asst.-surgeon, U. S. A.

Stanley S. Warren, contract surgeon, from Fort Clark, Tex., to his home, Shelbyville, Tenn., for annulment of contract.

William P. Woodall, contract surgeon, from Salado to Fort Clark, Texas.

In addition to the above the following-named officers are detailed as members of the faculty of the Army Medical School: Colonel Wm. H. Forwood, asst. surgeon-general, U. S. A., as president of the faculty, vice Colonel C. H. Alden, U. S. A., retired; Colonel Calvin DeWitt, asst. surgeon-general, as professor of military medicine; Maj. John Van R. Hoff, surgeon, as lecturer on the duties of medical officers in war and peace; Major William C. Borden, surgeon, as professor of military surgery, vice Colonel Forwood, designated as president of the faculty; Major William P. Reynolds, surgeon, U. S. Vols. (captain and asst.-surgeon, U. S. A.), as instructor in Hospital Corps drill and first-aid to wounded, vice captain George D. DeShon, relieved.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended June 22, 1901:

Dr. H. M. Tolfree, appointed assistant surgeon from June 14, 1901.

Surgeon C. F. Stokes, ordered to the *Solace*, upon arrival in the United States.

Asst.-Surgeon R. B. Williams, ordered to the *Kearsarge*, June 24.

Asst.-Surgeon F. M. Furlong, detached from duty at Guam and ordered to the *Solace* for transportation home.

Asst.-Surgeon R. K. McClanahan, detached from the *Culgoa* and ordered to the *Vicksburg*.

Asst.-Surgeon D. R. Kerr, detached from the *Vicksburg* and ordered to the *Culgoa* to wait orders en route

Marine Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended June 20, 1901:

Surgeon C. T. Peckham, granted extension of leave of absence, on account of sickness, for thirty days from June 20.

Surgeon R. M. Woodward granted extension of leave of absence for three weeks from June 5.

P. A. Surgeon C. H. Gardner, granted leave of absence for seven days from June 21.

Asst.-Surgeon G. M. Corput, relieved from duty at the port of St. Louis, Mo. Leave of absence for one month granted by bureau telegram of May 16, amended so that said leave shall be for twenty-one days only.

Asst.-Surgeon Dunlop Moore, to proceed to Port Townsend, Wash., and assume temporary charge of service during absence of P. A. Surgeon C. H. Gardner.

A. A. Surgeon B. J. Brown, Jr., granted leave of absence for fourteen days from June 20.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for two days.

Hospital Steward W. F. Schlaar, relieved from duty in the Hygienic Laboratory, and directed to proceed to Key West, Fla., and report to the medical officer in command for duty and assignment to quarters.

Hospital Steward E. B. Scott, granted leave of absence for twelve days from June 24.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended June 22, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

California: San Francisco, June 2-9, 1 case.
Florida: Key West, June 5, 1 case.
Illinois: Chicago, June 8-15, 4 cases.
Indiana: Evansville, June 8-15, 1 case; Michigan City, June 10-17, 2 cases; South Bend, June 8-15, 1 case.
Iowa: Clinton, June 8-15, 1 case.
Kansas: Wichita, June 8-15, 3 cases.
Kentucky: Lexington, June 8-15, 1 case.
Louisiana: New Orleans, June 8-15, 11 cases.
Massachusetts: June 8-15, Fall River, 1 case; New Bedford, 3 deaths; Worcester, 8 cases, 2 deaths.
Michigan: Detroit, June 8-15, 33 cases, 1 death; Sault Ste. Marie, June 16, prevalent.
Minnesota: Minneapolis, June 8-16, 17 cases; Winona, June 8-15, 1 case.
Missouri: St. Louis, June 2-9, 37 cases, 1 death.
Nebraska: Omaha, June 8-15, 12 cases.
New Hampshire: Manchester, June 8-15, 6 cases.
New Jersey: Jersey City, June 8-16, 2 cases; Newark, June 8-15, 3 cases; Plainfield, June 8-15, 1 case.
New York: New York, June 8-15, 102 cases, 11 deaths; Yonkers, June 7-14, 5 cases.
Ohio: Cincinnati, June 7-14, 5 cases; Cleveland, June 1-15, 45 cases; Dayton, June 8-15, 1 case; Toledo, June 8-15, 1 case.
Oregon: Portland, May 1-June 5, 23 cases.
Pennsylvania: Philadelphia, June 8-15, 3 cases, 1 death; Pittsburg, June 8-15, 2 cases.
Rhode Island: Providence, June 8-15, 3 cases.
Tennessee: Memphis, June 1-15, 26 cases, 2 deaths; Nashville, June 8-15, 1 case.
Utah: Salt Lake City, June 8-15, 9 cases.
Vermont: Rutland, June 8-15, 1 case.
Washington: Hoquiam, June 10, 1 case.
West Virginia: Wheeling, June 8-15, 1 case.
Wisconsin: Green Bay, June 8-16, 6 cases; Milwaukee, June 8-15, 3 cases, 1 death.
Philippines: Manila, April 20-May 11, 18 cases.

SMALLPOX—FOREIGN.

Austria: Prague, May 25-June 1, 4 cases.
Belgium: Antwerp, May 25-June 1, 2 cases.
Ceylon: Colombo, May 4-11, 5 deaths.
China: Hongkong, April 26-May 11, 5 cases, 2 deaths.
Colombia: Panama, June 3-10, 6 cases.
France: Paris, May 25-June 1, 10 deaths.
Gibraltar: May 24-June 2, 1 case.
Great Britain: Glasgow, June 1-7, 35 cases, 1 death; Liverpool, May 25, June 1, 2 cases; London, May 25-June 1, 1 case.
India: Bombay, May 14-21, 8 deaths; Calcutta, May 11-18, 31 deaths; Karachi, May 12-19, 4 cases, 2 deaths; Madras, May 4-17, 22 deaths.
Italy: Messina, May 25-June 1, 1 death; Naples, May 26-June 2, 169 cases, 30 deaths.
Russia: Moscow, May 18-25, 25 cases, 1 death; St. Petersburg, May 18-25, 15 cases; Warsaw, May 11-18, 4 deaths.
Spain: Corunna, May 25-June 1, 1 death.
Straits Settlements: Singapore, April 1-30, 3 deaths.
Switzerland: Geneva, May 18-25, 5 cases.
Syria: Beirut, May 18-25, a few cases.

YELLOW FEVER.

Cuba: Havana, June 1-8, 1 case.

CHOLERA.

India: Bombay, May 14-21, 3 deaths; Calcutta, May 11-18, 77 deaths; Madras, May 4-17, 6 deaths.

PLAGUE—INSULAR.

Philippines: Cavite, May 2, 1 case; Cebu, May 2, 1 case; Manila, April 20-May 11, 94 cases, 79 deaths; Santa Rosa, May 2, 1 case.

PLAGUE—FOREIGN.

Africa: Cape Town, May 4-18, 463 cases, 209 deaths.
China: Hongkong, April 27-May 11, 221 cases, 209 deaths.
India: Bombay, May 14-21, 224 deaths; Calcutta, May 11-18, 79 deaths; Karachi, May 12-19, 149 cases, 114 deaths.

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Address.

SECTION ON PRACTICE OF MEDICINE.

ADDRESS OF CHAIRMAN DELIVERED AT THE FIFTY-SECOND ANNUAL MEETING OF THE A. M. A., HELD AT ST. PAUL, MINN., JUNE 4-7, 1901.

J. M. ANDERS, M.D., LL.D.

PHILADELPHIA.

Upon those selected to guide and direct the executive work of this large and important section of the AMERICAN MEDICAL ASSOCIATION, devolves a difficult task and a weighty responsibility. The high character and comprehensive scope of the work actually accomplished by the Section, more especially during the last two decades, is a forcible reminder that lack of concentrated effort in the future will result in stagnation, if not a backward step, instead of progress. You may be assured that with these thoughts ever in mind, those charged with the office work and the preparation of the present program spared no effort to make it attractive, interesting and meritorious. I desire here to make public acknowledgment of the efficient services so cheerfully and faithfully rendered by the Secretary of the Section.

It might seem befitting a chairman's address, at first sight, to take a retrospective view and consider the progress of internal medicine during the last 100 years, at this, the first meeting after the dawn of a new century in its nascent glory, but I join my predecessor, Dock, who says: "These things have been told and retold in more eloquent tongues."

The past is only useful as it furnishes inspiration for the present, hence, contrary to custom, generally speaking, my brief utterances shall not be reminiscent in character. To come down to the past year, it would indeed be hard to describe fully the fruits of that brief period. Moreover, this would be a work of supererogation, since you have already been made acquainted through the medical press with its most important advances and discoveries. Again, neither the number nor the relative importance of the published medical discoveries and fresh views can be arrived at by a process of induction while we are yet so close to the scene of action. Time is needful to encompass, confirm and properly appreciate the true worth of new scientific truths, as well as to determine precisely their range of practical application.

New truths are the raw material, which must be refined by a process, first of confirmatory investigation, then of practical application, before they become the finished fabric and constitute a part of the sum of, or mark an advance in, scientific knowledge. All this is necessary in order that nothing that is good shall be lost to mankind and nothing that is false shall fail to be rejected. Specific points connected with subjects in the developmental stage are likely to be considered by the essayists at these meetings and to be subsequently discussed by the members. Hence the folly of attempting to estimate or to delineate accurately the real or noteworthy and numerous minor improvements at the close of each year. This, however, can be accomplished with ease and certainty from the point of vantage of the future. On the other hand, I am not protesting against the propriety of allusion to revolutionizing and startling discoveries that are of universal interest and promise much for the future, in scientific addresses.

I am not rash enough to attempt a prophecy for the future of internal medicine—a tempting task—but cheered and encouraged by the unparalleled leaps and bounds of the last two decades, we turn with hope and confidence to the new, with its boundless opportunities and possibilities.

It has been questioned by some whether we may hope to make a "proportionate advance in the future," as compared with the course of events in the recent past, but the marvellous expansion of laboratory research, and the greater precision in methods of clinical observation, leave little room for doubt that the increase in actual knowledge will be at an increased ratio—there will probably be witnessed a new era of scientific achievement. At all events, we may anticipate greater progress in the coming years, unless, perchance, the profession falls short in the matter of training the senses and of cultivating critical judgment. Here may be thrown out a word of caution, lest the predominant tendency of the day to rest confidently upon the results of the refined, scientific methods of investigating disease lead to the unconscious neglect of careful bedside observation. The most fruitful results have been and ever will be attained when personal observation and the more exact laboratory methods are happily combined. The medical horoscope, however, reveals nothing that is calculated to inspire universal uneasiness and I have little patience with pessimistic views as we face a period that doubtless holds in store products and triumphs in original research and in practical experience and observation that we will not have dreamed of.

At present this body enjoys the cordial support and sympathy of the majority of the leading medical men throughout the country. It has met the necessities of the past and it will well meet the requirements of the future. The rapid growth and ever-increasing importance of the Section emphasizes the conspicuous ability of those who conducted its scientific business during the recent past. On searching the records of by-gone days, one may discover counsels of their wisdom for future guidance and action; and yet not to be overlooked is the fact that what was best or even good then may not be so now, so radically do conditions change within brief periods, in consequence of the rapid progress of medical science.

The medical section of the AMERICAN MEDICAL ASSOCIATION can point without ostentation and with becoming modesty to its record; it has accomplished highly credit-

able pieces of scientific work, but its rise and growth can not continue indefinitely unless those most deeply interested in its success and intrusted from time to time with the unenviable responsibility of formulating and executing plans for larger usefulness, give even more laborious and careful attention to the arrangement of subjects, the selection of essayists of wide reputation, the office work and other details in the future than in the past. This is necessary if the utility of the work accomplished by our Section is to be commensurate with, or to keep pace with, the development of our science. It is to be recollected that as it assumes a more and more conspicuous or commanding position among professional organizations, the greater will be the danger from deterioration or disintegration. Indeed, "the safety of any organized body is in inverse ratio to its size" (Rothrock), or, in other words, so soon as it commands attention and stirs the thought of the general public, it invites honest criticism. This is no new idea, but a well-established physical law. Hence, although there are no "vague shapes of gloom" in the horizon, it behooves the conductors of the offices of this organization to keep in remembrance the principles it embodies and to adopt a policy that will at all times reflect, what after the closest scrutiny, observation, experience, investigation and honest conviction is believed to be the highest wisdom and calculated to promote the highest interests of the Section. This policy should, it seems to me, determine also what subjects shall be discussed and whether certain questions are of sufficient importance to be discussed at all. The effect and the object aimed at would be probably to lessen the number of topics considered at each session, but it would give impetus to the merits of the papers presented and would also allow more time for their discussion. Nothing is gained by presenting an overfilled program that can neither be carried out satisfactorily nor enjoyed by the members. The amount, as well as the character, of the material supplied should be prearranged with greater care than is practicable under the present system, so that the proceedings could be grasped within the time allotted to our sessions. Symposia meet the difficulty to a certain extent, particularly if previously arranged and planned in such a manner as to avoid repetition, as well as to present the most interesting aspects only of the subjects brought forward. It is my firm conviction that the growth of the medical section and its influence upon the medical profession of the United States could be greatly enhanced by extending the work of the Executive Committee. Better still, perhaps, would be the appointment of a special committee on scientific business. This committee should hold office for from three to five years, thus insuring a membership conversant with the working arrangements and needs of the Section. The Secretary of the Section should be a member of this committee and the chairman a member ex-officio. All papers intended for presentation at the annual meeting of the Section should be in the hands of and scrutinized by the committee at least one month prior to the date of the meeting.* A part of the function of the special committee previously suggested should be to report plans, and broadly sketch new features with a view to effecting improvements in the work, thus insuring the greater prosperity of the Section for the future and removing certain deficiencies that may tend to limit its utility. I care naught whether the suggestions I have ventured be adopted, but I do affirm that the times are ever ripe for readjustments looking to the improvement and betterment of the character of section work. I desire to invite especial attention to the timeliness of a self-examination, a close scrutiny of the internal condition of things.

I am pleading for a policy that will tend to exalt the professional importance of the Section, which should at all times be specially representative of the best medical research as well as the ripest experience and observation of this fair land; and for a policy that shall insist upon a maximum of creative, constructive, original work to the exclusion of wearisome individual details and cumbersome bibliography. These meetings should be the occasion of the most important contributions to *practical* medicine.

Assuming this position to be incontrovertible, are we thoroughly alive to our responsibilities and opportunities? My apology for raising this query, if any is needed, is that one meets with comments like the following[1]: "The meeting itself appears to have been one of interest. The papers read were not of very striking originality. Perhaps we should except two of them from this remark." When it is recollected that these statements apply to the meeting of the AMERICAN MEDICAL ASSOCIATION in general, and that the total number of papers read before this body annually is several hundred, the words quoted above can not be regarded as a gratifying expression of approbation.

The accomplishment of high praise instead of comments like the above is the goal for this organization. If it be thought from these remarks that my attitude is too pessimistic, I must demur; on the other hand, I affirm that the times and the occasion are alike pregnant with promise and encouragement. Conditions are most favorable when viewed in the light of the situation as it existed in the recent past. My sole desire is to emphasize the importance of carefully watching and guarding the Section in its upward movement. Surely the auspicious opening of a new century should furnish a hopeful prospect and mark another mile-stone in its march toward an era of increased prosperity and greater practical utility.

Specialism in the science and art of medicine is an absolute necessity, but I venture to suggest that certain reforms are desirable in the line of rearrangement of the work that has been embraced under the Section on Practice of Medicine, as well as in those most closely allied to it. I am, and have been, in thorough accord with the establishment of the Section on Pathology. This is a special department of medical science for those who take a really scientific interest in the subject, and those who have had careful training in the methods of investigating the more obscure and finer questions in morbid anatomy and pathology. The technical knowledge that results from these laboratory studies, and the expert opinions based upon them, however, are of no small value in the study and recognition of many diseases. We welcome the fruits of these labors and utilize them, but the majority of the members of the medical section have neither the training nor the time needful to devote to the detailed work of the new Section. On the other hand, the general practitioner must constantly keep before the mind's eye a picture of the gross lesions of disease, and must appreciate the processes involved in their pathogenesis in

* These suggestions are met in part by the new rule compelling the retiring chairman and two members of the Executive Committee to approve all papers presented before the Section before they can be published in THE JOURNAL, but does not prevent the reading of unworthy articles.

1. Editorial in The Lancet, London, vol. ii, 1893.

order that the clinical manifestations may be properly appreciated. The lines between the sections on medicine and pathology, however, should never be too closely drawn. There is a narrow border field in which clinical observation, laboratory investigation and post-mortem findings are inseparably associated.

In the case of the Section on Materia Medica, Pharmacy and Therapeutics, we have an instance in which cleavage has been overdone; and it is recognized by many who have been closely identified with that section that, so far as applied therapeutics is concerned, it is of practical interest and importance exclusively to the clinician. The greatest progress in internal medicine has been, during the last century, in the sphere of diagnosis, while the advance in applied therapeutics has been comparatively slight. It is true that we are experiencing a wave of over-activity relative to the number of novel remedies brought to the attention of the medical profession, but trustworthy records or positive statements concerning the majority of these are sadly wanting. Indeed, a note of warning against the injudicious employment of novel remedial agencies is timely at present. Their action, or supposed action, upon the human economy does not in many cases rest upon the results of experimental pharmacology, but, as a rule, simply upon the briefly summarized personal experience of a single practitioner, whose promulgated statements serve as the basis of a catching and alluring advertisement for some enterprising firm with, let us charitably hope, the most laudable intentions.

Much to be deplored are the hidden purposes of our professional brethren who vaunt novel agents without even presuming to afford clear and convincing evidence of their therapeutic value. It is, however, to be looked upon as a favorable indication that an awakening on the part of the profession at large to the importance of greater interest and attention to the all-important subject of the restoration of health to the sick, and even to the symptomatic treatment of disease, is taking place. The prime object of our art is to cure disease. What manner of physician is he who fails to exert strenuously the resources of that art? Surely none of us would be willing, after making a precise and careful diagnosis in a given case, to step aside and allow the therapist to conduct the treatment. Nor should we, as clinicians, feel gratified to continue in attendance upon a case in which the treatment was dictated by a specially-trained therapeutist. This granted, obvious harm has arisen and will doubtless continue to arise from injudicious specialism. It is true that the study of the physiologic action of drugs is the basis of scientific therapeutics; it is equally true that the progressive clinician must avail himself of such knowledge—the finished laboratory product—resting as it does on the immutable basis of physical truth. As practitioners, however, we know that while there is a therapeutics founded upon pharmacology, thanks to the genius and labors of Magendie and Bichat, there is also an empiric therapeutics and a yet wider sphere of curative action in hygienic means, including dietetics. Whatever forces are of practical use must be embraced in the armamentarium of the medical practitioner; he must know the proper basis for their application, and the fundamental laws or rules that serve as guides to the attainment of scientific accuracy in his efforts to overcome disease.

Among the important questions pertaining to the treatment of disease that are awaiting a clearer solution and should be considered by this Section may be mentioned: serumtherapy, organotherapy, the higher precision of results from alkaloids as compared with crude drugs, the true sphere of hydrotherapy, of climate, rest, exercise, massage, diet, venesection, and electricity. Would not a more careful, thorough and comprehensive consideration and a fuller informal discussion of these subjects by the Section lead to increased knowledge pertaining to most valuable aids for the relief of suffering and the cure of human ills? Is not the oft demonstrated fact that medicines are the least important part of the treatment of disease too commonly lost sight of by essayists? For example, success in the treatment of disease is often possible only by the use of appropriate dietetic measures. "The father of medicine," Hippocrates, was fully alive to the importance of a wise selection of pabulum for the sick. Knowledge of the fundamental principles of dietetics is essential for the conducting of the cure of disease (Clarke). Too little interest is manifested by the general practitioner in the diet treatment of disease; he is in great need of practical information relating to this theme and of enlightened discussion of the subject. Now, there could be no more opportune time than the present and no more appropriate place than in this section to consider and discuss this subject in its practical phases, and the same remark would apply to the other physical methods of treatment to which I have made passing reference.

The development of proper and efficient systems of treatment must be the achievement of the physician; he must master their "spirit and form," for he alone is acquainted with the complexity of the indications calling for their utilization. I have been surprised that an upheaval of sentiment in favor of a return to first principles, or a throwing of therapeutics where it properly belongs, into the Section on Practice of Medicine, has been so long delayed. I am not protesting against a special section, properly organized for the prosecution of certain definite lines of investigation, more particularly the physiologic action of drugs, their constitution, and materia medica proper—a section of "Pharmacology, Pharmacy and Materia Medica," if you will pardon a suggestion. As in the case of morbid anatomy and pathology, the clinician is interested in the results of such scientific work; the accurate knowledge thus gained by the laboratory experimentalist is of marked value to the successful treatment of disease and satisfactory observation at the bedside.

I am not an advocate of the unlimited multiplication of sections, and I have a fixed belief that the best method of making the AMERICAN MEDICAL ASSOCIATION the aggressive, energetic and world-famed organization that all of its members must wish it to be, is by a co-operation of the more or less closely allied sections in the bringing forward and the discussion of certain subjects or selected aspects of appropriate themes that possess leading interest, in joint sessions.

I am led in consequence of these reflections to make another step in the same direction, and refer briefly to the brilliant dawn of a new morning on which the obscuring mists of ignorance, prejudice and misconception have been lifted by the light of advancing truth, and the gifts of surgery to medicine are appreciated and cordially welcomed. The increasingly large number of human ills in which surgical aid is invoked suggests the thought that a closer affiliation of the surgical and medical workers would be of importance to the welfare of mankind.

Speaking of specialism, says Shattuck,[2] "The heart

2. Address in Medicine, Phila. Med. Jour., Sept. 22, 1900.

is practically the only viscus which remains the exclusive property of the physician, and I am not so sure that even this organ will soon be attacked and we may hear of suturing mitral valves." Of a truth, this organ has been invaded by the surgeon. Neither the physician nor the surgeon can afford to confine himself alone to his specialistic studies; there should be held more frequent meetings on a common platform for the discussion of certain subjects or phases of topics of mutual interest; and consultations in the operating theater and at the bedside, as well as combined medical and surgical clinics in the arena for the benefit and instruction of students are urgently demanded. Truth and fairness compel the admission that the zealous surgeon is sometimes more to be honored, possibly even rewarded, for what he attempts than for what he actually achieves. Without wishing to detract from the merits of our surgical confrères, the medical practitioner is compelled to witness or learns of surgical operations having been performed which would most probably not have been executed had the operator first consulted with a progressive clinician. Conversely, the physician would grow less conservative as the result of more frequent consultations between himself and surgeons—a consummation to be desired. The thyroid gland has been extirpated *in toto* for exophthalmic goiter with resulting myxedema; cholecystotomy has been performed too commonly for supposed cholelithiasis where gall-stones were not in evidence after opening the abdominal cavity. These conditions, and numerous others that could be cited, should be carefully and thoroughly studied by both physician and surgeon, prior to operating, in order to determine precisely the nature of the affection in the case and the indications for treatment, medical and surgical. If this suggestion be not more generally adopted in the future than in the recent past, there remains but a single course open to the medical man, namely, to enter the domain of surgery.

In short, somehow or other, the medical man and the surgeon should be brought into closer, truer and more intimate relations with one another along certain definite lines, in the growing border lands, so to speak, between internal medicine and surgery. This is essential to the attainment of the true dignity, the comprehensive scope and beneficent intent of the medical profession. The morbid processes that we term medical diseases are not entities, and this is equally true of surgical conditions and affections; and success in the matter of their treatment demands, in many case, the combined efforts of the physician and the surgeon. Analogously, while each section of the American Medical Association has, for the most part, a distinct function (and while the best work may be done by the special local and national societies), yet the judicious affiliation of those sections having interests in common is indispensable to the realization of the full measure of our strength and our influence as a national organization. No greater stride toward the attainment and maintenance of our true position, toward promoting professional achievement and welfare or strengthening the pillars of the Association could be taken than by a closer, truer union wherever the strands of mutual interest of the different sections are inseparably interwoven.

Finally, if the American Medical Association hopes to be one of the great powers of the country, it is of grave importance that the proposed reorganization scheme be promptly effected and that due effort be made to establish and maintain proper respect and forbearance between the various sections, to the end that they may work in perfect harmony with one another.

I have attempted to point out a few lines on which our organizational and professional progress must be conducted. If I have seemed to lay too much emphasis upon the interdependence of certain sections of the Association and insufficient stress upon scientific investigation and data as the one sure means to a desired end, I would say in extenuation that the apparent omission is to be ascribed to the restrictive custom as to the time for a chairman's address. On the contrary, in the special work of this section, or any of the others, contributions based on original obesrvation and researeh must, in the future as in the past, constitute the choicest fruitage. Looking to the attainment of these higher results, permit me to suggest, in concluding, that an earnest effort should be made to enroll on the escutcheon of our Section all the master spirits in America, all who are bound together by the common tie of special research and observation in the broad field of internal medicine.

Original Articles.

APPENDICITIS.*

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In addressing the medical section at this meeting, I acknowledge to a feeling of great satisfaction, for though my subject is a surgical one, I can come before you without hesitation, since no one has such power to increase the application of surgery as the general practitioner—not by diagnosis alone, but even more by a proper comprehension of these morbid conditions most commonly seen by the surgeon.

I shall make a few remarks on appendicitis, and though to some of you this may seem a topic sufficiently discussed, yet many false ideas still cling to it, and each day convinces me of the necessity of threshing out the matter until the priceless grains of truth remain.

The appendix is probably the most vulnerable of the abdominal organs, and this from several causes: 1. It is a structure in the process of retrograde metamorphosis; it is deficient in blood, nerve and lymphatic supply; it is long and its caliber is small, hence its drainage is easily interfered with; and lastly it is subjected to traumatism by the movements of the psoas muscle, on which it usually lies. From this, then, it is apparent that the appendix may easily become a very target for the destructive micro-organisms—normally present in its lumen—where from any cause these are incited into activity; and it is especially noteworthy that a hollow, glandular organ remains intact only so long as the production and evacuation of its secretion continues normally. When this function is deranged there are serious results: 1, retention, stagnation and decomposition of the appendix contents; 2, pressure, leading to impairment of the appendix wall; 3, and most important, the bacteria, especially the colon bacilli, are so increased in number and virulence that they are able to penetrate the coats of the appendix and set up their irritant processes in varying degrees. Such is, in brief, the pathogenesis of appendicitis—a complex process, essentially progressive in character.

In conformity with clinic observation two varieties

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of inflammation of the appendix are recognized, an acute and a chronic; and while a chronic appendicitis may be the result of a previous acute process, yet it must not be forgotten that appendicitis may also be chronic from its inception. The following classification is suggested as convenient and well founded. Acute appendicitis: 1, catarrhal; 2, interstitial; 3, ulcerative; 4, gangrenous. Chronic appendicitis: 1, catarrhal; 2, interstitial; 3, obliterating.

It must, however, be frankly admitted that we are not always able to distinguish clinically the different pathologic varieties of appendicitis. Indeed, dissimilar lesions may even present identical symptoms; nor do the clinical manifestations bear any suitable proportion to the degree of involvement of the appendix.

These apparent inconsistencies are explained by the fact that most symptoms are due to peritoneal inflammation by extension, and nothing is more striking than the diverse reaction of the peritoneum to the same variety of inflammation as seen in different cases. In addition, the inflammatory phenomena are dependent on the situation and extent of the lesion, the rapidity of its progress and the changes induced by possible previous inflammation. The majority of appendical inflammations are chronic in nature; and many of the so-called acute cases represent exacerbations, a relighting of a quiescent focus, whose unsuspected presence an accurate history, I am sure, would often indicate.

It is not rare to have demonstrated in an individual the whole pathology of appendicitis, as when a chronic catarrhal appendicitis develops interstitial changes, ulcerates, becomes gangrenous and perforated, and is partially liquefied in an abscess; in chronic cases this sequence is common after months and years. But in the acute cases these same destructive effects are the rule, and take place with extraordinary rapidity, only requiring ten to twelve hours for the formation of a considerable pus collection or purulent peritonitis as adhesions determine. As in other diseases, so in this, nature makes an attempt at conservative resistance by adhesions to localize the inflammation and resulting abscess.

But I have never seen much good from these efforts of nature to cure; for the abscess itself, by its tendency to infect the peritoneum, is a grave menace, and even if the abscess ruptures into a hollow viscus, like the intestine or bladder, the situation is not much better. In this connection it seems advisable to refer to a variety of appendical inflammation which, not dangerous in itself, has been the indirect cause of innumerable deaths; I refer to obliterating appendicitis. Complete obliteration of the lumen of the appendix is the familiar standby of many general practitioners, but it is a will-o'-wisp; it does occur, I admit, but so rarely as to be practically non-existent, and in several thousand abdominal operations I have seen it scarcely a dozen times. The relation to treatment is obvious.

This, then, is a short sketch of certain features of the pathology of appendicitis, and two points in it I especially emphasize: 1. The practical non-existence of any form of inflammation which by obliterating its lumen renders the appendix harmless. 2. The appalling rapidity and suddenness with which the appendix may suffer bacterial invasion and necrotic degeneration with resulting general peritonitis. Forget, if you will, all other surgical pathology, but remember those two facts; upon them is based proper treatment and the justice of claiming appendicitis as a purely surgical affection, and whoever doubts their truth, him I invite to be present at my operations until conviction is forced upon him.

I shall not detail the more minute changes; our patients require pathologists for the living rather than pathologists for the dead—if I may use these terms; they need diagnosticians of disease by the bedside infinitely more than recognizers of morbid tissue at the laboratory.

It is the diagnosis, then, which is of supreme importance; and this ordinarily is not difficult. But first let me utter one word of caution: No frequent disease presents its signs and symptoms in such varied form and locality as appendicitis; make it a rule, therefore, in *all* abdominal cases to first exclude appendical irritation, because careful examination will often reveal as due to it affections otherwise apt to be classed as "enterocolitis," "acute dyspepsia," "cholera morbus," "biliousness," etc.

In all inflammations of the appendix, not entirely chronic, there are three "cardinal symptoms," viz., pain, tenderness, and rigidity; and of these pain is, in every variety, by all odds the most significant, so much so that I regard with suspicion every clinical history with a "bellyache," inflammation of the bowel, neuralgia of the stomach, and affections given in similar terms. But the pain of appendicitis has certain characteristics: above all it is paroxysmal, cramp-like and colicky, and may at intervals almost disappear. As to its locality, it is usually first referred to the umbilical and epigastric regions, becoming localized in the right iliac fossa only after the lapse of several hours, and that not in all cases. It is upon this point that egregious errors have been committed, so many of which I have seen that I should like to have emblazoned upon every house-top this sentence: The pain of appendicitis is neither always nor necessarily referred to McBurney's point; and pain elsewhere by no means excludes appendical inflammation. And if you ask me the reason, I have merely to call your attention to the variability in position of the appendix, the different parts of it affected, and the diverse involvement of the sympathetic nerve plexuses, to make my remark appreciated. For instance, pain and tenderness on the left side are commonly noted, and indicate that the appendix points south—rarely east—and occupies the pelvis; in such cases vesical symptoms are common and occasionally the pain is referred along the course of the spermatic cord, and may even cause retraction of the testicle, as in kidney-stone.

If the appendix is behind the cecum and points north pain may be referred to the back, to the kidney or to the liver, and it is then that skilful examination is needed to elicit, by palpation, the tenderness complained of subjectively. Too often have I seen in consultation, practitioners, after a few ill-directed punches, assert the absence of abdominal tenderness, when careful, deep palpation revealed a small, but exquisitely painful spot in the loin, pathognomonic of appendical disease. In fact, many a doctor, despite sufficient experience, never learns the art of palpation, since lightness of touch and knowledge of what to find are wanting, and thus many appendicitis cases are overlooked.

Examine first away from the seat of disease, and slowly and gently approach the tender area. A localized spot of extreme tenderness is probably the surest indication of pus formation; conversely, abrupt cessation of such pain is apt to denote complete gangrenous change and paralysis of the peripheral nerve filaments

by toxin absorption. In addition to tenderness, palpation determines the presence and degree of rigidity. This is usually well marked and most intense over the inflamed appendix, but sometimes the rigidity of the entire abdominal wall is such as to preclude the possibility of local examination. Other symptoms of appendicitis—vomiting, diarrhea, constipation, etc.—I shall not consider, except to say that in appendicitis the temperature record is utterly untrustworthy and gives no reliable data in regard to pus, which, if encapsulated, may develop quite as well with a normal temperature as with an elevated one. Nor do I depend to any extent on blood examinations; a leucocytosis of over 20,000 usually indicates pus, unless either shut off by adhesions or the individual is overwhelmed by septic absorption. In fact, in appendicitis I have never learned by laboratory methods what was not as surely obtainable at the bedside.

I shall merely refer to the differential diagnosis of appendicitis. In men it is concerned especially with affections of the kidney and gall-bladder—calculi for the most part—while in women uterine and ovarian disorders are added. Occasionally the diagnosis is difficult, but in the vast majority of cases an accurate history, careful palpation and a due regard for the three cardinal symptoms—pain, tenderness and rigidity—readily suffice to distinguish appendicitis from other diseases.

It may be well to allude to the similarity between typhoid and appendicitis when both are in the early stages, and despite the Widal test such cases require much consideration. The slow onset, headache, temperature record, and epistaxis point to typhoid; while in appendicitis the local manifestations are usually more marked. As I have said the symptoms of appendicitis are seldom in proportion to the appendix lesions; let it suffice therefore to diagnose early the inflammatory involvement, which is of itself proper enough indication for rational treatment; and if you ask me what this is to be, I answer: There is but one treatment for appendicitis, viz., the aseptic scalpel of the surgeon, and it should be called upon as promptly as the diagnosis is made.

I know that some will recall cases apparently cured without surgical interference, and I recall them too, for in my experience they were on the operating-table with gangrenous appendicitis and abdomens full of pus, the saddest sights in surgical practice; for the first attack of inflammation creates a locus minoris resistentiæ for the later development of bacterial destruction. Clinical experience, unbiased judgment, therapeutics itself teach the absolute inefficiency of drugs to control or even affect a progressively inflaming appendix, and in the face of these facts medical powerlessness becomes by delay medical dawdling; and when, in appendix cases, I encounter pus, developed in an acute exacerbation after an interval of supposed safety, I realize that some one has blundered—either the physician, in not insisting on operation, or the patient in refusing it. In such instances allowing pus to be present is almost a crime, so easily averted is it by an early operation in itself practically without mortality. In fact I regard the medical treatment of appendicitis as high-grade "Christian Science."

As for the intervals after an acute attack, I consider them as absolute indications for operation. How often has a flourishing life been blighted by blind confidence in their permanence; how often are they but the inception of that quiescent repose that ends in the eternal rest of the grave!

The very history of appendicitis shows the necessity and growing appreciation of early surgical interference, and it is this practice which I both have and shall continue to reinforce with all my strength. It is the duty of our profession not to be scientific merely, not to be experimental alone, but to be life-saving, and this is the especial province of early operation in appendicitis.

DISCUSSION.

Dr. Delancey Rochester, of Buffalo—I want to say a word from the standpoint of the physician. I agree entirely with all that Dr. Deaver has said, so far as I heard. I regret that I did not hear his remarks concerning the morbid anatomy and symptomatology of the disease. I only wish to add one or two words upon the subject of diagnosis and treatment. I want to make a strong plea for the value of the blood count in the diagnosis of these conditions during the acute inflammatory state and, particularly, during pus development. I have in mind several cases in which the blood count was of great value in determining purulent inflammations. I was called in to see one case during the absence of the attending physician. I was informed that the case was not one for operation, that an operation was not indicated on account of the weak condition of the patient. There was abdominal tenderness which was diffused generally through the pelvis, more particularly in the region of the appendix, and very markedly tender at McBurney's point; there was no tenderness above that point. This tenderness had existed for some time. The family was decidedly opposed to operative interference. Finally, a blood count was made and we found 56,000 leucocytes in a cubic millimeter; I then told them that an operation should be performed. In order to be certain several counts were made in succession, and the number of leucocytes never went below 15,000. An interesting point in reference to the blood count was that the leucocytosis varied with the temperature; with an elevation of temperature there was an increase in the leucocytes and *vice versa*. An operation was performed and an appendicitis was found to be present but complicated with disease of the ovaries. I think that, in this case, the blood count was of value in that it made me insist upon an operation. Dr. Deaver has stated that we may mistake disease of the gall-bladder for disease of the appendix; that they may be mistaken for each other. I wish to relate a case, occurring in the practice of Dr. Stockton, which I saw with him on several occasions. A young woman entered the hospital who had great pain and tenderness over the whole of the right side of the abdomen. The diagnosis made was that she was suffering from gall-stones. A blood count was made, a leucocytosis was found to be present, and it was thought that she had a purulent inflammation of the gall-bladder. An operation was performed, the gall-bladder was opened and pus and gall-stones were found. The patient improved for twelve hours and died within twenty-four hours. At the autopsy it was found that gall-stones had perforated the appendix, and that the patient had died from appendicitis in connection with the gall-bladder trouble.

As regards the treatment I believe that the aseptic scalpel is the only one for appendicitis in cases where it can be used.

Dr. J. V. Kelly, of Philadelphia—I think that, after the first twenty-four hours, a medical man should not attempt to treat a case of this disease. I have never regretted sending for Dr. Deaver, but have regretted not having sent for him early enough.

Dr. Frank D. Smythe, Memphis, Tenn.—I am prepared to agree with Dr. Deaver in toto. My experience in the management of appendicitis bears out the truth of every point he has made. Appendicitis is essentially a surgical disease; and a physician essaying to treat a case of appendicitis without the aid of a surgical colleague should possess considerable diagnostic skill in order that the proper time for operation could be determined. If the diagnosis were made early and the patient subjected to immediate operation you would lose none of your cases of appendicitis. The operation should be performed

before the appendix becomes the site of an abscess and before the peritoneum shall have been invaded. At this time the operation can be performed quickly and safely and without risk of contamination of the peritoneum. The operation is a perfectly safe one in the hands of a skilful surgeon—practically without risk if performed promptly after its early recognition.

I have never lost a case of appendicitis when operated upon during the first day of attack. In this disease all cases should be subjected to immediate operation if recognized at the onset and seen by a competent surgeon. During the past year I have operated upon ten cases of septic lymphangitis and peritonitis following gangrenous appendicitis after perforation with 100 per cent. mortality. In none of these cases did I entertain any hope of recovery. I do not believe that a case of general septic peritonitis can be saved with or without an operation; I have never seen a case of this character reported as cured, and certainly have seen nothing of the kind in my practice.

No man can say how a given case of appendicitis will terminate, regardless of the mildness of the symptoms, if treated medically. It is impossible to predict what twenty-four hours will bring forth.

The mortality of appendicitis depends upon where the appendix points in the event of rupture, and not in the least upon the plan of campaign pursued if managed medically. Dr. Deaver has just said that the medical treatment of appendicitis is nothing more nor less than high-grade "christian science," and that the only legitimate way of treating appendicitis is with the aseptic scalpel in the hands of a conscientious and skilful surgeon. I agree with the essayist in every particular.

DR. J. A. WITHERSPOON, of Nashville, Tenn.—I have listened with pleasure to the remarks made by Dr. Deaver and my confidence in him has never slackened since he was my teacher. I rise to-day to say that if the medical treatment of appendicitis is to be according to the belief of the "christian scientists," then the man who has a little pain in his belly, with a little temperature and with very few physical signs, who submits himself to operation, that man is as brave as Julius Caesar and has the faith of a Daniel. Now, gentlemen, we, as general practitioners, must realize that appendicitis is both a medical and a surgical disease. There are many cases that are mainly surgical. There are many cases of appendicitis that you and I have seen get well from the medical treatment, by placing the patient in bed, at once stopping all nourishment, applying ice-bags over the appendicular region, keeping the patient perfectly quiet, and using rectal enemas; with such treatment I can see no reason why many attacks of appendicitis will not end in recovery. Take the experience of my friend from Memphis who has just addressed you; he has lost 10 cases from operation. How many have lost 10 cases without operation? I believe that the proper course to pursue in these cases is to let the physician and surgeon go hand in hand; let the surgeon be urged to meet the emergency of perforation or of the abscess. These cases should be carried through the acute attack and, if an operation is demanded, let it be done during the interval. Eighty per cent. of the cases of appendicitis get well without the knife. But, if we can have such a skilled man as Dr. Deaver with us, he may save every case if seen in the primary stage, but we are not all of us fortunate enough to be able to call in Dr. Deaver, or as skilful a man, and every scalpel is not aseptic. We all know that in the smaller places if such extreme views prevail and men often incompetent undertake this operation that many lives will be sacrificed on the altar of fanatical surgery.

DR. BOARDMAN REED, of Philadelphia—I agree with Dr. Deaver in the main, but I can not agree that at all times and in all places the aseptic knife is the only remedy in appendicitis. I agree, however, that in large cities, in hospitals with their skilled abdominal surgeons, with trained nurses, and all the paraphernalia and conveniences for clean and good work, that an operation performed on the first day, and perhaps on the second day, would be the most conservative; but, if in the country far from any hospital, from skilled surgeons and trained nurses, etc., I believe that we must then think of other remedies besides the knife. If one can not get a trained surgeon and if the case has gone on to the third day I think it is sometimes safer to treat the case conservatively by rest, poultices and starvation and help perhaps from laxatives, calomel, or opium, than to resort to surgery.

I wish to say a word in regard to the chronic cases of appendicitis. Here the main thing is to prevent. It is a well-known fact that most of these cases do not arise from concretions, or seeds, as was once thought, but from an extension of a catarrhal process involving the colon, chronic, insidious and often unrecognized. I think the symptoms that precede chronic appendicitis are not frequently enough recognized. They nearly always include, vaguely, impaired health, constipation or diarrhea, anemia, a lowering of the strength, general malaise, etc., symptoms which give a warning that something is wrong. The patient then does not need so much a surgeon as he does a skilled clinician, one skilled in palpation, skilled in recognizing the early signs which tend to cause catarrh of the appendix. Besides recognizing the catarrhal condition in the bowels, besides palpation and recognizing the tender spots over the involved portions of the intestine, a more rigid condition of the muscles on the right side of the abdomen can usually be made out and there are also signs to be discovered in the urine which will aid us in making a diagnosis if in doubt, i. e., the presence generally of indican or the aromatic sulphates, or both, together with an increased total acidity of the urine.

DR. I. N. LOVE, of New York City—We all know what the position of Dr. Deaver has been and that it is a definite one; we all know the position he has held for a long time. We also know the position held by Robert T. Morris, and other experts, from a surgical standpoint. If we who are specialists in internal medicine study the question carefully, we must study it from both the standpoint of medicine and surgery. We must study not the theory but the conditions confronting us. Every case is a law unto itself. In every suspected case of appendicitis it is highly important that a competent physician, a good diagnostician, be called in early. We all know that every case of cholera morbus, every case of catarrh of the bowels, every case of ptomain poisoning, or suspected typhoid fever, every case of abdominal disturbance in fact is a possible case of appendicitis in disguise. Speaking of symptoms, whenever I have been called to see a case giving evidences of the disease along these lines I have observed that rigidity of the right side of the abdomen is a fairly positive symptom. Nature is placing a splint upon the disturbed bowel by making rigid the abdominal wall. Tenderness at a given point goes without saying. If the irritation be discovered early enough we usually assist Nature by emptying the canal and placing the patient at once at rest, starving them, placing an ice-bag over the seat of the trouble and then have an ideal surgeon constantly in attendance, ready to meet any emergency that may arise. If no emergency arises then we should continue to treat the patient along the lines indicated, and an operation can be done at our pleasure. In my own judgment operation should be done through fear of recurrences, although a patient may escape such recurrences. If the conditions are ideal, and if Deaver, Morris, Price, or other well-known abdominal surgeons could be had, even if it was at the country crossroads, I think an operation may be done; but in an average case of appendicitis I would trust to quiet, diet, starvation, ice-bags, and time.

DR. WILLIAM BAILEY, of Louisville, Ky.—From the standpoint of the general practitioner, I heartily approve of all contained in the paper read by Dr. Deaver. In doubtful cases I am always ready to have an exploratory incision made for the purpose of clearing up the diagnosis. I have no confidence at all in the medical treatment of this disease. I make this remark in the face of the fact that many cases do recover without operation; so far as I know, they did not recover through any virtue of the treatment employed. I can recall cases of appendicitis that were not operated upon, that have gone for more than forty years without recurrences of the attack; but I have seen so many that did not come on after any catarrhal

condition but as a thunder-bolt in a clear sky and in twenty-four hours were in an inoperable condition. In cases of doubt as to diagnosis I am always ready for the surgeon to make an exploratory incision. I do not believe that such an incision is a factor at all in the cause of death in such cases. I doubt very much the reports made in the papers that the patients died from the surgical operation; they died from disease which surgery was not able to relieve. I do not believe that any case, no matter what the conditions are, can be operated upon too soon, and I doubt if it is ever too late for operation.

Dr. C. W. Lillie, of East St. Louis, Ill.—To illustrate how rapidly an apparently latent case of appendicitis may develop, I wish to relate one in which I have been particularly interested, occurring in my only son. This young man, 21 years of age, robust, hearty, a football player and a general athlete, appeared all right at noon, but one-half an hour later, during my absence, he was taken with severe pain in the abdomen, which at once showed the place of development of a hernial tumor; my attention was called to that when I returned one-half an hour later. I was not aware that the young man ever had a hernia. When my attention was first called to it signs of collapse threatened and I feared that the young man would die from some cause apparently unaccountable to me. I had him taken to the Jefferson hospital in an ambulance. While in the ambulance on the way to the hospital the tumor entirely subsided and the pain disappeared, so that on arrival at the hospital he walked up one flight of stairs to his room, and operation was deferred until the day following. Twenty-four hours after the first advent of pain he was operated upon by Dr. Waldo Briggs, who found that he had to deal with about 5 inches of the ascending colon which was gangrenous, and that 4 or 5 inches more of it was in such a congested condition that at least 8 inches must be resected; fully 5 inches of the ileum was also in a partially necrotic condition and the entire 13 inches of the intestine was removed. The appendix had sloughed off in nearly its entire length. Resection of the bowel was done, the ileum and the colon were joined by the Murphy button and the patient made a good recovery. The points of particular interest in this case were the suddenness with which the alarming symptoms came on and the complication of a hernia which alone was believed to be the real trouble. As a result of this I am of the opinion that we should never allow our cases to go too long without operation. Since the occurrence of this case I have had another which happened in a hearty young man; within a few hours after its development an operation was done and there was found a gangrenous condition which with a few hours more delay would have necessitated an almost similar operation.

Dr. H. S. McConnel, of New Brighton, Pa.—It seems to me that we are not recognizing the fact that there are two treatments of appendicitis, the medical and the surgical; when the general practitioner is called to see a case he considers it a medical case, but for him to treat every case of pain in the abdomen as one of appendicitis I think is a great mistake. I think it is his duty to treat every case of pain in the abdomen unless he is positive that he has a case of appendicitis to deal with. One should bear in mind that there is not always a rigidity of the rectus muscle nor pain in the right side, for often they are on the left side of the abdomen. There is no doubt in my mind but that a severe case of appendicitis should be operated upon so soon as diagnosed. I have seen men come here who preached that we should wait twenty-four hours before resorting to operative interference; but I think that if the patients were treated, as they should be, with ice, saline solutions, etc., we will not make many mistakes.

Dr. Frank Warner, of Columbus, Ohio—I believe that there is but one time to operate in cases of appendicitis, and that is when the diagnosis is made, and the best way to make that diagnosis is by the presence of pain, tenderness and rigidity over the region of the appendix. Whenever these symptoms have arisen I must take issue with Dr. Love when he makes the statement that "then an operation can be done at our pleasure." Again, I do not approve of the method referred to by the gentlemen who preceded me, that we should wait awhile. After the diagnosis is made I think we would make an egregious error if we did not proceed at once to operation for the reason that we do not know what one of these cases will develop a gangrenous appendix. After diagnosing a case, if you wait even over night either your operation is a useless one or else you have added greatly to the danger. It has been stated that we can not all secure the services of the greatest surgeons to operate for us; I think that any man, with a moderate degree of ability, is capable of doing this operation and with less danger to his patient than if he either waited for the presence of a great surgeon who is long in reaching the patient, or resorted to medical treatment. With pain, tenderness and rigidity present, and the diagnosis settled, we should decide at once to operate, and I do not believe in wasting time because every day added to the postponement of the operation adds to its death-rate.

Dr. A. F. House, of Cleveland, Ohio—If there is any general practitioner in the room who will point out to me how to discriminate between the so-called medical cases and those that are surgical, I will be greatly obliged to him. In my experience with these so-called medical cases of mild degree, after a certain time, may come an explosion, as it were, and the case becomes a fulminant one, and the patient died; I have never yet seen a case that terminated fatally from too early an operation, while I have seen many cases that have died because they were operated on too late. I am glad to be able to support the opinions expressed by the essayist.

Dr. Wm. M. Findley, Altoona, Pa.—I rise simply in the interest of the 20 per cent. You that were present at Atlantic City last year heard an able discussion on appendicitis and you remember that Dr. Senn made the statement that 80 per cent. of the cases recovered without operation. I rise in the interest of the 20 per cent. Personally, I would not like to be one of that 20 per cent. I do not believe that the medical profession need have 20 per cent. of deaths from this disease. The records of gentlemen who are not connected with hospitals and who operate in the homes and hovels in the country give a better record than 20 per cent. of deaths when the operation is performed early, at the time the diagnosis was made. I have recently heard it stated here that operations are performed upon cases of appendicitis thirty-six hours after the diagnosis is made, and this, too, in the cities. I certainly believe that, in the cities where there are hundreds of surgeons, that these cases should be operated upon at once. In the little town where I live the death-rate during this past year was about one per cent. where the cases were operated upon within twenty-four hours; but, after thirty-six hours, I do not think such a good result can be obtained. I sincerely hope that the medical men of the United States will get away from that 20 per cent. death-rate in appendicitis.

Dr. George F. Jenkins, of Keokuk, Iowa—There are cases of appendicitis that should not be operated upon, and I think it is absolutely wrong to operate upon every case so soon as the diagnosis is made. If the treatment is carried out in certain lines—rest, salines, ice-bags, etc.—and if the treatment is commenced early enough you will not be compelled to resort to operation in all cases. Operation is always indicated when suppuration occurs. Dr. Deaver says that no physician can foretell the danger in any case, and hence he would not take the responsibility of treating even a mild case unless permitted to operate immediately. Does he say to the patient: There is no danger in operating, I will certainly cure you? No; he is still unwilling to take the responsibility, but says: If you will take the risk, I will do the cutting. Every case should be treated either medically or surgically, according to indications present. Responsibility rests equally upon the physician, whether he chooses to operate or not to operate.

I claim that we should always treat the man who has pneumonia, not simply treat the pneumonia, and I insist that, for the same reason, we should always treat the individual case of appendicitis, and not simply treat appendicitis. Routinism is as reprehensible in surgery as it is in medicine, and hence I am opposed to cutting in every case of appendicitis.

DR. J. M. SPELMAN, of Anaconda, Montana—I desire to say a few words because I find that the gentlemen who live in the Ohio and Mississippi valleys find it difficult to secure a skilful surgeon. In Montana it is impossible to get Dr. Deaver, or any other noted surgeon out there; it is impossible to do anything but take right hold of these cases yourself and, I promise you, we do it. We find no difficulty in performing operations for appendicitis, but we do find difficulty in treating them on medical lines. It seems to me that the discussion that arises year after year in the American Medical Association does us more harm than good, because it often has been the cause of delay in cases that required immediate operation; the idea has become prevalent among the people that operation should not be performed at once and so they will not allow it sufficiently early. I feel that this operation is as much an emergency operation as tracheotomy or herniotomy as we were formerly impressed and that every good practitioner should know its technique.

DR. W. H. CHRISTIE, of Omaha, Neb.—As a general practitioner, I wish to speak briefly. Gambling, whether done as a private individual or as a professional man, is a bad business so far as the pocket-book is concerned in the former and one's standing in the community in the latter. These patients that died from the operation when it was performed in the latter stages might have lived if they had been operated upon at an opportune moment. Waiting before operating is gambling with human life. We can not tell, nobody can tell, what is going to happen when the appendix becomes diseased. Therefore, I do not believe in gambling with human life; we should urge operation immediately, as soon as the diagnosis has been made.

DR. JOHN B. DEAVER, of Philadelphia (closing the discussion)—So far as the value of the blood count is concerned I do not question it, not for one moment; but, where there are no facilities for such work, and where time is necessary in order to profit by such an examination, causing delay, then I am opposed to it; the patient's welfare will not admit such a delay.

I can not agree with all that has been said relative to the medical treatment of appendicitis. In cases that have recovered from an attack I believe that it is wiser to operate between attacks than to wait till another attack is ushered in; operate in the interval. I do not believe that there is a man living who can tell whether A., B. or C. can recover.

I maintain that it is all right for a surgeon, if properly trained and an anatomist, with experience and common sense, and with the facilities for operating, to operate so soon as the diagnosis of appendicitis has been made. I also maintain that the surgeon is better able to read the conditions inside the belly than a medical man.

I wish to congratulate Dr. Bailey; with his silver locks, he can teach all of you; I admire a man at his time of life who is abreast of the times, and I pray that we may have him with us for many years to promulgate views such as he has to-day, which must accomplish much good.

PRELIMINARY WORK.*

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Many years ago it occurred to me that physicians could follow generally with advantage both in pathology and physiology the example of neurology and study the human body from the standpoint of both its embryonic and post-uterine evolution and from the standpoint of its degeneracy as well. It was long recognized that health simply constituted a balance and that disease meant the destruction of this balance with resulting undue predominance of some healthy function and the undue depression of others. Practically the same rule is followed by the chemist who controls his analytic experiments by his synthetic, and vice versa. Physicians and dentists generally in studying man as an entity, view the differences between the normal and the abnormal as of kind and not of degree. To avoid this error, I have studied the degenerate phases of man from the standpoints of etiology, physiology, and lastly and most important from the standpoint of embryology and post-uterine development periods. The result of these studies has been the general discussion of degeneracy as a phase of evolution, in "Degeneracy: Its Signs, Causes and Results," published in London in 1898. The local degeneracies either as an expression of general advance or its reverse have been outlined in my works upon "The Etiology of Osseous Deformities of the Head, Face, Jaws and Teeth;" "Irregularities of the Teeth and Interstitial Gingivitis or so-called Pyorrhea Alveolaris;" "Degeneracy of the Alveolar Process." It is now my intention to discuss one of the most important of local degeneracies so far as dentistry is concerned: Degeneracy of the Pulp. Last winter I arranged with Chicago dental surgeons that extracted teeth should be saved for me. My assistant collected from their offices every afternoon at 4 p.m. The teeth were then cracked open at my office, the pulps removed and placed in Müller's fluid and 1 per cent. formalin before 6 p.m. From 1958 teeth obtained, 1017 pulps were removed. Macroscopically the pulps were thus divisible: Normal, exposed, inflamed and suppurating, mummified, calcified and calculous; fungoid, with exostosed roots; loose teeth abrasion; pulps destroyed with arsenic and deciduous teeth pulps. Sound erupting third molars and bicuspids extracted in regulation had been placed in Müller's fluid ere they came under my observation.

In nearly every case the pulp could be lifted out of its chamber so far as the apex of the root. In every case, the root had to be crushed before the pulp could be detached. Pieces of the cementum almost invariably adhered to the pulp, which required considerable force to detach. The slight adherence of pulps to the chamber was due to anatomic construction. This peculiar relation of the pulp to the walls of the canal becomes obvious when attempts are made to remove it in single-rooted teeth, after application of arsenic. The nerve broach not infrequently carries the pulp with it in passage toward the apex. The pulp often comes out in doubled-up contracted mass. Sometimes it comes away in pieces, and sometimes the pulp is not entirely detachable from the end of the root. The claim that pulps immediately removed from the teeth after extraction adhere to the wall of the canal is not borne out by experience. If nerve fibers radiated from the pulp and extended into the dentine it would be impossible to remove the pulp from its chamber. The pulp, however, can not be removed from the end of the root without breaking; it therefore seems evident from a macroscopic standpoint that nerve fibers as such do not enter the dentine. In removing the pulp it always remained *in toto* on account of the strong connective tissue.

A point of great interest in connection with pulp adhesion to the root is that not only the degeneracy of the pulp, but also of the tooth likewise. In development of the tooth, calcification begins at the crown and extends toward the apex. Calcification takes place at the periphery of the root and extends toward the center. A marked opening results with a large primitive organ (the pulp) until the apex is reached, when it closes. This closing often continues after the crown has erupted. The foramen is almost completely closed. What was

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once a large pulp containing nerves and blood vessels tapers down to the minutest size with but only one or two blood vessels and nerves remaining. In the lower mammals teeth have open ends with large pulps. These furnish sufficient nourishment to the teeth and resistance to decay. Of the 1017 pulps collected 131, or 11.9 per cent., were more or less mummified. While no special attempt was made to determine the extent of mummifaction, 75 per cent. of the 131 seemed mummified. The remainder had varying degrees of mummifaction beginning at the apical end. The extent of bloodletting at the time of extraction governed the degree of mummifaction. The question further arises, What amount of blood did the pulp contain at the time of extraction? Did the closure of the apical end of the root cut off the blood supply? It is certain that teeth with mummified pulps were hard, dense and comparatively difficult to crack. In pulps partially mummified there was a demarcation between the part filled with blood and the dried end. In the dried end, mummifaction was complete. The dried specimen was removed from the end of the root with as much difficulty as the normal pulp, while the main part could be readily lifted out of the chamber as there was no adhesion. The pulp can become completely mummified in six to twelve hours. All the teeth from the same mouth were sometimes mummified. The pulps in abraded teeth had receded and been almost obliterated. Recession is sometimes followed by obliteration of the pulp chamber. In most cases, the filling of the pulp chamber does not follow. Blood supply is almost if not quite exhausted. In cases where the roots were exostosed the pulps were often almost obliterated with corresponding filling in of the pulp chamber. In other cases mummifaction of the pulp occurred. There were seventeen (1.5 per cent.) calcified and calcalous pulps. In some the tooth had to be completely crushed to remove the calcified mass which had adapted itself to the walls of the cavity. In others the pulp could be removed in its entirety, so complete was the calcification inside the pulp inself. There were four fungoid pulps of 1017 pulps. In all four, pulp stones could be felt. The percentage of minute pulp stones can be determined by the microscope alone.

In interstitial gingivitis, where the alveolar process has receded and the roots of the teeth have been exposed for some time, the pulp recedes and the canals become filled with dentine. Although the pulps are alive, the substance in the tubuli decomposes and the odor is more penetrating than that from dead pulps. The dentine becomes dark and twice as much force is required to break open the tooth than in the normal variety. These teeth are brittle and fly to pieces, while the normal tooth splits lengthwise.

The tooth is the lowest structure in the body since it is formed of material which can be destroyed by disintegration only. The pulp is a temporary organ, having attained its normal size and hence been at its best when it commences to form the dentine. The apical foramen is largest in the lower vertebrates. Pulp stones or secondary dentine are the commencement of degeneracy. No lymphatics (Sudduth) exist in the pulp, since it is a formative as well as a degenerative organ. One hundred and thirteen, or 11.1 per cent. of the pulps examined, were exposed, infected with pus infection and sloughing. The inflammation sometimes extends throughout the entire pulp. Sometimes one part or side only is affected. In the case of a molar, inflammation often extends upon the side of the pulp and into one root. The other side of the pulp root or roots remains normal or is but slightly affected.

These teeth and pulps were turned over to Drs. Latham and Anderson for cutting, staining and mounting for the microscope.

THE LITERATURE OF THE PULP.*

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In reviewing the work done on the dental pulp, it appeals very strongly to the operative side. In other words, the majority of the papers concern themselves with the pathologic conditions, which include special and general pathologic states from inflammatory to degenerative, and bacteriologic gangrene to formation of pulp-stones and the treatment of the same. One noteworthy point is the constant effort directed to the "killing of the pulp" by every known means and the very little encouragement to try to save the "formative organ." In these days of advancement of the histophysiologic research and the introduction of new methods and chemicals, it seems strange the dental pulp appears to have been considered as either completely worked out or not so important an organ as enamel or dentine or even the peridental membrane. Yet its development, structure, functions and variations are hardly understood—and we expect to cure its ailments. It is true a great deal has been investigated and many essays and papers presented from all parts of the world, but very little truly scientific work has been completed. Take the latest works on dentistry and see in what small space the dental pulp is mentioned and the debatable points occurring in almost every line. Even the dentine seems to be of greater importance, and yet the question may be asked: "Should we have a dentinal layer if the pulp were not formed early and were not of primary importance as a formative papilla for its development?"

In this paper, so far as possible, references to the operative treatment of the pulp have been excluded, and in considering the anatomy, histology and especially the development of the pulp, many authors have described the neighboring structures of odontoblasts, dentine and enamel, it being impossible to separate them wholly from the pulp. Anyone wishing to study the latter must be willing to examine also the former.

Dentists are now waking up to the fact that we must have more preliminary training in the elementary branches, and schools of dentistry are constantly improving. It would be a worthy object to found grants, scholarships and opportunities for original research work to post-graduates or advanced workers, instead of such memorials as oil-paintings, busts, etc. The former would carry far more weight, would perpetuate memory in a nobler way, and reach to almost every clime and class by constant quotation, thus enriching science and benefiting thousands of suffering humanity. How many libraries contain works on dentistry accessible to the student that are of recent date or valuable in looking up the subject? It has been said that publishers object to giving the large medical and scientific libraries a copy of a book for fear of lessening its sale. Personally, I think this objection should not be sustained, as many people who note a new book in a library or store, finding it suited to their needs will buy a copy to have at hand. Hardly any one man (even if he could afford it) cares

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to buy every book published in his own branch, since so many are merely reiterated statements, by worthy investigators, not brought up to date or not original. Owing to the scarcity of accessible works even in the majority of our large central cities, the task of "looking up literature" is by no means easy or worthily done, oftentimes many essays and papers scattered through the numerous journals being out of reach. Better libraries are needed.

Perhaps the earliest mention of the dental pulp is by Galen,[1] who states: "He felt the pulsation in a tooth that was aching in the same way as any other inflamed part. I know that the seat of one pain was in the tooth and the other in the gum." "To Galen we may also ascribe the discovery of soft nerves supplied to the teeth."

In 1771 John Hunter noted the building up and closing in of the pulp cavity when attrition has worn the teeth, as did George Prochaska (1780) in his work published in 1800. Besides these, we may note Thomas Bell, Bertin Rousseau, Lent, Raschkow, Richard Owen, Alexander Nasmyth, Kölliker, R. T. Hulme, E. Albrecht, R. Hohl, J. Bruck Junr, F. Ulrich and many others, whose papers chiefly relate to calcifications in the pulp and pathology.

About the earliest histologic point I have found so far seems to be by Paul B. Goddard,[2] who described the pulp as composed of granular matter invested by a delicate membrane or epithelium.

Prof. L. S. Beale, in 1865, states the pulp tissue is not converted into dentine, neither does the dentine, nor tissue from "which it is formed, exhibit any characters justifying in stating it to be connective in origin. Dentine is only produced by the agency of the so-called cells." The mass of the pulp is composed of a single form of connective tissue with numerous oval and triangular corpuscles (germinal matter) not unlike the mucous tissue of the umbilical cord. This will seem to be foreign to the title of this paper, but I find in almost all articles the close relation of dentine and its histology and origin the chief topic.

Kölliker[3] summarized the dental tissues in one of the first text-books, which held its place for many years. The odontoblasts were formally termed "dentinal cells" (Elfenbeinzellen). Kölliker termed this entire layer of cells *membrana eboris,* because after the pulp has been withdrawn it usually cleaves to the inner surface of the tooth in the form of a continuous membrane-like layer. Kölliker, Klein and others, state that odontoblasts excrete dentine, differing from Waldeyer, who has a most complete and satisfactory theory as regards the development of the teeth. He also makes mention of Sharpey's fibers being formed in the cementum, and agrees with Boll that the odontoblasts (a term originating with Waldeyer) send fibers and connect with each other by lateral processes. He also edits the article on "Formation of Dentine,"[4] which formed the basis of a controversy with Prof. H. Hertz in *Virchow's Archiv,* and was used by Franz Boll in order to explain the contradictions of the two investigators and so form an independent opinion.

Franz Boll is an investigator to whom we owe much. His work[5] is standard to-day, even in the light of so much new research by better methods and apparatus. Professor Waldeyer, of the University of Breslau, eminent as a histologist and microscopist, says in his famous essay on the mouth and development of the teeth: "We owe to Mr. Boll (a medical student at Bonn, when his essay was written) the first definite knowledge of the condition of the nerve fibers in the teeth." Boll says we *never* secure the whole pulp or *all* the soft part of it, as the odontoblastic processes project into the tubes of the dentine. Let one be ever so careful in extracting the pulp from freshly cracked teeth, a trace of this peculiar layer will rarely be found on the surface of the pulp. But if cracked and then hardened in chromic-acid solution for an hour, using considerable care in removing broken dentine and a sharp knife, one may sometimes obtain the superficial layer of the pulp *in continuo.* The processes which are enclosed in the dentinal tubes generally break close to the body of the cell, but by a skilful movement of the knife they may sometimes be successfully extracted of considerable length from the tubules.

J. Tomes described nerve fibrils in the dentine continuous with the pulp-network, and considered these fibrils to be the cause of sensitive dentine. Boll, in his demonstrations, used the long incisors of rodents, as guinea-pigs, rabbits, etc., which may make some difference as regards the attachment of the pulp to the dentine.

Goodsir's[6] work was received without question by most anatomists, if not by all, inasmuch as it gave a very definite intelligible description of observations in place of vague general notions, especially as regards the development of enamel, which was, in 1863, clearly demonstrated by Professor Kölliker.

Legros and Magitot in their work[7] give a very excellent résumé of much value. This work, published in 1873, was translated in 1880 by M. S. Dean of Chicago.

J. Raschkow[8] mentioned that the teeth developed under the mucous membrane and enamel organ. He described the blood supply of the pulp, by two or three arteries and asserted that the pulp has one large and a few smaller nerves, the latter breaking up near the surface into an exceedingly fine plexus, called the plexus of Raschkow. Boll and others suggest that fine filaments are given off from this plexus which inosculate with the branches of the odontoblast cells, but as yet this connection has not been demonstrated and accepted as a fact.

Neumann,[9] in 1863, demonstrated the dentinal sheaths. Boll following out the dental nerves in their further course, more recently. Tomes[10] has most carefully and successfully continued the study of the finer points of dental structure and, by first demonstrating the dentinal fibers, opened the way to a correct interpretation of the nature of dentine.

Lent[11] demonstrated the dentinal processes of odontoblasts. Klein[12] says the cells beneath the odontoblasts are spherical and nucleated, and, according to his view the dentinal process is derived from these cells and it from odontoblasts.

Retzius[13] observes by the use of Golgi's stain, that the nerve fibrils of the pulp appear to penetrate between the odontoblasts and terminate between them and the dentine. Rose[14] says, with increasing age the odontoblasts appear to suffer from atrophic changes.

Erwin Hoehl[15] states that three kinds of cells occur in the pulp at different life periods: 1, the outermost peripheral layer of branched cells; 2, centralward the conjugation cell layer, containing the elementary or primary odontoblasts, the largest process of the cell becoming the future dentinal fibril; 3, secondary odontoblasts (dentinoblasts) by conjunction of the first and second layers.

R. R. Andrews[16] states that odontoblasts in forming

the matrix of dentine give out minute globular bodies which form a layer of calcoglobulin, not being themselves any part of the matrix. The fibers within the tubes are formed from a separate cell, deeper in the pulp tissue, whose processes pass in through the protoplasmic mass of the odontoblasts to reach the dentinal tubes of the formed dentine.

BLOOD SUPPLY OF THE PULP.

Bödecker.[17] in discussing Mr. Witzel's work, says: "I have not been able to see an artery in a pulp as illustrated, though I will not say there may not be one." So far, he has only met with capillaries. Arteries go into the pulp and divide at once upon entering it. In fetal pulps, a number of arteries are seen extending to the base of the tooth, but on entering are only seen as capillaries.

Dr. W. H. Atkinson[18] says that no embryologists will state there are three coats on the vessels in the pulp; the large vessels are sinuses.

Dr. A. O. Hunt[19] notes Dr. Patrick's demonstration of the methods of blood supply to the follicle of the developing tooth. Specimens were prepared as follows: Injections of gelatin carmin were made through the carotid artery; sections cut from the jaw were put into absolute alcohol and ground down, no water being used, only alcohol to keep them wet. Examination of these specimens showed that the blood supply of the tooth did not pass directly from the artery through the foramen but was distributed through the cancellous bone by a number of small branches and all along the peridental membrane by a system of capillaries. He believed the nerves did not pass directly through the foramen but by a circuitous route accompanying the blood current. All the blood vessels stopped on the outside of the membrane and the supply was there taken up and distributed by a system of capillaries. A fetal (eight months) tooth showed this clearly and he thought it true of the developed specimen. He doubted the old theory that the artery and nerve fibers entered the foramen directly, and he also thought the office of the peridental membrane was simply to sustain what it has built up. In other words, the artery breaks into capillaries, passes into the cancellous bone about the teeth, is distributed to the peridental membrane, from it to the pulp through the apical foramen or a number of foramina in the root.

Black,[20] in discussing the above paper, agreed with Dr. Hunt in the statement that no direct branch from the dentinal artery enters the apical foramen and supplies the pulp as depicted in so many text-books; but that many arteries, branches from the main dentinal arteries, are distributed to the bone of the alveolus and the peridental membrane, forming a network which gives off branches that enter the dental foramen and supply the pulp. "In children you will find half a dozen, and before the root is fully formed you will find hundreds of them entering the pulp from all directions, but as the foramen decreases in size they are shut off until there is but one."

J. Leon Williams[21] describes the blood supply of the pulp as coming from two sources, namely, the pericementum and the medullary canal, and has observed in recently developed teeth small blood vessels passing from the pericementum through the side of the root into the pulp; also he notes an "intricate plexus of very fine blood vessels in the odontoblastic layer of cells."

H. H. Burchard[22] believes (though he has not demonstrated) that the pulp has an extensive collateral circulation, the branches of the inferior dental arteries anastomosing freely with the branches of the external maxillary, facial, coronary, mental, submental, sublingual, gingival, internal maxillary and its branches, other than the inferior dental. Cryer's dissections showed that in the lower jaw the inferior dental artery is the main supply.

In the embryo, as early as three months, a blood supply in the dentinal papilla is evident, vessels showing in the dentinal papilla (the future pulp) before the follicular walls (in part the future pericementum) is outlined. "When the dental tissues proper begin to form, the follicles lie in a gutter of bone, their bases (the future necks of the teeth) separated from the bone by a comparatively thin layer of fibro-vascular tissue in which lie the inferior dental vessels. At this stage, numerous arterial trunks are seen passing into the immature pulp." At seven months, the lateral blood supply (from the periosteum) is more marked than that from the base of the dentinal papilla and quite distinct from the vascular supply to the pulp. Bone forms around all the arterial trunks enclosing them, the vessels being at first enclosed by indifferent tissue, this becoming fibrous and finally ossification taking place.

Hertwig's "Embryology" describes the visceral arches at an early stage in the development of the ovum, and states that differentiation of the tissues of the visceral arches into bone, muscle fascia and glands, changes the anatomical relations of the arteries originally supplying the arches.

Burchard's conclusion is that the pericementum is supplied from arteries which enter the apical space in several branches from the dental arterial trunks and that there is free anastomosis with the vessels of the alveolar walls. The pulp is supplied by several trunks from the dental arteries. In case of obliteration of these trunks collateral circulation is established through the vessels of the pericementum and alveolar walls.

NERVE SUPPLY OF THE PULP.

Retzius investigated the endings of the pulp-nerves in fishes, reptiles, amphibians and mammals. He used the Golgi method and traced the nerve fibers to their terminal fibrillæ, which appeared under the dentine or on the free surface of the pulp, occasionally in the teeth of young mice, running between the odontoblasts and the dentine, but never into the dentinal tubules.

Huber[23] studied the nerve supply of the tooth pulp in dogs, cats, and rabbits, employing the *intra vitam* methylene-blue method of staining. He demonstrated that medullated nerve fibers going to the pulp in large bundles break up into small bundles which anastomose and form a plexus in the fibrous tissue membrane covering the under surface of the pulp. From this plexus smaller bundles of medullated nerves pass perpendicularly into the pulp and can be traced "to all levels of the pulp, some of them to the very tip." Besides these, many medullated fibers leave the bundles and approach the surface of the pulp near the lower surface of the odontoblastic layer, losing their sheaths or breaking up into branches, which are non-medullated with varicosities and nuclei and which branch and interlace with each other, forming a network under the odontoblasts. Terminal fibers given off from this network pass up between the odontoblasts and terminate in fine granules near the free ends of the odontoblasts. Somewhat rarely the fibers may be found crossing over the odontoblasts and ending between the odontoblasts and the dentine. In these findings, Huber coincides with Retzius and he states positively that he found no nerve fiber in the

dentine and no fiber connected directly with the odontoblasts or with any other cell elements of the pulp. "The terminal fibrillæ or fine branches given off from them terminate in free endings between the odontoblasts or between these cells and the dentine and are not in connection with the dentinal fibrils directly or through the odontoblasts."

Morgenstern[24] endeavors to establish principally certain special points: 1, innervation of the blood vessels; 2, relation of the axis-cylinder to various cellular components; 3, the nerve endings; 4, structure of the nerve plexus beneath and within the odontoblastic zone.

1. The innervation is enormous. All the arteries, even the finest arterioles, exhibit an extremely fine and elaborate plexus. In the larger blood vessels, it shows a very regular arrangement of the fibers, one set running parallel with the blood vessels and another at right angles to them. In this way, each nucleus is made to rest, as it were, in a network of nerves. One or more axis cylinders are frequently found with the finest capillaries, not uncommonly embracing these spirals. This was especially easy to prove in the crown pulp of a calf. Morgenstern found similar formations in dentine that had been treated by the corrosive sublimate method (Golgi), and had afterward been colored with hematoxylin. The larger nerve fibers have Ranvier cells at fairly regular intervals; the finer ones have few cells or none at all, although they have many knobby enlargements, which appear in the finest fibers only as points.

2. Nerve endings in the pulp are difficult to determine as one can never assert with absolute assurance that where a nerve fiber appears to terminate, it does not really continue in some other direction out of your field of observations. I believe they terminate as free fibers, especially when they divide like a brush into a number of very fine threads. Many axis cylinders end in small knobby enlargements beyond which for the most part a very fine, short thread extends.

3. Between and below the odontoblasts the nerves frequently terminate in rounded cellular bodies, which could be better shown by another method, by means of which they are brought into sharper contrast with their surroundings. These bodies are identical with the terminal discs described above, we assume. Whether the nerves extend throughout the entire odontoblastic zone—a most important question—could be answered positively by Bethe's modification of the methylene-blue process. In the so-called horns of the pulp, more correctly the crest, the nerve fibrils are universally present between the elementary cells which are but imperfectly united to form odontoblasts. These nerve fibrils lie in close parallel lines and send out a large number of lateral branches, between the elementary cells which are side by side in rows. The fibers show by their marked blue tint and by the fact that they spring from the primary nerve fibers, that they are integral constituents of the nervous system which extends throughout the pulp. Dentine germs from human and animal fetal jaws treated by the anilin-blue methods of Ciaglinsky and others (Stroebe) showed the fibrils of Weil's zone to be colored blue, like axis cylinders, but that the dentinogenous substance was likewise colored blue. Where odontoblasts had been formed there was often seen narrow transverse strips of blue tint,[25] by which the odontoblasts seemed to be derived into segments.

Erwin Hoehl also saw this appearance but correctly explained them as fibrils of the intercellular network of nervous elements and this can be proved by the methylene-blue method, and Nikiforoff, also Morgenstern's formic acid was peculiarly efficacious. That cells which belong to the nervous system do occur between the odontoblasts is proved by preparations made with methods two (2) and six (6). The peculiar chemic and optic properties of the odontoblastic zone serve to explain why the morphologic constituents are so difficult to recognize both there and in the membrana præformativa. The nearer the odontoblastic zone approaches the dental process the more thoroughly does it seem to be filled with a hyaline substance which opposes an almost insurmountable obstacle to all investigations.

Whether ganglion cells occur in the pulp is perhaps answered by the methylene-blue test to the extent that remarkably large cells connected with at least two nerve fibers occur, especially near the larger blood vessels, that is, in the axial portion of the pulp.

SUMMARY.

1. The nerves of the pulp are divided into central and parietal nerves according to their location. The nerve branches of the parietal system are more slender, but much more numerous than those of the central. They are spread in two directions, axial and radial, the former following the long axis of the tooth, the latter that of the dentine canals.

2. Although belonging to the parietal system, its outermost stratum forms a system in itself.

3. More strongly developed nerve fibers of the central system form no proper plexus in the pulp; those of the parietal system form temporarily in the young pulps a plexus.

4. Medullary sheaths of the pulp are secondary formations only determined positively in teeth that have been cut.

5. Odontoblastic zone is transversed in the most varied directions by nerve fibers.

6. Nerve fibers terminate in several ways: *a*, free in the pulp; *b*, knobby enlargements with projecting supplementary fiber; *c*, disc bodies frequently seen in the odontoblastic zone.

7. In the central part of the pulp are some very large cells which may be considered as ganglion cells.

8. Different varieties of endings occur even in the enamel.

These remarkable results of Morgenstern's have been questioned by Röse, who thinks it a precipitate in the dentinal tubules and on the processes of the odontoblasts.

Dr. W. G. Aitchison Robertson[26] says "the odontoblasts in the teeth of oxen are bipolar, one process being a dentinal fiber and the other continuous with the nerves of the pulp. He thus regards the odontoblasts and dentinal fibers as becoming in course of development the terminal organs of the nerves of the tooth. These facts and the development of the dentine were made on the teeth of rabbits and kittens, in the former taking advantage of the aid given by feeding the animal for a time on food containing madder, which stains the dentine matrix produced while the madder is being taken just as it does the matrix of bone. The elongation of the dentine results from proliferation of connective tissue cells in a formative ring at the base of the tooth follicle. The thickening of the dentine results from new layers of matrix added from within under the influence of odontoblasts, not from interstitial growth which produces nothing more than a slight increase in matrix between the dentinal tubules in the crown of the tooth." To the question whether the nerve passes as a main fiber from the trunk nerve direct through the

foramen, or are the nerves in the pulp continuous with the nerves in the pericementum, statements have been made that if the nerves extended through the foramina the broken nerve would be seen extending beyond the end of the root, which is never the case! If anyone will take the pains to examine the teeth as soon as extracted examples can often be seen with a projecting pulp or nerve (?) varying from one-sixteenth to one-eighth of an inch in length, some times even more. They appear as whitish threads coming from the apex, especially in cuspids, incisors and bicuspids, blanched on account of the sudden rupture and hemorrhage. Unless noted at the time, the shrinkage is so great it might not be perceived, though carefully fixed material will show the pulp in some cases, specimens of which I have now.

J. L. Williams emphasizes the vasomotor nerves of the pulp and pericementum, showing branches (non-medullated) distributed to the blood vessels, he suggests that stimulation or injury of these nerves may paralyze the vasoconstrictor fibrils a short time before paralysis of the vasodilator fibrils occurs, thus explaining the engorgement of the vessels which strangulates the pulp in arsenical destruction of the latter. The origin of the vasomotor nerves, he states, is "in the upper jaw from the anterior palantine nerve, which, arising from the spheno-palantine ganglion, is connected with the sympathetic system through that branch of the Vidian nerve which arises from the carotid plexus; and in the inferior maxilla, their connection with the sympathetic system is through a nerve branch from the facial artery, which enters the submaxillar ganglion, through the chorda tympani and also the otic ganglion from a branch arising from the plexus of the middle meningeal artery."

Burchard believes that the nerve supply of the pulp is from the branches of the dental trunks proper, though admitting that nerves pass over the alveolar rim into the pericementum. In mature teeth, he is not certain as to the point of entry. But in a figure showing a cuspid tooth at 13 years, the nerves one-third of the way up the canal are seen to consist of several bundles of medullated fibers which follow the course of the main blood vessels, splitting into fibrillæ, beneath the layer of odontoblasts with which they have a doubtful relationship.

Black states that nerve bundles distributed to the apical pericementum, as well as to the pulp, have a common origin, namely, the inferior dental nerve in the lower jaw and that in the upper jaw, blood vessels and nerves together penetrate the antral wall "into channels of the basal portion of the alveolar bone."

In conclusion, let us note the great diversity of opinions prevailing among histologists. Are not these questions of vital importance before we can in any way reliably attempt or even venture to cure the pathologic conditions brought to our notice? How much more important is the histology, embryology, bacteriology and pathology of the dental tissues compared to the subject of physics by lectures and laboratory as is now being put in the fourth year of some of our dental colleges when it really belongs to the elementary chemic course. Let us encourage workers to give some time, optional or obligatory, during the senior or post-graduate year and give them better facilities by money grants through the Association whose committee on special research could determine whether the candidate was worthy of support or not and let the papers be published in THE JOURNAL if worthy of recognition.

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METHODS IN THE PREPARATION OF TEETH.*

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In preparing sections of teeth for the microscope it is necessary to proceed in different ways according to the structures desired to be demonstrated. For convenience the methods may be divided into: 1, ground or hard methods; 2, injection methods, and 3, structural methods: the structural being subdivided into general or those used to demonstrate cellular structures, and special or those demonstrating nervous tissues.

The hard or ground method should be used for studying tooth tissues in situ. The different processes, though differing somewhat in technique, all consist in grinding down sections of teeth thin enough to examine under the microscope and then polishing to a smooth surface and mounting in Canada balsam.

HARD METHODS.

Nealey's.—Fresh tissues only should be used and the

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method is a rapid one, the sections being ready to mount in thirty minutes. First one side of the tooth and then the other is ground on a dental lathe with a set of emery wheels. The advantages of this method are that the sections do not curl or become brittle.

White's.—Sections of teeth are ground between two plates of ground glass with water and pumice powder and finished with ground glass alone. They are mounted in Canada balsam without heat; or, they may be soaked in ether twenty-four hours, transferred to thin collodion and stained with fuchsin two or three days, when they are hardened in methyl alcohol and ground down at leisure with ground glass and water only.

Dunkerley's.—Sections are cut off by means of a thin copper disc fitted to a dental lathe and revolving in a trough containing water and fine corundum powder. They are ground on copper discs and a Water-of-Ayr stone.

Cowardine's.—From green teeth preserved in turpentine rough sections are made, and then embedded in balsam and ground with corundum of four grades successively. They are then polished with the finest powder, stone lap, dry whiting powder and the hand; and then mounted in balsam, or dry.

Koch's.—Objects are soaked in copal solution, dried, hardened and cemented to a slide, on which they are ground down on a grindstone and on a hone to the requisite thinness and polished and mounted in balsam.

Weil's.—Tooth is extracted and immediately put into alcohol or aqueous solution of bichlorid of mercury to prevent shrinking. In all manipulations—cutting, sawing, grinding, sectioning—care should be taken that the tooth is at no moment without excess of moisture. Pulp is exposed at both ends and fixed in a saturated solution of bichlorid of mercury eight to twelve hours, washed in water two hours, then harden in dilute alcohol and gradually increase the strength 30 per cent. eight to twelve hours; 50 per cent. eight to twelve hours; 70 per cent. eight to twelve hours; 90 per cent. to which tincture of iodin 1.5 to 2 per cent. has been added. Stain in borax-carmin. Wash, dehydrate, clear, embed in balsam and rub down.

McQuillen attaches sections to a slide with balsam and grinds with a hone.

Latimer grinds on a corundum wheel, an Arkansas wheel, then polishes by rubbing on a smooth and dry plate glass.

Boedecker's.—A fresh tooth, or one soaked for a short time in chromic acid, is sliced thin under water and ground as thin as possible upon the corundum wheel of a lathe, always being kept under water. The sections are then placed in chromic acid one-half of 1 per cent, or picric acid saturated aqueous solution to harden tissues and dissolve the lime salts. They are then stained and mounted.

Hart.—After grinding sections thin, immerse them in 6 per cent. glacial acetic acid and then treat them in the usual way.

Modifications of these methods have been advised, as those of Smith, Röse, and others.

INJECTION METHODS.

To demonstrate the blood supply injection methods are necessary. The blood-vessels are filled with colored substances for the purpose of showing their relations to, and course through the tissues. Beale's Prussian blue is the solution usually used. This mass runs well and has not much tendency to exude from cut vessels. Its formula is as follows:

R.	Price's glycerin	℥ii
	Tincture sesquichlorid of iron	gtt. x
	Potassium ferrocyanid	gr. iii
	Hydrochloric acid (strong)	gtt. iii
	Distilled water	℥i

Fearnley introduces Carter's carmin into the aorta of an animal, during which time it is kept warm. After the injection it is removed to cold water:

R.	Carmin	m. cxx
	Glacial acetic acid	m. lxxxvi
	Gelatin solution (1.6)	℥ii
	Distilled water	℥iss

Whitman, in injecting, uses the femoral, or, if that is too small, the carotid or aorta. The animal is immersed in warm water and normal salt solution forced through the vessels to wash out the blood and dilate the vessels, and then the starch injection mass is forced through.

Inj. Mass:			
R.	Dry starch	1	
	Chloral hyd. 2.5 aq. sol	1	
	Alcohol		25
	Color		25
Color:			
	Dry color (ultramarine)	1	
	Glycerin	1	
	Alcohol, 95 per cent	1	

Lepkowsky injects Berlin blue and then hardens the tissues *in situ* in formol 50 per cent. for two days. Then he decalcifies in nitric acid 10 per cent. (eight to fourteen days) and mounts in celloidin.

Huber used Ehrlich's methylene-blue *intra vitam* method. After forcing through a normal salt solution, methylene-blue in normal salt solution was injected through the carotid until the lips assumed a deep-blue color. Thirty minutes later the lower jaw was removed and cleansed with a dry cloth. The teeth were removed and the pulp placed on a slide in normal salt solution. In a few moments the characteristic blue color was found to have developed in the axis cylinders of the peripheral nerves. In fresh preparations the axis cylinders stained deep blue; the other tissues not at all or faintly. Unfortunately, preparations prepared thus always fade unless a fixative is used promptly. As a fixative a saturated aqueous solution of ammonium picrate (Dogiel), or a solution of ammonium molybdate (Bethe) may be used. The former preparations are mounted in a mixture of glycerole and the ammonium picrate solution; the latter dehydrated and mounted in balsam. Prepared in this way the tissues become so clear that a small pulp may be examined *in toto.* These methods Huber used in a rabbit; they can not be employed in pulps of human teeth.

With these two methods, the hard and the injection, I have had but little experience, having worked mainly with pulps and decalcification of teeth. To demonstrate tissue structures it is necessary to stain microtome sections with different dyes to bring out the different tissues. Either pulps themselves are used, or decalcification of the hard structures is necessary.

DECALCIFICATION METHODS.

Hopewell Smith decalcifies in 5 per cent. chromic acid, or, after hardening in Müller's fluid three to four weeks, removes to alcohol ten to twenty days, washes, seals the apical foramen with collodion and places in 12 c.c. hydrochloric acid 10 per cent. for fifteen hours, then adds 1.5 c.c. nitric acid and in forty hours 1.5 c.c. nitric acid again. In seventy-five to eighty hours they are washed in lithium carbonate for half an hour and cut by freezing method, celloidin, or paraffin. If the

freezing method is used they should be dehydrated in 30, 70, 90 per cent. and absolute alcohols successively for one minute each to prevent shrinking.

Lepkowski's.—Pieces 0.5 m.m. thick are placed in pure formic acid 3 parts, and 1 per cent. aq. sol. gold chlorid 6 parts, for twenty-four hours. Then they are washed in distilled water and placed in gum arabic and glycerin for twenty-four hours, washed, and embedded in celloidin or paraffin.

Kleinenberg's formula:	
Picric acid	100
Sulphuric acid, strong	2
Filter and add dist. water	300
Ebner's formula:	
Hydrochloric acid	1
Sodium chlorid	10
Dist. water, ad	100
Haugh's formula:	
Phloroglucin	1
Nitric acid	10
Dist. water	50

After this solution, tissues stain well and all elements except blood are well preserved.

Schaeffer used a saturated aqueous solution of picric acid containing 2 per cent. hydrochloric acid and a crystal of picric acid added from time to time. When soft the tissues were placed in alcohol containing lithium carbonate. The alcohol should be changed till no color comes away. Embed in paraffin.

Squire's.—Hydrochloric acid 5 grams, and glycerin 95 grams. It softens slowly and does not interfere with structure.

Huber hardens with Müller's fluid for several weeks and then transfers to equal parts of nitric acid 10 per cent. and hydrochloric acid 1 per cent.

Boedecker advised chromic acid .5 to 1 per cent., used in large quantity and renewed frequently. To enforce the action of the fluid he added a small quantity of dilute hydrochloric acid (1 to 2 gtt.). This is a good method for softening the teeth when still in the jaw. It can be stained with carmin, logwood, or gold chlorid. If gold is used, wash well in distilled water to free from alcohol before placing in gold solution (0.5 per cent.), stain one-half to one hour, thoroughly wash in distilled water and expose to daylight several days.

Lactic acid acts well upon teeth (if diluted sufficiently) by dissolving the lime salts much faster than the chromic acid. Specimens decalcified in lactic acid are not distinct enough for study with high powers, hence after being softened with lactic they must be placed in chromic for several weeks.

Boll advises chromic acid one-thirty-second per cent. and gradually increased in strength until in two weeks it contains 2 per cent. or over. Decalcify five to six weeks.

Hopewell Smith.—For jaws of embryo mammals, strip jaws of all tissue except the gums, wash in normal salt solution and place in Müller's fluid for two weeks. Change often, and remove to alcohol and cut by freezing microtome, celloidin or paraffin. Its advantages are its simplicity, the odontoblasts are a large size, and the formation of the dentinal fibrils are at their highest stage of development. It affects but little the relative positions of dentine, odontoblasts, and pulp.

In using the tooth pulps alone great care must be exercised in obtaining them that the pulp may be obtained in its entirety. While some workers claim that all that is necessary is to crack open the tooth and lift the loose pulp out, my experience leads me to think differently. Many pulps that I have worked with have had small pieces of dentine attached along the sides. These were unnoticed at first until the knife struck them in microtoming.

In some sections the tomes could be seen extending out from the odontoblasts along the free border of the section; in others these were present only in places, and many were perfectly free from them. Some investigators believe that the nerve fibrils pass up between the odontoblasts and enter the dental canaliculi side by side with the dentinal fibers. Others differ; but whether so or not one thing is certain, that there is an intimate connection between the tomes and the dentine and that, being so delicate, great care is necessary in handling them. Boll claims that the odontoblasts, by their long processes, which extend into the dentinal canaliculi, are held firmly to the inner surface of the dentine, appearing to the naked eye as a thin mucus-like film. If this film is scraped off with a knife and brought under the microscope we see besides peripheral cells some parts of the inner pulp tissue. He therefore advises splitting a tooth and placing pulp and tooth in a very weak solution, chromic acid one thirty-second per cent. for one hour. Remove the loose fragments of tooth with a thin sharp knife; go between pulp and dentine close to the walls of the pulp cavity. In specimens obtained, thus large quantities of non-medullated nerve fibers are seen toward the periphery of the pulp which, when removed in the ordinary way, adhere to the pulp chamber.

Robertson holds that when a tooth is broken open the odontoblasts cling to the dentine and the pulp remains free, thus proving that the attachment to dentine is stronger.

For ordinary staining, logwood, logwood and eosin, and Van Giesen are good stains; but for special staining, and especially for the nervous tissues which we are so anxious to bring out, special stains are necessary. Of these the following are largely used: Golgi's stain for demonstrating nerves; Ehrlich's methylene-blue shows axis cylinders of peripheral nerves; Apathy's double stain for differentiating nervous and connective tissues; Mummery's iron and tannin for fine nerve fibers; Marchi's medullated nerve fibers, and Underwood's gold chlorid.

For the odontoblasts place in 6 per cent. solution of potassium anhydrochromate for twenty-four hours and tease in picro-carmin. To demonstrate the nerves in the processes of the odontoblasts, Beale crushes a fresh tooth and stains by his method. He macerates in strong syrup until soft and examines a few very thin sections, when the acid will be found to render all tissues transparent except the nerves which are granular.

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SYMPOSIUM ON DEGENERACY OF THE PULP—PAPERS OF DRS. TALBOT, LATHAM AND ANDERSON.

DR. R. R. ANDREWS, Cambridge, Mass.—Concerning the matter of preparing tissue, I have tried all these various complicated methods and with more or less success, but I finally came to the conclusion that if I got my tissue as nearly alive as possible, and used the simplest possible means of preparing it, I got in every case the better results. I have worked mostly on the heads of calves because it seemed to me they showed the tissue so well. I have taken the calf at birth and taken out the teeth and transferred them to a low percentage of chromic acid solution, 0.5 per cent., and if necessary I would use some stronger acids, hydrochloric, for instance, a very small percentage; I cannot tell just exactly the combination which I used. I placed that tissue in the solution and tested it from day to day. I have let it remain three or four weeks, but as soon as I found the area of that tooth sufficiently softened to use the microtome, I would let it remain until my microtome reached hard tissue, and in that way I found the most beautiful photographs could be made from the higher powers. Many pictures of low powers are entirely useless with the higher powers. The tissues seem to have run together and there is no definite picture and no differentiation of the pictures. They have to be very carefully prepared and it takes a long time. I have always been in favor of working as near life as possible, soon after the preparation was taken from the live body and in the simplest possible way.

DR. G. V. I. BROWN, Milwaukee, Wis.—I would have liked to see the symposium develop along the line of pathologic changes that occur in the pulp, so that under the microscope some definite etiological idea could be arrived at. I have had a great many interesting cases the past year, but in a large measure the benefit of them has been lost, because in our laboratories in Milwaukee we do not seem to have any distinguishing way of arriving definitely at the pathologic changes that take place in the pulp tissue. I have in mind one case in which there was a spasmodic affection of the muscles of the face accompanied by a recurrent pain which occurred at intervals of one and one-half to two minutes, so severe that the life of the patient was almost unendurable and the hyperesthesia at the posterior portion of the mouth and pharynx made it almost impossible to take nourishment. The difficulty was finally located in the tooth pulp and cured, and although that pulp was carefully preserved and an attempt made to treat it so it would show the characteristics of that condition we were unable to arrive at anything which we felt we could give out as scientifically correct.

DR. R. R. ANDREWS—If Dr. Talbot, in the large number of teeth he examined, had made a pathologic study of them, it might have been of great benefit in this direction, and he would have found that the pulp even at full maturity of the tooth is of great service. It is a mistake to suppose that the pulp has lost its function when it is fully formed. I know it is the belief that when teeth are fully formed the pulp might as well be out and they let it go, but those who have studied this subject will tell you that a healthy dental pulp has a function to perform through life.

DR. EUGENE S. TALBOT, Chicago—I scarcely think the Chairman and Dr. Brown have quite grasped the situation in regard to these papers. The general subject of this symposium is "Preliminary Work." The teeth were selected by myself and taken at all stages by men who make a specialty of the extraction of teeth. Age was not hence taken into consideration in a general way. The object of the paper was to give my own results only. Dr. Latham, Dr. Anderson and myself have undertaken a large amount of work, which is all preliminary. We have undertaken it in a systematic manner, taking up the general conditions of the teeth in a healthy state and from embryologic and nosologic points of view. There is one point in dental literature to which attention was paid, giving credit to whom credit is due. One object of these papers is to summarize the literature. One-half of it was given. The idea is to compile all literature upon the pulp before generalizing. That has been my method throughout life. All my writings show that I feel obliged to give credit to those that have done work before. After that, I take up the line of work and in all points where the work corresponds with that previously done, I give credit. If it differs, I show wherein difference occurs. That is the only way in which to make scientific research.

DR. VIDA A. LATHAM, Rogers Park, Ill.—I would like to say that I am in the center of a large city, but I have had extreme difficulty in getting hold of material. Our library boasts of a medical department, but it is almost devoid of dental literature except a few current journals. I believe the Northwestern Dental School has a library, but it is rather difficult to gain access, and then, when used for their students, the papers are either in Swedish or Hungarian and I am ignorant of those languages. I have tried to be pretty careful in regard to finding the original, and I have found papers that were under men's names that were a little familiar, that when carefully searched they were not their work at all. So I have tried to be particular on this point. It is rather difficult to follow the literature. I have used the excellent *Cosmos* index; also Dr. Taft's index, which is very good, and in that way I hope I have not missed any good articles in the journals, but I would be glad to hear of any other good papers that have been published.

There is another point in pulp methods that Dr. Anderson has brought out. I have tried to use simple methods. I believe the only successful methods that are being used are those which take in the jaw itself. It is almost useless to take out the tooth because you break the pulp and the continuity is broken. It is difficult to get a jaw or teeth from the human unless you are attached to a hospital. There is a prejudice in America against the postmortem; it is almost impossible to get teeth *in situ*. A point that strikes me very forcibly is why should we use the term "degenerate" in the embryo? Take the new works on embryology, take the American Dental works; take any standard works, and you find almost nothing on normal, let alone, degenerate pulp; the name does not occur. When we think of the importance of it, when the literature is silent on it, how can we treat sensitive dentine? Why should we take out the pulp? How can we treat the pulp when we do not know what it is? It is impossible. Out of ten pulps, nine are probably pathologic. Those who do dental histologic work use the ordinary methods for tissues. These methods must be studied especially with relation to dental tissues. Dr. Andrews is also very fond of glycerol, but after a few years the specimens may disappear! Specimens that I mounted ten years ago, I can find no trace of, and under those conditions, I feel a little doubtful about using glycerol. A man may write asking if you have certain slides to prove your statements, and therefore you must keep the specimens. I once wrote to Dr. Sudduth for specimens and he replied that he did not keep his slides as they were so easy to make! Personally, I do not agree with him. I have put in six months on one slide and then had difficulty to secure a good specimen. This, I beg to say, is mostly preliminary work, and now we expect to go further with various animals and human material from the embryo and find out where the pulp comes from, and when it originates. Some say it forms the odontoblasts, and some say it does not. If sensitive dentine exists there must probably be sensory nerves; if a formative organ they may be secretory cells like enamel or ameloblasts, and I believe nervous also, because we now are finding nerve endings in the epithelium in the tongue, cornea and all parts of the body due to the newer and special methods now being introduced, which previously have not been seen.

DR. G. V. I. BROWN—I am glad to hear what Dr. Latham has said and glad to hear the statement about the preparation of specimens. So far as I have tried the work it has been unsatisfactory. A large proportion of the methods are comparatively useless in application. It is one thing to get a nice, healthy specimen, and another thing to get a reasonable effect in demonstration, and then you should have a perfect specimen.

DR. R. R. ANDREWS—In regard to Morgenthau's demonstration, I think he uses the Galbia method. He found the dentinal tubules which appear to be fibers of nerve structures. I worked

on that method for more than six months trying to get some results, with entirely negative results and I used the most careful methods. It shows how difficult it is to get at these things.

PERIODS OF STRESS AND THEIR DENTAL MARKS.*

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CHICAGO.

Despite embryologic teachings, that old notion that man is an entity who undergoes development alone, still controls pathology and physiology. The human being, however, is a compound animal in whom organs have their own nervous system and their own life under control of the cerebrospinal system. The child is not an undeveloped man, but man is an imperfectly developed child. The embryo has to contend with retrogressive as well as progressive factors, and the same is true of man after birth. Vertebrate embryos are of common type at their origin and assume successively many common forms before definitely differentiating. The higher vertebrates contain in essence the organs and possibilities of all lower vertebrates. The human organism is therefore a balance. While the balance is maintained the organs work in unity, though there is a constant struggle for existence between them. During embryonic existence this struggle is more intense and diversified than after maturity, because of the influence of three contending forces: remote atavism or throw-back to primitive types, immediate atavism or throw-back to less remote ancestors of the same type, and finally immediate heredity. Remote atavism tends to preserve structures which occur in the normal embryo only to disappear. The human heart passes through all vertebrate heart phases. This is likewise true of the teeth. During the life of the embryo the tooth system wavers at one time between the polyphyodont and the diphyodont. At this period, should the diphyodont tendency of man be arrested, the polyphyodont takes its place and the human being sheds teeth as do reptiles. On the other hand, should immediate atavism gain the ascendancy over remote atavism shown in polyphyodontia, diphyodontia occurs. When the struggle for existence between the two is keenest a period of stress results, which affects the organism as a whole. This stress expresses itself most strongly in dental and maxillary irregularities, since the jaws and teeth are among the most variable structures in evolution. Under what is known as the law of economy of growth is governed the relation of the organs to each other, and the process whereby one structure is sacrificed for the development of another or for the development of the organism as a whole. Since certain parts in the evolution of organs disappear and in the evolution of organisms certain organs through suppressive economy and since the disappearing and developing tendency of necessity centers around the time when certain functions are to be lost by the disappearing and others gained by the developing, periods of stress occur around which the law of economy of growth centers the struggle for existence between parts of organs and between organs themselves. It is because of this that physiologic atrophies and hypertrophies and their reverse occur. Nearly all conditions of physiologic disturbance may result at these periods of stress under the influence of maternal environment or of hereditary factors. The fetus, therefore, must be prepared to pass through not only intra-uterine periods of stress, whose dental mark has already been indicated, but post-uterine periods as well.

The child has not attained its full development at the time of birth. It has within it certain potentialities, some of which are never fully realized. There is a constant struggle between the central nervous system and certain bodily functions for preservation of the individual and for preservation of the race, through which the central nervous system fails to reach the height indicated in the child. This struggle for existence after birth is keenest at certain periods. Each period is marked by dental phenomena. The first is the period of the first dentition. Here, coincident with teething, the child is gaining its impressions of the outside world, is learning to walk and talk, and is also developing its eliminative organs, especially the rectum. These varied functions constitute a strain on the system, effects of which are most often evinced through the teeth and jaws. The conditions charged to teething are an expression of constitutional strain finding its outlet through the point of least resistance. During this first dentition, the strain of development forces attention to the teeth, and thereby leads to neglect of other factors. The teeth at this period should be regarded as a meter of constitutional strain, and not a cause of it. Within the next period, between 2 and 6, occurs the first great check to continued development of the brain. Man has learned to use his brain despite this check, but had it not occurred he would have had a higher type of brain to use. Sometimes during this period the brain gains in size, albeit not in balance, at the expense of the general system. In no small degree the struggle for existence during this period of stress centers around the development and eruption of the 6th year molar. With the eruption of this molar, premature puberty, sexual precocity, epilepsy, insanity, gout, rheumatism, obesity, and other nutritive degeneracies, may occur. All have been charged to the eruption of the 6th year molar, whereas its irregular or difficult eruption is, like them, an expression of constitutional stress. Hygiene of the teeth at this period means also constitutional, mental and moral hygiene. Epilepsy, for example, is not a disease, but a symptom of weakness of certain vasomotor inhibitions. The first convulsion does not constitute epilepsy. Through a law of the nervous system, nerve action once roused tends to repeat itself. In this way are established normal and abnormal habits, of which last epilepsy is one. In its early stages a habit normal or abnormal is easily checked. The first convulsion, therefore, could be prevented were its premonitions known. A recurrence could also be prevented were the constitutional origin recognized. Observation of the general constitution at this time, because of irregular eruption of the 6th year molar, would enable the physician to nip epilepsy, and many other allied conditions, in the bud. Reflex notions, however, must be flung overboard. All irritations should be removed and any constitutional irregularity treated.

The obese child of 6 years, even though the obesity be not excessive, should be looked upon from a health standpoint with suspicion. There is liability to disease, and marked tendency to systemic weakness when under morbid influence. These children are particularly liable to rheumatism, gout, etc., and profuse hemorrhage from slight causes. Youthful obesity is sometimes associated

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with precocious maturity and resultant early senescence. More often it co-exists with extended infantilism, as in the case of Dickens' "fat boy."

E. S. Talbot, examining 267 corpulent school children and adolescents, found marked stigmata of degeneracy. Ninety-two per cent. had deformed ears to a marked degree. Sixty-six per cent. had arrested development, as compared with their age, while 12 per cent. presented excessive development. Thirty-four were too young to determine the form and size of the jaw. In 33.5 per cent. of the thirty-four the molars, incisors, cuspids and bicuspids were present. Ninety-six per cent. of these had small teeth. Eighty-seven per cent. (of the 233) had arrested development of the upper jaw; 22 per cent. arrest of lower jaw. Sixty-four per cent. had V-shaped or saddle-shaped arches, or their modification, and protruding teeth. Seventeen per cent. had hypertrophy of the alveolar process. Eighty-three per cent. had small teeth. Twenty-seven per cent. had extra tubercles upon the molars. Eighty-two per cent. had stenosis of the nasal cavity more or less marked. Thirty-six per cent. had deflection of the nasal septum to the left and 29 per cent. to the right. Twenty-one per cent. wore glasses for eye defect. In 58 per cent. there was enlargement of the thyroid gland, and in 7 per cent. arrest of development of it. In 296 cases of early lipomatosis (180 male and 116 females) coming under my own observation, there were 10 cryptorchids, 6 hypospadiacs and 3 cases of pseudo-hermaphroditism. Three females had infantile bifid uteri. Four had enlarged clitorides; in one of these the urethra perforated the clitoris, as in the female shrew. Of 40 girls who had reached 18, only 3 had menstruated normally. The others were amenorrheic or dysmenorrheic, or had neurotic storms during the period. There were 160 hebephreniacs among the number. Of these 120 had masturbated excessively. Ten had been nymphomaniac or satyriasic, the sexual appetite having become completely extinct at 18. Fifty of the non-hebephreniacs never showed any signs of sexual appetite. Three of the hebephreniacs were sexual inverts, while 80 practiced various perversities. Of the non-hebephreniacs 10 were cyclothymiacs, 30 had acute forms of insanity, 10 were epileptic and 15 hysteric. Thirteen had had chorea. Ninety-seven had difficulty in learning to speak and 30 always stuttered.

The appearance of the first permanent molar is therefore of great significance to stomatologist and sociologist alike. The mental and moral deficiencies usually present will interfere with proper care of the teeth particularly indicated in cases where such deficiencies occur. While the eye has received much attention as a sociologic guide the teeth and jaws have, as a rule, been much neglected, although of even more significance than the functional disorders of the eye.

The next important period of stress is practically that of the second dentition. Here there is a foreshadowing of the mental and nervous phenomena of the following period of stress. Sexual development now frequently receives its initiative. What is true of neuropathic children earlier is true at this time of ordinary children, under conditions of stress. There is irregularity of disturbed sleep, irritability, apprehension, strange ideas, great sensitiveness to external impressions, high temperature, delirium, convulsions from slight causes, disagreeably anxious dreams, romancing, intense feeling, periodic headache, muscular twitching, capricious appetite and marked intolerance of stimulants and narcotics. The struggle for existence between the developing alimentary and other systems between the 2d and 6th year had produced effects which are most felt during the 6th to 12th year. Provided this struggle is between normal limits, the average child does not incur permanent danger from it. If, however, from heredity, congenital defect or improper environment, development of the system does not proceed equably, then strain results, which produces, during this period, not only the conditions already described, but the following as well:

NEUROSES.	PSYCHIC TYPES.
Convulsions.	Hallucinations
Nervous laughs	Anomalies of character
Nervous coughs	Aberrant sentiments
Hiccoughs	Love
Renal	Jealousy
Hepatic	Anger
Gastric	Obsessions or imperative concepts
Vesical	Pure
Genital	Attended by impulsive acts
Pulmonary	Arson
Adenopathic	Suicide
Cardiac	Homicide
Metabolic	Alcoholism
Stuttering	Theft
"Tics"	Rape
Neuralgias	Non-criminal acts
Neurasthenia	Night terrors
Ecstasy	Idiocy
Hysteria	Imbecility
Chorea	Mania
Epilepsy	Acute confusional insanity
Somnambulism	Melancholia
	Transitory frenzy
	Stuporous insanity
	Stupor
	Katatonia
	Paranoia
	Cyclothymia

These are apt to occur at this time as a reaction to temporary disturbances of health. The temperature at which psychic disturbances begins in a child is a fair index of its brain stability. Neuropathic children, on a very slight rise in temperature or even without it, are subject to attacks of unreasonable elevation, during which they are quite beside themselves, rushing about wildly, shouting, fighting, and without clear consciousness of their surroundings. With this last picture stomatologists are very familiar in children brought to them for care of the teeth. During this period such disturbances have to be taken into account in cases where maxillary and dental treatment and regulation are indicated.

The period of puberty should include the period from the appearance of the menses or spermatozoa until the completion of the 25th year. The appearance of the wisdom tooth at this time marks human maturity, which was the reason that 25 was selected for the age of maturity by the code of Napoleon. During this period it is possible to correct dental and maxillary irregularities with benefit to the subject. Every one of the conditions enumerated are due to strain during the period between 6 and 12 may appear. In addition there occurs a type of mental disorder called hebephrenia, or insanity of puberty, which is practically incurable after its development. This is an insanity peculiarly charged to cigarette-smoking, masturbation, overstudy, religious excitement, and "love," all of which are the expressions of the defects and not their cause. These subjects in

the earlier stage of their psychosis peculiarly require teeth regulation. In some cases, strain from the tooth irregularity may have sufficed to upset the unstable mental balance. The next great periods of stress in human life are those of the climacteric and of the senile period. The first is accompanied by the menopause in women and prostate change in men. The dental conditions marking these two periods of stress are generally involutional in character and require prothesis or treatment, not correction.

DISCUSSION.

Dr. Eugene S. Talbot, Chicago—I have been interested in this subject for years and I have spent a great many years in the study of these conditions. I have never heard a paper so clearly define those conditions as the one that has just been read. Someone has said that the discussion of dental subjects has been exhausted, but a knowledge of the conditions of the mouth so far as hereditary environment and embryology are concerned is still in its infancy. There are some points which deserve attention. Dentists often remark that if their patients were more careful with their teeth they would not decay, and then prescribe a course of treatment handed down for decades. The same old story is told of brushing the teeth, recommending the use of certain preparations, etc. As Dr. Kiernan said, evolution of the teeth is tending towards extinction. Decay of the teeth is a natural process and all the treatment on earth —as now applied—will not save them except in the individual. It is not only a personal calamity, but it has become a national one. Study of the teeth and jaws of the peoples of Europe shows teeth of men deteriorating, where the peoples are not of a nervous tendency, as they are in other countries. Through Greece, Turkey, Russia, Norway, Sweden, France and England, in the order mentioned, is evident degeneracy of the jaws and teeth. There are no peoples in the world whose teeth are decaying to-day like those of the English people. There are no irregularities of the teeth like those of the English. In England it has become a national calamity and the authorities have appointed committees and have furnished money to investigate the cause of decay of the teeth. All attention, the best methods of treatment will not save them.

Another question of the jaws and teeth that Dr. Kiernan has discussed, is the evolution of the second set of teeth. Dentists think they are able to treat pyorrhea alveolaris or gingivitis, and some claim to cure every case. With them it is simply a matter of local application, a peculiar sense of touch with instruments to remove all visible deposits. The condition is an atavistic one, and the disease is preventive to a certain extent. Still, should the individual live long enough, he would lose his teeth. This is a process of osteomalacia and nothing more than atavistic. As Dr. Kiernan has said, change of the teeth is going on continually. Where one tooth is shed in the lower vertebrates after it has done its duty, another takes its place. Where the temporary teeth are shed by absorption the second set takes its place. This absorption goes on with the second set and the teeth are lost in time. This occurs not in all cases, however, but in the majority, if the person lives long enough. Dr. Kiernan showed you a picture of the degeneracy and arrest of development. This is a picture where the child has grown to manhood, yet remained arrested in development. If the internal structures of the body were examined arrest of development would be evident. All have seen such cases, since they are very common. This particular condition illustrated, has arrest of development of the jaws and face. Dr. Kiernan remarks that structures that are temporary are changing from generation to generation.

For this reason dentists should be careful in regulating teeth, especially in children of from one to twelve years of age. These children are in the condition shown. In this neurotic condition the nervous system is very easily involved and also other organs of the body. Children are often invalided for years by having their teeth regulated and dentists should be very careful on that point. Another point about regulating teeth in such patients needs attention. Dentists can not tell just exactly how it comes about, but where the teeth are moved by springs, ligatures and all kinds of appliances, they can not be held perfectly firm. Later in life absorption of the alveolar process occurs at this very point, due to osteomalacia or alveolar absorption. Later in life gingivitis sets in from regulation of the teeth, the jaws are never restored to health and the absorption goes on until the teeth become loose and are lost.

I want to call your attention to the picture, a four and one-half months old embryo. All have seen children that have the appearance of age, with little hairs upon the face and ears, with wrinkles in the face, the hair frequently gray in spots, the skin drawn up and the fingers long and slender. In such patients, dentists should be very careful in the regulation of the teeth and in all operations. They always have irregularities and the greatest care is necessary because of the unbalanced nervous system.

Dr. Vida A. Latham, Rogers Park, Ill.—It is a good thing to have the tension made clear on pathologic principles. Many teachers have made the statement that it is absurd to suppose that the changes are made through the nerve functions. They can occur through tension, perhaps not permanently, but it is one of the factors underlying this development, or it may be through a case of retrogression. When we think of the enormous amount of force that goes on in the development of the teeth coming through four dental cycles, and of the congestion which involves the vasomotor and vasoconstrictor systems, we may come to the conclusion that it is due to the period of first stress. I have heard men advance the argument that pathologic stress is absurd; that it can not come from such a source, and was only a poor excuse for ignorance of some local condition.

Dr. G. V. I. Brown, Milwaukee—I can not say very much on this subject without encroaching on the paper that I expect to read later on. I shall be obliged to disagree with Dr. Talbot concerning the regulation of teeth, because I have to begin to regulate the teeth of these young patients before they are entirely destroyed, and from all of which I have demonstrated I can not agree with him. In regard to what he says of the disastrous results following the regulation of teeth in children and young persons, I think it was rather the fault of the method than the age of the patient, and I am convinced that where that continual absorption went on it was due to the effect of occlusion of the jaws on account of malposition, which caused an irritation of the tissue around the mouth.

Dr. James G. Kiernan, Chicago—I only wish to correct a little terminology which I think might be desirable in this Section. There is perhaps no word so misused and misleading as "degeneracy." The question is whether there is general degeneracy or whether it is a disappearance of certain parts for the benefit of the organism as a whole. It is true, a great many changes occur in this way for the benefit of the organism as a whole. The teeth are decreasing in number. There is very good reason to believe that man at one time possessed at least two extra incisors. There is also very good reason for believing that the wisdom tooth is tending to disappear. There is also good reason to believe that the human tooth is becoming microdont rather than macrodont, rather smaller than larger. This is along the general line of evolution with reference to the face and jaws. The human jaw itself with all its beauty, the human face, with all its beauty, is degenerate. For biting purposes and chewing purposes, it is not as valuable as the jowl of the lower races. It is an embryonic feature. It has lost space for the benefit of the brain. The brain has been absorbing more and more space at the expense of the bones of the face. Therefore, in dealing with this question of irregularities it would be wise to look at it in certain cases as a normal process. In certain cases it is wise to study the teeth not only from the point of regulation, but also from the standpoint of removal a little more than is done. No human hand can turn back the clock of time, retain a high type of man, and yet restore the jaw of a prehistoric ancestor who lived on food in which there was an enormous waste. The native or prehistoric races had beautiful teeth; but those teeth could not exist with the environment of the civilized races.

Civilized man does not waste his food so much; he does not need to do so much chewing and tearing. In the only animal that can be compared with man, the dog, similar changes are taking place, and these changes of domesticity are coincident with the changes occurring in civilized man. Another factor also influences these changes. There are many race types with different jaws and different teeth. No races are pure considered from this standpoint, but all races are intermixed. It is safe to say that every one of the English-speaking races has some primitive race element in them. Every one of the Teutonic races and every one of the Eur-African races have the same elements in them, and also the Eur-Asiatic. These races have different types of jaws, different sizes of teeth; from their mixture comes the so-called Aryan race. These people are subjected to a new environment. It is therefore a duty to study how far in one case removal of the teeth in a certain type might be a benefit in correcting irregularity, and how far in the other it might be injurious, and deal with the question from that standpoint. It can not be dealt with in a general way, but the individual conditions to which man is exposed must be studied. There is much nonsense talked about the degeneracy of the teeth. This is usually ascribed to luxury. The degeneracy is often an expression of the advance of the human race. When man gets fewer teeth, then there would not be so much irregularity, nor so much trouble in other directions.

INFECTIOUS DISEASES.*

ALICE M. STEEVES, D.D.S.

CHICAGO, ILL.

A knowledge of the possibility of transferring infectious diseases from one patient to another by means of instruments or otherwise, and of the character of the infection itself, is of the greatest practical value. While the necessity for proper precautions to avoid these accidents has long been recognized, the recent advances in the bacteriology of the mouth and throat cause the subject to assume new importance.

Of all diseases in which the infection is frequently carried from the mouth of one patient to that of another, perhaps the most important is syphilis. In this affection two different lesions are formed in or about the mouth, each characteristic of the disease, and appearing at different periods in its course. The primary sore is frequently to be found upon the lips or within the mouth. This is especially true in children. The mucous patches of the secondary stage are usually seen in the mouth, where their seat is on the inner surface of the lip, the tongue, the palate, or the fauces. In size they are from an eighth to half an inch in diameter, and while they extend superficially they are never deep. They are whitish in color, with rounded edges and raised rather than depressed. These two lesions are the sources of most of the infection, which causes new cases of the disease, the virus being carried by actual contact, surgical instruments, household utensils or other accidental means; and to unaccustomed observers they may be overlooked or neglected, or considered harmless because their true character is not recognized.

The frequency with which these conditions occur and the great danger attached to them should warn every oral surgeon to be ready to recognize them and to take proper precautions to protect himself and others.

Modern research into the bacteriology of the mouth and throat has suggested new possibilities in the matter of carrying infection from patient to patient.

The discovery that the germs of scarlet fever and diphtheria may be found in perfectly healthy mouths and throats, and the fact that these germs remain in the mouth and throat for long periods after the clinical signs of the disease have disappeared, suggests the probability that these diseases may be transferred from patient to patient by unclean instruments. Well proven instances of this kind are indeed rare; yet this mode of infection is worthy of attention.

The germs of diphtheria are sometimes found in tooth cavities or in a healthy throat, and although they may not cause the disease in that individual because of his natural resistance, when carried to the mucous membrane of a susceptible person they may produce the disease in a virulent form. The bacillus of diphtheria may be the cause of all grades of sore throat, from a simple acute catarrh to an intense membranous inflammation extending into the nose and mouth; so that the true nature of a sore throat may not be recognized and the bacilli spread from patient to patient on septic instruments as is so often done by infected spoons and forks.

Diphtheria bacilli usually remain in the throat two weeks after the membrane has disappeared, but have been found five or six weeks afterwards in some cases. The infectious nature of purulent discharges following scarlet fever, such as a rhinitis or pharyngitis, are now fully recognized, so that, if after one of these infectious diseases catarrhal inflammations are present, the necessary precautions can be taken to prevent new cases of the disease.

In the same manner, erysipelas, which begins so often at the juncture of the skin and mucous membrane, and pus cocci from suppurating processes in the mouth may be transferred from patient to patient; and it is easily conceivable that the bacillus of tuberculosis could be taken from the mouth of a tuberculous patient on dental instruments and be deposited in the mouth of another patient and then find its way into the lungs.

DISCUSSION.

DR. VIDA A. LATHAM, Rogers Park, Ill.—This is a subject that is scarcely touched upon by dentists, but in connection with the physician we can accomplish a great deal in this direction. Many cities have a quarantine law, and in that way we can control these diseases in large cities, but it is more difficult where a physician is allowed to use his discretion in placarding a house. There is a great latitude in that method. If a physician is not perfectly honest and upright, he can probably be persuaded by higher fees or some other way to favor the family. A man will tell him that he has got to go to business, and the result is the physician does not quarantine the father of the family, and he goes to the bank or to his business without hindrance.

I have had two horrible cases of infection in little folks through the non-disinfection of instruments, more especially forceps. In one case that was referred to a specialist, a syphilitic lesion was caused in the upper jaw through the use of unclean instruments. In another case a woman contracted primary syphilis and as I did not care to be in a malpractice suit, it was referred to a specialist. The cause was using infected forceps in extracting her teeth.

In dental schools how many students are trained to see cases of syphilis in the oral cavities? They do not see them because they are not pointed out. I have only seen them, because I have practiced medicine and dentistry. Few dental schools make any effort to classify or make a clinic for such diseases. Unquestionably, students ought to study and know these conditions. Most of us, if we should see a case, would not recognize it. Therefore, I hope the teaching of surgical cleanliness will be broader and deeper in all its branches.

DR. GEORGE T. CARPENTER, Chicago—The ordinary practitioner will not recognize the conditions, particularly syphilitic lesions, and it is a very difficult matter, even where he suspects

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* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

a case, to get a history of the case. Syphilis is a disease that is covered up, and sometimes the only thing the practitioner can do is to pursue syphilitic treatment in a case he suspects and the case will respond if his surmise is correct. We can not be too particular in regard to the absolute importance of sterilizing instruments. Less than a year ago I had a relative in my office who was having a little work done. He spoke of a slight abrasion at the corner of the mouth. I cleansed it and gave it some trivial local treatment and the incident passed from my notice. At the same time, I held the chair of oral surgery in one of our schools. A short time after that a brother, who was a medical student at that time, and who has since graduated, asked me if I had noticed William's mouth. I told him I had not specially noticed it. He said he wished I would notice it, as he himself was a little alarmed. He had been taking one of the preparations of mercury, and he believed he had secondary syphilis. If a person teaching these things will let them pass from under notice, what will the ordinary practitioner do? Consequently, I think we should be alive to the existence of these conditions, but above all we should pay strict attention to the sterilization of our instruments.

Dr. A. E. Baldwin, Chicago—The statement is made that cleanliness is next to Godliness, but I believe that cleanliness is Godliness, especially in the dental chair. I think we sometimes exaggerate the importance of the health departments of our large cities in regard to the transmission of many of these diseases. I think it is a question as to whether some of these diseases that are called infectious or contagious are really what the name implies. Where we find those conditions present in healthy mouths, for instance, tubercle bacilli, we find them often present in many mouths of perfectly healthy people. In many school-children we find those bacterial conditions are present in a perfectly healthy mouth. I suppose the only conclusion arrived at is that we must have a proper condition of the system so that the resistance is not great enough to throw off the effect of the systemic poison.

In regard to the use of cleanliness, it seems hardly necessary to speak of it, but I recognize the condition Dr. Carpenter speaks of, the busy practitioner omits to investigate some cases that he would investigate if his mind were not centered upon something else and his time limited. It requires a good deal of courage to acknowledge our shortcomings, but I think if the truth were told by all of us, some things fully as bad or even worse might be said than what the Doctor has told us. But the only thing to do is to fix the fact in our memory, that we must be very careful in everything that tends to the welfare of our patients, and that we must attend to the absolute cleanliness of our instruments, our hands, and our persons.

Dr. James G. Kiernan, Chicago—There is a rather serious error in Dr. Baldwin's statement. In the first place, for infection, two things are necessary; a culture medium for developing the particular germ, as well as the germ. There is probably no healthy individual without pathogenic germs in his mouth. While he is immune under given conditions, those bacteria may be transmitted to another non-immune individual and the result continued indefinitely. The particular medium may be immune, but he continues the danger. That danger, however, has been met somewhat by the prevailing practice in dentistry of using antiseptic washes. There may be certain bacteria in individual mouths and those bacteria may not gain entrance into the system until after operation. This is the case with the streptococcus, the staphylococcus and other pathogenic bacteria. The existence of bacteria in a healthy mouth contains an element of danger greater than is generally recognized.

Dr. Vida A. Latham—I would like to emphasize a point brought out by Dr. Kiernan. I think we doctors and specialists should pay particular attention to the throats of children at school. How many children are allowed out under two weeks with an infectious or contagious disease? In England it is at least six weeks or until all the scabs and rashes have disappeared. Here, from climacteric conditions, measles, scarlatina, etc., would be rather light, but there the mortality is greater. In the case of scarlet fever it may be only a light attack, and the child may be back in school in two weeks! I know of a child who had a light attack of scarlet fever, whose mother allowed it to play with other children, putting kid gloves on the hands of the child. Of course, there is danger of infection. I have a friend, a lady, who went to a house where there was a case of scarlet fever unknowingly until the mother told her that her little girl had the disease and also diphtheria. There was no placard, though under a physician. My friend went home, changed her clothing, then hurried to a dentist's office, where she had an appointment. That is where contagion comes from. I do not think children should be allowed out of quarantine to mingle with people as early as they are in Chicago.

Dr. G. V. I. Brown, Milwaukee—I remember last year a gentleman gave us a very scholarly dissertation upon this subject, and it set me to thinking a good deal. Since then I have tried to do a little missionary work, and during the last year I have given, at various times, before school boards and school committees and any who were interested in the subject, an illustrated discussion on this topic, in which I tried to enforce the value of care in this direction by having slides thrown from the lantern upon the wall, illustrating these different germs that we have been speaking about, particularly the diphtheria bacillus, the pneumococcus, and so on. I do not think I can do better at this time than to emphasize again the necessity of doing something more than talking these things over among ourselves. We all know the danger of infection. We are benefited by having the idea that cleanliness is next to Godliness impressed upon our minds, but if we would resolve ourselves into a committee of the whole, and go out from here and spread the information until we make school boards and those who have charge of the instruction and care of young people recognize the importance of these things, we would be doing a great deal more than we are doing here now. I have tried to make it strong in speaking of diphtheria by calling attention to the fact that Park View had an epidemic of diphtheria, and at least 1 per cent. of the children had these germs in the mouth. In Milwaukee we have had members of the medical profession, during an epidemic, examine the mouths and throats of children every morning before school began, but it seems to me that is a good deal like locking the barn door after the horse is stolen, because by the time the lesion is manifest, or the disease recognized, the child has already exposed more children than it would be possible for us to compute. The same is true, in a large measure, of tuberculosis. If one in every seven dies of tuberculosis, as has been stated by Dr. Senn, and many agree with him on that point, and the disease is so prevalent that it defies all our laws of sanitation, it seems to me the practical thing to do is to begin right in the mouth. In by far the majority of those cases of affections of the lungs, the bacilli are in the mouths of such people continually, and whatever care may be taken of the sputum of such people after it leaves the mouth, a little care taken before it leaves the month would be much better. It is a simple matter for public schools to have a large vessel at the door with some cheap antiseptic, and make it obligatory upon pupils to rinse their mouths before entering the schoolroom. I am certain we would do more to check diphtheria and influenza by checking these things than we can in any other way. I think it is well worth continually repeating until we are tired of it, or until we finally make the right impression upon the minds of the people in charge of our public institutions. We are not politicians, but if we can arouse the laity without politics by continually reiterating these facts before the people, we shall feel that our labors have not been in vain.

Dr. A. E. Baldwin, Chicago—I think a great deal of harm comes from posting notices. I know they would agree with me in many large cities. Here is a case of a child that has scarlet fever. That child was isolated from the household, and no one allowed to see it except the trained nurse; no one else ever went near it. Would it be right to isolate that whole building by putting a placard on the front door? They would not be incautious; they could not be affected at all by being in another part of the house. Does that little card, eight by

fourteen, offer any protection? Not at all. It does nothing of the kind. I agree with Dr. Latham that there should be a rigid enforcement of separation between those affected and those who are not affected, children as well as adults.

Speaking of what Dr. Brown has said, I do not think tuberculosis is dangerous to us as long as it is in Dr. Brown's mouth. It is not spread in that way. The only circulation it has is in the air or in food and drink, and the remedy he suggests would do no good in lung difficulties. If we could have any preparation to take into the mouth to destroy tubercle bacilli it would have no effect one-half hour later. I think there is such a thing as carrying this matter too far. Notwithstanding the isolation of these cases, we will find these Krebs-Loeffler bacilli in many mouths that are healthy, and we can not look into every mouth. That is impossible. When we admit that they may be found in the mouths of people who are perfectly healthy, we can readily see that isolation cuts no figure. I do not want anybody to misunderstand me; I do not want to throw open the door to every diphtheric case, but there are a great many things that we advocate that are really not as far-reaching as we think they are. They are not as effective as we think they are. I do not think that anyone who knows me can say that I have ever been an advocate of any chance or careless method in any way, shape or manner, but I do think we had better be a little cautious and know what we claim before we make any great claims for our belief. It is far from proven that many diseases that are called contagious or infectious are really so.

DR. G. V. I. BROWN—In the isolation hospital in Milwaukee, during an epidemic of scarlet fever, the patients were immediately placed upon a system of treatment which included the disinfection of the mouth with hydrogen dioxid and oxygen. The result was that out of one hundred cases there was not a single one affected by any of the various sequelæ that follow that disease. The suppurative process which very frequently is likely to follow that disease, and that almost invariably affects the middle ear, was entirely absent, and there is no question about the value and efficacy of that treatment, and it is now becoming an established factor in the treatment of other diseases. The same is largely true of typhoid fever and some modifications of that disease.

DR. ALICE STEEVES, closing the discussion—This paper has been the outcome of my own observation and experience. I have reason to believe that there has been infection from improperly cleansed instruments in several cases of which I had the care, and I thought it would be well to bring this matter up. In speaking of sterilization and cleanliness, I feel that especially in the schools ordinary cleanliness is not properly demonstrated to the students. We must have ordinary cleanliness before we can have surgical cleanliness.

THE TREATMENT OF CUTANEOUS CANCER.*

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The treatment of cutaneous cancer has been one of the most serious and difficult problems with which the profession has had to deal. The remedies, which at one time have been highly extolled, at another, severely condemned, are exceedingly varied in nature and innumerable in number. Two remedies which are received with much favor to-day, zinc chlorid and white arsenic, have been extensively used, the one for scores of years, the other for centuries. The use of these two remedies, in the hands of certain specialists, was attended, at least in selected cases, by eminently successful results; in others there was absolute failure, if not death of the patient.

Caustics were much in vogue in the treatment of cancer, until the recent advances in surgery were made possible by the introduction of antisepsis and anesthesia. Since then the knife has been freely employed, and its use was gladly welcomed, with the hope that free and radical extirpation would assure a positive and permanent cure for a condition whose erstwhile therapy was exceedingly painful and of more or less doubtful



Fig. 1.—J. W. M. Photograph of piece of tissue removed from posterior border of scalp, measuring 3½x2½x½ inches, by means of pastes, applied by a cancer-quack. Sub-epidermal surface, which is traversed by some muscular bands, removed from the underlying muscular tissues.

value. It is needless to add that our fondest hopes have not been realized, and after a rich experience covering a goodly number of years, the most sanguine must admit that the results have not been gratifying.

Coley[1] states that "however ardent advocates we may be of surgical intervention, to the exclusion of all



Fig. 2.—J. W. M. Cicatricial deformity resulting from the removal of tissue (see Fig. 1), by means of the cancer-quack's paste.

other methods in the treatment of cancer, we are nevertheless confronted with the fact, that at least 75 per cent. of all cases are, or at some time become beyond the reach of the surgeon's knife." William Watson Cheyne,[2] surgeon of King's Hospital, London, speaking of cutaneous cancer, states, "that the very removal of the local

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1. Wm. B. Coley: The Practitioner, 1899.
2. William Watson Cheyne: Ibid.

disease, may, in some cases, rid the patient of the disease altogether. The favorable results are best seen in cases of epithelioma affecting the extremities, after amputation. R. Volkmann gives the cures, that is, the patients well three years after operation, as 51 per cent." Allowing for 15 to 20 per cent. recurrences after this period, we can readily see that the knife promises only about 30 per cent. of cures, and then, for the most part, at the cost of amputation of the affected extremity.

Both the profession and the laity have gradually learned to realize those facts, and the nonchalance of the former and the skepticism of the latter have been instrumental in removing these individuals from our observation, to the care of the so-called cancer-quacks. As a direct result the number of these quacks have steadily increased, and in every large community there are not a few who have attained a considerable degree of local eminence, with the reputation of having effected



Fig. 3.—J. W. M. Cicatricial deformity of lip, resulting from the application of a cancer-quack's paste.

a long line of, not failures and recurrences, but successful and permanent cures. A great deal of this reputation, I may dare say, is not undeserved; in place of dejecting the patient with the utter hopelessness of his disease, the danger and uncertainty of a severe operation, or the loss of an extremity, the quack encourages him with hopeful assurances and promises—pledges that are not always plighted.

The agents these so-called cancer-quacks employ, are, for the most part, caustics, preparations of arsenic, zinc, potash, lime, and the common acids. An interesting specimen was recently removed by one of our local surgeons from the posterior border of the scalp. The alcoholic specimen measures three and a half by two and a half inches in its two diameters, and one-half inch in thickness, and has been removed with the subcutaneous tissue, fat, and even with some of the muscular fibers of the underlying tissues; allowing at least a third for shrinkage after hardening in alcohol, the fresh specimen must have measured almost five by four by three-quarter inches. It had been removed in a round, clean-cut manner, by the application of a brownish-red paste, and separated spontaneously, with considerable pain and reactionary inflammation, after



Fig. 4.—Mr. W. K., aged 70 years; epithelioma of 2½ years' duration. Feb. 20, 1901.



Fig. 5.—W. K., March 21, 1901; epithelomatous ulcer of 2½ years' duration completely healed 29 days after institution of treatment.

an interval of four or five days. The disfigurement from the resulting cicatrix is considerable. Microscopic examination of the removed area reveals the tissues to be in an excellent state of preservation, the

epidermis, sweat and sebaceous glands, hair follicles, and blood-vesels being histologically well preserved. The blood-vessels are extensively thrombosed and at the border where separation from the surrounding tissues has occurred there is very extensive inflammatory infiltration. The specimen was removed from an individual 27 years of age, and the only indication for its removal was a papular, pigmental syphilid. A second area (cancerous?) was removed from the upper lip, and the cancer-quack was engaged in removing a third from the inside of his throat, when the patient, perforce from pain and distress, withdrew himself from his treatment. This cancer-quack enjoys a lucrative practice and an extensive local reputation, and no one can doubt that a remedy of this character can prove thoroughly efficacious in a case of genuine cancer.

Time does not suffice to permit me to take up all the remedies which are extensively used and extolled to a



Fig. 6.—Mrs. A. K., aged 80 years, April 26, 1901. Epithelioma of 3 years' duration.



Fig. 7.—Mrs. A. K., aged 80 years, May 8, 1901. Epithelioma-tous ulcer completely healed 12 days after institution of treatment.

greater or less degree by various members of the profession. I wish to conclude with a brief narration of my results with a remedy which at present is receiving general and favorable recognition. I refer to arsenious acid, mixed with equal parts of pulverized gum-arabic, to which sufficient water is added to make a paste of the consistency of butter, and enough cocain crystals to alleviate the anticipated painful reaction, as recommended by Marsden, Robinson, Gottheil, and Stelwagon. I have found it expedient to add 10 per cent. glycerin before adding water, which prevents the paste from becoming too dry and therefore prolongs and intensifies its action; the reactionary pain is also diminished by the glycerin.

R.	Ac. arsenicosi	
	Pulv. gum acaciæ, āā	5
	Cocain. mur. cryst.	2
	Glycerin	2
	Aquæ q. s.	

M. Ft. paste. Sig.: Apply locally.

The paste is applied directly to the ulcerated surface, after being uniformly spread on a piece of muslin or linen, which has previously been carefully adapted to the affected area. It dries in the course of five to ten minutes, and remains firmly adherent until its removal 12, 24 or 36 hours later is indicated by the pain, intensity of the reaction or the degree of the treatment required. The after-treatment consists in the application of simple, soothing, antiphlogistic remedies, in the form of indifferent pastes, Wilson ointment, combined with cold compresses saturated with the solution of alum acetate. The resulting pain is usually slight, often scarcely sufficient to disturb sleep. There is some reactionary inflammation, in the form of redness and swelling, which is usually limited to the ulcer and its immediate neighborhood.

I have not found it essential to prepare the surface by the application of caustic potash, in stick or solution, green soap, etc., as recommended by numerous authors, in order to cut down the epidermis and to remove scales, crusts, and keratoses, which can interfere by their presence with the action of the arsenic. In one case I felt obliged to remove a crust by means of a compress of oil, applied for twenty-four hours. The application of caustic potash, even though momentarily applied, is exceedingly painful, and its irritating and destructive action being directed against healthy and diseased tissue alike, it is considerable of a gain to be able to dispense with its use.

In most instances one application of the arsenic has been all that was necesary; in several instances I felt obliged to repeat the application for fear the resulting reaction was not sufficiently intense. In one of these cases the ulcer was surrounded by an elevated wall of tissue, epitheliomatous in character, which did not share the reaction; the second application, made twelve days later, remained as ineffectual as the first, and though the wall remained, cicatrization was complete in twenty-nine days. During the following two or three weeks the

wall also underwent spontaneous involution and has entirely disappeared.

From this I infer that arsenic possesses not only an elective action, exerting its chief influence on the weaker and less stable pathological tissue, sparing the more resistant surrounding normal tissue, but also exerts a specific influence over the cancerous tissue whereby it inhibits its growth and prevents its further spread and development without entailing its direct destruction.

My experience is too recent to permit me to judge of the permanency of the results; its immediate effects are certainly all that can be desired, and if nothing but this crowns our efforts it should hold a very high place as a palliative measure.

I regret that time does not permit me to compare its action with other remedies that have been recommended from time to time, and are in extensive use to-day, namely, formalin[3] (Ravogli), acid nitrate of mercury, pyrogallic acid, zinc chlorid, electrolysis, (Corlett), injections of alcohol, Vienna paste, mixed toxins of erysipelas and bacillus prodigiosus.

As far as my experience permits me to judge, I am strongly impressed that this method of treatment possesses decided advantages over the former methods. It is prompt in results, easily limited and controlled, spares the healthy tissues, exerts a marked specific influence, and produces relatively little distress and subjective disturbance. It promotes prompt cicatrization, and speedily converts a freely discharging, foul-smelling ulcer, filled with soft mushy granulations and flabby detritis, into a firm, clean-looking sore, inhibits the discharge and materially diminishes the inflammation of the surrounding tissues. The peculiar influence it exerts over the diseased tissue, without entailing its actual destruction, leads to the belief that the best results are to follow its application in mild rather than in severe forms; in other words, under-treatment rather than over-treatment is indicated. Time must prove whether or not the results are temporary or permanent in nature, but even in its present form it should prove to be an invaluable agent, if only palliative in nature.

DISCUSSION.

Dr. W. T. Corlett, Cleveland—Although I have not had much experience with the treatment Dr. Heidingsfeld advocates, I have had quite an extensive experience in the treatment of superficial epithelioma. During a period of about twenty years, after a wide range of remedial measures, I have of late years selected electrolysis almost exclusively in the treatment of epitheliomata. I believe it presents many advantages over other methods and even that advocated by Dr. Heidingsfeld. I can further say for electrolysis that it is extremely satisfactory, and while I do not advocate any exclusive method, believing the special requirements of the case should always be considered, yet, as I have observed the results attained by surgeons, the results are to me quite convincing that the methods resorted to by dermatologists are, as a rule, more lasting than when the knife is exclusively used. The method of employing electrolysis is extremely simple; anybody can do it with patience and a little skill. I often use an ordinary McIntosh battery of eighteen cells, which is sufficient to supply electricity for an ordinary operation, lasting twenty minutes to an hour. The patient must first be anesthetized, and when the lesion is small, he may be discharged as soon as he comes out of the anesthetic. Very little, if any, after-treatment is necessary. Of a large number of cases, some of which had existed many years, the diagnosis having been confirmed by microscopic examination, in only one instance, so far as I have been able to ascertain, has the growth returned. In this case the disease had developed beyond the point when any operation holds out much hope.

Dr. William Allen Pusey, Chicago—I have followed the method Dr. Heidingsfeld suggests, using Marsden's paste and frequently using the zinc lotion recommended by Unna, with most excellent results. I am surprised at the rather pessimistic prognosis Dr. Heidingsfeld gives, for it is a fact that cutaneous carcinomas are the most benign we have and we should expect a good result in all cases not complicated by metastasis. I had occasion to look through my records about a year ago and found that during the first three and a half years of practice that I treated eleven cases of epithelioma, either by curettage or by the application of paste without curettage. In all these cases, except one, there was a microscopic diagnosis. Each one of these cases I have been able to follow and there has been no recurrence. I do not think that is an unusual result with this method; I think Dr. Heidingsfeld exaggerates the importance of these lesions, if they are treated early.

I have lately treated an epithelioma by a new method, to which I would call attention in this connection; I have made use of x-rays. This case has been in existence twenty years. It is a superficial form of carcinoma involving only the skin. It has been treated by the best surgeons in Chicago and they had left a large epithelioma on the shoulder. This was put under treatment by exposure to x-rays, in January of this year. I exhibited the case last week and I do not believe anybody was able to detect any suspicious tissue remaining, the shoulder is apparently entirely healed, although, of course, further time is necessary to confirm the cure.

Dr. L. E. Schmidt, Chicago—I have had considerable experience in the x-ray treatment of cancer of the skin and up to the present time have not seen any favorable results, although I have practically followed the method used by Dr. Pusey, and originally laid out by Dr. Freund of Vienna. I do not see exactly why the dermatologist should lay the scalpel aside altogether. Without doubt there are a considerable number of cases that can be treated more successfully in a surgical way. Take those cases that border on the mucous membrane, both of the anal and oral, and other regions. In these positions the various pastes that are recommended can not be used with ease or safety.

Dr. Joseph Zeisler, Chicago—We have been using various medicinal agents in the destruction of cancer for a long time, but I have noticed during the last two years the enthusiasm with which these so-called quack methods have been taken up by dermatologists of good reputation. In my entire practice I have never made use of such agents, and knowing their constitution I believe I shall never use them because the method seems to me so thoroughly unsurgical, and after all, the treatment of epithelioma should be surgical, understanding by that term the thorough removal of everything that is diseased. It seems to me more rational to do this operation in the cleanest, most rapid manner possible. It seems more reasonable to do it in this way than by the slow course of cauterization, where we can not always limit the operation. I do not desire to be understood as wishing to relegate the treatment of epithelioma to the surgeon, for I believe the dermatologist will always find a field for this work. I am happy to say that some excellent surgeons in Chicago have referred cases of epithelioma to me. When I speak of the dermatologist removing a cancer in a surgical way, I mean by the use of the curette, scraping down to healthy tissue. It is surely possible to remove a superficial epithelioma in this manner. When it has ceased to be a superficial epithelioma I leave it to the surgeon. When it is complicated with deep-seated glandular troubles I do not touch it, because I do not claim to be a surgeon. After thorough curetting it is also proper to have a thorough cauterization, and I have always found the nitrate of silver in substance the best thing to use. There are others in this room who can testify to the excellent results I have had in such cases. In one case an epithelioma of the lip was removed in this way and healed in eight days in the most beautiful manner. As long as we have this clean method of removal

3. Ravogli: Jour. A. M. A., 1899.

with modern methods of local anesthesia, I will stick to it until I learn of something better.

I want to express the hope, not based on experience but on observation, that in treatment by the x-ray we may perhaps find a valuable resource in this department of medicine. That the x-ray is an excellent means of destruction in lupus we have opportunity to observe in Chicago, where Dr. Pusey has used the method extensively. I believe it is as yet too early to form a definite opinion about it, but I am in hopes that the x-ray will prove to produce excellent results.

DR. BURNSIDE FOSTER, St. Paul—In the treatment of malignant dermatoses where, as is often the case, it is quite impossible without a microscopic examination to discriminate absolutely between cancer, lupus or rodent ulcer, I have had great satisfaction, after having removed everything possible by mechanical means, in the use of superheated air after the Holland method. I hope to show you to-morrow a very beautiful result in the treatment of a case of lupus after this method. So far as the treatment of skin cancers is concerned, it seems to me quite impossible to lay down definite rules which will apply to all cases and it seems rather a waste of words to attempt to do so. Undoubtedly, some cases are best treated by excision and some cases are best treated by erasion followed by the application of some caustic. Where it is quite evident that, by either of these methods, the growth can be entirely removed, we must be guided by the probable cosmetic result. I have had considerable experience in the destruction of skin cancer with caustics and I shall never be persuaded that the knife could have accomplished such beautiful cosmetic results as I have seen by these methods.

DR. D. W. MONTGOMERY, San Francisco—In the treatment of epithelioma you simply have to destroy it, with the curette, chromic acid, nitrate of silver, arsenic, or with the knife, but you must destroy it. The great advantage the physician has is in knowing a large number of methods of slow destruction. The arsenical method is undoubtedly a good one, but in looking over the literature I was impressed with the variation in strength of these arsenical preparations; it is wonderful how various these strengths are. Marsden himself never used a paste weaker than 50 per cent., nor stronger than 75 per cent. To my mind 50 per cent. seems to be the least that one can use in order to get a good cautery. There are a number of cases where you can not use arsenic, and there are quite a number of other cauteries you can not use. For instance, a man was sent to me with an epithelioma on the back of his hand at the base of the finger that had developed on a scar. I could not use arsenical paste on that for fear of eating into the tendon sheath. I did not want to use a curette for the same reason; in fact, I did not want to use anything on it but the knife, so I sent him to a surgeon and it was so removed, and I think it was taken out thoroughly. I would not for a moment think of discarding the knife, and I would not think of discarding the actual cautery. French authors prefer the actual cautery. When a chemical is indicated I think the one they use most frequently in Paris is caustic potash. It is an admirable caustic. I remember the case of an old lady from whom I could not have removed a cancer of the nose with anything else. She was very nervous and would not stand the sight of any instrument, and she would not stand the injection of cocain, but in the course of a sitting I ploughed the growth with a caustic potash stick. I suppose it caused her a good deal of pain, but pain does not trouble these people. Having become accustomed to the application of arsenic I do not think I shall ever entirely give up its use.

DR. DAVID LIEBERTHAL, Chicago—Every method of removing cutaneous cancer without a cutting operation is valuable, and especially so if it does not cause much pain. We should not forget that there are patients who would not submit to an operation. That hot air, concerning the efficacy of which Dr. Foster spoke, might give good results; I can readily understand, considering the coagulative properties of heat, which will most readily affect diseased tissue. The first cases treated by x-rays were reported by Drs. W. Johnson and W. H. Merrill in the *Philadelphia Medical Journal*, December, 1899; and at the International Congress of Paris, 1900. Dr. S. Steenbeck reported two cases, one of which developed upon the base of a lupus vulgaris. These cases, which were all of limited size, resulted in cure. In a case of epithelioma which I reported May 25, 1901, in THE JOURNAL of the American Medical Association, and which was the size of the palm of the hand, the x-ray was applied for a period of three months by Dr. Haiselden. At first there was noticed a decrease in the secretion and some flattening of the tumor, but in the further course the tumor increased and surgical interference was resorted to. This case did not extend beyond the fascia. It is my opinion, considering all these cases, that the x-ray should be tried in all cases of epitheliomas of small size, but in those of larger size other methods will have to be employed.

DR. C. W. ALLEN, New York City—The treatment of cancer in this way was originally advised by reputable physicians and it was only because quacks took it up, it seems, that we dropped it. Now, after these many years, we have for some reason taken it up and I think it has gone far enough in this renaissance to prove to us that the method is excellent and not to be dropped again, especially the use of arsenic. Electrolysis I have also used, but rarely as the sole method of treatment. I often use it in connection with other treatment to destroy outlying suspicious changes from the normal vascular dilatations, little outgrowths at a distance. Occasionally I have used it as the only method, with great success. Just before starting from home I saw a man in whom three years ago I removed an epithelioma from beneath the eye, using nothing but the needle, and he had as soft a scar as one could wish for.

I failed to gather from Dr. Zeisler's remarks that he differs from the rest of us. I think most of us are inclined to curette before paste is applied, especially if there is no base that can be acted upon quickly by the arsenic. We all have our preference as to caustic, most of us using arsenic, some caustic potash and others nitrate of silver. Patients come to us as dermatologists because they refuse to be subjected to the knife and they will nurse their cancer and will die with it, if necessary, or let it go on to the destruction of an eye, or whatever organ it may be, rather than to have it operated upon with the knife. If they come to us and we offer them nothing but the knife there is nothing for them to do but to go to the quack. I think we should bear that in mind and offer something they will accept. You can curette without letting them know you are doing a surgical operation. I never say to a patient: "I am going to curette you and it will cause bleeding." I simply curette them and then apply caustic, or whatever I am going to use. I do not confine myself to any one method; I wish to speak of a combination method I have carried out. That is, after applying arsenical paste, which I mix with orthoform instead of acacia, and put in crystals of cocain, I put on arsenic solution, namely, arsenic, alcohol and water. I make daily applications of this and if I have missed any cancerous tissue the arsenic continues to attack it. The wound heals quickly and there are no cicatrices.

Just before leaving New York I saw a man who had had epithelioma of the penis. Dr. Leusgarten had examined the tissue and pronounced it epithelioma, and it seemed to me clinically unmistakable. I had applied the Bogard paste, which contains besides arsenic, zinc chlorid. That was eleven years ago and the man has remained perfectly well since. I do not advocate the use of arsenic in epithelioma of the penis, unless you get the case early. I have recently used this method in six or eight cases of epithelioma of the lip. Three were rather remarkable as to age, being 23, 26 and 28 years old. I have seen these men subsequently and they appeared to be cured, with a soft cicatrix. If we can do this with superficial epithelioma of the lip we can do it in epithelioma of the penis; the tissues of the penis resist invasion and it is a long time before the glands are enlarged.

In regard to epithelioma on the back of the hand, I think caustic is applicable there and I have used it in epithelioma of the palm, with a perfect result. One case was a recurrence; it was the mother superior of a convent, and the cancer returning I used caustic paste. The palm healed beautifully and I do not think it has returned. Arsenic is not apt to go into the

tendons; it does not have a tendency to attack healthy issue. With zinc chlorid there is danger of the healthy as well as the diseased tissue being attacked. I think if we combine several treatments, using, if necessary, two or three in some cases, we will do better than the surgeon can do. That is my impression after using these methods twenty years.

Dr. A. W. Brayton, Indianapolis—Where so many speak we learn many things, and some that are not true. Nothing is so amusing as the talk about the benign tendency of arsenic by which it avoids normal tissues and selects the epithelial growths. That does not appeal to me; I do not think it has pathological or clinical support. I will say, however, that in the case of xeroderma pigmentosum I have had under observation for eight years, and that of her sister who has been under my observation since birth with the same disease, the inhibitory tendency of arsenic has been very satisfactory. After the tumors are raked out with a sharp finger-nail or spoon the application of a mild solution, even Fowler's solution, seems to inhibit their further growth.

The statement made this afternoon that impressed me most is that the old people who have cancerous growths to be removed bear the pain well, but they are victims of terror; they dread the knife and they dread the actual cautery. I do not think we err in removing cancer of the lower lip by grasping the lip between the thumb and finger, cocainizing it, scraping it with a sharp spoon, and then using the actual cautery or acid nitrate of mercury. I frequently use the Paquelin cautery in such cases.

I agree with Dr. Zeisler that we should work in a cleanly way, but I think the application of such caustics as we can control in our office, the removal of the epithelioma with a spoon, followed by the application of carbolic acid to deaden the nerve, then the acid nitrate of mercury, is a cleanly and efficient treatment. I give them half an ounce or so of acetanilid to apply to the wound from time to time and find it sufficient. Orthoform combined with arsenic may have a beneficial action, but I doubt its anesthetic action under such conditions.

Dr. M. L. Heidingsfeld, in closing the discussion—In regard to the prognosis being rather pessimistic, it is not my own; because my experience has been entirely too limited to permit me to express myself on a subject of that character. The opinions I have given from the literature are those of Coley and Cohen, and one or two other men. I have investigated very carefully, and nearly all the men I had occasion to look up have given a guarded prognosis in epithelioma or cutaneous cancer.

In spite of the statement of Dr. Brayton and others this afternoon, I am firmly of the opinion that arsenic does possess an elective, specific action in cancer. I have had several cases, all over 65 years of age and some as old as 84, all typical looking epitheliomas, some having the characteristic wall, slightly turned out, infiltrated and hard. Anyone who has done extensive pathologic work knows that the border in particular shows the characteristic pathologic condition. I was fearful of my results, that these ulcers would not heal; the walls have disappeared. I can only account for that by supposing that the arsenical paste has an elective action, because it does not destroy the tissue but inhibits its growth. This feature makes it a more desirable drug than anything else we have. All other processes that destroy the tissue act on the normal tissue as well as the pathologic tissue. In these cases the treatment is very satisfactory, the ulcer needs to be undertreated rather than over-treated.

As to whether the knife is more applicable than a method of this kind, that will have to be demonstrated by results. It does not matter very much whether it is the knife or the application of a drug, as long as we get results. If we have an agent which clears up these ulcers in a comparatively short time, and I have had them clear up completely in four to six weeks, that is certainly as well as any result we could obtain by surgical intervention.

As to whether arsenic can be applied on the back of the hand, I take it that it can be applied anywhere, with the same result. If the treatment is not carried out extensively there is no reason why it could not be applied to these areas as well as to others.

RELATION OF SYPHILIS TO BLASTOMYCETIC DERMATITIS.*

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Since the discovery of actinomycosis hominis by Israel, in 1878, it has been shown with the aid of microscopic preparations preserved in the laboratories of Europe, that cases of this disease were previously observed and reported as cases of sarcomata; cases of mycetoma have been proven to be caused by actinomycosis; the disease has been found in the brain; it has been observed under the clinical diagnosis, appendicitis; Neisser has reported a case which he at first diagnosed as a papulo-pustular syphilid, but which on further examination proved to be actinomycosis cutis, and, lastly, branching forms of the bacillus tuberculosis have been found in the lungs which Hektoen[1] tells us can not be distinguished from actinomycosis pulmonalis.

Ever since observing the case which my colleague, Dr. Herzog, and I reported last year as a case of blastomycetic dermatitis engrafted on syphilitic ulcers,[2] I have entertained the opinion that should it become established that blastomycetic dermatitis is a distinct disease, it was destined to have a somewhat similar history.

The first cases were discovered hidden away under the diagnosis tuberculosis verrucosa cutis. My case showed that a search should be made among the fungous syphilids, and it suggested other possibilities of diagnosis. The object of our present communication is to explain our views in greater detail, and to answer the many objections which have been raised to my opinion that there was a syphilitic basis to this case.

It will be recalled that the patient stated that for sixteen years ulcers, which he described as simple ulcers, were continually appearing and disappearing on the anterior surface of the leg; these ulcers left scars, some of which were quite deep, others superficial, having a semi-circular and stellate arrangement (symptom of Fournier), and that at the end of sixteen years those of these ulcers which were in a state of activity suddenly took on a changed appearance; they became covered with little warts, and, starting from these lesions, this wart-like eruption spread upward over the thigh, so that at the end of four years the entire thigh was one enormous plaque, covered with wart-like papillæ, the upper border of which was limited by a deep, firm infiltration, and seven months before the patient came under our observation, frambesiform lesions, which produced a very offensive discharge, developed on the foot. The patient never entirely recovered.

In treating of the vegetating or papillomatous and frambesiform syphilids, Kaposi[3] says: "It is a fact that vegetating formations frequently develop on specific nodules. They are not in themselves specific, inasmuch as they correspond, histologically, to those which develop on a simple inflammatory base, and, like these, originate from an exuberation of granulations or hypertrophy of papillæ, the same as in condylomata lata, the base alone being syphilitic. They can only be recognized as syphilitic by the characteristic infiltration or ulceration of the border."

If this statement is correct, the most rational explanation of these vegetations which sprout on a syphilitic base is that they are due to a secondary infection. The micro-organisms which are present in these growths

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have not been sufficiently studied, but the striking resemblance of some of the cases to blastomycetic dermatitis and their clinical history certainly suggest the possibility of this disease being discovered among these fungating syphilids.

Like blastomycetic dermatitis, these syphilids are rare; they are papillomatous fungating plaques; lasting for years; involving enormous areas of cutaneous surface; sometimes steadily progressing during their entire course, and sometimes remaining in a quiescent stage for a long time, to suddenly take on great activity of development. They are exceedingly rebellious to treatment; at times finally disappearing under the administration of potassium iodid, only to reappear at some future time, and at other times only partly disappearing under treatment.

Were they due to ordinary pyococci they would be common, and we would not expect them to last so long and to steadily extend in spite of antiseptic treatment.

When potassium iodid is administered in cases of blastomycetic dermatitis, a peculiar reaction may sometimes be observed in the plaques; an inflammatory exudate is thrown out around and upon the lesions which, when the lesions are superficial and small, resembles very closely the reaction which occurs in lupus vulgaris after an injection of Koch's lymph. Where the lesions are deeper and their base is markedly infiltrated, the infiltration increases and the plaque increases in size, and sometimes ulceration of the plaque occurs. This reaction is usually accompanied by iodism. These changes have been observed in syphilis.

The objection has been raised to my assigning a syphilitic base to my case that the histo-pathology was distinctly the histo-pathology of blastomycetic dermatitis and not the histo-pathology of syphilis.

We have never said that the histo-pathology of this case was the histo-pathology of syphilis. What we have said, and what we now wish to emphasize, is that this was a case of syphilis cutanea vegetans of Kaposi. We took it for granted, and we had a right to, that every dermatologist would know that there was something special regarding the histo-pathology of syphilis cutanea vegetans of Kaposi.

Thirty years ago Kaposi[4] said that there was something special regarding the histology of these vegetating syphilids, inasmuch as they resemble common warts on microscopical examination. To-day Unna[5] says: "Under certain conditions the epithelium growth which develops on tuberous syphilids may, without atrophy of the epithelium, undergo a peculiar change, which causes it to resemble certain cancers, especially the rodent ulcer." In some cases, then, these eruptions resemble the rodent ulcer; in other cases, the common wart.

Blastomycetic dermatitis, when viewed with one-fourth power lens, so closely resembles the rodent ulcer that if a section be given to a competent pathologist, but one who is not on his guard for blastomycetic dermatitis, he will, as I can assert from personal experience, almost invariably report that it is a section from a rodent ulcer. In my case a few sections showed the wart structure, as described by Kaposi.

The findings with the oil-emersion are to be left out of consideration in this discussion, because the syphilids have not been sufficiently studied with the oil-emersion.

In criticism of our diagnosis, it has been pointed out that there was no history of syphilis in the case. We do not feel called upon on this occasion to enter into an extensive consideration of that cardinal principle of diagnosis, which has no place in scientific discussion outside of under-graduate instruction, namely, that a negative history of syphilis counts for nothing in the diagnosis of tertiary lesions; as a matter of daily clinical experience, cases may be seen in any dermatological clinic which may be diagnosed as syphilitic almost to a certainty without there being any history of previous syphilitic disease.

Of far greater importance, to my mind, is the objection that in each and every case of blastomycetic dermatitis which has been reported to date there is a negative history of syphilis. A negative history of syphilis counts for nothing in the diagnosis of an individual case, but if it can be shown that there is an entire class of cases in which the history is negative, it is a matter of the utmost importance. A review of the cases reported since the original article of Riehl and Paltauf, in 1886, to date, in which the differential diagnosis rests between cutaneous tuberculosis other than lupus and syphilis, and which were diagnosed syphilis, shows that there are but few in which there was a clear history of syphilis, and, furthermore, we will point out the fact that there are not many of these cases in which there were present lesions or lesion relics, such as might be produced by syphilis, but are not known to be produced by blastomycetic dermatitis or tuberculosis verrucosa cutis, such as perforation of the palate, *le nez a lorgnette,* periosteal nodes, etc.

These facts are capable of several interpretations. The next point for discussion is whether the clinical picture presented by this case was the clinical picture of tuberculosis verrucosa cutis or syphilis cutanea vegetans. This involves a discussion of the differential diagnosis of these diseases. That they are to be differentiated may be easily established. Riehl and Paltauf[6] say that not every plaque, the surface of which is covered by wart-like papillæ, is to be diagnosed their dermatosis, but only those cases in which all the symptoms taken together present the clinical picture which they describe. Brugger[7] says that syphilis sometimes so closely resembles tuberculosis verrucosa cutis that a differential diagnosis can only be made by the administration of potassium iodid.

Nearly all German writers agree that one of the chief points in the differential diagnosis of these diseases is that the outer zone in tuberculosis verrucosa cutis is a lilac-ring, as Besnier calls it, which almost entirely disappears on pressure, while in syphilis the outer zone is a distinct, firm infiltration, such as was present on the upper border of our case. Where there are a number of lesions present they do not all present the indurated border, and clinical experience has taught me that the induration may be entirely absent, and still the case be syphilitic, a point not mentioned by German writers, although we find in German literature reports of cases in which induration was not present, of which the following, reported by Ostermayer,[8] of Buda Pest, is an example: "The patient, a woman, aged 31 years, presents a lesion on the chin and cheek which is the size of the palm of the hand, and has been present a few months. On examination, the lesion is seen to be a plaque of a pale-red color, with a warty, papillomatous, uneven surface. The plaque rises abruptly from the surrounding healthy skin, just as the surface of a lawn rises above a surrounding walk. It is of oblong form and ulcerated only in two pea-sized places. The papillæ are 8 to 10 mm. high, and 2 to 3 mm. wide. The surrounding skin is normal, and the plaque is as if set into normal skin. When first seen the case was diagnosed

'lupus papillaris,' but when no lupus nodules were found on the periphery of the lesion, the patient was stripped, and ulcerating gummata and periosteal nodes of the tibia were found, which were sufficient for the diagnosis, even in spite of a negative history." This is one of the few cases of this kind in which lesions were present which, so far as is now known, are not produced by blastomycetic dermatitis, but are produced by syphilis, and were this patient to present herself in any dermatological clinic of this country to-day, the lesions would be immediately examined for the presence of blastomyces.

The next point is the size of the plaque. Most authorities agree with Jackson,[9] that a fully developed patch is the size of a silver dollar.

Besnier and Doyen[10] speak of very large plaques, which they state are always fissured; their writings convey no idea as to how large these plaques may become, so that the only means at our command of forming an idea of the size which the plaques may attain is a review of the cases which have been reported, and nowhere can we find a case co-extensive in size with that of the entire thigh.

All authorities agree that tuberculosis verrucosa cutis is a disease which develops very slowly. Joseph[11] says that it takes fifteen to twenty years to form a full-sized plaque; others say from three to fifteen years. In one of Fabry's[12] cases, the disease involved one-third of the back of the hand in two years' time, which is rapid development. We can find no case where a plaque the size of the entire thigh formed in four years, as was observed in our case.

The following case, entitled "A Papillomatous and Ulcerating Lesion of the Forearm of a Doubtful Nature," reported by Brocq,[13] illustrates the importance this authority attaches to rapidity of development as a point in the diagnosis of verrucous tuberculosis:

"The patient is 59 years old, apparently healthy. For the past eight months he has had a lesion of the left forearm, regarding the nature of which I would be pleased to have the advice of my colleagues. At the present time it consists of a plaque, slightly oval in form, the long axis of which is from 5 to 6 centimeters in length, situated near the median line, and slightly internal to the anterior surface of the forearm. It presents an outer zone of redness, which is slightly violaceous, disappearing partly on pressure. The tissues of this zone are a little infiltrated, and the infiltration increases towards the center, and decreases towards the periphery, without any sudden demarkation from the healthy skin, but the limits of the lesion are sufficiently marked by the color. The skin in this zone is smooth and devoid of apparent superficial lesion. Inside of this zone there is a median portion much more irregular where the integument is mammillated, cut with deep fissures, as if torn open, and pseudo-papillomatous. One might say that the skin has been excavated by numerous small ulcerations, the borders of which are granulating. The tissues in this part of the plaque are soft, but deeply infiltrated. On pressure a purulent serum exudes from divers openings, but in small quantities. The physiognomy of the entire patch is not that of a gumma, either tubercular or syphilitic, but, on the contrary, more that of tuberculosis verrucosa cutis of Riehl and Paltauf. It is not painful either spontaneously or on pressure. It developed rapidly in two months; it then became papillomatous, markedly indurated, and formed a decided projection. It appears that the patient has had several lesions resembling furuncles, which he scratched, and this lesion is a transformation of one of these furuncles. The only two diagnoses which appear probable to us are, 1, a variety of tuberculosis approaching, as we shall see, verrucous tuberculosis of Riehl and Paltauf, but the development has been *so very rapid,* and, 2, an inoculation of some parasite, which has produced a lesion resembling the Briska button. This last diagnosis is impossible, because the patient has always lived in France, and also because it has not exactly the appearance of the Briska button."

In closing the discussion, Brocq remarked that it resembled most of all tuberculosis verrucosa cutis. Were this case to present itself in any dermatological clinic of this country to-day, there can be no question but that the first diagnosis which would be considered would be blastomycetic dermatitis.

In addition to the importance which Brocq attaches to the rapidity of development, it should be noted that the case impresses the observer as being a secondary infection. The induration present in this case is also to be borne in mind.

The frambesiform lesions of the foot developed in seven months' time. There was no disease of the subjacent bone, as is usual in large plaques of tubercular vegetations, and the secretion from these plaques was of the very offensive nature mentioned by Kaposi as one of the symptoms of syphilis cutanea vegetans.

From these findings it will be seen that a syphilitic base was assigned in this case, on the following evidence:

1. That for sixteen years ulcers were appearing and disappearing on the anterior surface of the leg, leaving scars which resembled syphilitic scars; at the end of sixteen years the ulcers then present took on a changed appearance; they became covered with little warts, which spread rapidly.
2. The infiltrated border.
3. The size of the patch and rapidity of development.
4. The histo-pathology.
5. The character of the frambesiform lesions.
6. The result of treatment.

These symptoms are certainly sufficient to exclude tuberculosis verrucosa cutis, and with that disease excluded, one of two propositions is correct: either ours is a case *sui generis,* the like of which has never before been observed in the history of medicine, or else such cases have been previously observed, but have been reported under some other head than that of tuberculosis verrucosa cutis. Inasmuch as the opposition has not claimed that such cases have been heretofore reported under any other head, than those mentioned, we are justified in concluding that such cases are either *sui generis,* or syphilis cutanea vegetans, and that point we have sufficiently argued.

The question will immediately occur to your mind: Do the above-named symptoms absolutely establish a syphilitic base to the case in question, in view of our present knowledge of blastomycetic dermatitis?

It must be acknowledged that if blastomycetic dermatitis be recognized as a distinct disease, these symptoms are totally insufficient, but inasmuch as they are the symptoms on which our diagnosis has always depended, they must stand until blastomycetic dermatitis is fully recognized as a disease. Zeisler[14] says: "The question is whether we have a right to overthrow well-defined, sharp and precise clinical pictures which we have always recognized, on account of the occasional occurrence of these organisms." All German authorities

who have expressed an opinion on the question of blastomycetic dermatitis have taken a most conservative stand.

Jadassohn[15] simply says: "Potassium iodid, which usually acts quickly in late syphilis, can influence actinomycosis, and, as has been recently stated in one case, it can exert an influence on blastomycosis, but it has no influence on tuberculosis."

In his recent text-book, Jarisch[16] says: "The proof that blastomyces are the cause of skin diseases must be left to further investigation, as well as their importance in the etiology of tumors."

Kromayer[17] is most emphatic in his statement. He says: "Buschka's case is especially characterized by the fact that cultures inoculated into the skin of the patient himself produced cutaneous ulcers like the original. In this respect this case differs from any case reported to date, not excepting the case reported by a triumvirate (Hyde, Hektoen and Bevan), which resembled tuberculosis verrucosa cutis. In this case yeast fungi were found, which were assigned as the cause of the disease. They did not produce fermentation of sugar, and they only produced slight symptoms of disease in animals. In this case, as well as in all other cases, it is advisable to place an emphatic query after blastomyces as a cause of disease. To date the Buschka case is the only case of blastomyces in the human race."

Pelagatti[18] has obtained a *pure culture of blastomyces from a case of lupus.*

Ricketts[19] has isolated three varieties of blastomyces from seven of Professor Hyde's cases.

In discussions before the Chicago Medical Society it has been stated that these eruptions contain not three, but seven, different varieties of blastomyces. I can not conceive of a disease being due to seven different varieties of a given micro-organism. There are a great many varieties of actinomycoses, some of which are saprophytic, and the same must be true of these micro-organisms.

A study of the history of the fungating syphilids shows that in the past from time to time first one disease and then another has been excluded from this classification. Kaposi has participated in this work of sorting out diseases from among these vegetating syphilids, and it is very possible that the time has now arrived when we will be able to separate one more disease, which has heretofore been concealed among these eruptions. There are several facts which might be mentioned which support this contention, but there are a good many which indicate that such is not the case. It is a matter of doubt. There is very little evidence in support of the contention that blastomyces is the cause of the disease.

Before any conclusion can be arrived at, a thorough study of blastomyces occurring in cases of surgical tuberculosis must be made.

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DISCUSSION.

DR. J. NEVINS HYDE, Chicago—I am already on record on this question and have nothing to add to what has been already set forth in print. I would like to ask Dr. Montgomery to say something about an interesting case, of which he has full records, and which we regard as the missing link between the cutaneous forms of blastomycosis and those in which there has been visceral involvement, as in the well-known record made by Busse and Buschke of their patient.

DR. F. H. MONTGOMERY, Chicago—There are two or three interesting points in regard to this particular case, which has been under observation for a number of years. There was a diagnosis of syphilis or carcinoma and tuberculosis, the case being passed upon by competent pathologists. I showed it to at least a dozen excellent pathologists in this country and Europe, and each one said it was not tuberculosis, it was not syphilis, it was not carcinoma. The nearest they could come to it was that it was syphilis and tuberculosis. The case was considered unique. I will not go into details, the primary records, which were lost, have been recovered and the slides are in our possession showing infection of the lungs with blastomyces. The clinical history pointed to systemic infection and the man died of infection resembling recurrent attacks of pneumonia. In the other cases, twenty-five or fifty of them, having a distinct clinical type of cutaneous lesion, differing as a whole from all other known dermatoses, blastomyces have been found in the tissue, in many of them a dozen or more have been discovered. From these organisms animals have been inoculated and lesions produced in internal, deep-seated organs, blastomyces recovered and again cultures produced and cutaneous lesions developed. We are not able to produce these typical lesions in man. We can not take lesions from a typical verrucous cutis and produce them on the skin. Regarding the statement of authorities previous to any knowledge of blastomycosis, these men knew tuberculosis, they know syphilis and they recognized cases that did not belong to either category; they tried to assign them to some known disease.

DR. JOSEPH ZEISLER, Chicago—Inasmuch as Dr. Anthony has honored me by expressing an opinion I gave some time ago, I feel that it is my duty to place myself on record by stating that I am rapidly coming to the opinion held by Dr. Hyde, Dr. Montgomery and others who look upon this group of cases so far observed as belonging to a distinct entity and probably due to a peculiar organism. My change of mind is largely due to clinical observations made possible by the presentation of a series of cases by Drs. Hyde and Montgomery which seem to me remarkable. As long as we could judge these cases only by pictures I had doubts, but I have recently had occasion to see the difference of observing a disease on the living subject and I am almost prepared to say that the next case of blastomycosis that comes to me I will not wait to judge from the clinical lesion. I believe all of us who can look back over an experience of twenty years in dermatology, if we could go over our cases, would find one here and there that baffled us; sometimes there was a diagnosis of vegetable syphilid, sometimes of a peculiar tuberculosis of the skin, sometimes a new formation, and so on. I think Dr. Hyde and Dr. Montgomery deserve a great deal of credit for placing the clinical picture of this disease in such shape that we shall soon be able to recognize it without the aid of the microscope. They have demonstrated in all their cases the same micro-organisms, which are not found elsewhere, and the value of their discoveries should be recognized.

DR. A. W. BRAYTON, Indianapolis—I do not recall anything more interesting in dermatologic discussions than the report of the Dermatological Association at the meeting in Washington, unless it be the frank statement of Dr. Zeisler in regard to his present attitude on this subject. Of course, on the outside we recognize that there have been two camps in Chicago regarding blastomycosis and its relations to syphilis and

tuberculosis. It has been my fortune to meet three cases, which occurred in our city, of which I have made some notes embodied in a paper I shall present to the Section. I am familiar with the opinions of gentlemen living in localities where this disease has not occurred, Drs. Bowen and White of Boston and the group of New York dermatologists, in whose practice it has not been met. I had in mind with that group Dr. Zeisler until his very frank admission this afternoon that he, like Dr. Johnson, of New York, may have entertained for a time erroneous opinions in regard to the etiology of that very definite clinical condition that goes by the name of blastomycosis of the skin, blastomycetic dermatitis—the name given by Gilchrist and which out of courtesy to his work will go down in history as the proper name for this disease. I am glad that Dr. Johnson, after having conversed with Dr. Welch, of Johns Hopkins, and gotten his views in regard to the etiologic relationship of the yeast plants that are found in the lesions, modified his conclusions, as Dr. Zeisler has done this afternoon.

I was struck with Dr. Zeisler's statement, and have included the same views in the notes I have prepared for presentation, that if he were to see in his dermatologic practice now a disease presenting certain features he would promptly regard it as blastomycosis upon the clinical presentation alone. I have only seen three cases. I saw Dr. Hessler's case, and am reminded that these yeasts differ under different cultures. The yeast in Hessler's case, Plimmer's yeast, and the yeast in the case I diagnosed on April 10, and discharged as cured just before coming here, differed. I regard it as a very simple thing to diagnose in the two cases I have met and studied clinically, and the accounts I have read of other cases coming directly under the care of gentlemen in Chicago, agree with my own; it is quite possible, I think, when you see a case in your office to conclude that it is blastomycosis. You take it in connection with the clinical progress; rule out syphilis; rule out tuberculosis; rule out cancer and you have an entirely different clinical picture. Take the last case I had, a woman of 23, who eighteen or twenty months ago had a slight abscess on the finger, which spread in spite of various treatments until it involved nearly the entire surface of the little finger and part of the ulnar surface of the right hand. The inflammation, the irregularity, the excessive pain, a boring, constant pain at night, which were present in these two cases I think of great value in the diagnosis. It is a matter of considerable interest that these cases should have developed to such a great extent in Chicago, and the dermatologic profession is fortunate, I think, in having men there who took it up with the insistenee and persistence they have shown. It is good that they were divided into two camps for study and research, bringing out the full details of these cases; such papers as Dr. Anthony's are highly stimulative. But I am surprised that so many pathologists, going over their material for a long time back, did not find the yeast plant in the tissues. I presume there are good reasons for it; most likely its absence. We have no explanation at hand for its prevalence in Chicago. There are certainly localities where yeasts are abundant.

DR. R. R. CAMPBELL, Chicago—Dr. Anthony's paper recalls a case we met with at the Policlinic about five years ago, which, with our knowledge at that time, we diagnosed as syphilis, but the microscopic findings presented something peculiar, the nature of which was never determined. The patient was placed on iodid of potassium and in three days returned with marked iodidism, claiming that he had caught cold, the eruption presenting an inflammatory reaction which the patient described as erysipelas. He was kept on the iodid for some time and in about six weeks the eruption entirely disappeared. Up to the present time no further manifestation of the eruption has been noted. That these cases, with those of actinomycosis and syphilis, disappear under the iodid is rather unfortunate as no stress in the diagnosis can be laid on the fact of their disappearing under the iodid. To my mind there is no question but some cases of syphilis very decidedly resemble blastomycosis as described by Dr. Hyde, and as shown in some cases I saw through the courtesy of Dr. Hyde at the Chicago Dermatological Association. I do not think, however, that Dr. Hyde claims, as Gilchrist says he does, that it can be clinically and positively diagnosed at the present time.

As to the disease occurring more frequently in Chicago than in other places, I do not think there is any peculiarity about that. The disease was taken up there and investigated by Drs. Hyde, Montgomery and Ricketts, and it simply shows more industry on the part of Chicagoans than others.

DR. MAXIMILIAN HERZOG, Chicago—It appears highly probable that the condition which has been called blastomycetic dermatitis is a disease *sui generis*. I do not feel competent to decide from a clinical standpoint whether this disease is to be always looked upon as a primary condition or whether it may be engrafted upon syphilis or tuberculosis. It is certain that the disease under discussion presents a characteristic histopathology. We find the following: An extensive proliferation of epithelial structures. The epithelial cells in proliferating form pegs which penetrate deeply into the derma and the subcutaneous connective tissue. We do not, however, find, as we do in carcinoma, a tendency to form well-defined alveolar nests. In the proliferated epithelial structures we find small miliary abscesses, the abscess cavity being filled with ordinary polynuclear leucocytes, eosinophilie cells and plasma cells. It is right here in these abscesses where we find the double-contoured micro-organisms which have been called blastomycetes. Drs. Hyde and Montgomery and their associates certainly ought to be complimented on the great enthusiasm with which they have taken up the subject of blastomycetic dermatitis and upon the extensive results they have obtained. I have had an opportunity to examine a number of pure cultures and micoscopic preparations derived from their cases and presented at one of the last meetings of the Chicago Pathological Society. From the statements then made by Dr. Ricketts, who did most of the microscopic work in connection with the cases of Drs. Hyde and Montgomery, and from my own observation then made on their material, it appears to me that from their cases were obtained three kinds of micro-organisms: 1. A type which does not form any spores and which therefore would have to be classed with torula or oidium. 2. A type which forms spores and which ought therefore to be classified as a true saccharomyces. 3. A micro-organism which forms a mycelium which divides dichotomously and which forms spore-bearing hyphen. The latter micro-organism approaches in type such higher moulds as aspergillus and verticillium.

I believe Dr. Montgomery is mistaken when he says that Dr. Ricketts succeeded in changing one of these forms into another by merely transplanting on different culture media. To the best of my knowledge Dr. Ricketts never succeeded, for instance, in changing a non-sporulating form into a sporulating form, or vice versa. In view of these facts it appears to me that the etiological relation between these different types of micro-organisms and blastomycetic dermatitis is not yet fully established, because it seems somewhat strange that micro-organisms so different in type should produce an absolutely identical histologic picture. The case of actinomycosis which has been cited is not fully identical with the present case because the different forms of actinomycosis do not vary as much as the different forms of micro-organisms found in the skin disease, now generally called in our country blastomycetic dermatitis, do vary. We must consider the possibility that the micro-organisms found are present only in a symbiotic relation in our disease and that the true cause of what we call blastomycetic dermatitis may be still hidden away from us. You know that yeast-like micro-organisms have been found by San Felice in sarcoma, yet we can not consider that their etiological relation to sarcoma is fully established. The same, it appears to me, is true of blastomycetic dermatitis. Yet, be this as it may, I can only repeat what I said before, that Dr. Hyde and his associates deserve all possible credit for the work which they have done in connection with the disease under discussion.

DR. F. H. MONTGOMERY, Chicago—Dr. Ricketts did not intend to make a positive statement classifying these under three different heads. He has not demonstrated to his entire satisfaction spores in any one organism. There are highly refractive buds, but none have been found distinctly in the cap-

sule. The spores have not been cultivated. The truth is that investigators are not yet ready to give us a definite classification of these organisms. Another fact along the same line is that investigators have demonstrated a number of distinct species which are pathogenic, so it is not necessary to limit the origin to one species of blastomyces. As to the posibility of it being a bone tuberculosis or bone syphilis, of course we can not say. We are accumulating evidence and are trying to present it but are not drawing absolute conclusions as yet. With a series of cases of these very severe, extensive lesions lasting from two or three to ten or twelve years, where there is no history and no other evidence of syphilis; it is certainly a strong argument against syphilis.

DR. HENRY G. ANTHONY (closing the discussion)—At the recent meeting of the American Dermatological Association I had the pleasure of listening to a paper on blastomycosis by the president of the Association, Dr. Shepherd, of Montreal. He showed lantern slides of cases of very peculiar granulomata which had passed under his observation in times past, and which he stated he would examine for blastomyces, were they to come under his observation to-day. His remarks recalled to my mind figure 216, page 733, of Taylor's work on "Venereal Diseases," edition of 1895, which is cut of a papillomatous syphilid such as we have under consideration; consequently I showed this cut to Dr. Shepherd and asked him if he would examine such a case for blastomyces; he said he would and that the fact that blastomycosis is influenced by potassium iodid convinced him that cases of this disease had been heretofore reported as cases of syphilis. I refer to this matter with the Doctor's permission.

I hope that I have not given the impression that I have not a full appreciation of the work done by Professors Hyde and Montgomery. I do not think there is anyone who appreciates any more fully the value of their work than I do. Dr. Montgomery states that he has not drawn any positive conclusion in regard to this disease; neither have I. I distinctly stated that I had not drawn a positive conclusion and that I hesitated as to whether we might look upon the disease as a distinct entity.

In regard to Dr. Hyde's remark about Dr. Bowen, I wish to say that I had no intention of quoting Dr. Bowen in regard to the relation of blastomycosis and syphilis. I thought that the way I worded it was clear. He referred to the subject in general; he meant he was not absolutely convinced that blastomyces caused the disease.

In regard to the distinct clinical type, I think I can pick out a case of blastomycosis as well as almost anyone; but at the same time I feel that the cases which can be picked out are in the minority; that there are just as many, even more cases, in which no man can say beforehand that the blastomyces are present in the given case. I have seen such cases and that is why I have not laid such stress on these distinct clinical features as others do. Furthermore, I showed a case at the meeting of the American Dermatological Association which everyone who saw the case, acknowledged did not present the characteristic appearance regarding which so much has been said.

In regard to the importance of the case Dr. Hyde referred to in his first remarks, the reason why I did not lay as much stress on that as he did, was because of the fact that the blastomyces were discovered in it, and the importance of the case was worked out and realized so long after the observation of the case that it seemed to me to throw it into doubt.

The statement made before the Chicago Medical Society, that these eruptions contain seven different varieties of blastomyces has not been published; hence, it may be disputed; but there can be no disputing Dr. Rickett's statement, that he found three different varieties of blastomyces in Dr. Hyde's cases, because he has published an account of his findings in the *Illinois Medical Journal*, reference to which I have appended to my paper. He says: "From seven cases the organisms have been cultivated. They fall into three groups: 1. The yeast-like, resembling those of Hektoen, Hessler, Busse and Curtis. 2. The oidium-like. 3. The mould-fungus type, resembling the organism isolated by Ophüls and Moffit from the protozoic (?) disease." Study shows that all these have common generic properties, and are separated only by specific characteristics which are more or less variable. In accordance with pre-existing nomenclature, they all belong to the genus oidium. "Blastomyces" is considered not sufficiently inclusive.

A CASE OF ERYTHRODERMA SQUAMOSUM.

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A group of mild affections of the skin of a transitory nature, characterized by a desquamation of the epidermis, was called pityriasis by Bateman. Biett gave a more definite meaning to pityriasis, which he considered a mild chronic inflammatory process of the most superficial layers of the derma, accompanied with continuous exfoliation of small epidermic scales. Devergie gave an interesting description of pityriasis, which he called rubra, and we can say that he established a new pathological entity. Pityriasis rubra (Devergie), however, has nothing to do with another disease of squamous nature, which was after a while described by F. and H. Hebra under the name of pityriasis rubra. F. Hebra[1] said that the name pityriasis rubra could be given to any disease of the skin which during its whole course was not accompanied by any other symptoms but a constant, intense, brownish-red discoloration, without marked infiltration, without formation of papules, fissures, vesicles or discharging, with some itching sensations, seldom localized, but usually spread over the whole surface of the body. He referred to only 14 cases to his knowledge, showing it to be a rare disease, having usually a fatal termination. The patients are extremely sensitive to cold, complaining of continuous chills. The disease progresses without any interval, the skin is deeply red and is covered with thin scales. Gradually the skin becomes thin and shiny, showing a certain degree of selerosis; the hair becomes dry and brittle, and falls off; the nails easily break, the whole process seems to be that of an inflammation of the chorion and of the epidermis, terminating in atrophy of the skin. The syndromic picture of the disease shows a very severe affection, while it is possible that cases of the same pityriasis may exist limited to some part of the body and of benignant nature. Vidal and Brocq have referred to cases of pityriasis of different degrees of intensity, from a very mild to those of a pernicious nature. In the dermatological practice the observation of eruptions consisting of red patches covered with thin epidermic scales not rarely occurs, and these eruptions are not accompanied by severe symptoms of malaise nor by deep affections of the general system. James C. White[2] referred to a case of this kind, which he called by the name of the author, Brocq's *erythrodermie pityriasique en placques disséminées.*

The name of *erythrodermies exfoliantes* was first applied to these eruptions by Besnier to characterize a group of affections the symptoms of which are a red surface (*erythros,* red) and a continuous desquamation. In his classic notes to the lessons of Kaposi this group of squamous affections of the skin is headed by the name *erythrodermies exfoliantes lentes ou chronique idiopathiques primitives.* These he divides into four varieties. One is a form of a chronic dermatitis with different ways of starting, which after a long chronic stay ends in a condition of the skin somewhat like that of the pityriasis rubra. Another type is a kind of dermatitis of a tardy and chronic course, accompanied with a leukemic condition, enlarged lymphatic glands, and also to the pre-mycotic stage, which although confused with eczematous forms, are yet neatly separated. A third

variety consists of a kind of dermatitis spread on the whole surface of the skin, red, with fine scaly epidermis, connected with latent infections, chronic suppurations, etc. The fourth variety, as sketched by Besnier, would be a kind of pityriasic condition of the skin, which remains as the result of pityriasis rubra follicularis.

It will be interesting now to refer to the history of the case, a boy, F. B., 3 years old, well developed, well nourished, with blond hair, white skin, blue iris. He is the youngest of seven children from healthy parents. The parents say that all their children have had the same affection in a milder degree between the ages of 4 and 8, relapsing in character, lasting from several weeks to several months. The little patient is already suffering for the third time from an attack of this kind, the first being when 2 years old, the second on Jan. 18, 1901, for which he was in the hospital four or five days, and the third relapse is the present, entering the Hospital on March 5. The patient has never suffered in general health; pulse and temperature have always been normal; he has never had sore throat or any other complaint. The skin of the entire body, with the exception of the palms of the hands and soles of the feet, is red and covered with scales, varying in size and appearance according to the different anatomical regions. Although the eruption is so universal, yet when the scales have been removed the red surface showed that they were made up of round patches of considerable size and by their confluence appeared the uniform redness. The redness disappeared somewhat when pressed under the finger, to return immediately. No papillary or follicular projection could be seen on the whole red surface, nor were the furrows of the epidermis altered. No subjective symptoms were present, the little patient never scratched, never complained of any pain. The redness was of a light rose-red hue, which was somewhat deeper in color when exposed to the cold air. The whole surface was covered with thin white scales of different appearance according to the different anatomical regions. On the forehead the scales were somewhat thicker and mixed with the cutaneous smegma and remained adherent with a tendency to form a whitish layer. (Fig. 1.) The hair is abundant, brown in color, in normal condition, but the scalp is covered with thick scales which, as in the forehead, have a tendency to accumulate. The neck was also covered with scales which were very thin in the anterior part and thicker and more abundant in the posterior. (Fig. 2.) The whole body was covered with scales covering red surfaces of the skin; they were much thicker and more abundant on the sides of the chest and abdomen, while the anterior surface of the neck, the sternal region, the middle of the abdomen, pubis and genito-crural regions were entirely free. (Fig. 3.) The shoulders and the back were just covered with scales, and in the same way the arms and the legs showed that they were deeply affected by the eruption. The hands had a few scales around the wrists, the phalanges were free from eruption and the palms and soles were perfectly normal. The nails did not show any alteration. The skin appeared rather rough, but taking it in folds did not show to the touch marked infiltration. Two applications of cod-liver oil on the body were sufficient in order to have all the scales detached, leaving the surface of the skin in the form of round red spots disseminated over the body. In these spots no papules or no follicular projections could be found, showing that the affection consist of a superficial process of the superficial layers of the derma and of the epidermis. That the disease is not the result of a permanent alteration of the general system is shown by the short period of the attacks, and by the easy yielding of the same to treatment. Furthermore, at the beginning and during the attack no fever, no itching, no stomach or bowel complaint ever caused any sufferings of the patient. The urine has been found constantly of a normal acid reaction and specific gravity, and normal in qualitative contents. The blood examination was made with the following result: red corpuscles, 5,400,000; white corpuscles, 8400; small lymphocytes, 23 per cent.; large lymphocytes, 2.1 per cent.; polynuclear, 73 per cent.; eosinophile, 1.4 per cent, showing that the blood is in normal condition. In different bullous affections we have found the eosinophile bodies increased to 19 per cent., and in one case of dermatitis herpetiformis (Duhring) at the time of an attack the eosinophiles reached 43 per cent.

The bowels were perfectly normal, the boy enjoyed a good appetite and perfect digestion. He never complained of any discomfort, was of a rather quiet and peaceful disposition. He slept soundly, never woke up at night, showing the mildness of the affection, which had not much influence on the general system.

This peculiar affection, which had already relapsed three times in the little patient, had nothing to do with any of the common diseases of the skin. It was not an eczema, nor an eczema seborrhoicum, it was not psoriasis nor a pityriasis rosea. Although somewhat like ichthyosis, yet it had nothing to do with that disease, which is a permanent skin affection. The erythema scarlatiniforme was soon eliminated, knowing that it is a disease with a cyclic evolution, accompanied with



Figure 1.

fever and inflammatory symptoms of the skin and mucous membranes. There remained for my case only one nosological place, which is between pityriasis simplex and pityriasis rubra (Devergie), a disease which has for its principal symptoms redness of the skin and exfoliation of the epidermis, a disease mild and relapsing in character, causing no general reaction and no subjective symptoms. It is therefore an affection which finds its place among the *erythrodermies exfoliantes lentes ou chroniques idiopathiques primitives*, as established by Besnier, with some affinity to the affection called by Brocq,[3] and accepted by James C. White as *erythrodermies pityriasique en plaques disséminées*. I said some affinity with the case of Brocq, for the reason that he described the disease as made up of spots varying in size from 2 to 6 centimeters, while in my case the

spots were larger and more confluent so as to form an equal surface. The age of the patient must surely have had a great influence upon the appearance of the disease, when we think that the patient of Brocq was a woman of 45, the patient of White a man of 38, and my patient a child of only 3 years, and it was only the third time the affection has made its appearance.

Pathology.—A piece of skin was removed from the deltoid region, and was treated in formalin 2 per cent., hardened in alcohol and the sections stained with hematoxilin (van Gieson), and polychrome methylene-blue by my assistant, Dr. M. L. Heidingsfeld.

In the specimens as it appears from the accompanying illustrations, Figs. 3 and 4, the horny layer is thicker and ragged with epidermic shreds, but the stratum spinosum and granulosum have a normal appearance. The stratum lucidum is fairly preserved, while it was lacking in the case of White. Although microscopically no papules and no alterations of the furrows of the skin



Figure 2.

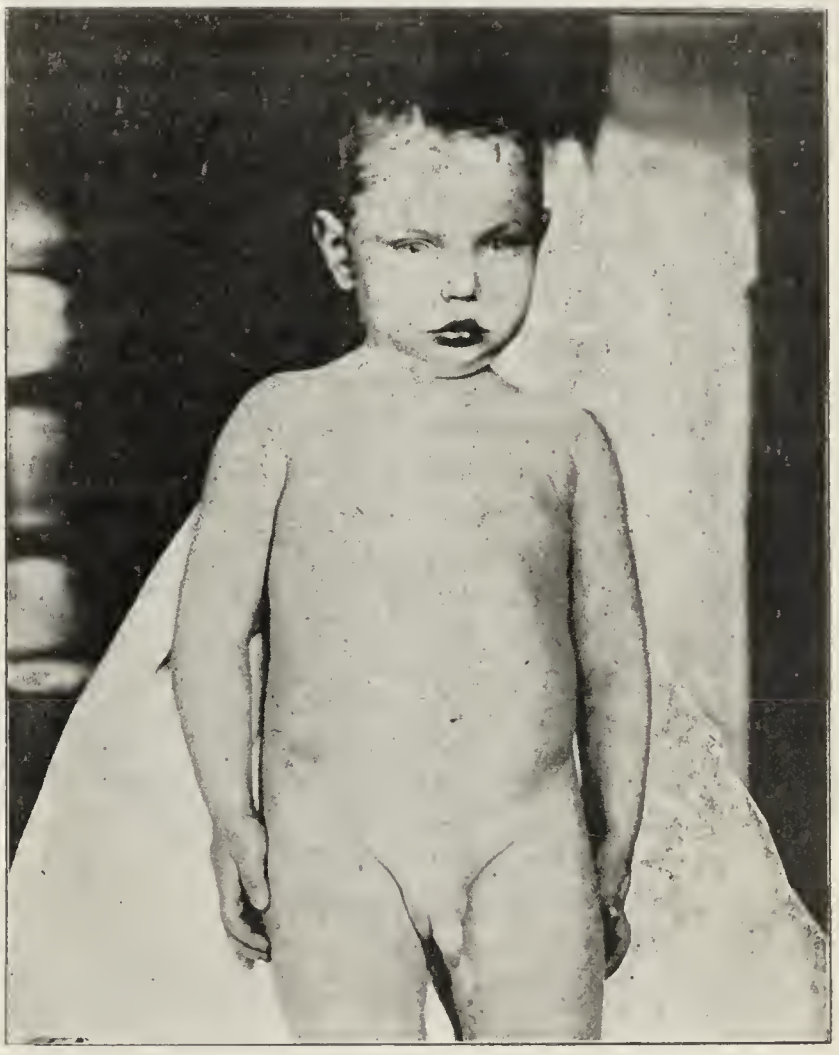


Figure 3.

were present, yet in some places the papillæ are somewhat enlarged, forming a kind of flat papillary elevation consisting of four or six papillæ. The blood vessels are greatly enlarged and can be seen in the papillæ and in the chorium. An infiltration of small cells is especially remarkable in the connective tissues of the papillæ and in the subpapillary layer. These infiltrating cells are found always more abundant around the blood vessels, which show a great increase in their perithelium. The glands and the hair follicles are enlarged and their epithelium is somewhat increased.

The entire pathological feature of the erythroderma consists in the enlargement of the blood vessels and in a perivascular cellular infiltration, which produces alteration of the nutrition at the epidermis and as a result the hardening and the exfoliation of the horny layer. These are signs of a well-marked inflammatory process revealed by the increase of the cells of the connective tissue of the papillary layer and around the blood vessels of the subpapillary layer. These cells are different from those which are found in the subepithelial layer in cases of lichen.

In erythroderma the patches of the skin are red, rough and scaly. Unna[4] points out two important characters which differentiate erythroderma from pityriasis rubra (Hebra) and pityriasis rubra seborrhoica, which consist in a mild cellular infiltration of the papillary layer and the marked adherence of the epidermic scales. Pityriasis rubra pilaris and ichthyosis are to be referred to hyperkeratoses, while erythroderma is only a parakeratosis spread to large surfaces of the body. In pityriasis rubra pilaris the enlargement of the pores of the skin is pronounced in form of papules of different size and elevation, while in erythroderma no apparent papules are to be seen nor enlargement of the furrows, but only a red flat surface covered with brown-like scaliness.

I do not find that our case has much similarity to the erythrodermie in the sense of v. Düring,[5] who describes it as presenting a general diffused redness and infiltration of the skin, which is developed in lichen neuroticus from the follicular papules and from interfollicular erythema, which disappears leaving a deep browning pigmentation. In our case no apparent papules nor enlargement of the pores can be seen, but pathologically we have found an increase of the papillæ with enlargement of the blood vessels and accompanying infiltration of small round cells in the papillary and subpapillary layer and a desquamation of the horny layer.

Differential Diagnosis.—Indeed, a physician who has not much practice with squamous affections of the skin, finding himself in the presence of a case like this subject of our study, where the surface of the body is all red and covered with scales, would find some difficulty in establishing a nosological place for the disease. As

stated above, this affection has no relation to the pityriasis rubra of Hebra, which from the beginning to the end is revealed by an intense redness of the skin with a thin desquamation of the epidermis. The redness is universal, the disease progresses constantly without intermission. The skin gets thinner, brilliant and retracted, ending in a sclerotic atrophy. In erythroderma the redness which appears equally diffused, consists of groups of eruption in red round patches, which have appeared clearly after removing the scales by means of annointing the skin with cod-liver oil. This clinical characteristic is perfectly in accordance with the pathological alterations where we have found places where groups of papillæ were somewhat enlarged and somewhat above the level of the others, as shown by our illustrations.

The difference between the two affections is therefore neatly marked by clinical and pathological characters. Erythema scarlatiniform, so well described by Besnier, and pointed out first by Ferreol under the name of desquamation scarlatiniforme recidivante, is an acute affection, accompanied with fever, general malaise, sore throat, with an eruption of red patches, itching and burning, which after four or five days begins to desquamate. This nosological type is entirely different from our erythroderma squamosum, where the scaliness on a red surface forms the principal characteristic of the disease, where no acute invasion, no subjective symptoms, no fever have ever appeared.

Etiology.—The pathogenic causes of the erythroderma in general are extremely obscure and difficult to be established. In our case we can not find any apparent cause which externally may affect the skin directly, but we must rather admit a cause probably of a toxic origin formed in the system, which affecting the center of the vasomotor nerves is capable of producing hyperemia of the chorium with exudation and consequent alteration of the nutrition of the epidermis as revealed by the scaliness. From the statement of the parents that their other children between the ages of 4 and 8 years have suffered attacks somewhat similar to those affecting our little patient, we could infer that there must be some autotoxic condition in the whole family of an hereditary nature which is capable of producing those attacks. All that we can say is to resort to the explanation so well given by Tommasoli of the autochthonous poisonings which are formed within the system. In fact, an alteration of the physio-chemical condition of the fluids of the organism may easily happen. Ptomains are easily formed on account of retained toxic elements, which in some cases may favor the multiplication of microbes, and in other cases may produce disturbances of nervous and vasomotor nature, which make their appearance on the skin.

Treatment.—In regard to the treatment, the affection has easily yielded to our method, which has consisted in removing the scales by annointing the whole body with cod-liver oil and then wrapping the patient in a coarse woolen blanket. After two days the skin was perfectly free from the presence of the scales. Then an application of vaselin with resorcin and salicylic acid according to the following formula, has brought the skin to a normal condition.

℞. Resorcin 3ss 2
Acid. salicyl ..... gr. x
Vaselin fl. ..... ʒi 32 | 65



Figure 4.



Figure 5.

Internally we have given a solution of potassium arsenitis (Fowler), from three to six drops three times a day.

From the results of the treatment it is clear that the affection is of a benignant nature, which does not produce severe symptoms, but it has the tendency to relapse, showing that the cause producing the affection has its seat in the system from autotoxic origin.

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The Physician at Watering Places.—At the recent German Congress of Balneology, Liebreich observed that it is the physician, more than the chemical factors, that make the success of a mineral spring resort. He ascribed to this fact the fine results attained in the German watering-places, which lead the world, he asserted.

Clinical Report.

HIP-JOINT AMPUTATION BY MEANS OF THE WYETH PINS.

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The issue of May 19, 1901, of THE JOURNAL contains an interesting article by Professor Wyeth on "Bloodless Amputations at the Hip-Joint." The writer having had recently a case desires to report it as follows: C. H., aged 8, residing at Corning, Ohio, fell from a tree, a distance of 20 feet, sustaining a compound fracture of the upper third of the left femur. Oct. 27, 1900, three weeks after the accident, he was brought to St. Anthony's Hospital in a septic condition. Pulse was 140; temperature 104. The limb was much swollen and filled with pus. An incision was made on the outer aspect of the thigh and considerable pus liberated. The muscular structure was found to be disorganized, the bone comminuted, and the medullary canal filled with purulent matter. The bone was devoid of periosteum for more than five inches, and no evidence of bony union found.

His condition demanded immediate operation and it was decided to amputate at the hip-joint by the Wyeth method. After thorough preparation, the patient was brought to the operating-room the following morning and chloroform administered. Fifteen minutes previous to the giving of the anesthetic, morphia one-fourth grain and atropia one one-hundredth grain, were hypodermically injected. The limb was deprived of as much blood as possible by elevation, no bandage being used for fear of driving septic material into the circulation. Two long mattress pins were then introduced, and Esmarch's tourniquet applied. No trouble was experienced during the operation until disarticulation was commenced. Owing to the shortness of the shaft of the femur rotation was exceedingly difficult.

After the ligation of the vessels the tourniquet was removed and but little oozing occurred. This was effectually controlled by hot moist compresses. A drain was placed at the acetabulum and brought out at the most dependent part of the stump. Muscle was coaptated to muscle, and the skin flaps approximated by catgut. Retention sutures of silkworm gut were also inserted. But little shock ensued and convalescence was rapid.

Another case in which the writer made use of the mattress pin was one of amputation at the shoulder joint. Miss S., aged 18, residing at Delaware, Ohio, was brought to St. Anthony's Hospital, April 29, 1897, suffering from gangrene of the left hand and forearm. Two weeks previous to her admission to the hospital the parts were caught in a steam-laundry roller and badly mangled.

Disarticulation at the shoulder-joint was performed April 30, the pins being used with complete satisfaction. No blood was lost until the last stage of the operation was reached. The principal vessels having been ligated, the tourniquet was removed and the flaps partly brought together, when suddenly a most violent capillary hemorrhage occurred.

Much difficulty was encountered in arresting this, but by means of continuous pressure it was finally controlled. Notwithstanding the great loss of blood, the patient evinced no shock and convaleseed nicely. It was afterwards learned that she was one of the so-called bleeders.

New Instrument.

SPRAYING AND INSUFFLATING THE ACCESSORY NASAL CAVITIES.

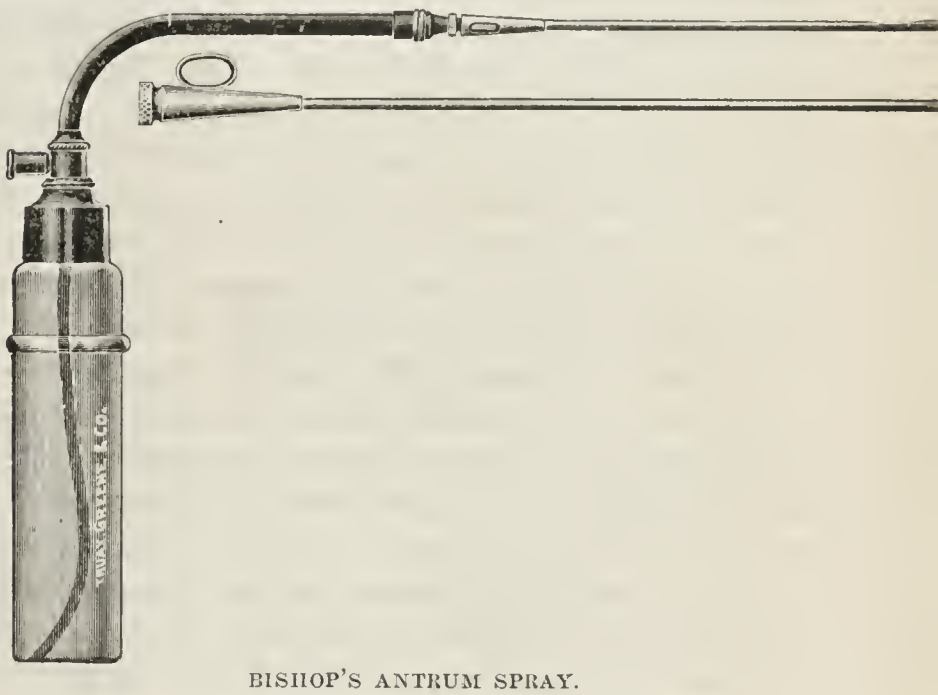
S. S. BISHOP M.D.
CHICAGO.

In suppuration of the cavities connecting with the nose the question of effectively cleansing and medicating them is a serious one. The ordinary nasal douche and sprays are inefficient. It is necessary that generous quantities of detergent solutions shall not only reach the affected parts, but that they shall flow over them with sufficient force to dislodge and carry away the offensive discharges.

The writer has devised a combination of canula and spray tips, shown in the accompanying illustration, which render satisfactory service. They are an adaptation of the Davidson atomizer fitted with spray tips having very large openings, and the outer tip being turned to fit closely into the conical opening of a special canula. The latter is made of silver, and is practically a modification of the Eustachian catheter. Instead of having the beak curved on the arc of a large circle, like that of the catheter, it is bent on the arc of a very small circle, so as to allow of its introduction into a narrow space.

This arrangement of the beak is required for the purpose of introducing it into the maxillary antrum, either through the ostium maxillare, or through an artificial perforation, for instance the opening made by way of the socket of a tooth.

The outer spray tip is so nicely adjusted to the conical mouth of the canula that there is no leaking at their junction, although the first ones made were defective in this respect; but a small piece of rubber tubing fitted over the outer spray tip, to join it with the canula, prevents the leaking.



BISHOP'S ANTRUM SPRAY.

When fluids are thrown through the canula they escape from its beak in the form of a very profuse spray, which approaches the character of a stream in effect. It is so copious, in fact, that it deluges the cavity into which it is projected, and with an air-pressure of only eight pounds the full bottle of the detergent solution is emptied within a minute. The same tips, used without the canula, are valuable for flushing the nasal fossæ.

By means of this antrum spray, some cases of suppuration of the antrum of Highmore can be cured without making an artificial opening, but the apparatus is just as effective for washing out the antrum after an operation. By rotating the beak of the canula, introduced through the artificial opening, the walls of the cavity can be thoroughly cleansed and medicated, as I have demonstrated many times.

If the canula is to be used in the ostium maxillare, the opening of the antrum is first located, the canula is introduced, and the latter is then marked at the point corresponding to the tip of the nose. This mark, in any given case, facilitates the introduction of the canula afterwards.

The same apparatus is useful in treating suppurative inflammation of the ethmoid cells, the beak of the canula being directed upwards so as to throw the coarse spray into the cells. Some patients with disease of the frontal sinuses have claimed that they could feel the spray from the canula enter the sinuses. I have not felt certain, however, that they were not mistaken.

After cleansing the suppurating surfaces, various powders, such as boric acid, aristol and nosophen, are blown through the canula to the diseased parts. When used as an attachment to the powder-blower the canula must be dry, hence it is advisable to have more than one for use in the combined wet and dry treatments.

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HOSPITAL MANAGEMENT.

It seems that in England a disagreement between the managers and the medical staff at the National Hospital for the Paralyzed and Epileptic[1] has resulted in a free, general discussion of the question of hospital management, with particular reference to the relations between the lay managers and the medical staff. The *Practitioner* devotes its number for June to a "symposium" on the subject, the opinions of a considerable number of representative persons interested in hospitals in one capacity or another having been secured. The vital question is whether hospitals should be wholly under lay management or whether the medical staff should not also have a voice in the government. Mr. Burford-Rawlings[2] set up the claim that the medical element should be entirely excluded from any part in hospital government. The reasons advanced by the gentleman in support of this view can not be considered as reflecting much credit upon his conception of the true mission of the hospital and the relations of medical men to its work. At all events, his contentions would not find many supporters among interested persons conversant with hospital matters in general in this country. The symposium in the *Practitioner* may be summarized as an absolute and sweeping condemnation of the Burford-Rawlings theory of hospital management. Among others, Prof. Clifford Allbutt takes a decided stand against the so-called "lay supremacy" in hospitals, and comments upon the condescending attitude seen in some managers toward the physicians, an attitude which we in this country observe more particularly in the politician, who for a brief period finds himself "interested" in the management of the county or city hospital. The opinions collected by the *Practitioner* are strongly in favor of adequate medical representation on the governing bodies of hospitals. It is quite evident that the highest degree of success, in the broadest sense, will be attained in hospital work only when the fullest sympathy and harmony obtain between the managers of the financial and other matters and the men entrusted with the actual care of the patients. The exact manner in which this sympathy is attained does not matter so much, provided there is opportunity for it to grow and develop. A hospital in which there is lack of real co-operation between the managers and the medical staff is like a house divided against itself. There are so many elements essential to success in hospital work of which the lay managers can have no idea, that they should be happy to turn over certain things entirely to the medical men, and there are other questions of diverse kinds which the medical man is not so well fitted to handle as the man of affairs. The influence of medical men is especially needed in order to overcome the idea, often prevalent among laymen, that admirable buildings, well-prepared food, smart nurses, and the requisite number of patients constitute the essentials for a successful hospital. These things are well enough; but the one thing needful to bring out of them the greatest service is encouragement of the scientific spirit in the medical staff.

1. See our "London Letter."
2. Nineteenth Century, April.

NERVOUS TACHYPNEA.

The act of respiration may be modified by a variety of influences; thus, it is lessened in frequency by opium and its derivatives, rendered irregular by uremic poisoning, and increased in frequency by all states attended with deficient hematosis. The last-named condition is known as dyspnea. When the demands on the respiratory function are lessened by reason of an over-supply of oxygen, apnea results. Mere increased frequency of respiration, occurring in paroxysms, or constantly with paroxysmal exacerbations, but unassociated with organic disease, is known as tachypnea, and it is not an uncommon manifestation of neurotic disorders, particularly hysteria and neurasthenia. An analysis of forty cases of this character, observed among a total of 1155 cases of various neuroses, has been made by Dr. Reckzeh.[1]

The term tachypnea was restricted to cases in which the respiratory frequency was forty or more in the minute, and all cases were excluded in which the condition was not purely neurotic and functional, but dependent on organic disease. Fourteen of the cases occurred in males, and 26 in females. In the former, the accompanying nervous disorder was either neurasthenia or traumatic neurosis; in the latter, hysteria, with the exception of 2 cases of exophthalmic goiter and 2 of profound neurosis. The men were from 18 to 44 years of age—with an average of 26.54; the women, from 15 to 52—with an average of 23.12.

With regard to etiology, heredity was found to play an important part, seven cases exhibiting hereditary predisposition, sometimes direct, at other times indirect. In other cases, the resistance of the nervous system had been lowered by somatic or psychic influences, such as alcoholism, traumatism with concussion, mental depression, anger, fright, functional disorders of the heart, gastro-intestinal disorders, diseases of the sexual organs, sexual excesses and abuses.

Respiration was moderately accelerated and superficial continually in 19 cases, with slight paroxysmal tachypnea in 11 of these, and severe in 8. In 5 other cases there was marked tachypnea continually, with

1. Berl. Klin. Wochenschrift, 1901, Nos. 17, 18 and 19.

paroxysmal exacerbations; and in 16 there occurred attacks of tachypnea, mild in 8, and severe in 8, the breathing at other times being normal. The respiratory rhythm was unaffected in so far as expiration followed inspiration without a pause, although the relation of the first to the second was as 1 to 1, instead of 7 to 6. The onset of the attacks of tachypnea was always sudden, while their subsidence was more or less gradual. The type of respiration was generally costal; the vital capacity of the lungs was usually low.

No satisfactory explanation has been given for the occurrence of the attacks of tachypnea. It is thought, however, that the condition may be dependent on irritation of the vagus, resulting from psychic or other central or peripheral influences. This takes place in health, but under the circumstances in question it is more readily brought about.

The diagnosis of nervous tachypnea depends upon the exclusion of disease of organic character capable of causing increased frequency of respiration, and the presence of other neurasthenic or hysteric symptoms. The prognosis of the condition itself is good, although influenced by that of the underlying disorder.

The treatment is in part symptomatic, with such remedies as morphin, bromids, sulphonal, antipyretics, cardiants, and ice; and partly causal, directed to the relief of the neurasthenia or hysteria, with valerian, hydrotherapy, electricity, etc.

YELLOW FEVER AND MOSQUITOES.

For that final proof by experimentation of the cause of disease and its *modus operandi,* or for the collection of irrefutable evidence of pathogenesis, extensive use of animals has been necessary. The environment and other conditions upon which the proof depends of questions subjected to investigation may be absolutely controlled in this manner and accuracy of detail obtained to such a degree that the accumulated data assume the exactness of a mathematical proposition. Nevertheless, for some diseases and for certain problems the difficulties have precluded the use of animals and public sentiment has prevented the employment of human beings; this has been especially true of researches upon some of the infectious diseases.

Reed and Carroll, and the corps of assistants under them, in their investigations of yellow fever, have boldly waived all precedents of this character and have made use of human beings in experimentation with a success, in some respects, hitherto unparalleled. Without entering into the humanitarian phase of this procedure, except to note that in all instances the individuals experimented upon were "fully informed as to the nature of the experiment and its probable results," it is of interest to learn that the importance of the conclusions accruing from such courageous researches are in thorough accord with the novelty of the methods employed. The experiments in which human beings have been utilized and controlled in manners fully as precise as those of any animal experiments, have had as their product up to the present time, two conclusions; the rejection of the bacillus icteroides of Sanarelli as the cause of yellow fever, and proof of a connection between this disease and mosquito bites.

In an interesting summary of the work of this board,[1] Surgeon-General Sternberg reviews the familiar facts pertaining to the geographic and climatic prevalence of yellow fever with regard to its transmission by mosquitoes.

The failure of the experiments of Carlos Finlay, who first suggested this transmission, have been found to depend upon the length of time necessary for the "germ of yellow fever to develop in the bodies of the mosquitoes after they have bitten individuals afflicted with the disease. From this fact the thought at once intrudes that the parasite of yellow fever may be of a protozoan nature and allied to the organisms of malaria. In May of this year, Dr. Reed reported that yellow fever had been successfully conveyed to twelve human beings by mosquito bites. Some support to the mosquito transmission has been furnished by the inability to transmit the disease by experiments with clothing and bedding contaminated with vomites, excreta, etc., of the fever stricken; this has had as its corollary, that fumigation for prophylaxis is only of value as an insecticidal measure, and instructions to this end have been incorporated in a circular issued by the Chief Surgeon and Commanding General of the Department of Cuba, upon the approval of Surgeon-General Sternberg. It might be as well to direct investigation to the discovery of curative or abortive methods of treatment, as to the detection of the specific organism, for in some infectious diseases such treatment has long been highly useful, notwithstanding ignorance of the germs, e. g., hydrophobia and smallpox; moreover, the organism of yellow fever may, as hinted by Sternberg, be ultra-microscopic; it should be remembered[2] that Nocard and Roux, in their work upon pleuro-pneumonia of cattle, found an organism that was barely visible with a magnification of 2000 diameters. Finally, it is to be hoped, that by the use of collodion capsules, or some other equally ingenious technic, animals may be made susceptible to inoculation experiments and the use of human beings relinquished.

THE IDENTITY OF VACCINIA, COWPOX AND SMALLPOX.

It was the belief of Jenner that vaccinia, cowpox, and smallpox were expressions of the same disease; but this view has been warmly contested, and one of the early objections against the utility of vaccination consisted in the argument that one could not hope to confer protection from one disease by inoculation of another. This

1. Yellow Fever and Mosquitoes. The Popular Science Monthly, 1901, July.
2. JOURNAL A. M. A., xxxiii, p. 1117.

contention seemed supported by the difficulty encountered in transmitting smallpox from man to cow. Nevertheless, this has been accomplished in a number of instances. The inference seems justified, therefore, that by reason of certain biologic peculiarities, the cow is capable either of resisting entirely infection with the virus of smallpox, or of so modifying the latter that an attenuated form of the disease develops; and it may be concluded that the disease appeared the earlier in man, and from him was conveyed to the cow. The comparatively mild character of the disease when human beings were inoculated with smallpox for protective purposes seems not entirely without significance in this connection.

Believing it not improbable that much of the cowpox in the prevaccination period was derived from the inoculated form of smallpox, rather than the ordinary variety, Dr. S. Monckton Copeman,[1] one of the ablest and most ardent of contemporaneous investigators in the subject, undertook to obtain for purposes of experiment virus from Nubia and certain parts of India where inoculation of smallpox is still practiced; but without success. However, he found that the monkey is susceptible to smallpox, the various phases of which in this animal closely resemble those observed in man; and accordingly he inoculated some monkeys, and from them successfully conveyed the infection to calves, with the development of lesions indistinguishable from those of typical vaccinia, although calves could not be infected with virus directly from human beings. Further, he was able to vaccinate successfully children with lymph from the inoculated calves, without any generalization of the eruption or the development of any bad symptoms. It would thus appear that it is necessary for some change to take place, either in the virus of smallpox or in the condition of the calf before inoculation of the latter by the former can be effected. The observation, further, lends support to the view that smallpox, cowpox, and vaccinia represent varying grades of intensity of the same infective process.

VITALITY AND CHEMISM.

In the issue of *Science*, June 15, the late Dr. Joseph Le Conte notices the fact that seeds exposed to intense cold (—180 to —250 F.) do not lose their power of germinating, and suggests that as chemical action is arrested at such temperature, life may be a form of energy akin to chemism. He, therefore, attributes life to a particular molecular arrangement, the extreme cold acting by temporarily changing this molecular constitution. This may do for a hypothesis, but it will require some at present apparently impossible research for its verification. His admission that life is a form of energy seems hardly warrantable with our present knowledge; it certainly does not come under any law of the correlation of forces; it is not convertible into any other form of energy. Le Conte says: "The essential nature of life, as of all energy, is activity; but there is a necessary underlying condition, i. e., a peculiar molecular constitution, which may be called potential life." It seems much more natural and reasonable to recognize in vitality a still more ultimate agency than chemism, which seems itself to act under the guidance of this vital principle, as it may more properly be designated, rather than a force or form of energy, and to admit its as yet mysterious and unexplainable nature. To claim that, because chemism also survives extreme exposure to cold, life must itself be an analogous force, appears to us a begging of the question. The possibilities of the vitalized cell do not appear to us explicable by any known law of physics or chemistry as yet discovered.

1. British Medical Journal, May 11, 1901, p. 1134.

A PROOFREADER'S BLUNDER.

Josh Billings said that the difference between a blunder and a mistake is that, when one takes another's umbrella and finds that it a better one than his own, "that's a mistake," but when the umbrella is poorer, "then it's a blunder." Probably the other fellow would not agree with him. Whether to call the error in proofreading which occurred in this journal last week a blunder or a mistake we are not decided. As there was no harm done by it and as it probably caused a good many smiles, we are inclined to call it a blunder. The title of the leading article as it appeared in the table of contents read: "Poverty and Pregnancy, their Cause, Prevention and Cure," and as the author, whose name followed, is one of the oldest, best known and most respected members of the profession, there was probably a good deal of curiosity manifested on the part of some to know what ultra-Malthusian ideas would be found in the article. While "poverty and pregnancy" are quite likely to be found together, the two could hardly be considered together in regard to their cause, prevention and cure. As a rule typographical errors are explainable, but it is hard to explain how the word "pregnancy" could be mistaken for "degeneracy"; we shall not try, but simply call it one of the blunders of the Fourth of July. As misery loves company, there is a certain amount of pleasure in reading in the current number of our staid and respected contemporary, the London *Lancet,* an apology for using the words "a sour correspondent," which it insists should have been "as our correspondent."

THE COMMITMENT OF THE INSANE.

The newspapers have recently devoted some of their news and editorial space to a case in which an alleged lunatic was liberated by an Indiana court decision as not insane, and have dilated upon the occurrence as a proof that under existing laws sane persons are liable to be committed to the "living death" of asylum existence. There is nothing that more quickly stirs up the public than such a charge, and there has been an evident tendency to make the most of it. Without regard to the merits of the particular case or to the peculiarities of Indiana laws, it may safely be said that the danger of sane persons being long confined in public asylums is a minimal one. It seems to us also that the presumption is all in favor of the insanity of a person detained in an asylum under presumably competent and honest medical officers, however the courts may decide. Dangerous lunatics have been released by judges and juries

as not insane and the same individuals have been recommitted by judicial procedure almost immediately as a measure of public safety. In other cases suicides, murders and other dangerous acts have quickly followed their release. In fact there is nothing less infallible than judicial decisions as regards insanity, that is, as regards its existence or non-existence in individual cases. In states where a judicial proceeding is required for commitment it is possible for perfectly sane persons to be found insane, and vice versa. The predilections, however, of courts and juries rarely permit the first error, while the latter one is probably frequent enough. There is a very serious possible danger of the enlargement of unsuitable cases in any popular agitation in regard to the supposed confinement of sane persons, and judges and juries should realize their responsibility and make sure by fully competent testimony as to the fitness for absolute liberty of anyone they order released.

TYPHOID FEVER AND DIPHTHERIA.

As pointed out by Manges,[1] the development of diphtheria in the course of typhoid fever is probably often overlooked, principally on account of the stupid condition of the patient and because the physician does not often feel called upon to make thorough examinations of the throats of his typhoid fever patients. The older literature on typhoid fever contains frequent reference to pharyngeal and laryngeal complications of a diphtheric character, at least in the anatomical sense. While so thorough a writer as Curschmann, in 1898, practically denied the occurrence of true diphtheria in typhoid fever, several instances of this kind have been recorded both before as well as after Curschmann's expression of his views, more particularly by American writers, the diagnosis being fully verified by bacteriologic and cultural tests. Manges reviews these cases, adding six of his own in which the diagnosis of diphtheria was corroborated by cultural methods. Curschmann's statement is consequently incorrect. It is of importance that the possibility of true diphtheria developing in the course of typhoid be generally recognized, both for prophylactic and therapeutic reasons. Diphtheria antitoxin is borne as well by typhoid fever as by other patients, and it should be promptly administered, when necessary, in typhoid fever, so as to remove as thoroughly as possible the added danger of diphtheria, which does not seem to have any special influence one way or the other upon the clinical course of the typhoid fever itself. In many of the cases of mixed infection, especially the earlier ones, death resulted; in some instances the existence of diphtheria was not recognized until at the postmortem.

THE ETIOLOGY OF NOMA.

The etiology of noma has been made the subject of frequent inquiry in recent years, but the results have been otherwise than uniform. This is probably unavoidable on account of the large numbers of various kinds of organisms necessarily freely present in areas so exposed as those usually attacked by noma. It is true, however, that in several instances of noma competent investigators have demonstrated the presence of diphtheria bacilli. Beginning with Bishop and Ryan, in 1895, who described a pseudodiphtheria bacillus, or a true diphtheria bacillus of greatly reduced virulence, Freymuth and Petruschky, in 1898, found diphtheria bacilli associated with two cases of noma, one of the genitalia and one of the alveolar process. Both of these cases were cured by the use of diphtheria antitoxin. And now comes Walsh[1] with a report of eight cases of noma, in all of which he found B. diphtheriæ, as determined by the usual tests now in vogue. Most of these cases had measles, the disease which most frequently is succeeded by noma. Walsh points out that diphtheria is often seen with and after measles. In the St. Vincent's Hospital, from which his cases are taken, diphtheria and noma are also not infrequently associated. Walsh concludes that true diphtheria bacilli are found in many cases of noma, and that as noma is a form of gangrene it is not unreasonable that the diphtheria bacillus is the primary cause, at least in some cases, the putrefactive softening resulting from the growth of saprophytes. He thinks that when other pathogenic microbes, capable of causing necrosis, are found, then it may be that they are the primary excitants. A larger number of cases must be studied before the unity or multiplicity of the etiologic factor in noma may be definitely settled. The views of Walsh seem to harmonize well with the results of the bacteriologic observations so far, and if we grant that the bacillus of diphtheria is the cause of at least some cases of this destructive disease it at once follows that diphtheria antitoxin should be freely used in all cases of this kind, with a view to arresting the necrosis at as early a stage as possible in those instances started by the diphtheria bacillus.

THE MODE OF INFECTION IN ANCHYLOSTOMIASIS.

Anchylostomiasis is caused by a parasitic worm, the uncinaria duodenalis or anchylostomum duodenale, which inhabits the upper part of the intestine and produces, by removal of blood and possibly by intoxication, an anemic disease of extraordinary frequency in some parts of the world, especially Egypt, Italy, India, and also elsewhere. This disease is known also as Egyptian chlorosis, brickmaker's anemia, mountain anemia, miner's cachexia, etc. In the United States we are apparently free from the infection; at all events no observations have been made upon the disease in this country, except possibly in some of the southern states. The diagnosis is made by finding the eggs in the stools of persons with chronic anemia and wasting as well as more or less well-marked intestinal disorders. The mode of infection is supposed to occur through the drinking water, because the larvæ develop in moist earth, whence they may readily enter the sources of water-supply. In Egypt the disease is very common in those that work in damp soil, and, as indicated by the synonyms mentioned a moment ago, workers in the earth seem subject to the infection. Recently, Looss, of Cairo, has suggested another mode of entrance, namely through the skin. He found that when suspensions of larvæ are allowed to dry upon the skin there

1. American Medicine, June 1, 1901.

1. Proceedings Phil. Pathological Society, 1901, iv, 179-186.

quickly results an area of redness and burning. The intestinal infection developed in his own case under circumstances that, he states, absolutely exclude entrance by the mouth, and while he was working with the larvæ. The fact that the larvæ sink to the bottom in reservoirs of water does not seem to him to favor the mode of entrance ordinarily accepted. Looss placed a drop of larval suspension upon the skin of an extremity an hour before amputation and carefully examined the area afterward. It was found that the larvæ penetrate freely into the hair follicles; this accounts satisfactorily for their rapid disappearance from the surface of the skin. He promises future reports on further work on this interesting observation. If found to be true, this ability of the larvæ to enter the skin will account for the infection perhaps even more satisfactorily than the explanation heretofore offered; especially in the case of laborers who stand for hours in soft mud. But the course of the larvæ toward the jejunum and the reasons that determine their wandering and their localization here offer many interesting problems for research. Perhaps a similar explanation is applicable to other parasitic invasions not now fully understood.

THE PERSISTENCY OF PLAGUE.

An editorial in the *Journal of Tropical Medicine*[1] summarizes the present status of the plague in terms that are not altogether encouraging. Hong Kong is now passing through the seventh recrudescence, one that promises to be the worst yet experienced. Modern sanitation seems there to have met its match. In spite of specially favorable conditions this British outpost appears to be as vulnerable as any of the adjacent insanitary Chinese towns and villages. "From what is known of plague," the editorial states, "we must expect when once a town is infected, that recurrences are not only possible but that they will continue with an inveterate persistency, rendering the future, from a public health and commercial point of view, gloomy in the extreme." The plague in Capetown is also instanced as affording unpleasant facts. We have come to believe that Asiatics were especially susceptible to the disease and that the white race, with its better modes of living and more sanitary habits, would be almost immune. In Capetown, however, the whites suffer fully as much as the colored races, and it is the Chinese there who are comparatively least affected, and next to them the Malays. Habits no more than race appear there to govern the spread of the infection, and sanitation has thus far done little effective work in checking it. From these and like facts it seems there is little ground for any complacent sitting down and waiting, with the belief that any section is safe. We evidently do not know yet all the resources and methods of the destroyer, and any false sense of security where the pest has apparently disappeared may have most disastrous consequences. It has reappeared in Honolulu notwithstanding the very energetic measures taken against it, and may do so elsewhere where the measures have not only not been so thorough, but have been embarrassed by an ostrich policy of suppression of facts. These are possibilities to be seriously considered, and only eternal vigilance can be regarded in any exposed section as the least price of security.

1. June 15.

AN ENCOURAGING OUTLOOK IN MEDICAL LEGISLATION.

Medical practice acts are gradually "going through the mills" of the supreme courts, and are generally coming out all right. One of the most recent decisions is that of the Ohio supreme court refusing a mandamus to compel the State Board of Medical Registration to recognize the diplomas of the Hygiea Medical College, of Cincinnati. The court rejected the plea that the grant of the power to determine what medical colleges were in good standing was unconstitutional, since that point had already been decided by another decision. If it were void on this ground, moreover, it would be highly improper for the court to compel the board to exercise it as regards this particular institution. The charge of prejudice does not appear to be sufficient ground for mandamus in this case. The proper scope, the decision says, of a mandamus, against an official board, is to command the performance of acts which the law has specially enjoined upon it as a duty resulting from the office. Unless the duty is so enjoined the remedy is inappropriate. Search of the statutes reveals no provision authorizing the application of a medical institution to be recognized as in good standing or compelling the board to act on it. It is only when a diploma is presented that the action of the board can be invoked. Whether, then, a mandamus would lie on the refusal of the board to grant a certificate, must depend on the facts of each case. Such cases can not be covered by a general order to grant certificates to the graduates of any particular institution, for unless an application is made the duty of the board to grant does not arise. And then the seeking the remedy for a refusal belongs to the applicant as the party directly interested, and not to the college issuing the diploma, whose interest is only remotely affected. The statute does not define what shall constitute a medical institution in good standing; that is left to the judgment of the board. It is unnecessary to inquire here whether there may be cases where the courts would undertake to correct or control its judgment. It is clear that the standing of a medical college within the meaning of the statute is not to be determined alone from the course it has prescribed for graduation. The statute imports, at least, that it shall be one that has established a favorable reputation in the medical profession. The board should not be required to recognize one that, from its brief existence or the novelty of its teaching, in its judgment has not acquired such reputation, and much is necessarily left in this respect to the sound discretion of its members, who, it is assumed, will act as their position requires, fairly and justly to all concerned. This decision, of which the above are the leading points, is a valuable one to our Ohio confrères, as establishing the validity of the law, and also affords a useful precedent for reference in other communities.

THE FRENCH GOVERNMENT sends every year some young men, natives of Madagascar, to Paris for a two-year course in medicine, after which they return home to practice.

Medical News.

COLORADO.

Dr. Charles Denison, Denver, sails for Europe on the *Campania,* July 13, to attend the British Congress of Tuberculosis.

New Medical Law.—The effect of the new medical law is being felt. On June 16, a "doctor of psychology" was fined $50 and costs for practicing medicine without a license.

The National Hospital for Consumptives, Denver, has received donations of $25,000 from W. Guckenheim's Sons, of New York, and $5000 from S. Grabfelder, of Louisville, to be applied to the building fund.

Tuberculosis in Colorado.—Dr. Henry Sewall, Denver, in a report made to the state medical society, stated that in the sixteen months to May 1, 1901, 1674 deaths from tuberculosis were reported. In 970 cases the disease originated outside of Colorado. In 480 cases, the origin was not given. In 224 cases or 13.32 per cent. the disease originated in Colorado.

The Colorado Maternity and Children's Hospitals, Denver, were opened to inspection a short time ago. The staff of the new institution is as follows: Consultants, maternity staff, Drs. Thomas H. Hawkins, Francis H. McNaught, William P. Munn, William S. Bagot and Charles B. Van Sant; children's staff, Drs. Herbert B. Whitney, Seymour D. Van Meter, Eleanor M. Lawney, Melville Black, N. Harris Kirby and Frank E. Waxham. Visiting Staff, maternity, Drs. Frank W. Kenney, Seymour D. Van Meter and Laura L. Liebhardt; children's, Drs. Frank W. Kenney, F. P. Gengenbach and C. A. Graham.

ILLINOIS.

Dr. E. M. Sutton, Peoria, will spend his vacation in Europe. He will go on the *Umbria,* leaving New York on the 20th.

Dr. Arthur L. Hagler has been appointed on the staff of the St. John's Hospital, Springfield, in the eye and ear department.

Dr. Frederick C. Winslow, has assumed charge of the Asylum for the Incurable Insane at South Bartonville, near Peoria.

Physician Not Horse Doctor.—Judge W. G. Cochran has decided that a surgeon has not the right to practice as a veterinary in a suit brought by Dr. Max W. Barbour, of Arcola, against a race-horse owner for services rendered to one of his horses.

Chicago,

Dr. A. M. Corwin has resigned from the faculty of Rush Medical College.

Dr. Henry H. Mather, while playing golf, sustained a fracture of the right fibula.

Dr. Arthur Reynolds sails from New York, on July 13, for London, to attend the Congress on Tuberculosis.

Dr. Willis O. Nance will leave New York on Saturday, July 20, on the *Umbria,* for a six weeks' European trip.

Drs. Frank Billings and Robert H. Harvey leave this week to spend their vacation at Mackinac Island, Mich.

Travelers.—Drs. J. A. Robison and W. Byron Coakley have joined the army of European travelers and will attend the Tuberculosis Congress in London.

Dr. L. Blake Baldwin, who has been appointed professor of clinical dermatology in the College of Physicians and Surgeons, left July 1, for Paris, where he will spend three months.

The Chicago Lying-In Hospital has received a donation of $5000 from Abram Slimmer, Waverly, Iowa, for the erection of a new dispensary building, contingent on the subscription of $10,000 additional.

The College of Physicians and Surgeons has been formally deeded the West Division High School property, by the City of Chicago, the consideration being $186,000. About $40,000 will be expended on the building belonging to the college recently burned.

Northwestern University Medical School.—N. S. Davis, Jr., has been elected dean, and Arthur R. Edwards, secretary, of the faculty. Wesley Hospital, in close connection with the college, has been informally opened to the profession, and after complete equipment the formal opening will take place. The Hospital will accommodate 300 patients. Plans are completed and the money is raised for a $22,000 amphitheater and operating rooms at Mercy Hospital, with a seating capacity of 400. Drs. C. L. Mix and P. T. Burns have been appointed assistant professors of anatomy.

Changes in Medical Department of the National Guard.—The resignations of Major G. Frank Lydston, surgeon, and Lieutenant Elihu N. Elliott, assistant surgeon, assigned to Second Infantry, and of Lieutenant Norval H. Pierce, passed assistant surgeon, first ship's crew, Naval Militia, have been accepted. Dr. Buell S. Rogers has been commissioned major and surgeon, Dr. B. McPherson Linwell, captain and assistant surgeon, and Drs. Frank Webster Jay and F. Gregory Connell have been commissioned first lieutenants and assistant surgeons, and assigned to the Second Infantry.

Mortality and Morbidity.—Notwithstanding the high temperature of the past fortnight the mortality rate has not been materially increased. There were but 17 more deaths last week—and of these 7 were from sunstroke—than during the previous week, while the total was 20 fewer than in the corresponding week of 1900. Only the continued malignant character of the widespread epidemic of measles gives the Department any concern. There were 13 deaths recorded from this disease last week and the type of the malady shows no change. The Department repeats its warning to parents against exposing non-immune children to the contagion and again insists upon the necessity of strict isolation of all measles patients. The disease is especially prevalent and severe in the 27th Ward.

Increase of Suicides.—The recent enormous increase of suicides in this city has led the Commissioner of Health to request the Coroner to make special inquiry into the history of these cases with reference to the relation of influenza. In the following note to that official it is pointed out that "In the five years, 1871-1875, the suicides in Chicago were 12.6 per 100,000 of population. In the last lustrum, 1896-1900, there were 23.0 per 100,000. The increase—which has been quite general in all civilized countries during the past half-century—was very gradual in Chicago until about 1893, when they suddenly increased from 18.7 in 1890 to 23.8 per 100,000. Grip or influenza has been more or less prevalent in this city since the fall of 1889 and was especially prevalent in 1891. It is claimed that this disease profoundly affects the nervous system, causing all grades of mental disturbances, from simple melancholia to acute insanity. It is quite possible that the great increase in the number of suicides in 1893 was due to this effect of the grip epidemic of 1891 and that the general increase during the whole period, 1890-1900 is due to the same disease. What I wish you would do for me is to cause inquiry to be made in every case whether the suicide had ever had an attack of grip or influenza; if so, in what year; and had the fact ever been the subject of comment by the suicide or the family or associates. Please have these data noted on the Coroner's certificate so that I may have them properly compiled."

No Private Hospitals in Chicago.—The London *Lancet,* June 22, prints the following paragraph from its New York correspondent: "Novel Sanatorium in Chicago.—A sanatorium is about to be constructed in Chicago upon a wholly new principle. The medical men in that go-ahead city have for some time been dissatisfied with the means of accommodation which Chicago offers to patients from a distance who are desirous of placing themselves under the charge of practitioners there. There are many objections both on the part of physicians and patients to the large general hospitals and it seems that there are no private hospitals in Chicago. In consequence of this condition of affairs those who wish to be treated in the city are compelled to betake themselves to large hotels or to apartments. The big hotels are too noisy and apartments have, as a rule, some drawbacks. Besides, friends or relatives of the sick have not always been able to secure quarters near the sick bed. To remedy this unfortunate situation five physicians and surgeons of Chicago are preparing to build a large private hotel and sanatorium to cost $400,000 (£80,000). This combination of hotel and sanatorium is, it may be imagined, the first time that such a plan has been put into execution, and it is yet another tribute to the practical versatility of the Western American's brain." It will be news to the Chicago profession that there are no private hospitals in this city, or that it is necessary for patients to betake themselves to hotels when they come for treatment.

INDIANA.

W. T. Davis, Ehrmandale, has been fined $20 and costs for practicing medicine without a state license.

The President of the Red Cross Medical Society, Indianapolis, has been fined $25 and costs for practicing medicine without a license.

The W. B. Fletcher Sanatorium has been incorporated at Indianapolis with a capital stock of $50,000 by Drs. William B. Fletcher, Mary A. Spink, Urbana Spink and others.

Mears Memorial Library.—Dr. J. Ewing Mears, Philadelphia, proposes to establish a medical library and to found a home for the Marion County Medical Society in memory of his father, the late Dr. George W. Mears, who was a pioneer physician of Indianapolis.

New Military Surgeons.—Drs. W. Ruston Davidson, Evansville; Paul J. Bareus, Crawfordsville, and Jacob M. Hill, South Bend, have passed their examinations and been recommended for commissions as assistant surgeons in the First, Second and Third Infantry, respectively.

The physicians and surgeons of Anderson, owing to the numerous suits for alleged malpractice, have agreed to refuse all service in surgical cases unless the patient or his family signs an agreement releasing the surgeon from liability in the event of any unsatisfactory results.

KENTUCKY.

Kentucky School of Medicine, Louisville, held its annual commencement exercises, June 26, graduating a class of forty-three.

Hospital College of Medicine, Louisville, held its annual commencement, June 27, graduating a class of fifty-seven. Dr. Lewis S. McMurtry, president of the college, delivered the doctorate address.

Kentucky University Medical Department, Louisville, held its annual commencement exercises, June 25, graduating a class of nineteen. The address to the graduating class was made by Rev. George B. Eager, D.D.

Dr. W. E. Clark, who was convicted of manslaughter in January last, has been granted a new trial by the appellate court, June 22, because of the admission of certain evidence, the failure to admit evidence of defendant, and the instructions of the court.

MAINE.

The State Board of Health, at its annual meeting, re-elected Dr. Charles D. Smith, Portland, president.

Smallpox is prevalent in Bangor. Public vaccination has been ordered and strict quarantine is being enforced. Bangor has 8 cases of the disease, Milo 5 cases, Portland 1 case, and Lagrange and Dexter each 2 cases.

The Medical School of Maine, Brunswick, held its annual commencement, June 27. This was the last class to graduate under the three year rule. A class of thirty-nine received diplomas, and the doctorate address was delivered by Hon. Augustus F. Moulton, Portland.

Anatomical Material.—An act has been passed by the legislature requiring all public offices having charge or control over dead human bodies to notify immediately the Board of Distribution whenever unclaimed bodies come into their control, that the said board may take and remove such bodies to be used within the state for the advancement of medical education.

A "magnetic healer," of Portland, who had been notified by the secretary of the State Board of Medical Registration not to practice medicine without examination and registration and who nevertheless persisted, was indicted, tried and found guilty. The accused used the letters "S. R. S." after his name in his advertisements, and on being asked their significance, stated that they meant "Silent Rubbing Specialist."

MARYLAND.

Baltimore.

Dr. Robert Hoffman sailed for Europe July 4.

Dr. Frederick Taylor has sailed for England.

Dr. Marie E. Thalwitzer has sailed for Europe.

Dr. James M. Crayhill will sail for England July 20.

Dr. Daniel Z. Dunnott will spend the summer at Plinhimmon, Ocean City, Md.

Dr. Harry Friedenwald left with his family, on July 4, to spend the summer in Europe.

Dr. John Ruhrah, who has been studying in the hospitals of Berlin, Vienna and Paris, is now in London. He will return to Baltimore, September 1.

Memorial to Dr. Jesse W. Lazear.—Those who were associated with the late Dr. Jesse W. Lazear at Johns Hopkins Hospital, are planning a suitable memorial of his life and services.

Mr. J. W. Middendorf has contributed $10,000 to the Charlotte Williams Hospital, of Richmond, Va. The institution is a memorial to a deceased daughter of Mr. John L. Williams, of the latter place.

Mosquito Extermination.—A company has been organized here to fight the mosquitoes. It is called the New Jersey Mosquito Exterminating Company. A small stipend will be charged for which the company undertakes to rid one's premises of the pest for the season.

The mortality of this city for the week ending July 6 was 451, the largest since records of deaths began to be made. This is the more remarkable because but two weeks before the mortality had been the smallest ever known. The intense heat lasting throughout the week, and on two days reaching 103 F., is accountable for this large figure. There were 78 deaths from sunstroke, 234 were under 5 years, and 89 over 60 years of age.

Dr. Howard A. Kelly and family are at the Colonial, Ocean City, Md.; Dr. Powhattan Clarke is at Chester, Nova Scotia; Dr. C. C. Bombaugh and family are spending the summer at Niagara-on-the-Lake, Ontario; Dr. H. C. McSherry is at Blue Ridge, Summit, Pa.; Dr. W. W. Russell is at Marine Villa, Cape May, N. J.; Dr. Alan W. Smith and wife are at Rehoboth Beach, Del.; and Dr. Henry Lee Smith is at the Blue Mountain House for the summer.

Fraud at Examination.—A case of fraud was attempted at the recent examinations before the Maryland State Board of Medical Examiners. A young physician, said to be a Philadelphian and graduate of the University of Pennsylvania, applied to the board for examination, giving the name of another physician, graduate of one the Baltimore schools, now practicing in New Jersey. The scheme was discovered and a detective put on the case. The only motive found was the alleged fact that one holding the Maryland certificate can get a New Jersey certificate without further trouble. The candidate was refused the Maryland certificate, though he received a high average.

Tablet to Dr. Jesse William Lazear.—At Trinity Hall Military School, Washington, Pa., on commencement day, June 18, a tablet to the memory of Dr. Jesse William Lazear, of Baltimore, was unveiled with appropriate ceremonies. It is inscribed as follows: "In memory of the virtue and self-sacrifice of Jesse William Lazear, M.D., of Baltimore, Md. Born May 20, 1866. Died Sept. 25, 1900. Prepared for college at Trinity Hall, 1880-4. Graduated at Johns Hopkins University, medical degree from Columbia University, Instructor at Johns Hopkins University, Assistant Surgeon United States Army. Died while investigating causes of yellow fever in Cuba. He gave his life to his country for the advancement of science. *Pro Deo et Patria.*"

MASSACHUSETTS.

Tuft's College Medical School held its annual commencement June 19, graduating a class of thirty-four.

Doctors Have Smallpox.—Dr. Charles B. Stevens and Dr. Campbell, of the staff of the Worcester City Hospital, and one of the nurses are ill with smallpox.

The Wage Earners' Hospital is to remove to Harvard and Albany Streets, Boston. Drs. George Van B. Buehler, Charles L. Ogden and Clarence M. Casselberry constitute the staff of the new hospital.

Franklin Hospital, Boston, was opened June 6. It has a capacity of about sixty beds, and is so arranged that patients can be cared for by their own physicians. Dr. R. Sherman York is in charge of the hospital.

Frost Hospital, Chelsea, held its annual meeting, June 21. Dr. Frederick S. Raddin was elected a member and secretary of the Medical Board. Dr. Charles H. Shackford was re-elected chairman of the board; Dr. Joseph B. Fenwick was elected admitting physician.

NEBRASKA.

Dr. John P. Lord, Omaha, has returned from a nine-months' tour of Europe.

Dr. Minerva M. Newbecker has resigned as assistant superintendent of the Hospital for the Insane at Lincoln. Her successor has not yet been appointed.

New Asylum Physicians.—Dr. William L. Carlyle, Hebron, has been appointed assistant physician of the Hospital for the Chronic Insane at Hastings, vice Dr. Woodward, resigned; and Dr. Alma J. Chapman, Hastings, succeeds Dr. Ewing, resigned.

Nebraska Anatomical Society.—By an act of the legislature, the Nebraska Anatomical Society has been formed in

Omaha, and will be given possession of all unclaimed pauper bodies in the state for distribution to medical colleges. The unclaimed bodies annually range from 300 to 500.

NEW MEXICO.

State Board of Health.—At a regular semi-annual meeting of the New Mexico Board of Health, held at Santa Fe, June 3, Dr. George C. Bryan, Alamagordo, was elected president, and Dr. Walter G. Hope, Albuquerque, secretary.

Consumptives Improve.—The Government Hospital for Consumptives at Fort Bayard reports 149 patients undergoing treatment, many of whom have so improved as to be able to return to duty. A majority of the patients show marked improvement.

Medical Examiners for School Teachers.—The president of the territorial board of health has appointed twenty-two physicians to examine school-teachers in accordance with the new law which provides that no one suffering from tuberculosis shall be allowed to teach school.

NEW YORK.

Jamaica Hospital.—At the annual meeting of the medical staff of this hospital, Dr. Philip M. Wood was elected president; Dr. Henri M. Auger, vice-president, and Dr. Austin J. Blanchard, secretary. Drs. Samuel D. Nutt, of Ozone Park, and William T. Scovil, of Richmond Hill, were added to the medical staff.

Census of Consumptives.—A census of the consumptives in the state is to be taken by Dr. Daniel R. Lewis, President of the State Board of Health. This census is only for the purpose of learning the number of consumptives in the state as far as possible, and the revealing of other facts relating to the disease, of importance to the profession.

Health Report.—There were 10,327 deaths in New York state during May, or 500 above the average for that month during the preceding years, according to the monthly report of the State Board of Health issued July 3. Smallpox has been reported during the month from 24 different points and in all there have been noted 32 new cases within the past month.

The Albany Medical College has made several changes in its faculty. Dr. Howard Van Rensselaer will have charge of the departments of materia medica and therapeutics, and the practice of medicine. Dr. Leo H. Neuman has been appointed clinical professor of the practice of medicine and Dr. J. Montgomery Mosher is now clinical professor of neurology and electro-therapeutics. As lecturers, Drs. Arthur T. Laird, on clinical microscopy, George E. Lochner, on gynecology, and Chas. H. Richardson, on surgery, were appointed.

Buffalo.

The Exposition Hospital has already treated 1600 cases.

Dr. Augustus Pohlman, instructor in anatomy at Cornell University, Ithaca, has gone to Freiburg, Germany, for special study in anatomy.

Buffalo Academy of Medicine.—The medical section, at a recent meeting, elected Dr. Harvey R. Gaylord chairman, and Dr. Harry Rooth secretary.

The United States Hospital Corps Camp at the Pan-American Exposition will prove of especial interest to physicians interested in seeing a model sanitary field hospital. There is a tropical, a summer and a winter ward.

The Buffalo Fresh-Air Mission has opened its hospital at Athol Springs for the summer season. At this hospital a large number of infants suffering from non-communicable disease and belonging to poor parents, are treated every summer and many are restored to health.

University of Buffalo.—The faculty and alumni association of the medical department of this University have established a Pan-American bureau of information for the exclusive benefit of the alumni who are to visit the Pan-American. The bureau has been opened in the library of the University at 24 High Street, near Main.

New York City.

Dr, Louis Fischer sailed for Europe on *La Bretaque*, June 27.

Dr. S. A. Knopf sailed for London July 10, to attend the British Congress on Tuberculosis.

Dr. Charles K. Briddon recently completed his twenty-fifth year as attending surgeon to the Presbyterian Hospital.

The Floating Hospital Services for the children of the poor has been begun for the summer season by St. John's Guild.

The Emergency Hospital connected with the Department of Charities, at Coney Island, is completely fitted up and has an ambulance service.

Five Brooklyn Physicians, who have been sued by a debt-collecting agency, declare that they signed the contract, under the terms of which they have been sued, under a misapprehension, and that the conditions of the contract are practically impossible of fulfillment.

Claim for Expert Services Allowed.—The claim of Dr. Jackson R. Campbell, Tombs physician, for $2250 on account of services as expert medical examiner, which was disallowed by Comptroller Coler, and was referred to the corporation counsel, has been ordered paid.

In the case of Herbert C. Wadman, a patient, who died at Manhattan State Hospital, the coroner's jury rendered a verdict that Wadman came to his death from chronic nephritis and acute mania, aggravated and hastened by broken ribs and injuries to the chest and head. The jury censured the management of the Manhattan State Hospital, exonerating the Bellevue Hospital authorities, and found that the injuries were inflicted by Attendant John Foley, and that keeper Michael Carroll was an accessory.

OHIO.

Dr. and Mrs. John Edwin Brown, Columbus, sailed for Antwerp on the *Vaderland*, June 26.

Mr. H. M. Hanna, Cleveland, has endowed a chair in the Medical School of Western Reserve University.

Dr. Reginald B. Leister has resigned from the staff of the Toledo State Hospital and will practice in Toledo.

Dr. J. M. Crawford, ex-minister to Russia, has been created Doctor of Laws by the Ohio University at Athens.

B. S. Slocum, a negro, was arrested on June 24 at Amanda, Fairfield County, charged with the illegal practice of medicine.

Dr. Fred L. Wilson, of the Athens State Hospital for the Insane, has resigned and will resume practice at Washington Court House.

New Laboratory.—The Laboratory of Clinical Microscopy, Medicine and Surgery, donated by John H. Brown, of Cleveland, in memory of his brother, and by Samuel Mater, to the Medical Department of Western Reserve University, Cleveland, who dedicated with appropriate ceremonies, June 12. Dr. Herbert L. Burrell, of Harvard Medical School, delivered the principal address.

Osteopathy.—A motion to advance the case of the State of Ohio vs. Gravitt was granted by the Supreme Court of Ohio last week. This case involves the question of the practice of osteopathy under the provisions of the law which took effect on July 1, 1900, and the granting of the motion insures a speedy hearing and decision of the case.

PENNSYLVANIA.

The estate of the late Dr. William H. Daly, Pittsburg, is estimated to be worth $250,000.

Rev. William A. Passavant, of Pittsburg, widely known as a philanthropist, and a worthy successor of his father in the establishment of hospitals in various cities of the country, died suddenly at Jummonville, July 1, from apoplexy.

Appropriations.—The following appropriations were passed by the Legislature, June 25: Free Hospital for Poor Consumptives, $110,000; Taylor Hospital, Lackawanna County, $15,000; Medical Department of Western Pennsylvania Hospital, Pittsburg, $100,000; Titusville Hospital, $10,000; St. Joseph's Hospital, Scranton, $1000, and Nason Hospital, Roaring Springs, $5000.

Philadelphia.

Dr. Thomas R. Neilson has been elected assistant clinical professor of genito-urinary diseases at the University of Pennsylvania.

The State Board of Medical Examiners held an examination June 18 to 22. Three hundred and thirty candidates for certificates to practice medicine were examined.

Appropriations.—The legislature has made the following appropriations to Philadelphia medical institutions: Medico-Chirurgical Hospital, $190,000; Jewish Hospital, $10,000; St. Joseph's Hospital, $10,000; University of Pennsylvania, $25,000, and University of Pennsylvania Hospital, $58,000.

Prof. W. W. Keen, of Jefferson Medical College, has been granted two years' leave of absence and Prof. J. Chalmers DaCosta will do his work, together with his own, both in the college and in the hospital. This additional work necessitates Dr. DaCosta's resignation from his position on the surgical staff of St. Joseph's Hospital, and Dr. Charles F. Nassau has been appointed to fill the vacancy.

VIRGINIA.

Old Dominion Hospital.—Ground was broken for the new Old Dominion Hospital, Richmond, June 22.

Dr. Samuel A. Hinton, Petersburg, has been appointed city physician, vice Dr. Hugh Stockdell, deceased.

The Isle of Wight County Board of Health has been organized with Charles H. Hart, Suffolk, president; Dr. Leslie C. Brock, Smithfield, secretary.

Winchester Memorial Hospital.—Mrs. Lewis H. Hyde, of New York, has contributed $5000 toward the building fund of this hospital. Of the $15,000 required, $7000 has now been raised.

WISCONSIN.

The New Norwegian Luthern Hospital at La Crosse was wrecked during a tornado, June 28.

Dr. Horace M. Brown, Milwaukee, has sailed for London, where he will attend the British Congress on Tuberculosis.

The Alumni Association of Milwaukee Medical College has been incorporated by Drs. Lawrence Hopkinson, Ernst J. Panetti and Eugene D. Regan.

GENERAL.

Health Board and Laboratory for Manila.—The Philippine Commission has passed bills establishing a Government biological and chemical laboratory. A Board of Health, consisting of commissioner, sanitary engineer, chief inspector, laboratory superintendent and secretary, has been formed. Stations for the supply of vaccine virus will be established wherever necessary in the provinces.

War on Mosquitoes.—The Marine-Hospital Service has instructed its medical officers to aid in the extermination of mosquitoes and fleas, and to take every precaution possible to keep the pests from the hospitals and quarantine stations. It is required that all pools of water near stations of the service be covered with petroleum. Patients with infectious diseases must be protected by wire netting. The army quartermasters also have arranged for a supply of kerosene, which is to be used on all stagnant water within the confines of military posts.

Dr. S. Weir Mitchell, who, as we announced last week, has just returned from a trip around the world. Evidently the Doctor has the reputation of being a worker, for a newspaper asserts that six long novels, forty-nine sonnets, 103 quatrains and several other poems, not to mention four books of sketches, a treatise on nervous diseases, fifteen or twenty short stories, were dashed off by him at odd moments during his trip. All these precious works, we are informed, are now in the possession of Richard Watson Gilder, who has hired eight detectives to watch the stuff.

A New Journal.—The first issue (June) of a new psychiatric journal, *The Journal of Mental Pathology*, has been received. It is published in New York under the editorial management of Dr. Louise G. Roubinovitch, with Drs. Magnan, Joffrey, Raymond, Regis and Morell abroad, and Drs. Mills and Hughes, of this country, as editorial collaborators, and a very extensive staff of contributors from all parts of the world. The initial number contains articles by Drs. Marie, of Paris; Ferrari, of Italy; E. A. Spitzka, of New York, and the editor, with selections, editorials and book notices; it presents a very creditable appearance. From the reputations of the collaborators and contributing staff, we shall look for high-class work in the articles appearing in this new journal: the character of those in the present issue promises well for the future.

CANADA.

A death from tetanus following vaccination is reported from Brantford, Ont.

Charity Bequests.—By the will of the late Senator Villeneuve, Laval University gets $25,000, Notre Dame Hospital, Montreal, $5000, and the Catholic Orphan Asylum, $5000.

Dr. A. T. Stanton, late of the house staff of the Toronto General Hospital, has been appointed surgeon of the C. P. R. steamer *Empress of China* of the Pacific fleet. Dr. Stanton left last week for the Pacific Coast.

Militia Dental Corps.—At the annual meeting of the Eastern Ontario Dental Association held in Ottawa, on July 4, a resolution was passed requesting Dr. Borden, minister of militia, to take steps to have a dental corps appointed in connection with the Canadian Militia.

Montreal is once more free of smallpox; quarantine was raised on the last house last week, and there are now no houses quarantined in that city. There are only three or four patients at the smallpox hospital, and it is expected they will be released in the course of a few days.

Dr. Montizambert, Director-General of Public Health, and Dr. McEachren, chief veterinary inspector for the Dominion, have been delegated by the Canadian government to attend the conference to be held in London, on July 22, to consider the question of prevention and cure of tuberculosis.

The Royal College of Dental Surgeons assembled in convention in Toronto last week, there being a large attendance of outside members. Dr. Walter Willmott, of Toronto, addressed the convention on the use of the *x*-ray in dentistry, and showed the importance the rays were in the profession of dentistry.

Montreal General Hospital.—During the month of June there were 262 admissions to this hospital, 256 discharges and 15 deaths. The average number of patients daily in residence was 167. The average of typhoid fever cases was 15. During the hot spell there was a large number of cases of sunstroke and heat prostration, but there was only one death from this cause. There is at present a great demand for trained nurses in Montreal, and the Training School is constantly besieged with enquiries. The graduates of this institution now number 180.

Cottage Hospital Scheme.—The idea of special collecting cards in connection with the Cottage Hospital scheme has proved very successful, and Lady Minto is pleased with the results so far. Nearly $20,000 has reached her excellency in this way from various parts of the country, and the countess is especially delighted with the work of the ladies of Montreal. In London, Ont., the scheme of collecting has been taken up by a special committee, and there excellent progress has been made. A rather curious circumstance is that the responses from Winnipeg are almost nil. Throughout the West around Regina and Saskatchewan, the scheme is being taken up with interest, and even from far-off Yukon subscriptions are coming in.

FOREIGN.

The Berlin University is planning an institute for radiotherapy. Professor E. Lesser is to be placed in charge.

The Plague at Rio Janeiro.—The four cases of bubonic plague recently found in Rio Janeiro were all brought from Oporto, Portugal.

The Plague at Capetown.—The total number of plague cases up to July 7 has been 760. The deaths have numbered 361, including 65 Europeans.

Glasgow University Honors Germans.—The University of Glasgow, on the occasion of its 450th anniversary, conferred honorary degrees on Quincke, Mikulicz and Kronecker, of Germany.

Reorganization of Turkish Medical Colleges.—Professor Rieder, of Bonn, and Dr. Deycke, of Hamburg, have been reorganizing the medical schools in the Turkish empire, at the request of the sultan. Rieder has been appointed general inspector of medical education.

Professor von Leyden's Jubilee.—The twenty-fifth anniversary of Professor Leyden's incumbency of the chair of medicine at Berlin was celebrated with much ceremony, June 8, by his friends and pupils. He was the successor of his master, L. Traube, and has worthily sustained the traditions connected with the chair.

Memorial to Pettenkofer.—Munich is planning a statue of Max von Pettenkofer, and also the erection of a Pettenkofer building, to contain a museum of articles connected with Pettenkofer's life and services to hygiene and sanitation, and also rooms for meetings of medical and other scientific societies, and a library. The committee that has the matter in charge is formed of the municipal authorities and chiefs of the Institute of Hygiene, etc.

Honors to the Memory of Physicians.—A portrait bust of Theodor Meynert was unveiled at the Vienna University,

May 19, nine years after his death. The memorial was erected by the government in honor of Meynert's discoveries and achievements in psychiatry. Berne is preparing to honor in the same way the memory of A. von Heller, the famous scientist and physician of the eighteenth century, who, as simultaneous professor of surgery, anatomy and botany, conferred such luster on the University of Goettingen.

The Virchow Fund.—The amount raised for this fund was 78,000 marks when it was first presented to Virchow in 1881, on his sixtieth birthday. According to his wish it is devoted to anthropologic, ethnologic and prehistoric research. Six scientific expeditions have received appropriations from the fund and their discoveries have been duly published and illustrated in the Transactions of the Berlin Anthropological Society. The excavations were in the Caucasus, Malacca and in Cyprus. The expenses of Cetti's fasting test under the supervision of Senator, Zuntz and Munk were also defrayed from the fund, and the important scientific researches of Stuhlmann, Mies and Meslort on prehistoric biology, etc., published. The fund has been increased by various gifts until it is now 137,000 marks. The committee in charge are anxious to have it reach 200,000 marks, or about $80,000, by October 13, Virchow's eightieth birthday, as mentioned in the appeal published last week, p. 40. We learn from our exchanges that, during a recent windstorm, he was hurled against a tree and severely bruised in the forehead.

LONDON LETTER.

The Tuberculosis Congress.

The arrangements for the forthcoming Congress on Tuberculosis are almost complete and the meeting promises to be a very successful and important one. Over 1,200 applications for membership have been received and the number is expected to exceed 2,000. On Monday, July 22, at 3 p. m., at St. James' Hall, the Congress will be opened by H. R. H. the Duke of Cambridge at the request of the King. His Majesty has taken a great interest in the tuberculosis question and, indeed, in sanitary questions in general. When he was Prince of Wales he presided over the Society for the Prevention of Tuberculosis and it was arranged that he should preside at the opening of the Congress, but his accession to the throne has caused him to cancel the arrangement and to appoint his grand-uncle in his stead. Abroad, measures have been taken to secure a large number of foreign visitors. A German committee has been formed under the presidency of the Duke of Ratibor, and a French committee under Professor Brouardel. Amongst those enrolled are Prince d'Arenberg, Profs. Lannelongue, Proust and Noeard. Professor Calleja, president of the next International Congress in Madrid, is promoting the interests of the Congress in Spain. Profs. von Schrötter and Weichselbaum will represent Austria. Among American representatives are Profs. Osler and Janeway. Numerous adhesions have been received from Italy, Hungary, Belgium, Norway and Sweden, Holland, Switzerland, and Portugal. A reception will be held at 9 p. m., on the opening day at the Queen's Hall by the president of the Council and the executive officers of the Congress. On July 23, at 3 p. m., the second general meeting will be held at St. James' Hall, when an address will be delivered by Koch, Lord Lister in the chair. Koch will deal with the question: "Whether what has been done and what is likely to be done for the prevention of tuberculosis corresponds to the etiological conditions of the disease and how far changes with view to more thorough treatment should be instituted." Professor Brouardel will deliver an address on July 24. Receptions, garden parties, river parties, etc., will be held in connection with the Congress, which promises to be as successful from the social as the scientific standpoint. Arrangements will also be made for visits to Sanatoria and other places of interest.

Departure of the Fifth Malaria Expedition From the Liverpool School of Tropical Medicine.

The extraordinary enterprise of this recently established school is shown by the organization of five malarial expeditions. Major Ross, whose name has been rendered famous by the proof of the mosquito theory of malaria, and Dr. Turner, assistant lecturer in pathology at the University of Glasgow, have been sent out to West Africa in order to attempt the extermination of the anopheles mosquito. It is thought that the Colonial Office will send a representative to assist in the work. Mr. Chamberlain has sent a message wishing the expedition every success and intimating that he has instructed the Governor of Sierra Leone and other officials to give the expedition every assistance in their power.

Army Medical Reform.

A committee of experts has been appointed to consider a scheme of reform drawn up by the Secretary for War. It consists of the following members: Howard H. Tooth, M.D., F.R.C.P., representing St. Bartholomew's Hospital; G. H. Makins, F.R.C.S., St. Thomas's Hospital; Alfred D. Fripp, Guy's Hospital; Sir F. Treves, London Hospital; Alexander Ogston, Scotland; Lieutenant Colonel Keogh, Ireland; E. E. Perry, M.D., F.R.C.P., Senate of London University; Surgeon-General Hope, President of the Medical Board, India Office. Most of the civil practitioners have served in the South African war and therefore are peculiarly fitted for the task of remedying the defects of the army medical system.

Suicide of a Surgeon.

Considerable sensation has been produced in medical circles by the suicide of Mr. Thomas Bond, the well-known medical jurist who figured in almost every *cause celebre* in which medico-legal questions arose. He had been suffering from cancer of the prostate, which caused great pain. He took considerable morphia and was heard to say: "I am sure I shall jump out of the window or blow my brains out." Generally speaking, he was a strong-minded and courageous man. During the absence of his nurse he threw himself out of the window and fell on his head a distance of 50 feet. In 1873 he was appointed assistant surgeon to the Westminister Hospital, but it was as an expert in criminal cases, such as the trials for murder of Kate Webster, Lamson, Lefroy, and Mrs. Pearcey, that his reputation lay. He had extraordinary experiences of railway accidents, and companies often resorted to his services to protect themselves against the claims of malingerers. He was one of the best of medical witnesses. His evidence was clear and carried conviction, and having formed an opinion he adhered to it with a tenacity which no cross-examination could shake.

Report of the Committee of Inquiry of the National Hospital for the Paralyzed and Epileptic.

The circumstances leading to the appointment of this committee have been previously described in THE JOURNAL. The report which is unanimous has been presented to the governors. The witnesses heard comprised experts in hospital management, Lord Lister, Sir Wm. Broadbent, Sir Sidney Waterlow and Mr. C. S. Loch; members of the board of management; medical officers of the hospital; present and past house physicians; present and past matrons and nurses; the Secretary-Director and other officials. Of the allegations made by the medical staff the committee find that some of the most important are true; some have foundation in fact, but are exaggerated, and that others are not supported by sufficient evidence. With regard to the question of diet they find that at the beginning of last year the supplies to particular wards fell short more often than ought to have occurred. The quality of the meat, fish, eggs, and vegetables was often far from good. In a few cases the personal cleanliness of the patients did not receive sufficient care. In some wards the supply of linen was deficient. The supply of draw-sheets, which from the character of the diseases treated in the hospital are required in large quantity, was very deficient. The method of communication between the medical staff and the Board—through the Secretary-Director—has not worked well and the committee are of opinion that the direct representation of the staff on the Board would be of great and permanent benefit to the hospital and would have prevented the present schism. The allegation of the Board that such representation would tend to destroy the religious and philanthropic character of the hospital, is dismissed as unfounded. The committee therefore recommend that the Board be increased by two members chosen by the medical committee from the medical staff. This change would tend to bring the hospital into line with similar institutions. The committee disapprove of the investiture of the Secretary-Director with so much power, and find that he has not used it with tact and judgment, but has exceeded his functions. They recommend the abolition of this office and the appointment of a secretary entrusted with ordinary powers who should be the chief and executive officer of the Board of Management, but be restrained from interfering with the lady superintendent or the medical staff, or that a secretary and medical superintendent should be appointed as a permanent officer, who should not only discharge the duties of secretary and house physician, but should be the responsible and resident head of the whole institution under the Board of Management. So far the prolonged and stubborn contest, which threatened to wreck one of the most useful charities in this country and one of the most famous hospitals in the world, has ended in the com-

plete victory and vindication of the medical staff. The Secretary-Director, an able and energetic official, who has served the hospital more than thirty years, had gradually been allowed to take almost all the powers of the governing body into his own hands, and in the end attempted to over-rule the medical staff on such purely medical questions as nursing and diet. The attempt has ended as it deserved.

PARIS LETTER.

Cytodiagnosis in Inflammatory Diseases of the Nervous System.

Cytodiagnosis as a means of distinguishing certain forms of mental diseases, accompanied by inflammation from others which are neuroses, has been studied recently by Dr. Seglas and Nageotte. In 14 cases of mental disease simulating progressive general paralysis, lymphocytosis was found in 5 cases which proved to be paresis, whereas in the other 9 cases, this symptom did not exist. Dr. Joffroy, the neurologist, remarked that it was quite noticeable before the other symptoms of paresis. Drs. Dupré and Devaux communicated at the same meeting of the Medical Society eight observations of patients on whom lumbar puncture was performed. In two cases of progressive general paralysis, leucocytosis was very apparent, as indicated by Widal and his pupils. The six other cases were: One senile dementia, one organic dementia, one precocious dementia, and three cases of delirious melancholia. There was no leucocytosis in these cases. Dr. Widal recommended not drawing off more than 3, 4, 5, or, at the most, 6 cubic centimeters of liquid. The patients should remain in bed the rest of the day, and not raise their head from the pillow. Very fine needles should also be employed, as there is less risk of tearing the meninges.

The Use of Large Doses of Antitoxin.

Dr. Widal spoke of the method he followed out in the treatment of diphtheria. He has often seen patients come into the Maison Municipale de Sante, a species of private hospital, at the fifth or even seventh day of an attack, without having been injected. In such cases he gives doses of 60, 80, or even 100 grams of serum, and he has never seen any accidents due to the use of such large doses. In such cases paralysis may supervene, and even sudden death. It should be remembered that the serum treatment can not act when cellular lesions are already produced, and Dr. Widal therefore prefers injecting serum to a patient who does not need it than waiting too long in other cases.

Mortality of Infants in France.

Professor Budin, who has succeeded to Tarnier as professor of clinical obstetrics, made a report recently to the Academy of Medicine on the mortality of children after birth in France. According to some statistics published recently, out of 1000 deaths, there are about 167 of children less than a year old. At Lille the number is 274, 342 at Dunkerque, 414 at Nancy. This excessive mortality is due to the prevalence of gastro-enteritis, which causes 385 deaths out of 2000; respiratory troubles, which bring about 147 deaths; congenital debility produces 171 cases; tuberculosis 25; contagious diseases, 50; and all other causes, 222. Professor Budin showed how these different diseases could be fought in a measure, and gave a description of various institutions not only in Paris, but at Florence, Brussels, and Montreal, where advice was given to mothers and sterilized milk was furnished. According to Drs. Balestre and Giletta, 76 per cent. of the deaths occurring during the first year could be prevented. Professor Fournier reminded the assembly that syphilis was a potent factor in the death-rate of children, half, if not more of the deaths occurring in families suffering from syphilis, being due to this disease.

Epidemic of Lockjaw.

At a meeting held by the Society of Surgery, on June 5, Dr. Reynier, surgeon of the Lariboisière Hospital, spoke of three cases of lockjaw which had been seen in his service. Six years had elapsed without his having observed a single case, when in January last he saw symptoms of it in a boy he had operated for hernia. The patient died, and four days after a woman in another ward showed signs of this disease and died the eighth day. A patient who was operated at about the same time was injected with antitoxic serum. Eight days afterwards lockjaw made its appearance, but on increasing the dose of chloral from 12 to 20 grams, the symptoms grew less alarming, and the patient recovered after three weeks. Dr. Reynier thought that it might be the catgut which had been the cause of the infection. Dr. Quénu said that he had never seen a single case of lockjaw cause an epidemic of this disease, and as for the catgut, it could be easily sterilized in alcohol at a temperature of 120° C. Dr. Delbet remarked that he remembered the case of a patient who had a mild form of lockjaw, and who was treated by injections. He rapidly grew worse and died the next day. Dr. Brun described a similar case in a child three years old. On the other hand, Dr. Bazy said that he always had injections made to patients who had bad wounds received in the street and he had only seen so far two cases of lockjaw with men who had not received this treatment. He always gave chloral in large doses in such cases.

Oxygen as a Treatment for Boils and Carbuncles.

A new treatment against boils and carbuncles has been advocated recently by Dr. Thiriar, professor of clinical surgery at Brussels. It consists in the injection of oxygen into the tumor formed by the boil. A receptacle containing oxygen under pressure may be used, and put in communication with a needle, which is inserted under the skin. One injection is found sufficient for an ordinary boil; for a carbuncle it is well to inject oxygen through the different openings. The anthrax becomes painless in a relatively short space of time, and the inflammation disappears in a few days.

Book Notices.

A TEXT-BOOK OF GYNECOLOGY. Edited by Charles A. L. Reed, A.M., M.D., President of the AMERICAN MEDICAL ASSOCIATION (1900-1901.) Illustrated by R. J. Hopkins. Cloth: Pp. 900. Price, $5.00. New York: D. Appleton & Co. 1901.

This is a composite book—a book with many authors. It is the kind that the average book agent will insist is, and must be, good because so many good men have contributed to it. The reviewer believes that, as a rule, the opposite is true, viz., that when the responsibility is divided the result is likely to be as the meal prepared by many cooks. However, in the book before us the editor has come as near to eliminating the objections to a composite book as one could wish. While there are thirty-one contributors, a thorough editorial revision has made a uniformity of style and expression throughout that would have been impossible with such a large number of contributors had this not been made. The awkwardness, the lack of continuity of thought, and the repetition that is so common when many contributors write on allied subjects, have all been eliminated. Even the references to their own work by the different writers has been rendered into the third person. There has been a greater subdivision of labor in the preparation of this book than is usual, even in this age of collaboration. Thus we find among the contributors specialists in pathology, in neurology, in dermatology, in hygiene, etc. In the chapter on neoplasms of the uterus there are no less than eight different writers; but when it is remembered that each of these has obtained a reputation in the subject on which he writes, and that the whole has been made consecutive by the editor, all objections to this multiplicity of contributors is removed. While much of the work is of the composite nature, quite a number of the subjects are considered by individuals. Three chapters devoted to the subject of Diseases of the Female Generative Organs are written by M. L. Harris. These would make a splendid monograph on the subject, for they treat it in an exhaustive manner. The writer shows that he has a thorough knowledge of the matter, and has presented it in a most acceptable manner. Some of the subjects considered do not strictly belong to a work on gynecology—as, for instance, movable kidney, tuberculosis of the kidney, renal calculi—but they none the less add to the value of the book. The chapter on Pelvic Diseases and the Nervous Affections, by Dercum, is a valuable one. Dercum discusses the subject of neurasthenia and hysteria from the standpoint of the neurologist, but every gynecologist will endorse the assertion that no operation should be done simply to remove symptoms that are characteristic of the neuroses, but should be done for symptoms properly belonging to pelvic disease itself, and for this alone; in other words, operations should be

made on surgical indications only. The three chapters on rectal diseases are out of place in a book on gynecology. The editor, in the opening paragraph, defines gynecology as "a consideration of the names, causes, prevention, diagnosis, pathology, and treatment, of diseases peculiar to women." The diseases of the rectum as they relate to the various disorders peculiar to women, are considered in their appropriate places in the book where they ought to be considered, and piles and other affections of the rectum that are common to both sexes do not come under the definition given.

While evidently it was not the design to give an elaborate description of the various operative procedures, or to take a superabundance of space with a description of minor details, yet the technic is so well presented in nearly every instance that the student will find it as helpful as though pages had to be read rather than paragraphs. The chapter on Abdominal Section is a good illustration of clear cut and easily understood descriptive writing; there is no forest of verbiage to push through, no underbrush of useless detail to get rid of. The illustrations are practically all new, being made especially for this work under the editor's direction. They are excellent and numerous. On the whole the editor is to be congratulated on the splendid work he has done in producing such an excellent up-to-date work on gynecology.

A MANUAL OF HYGIENE AND SANITATION. By Seneca Egbert, A.M., M.D., Professor of Hygiene, and dean of the Medico-chirurgical College of Philadelphia. Second Edition, Enlarged and Thoroughly Revised. Illustrated with 77 Engravings. Cloth. Pp. 435. Price, $2.25. Philadelphia and New York: Lea Brothers & Co. 1900.

This second edition, occurring within two years after the appearance of the first, is itself a recommendation of any book of this class, reaching as it does, only a comparatively limited number of readers. The book is designed not merely for the medical man, but also for everyone who is interested in subjects of healthful living. Dr. Egbert has put in a convenient and readable form the main facts of hygiene and sanitation, and in the present edition has added a chapter on military hygiene as being indicated by comparatively recent events. The book as a whole has been revised, and therefore is presumed to be fully up to date. As far as we have inspected it, we find no serious discrepancies or misstatements. It is a work that can be honestly recommended not only to the medical man, but to his patients and especially to all persons who hold public offices, or even in the way of being members of boards, trustees, or otherwise having to do with matters which are in any way concerned in the question of sanitation.

ATLAS AND EPITOME OF OPHTHALMOSCOPY AND OPHTHALMOSCOPIC DIAGNOSIS. By Prof. Dr. O. Haab, Director of the Eye Clinic in Zurich. From the Third Revised and Enlarged German Edition. Edited by Geo. E. de Schweinitz, Professor of Ophthalmology, Jefferson Medical College, Philadelphia. With 152 colored lithographic illustrations and 85 pages of text. Cloth. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co., 1901.

Professor Haab's work on ophthalmoscopy is valuable to the student and indispensable to the specialist, for nowhere else can be found such a fine pictorial collection of changes and lesions of the eye-fundus as this volume contains. The American editor has further enhanced its usefulness by annotations and additional ophthalmoscopic illustrations. Not the least pleasing feature is the low price at which this work of art has been placed in the market.

HEALTH AND HYGIENE FOR THE HOUSEHOLD. By John Joseph Nutt, B.L., M.D., Member of the American Medical Association. Cloth. Pp. 69. Price, 50 cents. New York: The Abbey Press.

The author of this little work endeavors to acquaint the lay reader with some of the leading facts of sanitation, and its circulation ought to do much good. Such advice is what the great majority of the people need; unfortunately, however, most people will go on in their old way. We can recommend it to the public as containing a good deal of valuable and sensible advice.

Married.

PHILIP LE SAGE, M.D., to Miss Lizzie Meers, both of Joliet, Ill., June 26.

JAMES C. HOLDSWORTH, M.D., to Miss Mary E. Wolf, both of Baltimore.

JOHN M. FOUTS, M.D., to Miss Flora Jones, both of Centerville, Ind., June 26.

J. HARRY ULRICH, M.D., to Miss Sallie Rittenhouse, both of Baltimore, June 25.

ROBERT W. MARKLEY, M.D., to Miss Myrtle Weltzier, both of Huntley, Ill., June 26.

GEORGE W. PORTER, M.D., to Miss Mabel Boyer, both of Ashton, S. Dak., June 25.

THOMAS J. CASE, M.D., Unionville, Iowa, to Miss Dellie Hard, of Albany, Iowa, June 26.

W. F. BLACK, M.D., Sayreton, Ala., to Miss Elsie Kelly, of Woodlawn, Birmingham, Ala., June 21.

ARTHUR G. EMERSON, M.D., Lewiston, Neb., to Miss Marion Riddell, of David City, Neb., June 26.

AUGUST CONRAD SCHUETZLER, M.D., Toledo, Ohio, to Miss Lapworth, of Hokedale, Mass., June 29.

WILLIAM E. H. MORSE, M.D., Algona, Iowa, to Miss Carrie I. Warrick, of Davenport, Iowa, June 21.

Deaths and Obituaries.

Joseph Le Conte, M.D., College of Physicians and Surgeons, New York, 1845, died July 5, in the Yosemite Valley, where he had gone for a brief outing. He practiced at Macon, Ga., but afterwards took up the study of natural science under Agassiz. In 1851 he became professor of natural science at Oglethorpe University, in Georgia. He was employed by the confederate government as a chemist during the war. In 1869 he was appointed professor in the University of California. He had a national reputation as a teacher and writer in philosophy, history and science.

J. Augustus Ehler, M.D., Pennsylvania Medical College, Philadelphia, 1841, died, June 29, at his home in Lancaster, Pa., aged 81. He was a member of the State Medical Society, and of the American Medical Association, an organizer of the Lancaster County Medical Society, and was reputed to be the oldest practicing physician in Pennsylvania.

William E. Wright, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1866, a member of the American Medical Association, the Iowa State Medical Society and until a short time before his death, president of the Marion County Medical Society, died at his home in Knoxville, Iowa, June 19, aged 60.

Dr. Thomas P. White, University of Strasburg, Germany, 1880, died at his home in Cincinnati, June 29, aged 46, from heart disease, after an illness of some months. He had been for a number of years physician to St. Mary's Hospital; also trustee of the Public Library of Cincinnati.

James W. E. Roby, M.D., New York University, 1887, died in St. John's Hospital, Long Island City, June 25, aged 38. He began practice in the Eastern District of Brooklyn, where he became widely known.

Harry A. Merchants, M.D., Albany (N. Y.) Medical College, 1897, a member of the East Hampden and Massachusetts State Medical societies, died at his home in Monson, from blood-poisoning, June 25, aged 34.

John Beauregard Hart, M.D., University of Maryland, of Baltimore, died at the Sheppard and Enoch Pratt Hospital, near Baltimore, June 29, from apoplexy.

E. Norris Lloyd, M.D., Jefferson Medical College, Philadelphia, 1886, of Yardley, Pa., died in Philadelphia from a self-inflicted wound in the throat, June 21.

Samuel Turner, M.D., Louisville National Medical College, 1894, committed suicide by hanging, June 28, while of unsound mind by reason of the intense heat.

Philip A. Taliaferro, M.D., Jefferson Medical College, Philadelphia, 1850, of Wareneck, Va., died suddenly, while sailing, at Gloucester Court House, Va.

John G. L. Whitehead, M.D., Philadelphia College of Medicine and Surgery (now extinct), 1852, died at his home near Crosswick, N. J., June 29.

John H. Groff, M.D., University of Maryland, Baltimore, 1866, for quarter of a century a practitioner of Penngrove, N. J., died at his home in that place, June 19.

Edward P. Stuart, M.D., New York University, 1877, died at his home in Penn Yan, N. Y., June 23, from tuberculosis, after a long illness, aged 50.

Ebenezer H. DeLand, M.D., an old and respected practitioner of Worcester, Mass., died at his home in that city, June 22, from pneumonia.

Lewis M. Eastman, M.D., University of Maryland, Baltimore, 1859, died at his home in Baltimore, June 27, from paralysis, aged 64.

Edward M. Estes, M.D., University of Louisville, 1878, died at his home in McKinney, Ky., June 19, after a long illness, aged 45.

John P. Wheeler, M.D., New York University, 1843, long a resident of Hudson, N. Y., died there June 28, aged 84.

Alson J. Foster, M.D., University of Minnesota, 1901, died at the home of his parents in St. Paul, Minn., June 23.

J. Abbott Galloupe, M.D., Harvard Medical School, died suddenly in his office in Beverly, Mass., June 25, aged 29.

William R. Barker, M.D., New York University, 1882, died at Newport, Md., June 22.

Miscellany.

Woman's Medical College of Pennsylvania.

This college, now in the fifty-second year of its existence, has just issued the annual report of its maternity department, as follows: The report of the out-obstetric department for the session of 1900-1 shows the number of cases attended from May 1, 1900, to May 1, 1901, 302; the number of children born was 303. Of these, vertex presentations amounted to 285; face, 2; podalic, 10; transverse, 5. There were no maternal deaths; the fetal deaths were 20. The number of after-visits made by physicians and students was 5017. The maternal complications consisted of generally contracted pelvis, 3; oblique pelvis, due to hip-luxation, 1; rhachitic flat pelvis, 2; albuminuria, 2; placenta previa, 1; double vagina, 1; perineal and vaginal lacerations, repaired, 67. The fetal complications consisted of shoulder presentations, 2; funic prolapsus, 5; prolapse of hand, 3; Naegele's obliquity of head, 2; breech and footling presentations, 10; face presentations, 2; twins, 4; monstrosities, 2; and ruptured cord, 1. The operations were: axis traction forceps, 2; high forceps, 3; low forceps, 6; internal version, 3; manual extraction on breech or foot, 5; craniotomy, 1; decapitation in neglected transverse, 1; operation for ankyloglossia, 9; repair of perinei and vaginæ, 67. One student attended 26 cases; six students attended, each, 12 cases; two students, each, 10 cases; twelve students, each, 9 cases; eight students, each, 8 cases; three students, each, 7 cases; three students, each, 6 cases. The number of cases attended since foundation of Maternity Hospital of the College in 1888, has been 2500. The number of maternal deaths during that time was only 2. In the hospital the number of cases delivered was 110, with no maternal deaths, and 7 fetal deaths. The maternal complications of those in the hospital consisted of, placenta previa, 1; low implantation of placenta, 1; hydramnios, 2; kyphotic pelvis, 1; funnel-shaped pelvis, 2; generally contracted pelvis, 12; rhachitic, flat pelvis, 2; mitral stenosis, 1; prolapsus of hand of child, 2; and postpartum hemorrhage, 1. The following operations were attended by the students: axis-traction forceps, 2; high forceps, 8; forceps in cavity, 12; version, 2; Cesarean section, 1; Dührssen's incisions and repair, 3; episiotomy, 6; primary perineorrhaphy, 23; amputation of supernumerary thumb, 1.

Testimonials and Patent Medicines.—The manner in which at least one large patent medicine manufactory secures its recommendations were recently exposed in this city. Two young men, agents of the Peruna Medicine Company, approached Mayor Foeltzer with an offer of one dozen fine photographs for a recommendation of the wonderful curative powers of Peruna. "But," said the mayor, "I have never even seen a bottle of Peruna, let alone being lifted from the brink of the grave by using it." "That doesn't make the slightest difference," replied the agent coolly, "all you are asked to do is to sign your name as the mayor of Benton Harbor at the bottom of a sheet of paper and authorize us to write the recommendation. No one here will ever know anything about the affair as the recommendation and photo will be published in only eastern papers. It will help us to sell Peruna and will help you to get a dozen photos." The mayor read a severe lecture to the agents and then gave them two seconds to leave his presence," replied the agent cooly, "All you are asked to do is to take up with the Peruna scheme are almost murderers. Suppose, for instance, that a sick person is led to dismiss the doctors and to feed on Peruna by these fake recommendations, and then dies. Wouldn't it come pretty close to murder—murder for a dozen photographs." The Peruna agents succeeded, nevertheless, in placing a great number of photographs in both St. Joseph and Benton Harbor. In St. Joseph recommendations were secured from some of the highest city authorities and most reputable citizens. These will be published in hundreds of newspapers in the eastern states and will lead perhaps thousands of sufferers to pay their good money for a worthless medicine. Worthless, because it is presumed that an honest medicine would be boomed exclusively by its merits.—*The Evening News*, Benton Harbor, Mich., July 6, 1901.

Dentists for the English Army.—The British war office has, according to *The Lancet*, recently been asked to send to the army in South Africa four dentists, with the view to prevent the invaliding of the men by reason of "bad teeth." The authorities have complied and have applied to the British Dental Association for advice as to instruments, furniture, etc. The medical officers of the navy are now specially trained in dentistry; moreover, a complete set of dental instruments is supplied to each ship as part of the new outfit of surgical instruments.

German School Reform Congress.—The second annual gathering in Germany of persons interested in the hygienic evolution of schools, met at Wiesbaden, May 31. Resolutions were adopted urging the appointment of medical inspectors for all institutions of learning, from the lowest to the highest. The substitution of the Latin handwriting for German script was almost unanimously advocated. We mention gratefully, by the way, that our German medical exchanges are always printed in the Latin letters, that is the same as used in America, France, England, etc.

Danger in Nursing Bottles.—Physicians do not need to be told that unclean nursing-bottles are a menace to the lives of babes—but the mothers do. It is astonishing how many mothers are not only careless but actually ignorant of this danger, and it is only by repeated warnings that they are made to realize its importance. Thousands of infants are carried off every summer from this cause that might easily be saved by proper precautions on the mother's part.

International Leper Sanitarium.—The *Gazetta degli Ospedali* states that Spain is strenuously objecting to the choice of an island off Tarifa as the site of the proposed international leprosorium, fearing contagion of her possessions in Africa. Dr. Ovilo and Lieut. Castela have been delegated to present the matter at the approaching meeting of the international committee at Tangiers.

The German Committee for the Study of Cancer held a meeting recently which was addressed by Professor Schuetz on the subject of carcinoma in animals. He stated that cancer is rare in horses, but on the other hand, it frequently occurs in dogs. The external integuments are usually affected.

Professor Mantegazza's Fortieth Professional Anniversary.—The 30th anniversary of the founding of the Florence Anthropologic Society was celebrated in connection with Mantegazza's jubilee. It is announced that an anthropologic laboratory is to be founded in his honor. Retzius brought a greeting to him from the Swedish Society, and Virchow represented his Society.

A Central Station for Testing New Medicines is to be organized in Germany in connection with the National Public Health Department. The necessity of such an institution is shown by the fact that 126 new medicines were put on the market in 1899-1900.

The Spanish Authorities are putting up a memorial tablet on the house occupied by the illustrious anatomist, R. Martinez Molina, at Madrid. In our Spanish exchanges he is called the "Perla de San Carlos."

Chair of Oto-Laryngology at Rostock.—The University of Rostock is the first German medical faculty to have a regular chair for this specialty. Professor Koerner is the first incumbent.

Professor Piero Giacosa, of Turin, has been chosen president of the section of the history of medicine in the International Congress of History to be held at Rome this fall.

Association News.

THE ST. PAUL MEETING AS VIEWED BY OUR CONFRERES.

From the Columbus Medical Journal, June.

The St. Paul meeting of the American Medical Association has been pronounced by those in attendance as one of the best in the history of this great organization. The registration was almost as large as it was at the Atlantic City meeting last year, while the Section attendance was better.

The papers were, "in almost every instance above the average in scientific interest and practical value." . . . The large attendance at the Sections, and extended discussions which were full of interest, indicate that the members were making no holiday out of the sessions. The able and stimulating address of President Dr. C. A. L. Reed, who extended greetings and invoked upon the deliberations "the spirit of liberty, courage, progress, and truth," set the pace in high thinking and earnest inquiry which characterized the meeting throughout.

The presentation and unveiling of a portrait of the founder of the Association, Dr. Nathan S. Davis, was a handsome and timely recognition of the services of this distinguished leader, who, in the language of Dr. Pennington, has perhaps done more than any other individual in promoting the efficient social organization of the medical profession throughout the United States, and in elevating the standard of medical education. This ceremony led to the appointment of a committee to secure, without expense, the portraits of past presidents of the Association. The adoption of the revised constitution and by-laws assures an effectual reorganization which will bring the state societies into more vital relations with the Association, and, by the elimination of the general morning meetings, after the first day, will give more time for Section work. The limitation of the number of papers will insure more careful preparation, and more deliberate consideration of those on the program. The completeness of arrangements reflected credit upon the local profession, and the officers of the Association, while the hospitality of the twin cities of the West won the hearts of every visitor. The first meeting of the century has revealed new phases of medical science, full of promise, and under a new constitution initiated a new era of fraternal organization.

From the Southern Practitioner, July 1.

Although the meeting at Atlantic City was perhaps larger than that at St. Paul, it had but little advantage in point of numbers; and the great change in the working methods of the organization make the last meeting notably the most important in its history. While the character of the organization is not changed, the very important change made in the future as pertains to "business," as it may come before the Association, is not only a marked feature, but one of the very greatest importance, and one that we confidently believe will redound to great good. . . . Outside the possibility of greater advantages of transacting its business properly, a longer time is afforded for the scientific work of the Association. Farther, it foreshadows, or should do so, a complete reorganization of State organizations, and no time is more suitable than the present; and we most sincerely hope to witness, within the immediate future, the reorganization of all along similar lines. Possibly local environments or customs may require some slight variations, but the general characteristics of the National, should pervade all State and Territorial Societies.

The addresses of the President, together with that on Medicine, Surgery and State Medicine, as well as the scientific work in all the Sections, so far as we can learn, compare favorably with any preceding meeting. The exhibits were well up with former meetings, and the hotel facilities were satisfactory. As for the social entertainments afforded, both general and private, as an experienced delegate, one who has been quite a regular attendant for a number of years expressed himself, "St. Paul just spread herself, and Minneapolis helped her." The election of Dr. John A. Wyeth, of New York, as President, is a fitting recognition of his abilities as a student of science, a faithful and careful worker, an eminent surgeon, and a most worthy member of his profession, and courteous gentleman. The selection of the other officers we believe will give as much satisfaction as is possible, as will also the selection of Saratoga as the next place of meeting.

THE JOURNAL of the Association is in a most prosperous condition, . . . and is rapidly becoming just what it should, the exponent of American medical opinion and thought. Yes, truly, an organ of the American medical profession with influence and weight.

From Medical Fortnightly, June 25.

It was a great meeting in every sense of the word. The attendance was large, over 2000 physicians were registered, while fully 500 more were present as lookers on. The weather was not perfect, but in spite of the rain, it was agreeable and the elements did not interfere with the proceedings of the society. St. Paul looked its best, the people did their best, and the physicians went one better, and were tireless in their desire to make the meeting a memorable one to all who came. As a result St. Paul will always figure in the history of the society. The greatest event of the meeting was the adoption of the plan of reorganization, which was unanimously accepted and became a law at this meeting.

The society is now upon a solid working basis, with stable features and powers which will be sure to yield results. The scientific work of this meeting was of a superior order, the various sections being full and of especial service to all who attended. The number of papers being less than at former meetings, more time was given to discussion. Discussion is the life of a medical meeting; this was proven true at St. Paul. Another feature, which is commendable, is that of varied symposia —a symposium with discussion on a certain subject is carefully planned and the subject exhaustively treated. The result is all that is new, all that is worthy and helpful upon a certain subject is presented and thoroughly discussed.

From Medicine, July.

The St. Paul meeting of the Association has passed into history, and will be long looked upon as one of the most successful and perhaps epoch-making in the progress of the Association.

The adoption of the report on reorganization was inevitable. A very small minority opposed it, but the concensus of opinion, being so overwhelmingly in its favor, meant that it would be promptly carried when it came to a vote. It was claimed on the floor of the convention that the proposed House of Delegates was creating an undemocratic star chamber to arbitrarily govern the Association. This suggestion came from that small coterie of individuals who, in the past, have largely attended to the business of the convention and whose occupation under the

new order of things will be somewhat restricted. The creation of the House of Delegates is, in effect, enlarging the governing body and giving it a thoroughly representative character. It will relieve the general sessions of all business details, and, while they may be less picturesque, they will be more orderly.

From the St. Paul Medical Journal, July.

It was with mingled feelings of regret and relief that we witnessed the adjournment of the 52d annual meeting of the American Medical Association, which will meet next year in Saratoga. The meeting was a large one, the actual registration being eighteen hundred and ten, and there were not far from twenty-five hundred in attendance, and the body of delegates was an unusually representative one. We shall make no attempt to report the meeting in detail, as we assume that all of our readers have access to one or more of the weekly journals in which this is done much more accurately than we could do it if we attempted to. The most important event of the meeting, indeed we believe the most important event in the history of the Association, was the adoption in a modified form of the report of the Committee on Organization. We hope that every member of the Association will read carefully the plan of reorganization as it was finally adopted, and that every state and county medical society in the country will adopt the recommendations concerning membership there suggested. This matter was discussed by Dr. Wm. Davis in his address, as President of the Minnesota State Medical Society, and the Society appointed a committee to consider the matter in all its details and to report at the next annual meeting. We shall have frequent occasion to refer to this matter, and at this time we will simply say that the plan meets with our hearty approval and that we believe that it will accomplish a vast amount of good for the Association in many ways. It will, among other things, purify the politics of the Association; it cannot do away with politics, for in an association of this kind some politics are unavoidable, but with the elective power in the House of Delegates, it is not at all likely that organized cliques will come to the annual meetings with their candidates for the various offices determined upon and with a carefully arranged plan of campaign for their election. Dr. Reed was almost ideal as a presiding officer, firm, dignified, and with a perfect knowledge of parliamentary law, and his presidential address, as might be expected by those familiar with his gifted pen, was a broad, scholarly and thoughtful document, containing many helpful suggestions concerning the policy and the possibilities of the Association. It should be carefully read by those who were denied the privilege of listening to its eloquent delivery.

The Section meetings were well attended and a very large number of valuable papers were read and discussed. The Pathologic Exhibit excited much interest and a great many important subjects in pathology were represented by carefully prepared specimens and series of preparations, photographs and microscopic slides. The series of wax models representing various stages of smallpox prepared by Mr. Dahlgren, of Minneapolis, for the Pathological Laboratory of the University of Minnesota attracted much attention and was highly commended. The General Exhibits were interesting, well conducted, largely attended and satisfactory both to the exhibitors and the local committee. The hotel arrangements were admirable and we heard no complaints of uncomfortable accommodations or overcrowding. Concerning the entertainments and the social features of the meeting it is perhaps not becoming for us to speak, but we were much gratified to hear on all sides such cordial and spontaneous expressions of appreciation from our guests and we feel sure that everybody had a good time.

New Members.

The following is a list of new members of the American Medical Association for June, 1901:

ALABAMA.

Zimmerman, Albert S., Killen.
Goggans, J. A., Alexander City.
Watkins, I. L., Montgomery.

ARIZONA.

Craig, R. W., Phoenix.

ARKANSAS.

Goree, J. L., Pine Bluff.

CALIFORNIA.

Bullard, F. D., Los Angeles.
Fales, Louis Henry, San Francisco.
Bruner, Francis Marion, Santa Ana.
Cagleri, G. E., San Francisco.
Ransom, S. A., Angel Island.
LeFevre, Joseph P., San Francisco.

CONNECTICUT.

Goodenough, Edw. W., Waterbury.
Hammond, H. L., Killingly.
Kellogg, K. E., New Britain.

COLORADO.

Friedmann, A. C. H., Colorado Springs.
Phillips, C. W., Rocky Ford.

DISTRICT OF COLUMBIA.

Fisher, W. N., Washington.
Wertenbaker, C. P., Washington.

GEORGIA.

Chason, J. D., Bainbridge.
Battey, Wm. W., Augusta.

INDIANA.

Culp, L. L., Ft. Wayne.
Wardner, Horace, Laporte.
Cole, A. M., Indianapolis.

ILLINOIS.

Petersmeyer, Wm., Ashton.
Rutledge, J. A., Elgin.
Brewer, E. J., Ashton.
Rice, Delia N., Galesburg.
Chapin, H. A., White Hall.
Hallberg, C. S. N., Chicago.
Johnson, C. W., Chicago.
Swan, C. F., Chicago.
Stewart, W. T., Chicago.
Andrews, E. W., Chicago.
Goodsmith, H. M., Chicago.
McIntyre, C. J., Chicago.
Martin, F. H., Chicago.
Sauford, W. C., Chicago.
Sandberg, K. F. M., Chicago.
Stevenson, A. F., Chicago.
Stewart, H. J., Chicago.
Webster, E. M., Chicago.
James, R. L., Blue Island.
Lillie, C. W., East St. Louis.
McGowen, T. J., Palestine.
McLaughlin, W. K., Jacksonville.
Norton, F. D., Columbus.
Peyton, D. C., Jeffersonville.
Sourwine, J. D., Brazil.

IOWA.

Patterson, W. E., Greene.
Field, Geo. Alfred, Callender.
Sowles, E. E., LuVerne.
Pattison, I., Oelwein.
Ryan, G. N., Des Moines.
Saunders, C. J., Ft. Dodge.
Warren, J. N., Sioux City.
Smith, Frank S., Nevada.
Lachman, E. W. Estherville.
Chase, C. S., Waterloo.
Deering, A. B., Boone.
Dean, F. W., Council Bluffs.
Dennis, E. G., Charles City.
Downing, W. L., Moulton.
Farnsworth, H. S., Clinton.
Fuller, Z., Sac City.
Graham, J. C., La Porte City.
Hanna, J. W., Winfield.
Harding, L. W., Salou.
McLaughlin, A. J., Sioux City.
McLean, J. W., Fayette.
Pond, A. M., Webster City.
Rawls, J. A., Creston.
Shellito, A. G., Independence.
Smith, E., Aurora.
Stevens, G. M., Decorah.
Stockman, G. C., Mason City.
Vest, F. E., Montezuma.
Herrick, S. J., Everest.
Waterman, J. C., Council Bluffs.

KANSAS.

Elmore, R. B., Osburg.
Farney, Haydee M., Mound City.
Parker, John B., Hill City.
Hunter, Randall R., Fulton.
Harkey, Wm. Cathey, Gardner.

KENTUCKY.

Smith, J. W., Clinton.
Schachner, Aug., Louisville.
Linn, C. H., Kuttawa.
Powell, W. D., Harrodsburg.
Aud, C. Z., Cecilian.
Frank, L., Louisville.
Green, J. T., Leitchfield.
McCormick, A. T., Bowling Green.

MASSACHUSETTS.

Harding, Walter A., Everett.
Gay, Wm. Fred'k, Boston.
Frame, Jos., Rockland.
Hatch, Leonard F., Lynn.
Leonard, Jr., E., Melrose.

MAINE.

Foster, B. B., Portland.

MICHIGAN.

McIlench, W. J., Brighton.
Layton, Matthew A., Woodmere.
Alway, Geo. H., Gaines.
Shaw, Nenian T., Birmingham.
Seeley, Oscar F., Climax.
Warthin, Altred S., Ann Arbor.
Ballard, W. R., Saginaw.
Bliss, J. W., Saginaw.
Godfrey, W. L., Battle Creek.
Kellogg, P. S., Battle Creek.
McLurg, J., Bay City.
Stewart, C. E., Battle Creek.
Tupper, V. L., Bay City.
West, W. K., Calumet.
Shurly, B. R., Detroit.

MINNESOTA.

Barck, G. W., Albert Lea.
Nichols, G. W., Milaca.
Freeman, J. P., Enumous.
Wing, I. C. J., Clinton.
Bouman, Hermann, Torah.
Hawkins, V. J., St. Paul.
Smith, P. Albert, Faribault.
Phillips, J. R., Northfield.
Burgan, Jas Homer, Tracy.
Manu, Arthur T., Minneapolis.
Hesselgrave, S. S., St. Paul.
Avery, J. F., Aitkin.
Wood, W. S., Geneva.
Johnson, Osa, St. Paul.
Nippert, H. T., St. Paul.
Behrens, B. M., Minneapolis.
Bjellaud, A. O., Mankato.
Holbrook, J. S., Mankato.
Johnson, J. S., St. Paul.
Landenberger, John, New Prague.
McKinnon, Malcolm, Fosston.
Miller, A. W., St. Paul.
Whitcomb, E. H., St. Paul.
Morley, Wm. B., St. Paul.
Sherwood, Geo. S., Kimball.
Vittum, W. H., St. Paul.
Camp, J. L., Brainerd.
Dimmitt, F. W., Red Wing.
Jacoby, Wm., Wells.
Allen, A. W., Austin.
Adsit, A. M., Hastings.
Anderson, C. A., Rush City.
Arzt, C. P., St. Paul.
Bachman, C. E., Evansville.
Barton, G. C., Minneapolis.
Bean, C. E., St. Paul.
Bole, R. S. St. Paul.
Boot, G. W., Lamberton.
Boyd, C. A., Lewiston.
Braden, A. J., Duluth.
Bray, C. W., Biwabik.
Buckley, E. W., St. Paul.
Button, A. J., Hammond.
Burton, C. N., Elinore.
Cremer, M. H., Mazeppa.
Cox, A. J., Tyler.
Dodge, F. A., Le Sueur.
Dodge, W. M., Farmington.
Dunn, J. B., St. Cloud.
Ely, C. B., Rochester.
Franchere, F. E., St. James.
Freeman, W. W., Grand Meadow
Fritsche, L. A., New Ulm.
Frost, E. H., Wilmar.
Gallagher, J. W. S., Winona.
Hansen, M., Hendrum.
Lichtenstein, H., Winona.
McKean, J., Montgomery.
Mayland, M. L., Faribault.
Mikkelsen, M., Wells.
O'Hara, J. J., Alma City.
Peters, R. M., Minneapolis.
Plondke, F. J., St. Paul.
Pritchard, D. B., Winona.
Randall, B. M., Graceville.
Renz, G. A., St. Paul.
Roberts, T. S., Minneapolis.
Rood, D. C., Hibbing.
Rose, F. M., Faribault.
Schoch, J. L., New Ulm.
Simpson, J. D., Minneapolis.
Schofield, C. L., Benson.
Schoonmaker, E. C., Perham.
Slocumb, J. A., Plainview.
Stoner, R. R., Winthrop.
Stover, E. E., Bigelow.
Trace, O. C., Little Falls.
Van Beeck, H. G. C., Hastings.
Waltam, G. S., Warren.
Watson, T. R., Zumbro Falls.
Williams, John, Lake Crystal.
Wood, E. S., St. Paul.
Ritchie, P., Ramsey.

MISSISSIPPI.

Ballard, J. C., Natchez.
Harris, T. A., Rosedale.

MISSOURI.

Goben, Grandison A., Kirksville.
May, Henry A., Washington.
Ralston, J. P., Sheffield.
Sawtell, J. E., Kansas City.
Gaines, J. R., Musselfork.

Townsend, Jas. A., Unionville.
Lincoln, Ben. S., Monroe City.
Fuson, Frank B., Mansfield.
Carter, Oscar Newton, Lebanon.
Fritts, J. R., Mexico.
Standly, E. D., Linneus.
Nash, G. A., Maryville.
Scott, J. N., Kansas City.
Greene, J. V., Kansas City.
Jackson, C. M., Columbia.
Long, O. M., Harrisburg.
Morton, D., St. Joseph.
Robinson, J. F., Nevada.
Wiener, M., St. Louis.
Dannaker, C. A., Kansas City.

MONTANA.

Wine, W. B., Dupuyer.
McDonald, H. J., Butte.
Spelman, J. F., Anaconda.

NEBRASKA.

Brown, Ewing, Omaha.
Hepperlen, H. M., Beatrice.
Gilmore, R. A., Omaha.
Bridges, E. L., Wausa.
Clements, G. P., Clarkson.
Haggard, J. R., Lincoln.
Henry, E. C., Omaha.

NEW JERSEY.

Carling, W. Monroe, Trenton.
Ramsay, W. E., Perth Amboy.

NEW YORK.

Byrne, Patrick J., New York City.
Bozovsky, V. D., Dunkirk.
Jack, G. N., Depew.
Houghton, H. S., New York City.
Bloodgood, D., Brooklyn.
Gumaer, A. G., Buffalo.

NORTH DAKOTA.

Currie, A. N., Hatton.
Baier, Florence C., Jamestown.
Baldwin, L. B., Jamestown.
Fiset, L. O., Grand Forks.
Gerrish, W. A., Enderlin.
McKenzie, J. D., Milnor.
Meckstroth, L. W., Wahpeton.
Pray, E. A., Valley City.
Quain, E. P., Bismarck.
Rounsvelle, A. P., Larimore.
Sifton, J. W., Jamestown.
Spottswood, C. P., Hankinson.

OHIO.

Calhoun, S. Fred'k, Cleveland.
White, D. K., Cleveland.
Barnes, Albert S., Cambridge.
Chadbourne, T. L., Galipolis.
Clark, C. R., Youngstown.
Dickson, J. A., Ashtabula.
Kimmell, J. A., Findlay.
Rathburn, D. C., Middleport.
Sylvester, J. E., Wellston.
Wagar, C. P., Toledo.
Krouse, L. J., Cincinnati.
Schwab, L., Cincinnati.

OKLAHOMA.

Love, R. D., Perry.

PENNSYLVANIA.

Newell, Mary E., Altoona.
Wadsworth, Wm. S., Philadelphia.
Myers, Rudolph, Huntingdon.
Rhard, Charles C., Homestead.
Nones, R. H., Philadelphia.
Neff, E. L., Pittsburg.
Brubaker, J. L., Altoona.
Hayes, F. M., Allegheny.
Shallenberger, H. M., Rochester.
Sheridan, J. C., Johnstown.

RHODE ISLAND.

Merriman, Alfred M., Bristol.

SOUTH DAKOTA.

Coulter, J. E., Desmet.
Cook, J. F., Langford.
Jones, J. D., Groton.
Lane, W. H., Miller.
Mallery, C. B., Aberdeen.

TENNESSEE.

Haigler, T. W., Chattanooga.
Meyer, L. L., Memphis.
Watson, Wm. T., Lexington.
Eve, Paul F., Nashville.
Hall, D. M., Memphis.
Witherington, J. B., Munford.

TEXAS.

Aronson, Emile, Dallas.
Gilbert, A. J., Hillsboro.
Gray, C. A., Bonham.
Seay, E. L., Denison.
Wilson, Robt. S., Gainesville.

VIRGINIA.

McCurdy, Neil A., Norfolk.

WASHINGTON.

Yocum, J. R., Tacoma.

WEST VIRGINIA.

Long, D. J., Piedmont.

WISCONSIN.

Buchanan, R. C., Green Bay.
Chittenden, G. C., Madison.
Conkey, C. D., West Superior.
Conger, F. G., Mondovi.
Elkinton, C. H., Eleva.
Epley, F. W., New Richmond.
Godfrey, J., Lancaster.
Head, L. A., Madison.
Hudgel, Chas R., Ladysmith.
Keenan, Geo., Madison.
Mills, N. P., Appleton.
Moyer, S. R., Monroe.
Noyes, J. C., Oshkosh.
Perrin, H. E., Star Prairie.
Philler, H., Waukesha.
Sharp, M. B., Madison.
Sperry, W. P., Phillips.
Thibodo, F. H., Green Bay.
Witte, W. C. F., Milwaukee.
Wiley, F. S., Fond du Lac.

Report on the Pathologic Exhibit of the American Medical Association at the St. Paul Meeting Held June 4 to 7, 1901.

FRANK B. WYNN, CHAIRMAN.

INDIANAPOLIS.

Many have borne appreciative testimony to the success of the first Pathologic Exhibit of the Association, inaugurated at Atlantic City a year ago. It was a wholesome digression from the monotony of commercial exhibits and appealed at once to those striving for the higher ideals in medicine. The pathologist, expert clinician and general practitioner alike found it interesting, instructive and useful. Considering the ethical and scientific spirit of the Association, official approval of the movement was a result anticipated. An appropriation was made commensurate with the importance of the work, which was to be under the supervision of the Section on Pathology and Bacteriology.

Profiting by the experience of a year ago, it was hoped for the St. Paul meeting to secure a better balanced exhibit, both in the scope and character of material presented. The difficulties in the attainment of this end were, first, to secure the promise of exhibits, and secondly, to ascertain from prospective exhibitors a list of what it was designed to contribute. In this way it was sought to obtain an approximate estimate of the quantity and character of available material. Thus, would unnecessary duplication of specimens be avoided, and the exhibit built up at weak points, giving it symmetry. In the very nature of things this was an arduous undertaking, both on the part of the Committee and those who signified a willingness to contribute. In the main the hopes and desires of the Committee have been realized. When it is remembered that the large labor necessary in the preparation and presentation of the exhibit was performed by exhibitors gratuitously, one can but marvel at the results attained. What stronger proof could be given of the unselfishness of the true scientific spirit? A corps of over fifty scientific workers, many of them eminent in the field of pathology, labored faithfully for this enterprise at home, and at the St. Paul meeting subordinated pleasure to the successful demonstration of the Pathologic Exhibit, making of it a great common school of practical pathology, for the rank and file of the profession. They merit and have won the grateful thanks and unstinted praise of the whole Association.

Although the Pathologic Exhibit is under the direction of the Section on Pathology and Physiology, it is a feature of the Association to which all Sections are related. Next to the place where the general sessions are held, the Pathologic Exhibit rooms should be the most important common meeting-place for the members of all Sections. It is, therefore, the duty of the Committee of Arrangements each year, to provide for the Pathologic Exhibit, ample space, conveniently located, well lighted, and separate and distinct from the commercial exhibits. The local committee on Pathologic Exhibit deserves thanks for securing the best available quarters at St. Paul. Unfortunately the room was not convenient of access. Consequently, the attendance at the exhibit was not what its excellence warranted.

In the summary which follows, the merest reference only is possible to exhibitors and their collections. Inadequate as the report of necessity is, it will give the reader a general idea of the great work accomplished in this practical scientific department of the Association.

A.—SOCIETIES.

Cincinnati Academy of Medicine: H. J. Whitacre.

Miscellaneous specimens	50

This well-known medical organization did credit to itself and the Queen City by sending to the exhibit this excellent collection. Particularly noteworthy was a series of specimens illustrative of prostatic hypertrophy.

Indiana State Medical Society: Frank B. Wynn, Indianapolis.

Photomicrographs of malarial blood, etc	50
Photographs illustrative of different types of feeble-minded	25
Series of photographs illustrative of different types of criminals	42
Gross specimens	110
Total	227

Especially interesting was the group of photomicrographs of malarial blood and bacteria by C. S. Bond; also the series of photographs representing different types of criminals, by A. L. Spinning. Among the gross specimens was shown a group of livers illustrating beautifully and typically alcoholic, syphilitic and biliary cirrhosis. There was also a fine series of brains showing cerebral hemorrhage. This Society participated in the exhibit last year and enjoys the distinction of being the pioneer in this line of society work.

Kansas State Medical Society: Geo. A. Boyd, Baldwin.

Miscellaneous collection of gross specimens	30

Most interesting and instructive in this exhibit was a collection of mosquitoes from all parts of the world, mapped to show their relationship to malaria.

Wisconsin State Medical Society: H. V. Würdemann and Gustav A. Kletzesch, Milwaukee.

Collection of eye specimens	40

This extraordinary collection of eye specimens, beautifully mounted in glycerin jelly, gave a very comprehensive view of gross pathologic conditions of the organ.

B.—COLLEGES.

Chicago Policlinic: Maximilian Herzog.

Gross specimens	30

Very interesting in this collection was a series of tubal pregnancies and several specimens of myoma complicating pregnancy.

College of Physicians and Surgeons, Chicago: W. A. Evans, W. T. Eckley and C. E. Coates.

SEMI-MOIST AND DRY SPECIMENS.

Nasal fossa and accessory sinuses	20
Antrum of Highmore	12
Dural sinuses	12
Of male and female pelves	5
Pott's fracture, tubercular spine, etc	5
Joints	12
Male urethral	6
Brain and spinal cord	7
Pathologic sklagraphs	65
Photomicrographs	36
Miscellaneous	5

WET SPECIMENS.

Tuberculosis	20
Carcinoma	10
Gangrene	6
Uterus and ovary	16
Miscellaneous	8
Total	245

This very large and beautiful collection consisted of anatomic as well as pathologic specimens and was especially noteworthy for its superior average excellence. The semi-moist specimens exhibited outside of containers, afforded great advantages for close inspection.

McGill University, Montreal, Canada: J. G. Adami.

Miscellaneous specimens	11

Prof. Adami was not able to be present in person, but evidenced his interest in the exhibit by sending this choice collection. Very striking was the group of cerebral aneurysms.

Hamlin University, Medical Department, Minneapolis: J. F. Corbett.

Gross, dry, bone specimens	75

This beautifully mounted collection of bone specimens represented a wide range of pathologic conditions.

Medico-Chirurgical College, Philadelphia: Joseph McFarland,

Skiagraphs	26
Microscopic demonstrations	25
Total	51

The striking feature of this exhibit consisted of a series of microscopic specimens showing beautifully all the various neoplasms and other important pathologic conditions found in the mammary gland.

Northwestern University Medical School, Chicago: G. Fütterer and F. Robert Zeit.

This remarkable collection consisted of tumors grouped anatomically as follows:

A. Endothelioma of humerus with extensive metastases	6
B. Carcinoma of uterus	9
C. Primary carcinoma causing implantation in other organs	4
D Carcinoma with cells performing physiologic function like organ where found	1
E. Carcinoma of breast with many metastases	4
F. Carcinoma of gastro-intestinal tract, particularly of stomach in reference to gastric ulcer	12
G. Tumors of the mamma	5
H. Cysts of ovaries	7
I. Miscellaneous	17
Photographs accompanying the foregoing	50
Total	115

These were all Kaiserling preparations, mounted in unique oak frames with glass centers, getting rid of the refractive distortions of round jars. The entire group was instructive alike to the pathologist and practitioner.

Wisconsin College of Physicians and Surgeons, Milwaukee.

Miscellaneous gross specimens	17

Some of these were very excellent specimens.

Rush Medical College, Chicago: Ludvig Hektoen and H. G. Wells.

Jar specimens, miscellaneous	35
Bone specimens, dry	6
Group of eye specimens mounted in glycerin jelly	12
Photographs	14
Cultures of blastomycetic dermatitis	20
Books illustrating laboratory training	14
Total	101

The students' note-books which were exhibited contained many original drawings of exceptional merit, which bore eloquent testimony to the superior laboratory training received. The jar specimens were all rare. Almost without exception, they were accompanied by published reports.

University of Minnesota, Minneapolis: F. F. Wesbrook, L. B. Wilson and S. M. White.

Sets of cultures of bacteria showing method of preserving cultures for purposes of demonstration	26
Colored wax models of smallpox, chicken-pox, pemphigus, etc., made by B. E. Dahlgren from plaster impressions taken by G. D. Haggard	40
Jar preparations—miscellaneous	149
Dry bone and other specimens	18
Photographs	20
Large water colors, illustrating classification of bacillus diphtheriæ	21
Total	274

Most striking in this large and well-arranged exhibit was the beautiful set of wax models referred to above. The plan of preserving cultures for purposes of demonstration is unique, artistic and practical. The excellence of this collection was made patent by the constant presence of someone to demonstrate the specimens.

C.—HOSPITALS, MUSEUMS, ETC.

Central Indiana Hospital for Insane: George F. Edenharter and William Charles White.

Photographs illustrating different types of insanity	62
Photographs of Pathological Building and equipment of hospital	26
Gross specimens	12
Total	100

The photographs of the insane were especially fine. Noteworthy among the gross specimens was one of biliary cirrhosis arising from obstruction of the common duct by a stone.

Iowa Hospital for Insane, Independence: Gershom H. Hill and Albert M. Barrett.

Miscellaneous gross specimens	30

These were all Kaiserling preparations and accompanied by carefully prepared data, bearing excellent testimony to the pathologic work being done in the institution.

Government Hospital for Insane, Washington, D. C.: A. B. Richardson and I. W. Blackburn.

Miscellaneous gross specimens	40

This institution contributed very generously toward the success of the Atlantic City Exhibit. Although neither representative was able to be present this year, their good will toward the movement was shown in this excellent collection of gross specimens contributed. Very beautiful were those of aneurysm of the heart, hepatic, cirrhosis and prostatic hypertrophy.

Lakeside Hospital, Cleveland: W. T. Howard, Jr.

Miscellaneous gross specimens	25

This institution was very creditably represented both this and last year. Rare and instructive were the neoplasms as follows: Carcinoma with tuberculosis of cecum; primary carcinoma with cirrhosis of liver; angio-sarcoma of humerus; primary muscle cell sarcoma of uterine wall; sarcoma of both suprarenal bodies; and primary sarcoma of stomach.

St. Luke's Hospital, Richmond, Va.: Stuart McGuire.

Stone in the bladder with foreign bodies as neuclei	5

These stones were removed from the female bladder. Three were formed on hair-pins; another about a broken fragment of gum catheter, and the fifth upon a segment of a silver catheter.

St. Mary's Hospital, Rochester, Minn.: Drs. Mayo.

Miscellaneous gross collection	27

The distinctive feature of this collection was a series of pathologic appendices showing: 1. Acute appendicitis, 6 to 36 hours after primary attack. 2. Showing abscess, gangrene and foreign bodies, operation 3 to 12 hours after first attack. 3. Chronic form, operation between attacks. 4. Chronic obliterating appendicitis.

St. Peter Hospital for Insane: H. D. Valin.

Pathologic brains, dry	12
Wet specimens	8
Casts of brains	10
Photomicrographs	37
Miscellaneous	68
Total	135

This entire collection gave ample evidence of excellent work being done in this institution in the field of neuropathology.

Department of Public Health, Chicago.

Photographs of smallpox and chicken-pox	50

This was a most excellent series of photographs.

U. S. Army Medical Museum, Washington, D. C.: Col. Calvin DeWitt and Capt. A. E. Bradley.

Radiographs of gunshot fractures received by soldiers in the Spanish-American war	24
Fractures received by soldiers in the war of 1861-65, of interest by way of comparison with the radiographs. The varying effect of the different type of missile was well shown	25

Intestinal lesions of typhoid fever and dysentery	17
Finely mounted series of dental deformities	35
Plaster casts of Peruvian skulls, showing prehistoric trephining. Some of these skulls presented evidence of healing after operation	19
Total	120

This very fine collection, sent from the great Army Medical Museum, is evidence of the good will borne the Pathologic Exhibit by Surgeon General Sternberg and his colleagues.

U. S. Bureau of Animal Industry, Washington, D.C.: D. E. Salmon.

Tuberculosis in meat, specimens	50

Those who attended the Atlantic City meeting will recall the extraordinary demonstration of diseased meats which Dr. Salmon made in the Pathologic Exhibit, comprehending all the gross pathologic conditions found in Government meat inspection. For this year's Exhibit he again presented cold-storage specimens, limiting them, however, to tuberculosis in animals. This typical group, eminently interesting and instructive in itself, was rendered doubly so by its proximity to the group showing tuberculosis in the human being.

INDIVIDUALS CONTRIBUTING COLLECTIONS.

Emil Amberg, Detroit.

This was a collection of dry-bone specimens which proved extremely interesting to otologists. They were grouped as follows:

1. Series showing variation in position of lateral sinus (temporal bones)	20
2. Specimens with abnormally developed styloid process (temporal bones)	20
3. Specimens showing development of styloid process at different ages	29
4. Specimens showing topographic anatomy of ear	21
5. Other specimens	4
Total	94

Edward Boeckmann, St. Paul.

Photographs of lepers	14

This was an exceptionally fine series of photographs, representing the different varieties and stages of the disease.

Frederic S. Dennis, New York.

Gross specimens	100

Dr. Dennis exhibited a series of sarcomata and carcinomata involving the bones and glands. They were presented in connection with a paper read before the Section on Surgery and Anatomy, on "Treatment of Malignant Disease by Surgical Operation." The specimens were from his tabulated cases in which no recurrence has taken place.

James Nevin Hyde and Frank Hugh Montgomery, Chicago.

Photographs of blastomycetic dermatitis	53
Cultures of blastomycetic dermatitis	20
Total	73

This beautiful series of photographs was highly appreciated by all dermatologists as well as many others interested in this rare skin affection upon which these gentlemen are eminent authorities.

Leo Loeb, Chicago.

Specimens	20

This was a most excellent demonstration of research and experimental work, a feature of the Pathologic Exhibit which the Committee has been anxious to build up. The bodies of ten rats were exhibited, showing tumors in a series of succeeding transplantations of sarcoma of the thyroid in a rat. Drawings from microscopic sections accompanied the gross specimens.

Charles Lester Leonard.

Beautiful series of skiagraphs, showing renal and urethral calculi	10
Total number of specimens constituting the Pathologic exhibit	2130

Societies.

Chicago Electro-Medical Society.—This society has been organized with Dr. Shobal V. Clevenger, president, and Dr. Gordon G. Burdick, secretary.

Northwestern University Medical School Alumni Association.—At the annual meeting of this association, Dr. William A. Mann, Chicago, was elected president, and Dr. Henry B. Hemenway, Evanston, secretary.

Panhandle (of Texas) Medical Society.—The seventh quarterly meeting of this society will be held at Amarillo, July 16 and 17, under the presidency of Dr. David R. Fey of that place.

Practitioners' Club (Jersey City, N. J.).—At the fourth annual meeting and dinner of this club, June 11, Dr. Gordon K. Dickinson, Jersey City, was elected president; Dr. Charles A. Gilchrist, Hoboken, vice-president, and Dr. George W. Shera, Jersey City, secretary and treasurer.

New York State Medical Association.—Third District Branch.—The annual meeting of this branch of the State Association was held in Ithaca, June 13 and 14. Dr. Elias Lester, Seneca Falls, was elected president; Dr. Bernard S. Moore, Syracuse, secretary, and Dr. Chauncey P. Biggs, Ithaca, treasurer.

Ulster County (N. Y.) Medical Association.—The Ulster County branch of the New York State Medical Association was organized at Kingston, June 20, with the following officers: Dr. Fred Huehne, Rondout, president; Dr. James L. Preston, Kingston, vice-president; Dr. Alice Devine, Ellenville, secretary, and Dr. Alexander A. Stern, Rondout, treasurer.

Union County (Ohio) Medical Association.—The physicians of Union County met at Marysville, June 11, and organized an association with the following officers: Dr. David W. Henderson, president; Dr. Charles McCune, of Unionville, and Alexander Smith, of Pottersburg, vice-presidents, and Dr. Stanley J. Bowen, of Claiborne, secretary and treasurer.

Northern Aroostook (Maine) Medical and Surgical Society.—The annual meeting of this society was held at Caribou, June 11. The following officers were elected: Dr. Herbert F. Kalloch, Fort Fairfield, president; Drs. Charles E. Dow, of Mapleton, and E. H. Doble, of Presque Isle, vice-presidents; Dr. Jefferson F. Cary, Caribou, treasurer, and Dr. W. G. Chamberlain, Fort Fairfield, secretary. The next meeting will be held in September at Presque Isle.

Washington State Medical Society.—The twelfth annual meeting of this society was held at Seattle, June 18, 19 and 20. A committee was appointed to devise a common form of constitution for the various county medical societies throughout the state. The election of officers resulted as follows: Dr. John W. Bean, Ellensburg, president; Drs. Henry B. Luhn, of Spokane, and Frantz H. Coe, of Seattle, vice-presidents; Dr. James B. Eagleson, Seattle, treasurer, and Dr. Arthur H. Coe, Spokane, secretary. Tacoma was selected as the meeting-place for 1902.

New Jersey State Medical Society.—The 135th annual meeting of this society was held at Deal Beach, June 25-27. Acting President Dr. John D. McGill, Jersey City, in the chair. The following officers were elected: Dr. John D. McGill, Jersey City, president; Drs. E. L. B. Godfrey, of Camden, Henry Mitchell, of Asbury Park, and Addison W. Taylor, of Beverly, vice-presidents; Dr. Ellis W. Hedges, Plainfield, corresponding secretary; Dr. William J. Chandler, South Orange, recording secretary, and Dr. Archibald Mercer, Newark, treasurer. The next meeting will be held at Atlantic City.

Wisconsin State Medical Societies.—A joint meeting of the Wisconsin State Medical Society, Wisconsin State Eclectic Medical Society and Homeopathic Medical Society of the State of Wisconsin was held in Waukesha, June 26. Dr. William H. Washburn, Milwaukee, representing the regular school, delivered an address on "The State Control of the Practice of Medicine;" Dr. J. V. Stevens, Jefferson, representing the eclectic school, spoke on "The Sanitation and Public Control of Charitable Institutions," and Dr. Quincy O. Sutherland, representing the homeopathic school, addressed the convention on "The National Control of the Practice of Medicine."

Colorado State Medical Society.—The annual meeting of this society was held June 18, 19 and 20, at Denver, Dr. Wil-

liam P. Munn, Denver, presiding. In his address he advocated a school of instruction for the training of health officers. He said that physicians did not advocate vaccination for commercial benefits because it would be more profitable financially to the physician to let smallpox attack as many patients as possible. The following officers were elected: Dr. Richard W. Corwin, Pueblo, president; Drs. William W. Grant, of Denver, P. J. McHugh, of Fort Collins and Z. J. Forhan, of Trinidad, vice-presidents; Dr. James M. Blaine, Denver, corresponding secretary; Dr. Minnie C. T. Love, Denver, recording secretary, and Dr. William J. Rothwell, Denver, treasurer. The 1902 meeting will be held in Pueblo.

CHICAGO SOCIETY OF INTERNAL MEDICINE.

Annual Meeting, June 27, 1901.

The president, Dr. John A. Robison, in the Chair.

Causation, Effects, Prophylaxis and Management of Biliary Calculi.

DR. I. N. DANFORTH said that the most common cause of biliary calculi was a catarrhal inflammation of the gall ducts. He detailed a case, the wife of a minister, who thought she was going to die of cancer of the liver. She presented no symptoms of that disease, but her case was clearly one of inflammation of the liver with subacute nephritis of several years' duration. Patient manifested all the symptoms of gallstones. He operated and found stones in the hepatic duct, not in the gall bladder. Patient died a short time after the operation. Post-mortem examination disclosed considerable enlargement of the liver, and the ramifications of the gall ducts were filled with a thick, tenacious mucus, precipitated crystals of salts, and a number of small calculi.

He reported another case which came under his observation ten years ago, in which a diagnosis of floating kidney was made. The patient was sent to him for operation. He operated, expecting to find a floating kidney, but when he reached the position where the kidney ought to be, he found it was not the kidney at fault, but a floating liver. He evacuated a pint or more of thickened bile. Four gallstones were found in the common duct and removed. A biliary fistula followed the operation, so that bile escaped through it for a month or more afterwards, but the fistula gradually closed up, and the patient recovered, with the exception that she had an enlarged or hypertrophied liver, and had occasionally bilious attacks, during which time there was more or less tenderness over the liver. This case of gallstones had its inception in a chronic catarrhal inflammation of the gall ducts.

DR. M. L. GOODKIND thought that catarrhal conditions of the gastro-intestinal tract were predisposing factors in producing gallstones, constituting a suitable soil for the development of organisms within the bowel. The colon bacillus was not infrequently found in the gall bladder as a direct cause, the catarrhal condition simply operating as a predisposing factor. It was found after typhoid fever. He had had several cases operated on in which there seemed to be a direct history following typhoid fever. He had seen three or four cases of gallstones at the Michael Reese Hospital which were directly due to mitral stenosis. In an English text-book mitral stenosis was mentioned as a frequent cause of gallstones, the statistics given by Gibson being that gallstones occurred in about 6 per cent. of all women, and in from 20 to 26 per cent. of all men, having mitral stenosis.

Another condition which was frequently associated with gallstones, is Glenard's disease of enteroptosis and gastroptosis, but whether that was due to the same cause that brought on gallstones, as tight lacing and debility, or whether it was a direct cause, he did not know.

Prophylaxis consisted in keeping the gastro-intestinal tract in as good condition as possible during the acute infectious diseases, particularly those that manifested themselves in the intestinal tract. The diet should be carefully watched. People predisposed to mitral stenosis should pay attention to the action of the liver: to the action of the intestinal canal. The bowels should be flushed for a month or so after an infectious disease, such as typhoid fever, particularly where constipation existed, by the occasional use of phosphate of soda, intestinal antiseptics, benzoate of soda and salicylate of soda being preferred by most authorities.

His own experience, in the management of biliary calculi, had been favorable to medical treatment. He had gone through the Carlsbad treatment of his patients, using phosphate of soda, rhubarb, etc. In the management of biliary calculi during the attack, to relieve pain he had resorted to Hoffman's drops, hot fomentations, and various external remedies, but had never found them successful. He had relied, during the attack, on whiffs of chloroform.

DR. LISTON H. MONTGOMERY referred to the surgical treatment of biliary calculi and spoke of cholecystotomy, saying that this operation was first proposed in 1733. At that time the operation was considered feasible by French, German, and English surgeons.

DR. EDWARD F. WELLS stated that the first recorded operation for gallstones, deliberately undertaken, was made by Bobbs, of Indianapolis, Ind., some time before 1870. A few years after that, and before Dr. Bartholow operated, Dr. Marion Sims advocated strongly and operated for gallstones. He remembered the circumstances particularly, for the reason that in the year 1876 his attention was called to an article published in the *Boston Medical and Surgical Journal*, by a Baltimore physician, entitled, "A Medical Reclamation from Surgery in the Treatment of Gallstones." In this article choloroform was advocated as an internal remedy. Cholecystotomy had already been established in medical practice previous to 1876. He had prescribed chloroform from the time he read the article referred to to the present day. If chloroform was any benefit in the treatment of gallstones, it acted as a solvent of them. But it might be beneficial in other ways. It might promote secretion of bile; it might promote fluidity of the bile and prevent the formation of gallstones. He believed chloroform was a very useful agent. He was positive that his patients were not mistaken about the benefits which they had derived from taking chloroform for a long period. One of his patients had taken it week after week, and month after month for 15 years, and he did not think patients would continue any one remedy any such length of time as he had seen patients do with chloroform without believing they had received benefit from it. Gallstone colic, from which patients suffered, might be due to a single stone which was dislodged, and the patient might take chloroform or anything else and not have another attack. A patient might have an attack of gallstone colic and never have another, so that because apparent benefit had been derived, it did not follow that real benefit had accrued. The remedy was certainly a harmless one, and he still prescribed it. He gave it in from 10 to 20 drop doses, three times a day, in cream or syrup. Patients were able to take it indefinitely, and after taking it for a year or so they would ask if there was any harm in continuing it, and, if not, they would continue to use it. In answer to the question whether there was any danger of patients acquiring the chloroform habit, Dr. Wells replied that he did not think so, and again called attention to the case of the man who had taken it for fifteen years.

Recently he had a patient who was taken ill with severe abdominal pain, followed by nausea and vomiting. He saw him the next morning, at which time the patient placed his hand in the lower part of the abdomen on the right side above Poupart's ligament. This region was very tender. Temperature was 101; pulse moderately accelerated. He made a probable diagnosis of appendicitis. A blood count was made showing moderate leucocytosis. No uranalysis was made, and there was no bile present in the urine. There was no jaundice. At the end of three days he was free from pain and fever, although the slight tenderness in the region referred to continued. On the fourth day patient went to his place of business in Hammond, walked a considerable distance, returned home not feeling so well. The next morning, at 4:30, he was seized with excruciating pain in the abdomen. The speaker was sent for. He found the man rolling in bed on his hands

and occupying every imaginable position on account of agonizing pain. The pain had returned and was of the same character as that from which he had suffered four or five days before. He said to himself that no man with appendicitis was going to roll on the bed and get on his hands and knees, while a man with gallstone colic might do so. Here was a diagnostic point of value. It was easy to conclude as to the nature of the affection. Pain and tenderness in the lower portion of the abdomen returned, and in fact tenderness had never disappeared. Fever recurred. The pulse became accelerated. Patient vomited once or twice, but had no jaundice, no bile in the urine. The gall bladder was opened, and a number of gallstones removed. At a secondary operation a number of very large gallstones were removed, probably twenty large ones, and a large number of small ones. An unusual feature in this case was a localized peritonitis occupying the right half of the abdomen, extending down as far as the iliac fossa and nearly to the median line, spread out almost as large as the hand, containing a considerable amount of flocculent serum. It was walled off from the general abdominal cavity, and did not contain bile, although the gall bladder lay in immediate juxtaposition to this.

DR. GEORGE W. WEBSTER directed attention to a number of points in regard to the symptomatology. He said we should distinguish carefully between those cases in which there was a stone or multiple stones in the common duct, and those in which there was obstruction due to stones or a stone in the cystic duct. The symptomatology in both of these cases was rather characteristic, and each one furnished peculiar clinical features that were of interest and served to distinguish readily one from the other. In those cases in which there was a stone in the common duct, particularly a movable stone, having the ball-valve action first described by Osler, we might have two sets of symptoms. The blood-pressure in the portal vein was the lowest perhaps of any vein in the body. There were three other veins spreading out from this through which collateral circulation might be established where there was increased pressure in the portal vein. For example, the inferior hemorrhoidal, the superior epigastric and the azygos veins were the ones to which he referred. When for any cause there was increased obstruction in the liver, therefore diminished celerity of flow of blood in the liver, this led to increased pressure in the portal vein. This would immediately cause a diversion of a part of the blood stream which should pass through the liver through the collateral circulation, and we had symptoms due to substances, such as the products of proteid digestion, peptone, and the like, in the blood, with extreme lowering of blood tension, mental depression, and other symptoms which were characteristic of toxemia merely due to a normal blood stream which should have these substances removed by passing through the liver. In other words, we had symptoms similar to those which snake poisoning would produce if injected into the systemic circulation without passing through the portal vein. We had added to that certain causes in which there was real infection. There might be symptoms of infection, and oftentimes added to both of these there might be a picture of cholemia. The clinical picture was a composite one. If we interpreted the symptoms rightly, in the majority of cases we could tell whether there was merely a cholemia, an obstruction of the portal circulation, or a more extensive obstruction in that region. For example, it was known that the circulatory activity of the liver depended largely on the chemistry of digestion. Where there was alcoholic gastritis, or gastritis from any other cause, we would have increased activity of the liver due to the increased chemical activity of the digestive organs. This led to increased pressure in the liver, increased pressure in the portal circulation, and we had this diversion of the blood from the collateral channels, and the symptoms found under those circumstances were due to the influence of the blood, which should have passed through the liver, being diverted and acting on a susceptible nervous system.

In regard to the treatment, he was long ago convinced that there was only one treatment, namely, a surgical operation. If the patient could not be relieved by medicinal means, the physicians should refer him to a surgeon.

DR. LISTON H. MONTGOMERY asked in regard to treating biliary calculi with large doses of olive oil. In a few instances he had used sweet oil with great benefit. He hardly knew whether the oil was a solvent or whether it assisted the passage of the stones on through the ducts into the intestine.

DR. GOODKIND said that he had used it, but without good results.

DR. GOODKIND said that he had yet to see the first case of genuine gallstones that had been cured by olive oil either given by the mouth or per rectum.

DR. WELLS said that surgical treatment was the proper method of managing gallstones. However, neither medical nor surgical treatment alone was the best and proper management for every case. It was within the experience of every member of the Society to have had patients who had had attacks of gallstone colic and who, through many years, had never had another attack. Gall bladders had been opened post-mortem, with but a single gallstone present, or but few or no gallstones present in cases in which gallstones had been diagnosed. If a patient recovered from an attack of biliary colic, and was in good health, he did not think he or she should be operated on. It was well to keep such patients under observation, and if frequent attacks of biliary colic occurred, then they should be operated.

DR. JOHN A. ROBISON said that the frequency with which gallstones followed typhoid fever called to his mind an interesting case which he saw in the Presbyterian Hospital. The patient had had an attack of typhoid fever ten years previously. Dr. Bevan operated and found a number of gallstones; also a suppurative cholangitis. A test was made and the Widal reaction was very prompt.

He saw Dr. Fenger also examine a case in his clinic, which was supposed to be one of appendicitis, and diagnosed as such by two or three good surgeons. Dr. Fenger was inclined to think that the diagnosis was correct, but expressed some doubt to the class as to whether the case was really one of appendicitis or of gallstones. He opened in the region of the gall-bladder first. On reaching the gall-bladder, he readily discovered the gallstones, removed them, and the patient got well.

As regards the administration of olive oil, he had used it frequently with no results. In fact, in one case he believed it was the cause of death. The patient was 50 years of age, and had previously been operated on by the late Dr. Parkes for renal calculus. The calculus was removed, a fistula resulted, and did not close. Shortly after the operation for the removal of renal calculus, the woman developed symptoms of biliary calculi. She had frequent attacks of biliary colic, and the speaker was called to see her one night during one of the attacks. He called in a surgeon, as he thought the case was urgent, who advised immediate operation. The family were loth to consent to operation. A physician was called and placed the woman on the olive oil treatment. In less than four weeks afterwards the woman went into collapse and died. Post-mortem examination disclosed a very large gallstone imbedded in the common duct, which had ulcerated its way through the outer and middle coats of the cystic artery. If the patient had been operated on at the time he thought she would have been relieved.

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Dr William H. Welch in the Chair.

Splenomegaly.

PROF. WM. OSLER showed a case of splenomegaly associated with cirrhosis of the liver, in a young man who has been a beer-drinker. He has had occasional attacks of jaundice since early life. Such tumors are often removed for ovarian tumors. The three earliest cases of splenectomy were done by gynecologists. Several other cases were referred to by Dr. Osler, as 1, lasted eight or ten years, and patient recovered completely; 2, spleen was removed, and patient did well for more than a week, then had recurrence of his frequent attacks of hemor-

rhage, with fatal result; 3, had nearly bled to death on four or five occasions; died from uncontrollable hemorrhage a few minutes after being taken from the operating table.

Scurvy.

This was in a white man accompanied with subcutaneous hemorrhage of the thigh, which was in a seleremic or sclerotic condition. The patient had come in with hemorrhages, swollen gums and enlarged knee. On aspirating the latter a bloody fluid was obtained. There were remains of a purpuric rash. It is an unusual condition which has been described by Russian physicians. A good deal of scurvy comes into the hospital from the large number of foreign immigrants, especially Hungarians and Poles.

Cystitis—Peculiar Condition of Uterus in Pregnancy.

Dr. Howard A. Kelly spoke of drainage in bad cases of cystitis. Here attempts to wash out will be cut short on account of the pain. Dr. Kelly treats such cases by placing the patient in the knee-breast position and letting air into the bladder through the cystoscope. He then thrusts in a narrow-bladed, specially made knife, set at an angle with the handle, and draws it downward towards the urethra, leaving a free opening into the bladder for escape of urine. Dr. Kelly urged the importance of making topical examination of the bladder before commencing treatment in cases of apparent cystitis. He had had cases which had been treated elsewhere for a length of time for cystitis when on using the cystoscope a stone was seen, and in its removal the symptoms disappeared. He spoke also of peculiar cases of pregnancy which he does not understand. One part of the uterus softens down and the rest remains rigid; the softened part may bulge. In his case it was mostly towards the patient's right. The patient was the wife of a physician from Iowa. He was advised to let it alone and returned home, where his wife had a normal labor. In another case, the wife of an army surgeon, the abdomen was opened and the right upper horn of the uterus found to be softened. The patient later aborted per vias noturales. In a third case exactly the same condition was found. Dr. Kelly would call it "Apical pregnancy," and it is liable to be mistaken for extrauterine pregnancy.

Experience with an Epidemic of Smallpox.

Dr. Otley J. Porter, of Columbia, Tenn., described an epidemic that has recently prevailed in that section of Tennessee in which he lives. For a time the diagnosis was in dispute, some regarding it as chicken-pox, others as a new sort of eruption, "the bumps," and a few diagnosticating true smallpox. Meanwhile, in the uncertainty there was no efficient action or isolation, and the disease spread until there were 1000 cases. Dr. Porter exhibited casts of the eruption and threw pictures on the screen, showing that the disease differed in no way from the smallpox of the text-books, there being cases of hemorrhagic, confluent, semi-confluent and discrete smallpox, as in other epidemics. The mortality also was the same, all the hemorrhagic cases (5 or 6) dying; 40 per cent. of the confluent, and 10 to 15 per cent. of the discrete. Old persons over 75, pregnant women and infants under 12 months are usually exempted from the need of vaccination, but none need it more than these persons. In the 1000 cases there were some 15 of the disease in the fetus *in utero*, several of which Dr. Porter had himself delivered.

Dr. Smith, of Minneapolis, spoke of an epidemic of 600 cases in that city. Fifty cases had occurred before the existence of smallpox was acknowledged by the authorities. The fatality was small. Of the 6 cases in pregnant women, all aborted and died. Many who were vaccinated took vaccinia. Less than 2 per cent. showed a scar.

Dr. Osler said that the present widespread epidemic was evidently one of exceptional mildness, but it is a mistake to suppose that discrete epidemics are rare; Sydenham describes them.

Dr. Porter said the idea of an "attenuated" organism was not borne out by the facts, for example these cases of hemorrhagic, confluent and discrete form, all originated from the same case.

STATE MEDICAL SOCIETY OF WISCONSIN.

The fifty-fifth annual meeting held at Waukesha, June 26, 27 and 28, 1901.

The president, Dr. J. F. Pritchard, of Manitowoc, in the chair.

Serotherapy.

Dr. J. F. Pember, of Janesville, said that the mortality in all cases of tetanus treated without tetanus antitoxin is 60 per cent., as against 30 per cent. for all cases treated with it. The serum treatment in cholera and plague is practically without data. The treatment of rabies by the Pasteur method results in an enormously lessened mortality.

The treatment of plague by serotherapy has not shown results warranting any conclusion. The antipneumonia serum promises much. No very useful results have been reached in the serum treatment of tuberculosis. Antispirochetic serum has shortened the disease some days in the treatment of relapsing fever. Serum treatment in malignant endocarditis promises much. The treatment of snake bites by antivenomous serum is largely in its experimental stage. In cases of streptococcus infection the serum treatment has shown some good results. But the antitoxin treatment of diphtheria has won for itself the right to be regarded as a specific. Bayeux's tables, based on an analysis of 200,000 cases, give 55 per cent. as the death-rate before the advent of antitoxin and 16 per cent. since its use, with not a single death due to the antitoxin. The American Pediatric Society's table shows that where antitoxin is injected the first day of the disease the mortality is 6.6 per cent., the second day 8.3, the third 12.9, the fourth 17, and the fifth 23.2 per cent. The writer made the bold statement that the piosonous dose of antitoxin has not been found and that in the near future physicians will adopt heroic measures in desperate cases and give enormously large doses.

Chorea.

Dr. H. B. Favill, of Chicago, read a paper on chorea, with special reference to its relationship with rheumatism and heart disease. He called attention to the fact that the problem was an obscure one. The word functional is frequently misused. It really is an expression of one of two views, either describing a reaction whose structural basis is unknown or as implying the possibility of resistance to morbid influence without permanent organic change. Endocarditis is really rheumatism and not a sequela of it, and is essentially the rheumatism of the young; the evidence is accumulating that rheumatism is a septic process. The probable conclusion is that endocarditis, chorea and arthritis are coördinate manifestations of diseased conditions peculiar to the young, in that order, and that an important element in the causation is infection.

Conjunctivitis, Keratitis and Iritis.

Dr. G. V. Mears, of Fond du Lac, read a paper on differential diagnosis and treatment of conjunctivitis, keratitis and iritis. He treated the matter from the standpoint of the general practitioner. Ophthalmia of the newborn especially must come under the treatment of the general practitioner and he should be able to make a differential diagnosis, but a good rule is when in doubt call a specialist, and in fact the general practitioner should not, unless compelled to do so, treat important affections of the eye.

Bright's Disease and Diabetes Mellitus.

Dr. A. J. Hodgson, of Waukesha, read a paper on clinical points in Bright's disease and diabetes mellitus. He suggested a bread made of 20 per cent. nut-meats with 80 per cent. pulverized bran, sweet milk, baking powder, a little butter and egg. Bake in the form of gems. The so-called gluten flour is usually a fraud. It is only a cheap quality of flour which the mills are glad to get rid of at any price. Drugs are of little benefit. Codein will not cure. As to Bright's disease, the point is to get the whole system in good order, aside from the kidneys. Then the kidneys will soon come into line. It is especially important to keep the urine bland, which may be accomplished by the use of proper waters.

Fractures of the Femur.

DR. F. J. FORD, of Omro, read a paper on the subject of fractures of the middle and upper third of the femur. Results show that functionally useful limbs are not obtained in more than 16 per cent. of cases, while perfect results are almost never obtained.

Neurasthenia.

DR. J. H. MCBRIDE, of Pasadena, California, read a paper on "Some points in the management of the neurasthenic." The writer emphasized the importance of the physician getting hold of the mentality of his patient and always bearing in mind that these patients are people who need to be recreated in character and habits of mind and body.

DR. HAROLD N. MOYER, of Chicago, said that hysteria, neurasthenia and hypochondria must not be confounded. Hypochondria is simply a delusion of illness while hysteria and neurasthenia are true diseases. In neurasthenia the fatigue symptom is crucial. It is very important to obtain mental control of the patient.

Reorganization.

The President in his Annual Address strongly urged the adoption of a new constitution of reorganization of the Society, following in line with the American Medical Association, and making the unit the county or local medical association. Under this plan, he said, the profession of the state presents an unbroken front which secures the greatest possible good to the community and makes quackery almost impossible. Under the plan presented the business of the Society is done by delegates who have charge of all matters except the scientific program. The members of this House of Delegates are ineligible to office, which puts the working part of the Association out of politics.

The President recommended for immediate action, 1, that three or more members of the Society be elected to act as a reorganization committee with full powers to make such changes as may be necessary in the constitution and by-laws of this Society, to conform to the plan of reorganization of the American Medical Association, their report to be ready for adoption at the next annual meeting of this Society. This recommendation was adopted. The reorganization committee named is as follows: Dr. J. F. Pritchard, of Manitowoc, Dr. W. B. Hill, of Milwaukee, and Dr. G. V. Mears, of Fond du Lac; 2, to elect delegates at this session to comply with the requirements for representation in the House of Delegates of the American Medical Association. This was done on the following Friday.

Nervous Diseases Following Injuries.

DR. T. W. NUZUM, of Brodhead, presented the results of numerous experiments and concluded that slight injuries may produce severe spinal neuroses; that bodily injury is often less important than the fright element; that the majority of cases against great corporations are either feigned or exaggerated; that it is the duty of the expert witness to determine the existence of actual disease and its character, whether simply neurasthenia, severe hysteria, or organic lesion; that prognosis is usually good; that traumatic hysteria is intractable; that death may result where no physical lesion can be demonstrated; that traumatism may cause locomotor ataxia, epilepsy, apoplexy or paralysis agitans. Many of the cases, however, are due to suggestion.

Address in Medicine.

DR. GEORGE M. GOULD, of Philadelphia, delivered the annual address in medicine on the relation between sin and disease. He said that the unvarying concomitant of civilization was syphilization. It is claimed that 50 per cent. of wives' sterility is due to the husbands' gonorrhea. The licensing of evil is the lessening of evil. The annual drink bill of the United States is $1,059,000,000. The chief cause of crime is alcohol. The Royal Commission of Scotland attributes 72 per cent. of all crime directly or indirectly to alcohol. Prohibition breeds intemperance and is a hypocritical failure. In prohibition Vermont 3,000,000 doses of opium were demanded last year. The diseases caused in whole or in part by sin are in this order: syphilis, gonorrhea, alcoholism, abortion, tabes, insanity, hysteria, etc. Deaths caused in whole or in part by sin are found to be in this order: suicide, homicide, syphilis, gonorrhea, war, famine, pestilence alcoholism, etc. The horror of the crimes of the civilized soldiery in China is unknown. Thirty to forty per cent. of blindness is due to gonorrhea. Pneumonia is now killing more of our citizens than pulmonary tuberculosis. Nearly one-half of our mortality is due to disease of the lungs and 75 per cent. of this mortality is preventable. The average length of life in the 16th century was between 18 and 20 years. To-day it is over 40 years. In the last 20 years it has been lengthened by six years. Our toleration of anti-vaccinationists, Eddyism and Dowieism is to be paid for in millions of lives. Only one out of three thousand millionaires cares a fig for the prevention of disease. All honor to the one! Three billion dollars is the loss to the American people by preventable deaths each year. These figures warrant a demand for the establishment of a National Bureau of Health with a cabinet officer at its head. Such a bureau would easily save a thousand times its expense. Of course, it is the saving in life and suffering that is aimed at, but the figures are given to bring the matter home to your imaginations.

Causes of Sudden Death.

DR. J. M. BEFFEL, of Milwaukee, said that the subject is important. Post-mortems should always be had and physicians should be careful in giving death certificates. The Doctor reviewed a statistical record of 100 cases of sudden death which occurred in Milwaukee during the past three years. Alcohol is a very important factor in sudden death. Forty-seven cases of the 100 were due to diseased condition of the vascular system. The kidneys were diseased in 22 cases, the lungs in 18, the liver in 9. There were three classes of sudden deaths due, 1, to diseases of the vascular system; 2, to general intoxication, such as diseases of the lungs, liver and kidneys, and 3, rupture of blood vessels within the brain.

Address in Surgery.

DR. JOHN B. DEAVER, of Philadelphia, presented the annual address on the subject of "The atypical and unusual varieties of appendicitis and their management." He said, there are three cardinal symptoms of diagnosis, pain, tenderness and rigidity. Many cases are difficult of differential diagnosis, especially chronic cases, but the treatment of this disease is essentially operative, and the earlier the operation the better. Indigestion and biliousness are frequently attributable to appendicitis. The importance of a careful history of the case can not be exaggerated.

Cervical and Perineal Lacerations.

DR. W. E. GROUND, of West Superior, said that nearly all of the diseases occurring during labor follow in the wake of the midwife. Dr. Harris' operation is the coming one. Repair perineal lacerations immediately, except deep-seated lacerations of the cervix, where repair should be postponed for some time in order to avoid sepsis.

Acute Pain in Abdominal Disease.

DR. A. J. BURGESS, of Milwaukee, read a paper on the diagnostic importance and significance of acute pain in abdominal disease. He emphasized the importance of prompt action in cases where pain in the abdominal cavity is accompanied by rigidity, or even shock without rigidity. Dr. Burgess insisted on the importance of immediate operation where a man has all the symptoms of a grave abdominal disease.

Earache.

DR. G. A. HEIDNER, of West Bend, read a paper on the subject of earache, its significance and remedy, discussing the most important causes of earache, viz., trouble in the external canal, and trouble behind the drum-head. He opposed paracentesis by the general practitioner in children under 10 years of age.

Cleft Palate.

DR. GEORGE V. I. BROWN, of Milwaukee, read a paper on the subject of surgical treatment of cleft palate and proposed what is in many respects a new operation, which he has suc-

cessfully performed in many cases. He said the most important point in the diagnosis was to make a proper classification of cases. Dr. B. G. Maercklein of Milwaukee said that Dr. Garretson of Philadelphia first called attention to the fact that the bones in infants were so soft that they could be strung into apposition.

Syphilis of the Nose and Throat.

Dr. Henry B. Hitz, of Milwaukee, urged that the profession do not neglect a careful and frequent examination of the nose and throat. If the patient complains of nasal discomfort, obstruction or discharge, or of any symptoms referable to the throat and vocal organs, find out the cause if possible. If after examination you are still in doubt as to the specific character of the lesion, put your patient on a rigorous specific treatment —preferably a mixed treatment—which will clear up your doubts in short order, and without the possible mutilating results of delay.

Commissions in Medicine.

Dr. Carl L. Feld, of Watertown, read a paper on commissions in medicine from a moral and medicolegal standpoint. It was stated in the discussion of the paper that there was very little trouble of the kind in Wisconsin. That the matter was gradually righting itself, and that the proper principle to apply was to determine whether or not there was collusion between the general practitioner and the specialist.

Milwaukee was chosen as the place of the next meeting. The officers for the ensuing year are as follows: President, W. H. Neilson of Milwaukee; first vice-president, A. J. Hodgson of Waukesha; second vice-president, L. H. Pelton of Waupaca; secretary, Charles S. Sheldon of Madison; treasurer, Sidney S. Hall of Ripon; censors, F. E. Walbridge of Milwaukee, H. Reineking of Sheboygan, and George M. Steele of Oshkosh.

Delegate to the council of the American Medical Association for three years, W. T. Sarles of Sparta; alternate, Herman Gasser of Platteville; for one year, J. R. Barnet of Neenah; alternate, Byron M. Caples, of Waukesha.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held June 10, 1901.

The president, Dr. N. P. Dandridge, in the chair.

Use and Abuse of Digitalis.

Dr. Robert Ingram went fully into the discussion of the properties of the drug, its various active principles, and the therapeutic indications. He was followed by Dr. Frank Scheerer, who gave a detailed account of several cases illustrating the various organic valvular diseases which had been materially benefited by the judicious administration of digitalis.

Dr. L. A. Moloney said that while an interne in the Cincinnati Hospital, a patient had fallen suddenly to the floor. He happened to be in the ward at the time and on examination found the heart's action had almost ceased. He had immediately given a hypodermic injection of 1/30 grain of digitalin, and had repeated the dose in a few minutes. After the first injection there had been a slight fluttering of the heart, but after a few seconds the action of the heart was found to be more regular. Within half an hour after the last injection the patient was able to move about the ward. Recently he had had occasion to use digitalin on a patient afflicted with a severe diarrhea. The dose in this instance was 1/50 of a grain, and the result was all that could be desired.

Dr. William H. Muhlberg was inclined to think that digitalin was entirely inert, and gave an experiment in which he had used the drug on a rabbit with negative results; with the tincture of digitalis there resulted a marked increase of the heart's action and contraction of the peripheral vessels.

Dr. S. P. Kramer was inclined to think that this positive reaction with the tincture was due to the alcohol contained in the tincture.

Dr. Muhlberg promised to repeat the experiment and report to the Academy the week following. He made the following report at the regular meeting of the Academy, June 17: "I made the statement last Monday night that I had experimented with some specimens of digitalin and found them absolutely inert, while from a specimen of tincture of digitalis I obtained a distinct rise of blood pressure in a very short time. One of the gentlemen present, in a very able criticism, stated that he did not think that the results obtained from the tincture of digitalis were due to the digitalis, but to the alcohol in the preparation, for the reason that it required in the neighborhood of twenty-four hours to get the characteristic effects of the drug digitalis. I thought his criticism a very fair one and promised to repeat the experiment with digitalis and report later. I obtained some of Merck's digitalin and made a 1 per cent. solution. I then injected 10 gtt. of this solution and waited some thirty minutes, but did not obtain any reaction. I then injected some infusion of digitalis into the jugular vein and obtained a rise of blood-pressure during the first eight or ten beats of the heart immediately succeeding. On the tracing which I will pass around, you will see one line, which is the line of atmospheric pressure, the larger and more distinct line indicates the blood-pressure line. The heart beat was not markedly slowed until after twenty beats. I think the rise in blood-pressure is due to the effect of the drug upon the vasomotor system rather than due to the effect of the drug on the heart itself. The blood-pressure remained up in his experiment about thirty minutes. After killing the animal, I found a typical digitalis heart. The systole was a powerful one, and the heart beat very slowly. I am inclined to think with Dr. Kramer that digitalis does not act on the heart for some time after it is given, but the rise in blood-pressure occurs very shortly after the drug is given, this being due to the effect on the vasomotor system.

Dr. J. L. Cleveland thought that in many cases of heart disease, with congested livers and lungs, the results claimed for digitalis were due in great part to the judicious use of dietetic and hygienic measures. He called attention to the fact that digitalis is often abused and given as soon as a bruit is discovered, when there is really no indication for the exhibition of the drug whatsoever. He did not question the great value of the drug when compensation had been ruptured. He thought that digitalis should be used with great caution when there was a secondary kidney involvement, and especially where the heart was hypertrophied and the arterial tension high; under these circumstances the drug should be put off as long as possible, and when finally administered, should be given in conjunction with some drug as nitroglycerin, which has a tendency to dilate the peripheral vessels and thus lower arterial tone.

Dr. R. B. Hall testified as to the value of Merck's digitalin in heart-failure after abdominal sections, especially where the operation has to be performed on women the subjects of valvular disease of the heart. He wanted to insist that the dose should be as large as 1/20 to 1/15 of a grain and repeated every three or four hours.

Dr. G. A. Fackler thought that the discussion of digitalis should take more the line of personal experience, as at the present time every practitioner can testify as to its value in selected cases. Personally he thought that when compensation was ruptured, no matter what valve was affected, digitalis was indicated. He preferred a reliable tincture, given in doses of from 20 to 30 drops every two to four hours, as indicated by the clinical symptoms. He was no believer in the accumulative action of the drug, so-called, had never seen a case, and on inquiry among a number of his colleagues, had never heard of a case. He had no doubt that a poisonous action could be exerted if the drug were irrationally administered; but digitalis was not peculiar in that regard; all drugs would act in this matter.

Dr. Alfred Friedlander did not agree that the tincture was the only reliable preparation of digitalis. He had obtained good results from the digitalin of Merck and from the fluid extract of Squibb administered hypodermically in one minim doses.

DR. E. W. MITCHELL also testified as to the value of the fluid extract and digitalin. Some months ago he had had occasion to use as much as 1/5 of a grain of digitalin (Merck) in divided doses during the course of an hour's time with the happiest results. He was inclined to think that the infusion of digitalis made by a reliable house gave as satisfactory results as any.

DR. W. E. KIELY said that as digitalin did not represent the active principle of digitalis, it could not be expected to give the same therapeutic results. He used for the most part a reliable tincture. He did not see why the fluid extract should be superior to the tincture, as the only difference between the two preparations was one of strength. The best results could be obtained from the tincture that is made from the infusion.

COLORADO STATE MEDICAL SOCIETY.

Thirty-first Annual Convention, held in Denver, June 18, 19, and 20, 1901.

Gonorrheal Rheumatism.

DR. HOBART E. WARREN emphasized the following points: Do not treat gonorrheal urethritis by irrigation; do not introduce an instrument into the urethra as long as a discharge or shreds are present. Gonorrheal rheumatism may occur without previous uro-genital infection. Definite points of tenderness about an inflamed joint are peculiar to gonorrheal arthritis. Administer anti-rheumatic remedies at the start; make early use of dry heat.

Mother's Milk.

DR. EDWARD C. HILL said that the true test of mother's milk is a grain in weight, about one-half ounce daily, as a rule. Loss of weight as a stationary condition should be an indication for an inquiry into the composition of the milk.

Consideration for the Radical Treatment of Uterine Carcinoma.

DR. W. A. JAYNE has come to the conclusion that when the disease has progressed so far that absolute removal is improbable or problematical, it is much better to discard hysterectomy and resort to the cautery.

Dry Heat in the Treatment of Disease.

DR. R. W. CORWIN described the physiologic influence of dry heat, and related the history of ten cases treated by this method in the Hospital of the Colorado Iron and Fuel Company with beneficial effect. His conclusions are that in surgery it is of great value. He suggested its use in sprains, stiff and tubercular joints, acute nephritis, cramps due to plumbism, arthritis deformans, and acute synovitis.

Case of Typhoid Fever with Greatly Enlarged Liver, and Intestinal Hemorrhages.

DR. ALFRED MANN reported the above case, in which the edge of the liver could be palpated for more than two months after the cessation of the fever, and in which hemorrhages from the bowel occurred on the 4th, 5th, and 6th week of the disease.

National Jewish Hospital for Consumptives.

During the past eighteen months 350 applications for admission were made, of which 228 were examined, and 204 admitted. They are admitted for a term of six months, and no longer than one year. The cases are divided into incipient (25), first (42), second (82), and third (43) stages. Improved 125, unimproved 39; worse 17, died 23. The predominance of right-lung involvement was marked. The largest number were tailors. In 152 cases, the family history was negative. Hemorrhage was present in 98 cases, and spitting of blood in 23 cases; 121 patients had night sweats, in 64 of whom they ceased on coming to Colorado; 92 had never had any; 75 per cent. had fever. In 166 cases bacilli were found; absent in 33 cases; there was no report on the remainder.

Mental Disturbances in the Course of Cardiac Diseases.

DR. ADOLPH ZEDERBAUM, after a careful study of many cases in his own practice, and an exhaustive research into the literature of the subject, arrived at the following conclusion: 1, that the heart, in a number of women during pregnancy and the puerperium, is subject to hypertrophy, which may become permanent, and pathologically affect the valves, and 2, that latent cardiac diseases of rheumatic and other origin may first come to the front during pregnancy, or in after labor.

Treatment of Neuralgia with Castor Oil.

DR. F. E. WAXHAM reported several cases of facial neuralgia treated successfully with large doses of castor oil. He administered 1 to 3 ounces three or four times daily. After the first two or three doses, it loses its cathartic effect. To make it palatable, he adds mucilage of acacia and lime water.

Bleeding in Radical Operation for Piles.

DR. WILL B. DAVIS thinks that thorough divulsion from anus to ampulla should be the preliminary step in all operations, and this will prevent post-operative hemorrhage by rendering the muscles incapable of contracting upon the veins, and the same procedure will immediately check a post-operative hemorrhage.

Typhoid Fever.

DR. W. A. KICKLAND, of Fort Collins, made the following deduction from a study of "100 Cases of Typhoid Fever Seen in Private Practice During the Fall of 1900": There is a greater similarity in cases infected from a common source than in the same number of cases occurring sporadically; that a rigid milk diet is not absolutely essential to prevent relapse, nor to a low rate of mortality, and that routine use of intestinal antiseptics with hydrotherapy gives as good results as can be obtained from any form of treatment.

Some Experiences with Venesection.

DR. H. B. WHITNEY made the following concluding statement: 1, conditions demanding venesection are usually of sudden onset; 2, such cases usually present not only cyanosis, but, also, the local signs of dilated right heart and pulmonary edema; 3, that the gradual heart failure of acute infection and chronic diseases can neither practically nor theoretically be shown to be a proper field for venesection.

Case of Talma's Operation for Ascites in Cirrhosis of Liver.

DR. M. BALLIN reported a case, 53 years old, saloon-keeper; 2 years ago dropsy of extremities; ascites in 1900. He was tapped repeatedly. The parietal peritoneum was greatly scarified with a knife in a semi-circle around the upper angle of the incision and then the omentum was sutured with four stitches to the scarified region. The ascites has not returned. There are about 28 cases reported in literature.

Esophagometer.

DR. C. D. SPIVAK exhibited a device under the above name for measuring the length of the esophagus. It consists of a stomach tube, to the end of which is attached a whistle as long as the tube traverses the esophagus; blowing into the tube will produce no sound. As soon, however, as the whistle reaches the stomach, blowing into the tube will produce a whistling sound. The distance from the whistle to the incisor-teeth, minus the distance from the incisor-teeth to the uvula, will give the length of the esophagus.

Treatment of Typhoid Fever with Intra-Rectal Injection of Normal Salt Solution.

DR. E. STUVER used cold normal salt solution by intra-rectal injection in the recent epidemic in Fort Collins with excellent results. He uses a very cold solution, and when the fever is high, even ice-water.

Extra-Uterine Pregnancy.

DR. O. J. PFEIFFER reported a case of extra-uterine pregnancy at the fimbriated end of the left tube, which recovered after the removal of the fetus. The fetus was only one-half inch long, although the pregnancy lasted two months. The sac is a remarkable symmetrical ovoidal sphere; its walls are about half an inch thick. The placental attachment is plainly shown.

An Outbreak of Pyemia, Suggesting Bubonic Plague.

DR. J. N. HALL reported the histories of 13 cases which have occurred in Colorado during the early months of this year. If a single case occurs it would be called pyemia of cryptogenetic origin: if many such are seen, the name becomes a mockery. Of the 13 cases, 2 may be classed as multiple abscesses, with recovery; 3 proved fatal; 1 partial recovery, and 1 lost to sight. Four cases had enormous axillary abscesses, with unusual severity of constitutional symptoms; all recovered. One case had a single abscess, and several bed sores; it was fatal. All these cases were investigated by the State Board of Health, at the request of the attending physicians.

Pulmonary Tuberculosis in Grand Junction Indian School.

DR. R. H. BULL reported 16 cases of tuberculosis that have occurred in the school since 1896, all of which improved as soon as they were returned to their respective reservations.

The Chest Pantograph.

DR. C. B. VAN ZANT applied the pantograph—an instrument devised by Dr. W. S. Hall, of Chicago, for graphic recording of the contour of the chest—to the study of the following conditions: To accurately record the alterations in chest form, which are usually designated by the vague words "some depression," "deficient expansion," etc., progressive deformities of the chest following emphysema, pleurisy, fibroid phthisis, etc., congenital or unprogressive deformities like pigeon-breast, funnel breast, rachitis chest, and as a means of keeping track of many conditions beside those of the thorax, change of size and shape of face in acromegaly, of head in hydrocephalous, of neck in goiter, etc.

The X-Ray in Medicine, Surgery and Medical Jurisprudence.

DR. G. H. STOVER is of the opinion that skiagrams should not be introduced as evidence before a jury, because it is misleading; skiagrams never give an accurate image of the conditions as they actually exist; their meaning must be translated in connection with the findings of other and ordinary methods of examination.

The Physician in Relation to Dispensing of Medicine.

DR. J. TRACY MELVIN discussed the question whether we can be more certain in the results, more accurate in our dosage, more satisfactory to patients and ourselves by dispensing our remedies ourselves at the bedside than by sending our prescription to the pharmacist. In many of the country districts the physicians have been compelled by environment to adopt this plan, whether it is best or not, because of the long distance from any other source of supplies, but the question is: Should the practice be more general, and from choice, not necessity? He is in favor of the physician dispensing his own drugs, for the reasons that the drugs nowadays are put up in such a form that every physician can easily dispense them; the patient has more confidence in the remedy; the change in the drug does not attract attention, and the ability to change the dosage.

The Temperature, Pulse and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain.

DR. J. T. ESKRIDGE, after a careful and exhaustive study of the subjects, makes the following conclusions: 1, a change in the character of respiration, rather than in its frequency, is sometimes one of the first symptoms of organic intra-cranial disease; 2, respiration, more frequent during sleep or unconsciousness, is strong evidence of organic disease of the brain; 3, apoplexy, due to hemorrhage, is attended with greater disturbances of the temperature of the body soon after the occurrence of the stroke than is the case when the apoplexy is due to thrombus or embolus. There will be a slight fall in the axillary temperature on the paralyzed side, and in 8 to 12 hours a slight rise on the same side; 4, in apoplexy, due to thrombus or embolus, there is no disturbance of temperature during the first two days; 5, if the temperature on the paralyzed side remains higher than on the opposite side for several weeks, it indicates softening or inflammation of the brain, and lends gravity to prognosis; 6, all cases of injuries to the head, in which the temperature does not reach normal or slightly above a few hours after the receipt of the trauma will likely prove fatal; 7, rapid, weak and intermittent or irregular pulse denotes great danger in traumatic cases; 8, an exceedingly slow (8 or 10 per minute) and intermittent respiration indicates a lesion at the base of the posterior fossa.

President's Address.

DR. WILLIAM P. MUNN, the retiring President, in his annual address, referred to specialism, and said: There never was a greater field for the family physician than to-day. Specialism has its limitations, recognized only too well by those who practice the specialties. The specialists in cities the size of Denver we find overworked and under-paid specialists, who seek to right themselves by a return to general practice, either of surgery or medicine. The gynecologists now accept all kinds of surgery. The surgeons take obstetric and gynecologic cases. The lesson of all this is that specialism has its legitimate boundaries set by nature and the inherent condition of the people, and their customs; otherwise specialism can not survive.

CHICAGO PATHOLOGICAL SOCIETY.

Regular Meeting, held June 10, 1901.

President, Dr. L. Hektoen, in the chair.

Division of Nervous Cells.

DR. ALICE HAMILTON presented a paper dealing with cell division in the central nervous system of the white rat before and after birth; the number and distribution of the mitoses, the period up to which they persist, and their character. Mitoses were found along the ventricular surfaces in the early stages of development, gradually ceasing here, and increasing in the outer layers, until at birth; almost all are in the outer layers. At birth mitoses are numerous and persist up to the end of the fourth day; beyond this period no examination was made. The dividing cells are of two kinds: 1, small, devoid of visible cell body, resembling cells of the neuroglia; 2, large, with abundant cytoplasm, round, pear-shaped or spindle-shaped. These are in the gray matter of the cord and brain and correspond in measurements with the multipolar and pyramidal cells.

In the later stages of development the offspring of the germinal cells become partially differentiated but without losing their power to divide. The large dividing cells are, then, immature nerve cells; the small are cells of the neuroglia. In the case of the white rat, these cells retain their power of division until after the fourth day of extra-uterine life.

Malignant Carbuncle of the Upper Lip, Followed by Pyemia.

DR. W. B. WHERRY related the following case: A barber, 23 years old, entered Prof. Bevan's service in the Presbyterian Hospital on Feb. 7, 1901, and died on Feb. 8, at 11:15 p. m.

About a week before his admission he extracted a "dead hair" from his upper lip. This was followed by redness of the lip and swelling, which rapidly extended to the side of the face and shoulder. He rapidly grew worse and died with all the characteristic symptoms of septico-pyemia. The post-mortem examination was held twelve hours after death by Professor Hektoen. The anatomical diagnosis is as follows: Acute, diffuse, purulent and necrotic staphylococcus inflammation of upper lip and adjacent parts of face; multiple abscesses and hemorrhagic pneumonic areas in lungs; double fibrino-purulent pleuritis; abscess in spleen; acute splenic swelling; cloudy swelling of kidneys and liver; persistent thymus.

Bacteriologically, a pure growth of the staphylococcus pyogenes aureus was isolated from the lip, heart's blood, pleural exudate, liver and spleen.

Histologically, the lip shows dense cellular infiltrations with foci of necrosis containing groups of cocci, which stain by Gram's method. The lung contains many pneumonic

and hemorrhagic areas and mycotic emboli. The other organs show the characteristic changes of a severe infectious process. The dangers of this affection depend chiefly upon its location and the virulence of the infective agent; the prognosis is extremely grave on account of the liability to thrombosis and embolism. The treatment of the early stage, which has so far given the best results, is excision of the necrotic area and packing with iodoform gauze. After thrombosis and embolism have occurred, treatment at the present time seems to be hopeless.

The Distribution of Segmentation and Fragmentation in the Myocardium.

DR. W. B. WHERRY: Twenty hearts were carefully preserved and eighteen pieces were taken from each heart. In searching for changes, the divisions into simple segmentation, and degenerative fragmentation and segmentation, made by J. B. MacCallum, were kept in mind. Degenerative fragmentation and segmentation occurred twice in the left auricle. Segmentation was distributed in the following order of frequency: left papillary muscles, wall of left ventricle, right papillary muscles, posterior surface of apex, etc. The changes in the walls practically correspond to the changes in the papillary muscles.

"Diffuse" segmentation of both left papillary muscles, accompanied by diastasis and displacement of the segments, seems to indicate more or less general segmentation and fragmentation throughout the ventricles.

Cyst-Adenoma of Ovary.

DR. E. FRIEND: Patient 31 years old; married five years; never been pregnant; menstruation regular and painless; family history negative. About eight years ago severe pain developed in the region of the left ovary, but upon examination this was pronounced healthy. About one year ago a swelling appeared, extending from the symphysis pubis to the umbilicus, but this gave no pain until about a month ago. She then entered the hospital and at operation there was removed from the right ovary a small, multilocular cyst. The patient made an uninterrupted recovery and was discharged from the hospital yesterday.

Adenomas develop as a result of disturbance in the formation of Pflüger's tubes in the growing ovary. Cyst-adenomas are simply adenomas which have undergone cystic degeneration; they consist of long, round, tortuous cavities, separated from each other by connective tissue. These cavities may become obliterated entirely or partially by papilliform growths.

The present officers were re-elected for the coming year.

Medicolegal.

Validity of Law Requiring So Much Fat in Cream Sold.—The Supreme Court of Minnesota holds, in the case of State vs. the Crescent Creamery Company, that section 7002 of the General Statutes of Minnesota of 1894, which prohibits the sale of cream that contains less than 20 per centum of fat, is a valid exercise of the police power and constitutional. It says that there is undoubtedly less necessity for a statute to prevent deception in the sale of cream than there is of one to prevent fraud in the sale of milk, because the latter may be classed as a necessity, and the former as a luxury, and its sale not as general as that of milk; but the distinction is one of degree, not of principle. In either case, the legislature is the sole judge of the necessity and propriety of preventing deception in the sale of the article, by appropriate legislation. And the constitutionality of such a statute as the one in question rests upon the same principles as does the validity of statutes prohibiting the sale of milk unless it contains a prescribed percentage of fat and solids, and other similar statutes, the constitutionality of which has been uniformly sustained.

Evidence of Misrepresentation in Procuring License.—The issue in the case of Curryer vs. Oliver, brought by the secretary of the State Board of Medical Registration and Examination of Indiana, was whether a physician's license had been obtained by fraud and misrepresentation, the misrepresentation alleged being that the holder was a graduate of a reputable medical college, when in fact he was not a graduate of any medical college. The evidence consisted of the record kept in the office of the clerk of the Clay circuit court, showing the issuance of a license to the party under the act of 1885. The clerk who made the record testified that the license would not have been issued if the party had not made an affidavit, and that the information as to the name of the university from which he graduated and the date of his diploma were taken from such affidavit. The affidavit itself could not be found, although search was made in the proper place at various times. The book containing the copy of the license was identified as "The Record of Physicians' Certificates." It was kept in the clerk's office of Clay county. No objection was made to the admission in evidence of this record. The statute then provided, among other things, that "such applicant shall pay to such clerk for such license the sum of $1.50, and the clerk shall record such license, together with the name of the college in which such applicant graduated, and the date of his or her diploma, in a book to be kept for such purpose, and which shall be a public record." Upon this evidence there can be no doubt, the Appellate Court of Indiana holds, that the party procured a license upon the misrepresentation that he graduated from the institution named at the time named; at least, it says, such inference might be fairly drawn, the presumption, until the contrary is shown, being that the clerk properly discharged his duty. Moreover, there was introduced in evidence an affidavit made by this party in 1897 upon which a certificate of registration was issued to him in which affidavit it was stated by him that he was not a graduate of the university before referred to. And the court holds that from the evidence so introduced, in the absence of any explanation or denial by the party, the ultimate facts charged might have been properly inferred, wherefore it holds that it was error to sustain a motion for a finding and judgment in favor of the party on the evidence at the close of the petitioner's or secretary's evidence.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Tenia Solium (Tapeworm).

The treatment of tapeworm divides itself into three parts or stages: 1, the preparation of the intestinal canal; 2, the destruction of the tapeworm; 3, its expulsion. It must be remembered in carrying out the above treatment that it taxes the strength of the patient and consequently should not be undertaken on those patients recovering from prolonged illness, in sufferers from carcinoma, or tuberculosis or in pregnant women. To meet the first requirement, the intestine must be emptied as thoroughly as possible in order that the remedy may more readily come in contact with the parasite. Consequently a good laxative or mild cathartic should be given for a day or two previous to administering the teniafuge. At the same time, a diet should be prescribed consisting of fruit, containing small seeds such as strawberries, raspberries, gooseberries and new currants, also considerable milk, eggs and meat, with but little bread and potatoes. The night previous to the administration of the teniacide, the patient should partake of a salad consisting of dried herring, garlic and onions. The object, of course, in the above diet is to include only those articles that can be digested in the stomach. The above salad is supposed to be repulsive to the worm. A high enema should also be given the night previous to giving the teniafuge so as to cleanse thoroughly the large intestine.

To carry out the second part of the treatment some drug

must be administered that will either kill the worm or narcotize it so that it will release its hold upon the wall of the intestine and aid in its expulsion. There are a great many preparations recommended, but few of them are efficient. The one preparation most to be relied upon is the male fern, administered as follows:

R. Oleoresinæ aspidii 3i

M. Ft. capsulæ No. vi. Sig.: Take in keratin coated capsules at intervals of ten minutes, beginning early in the morning.

Previous to its administration the patient should be instructed to remain in bed in order to guard against vomiting. One hour after the last capsule has been taken, a brisk cathartic should be administered. Magnesium sulphate is regarded as preferable to oleum ricini, as the oil is said to increase the absorption of the male fern, which, of course, should be avoided on account of danger of producing toxic effects.

Treatment of the Umbilical Cord.

Dr. A. H. Longstreet, of Brooklyn, states in the *New York Med. Jour.*, that if there should be some inflammation or irritation of the umbilicus either before or after the cord drops, or if the parts keep moist, to apply the following:

R.	Pulv. acidi salicylici 3i	4	
	Amyli .....ʒi	32	

M. Bathe the part and dry thoroughly and apply as a dusting powder.

Diarrhea in Children.

The following is recommended by Hirsch, in *Pediatrics*:

R.	Argenti nitratis .....gr. i		06
	Sacchari albi 3ii	8	
	Aq. destil. .....ʒii	64	

M. Ft. mistura. Sig.: One teaspoonful every two hours for newly-weaned infants.

Treatment of Glaucoma.

Dr. Wicherkiewicz, as noted in *Med. Age*, recommends the following very highly in the treatment of acute as well as chronic glaucoma:

R.	Eserinæ salicylatis .....gr. 1/6		01
	Pilocarpinæ muriatis .....gr. iii		20
	Cocainæ muriatis .....gr. i		06
	Aq. destil. 3iiss	10	

M. Sig.: One drop into the affected eye once a day, at bedtime.

The mydriatic action of the cocain is neutralized in this combination through the eserin and pilocarpin, and intraocular tension is diminished through the use of this collyrium. He states that in fresh and acute cases, the solution should be dropped into the eyes three times a day.

In chronic glaucoma where iridectomies have no effect in stopping the progress of the disease, he has seen marked improvement in vision as well as in the structure of the eye, following the use of these drops, applied once a day at bedtime.

Amyl Nitrite in Seasickness.

The following prescription containing amyl nitrite is recommended by Martindale:

R.	Amyl nitritis .....m. viii		5
	Alcoholis (90 per cent.) 3i	4	
	Pulv. trogacanthæ .....gr. iv		25
	Aquæ destil. .....ʒii	64	

M. Sig.: One to two teaspoonfuls at one dose.

Treatment of Suppurative Otitis Media.

N. G. Ward, of Philadelphia, in an article published in *Amer. Med.*, states that in acute cases of otitis media, he syringes the ear out with a solution containing one to three drops of formalin to the ounce. In the most obstinate cases and those with granulations, alcohol is added:

R.	Formalin .....gtt. v		30
	Alcoholis (95 per cent.) 3ii	8	
	Aquæ q. s. ad .....ʒi	32	

M. Sig: The affected ear to be irrigated with a syringe.

Santonin in Treatment of Tabetic Pains.

Negro, as stated in the *British Medical Journal*, has used santonin in relieving the lightning pains of tabes dorsalis with good success. He gave, at the beginning, 5 grains every three hours until three doses were given and in subsequent attacks he gave 10 grains at a dose. He continued this treatment during the crisis only and found that the pain would gradually disappear, and ceased entirely after the second dose was given.

Sodium Bicarbonate in Vomiting of Pregnancy.

Monin, as stated in *Lyon Médical*, notes the resemblance of the symptoms which pregnant women present to those of hypersecretion, such as gastric pain, nausea and vomiting, excessive acidity, occurring in the morning and relieved by taking food into the stomach. He believes in both cases that the stomach is secreting continuously and not at the digestive periods alone. He states that good results have been obtained by administering sodium bicarbonate in 30-grain doses four or five times a day in capsule.

Treatment of Mosquito Bites.

Dr. A. Manquat states that the most successful treatment consists in the local use of formalin, tincture of iodin and alcohol. He uses the pure formalin or alcohol in one-half strength. The tincture of iodin is objectionable because of the stain it leaves on the skin.

As a prophylactic against mosquito bites the following combination is of service:

R.	Olei picis liq.		
	Olei olivæ, āā 3vi		24
	Olei hedeomæ (pennyroyal) .....ʒss		16
	Spts. camphoræ 3iii		12
	Glycerini 3iiss		10
	Acidi carbolici 3i		4

M. Sig.: Apply on retiring.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, June 29.

1 *Some Tropho-neuroses and Their Relations to Vascular Disease of the Extremities. B. Sachs and Alfred Wiener.
2 *The Freezing-Point of Urine; Its Determination and the Inferences which May Be Drawn from It. J. H. Huddleston.
3 A Preliminary Report upon a Case of Uncinariosis (Ankylostomiasis). Thomas A Claytor.
4 The Role of Infection and Intoxications in Diseases of the Spinal Cord. Alfred Gordon.

Medical News (N. Y.), June 29.

5 *The Importance of a Recognition of the Significance of Early Tuberculosis in Its Relation to Treatment. E. L. Trudeau.
6 A Study of Some Complications and Sequelæ of Typhoid Fever. (Continued.) H. A. Hare and H. R. M. Landis.
7 *Treatment of Diabetes Mellitus. Abraham Mayer.
8 *Cutaneous Manifestations in Diabetes. S. Sherwell.
9 *Diabetes in Surgery. Robert T. Morris.

New York Medical Journal, June 29.

10 Rabelais as a Physiologist: Reflections Suggested by His Description of the Production and Movements of the Blood, in 1546. Austin Flint.
11 *Notes on Ringworm. A. Ravogli.
12 Hyperacidity (Superacidity, Hyperchlorhydria, Superaciditas Chlorhydrica); A Clinical Study. (Concluded.) H. Illoway.
13 *Congenital Malformations of the Upper Extremity. Carl Beck.
14 *The Mental Diseases of Childhood. William B. Noyes.

American Medicine (Philadelphia), June 29.

15 *The Treatment of Abdominal Aortic Aneurysm by a Preliminary Exploratory Celiotomy and Peritoneal Exclusion of the Sac, Followed at a Later Sitting by Wiring and Electrolysis, with the Report of Two Hitherto Unpublished Cases. (Concluded.) Rudolph Matas.
16 Persistence of the Thyroglossal Duct. David Riesman.
17 Subtrochanteric Osteotomy for the Deformity Following Hip Disease. E. H. Bradford.
18 *The Hallucinations of Digitalis—Does Digitalis Cause Hallucinations, Delirium or Insanity under Certain Conditions? Harry Orville Hall.

18 The Treatment of Congenital Dislocation of the Hip-Joint. Leonard W. Ely.
20 Prevention of Disease Infection by Micro-organisms Through the Mouth and Nasal Cavities. Robert Reyburn.

Medical Record (N. Y.), June 29.

21 *Clinical Annotations on Five Cases of Right-side Abdominal Disease. A. A. Berg.
22 *Tonometric Examination in Chronic Diseases of the Heart. Theodor Schott.
23 *Chronic Gonorrhea and Post-Gonorrheal Urethritis—A Sketch of Their Modern Treatment. Ferd C. Valentine.
24 Tuberculous Mastitis. R. A. Giuliana.

Boston Medical and Surgical Journal, June 27.

25 *A Study of the Food Consumed and Digested by Four Members of the Harvard University Boat Crew in June, 1900. (Concluded.) W. I. Atwater and F. G. Benedict.
26 Some Forms of Intestinal Obstruction Due to Adhesions. A. T. Cabot.
27 *Catharsis in Abdominal Surgery. L. R. G. Crandon.
28 A Case of Measles Complicated by Appendicitis. Harold Williams.

St. Louis Medical Review, June 29.

29 Emergency Surgery in the Country. Edward W. Lee.

Cincinnati Lancet-Clinic, June 29.

30 *Pelvic Massage as an Aid in the Treatment of Gynecologic Lesions. Louise Southgate.
31 *Valves of the Rectum. E. W. Mitchell.
32 Akromegalia. T. L. Cornwell.

Virginia Medical Semi-Monthly (Richmond), June 7.

33 Importance and Difficulties of the Correct Diagnosis of Insanity in Its Medicolegal Aspects. J. T. Wilson.
34 Placenta Previa. Virginius Harrison.
35 The Use and Abuse of Eebolics. J. Wesley Bovée.
36 Practical Results from Examination of the Stomach Contents. E. Guy Hopkins.
37 A Case of Addison's Disease, Treatment with Suprarenal Extract. W. B. Atkinson.

June 21.

38 *The Limitations of Surgery in the Treatment of Nervous and Mental Diseases. William B. Pritchard.
39 Sudden Death Six and One-half Days After Gastroenterostomy. I. S. Stone.
40 The Early Operation for Appendicitis from a Pathologic Standpoint. J. G. Carpenter.
41 *The Arrest of Progressive Hardness of Hearing, Tinnitus Aurium and Ear Vertigo. Charles H. Burnett.
42 A Clinical Résumé of Typhoid Fever. George W. Gay, Jr.
43 Some Thoughts on Cystitis. C. N. Brown.

Pediatrics (N. Y.), June 15.

44 A Case of Mongolism. W. Winston Hall.
45 An Eruption Resembling Pemphigus Vegetans in an Infant. E. A. Fischkin.
46 A Case of Acute Tubercular Peritonitis with Strangulation of the Appendix by Adhesions with the Ileum. Charles G Cumston.
47 Tubercular Disease of Right Hip and Left Knee. J. M. Krim
48 Report of a Case of Laryngeal Stenosis. I. A. Abt.

Northwestern Lancet, June 1.

49 Report of a Case of Cystic Kidneys. A. R. Brackett.
50 A Case of Meralgia Paresthetica: Sensory Disturbances involving Six of the Seven Cutaneous Branches of the Lumbar Plexus. Mary B. Damon.
51 *The Diagnosis and Treatment of Intestinal Obstruction. James H. Dunn.
52 *The Symptomatology in Acute Nephritis. George D. Head.

June 15.

53 Corneal Ulcer: Its Diagnosis and Treatment. J. H. James.
54 Puerperal Eeampsia. H. H. Critchfield.
55 *Adrenalin Hypodermically Injected to Prevent Hemorrhage During Operations, with Report of a Case. Frank C. Todd.
56 *The Differentiation Between Cancerous and Tuberculous Tissues. C. H. Hunter.
57 The Pantherapist and Neotherapeutics. C. H. Kermott.

Medical Age (Detroit, Mich.), June 10.

58 *Psychotherapeutics. Philo D. Patterson.
59 The Use of Adrenalin Solutions. Albert E. Bulson, Jr.

Fort Wayne Medical Journal-Magazine, June.

60 Anesthesia. Chas. O. Wiltfong.

Western Medical Review (Lincoln, Neb.), June 15.

61 President's Address, Nebraska State Medical Society. H. M. McClanahan.
62 *Traumatic Injuries of the Ureter. J. W. MacDonald.
63 *Etiology and Pathology of Surgical Infections of the Kidneys and of the Cystonephroses. M. L. Harris.
64 Surgical Infections and Cystic Enlargements of the Kidney—Their Symptomatology and Diagnosis. W. H. Allport.
65 *Treatment of Septic Infections of the Kidney and Cystonephroses. L. L. McArthur.

University of Pennsylvania Medical Bulletin (Philadelphia), June.

66 *The Topical Treatment of Focal and Jacksonian Epilepsy. J. William White.
67 Right-sided Cardiac Hydrothorax. Alfred Stengel.
68 Cerebellar Lesions without Cerebellar Symptoms. William G. Spiller, W. E. Robertson and W. S. Wadsworth.
69 A Case of Complete Unilateral Oculomotor Palsy. David Riesman.
70 Some Forms of Apparatus Used in the Course of Practical Instruction in Physiology in the University of Pennsylvania. Edward T. Reichert.
71 A Series of Twelve Articles on Medical Men Prominent in the Civil and Military Affairs of Revolutionary Times. Francis R. Packard.

American Gynecological and Obstetrical Journal (N. Y.), June.

72 *Cancer of Uterine Fundus. J. M. Baldy.
73 Some Remarks on the Cesarean Section with a Report of a Case for the Relative Indications. George M. Boyd.
74 The Pubescent Schoolgirl. Wm. Edgar Darnall.
75 *The Choice of Operation in Retrodisplacements of the Uterus. Frederic Coggeshall.
76 Tubal Abortion. Herman E. Hayd.
77 What Is the Significance of Cervical Lacerations? Some Points Connected with Their Treatment. Chauncey D. Palmer.
78 *Myomectomy of Nine Myomata During Pregnancy and Delivery at Term. John D. Emmet.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), May.

79 The Doctor in Public Life. Albert E. Carrier.
80 The Relation of Fermentation to Disease. Earnest L. Shurly.
81 Appendicitis, with Report of a Case Complicating Ovarian Degeneration. Alvah N. Collins.
82 Historical Sketch, Etiology and Pathology of Diabetes Mellitus. Moses A. Fechheimer.
83 Course and Treatment of Diabetes Mellitus. James E. Davis.
84 Recent Experience with Smallpox. Theodore Schmalzriedt.
85 A Periosteal Elevator. Emil Amberg.

Peoria Medical Journal, June.

86 What of Electricity? O. B. Will.
87 Sanitation. W. R. Allison.

American Journal of Medical Sciences (Philadelphia), July.

88 *Two Cases of Operation for Traumatic Epilepsy; in One of which the Lateral Ventricle was Widely Opened: In the Other, an Abscess of the Brain, Caused by a Portion of Bone Being Embedded in the Brain for Fourteen Months, Was Evacuated. W. W. Keen.
89 *Primary Tuberculosis of the Pericardium. David Riesman.
90 The Extension of Aortic Aneurysms into and Between the Walls of the Heart and Dissecting Aneurysms of the Heart. Ludvig Hektoen.
91 *A Periendothelioma of the Dura Mater Involving the Cranial Nerves. D. R. Brower and H. G. Wells.
92 *Gonorrheal Myositis. Martin W. Ware.
93 Double Ureter of the Right Kidney. Charles L. Scudder.
94 Bronchial Concretions. L. W. Atlee.
95 *Progressive Muscular Dystrophy, with the Report of an Autopsy. B. Sachs and Harlow Brooks.
96 The Malaria of the Tropics. Barton Lisle Wright.

Iowa Medical Journal (Des Moines), June 15.

97 Early Diagnosis of Cancer of the Uterus and Breast. D. C. Brockman.
98 Iowa State Association of Railroad Surgeons. G. G. Cottam.
99 Melancholia. Max E. Witte.
100 Puerperal Infection from a Surgical Standpoint. G. G. Cottam.
101 Some Thoughts on Emergency Surgery. G. G. Cottam.
102 New Findings in Ophthalmology. E. H. Hazen.

Illinois Medical Journal (Springfield), June.

103 President's Address, Illinois State Medical Society. Geo. N. Kreider.
104 The Duty of the State in Regard to Tuberculosis. George W. Webster.
105 Progress in Medicine. J. L. Spalding.

Journal of Eye, Ear and Throat Diseases (Baltimore, Md.), May-June.

106 Report of a Series of Cases of Mastoiditis, with Operations. J. William Watson.

Journal of Medicine and Science (Portland, Me.), June.

107 Lecture on the Tribulations of the Pharmacist. Joseph P. Remington.
108 *Two Unusual Cases in Surgery. W. P. Giddings.

Interstate Medical Journal (St. Louis, Mo.), June.

109 Clinical Lecture on Surgery. N. Senn.
110 Katatonia. George Boody.
111 Some of the Uses of Electricity in Gynecologic Practice. W. H. Walling.
112 Anemia. W. S. Lessenger.
113 Otomycosis. Robert M. Lapsley.

New York State Journal of Medicine (N. Y.), June.

114 *Tuberculosis of the Eye; Its Differential Diagnosis, Pathology and Treatment. Charles Stedman Bull.
115 After-Treatment of the Child in Normal Cases. Bernard Cohen.
116 *Parasites In the Blood. Leon T. LeWald.
117 *The Tonsils as Portals of Infection. Julius Ullman.

Medical Herald (St. Joseph, Mo.), June.

118 Antepartum Diagnosis. A. B. Somers.
119 Association, in Women, of Pelvic and Hepatic Disease. Inez C. Philbrick.
120 An Improved Introducer for Intubating the Larynx. F. W. Dean.
121 Chorea. E. A. King.

Merck's Archives (N. Y.), June.

122 *Nourishment by Ordinary Food. A. L. Benedict.
123 Urea in the Treatment of Tuberculosis. Augustus A. Eshner.
124 *Some Considerations Concerning the Toxicity of Acetanilid. Samuel E. Earp.
125 *Thiosinamine: Its Pharmacology and Therapeutic Uses. William J. Robinson.
126 An Essay on Opium and Its Alkaloid Morphin, and Their True Value in Modern Therapeutics. (Continued.) Adolfo Luria.

Dominion Medical Monthly (Toronto), June.

127 Clinical Notes on Some Injuries to the Shoulder Joint. R. B. Nevitt.

Pacific Medical Journal (San Francisco), June.

128 A Report of 290 Abdominal Cases, with Comments. J. T. Stewart.
129 The Treatment of Varicose Veins and Ulcers. A. W. Morton.
130 Diseases of the Digestive Organs. Alfred W. Perry.

Detroit Medical Journal, June.

131 Ectopic Pregnancy. H. W. Longyear.

Southern Medical Journal (La Grange), June.

132 Infantile Convulsions. Francis W. Campbell.
133 Hyperemesis Gravidarum. J. W. P. Smithwick.
134 On Cases of Eczema in Subjects of Ichthyosis and Others. Dr. Whitfield.
135 Infantile Diarrhea; a Clinical Report. J. W. P. Smithwick.

Alabama Medical Journal (Birmingham), June.

136 Otorrhea—"A Rising in the Head." W. L. Bullard.
137 Actinomycosis in Man—Report of a Case with Special Reference to the Treatment. W. D. Gaines.
138 Cases from Practice. Shelby C. Carson.
139 Influenza. W. W. Harper.
140 Physician and His Status—Present and Future. R. C. Bankston.
141 The Widal Reaction. Edgar Allen Jones.

Southern Illinois Journal of Medicine and Surgery (Metropolis), June.

142 Address of Welcome, Southern Illinois Medical Association. H. C. Fisher.
143 The Doctor's Mission. W. F. Grinstead.
144 Medicine and Surgery. Benj. O. Jones.

Medical and Surgical Monitor (Indianapolis, Ind.), June 15.

145 Report of a Case of Symmetrical Gangrene (Raynaud's Disease) Concomitant with Valvular Cardiac Lesion. Wm. H. Orr.
146 A Consideration of Tenia, Ascaris Lumbricoides and Oxyuris Vermicularis and Their Treatment. Samuel E. Earp.
147 How to Manage a Normal Case Through the Puerperium. Elizabeth Malone.
148 Epileptiform Conditions of a Reflex Nature. F. M. Lynn.

American Journal of Surgery and Gynecology (St. Louis, Mo.), May.

149 Bloodless Amputation at the Hip in Railway Surgery. John A. Wyeth.
150 A Compact Operating Case for Railway Surgeons. N. Senn.
151 Ambulatory Treatment of Fractures Involving the Hip-joint. Daniel W. Marston.
152 An Idea In Post-operative Treatment of Empyema, with Two Cases Illustrative. R. J. Christie, Jr.
153 Wandering Kidney (continued). Emory Lanphear.
154 Clinical Report of a Few Severe Cases of Traumatism. Thomas H. Manley.
155 Amputations Below the Knee. Edward W. Lee.
156 "Blood Washing" In Septicemia. Robert T. Morris.
157 The X-ray in Diagnosis. Miles F. Porter.
158 On Hand Disinfection. Geo. Howard Thompson.

American Journal of Surgery and Gynecology (St. Louis, Mo.) June.

159 Modern Gynecology. Lucy Waite.
160 Wandering Kidney (continued). Emory Lanphear.
161 *Abdominal vs. Vaginal Hysterectomy. Henry O. Walker.
162 The Use and Abuse of Anesthetics. Alfred Roulet.
163 Protection of an Inflamed Median Nerve by Gold Foil After Five Fruitless Operations. D. S. Fairchild.
164 "Railway Surgery" In America. Clark Bell.
165 Résumé of Work Done by New York State Association of Railway Surgeons. Geo. Chaffee.
166 Medical Treatment During the Adolescent Period of Girls. Edwin Rosenthal.

Charlotte Medical Journal, June.

167 Medical Society of North Carolina—Annual Meeting at Durham. President's Address. Julian M. Baker.
168 Pneumonia and Its Treatment. John C. Rodman.
169 Conservative Treatment of Diseases of the Uterus. John Thames.
170 The Importance of Early Diagnosis and Treatment of Tuberculosis. J. P. Munroe.
171 A Few Great Names In Medical History. J. Edwin Kerr.
172 Antitoxin Animal Extracts and Serums. H. T. Bass.
173 Prevention and Sequelæ of Scarlet Fever and Measles. Edmund Harrison.
174 Nitrate of Silver in Typhoid Fever. J. T. J. Battle.
175 Treatment of Tuberculosis. H. B. Weaver.
176 Why Have Not Materia Medica and Therapeutics Advanced More Rapidly? And Some Suggestions for Their Future Development. A. Cheatham.
177 Amputation of the Arm, Together with the Clavicle and Scapula for Maliguant Growth. R. L. Payne.
178 Etiology and Treatment of Menorrhagia and Metrorrhagia. W. W. McKenzie.
179 The Pronated Foot. Michael Hoke.
180 The Physician as a Sanitarian. David A. Stanton.
181 Some Observations Relative to the Time and Indications for the Use of Obstetrical Forceps. L. D. Wharton.
182 Some Points on the Hygiene of Infancy and Childhood. Sallie Bordeu.
183 Report of the Chairman of the Section on Obstetrics, North Carolina Medical Society. Frank H. Russell.
184 Gynecology: Its Present Status and Possibilities. H. S. Lott.
185 The Need for Greater Care in Making Examinations and in Sending Patients to the State Hospitals. Isaac M. Taylor.
186 Blood Metabolism. E. D. Dixon Carroll.
187 *The Limitations of Surgery in the Treatment of Nervous and Mental Disease. W. B. Pritchard.
188 Extensive Necrosis of Inferior Maxilla; Operation; Recovery. 2. Extrauterine Pregnancy, with Long-retained, Full-term Dead Fetus; Laparotomy; Death. A. W. Knox.
189 The Problem of Typhoid Fever in the Rural Districts of North Carolina. H. W. Lewis.
190 An Unusual Case of Gall-stone. T. P. Wynn.
191 The Importance of an Early Definite Diagnosis of Appendicitis. J. Ernest Stokes.
192 Exhibition of Three Cases. H. A. Royster.
193 Bisol: Its Superior Merits and Practical Advantages Over Other Bismuth Salts. H. G. Ostrander.

AMERICAN.

1. **Tropho-Neuroses.**—Sachs and Wiener publish three cases of arterial diseases of the lower extremities and discuss the relation of tropho-neuroses in this region to special conditions. They suggest that it would be well to pay greater attention to the arteries of the lower extremities. Intermittent claudication and some vague rheumatoid affections may be due to arteriosclerosis. Whether immediate relation exists between the peripheral blood vessels and many of the tropho-neuroses as primary or secondary may be left to future investigation.

2. **Cryoscopy.**—Huddleston's article gives the details of the methods of cryoscopy, which are too long to be reproduced here. He believes that the method represents a notable advance in the application of quantitative physico-chemical methods to clinical work and that it may be of considerable value in the diagnosis and prognosis in cardiac diseases and to a less extent in other cases. It is, however, a laboratory method requiring time and care.

5. See abstract in THE JOURNAL, XXXVI, p. 1415.

7. **Diabetes.**—The treatment of diabetes should be directed to eliminating the amount of sugar of the urine and blood, maintaining the nutritive equilibrium of the patient or even increasing it, and maintaining or increasing the function of assimilating carbohydrates, and the prevention of complications. In treating the affection it has been Mayer's custom to divide the cases into mild and severe forms without regard to origin. The mild form he holds are cases in which by removal of carbohydrates the urine loses its glycosuria or it is reduced to an infinitesimal amount without much influence on the weight of the patient. In severe cases this is not the case and there

is wasting, acetone, diacetic acid, etc., are found in the urine. The prime object in the treatment of mild cases is to diminish the hyperglycemia and gradually reduce the carbohydrates, by using three or four days for the reduction and by keeping them excluded for three or four weeks. In this way a tolerance sometimes becomes established and so after several weeks or months they can take quite a liberal quantity. In most cases where small amounts of sugar still persist it will be necessary to reduce the proteids with the carbohydrates, substituting for them their calorie value in fats. Frequently milk can be substituted for both. The patients can take large quantities of lactose without showing much or any increase of sugar. If this, together with proper medical treatment, fails, the case is a progressive one and should be called severe. In the severe type he is very cautious about the dietetic treatment. When the urine reacts to Gerhardt's test, a strict rigid diet is a grave error and very dangerous, but where this is negative and the quantity of urea is normal without much increase and the patient still in the prime of life, rigid diet may be enforced in the beginning. In many of these cases there is increased nitrogenous metabolism and the aim should be not so much to decrease the sugar excretion as nitrogenous waste and production of diaceturia. He gives the diet tables for these different classes of cases. As regards medicines, when the diet removes hyperglycemia and glycosuria, drugs will only be required for faulty stomach action, or sluggish bowels. There are some drugs, however, which seem to have a beneficial effect on the excretion of sugar. Opium is one of these. He uses it for its beneficial effect on thirst and the general effect on the patient's mental and physical condition. The dose should be small in the beginning and .5 grain three times a day about one hour after meals, but to get its full effect it may have to be increased to three times this amount. In the severe cases in which the Gerhardt reaction is shown it should never be used; it should not be continued long in any case. He has found arsenic useful in mild cases, in conjunction with the diet and it has given him gratifying results. He uses only Fowler's solution and bromid salt, the latter in doses of one-thirtieth to one-tenth of a grain three times a day with much water after meals. In a certain class of diabetics beginning about middle life, high livers, the disease commences not unlike an acute affection and the percentage of glucose is found to be very high. He recommends bichlorid of mercury and finds it a specific in the reduction of sugar and amelioration of symptoms. It should be given off and on for ten days of the month, commencing with one-twelfth of a grain thrice daily, after meals, increasing it to one-sixth of a grain thrice daily after meals. The hygienic treatment is mentioned as important; also to keep up cheerful surroundings with moderate exercise, avoiding fatigue, and sometimes treatment by massage. The complications are also mentioned.

8. **Skin Lesions in Diabetes.**—The skin lesions mentioned by Sherwell are: 1. Generalized xeroderma, prevailing in the large majority of cases, and pruritus, which is sometimes almost a disease of itself. Next in the order of frequency are eczematous dermatitic manifestations, usually on flexor surfaces, and especially in the genital, anal, and inguinal regions, where they should excite suspicion and lead to careful examination of the urine. He thinks these conditions, though not so grave, are more distressing to the patient than any other. Furuncular and carbuncular manifestations are often concurrent as is well known and are clearly caused by the diabetic state. Erythematous lesions are sufficiently common as results of this glycosuric state. The only case he has ever seen of erysipeloid manifestations on the fauces and upper air-passages have been in diabetes. The so-called dermatitis herpetiformis or Duhring's disease has often diabetes for one of its etiologic factors, and there are one or two morbid growths originating by the diabetic diathesis or state. He refers to xanthoma diabeticorum and possibly to blastomycetic dermatitis. Of the latter, however, he has had no personal experience.

9. **Diabetes in Surgery.**—There are three chief reasons, according to Morris, why diabetes interferes with surgery: 1. The sugar circulating in the blood is hygroscopic and it draws water from all the tissues of the body until they are too dry, interfering with the normal processes of repair. 2. The fluids of a wound loaded with sugar are likely to be excellent culture media and the wounds are difficult to keep aseptic. 3. The anesthesia may precipitate an impending nephritis in kidneys that have become irritable on account of the unusual labor in excreting sugar. The relation of trauma to diabetes is also discussed. Injuries of the head cause about one-half of the cases of traumatic diabetes, and the other one-half are due to injuries of the pancreas, stomach or spleen. Traumatic diabetes is apt to be associated with traumatic neuroses of various kinds. The glycosuria, while often transitory, may become permanent. He suggests caution, however, when called upon to testify as to the cause of diabetes, unless we fully know the history of the patient in this regard previous to the time of injury.

11. **Ringworm.**—The symptoms and pathology of ringworm are discussed and described by Ravogli. As regards the treatment, he says almost any substance causing defoliation of the epidermis will suffice for local application. In the obstinate cases he has used the electric current from the positive to the negative pole. He uses an electrode having attached a sponge impregnated with antiparasitic solution, usually ordinary 1 per cent. bichlorid of mercury solution, applied to the diseased patch and the negative pole at some distance. This causes a penetration much deeper than would be the case without the help of the electric current. The method was suggested by H. J. Reynolds of Chicago. He calls particular attention to the need of care in using public combs, towels, etc., the dangers in barber shops, schools, and the like. He thinks that with care and attention tinea tonsurans can be easily diminished and prevented from spreading.

13. **Congenital Malformations of the Upper Extremity.**—Beck's article is a description of various congenital deformities of the upper limbs with skiagraphs and other illustrations, with remarks also on their surgical treatment.

14. **Mental Diseases of Childhood.**—According to Noyes there is in children a fatigue period from 7 to 9 years when tire occurs most easily. The heart is then more likely to be injured and the foundation of future mental weakness or disease often laid. Overstrain during this period commonly results in breakdown of the general health. The period of puberty following this is the time when mental symptoms begin to appear and he gives instances showing the condition and a long list of insanities or mental aberrations that may make their appearance at this time. Insanity is rare before adolescence, but the less pronounced psychical disturbances in young children are often the first manifestation of strain or symptoms that end some years later in the development of one of the definite clinical forms of adult insanity. There is no sharp dividing line between the symptoms of the neuropathic child and the psychopathic adult.

15. **The Moore-Corradi Method.**—In the conclusion of his paper Matas discusses the limitations and disadvantages of the Moore-Corradi method and summarizes the latter as follows: 1. The cure of the aneurysm may lead to the death of the patient by obliterating the orifice of important visceral arteries: this is most likely to occur in dealing with aneurysms of the upper or celiac division of the abdominal aortic tract—i. e., in about 50 per cent. of the cases. 2. Secondary rupture of the sac from the strain put upon weak portions of the sac in multilocular aneurysms, after partial coagulation of the contents has taken place (particularly likely to occur in subjects of general endarteritis with atheroma). 3. Escape of wire through a large aneurysmal orifice into the lumen of the aorta, with migration upward into the heart leading to perforation, traumatic endarteritis, endocarditis, with the formation of secondary thrombi and emboli. 4. Danger of perforating the sac by stiff wire or by overcrowding the sac with too much wire 5. Danger of extension of clot from the coagulum in the aneurysm to the main artery, leading to fatal blockade at the

bifurcation, with gangrene of the lower extremities. 6. Danger of rupture of sac from sudden withdrawal of abdominal support and displacement of adherent organs in the course of the exploratory laparotomy. 7. Danger of mistaking a fusiform for a saeciform aneurysm. 8. Danger from emboli and thrombi following incomplete coagulation of the blood in the sac (a very rare and practically unknown occurrence in abdominal cases). 9. Danger of shock. 10. Danger of sepsis. In the presence of this formidable array of dangers he asks what are the conditions favorable to its successful application, and answers that as theoretically possible but clinically rare the following conditions may be enumerated: 1, the aneurysm should be saccular; 2, it should be uniloeular; 3, it should be provided with fairly strong, resisting walls; 4, the patient should be young or middle aged, fairly healthy, and free from general endarteritis and atheroma; 5, the aneurysmal orifice communicating the sac with the lumen of the parent artery should be small; 6, the aneurysmal sac should spring from the lower, inframesenteric division of the artery, preferably between the origin of the superior mesenteric and the bifurcation; 7, if given off from the celiac region the orifice should be situated on the posterior or lateral wall of the aorta. He says in conclusion, after analyzing the question from every point of view, we are compelled to admit that very little advantage is gained from the use of the method and he would restrict recommendation of the method to a small group of comparatively favorable cases in which the aneurysms are confined to the inframesenteric portion of the aorta and then only after other safer methods have been tried and failed. In aneurysms of the upper part of the aorta he would regard the procedure a pure experiment. He would not recommend it then, even in the danger of death, unless by the urgent solicitation of the patient and with a full explanation of the chances he has.

18. **Digitalis.**—Having had his attention called to a case of acute delirium and mania apparently due to the use of digitalis, Hall looked up the literature and finds the subject treated in a monograph by Duroziez, who reports twenty cases. He asks for the reports of the observations of the profession of similar facts.

21. **Right-Side Abdominal Surgery.**—Berg gives the histories, with diagnosis of appendicitis, of a case of typhoid fever with intestinal perforation and recovery after suturing, and a case of purulent tubercular peritonitis operated upon by celiotomy, with recovery; a case of empyema of the gall-bladder with impactions in the cystic duct, cholecystotomy and recovery; a case of suppurative appendicitis complicated with large ovarian cyst and pyosalpinx, abdominal section, removal of appendix, cyst and pus tubes, with recovery; a case of lymphosarcoma of the intestine simulating appendicitis, laparotomy, with recovery from operation. All these cases had been diagnosed as appendicitis and in all the symptoms pointed to trouble in the right iliac fossa. He remarks that these illustrate the difficulties that are and may be encountered in establishing a diagnosis in disease of the right side of the abdomen. Pain over the classic McBurney's point is not by any means always appendiceal in origin, and he suggests that when diagnosing appendicitis the other organs in the abdominal cavity ought to be examined.

22. **Tonometric Examination in Heart Disease.**—Schott's article dwells on the importance of an examination of the blood-pressure as a guide to the therapeutics of heart disease and illustrates from his own experience the use and value of the tonometer. While this is an instrument that may be dispensed with by the general practitioner, the physician who is desirous of making a minute and careful examination must use it. He says it may be considered a serious symptom whenever in any case undergoing the balneologic and gymnastic treatment the blood pressure is lowered. He has no hesitation in saying that when the tonometric figure as low as 65 or 60 mm. of mercury is found, therapy is of little avail and the bath and exercise treatment are both contraindicated. He believes that further careful experience with the Gaertner tonometer will fully confirm the statements and facts here given.

23. **Chronic Gonorrhea.**—The methods of treating chronic gonorrhea and post-gonorrheal urethritis are described by Valentine, who speaks particularly of certain points, such as the degree of dilatation and its duration, the need of asepsis, the question of involvement of the urethral adnexa, all the conditions that may tend to the chronicity of the gonococci, and the subject of marital reinfection. He offers the following conclusions: 1. That in these conditions, like all others, the cause of the perpetuation of the disease must be sought. 2. That no one remedy exists or can exist which will meet all the causative indications. 3. That the cause of a chronic urethral discharge is easily found, and when found can be successfully treated. 4. That the majority of chronic urethritides can be successfully treated by the general practitioner, and that the services of the specialist are required only in exceptional cases. 5. That the physician's duty is to warn all his patients of the dangers of gonorrhea to themselves, their family, and the public. 6. That no person who has had gonorrhea at any time should be allowed to marry until it is proven that he or she is free from the disease.

25. **Dietetic Treatment.**—The summary of Atwater and Benedict's article, concluded in this issue, shows that the four men under observation took a daily average of 154 grams of protein, 139 grams of fat, and 473 grams of carbohydrates, with a fuel value of 3925 calories daily per man. These figures correspond very closely with other observations of men under training and show that they take in their food about 50 per cent. more protein and 16 per cent. more energy than men at ordinary occupations in the United States whose dietaries have been studied. A comparison of the amount of nutriment in the food with those in the solid excreta shows the amounts actually available. These are nearly, but not quite the same, as the amount actually digested. It seems that the four athletes on an average digested their food just about as completely as the average man does. One notable feature of the experiment was found in the fact that the nitrogen excreted by the kidneys and intestines was considerably less in amount than the total nitrogen in the food. This means that there was considerable storage of nitrogen in the body, not far from 24 grams of protein per day, if no allowance is made for nitrogenous excretion in perspiration. Even after making a considerable allowance for excretion through the skin, it suggests the inquiry whether men who are storing nitrogen to such an extent are in the best physical condition and whether the amount of protein in the diet was the most appropriate for the purpose. The most important conclusion, however, to be derived from the experiments is, they say, that further and more detailed investigations are needed to show what diets are best for men under such muscular strain as that of oarsmen in training for races.

27. **Catharsis in Abdominal Surgery.**—The conclusions that seem to Crandon warranted from his study of the subject are: 1. In acute pelvic peritonitis both enemata and drugs by mouth should be used to produce catharsis before operation; drugs by mouth and oil enemata after operation. 2. In all acute inflammatory conditions of the abdomen where the alimentary tract is involved, the bowels should be moved by enemata alone, before and after operation, the enema of salts, turpentine and glycerin being the best.

30. **Pelvic Massage.**—After relating her experience with this method Southgate says: To sum up results obtained from my cases herein reported and others whose history I have not given you, pain and soreness in pelvis has been relieved; adhesions have been freed; exudates have been absorbed; large recent subinvolution was reduced; old chronically enlarged uteri have been rendered much smaller; enlarged fibrous ovaries have diminished slightly in size; retroverted, hypertrophied uteri, complicated with enlarged appendages and lax vaginal walls, reduced in size and retroversion somewhat improved; retroverted, prolapsed uterus without complications restored when electricity was added to the massage; severe dysmenorrhea of many years' standing, when caused by adherent ovary, cured.

31. **Rectal Valves.**—Mitchell reports a case where the existence of these valves was determined by proctoscopy, while the old methods had failed to reveal them.

38. **Surgery in Nervous Diseases.**—Pritchard doubts the value of surgery in functional nervous troubles and protests against the tendency of the surgeons to overstep their proper bounds in this direction. He concludes that in diseases of the brain, sinus phlebitis and traumatic hemorrhage, surgical procedure is not only legitimate, but is imperatively demanded. In brain tumors and in imbecility due to cranial deformity it has a legitimate field and while the results attained have not been specially gratifying, other remedial measures have resulted in no benefit whatever. Paralytic deformities, talipes, and contractions can be successfully treated by surgery alone. The loss of function may be completely relieved and useful action restored by muscle transplantation or section. Compression myelitis from trauma or other cause demands surgical treatment. Laminectomy is a legitimate procedure as demonstrated by results. In the treatment of neuroses, however, intrinsic or reflex, surgery is never a factor of any assured value. It may in exceptional cases prove a valuable adjuvant, but should never be relied upon alone. In non-reflex epilepsy the only excuse for surgical interference is that nothing else can be any worse. In reflex epilepsy and in other neuroses due to or aggravated by any ascertained reflex cause surgical removal of such reflex cause is legitimate, but the surgeon is wise who promises nothing. Among the sensory and motor neuroses surgery in the majority of instances seems a desperate experiment at best and often a crime. The domain of the surgeon in the treatment of epilepsy he believes is yet uncertain. Cautious, discriminating experimentation should constitute the guiding and dominant influence. While the ratio of failures to successes is large, he thinks that there is a future for surgery in this direction.

41. **Incudectomy.**—The mechanism in progressive hardness of hearing is given by Burnett, showing that the retraction of the incus is an important element and the operation of reducing the retractive force of the tensor tympani by incudectomy is recommended. The operation is made under general anesthesia and electric light with careful previous sterilization. When the membrane is intact the initial incision is made with a delicate knife, beginning close behind the short process of the malleus and following close behind the periphery backward and downward to a point below the line drawn horizontally through the umbo of the membrane. The flap thus made should be pushed inward toward the promontory by a probe armed with sterilized cotton. If there is no bleeding the incudostapedial joint is seen as soon as the flap of the membrane is pushed aside. If there be bleeding it must be mopped away. The incus being now in plain sight, it should be gently disarticulated from the stapes by drawing the former outward and downward by means of the incus hook-knife placed behind its long limb. Then the long limb of the incus should be grasped by special forceps and cautiously drawn down and outward into the auditory canal and then removed entirely from the ear. The operation is then finished. The meatus should be stopped with sterilized cotton and the ear let alone for twenty-four or forty-eight hours unless the meatus become moist with blood, when it should be changed. There should be no after-treatment in such cases. Sometimes slight reaction has occurred, but this is healed in a few days by simply mopping the ear with sterilized cotton and a solution of formalin (1 to 100), and he has never had any bad results. His experience with 78 cases has been good; the operation arrests and prevents progressive deafness and has a curative power in tinnitus and ear-vertigo.

51. **Intestinal Obstruction.**—The first duty in a case of intestinal obstruction is not to lose time in reaching a diagnosis or in instituting treatment. The essential phenomena are so striking to an observer as not to leave him long in doubt. In true ileus we have sudden and complete arrest of the fecal circulation indicated by sudden pain, vomiting, constipation, tympany, and stercoremia due to absorption through the paralyzed intestine, as shown by pale, drawn face, sunken eyes, a dark violet tinge to the skin, rapid, weak and small pulse, temperature normal at beginning, but later subnormal. The hopeless indication of these symptoms should be noted early, as the established conditions are unfavorable. Many physicians give cathartics, which Dunn condemns. Opium should not be given so as to mask the condition, though there is no other objection to its use. The most important thing where the obstruction is yet uncertain is the rational use of enteroclysis, using as much warm saline solution as possible with moderate pressure. This carefully conducted two or three times during the twenty-four or thirty-six hours will eliminate the existence of pseudo-ileus not requiring operation, and is not specially harmful in true ileus. The danger line for the patient should not be passed before operation is undertaken; ordinarily twenty-four to forty-eight hours should suffice. The various forms of internal strangulation should be watched for. These occur mostly in the middle third of life. Intussusception furnishes about one-third of the acute obstructions and usually occurs in patients under 10 years of age, and the discharge early of traces of blood in the stools is almost pathognomonic. Volvulus occurs in a large proportion of the cases of obstruction in the large intestines, hence, the diagnostic importance of inflation of the colon. In about 10 or 20 per cent. the nature and location of the obstruction remains more or less obscure to the best diagnostician, but the operator should not be very much embarrassed by this fact. Of the operations laparotomy is the one of choice, enterostomy being useful only in the last-resort cases. It is important that the operator should have everything at hand for any emergency and a definite system of handling pads, sponges, etc. Rapid work and the least possible rough handling of the intestine is important in advanced cases.

52. **Acute Nephritis.**—Head calls attention to definite types of symptoms of acute nephritis: 1. The gastrointestinal in which the attack is ushered in by vomiting, vomiting combined with diarrhea, or diarrhea alone. Over 50 per cent. of his 38 cases studied exhibit this type and he reports some of them as illustrations. 2. Next to this is the neurotic type, where the nervous system bears the brunt of the toxemia; the following symptoms occur; headache, sleeplessness, dyspnea, delirium, general or local convulsions and coma. About 28 per cent. of his cases were of this type. The two types just described are rarely seen associated. 3. This type is comprised of those cases characterized by the presence of edema, upon which so much stress has been laid by various writers. It is present in only 4 of his 38 cases. Edema is a much overestimated symptom of acute nephritis and has not the clinical importance attributed to it. Skin rashes are common enough as manifestations of nephritis to constitute the fourth type. In 3 cases of the 38 they were present, associated usually with edema. While as a rule striking symptoms are present, one sometimes meets with a case where there is no well-marked symptom to suggest the presence of the disease. This he calls the silent type of the disease, and he had about 5 of the 38 cases which he classed in this type. Other symptoms are enumerated, such as attacks of dizziness, abdominal pain, visual disturbances, epitaxis, etc.; these may occur but are not common and do not establish any special type of disease.

55. **Adrenalin.**—Todd reports a case in which adrenalin was injected to prevent hemorrhage in a case of operation for abscess in the neck, with the results that there was scarcely any bleeding, not enough to obscure the parts, though the patient in a previous operation had bled more than usual. The wound was packed with sterile gauze, but on removal from the neck this was unstained except where it had covered the cut surface, showing that there was no secondary hemorrhage. The adrenalin injections also had the effect of strengthening the heart, but otherwise there was no systemic disturbance.

56. **Tuberculosis.**—The object of Hunter's article is to call attention to a fundamental appearance of tubercular tissue not found anywhere else, viz., the presence of miliary tubercle. With this fact in mind one should not be left in doubt, he says,

in defining the tissue as to whether it is tubercular or cancerous.

58. **Psychotherapeutics.**—Patterson's article is an interesting historic résumé, and ends with a suggestion. He asks if the progress of the profession does not demand a judicious course in psychology as applied to the prevention, cause and cure of disease, to be added to the curriculum of medical instruction. Would it not be well to make a section of the state society (Michigan) devoted to the observation and study of the subject? Does not the dissemination of seeds of disease sent broadcast by mental suggestion in quack advertisements require local action for their prohibition?

62.—See abstract in The Journal, xxxvi, p. 127.

63.—Ibid., p. 127.

65.—Ibid., p. 127.

66.—Ibid., § 26, p. 1893.

72.—See abstract in The Journal of June 8, p. 1650.

75. **Ureteral Retrodisplacements.**—The operations for the various conditions are enumerated by Coggeshall as follows: 1. The Alexander operation unmodified when there is retroversion or retroflexion without adhesions so that the uterus is replaced with perfect ease; if the woman is still of child-bearing age; if the uterus is not markedly enlarged by actual hyperplasia, and if the symptoms confirmed by bimanual examination with or without ether, indicate nothing wrong with the adnexa and no evidences of fibroids. 2. The Goldspohn operation under the following conditions: Whenever in performing the Alexander, the ligament is broken or difficult to find, and also in a large number of retroversions where we can not be positive about the non-implication of the adnexa or where we know that diseased tubes or ovaries need to be dealt with or adhesions to be broken up, always provided that the adnexa are not too large to be brought out through the enlarged ring. 3. Posterior colpotomy followed by an Alexander seems more convenient than the last mentioned operation, when there is a large degree of retroflexion with adhesions, or of diseased adnexa, but are not too large to be brought out through the ordinary posterior vaginal incision, and are also markedly prolapsed. It is also the best operation in cases of retrocession as the most important measure for the cure of this form of retrodisplacements is the free division of the uretero-sacral ligaments. 4. Where it is necessary for any purpose to open the abdomen by median incision, Gilliam's operation is the most convenient method of fastening the uterus in place except in cases where the round ligaments have undergone much atrophy. It has an advantage over doubling the ligaments on themselves, in throwing the thin distal portion of the ligament out of use, and depending upon the stronger proximal portion for support. It also changes their direction so that they pull more directly in the line required. 5. Where the round ligaments are not available, which hardly ever happens except in women past the menopause, ventral fixation may be employed. It is hardly ever the operation of choice, but one is sometimes driven to it by necessity. 6. Vaginal hysterectomy is in Coggeshall's opinion perfectly legitimate as a remedy for retroversion, especially with prolapse in women past the menopause, where there is marked atrophy of the vaginal wall, especially if there is any degree of ptosis of the abdominal organs generally. 7. The repair of lacerations of the cervix and perineum with the addition of anterior colporrhaphy where indicated, is a simple and effective means of treating moderate degrees of retroversion, especially accompanied with some prolapse in women who are not certainly past child-bearing or even in older women where neither atrophy of the deeper layers or vagina, nor enteroptosis is present. He does not believe that the present state of abdominal surgery has yet advanced to the point of so reducing the risk of opening the peritoneum to justify it where there is a very probable cure by a less serious operation.

78. **Myomectomy in Pregnancy.**—Emmet reports a case where nine myomata were removed during pregnancy without interfering with the processes and with labor and delivery at term. He thinks the lesson learned from this case is that hysterectomy may and should be avoided in all cases of myomata complicating pregnancy. If pregnancy were continued after so prolonged and irritating an operation as nine-fold myomectomy he can not see why myomectomy can not always be practiced with equally careful technique.

88. **Traumatic Epilepsy.**—Keen's article gives two cases of traumatic epilepsy operated upon, in one of which there appears to have been relief from operation. In the first there was a curious condition in which the cortex and white substance external to the posterior part of the lateral ventricle was entirely absent. The patient's mental condition before and afterwards was entirely normal. Whether the case was one of acquired porencephaly or whether there was simply destruction of the cerebral tissue between the ventricle and the dura at the time of the accident or by absorption later the author is unable to say.

89. **Pericardial Tuberculosis.**—The conclusions of Riesman are as follows: 1. Tuberculosis of the pericardium is comparatively common. 2. It may be primary in the clinical, rarely in the pathologic sense; it may be secondary. 3. The primary form is either a hematogenic infection or is the result of extension by contignity from some trivial focus. 4. The most frequent source of infection is a tubercular mediastinal or bronchial lymph gland. 5. The primary form is usually chronic, and appears as an obliterative pericarditis. 6. In a large percentage of cases there is an associated mediastinitis, with adhesions to pleura, sternum, and ribs. 7. The symptoms are those of adherent pericarditis or mediastino-pericarditis. 8. In every case of obliterative pericarditis of obscure etiology tuberculosis should be suspected, particularly if there are no endocardial murmurs. 9. The diagnosis of tuberculosis of the pericardium can usually be made only by excluding other causes, except in rare instances of successful animal inoculation with fluid obtained by tapping a pleural cavity. 10. Tubercular pericarditis may not present any characteristic features at autopsy; hence, microscopical examinations should be made in every case of adherent pericardium before tuberculosis is excluded. 11. In rare cases a clinically primary tubercular pericarditis is acute, the exudate being serofibrinous, hemorrhagic, or purulent.

91.—See abstract in The Journal, xxxvi, p. 343.

92. **Gonorrheal Myositis.**—Ware reports a case of gonorrheal myositis with microscopic findings and discusses the literature, giving in brief the hitherto reported cases. He thinks that some permanent stiffening may eventuate in this case from the residue of connective tissue. He also is inclined to believe that the gonococcal myositis is an extension from similar inflammation of adjoining joints or the bones. The treatment is largely expectant and measures to relieve the pain, and when the acuity has abated massage. If the pain be excessive he thinks incision will often be of use.

95. **Progressive Muscular Dystrophy.**—Sachs and Brooks' paper reports a long-observed case with autopsy. They have specially investigated the spinal cord and find no evidences of tract disease. The occasional degenerated fibers in the posterior columns are probably ascending central branches of the degenerated spinal ganglion cells. The changes in the ganglion cells do not appear to them sufficient or of such a character as might be expected were the process a secondary one following long-standing muscular atrophy. They are inclined to consider them due to nutritional disturbances particularly affecting the mass of the cord following extensive and rapidly progressing curvature of that portion of the spinal column. The chief inference from the negative findings in this case is that there is not any evidence showing the disease of the muscles was due to disease of the gray or other portions of the spinal cord. Erb's theory should be regarded as purely speculative. At present there seems to be sufficient warrant to maintain distinction between the amyotrophies and the myopathies. It is difficult, however, to account for the latter group, unless we are satisfied simply to state that there must be some defect in the embryonal structure not permitting of satisfactory development of the muscular system. Two questions are raised: 1. Are all these cases of progressive dystrophy primarily muscular

disease or may not some of them be local expressions of universal lipomatosis? The case of a boy recently examined suggests apparently the latter possibility. 2. Are these muscular dystrophies necessarily progressive? The authors are inclined to offer a little hope from recent experiences. Two cases are reported in which there has been improvement at least.

108. **Two Unusual Surgical Cases.**—The cases reported are one of myoma with fibroid ovarian tumor, the first with only very obscure symptoms and the latter with none at all. The second case was one of ovariotomy in an extreme condition at the time of the operation.

114.—See abstract in THE JOURNAL, XXXV, p. 1172.

116.—Ibid., p. 1105.

117.—Ibid., p. 1171.

122. **Diet and Nourishment.**—The assumption that modern culinary art and the average appetite are essentially wrong is held by Benedict to be more dangerous than acceptance of our habits of eating without question. As an illustration of this he notices the tendency to prescribe in typhoid a dietary which would be insufficient and intolerable in health, which is deficient in carbohydrates and iron, which is constipating, which is an excellent pabulum for the colon bacillus and undoubtedly for the typhoid bacillus also. It is deficient in chlorid and almost lacking in material to stimulate the appetite or the digestive secretion. If milk is unavailable the next most orthodox nutriment is animal broth rich in toxic extractives, with which the emunctories are already overcrowded. On the other hand, we are told that a cracker or a piece of bread or toast is apt to reach the ileum as solid food and inflict mechanical damage. While there is no question that the diet of typhoid should be limited as to frequency and amount we should remember that milk is more truly a solid food than most bread stuffs or cereals, and that it is possible to come somewhere near satisfying the patient's needs and his appetite without puncturing his bowel needlessly or creating a chemical disturbance that may lead to serious results. Others advise a diet of concentrated proteids with small amounts of food stuffs in gastric affections and a diet rich in fats and vegetables in intestinal disease; amylaceous dyspepsia, he thinks, is a bugbear rather over feared. Nearly all rigid dietaries neglect the need of the system for a large amount of glucose. Meats are served in too great abundance. In most digestive disorders he thinks it better to allow well-fried meat or boiled meat and rare roast beef. In all hyperchlorhydric cases salt is to be avoided and in the reverse condition it is indicated. To a large extent the individual appetite should be consulted and we should remember in the diet as to meat that most patients take too much. Most soft, starchy vegetables can be given in moderate amounts except in diabetic cases, though not the best food for fevers. Vegetables with hard seed coats should be avoided in gastric stagnation; bulky vegetables containing little nutriment and much cellulose should be avoided in nearly all cases coming under the physician's care. All foods except fruits, nuts and milk are better cooked than raw, and he would almost make an exception of milk. The worst sins of modern cooking are overseasoning and preparations of doughy masses. Cake, pastry, etc., should be withheld in sickness. Good ice cream is wholesome. Fruits and nuts are generally fairly aseptic and many absolutely antiseptic. Gelatin is a harmless basis for appetizing dishes and somewhat nourishing as a fuel food. One of the best desserts is candy, but it has lost much of its credit from the fact that it is eaten to excess between meals. Other foods would also produce bad results under similar treatment. If eaten regularly as a dessert at dinner probably few persons would care to eat more than 10 to 25 grams at once. As it is, it is not uncommon for a person to consume ten times this amount between two meals. Most persons coming under the physician's care need to be warned against tea and coffee; also chocolate usually is taken too strong. Water should be taken freely, with the ordinary diet at least a quart daily, allowing a glassful at each meal. It is better that water should be drunk between meals and in small quantities at a time. With gastric dilatation and atony no water should be taken at meals and one to two quarts be drunk in small quantities at intervals beginning one hour or so after a meal. Alcoholic liquors are seldom indicated, the milder malt liquors do more harm to the stomach and bile by causing fermentation; the strong liquors expend their energy rather on the nerve centers and glands. Alcohol should have no place in the dietary unless the patient has been so accustomed to it that it is deemed inexpedient to withdraw it immediately.

124. **Acetanilid.**—Earp calls attention to the popular indiscriminate use of acetanilid and its occasional dangers. Fifteen grains, he says, is considered the maximum dose, but he has seen harmful symptoms from one-half of this quantity. Some authors advise that 3 grains every hour may be given with safety. He has seen patients follow this rule and reach the danger line before 15 gr. had been given. Therefore, while the drug has its value and good results can be obtained, he wants to emphasize the fact that extreme caution should be observed in its use. It is probably never indicated when the patient is in an enfeebled condition, but often robust patients are just the ones that show its toxic effects. He has seen cases of poisoning in the use of 8 grains of acetanilid in individuals who had quite frequently used larger doses before. We have little knowledge of its deterioration, and the possibility of an impure product being sent out should be considered. It has been suggested that acetanilid may be to some extent mixed with acetoluid and sold as the genuine article. He has observed that people who are quiet during the time that several doses are taken are more likely to suffer from untoward effects than those who have taken it during vigorous exercise. If small doses are given and there is a decline in the temperature and signs of depression, a cardiac stimulant given early will overcome the unfavorable symptoms. Most of the cases of poisoning are those in which some person has purchased the drug and self-administered it. In the use of acetanilid he observes the following precautions: "Under no circumstances do I give it independent of other agents for the relief of pain; if used for this purpose, codein makes a good adjuvant and it should be guarded by some cardiac stimulant. In the general use of this remedy accidents occur, because intervals between the doses are too short and quite frequently the second dose is given when the first one has accomplished the desired result. I instruct the nurse in the physiological as well as in the therapeutic action, and the appropriate antidotal measures. Under these precautions this positive agent need not be abandoned, and favorable results may be obtained with a comparative degree of safety.

125. **Thiosinamin.**—This agent (chemically, allyl sulphocarbamid, allyl sulpho-urea, rhodalin), prepared from oil of mustard, is discussed by Robinson, who notices the literature and its various uses. It has been given by the mouth and in capsules in .5 to 3 grain doses and hypodermically in a 5 to 15 per cent. solution, doses varying from one to three or four grains. The injections are painful, but not excessively so. It is used in skin disorders, and he says: 1. The beneficial effects of thiosinamin in cicatrices, keloid, chronic glandular enlargements, and lupus are undoubted. 2. The drug seems to possess a beneficial influence in corneal opacities and in deafness due to sclerosis and adhesions. Further testimony is needed in this direction. 3. The drug is claimed to have given good results in urethral stricture and in gynecologic affections; but the number of reports is small and further evidence is necessary. 4. Taking into consideration the softening and resorbent effects of the drug, it seems rational to believe that it would produce good effects in such conditions as hypertrophied tonsils, hypertrophied turbinates, and in various hypertrophies of the skin. A cautious trial of the drug in the above conditions seems highly desirable. 5. From the latest reports it appears that when used locally—applied to or injected directly into the lesion—thiosinamin produces a stronger and more prompt impression than when administered internally.

161.—See abstract in THE JOURNAL, XXXV, p. 1046.

187.—See also ¶ 38.

FOREIGN.

The Lancet, June 22.

On the Agglutinating Property of Blood-Serum in Cases of Plague. D. Louis Cairns.—After noticing the results of investigation of the agglutinating power of serum in plague cases, and the method employed to obtain the emulsion, which is too full to be given here, Cairns gives tables of the cases tested by him in the recent Glasgow epidemic, from which the following deductions appear fully warranted: 1. During the early days of the disease the reaction is not manifested, and consequently in rapidly fatal cases is probably never obtained. 2. Agglutinating properties first appear in the blood towards the close of the first week of illness (dilution of 1 in 10) These gradually increase in intensity up to the sixth week of illness, and are sometimes maintained at a high level as late as the eighth week. After this date, however, in the majority of cases, a gradual decline in the agglutinative power of the serum becomes apparent. The rates of increase and decrease of the reaction, generally speaking, are approximately equal; occasionally, however, the reaction wanes and disappears in a shorter period than that occupied between its appearance and point of maximum intensity. 3. In very severe cases ultimately proving fatal the reaction, though present, never reaches a high degree of intensity. In cases of almost equal severity, however, in which an early and rapid convalescence followed, the reaction was of more marked character. 4. In the mildest forms of plague a high degree of agglutinating power is probably never attained and in some it appears to be absent. Striker, in fact, states that the reaction never appears in this class of cases, but this is undoubtedly too sweeping an assertion, as an undoubted and characteristic reaction in a dilution of 1 in 25 was obtained in two such cases. 5. The reaction, as a rule, is most marked in those severe cases characterized by an early and favorable crisis, and in such cases it disappears very slowly, having been shown to be present as late as the fifth month after the primary illness. He remarks on certain mild cases that, notwithstanding the indisposition, was slight and the temperature sometimes only normal, they are as important as the severer ones as regards the danger to the community. In the severer forms of disease the possibility of serum diagnosis is much greater, but the diagnostic value of this agglutinative reaction is most important during and subsequent to the stage of convalescence when the possibility of bacteriologic diagnosis is more or less remote. In all cases, moreover, where there are glandular enlargements of dubious nature during the presence of plague epidemic the appearance of this reaction can not fail to be of signal value.

British Medical Journal, June 22.

Transplantation of Ureters into Rectum by an Extraperitoneal Method for Exstrophy of Bladder. George A. Peters.—The case reported is that of a child aged 2 years and 7 months, suffering from ectopia vesicæ and procidentia recti. The procidentia was operated upon Dec. 7, 1896, incision being made in the median line above the imperfect umbilicus and consisted in making a longitudinal fold along the axis of the bowel, securing it by a double Lembert suture, thus narrowing its lumen and forming a fleshy column of the anterior fold of the rectum. This prevented the prolapse and recovery was satisfactory. The author reports it as a new operation and claims that it differs from any other in its essential features, consisting in narrowing the lumen of the lower dilated portion so as to make it practically impossible for the original apex of the protrusion to fall into it, and at the same time converting the part doubled in into a strong vertical fleshy column, the lower end of which is supported by the perineum, while the upper in turn supports the apex of the protrusion. He has operated since in another case also successfully. The exstrophy was treated also at another operation, nearly three years later. The sphincter was well stretched and the rectum previously cleared by a purge or enema of non-poisonous antiseptic solution. With the rectum blocked in its upper portion by a fair-sized sponge, a Jacques soft-rubber catheter, about No. 5 (English), was passed for about two inches into the ureter. The part containing the eye was cut off so that the urine entered the opening freely. A silk suture was then caught around the extreme end of the ureteral papilla, once or twice, and was also passed by a needle through the substance of the catheter so as to effectually prevent its slipping out, as it was the intention to retain these catheters in position at least forty-eight hours. Care was observed not to obstruct the lumen by passing the thread across it or by tying it too tightly. The distal end of the ureter with a goodly rosette of bladder muscle and mucous membrane was then dissected free, the catheter affording an excellent guide to its position. The idea was whatever virtue there might be in the peculiar termination of the ureter upon the inner surface of the bladder, should be retained when the transplantation was completed. As soon as the entire thickness of the bladder (here uncovered by peritoneum) had been snipped through with scissors, blunt dissection was employed and it was found not to be difficult to free the lower end of the ureter along the wall of the pelvis without injury to the peritoneum. Both of the ureters having been isolated, the whole of the bladder tissue was ablated from the perimeter where it merged into the skin, to the prostate where the vesiculæ seminales debouched. Great care was employed not to injure the peritoneum and in this case it caused no trouble. Next, the lateral aspects of the rectum, at a point below the reflection of the peritoneum, were exposed and the final step of the operation was the transplantation of the ureter into the lateral walls of the rectum, as follows: With a finger in the rectum the operator carefully determined the exact point where the implantation was to be made. It must be above the internal sphincter in the lateral and not in the anterior wall, to avoid kinking, and high enough to permit the ureter to project slightly, one-fourth or one-half inch, into the lumen of the bowel without stretching. As it is thus produced, it forms a papilla which, when pressed within the bowel, becomes converted into a valve, similar to that at the entrance of the bile duct and salivary ducts. This point having been decided upon, the operator or his assistant passes a slender forceps through the anus, presses them against it from the rectal aspect and lifts it across into the anterior wound. The wall of the bowel is now incised upon the projecting forceps, which are then forced gently through. By stretching and cutting, the wound is enlarged with great exactness, so as to exactly fit the ureter with its contained catheter and yet not squeeze them. The forceps are now opened, made to grasp the distal end of the catheter, and it is drawn into the bowel and out of the anus, the operator at the same time carefully directing the ureter through the slit and satisfying himself that its termination forms a papilla at least one-fourth of an inch long on the rectal mucous surface. In guiding the mouth of the ureter through the slit, the forceps may be passed back again beside the catheter and made to grasp the edge of the rosette of bladder tissue around the ureteral papilla. This process is repeated on the other side. The sponge plug is now withdrawn, care being taken not to disturb the catheters while so doing. No attempt was made to stitch the ureters in position. The catheters are left in position at least two or three days, or until they come away of themselves, which occurred in this case in about sixty hours. The author did not think it judicious to attempt any plastic operation for immediate closure of the abdominal wound. The whole area was surprisingly small and a moderately firm packing with iodoform gauze afforded efficient drainage and support, and acted as a splint to the ureters in their new position. Plastic closure may be done later when the implantation has healed securely and granulation been established. In this case the wound healed entirely by granulation and the scar was quite small and firm. It is now more than four years since the operation for procidentia recti was performed and about one and one-half years since the conversion of the rectum into the cloaca; the boy is in perfect health. There has not been the slightest tendency of return of the procidentia; there was no disturbance of function of the kidneys, and the mouths of the ureter could each be felt as a salient papilla as large as the tip of the little finger. There is no eczema or excoriation of anus or perineum, or any evidence that the rectum resents

the presence of urine. The frequency of defecation depends largely upon the amount of fluid ingested, and the degree of activity of the boy. There is no evidence of reabsorption of urine from the rectum and the cloaca seems to act habitually as a bladder and only performs the defecation function at such times as a movement of the bowels should take place under normal conditions. For this extraperitoneal operation the following advantages are claimed: 1. There is absolutely no danger of peritonitis. 2. A prominent natural papilla is secured. This is the natural manner of debouchement of a duct upon a mucous surface, and affords the best possible protection against spread of infection up the ureters. 3. The ureters are further protected against infection or sloughing by lying undisturbed in their natural environment almost to the point of implantation. 4. The operation is easy of performance, and practically free from shock and exhaustion.

Annales de l'Institut Pasteur (Paris), May.

Endoglobular Hematozoa in Reptiles. P. L. SIMOND.—An endoglobular hematozoon of the hemameba species was found in a fresh-water turtle, and other species were discovered in crocodiles. They differ in their species in the same proportion as their hosts. It seems probable from the facts observed, that each given species of reptile has a certain single endoglobular parasite. Two cases of simultaneous infection by two parasites were noted in one instance, but it is possible that both parasites belonged to the same species and were merely in different stages of development.

Intracellular Digestion in the Sea Anemone. F. MESNIL.—A fish or crab taken in entire by the actinia or sea anemone, is destroyed by intracellular digestion. The digestive cell in these animals represents the embryonal stage of what, in the higher animals, constitutes two distinct systems—circulation and digestion. The arrangement of the digestive cells and their pseudopodic and plasmodial properties renders possible the paradoxical phenomenon of complete intracellular digestion.

Annales des Maladies des Org. Gen.-Urin. (Paris), May.

To Prevent Recurrence of Stones in the Bladder. GUYON.—The task of the surgeon in case of stone in the bladder is far from being restricted to the mere removal of the stone. The accompanying cystitis must be cured and the recurrence of stones prevented. Experience has demonstrated that the presence of calculi is no obstacle to the attenuation, and even the cure of a cystitis, if it is secondary; also, that the removal of the stones does not necessarily cure it. Local treatment is imperative both before and after the operation, especially when the cystitis is old and severe. Instillations are usually all that can be borne at first, followed by fractioned irrigations as soon as possible. Some cases allow the irrigations to be commenced from the start, followed by instillations. Calculi do not contraindicate a permanent sound. If the bladder is painful or hemorrhagic it may be necessary to evacuate the organ without leaving it empty, replacing each portion of urine withdrawn by the same amount of a tepid solution of boric acid. This topical treatment may relieve without anodynes, but sometimes a suppository or injection of an opium or antipyrin solution may be necessary. This treatment of the cystitis may require one or two weeks, the criteria being the number of mictions, the capacity of the bladder and the acidity of the urine. The urine becomes less infectious and it is possible to avoid febrile accidents. Silver nitrate is the best of all measures. It seems to have an elective action on pyogenic bacteria, and on the uri-bacillus liquefians, and is especially active when the urine ceases to be acid. Silver nitrate restores normal acidity to the urine, and this is the most certain means to prevent the recurrence of secondary calculi. Mineral substances become insoluble in an abnormal urine. Patients operated on should be cautioned not to neglect to test the reaction of their urine frequently with litmus paper, and resume the silver nitrate if the acidity is diminishing, and continue it until the urine turns the litmus paper red. This opposes a chemical barrier to the causes of the precipitation of the phosphates. General hygienic measures are of great importance, avoiding alcohol and rich food, alkaline water, and the tartrates of lime and magnesia, and a diet too abundant in vegetables. The patients should return once a week for repeated verification and successive evacuations.

Bulletin de la Soc. Med. des Hopitaux de Paris, May 30.

Gonorrheal Peritonitis in Little Girls. J. COMBY.—In case of diffuse peritonitis in little girls, the external genitalia should always be carefully examined. If evidence of vulvovaginitis are discovered, this suggests the possibility of a gonorrheal origin. Comby had three cases under observation nearly at the same time, and was on the point of operating each, supposing that the diffuse peritonitis was the result of a perforating appendicitis, when the discovery of the gonorrheal lesions altered the diagnosis and with it the treatment. This form of peritonitis, in spite of its alarming onset, terminates in rapid recovery without surgical intervention.

Diagnosis of Nervous Affections from the Cerebrospinal Fluid. BABINSKI.—Examination of the cerebrospinal fluid in 120 persons resulted in finding the fluid normal in 60 cases, numbers of polynuclear cells in 1 case, and lymphocytes in great abundance in 56 cases, and scanty in 3. In the 56 persons who showed marked lymphocytosis, 50 were patients exhibiting symptoms which we associate with generalized syphilis—that is, tabes, general paralysis, Robertson's sign, isolated or accompanied by hemiplegia or paraplegia, or progressive muscular or pupil atrophy. In the remaining 6 cases there was some basis for the diagnosis of an affection of this kind, and it has developed since.

Intestinal Obstruction from Large Gall-Stone. TROISIER.—An obese woman of 60, who had never had an attack of icterus, nor of hepatic colic, exhibited all the symptoms of acute intestinal obstruction for eight hours. Soon after, a gall-stone, measuring 7.5 cm. in circumference, was evacuated in the stools. It was 25 mm. thick and weighed 7 gm. dry. The size and the absence of icterus precluded the assumption of the passage of the stone through the bile duct. It must have entered the intestine through a cholecysto-duodenal fistula. No symptoms appeared during the three years since.

Echo Medical (Lille), May 26.

Sphenoidal Sinusitis. GAUDIER.—A man applied for relief from an unbearable headache, which appeared every morning about 2 a. m., and lasted until about 5, when it ceased. The pain always started in the side of the right eye, ear and jaw, with subjective pulsation through the entire head. Two days before applying to Gaudier he had noticed a drop of pus when he blew his nose at 5 a. m., and the pains vanished about this time. He had no occasion to blow his nose nor expectorate at other times. In order to examine the sphenoidal sinus, the lumen of the meatus must be enlarged if necessary, and a droplet of pus will confirm the suspicion of sinusitis. Prompt cure follows the evacuation.

June 16.

The Country Physician in an Epidemic of Diphtheria. H. DELBECQ.—The epidemic described was in a fishing hamlet where the lack of means and intelligence rendered local treatment impossible. Delbecq therefore renounced all attempts of the kind and relied solely upon serum treatment. All of the 19 cases recovered except 3, first seen in a moribund condition. The persons exposed, 65 in all, were injected with 5 to 10 c. c. as a preventive measure. The success of the serum treatment was remarkable. In one case a woman coughed up a perfect cast of the trachea and bronchi, to the fourth subdivision with seven ramifications on the left, and to the third with six ramifications on the right. The lumen of the tubular cast extended into the finest ramifications. The patient had been injected but once, receiving 20 c. c. of Roux's serum. Delbecq made a bacteriologic examination in 16 cases, placing the culture tube under the wing of a hen, with its feet tied together, in a box covered with a cloth, in order to maintain a constant temperature of 37 C. He did not order the school to be closed, but allowed it kept open after having the building disinfected, as he believed that the children, if allowed to play all the time, would be more liable to

contract colds which would favor the evolution of diphtheria, than if they were kept regularly in school.

Journal de Medecine de Paris, June 9.

Role of the Lymphatic Glands in Infections and Diatheses. Courtois-Suffit.—Recent research, clinical and experimental, tends to establish that, from the physical, chemical and anatomic points of view, the lymphatic gland represents a true differentiated organ, intrusted with the task of defending the animal organism against both microbes and their toxins. It arrests the passage of bacteria and attenuates their virulence, while it is one of the places where the antitoxin is produced. The alterations in the glands are of two kinds: The first are manifestations of their functional activity, and are evidences of the struggle against the infection; the second are purely passive and are produced only secondarily, when the resistance of the ganglion has been overcome by the action of the infectious and toxic agents. A sound gland may, therefore, be hypertrophied from its excessive functional activity, or the increase in size may be due to infiltration with microbes or tuberculosis, or to cancerous degeneration. The simple hypertrophy of glands in the vicinity of a malignant neoplasm is a premalignant or paramalignant alteration. It is the reaction of the glands to the toxic products secreted by the neoplasm, and is for the purpose of producing unusual amounts of leucocytes, which pass into the lymph passages, and thence into the general circulation, explaining the leucocytosis observed in case of malignant disease. It precedes the appearance of specific cells in the ganglion. The glands in the vicinity of the neoplasm may also be infected by secondary pyogenic microbes or by tuberculosis. The relations between malignant disease and suppuration are well known, and the septic germs may be disseminated by the blood or lymph. Malignant disease passes through three phases—a local, a lymphatic, and a final, general circulation phase. According to Soupault and Labbe's latest statistics, the average number of cancerous ganglia in case of malignant disease of the mamma is 5, non-cancerous 2; of the stomach, liver and pancreas, cancerous 9, non-cancerous 5; of the peritoneum, cancerous 1, non-cancerous 2; of the tongue, cancerous 0, non-cancerous 4; of the tonsil, cancerous 4, non-cancerous 1; of the larynx and lungs, cancerous 2, non-cancerous 2; of the bladder and uterus, cancerous 0, non-cancerous 3. Youth favors metastases to the glands, owing to the greater activity of the lymphatic system during the first third of life. The nature of the tumor has also great influence on the early development and importance of secondary adenopathy. The participation of the glands in the cancerous process is more frequent and earlier in proportion as the tumor abounds more in epithelial cells and connective tissue is scanty. The remote adenopathy sometimes observed in case of malignant disease, usually affects the inguinal, axillary and supraclavicular glands. Tumefaction of the inguinal glands is too common for it to have any diagnostic value. The supraclavicular glands were affected in 21 out of 26 cases of malignant disease of the alimentary canal, and in 17 out of 37 cases of subdiaphragmatic visceral carcinoma. This frequently occurs also with carcinoma of the intestines, liver, kidneys, and suprarenal capsules.

June 16.

Action of Ozone on the Hemoglobin and Red Corpuscles. Oudin.—During the last twelve years Oudin has been making a special study of the influence of ozone on certain affections. He finds that it is unquestionably superior to all other therapeutic measures in its effect on the numbers and quality of the blood corpuscles. He describes three typical cases, showing the improvement obtained in six to eight weeks of ozone treatment. The first was a case of tuberculosis, with 7 per cent. oxyhemoglobin, 2,500,000 reds and weight 57 kilos. After six weeks of ozone treatment the proportion of oxyhemoglobin was 12 per cent., the number of reds 4,700,000, and the weight had increased by 5 kilos. The second case was that of a patient with chloroanemia, weighing 35 kilos, with 3,700,000 reds and 6 per cent. hemoglobin. After treatment the weight was 42 kilos, the number of reds 4,350,000, and the proportion of hemoglobin 10.5 per cent. The third patient was a victim of lead poisoning, with anemia and paralysis, weighing 50 kilos, with 5 per cent. oxyhemoglobin and 1,500,000 reds. After two months of ozone treatment, the weight had increased to 59 kilos, the reds to 5,200,000, and the proportion of oxyhemoglobin to 13 per cent. This effect on the oxyhemoglobin is perceptible even after the first inhalation.

Presse Medicale (Paris), June 15.

Therapeutic Puncture of the Sacral Canal—"The Epidural Method." F. Cathelin.—This new method of spinal injections is not meant for spinal cocainization only, but is advocated as a superior method of administering the majority of soluble medicines now administered by the mouth, rectum, or injected under the skin, or into a vein. The drug, in a weak solution, is introduced into the sacral canal and is thus brought at once into contact with the extensive plexus of veins which lines almost the entire bony structure. The absorption of the drug, therefore, proceeds simultaneously over a large surface, and its effect is felt to the remotest ramifications of the vascular system. For cocainization Cathelin injects on an average 4 cg. of a 1 per 100 or 200 solution of cocain. The method has already scored a number of brilliant successes in the palliative treatment of neuralgias in the legs, sciatica, lumbago, the fulgurant pains and gastric crises of tabes and also in intercostal neuralgia. It must also prove useful in cases of inoperable malignant disease of the rectum, of hemorrhoidal fissures, in painful delivery, and affections of the joints without effusion. It may be utilized for the administration of large doses of chloral in tetanus, or of the soluble mercurial salts, the benzoate or cyanid, for instance, in the severe cerebral or spinal form of tardy syphilis. The epidural injection is simpler and less dangerous than an intravenous injection, and never causes the local nodules, while its action is fully as effective, to say the least. The patient in the knee-chest position, the needle is inserted obliquely between the lower tubercles of the sacrum, just below the lowest median tubercle, where a triangular depression is evident. As the needle is introduced, it is slanted forward toward the anterior wall of the canal. There is a sensation as of forcing it through a taut membrane; when this is passed, the point of the needle is raised to follow the median line, and inserted for three to five centimeters, giving the sensation of passing through a soft substance. The fluid is then injected very slowly and the hole closed with a drop of collodion. The nerve roots are not affected by this procedure. The drug acts by osmosis through the extensive intraspinal venous network, which fills up the entire epidural space, as Cathelin has recently established by injecting colored wax and other substances under pressure.

June 19.

The Epidural Method. M. Brocard.—Sicard claims the priority of this new method of spinal injections, as he announced it at the meeting of the Société de Biologie, April 20, while Cathelin's communication was not presented until the following week. The three tubercles where the spinal canal is left exposed near the end of the sacrum, owing to the non-development of the laminæ and spinous processes, is the point for the puncture, a little above the line uniting the two tubercles. It can be approximately determined by measuring 7 cm. from the tip of the coccyx in the adult. The sacral canal at this point has a transverse diameter of 15 to 18 mm.; the antero-posterior diameter is 8 to 10 mm. The tip of the cone formed by the dura is 7 cm. above, out of reach of possible injury. The tolerance of the spinal canal outside the dura for non-toxic fluids is remarkably great, and experiments with stains injected in the cadaver showed that the fluid rapidly spreads through the entire epidural space in the dorsal and even cervical region. Cathelin's assumption that the drug acts by absorption through the vast plexus of veins in this space is probably correct, but there must be, besides this, some vasoconstriction phenomena, and also some effect on the nerve substance direct. Chipault has the patient assume the Trendelenburg position to facilitate the dissemination of the fluid, but Sicard prefers the lateral decubitus on

the affected side, the legs flexed on the thighs drawn up to the pelvis, until the knees touch the chin.

The general direction of the puncture is that of the buttocks groove and Brocard and Chipault insert the needle for 4 to 5 cm. It hits against the coccyx if introduced too low, and against the roof of the sacral canal if too high, but in either case no damage is done. If the needle is held too upright it injures the periosteum of the floor. Nausea, fever, and headache never accompany this method of injection. The only symptoms observed were a sensation of heaviness in the limbs and very rarely formication, extending to the toes. Four or five hours after the injection a sensation as of a bruise is experienced in the lumbar region, gradually subsiding during the night. The analgesia obtained by spinal cocainization by this method never affected the skin, and it is, hence, exclusively medical analgesia. The relief of pain is immediate; it vanishes in two to five minutes after the introduction of the fluid. The analgesia obtained lasts for two or three days. The pain is then liable to reappear, but in the experiences to date, each recurrence is less violent and progressive improvement can thus be attained, amounting to actual cure. Colleville has cured three severe cases of sciatica by injecting a mixture of guaiacol 6 gm., orthoform .5 gm., and benzoic acid .365 gm. in almond oil q. s. to make 60 c. c. Chipault found the analgesia after cocainization by this method sufficient to allow resection of the coccyx.

The Cerebrospinal Fluid After Spinal Cocainization. RAVAUT and AUBOURG.—After spinal cocainization in Guinard's service, if the headache is intense a second puncture is made and a certain amount of cerebrospinal fluid allowed to escape. The relief is evident, and it was observed that whenever there was much headache the fluid spurted as if under high pressure, while it oozed a drop at a time when the headache was minimal. The turbidity of the fluid was also proportional to the amount of headache. The fluid of patients with severe headache contained large numbers of polynuclears, but a slight increase was noted in every case. Repeated lumbar puncture of the patients who exhibited most marked symptoms showed that the polynuclears gradually diminished in numbers and were replaced by lymphocytes and mononuclears, the fluid becoming normal again by the end of eight to twenty days. Repeated tests demonstrated that the meninges show no traces of the cocainization, resuming their normal condition in every respect after this interval. The reaction at first is evidently due to the direct toxic action of the cocain. Some of the patients were injected with the cocain dissolved in their own cerebrospinal fluid drawn just previous to the operation, but the symptoms were the same as when distilled water was the vehicle. The disappearance of all traces of the reaction testifies to the complete recuperation of the meninges and the ultimate harmlessness of spinal cocainization.

Deutsche Med. Wochenschrift (Berlin and Leipsic), June 20.

Treatment of Tuberculosis with Tuberculin. GOETSCH.—It seems highly irrational to Goetsch to increase the fever with repeated injections of tuberculin when the patients are already febrile. He consequently never administers it when the patient has fever, and thus his patients are not exposed to the so-called dangers of tubereulin. He commences with very small doses and proceeds very slowly and cautiously, with the result that the nine patients thus treated during 1891 lost their bacilli and recovered their health. The three following years no patient was willing to take the tuberculin treatment owing to the general disfavor into which it had fallen. In 1895, however, tubereulous persons who had witnessed the complete recovery of his first nine patients, or been sent by them, applied for tubereulin treatment, and he was thus able to apply his prineiples on a large scale, the number of patients increasing each year, until he had 110 during 1900, a total of 224 in all. Of this number 37 are still under treatment, and of the remaining 175, 125 ean be considered cured. The others were satisfied with the improvement attained, or for other reasons did not complete the cure. Tubercle bacilli were found in the sputum in 88 out of 224 who applied; 12 were rejected as being in too advanced stages of the disease. In 1 bacilli were discovered in suppurating cervical glands. The average length of treatment was 198 days, ranging from a minimum of 50 to 791. The average for patients with pulmonary tuberculosis was 143 days. The patients gained from 8 to 40 pounds in weight, averaging 19. Most of the cured cases return occasionally to allow oversight over their progress. A detailed record has been kept of each case, the weight, temperature morning, noon and evening, and the dose injected. The injections are made twice a week. During the first year Goetsch abstained from all adjuvants in order to test the tuberculin more thoroughly, but since convinced of its efficacy, he supplements it with the usual hygienic and other measures, but does not find that the course of treatment has been materially shortened thereby. As he never injects while the patient has fever, the temperature is reduced to normal by rest in bed and wet packs. If it is impossible to abolish the fever, tuberculin treatment is contra-indicated. No patient is submitted to this treatment whose case does not offer chances of success. Treatment is begun the third day, the dose corresponding to the general condition, usually .0001 gm. of old tuberculin. He has never succeeded in banishing the bacilli with the new tuberculin alone, although he has administered as much as 20 mg. at a time of T. R. in a number of cases. If this dose causes a febrile reaction, he reduces it by .00001 gm., and if this is not supported, he replaces the old by the new tuberculin, T. R., which is usually tolerated in the dose of .001 mg., and has proved its usefulness as a preliminary to the other. As soon as 1 mg. of T. R. is reached, then .0001 to .001 of old tuberculin is injected and tolerated without reaction. By gradually increasing the dose it is possible to raise it to 1 gm. of old tuberculin. The bacilli and cough have long disappeared by this time, the weight is normal, and the physical signs have subsided. But this result can be accomplished, Goetsch emphasizes, only by making it a principle never to increase the amount until the last dose was tolerated without a febrile reaction. He also, especially at the commencement of the treatment, insists that the patients must remain in bed forty-eight hours after the injection, to diminish the chances of a febrile reaction. The visible effect of the tuberculin in cutaneous tuberculosis is an intense redness and swelling of the affected points. In glandular tuberculosis the glands swell after each dose of the tuberculin, but subside again in two or three days. This same phenomenon is observed in affected tonsils, rendering their removal necessary in some cases. Patients with pulmonary tuberculosis frequently experience sensations as if a similar phenomenon were occurring in their lungs, and are able to locate the lesion. Hemoptysis seldom recurs and is less abundant. Fresh hemorrhages were never observed in any patient. The night sweats vanish during the third or fourth week of treatment. Four typical cases are described in full with nearly four pages of the tabulated temperature, dose, weight, and date, which it requires no knowledge of German to understand at a glance. The first is that of a teacher of 21, whose mother had died of tubereulosis: bacilli in sputum when admitted Jan. 4, 1898. He was dismissed cured April 4, with a gain of 34 pounds in weight and an additional gain of 15 pounds since. The first dose was .001 gm. and the last 1 gm. of old tubereulin. The temperature was occasionally 37.1 during the first twelve days. The second patient increased 21 pounds in weight during the treatment, which lasted five months. The table shows how the dose had to be frequently redueed as a febrile reaction oecurred, the highest temperature being 38.8 C. These patients were examined recently by Professor Kast, who found them both perfeetly sound. Koch supplements this communication by emphasizing the folly of administering tuberculin in cases of mixed infection, especially with suppurative processes. The specific action of the tuberculin is lost in such eircumstances. He has always warned against too violent reaction, but, as he remarks, "Goetsch has gone beyond this and avoids any reaction at all, as far as possible, and yet he is able to reach very large doses. He has obtained remarkably good results by this method of proeedure, as I recently eonvinced myself

by a personal visit to his sanitarium. In order to incite other physicians to similar attempts he prepared the above communication for publication at my request."

[See editorial in last week's issue.]

Therapie der Gegenwart (Berlin), June.

A Cured Case of Aortic Insufficiency. H. SENATOR.—A cigarmaker, born in 1831, with a history of gonorrhea and syphilis at 20, was exhibited in clinics as a typical example of aortic insufficiency, in and after 1868, and the records contain several detailed descriptions of his symptoms, the classic picture of aortic insufficiency complicated by a tubercular lesion in one lung. Senator's astonishment may be imagined when, in 1871, he examined the man again to find not a single indication of aortic insufficiency, and the supposed tubercular focus in absolute *statu quo*. Repeated examinations convinced him that the valvular lesion must have healed, and that the tubercular focus must have been merely a syphilitic induration. The autopsy in April, 1901, confirmed this diagnosis. Only two semilunar valves were found at the orifice of the aorta, one evidently formed of two that had grown together. The valve was watertight. The pulmonary lesion was an induration with a patch of thickened pleura to correspond. Nothing was found to suggest an explanation of the fact observed during life that the systolic murmur had been loudest over the pulmonary orifice. The murmur must have originated at the orifice of the aorta in consequence of an eddy produced in the blood stream by the thickening and excrescences of the valves, but it was heard loudest over the pulmonary orifice for some inexplicable reason. The clinical records between 1877 and 1881 mentioned that the clinical picture had slightly altered. Two sounds were heard over the carotid, an indication that a diastolic sound was being developed at the aorta. Later it was noticed that two sounds were audible over the aorta, and that a murmur accompanied the second sound. Cured valvular lesions are rare and usually they are defects of the mitral valve, and always in young persons. In this case the man was 33 years old when it was first noted, and he survived thirty-seven years, living in poverty and never treated for the valvular affection. Treatment was always directed to the pulmonary lesion. No disturbances in compensation were noted at any time. His death was due to a circumscribed, comparatively recent tubercular lesion, causing hemoptysis. Senator was unable to find more than two cases of cured aortic insufficiency in the literature, in one the patient was 20, in the other, 37 years of age.

Treatment of Tetanus. E. LEXER.—Bergmann has lost confidence in serum treatment of tetanus and relies upon amputation as his chief support. Several fatal cases have been published recently in which all the conditions of early injection, etc., had been complied with. Lexer describes a case in which symptoms of tetanus appeared the sixth day after a compound fracture of the arm with an extensive phlegmon. Serum from Berne was injected into the veins and lateral ventricle, at the same time the arm was amputated close to the shoulder. The injections of serum were continued for several days, alternately subcutaneous, intravenous and cerebral. The temperature was continuously 40 C. An improvement for two days was followed by extremely severe symptoms, which gradually subsided in the course of two weeks and the patient had completely recovered by the end of four more.

Influence of Diet on Childbirth. W. BOKELMANN.—In the *Centralblatt f. Gyn.*, 1889, 33, Prochownik recommended that women during the last few weeks of pregnancy confine themselves to antidiabetic diet, in order to check the development of fat in the fetus and render the bones more compressible. Bokelmann has followed these directions and proclaims, after an experience of eight years, that the advice is sound, and that women with contracted pelves, or who have previously given birth to exceptionally large children, or elderly primiparæ, are liable to derive the greatest benefit from this measure. Of course it is impossible to guarantee an easy birth in all cases, but the chances are decidedly in favor of it. He modifies Prochownik's directions to a certain extent, commencing the dieting gradually during the last third of the pregnancy and gradually growing stricter toward the last month. Water, soup, potatoes, sugar and beer are forbidden, although a moderate amount of carbonized water may be taken between meals. Sugar can be substituted by a small amount of saccharin. The woman may eat freely of meat, eggs, fish, green vegetables, cheese, a limited amount of bread, but butter *ad libitum*. As a beverage, 300 to 400 gm. of red or Mosel wine. The women usually feel so unusually well, subjectively, on this diet, that they bear its deprivations with pleasure. There are no unfavorable consequences for either mother or child. The children are certainly leaner, the bones of the head offer less resistance and artificial assistance is less frequently required. Another favorable effect is the more vigorous action of the uterine muscles; the diet is similar to that followed in the training of athletes, and it has a generally favorable action on the entire muscular system.

Oxygen in Therapeutics. F. KLEMPERER.—The benefits of the inhalation of oxygen are probably due to its direct action on the nerve centers. Michaelis has used about 150,000 liters of oxygen on his patients, and, with but one exception, has always noted a more or less marked subjective euphoria follow its use. The pulse and respiration become slower and more regular, and the same effect is observed in idiots and in comatose patients, excluding the effect of suggestion. Inhalations of oxygen have proved useful in intoxications and in dyspnea—it is an actual antidote to carbon dioxid—and, also, in intoxications from exhalations in mines and tunnels. It has been recommended for methemoglobin intoxication. Michaelis cured a case of morphin poisoning by this means, the patient being in profound coma and breathing only by artificial respiration. Spontaneous breathing followed the first inhalation of oxygen, and every time the respiration grew weak again, the oxygen restored it, strengthening the pulse and diminishing the cyanosis. Strychnin intoxication is also favorably affected by oxygen. After saturation of the blood with oxygen, it is impossible to induce convulsions in animals with strychnin or other reflex poisons. These inhalations have been advocated recently also for alcohol intoxication and in chloroform narcosis. Dyspnea is the second great indication for the inhalation of oxygen. Babinsky has reported the case of a girl of 13 suffocating from a piece of food in the trachea. The dyspnea and cyanosis were extreme, but the inhalation of oxygen raised the pulse and the lips became red. The transient restoration of circulation in such cases or with tracheal or laryngeal stenosis from compression by the thymus, may tide the patient past the danger point. The benefits of oxygen in bronchitis, emphysema and asthma are generally known, but in pneumonia or pleuritis, the compression or infiltration of the lung prevent the absorption of the oxygen. Cardiac asthma is favorably modified by the oxygen and likewise severe asthma caused by the compression of an aneurysm. Aside from intoxications and dyspnea, the benefits reported from the use of oxygen are probably due more or less to suggestion, as, for instance, the favorable effects in a few cases of chlorosis, nervous vomiting, the vomiting of pregnancy and uremic conditions. Anemia, leukemia and diabetes did not seem to be affected by the oxygen.

Calomel as a Diuretic. KLEMPERER.—On account of its marked diuretic properties, calomel is indicated in heart and lung affections and in dropsy, but for the same reason it is directly contraindicated in albuminuria and nephritis.

Therapeutic Inhalations on a Large Scale. ADAM.—At the Flinsburg sanitarium the guests pass half an hour morning and evening in rooms in which the air is impregnated with salt solution, then with the essence of pine needles, and then with that of balsam fir, ten minutes in each. This is followed by a bath and a walk. The benefits are both local and general, and twenty years of experience have confirmed the efficacy of the inhalation of resinous fumes as a tonic measure. Adam suggests that shallow tanks filled with pine needles and fir twigs, with a stream of water trickling through them, on the principle of salt-evaporating pans, might prove a useful adjunct to city hospitals or spas.

Centralblatt f. Chirurgie (Leipsic), June 8.

Instrumental Application of Ligatures. M. KATZENSTEIN.—In order to avoid all contact with the fingers in applying ligatures, Katzenstein has devised a set of instruments which apply a wire ring to the vessel and then crush it flat, thus mechanically occluding it. When he wishes to close the lumen of an intact vessel he applies an oval ring, 1, fig. 1, with a straight clasp in the center, like a buckle, which compresses the vessel firmly and completely. When a vessel has been severed, a ring is slipped over the stump and with a Péan forceps, the ring is crushed flat, thus holding the lumen

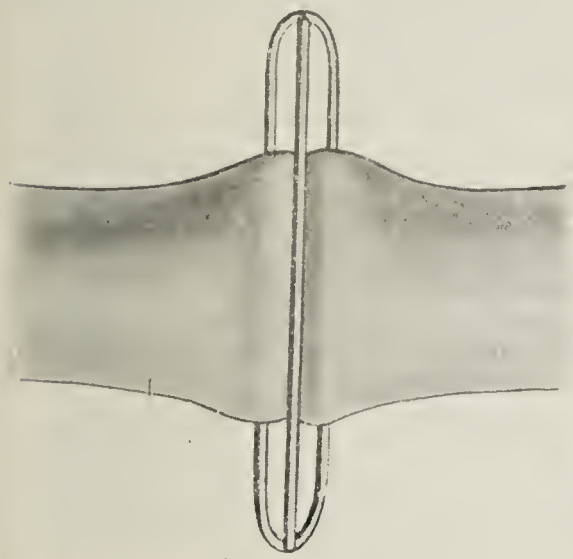


Figure 1.



Figure 2.

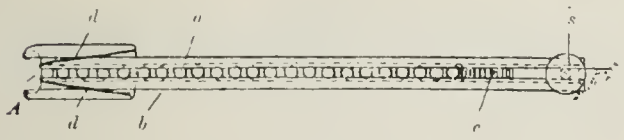


Figure 3.



Figure 4.

tightly occluded, fig. 2. These rings are mounted in a grooved slide, fig. 3, with a spring, "c," and thumb-screw, "s," at one end, tapering at the other to fit into the jaws of the Péan forceps "a," which is provided with a spring on one side, "f" fig. 4, to hold the ring, "a," firmly until passed over the vessel stump, fig. 2. Open loops can be used instead of rings, with a suitable slide and the jaws of the Péan grooved to correspond to hold the loops. A year's experience with these instruments has confirmed their great value in asepsis and time-saving.

Gazzeta Degli Ospedali (Milan), June 16.

Amyl Nitrite as Antidote for Spinal Cocainization. A. CORDERO.—This communication advocates the administration of amyl nitrite to diminish the disturbances due to cocain anesthesia by the lumbar route. The pallor and cold extremities of persons submitting to cocain anesthesia indicate that the drug has a pronounced vasoconstricting action. Amyl nitrite has a marked vasodilating effect and Cordero conceived the idea that the nitrite would counteract the vasoconstriction. Schilling some time ago suggested amyl nitrite as an antidote for cocain poisoning. After the injection of the cocain, the patients inhale three of four drops of amyl nitrite on a fold of gauze. The face becomes red, the pupils contract, and this condition of slight congestion of the head is kept up by administering a few more drops of the nitrite, if necessary, to a maximum of twenty. Twenty-seven patients thus treated escaped the usual after-effects of cocain; there was no severe vomiting nor violent headache. Nine were apyretic and the temperature rose to 38 C. in only two. There was slight nausea in a few cases, but all the patients were eompletely restored the next day with good appetite. Cordero considers himself justified in recommending this procedure as a reliable means of preventing the disagreeable consequences to which spinal cocainization is liable. He injects 6 to 9 mg. of cocain in a .5 per cent. warm solution, which he finds sufficient for all operations below the umbilieus.

Vratch (St. Petersburg), May 25.

Syphilitic Endocarditis. M. Y. BREITMANN.—From his own observation and reviewing the literature on the subject, Breitmann is convinced that there is no such thing as a primary inflammation of the heart valves and proliferation, of exclusively syphilitic origin, in the condylomatous stage. Syphilitic alterations in the endocardium occur only in the tertiary stage, and are merely gummatous processes propagated from the myocardium. They can, however, simulate the clinical picture of a primary cardiac defect.

Genu Recurvatum. A. WOROBJEFF.—On the foundation of ten personal cases, which are described in detail, with several illustrations, Worobjeff classifies this condition as neurotic or osteopathic in origin. To the neurotic class belong the paralytic and arthropathic varieties and to the osteopathic the genu recurvatum resulting from a fracture or rhachitis, osteomyelitis, tuberculosis or syphilis. Determination of the cause is important both from the theoretical and practical point of view.

Auto-Amputation of the Appendix. P. D. WEINGROW.—In a case of suppurative peri-appendicitis, the appendix became spontaneously amputated and was evacuated through the rectum eleven days after the onset of the acute infection. It occurred in the midst of robust health, the patient a man of 37.

Revista Medica de Bogota, Colombia, No. 251.

Analogy Between Yellow Fever and Snake-bite. N. OSORIO.—The close resemblance between yellow fever and the symptoms that follow the bite of a venomous serpent suggests that the toxins in each may be identical. The anatomic lesions certainly seem to be identical in each. Especially remarkable in this respect is the degeneration of the liver cells, although it is much more rapid after a snake-bite than in yellow fever, in which the toxins have first to be elaborated, while in the snake-bite they are introduced *en masse*, already manufactured. Osorio thinks that researches in the line of reciprocal immunization with these toxins might lead to important results.

Books Received

SURGICAL EXPERIENCES IN SOUTH AFRICA, 1899-1900, Being Mainly a Clinical Study of the Nature and Effects of Injuries Produced by Bullets of Small Caliber. By George Henry Makins, F.R.C.S., Surgeon to St. Thomas' Hospital, London. Cloth. Pp. 493. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

SELECTED RESEARCHES IN PATHOLOGY. By Alex. Gunn Auld, M.D., M.R.C.P., Author of "The Pathological History of Bronchial Affections, Pneumonia and Fibroid Pneumonia." With Illustrations. Cloth. Pp. 153. Price, $2.10 net. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1901.

DISEASES OF THE THYROID GLAND AND THEIR SURGICAL TREATMENT. By James Berry, B.S., Lond., F.R.C.S., Surgeon to the Royal Free Hospital and Lecturer on Surgery at the London (Royal Free Hospital) School of Medicine for Women. Cloth. Pp. 367. Price, $4.00. Philadelphia: P. Blakiston's Son & Co. 1901.

MANUALE DI CHIRURGIA OPERATORIA. Dei Dottori R. Stecchi e A. Gardini. Con 118 Incisioni. Cloth. Pp. 321. Milano: Urico Hoepli. 1901.

MICROBOLOGIA. Perche e Come Dorbiamo Diferderci dai Microbi, Malattie Infettive, Disinfeziono. Profilassi. Dott. Luciano Pizzini, Direttore del Laboratorio batteriologico del l'Ufficio d'Igiene di Bergamo. Cloth. Pp. 141. Milano: Ulrico Hoepli. 1901.

IGIENE DELLA BOCCA E DEI DENTI. Nozioni Elementari di Odontologia. Con 23 incisioni nel testo. Dott. Ludovico Couilliaux, Libero Docente di Odontoiatria nella R. Universita di Parma. Cloth. Pp. 298. Milano: Ulrico Hoepli. 1901.

SOCCORSI D'URGENZA. Pel Dottore Carlo Calliano, Dirett. della Scuola Samaritana d'Italia alla Sede Centrale in Torino. Quinta Edizione Riveduta ed Ampliata, con 6 tavole illustrative. Cloth. Pp. 368. Milano: Ulrico Hoepli. 1901.

MANUALE DEL MASSAGGIO. Pel Dottor Romolo Majnoni, Dirigente alla Poliambulanza di Milano gia Chirurgo Assistence al l'Instiuto dei Rachitici. Con 54 Incisioni. Cloth. Pp. 179. Milano: Ulrico Hoepli. 1901.

HOW TO COOK FOR THE SICK AND CONVALESCENT. Arranged for the Physician, Trained Nurse, and Home Use. By Helena V. Sachse, Graduate of the Philadelphia Cooking School. Cloth. Pp. 239. $1.00 net. Philadelphia: J. B. Lippincott Co. 1901.

PROGRESSIVE MEDICINE. Vol. II, June, 1901. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 460 pages, with 81 engravings and one full-page plate. Issued quarterly. Price, $10.00 per year. Philadelphia and New York: Lea Brothers & Co.

LECTURES ON THE HISTORY OF PHYSIOLOGY During the Sixteenth, Seventeenth and Eighteenth Centuries. By Sir M. Foster, K.C.B., M.P., M.D., D.C.L., Sec. R.S., Professor of Physiology in the University of Cambridge. Cloth. Pp. 310. Price, $2.25. Cambridge: The University Press. 1901.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICS AND GYNECOLOGISTS. Vol. XIII. For the Year 1900. Cloth. Pp. 337. Philadelphia: Wm. J. Dornan. 1901.

TRANSACTIONS OF THE ASSOCIATED PHYSICIANS OF LONG ISLAND. January, 1900, to June, 1901. Vol. II. Paper. Pp. 168. Rahway, N. J.: Mershion Co. Press.

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY. February, 1901. Paper. Pp. 19. New Rochelle, N. Y.: Published by the Society.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. June, 1901. Paper. Pp. 196. Philadelphia: Published by the Society. 1901.

ANNUAL REPORT of the Milwaukee County Hospital for the Year Ending December 31, 1900. With the Medical and Surgical Statistics, the Rules and Regulations for the Government of the Hospital as Adopted by the Board of Supervisors, and the Prospectus of the Training School for Nurses, etc. E. C. Grosskopf, M.D., Superintendent. Paper. Pp. 111. Milwaukee: Edw. Keogh Press. 1901.

ANNUAL PRICE CURRENT Dyes, Paints, Oils, Drugs, Proprietary Medicines, Glass, Glassware, Chemicals, Chemical Products, Toilet Articles, Perfumery and Medicines. Peter Van Schaack & Sons, Wholesale Druggists, New York and Chicago. Cloth. Pp. 1166.

PROCEEDINGS OF THE NINTH ANNUAL MEETING OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES, Held at New York City, May 31, June 1 and 2, 1900. Cloth. Pp. 514. Chicago: R. R. Donnelley & Sons Co. 1901.

FOURTEENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF THE STATE OF OHIO For the Year Ending Oct. 31, 1899. Cloth. Pp. 844. Columbus, Ohio: Fred J. Heer.

THIRD REPORT OF AN INVESTIGATION OF THE RIVERS OF OHIO As Sources of Public Water Supplies. By the Ohio State Board of Health. 1900. Cloth. Pp. 284. Printed from Fourteenth Annual Report of the Ohio State Board of Health.

THE SEVENTH ANNUAL REPORT OF THE BOARD OF MANAGERS of the Craig Colony for Epileptics at Sonyea, Livingston County, N. Y., Including the Report of the Medical Superintendent to the Managers. Paper. Pp. 99. The Craig Colony Press.

PROCEEDINGS OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY, During May. Paper. Published by the Society. 1901.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., June 20 to 26, 1901, inclusive:

John Carling, major and surgeon, Vols., having tendered his resignation, is honorably discharged from the service of the United States, to take effect July 3, 1901.

Charles M. Gandy, major and surgeon, U. S. A., former orders modified so as to direct him to proceed to Manila, P. I., in the transport *McClellan*, to sail from New York City, N. Y., July 10, 1901.

John H. Hess, dental surgeon, from Washington, D. C., to West Point, N. Y., for duty at the U. S. Military Academy.

Damaso T. Lainé, major and surgeon, Vols., recently appointed, relieved from duty in the Department of Cuba, to proceed to San Francisco, Cal., en route for service in the Division of the Philippines.

Appointments, promotions, and other changes in the regular and volunteer medical forces of the Army, reported from the Adjutant-General's Office, Washington, D. C., May 16 to June 15, 1901:

During the month ending June 15, 1901, the following promotions and other changes in the status of medical officers of the regular and volunteer forces were reported from the Adjutant-General's Office. Previous changes of this character were reported in the JOURNAL of June 8, 1901.

Deaths, Regular Army.—Major Edward Everts, retired, May 17, 1901, at Alameda, Cal.; Major Louis S. Tesson, surgeon, June 17, 1901, at Vancouver Barracks, Wash.

Appointments, Volunteers.—To be surgeons, with the rank of major: Captain John Carling, assistant surgeon, U. S. Vols., May 11, 1901; Damaso T. Lainé, of Cuba, May 27, 1901; Abram L. Haines of New York, May 27, 1901; Captain Simon J. Fraser, assistant surgeon, U. S. Vols., May 31, 1901; Captain Howard A. Grube, assistant surgeon, U. S. Vols., May 31, 1901. To be assistant surgeons, with the rank of captain: Meyer Herman of Louisiana, May 11, 1901; John Bilbert of Pennsylvania, May 10, 1901.

Honorably Discharged, Volunteers.—Major B. Albert Liebermann, surgeon, 33d Infantry, May 27, 1901; Captain William C. Berlin, assistant surgeon, 45th Infantry, April 20, 1901.

Mustered Out with Regiments, Volunteers.—Major Harold L. Coffin, surgeon, 39th Infantry, May 10, 1901; First Lieutenant Charles Fitzpatrick, assistant surgeon, 45th Infantry, June 3, 1901.

Commissions Vacated by New Appointments.—Major James D. Glennan, surgeon, 38th Infantry, May 11, 1901, by appointment as major and surgeon, U. S. Vols.; Major William B. Banister, surgeon, Vols., April 2, 1901, by promotion to major and surgeon, U. S. A.; Major Samuel C. de Kraft, surgeon, Vols., May 10, 1901, by appointment as major and surgeon, Vols., under the act of February 2, 1901; Major William D. Bell, surgeon, 42d Infantry, May 18, 1901, by appointment as major and surgeon, U. S. Vols.; Captain Isaac W. Brewer, assistant surgeon, May 20, 1901, by appointment as major and surgeon, U. S. Vols.; Captain George P. Peed, assistant surgeon, May 15, 1901, by appointment as major and surgeon, U. S. Vols.; Captain John Carling, assistant surgeon, May 17, 1901, by appointment as major and surgeon, U. S. Vols.

Mustered Out of Service.—Major Charles F. Mason, surgeon, and Captain Richard S. Griswold, assistant surgeon, 26th Infantry, May 13, 1901; Major Charles L. G. Anderson, surgeon, and Captain Joseph L. Sanford, assistant surgeon, 29th Infantry, May 10, 1901; Major Frank E. Artand, surgeon, 45th Infantry, June 3, 1901; Major William Cogswill, surgeon, and Captain Henry H. Lee, assistant surgeon, 46th Infantry, May 31, 1901.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended June 29, 1901:

P. A. Surgeon E. M. Shipp, detached from the *Michigan* and ordered to the Asiatic Station by vessel sailing from San Francisco, July 15.

P. A. Surgeon W. B. Grove, detached from the Naval Hospital, Norfolk, and ordered to the *Michigan*, June 28.

Assistant Surgeon G. C. Smith, detached from the *Vermont*, and ordered to temporary duty on the *Alvarado*, July 1.

Assistant Surgeon H. M. Tolfree, ordered to the *Vermont* as the relief of Assistant Surgeon G. C. Smith.

Assistant Surgeon J. S. Taylor, detached from the *Manila*, and ordered to the Naval Hospital, Yokohama, Japan.

Assistant Surgeon W. H. Bucher, commissioned past assistant surgeon, from April 15, 1901.

Drs. R. T. Atkinson and A. W. Balch appointed assistant surgeons in the Navy, from June 22, 1901.

P. A. Surgeon R. S. Blakeman, ordered to the Naval Hospital, Norfolk, Va.

Marine-Hospital Changes.

Official list of the changes of stations and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital service for the seven days ended June 27, 1901:

Banks, C. E., surgeon, granted leave of absence for two days.

Hastings, Hill, assistant surgeon, to proceed to San Diego, Cal., for special temporary duty.

Adams, E. B., acting assistant surgeon, granted leave of absence for three days from June 23, 1901, on account of sickness.

Bailey, C. W., acting assistant surgeon, granted leave of absence for ten days from June 21.

BOARD CONVENED.

Board convened to meet at Washington, D. C., June 27, 1901, for the physical examination of applicants for the position of engineer officer in the Revenue Cutter Service. Detail for the Board: Past Assistaut Surgeon H. D. Gaddings, chairman; Past Assistant Surgeon J. B. Greene, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, U. S. Marine-Hospital Service, during the week ended June 29, 1901:

SMALLPOX—UNITED STATES.

California: Los Angeles, June 15-22, 1 case.
District of Columbia, Washington: June 15-22, 1 case.
Indiana: Evansville, June 22, 1 case.
Louisiana: New Orleans, June 15-22, 3 cases, 1 death.
Kentucky: Lexington, June 15-22, 1 case.
Massachusetts: Fall River, June 15-22, 6 cases; Fitchburg, June 1-8, 1 case; New Bedford, June 15-22, 1 death; Quincy, June 15-22, 1 case.
Michigan: Detroit, June 15-22, 2 cases; Grand Rapids, June 1-22, 8 cases.
Missouri: St. Louis, June 8-16, 34 cases.
Nebraska: Omaha, June 15-22, 5 cases.
New Hampshire: Manchester, June 15-22, 1 case.
New Jersey: Newark, June 15-22, 2 deaths; Jersey City, June 16-23, 2 cases.
New York: Buffalo, June 19, 1 case; Elmira, June 15-22, 1 case. New York, June 15-22, 60 cases; 20 deaths.
Ohio: Cincinnati, June 14-21, 4 cases; Cleveland, June 14-21, 24 cases.
Pennsylvania: Lebanon, June 15-22, 9 cases; Philadelphia, June 15-22, 2 cases.
Rhode Island: Providence, June 15-22, 1 death.
Tennessee: Memphis, June 14-21, 8 cases.
Utah: Salt Lake City, June 15-22, 2 cases.
West Virginia: Wheeling, June 15-22, 1 case.
Wisconsin: Green Bay, June 16-23, 1 case.

SMALLPOX—FOREIGN.

Canada: Stanbridge, June 6, present.
Columbia: Panama, June 10-17, 6 cases.
France: Paris, June 1-8, 24 deaths.
Germany: Hamburg, June 1-8, 2 cases.
Great Britain: Glasgow, June 7-14, 18 cases, 1 death; Liverpool, June 1-8, 1 case; London, June 1-8, 1 case.
Greece: Athens, June 1-8, 1 case.
India: Bombay, May 21-28, 8 deaths: Calcutta, May 18-25, 25 deaths; Karachi, May 19-26, 10 cases, 6 deaths.
Italy: Messina, June 1-8, 16 cases, 1 death.
Russia: St. Petersburg, May 24-June 1, 11 cases, 6 deaths: Warsaw, May 18-25, 7 deaths.
Spain: Corunna, June 1-8, 1 death.
Straits Settlemeuts: Singapore, May 4-11, 1 death.

YELLOW FEVER.

Costa Rica: Port Limon, June 13, 1 case.

CHOLERA.

India: Bombay, May 21-28, 3 deaths; Calcutta, May 18-25, 65 deaths.

PLAGUE.

China: Hongkong, May 11-18, 122 cases, 113 deaths.
Egypt: Miniet, June 3, 2 cases; Zigazag, June 3, 1 case.
India: Bombay, May 21-28, 192 deaths; Calcutta, May 18-25, 47 deaths; Karachi, May 19-26, 112 cases, 107 deaths,
Japan: Formosa, May 21, 41 cases, 29 deaths.

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Addresses.

ON THE ADVANCEMENT OF SURGICAL PEDIATRICS.

CHAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON DISEASES OF CHILDREN, AT THE FIFTY-SECOND ANNUAL MEETING OF THE A. M. A., AT ST. PAUL, MINN., JUNE 4-7, 1901.

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SURGERY IN PEDIATRICS.

I wish to offer some remarks on the advaneement of the surgical side of pediatrics. Surgical pediatrics was later and slower in its development than was medical pediatrics. It is evident that the advance of such a science and art may be measured in many different ways. For instance: 1. By the recognition of the necessity and importance of it. 2. By the inerease of actual knowledge concerning it—the discovery of new facts. 3. By the spread of knowledge through text-books and other literature, teaching in the medieal schools, and in that kind of post-graduate schools wherein all are professors and all are pupils—namely, the medical societies. 4. By the extent to and the manner in which knowledge is applied in practice, both private and in hospitals, and the number and enthusiasm of those who devote themselves to it.

Obviously it will be impossible for me to trace elaborately the advance in this department, which would involve a complete history of the branch. I shall merely touch here and there certain salient points indicative of progress, or the lack of it.

Among all these indices one may usually measure very well the status of any department of learning by its own special literature; although it may happen that the facts or principles which should be combined into a science remain too long isolated or connected with various other groups, their own natural relationships unrecognized.

As we all know, numerous writers from the ancients down have alluded to the behavior of disease in children, the surgical, occasionally, as well as the medical; and yet as late as 1846, when Coley wrote an introduction to his "Practical Treatise on the Diseases of Children," he made the following statement: "I am not aware, however, that any author, British or foreign, has published a work comprehending all the diseases incident to children and their appropriate surgical as well as medical treatment. This omission may be accounted for by the division of the profession, which has limited the education and practice of physicians who have hitherto been the principal or only writers on infantile disorders."

This remark Dr. Coley makes after professing himself acquainted among modern writers, with the works of Astruc, Armstrong, Hamilton, Cheyne, Heberden, Becker, Plenk, Auvity, Burns, Capuron, Clarke, Gardien, Comet, Gölis, Dewees, Underwood, Billard, Meissner, Marley, Maunsell and Evanson, Barrier, Barthez and Rilliet, Rees, etc. I am ready to vouch that Dr. Coley's statement is well founded, for on perusal of many of the authors he mentions, and others not in his list, it becomes evident that none of them had given adequate attention to the surgical side of children's diseases.

Take for example Underwood—writing in 1795—who devoted 188 pages, or Part I, of his second volume, to "All such complaints as may fall under the province of the surgeon, with others that may be said to be of a mixed kind which," as he says, "should be all familiar to every accoucheur." But Underwood addressed his text as much to the laity as to the profession, and there is little or nothing in it to enlighten or guide the surgeon.

Even John Syer, surgeon, of London—who, being a surgeon, might be expected to do better in this respect—in his treatise, written in 1812, presented no topics which might be called surgical, excepting purulent ophthalmia, croup, and rickets. Under croup, he did not even mention any operative measures. However, tracheotomy, although known, was little esteemed until Trousseau's revival of it in 1850-57. As to rhachitis, Syer gave no definite account of the deformities and only a general description of deformity apparatus. For these, as for other diseases, he presented "the General Principles of their Domestic Treatment."

Dewees' "Treatise on the Physical and Medical Treatment of Children" (1826), included ophthalmia, croup, hip-disease, hydrocele, herniæ, and several skin affections, but even these few surgical topics can not be said to have been handled surgically.

Eberle's book (1833) had practically nothing surgical.

Billard—the English translation of whose work appeared in 1839—included in his treatise diseases of the skin, herniæ, prolapse of the rectum, intussusception (at least the kind found postmortem), malformations of various parts, and also fractures—intra-uterine, and of the new-born. But he pointed out no differences between those abnormalities and similar conditions in the adult, nor did he give the treatment for them. His attention was centered on "Recent Clinical Observation and Investigations in Pathological Anatomy," for this was the period of a new enthusiasm in that branch of medical science.

Evanson and Maunsell (1843) included syphilis, rhachitis, skin diseases, foreign bodies in the larynx, fractures, herniæ, nevi, tongue-tie, hare-lip, spina bifida,

and ophthalmia, imperforate anus, and various deformities of the genito-urinary organs. Although they sometimes advised and described the treatment then considered appropriate for these difficulties, their general attitude seems to be expressed in a remark which appeared in connection with making an artificial anus in the groin (page 138), as follows:

"The operation would be a very hopeless one; but a consideration of its merits, and of the exact modes of performing the other operations, belong rather to the province of the surgeon, than of the child's physician—who, in that capacity, has merely to ascertain the nature of the deformity, and must draw upon his own general knowledge of surgery, or apply to another practitioner for the means of its removal." Their position on this point is again stated when treating of hare-lip (page 139). "The consideration and treatment of this deformity belongs to the surgeon—all that the child's physician, as such, has to do with it, is to consider *when* the operation should be performed. If the child can suck, it is better not to submit it to the hazards of an operation in early infancy. But cases occasionally occur in which such a degree of deformity exists as to demand immediate assistance in order to give the infant a chance for life. The nature of the operation, and modes of performing it, belong altogether to the province of surgery."

These authors mentioned are but examples. Others who might be cited—for instance, Stewart, 1843,—were much like them. So that it appears to be true that physicians had until then "been the principal or only writers upon infantile disorders," and had made little progress in surgical pediatrics.

But Coley purposed, as every good author should, to do better than his predecessors, and in the matter of the surgical diseases, he in some degree succeeded. He not only discoursed on the herniæ, imperforate anus, clubfoot and other distortions, hare-lip, laryngotomy and tracheotomy, foreign bodies swallowed or lodged in the pharynx, or in the vermiform appendix,prolapsus ani, pyothorax, vesical and urethral calculus, imperforate urethra and vagina, phimosis and paraphimosis, diseases of the joints, burns and scalds, spina bifida, and other surgical topics, but he advised and described the surgical treatment which experience or the literature up to his time had taught him. He also treated of diseases of the eyes, and of the skin, quite extensively. But Coley's book seems to have attracted little attention.

J. Forsyth Meigs, writing in 1848, presents nothing surgical, although his work more nearly equalled the quality of those on general medicine than had any upon diseases of children up to that time. Nor can the lectures of Charles West, the most admirable clinician and oft-quoted writer of his time, be said to deal with both sides of his subject.

In Churchill (1850), a few topics, as tracheotomy, paracentesis for pleurisy, hare-lip, cleft palate, imperforate anus, and spina bifida receive some surgical handling. Condie does not consider that surgical subjects fall within the scope of his treatise.

But by this time the knowledge of anatomy, of physiology, of pathology, and of the history of diseases and injuries had increased to such an extent, the observations of practical surgeons had so accumulated and the establishment of hospitals for children had so improved the facilities for the study of their diseases that their peculiarities and their importance could no longer be quite ignored by the profession.

About the year 1850, in Paris, while Trousseau taught the diseases of children, the surgical side was taught by Giraldes, who, however, published little in permanent form until later. In 1855, J. C. Forster, in London, had been making "A few remarks on the surgical diseases of children," and in 1860 his 8vo volume was published. It was also in the year 1860 that A. A. W. Johnson delivered, at the Hospital for Sick Children, a course of "Lectures on the Surgery of Childhood."

In 1863 we find that the council of the Medical Society of London, "recognizing the importance of this subject, have been led to believe that the interests of its members might be promoted and the profession benefited by having their attention drawn from the broad field of general medicine and surgery to the comparatively small one of the diseases of children; and on the strength of this belief have, abandoning the custom by which they have been hitherto bound, defined the subjects for the Lettsomian lectures"; and they nominated as lecturer, Mr. Thomas Bryant, who delivered three admirable lectures on the surgical diseases of children.

M. Giraldes, in Paris, had been followed as the leading teacher, by Guersant, whose "Notices sur la Chirurgie des Enfants," a series of very pointed and practical papers, found their way into an English translation in 1871. Giraldes prepared his clinical lectures for publication about the same time.

The work with both scalpel and pen, of the pioneers in this special line, had now become so valuable that still further interest was aroused and talent engaged in its behalf.

In 1869, Timothy Holmes issued his "Surgical Treatment of Children's Diseases," a book of nearly 700 pages, and in quality well worthy of its great author.

You will please observe that Holmes omitted, from the first edition, some special subjects, viz., diseases of the eye and ear, orthopedics and diseases of the skin, "not," he says, "because I am in favor of cutting up surgery into little pieces, but because the volume had already exceeded what I had intended; and these subjects are all excellently treated in works which are in everybody's hands." However, in the second edition—yielding to a sense of the fitness of things—he added a chapter on orthopedics. I mention this point in particular to illustrate the fact that the other specialties had advanced so much faster than pediatrics, and particularly than surgical pediatrics, as to have completely outstripped it in development as a distinct branch of our profession.

This statement is capable of verification by reference to the history of the other branches and is particularly shown by the specialties of the eye and ear, skin diseases and orthopedics, and later gynecology. Obstetrics, which synchronously with anatomy had become separated in the work of the medical schools from surgery, had remained in practice more distinctly in the hands of the general practitioners. But obstetrics, fecundated by its former companion, surgery, gave birth to a charming daughter, gynecology, who soon grew to maturity, came out in society with the greatest èclat, became the reigning belle and turned the heads of many susceptible young men for a long season. Thus gynecology, with the other specialties, chronologically took the lead of surgical pediatrics.

It is curious to observe in this connection that the "Compendium of Children's Diseases," of Johann Steiner, of Prague, which appeared about this same

time, had for its English translator no less a personage than Lawson Tait, who added a few notes on the "Surgical Ailments of Children." One can not but speculate on what might have happened if Lawson Tait had felt a greater attraction for surgical pediatries than for gynecology.

But my cursory sketch has brought me down to times almost within the recollection of the majority of my hearers. You are familiar with the record of the last thirty and the magnificent work of the last twenty years in the surgical diseases of children.

To continue a comparison among the recent achievements of those still active in professional life would require a nicer discrimination and might involve greater consequences than I care to assume; but I may at least mention, in passing, and almost at random, the names of Pooley, Marsh, Owen, St. Germain, Fumagalli, Willard, Wright, Ribiera y Sans, R. W. Parker, Charon and Gevaert, Karewski, McEwen, McClellan, Keen, Taylor, Wharton, Packard, Morris, Morton, Power, Phocas, and O'Dwyer, although I have omitted scores of worthy authors of books and writers of essays, brilliant investigators and able practitioners in this field. The new impulse came along with the grand impetus of general surgery occasioned by antisepticism.

There is now needed no elaborate argument to prove that there is a department of surgery as distinct from that of adult life as the medical diseases of children differ from those of their elders. As in medical pediatries, so in surgical, we meet abnormalities found only in children, and also we meet those which, while they occur in adults as well as in children, are in the latter marked by different phenomena, manifest a different behavior, require a different treatment and often bring a different result from what would be usual in the same affections occurring in persons of mature years. It is only necessary to point out that the malformations, the early evidences of hereditary syphilis, separation of the epiphyses, croup, rickets, enuresis, canerum oris and noma, as well as certain herniæ and hydrocele and certain varieties of tumor, belong to the class of troubles found only in children. While intussusception, prolapse and polypus of the rectum, hip-joint disease, postnasal adenoids, enlarged tonsils, foreign bodies in the nose and ear, and cervical adenitis, although not exclusively found in children practically belong to the surgical affections of childhood.

Concerning the fractures and dislocations, empyema, and nearly the whole remaining list of surgical ailments —not to mention orthopedics or numerous affections of the eye and skin—we who have given the subject special study and are accustomed to surgical work among children know how common they are, and to a certain extent how different they are from similar afflictions in the adult. We are aware what peculiarities surround operative work upon children; how ill they bear hemorrhage or cold or prolonged shock, and how wonderfully they recuperate once the stress of the storm is past. The effects of anesthetics and of antiseptics, the art of dressing and bandaging and the use of medicines and diet in surgical cases—all these differ in children from similar cases in the grown up. Even if the specialists take all they dare there is enough remains of what might be called general surgery of children that is peculiar and requires special study and experience.

In view of all the splendid progress that has been made, it may appear ungrateful and hypercritical to seem dissatisfied; and yet to be satisfied is to stop progress, and there remains a great deal to be done to advance this department.

The exact points and degrees of difference in the phenomena of diseases and injuries, their prognosis and their treatment are not yet all completely mapped out, while there is much territory never yet thoroughly explored by any in the profession.

A larger amount of work needs to be done in the diffusion of such knowledge as is available, and in the application of it in practice; for the available knowledge is yet but indistinctly and vaguely seen in the minds of many practitioners of general medicine and surgery, and the all-around pediatrist as often finds the surgeon as the physician at fault in his work upon children, for want of special knowledge of them—mistaking the condition, miscalculating the probabilities, misjudging the vital force. In fact, the profession at large has not yet even sufficiently recognized the necessity and importance of this branch.

In the colleges insufficient attention is paid to the surgical diseases of children. In 1896, in an address as president of the Ohio State Pediatric Society, I gave the replies I had received to inquiries directed to the various medical colleges of the United States and Canada, upon the point whether surgical as well as medical diseases of children were taught in the regular course. Sixty-three colleges replied upon this subject. Thirty-seven of them said that the medical side only was taught and twenty-six taught surgical as well as medical pediatries. When I asked the question, "Does the teacher individually consider that pediatries includes the surgical as well as the medical diseases of children," I was answered affirmatively forty times, negatively, thirteen, while the remainder either left the question unanswered or answered indefinitely.

In the medical journals and in the medical societies one finds evidence that too little attention is paid to these surgical subjects. Examine your journals and the program of any medical society, even a pediatric society, and see what a small percentage of papers is on surgical topics in pediatries. Some of those which should be found in the pediatric appear in the transactions of other specialties.

There is still in the minds of the profession, as of the people, a degree of misapprehension as to the natural and proper scope of pediatries. There are many, both in and out of the profession, who look upon the child's doctor as a kind of a male nursemaid, who limits his practice to mixing milk and inspecting diapers. Very important things to be done are these, but scarcely the only work of a pediatrist!

There should, if necessary, be children's surgeons as well as children's physicians; or if, as Holmes says, one "objects to cutting up surgery into little pieces," it should at least be required that the surgeon extend his knowledge to diseases of children.

As to whether one man can practice, successfully, both medical and surgical pediatries, is a question somewhat aside from our present theme. In my opinion the answer must depend on the circumstances and the man.

In addition to the misapprehension I have mentioned as to the scope of pediatries, and to the fact that other specialties have outstripped it and to some extent taken from it, it is evident that the long-time-ago state of affairs yet prevails—namely that more physicians than surgeons have devoted themselves to this branch. To

what extent this is a cause and to what extent an effect of the other causes, would be hard to decide. But I believe the present state of things will continue until earnest and devoted workers in this department succeed in gaining general recognition of its importance, and either more pediatrists turn their attention to surgery or more surgeons turn pediatrists.

My hope is that the attention of my hearers individually, and of the Section as an organization, may be aroused on this subject, and that you may be led to make further advancement in this beneficent and to me most delightful department of professional labor.

THE STUDY OF LARYNGOLOGY IN THE UNIVERSITY AND IN THE HIGHER MEDICAL EDUCATION.

CHAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON LARYNGOLOGY AND OTOLOGY, AT THE FIFTY-SECOND ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, AT ST. PAUL, MINN., JUNE 4-7, 1901.

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Instead of making the usual report on the year's progress in the specialty, I will depart from the prescribed routine and call attention to a subject which is of vital importance both to the laryngologist and to the profession at large. At the outset I wish it to be distinctly understood that I shall speak only of undergraduate instruction in schools of the very first rank, and not of the more elaborate training of the postgraduate for special work.

The study of laryngology has been grossly neglected in the medical schools of this country and Europe. It is either omitted entirely from the schedule of studies or, in many colleges at least, it is taught in a superficial, perfunctory sort of way that neither inspires faith in the instructor nor interest in the student.

Although the catalogue often tells in glowing terms of a course on laryngology, such a course will be found in practice to be like the "Co." in "A. Tetterby & Co.," "a mere poetical abstraction, altogether baseless and impersonal." In very few schools is it taken at all seriously, while in only one is it an obligatory study and a requisite for the degree. It seems to me, therefore, that the time is ripe for the discussion of its place in the university and in the higher medical education.

IMPORTANCE OF A STUDY OF LARYNGOLOGY AND ITS PROPER PLACE IN THE CURRICULUM.

I use the term laryngology in its broadest sense, to denote the anatomy, physiology and diseases of the upper respiratory apparatus, together with its connections and appendages, or accessory cavities. In this latter category may be placed the pharynx and the middle ear. The position assigned to laryngology in the university has been heretofore not at all commensurate with its importance, and yet of all the pure specialties, that is to say, those branches requiring special technique and special instruments and methods of precision, it is the most generally useful to the diagnostician and general practitioner. The time has gone by when it should be necessary to press the claims of laryngology to recognition of the highest rank. We no longer apologize—we demand. There was a time when laryngology meant little more than the art of laryngoscopy, and it was often prostituted to inferior use. It is no longer a simple method of examination and demonstration, but an enduring, vital force in medical progress, which lives and breathes and has its being within the very heart of inner medicine itself. It is no longer the Canaan of the quack, but a fair land of promise for the highest order of research. It should, therefore, hold high place in the curriculum of the college and university. It should have a separate, well-equipped department and a full professorship. While I do not wish to over-estimate the relative value of laryngology in a scheme of medical education, and while I am fully conscious of the present congested condition of the schedule, and the future necessity of a large number of elective studies, I am of the opinion that, in view of its very great importance, it should remain, as it is in the curriculum of the Johns Hopkins University, an obligatory study. If laryngology and ophthalmology should ever disappear from the list of compulsory studies, they should be the last to go. Their exile from a curriculm in which they have been once established would be, not an act of progress, but of retrogression.

THE FUTURE OF THE LARYNGOSCOPE.

A knowledge of the use of the laryngoscope will in the future be as necessary to the equipment of the advanced physician as is now a knowledge of the physical examination of the chest. It is absolutely invaluable to the diagnostician, for it is especially useful in the early detection of disease, often pointing, long in advance of classic signs and symptoms, the way to grave disorder. Time was, not very long ago, when physical diagnosis of the chest was not required of the medical student, and when the special knowledge of the art was supposed to be, and practically was, confined to the few. Now every practitioner of medicine knows, or thinks he knows, it all. The laryngoscope will go the way of the stethoscope and become the common property of the general practitioner of medicine. It will be an absolute necessity in that specialty which, next to surgery, is the highest of them all—the great special study of the future— internal medicine. The time will come when the art of laryngoscopy will be linked to general medicine as the art of physical diagnosis has become its inseparable associate.

INCREASING GENERAL KNOWLEDGE OF LARYNGOLOGY.

When, twenty-three years ago, the conception of creating the American Laryngological Association, the oldest special society of the kind in the world, arose in the brain of its too-early-lost founder, it was hardly possible to gather together more than a corporal's guard of men of national reputation in this department of medicine. Now the complexion of things has entirely changed. While at that time the specialist was found only in the larger cities, now there is scarcely a hamlet in the land that does not contain a laryngologist—indeed, in recent years the larynologist has, in some quarters at least, proliferated to an alarming extent.

There will come a time in the future—in the near future, perhaps—when the boundaries of the specialty will be almost indefinitely extended. The great advances which laryngology has made in recent years, the rapidly growing necessity of a knowledge of its special province in the elucidation of obscure conditions in adjacent and remote organs of the body, the popularity of its study and the accordingly rapidly increasing number and far-reaching geographic distribution of its votaries, will, in the course of time and in the nature of things, lead to such a congested state of the specialty that many will either be driven into the ranks of general medicine, or compelled to take up some other line of special work in

connection with their original specialty. This already has been done in the smaller towns and in the great centers of population in the progressive west, where ophthalmology is the inseparable associate of laryngology and otology. The rational practice of the latter is impossible without a thorough knowledge of rhinology and diseases of the throat, and nothing is more illogical and grotesque than its solitary association with ophthalmology, except, perhaps, the combination alleged to have been practiced by a distinguished foreign ovariotomist, who took no cases except abdominal tumors and diseases of the ear.

While a more general knowledge of laryngology may have its drawbacks, if we look at the subject from a purely commercial point of view, it may have, among other things, a salutary effect in relegating to the rear that unfortunately numerically large element in our midst whose only claim to special knowledge resides in the possession of the necessary apparatus which goes to make up the armamentarium of a worker in this field.

DEVELOPMENT OF THE STUDY OF LARYNGOLOGY.

Let us now turn to the development of the study of laryngology by undergraduates in our medical schools, if, indeed, we may speak thus of a study which has practically just begun, and, in doing so, perhaps I can best illustrate the different phases of its development by giving a chapter from my own experience.

Twenty years ago, when I was on the working staff of the, then, largest throat and nose clinic in London—the Hospital in Golden Square—there was no place in that vast metropolis where the student could get systematic instruction in special work. None of the colleges or hospitals gave lectures on laryngology—nowhere was it requisite for the degree. All strangers in London, interested in the specialty, came to Golden Square, attracted there by the personality of Morell Mackenzie, then at the zenith of his popularity and power. With all the vast material at our command, there was practically no instruction given, except in the way of hasty demonstration of cases; and if the student or visitor learned anything, it was through close personal observation on his part and not through any gigantic effort to impart knowledge on the part of the medical staff. With one or two exceptions, the latter directed their attention almost solely to the larynx and thyroid gland, and the nasal passages were only examined when in quest of a polypus or when the attention was irresistibly attracted to these organs by the horrible stench of an ozena. The nasal cavities were practically neglected and the only apparatus in the hospital for the treatment of these diseases consisted of a pair of forceps for the removal of nasal polypi, and a hand-ball atomizer with a detergent solution for the treatment of ozena or any other miscellaneous disease of the nose that might irresistibly obtrude itself upon the recognition of the medical staff. When later I studied on the Continent, I found a like condition of affairs. In no school was laryngology taught to undergraduates, and the only means of acquiring special knowledge of the subject were the imperfect courses on diseases of the larynx given by the professors and their assistants. There was no special course in rhinology, which subject, as in England, was left entirely alone. I returned to my own country to find the same neglect of the study of laryngology that I had found in England and on the Continent.

In 1887 I was called to the chair of laryngology and rhinology in one of the oldest medical schools in America. The annual catalogue and circular told in flamboyant terms of a course on laryngology which at once set the mind to wondering how it would be possible for a student to escape from the institution without absorbing all that was coming and all that had gone before in that imperial domain. On my induction into office, I cast about me for the paraphernalia which should accompany my lofty position. I found in a dark closet or hole which led under the seats in the amphitheater where the lectures and clinics were given, a dilapidated lamp whose structure and general appearance of antiquity suggested the possibility that it might have been originally trimmed by some spirit in the age of fable, a broken laryngeal mirror, from whose back the quick-silver had long since departed and a cardboard diagram, colored blood red, like an eczema, which was supposed to represent the laryngeal image but looked more like a vulva on fire. These crude implements of the laryngoscopic art I found—and a tradition. According to this tradition my predecessor in office was accustomed to meet the class at the opening of each session, and, after a few introductory remarks, disappeared with a patient into the closet under the seats and closed its door. There was a period of breathless silence and intense expectation on the part of the students, during which time all manner of strange noises were heard in the darkness beneath them. These finally ceased, and the professor reappeared, his face radiant with satisfaction, and advancing toward the class, with the laryngeal mirror held aloft, triumphantly exclaimed, "Gentlemen, I have seen the vocal cords." According to the same tradition, that was all the laryngology the class got during the session.

The quarters assigned to me in the dispensary, where the patients were examined, consisted of a little compartment or "box" from which all sunlight and fresh air were carefully excluded, and in whose foul atmosphere two of my assistants subsequently probably contracted tuberculosis. It was thus thoroughly equipped and under such cheerful conditions that, without either moral or financial support on the part of the executive branch of the institution, I began the task of teaching practical laryngology to undergraduate students. Fortunately, I had excellent assistants, with whose aid I soon built up an excellent clinic, so that we were enabled to give the men during the session demonstrations of most of the diseases of the upper air-tract and all the common operations on the nose and throat. I gave the lectures and clinics and my assistants superintended the instruction of the students in the dispensary. Although attendance in the department of laryngology was not compulsory, and although no examination was ever held in this branch, the course was largely attended and many became so much interested in the subject that they subsequently took it up as a specialty.

In 1889 the Johns Hopkins Hospital threw open its doors, and several years later (1893) the medical school in connection with it and the University, was formally opened. The Johns Hopkins University deserves the credit of being the first institution of learning, either in this country or beyond the seas, to give to laryngology the prominence which its place in medical education demands. It was the first to make it an obligatory study in the curriculum, and to make an examination in this branch a requirement for the degree of Doctor of Medicine. This was one step, and in consideration of the former neglect of the subject, a prodigious one, to place laryngology where it properly belongs and to give to it the position and prestige to which it is justly en-

titled. It, therefore, marks an important era in the evolution of the undergraduate study of laryngology. If for no other reason, then, as a matter of historical interest, I will ask attention to the method of teaching the specialty which has been adopted in this institution. I shall content myself with simply giving a mere outline of the work, and shall not enter into matters of detail.

STUDY OF LARYNGOLOGY IN THE JOHNS HOPKINS MEDICAL SCHOOL.

The time required for the degree of Doctor of Medicine is four years, of nine months each. The requirements for entrance to the medical school are rigid, only those being admitted who give evidence of having had a liberal education as indicated by a collegiate degree in arts or science, including an acquaintance with Latin, a reading knowledge of French and German, and adequate training in physics, chemistry and biology. The first two years are devoted mainly to practical work of all kinds in the laboratories of anatomy, physiology, physiologic chemistry, pharmacology and toxicology, pathology and bacteriology. During the last two years much of the students' time is spent in practical work in the wards, laboratories and dispensary. It is not until the fourth year that the class enters the special departments. It is my intention to give a course on laryngology in the third year, so that when the student enters his graduating or fourth year course, he may be at least familiar with the use of the mirror. I mention these facts simply to show that, when the student reaches me, he is quite thoroughly trained, not only in the use of his brain, but also in the use of his hands. By constant practical work for three years, he has acquired an amount of manual dexterity which enables him to master the art of laryngoscopy with relative ease.

The graduating class is divided into four sections—each section (of the fourth-year class) attends for one and one-half hours daily during two months, the laryngological and rhinological department, where they receive practical instruction from my assistants and myself. After preliminary drilling in the use of the laryngoscope and other technical procedures, and in diagnosis, the student assumes the work of clinical assistant. He is given pathologic material for examination and diagnosis, and is encouraged to report cases and read papers before the Hospital Medical Society, to look up the literature of interesting subjects connected with laryngology, to observe for himself and, if he has time, to do original work. He is taught to investigate and to enquire, and I may say just here that it often requires a very high order of human ingenuity to construct an evasive answer to some of the conundrums with which I am frequently assailed. He takes his first lesson on the human subject—gets his first impression from Nature. I formerly used models; but some one stole them and I am glad they are gone.

By the above method, the teacher comes into direct personal contact with each member of the class, and is enabled to measure the mental status of the individual. In no other way can laryngology be properly taught. It is hard work, but it pays in the results which are accomplished. Laryngology can not be taught by text-book or lecture. It must be taught over the shoulder of the instructor, and on the part of the student, must be acquired by direct contact with, and personal observation on, the living subject.

While the didactic lecture is fast becoming an anachronism, I do not believe that the day of its usefulness is completely gone. I give a systematic course of weekly lectures to the entire class, which are supplemented by pathologic and clinical demonstrations, on the anatomy, physiology and commoner diseases of the upper air-passages and their relations to morbid processes in other parts of the body. In this course especial attention is paid to diagnosis. The object of these lectures is two-fold: 1, to give in a concentrated form and in the shortest possible time information which could not be acquired except by great additional labor on the part of the student, and 2, to avoid endless repetition in the section room.

In the matter of text-books and literature, the class is shown the principal works and current periodicals in English, French and German. No special text-book is recommended or required; but, in connection with the lectures, the students are referred to special articles and monographs containing the classic literature of each special subject.

The question of the value of examinations is a very important one and one which is destined soon to be pressed to final settlement. While I can not go as far as my gifted friend and colleague, Professor Mall,[1] who is of the opinion that it would be well to separate them from the course of instruction entirely, I must confess that I am very much in sympathy with him in the main points of his contention. But until a more rational and exact method of accomplishing the same results be devised, I am afraid the examination must remain as a necessary evil. It is often a farce. One of the best examination papers I ever received was from a student who, on account of a serious illness, was compelled to absent himself from the very lectures on which the class was being examined. He had used the notes of a fellow-student and came back at me almost with my own words. In the university in which I received my first medical degree, instruction, except in the department of anatomy, which was practically and ably taught, was entirely by didactic lectures. We sat all day in the lecture-room taking notes, and spent the entire evening "cramming" them for the next recitation. We never saw a medical case. Once during the session, the professor of surgery brought in the colored janitor, stripped him and bandaged his legs and arms. This was our only course in practical surgery. Those were the good old days when, as Mall says, the students "heard much, saw little and did nothing." When the day of examination arrived I knew my text and note books from cover to cover, and could locate with unerring accuracy any required item of information to the page and to the line. My memory was so saturated with medical lore that it took me some years after I left college to forget it. I was invincible in the examination room, but helpless at the bedside.

The best examination is the observation of the student in his daily work and the resulting estimate of his personal equation. During the first two years I gave an oral examination at the end of the term, carrying each student over the entire field covered by the lectures, but, as the size of the class increased, this had to be abandoned, and I now give a single written examination, of which the following, which was my first, is an example.

1. Give the physiology of the nasal and accessory cavities.

2. General symptoms and diagnostic signs of suppuration in the nasal accessory cavities—diagnosis of pus in the antrum maxillare.

3. Early laryngoscopic diagnosis of tuberculosis and cancer: characteristics of syphilitic, cancerous and tubercular ulceration in the upper air-passages.

1. Liberty in Medical Education; Phila. Med. Jour., April 1, 1899.

4. Chief causes, symptoms and laryngoscopic signs of double, complete abductor paralysis.

5. Nature and diagnosis of so-called nasal reflex neuroses.

Out of a class of thirty-four there were only two who failed to pass.

This, in brief, is a simple outline of the way in which laryngology is taught in the Johns Hopkins Medical School. I am fully aware of the imperfections of the method; but everything must have a beginning, and time and further experience will doubtless make it more perfect. In the classes under my care it has so far been very successful. The net result is that when the student graduates he has made a very fair groundwork on which to base, in the future, if he will, a more elaborate study of the specialty.

LARYNGOLOGY THE INSEPARABLE ASSOCIATE OF GENERAL MEDICINE.

In teaching laryngology the instructor should forever bear in mind, and the student should never be allowed to lose sight of, the fact that it is an inseparable part of general medicine—that the pathology of nasal and laryngeal diseases is not an isolated pathology; that the appearance of disease in the upper air-tract is governed by the laws that condition the development and course of disease in general, and that the rational interpretation of these affections presupposes, therefore, the application of general pathologic principles to the peculiar conditions which the anatomic and physiologic functions of the structures involve. Above all, he should remember that peculiarity of structure is not anatomic isolation; he should remember the correlation of organ and organ, the sympathy of tissue and tissue which makes up the perfect physiologic life of man. In looking upon the subject from the high vantage ground of general pathology and laws of health, the student is in a better position to apprehend the rôle which external and internal influences play in the evolution of disease of the respiratory apparatus, than if he viewed the subject from the level of a narrow specialism or from the standpoint of the mere empiric.

FRATERNITY AND CO-OPERATION AMONG THE DIFFERENT DEPARTMENTS OF MEDICINE.

Laryngology should not be studied apart, but kept in constant and closest contact with all the other departments of the university. Let there be more fraternity among the different specialties—more co-operation. If special workers in the different departments of medicine would, instead of holding aloof from each other, combine the special knowledge they possess in a common endeavor to elucidate the difficult problems which daily confront them, the hostile cry of ignorant criticism, which is so often directed against them, would be forever silenced by their discoveries for the commonweal.

HIGH IDEALS IN THE STUDY OF LARYNGOLOGY.

The study of laryngology will never reach the full fruition of its hopes and aspirations until it becomes the inspiration of a higher effort and a loftier ideal.

Let it teach the student not to contract, but to broaden the horizon of his intellectual activities. Let it make him understand that the laryngoscope is not merely a device for exposing hidden recesses of the body and for the demonstration of that which is already known; but an agent of positive power in future research—a means of scientific expansion and exploration of the unknown. Let laryngology walk with becoming humility beside the great pioneer forces of human endeavor, aiding them, it may be, in an humble and unostentatious way, but still contributing to their progress through the trackless wilds of the land that is untrodden and unknown. Undaunted, undismayed, let them together press forward until the wilderness shall blossom as the rose and Nature's wild forest ring with the shout of their exultant discovery. When this ideal shall have been attained and this conception of our art is realized, then will the study of laryngology blaze the way for the triumphant march of scientific medical achievement, and the laryngoscope will become an instrument of progress and power.

Original Articles.

SIMPLE GINGIVITIS, ITS ETIOLOGY AND TREATMENT.*

GEO. T. CARPENTER, M.D.

CHICAGO, ILL.

Disease of the human gums, in these days of advanced civilization, is very common and almost universal. In fact, it is a rare thing to find gums that are in all their margins perfectly free from irritation, inflammation, hypertrophy, atrophy, or absorption, and many will show evidence of gingival ulceration. At three previous meetings of this Section I have presented papers closely connected with the present subject. The conditions then studied were the result of advanced inflammatory or suppurative processes; but by the term "simple gingivitis" I include only that condition of the gum margin about the necks of the teeth, known as the gingiva, that shows the slightest departure from health, but is fully established and persistent in its nature. It is the purpose of this paper to take gingival irritation in its simplest form and point out its etiology and treatment, and in this way prevent the subsequent and more serious diseases, which by their certain progress result in pain, discomfort, loss of tissue, and eventually the loss of the teeth themselves. Gingival irritation is liable to present itself at any point where there is a gingival margin. We may find the gingiva of one tooth inflamed and the rest of the gums in a healthy condition. We may find the anterior teeth in a clean condition but affected by gingivitis, while in the posterior teeth, which receive less care, the gums may be in good, healthy condition. We may find gingivitis in some, or all, the gums in well-kept mouths, and we may find exactly the same condition of gums in mouths that do not receive the slightest care or attention. We will find this form of inflammation in the mouths of the young, those in middle life and old age. We will also find it in the anemic and emaciated, also in the well-nourished and rugged. This condition, which is found in the human mouth, is rarely found in the mouths of lower animals in their natural state, and from some experiments on the gingiva of rabbits I find that it is almost impossible to establish a gingival irritation without using some powerful infections or poisonous substance. We also find that in the human mouth where bands, clamps, wedges, or ligatures have caused some irritation and even laceration, that a gingivitis does not as a rule result, so that the etiology of this apparent slight trouble is varied and very obscure. The etiology or local causes: Irregularities and malocclusion are factors; also imperfect or loss of contour; improper use of the teeth or, more correctly, insufficient use of the teeth, causing lack of tone to the gum; inor-

* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

ganic substances used as dentifrice, causing unnatural or insoluble deposits under gum margins, which is most common in the lower jaw; the injudicious use of tooth-picks; floss and rubber bands, keeping constant irritation at given points.

Constitutional Causes: A defect in nutrition or cachectic condition may cause an isolated gingivitis at a given point, just as the same condition may produce an aphthous ulcer at any point on the mucous membrane of the mouth. The same cause which results in dyspepsia, constipation, sick headache, dyspnea, and a host of other symptoms, also cause gingivitis.

Improper Nourishment: This is often the result of too much preparation of food for the teeth and stomach. Plain, coarse, wholesome food that will give the teeth something to do will act as a proper stimulus to the gums and will be kindly received by the stomach. The colored people at the close of the Civil War had mouths with healthy gums and teeth free from caries, but higher civilization, mingled with hotel and restaurant cooking, has so changed conditions that their mouths now are filled with both caries and disease. Careful examination of the mouths of many of the peasants emigrating from Europe, have led me to believe that the care of the mouth should be principally through the stomach and a thorough use of the teeth by mastication of food.

Treatment: Correct all mal-occlusions and restore perfect contour to crowns. Remove all local irritants and deposits and make a light application of tincture of iodin to affected parts and give instructions to prevent irritation and abuse of gums; change diet from mashed vegetables of all descriptions or soaked or cooked in milk to that of dry or Swedish toast, whole wheat, or grape-nuts; to be ground thoroughly fine with the teeth, incorporated with the saliva and swallowed. This treatment should be followed, especially with children suffering from gingivitis.

I am indebted to Dr. M. H. Fletcher, of Cincinnati, for the suggestion of corn-meal as a dentifrice. I think as a partial substitute for thorough mastication that a good cereal dentifrice is very beneficial, using corn, oats, cream of wheat, or any coarse and grainy substance, and brush the teeth and gums vigorously after each meal and before retiring, giving a half rotation to the brush. The mouth should be thoroughly rinsed after each brushing, as there is some difficulty in removing the cereal. I do not approve of the use of a very stiff brush without a dentifrice, and I consider the place for all inorganic dentifrices is on the outside of the mouth. They may serve a good purpose for cleansing metals and marble, but should not be used on organized tissues.

103 State Street.

DISCUSSION.

DR. G. V. I. BROWN, Milwaukee, Wis.—The essayist states, after describing the simple forms of gingivitis, that gingivitis more often proceeds from the apices of the roots toward the gingival margin than from the gingival margin to apices of the roots. That was the point Dr. Talbot made clear some time ago. He said in our treatment of pyorrhea alveolaris we pay too much attention to palliative treatment. He said he considered our diseased gums from the gingival margin, whereas a mild inflammatory process was going on very much in advance of what we could see with the naked eye. Upon that simple fact I have based what treatment I have attempted ever since, and I think when we realize that, we have got all we need for that which comes directly within our own province. We must admit that every general condition which interferes with the excretory organs in any way will certainly render the tissues of the body more susceptible to the inflammatory process than they would be otherwise. If an interference with these organs in the performance of their natural functions will render the cure of any inflammation more difficult, and contraindications would complicate this state of affairs, so far as we are concerned we have all we can do to take care of the local matter. If we recognize the fact that these inflammatory changes are going on beyond the point we can reach in our treatment, beyond the point our profession is capable of exploring, then we must in some way relieve the local condition, and it is impossible to have a case of pyorrhea where you have that contraindication without having the occlusion of the jaws interfered with, and you can not cure that condition locally as long as the occlusion of the jaw is imperfect, and by this irritation of the surface you continually increase that inflammatory condition in spite of all you can do. I will probably bring down a storm of scientific criticism upon my head, but if I can not do more than to bring out the valuable point Dr. Talbot brought out years ago, I shall be satisfied.

DR. EUGENE S. TALBOT, Chicago—I am very much pleased with the conclusions of the essayist and the remarks by Dr. Brown. I am glad Dr. Brown has given this subject so much attention since I first outlined the pathology of this trouble. Both essayist and Dr. Brown are correct. Dr. Carpenter has taken up the local condition and causes of the diseases, and Dr. Brown has taken up the constitutional side of the question. There are certainly two factors in producing simple gingivitis, the local and the constitutional. I must, however, go back further than either of these gentlemen in order to get to the real condition and cause and that is the point where individuality must obtain treatment. Transitory structures are involved and the fact must not be lost sight of that the jaws and teeth are passing from a large and strong jaw to an extremely weak one; these changes are going on very rapidly, indeed, with our present mode of living. Dr. Carpenter said in his paper that the lower animals are not involved in this change in their "natural or undomesticated" state. These structural changes go on in domesticated lower animals as they do in man. Dogs have undergone a change, as Dr. Kiernan said yesterday, in certain structures the same as man. Gingivitis occurs in horse and cow in the fall of the year when the animals are taken from the pasture to the stable. The horse after being put in the stable will catch hold of the manger and pull with his teeth making a piping sound. This indicates there is irritation in the gums with resultant inflammatory action. The same is noticeable in the cow in trying to grind her teeth. In transitory or unstable structures inflammation sets in quicker than in any other structures. This is true alike of the appendix and the jaws and teeth. Wherever these changes occur in the systemic condition from disorders like indigestion or diseases such as typhoid fever, it is manifested here. Especially is this true of little children. I have noticed particularly in degenerates, such as in the deaf, dumb, blind and idiots, that there is marked inflammation of the gums. So the abnormal condition of the structures must not be unheeded in the treatment. A writer in the June *International Dental Journal* of Boston claims that the gum should not be massaged. He has a brush composed of badger's bristles, a very soft brush. He claims that if at all only a very mild massage should be done and the fingers should be used. The opposite from actual experiments seems to me alone justifiable. The essayist states that a very strong brush should not be used; I should use the stiffest brushes upon the gums. It is not the gum that is being injured as the alveolar process is absorbing away; it is the interstitial tissue. The gums become involved, but there is no danger of absorption. The blood is forced out of the gums and they contract to secure a healthy alveolar process. Absorption of the gum is not the danger, but absorption of the alveolar process. The gums contract down to it. The gum should be massaged with a stiff brush and tincture of iodin should be used to reduce this inflammation. Inflammation takes place in nearly every patient. The blood shows that pathologic conditions have set in. To reduce the gums to their healthy condition, use a stiff brush and massage them three or four times a day.

DR. VIDA A. LATHAM, Rogers Park Ill.—When we speak of

simple gingivitis, the majority of people consider at once pyorrhea alveolaris! Let us take a case for example: A woman comes to your office, an apparently healthy case, perhaps the mother of a family. Her general history is good but she may be a little anemic. She has a magnificent set of teeth, but we meet with a little discoloration of the gums. What is it? It is nothing more nor less than the outcome of simple gingivitis. I do not care to hear anything about the pyorrheal condition, or whether it is a passive or active congestion, or if by pressing with the finger you can get blood or pus, provided it has reached the suppurative stage of the inflammatory condition. That is not the point. We mean simple gum infiltration. Therefore, I would like to have somebody go back to the beginning and give us the early stages of what may become sooner or later interstitial gingivitis. For example, here is a case of lung disease. Is it pneumonitis? You may have it in the upper lobe or the second lobe or all the lobes, but it may enter upon resolution, clearing up everything and the parts return to the normal. If you get a pneumonitis and it does not all resolve you may then get an increase of fibrous tissue, which would be called a cirrhosis or interstitial or fibroid pneumonia; you may have an increase in size or a decrease and the result is the same; it is a thickened sclerotic condition. It is this distinction which I think our dental pathologists have confounded with the later stage. When we are called upon to treat this early simple irritated state we fail to recognize or treat it previous to its entry into one of the most serious and advanced terminations of inflammation. It may certainly become fibroid, abscessed, ulcerated or even gangrenous. I prefer to ask you to deal with the simple congestive or irritated condition which is the early simple gingivitis even if recession be present, or swollen edematous puffy tissue of the gums so well known in unclean mouths. Here is a child that is degenerate, but the simple and interstitial inflammation is not necessarily a degeneration. I think our dental pathologists are very lax in this matter. We have different forms of gingivitis, some are chronic, some are acute. The gum has receded, there is a great deal of hyperesthesia, a continual irritation, everything the patient touches makes the teeth ache. I would like to have a remedy for this early condition. I have several cases on hand which I do not know how to treat. I have tried massage, local and general treatment; I have cleansed the teeth. I have used anesthesia to find salivary calculi on the roots and I can not find much wrong. These are cases I wish a special classification for. Why should we not have early simple as well as the chronic or interstitial gingivitis with recovery. This is a condition I would like to bring to your notice and ask for a remedy as well as for more research into this, the very beginning of the disease, and so prevent the loathsome and dreaded "pyorrheal states" and its recession or absorption of the alveolus as illustrated so ably by Dr. E. S. Talbot in his work on so-called "Pyorrhea Alveolaris."

DR. G. V. I. BROWN, Milwaukee, Wis.—The trouble is we have taken too narrow a view of this matter. In pyorrhea or gingivitis, when you come to cut off the state of inflammation and classify under one name or another a condition which to-day may be one thing and to-morrow another, you are making a classification which will not stand, but this distinctive condition which we recognize as pyorrhea is simply one form of the condition which we have brought to our notice as dentists. An inflammation may be destructive or constructive. We have just as frequently in some cases a condition which causes a change in the pericementum. This is evident to us, particularly when a tooth is attempted to be extracted. The process comes away with it; there has been a change in the membrane, that which has formed this union of the surrounding bone to the pericementum in a way that has become almost inseparable. Under these conditions we find many patients. A large number of the chronic neuralgias come from this condition of the membrane. In addition to this, we have certain structural changes in the dental pulp itself. These changes all occur as the result of some nervous disturbance due to the excitement of the centers which control the muscles of mastication. They continue working and grinding, which causes a local and general disturbance which is greater than we have any idea of. I think I have a half bushel of casts showing the stress due to habit, and in these cases sometimes a paroxysmal pain occurs every few minutes and continues for years until the patient is a physical wreck. I have a number of cases now that have had to be cared for as a result purely and simply of this habit. Again we have a pyorrhea which we recognize easily, and we have pulpitis due to the loss of the surrounding tissue. But these conditions due to the same causes aggravate all these other conditions, because when the excretory organs are out of order the nervous conditions are worse. Taken in its broad sense there is no longer any question as to the marked etiologic factor in pyorrhea. The way to all this has been made clear by Dr. Talbot.

DR. A. E. BALDWIN, Chicago—Before this subject is passed, I want to claim that I believe that these gentlemen have been discussing something else than the paper. The paper is on the subject of simple gingivitis, simple inflammation of the gingiva or gum. You must not say in an assembly of sane people that you can have a simple inflammation and have it absorbed by the body. I do not think any sane man would make such a statement. I may say to you that I learned years ago in the medical college that there could be simple inflammations, and the meaning of the word "simple" is "without complications." We may have simple inflammation of the lungs; we may have simple inflammation of the pleura; we may have simple inflammation of the gums, and when anybody gets up before this Section and says the best way to quiet an inflammation is to jump on it, to tread on it, to strangle it, to scarify it, it seems to me wrong. I think oftentimes with some of these local irritations we are not discussing interstitial, but we are discussing simple gingivitis. The amount I do not know about a great many of these subjects would fill a book, but there are some things I feel I do know, and I know that simple gingivitis is simply an inflammatory process of the gum itself, not complicated with suppuration, not complicated with anything, but just what the name means. About as good a plan as you can follow is to give the part rest, quietude, something soothing. I believe that is our first duty. There may be complications that may be treated and treated wisely, but it seems to me this talk has been largely upon a question that is far from the paper as read.

DR. GEORGE T. CARPENTER, Chicago—I would like to say a word in closing in regard to the word "simple." It was my intention by the use of this word to include only the gingivitis in its simplest form and to avoid "interstitial gingivitis," or pyorrhea alveolaris. It was distinctly understood that the term "interstitial gingivitis" should not be used so as not to have the subject misconstrued. I stated certain conditions as not coming under the head of this paper, but emphasis was placed on the simplest conditions. This does not even result in ulceration in many cases, but it is simply an evidence of that slight affection of the gingival margin that does not get well. These conditions lead on to something more serious, and what we are trying to do is to get at the cause and treatment of this condition. Dr. Brown speaks of the local causes, but I spoke of the constitutional causes. A constitutional cause is directly responsible for this condition. As I said in my paper, it is almost an impossibility to establish this condition unless there is a departure from health. There may be no sign of anemia, but where there is a departure from health or a disturbance of the circulation we establish gingivitis.

In speaking of the animals in their natural state, I did not take into consideration dogs, horses and cows for the reason that they are domestic animals and are fed by man. I mean the wild animals, and I have never found a case of gingivitis in wild animals. There may be cases, but not as a rule. It is under this artificial condition only that we find gingivitis.

In reference to the tooth brush, its use is simply applying Nature's cleansing materials to the mouth. We are not chewing inorganic substances. Our teeth are only intended to masticate vegetable and animal substances, and through contact of these substances to the teeth and gums is Nature's process. That is the reason I object to the use of the stiff tooth brush. I think it is an unnatural process, and I depend

upon the cereal more than the stiffness of the brush. The object in this is to give tone to the gum. What we want is to stimulate the blood supply, and we do this with a cereal carried on a tooth brush, which partially takes the place of the failure to properly masticate proper foods.

We see defects in the teeth that we know are only slight, but that will in our judgment become more serious; and we urge the necessity of these defects receiving prompt attention. We do not place the same importance to defective conditions or disease of the gums. That is why there are more teeth lost in this condition than from caries. As long as a tooth is perfectly sound there is no need of the dentist, but as soon as we see any changed or defective condition we should always be serious with our patient and explain the danger. When the gums are diseased there is something the matter with them, just as much as if there were a dozen cavities in the mouth, and no dentist would allow decay to go on. They would call it imperfection of the teeth. This is simple gingivitis, and it is growing worse instead of better and will ultimately result in the loss of those organs. We want to sound a warning and educate our patients up to this fact and give them to understand that we mean exactly what we say, and the loss of a few teeth with an explanation will probably result in an education that will do much good.

DR. R. R. ANDREWS, Cambridge, Mass.—I have had considerable discussion with Dr. Sargent on the want of use of the teeth by children. It is a fact that children eat too much of soft mush; they do not use the teeth enough, and although it is a very disagreeable habit, I think there would be an improvement of the teeth if the children were encouraged to chew gum. There is no question but what the chewing of gum is a good stimulative process and puts the teeth in a good, healthy condition. Our children do not live right. They are fed on these soft materials and their teeth do not have the use they were meant to have.

There is another thought that occurred to me. Dr. Williams has, without any doubt, demonstrated that there is in the mouth, more particularly on those teeth where the mouth is full of decay, a microscopic form of germ. He has demonstrated that this micro-organism, the leptothrix bacillus, is constantly going to the extremity of the roots, myriads upon myriads. Let any one have a patient take a little iodin and put it around the teeth. I have had patients come to me and ask how they should keep their teeth clean. I told them to brush them morning and night and put a little iodin on and they will be surprised at the result. I think great good comes from the treatment as practiced by Dr. D. D. Smith, of Philadelphia. He takes a piece of orangewood of a V-shape and goes around the teeth inside and outside the occlusal surface. Dr. Smith makes the astounding statement that bad breaths are cured, that a pyorrhea alveolaris is cured. Dr. Smith has under his care a patient who has been treated for two years for pyorrhea, and he has recently been using this treatment, stimulating the gums with this stick, going under the gums as well as cleansing them thoroughly, and he made the statement before the Boston Dental Society that he had never had so much success as he has had with this method after using it only three months. There is certainly something in that. These germs are hidden under the gum, but this stick goes all around and under the gum, thoroughly cleansing it, and in that way he gets rid of a great deal of this injurious matter.

Orthoform Test for Gastric Ulcer.—Mennini states in the *Riforma Medica* of May 18, that it is possible not only to differentiate a gastric ulcer with orthoform, but also to determine its location. After ingestion of one gram of orthoform dissolved in half a glass of water, the pain from an ulcer vanishes in twenty minutes, and does not reappear for three or four hours. The analgetic effect is not experienced in certain cases unless the patient lies in the ventral or dorsal decubitus, according as the ulcer is located in the front or rear wall of the stomach. The orthoform has no effect in cases of simple gastralgia with the mucosa intact. The pain continues uninfluenced by it.

MILITARY DENTAL PRACTICE—ITS MODIFICATIONS AND LIMITATIONS.*

HENRY D. HATCH, D.D.S.

NEW YORK CITY.

What shall the new military practice consist of? What are its limitations and modifications, and how must the conservative civil practice be modified so as to best serve the interests of the army and the individual soldier? These are the questions with which it is the province of this paper to deal.

There are certain branches of dentistry which to-day, as it exists, it would seem wise to eliminate altogether, namely, prosthetic dentistry, orthodontia, crown and bridge work, and gold filling.

Prosthetic dentistry would be impracticable for the following reasons: 1. The appliances necessary for the construction of artificial dentures are cumbersome and would add that much more to an already overburdened transport service. 2. The time required to do such work is more than could be spared, owing to the few surgeons assigned to the service.

That orthodontia would have no place in military surgery is self-evident to any dental surgeon.

Crown and bridge work would hardly be feasible, except, perhaps, at certain army posts, for the reason that to be of any value it must be done with a certain nicety requiring much time, many additional instruments and much expensive material.

Gold filling is placed in this category for much the same reason. Gold filling, to be of any value, must be done under the most propitious circumstances, requiring a good chair, good assistants, dry, clean surroundings, many fine instruments and plenty of time; the item of time is the most important in this case, as, with the present limited number of surgeons, to give the necessary time to one man would probably rob others of needed attention.

Eliminating, then, all the above, there still remains work enough for the most energetic and able men.

THE OUTFIT.

Let us now briefly glance at the positive side of the question. Other things being equal, the dental service will be popular in the army, as it takes up little room, demands few transportation facilities, and adapts itself to the prevailing conditions easily and uncomplainingly. The outfit, then, should be as small as is consistent with good work; everything should be snugly packed and capable of being unpacked and packed again in the shortest possible time. One of the lessons taught by the Boers in their struggle for independence is that the modern army must return to the practice of Julius Cesar, where luggage was reduced to the minimum. A portable headrest attached to an ordinary chair would have to take the place of the ordinary dental chair, except at regular army posts. Anesthetics could be given on the operating table of the general surgeon, or on a cot bed. The instrument case could be mounted on a tripod or a table, and made to take the place of the usual cabinet.

An instrument sterilizer should, by all means, be made a part of the outfit, such as a Sehering formaldehyde sterilizer, or the smaller one as modified by Dr. Stanton of New York, or the formaldehyde sterilizer devised by Dr. Low of Buffalo, which is perhaps more cheaply and easily operated.

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* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

Formaldehyde gas must prove to be the ideal sterilizing agent in military as well as civil dental practice. It requires a very small quantity of spirits to generate the gas. As previously pointed out to the profession by the writer, boiling is the cheapest and most ready method of sterilizing where the nature of the instruments and appliances admits of boiling; but with dental instruments we have the mirrors, which can not be boiled; also corundum wheels, engine hand-pieces and many other things. But whatever the method, it is to be hoped that the dental surgeons will not lag behind the general surgeons in this respect.

OPERATIVE DENTISTRY.

The dental surgeon will at first be most often called upon to relieve pain, either by extracting or treating exposed pulps, alveolar abscesses, etc., and here is where the high character of the men selected by our excellent examining board will have a chance to show itself, and prove to the army and the nation that the modern dental surgeon is something more than a mere tooth-puller.

Extracting may have to be done more often than in civil practice; but by using good judgment and adopting means adapted to the exigencies of the service, extracting may be reduced to the minimum.

Certain pulpless molar teeth, which in private practice would be sterilized and filled to the ends of the roots, might be saved by using some of the mummifying methods—preferably Miller's—always with some filling over it that could easily be taken out, if need be, and the pulp chamber and canals redressed. In certain cases, extracting might be avoided by opening into the pulp chamber at the cervix and waiting until the case could have more thorough treatment. At any rate, root-filling should not be attempted unless the operator has the time and the facilities to do it thoroughly.

In the minds of the laymen, or the common soldier, "nothing succeeds like success," and in the first years of this experiment (for such it is evidently considered by the government) it will be well to undertake nothing which does not promise to succeed.

In extracting and other surgical work it is to be hoped that anesthetics, either local or general, will be used as they would be in civil practice. Even a soldier ought not be called upon to endure more pain than is necessary. Besides, many will be either in the hospital or on the verge of it, when rough treatment and shock might be the last straw. Any tendency to become brutal or rough on the part of the dental surgeon should meet with prompt rebuke or dismissal from the service.

The dental surgeon will have plenty of opportunity to observe and treat diseased conditions of the soft and osseous tissues surrounding the teeth. If they are carefully observed and accurate records kept, much will be added to our meager knowledge of these conditions. The dental surgeon will see conditions caused by both mercury and the need of mercury, and perhaps will be able to get truer histories in the army than out of it.

That dental surgery merges into oral and general surgery, so that a dividing line can hardly be drawn, goes without saying. Hence, it is to be expected that the dental surgeon will have much to do with fractures and gunshot wounds involving the maxillæ. The use of interdental splints made of vulcanite or swaged metal would hardly be applicable in military practice for the reason given above concerning prosthetic work. In their place there could be substituted something after the Angle system of easily adapted bands and ligatures, or an easily made splint consisting of metal bands connected by hard solder to heavy platinum and gold, or iridio-platinum, wire—the piece made loosely fitting on a cast gotten from a modeling composition impression, and cemented in place. An interdental splint, in many instances taking the place of vulcanite, may be made quickly and easily by cooling and trimming two side "bites" of modeling composition. In cases of resection of a considerable portion of the inferior maxilla, such a side "bite" of modeling composition, put in place immediately, answers an excellent purpose.

IDENTIFICATION BY THE TEETH.

For the purposes of identification, after disaster by fire or flood, or other causes, where clothing is destroyed or the soft parts decomposed, experience has proved that identification by the teeth is the only reliable one. The condition of the bodies after the disaster to the battleship *Maine*, and after the catastrophe of Bazar de la Charité in Paris, May 4, 1897, and in many other instances, prove this. Therefore, it is urged that the Government be memorialized to the effect that all officers and men in the army and navy, and all who shall be mustered into the service, shall have charts and casts made of their teeth by the dental surgeons of the army, or others appointed for the purpose, such charts and casts to be properly inscribed and filed with the proper departments for reference in case of death or desertion.

It would seem that with the training the dental surgeon has received in aseptic methods and in minor surgery, he might be an excellent assistant to the general surgeon in emergencies, after battles, etc., thereby tending to promote mutual regard, and a better understanding between the two professions, now separate, but destined to become one.

OPENING DISCUSSION ON "MILITARY DENTAL PRACTICE—ITS MODIFICATIONS AND LIMITATIONS."*

JOHN S. MARSHALL, M.D.
PRESIDENT EXAMINING BOARD DENTAL SURGEONS, U. S. ARMY.
ST. PAUL, MINN.

The passage of the Army Reorganization Bill with its section creating a Corps of Dental Surgeons for the U. S. Army, makes an epoch in the history of modern dental surgery; an epoch which has never had its counterpart before in the history of the world, the influence of which is destined to be far-reaching in its beneficent results, and of great importance in the elevation of our educational and professional standards.

When we take into consideration the fact that modern dentistry covers, in its growth and development, a period less than the lifetime of many individuals, we have good reason to be proud of its achievements. Sixty years ago there was no such thing in existence as a dental college; a dental journal had not been thought of, or a scientific dental society organized. The practice of dentistry at this time was, with few exceptions, in the hands of the barbers and blacksmiths. The few earnest scholarly men who had entered its ranks were desirous of lifting their specialty out of its low estate, and by education and scientific training make of it an honorable and worthy calling. In this endeavor, however, they met with no encouragement at the hands of their confrères in the medical profession, but, nevertheless, with these great odds against them, engendered, not by malice, but by the narrow view taken by those unfamiliar with the capabilities and possibilities of devel-

* See preceding article.

opment which lay in this infant specialty, they moved forward and laid the foundations of what has proved to be one of the greatest specialties in the whole field of medicine.

We have special reason for congratulation also in the fact that the Congress of these United States was the first legislative body in the world to formally recognize the *value* and *need* of the beneficent services of our specialty as a department of military medical practice, and that we have been given an opportunity to prove the wisdom of its action to our country and the world.

The whole question, however, of placing dental surgeons in the Army was looked upon by many of our national legislators in somewhat of the light of an experiment, and in a certain measure this is true of the War Department and of the Surgeon-General. For this reason, when the bill was framed it was thought best to provide for the organization of the dental corps upon the contract system, as by this system it would be an easy matter to discontinue it if it should prove unsuccessful; while upon the other hand, if its service was a success, and found to be an indispensable part of Army medical practice, the Corps could be made permanent by amending the law so as to make its members commissioned officers.

The examinations of the Dental Corps and the selection of the outfits have been placed in the hands of an Examining and Supervising Board of Dental Surgeons, subject to the approval of the Surgeon-General and the Secretary of War. These officers have invariably sustained the Board in all of its work; have given them every facility asked for, and rendered every assistance possible in planning the organization of the Corps and insuring its future success in the field.

European nations will be interested in the plan of organization of our Army Dental Corps, of its personnel, and the results of its professional services. Upon the success or failure of this enterprise will depend in a large measure the introduction of a similar service into the armies of other nations. It is to be hoped, therefore, in the interests of humanity that it may prove successful.

I have been interested in reading the paper of the essayist, and feel like complimenting him upon his apparent grasp of the subject under discussion. His suggestions as to the modifications and limitations of military dental practice are in many respects good, but it will not be necessary to confine Army practice within such narrow limitations as he has outlined.

The general suggestions which he has made and many more of a specific nature have formed the subjects of much earnest consideration upon the part of Surgeon-General Sternberg and the Examining and Supervising Board, and not until each question has been carefully weighed and the consequences of its adoption or rejection examined from all standpoints, has final action been taken. The progress of organization has been necessarily slow, for there were no established precedents to guide the Board in its actions, and no past experience to enlighten it. It has, therefore, been obliged to begin its work at the very foundation, striving to lay this *firm* and *sure*, and then gradually to rear upon this the superstructure of a finished organization. The organization of the Dental Corps is yet in the experimental stage; the authorities must therefore carefully feel their way and adapt the service to the peculiar demands of military life and movements, making such changes from time to time as experience and foresight shall dictate.

With the approval of the Surgeon-General, I herewith present in brief outline the plan upon which the Army Dental Corps is organized. This outline comprises:

1. The official status and pay of the Army Dental Surgeon.
2. Examination of candidates.
3. Assignment to duty.
4. Regulations governing the Dental Corps.
5. The supply table.
6. Nosological table and system of keeping records.

THE OFFICIAL STATUS.

The Army Dental Surgeon belongs to the regular establishment, and according to the law which created the Corps, he will serve the officers and enlisted men of the regular and volunteer armies. He is employed as a Contract Dental Surgeon, having the *relative* rank of a first lieutenant. His pay is $150 per month, and quarters when serving with troops. All instruments, apparatus and materials are furnished by the Medical Department that are necessary for conducting his practice and performing his official duties.

THE EXAMINATION OF CANDIDATES.

The examinations consist of *a*, physical condition; *b*, written and oral questions upon the studies of the dental college course; *c*, practical demonstrations in operative dentistry; *d*, practical demonstrations in prosthetic dentistry.

a. The physical examination is conducted by an army surgeon detailed for this purpose, and upon the same general lines as those in vogue for entrance into the other departments of the Army. Perfect health and freedom from physical defect are necessary to pass this examination; but defective eyesight which can be corrected by appropriate glasses does not debar the candidate.

b. Written and oral examinations are conducted upon the following-named subjects, and the candidate must attain a general average of 75 per cent. upon each of them: Anatomy, physiology, histology, chemistry, physics, metallurgy, dental anatomy and physiology, dental materia medica and therapeutics, dental pathology and bacteriology, orthodontia, oral surgery, operative dentistry, prosthetic dentistry.

c. The practical examination in operative dentistry consists of the following: 1. Examination and recording the condition of the mouth and teeth. 2. Preparation of cavities, 1, by hand instruments; 2, by engine instruments. 3. Instrumentation and technique. 4. Preparation and manipulation of filling materials: gold, tin, amalgam, gutta-percha, oxyphosphate, cement. 5. Insertion and finishing of fillings. 6. Treatment and filling of root canals and preparation of root for pivot crown. 7. Manipulative technique in removal of calcarious deposits. 8. Application of rubber dam, metallic separators, matrices, etc. 9. Diagnosis, prognosis, and treatment of oral diseases. 10. Care of and sterilization of instruments and hands.

d. The practical examination in prosthetic dentistry comprises: 1. Impressions, casts, bite and articulation (occlusion). 2. Construction of denture in vulcanite. 3. Construction of dies and counter-dies from impression to completion. 4. Construction of swaged plate, with metal and rubber attachment. 5. Construction of inter-dental splints. 6. Construction of Richmond crown.

Upon all clinical or practical demonstrations the candidate must attain a general average of 85 per cent.

The reason for this higher requirement in the practical branches is made evident by the statement that practical men are needed in the service, not theorists. But it may also be stated that practical ability alone would be of little value in military dental practice. The dentist to be successful in this new field of practice must be thoroughly informed upon all those subjects and theories which form the foundation of modern dental surgery. He will need to be self-reliant and capable of conducting any case that may come under his especial care, no matter how serious it may be, for he will many times be so located that he can not obtain the advice of a consultant in his specialty; while, upon the other hand, he may be, and that frequently, called in by the post surgeon as a consultant in cases which present oral or dental lesions; or which by reason of certain symptoms the surgeon is led to believe may be dependent upon some obscure dental or oral malady, and upon which he desires an expert opinion to assist him in an intelligent treatment of the case.

ASSIGNMENT TO DUTY.

As rapidly as the candidates have passed the Examining Board they have been assigned to service in the Philippines and Cuba, for the reason that our troops located in tropical climates are in the greatest need of the services of the dentist. When these demands are satisfied in one location the dentist will be assigned to another station and thus moved about from place to place, wherever his services are most urgently needed. The number of dentists is so few, thirty in all, and the army so large, something over seventy thousand, that there is likely to be an abundance of employment for all those who enter this service. The opportunity, however, for a large and varied scientific and practical experience along professional lines, offered by the establishment of the Army Dental Corps, will be very great, and ought to prove a tempting inducement to the really progressive young man.

REGULATIONS GOVERNING THE DENTAL CORPS.

The following regulations having received the approval of the Honorable the Secretary of War, become, with the General Regulations bearing upon officers of the Army, the law governing contract dental surgeons:

Candidates for appointment as dental surgeons must be not less than 24 nor more than 40 years of age. They must be graduates of standard medical or dental colleges, trained in the several branches of dentistry, of good moral and professional character, and prior to appointment will be required to pass a satisfactory professional examination before a board of dental surgeons convened for that purpose by the Secretary of War.

Contracts with dental surgeons will be made for three years, but may be annulled at any time by the commanding general of a military department, after official investigation, for conduct to the prejudice of good order and military discipline, or by the Surgeon-General when in his opinion a termination of the contract would be in the interests of the service.

Dental surgeons are attached to the medical department and will be assigned to duty in accordance with the recommendations of the Surgeon-General of the Army or the chief surgeon of a military department.

A dental surgeon when assigned to a station will apply to the post commander for a suitable operating room. If no other room is available the surgeon of the post may assign him a room in the hospital.

Each dental surgeon will ordinarily be allowed one enlisted man as an assistant, who will be detailed from the acting hospital stewards or privates of the Hospital Corps, and whose duty it will be to assist the dentist in his operations, in caring for the instruments and other public property, in keeping the records, and in the performance of such other official work pertaining to this position as he may be directed by the proper authority to do. When a member of the Hospital Corps is detailed as dentist's assistant he will receive commutation of rations at the rate of $1 daily, and will be provided with a suitable room as quarters by the Quartermaster's Department, except while on duty at a post, when he will be attached to the Hospital Corps or other organization for rations and quarters. Necessary dental instruments and supplies will be purchased by medical supply officers under instructions from the Surgeon-General and in accordance with a supply table to be approved by the Secretary of War.

Dental surgeons will be held strictly responsible for all instruments and supplies issued to them and will be governed by army regulations and orders now in force, or hereafter to be issued, with reference to accountability for government property.

In accordance with the act of Congress authorizing their employment, dental surgeons will "serve the officers and enlisted men of the regular and volunteer army." The families of officers and civilian employees attached to the army are not entitled to their services. In this connection acting assistant surgeons are to be regarded as commissioned officers.

Dental surgeons will operate between the hours of 9 a. m. and 4 p. m. only upon those officers and enlisted men who are entitled to their services. They may operate upon others not entitled to free service before and after these hours when their services are not required by those entitled to them, but material issued to them by the Government will only be used in operations upon officers and enlisted men of the army.

Dental surgeons will not perform any operation upon officers or enlisted men of the army or prescribe medicines for them other than those necessary for the treatment of the teeth and gums. This prohibition does not apply to cases of emergency where no medical officer is within reach, and where a dental surgeon is able to render the necessary surgical assistance to meet the immediate emergency.

Emergency work, whether for officers or enlisted men, should always have precedence. Plate work or restoration of teeth by any method will only be done for those who have lost teeth in the service and in the line of duty. For plate work or filling teeth only the cheaper materials will be supplied, but gold may be used, if the operating dentist sees fit to use it, at the expense of the individual operated upon.

Enlisted men requiring the services of the dental surgeon will, at an hour prescribed by the commanding officer, be conducted to the designated place under a non-commissioned officer, who will take with him and hand to the dentist a list of those reporting for treatment. This list will be entered in a daybook ruled in columns for surname, given name, rank, company, regiment, etc.; all headings to be the same as those borne on his monthly report.

All cases requiring treatment involving future appointment will be so noted, and the others will be marked according to the circumstances, as "treatment unnecessary," "further treatment unnecessary," "should be sent to the surgeon," etc. When future treatment is necessary the dentist will forward a card as follows:

.....19....

The Adjutant,

.....

Sir:—I have the honor to ask that.....

be directed to report to me from ....m. to ....m. on ..... instant for treatment. Very respectfully,

....

Dental Surgeon.

Dental surgeons will submit a monthly report in duplicate (on prescribed blanks) of all official work done by them, giving all required data in every case in which professional services have been rendered. This report will be an exact copy of the register kept for the period. One copy will be sent on the last day of the month to the Surgeon-General and one to the chief surgeon of the department in which the dental surgeon is serving.

THE SUPPLY TABLE.

This table is too long to present in this place, but it may be stated that it includes a portable dental chair and a dental engine, packed in separate cases; burrs, mandrels, stones, discs, etc. Excavators, chisels, scales, plastic pluggers, gold pluggers, rubber-dam clamps, clamp forceps, dam punch, extracting forceps, elevators, steam sterilizer, etc., in fact all of the instruments and adjuncts that are really necessary to perform any operation upon the teeth, except for crowns and bridges. Each outfit contains medicines and supplies of filling material sufficient for three months' service. The smaller instruments and the supplies are packed in two strong cases, arranged with trays and receptacles to hold the instruments and supplies in place. The whole outfit when cased and crated weighs about 450 pounds. To protect the cases from rain and dampness they are enclosed in canvas covers. The general hospitals, and such other posts as may be designated by the Surgeon-General, will be furnished with an additional outfit, consisting of a regular office operating chair, Allan bracket, cuspidor, instrument case, extra extracting forceps, and a full laboratory outfit for constructing vulcanite plates, swaged metal plates, interdental splints, crowns and bridgework.

NOSOLOGICAL TABLE AND SYSTEM OF KEEPING RECORDS.

The ordinary system of keeping records in civil practice, by means of charts, could not be employed in military practice, for the reason that it would occupy too much space. As a substitute for this the following system has been devised and has received the approval of the Surgeon-General:

DISEASES AND INJURIES OF THE TEETH AND MOUTH.

Abrasion (mechanical).
Abscess of the jaws (associated with impacted teeth).
Calcification of the pulp.
Caries.
Cysts of the jaws (associated with devitalized teeth).
Dento-alveolar abscess.
Erosion (chemical).
Fractures of the teeth.
Hemorrhage (following extraction).
Hypertrophy of the pulp.
Hypertrophy of the gums.
Hypercementosis.
Necrosis of the teeth.
Pericementitis, acute.
Pericementitis, chronic.
Pulpitis, acute.
Pulpitis, chronic.
Pyorrhea alveolaris.
Resorption of the alveolar processes.
Salivary deposits.

Note: The duties of the dental surgeon will ordinarily be confined to the treatment of such cases as are directly associated with the teeth and gums; but occasions may arise when his services would be required as a specialist in the treatment of diseases and injuries of the mouth and jaws, such as cysts of the salivary ducts, empyema of the maxillary sinus, fractures of the jaws, gingivitis, necrosis of the jaws, facial neuralgia, stomatitis and tumors of the gums and jaws, etc.

CLASSIFICATION OF THE TEETH.

1. Superior Central Incisors.
2. Superior Lateral Incisors.
3. Superior Cuspids.
4. Superior 1st Bicuspids.
5. Superior 2nd Bicuspids.
6. Superior 1st Molars.
7. Superior 2nd Molars.
8. Superior 3rd Molars.
9. Inferior Central Incisors.
10. Inferior Lateral Incisors.
11. Inferior Cuspids.
12. Inferior 1st Bicuspids.
13. Inferior 2nd Bicuspids.
14. Inferior 1st Molars.
15. Inferior 2nd Molars.
16. Inferior 3rd Molars.

In designating the teeth, and in recording all operations upon them, the dental surgeon will indicate the tooth by the following plan, using the letters R. and L. to designate the right and left sides, and the figures 1, 2, 3, etc., to designate the tooth. Examples: R. 1. Right Superior Central Incisor; L. 14, Left Inferior First Molar.

CLASSIFICATION OF CAVITIES.

Simple cavities on exposed surfaces.

Incisors and Cuspids.	*Bicuspids and Molars.*
A. Labial.	D. Morsal.
B. Lingual.	E. Buccal.
C. Morsal.	F. Lingual.

Simple Approximate Cavities.

Incisors and Cuspids.	*Bicuspids and Molars.*
G. Mesial.	I. Mesial.
H. Distal.	J. Distal.

Compound Cavities.

Incisors and Cuspids.	*Bicuspids and Molars.*
K. Mesio-labial.	R. Mesio-morsal.
L. Disto-labial.	S. Disto-morsal.
M. Mesio-lingual.	T. Morso-buccal.
N. Disto-lingual.	U. Morso-lingual.
O. Mesio-morsal.	V. Mesio-disto-morsal.
P. Disto-morsal	W. Bucco-linguo-morsal.
Q. Mesio-disto-morsal.	

In recording all operations of filling the teeth, the cavity will be described by the dental surgeon according to the preceding classification, using the letters A, B, C, etc., to designate its location.

Example: A Simple cavity in labial surface of an incisor or cuspid tooth. I—Simple cavity in mesial surface of a bicuspid or a molar. V—Compound cavity in mesial, distal and morsal surfaces of a bicuspid or a molar.

Classification of Filling Materials.

Tin.
Amalgam.
Oxyphosphate,
Gutta-percha.

The kind of filling material employed will be indicated by using the first letter of the word designating that material.

Example: R. 5 Q. A. Tooth, right superior 2nd bicuspid; cavity, mesio-disto morsal surfaces. Filling material, amalgam. If a combination filling is employed it will be designated by the first letters of the words designating the materials used. *Example*: L. 7. S. G.-O. Tooth, left superior 2nd molar; cavity, disto-morsal surfaces. Filling material, gutta-percha and oxyphosphate cement.

Exception: The only filling materials furnished for the use of the dental surgeon by the Medical Department are those enumerated above. Gold, however, may be provided by the dental surgeon and inserted for those officers and enlisted men who are willing to reimburse him for its cost. The minimum fee to be $1, and the maximum $2, for such filling.

In recording operations made with *gold* the full word should be written out.

Other operations upon the teeth will be designated by a combination of letters, as follows:

Abscess Lanced—A-L.
Calculus Removed—C-R.
Pulp Devitalized—P-D.
Pulp Extirpated—P-E.
Root-canal Filled—R-F.
Tooth Extracted—T-E.
Tooth Treated—T-T.

One hundred of these record sheets are bound in a book, and form the Register of Dental Operations. Each month the dental surgeon is required to send to the Surgeon-General an exact transcript of the Register of the operations performed during that month, upon blank sheets known as the Monthly Record of Dental Operations. These reports are placed on file for future reference. The Register when filled is transmitted to the Surgeon-General and also placed on file.

These records will form an important means of identification in casee of death or desertion, while to the Pension Office they will prove of value in passing upon those applications for pension which are based upon the loss of teeth while in the service of the United States Army.

They will also prove to be of immense value from the scientific standpoint, in efforts to settle the questions of the relative prevalence and spread of dental caries among men who have been selected for military service, because of their perfect physical condition; as compared with men in civil life. Of the relative increase in this disease resulting from physical and nervous strain of severe campaigns, and of residence in tropical climates. Of the causes and prevalence of pyorrhea alveolaris, gingivitis, stomatitis, and kindred oral affections.

It will be noticed by the Regulations governing the Army Dental Surgeons and the rules laid down by the Surgeon-General, that the only filling materials which will be furnished by the government are tin and the *plastics;* but the dentist is not prohibited from using gold, if the officer or the enlisted man is willing to reimburse him for the material used. (This material he must carry with him at his own risk.) In fact, he is encouraged to use gold by being furnished with instruments and appliances with which to perform this class of operations. He is, furthermore, furnished with an acting hospital steward, whom he is expected to train as an assistant. With such intelligent assistance as this, there is no reason why as good gold fillings may not be inserted by the military dental surgeon as by the dentist in civil practice.

The character of the service which must be rendered in the field, will of necessity be that of meeting emergencies. Relief from suffering will be the first object of the treatment, and the introduction of temporary fillings to protect the teeth from further decay until a more favorable opportunity can be secured for inserting a permanent filling.

The dental surgeon will, however, as a rule, be located at posts and stations of a more or less permanent character, where he can conduct his practice with as much care and thoroughness as is possible with the civil dental surgeon.

Each field outfit is provided with a quantity of modeling composition and impression trays, so that fractures of the maxilla can be treated temporarily by interdental supports made from the modeling composition, while the patient is being transported to the general hospital, where facilities will be found for constructing any form of interdental splint or other mechanical apparatus that might be indicated.

The army dental surgeon is expected to confine his professional services to the treatment of the diseases of the teeth and their associated parts, but the regulations provide that in cases of emergency, when no surgeon is present, he may, if competent, render any assistance that the case may demand.

The dental surgeons located at general hospitals and large posts will be furnished with as good and as complete an outfit for a general dental practice as is found in the offices of the best civil practitioners. At such stations the dental surgeon will have frequent opportunities for the treatment of cases in orthodontia for the children of the officers of the station, or inserting crowns, bridges, and artificial dentures, for the officers and enlisted men, and for their families; while the general hospitals will furnish a certain number of cases of fractured maxilla, that will need to be treated by the construction and insertion of some one of the various forms of interdental splints.

From the foregoing pages it will be seen that the War Department, through the recommendations of the Surgeon-General, has provided for the care and the treatment of the dental and oral diseases of the Army in as thorough and as scientific a manner as is possible under the exigencies of military life and movements. Experience, however, may make it necessary to institute certain changes and modifications in the present system of service, and when such action is proved to be essential to the welfare of the army and an increased efficiency of the Corps, there is no doubt but that the proper authorities will immediately institute such changes and modifications.

DISCUSSION ON MILITARY DENTAL PRACTICE.

DR. A. E. BALDWIN, Chicago—I have been very much interested in this branch of our professional world ever since the talk of its organization in the army has been before us, and especially have I been interested the past year when active steps have been taken towards carrying out this plan. I was pleased with Dr. Hatch's presentation of the subject, and I am much pleased with the discussion, or rather the supplemental paper, given us by Dr. Marshall in connection with this. I feel and have felt from the beginning that the profession at large would be very well represented, in fact, better represented by Dr. Marshall on that Board as an organizer of this branch of army life than any man I know. I have known him for a great many years and sat under his instruction years ago as a student. I have never seen a man who would grasp, arrange and organize matters in the minutest details like Dr. Marshall, which is shown in this paper. I think the army is to be congratulated, and especially the surgeon-general upon having such a man in his department; I shall look with a great deal of interest for the results of this work.

DR. CHARLES CHITTENDEN, Madison, Wis.—As an examiner of a number of years' experience, it seems to me it would have been impossible at the first attempt for any Board to have laid out a more practical, complete scheme than that presented here to-day. It fills me with admiration and delight. It is a movement in the direction that shows that such men in our profession as have been put into prominence in this way are equal to the occasion. It makes me proud of the fact that we have got such men. I think we are to be congratulated upon the work of this Board as far as it has been carried on.

DR. EUGENE S. TALBOT, Chicago—It occurred to me after that bill was passed that the profession knew very little about the work to be done by the dentist appointed to fill the position in America's new possessions. It is very gratifying to know that Dr. Marshall has received that appointment. The fact that so few men have been appointed or accepted who have applied, augurs well for the standard the Board has adopted. They have already stirred up quite a little commotion in dental journals. Editorials have been written in dental journals and letters have been received showing there is uneasiness. The average dental teacher is of the opinion that all there is of dentistry is simply the filling and extraction of teeth. It is very fortunate for education of the profession that this law has been passed and a number of dentists sent to the field to attend to soldiers. The work of filling teeth is a very small part of the work these dentists are called upon to perform. It has been shown not only in Cuba, but in the Philippines that many diseases, especially gingivitis, affect the jaws of people who suddenly change climate. It is due to the manner the excretory organs are affected by the sudden change of climate, the jaws and teeth become involved, and in a very short time, sometimes in the course of a few weeks, inflammation sets in, the teeth become loose and in many cases drop out. Such conditions appear in the report that Dr. Marshall has made. The fact that a dentist is expected not only to fill teeth and make plates but to perform other duties, ordinarily within the scope of a physician or surgeon, demands that dentists be properly educated along these lines. The average physician has to be posted in the

treatment of those apparently new diseases. A man to treat these cases intelligently must understand general medicine. Just how far a dentist would be allowed the conduct of these cases and give treatment remains to be seen. The conditions shown by Dr. Marshall makes it evident that dental colleges will have to advance their course in pathology and that a four years' course is now necessary.

THE TONGUE AS A BREEDING PLACE FOR BACTERIA.*

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CINCINNATI, OHIO.

The accompanying photomicrographs of sections of the human tongue show it to be covered with glands, fissures, and spinous processes, the latter slanting at a great angle. It is evident that this surface may hold pabulum and protection for the development and growth of myriads of bacteria. It is possible that cavities in the teeth, and gums diseased from deposits about the teeth, are more prolific, but probably not.

Out of the "seven nutrient media for bacteria in the oral cavity" given by Miller, five are always present on a coated tongue, namely, normal saliva, buccal mucus,



Section of Human Tongue.—X 75. aaa, Filiform papillæ; b, mucous membrane; c, muscular tissue; d, circumvallate gland.

dead epithelium, particles of food, and exudations from diseased gums.

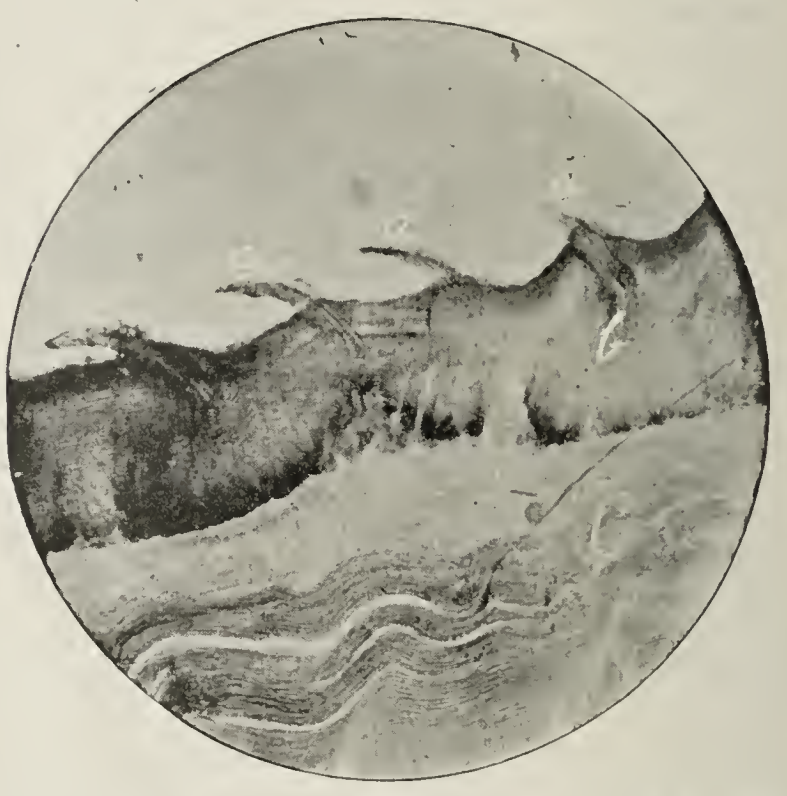
Formerly physicians were very careful about the examination of the tongue, but at present the diagnostic value of its coating is largely disputed. On the other hand, some of the best physicians make the tongue the principal basis of their diagnosis, especially in gastro-intestinal troubles. But the tongue as a breeding place for bacteria is properly attracting more attention at present and cannot justly be ignored.

Van Valzah-Nesbet has said: "The tongue is not a mirror of the stomach, as the ancients supposed, but is a local mirror which reflects only that which comes over its surface."

Dr. A. L. Russell says: "The color is due to the pearly color of the cornified epithelial cells covering the papillæ; to retained particles of food, and the debris of micro-organisms, broken down epithelium and mucus. The color of the organ proper is quite as important as its motions, contour, lesions and coating. It is well to remember that in perfect health there is usually a slight, uniform coating of a whitish color diffused over the entire tongue, and that towards the base of the tongue in the region of the circumvallate papillæ there is always a heavy coating, which is increased with any increase of the normal coating of the anterior portions."

Hare says: "The coating may be black from the ingestion of iron, charcoal, bismuth, ink, berries, cherries, or red wine. It may be stained brown from tobacco, licorice, nuts, prunes or chocolate. It may be yellow from the ingestion of rhubarb or laudanum."

F. Forcheimer says: "In some cases the tongue is of great clinical importance and in many others its examination for diagnostic purposes is without value. It goes without saying that no case has been completely examined unless the mouth has been looked into, and yet in a great many cases nothing is gained by this examination. . . . The tongue is affected as the result of local and general conditions. . . . The changes that take place are in the direction of size, shape, color, coating or fur. The blood affects the color of the tongue, as a whole, more than any other



aaa, Filiform papillæ; b, mucous membrane; c, muscular tissue.

cause. The furring of the tongue is that portion of our subject which has been most studied. The fur upon the tongue is, when examined microscopically, seen to be made up of epithelial cells, molecular detritus, and organisms of various kinds, held together by mucus. The organisms are those usually found in the mouth; sometimes we find pathogenic organisms, most frequently the pneumococcus and pus producers. In long-continued fevers, in which the absence of moisture is the predominating cause, we have a peculiar condition of a dry white fur, quite thick and adherent. When there is not sufficient movement of the tongue there results a fur, because fewer of the old cells are removed than would be under normal circumstances. In paralytics we constantly see a furred tongue. The place of deposit of this fur depends very much upon the size and shape of the tongue; where the tongue does not come in contact with other parts of the mouth it will be thick, at the edge it will be rubbed off, leaving a red outline. The most ludicrous mistakes occur to those who overlook the fact that particles of food and medici-

* Read in the Section on Stomatology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

nal agents give their color to the fur; rhubarb produces a beautiful liver tongue."

The concensus of opinion of the foregoing investigators seems to be that the coatings of the tongue are local and not indicative of any particular disease, and that the mass contains large quantities of bacteria. These coatings may be accounted for as follows:

The dorsum of the tongue, with its processes, glands, fissures and rough, horny surface is most favorably constructed for holding detritus from its own surface and from other parts of the mouth, also small particles of food and tartar; but the great factor of the formation and persistence of this coating is mucus. The coating forms at times into almost a membrane. This is due to the cementing qualities and the insolubility of the mucus discharged into the mouth.

The easily and quickly forming cakes of mucus in the nostrils is accounted for by the continuous passage of air over its surface, drying it rapidly, carrying dust and foreign matter into its substance which becomes imbedded, producing black, yellow, gray, or other color, dependent upon the character of foreign particles with which the air is freighted. The surface exposed to the air becomes hardest; that next to the membrane is softer. When the mucus finally dries and shrinks, it breaks into patches, curls and drops away, or is removed.

The mucus of the mouth, when separated from the more fluid portions of the saliva, is just as strong a cementing agent as that of the nostrils, and holds the particles of food, dead epithelial cells and tartar into a mass or layer, covering the rough surface of the tongue, also cementing the coating to the slanting, filiform processes, and to the uneven surface. Under this layer the mucus is continually secreted; and the desquamation of epithelium goes on; thus the layer is continuously added to from below as well as from above.

The upper surface of the layer being constantly wet has no opportunity to become dry and break up into patches as in the nose. In persistent mouth breathing it may occur, or portions of the coating may be removed mechanically, producing what is called "patchy tongue." Mouth breathing rapidly drives the water from the saliva, leaving the mucus and causing it to stick the closer and make the layer thicker and more persistent.

Such systemic disorders as tend to produce fever have their effect upon the mucous membrane, among the first of which is the "dry stage." In this stage the mucus is thicker, less abundant and dries quicker. This is as true of the dorsum of the tongue as of any other mucous membrane, hence the coating is usually pronounced and well formed by the time the physician is called to see the patient.

The color of the coating is largely effected by the incorporation of blood from different parts of the mouth, most frequently from bleeding gums, a condition found in a large percentage of people at all times, or it may be colored from many sources as cited, and not unfrequently from bacteria. Miller has cultivated a number of chromatic mouth-bacteria.

In addition to personal observation the foregoing would seem strong evidence to convince one that the coatings of the tongue are from local causes, but may be favored and increased by febrile conditions which precede or accompany almost every bodily ailment. Lack of cleanliness and mouth breathing are undoubted and prolific causes.

The danger from unclean tongues and mouths containing decayed teeth and diseased gums are graphically set forth by Miller. He says: "From a neglected mouth, such as repeatedly comes under the observation of dentists, enormous quantities of bacteria must reach the intestinal tract, in spite of the sterilization of food. In a very unclean mouth examined for this purpose I estimated by culture methods the number of cultivatable bacteria at 1,140,000,000; many of them were doubtless carried to the stomach during every meal, to be replaced by others developed between meals and over night."

Von Kaczorowiski proves clearly enough that the micro-organisms in an unclean mouth, quite independent of those introduced with the food and drink, suffice to produce intense fermentive processes, chronic dyspepsia, etc.

Even with decayed teeth and diseased gums to breed bacteria in great numbers, the dorsum of the tongue still presents the largest surface for their growth; and if it is not cleaned once or twice a day (which practically no one does) it is one of the greatest of all places in the mouth for breeding bacteria.

The mucus which cements the layer of sordes upon the tongue and lips is not soluble in water, ether, alcohol, chloroform, or dilute mineral acids, but is soluble in alkaline solutions, and since nearly all of our food is either acid or neutral, and not one in thousands thinks of scrubbing the tongue as a matter of cleanliness and protection, it certainly is a source of danger and infection, and an undoubted condition for perpetuating disease, especially with invalids.

In order to test the solubility of mucus in alkaline solutions, try scrubbing the tongue with a toothbrush filled with powdered biborate or bicarbonate of soda, and notice how the coat disappears. (Biborate is the least disagreeable.) Protrude the tongue and scrub it from back to front until the coating is removed. When the tongue is to be examined for diagnostic purposes this should be done so that the real color and condition of the tongue can be examined. Then the diagnostic features will be visible and of undoubted value. The use of the brush is much better than to scrape the tongue with a hard instrument. Ordinary tooth powders are not satisfactory because the finely pulverized chalk or other earthy matter remains on the tongue like food and dead epithelium, and the real condition and color of the surface is still unexposed for inspection. Coarse powdered borax or cornmeal, or the two mixed, form a coarse detergent powder very efficient for this purpose, as well as for cleaning the teeth and gums.

A clean mouth undoubtedly prevents much fermentive and putrefactive indigestion, not to mention its comfort and the prevention of tooth decay and diseased gums.

Animals keep deposits from the tongue by its use as a prehensile organ, and by licking their bodies and other substances. Then the saliva of animals in their native state is decidedly alkaline in reaction, and keeps the mucus dissolved much better than does the human saliva. The latter is either acid or very weak in alkaline reaction, a condition accompanying civilized life, and may be found in animals kept as pets or in confinement and fed upon prepared foods.

There is probably no way of estimating the great immunity brought about by keeping the mouth and all it contains perfectly clean. As a prophylactic measure no physician can afford to neglect it, either for himself or his patients.

DISCUSSION ON PAPER OF DR. FLETCHER.

DR. EUGENE S. TALBOT, Chicago—I differ with the essayist in regard to the cause of the coating of the tongue.

Dr. Kiernan, in his paper yesterday, alluded to the alimentary canal in the development of the child. He pointed out

that the alimentary canal and rectum were structures completed later in development; that is, that other structures of the body were perfectly developed before the alimentary canal and rectum. That is precisely the condition I have noticed in children. As shown the condition results from this abnormal state of the alimentary canal. This condition called indigestion is very common among neurotic and degenerate children. Neither neurologists or clinicians view it as a local condition. I believe that probably food is taken by the child which does not assimilate in the alimentary canal; hence, the small intestine does not perform its function and markedly furred tongue results. I have frequently seen this condition occur as often as four times yearly in a child. While food has a good deal to do with it, the assimilative and excretory organs do not harmonize in their action and constipation results. I do agree with Dr. Fletcher in regard to the treatment of these conditions. Local treatment will help greatly in clearing up the tongue, especially after the alimentary canal has been put in normal condition. Scraping the tongue may be done well, either with an instrument made for the purpose or with a stiff tooth-brush. Stimulation has most to do with the results. Frequent clearing up of the tongue results after brushing and stimulating it into a healthy condition.

DR. G. V. I. BROWN, Milwaukee, Wis.—It seems to me the essayist has given us a partial proof. What he says concerning the effects of month-breathing upon the mucous membrane of the tongue is true in a measure, but if it were entirely true I think we would notice greater changes in the structure of that membrane in patients who are chronic mouth-breathers. While there are quite small changes in the mucous membrane, particularly in the nasal passages, that of the mouth is not materially altered, so far as its permanent form is concerned. I think you all know that I am rather partial to the use of hydrogen dioxid to prepare the mucous membrane for the action of the antiseptic which you are going to use. You may not depend upon the dioxid as an antiseptic *per se*, but there can be no difference of opinion as to the value of preparing the mucous membrane by using that and then following with any germicide solution. In the treatment of patients with cleft palate and other operations of the mouth, the cleansing of the mouth every half-hour, in addition to repeated washing through the nose, perhaps once or twice a day, is a matter of vital importance, and is beneficial in two different ways: One is that the effect of the germicide used is constructive to the mucous membrane, and serves on the other hand to destroy the poisonous effects of the use of the germicide which is of a nature to be destructive upon living tissue of any kind, so I have come to use the dioxid, a 3 per cent. solution, and carbolic acid alternately, using one each half-hour, and getting good results in that way.

DR. A. E. BALDWIN, Chicago—I have little to say, only that I was glad to listen to the paper, and it shows a line of investigation that could be made productive of results. I have long thought that the mucous membrane of the mouth is perhaps more pathognomonic than we have given it credit for, but how far the investigation, as given in the paper, turns that way, I am not prepared to say. I have in a quiet way followed the investigation as carefully as possible in the mucous membrane of the mouths of my patients, observing them very carefully, but so far I have obtained no results that I feel would be proper to present before this Section.

Duration of Pregnancy.—According to the German laws the maximum duration of pregnancy is estimated at 302 days. Winckel has been reviewing the statistics of the Dresden and Munich maternities and finds that 1007 children are recorded among the 30,500 births during the last thirty years, who measured 48 to 52 cm. in length and weighed 4000 gm. Of this number 233 or .4 per cent. were born after the pregnancy had lasted from 303 to 336 days, showing that in case of unusually large children the duration of the pregnancy is longer than the laws admit. He mentions that none of the children ever weighed as much as 6 kg. at birth, and none at Dresden during the last eleven years weighed even 5 kg.—*Sammlung Klin. Vortraege*, 292.

A CONTRIBUTION TO THE SURGERY OF THE KIDNEY.

TWO CASES OF DISEASE OF THE KIDNEY SIMULATING GALL-STONES.*

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CHICAGO.

The surgery of the kidney is much neglected in general practice on account of the difficulties of diagnosis which the surgical diseases of this organ present. The organ itself is hidden in the back. Its exploration through a mid-abdominal incision is unsatisfactory. The urine does not always present a suggestion of the condition of the kidney. The symptoms often lead the physician astray. Two such cases in my own practice seem to me worthy of record as a warning.

When we approach any diseased abdomen, our attention is fixed more or less intently on certain luminous spots, toward one or more of which the symptoms course or the findings almost inevitably point. The spots are the appendix, the gall-bladder, the pylorus, the kidneys and the appendages of the uterus. When we analyze the symptoms and findings of typical cases, there is little danger of error, but in atypical cases, such as the two which I have chosen to present, the diagnosis is very uncertain even after the closest observation. I hope that you will not be wearied by this simple method of presentation, for I have always found the recital of well-studied cases of the greatest practical value.

Mrs. C., 35 years old, was born in New England and educated in one of the colleges for women. She had no sickness of any account during her childhood, but as adolescence came on, she had painful menstruation and became rather nervous and hyperesthetic, but not to any serious extent. After graduation she went to the Sandwich Islands to teach. She married there and returned to the States, where a child was born in 1895. This confinement took place in Philadelphia under competent assistance, but there is evidence in the history there was some puerperal infection of a low grade, which persisted a rather long time. After the confinement, at intervals of two or three months and rarely at intervals of ten days or two weeks, the patient suffered attacks of abdominal pain accompanied by considerable rise of temperature and rarely by vomiting. These attacks lasted only a few hours each time. The pain began in the pyloric region and extended through the back and both shoulders. There was tenderness under McBurney's point during one of the attacks, and a diagnosis of appendicitis was made. In one of the attacks a tumor was felt in the same region, and this time a diagnosis of wandering kidney was made by another physician. After these attacks there was a gradually falling temperature and considerable prostration. The patient had been put on a restricted diet without effect. She had tried hydropathic treatment and a vegetarian diet without any modification in the frequency or the severity of the attacks.

In June, 1899, she left the Sandwich Islands and came to Chicago under my treatment. I found the patient a very intellectual woman of nervous, sanguine temperament and a New England conscience. She weighed 125 pounds. Her history was given clearly, explicitly and without bias. On examination, I found a perfectly developed chest and normal heart and lungs. The apex-

* Read before the Tri-State Medical Society, April 4, 1901.

beat, however, was three inches from the middle line, indicating a moderate enlargement. The blood showed a normal proportion of red and white corpuscles, but the hemoglobin was only 65 per cent. Malarial organisms were found in abundance. There were many floating black particles in the blood, of unknown significance. The urine was slightly diminished in quantity and in normal constituents—18 to 22 grams of urea a day—but although frequent examinations were made, there were never any abnormal constituents found. In examining the abdomen, both with and without chloroform anesthesia, no tumor nor abnormality was discovered.

The patient was put on antimalarial treatment, consisting of mild laxatives, a light diet, large doses of quinin, 20 grains six hours before the appearance of the slight rise of temperature, 99.5 F., followed by arsenic for two weeks. This rise was discovered by taking the temperature every half hour during waking hours. The organisms were gone by the end of a week. During the next few months the blood was repeatedly examined, but no malarial organisms again discovered. The hemoglobin rose gradually to 85 per cent.

There were no attacks of pain during the first few weeks she was under my care, but one morning at the end of two months she sent for me in great haste, and I found her suffering moderately from pain in the abdomen, back and shoulders. Her temperature was only 99 F., the pulse moderately accelerated. The patient was not anxious or fearful and willingly allowed protracted examination before morphin was given. Now for the first time a tumor in the region of the gall-bladder was easily outlined. It was not movable, but clung to the lower border of the liver and moved with each inspiration and expiration. It was moderately tender on pressure. No other signs or symptoms were elicited. A small hypodermic of morphin was given and the hot water-bag placed over the liver. In two hours the pain and tumor had both disappeared. The next attack came on only a few days later, after a hearty meal. It resembled the first attack in every particular, except that it began with vomiting. The tumor appeared again and disappeared with a liquid movement of the bowels. The third attack came on in October, and was more severe and long lasting than either of the others. This time I had Dr. George W. Webster in consultation. He saw the patient alone. The tumor in the region of the gall-bladder was present as before, but now for the first time there was distinct jaundice and the urine contained an unmistakable circle of bile. The case was thought from the first to be one of stone in the cystic duct, for the following reasons: 1, pain in the region of the back and shoulders; 2, tumor in the region of the gall-bladder; 3, absence of all evidence of renal disease; 4, clinical history of biliary calculus. With this history and the advice of Dr. Webster, I deemed it best to remove the stone.

After the usual preparations and under chloroform anesthesia, she was operated on November 30. Her temperature was normal and her pulse 88 before the operation. An incision three inches long was made along the right border of the rectus muscle and the abdomen explored. The gall-bladder was of normal appearance and thickness and contained no calculus. The right renal region was filled by a cyst-like mass somewhat larger than a kidney. The ureter was of normal size and feeling. The peritoneum was opened over the kidney and behind the colon and attached to the depressed peritoneal edges of the abdominal wound by continuous and by interrupted catgut sutures. The small amount of fat over the cyst was pushed away and the tumor pulled out through the abdominal wound and examined. It was found to be a cystic kidney, the outer surface of which looked like an ovarian cyst. The kidney substance was gone, except at a point near the lower pole, where a mass remained as big as the ball of the thumb. The wound was protected and the cyst opened. It was found to involve all the calices and the pelvis. The ureter opened out of it by a short turn. There appeared to me no way by which the small amount of kidney tissue could be saved and the ureter made effective. Therefore the artery and veins were separated from the ureter and ligated with strong, braided silk. The kidney was removed and the ureter pulled out of the wound as far as possible and cut off. The mucous membrane was turned in and the muscular and fibrous coats sewed tight together with fine silk. The stump was then dropped. On account of fear of infection from the interior of the cystic kidney which had been opened over the wound, I decided to pack the cavity with gauze containing a little iodoform. The ends of the abdominal wound were closed, leaving only a small opening for drainage. The operation lasted an hour and a half and was borne without event.

The temperature rose four hours after the operation to 99.6 F., and there was considerable pain and vomiting. During the following few days the urine was quite scanty, but it contained no abnormal constituents. The temperature never rose above 100 F. and the convalescence was perfectly normal. The packing was removed from the wound within a week, but the cavity became infected and did not close until six weeks later. Warning was given by a sharp chill and rise of temperature to 104 F., and the silk ligature on the renal artery was removed under cocain anesthesia. The urine had gradually and steadily increased in quantity until it reached 1000 c.c., and until the urea rose to 18 to 20 grams a day. During the convalescence there was a sharp attack of pain resembling the old paroxysms, but since that time, almost a year and a half, she has had no pain and no sickness. The urea has steadily increased and the patient has enjoyed almost perfect health. She has led an active student and literary life.

Mrs. M., 40 years old, of New England stock, was born and spent most of her early life in the tropics. She was always very active mentally and physically, but was never very strong. She weighed about 120 pounds. She was never ill except when her only child was born eight years ago. The labor was difficult.

In 1889 she had an attack of colic with fever and jaundice and was ill several days. Again, a few years later, while in Europe, she had a somewhat similar attack without jaundice. In 1898 she had several attacks of severe pain in the abdomen. During these attacks I attended her. The pain was severe paroxysmal, lasting fifteen to thirty seconds, with about an equal interval. She preferred a sitting position, bent over on her knees, with head and shoulders turned down. The greatest pain was in the back and shoulders, with none in the legs or vulva. The muscles on the right side of the abdomen were rigid and examination was difficult. A few drops of chloroform in olive-oil usually relieved the pain at once. On a number of occasions she had the sudden relief characteristic of displaced mechanical obstruction. The urine was frequently examined, but no abnormal constituents were found. There was no bile. A provisional diagnosis of gall-stones was made. The patient without any recommendation took the olive-oil

treatment. There was a long interval, several months, of apparent relief, but during this time she always remembered her side. About October, 1900, she was taken with a most severe attack and for the first time a distinct tumor was felt in the region of the gall-bladder. It was hard, round, immovable and painful. A few whiffs of chloroform were given to facilitate examination, and after waking up the pain was gone. The next day the tumor could not be felt. During the Christmas vacation a very protracted attack was suffered and this time there was no complete relief for a week. Severe sharp attacks followed in quick succession after her return to the city, and in two or three, the tumor in the region of the gall-bladder was unmistakably felt. In one attack, the pain disappeared during palpation of the abdomen. Her temperature during these paroxysms rose to 99 F., but once or twice a degree higher. The urine was uniformly acid, of rather large quantity and contained 2.5 to 3 per cent. of urea. There were never any abnormal constituents.

With the following indications and diagnosis, which I copy *verbatim* from the notes of her history sheet made before operation, she entered the Baptist Hospital for operation Jan. 14, 1901.

INDICATIONS AND SYMPTOMS.

1. History of abdominal pain, region of gall-bladder, radiating into back (and shoulders), certainly not into labia or legs. Duration six or eight years.

2. These pains severe, often light or simply threatening; when severe, terminating suddenly with complete relief.

3. Rigidity of muscles over right side of abdomen continuing even after the paroxysms of pain have subsided.

4. Tumor felt on at least three separate occasions in region of gall-bladder. Unfortunately no history or record of recognition of kidney at same time and separate from it.

5. No tumor or tenderness over appendix or over course of ureter, or in pelvis.

6. No tumor or tenderness over pancreas.

7. No tympanites. Rumbling of gas in bowels during and after attack, with no appreciable relief from pain or difference in character after paroxysm.

8. No fluid in peritoneal cavity.

9. No abnormal constituents in urine; acid.

10. No dilatation or hypertrophy of heart as in stone in kidney.

11. No evidence of tuberculosis in examination or history.

12. Low temperature, 99 to 100; with subnormal temperature of 97.5.

13. No vomiting, and only once or twice "sick headache."

14. No disorders of bowels, movements a little tardy, no diarrhea after paroxysm.

15. No jaundice (except in 1889).

DIAGNOSIS.

The diagnosis lies between 1. gall-bladder disease; 2. appendicitis; 3. mechanical obstruction of kidney; 4. tubercular peritonitis; 5. obstruction at hepatic flexion of colon; 6. tumor in this region; and lastly, gatralgia or hysteria.

The disease or condition is of long duration, 2 to 8 years; no suppuration, temperature 99 to 100; probably mechanical, stopping the discharge of some viscus and the peristaltic action of some set of muscles.

The usual preparations were made and with chloroform anesthesia the abdomen was opened on the right border of the rectus muscle. The gall-bladder was found empty of stone and normal in appearance. The right kidney was movable and directly under the gall-bladder, but easily brought into the middle-line under the umbilicus. After thorough examination of the pylorus, the appendix and the right ovary, the floating kidney was considered the only adequate cause of pain; it was fastened back in its place in the usual manner. The location was approached by a long, curved incision, the kidney denuded of fat and pushed back so as to button through the inner fascia of the quadratus. It was fastened to the fascia by a double row of interrupted long-lasting catgut stitches. Both wounds were then closed in layers.

The patient made a perfect recovery except for one alarming complication. During the four weeks she was in the hospital, she had three attacks of pain similar to the pain she formerly suffered. Since that time she has been entirely free from pain. The kidney remains in place and she has resumed her very active life.

THE GYNECOLOGICAL AND OBSTETRICAL SIGNIFICANCE OF GIRLHOOD.

HENRY P. NEWMAN, A.M., M.D.,
CHICAGO.

I have recently received a letter from Dr. George Engelmann, of Boston, announcing his intention of reading a paper before the Gynecological and Obstetrical Section at the June meeting of the American Medical Association, on "The Causes of the Increasing Sterility of American Women," and stating his conviction that the subject is of vital importance and needs investigating. The same authority, as President of the American Gynecological Society, made an elaborate address last year upon a very nearly related topic: "The American Girl of To-day," and aroused much interest in his carefully prepared and somewhat startling statistics. It would appear from his researches, and in these he was assisted by prominent educators, teachers in young women's colleges and normal schools and by the heads of mercantile houses where women are employed, that the absolutely normal, healthy girl is exceedingly rare. It is evident that for her own sake as a future mother and for the sake of the race which is to come of her that we should do something to better the conditions which threaten her maternal functions.

The lack of fertility is not the only evil. The need is not so much for larger as for better families. The higher you go in the scale of animal value and intelligence the scarcer become the progeny. We want a better physical heritage for the few. It is the right of each individual to be perfectly born and generously nourished at a healthy mother's breast. A perfectly just and apparently simple proposition, but one requiring the united effort of our entire domestic, social and scientific systems. It has been proposed that the obstetrician be given charge of the whole period of gestation. But this is not enough. Too often he will find threatening lesions, infections, inflammations, malformations and malpositions already existing and will feel that to be successful with his case he should have had an oversight over the years of girlhood in which so much mischief was done.

The case-books of our specialists in gynecology and obstetrics and the records of teachers and employers of young girls go to show that the period between childhood and womanhood is not all what it should be. This period in which nature is concentrating all her energies upon the development of the generative organs and the establishment of their physiological functions is ordinarily that in which greatest demand is made upon the vital forces of the girl by the exigencies of our modern social and educational systems.

Her mental and nervous forces are taxed to the utmost by the ambitions of the study room, and the transitions from grammar to high and normal schools; she is over-

worked by the addition of music and one or two languages to the already full curriculum of the class; her digestion is impaired by that wretched institution the school "lunch," and other abuses; her muscular activities are curtailed by the adoption of the corset and a more mature and burdensome form of dress; her social instincts are roused by too early participation in exciting amusements, and with it all she begins to experience the nerve-trying influence of the menstrual epoch. If employed as a wage-earner the conditions of her occupation are even less favorable in the majority of cases. Under these complex and unhealthy stimuli the average young woman may present a bright and vivacious appearance but is wanting in endurance, nerve-force and general physical tone. In a very large percentage of American girls there is greater or less impairment of the menstrual function. Engelmann's statistics, covering all degrees of pain, give as high as 73 per cent. of suffering at the monthly period, and 50 per cent. of irregularities of all kinds. Not all of these young girls consider themselves, or are to be classed, as invalid, but it may certainly be affirmed that all deviation from the physiologic in the performance of the menstrual function is a detriment to the function of maternity in the same degree as the woman has departed from normal standards. As I have observed in numbers of cases the sequence is this: irregular menstruation, seldom profuse or prolonged but usually accompanied by pain at the beginning and during the progress of the flow. After a varying lapse of time, this characteristic menstrual pain is preceded by a prodromal stage of nervous exacerbation in anticipation of the flow and due to the gradual development of congestive or structural disease of the ovaries. Sometimes this goes on to a condition of pronounced or partial invalidism; sometimes the patient, and I use the term advisedly, for about this time the unfortunate pathology is brought to the attention of the physician, sometimes the patient marries. If married, such a woman may expect either total sterility or the birth under most unfavorable circumstances of one or two children. Sometimes she loses, her life; often through unavoidable obstetrical accident, her little remaining health; sometimes her child is sacrificed, and all to the Moloch of our bad social and educational methods. To quote Engelmann's words: "The girl pays the penalty and the community suffers." To return to the etiology and pathology: the disturbance of the process of development of the generative organs, which is the chief concern of Nature in the pubertal period, the forced activity of other organs through misdirected or ill-timed educational methods results in a thwarting of the growth in the pelvic regions and a condition there which is pathognomonic. In gynecologic parlance we speak of it as infantile uterus, or the puerile or juvenile cervix according to the degree of arrest of development. In the first the process of development has been nipped quite in the bud, while in the latter and commoner form Nature's efforts have been fairly successful as to the corpus uteri while the cervix remains long, conical and deficient in lumen.

This typical maldevelopment of the cervix plays a disastrous role in the future history of the woman. Pain itself, not always pronounced in the beginning, gradually becomes a feature of the moment. Recurring monthly this influence is baneful and like all chronic suffering, exhausting and devitalizing. The congestion incident to this state of things becomes more persistent as time goes on until a passive congested state is continuous throughout the intermenstrual period. There is general lowered vitality and less resisting power, so that even should pronounced infection with inflammatory exudates be wanting, a low form of white-cell proliferation occurs and the newly-formed connective tissue hardens, contracts and, by constricting the lumen of the cervical canal, renders this important organ unfit to perform its functions, softening and dilating in menstruation, copulation, and childbirth, drainage of the uterine cavity, etc. The ideal handling of these cases is prophylactic, such as is embodied in that trite advice that we begin with the girl's grandmother. Being forced to make our beginnings with this generation we must do the best we can for it. Much can be done by instructing mothers in the management of the maturing child. Perfect confidence between mother and daughter will insure hearty co-operation on the part of the latter in all efforts for her developing health and strength. Out-door life should be rigidly insisted on for the girl as for the boy. The dress should be as free and unconfined as his. Forced mental development at the expense of the physical should be discouraged. In fact, due observance should be given to the hygiene and sleep, diet, dress and exercise. Pain should be relieved, not necessarily by drugs, but by sitz-baths, topical applications, heat, etc., or, if due to mechanical causes in the organs themselves, recourse should be had promptly to surgical intervention.

The conical cervix already described is so frequent a cause of dysmenorrhea that it should invariably be corrected when the attention of the physician is called to the characteristic symptoms.

It is better practice to do a full dilation, under anesthesia, supplemented with plastic work for the purpose of restoring the contour of the cervix and maintaining a proper lumen, than to subject the patient to a course of local treatments in the gynecologic chair. I believe, in fact, that the doubtful local benefit to be derived from such treatment is more than counterbalanced by the mischief of the procedure in fixing the girl's attention upon her pelvic organs and clouding her young horizon with the shadow of chronic difficulties.

With this in view I have been in the habit of subjecting my patient to but one seance, in which I aim to accomplish so much that she does not have to return for further local treatment. She is told that her difficulties have been corrected and is encouraged to believe that she is now cured and must in future keep herself well.

The operative work I speak of, "tracheloplasty," is applicable to all cervical deviations, deformities and displacements, and is undertaken to restore the anatomical relations of the organs and to re-establish normal function.

While conception and full-term pregnancy are theoretically to be desired in these cases, both as a means of developing the generative tract and remedying some of the imperfect conditions present, it is not always happy in its results. If the case goes on to full term, labor is apt to be arduous from lack of functional power in the organ, anatomical conditions, etc., and tears or trauma are exceedingly apt to occur with all the dangerous consequences. At best such a woman is sadly handicapped and, for her, wifehood and motherhood are hazardous experiments. If mothers and educators could be made to realize how preventable are most of the diseases from which the rising generation of women is doomed to suffer; if, for instance, they would reflect upon the fact that among the most prolific causes of gynecic disease are maldevelopment from improper hy-

giene at puberty, taking cold at the menstrual period, and constipation, the season of girlhood would henceforth be brought much nearer Nature's wise intention and would to a great extent cease to have its present significance to medical science.

The girl as the product of modern civilization is, in everything but bodily vigor, removed by all that is desirable from her aboriginal mother.

It is the just aim of our educational system to develop still further her intellectual qualities. It is therefore due to her and to the vital interests she represents that we endeavor to restore as far as is compatible with our artificial standards, the natural privileges of which she has been deprived, and contend with coming generations for better things.

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ADENOMA SEBACEUM OF THE NON-SYMMETRICAL TYPE.

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The pathologico-anatomical term adenoma still lacks both definiteness and circumscription. Some authorities extend it to include all increase of glandular epithelium, even when form and function are well preserved. Others limit the designation to an atypical increase with loss of function. It is not surprising, therefore, that the same confusion should exist with regard to the sebaceous adenomata of the skin. The affection is a rare one, and the opportunities for histological examination have not been numerous. A study of the literature, however, shows very plainly that two main pathological types may be distinguished. The first accords with Unna's definition: Benign, irregular, tumorous outgrowths of the sebaceous epithelium, going on to fatty, but not to corneous or colloid metamorphosis. The second is a simple hypertrophy of apparently normal sebaceous gland tissue.

Clinically, also, at least two types of sebaceous adenomata are to be recognized; they do not, however, correspond to the pathological types, cases of both occurring in either of them. Most of the recorded cases have occurred as multiple, yellowish or yellowish-red, firm pin-head to lentil sized nodules, without any central depression, and situated on the central portions of the face, more especially upon the nose, naso-labial folds, etc. A certain proportion of cases are congenital, and are therefore ranged by Besnier, Hallopeau, and Jadassohn among the nevi. Mental sluggishness or distinct deficiency has been noted in a number of cases.

In a few cases, however, sebaceous adenoma occurs as one or more larger tumors seated upon the scalp, or more rarely upon the back or other parts of the body. Barlow has found 50, and Poncet as many as 60, in one case; but usually they are single or few in number. They form lentil to nut sized or larger tumors of a pale yellowish color, and absolutely indolent. Microscopically they are composed, as a rule, of hypertrophied sebaceous epithelium enclosed in a distinct fibrous stroma. Hyaline and calcareous degeneration has been noted and even transformation into typical epitheliomata. It is a case of this kind that I desire to record.

The patient was a girl of 19, born in Germany. She was distinctly backward in physical development, looking like a girl of 14 or 15, but was mentally bright. She began to menstruate at 16, suffered from chlorosis three years ago, and had had leucorrhea for the past six months. The lesion on the scalp was first noticed when she was one year old; it was very small at first, and has gradually grown to its present size. There had been no subjective symptoms from the growth, and the patient simply desired to be relieved of the deformity.

The growth is not very well shown in the accompanying illustration, on account of its comparatively slight elevation above and color differentiation from the surrounding skin and blond hair. It was situated upon the right parietal region of the scalp, near the fronto-parietal margin and about half an inch behind the anterior margin of the scalp. It formed a curved, elongated patch two and a half inches long by three-quarters of an inch in its widest part. The surface was slightly elevated, a little rugose, and marked with a few lanugo hairs; normal scalp hair was entirely absent



Figure 1.

over it. Its color was a pinkish-yellow, quite distinct to the eyesight from the normal scalp. The entire mass formed an absolutely sharply circumscribed tumor in the skin.

The diagnosis was not made from the appearance of the growth; in fact Darier admits that it can not be made in the non-symmetrical form of the disease until the microscopic examination has been made. Before this was done I demonstrated the case as a probable xanthoma at the Manhattan Dermatological Society. After excision portions of the tumor were hardened and stained in various ways. I may note that the "Kernschwartz" gave me the best results for photomicrographic reproduction, giving all the gradations from light gray to black in a way eminently suited for the purpose.

The microscopic picture is shown in Figure 2. Its most marked feature is the enormous hypertrophy of

the sebaceous glands, which are, however, normal in shape and have normal excretory ducts. Each gland is inclosed in a thin capsule of fibrous tissue. The epithelial layer is increased and the papillæ of the corium are hypertrophied; and here the growth resembles the benign forms of epithelioma to a certain extent. The isolated hair papillæ found in a few of the sections are very small and atrophic. The sweat glands and the subcutaneous connective tissue and fat are apparently unchanged, save for the compression exercised by the hypertrophied sebaceous glands.



Figure 2.

The resemblance to rhinophyma is marked, but there is absence of any hypertrophy of the connective tissue of the cutis, and the increase of the epithelial layer is distinguishing. Benign epithelioma of the adeno-cystic type might be thought of but for the absence of epithelial prolongations and degenerated cell-nests.

THE TREATMENT OF LARYNGITIS.*

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It is the intention of this article to describe chiefly the local treatment of acute and chronic laryngitis, and to mention general measures only where they are necessary aids. The first form of acute laryngitis to be considered is the simple catarrhal type of moderate degree. This variety occurs chiefly in adults and, of all forms of laryngitis, is seen oftenest. It does not confine the patients to the house so that most of them are seen in the office or at clinics.

The chief symptoms are cough, at times incessant and distressing and varying degrees of hoarseness. The laryngoscopic appearance are the well-known ones of diffuse or localized congestion, especially of the cords, while secretion may be absent, or raised in the form of mucus or muco-pus. Most of these cases run but a short course and recover spontaneously, though the patient may continue to use and even abuse his voice. Where cough is a prominent feature it mechanically injuries the larynx and should be controlled by codein or other usual remedy. The influence of the inhalation of hot steam on the course of the disease has, in my hands, been so decided that I have come to rely on its beneficial influence. Voice rest is to be enjoined, but it is hard to enforce obedience. Of internal remedies, salicylate of sodium seems to have an abortive influence in some cases. With diaphoretics I have accomplished nothing, neither has menthol volatilized or sprayed in oily solution influenced the course of the affection as far as I could see. Seth Bishop praises menthol as an antiseptic anodyne. The anodyne effect is so feeble, in my experience, that it will not even suppress cough. The cooling sensation caused by the drug is deceptive. Menthol is, as Ingals says, chiefly an irritant stimulant and hence out of place in early acute laryngitis. As to its antiseptic influence it is doubtful whether the minute amount of this rather feeble antiseptic entering the larynx in volatilized form will influence the growth of microbes encased in protecting mucus. The oily menstruum of the spray will prevent efficient action of the antiseptic qualities of the remedy. This effect of oily solution on antiseptics is emphasized by John E. Weeks in his article on the relative germicidal value of the antiseptics. He thinks that the oily solvent prevents contact of the chemicals used. with the tissues.

Though most cases of the variety of laryngitis under consideration recover speedily, quite a number show little tendency to get well and pass into a tedious subacute stage with slow recovery or become chronic. Persistence in singing or speaking contrary to orders is one of the chief causes for this. In fact, it seems almost impossible to induce patients with acute laryngitis to rest the voice. Where the acute laryngitis assumes this protracted form local treatment is needed. Most cases will recover promptly under its influence, but some will prove refractory, especially where the general health is bad, as in the pretuberculous state or when lactation reduces nutrition.

The clinical picture and histologic appearances of acute laryngitis are those presented by an infected mucous membrane. whatever theories may be held in regard to the etiologic importance of exposure to cold, which probably acts merely as a predisposing cause. If we find the histologic changes of acute laryngitis, the epithelial and subepithelial round-celled infiltration, the desquamation of devitalized epithelium, the wandering of masses of leucocytes to the surface in any mucosa other than that of the respiratory tract, as that of the urethra or conjunctiva for example, we are not in doubt in the least that we have to do with a mucous surface inflamed by bacterial invasion. Why should exposure to cold. without other agent, be supposed to be able to produce changes in the mucous membrane of the larynx that elsewhere in the body we regard as typical of an infected mucous surface? The beneficial action of the usual remedies also impresses one with the infectious character of acute catarrhal laryngitis. These remedies are the so-called astringents, all of which are bactericides, and it has been my experience that the most bactericidal of all, nitrate of silver, is the most effective, and that the least in value are two but feebly antiseptic, tannic acid and alum. The most effective astringents are metallic antiseptics, and differ from organic antiseptics in their power of combining with the surface of the living tissues and imposing a barrier of metal-laden protoplasm to bacterial invasion. They therefore do not merely lie on the epithelium, but enter into it so that

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prolonged contact is insured. If used in too great strength they will devitalize the surface, that is cauterize it, a result irritating and undesirable in acute inflammations.

This clinging power of the metallic salts to the tissues undoubtedly explains the permanence of their beneficial and also undesirable effects, such as lead poisoning and argyria. One of the unpleasant features of the silver salts is this latter quality, and Moritz Schmidt tells of three cases of argyria due to persistent swabbing of the throat for months with silver nitrate. As to the so-called astringent effect of the astringents, as Harnack says, it does not exist. They do not cause a mysterious contraction of the tissue elements or their vessels; they merely form a protecting coat which hinders the egress of secretion—hence the drying effect of astringents.

At present silver nitrate is largely being displaced by protargol and similar modern compounds of silver, which are undoubtedly superior to the nitrate. Protargol is antiseptic, does not cauterize and penetrates the tissues deeply. A good strength of solution for use in acute laryngitis is from 20 to 50 grains to the ounce. Protargol and the astringents seem to me most effective where there is a decided amount of purulent secretion, while in the cases where hyperemia predominates the result is much less marked. Some of these latter cases are, in fact, in some instances not so much laryngitis as congestion due to voice abuse, especially in singers. This has been well emphasized by Holbrook Curtis of New York. Results are best obtained here by voice rest and proper methods of singing.

I have not found that the remedies of the eucalyptol, thymol, menthol and terbene group compare in efficiency with the metallic astringents. They are often used in oily solution and, as mentioned, oily menstrua inhibit the action of antiseptics. In addition oils do not form intimate contact with the moist tissues treated, but spread and float away as they would on water. The conditions are different on the skin, designed naturally for oily media, and where prolonged contact is assured. The above-mentioned drugs belong to the class of feebler antiseptics and therefore require prolonged contact in decided strength to be effective.

The mode of application of remedies is not a matter of indifference. The spray seems to me the best. Powders are removed by coughing and scraping before the active drug they contain has time to dissolve and penetrate the layer of mucus that protects the epithelium. Swabs mechanically injure the tissue by causing violent spasm of the laryngeal muscles and scraping off the epithelium, leaving raw surfaces. The laryngeal syringe, to reach all parts, must inject a large amount of fluid which can therefore not be used in proper strength to be effective without causing the patient great discomfort. With the spray a single drop can be made to evenly cover a large surface. The spray should of course always be introduced under the guidance of the laryngeal mirror, but even then its fault is that enough does not get into the narrow space found in many patients between the epiglottis and posterior pharyngeal wall, in sufficient amount to be effective. To open the upper larynx widely for the spray in these cases it is a good practice to hook the epiglottis forward with the tip of the atomizer. In many cases this is not possible, however, with the ordinary laryngeal tip, so that I use one of my deep tracheal spray tubes, recently described in THE JOURNAL, for this purpose. The long tube readily hooks up the epiglottis. Another advantage of the instrument is the fact that it is possible with it to spray directly against the interior of the larynx and so blow away mucus from the surface while driving the remedy against the tissues at short range. The perspective does not permit us to appreciate how very far down in the neck the larynx is often situated, and a spray coming from high above it in the ordinary way spreads like a fan, so that but a portion of the medicament enters the larynx, and the rest is lost on the pharyngeal walls and in the fossa pyriformis.

From the milder type of laryngitis mentioned we advance through grades of increasing severity until we reach an extreme type of acute laryngitis, acute submucous laryngitis. In this form the infectious agents pass beyond the mucous membrane into the lymph spaces and channels of the submucous connective tissue, which becomes swollen and hyperemic, while at times enlarged cervical lymphatic glands can be felt. In the upper larynx the swelling may be so great as to cause serious dyspneas due to enlargement of the epiglottic and aryepiglottic folds. In this type of laryngitis it is obvious that the affection has penetrated too deeply to be influenced by applications to the laryngeal mucosa, as the disease is more in the lymphatic channels than on the surface; in fact the irritant effect of astringents may add to the swelling in a dangerous degree. In these cases the external application of cold to the neck is efficacious. As Scheeh states, cold limits the blood supply to the larynx by constricting both the great and small arteries of the neck, as proven by Winternitz. This diminishes the vascular swelling of the mucous membrane. In the case of a patient shown at the clinic for chest, throat and nose diseases, at Rush Medical College, the dyspnea was so great that tracheotomy was considered. The patient was admitted to the Presbyterian Hospital and treated with a spray of adrenalin chlorid applied systematically, together with repeated hypodermic doses of pilocarpin, ¼ grain each, to keep up a profuse sweat. These means seemed to keep the swelling in check, so that operation was avoided.

The hypodermic use of pilocarpin for edematous conditions of the larynx has been advocated by Suarez de Mendoza, and he thought that it avoided tracheotomy in threatening cases. Felix Semon obtained good results from scarification of the swollen mucosa in these severe examples of submucous laryngitis. Intubation proved ineffective in a case of my own, as the edematous aryepiglottic folds closed over the top of the tube; scarification also proved unavailing so that tracheotomy had to be performed. When the epiglottis is much swollen it is apt to be immovable, so that fluids enter the trachea. In this state it is advisable to feed with the esophageal tube. In some instances submucous laryngitis is confined to the hypoglottic region, the loose areolar tissue underneath the cords swelling and dangerously obstructing respiration, the so-called laryngitis hypoglottica acuta gravis of Naether, or chorditis vocalis acuta inferior as it is also called. This grave form occurs chiefly in adults, while a less serious variety is found in children, causing the condition called pseudocroup, laryngismus stridulus, or spasmodic croup. Though often this affection is caused by spasm of the glottis merely, the opinion of to-day seems to be that at least most of the cases are due to temporary hypoglottic swellings that increase during the venous congestion due to sleep, and subside as soon as the waking child takes deep inspirations. The swelling has been seen by a number of observers. In some cases intubation is needed, but as

a rule cold applications to the neck, keeping the air moist with steam and the use of narcotics to avoid any complicating spasm of the glottis will avert this. Local applications to the hypoglottic region in children are impossible.

The acute hypoglottic laryngitis of adults is apt to require tracheotomy or intubation, and neither of these operations should be put off if dyspnea is at all marked, as the hypoglottic swellings are apt to suddenly increase enough to suffocate the patient. Cold applications to the neck will prove useful. Hajek warns against the use of potassium iodid in this affection, as it may make immediate tracheotomy needed by adding to the swelling. Laryngitis with scabbing and crusting in the larynx, the so-called laryngitis sicca, exists not merely in a chronic but also in an acute and subacute form. It is hard to explain this tendency of the secretions to dry in the larynx. The crusts may become massive enough to cause serious dyspnea, but usually are merely sufficient to create cough and hoarseness and at times bleeding.

Cases of this kind are not excessively rare, and usually the crusts can be seen to extend down into the trachea. As a rule the scabs rest on the cords and inter-arytenoid region, where there is pavement epithelium. These cases are generally tedious without treatment both to the larynx and trachea. As long as the latter is lined with crusts treatment confined to the larynx is ineffective. Inhalation of normal salt solution from a steam atomizer is an excellent palliative, but will have little effect on the tracheal scabs. Nitrate of silver or protargol sprays, as soon as the disease has passed its acutest stage, are very effective if they can be made to reach all of the diseased mucosa. The ordinary laryngeal tip will answer well enough for most cases confined to the larynx, but for the tracheal scabbing I have found it necessary to use the long tracheal spray tube devised by me. The tip of this must be either held within the opening between the cords or passed through them into the trachea after cocainization. The ordinary spray tip has to be placed so far above the chink of the glottis that most of the jet is lost in the larynx and but little passes into the trachea, especially as the cords are held spasmodically in a position of partial adduction by most patients. Until I used this method I found laryngotracheitis sicca a discouraging disease to treat. The tracheal syringe is far more unpleasant for the patient than the spray, and as it necessitates larger amounts of fluid the concentration of the chemical in solution must be weaker unless we wish to run the risk of causing excessive irritation. The spray also applies itself more evenly to the tracheal walls. Oily substances can be sprayed into the trachea with the view of dissolving the crusts, and the patient should be kept in a room with a steamy atmosphere.

Laryngitis characterized by hemorrhage from the mucous surface without ulceration or wound, and at times by submucous hematomata, is called laryngitis hemorrhagica. It is very rare and in some cases has proved dangerous on account of large tough clots forming in the trachea and larynx. In a large proportion of cases it accompanies laryngitis sicca. The bleeding may be profuse. In laryngitis sicca the recurrence of the bleeding can be avoided by moist inhalations to prevent the formation of crusts. Astringent applications in laryngitis hemorrhagica should not be irritating, and the best of these for mild hemostatic effect is probably tannic acid. The iron salts will certainly create much reaction and form tough leathery clots hard to remove by coughing. When the larynx is full of clots and blood it is doubtful whether any local applications will reach the bleeding surface, so that cold to the neck, rest and narcotics are probably the best remedies under these conditions. Adrenalin would have a good but temporary effect when it can be applied.

Uchermann has recently described a form of laryngitis which he calls laryngitis acuta circumscripta nodosa rheumatica. It occurs in the form of sensitive, rather firm, blue-red infiltrations analogous to those of the cutaneous erythema nodosum. When seated over the crico-arytenoid articulation the nodes cause pseudoanchylosis with immobility of the cord. The therapy is salicylate of sodium.

In chronic laryngitis we have to deal with lasting changes which have gradually more or less profoundly altered the epithelium, the submucous connective tissue and the blood-vessels of the larynx. These elements will be effected in varying proportion. The epithelial changes are usually in the direction of the creation of a dermoid condition of the laryngeal mucosa. In extreme cases the whole laryngeal interior becomes thus lined with pavement epithelium, but usually there is thickening merely of the inter-arytenoid epithelium and of that on the cords. At times the change is confined to the region of the processus vocales, causing two epithelial protuberances, the typical pachydermia laryngis of Virchow. When occurring in the inter-arytenoid region the epithelical thickening causes stiff folds or a general warty prominence of this locality. The connective tissue hyperplasia may cause smooth or nodular hypertrophy of the cords, greatly increase the size of the ventricular bands, which then cover the cords, create hypoglottic swellings that at times dangerously interfere with breathing, fill the inter-arytenoid space with clumsy folds and nodosities of thick mucosa. Hyperplastic mucous membrane protruding from the ventricle of Morgagni has given rise to the term "eversion of the ventricle," a false conception of the condition. The vascular changes are in the direction of venous dilatations which form, at times, varices on the cords. There may be venous congestion of the entire laryngeal membrane.

In other cases of chronic laryngitis there is atrophy instead of hypertrophy. In my experience a not very rare condition is absorption of the tendon-like connective tissue of the cords, leaving in their place mere folds of flabby mucous membrane, an incurable state well described by Störk. In some rare cases erosions on the cords and fissures of the interarytenoid region are found. They are always suspicious of tuberculosis. In some old cases of laryngitis atrophy of the muscles occurs simulating paresis.

Most cases of chronic laryngitis do not show these profound alterations. In many cases the condition is slight and localized, especially in the chronic laryngitis of singers.

In another type of cases the most prominent changes are found in the mucous glands, with chronic alteration of secretion, in mild examples limited to scraping up of small amounts of muco-pus. In the severer grades the whole larynx and trachea may be lined with pasty pus or thick crusts, at times fetid, the so-called ozena laryngis, usually but not always associated with the same state in the nose and nasopharynx. When the secretions are removed the shape of the laryngeal interior may be found but little altered. In some extreme cases the vocal cords will be found distorted and

joined to each other by cicatrices, leaving but small room for breathing, as described by Freudenthal.

This brief sketch of the pathologic conditions of chronic laryngitis shows their enormous diversity and the great variety of means needed to combat them, ranging from a mild astringent to a surgical operation, and that one must be able to recognize states in which irremediable changes make all treatment useless. The need of treating simultaneously nasal and pharyngeal pathologic conditions is too well known to need more than mention here. The great and inveterate effects of chronic laryngitis can not be conquered by a few spray formulæ, as the favorite prescription corner of some medical journals would lead one to think. Great patience is needed by the patient and physician and we can not promise too surely a recovery. Often we will get only moderate or no improvement.

The first thing needed in the treatment of chronic laryngitis is to remove the source of chronic laryngeal irritation if there is one, whether it be mouth-breathing, nasopharyngeal catarrh, alcoholism, voice-abuse, or other cause. It is very important to bring the body weight and nutrition up to the normal standard for the individual. This is unfortunately not alway possible when we consider how often chronic nontubercular laryngitis depends on pulmonary tuberculosis.

In the milder cases of chronic laryngitis, where the changes are confined to slight epithelial thickening and hypersecretion with moderate congestion, we can sometimes effect rapid improvement by the stimulus of mild astringent applications, such as silver nitrate, 10 grains to the ounce, or copper sulphate, 20 grains to the ounce. From the much praised alumnol I have had only disappointment, but zinc sozo-jodole, recommended by Moritz Schmidt, is mild in action and gives positive results. I use it in 5 per cent solution. This treatment is gratifying in the slight chronic catarrhal irritations of singers. Singers are subject to these even when they use their voices properly, and seem to have a special tendency to laryngitis.

In instances where the epithelial thickening and connective tissue hyperplasia is pronounced we need more powerful chemical agents to accomplish our ends. Those authors who have had the widest experience and have acquired an unusual degree of intralaryngeal skill in consequence advise here the application of mildly caustic solutions applied accurately to the parts showing pathologic changes, as for instance thickened hyperplastic vocal cords or the pachydermatous folds in the interarytenoid region. Solutions of silver nitrate in the strength of 25 to even 240 grains to the ounce of water are advised by Störk, Krieg, Schroetter, Semon. Tincture of iodin—pure—and chlorid of zinc in 3 to 5 per cent. solution are examples. Sajous even employs fused chromic acid to destroy completely the thickened epithelium and ectatic veins on the vocal cords, with good results. Störk says that silver nitrate should be used in strength sufficient to whiten the surface treated. Where the pathologic changes are marked and where we must cause destruction of epithelium which is unnatural to its location such severe means are needed and will be better borne than by the healthy larynx, but it is well to follow Semon's advice and begin with the milder solution, and only if nothing is being accomplished to work up to the stronger ones. It is better not to cover too much ground at one sitting, as severe reactions are to be expected; in fact, Störk says that the patient will be voiceless for a few days, and suggests that this enforced silence will be beneficial. He and others advise a sojourn in a resort, for some cases, simply because the patient will not have the usual opportunities for conversation. For these strong applications local anesthesia is needed as a preliminary, and the application of the astringent must be made with a small swab under the guidance of the mirror, with perfect accuracy. As Ingals says, the strong solutions are in most cases objectionable, because of the spasm of the larynx and the great discomfort they cause the patient. In some cases of marked chronic laryngitis, however, we can not avoid their use if we wish to accomplish anything.

Where hyperplastic mucosa protrudes from the ventricle it must be cut away. The best instrument for this purpose is the double curette of Landgraf and H. Krause, which cuts vertically. Tuberous masses in the inter-arytenoid region, elephantiastic ventricular bands can also be removed by some one of the double curettes, or can be reduced by electrolysis or the galvanocautery. The cutting operations are to be preferred, however. In some cases the snare can be used.

The treatment of the typical pachydermia laryngis of Virchow, the cushion-like epithelial masses growing from the processus vocales, likened properly to corns in the larynx, is regarded as very unsatisfactory. The accompanying chronic laryngeal catarrh may yield to remedies, but the pachydermatous outgrowth will remain. Some advise against interference with these growths where they do not injure the voice perceptibly. Chiari thinks they should be removed as they are occasional sources of perichondritis. If partly cut off with the double curette they will return; if deeply removed we may do injury to the processus vocalis. The cautery, electrolysis, tincture of iodin, chromic acid, have all been used with poor success. Scheinmann employs a spray of 2 to 3 per cent. acetic acid inhaled from a steam-atomizer for ten minutes three times a day. He also injected the same solution from a laryngeal syringe. The proceeding does not seem very logical, and his claims that the pachydermatous nodes softened and grew smaller were not confirmed by Ilberg, who also had no success with applications of 0.5 to 5 per cent. solutions of caustic potash.

Fein's method is the most promising. He caused disappearance of the pachydermia by using a solution of salicylic acid, 15 grains, water and alcohol each 75 minims, applied with a swab. There was no reaction. The remedy was used every other day for three months. For the treatment of chronically swollen vocal cords softened by venous dilatations Krause's incisions or scarifications offer a decided advance over previous methods. Krause uses a lance-shaped knife and makes small incisions 3 to 4 millimeters apart, longitudinally, along the cords from the anterior commissure to the processus vocalis. The incisions pass through the entire thickness of the vocal cords. In Krause's reported cases the result was recovery from chronic conditions that had resisted astringents for months.

The condition known as ozena laryngis or laryngotracheitis sicca chronica is notoriously intractable. A case of mine of this nature, of long standing, with extensive thick crust formation in the larynx and trachea, responded to treatment with protargol applied with my long tracheal spray, with but moderate improvement. Nitrate of silver was equally ineffective, and I was agreeably surprised, therefore, to find that a spray of potassium permanganate of 12 grains to the ounce was followed in a few days by absolute disappearance of the crusts, which have not returned after weeks, though the

treatment is kept up every three days to avoid a relapse. A rhinitis atrophica and pharyngitis sicca of severe degree still continue, though improved so much by irrigations with the same remedy, in the strength of ½ grain to the ounce, that the patient suffers no discomfort from these conditions. Permanganate of potassium is an ancient disinfectant of great power, and in my hands has proved itself far superior to peroxid of hydrogen, which has so largely supplanted it. It seems to deserve a more prominent place in laryngo-rhinologic therapy than it has at present.

In the treatment of the condition called singer's nodes, removal of these little outgrowths with cutting forceps seems most in favor at present, the galvanocautery and chromic acid being regarded as too uncontrollable. In one instance, in which I was greatly elated at the neatness with which I had removed some singer's nodes with Fraenkel's forceps, the patient disagreeably surprised me by returning the next day voiceless. Terror of the operation has caused an hysterical aphonia that lasted three weeks. Removal of singer's nodes may not improve the voice as much as hoped for, so that patients must not be led to expect too much.

Among the modern methods of treatment to be considered is Laker's vibration massage directed toward the removal of hyperplastic states. It also affects pareses of muscles and hypoglottic swellings favorably, according to the author. Laker, by means of tetanic contractions of the muscles of the forearm, can make the end of a cotton-wrapped probe vibrate 600 to 2,000 times in a minute against the tissues of the laryngeal interior. Coarse motions do harm.

In chronic hypoglottic laryngitis we have a condition that is a constant menace to the life of the patient. The characteristic hypertrophic swelling of the subglottic mucosa is liable at any time to an acute increase that may suffocate the patient. Attempts at operative removal of the swelling below the cords is apt to cause this so that tracheotomy should precede all efforts to remove the swollen hypoglottic mucous membrane by electrolysis, the galvano-cautery or by means of the cutting curettes. Usually, however, the hypoglottic folds are unreachable from above, so that the operation of Sokolowsky, laryngofissure and excision of the hypoglottic mucosa is needed. Schoetz reports two cases in which iodid of potassium caused the subglottic swellings to disapear. There was no history of syphilis obtainable. In other cases the drug proved of no avail.

In conclusion two newer remedies are to be mentioned that have earnest endorsers, ichthyol, which is a non-irritating antiseptic with true astringent properties, causing contraction of vessels and paling of inflamed tissues. It is recommended by Hubbard in chronic laryngitis sicca. Methyl violet, pyoctanin, has great penetrating power, is a powerful germicide and non-irritating. I have had no experience with it in the larynx, but can confirm Breagen's statement that applied along the eschar after the use of the galvanocautery in the nose it will prevent inflammatory reaction and suppuration. The subject under consideration is large, and I am aware of lack of detail in this article. I hope that it has brought into notice some methods of treatment that should have extensive trial.

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DISCUSSION.

Dr. E. Fletcher Ingals, Chicago—In spraying the larynx it often happens that the ventricular bands close and the spray does not reach the cords. I have overcome this obstruction by directing the patient beforehand to take a deep inspiration immediately after the spray has been applied and thus the liquid thrown into the vestibule of the larynx is drawn down on the cords. A remedy that has recently come into favor, which I have found of much value in tubercular cases, is the terchlorid of iodin; it may be used in a solution containing from one to two and one-half grains to the ounce of distilled water. It must be kept in a well-stoppered dark bottle and only the amount needed for one treatment should be turned into the atomizer at once. What remains in the atomizer after the treatment has been given must not be turned back into the bottle containing the original solution.

Dr. Robert Levy, Denver, Col.—The spray that Dr. Freer has shown us is very similar to one that I have used for some time. His instrument is an improvement over mine, however, in that mine is made on the atomizer and is of hard rubber, whereas his is made detachable and is applicable to any ordinary Davidson spray, which I think is an advantage. In some cases of acute laryngitis, in the form the Doctor mentioned at first, I have been accustomed to use adrenalin chlorid and I have had it used by the patient at home. Repeated applications during the day will keep up the ischemic action, which I have found of great advantage, especially in teachers and singers who must use their voice during the time of the treatment. I must offer a protest against intubation in cases of edema or in cases which are liable to become edematous in the course of the affection. It is a mistake to encourage increased edema by the introduction of the intubation tube. In those cases in which I have seen it used, the edema has continued above and below the tube; I have known it to occur below the intubation tube, but usually it is above. When surgical intervention is necessary, tracheotomy is the only resource.

Dr. Freer, in closing—In regard to Dr. Ingals' remarks as to deep inspiration during the spraying of the cords, I think this a good procedure when the larynx is not especially sensitive. When this is the case I use first a spray of cocain. In the majority of instances it is necessary to use the cocain spray before introducing my intra-tracheal spray tube into the larynx.

EDEMATOUS LARYNGITIS; WITH REPORT OF CASES.*

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The term edematous laryngitis is intended to describe a disease the underlying process of which is inflammation of a mucous surface, attended by serous transudation into the submucous tissues. To this disease many names have been applied, among which may be mentioned: Phlegmonous laryngitis, abscessus laryngis, edema of the larynx, erysipelas of the larynx, etc. Semon, in a paper on the subject, has called attention to the confusion which has resulted from the multiplicity of terms, and made a very commendable effort to simplify the matter by classifying certain types.

Much of the confusion which certainly does exist in the literature could be obviated if a distinction was sharply drawn between cases in which the symptom edema is present without inflammation, or, as Rice denominates these, the passive cases, and those in which inflammation of the mucous surfaces is an active and conspicuous feature. It is obvious from a study of the literature that much of the confusion has arisen from an attempt to classify under one head all diseases in which the symptom of edema is present.

My attention and interest was drawn to the subject by a case which has but recently been under my close observation. The history is as follows:

ACUTE EDEMATOUS INFLAMMATION OF THE LARYNX; CATARRHAL PNEUMONIA; PHLEBITIS OF THE LEFT LEG.

Case 1.—On Dec. 29, 1900, H. P., 55 years old, a driver by occupation, presented himself at the Polyclinic. His family and previous personal history was good. He had never been sick. About one week previously, he contracted a severe cold. There was nothing peculiar about this catarrhal attack, and he did not regard himself sick until his voice left him; and it was because of this symptom he came to the hospital.

On admission the voice was completely extinguished and there was considerable stridor in respiration.

Examination: The pharynx was intensely red—the nasal chambers filled with tenacious mucus. The laryngeal mucous membrane was extremely red and the lumen of the larynx much encroached upon by very marked edematous swelling—no view of the cords was obtained. There was much stridor in respiration, especially after a little excitement, e. g., in an attempt to make a laryngoscopic examination.

The condition of the patient in consequence of the laryngeal obstruction was so precarious that he was urged to remain in the hospital so that prompt measures could be taken to relieve him if it became necessary. Instructions were left the resident physician that preparation for immediate tracheotomy be made and that careful examination also be made of the urinary secretion.

He remained in about the same condition until Jan. 1, 1901, when there was marked increase in the stridor, he seemed to the resident physician to be in imminent danger, and I was called. It was evident, on a casual inspection, that the edema had increased. The face was bathed in perspiration and had that unmistakable distressed appearance so common in those in whom the respiratory functions are endangered. An attempt at scarification of the edematous tissue was determined on before resorting to the more serious operation—tracheotomy.

After a number of futile attempts, the tissues were finally thoroughly scarified. There was slight immediate relief, but much more a few hours later. The scarification was sufficient, however, to entirely remove all apprehension of danger from this source, nor was it necessary to resort to any further local measures throughout his illness, though, as will be seen, this continued for a long time.

The result of the urinary analysis was negative on Dec. 29, 30 and 31, 1900, and Jan. 1, 1901. On January 2 the specific gravity of the urine was 1028; a large quantity of albumin was present and there were numerous granular, hyaline and epithelial casts. The daily quantity of urine voided from the time of admission was from ten to fifteen ounces. This condition of the urinary secretion continued, with the exception of two or three days when the albumin disappeared, until January 21, when the quantity voided rose to fifty ounces, and there was a complete disappearance of all abnormal ingredients—these favorable changes occurring co-incidentally with a retrocession of grave pulmonary symptoms, to be adverted to later on.

Following the scarification, as above noted, there was relief to the extreme difficulty of breathing. There was still much stridor and the voice did not improve. The cough became

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incessant, with much expectoration of muco-purulent secretion. There was constant sweating and daily increase of temperature. The symptoms grew progressively worse and it became apparent that the inflammatory condition had extended to the bronchial and probably to the pulmonary tissues.

Dr. Riesman saw the case with me on January 15, and the following notes are the result of his careful examination: *Percussion*—resonance impaired over the entire chest, especially on the right side, to the inner side and below the scapula. *Auscultation*—abundant moist râles over both lungs; no bronchial breathing heard anywhere; a friction sound on the right side over the liver; heart somewhat feeble; no murmurs, no accentuation of the second sound.

The pulmonary symptoms lasted from January 2 to 18, when the temperature began to decline, and by the 21st it became normal in the morning. The urinary secretion increased markedly in quantity and all abnormal ingredients disappeared, the cough lessened and the muco-purulent discharge became less and was readily expelled. The patient was much more cheerful and seemed to be on the road to recovery. However, there was still much sweating—the temperature remained normal for three or four days, when it began to pursue a very irregular and zigzag course. The sweatings increased and he began again to seem quite ill. On the 23d the left leg became swollen below the knee, and was quite painful. The pain increased in the leg daily, and by February 1 a slight enlargement appeared in the popliteal space. By February 3 the swelling in the popliteal space had become softened and gave evidence of a collection of pus. Dr. Roberts made several incisions into the mass and let out a very large quantity of pus.

The further history of this case is more of surgical than medical interest. Several pockets of pus were opened and he continued in a rather unsatisfactory septic condition until April 3, when he was discharged.

The patient is by no means well. The pulmonary and thrombotic features of the case have entirely passed away, but he still has a great thickening in the larynx. His voice is better, but it is probably permanently impaired. There is no stridor except when he has slight catarrhal attacks, and then all the former symptoms of oppression and dyspnea return.

This case presents several features of interest. The apparently trivial onset, succeeded by laryngeal symptoms of gravity, is the first feature to attract attention. His illness occurred at a time when influenzal attacks were rife and, although the attack did not present the usual phenomena of that disease, the subsequent septic symptoms render it quite probable that there may have been infection from this source. We were at first inclined to the belief that the laryngeal symptoms were due to renal trouble, and force was lent to this view from the scanty urinary secretion, and the presence of albumin and a great number of all forms of casts. The subsequent history, in which we note the gradual diminution and final disappearance of these unfavorable renal symptoms, throws some doubt on the renal explanation of the case.

The one feature which stands out prominently, in reviewing the case, is the unquestioned septic condition. Immediately succeeding the laryngeal involvement, pulmonary symptoms developed. The examination by my colleague, Dr. Reiseman, failed to reveal any local point of consolidation, though the subjective symptoms at this time pointed toward the presence of croupous pneumonia. It was Dr. Reiseman's opinion that the pulmonary complication was due to diffuse catarrhal pneumonia of infective origin, and that in all probability the original attack was influenza.

During the continuance of the pulmonary symptoms, evidence of septic infection was shown by shivering, frequent copious sweatings, and an irregular temperature. After passing safely through the pulmonary attack and before cough and expectoration ceased, he showed other evidences of sepsis, the source of which was soon made manifest by the presence of a septic thrombus in the leg.

This case would stand well in Semon's group of cases and lend additional testimony to his theory. It seems probable that this particular form of acute inflammation is due to some pathogenic micro-organism.

It is a matter of regret that an examination of the pus from the abscess was overlooked. The sputum was examined on several occasions; at no time were tubercle bacilli found; pneumococci were found on several occasions.

The second case illustrates that form of laryngeal edema which is unaccompanied with the usual evidences of inflammation. Unfortunately the notes of this case have been destroyed, so that no detailed history can be given. The main features are so indelibly impressed upon my memory as to serve our purpose.

ACUTE EDEMA OF THE LARYNX; INTERSTITIAL NEPHRITIS.

CASE 2.—The patient was sent to me for the relief of a throat trouble which made breathing difficult. Of his previous history little could be ascertained. As he entered my office the stridulous character of his breathing and the very great effort of respiration was at once apparent. Respiration was a struggle.

An examination of the larynx revealed a pale red mucous membrane, covered by fluid blood, the submucous tissues infiltrated with serum leaving only a chink between the greatly swollen arytenoids; no view of the cords was obtained. The man's condition was so serious that he was urged to enter the Polyclinic Hospital so that every facility should be at hand for an emergency. He never reached the institution. The day following his visit to my office he was found wandering in the streets in the proximity of the hospital, in a semi-comatose condition and struggling for breath. He died before relief could be obtained. By the merest accident, knowledge of his untimely end came to me. The case was of such interest that steps were taken to ascertain where the man had been taken and, if possible, obtain an autopsy. After considerable difficulty we were successful in our search and also in obtaining an autopsy. It is a matter of great regret that the full record of the post-mortem findings are not available. These few facts are well remembered:

The larynx was filled with partially coagulated blood. The mucous membrane presented a shrunken, wrinkled appearance, similar to the hands of washerwomen, clearly indicating a previous effusion into the submucous tissues.

Both kidneys were contracted to an exceedingly small size and were corrugated and distorted. The capsule was everywhere tightly adherent. A well-known anatomist and pathologist, who assisted at the autopsy, expressed the opinion that death was due to rapid edema of the larynx, induced by chronic interstitial nephritis.

We have not the previous history to assist us in summing up this case; it is likely, however, that he had been a sufferer from chronic renal disease for a long time, and this sudden edema was simply one of the many serous transudations so common in cases of this nature.

The case well illustrates a type of laryngeal edema, totally different from Case 1, so different in every detail, save the single symptom, edema, as to make it difficult of comprehension how the two could ever be classed as identical pathologic processes. And yet it is this type of cases which has been classified by some authors under the caption "edematous laryngitis." During the course of the so-called zymotic diseases, e. g., smallpox, typhoid fever and measles, attacks of edema of the larynx may occur.

ABSCESS OF LARYNX DURING THE COURSE OF TYPHOID FEVER (?); EDEMATOUS LARYNGITIS.

CASE 3.—A. B., aged 15, passed safely through what seemed to be an especially severe attack of typhoid fever. In all fair-

ness it seems proper to state that there was a difference of opinion among the attending physicians as to the nature of the primary attack, one side holding to the view that it was undoubtedly typhoid fever, while the other adhered to the belief that influenza followed by broncho-pneumonia with intestinal symptoms was the primal cause. Without entering into a discussion as to the claims of either side, it is sufficient for our purpose to know that the lad was very ill with hyperpyrexia, sweatings, cough, diarrhea, etc., for a period of six to eight weeks.

The worst features of the case seemed to have passed in this time, although the patient was by no means well, as evidenced by irregular febrile seizures and sweating and the formation of abscesses in various portions of the body. He had, however, regained his appetite, the bowels were normal, his spirits had revived and, to the eyes of the attending physician, he seemed on the road to recovery, when suddenly hoarseness and some difficulty in breathing appeared. These symptoms increased rapidly, so that within twenty-four hours the voice was entirely lost and great effort necessary to carry on respiration. Examination revealed markedly edematous arytenoids almost closing the glottis. Intubation saved his life for four weeks, when he sank, worn out by the septic infection. At the autopsy an annular abscess, or rather sinus, was found surrounding the larynx immediately below the vocal cord, having an opening into the larynx.

It is by no means certain that the abscess preceded the edema, although because of the general septic condition such an explanation of the case seems probable. It is conceded, in the light of the autopsy, that this case does not strictly represent a typical case of edematous laryngitis. During life, however, it was indistinguishable from such. It does represent a type described as abscessus laryngis, which is used as a synonym by some authors.

In my experience aphonia is not an unusual symptom in the convalescence from typhoid fever. In most of these cases this symptom is due to inherent weakness of the laryngeal muscles failing properly to approximate the cords.

A few cases have been observed in which interarytenoid edema has been the obstructing cause of faulty approximation. In all these, however, the symptom is a fleeting one and likely due to changes in the blood and also blood-vessels in consequence of long-continued illness, permitting serous transudation, passing away as the strength increases. These cases belong to the passive and non-inflammatory type of edema.

The active inflammatory cases, and these are rare, begin with evidences of local inflammation attended by rapid transudation. The symptoms do not readily subside, but become progressively worse and, unless active measures are taken for their relief, end fatally.

The last case to which I refer complicated an attack of measles.

SEVERE ATTACK OF MEASLES; APHONIA.

CASE 4.—L. B., aged 10, during the course of an unusually severe attack of measles, became aphonic. Evidences of marked laryngeal stenosis rapidly supervened. I was hastily summoned by the medical attendant with a view of intubation. Examination showed the epiglottis and aryepiglottic folds markedly edematous. Because of this latter condition and the difficulty in making a proper laryngoscopic examination in a child struggling for breath, no view could be obtained of the interior of the larynx. It was presumed that the same condition existed as in the epiglottis and surrounding parts.

Immediate intubation was advised. The family physician yielded to the strenuous objections offered by the family and counseled waiting a few hours, to which I reluctantly consented. In two hours the child was seized with a severe paroxysm of dyspnea and died before we could reach the bedside. No autopsy was permitted. We are therefore not able to state positively that which we firmly believe to be the case, namely, that the larynx was the seat of edematous laryngitis.

The pronounced and very plainly visible edema of the epiglottis leaves no doubt in my mind that there was a true, inflammatory, submucous exudate in the larynx, and that the exciting cause was the attack of measles.

It is not at all unlikely that the bacteriologists of the future may, as Semon hints and believes, find the true cause, but in the light of our present knowledge we must be content to point out in our weak and very inadequate way those diseases in which edema of the larynx occurs, and ascribe to these some influence in its production.

The cases herein narrated have been observed in a special practice covering ten or more years. Three of these cases, 1, 3 and 4, were evidently due to some form of sepsis. The second can be explained by grave renal trouble and was not of septic origin. Many cases of edema of the larynx have been observed during catarrhal attacks, as the result of tuberculosis, syphilis or carcinoma, and the result of irritation produced by foreign bodies or irritating fluids which have no place in the type of edema which this report is intended to convey.

Sir Felix Semon, in a very able paper, endeavors to classify under one heading all cases hitherto described as acute edema of the larynx and pharynx, phlegmon of the larynx and pharynx, and angina Ludovici, and ascribes to them pathologic identity. To use Semon's words, "they merely represent degrees varying in virulence of one and the same process; that the question of their primary localization and subsequent development depends, in all probability, upon accidental breeches of the protecting surfaces through which the pathogenic micro-organism which causes the subsequent events finds an entrance, and that it is absolutely impossible to draw at any point a definite line of demarcation between the purely local and the more complicated, or between the edematous and the suppurative forms."

This is undoubtedly a step in the right direction in bringing order out of chaos in the terminology of these processes. One can not read the classic work of Semon without a feeling of admiration for the untiring industry and the patience with which he waited and labored on the subject before he brought his cases and the deductions drawn therefrom to the notice of the profession. In Semon's group of fourteen cases there is but one in which the larynx is alone involved. In the remaining thirteen there are associated varying degrees of inflammation and edema of both pharynx and larynx. Many of the cases appear in some way to be connected with a previous attack of tonsillitis. All of these cases, with the possible exception of the first three of the group, were markedly septic. He does not refer to the passive cases, and hence we infer does not regard them as belonging to the same group, a view in which every thoughtful observer must concur.

The conclusions which a study of the cases observed, and of the literature of the subject teaches, as to the etiology of idiopathic edema of the larynx, is that there are several types of cases:

1. Those in which there is no true inflammatory condition of the laryngeal mucous membrane, simply a transudation of serum into the submucosa—venous engorgements, the result of arteriocapillary fibrosis. To this group belong those cases seen in advanced chronic interstitial nephritis with cardiac and vascular changes. Cirrhotic conditions of the liver also may be responsible

for a certain number of cases, for here also are conditions found similar to the renal. To this group may also be added those mild and fleeting types of edema seen in the zymotic diseases, as already mentioned.

Transudation of serum into the submucous tissues does not occur as readily in the larynx as in serous cavities, or in the loose cellular tissues of an extremity, and in all likelihood requires an exciting cause to induce stasis—a cause furnished by a catarrhal attack or the enervating influence of long-continued illness. These cases are indistinguishable by the laryngoscope from the more actively inflammatory type, but differ widely in the constitutional derangement.

2. As to acute catarrhal attacks, every case of acute catarrhal laryngitis is accompanied by more or less thickening of the mucosa, as is evidenced by alteration in the voice. Submucous edema, however, we must all admit is rare. The records of all clinical services will furnish a fair number of cases of edema. Swollen posterior ends of the cord with interarytenoid thickening is quite a familiar picture. These are transient cases, ceasing when the inflammatory condition to which they are due passes away. It is certainly not easy to reconcile the pathology of this mild type of edema with the grave forms to be considered later.

3. Secondary septic processes complicating these diseases are classified by some authors as zymotic. Aphonia is not an uncommon symptom in these diseases, as has already been pointed out. Many of the cases of aphonia are transient. In still others the edema, to which the aphonia is due, is so excessive as to endanger life, and in these, symptoms of constitutional disturbance are apt to be pronounced. Here again is to be noticed two very dissimilar pathologic processes, save for the one symptom—edema.

The explanation is that one—the mild transient edema—is due to vascular changes incident to long-continued illness and passes away as the strength returns. The other—the severe prolonged edema—is due to septic conditions, sometimes a local abscess and greatly endangering life. These latter are observed in those in whom general septic manifestations have occurred.

4. As to the infectious cases, it is admitted that the line can not be sharply drawn between this form and the one preceding. My object is to point out in this group those cases in which the infection takes place immediately from the pharynx and larynx. The preceding group includes those in which the larynx is secondarily involved. To this group the term "Acute Idiopathic Infectious Edema of the Larynx" could with propriety be applied. It is to this class that Sir Felix Semon has endeavored to establish a pathologic identity and suggest the possibility of one pathologic micro-organism. The prevalence of epidemic influenza within the last decade or so has furnished many examples of this grave disease.

The history of the cases stamps them at once as of an infectious septic nature. The initial influenzal attack, or perhaps merely catarrhal attack, may not be severe. The local inflammatory condition and accompanying dyspnea is rapidly followed by pulmonary and general infection and sepsis.

The large number of cases of this form of infection, in which influenza has been associated, causes a suspicion that there is something in the latter disease favorable to the development of a product which finds a fruitful soil for its propagation in the mucous membrane of the pharynx and larynx.

It is conceded that the classification of the various forms of edema of the larynx herein attempted is imperfect or more or less artificial. The object of this paper will have been attained, however, if it leads other and better investigators to study the subject, the ultimate result of which will be a classification free from confusion.

TOTAL EXTIRPATION OF THE THYROID GLAND.*

GEORGE F. COTT, M.D.

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BUFFALO, N. Y.

On Sunday morning, July 15, 1900, I was hurriedly summoned to attend a male, aged 16, and found him breathing heavily while sitting on the edge of a bed. His voice was clear, indicating that the obstruction was below the subglottic region. As he was quite cyanotic, he was placed in a chair with his head tilted back and a 2 per cent. eucain solution injected under



E. W., aged 17; 11 months after operation.

the skin. The trachea was easily opened and a silver tube introduced. There was, however, no relief. Then a soft-rubber catheter was run down into the trachea, with instantaneous relief. His heart was in very bad shape, but he was watched closely during the night and strychnin and stimulants were freely administered. I left word that if the patient rallied I would remove the gland causing the obstruction. Next morning, Dr. Bingham, who had the case in charge, telephoned that the boy was all right and could undergo the operation.

It was proposed to operate under eucain, and about one-third of the gland was loosened therewith. The pain, however, was so great that chloroform was finally administered, after due notice had been given the parents of the risk run in the weakened condition of the patient. During the progress of the operation, the heart became quite irregular and weak and hypodermics of nitroglycerin, digitalis and whisky were given; but very little improvement took place. Subcutaneous injections of normal salt solution, of perhaps 400 grams each side, was then resorted to, and thus the patient tided over. After the gland was displaced, an attempt

* Read in the Section on Laryngology and Otology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

was made to sever it at the isthmus, but bleeding was profuse. Tying the vessels did not seem to make much difference; the forceps were therefore left in the wound for several days. The catheter was withdrawn the day after the operation and the wound allowed to close. He made an uninterrupted recovery and is to-day, June 4, 1901, in perfect health.

He has gained 30 pounds and grown 3 inches. He traced his trouble back but eight months, and the dyspneic symptoms about a week. The gland was very firm and weighed five and one-half ounces. The boy took sick at the beginning of vacation and was ready for school, September 1.

LARYNGO-FISSURE FOR PAPILLOMA.

A girl, aged 5, became quite hoarse, which condition was not relieved by treatment; two years later she was sent to me, and, as she allowed very little manipulation, I intubated her forcibly. After a week the tube was removed and some improvement seemed to take place, but soon the dyspnea returned and tracheotomy was performed. For the next two years I tried to have the



R. W., aged 9; 3 weeks after operation.

little girl tolerate the instruments, but she would not learn. Finally I proposed to split the larynx, and this was done, on May 3, 1901. The incision extended from the cricothyroid membrane through the larynx to the hyoid bone, and as the larynx was pulled apart the growth popped out, as it were, and was removed with a snare. There was so much bleeding that nothing more could be done, and the larynx was closed with catgut and the outer wound treated in the same way. Union took place by first intention, and the little patient made an uninterrupted recovery. The tracheal tube was removed in two weeks. The growth was situated subglottic, immediately below the cords, postero-laterally, by a broad pedicle which can be plainly seen. Any recurrence will be reported to the section.

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DISCUSSION.

DR. J. HOLINGER, Chicago—I would like to ask what the Doctor expects as to the possibilities of myxedema, according to the sense of Cobin, who has done several extirpations and uniformly found a condition develop which was extremely deplorable for the patient as well as for the surgeon.

DR. COTT, in closing—The first symptom in this case was noticed about eight months before the operation. I will say that Dr. Kocher is the best authority on the subject, since he has done over a thousand extirpations and his son has done, so far, four hundred. In this case I left a little piece of the gland in the neck, perhaps a half or three-quarters of an inch, because of the bleeding. In order to control the hemorrhage I had to leave the forceps on for several days. It is supposed that when a portion is left, even if that portion be transplanted, as for example into the abdominal cavity or anywhere else, myxedema does not develop; hence, I do not expect it to develop in this case. If, however, that should occur, I shall report to the Section.

TYPES OF MEMBRANOUS PHARYNGITIS.*

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CHICAGO.

Under the irritating action of any one of several species of infectious micro-organisms, there exudes upon the surface and into the substance of the pharyngeal mucosa a whitish-gray deposit known as a false membrane or exudate. The histologic changes consist of necrosis of the epithelium and alteration in the vessel walls with the exudation of a coagulable albuminoid substance derived from the blood serum and mixed with fibrin, desquamated epithelium and leucocytes. While the membranes differ somewhat in physical characters and composition in accordance with the intensity of the inflammation and the species of infecting germ, the distinctions are so slight as to be unreliable in diagnosis, except in connection with bacteriologic examination, supported by a close study of the symptom-complex. A familiar form of diffused exudate in the pharynx is that excited by the Klebs-Loeffler bacillus, which receives the distinctive title of true diphtheria. Most of the other diffused pharyngeal exudates have been grouped under the name simply of membranous pharyngitis, but recently there has been an attempt to classify the types of membranous pharyngitis in accordance with the kind of infecting organism, and to affix to each its characteristic chain of symptoms and physical appearances. This classification is far from complete, and good examples with bacteriologic confirmation and close clinical study are still needful. There are forms of membranous pharyngitis which commence apparently as follicular tonsillitis, in which the exudate, failing to remain punctated and limited to the lymphoid structures, spreads over the pillars to the uvula and posterior pharyngeal wall. The closest scrutiny should be given these cases in order to exclude diphtheria, but this done it is sometimes found that the only organisms discoverable are those which predominate in tonsillitis, the various staphylococci and streptococci. The systemic symptoms vary much in these cases, and the limited number of cases yet followed seems to indicate that the dominating organism is the main factor in influencing the course of the disease. Thus we speak of staphylococcus pharyngitis, streptococcus pharyngitis, pneumococcus pharyngitis, etc., although in none of these as yet has the micro-organism been made to conform to all of Koch's postulates determining the specific relation of a germ to disease. The following case will serve to exemplify what is now known as staphylococcus pharyngitis, while presenting points of unusual interest with respect to repetition of attacks, the extensive distribution and brief duration of the false membrane and the slight constitutional effect.

* Read in the Section on Laryngology and Otology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

CASE 1.—Mr. S., an intelligent man of affairs, robust, and of middle age, gave a history of having previously had three attacks identical with the two about to be related, making five altogether. The first passed for diphtheria, but without a bacteriologic examination. The second occurred in Boston where a careful culture-test excluded diphtheria. The third occurred while yachting and without medical attention. The fourth attack, and first under the author's observation, commenced like an acute follicular tonsillitis when first seen, on the morning of Nov. 23, 1898. The temperature rose during that day to 103 F., but in the following twenty-four hours, while the membrane extended, forming an uninterrupted plaque over both tonsils and spreading over the pillars and velum, the temperature fell to 100 F., and the patient felt generally fairly well. By evening of the next day, November 24, the false membrane had extended over the posterior pharyngeal wall and both surfaces of the velum palati and had gained much in thickness. It so resembled diphtheria that antitoxin was given without waiting for the culture. The same evening, and the following day, cultures were repeatedly examined independently by the Chicago Health Department and myself, but exhibited mainly staphylococci, with positively no diphtheria bacilli. The membrane began to shred off on the third day, which was so like the effect of antitoxin on diphtheria that a culture was submitted for further examination and animal injection, to Dr. R. H. Harvey, pathologist to Mercy Hospital, who made the following report: The growth on Loeffler's serum shows mixed infection, mainly staphylococci. No Klebs-Loeffler bacilli were found. As a control test the culture was removed on a platinum loop and inserted beneath the skin of a guinea-pig, under aseptic precautions, with absolutely no effect on the animal. On the fourth day the patient was without fever and able to go to business, feeling quite well, although the membrane did not wholly disappear until the seventh day.

As the infection in this case evidently originated in the tonsils, and these were moderately hypertrophied, I subsequently made a thorough fragmental excision, with a view to preventing further recurrence. Nevertheless, 1½ years later he suffered a fifth attack. It commenced in the merest remnant of tonsil tissue, deep between the faucial pillars, and a profuse thick whitish exudate rapidly extended over the pharynx, as before. The local discomfort was but moderate, more than usual in diphtheria, less than in streptococcus pharyngitis. There was considerable fever the first day, but none thereafter, and no systemic depression, the patient going to business and coming to the office daily. The Columbus Medical Laboratory reported upon the culture as follows: "April 23, 1899, specimen from Mr. S.—diphtheria bacilli absent; pus cocci and saprophytic bacilli present. [Signed] Adolf Gehrmann." Of the pus cocci, in my own examination staphylococci very largely predominated. The patient received no antitoxin during this attack, neither did the false membrane seem to loosen and commence to shred off so promptly. Otherwise the duration and course of the disease was the same as for the previous seizure. It remains to be determined whether diphtheria antitoxin does not have some favorable influence in arresting and loosening membranous exudates other than those caused by the diphtheria bacillus, as appeared to be the case in this patient's fourth seizure. Its alleviation of the crustation and fetor of atrophic rhinitis indicates that its action is not absolutely confined to diphtheria.

It is impossible to assert that the staphylococci which so largely predominated in this case, was the real infecting agent. Efforts to reproduce membrane from it in animals have failed. It is possible that some other still hidden organism may be the real cause. Staphylococci are commonly present in the mouth and crypts of the tonsils. They seem to become actively pathogenic only under certain conditions; also, as in this case, a culture usually reveals more than one germ, mixed infections cause varying manifestations and interfere with a rigid classification; nevertheless, where one organism so largely predominates, together with an absence of the specific diphtheria microbe, especially when it is found that the principal germ species excites, respectively, characteristic symptoms, it justifies the recognition of types named from the dominating organism.

The characteristics of staphylococcus pharyngitis as exemplified by this case have also been formulated by Bullock,[1] cited by Wolfenden and by Jaques.[2] The temperature rises suddenly, 102 to 104 F., and falls rapidly on the second or third day, even while the membrane continues to extend. The constitutional effects are slight and the duration brief, recovery occurring in from six to eight days. The pain in the throat is but moderate. The membrane commences in the tonsils and thence extends. It may be profuse, thick, soft, whitish, not necrotic, and loosens or dissolves quickly. Membrane is little disposed to form in the larynx, although spasmodic laryngitis may be excited.

The condition is quite different where streptococci predominate, as exemplified by the following case:

CASE 2.—Mr. D. J. E., aged 40 years, had distinct malaise and soreness of the throat for two days, succeeded by a chill and a temperature of 104 F. His pulse was 100, skin perspiring, face flushed, and there was mental hebetude and enlargement of the cervical lymphatic glands. The tonsils were only slightly enlarged, but were deeply congested, and exhibited at first a punctated exudate which soon formed a plaque and extended in the form of a thin milk-like film over the anterior pillars and part of the velum. The rest of the throat was highly inflamed and very red and sensitive. Convalescence was not complete for about twelve days. No diphtheria bacilli, but numerous streptococci associated with staphylococci were found.

Thus the average characteristics of streptococcus membranous pharyngitis are a more gradual rise and decline of the temperature, likewise reaching 102 to 104 F. The systemic depression is pronounced and the duration ten or twelve days. The membrane is apt to be thin and scanty, of slower formation and longer duration. The throat elsewhere is highly inflamed, very red, and perhaps edematous. It may border upon or be identical with erysipelatous pharyngitis or pass into a phlegmonous pharyngitis. The throat is very painful and the cervical glands swollen. There is a decided tendency to involvement of both the nasopharynx and larynx. In the larynx edema and swelling, as well as membrane, are causes of stenoses, and uninfluenced by antitoxin, while intubation must be maintained for two or three weeks.

In scarlet fever the pseudomembranous type of pharyngitis may evolve from the primary inflammation during the first few days, or it may not appear till about the second or third week, as if it were a secondary infection by the diphtheria bacillus as, indeed, it often

is. Heretofore the primary inflammation has been ascribed to a streptococcus infection, but recently Class[3] demonstrated what seems to be the specific organism of scarlet fever, a large diplococcus, which is present in the blood, scales and throat. Other organisms, especially streptococci are present and doubtless exert an influence. Diphtheria bacilli are present in from 10 to 50 per cent. of scarlatinous exudates.

Pneumococcus membranous pharyngitis, due to Fränkel's organism, almost to the exclusion of other germs, has been demonstrated,[4] but as yet I have been unable to verify, by precise bacteriologic methods, cases in which, from the association of pneumonia, I have suspected this condition. The pharyngitis is said to be ushered in with rigors, high fever and pronounced exhaustion. The false membrane is white, fibrous and resistant and ceases to form at the end of a week.

Emil Mayer[5] has recently reported a case of chronic recrudescing membranous pharyngitis, determined by elaborate bacteriologic methods to be due to the bacillus of Friedlander. The enamel-white membrane would recur at intervals of a few days, always cover the soft palate and sometimes the entire pharynx, remain one or two days and then exfoliate. Five other cases, some of them acute, are reported in the "Annals of the Pasteur Institute."[6]

A membrano-ulcerative angina in children, in which ulceration always follows membrane formation, is described from Paris, by Athenasin,[7] as due to the conjoined presence of the fusiform bacillus and the spirillum of Vincent.

Also, thrush, aphtha or soor, due to the oidium albicans, while usually discrete and affecting the mouth, occasionally becomes confluent and involves the pharynx, when it constitutes a type of membranous pharyngitis. It affects mostly children and adolescents, but likewise adults who are debilitated from other causes. I have observed it in advanced tuberculosis, when it is apt to hasten a fatal termination.

Pharyngitis leptothricia, while usually chronic and confined to the tonsils and lymphoid tissues, may involve the pharyngeal mucosa and even occur in an acute form, as in one case which simulated diphtheria.[8]

Still other conditions which should be kept in mind in making diagnoses are the mucous patches of secondary syphilis, herpes and pemphigus, all of which, while commonly discrete, do exceptionally occur in the pharynx in diffused confluent form, closely simulating membranous pharyngitis.

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DISCUSSION.

Dr. Emil Mayer, New York City—The Doctor has, in his usual way, presented the subject so thoroughly that there is but little to add. I would only emphasize the need of further examination beyond the mere throwing in of light and visual examination. In the case that the Doctor mentioned of membranous pharyngitis that was under my care, the method of bacteriologic examination was carefully described in detail, because nothing of the kind had been done before. In every one of these cases coming to us, in which there is the slightest question, the most thorough examination should be made. The disease remains for a long time; just as in the skin, so it is in the mucous membrane of the pharynx. But in the case cited there was simply a marvelous amount of exfoliation. In a few days' time there was a white coating covering the whole of the soft palate, which in a few days would disappear again.

Dr. B. R. Shurly, Detroit—Most interesting would be the prognosis, which we would immediately figure upon, if we knew the bacteriological identity of the various forms. Our treatment must be modified by the special form of germ with which we have to deal. Also, the relative tendency of these different bacteriological forms to invade the adjoining mucous membranes would be a most important problem. The natural tendency of about 15 per cent. of the Klebs-Loeffler exudates to invade the larynx is very familiar to us, and it would seem to me that the exudates arising from these other modified forms of membranous involvement would carry with them a much less number of laryngeal involvements.

Dr. Emil Amberg, Detroit—In connection with this subject I should like to call attention to a statement made by a Detroit physician, before a medical society. About a year ago he had a case of scarlet fever in a family with several children. He used antitoxin with other members of the same family, as a preventive measure, and he thought the antitoxin prevented the further spread of scarlet fever. A similar statement was made by a French physician, if I am correct. I would ask Dr. Casselberry in closing to enter upon this most important point. Naturally as mere hypothesis I may suggest that we, perhaps, may get a better knowledge of the pathology of these conditions exjuvantibus. It is not impossible that we may have in future, instead of the differentiation which is going on nowadays, perhaps a unification.

Dr. J. Holinger, Chicago—One of the main features is the fact that we can not depend upon the looks or the extent or any other characteristic of the membranes in the differential diagnosis between the true diphtheric membrane and the streptococcic or staphylococcic or any other form of membrane. You know the diagnostic point was given that the diphtheric membrane is usually more compact and in patches and pretty early transgresses the limits of the tonsils. On the other hand the other membranes, the streptococcic membranes, are much more limited to the tonsils and not quite as voluminous. Such a differentiation is absolutely impossible. A case came under my observation only a short while ago. A friend of mine, a physician in Chicago, complained just a little of sore throat, hardly any of malaise, and in a largely joking way he asked us to look into his throat. There was scarcely anything to see, but I advised him to have a bacteriological examination made. He went to the health office and came back with a diagnosis of diphtheria. The Klebs-Loeffler membranes have been observed to disappear in a short time, so that the diagnosis must depend upon the microscopic examination.

Dr. Casselberry, in closing—I would emphasize what Dr. Mayer has said in reference to the thoroughness of bacteriological examinations in all these cases, and especially in those in which the diphtheria bacillus is suspected. Now, while I have reported these cases, one as a streptococcus pharyngitis and the other as a staphylococcus pharyngitis, it is questionable whether those micro-organisms are the fundamental causes of the conditions. They may multiply without being the actual infecting organism. But no other organism having been found, these are assumed to be the cause of the disease. In regard to herpes, you will remember that it was mentioned in the paper as one of the conditions that must be distinguished. Under certain conditions, it might be very difficult to differentiate herpes from other types of membranous pharyngitis where there was no herpes elsewhere on the skin surface to suggest herpes of the throat. I am satisfied from experience that the streptococcus inflammation does often extend to the larynx; perhaps not as often as the membranous exudate of true diphtheria, but with some frequency, and these cases are little influenced by antitoxin. Edema is a prominent feature in them. The suggestion regarding the possibility of antitoxin exerting a favorable influence on other types of pharyngitis, not diphtheric, I simply throw out as a possibility. We know that the

use of normal salt solution and several other substances injected into the circulation stimulates the organism. It is possible in certain forms of pharyngitis other than diphtheria, that antitoxin may have a beneficial effect.

THE RELATION OF THE MIDDLE TURBINATE BODY TO CHRONIC NASAL DISEASES.*

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Chronic nasal catarrh is so prevalent on this side of the Atlantic as to have received the epithet of "the American disease," and the failure of medical men to find means for the cure or amelioration of the disorder has become an opprobrium to the profession and a prominent feature in the bids of the charlatans for patronage. We can not ignore the influence of climate and habits of living among us as the exciting causes, but there are long periods of the year in which these are not especially active in keeping alive the trouble, so we must seek elsewhere for the causes which operate to prevent the natural tendency to spontaneous recovery which exists in the presence of acute nasal disorders.

The easy accessibility of the inferior turbinate body, and its proneness to participate in all nasal irritations and respond by swelling and producing nasal obstruction, has made it the scapegoat for the rest of the offending organ, and it has been seared and cut, pinched and stabbed without mercy until, if it had had a tongue, its prayer for relief would have ascended to the skies.

Acute observers long since recognized that chronic nasal disorders existed which were out of the sphere of influence of the inferior turbinate, but the weight of authority favored nasal stenosis as the chief cause of nasal disease, and the possibility of other factors being more active than this one was overlooked. My purpose in the present paper is to call attention to the much greater influence which the middle turbinate has upon the course and progress of nasal disorders, in the hope that it may assist the work of others along the same line, and sooner usher in the day when we may promise our patient with chronic nasal troubles a cure which will stay a cure.

In this, as in other diseases a knowledge of the anatomy of the organ involved must first be had before we are in position to know what are pathologic changes; hence, I will hastily review the anatomy of the middle turbinate.

The middle turbinated body is so located as to be in the most intimate and important relations with the meatuses and accessory sinuses of the nose, the olfactory nerve and the most sensitive portions of the septum

In its normal state this body protrudes from the side wall of the nasal chamber and is bent sharply downward, lying parallel to the septum and midway between it and the lateral wall. It occupies most of the space between this wall and the septum from its point of attachment down close to the superior surface of the lower turbinate.

In the living subject the space between the turbinate and the septum or turbinate and side wall varies between one-twentieth and three-sixteenths of an inch, but this space may be obliterated by swelling of the membrane or hypertrophy of the bone.

The turbinate covers the outlets of the maxillary antrum; the hiatus semilunaris in which are the orifices of the anterior ethmoid cells and of the frontal sinus; while its rear portion is in close relation with the sphenoidal foramen, all of which openings are the outlets for considerable sized cavities liable to inflammation consecutive to disease of the nasal membranes.

The soft tissues of the middle are much less erectile than those of the inferior turbinate and when thickened are less amenable to shrinkage by medicinal means, as cocain, suprarenal extract, etc.

The shape and size of the middle turbinate varies considerably within what may be termed physiologic limits. For instance, it may be thin and knife-like from front to rear, with uniform thickness and equal spacing from the lateral walls. Again, its attachment varies greatly, sometimes being low down and again very high; the horizontal portion may be wide or scarcely demonstrable; the anterior and the middle or the posterior part may be either wider or thicker than the balance of the bone. According to these variations does the anatomical relation to the surrounding tissues vary, but so long as there is no pathologic change or inflammation present these variations do not signify.

The bone is very thin, being filled with pneumatic cells with fragile lamellar walls. From various causes, developmental or nutritional, these cells are prone to enlargement, altering the structure, shape and relations of the bone to surrounding parts.

The soft tissues overlying the middle turbinate bone become edematous when inflamed or irritated by discharges from neighboring cavities, and by their swelling close off the upper meatuses and the outlets of the various sinuses. The sinuses are slow to become involved in inflammations of the nasal cavities, and are also slow to recover from them. They are occluded by the swollen turbinate, which in turn is irritated by their discharges, and the condition is thus self-perpetuated.

With the obstruction of the meatuses acute inflammations soon pass over into chronic, and a creamy pus exudes continually, which running over the mucous membrance, produces granulation tissue just as a similar discharge elsewhere, and the abundant serum supply, aided by gravitation often makes them hypertrophy to an enormous degree.

The mucous membrane of the middle turbinate, having to stand the brunt of the irritation, is the first and very often the sole seat of polypoid growth. Every one who removes polypi with the snare, under good illumination, will have seen, on removal of those lying toward the maxillary antrum, a gush of pus as if the stopper of a bottle had been removed. This issues from some of the sinuses and, however frequently and thoroughly you may remove the polypus, you will not usually cure the discharge except you remove the turbinate, owing to the swelling of the membranes retaining the discharge until new polypi form. The most careful extirpation with snare, curette, caustic or cautery will not cure them until the turbinate is removed either in whole or part.

Very often polypi are concealed above and behind, and can not be seen or reached by the probe, and yet are found on removal of the turbinate, it would be impossible to cure such a case and leave the turbinate *in situ*. It is a common practice to cauterize the base from which polypi have sprung, with a view to checking their formation, but my experience is that this procedure fails more often than it succeeds, while it is a fruitful source of adhesions which are very obstinate to removal. In some of these cases the number of polypi concealed by the turbinate is astounding, equaling or exceeding those that were visible before it was taken out.

* Read in the Section on Laryngology and Otology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

In a paper before this Association, read at Columbus, Ohio, Dr. Holmes stated that "hypertrophy of the middle turbinated . . . is, like the polypi so often associated with it, generally secondary to empyema of the accessory cavities." This has come to be the view of many competent observers, and I firmly believe that the oftener removal of the turbinate is practiced in this condition the more firmly will the profession become convinced of the soundness of this position. A second indication for removal of the middle turbinate is sinus occlusion by swollen membrane which is not yet polypoid and which does not respond to the recognized modes of treatment by cleansing and disinfection.

In this class of patients the membrane seems irritable and swells to the occlusion of the sinuses, but either from the pus being produced by other organisms or because of individual difference in resisting power does not go on to form a polypus. No method of cleansing which has ever been used will be efficient with these patients until the obstruction is removed, and this is impossible while the turbinated body is left *in situ*.

I have known two of these patients to die from cerebral involvement, who I am sure could have been saved by early removal of the turbinate so as to provide free drainage from the infected sinuses.

A third indication for removal of the middle turbinate is fetid crusting of the discharges on the upper portion of the nasal chambers, in nonspecific cases. Cobb[1] refers to the cure of cases of pharyngeal crusting by removal of the hypertrophied rear portion of this bone, and in case this can be demonstrated to be the only part involved it is sufficient, but I extend the operation to the whole bone whenever the crusting extends to the middle or anterior portion of the middle fossa.

A fourth indication for removal is so-called "bullous hypertrophy," which is not a true hypertrophy of the bone, for the cells are simply ballooned out and the mucous membrane overlying is atrophied. The inferior turbinate is sometimes entirely absent as a result of the atrophying process extending to the whole nasal chamber.

The membrane overlying the middle turbinate will be found covered with a number of bluish umbilicated spots resembling the mouths of tonsillar crypts. Secretion is excessive but dries and crusts, and the only cure is removal of the bone, which appears to be the focus of infection. It is remarkable how rapidly such a patient improves after the operation.

In the fifth class, as has been mentioned, on the septal side the turbinate lies in close proximity to the most sensitive area of the nasal mucous membrane, and when contact occurs various disturbances of the nervous system arise. Thus are produced severe sneezing, coughing, nasal reflex asthma, hydrorrhea, headache, various eye reflexes, vertigo, tinnitus and even chorea and epilepsy, any one of which may be severe or obstinate enough to require removal of the bone as the offending cause. I have in the past year had two patients in whom peristent and ceaseless sneezing was the only symptom, but who were cured by this means after failure of other remedies.

A sixth class is that of vasomotor rhinitis, running along into other than the normal period of the year, who with the return of patency and improved breathing still suffer from pressure, sneezing, asthma, reflex cough or congestion of the eyes. On examination the turbinate is found crowding tightly against the septum and does not admit the thin probe after a liberal use of adrenal extract. I do not contend that removal of the turbinate will cure such a case without other treatment, but it will greatly shorten the period of suffering, which is a priceless boon to these patients.

I operate as follows: After as thorough cleansing as possible I apply 8 per cent cocain with a pledget of cotton on the applicator, followed by thin pledgets laid along the upper surface and between the bone and outer wall, where they remain about ten minutes. Suprarenal extract or adrenalin is then applied, which procures an almost bloodless operation. Holmes's middle-turbinate scissors, right and left, are then used, and the attachment of the bone to the lateral wall divided from before backward. If the rear portion is out of reach of the scissors it is cut off with the snare. The cavity is packed with a long thin strip of iodoform gauze, which is removed usually on the following day and generally no more packing is required. Frequent cleansing with borax solution is done by the patient, and healing is promoted by insufflations of dematin, a lead iodid compound, which for this particular place has proven better than any other substance tried. Performed in this way the operation is painless and practically bloodless, and brings to a satisfactory end many otherwise tedious or hopeless conditions of disease.

1. Archives of Otology, vol. xxix, Nos. 2 and 3.

DISCUSSION.

DR. J. F. BARNHILL, Indianapolis—It must be quite clear to all who practice rhinology as a specialty that we must often look beyond the nasal channels themselves if we would find the seat of the nasal disorder we are called upon to correct, for it is undoubtedly true that in many instances the discharge of which the patient complains, and the suffering he endures, is located entirely beyond the nasal fossæ. This fact is becoming so well understood that many rhinologists are beginning to look upon the nasal fossæ as being only the ducts of the accessory sinuses, and one of the main functions of which is to carry off the secretions of the large mucous area lining these several cavities. Now several of these sinuses empty into the nasal fossæ at a point in such intimate relation to the middle turbinate body that the latter organ can not become much enlarged or otherwise diseased without seriously interfering with sinus drainage, a fact I believe entirely sufficient to explain the pathology of a considerable percentage of nasal diseases. The various operations which the essayist has advised and described for the betterment of the drainage of this region, are rational procedures, and when done for the purposes of relieving pressure symptoms or defective drainage are as beneficial as almost any other intranasal operation with which I am acquainted. In regard to the cauterization of the bases of polypi after their removal, I must confess that I have felt skeptical of anyone's ability to locate the base sufficiently well in cases where the growth has been as well removed as it should be, to be able to cauterize it without doing harm to the surrounding parts. Cauterization of any part under the middle turbinate body and in the vicinity of the ostium maxillare, is apt to result in too much inflammatory discomfort, and personally I have always felt satisfied I had done the best for my patient when I had removed the growth so closely that I was afterwards unable to find any base to cauterize.

DR. W. E. CASSELBERRY, Chicago—I agree mostly with what the essayist has said in reference to this operation and the indications for it. I think he has drawn clearly the indications for the removal of a part or the whole of the middle turbinated body, and there can be no doubt that great benefits accrue to the patient in consequence of the operation. However, I consider that the need for the resection of the middle turbinated body should be real and evident and that the operation should not be made for trifling catarrhal changes. Polypoid degeneration; to promote access for radical removal of nasal polypi; to promote drainage from the ethmoid cells in edematous and suppurative ethmoiditis and to allay pressure symptoms, especially in certain cases of asthma and migraine, are the main indications. In most cases of empyema of the max-

illary sinuses drainage by this means alone is inadequate. The operation is not devoid of danger either from infection or from hemorrhage. Adrenalin certainly limits hemorrhage at the time of operation, but often it is far from bloodless at the moment, and secondary hemorrhage is frequent and may be profuse, even dangerous. I have reeently seen in consultation such a case which required thorough anterior and posterior packing to control the eontinuous profuse bleeding. Adrenalin failed to control it. Adrenalin appears to be followed by a secondary turgescenee, similar to the reaction of coeain, which seems to favor secondary hemorrhage; but it is not the sole cause, for subsequent bleeding occurs even when adrenalin is not used. The only safeguard is to pack the field immediately after the operation with iodoform gauze or surgical lint, which may remain a day or two.

DR. G. V. WOOLLEN, Indianapolis—I am very much pleased to see the tendencies that we witness in this paper. Among my first trainers was Woakes of London, who was then very much hooted at as being a fanatic on necrosing ethmoiditis. I was impressed that the middle turbinate was the chief offending point in the nose. Years ago I read a paper before the Mississippi Valley Medical Soeiety on nasal differentiation, and I still think that the idea should be carried forward, that we should not treat the nose as a whole, but that we should differentiate between the different parts of the nose. Dr. Casselberry and some present may remember my paper at Detroit, which was on the "Anterior Tip of the Middle Turbinate." When we eome to consider the middle turbinate we have to differentiate as to its difficulties, and the various other things that we have to deal with. I have never heard of any one calling attention to the various cavities that empty into the nose and nasopharynx by number. There are fourteen of them. Four of the cavities that drain into the nose are influenced by the middle turbinate. I had recently a case of great interest, wherein an attempt had been made to deal with antral disease through the mouth by removing a tooth; it was wholly relieved after removing the middle turbinate and getting out four pieces of curled wire through the nasal opening that had been used to keep the opening in the mouth free. My experienee is that we ean deal with the antral cavity very often through the nose. I can understand how the constriction of the orifices take place in some cases, but the more I deal with the middle turbinate the more I am convinced that we may accomplish very much. I have found the greatest difficulty where there is a general deviation of the septum, above which, you have a large turbinate. I was scored very freely in my early experience because I called attention to the middle turbinate as the offending point, but we are awakening to the fact that the initial lesion of the eatarrhal disease is largely in the ethmoidal region, the veritable "storm center."

DR. C. M. COBB, Lynn, Mass.—It appears to me that we can not emphasize too strongly the importance of drainage in the nose. So far as I can discover there is no essential difference between a chronic discharge into the nasopharynx and a chronic discharge into any other part of the body. You simply have a cavity to drain, and the drainage is sufficient; hence, the constant or intermittent discharge into the nose or throat. The gynecologists have gone over practically the same ground. They have had their stage of catarrhal inflammation and their stage of ulceration. They have at last learned that a chronic discharge means a diseased cavity which is not well drained. In rhinology, the whole point is the question of drainage from the accessory sinuses. If you secure drainage you remove the toxic infection. I wish to call your attention to the faet that often the anterior part of the middle turbinates is not developed; and the middle turbinate may be very small. In a large proportion of the cases of chronic catarrhal pharyngitis, the middle turbinate, if not well developed, contributes to the eondition.

DR. D. A. KUYK, Richmond, Va.—Dr. Baker did not mention a condition that has been of much interest to me, the disturbance of mentality produced by hypertrophy of the middle turbinate. I have had quite a number of cases of profound disturbance of mentality cured by the removal of the enlarged middle turbinate.

The absolute constancy of the pressure, day and night, produces in certain patients a condition of mental disturbance that is alarming; there is no cessation of the discomfort; relief is sought in vain. The patient becomes morbid, discouraged; loses all power of resistance; realizes that his mind is no longer what once it was; yields to his own fears of mental unsoundness, and becomes the victim of dire despair.

The removal of the offending turbinate relieves his symptoms. A good tonic treatment, with insistent and persistent encouragement, soon pulls the victim out of his slough of despond and restores him to his former self.

After intranasal operation when I pack I use cotton. Gauze seems to insinuate itself into every crack and crevice, to hang on to every minute bony spicule or irregularity. It is so strong that no matter how well it is soaked before removal, it pulls and tears the tissues, causing often an uncomfortable hemorrhage, no matter how carefully it is removed. Cotton, when any is adherent, does not injure the tissues; for, only the loose cotton is removed, the little adherent particles remain *in situ;* they do no harm and in a day or two come away of themselves.

As a styptic, a 20 per cent. solution of alumnol and undiluted hydrogen dioxid of each equal parts, is in my hands most satisfactory. I believe the internal administration of 10 grs. quinin, 5 to 10 hours before operation, diminishes the amount of blood lost during the operation. Especially was this so before the use of suprarenal capsule solutions; it lessens the danger of secondary hemorrhage.

DR. E. FLETCHER INGALS, Chicago—I have found very satisfactory, surgeon's lint thoroughly impregnated with boracic acid and iodoform. It may be left in place three to five days, if the physician sees fit; but usually two or three days is sufficient. I can not see any objection to having the patient use adrenalin every hour or two as long as may be necessary, but I doubt whether it would stop a hemorrhage from a vessel of any size. I do not think it would stop hemorrhage from one a millimeter in diameter. In the management of the turbinate I prefer to remove the bone beneath the mucous membrane, by means of a very rough dental burr, which can be easily done without sacrificing the mucous surface. I think the after-results are better.

DR. EMIL MAYER, New York City—The method I employ is that described by Dr. Casselberry. I think I can answer the question suggested by one speaker as to the lasting effect of the suprarenal extract. I am one of those who believe that out patients should not go any distance away and especially that they should not go about unless the nose is packed. I pack all my cases. In two cases I put the patients to bed and did not use any packing, but I used only the hemostatic that has been referred to and in two days' time I found they had entirely healed. In one I used it every two hours. The preparation I used then was adrenalin. The effect was very satisfactory, but we should all remember that long before the days of these hemostatics patients were operated upon and put to bed and no packing used. Dr. Holmes of Cincinnati, for instance, reported such cases; they were operated upon in a hospital and put to bed. Probably one reason why many of us have better success is because we treat these cases carefully, especially as regards after-treatment.

DR. J. HOLINGER, Chicago—The main feature in the removal of the turbinate is the drainage that may be secured in disease of the mucous membrane, or it may be of the submucous tissues. However, I would like to place a case on record in which a different part was affected. I may state in the beginning that there was no syphilis in the case. A man about 55 years of age had been treated in various places and a number of polypi had been removed during a period of six or eight months. Every two weeks or so a new lot had been removed. I followed the same procedure at once and removed a mass of the polypi. The second time he came a peculiar mobility of the middle turbinate struck me. There was a polypus on the septal and on the turbinate side that induced me to amputate the whole of the turbinate. With a long snare I got nicely around it and the result was I found the whole turbinate bone was separated in very small chips, perhaps the size of a split pea, and between there were sharp demarcation lines. It was clearly

a case of osteitis of the middle turbinate and the polypi that were secondary of course could never be expected to be removed entirely without the removal of the turbinate.

DR. BAKER, in closing—In regard to the matter of packing after an operation I think it makes very little difference what is used for the packing. You may, if you like, use punk with success and it is advantageous in that it does not insinuate itself between the spiculæ of bone and the adjacent tissue, and you are less likely to have hemorrhage when it is removed. As to putting the patients to bed, those of us who are fortunately placed may profit by that plan of treatment. But often we can not do that. For instance, in my practice I must often operate upon patients and have them take a railway trip immediately after the operation and go under the care of some other physician. I had one patient who previous to the operation had retained pus in the cells and every time a polypus had been removed there had been a free discharge of pus. The adjacent cells were curetted and he was sent home, but he reached home in an almost unconscious condition. His physician did not recognize the fact that the nose had been packed until some hours after the patient arrived at home, and it was left in altogether about eight hours; there was a cerebral infection and the patient lost his life. I feel I am in a way responsible for his death because I packed the case and let the patient go home. We should I think keep our patients under very close observation. In regard to the adrenalin producing subsequent hemorrhage, I have used the extract for five or six years, in fact ever since it first appeared on the market, and I do not see that I get any more secondary hemorrhages than before I used the adrenalin. It is a great benefit to be able to see every step of the work, as you may when you use the suprarenal extract or the adrenalin.

ACUTE EDEMA OF THE NASAL SEPTUM.*

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Acute edematous inflammations of the soft structures of the mouth and throat are comparatively common, especially in the tongue and uvula, but appear to be extremely rare in the nose. Thus, while vascular dilatation of the mucous membrane and the erectile tissue are the usual accompaniments of acute rhinitis, I have not been able to find, in an examination of the literature, any account of acute intranasal inflammations characterized by edema. Two instances, however, of this condition have come under my observation. In one of them it was possible to excise the whole edematous area for microscopic examination.

CASE 1.—The patient, a young married woman, 25 years of age, who had always been in good health, came, Aug. 15, 1898, for a blocking of the left nasal passage, with fulness and impairment of hearing in the left ear, of ten days' duration. There had been a slight sore throat at the beginning, which had passed off in a few days. There were no constitutional symptoms, nor elevation of temperature. There was no abormal nasal discharge anteriorly, but she complained of a moderate amount of nasopharyngeal dropping. Examination showed, in the left posterior naris a globular mass about 1.5 cm. in diameter, bright red, with smooth surface, completely filling the choana. It was not possible to see its point of attachment. The right choana appeared normal in outline and color, except for a slight swelling of the erectile tissue of the septum over a limited area of about 1 cm. on the right side, immediately behind its posterior end. This swelling was pale bluish-pink, but was not greater than the tumefaction in this region so often seen in chronic rhinitis. The pharynx, larynx, and anterior nares showed nothing abnormal. The left ear showed a moderate acute serous inflammation.

A simple oily spray was given for local use, and calomel administered in sufficient quantity to cause free catharsis. Four days later the left postnasal mass had shrunken to about one-half its former size, and appeared as an irregularly lobulated rounded mass, pale-pink in color, growing with a broad base from the left side of the septum, immediately in front of its posterior extremity, occupying in fact the corresponding site of the slight swelling of the right side above mentioned. The turbinates of the left side could now be seen posteriorly, and showed nothing abnormal. The serous catarrh of the left ear had diminished, and the hearing on that side had improved. On Aug. 25, that is, in three weeks, approximately, from the beginning of the symptoms, the mass had entirely disappeared, and both sides of the septum, seen in posterior view, were alike. The left ear appeared normal.

The patient then remained well until December, 1898. On Jan. 3, 1899, she consulted me, saying that for the past ten days she had been suffering from a severe cold associated with some sore throat and impairment of hearing on the left side. There were moderate constitutional symptoms of malaise and loss of strength, but little, if any, elevation of temperature. Examination showed a reddening of the nasopharyngeal mucous membrane without swelling. The septal mucous membrane was slightly reddened, but otherwise normal. The left ear showed a slight serous inflammation. Under a mild spray the symptoms and evidences of inflammation disappeared. On January 16 a light application of chromic acid was made to the left lower turbinate anteriorly, as this showed a certain amount of relaxation. Three days later the patient returned, saying that on the day following the cauterization she began to experience a filling up behind the palate, with nasal occlusion, at first left-sided, but now becoming bilateral. The left ear simultaneously became extremely deaf. There was at this time no fever, and constitutional symptoms were absent. Examination showed, lying on the upper surface of the soft palate, an irregularly globular mass, somewhat flattened above and below, bluish-pink, translucent, smooth, with numerous pinhead-sized whitish spots studding the surface. In size it was about 3 by 4 cm. in diameter. It filled completely the nasopharynx, so that neither vault nor septum was visible. A snare with a recurved canula was introduced through the mouth, and the wire slipped, with some difficulty, around the mass, when it was completely removed. The hemorrhage was slight. After removal, the mass was seen to be flattened, oval in shape, firm and elastic, resembling in appearance a mucous polyp. Post-rhinoscopic examination now showed its point of attachment to the area on the left side of the septum, which had been the site of the former swelling. This appeared now as a smooth area about 1 cm. in diameter, marked by a thin blood clot. Healing of this surface progressed rapidly, and on January 31, two weeks after the operation, the mucous membrane was smooth and closely adherent to the septum, differing in this respect from the corresponding area of the right side, which showed the circumscribed area of tumefaction previously referred to as so often seen in chronic rhinitis. The left ear was normal.

The patient remained well until April of the same year, when she came saying that she had a cold in the head for one week, but that there had been little, if any, blocking of the nose. Examination showed a somewhat

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reddened nasopharynx. The right posterior septal tumefaction was slightly larger than on last examination, and was of a pale, bluish, translucent color. The corresponding place on the left—the former site of the edematous tumor—was smooth and flat. There was no impairment of hearing, and the ears appeared normal. The acute symptoms disappeared in a few days.

Pathological Anatomy.—The excised mass was divided into several smaller portions, of which some were fixed in alcohol, and others in Zenker's fluid. Sections showed the following histologic appearances.

The mucous membrane consisted of from three to six layers of columnar epithelial cells, without evidence of ciliæ. Here and there the mucous membrane was absent or represented by tattered and loosely hanging columns of cells, while in several places vertical cracks and fissures through the mucous membrane were apparent. The individual epithelial cells seemed essentially normal. In the intercellular spaces were seen a few polynuclear neutrophilic leucocytes.

The body of the mass below the mucous membrane was composed of a delicate network of connective tissue fibers, with wide interspaces. In many places the fibers seemed forcibly ruptured from their connections, leaving ragged and frayed ends, separated by a varying distance. Scattered about in this area were a number of mucous glands of essentially normal size and appearance, surrounded by a moderate number of lymphoid cells with a few plasma cells and *Mastzellen*, in a manner similar to that which occurs in the ordinary hypertrophied mucous membrane. There were numerous thin-walled channels lined with endothelium containing red blood-corpuscles and a few polynuclear neutrophiles and lymphocytes.

These appearances denote, without doubt, a sudden escape of fluid into a circumscribed area, with the result of forcibly stretching the enveloping mucous membrane and the underlying connective tissue spaces.

The subsequent history of this patient is interesting. Three months later she came for examination, complaining of symptoms of cold in the head, of one week's duration. The nasopharynx was somewhat reddened. The mucous membrane of the septum, posteriorly, as seen in post-rhinoscopic examination, was moderately swollen, pale and translucent. The mucous membrane of the corresponding site of the left side of the septum, where the edematous mass had previously been removed, was found to be smooth and flat. The symptoms disappeared after a few days' use of a bland oily spray. The patient then remained away until twelve months later, when she returned, stating that there was an obstruction in the left nasal passage which flapped to and fro with respiration. Examination showed two large pedunculated, polyp-like growths, dependent from the infundibulum. These were removed. A few days later another smaller mass appeared in the same situation. At this time there was no evidence of acute inflammation. During the next few days no change in the mass was apparent. No bare bone could be discovered with the probe, but the question of syphilis presented itself strongly, and on inquiry it was learned that about ten months previously a general rash had appeared over the body, similar, the patient said, to measles, accompanied by a sore throat of several weeks' duration, and a general glandular enlargement, beginning in the groins. This disappeared in two or three months. Acting upon this supposition, I gave the patient mercury and iodid of potassium. Within a week the polyp began to diminish in size, and ten days later had entirely disappeared. The patient has since then been taking iodid of potassium, with the result of being in better general health than at any time during the preceding six months. It is not possible to make a positive diagnosis of syphilitic ethmoiditis, but it seems reasonable to suppose that such was the condition.

CASE 2.—This patient was a healthy woman, 26 years of age, who had been suffering from intermittent blocking of the nose for several years, which had, however, not been productive of much discomfort. The present trouble consisted of symptoms of a severe cold in the head, of one week's duration, with complete blocking of the right nasal passage. There was no fever, and but slight constitutional disturbance. Examination showed the mucous membrane of the nasal passages to be moderately reddened and diffusely swollen, the septum deviated slightly to the left. In the right nasal passage, about one centimeter behind the junction of the triangular cartilage with the perpendicular plate of the ethmoid, and about a centimeter above the floor of the nose, there was a reddish, soft mass, attached to the septum, moving back and forth with forced respiration over a distance of 3 cms., and completely blocking the passage. On slight contact with the probe it bled freely. There was abundant muco-purulent discharge from both nostrils. A bland oily spray was given locally, with blennostasin internally. On the next day this mass was seen to be much smaller, and its outlines were better made out. It now appeared as a semi-translucent, elastic, pink, pedunculated, pyriform mass, looking much like an ordinary nasal polyp. This rapidly continued to shrink in size, and in two weeks from the first examination had disappeared. Its site of attachment was now seen to be a bony ridge of the ethmoid plate, over which the mucous membrane appeared slightly thicker than usual. The diagnosis was made of a sharply circumscribed edematous infiltration of the mucous membrane and submucous tissue in this portion of the septum.

The resemblance of these two cases to the edematous inflammations of the soft palate is striking. In both structures a sudden inflammation of the mucous membrane and underlying tissues makes its appearance, and is rapidly followed by the escape of serum into the underlying connective tissue. There is moderate constitutional disturbance, and evidence of the existence of an infectious process. In the two cases just described, it was interesting to note that while the inflammation of the mucous membrane was fairly extensive within the nose and the nasopharynx, the edema was restricted to a limited area of the septum. It was manifested clinically by the development of a large translucent, pedunculated mass, having a strong resemblance to a mucous polyp. The duration of the process was from two to three weeks. The histologic examination in one of the cases confirmed the clinical diagnosis of acute inflammatory edema.

CRYOSCOPY AS A MEDICOLEGAL TEST OF DROWNING.—When a person is drowning, more or less water penetrates into the lungs and thence into the pulmonary veins and the left heart. The blood becomes diluted and the determination of the freezing-point in the right and left heart shows this dilution. In some experiments reported by Carrara, in dogs killed by drowning, the freezing-point of the blood of the right heart averaged .42 and in the left, .29. In salt water the difference is still greater. In a soldier who had been drowned in the sea the left heart showed 1.18 and the right, 1.04. The freezing-point is identical in both halves of the heart in cadavers submerged after death. In all cases the difference becomes equalized in the course of a few hours.

ATRESIA HYMENALIS, ITS ETIOLOGY AND TREATMENT.

WITH REPORT OF A CASE OF ATRESIA HYMENALIS, HEMATOCOLPOS, HEMATOMETRA AND HEMATOSALPINX DUPLEX, EACH OF THE SIZE OF A MAN'S FIST, IN A GIRL OF FOURTEEN YEARS. PRESENTATION OF SPECIMENS.*

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The formerly so-called congenital atresia of the female sexual apparatus has been in later days a subject of greatest interest and discussion, and the question whether or not every atresia ought to be classified as a congenital *vitium primæ formationis,* or as acquired by some inflammatory process during early childhood, has not yet been settled as to universal agreement. The pendulum of scientific opinion has nowadays swung rapidly to the side of those authors who believe that every atresia in a *simple* genital organ is caused by an inflammatory process and may be produced: 1, through infectious diseases during childhood (variola, diphtheria, erysipelas, scarlatina, measles, dysentery, pneumonia connected with vaginitis phlegmonosa dissccans, impetigo contagiosa, etc.); 2, vulvovaginitis gonorrheica of the new born, or vulvovaginitis of other bacteriological or traumatic origin during childhood, or colpitis senilis; 3, trauma during life by external force. scalding, burning, operation, corpora aliena (pessaries), cauterization with chlorid of zinc, thermocautery, curettement after abortion or birth,† etc.; 4. puerperal infectious diseases; yet it must not be forgotten, as will be shown at the close of my topic, that in some cases the most accurate and strict anamnesis is not able to reveal any such diseases as above mentioned, as supposed causes of gynatresias, and that, on the other hand, there is no explanatory reason for excluding entirely congenital malformations during the embryologic development of the fetus, though we can oftentimes not furnish a reasonable explanation. Landau, for instance, cited lately two very interesting cases of the latter kind in the Berlin Medical Society,[1] where there was in one case total occlusion of the uterus by a mesonephric fibroid of the cervical portion, *id est,* a fibroid originating by hyperplasia of the Wolffian body, which case is still more interesting for the reason that it is the first one cited in literature of a mesonephric myoma originating from the cervical part of the Wolffian body.

I do not intend in my introduction to go too deeply into the details of this interesting question, but will show at the end of my paper that, as it is in many other things where we say the truth is lying in the median line, so it is here, that is. both opinions are justified and are substantiated by microscopical examination and clinical observations.

Though the recent literature of atresia hymenalis shows interesting material, yet some features observed in the following case and cited below justify its contribution.

On February 16 I was called in consultation by Dr. Barckmann to a patient who gave the following history and status:

The anamnesis revealed that H. M., 14 years of age, had had so-called black measles (hemorrhagic) at the age of 4 years, for which reason she was confined to her bed for a fortnight. She was always well until two years ago when she was stricken at intervals with sudden attacks of pain in the abdomen which were attributed by different physicians to catarrhal enteritis, colic, etc., and treated accordingly. No minute examination was ever made. Six days before consultation she experienced an attack of somewhat similar pain, at first not so severe as to attract medical interference. Two days later, however, while playing the piano, the pain increased steadily and did not cease day or night. She was confined to her bed with colicky pain, chiefly in the left iliac region, and was compelled to urinate every five minutes. When I saw the patient in consultation with Dr. Barckmann, who at first appearance had made the diagnosis atresia hymenalis and hematometra, the following status was presented:

Very well developed and healthy looking girl; pulse 94, temperature normal; upon visual examination the mons veneris was found covered with hair; the abdominal region from the symphysis ossis pubis up to one finger's breadth beneath the umbilicus was protruding with an abdominal tumor which in the umbilical region showed the upper circumference of an enlarged uterus bifundalis. From the umbilical region the line of circumference descended in a convex line on both sides to the anterior superior spine. By manual palpation the umbilical part of the tumor felt like a hard mass, the part over the symphysis and Poupart's ligaments showed fluctuation. The part of the tumor over both Poupart's ligaments showed the appearance of two sausage-shaped tumors, broadly attached to the tumor in the median line. Between the labia majora a bluish looking membrane was bulging out of the vagina like a child's head in the vaginal outlet, together with a well-marked protrusion of the posterior vaginal wall. Diagnosis: atresia hymenalis, hematocolpos, hematometra and hematosalpinx duplex.

As the state of affairs was such that rupture of the sac might be expected at any time, the patient was immediately removed to the hospital and operated upon the next morning. The pulse on the evening previous to the operation rose to 120, temperature 100, which showed that some alarming disturbance was impending.

At the operation—narcosis by Dr. Holty, with assistant Dr. Barckmann—after opening the abdomen, the omentum, in a state of imbibition by a brownish-looking bloody fluid, was found in front of the tumor masses and attached to them and the parietal peritoneum. After freeing it by gentle blunt dissection, the situation could be determined. The tumor in the median line was the distended uppor portion of the vagina, and the unfolded cervical part of the uterus, upon which was lying the fundus of the uterus like a small cap on a big head. Dark-brown, bloody fluid, oozing, as was shown later on. from the left tubal tumor, was found in the peritoneal cavity. On both sides of the median tumor two retort-shaped, dark-brown looking, tubal tumors, each of them of the size of a man's fist, were encountered imbedded in delicate adhesions and attached to the bowels and the parietal serosa. On the left side a hematovarium of the size of a hen's egg was adherent to the tubal tumor. By gently breaking up the adhesions both tumors with the hematovarium on the left side could be removed without rupturing. The abdomen was wiped out and closed, and then, by a small opening through the membrane into the introitus vagina, two and one-third quarts of bloody fluid exuded slowly from the hematocolpos and the hematometra. Ten days after the first operation a plastic operation, to keep the vagina open, was performed. Uneventful recovery. Five weeks after the operation the menstrual flow reappeared.

The first question which arises in our case is: Does this atresia hymenalis belong to the congenital or

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† Menge demonstrated lately a case (Centralblatt f. Gyn., 1901, p. 463) in which atresia of the cervix uteri in three places was caused by curettement.

acquired class of gynetresias? I have already touched upon this question in my introduction, and pointed out that many authors, following the opinion of Nagel, Veit,[2] and Meyer,[3] deny absolutely the possibility of congenital atresia in cases of a simple genital apparatus, that is, without any other congenital malformation, such as vagina duplex, uterus bicornus, uterus septus, etc. This opinion, however, has been somewhat disproved by the excellent microscopical studies of C. Van Tussenbrock, in a case of atresia hymenalis[4] (compare C. Van Tussenbrock, "Histologische Differential-Diagnose zur Angeborenen und Erworbenen Hymenal-Atresie").

As we know, the normal hymen consists only of vulvar epithelium, connective tissue, and vaginal epithelium without any muscular layer.

Catherine Van Tussenbrock, well known to us by her classical studies on ovarian pregnancy, found in her case a muscular layer in the hymen, together with blood vessels, and no sign of previous inflammation, and concludes that in this case there has never been a hymen, but that the membrane which caused the occulsion of the vagina consisted of the inferior part of the atretic Müller's ducts with their surrounding secondary muscle layer and the bottom of the non-perforated sinus urogenitalis, which had become vulva. Treub,[5] who was always of the opinion that Nagel's theory was not in every case in harmony with clinical observations, thinks that Van Tussenbrock's discovery is a perfect anatomical proof of the theory of congenital atresia hymenalis. Henkel,[6] however, demonstrating the microscopical preparations of the hymen in a case of atresia hymenalis in which he found muscle fibers, is of the opinion that after the occulsion of the vagina a protrusion of the posterior part of the vagina takes place with elevation of its muscle layers, and that, therefore, this condition does not speak against an inflammatory origin of atresia. This protrusion of the posterior part of the vaginal wall was so well marked in our case that one could demonstrate it clinically, and I must say that I am fully convinced of Henkel's opinion when muscle layers are found. I regret very much, however, that external circumstances did not allow a microscopical examination in the case of my patient.

In our case the anamnesis could not reveal any catarrhal inflammation of the genital tract, either during childhood or during the state of hemorrhagic measles, and it would be dangerous and premature to come to the conclusion that the hemorrhagic measles must have had some relation to the alteration in the genital sphere of the patient, though it may perhaps be possible, and the inflammation, as it happens oftentimes, did not cause demonstrative symptoms. The more one sees in surgical and general practice, the more one comes to the conclusion: Beware of making a statement *post hoc, ergo propter hoc,* unless you have absolute proof and are perfectly convinced of the proof of your statement; and many statistics are, in this respect, like a *puella publica,* as Freund once expressed himself. Consider the question from this standpoint: How many have infectious diseases during childhood—measles, scarlatina, diphtheria, etc.—and in how many of these does atresia develop later on? In cases where we find diphtheric membranes on the vulva without or with diphtheria of the tonsils (Silberstein[7] lately cites a case of this kind cured by diphtherie serum), the fact that this diphtheric process may result later in atresia is well-nigh beyond dispute. Furthermore, as it is beyond question that many children contract a gonorrheic conjunctivitis during the period of birth, so, many may contract gonorrheic vulvar vaginitis in the same manner; and this is the more true because the gaping of the vulva, the protruding of the small labia and the tenderness of the epithelium favor infection of these organs, especially during birth. The reason that we find comparatively few cases of gonorrheic vulvar vaginitis in the new born in literature is, that they are oftentimes overlooked by parents and physicians, and but little attention is paid to a slight redness and leucorrhea from the vulva. In other cases of vulvo-vaginitis during childhood and infectious diseases, the symptoms may be of such trifling character that they are entirely neglected and yet the inflammation may cause atresias. Neugebauer, to whom we owe many statistics of interesting cases in gynecologic literature, has, in his monograph, "Zur Lehre der Verwachsungen and Verengerungen der Scheide, etc.," Berlin, Karger's Verlag, 1895, collected 1000 cases of stenosis and atresia, of which he thinks 479 are certainly acquired, and under these, as Piering[8] cites thirty-two times—seventeen times in children—a colpitis was the underlying cause.

The question of origin of the atresia hymenalis in our case can be answered, if we consider the origin of the accompanying hematosalpinges. Veit,[9] in his paper "Ueber Haematosalpinx bei Gynatresien," makes the appearance of a hematosalpinx a phenomenon of the greatest differential diagnostic value concerning the origin of an atresia, and says that all cases, in which we find hematosalpinx connected with hematocolpos or hematometra, are undoubtedly of inflammatory origin, even if we find other *vitia primæ formationis,* such as vagina duplex, uterus bicornis, etc. Wilbert, in his dissertation, "Beitraege zur Entstehung der Hymenal-Atresie" (Inaugural Disscrtation, Wuerzburg, 1898), cites a case in which the hematometra extended to the navel without a hematosalpinx. The retained menstrual blood was found germless and one was not enabled, by injecting it under the skin and the peritoneal cavity of rabbits, to produce inflammatory processes, but it was absorbed without any action. All others in which we find hematosalpinx he thinks are of inflammatory origin. Many clinical observations have proved the fact that the blood in hematosalpinx is highly infectious. More than 70 per cent. of cases in which the coexisting hematosalpinx was overlooked and the patients, therefore, simply operated upon by way of the vagina, resulted in death from peritoneal sepsis, caused by the ignorance of the performer. Fuld[10] cites that out of 56 cases operated in this manner 39 died. The tender adhesions of the tubes were broken by the sudden disappearance of the hematometra and hematocolpos, the tubes ruptured, and the infectious contents caused septic peritonitis. This danger of rupture of hematosalpinx during sudden disappearance of the hematocolpos has been pointed out sufficiently by many authors, who emphasized its importance (I will here only mention the names of Freund,[11] Rose,[12] Webster[13]). In our case the left tube was in a state of impending rupture, but, fortunately, only a little fluid had escaped into the peritoneal cavity, causing the rise of temperature and of the pulse on the evening previous to the operation. Had the operation been delayed twenty-four hours, or had rough handling by palpation caused a complete rupture of the tube, unavoidable death would have been the result. The

phenomenon of hematosalpinx, therefore, in our case compels us to classify the atresia as one caused by an inflammatory process.

It is not my intention here to go further into the discussion of the question as to the origin of the blood in the tubes, whether caused by refluxion from the uterus, catarrhal inflammation, or tubal menstruation, which process is absolutely denied by Saenger,[14] or even from the hematorium. Neither will I go into the details of a differential diagnosis between extrauterine pregnancy and hematosalpinx, which, as Veit has shown, can be differentiated by a regard for the closure of the abdominal end of the tubes in the latter. It is important to notice in our case that on the left side there was a complete atresia of the uterine end of the tube. This excludes an origin of the blood from the uterus on this side.

Concerning the treatment of hematosalpinx and atresia hymenalis, there can be but one opinion, which is, perform laparotomy first and extirpate the hematosalpinx, thereby removing the possible cause of septic peritonitis. Then open the hematoeolpos and hematometra by the vaginal route.

At the close of my paper, I should like to emphasize once more the following: 1. The origin of gynetresias in a simple genital tract may be twofold: *a*, caused by an inflammatory process, which is true in the majority of cases; *b*, caused by congenital malformation, as shown by Van Tussenbrock, in a case of atresia hymenalis, which, however, can find, as above cited, another explanation, and by Landau in a case of atresia cervicalis produced by a mesonephric fibroid. 2. The practitioner must pay attention to every case of birth where he suspects a gonorrheic infection of the maternal genital tract, not only to the eyes of the new born, but also in the same manner to the vulva and vagina; and, if he finds an infection of these parts he should treat them carefully with .5 per cent. of protargol solution three times a day, as advised by Siebert,[15] or by other methods. 3. In all infectious diseases during childhood possible inflammation of the genital apparatus must be taken into consideration. 4. The physician must enforce a thorough examination in all cases of molimina menstrulia with absence of menstrual flow. 5. If he finds an atresia somewhere in the genital tract as the underlying cause, he must not cut blindly into the hematocolpos or hematometra, but must direct his method of treatment after the question: Is there hematosalpinx present or not? 6. If the latter is diagnosed, laparotomy must be performed first and then the hematometra or hematocolpos opened by the vaginal route.

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DISCUSSION.

DR. A. MCDERMID, Chicago—This specimen coming from so young a girl, is remarkable. It was a wise precaution that the Doctor gave, not to open the vagina and trust to drainage in these cases. I recollect a case that I saw more than twenty years ago, where the family physician had made a crucial incision and the girl died from general peritonitis.

DR. A. GOLDSPOHN, Chicago—I did not hear all of the paper, but only the precaution about opening from below in hematosalpinx. That is correct, but there are many cases, as I had one recently, in a girl of 17, of occlusion from a thick, dense hymen. The blood accumulates in the vagina and it is a long time before the cervix and body of the uterus becomes expanded and before the tubes are involved, so that in such instances we should certainly open from below, as I did in my case with good results. The thing that is especially important for the general practitioner to understand is the danger of bimanual examination. In this particular class we have to caution against such compressing of the parts, notwithstanding the extreme value of bimanual examinations usually. A man accustomed to pelvic examinations and surgery is usually able, by careful bimanual and rectal palpation, to diagnose the cases of vaginal retention, which can be emptied from below, from those in which the tubes are involved and operation from above is needed.

HOW SHALL WE DEAL WITH UTERINE MYOMATA?*

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Much confidence in the efficiency of different remedies has been expressed at various times.

Those, which in recent years have attained to most pronounced favor, have been the animal extracts, notably those obtained from the mammary and thyroid glands. As in electricity, doubtless much of the benefit imputed to these drugs is due to suggestion. The only extract which has seemed to me capable of producing any beneficial effect is that derived from the thyroid gland. This agent appears to exert a special influence upon the epithelium of the uterine mucous membrane, which promotes the arrest of hemorrhage and decreases pain. These effects are found in the carcinomatous as well as the myomatous uterus. Not every patient, however, is able to take the drug in sufficient doses to exert a beneficial influence upon the growth.

The efficacy of electricity, I will not discuss further than to say that I should not advise its employment in uterine myomata demanding treatment, when the condition of the patient's health would permit surgical procedures. The first aim of our surgical treatment must be to restore the afflicted individual to health with the least possible danger to life. The second to preserve, where possible, the normal functions of the pelvic organs. In many patients, the former axiom is only maintained by the most radical operation. Where the uterus is spread out by diffuse interstitial myomata, the slight hope of retaining a functionating uterus does not justify the necessary exposure to greatly increased danger. In such cases, the patient is exposed to three dangers: 1, hemorrhage into, or through, the lacerated organ; 2, loss of vitality and sloughing of the bruised and injured tissues; 3, inflammation and consequent adhesions.

When the operator is intent upon preserving the function of the pelvic organs, he will find himself able to avoid the sacrifice of many uteri which he would previously have been impelled to remove. The age and condition of the patient will always be an important factor. Married women with numerous children, or those near the climacteric much less justify any additional risk. On the contrary, young and unmarried

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women sould have their organs preserved whenever possible.

The method of enucleation of myomata through an abdominal incision, of late years, has been frequently described, and is so well known that I will do no more than to emphasize some features of the procedure. The uterine incision should be vertical rather than transverse, and should be so made as not to injure the interstitial portions of the Fallopian tubes, or the large vessels supplying the uterus. The tumor surface should be exposed by a free incision, the growth seized by a double tenaculum and enucleated from its bed by a blunt dissector. Where a number of growths exist, the incision should be so placed as to permit the removal through it of as many growths as possible. After all growths have been removed, the ragged tissues should be excised and the wound carefully closed with continuous catgut sutures, so placed as to control bleeding vessels. A superficial row of sutures should be introduced so as to invest a good peritoneal surface to insure early union. Where the uterus has been extensively wounded a gauze drain should be inserted through the abdominal wall to prevent hemorrhage; for the uterine tissue is so elastic that bleeding may recur after closure of the wound.

It is generally regarded necessary to sacrifice the uterus when it is occupied by multiple myomata, but the number of growths is not of so much importance as are their size and situation. One growth may have a more marked destructive influence upon the uterus than a number of smaller growths. I enucleated twenty-five growths from a uterus which seemed very much riddled after their removal, but the patient had an uneventful convalescence and subsequently menstruated regularly.

I will not enter upon a discussion of the removal of submucous tumors through the vagina, as it is generally recognized that this avenue should be utilized whenever the growths are readily acessible through it. Where it is necessary to sacrifice the uterus the entire removal of the organ is the simplest and most expeditious procedure. After the abdominal incision the tumor and uterus are thrown over the symphysis and an incision made into the posterior vaginal fornix upon a bougie or a pair of forceps previously introduced. This part of the procedure was introduced by Eastman, who devised a grooved staff upon which the vagina could be opened. Through the vaginal incision the cervix is seized and drawn forcibly upward, while the vaginal wall is separated from it by scissors. Traction upon the cervix drags it away from the bladder, separation from which can be completed by pressure with the fingers. Frequently the uterine arteries are seen and seized before they bleed. Often they do not bleed as they are pushed back without being torn, while the small branches retract without much, if any, hemorrhage.

After separation of the bladder, the uterus remains attached by the broad ligaments. These can be temporarily secured with clamp forceps external to the appendages and the uterus and growths removed. The broad ligaments are now crushed with the angiotribe and tied in the groove thus formed with chromicized catgut. The uterine arteries are ligated with the same material. The operation as described is essentially that introduced and practiced by Doyen. Aside from its increased expedition, it affords greater security to bladder and uterus when the uterus is drawn away from these structures. I have frequently seen both ureters exposed in the wound. After securing the vessels, the vagina may be fastened upon each side to the stump of the broad ligament, which will prevent the subsequent relaxation of the vaginal canal. The peritoneal flaps are closed over the interior portion of the pelvic wound, completely excluding it from the peritoneal cavity.

In conclusion, from our knowledge of the progress of myomata, we are justified in answering the question of the title of this paper as follows:

1. Small uterine myomata, which do not give rise to symptoms are subperitoneal or interstitial, and may be permitted to go untreated, but the patient should be kept under observation and any increase in size should indicate operation, as continuous growth may result in destruction of the uterus.

2. Small growths which cause hemorrhage are submucous or interstitial, and should be removed through the vagina. They can be made accessible by tents, or by incision through either the anterior or posterior lip.

3. Multiple growths, or small growths, non-accessible by the vagina, which cause symptoms should be removed by abdominal incision. The uterus should be preserved whenever practicable.

4. When the growths are large, or render extirpation of the uterus necessary, the entire removal of the organ, as described in the text, is the simplest and most expeditious procedure.

DISCUSSION.

DR. JOSEPH EASTMAN, Indianapolis—When I reeall the time, eighteen years ago, when I was an assistant in the work of Professor Parvin, I recollect his thorough efforts, in making a differential diagnosis between fibroids and ovarian tumors, leaving the fibroids alone and removing the ovarian cysts. I remember that a number of lives were allowed to pass away because they had fibroids and nothing could be done for them. This was before the perfection of our modern methods of removing fibroids. Dr. J. B. Murphy said to me, "Doctor, we no longer find those horrible fibroids which we found fifteen years ago." That is true. The evolution in the removal of fibroids has been most remarkable and gratifying. The Doctor speaks first of the menopause having something to do with whether or not we shall disturb a fibroid. I am of the opinion that a larger percentage of women suffer from some form of degenerative change in a fibroid tumor during the menopause than where there is any reparative or atrophic change which restores the woman's health. I regard the menopause as a dangerous signal, and would hesitate more in allowing a woman with a fibroid to pass through the menopause than any period prior to or after that time.

In regard to myomectomy, I recently had a case where I undertook to remove a large subserous mass and found it in an advanced stage of decomposition, and in consequence I infected the wound and the patient. Before we attempt to remove such a tumor by enucleation, it would be well to determine whether it has already begun to undergo degenerative changes. There are still a few unusual cases of fibroids where we can not adopt any particular method; the morphology of the tumor must to a certain extent govern the method of removal. Although I have had considerable experience in the use of different methods for the removal of fibroids, I have as yet never come to the point where I could lay aside the old rule. It is only the few, and not the many, who are capable of doing aseptic surgery. Dr. Montgomery's paper covers the field very thoroughly and leaves little to discuss.

DR. SETH C. GORDON, Portland, Me.—I am known as a radical on fibroids. When a woman, advanced in life, comes to me with a fibroid or with symptoms which I find are due to a fibroid of the uterus, I believe the only safe, judicious, conservative thing to do is a hysterectomy. No man can say, when he removes a comparatively large fibroid, that there are no more fibroids present which he can not discover. Comparatively few women with fibroids conceive; quite a good many abort

before the period of gestation is finished. If we remove a uterus containing fibroids we have certainly conserved that woman's health. The mortality in hysterectomy is almost nil.

Conservatism, in my opinion, means the conservation of the woman's health. She comes to us not to be relieved of some temporary troubles, but to be cured. I have been in the harness a good many years, and I have done much of this work, and the cases where I have the most trouble are those that have been conserved by these gentlemen who call themselves conservatives. They usually let the woman go on; she is not suffering very badly, not losing much blood; she can bear the pain, and all that sort of thing. I do not believe in that kind of conservatism.

Two years ago I read a paper before the American Gynecological Society, entitled "Conservative Gynecology." I reviewed the history of myomectomy, and no candid man who reviews the cases reported in that paper, can say that conservatism removes myomatous tumors, especially in women beyond the child-bearing period, or who have passed the menopause, or women who could not conceive. You may say that the tumor is not doing much harm. The tendency of fibroids is to grow, to produce further symptoms, and the time when you can do the best operation with the least danger to your patient, with the lowest mortality, is when the tumor is small, when there are no complications, no degeneration, pus tubes, ovarian adhesions and complications arising from peritonitis. When women are suffering, true conservatism is to do a hysterectomy. I shall believe that as long as I practice surgery. We have been in the era of electricity, ergot, and all that kind of treatment, altogether too long. We have seen too many women die; too many go on to the point where an operation was necessarily attended with a large mortality. Doing a myomectomy under those conditions, with almost a certainty of having to open the abdomen again, is not true conservatism. The woman is the one to be considered in this matter; and when she understands the case fully, I believe the majority of them will not want to take the chance of a second operation. I am not terrified in the least by being called a radical; I rather glory in radicalism when such conditions confront us.

DR. WILLIAM H. WATHEN, Louisville, Ky.—I do not agree with Dr. Gordon's statement that every fibroid tumor should be removed. They should be removed when they cause inconvenience to the patient, such as would be greater than the danger of an operation. I do not believe in the operation of removal of the ovaries, or any operation, except the radical operation. I have found it to be best to remove the cervix. We know that cancer has developed in a number of cases after leaving the cervix. The operation of hysterectomy for small myomata should be done per vaginam; the results are better, and the patients convalesce more rapidly. When the tumor is too large, or when the vagina is very small, then remove the tumor by the suprapubic or combined method. There is no capital operation that has more simplicity than the operation of removing a fibroid when there are no complications.

The method I pursue is to apply two long clamps on each side, one close to the pelvic wall and one close to the uterus; cut down quickly between them, and then apply, as a rule, two others; then take the uterus away. I occasionally apply a clamp on the round ligament. I do this in preference to ligating, because you can ligate arteries much better when you have the tumor removed. You can reach them easily and can ligate them separately or *en masse*. The tumor is removed very speedily, sometimes within less than ten minutes, and you can ligate the arteries in half the time required before the tumors were removed. In cases where the tumor is too large to be removed from below and is wedged in the pelvis, so that it can not be elevated more than half an inch, having involved the broad ligament, you must treat each case individually and distinct from every other. In cases where there are no contraindications, I separate the vagina from its attachment to the uterus; dissect off the bladder as far as I can; open Douglas' pouch, and apply clamps to the broad ligaments to control the uterine arteries. Then I cut the uterus from its attachments for an inch and a half; then I clamp the ovarian arteries from above and remove the tumor by such methods as may best suit the case. In some cases, where you can not do otherwise, speedily bisect the uterus and then enucleate from below, beginning on the side that can be most easily enucleated. Clamps must be applied to any large bleeding points. Sometimes we can take these tumors away with but little hemorrhage.

DR. A. PALMER DUDLEY, New York City—The title of this paper is a very broad one, but I look at this matter from a strictly scientific standpoint and not from the standpoint of the possibility that the woman may need a second operation. If this study does not advance it must recede, and if we keep along the line of the belief that the uterus and its appendages must be sacrificed because of the presence of a fibroid tumor, we are at a standstill. We have finished the work and can do no better. We must decide whether to go forward or turn back. Who would think of turning back in art or architecture, or in science, and why should we, as artists in surgery, stop with hysterectomy because a fibroid is giving a woman trouble? I am governed in my work solely by my ability and skill as a surgeon. If I have a case where I can do a myomectomy and return healthy appendages with a repaired uterus, I am bound to do it. When I find that that can not be done with a reasonable amount of certainty, hysterectomy must be resorted to.

Ten years ago the question of chloroform in labor was fought out in this Association. Why can not we now do this work as described by Dr. Montgomery, relieving the woman providing she has healthy appendages that will do the work, and providing we can do it without searring the uterus to such an extent that it will be a menace in the future. The uterine muscular structure heals like any other tissue, therefore we can safely do a myomectomy, without regard to any operation that must be done in the future.

DR. G. B. MASSEY, Philadelphia—This question has often been the subject for discussion before this Section and it is always an interesting one. Some of us come here to learn, and many of us are frequently confronted with the question what to do when a case of this kind comes to us. I believe that the obscurity that still rests upon it, is due largely to exaggerated statements made in medical bodies. I want to know whether the small fibroids are less dangerous to remove than the larger ones. I am not a surgeon, but I am an observer, and my personal impression is that the size of the growth does not necessarily make the operation more dangerous. Then what happens after a successful removal?

Those who use electricity in the treatment of these cases are also confronted with problems. In the first place we should not promise any results in less than six months. That is a very serious objection, one, however, which has been largely met by the growth of the skill of the physician in using electricity. Much can be said on this subject, but these are only a few questions that have presented themselves to me while listening to this discussion.

DR. MONTGOMERY, closing the discussion—I am gratified with the interest displayed in my paper. Dr. Eastman misunderstood me in regard to operating near the menopause. I attempted to emphasize the fact that in women near the menopause, married women who have had a number of children, it is less necessary to save the uterus than in women of a younger age. I fully agree with him as to the removal of the uterus at this time when it is the seat of fibroids which give rise to marked symptoms. The change which the growths undergo are such as to render it desirable that a radical operation be done. I agree with him also as to the importance of recognizing the condition of the tumor prior to a consideration of enucleation; that the danger to the patient is increased when the tumor has undergone necrotic change.

I can not agree with Dr. Gordon as to the necessity or wisdom of performing a hysterectomy in every case of fibroid tumor. On the contrary, many cases in which hemorrhage is a marked symptom may be treated by the enucleation of the tumor through the vagina and the retention of the uterus. I fully agree with Dr. Dudley that we should endeavor to cure our patients by the restoration of function rather than by the sacrifice of important organs. I do not feel that when a patient has sacrificed her ovaries and uterus, that we can consider her case one of cure. We are simply saving her from a

serious disease; we are throwing her into a condition less unfortunate and less likely to produce serious disturbances of her health or which produces symptoms of less unpleasant character, which may be avoided by the mere enucleation of the tumor. Where a uterus can be saved in a woman under 40 years old we should invariably do so. With regard to the operation mentioned by Dr. Wathen, I think if he follows the method suggested by me in first making his incision into the vagina from the abdominal cavity, cutting around the cervix, pulling it away from the bladder and ureters, clamping the broad ligaments and uterine arteries if they bleed, he will never repeat the procedure he has described to us to-day. I can not conceive of any reason why a woman with a small growth of a healthy character should be subjected to so much danger as is the woman with a large fibroid growth. The larger the growth, the more serious is the operation; and the more serious the operation, the greater is the danger.

Clinical Report.

CASE OF FATAL HEMORRHAGE FROM A VARIX OF THE PAMPINIFORM PLEXUS.

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SURGEON TO MONTANA DEACONESS HOSPITAL.
GREAT FALLS, MONT.

J. A., V-para, aged 40, seven months pregnant, was first seen by the writer on June 5, 1901, in consultation with Dr. C. T. Sweeney at the Montana Deaconess Hospital. Her history showed that on May 28 and 29 last she had driven into Great Falls from her ranch fifty miles distant, sleeping the intervening night in her wagon on the road. On the 30th and 31st she had worked very hard re-papering a house occupied by her husband, who worked in the city as a plasterer, while June 1 was spent in purchasing supplies to take back to the ranch, which necessitated nearly the whole day's walking about or standing in stores. About midnight on the latter date she was awakened by a series of griping pains in the lower abdomen, and called Dr. Sweeney, who reports that the pains, while severe, were unattended by any symptoms of shock, her pulse at this time being between 90 and 100, full and strong; the os was slightly dilated. A hypodermic injection of morphia secured relief.

On the morning of June 2 pain was still absent, but the patient complained of an uncomfortable feeling of fulness in the abdomen, and the intestines being considerably distended a mild purgative was ordered, to be followed by an enema later. Pulse at this time was 104, temperature normal. June 3, there was no pain, the os was still slightly dilated; bowels had not moved and were much distended; temperature normal, pulse 116. The patient was transferred to the Montana Deaconess Hospital, where epsom salts was administered and enemata given during the day, but no stool was secured by the morning of June 4, although gas passed; the abdomen was becoming more and more distended and vomiting developed; temperature was slightly elevated (100 F.), pulse 120.

When I first saw her, June 5, the abdomen was greatly distended and tympanitic, particularly over the transverse and descending colon, which was plainly outlined upon the surface; a pregnant uterus reaching to the umbilicus could be felt; the bowels had not moved and she had vomited every few minutes all night, the vomited matter having a stercoraceous odor at times. Her pulse at this time was 135 and very weak, temperature normal, thoracic organs healthy, liver and spleen normal. She complained of severe pain in the abdomen; the features were dark, drawn and anxious; her teeth and lips were covered with sordes, and tongue dry and brown. Vaginal examination showed the os to be rather larger than a twenty-five cent. piece. Examination of recto-uterine space was negative. Immediate preparation was made to open the abdomen, and on going on the table the patient was almost in extremis, pulse 145 and very feeble; ether was the anesthetic employed. As soon as the peritoneal cavity was opened, large quantities of dark fluid blood gushed out. The hand encountered many large clots, both in the pelvis and among the intestines. The fingers were rapidly carried down both sides of the left broad ligament, which was found perfectly intact; then to the right side which was found to be occupied by a clot about the size of a small orange slightly infiltrating the cellular tissue between its blades, and communicating by an opening into which the fingers readily passed with the free fluid blood in the pelvis. Ligatures were rapidly applied to both extremities of the broad ligament well down into the pelvis, when all hemorrhage being controlled, the clots were removed, the peritoneum flushed out with hot saline solution and rapidly closed, the entire operation consuming about twenty minutes. The patient was quickly returned to bed, where rectal and subcutaneous injections of hot saline solution with hypodermics of stimulants failed to revive her, and she died in an hour.

An autopsy made one hour after death failed to show any cause for the symptoms of intestinal obstruction except the presence of the blood in the peritoneal cavity, where it did not act mechanically but produced an intestinal paralysis through the shock inflicted on it by its presence which acted as a foreign body. The broad ligament was so disorganized by the hemorrhage and by the ligatures applied to it that the ruptured vessel could not be identified; both tube and ovary, however, were perfectly normal.

Peculiar interest attaches to this case, for several reasons. The insidious character of the symptoms presented contrasted sharply with those usually attendant upon a ruptured tubal or ovarian gestation sac. Even the initial pain, in its comparative mildness and absolute freedom from shock, was but little suggestive of this accident, even though an advanced intra-uterine pregnancy had not deprived it of such significance. The failure of all attempts to secure a stool, together with the vomiting, tympanitic distention of the abdomen, slowly rising pulse, and normal or slightly elevated temperature, so strongly obtruded the obstructive features of the case that hemorrhage in the rôle of causative agent was not suspected.

The chief interest, however, centers about the pathologic condition revealed by the operation and confirmed by the autopsy. Here was a patient with a severe, even fatal, hemorrhage from the vessels of a broad ligament, in whom the possibility of extra-uterine pregnancy could be absolutely excluded. Not only was an intra-uterine pregnancy of seven months certainly present, as proved by the autopsy, but careful examination of the tube and ovary demonstrated that they were absolutely normal, and the conclusion was reached in the absence of other causes, that in this case the hemorrhage was from a ruptured varix of the pampiniform plexus, although the particular vessel affected could not be identified amid the crushed and tattered remnants of the broad ligament presented at the autopsy. Yet careful miscoscopic examination of the large, tortuous, irregular veins of the uterus and opposite broad ligament after death confirmed the impression obtained at the operation, that in the ordinary state of distention common to these vessels before rupture they were decidedly varicose.

It has been my fortune to see within the last two or three years a case of fatal hematocele occurring in a virgin where, although unconfirmed by autopsy, the inference was strong that the hemorrhage proceeded from a ruptured varicose vessel in the broad ligament; Doleris has described a number of similar cases. This occurrence of two cases of pelvic hemorrhage due to this cause within a comparatively short period in my own practice, together with the very considerable number of cases scattered through the literature, where pelvic hematocele, occurring outside the child-bearing period, could not be satisfactorily explained except upon the hypothesis of rupture of a varicose vein within the broad ligament, leads me to believe that a constant relation exists between uterine vascular disease and pelvic hematocele. I can not agree with reporters who describe cases not dependent upon obstetric traumatisms, and especially ectopic gestation, as the rarest accidents. They are of sufficiently frequent occurrence, I feel assured, to warrant much more careful consideration being accorded to them than they now receive, and to warn against the conclusion too generally accepted that the possibility to exclude ectopic pregnancy excludes also broad ligament hemorrhage.

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THE PATHOGENESIS OF PARESIS.

The pathogenesis of paretic dementia is generally held to be primarily in the nervous system, though certain toxic agencies, notably syphilis, are commonly admitted to have prepared the way. Since its apparent close relations with tabes have been brought to notice, a similar pathologic condition has been considered by many to be alike the basis of both disorders; as held by Mott, for example, paresis starts as a primary degeneration of the cortical association neurons, while in tabes the exogenous sensory spinal neurons are first affected. According to his view, both are essentially the same disease, the difference being in the portions of the nervous system involved. While the question of the primary parenchymatous or interstitial nature of the earliest lesions in paresis is still discussed and while there are not lacking able advocates of the vascular origin of the disease, there is at least the merit of novelty in the theory recently advocated by Dr. Ford Robertson,[1] pathologist to the Scottish Asylums.

According to his view, paretic dementia is a toxemia of gastro-intestinal origin, due to excessive growth of the bacteria which normally inhabit the alimentary tract, notably those of the colon group. The toxins thus generated specially affect the nutrition of the vessels of the central nervous system, and particularly those of the more vascular regions, because of their better blood supply. He admits the probable action of syphilis in preparing the way, but holds that it is essentially that of altering the natural immunity, and that there is some evidence that this is dependent upon commencing exhaustion of the leucoblastic function of the bone marrow. The toxemia is probably in some measure, he says, established for months or even years before the outbreak of the nervous disorder. In some individuals the cerebral cells are first to give way and paresis is the result: in others, the spinal and we then have tabes—the original process and cause are the same in both. Hence, as a deduction from these views, he believes that the treatment of paresis and tabes should be directed primarily to the correction of the morbid conditions in the alimentary tract and that the arrest of the disease by such means is practicable.

In the same issue of the *British Medical Journal*, there also appears a paper of Dr. Lewis C. Bruce, of the Perth District Asylum, evidently written in concert with that of Dr. Ford Robertson, and advocating the same general views. Bruce, however, has experimented with serum-therapy and tested the agglutination reactions of the bacillus coli with paretic serum and believes that he finds not only evidence in support of the gastro-intestinal toxemic nature of the disease, but also valuable therapeutic indications. He has used the serum from patients in the remission of paresis by inoculating with it others in the progressive stages, and he thinks that the results are to some extent significant and promising. As a therapeutic suggestion, his ideas are worth testing in a disorder like paresis, where nothing so far seems to be positively curative, but the theory of the disease here offered will require very ample demonstration before it can even be seriously thought of as a possible pathology.

Robertson admits that there are many unanswerable objections to portions of his theory, and others, not its advocates, will doubtless find arguments against it as a whole. The papers of Bruce and Robertson nevertheless call attention to certain aspects of the disorder and are, in this way, and on account of the exceptional nature of the views expressed, rather notable contributions to its literature.

1. British Medical Journal, June 29.

THE ART OF ENDOWING MEDICAL COLLEGES.

It is a matter for congratulation that philanthropists are turning their attention to medical schools. They are beginning to recognize the fact long since familiar to those conversant with the needs of such institutions that medical education as conducted at the present time is not self-supporting. The necessary equipment of a modern medical school represents an investment of considerable magnitude, whether we consider the wealth of clinical material needed for the practical training of the student—material that should be in the main supplied by the hospitals under the immediate control of the college authorities, or whether we consider the various laboratories for the practical demonstration of the fundamental sciences.

Again, the teaching force is fourfold greater than that needed in the recent past. It follows that the salary lists of these institutions are correspondingly increased. Not only so, but whereas in the past the professors occupying certain scientific chairs in the medical schools were at one and the same time in general medical practice, it is now deemed necessary for them to devote their entire time and attention to the duties of their chairs or departments. In short, there is no other form of professional training either so exacting or so costly as that pertaining to the education of the physician of to-day. Though the precise situation from a monetary view-point is fully appreciated at present by those in control of the affairs of our medical schools, as well as by those in teaching capacities, the popular notion relative to the question is still far astray.

The claims of medical schools upon private philanthropy have recently called forth laudable and generous responses from Mr. Rockefeller, who endowed the Rockefeller Institute for medical research, and Mr. J. Pierpont Morgan, whose gift of over one million dollars to Harvard University was publicly acknowledged on the occasion of the commencement exercises recently held of the medical department of that well-known university. We may confidently assume that these handsome gifts will prove to be the forerunner of even greater munificence on the part of others. Indeed, donations and endowments in connection with medical colleges will doubtless grow more conspicuous as the urgent needs of higher medical education are more generally appreciated by those possessing great wealth. Since it is practically certain that generosity toward medical colleges is sure to grow, those who are in a position to fully present their claims to the generously disposed need to remember that there is an art in giving. Such efforts, however commendable at first sight, can not accomplish good results unless much study and investigation is given to the question of how and when to apply donations and endowments. There is danger that unless forewarned, rich men may injure the cause of medical education or retard its progress as a result of misdirected generosity. It is also perfectly possible for men of wealth to be induced to furnish the funds that would enable an undeserving institution to swell enormously its matriculation list. Generosity must be tempered by critical judgment and the gratitude of the profession with wise counsel as to the best means of applying pecuniary gifts.

Whilst giving is praiseworthy, the art of giving is not unworthy of the most careful and thoughtful consideration of wealthy philanthropists, as well as those who control the administrative affairs of medical colleges and who are morally bound to develop them to the utmost usefulness.

RECENT ITALIAN INVESTIGATIONS ON MALARIA.

The various phases in the investigation of malaria, which has yielded such remarkable results, have been followed quite closely in the editorial columns of THE JOURNAL.[1] In the third annual report of the Italian Society for the Study of Malaria, Professor Celli[2] briefly reviews the work of the society for the past year. A number of small stations were established for the special study of the disease from an epidemiologic standpoint.

The work of these stations shows that where malaria prevails the anopheles genus of mosquito also occurs, but not vice versa. All stagnating water in marshy regions may be foci for the larvæ of anopheles; mixed salt and fresh waters are exceptions to this rule. The larvæ die in the water used for maceration of flax, whereas rice fields covered with stagnating or running water always harbor the larvæ of the malaria-carrying mosquito. The parasite of the grave tertiary form is the most widely distributed; that of the quartan form is less prevalent; while that of the mild tertian form is more widely distributed in the northern than in the southern part of Italy. By means of the mosquito theory the epidemiology of malaria in Italy has been well established through the efforts of this society.

Among the more important studies in the pathology and therapy of malaria may be mentioned those of Lomonaco and Panichi on the agglutinating powers of malarial blood, through which it is hoped to attain a rapid and sure means of diagnosis of latent malaria. Numerous experiments have been made on sufficiently large scale to demonstrate conclusively that persons working in malarial regions may be fully protected from malaria by mechanical protection against the stings of mosquitoes. This is confirmed by the English physicians Sambon and Low, who lived during the malarial season in a specially constructed house guarded against the entrance of mosquitoes. It may be recalled, too, that Manson produced malaria experimentally in London by means of infected mosquitoes sent there from Rome. Enactments have been secured whereby reliable quinin is kept for sale at a low price in all parts of Italy. Efforts are now being made to render specific treatment with quinin obligatory, in order to prevent death from pernicious malaria. Popular writings on malaria are to be spread among the inhabitants of malarial regions, and the physicians therein provided with scientific publications.

The economic gain for Italy through this united warfare against its terrible malaria can not be estimated, and the work of this society forms a good example for imitation in other lands. The value of euquinin as a prophylactic is well shown by the work by Di Mattei and others, and Mori[3] states that of 42 persons in a malarial region, subjected to prophylactic treatment with euquinin in doses of one-half gram per day, only 5, that is, 11.90 per cent., became infected, while of 47 non-immunized persons 39, that is, 82.97 per cent., fell victims to the infection. Celli regards this substance the best means now at hand for producing artificial immunity against malaria.

THE TEACHING OF CHEMICAL PATHOLOGY.

The increasing and now quite widely recognized importance of chemistry and physics in physiological and pathological processes is leading gradually to a remodeling of the methods of teaching pathology and physiology, with the view to giving the attention demanded by chemistry in its relations to these sciences. Within a year or so a few of our medical institutions have established distinct courses, of different kinds, in pathological chemistry. Professor Taylor, of the University of California, gives the details of the course

1. August 12, 1899; May 26, 1900; June 9, 1900; Feb. 16, 1901.
2. Centralbl. f. Bakt., 1901, xxix, 770-772.
3. Ibid., 786-791.

planned for the medical students of that school.[1] A full and valuable description is given of the equipment of the laboratory organized for this purpose and intended for fifty students. The underlying prineiple which led to the installment of this course is the neeessity for the student to learn that disturbed funetion is co-equal with altered structure, and hence an effort is made to study morbid physiology and morbid anatomy at the same time. In chemical pathology each student does practical work, as far as possible. Wherever material is insufficient general demonstrations are made.

The general course includes work on the saliva, the gastric fluids, the feees, the urine, transudates and exudates, the bones, various organs, tumors, toxins, antitoxins and ferments. When the class has done a certain amount of work along general lines, subjects for original work are given each student for more detailed study, and an interesting list of topics follows. The field is so large that it is not possible to cover all parts, whieh is not so essential as that the student should work out largely by himself some of the conditions of disease from both chemical and morphologieal viewpoints. The course here indicated occupies three afternoon sessions per week throughout the academic year.

We believe that this is an important step in the right direction. Eventually the courses of this kind may be made to include the study of the influence of chemieal and physical agents upon living matter as well as the study of the chemical composition of various kinds of dead matter. Perhaps an important question in the minds of some men, especially the deans of medical departments, will be, where is the time for this new course to come from? The curriculum is crowded already and students are being pushed too hard. The solution of this difficulty probably lies in the fact that as the chemieal and physical aspects of pathology are emphasized, the morphologic side, so prominent at present, will become less important and require less time for adequate presentation.

THE USE OF SUGAR.

The present tendeney of physiologists and authorities on dietetics to encourage the use of sugar as an aliment, has not failed to excite some controversy and adverse opinion. A recent article by Von Bunge is in point.[2] This author, starting from the common observation that children who eat sugar appear anemic and have bad teeth, reasons that as sugar contains neither iron nor lime, its free consumption, by supplanting other aliments containing these essentials, is damaging and should be discouraged. He would advise therefore an increased tax on sugar. In noticing the views of Bunge, Professor Lépine, of Lyons, takes exactly the opposite view. He shows from Bunge's tables how little lime and iron is taken in our food, and hence the improbability of enough sugar being ingested to make up any appreciable difference. With the Freneh, owing to the high price, sugar is used ehiefly as a condiment and only about one-third as much per individual as in England. It would not appear that the English or Americans suffer especially from their excessive use of sugar, unless we can attribute their frequent need of dentists to this cause. It is probable, however, that they really are not very much worse off in this regard than other eivilized people, and in other respects they certainly are not suffering physically from excess of sugar ingestion. Professor Lépine, as a hygienist, would prefer to see the consumption of this aliment tripled or quadrupled amongst his countrymen and has no fear that it will ever damagingly displace other essential food substances.

1. Phil. Med. Jour., June 22, 1901.

2. Der Wachsende Zuckerkonsum und seine Gefahren. Ztschr. f. Biol., 1901, xli, 2 s. 155 (referred to by Lépine).

A FRENCH MEDICAL ASSOCIATION OF AMERICA.

The proposition made at Montreal this summer to found a Freneh-speaking medical association for this continent does not apparently receive the endorsement of the English-speaking physicians of Canada. The *Canadian Journal of Medicine and Surgery* deprecates the movement and believes that it would be in no way representative of Canadian medicine; that it would be more patriotic and sensible to form a bilingual Canadian body, in which both languages could be used, and thus sink minor differenees in behalf of their common country. Of course, such a body as that proposed at Montreal would be maintainly French-Canadian, the French element in the United States being usually rapidly absorbed in the English-speaking general population. It is a misfortune for Canada that political and religious reasons have there preserved racial types and speech, but with existing conditions it is not unnatural that the French-speaking members of our profession, predominating as they do in a large portion of the Dominion, should propose a cleavage on linguistic lines, and it will be of interest to observe how far the patriotic plea for a united bilingual Canadian association will be effective. The editor says: "Medical scienee is not limited by geographical or political boundaries," and his closing suggestion that, if French-Canadian physicians "place language on a higher level than patriotism" his English-speaking compatriots in the profession might seek association with their American eonfrères, seems worthy of consideration.

ABENTERIC TYPHOID FEVER

As an argument against the employment of the term enteric fever to designate the specific morbid proeess dependent upon the activity of the typhoid bacillus, it has properly been pointed out that the lesions are by no means confined to the intestinal traet, which may, and, in fact, occasionally does, escape involvement entirely. Accordingly, the derivatives, splenotyphoid, pneumotyphoid, pleurotyphoid, have already found their way into the literature as descriptive of special localizations of the morbid proeess. To these there has recently been added the designation arthrotyphoid, to describe the condition present in a case of typhoid fever reported by

Barjon and Lesieur[1] in which there was articular involvement. The patient was a boy, 17 years old, who had had an attack of typhoid fever at the age of 8 years, and one of acute rheumatism at the age of 11 years; and now, again presented symptoms of the former disease. The spleen was not enlarged, and at first intestinal symptoms were wanting. There was, however, marked arthritis, which had begun in the feet and had extended thence to the hands. There was much delirium, and toward the close diarrhea became profuse. Typhoid bacilli were cultivated from the blood, and the Gruber-Widal reaction was obtained on several occasions. On post-mortem examination no ulceration of the bowel was found. The free borders of the aortic and mitral cusps exhibited hard granulations, pink in color. It is thought that the intestine and the spleen were immune in this case, in consequence of the previous attack of typhoid fever, and that the joints were involved as a result of the injury they had sustained in the earlier attack of rheumatism.

ADRENAL EXTRACT FOR HEMOPHILIA.

In the present state of knowledge, it is difficult to say to what extent the hemorrhage, spontaneous or otherwise, that occurs in connection with the so-called diseases of the blood, is due to deficient coagulability, and to what extent to changes in the blood-vessels. It would seem, however, that the blood-degeneration occurs first and the vascular disease as a secondary condition. Recent observation has shown that preparations of adrenal gland constitute a most efficient hemostatic, and their activity in this direction has been thought to be due principally to their vasoconstrictor influence. That, over and above this, adrenal gland has also some effect in increasing the coagulability of the blood, would seem to be indicated by its successful employment in the treatment of obstinate epistaxis in a case of hemophilia, as reported by Dr. D. McKenzie.[2] A boy, 13 years old, had bleeding from the nose of ten days' duration, for which no cause could be demonstrated. Insufflation of tannic acid, internal administration of calcium chlorid, and plugging of the nares were all tried, but the appearance of a purulent discharge, as well as the discomfort from the presence of the lint used for the last-named purpose, led to the application of a solution or suspension of adrenal extract, with the result that the hemorrhage was controlled. On inquiry, it was learned that the father of the patient had in youth bled constantly and freely from the nose, and still bled freely after cuts or the extraction of teeth; while the maternal grandfather of the parent had been subject to severe nose-bleed. The patient himself had, at the age of 6 years, an attack of epistaxis lasting ten weeks, and shortly afterward, on being operated on for adenoids, continued to bleed for several days. At the age of 9 years, profuse epistaxis occurred, lasting for three days. Besides, slight cuts were always attended with loss of blood out of all proportion to the character of the wound. Free bleeding from the gums followed the removal of loose milk teeth at different times, and bruises were readily induced. Whether the case reported be really one of hemophilia or not it illustrates the efficacy of adrenal gland as a hemostatic, and it certainly justifies the employment of the agent in the treatment of a disorder that has hitherto resisted all other therapeutic measures.

1. Journ. de Phys. et de Path. Gen., March; British Med. Jour. Epitome, May 11, 1901, p. 73.
2. Brit. Med. Jour., April 27, 1901, 1901, p. 1009.

CAN ACQUIRED IMMUNITY BE TRANSMITTED BY HEREDITY?

There is perhaps no more interesting and no more difficult problem in biology than the question as to the transmissibility of acquired characters. It seems not impossible that a compromise answer will afford—here as elsewhere—the true solution, to the effect, namely, that such characters as are purely local are not transmissible by heredity, while those that represent a permanent change in the organism as a whole may be so transmitted, providing, of course, they have developed prior to conception. Thus, the loss of a member or the development of a neoplasm would not be capable of hereditary transmission, nor would disease as such, because of its temporary quality. It may be stated as a general proposition that disease as such is not hereditary, that which may be transmitted by heredity being a certain predisposition or susceptibility on the part of the cells of the organism. Disease in the fetus is acquired directly from the mother, just as occurs in post-uterine existence. An apparent exception is found in the case of syphilis, but even here it is not beyond the range of possibility that the mother had been first infected and through her the fetus. The problem of disease heredity revolves about the question whether the sperm-cell or the ovum may be the seat of disease, and of this convincing evidence is wanting. On the other hand, it can be conceived that immunity is at times transmitted by heredity. Although the mechanism of immunity is not fully understood, it would seem to depend on certain activities residing within the cells of the body, either as an inherent property or as a result of antecedent infection; or within the body fluids. We may accordingly designate the former, which is fixed and obviously can not be conveyed from one animal to another, cellular or biologic, or active; and the latter, which is but transitory and is susceptible of conveyance from one animal to another, chemic or passive. Both of these forms of immunity may be conveyed from parent to offspring, though only the former can strictly be considered as hereditary, while in the case of the latter the transmission is entirely comparable with that which may be effected between one animal and another. Thus immunity may be conferred upon the fetus *in utero* by the blood of a mother passing through an attack of one of the infectious diseases, or on the nursing infant by the milk of such a mother, in the same way as like immunity may be conferred by treatment with antitoxin. The influence of heredity is here out of the question and the immunity is but transitory.

THE TENDENCY TO URBAN CONCENTRATION.

The preliminary census report of the United Kingdom, recently issued, presents some suggestive statistics. Thus, as given in the *British Medical Journal*, the

figures for the total population of England and Wales are 32,526,075. The tendency to urban concentration is shown by the fact that over two-thirds of this population was enumerated in 1122 urban districts, and almost exactly two-thirds, or 21,946,346, in 435 towns of over 10,000 population. Evidently, rural England is badly in the minority. The disproportion must be still further increasing if we are to judge by the percentage of increase in the larger towns, while the smaller show an absolute decrease. Thus, in 472 towns of from 3000 to 10,000 population the decrease during the decade 1891-1901 was 3.51 per cent., and in 215 towns of less than 3000 population it was 12.93 per cent. The sociologic aspects of this concentration of population in cities are perhaps more serious than the medical ones, but the latter are serious enough. It is hardly probable that with all the better facilities for sanitation, etc., that a purely urban population can still avoid breeding physical degeneracy. The man with the hoe, in spite of the sentimental pseudo-philanthropy his hard lot has incited, lives under better conditions for physical development than his brother of the sweatshops and crowded slum. The best blood of the city is recruited from the country, but in England this is evidently a diminishing source and the outcome will be worth watching. Other points that are noticeable in the figures as given are the steadily increasing excess of females over males, at present nearly 7 per cent.; the decrease in the birth-rate and in the average number of persons to a family; and also the decline in the death-rate, showing that at least sanitation is holding its own, and that extraordinary causes of mortality are in check. Our own census shows that one-third of the population of our country lives in towns of 4000 population or more, so we have the same tendencies to meet in a hardly less degree. It may be that our civilization is in a transition period and is adapting itself to new conditions successfully. A hundred, or even fifty years ago, the city growth of the present day would have been attended with evils which we can now hardly imagine and which have been done away with in the progress of medical science and sanitation. We seem to be setting aside the laws of natural selection, by which, at the expense, it is true, of an infinite amount of human suffering, mankind in the past has been constantly rising from lower to higher planes and what the result will be is a question for the future. There are no reliable prophets in these times, but it is safe to say that the colossal human aggregations of the present will insure new problems and work for our profession.

EDDYITES VERSUS VETERINARIANS.

The "christian scientists" are congratulating themselves that they have at last cured a horse suffering with the influenza, and the result is being telegraphed all over the land for the glory of Mother Eddy and her cult. If "christian science" would only go into the veterinary business exclusively there would be little to say against it, for human health and life would not be affected. This would also be the easiest way of settling its merits, as it would there run up against the financial interests, which are always more sensitive to what affects them than are those where credulity comes in play as an active factor. We shall, therefore, be glad to hear of this practice in that line, and hope it will widen out and try itself on glanders, farcy and other little things less certain to get well of themselves than pinkeye or horse influenza.

NEW DEVELOPMENT OF PLAGUE IN SAN FRANCISCO.

Our news columns contain a report of the new outbreak of plague in San Francisco. While this announcement will be received with regret, there need be no fear of the spread of the disease, at least not to an alarming extent, for the conditions now are different from what they were during the past winter. The Chinese part of the city has been thoroughly renovated, and this of itself will remove one cause of the spreading of the disease. The officials representing the Marine-Hospital Service, the State Board of Health, and the San Francisco Board of Health, are working in harmony and the ostrich method of the past has given way to open recognition of the existence of the disease. It is to be hoped that this united action may continue. It is to be hoped also that the authorities will recognize the possibility, if not the probability, of fresh outbreaks occurring in the future, as has been the experience in other plague centers. There must be no relaxation in the vigilance that has been shown for some time, but rather this new development should increase the watchfulness.

DIABETES MELLITUS SIMULATING GASTRO-INTESTINAL DISEASE.

We have scarcely advanced in our knowledge of the nature of diabetes mellitus beyond a recognition of the fact that the disorder represents a derangement of carbohydrate metabolism which may be of multiple or of complex origin. It appears that in health there exists a mechanism through the operation of which the entrance into the blood and thence into the urine of the products of carbohydrate metabolism is prevented, while under certain other conditions this barrier is broken down, with the development of glycosuria or diabetes of varying degrees of persistence and severity. While diabetes is characterized by a more or less definite train of symptoms, the clinical picture is by no means always distinctive, so that the value and the importance of systematic examination of the urine can not be overestimated. In a recent communication, Dr. Emil Schütz[1] calls attention to a group of cases of diabetes mellitus in which the dominant symptoms were gastro-intestinal, and he reports illustrative instances attended with gastric crises, with gastralgia, with intestinal colic and with general dyspeptic symptoms. These manifestations may occur in association or alternation with neuralgia and paresthesia in various parts of the body. The immediate cause of such digestive derangement is to be looked for principally in disease of the nervous system. In the cases in which gastralgia and colic are most conspicuous, disease of the pancreas may be the underlying condition. The course of the symptoms

1. Wiener Med. Wochenschrift, 1900, Nos. 20, 21.

mentioned will be favorably influenced by an anti-diabetic regimen. In all cases of chronic digestive derangement of unrecognized cause repeated examinations of the urine should be made.

THE NEWSPAPER AS A PATHOLOGICAL FACTOR.

A newspaper in an Eastern city changed hands about July 1, and the new proprietor, who has a large practical experience in legitimate journalism, at once formulated a set of rules for the conduct of the paper under its changed management. Among the rules were the following suggestive prohibitions: "No medical advertisements": no advertisements that a self-respecting man would not read to his family: no advertisements of immoral books, of fortune tellers, of secret diseases, of guaranteed cures, of clairvoyants, of palmists, of massage: no advertisements of offers of large salaries, of guaranteed dividends, of offers of something for nothing: no pessimism: no prize-fighting details: no personal journalism; no private scandal. Here is a program that involves the removal of most of the objectionable features in so-called modern journalism. If its details could be conscientiously carried out for newspapers, medical men would find less objection than at present to the promiscuous reading of the daily press, which is working such great harm. Two prohibitions should be added to the list: no details of suicides; no details of homicides, especially such as are committed under circumstances that point to the mental disequilibration of the active agent in the tragedy. If these prohibitions were faithfully kept we should have many less suicides and murders, since often the imperative idea that leads to their committal is suggested by the reading of these cases. How important the influence of such stories is on the mentally unbalanced, can be best realized from the fact that crimes of peculiar heinousness occur in groups. The time relation of these groups, taken in connection with their inevitable recurrence, shows that they are not mere coincidences, but are due to the rigid principle of cause and effect. It has been said that it is impossible to correct the sensational defects of the modern newspaper. A distinguished dramatic manager, when asked where he would begin if he wished to reform the American stage, said that he would begin with the audiences. This principle will apply to journalism. We shall have cleaner newspapers when readers demand and support them. Meantime, much can be done to raise the standard of taste among newspaper readers. So many of the prohibitions that should be enforced in the make-up of the daily newspaper have special reference to health matters that it is evident that medical men should take a lively interest in the subject. It is a duty of the physician to try to secure the suppression of the objectionable advertising matter that is flaunted in the faces of readers and that does so much moral and physical harm.

MAGNET FOR REMOVING TUBE FROM LARYNX.—Collet of Lyons introduces a curved magnet into the pharynx, following the base of the tongue. The laryngeal tube clings to and is easily drawn out with it. This device has proved extremely useful in emergencies, as no skill is required to remove the tube in this way.

Medical News.

CALIFORNIA.

The College of Physicians and Surgeons of San Francisco, at its commencement exercises, July 2, conferred the degree of Doctor of Medicine upon thirty-seven students.

Park Emergency Hospital.—The sum of $5000 has been set aside by the Board of Supervisors of San Francisco for the construction of an emergency hospital in order that people injured in the park may be properly treated.

A chair of anatomy in the University of California has been created, and Dr. Joseph Marshall Flint, instructor in anatomy at the University of Chicago, has been appointed to occupy it, with a salary of $3000 a year. It is the expressed desire of the Regents later to establish a scientific medical school at the University, which shall be under the complete control of the state.

Fakirs and Quacks will be Weeded Out.—The Los Angeles Board of Health has issued a notice to every practicing physician, dentist and pharmacist in the city notifying them that in case they have not registered according to law, but ten days more will be permitted them to do so, and that a failure to comply will be followed by legal prosecution. A fine of from $50 to $500, or imprisonment from 30 to 365 days, or both, is the penalty fixed for attempting to practice without a license.

CONNECTICUT.

A $25,000 appropiation has been made by the state legislature to the Hartford Hospital for the purpose of providing a special building for the treatment of pulmonary tuberculosis.

The State Board of Medical Examiners recently passed a rule in which they admit to examination only those who have graduated from a medical college. Hitherto they had allowed an applicant to take the examination. Another rule makes the examination fee $15 instead of $10.

Hospital Staff Changes.—At the General Hospital, New Haven, Dr. James W. Dounce has been promoted from assistant house-surgeon to house-surgeon, Dr. Thomas F. Maher, Yale, 1901, becoming assistant, and Dr. Carl W. Henze, formerly assistant house-physician, to the position of house-physician, his place being taken by Dr. Edward E. Meyers, Harvard, 1901.

Epileptics in Connecticut.—The committee, consisting of Drs. Max Mailhouse, New Haven, Edwin A. Down, Hartford, and Frank K. Hallock, Cromwell, which was appointed to ascertain for the Connecticut State Medical Society the number and condition of epileptics in the state has completed its inquiry. The number reported was 542, of whom 315 are males and 227 females. According to the report, 224 cases are in public institutions: 114 are capable of self-support, and 128 adult epilepties are insane. The committee reports a lack of interest in the welfare of epileptics, and that little is done to promote their comfort and to ameliorate their condition. The investigators regard the number of cases reported to them to be the minimum, and are convinced that the actual number of epilepties in the state is not less than 1000.

DELAWARE.

Wilmington has awarded the contract for building a $3500 pest-house at Farnhurst.

Delaware Medical Examining Board has granted licenses to practice to seven of the nine candidates who appeared before it recently for examination.

Through the will of Mrs. Caroline McClary, Wilmington, the sum of $5000 has been given the Delaware Hospital for the endowment of a free bed in memory of her husband, Samuel J. McClary.

DISTRICT OF COLUMBIA.

Dr. C. B. Purvis sailed for Europe on the steamship *Etruria*, July 6.

Providence Hospital.—The sum of $250,000 has been spent in improving and making additions to the hospital and both from a practical and artistic standpoint when completed it will be a credit to the city of Washington.

Smallpox Hospital Closed.—The quarantine station for the District was closed July 7, after the release of the seven suspects, who were declared out of danger, and the dismissal of the six guards who have had charge of the hospital during the epidemic. Officially the city is free from smallpox.

Changes at the Casualty Hospital.—Dr. Henry Tobias has been appointed resident physician at the Casualty Hospital and Eastern Dispensary. Dr. Thomas G. Jones has been made assistant resident physician, in place of Dr. R. A. Warner, who becomes interne at the Washington Asylum Hospital.

Increase in Insanity.—Statistics recently compiled by the local health office show that during the year ending July 1, 1900, 270 persons were adjudged insane in the District, while the fiscal year ending July 1, 1901, gives a total of 295 cases sent to the asylum. Of that number nearly 200 cases have been heard within the past six months.

GEORGIA.

The new Presbyterian Hospital at Atlanta was formally opened July 1.

Twenty-eight beneficiary scholarships in the Augusta Medical College, a department of the State University, were bestowed by Governor Candler, July 2.

Dr. Warren A. Brewster, who for the past year has been senior resident physician at the Lamar Hospital at Augusta, has been appointed superintendent of the City Hospital at Augusta.

An epidemic of anthrax is afflicting Bolivar County, and the State Board of Health, owing to the failure of the State Legislature to make, at its last meeting, the necessary appropriation, is unable to check the spread of the disease. A special joint meeting of the Board of Public Contracts and the executive committee of the Board of Health has been held, but as yet no funds for the establishment of the necessary quarantine have been secured.

ILLINOIS.

Dr. Joseph M. D. Robbins, Quincy, has assumed charge of the State Insane Asylum at Jacksonville.

Dr. R. H. Mead, Camden, has been appointed on the staff of the Chester penitentiary at a salary of $1500 a year.

Dr. Nelson K. McCormiek, Normal, has been re-elected physician to the Illinois Soldiers' and Sailors' Home at Normal.

Dr. Philip F. Gillett, Stillman Valley, has been appointed assistant physician at the Northern Illinois Hospital for the Insane at Elgin.

Dr. George E. Baxter has been appointed physician to the State Institute for the Blind, at Jacksonville, to succeed Dr. Frank P. Norbury, resigned.

Dowie's leases in his new home of the to-be-blest Zion City are for a term of 1100 years and provide that the leased ground can not be used for drug stores or physicians' homes or offices.

Dr. E. R. Whitmore, who has recently finished his service in the Cook County Hospital, has been commissioned Assistant Surgeon, U. S. A., with the rank of first lieutenant and will be assigned to duty in Washington during the coming winter.

Trained Nurses Organized.—Under the title of the Illinois State Association of Nurses the trained nurses of this state have formed a permanent organization. The primary object is to secure state legislation looking toward the passage of law prohibiting the practicing of nurses without a diploma granted by a training school. Representatives from all the training schools throughout the state were present at the recent meeting held in Chicago and the following officers were elected: President, Miss Harriet Fulmer, St. Luke's training school; secretary, Miss Seiderstriber, Hahnemann training school, and treasurer, Miss Ledwich, Illinois training school.

Chicago,

Dr. Wladislaw A. Kuflewski was elected vice-president of the Public Library Board, July 11.

Dr. August M. Unger was convicted of conspiring to defraud insurance companies and sentenced to the penitentiary, the motion for a new trial being denied. This closes the famous Defenbach case.

The College of Physicians and Surgeons has selected its officers for the coming year, as follows: Dr. D. A. K. Steele, actuary; Dr. William E. Quine, dean, and Dr. Frank B. Earle, secretary, vice Dr. W. A. Pusey, resigned.

Cook County Hospital is being fitted with two new boilers at a cost of $16,550. The recent investigations by the special committee, selected for that purpose, left no question as to the insufficiency of the boiler capacity in the hospital.

Bad Milk at Cook County Hospital.—The warden of the hospital complains of the filthy sediment found in the milk provided to the hospital. He submitted some milk for analysis to the city bacteriologist, who found that it contained formalin.

Big Fee Not Allowed.—In the suit against the estate of the late millionaire, Francis T. Wheeler, brought by Dr. Emma N. Warne for the sum of $100,000 for professional services, the claim was denied by the Probate Court. Dr. Warne has announced her intention of appeal.

Deaths and Public Health.—With an extreme range of 46 degrees in maximum temperatures—from 56 on July 7 to 102 on July 10, this latter being the highest ever recorded in Chicago—the total deaths reported from all causes last week were only 460, or but one more than during the previous week. The public health conditions have rarely been more favorable. Laboratory examinations show a remarkable absence of contagious-disease germs and the health department reports the fewest number of these diseases notified in any one week since the summer of 1899.

IOWA.

The Sioux City College of Medicine will have the same officers for the coming year, and Dr. J. H. Robbins has been elected to fill the chair of pathology.

Delegates Appointed.—Dr. Van Buren Knott, Sioux City, and Dr. John C. Schrader, Iowa City, have been appointed by Governor Shaw as delegates to the British Congress on Tuberculosis in London.

Insane Hospital Burned.—Fire completely destroyed the Insane Hospital, the Des Moines County Poor-farm and the overseer's residence, at Burlington, July 14. All of the inmates were gotten out safely, but several of the insane patients escaped during the excitement. The loss is estimated to be $40,000, with $25,000 insurance.

MARYLAND.

Baltimore.

Dr. J. Frank Croueh sailed for Germany July 18.

Drs. Francis T. and L. Wardlaw Miles sailed for Europe July 13.

Dr. T. Caspar Gilchrist sailed for England, July 20. He will pay a flying visit to Germany during his absence.

Drs. J. R. Bosley, G. R. Holden and J. C. Salter sailed from this port, July 10, on the North German Lloyd steamer *Frankfurt*, for Bremen.

Owing to smallpox in Sussex county, the State Board of Health has formally notified the Delaware Board of Health that, unless more rigid measures are taken to control the smallpox now in Delaware, a state quarantine will be declared in Maryland against the State of Delaware.

The Medical and Chirurgical Faculty of Maryland is at last entirely out of debt, through the energetic exertions of its treasurer, Dr. Thomas A. Ashby. Since 1896, when the Society moved into its new quarters, 847 Hamilton Terrace, about $25,000 has been raised among the members.

The trustees of the Sheppard and Enoch Pratt Hospital for the Insane will erect a recreation building for the use of patients at a cost of about $15,000. The house will be built on the Casino plan, one story in height, and will be divided into two departments, one for women and the other for men.

NEW JERSEY.

An anti-spitting ordinance has been recently passed by the Plainfield Board of Health.

Dr. Sewell O. B. Taylor, Millstone, has been elected physician of Somerset County to fill the unexpired term of the late Dr. Henry G. Wagoner, of Somerville.

In a competitive examination, Dr. Leo Spiegel, New York, obtained the position of house-surgeon, and Dr. Oscar J. Russi, Bordentown, N. J., that of house-physician in St. Francis Hospital, Jersey City.

State Board of Medical Examiners.—At the annual meeting of the State Board of Medical Examiners, held at Newark, July 5, the following officers were elected: President, Dr. Charles A. Groves, East Orange; treasurer, Dr. A. Uebelacker, Morristown; secretary, Dr. E. L. B. Godfrey, Camden. Fifty-one candidates for licenses were examined, and of that number 29.4 per cent. were rejected.

NEW YORK.

Anthrax has broken out among the cattle in the neighborhood of Higginsville near Rome. Many head of cattle have died, and the state authorities have been notified.

Statistics of work done by the health department at Albany, show that 7000 people have been vaccinated during the epidemic of smallpox now existing at that place.

"Bonesetter" Sweet has been arrested, at the instigation of the Otsego County Medical Society, for practicing surgery without a certificate. He comes from a family long known in Otsego county as "bonesetters," and his arrest is the result of a resolution recently passed at the County Society meeting to prevent any one practicing without a certificate.

Hospital Changes at Syracuse.—At the Hospital of the Good Shepherd, Dr. C. F. Ostrander, formerly house-physician, becomes house-surgeon, and Dr. Albert E. Stafford becomes house-physician; Dr. Henry G. Thrall will become ambulance-surgeon, Jan. 1, 1902. At St. Joseph's Hospital, Drs. William J. Mulheran and T. L. Hatch began their services as internes, July 1.

The Board of Regents of the State, who have entire control of all educational matters, has, at the request of the Medical Examining Board, made a regulation that examinations in anatomy, physiology, hygiene and chemistry be permitted at the end of the candidate's second year of study, immediately after his completion of these subjects, the final examination, in the other subjects, being held only after the medical degree has been received.

Buffalo.

Dr. Nelson G. Russell has been appointed pathologist to the German Hospital.

Dr. Lorenzo Burrows has been appointed ophthalmologist to the Buffalo General Hospital, succeeding Dr. Frank Abbott, deceased.

German Hospital Clinical Society.—The members of the staff of the German Hospital have organized a clinical society. Meetings will be held monthly at which the attending physicians will demonstrate cases of interest in their respective departments. The first meeting will be held in August and an invitation will be extended to the members of the Central New York Medical Association, which is to meet in Buffalo at that time, to be present.

New York City.

Deaths from Heat.—The official reports of the Bureau of Vital Statistics of deaths from heat for the week ending July 6, show that the actual number in the five boroughs of Greater New York was 989.

New York City's death-rate for last week was 40.82 per 1000 per annum, almost double the usual summer rate, and this large increase was due to the excessive heat that prevailed in the early part of the week. There were 2767 deaths from all causes against 1524 for the corresponding week in 1900.

Bellevue Hospital Buildings Condemned.—The State Board of Charities, at its meeting in Albany, July 10, condemned the main buildings of the Bellevue Hospital as being too old and insanitary. A resolution was also passed to increase the compensation of employes in the interest of improved service. A modern hospital is to be erected as soon as possible.

Suit for $10,000 damages has been begun against Joseph J. Gansky, a dealer in anatomical instruments in Brooklyn, on the grounds that he undertook to treat a case, representing himself to be a licensed physician. The plaintiff, Sadie Schoenberg, 10 years old, through her attorney, alleges that the amputation of her leg, which was found necessary at St. Vincent's Hospital, May 2, was due to the mismanagement of her case by the defendant.

The Manhattan Maternity and Dispensary, the object of which is to supply medical and surgical treatment to the poorer class of women, to provide facilities for the instruction of physicians and students, and to establish and maintain a training school for nurses, has been incorporated. Through the generosity of an unknown philanthropist, who has endowed the institution with the sum of $1,000,000, this work will be made possible. Dr. J. Clifton Edgar, who has displayed much interest in this work, will probably have charge of the institution.

Summer Health Inspection.—The Health Department, represented by seventy-five physicians in their employ, began, on July 8, a thorough inspection of all tenement houses. The duties of these physicians are to care for any sick, unable to employ a physician; to advise mothers as to the proper method of caring for children; to abate nuisances, or to report them to the proper authorities; to distribute tickets for outings given by St. John's Guild; to give free ice tickets where needed, and to note any habits which may be unhealthful.

The population of New York City on Dec. 31, 1900, as estimated by the Board of Health, now appears as follows: Manhattan Borough, 1,850,093; Brooklyn Borough, 1,166,582; Bronx Borough, 200,507; Queens Borough, 152, 999; Richmond Borough, 67,021; making a total of 3,437,202. Of this total city population those living in tenements number 2,382,605, about two-thirds of the whole, the remaining one-third residing in private houses, hotels and boarding houses. The proportion living in tenements becomes much larger in the city proper when we consider the fact that the boroughs of Bronx, Queens and Richmond are largely rural.

OHIO.

Dr. George J. Fisher, Cincinnati, has been selected as chief of the medical staff for the Y. M. C. A. convention to be held in that city. He will be assisted by Drs. Edward S. Johnson, E. Otis Smith, Milton G. Blunden, Frederick Theiss, Albert Gustetter, S. A. Allgaier and Edward H. Moss.

State Examination.—The State Board of Medical Registration and Examination held a meeting, July 9, 1901, for the purpose of passing on the grades of applicants examined on June 11, 12 and 13, 1901. There were 37 applicants examined, 29 of whom passed successfully; 7 were rejected and one was dismissed from the room for using a book to secure aid in answering questions.

In the suit of Dr. B. Merrill Ricketts, Cincinnati, against James W. Brown, for medical services to the defendant's son, the jury returned a verdict for the full amount of the claim, $826.26. The defense, that the son was of age at the time that the services were rendered, was not regarded by the jury because it was shown that the father had engaged the Doctor and told him to spare no effort or expense in the treatment of the case.

PENNSYLVANIA.

Dr. Francis Rahn, recently elected resident physician of the Norristown Charity Hospital, entered upon his service July 1.

Dr. Mary McCay Wenck, Sunbury, Pa., sailed on the *Laurentian*, July 6, for Glasgow. She will visit England and France.

Dr. Carmichel, a recent graduate of the University of Pennsylvania, is resident physician of the Chester County Hospital, at West Chester.

WISCONSIN.

Dr. John R. Currens, Two Rivers, has been re-elected president of the State Board of Medical Examiners.

Smallpox in the State.—From the reports of the disease throughout the northern parts of the state, the situation is still considered serious.

"Dr." John Shenion Convicted.—At Manitowoc John Shenion, Reif's Mills, was convicted of the charge of practicing medicine without a license and was fined $50 and costs. Not being able to pay his fine, he is now serving out a sentence of ninety days in jail.

Medical Law Sustained.—The law passed by the last legislature, requiring an examination of all applicants for licenses to practice who are not graduates of a Wisconsin college, was held in the Circuit Court to be constitutional and a valid exercise of the police powers of the state. This decision was rendered to quash the writ of mandamus served on the State Board of Medical Examiners, to compel them to issue a certificate to Dr. James R. Kellogg, Portage, who is a recent graduate of the College of Physicians and Surgeons, Chicago. An appeal was taken to the Supreme Court, where the case will come on for trial at the August term, and will be watched with much interest.

GENERAL.

New Cases of Plague in San Francisco.—Bubonic plague has again broken out in San Francisco, four cases having already been reported. The first case was that of a Chinaman, who died July 6. It is reported that he arrived in San Francisco a few days before from one of the lower islands on the Sacramento River, and that he was ill when he reached the city. An autopsy was performed and diagnosis of bubonic plague was verified by bacteriologic examination. After the death of the Chinaman three more deaths were reported. These were Japanese women who were living in a brothel on Stockton Street, in the Chinese section of the city. Bacteriologic examination confirmed the diagnosis in two of these; the result of the third had not yet been reported up to the writing of this note. Two of these cases were ill with the disease a week before the Chinaman landed in San Francisco, so they have no relation to that case. Another case is reported among the Japanese women, but not confirmed. This seems to be a new outbreak, as no new cases have been discovered for three months, the last case reported by the Marine-Hospital Service being April 4. The local and state boards of health seem to be working more in harmony now than during the former outbreak, and in unison with the Marine-Hospital Service. The cleaning of Chinatown was completed June 22, but inspection and postmortem examinations of Chinese have been continued under direction of the Marine-Hospital Service.

Enno Sander Prize.—The prize for 1901-1902 has been generously increased by its founder to consist of a gold medal, valued at $100, and $100 in cash. The subject for this year is "The Most Practicable Organization for the Medical Department of the United States Army in Active Service." The following are the conditions of the competition: 1. Competition is open to all persons eligible to active or associate membership in the Association of Military Surgeons of the United States. 2. The prize will be awarded upon the recommendation of a Board of Award selected by the Executive Committee. The board will determine upon the essay to which the prize shall be awarded, and will also recommend such of the other papers submitted, as it may see fit, for honorable mention. 3. In fixing the precedence of the essays submitted, the board will take into consideration—primarily—originality, comprehensiveness and the practicability and utility of the opinions advanced, and—secondarily—literary character. 4. Essays will consist of not less than 10,000, nor more than 20,000 words, exclusive of tables. 5. Each competitor will send three typewritten copies of his essay in a sealed envelope to the secretary of the Association, so as to reach that officer on or before Feb. 28, 1902. 6. The essay shall contain nothing to indicate the identity of the author. Each one, however, will be authenticated by a nom de plume, a copy of which shall, at the same time as the essay, be transmitted to the secretary in a sealed envelope together with the author's name, rank and address. 7. The envelope containing the name of the successful competitor will be publicly opened at the next succeeding annual meeting of the Association, and the prize thereupon awarded. 8. The successful essay becomes the property of the Association of Military Surgeons of the United States, and will appear in its publications. The Board of Award consists of William Cary Sanger, Assistant Secretary of War; Brigadier General George Miller Sternberg, Surgeon-General, U. S. Army, and some distinguished officer of the line to be announced later. Major James Evelyn Pilcher, Carlisle, Pa., is secretary of the Association.

FOREIGN.

Professor von Koranyi has endowed a prize to be awarded every five years for a publication on the cure of tuberculosis. The occasion was the golden jubilee of his professional career which was celebrated recently.

Italian Congress of Internal Medicine.—The Eleventh Congress of Internal Medicine will be held at Pisa, October 24 to 28. Addresses will be delivered by Queirolo and Fedeli on "Peritonitis in Typhoid Fever;" by others on "Modern Questions in the Pathology of the Liver," and by Baccelli on "Certain Problems in the Pathology of the Heart."

American Dentists in Germany.—The Association of German Dentists is planning to vigorously oppose the practice of American dentists in Germany. The latter seem, by their superior ability, to be gaining a foothold that is very annoying to the native dentists and the opposition is probably a result of jealousy. The aid of physicians is asked for, they being urged not to give anesthetics to the patients of the Americans. The physicians, however, do not seem willing to lend their support to the movement.

Society for Sanitary and Moral Prophylaxis.—The Belgian government has appropriated $400 to assist in defraying the expenses of the quarterly issued as the "Bulletin of the International Society for Sanitary and Moral Prophylaxis." The first number has already appeared and contains a fine article on the Prophylactic Congress, with outlines of circulars for collecting general statistics, etc., and among others communications from Neisser and Minod on the importance of personal prophylaxis against venereal infection, and minors as prostitutes.

Medical Regulations for German Students.—The new regulations in Germany practically lower the standard of admission to medical study in the universities, but extend the course to six years, as ten semesters are required instead of nine as heretofore, and after graduation, the candidate for a physician's title must first pass a year in a clinic or polyclinic connected with the university or some hospital. If no such opportunity presents itself, the graduate may be authorized by the chancellor to act as assistant to some physician with a large practice. Failure to pass three examinations in the same branch of the medical sciences definitely excludes the student from the course, and also failure to pass a portion of the same examination on three consecutive years.

LONDON LETTER.

The Census.

The preliminary report on the recent census in England and Wales has been laid before parliament. The total population was found to be 32,526,075 which shows an increase of 3,523,550 upon the population in 1891, giving a decennial rate of increase of 12.17 per cent., as compared with 11.65 of the previous decennium. The increase now recorded is numerically greater than in any previous decennium, but the rate per cent. is lower than in previous decennia excepting those terminating in 1861 and 1891. The mean of the decennial rates of increase in the ten decennial periods 1801-1901 has been 13.84 per cent. The highest rate was in 1811-21, when the percentage rose to 18.06, and the lowest in 1881-91, when it fell to 11.65. In 1881-91 the excess of births over deaths was 3,629,474 or 13.97 per cent.; in 1891-1901, 3,593,553 or 12.39 per cent. Had the loss of population by excess of emigration over immigration been at the same rate as in 1881-1891 the decrease under this heading would have been 671,502, whereas it actually was 70,003. But for the unusual drain on the population by the South African War this loss would have been wiped out, and for the first time a gain would have been established by excess of immigration over emigration. Since the accession of the late queen in 1837 the population has more than doubled. The present population consists of 15,721,-

728 males and 16,804,347 females. The excess of females is partially attributable to the number of men serving in the army, navy and merchant service abroad, who are excluded from the reckoning. To each 100 males enumerated there are 106.9 females. The proportion of females has been steadily increasing since 1851, having been successively 104.2, 105.3, 105.4 105.5, 106.4, and 106.9 to 100 males. The increase of population has principally taken place in the urban districts. The urban districts contain 77 per cent. of the population and show an increase in the decennium of 15.2 per cent., the rural districts of only 2.9 per cent. The population of London is 4,536,063, showing a decennial increase of 307,746. As in previous census reports it is found that in the center of London there is a group of districts in which the population has long been decreasing, owing to the substitution of business for dwelling houses, that round this central area is a ring of districts which have undergone a more or less rapid increase, and that outside this is a wide belt of suburban districts in which the population increases with extraordinary rapidity.

A summary, subject to revision, is given of the population of the United Kingdom which amounts to 41,454,578, showing an increase of 3,721,856. The population of Scotland is 4,471,957, showing an increase of 446,310. The population of Ireland is 4,456,546,—a decrease of 248,204, or 5.3 per cent. In the preceding decennia the decrease was 4.4 and 9.1 per cent. The excess of births over deaths was 218,222, hence the loss by emigration was 466,426. In 1821 the population of Ireland constituted 32.6 per cent. of the United Kingdom. Since then it has continuously decreased and now it constitutes only 10.8 per cent.

Municipal Consumption Hospitals.

The anti-tuberculosis movement in this country still continues to be very active. The latest phase is shown by new departures in municipal work in two great cities. At Edinburgh it is proposed to establish an hospital of 100 beds for incurable cases of consumption so as to diminish the risk of the patients becoming a source of infection. The idea of the health authorities is that such cases are, from the public health point of view, on the same footing as the acute fevers and should be isolated. A hospital with 100 beds would, it is thought, be capable of accommodating 400 patients annually at a cost of $25,000. In Sheffield, on the other hand, it is proposed to take means to facilitate the arrest of the disease. The Corporation propose to maintain a sanitarium for the treatment of poor persons suffering from consumption. Over 500 deaths from the disease take place every year, and it is estimated that at one time there are 1500 to 2000 persons suffering from it. It is proposed to limit the cases admitted to patients in the early stage. The time of residence required for the arrest of the disease is estimated at 3 to 6 months. For the treatment to be of real value it will be essential that the patient does not return to his insanitary surroundings or unhealthy trade. The committee who manage the institution will instruct the patient to get into a more sanitary house and assist him in obtaining another occupation if necessary.

CANADA.

Appointment.—Dr. Thomas H. Lunney has been appointed superintendent of the General Hospital, St. John, N. B., succeeding Dr. John MacCauley, who resigned. Dr. Lunney is a native of St. John and was graduated from McGill, Montreal.

Ottawa's Mortality Rate.—The mortality amongst infants and children in Ottawa still continues high. On the 11th, 9 deaths were registered, the largest number noted in one day during the year. For the month of June the number was 108. Since January 1 there have been 520 deaths in the Catholic parishes of the city.

New Hospital.—St. Stephens, N. B., proposes erecting a new hospital and Lady Tilley, wife of the late lieutenant-governor, Sir Leonard Tilley, is at the head of the movement. A splendid site has been donated and it is expected that the equipment will be provided by public subscription and the maintenance secured by a grant from the local government. Already five beds have been endowed and others practically guaranteed.

Smallpox Among Berry-Pickers.—Dr. C. A. Hodgetts, special officer of the Ontario Board of Health, has returned to Toronto after investigating the smallpox outbreak among berry-pickers in Brant County. During his visit of inspection he visited 34 houses and found that there had been altogether since April no less than 98 cases of smallpox or varioloid. Of the remaining 56 persons who were in the infected houses, 45 had been successfully vaccinated, thus forming a striking contrast to the 81 unvaccinated persons who had suffered from the disease. According to age, two cases were under one year; from one to ten, 40 cases; ten to twenty, 18 cases; twenty to thirty, 13 cases; thirty to forty, 10 cases; forty to fifty, 7 cases; fifty to sixty, 5 cases; sixty to seventy, 3 cases.

Ottawa Contagious Diseases Hospital.—For a long time Ottawa has been endeavoring to establish a proper hospital for infections and contagious diseases, but so far their attempts have proven of no avail; now a new feature has appeared on account of it having been alleged that certain aldermen are in a deal, so an investigation has been ordered. About two weeks ago the city council suddenly came to a decision one night to buy a lot of land on the high sandy banks of the Rideau, in the rear of the Protestant General Hospital, and agreed to pay $31,000 for it, which is said to be just double the assessed value of the property. Ever since the decision to purchase was arrived at there have been persistent rumors that some aldermen profited by the deal; and now the mayor has requested the city solicitor to institute an inquiry to ascertain whether it is true that some of the aldermen and even members of the board of health are implicated in this transaction. In the meantime while all this trouble is pending, there is, according to the statements of the city health officer, an alarming prevalence of contagious diseases and a lack of adequate means of isolation.

Health in Ontario Lumber Camps.—The Ontario government has made an important and timely move in adopting regulations to safeguard the health of workmen employed in lumber camps and other unorganized districts of the province. These regulations will hold the owner, manager or foreman of every lumbering camp, mining camp, saw-mill, smelting works, railway construction camp, or other industry, responsible for the enforcement of all provisions as to sanitation. They regulate the size of tent or houses and the ventilation thereof. They further provide for a hospital tent or building which must be located by the physician in charge in a position to satisfy the inspectors of the provincial board of health. The regulations are comprehensive and have been prepared with a view to the protection of a population numbering at least 100,000 distributed over some 400 unorganized townships extending over 1200 miles from the Ottawa River to the Manitoba boundary. It is specially requested that prompt notice be given the provincial board of health in Toronto of all outbreaks of contagious diseases, and all insanitary conditions discovered in lumbering and mining camps.

Miscellany.

Bacteriology of Phthisis.—The researches of Lasker, described in the *Deutsche Aerzte-Ztg*, No. 2, seem to solve the question as to the presence of bacteria in the blood in cases of pulmonary phthisis. He found the blood sterile in 67 out of 68 patients investigated with the most scrupulously careful technique. The patient with the positive result died nineteen hours later, so the presence of staphylococci in the blood may have been an agonal phenomenon. This may explain possibly the positive results of bacteriologic investigation by others, or they may have been due to contamination from the skin.

The Diazo-Reaction in Pulmonary Tuberculosis.—Stadelmann states in the *Deutsche Med. Woch.* of June 20, that the diazo-reaction was noted in 55 out of 152 cases of pulmonary phthisis. It was observed in 38 out of the 69 exceptionally severe cases. He concludes that this reaction has no significance for the diagnosis, but affords important information in respect to the prognosis when the test is positive, although 40 to 50 per cent. of the severe cases do not give the reaction. He points out also that the reaction is only significant when it persists. It may appear temporarily in light cases and it may be absent in many serious cases, but when it is persistent, even in apparently mild cases, it is a warning for especial vigilance over the patient.

The False Pregnancy of the Queen of Servia.—The *Sem. Med.* of May 22, published the letters written and received by Dr. Caulet, the Paris physician of the Queen of Servia. He states that he was summoned to her thirty-three days after her marriage and from the suppression of the menses, nausea, and swelling of the breasts, he informed her of the possibility of a commencing pregnancy and advised her to give up a tedi-

ous trip she had in prospect. He then returned to Paris but wrote to her five months later demanding an examination. In reply he was informed that he would be summoned for the accouchement, but in the meantime she was in charge of her local physician. When summoned at term, he found no traces of a pregnancy. Sneguireff arrived from Russia the next day and the bulletin signed by both physicians confirmed the fact that there was no basis for the assumption of a pregnancy beyond the partial suppression of the menses, gastric disturbances, increasing obesity and flatulence, although, Caulet adds, the subjective symptoms of this "nervous pregnancy" might have deceived even an experienced mother.

Precautions Necessary with Hydrogen Dioxid.—Two French professors at Lyons have recently called attention to the ready absorbability of hydrogen dioxid and the consequent danger of fatal gaseous embolism from bubbles of oxygen forming in the blood after absorption, when it is applied to an open wound or to detach an adherent dressing. In contact with the blood, as with pus, the effervescence continues. The oxygen is disposed of by the oxyhemoglobin in the blood if the amount is small, and no harm results. Inflamed tissues are peculiarly active in decomposing the dioxid, and absorption is always slow and gradual in all cases. Crolas advises rendering the dioxid alkaline by adding a saturated solution of sodium borate, a drop at a time, until litmus paper—first reddened by the dioxid—regains its blue color. Even aside from the fear of gaseous embolism, the dioxid should always be neutralized, as it is liable to contain more or less sulphuric, phosphoric or other acids. It should never be used stronger than eight to ten volumes, and always fractioned and in moderate amounts. With these precautions there need be no fear of the slightest evil effects from its use.

Another Fad—Air and Sun Cure.—According to a newspaper report there exists on Long Island an institution for physical culture, where the "air and sun cure" is carried on in such a way as to arouse considerable opposition on the part of permanent residents. The treatment seems to include the use of pretty nearly a minimum of clothing and this in both sexes, and on the public roads, at the local postoffice and the railroad station. The sights at the depot became the gossip of the road and attracted curious visitors, while they scandalized the residents. It was when the "sun curists" finally attempted to invade the village church in their abbreviated costume that the storm broke and the citizens met in conclave and protested, sending word to the proprietor of the resort that while they had no objections to the methods, if carried on in due privacy, they distinctly objected to the cure being taken in the scanty clothing on the highways and in the public places. Unless this was discontinued, the paper asserts, it was intimated that the patients would soon have other ailments to nurse. For a time the protest had some effect, but with the advent of hot weather matters are reported as bad as ever, and recourse is threatened to legal proceedings. Allowing for sensational newspaper embellishments, the account, if it has any basis at all, would indicate peculiar methods and management in the "physical culture health home."

"Fatty Heart."—Hirsch corroborates Robinson's statements that the mass of the musculature of the heart is directly proportional to the mass of the muscles of the rest of the body. Many obese persons have a small, insufficient heart and their general musculature is correspondingly defectively developed, —"their thick layers of fat hide their emaciation." Their cardiac disturbances are not due to a fat heart, but are merely heart troubles in an obese subject. They are of diverse nature, from simple weakness of the heart, due to the lack of proportion above mentioned, to stenocardia developing on a basis of arteriosclerosis. Hirsch has observed attacks of angina pectoris on a purely nervous foundation in obese smokers, and urges that this possibility should always be borne in mind. Some obese persons with arterioselerosis have attacks of dizziness, not followed by paralysis. Others have a hard, wiry pulse, which reveals the localization of the arteriosclerosis in the splanchnic region, and impending hypertrophy of the heart. Chronic interstitial nephritis is a frequent complication of obesity, especially in beer-drinkers. The treatment should aim to continue the increase of albumin while that of fat is arrested. The amount of food may be insufficient, indicated by dizziness in the forenoon, relieved by a lunch between meals. Hirsch recommends moderation in exercise for these patients, and the ergostat rather than sports. A swelling of the liver in connection with slight ascites is an important early sign of congestion of the veins in the trunk. The filling of the liver with blood is the chief means of determining the functional capacity of the right heart. When this reservoir no longer suffices, venous congestion follows.

The Prevention of the Spread of Acute Contagious Diseases.

A noted modern philosopher said that if he were asked to name the greatest and most beneficial discovery of the 19th century, he would not hesitate to say that it was the revelation that contagious diseases were due to germs. This far exceeds in importance, in health matters and happiness, all that steam and electricity and other inventions could bring forth. What are all their gains, if spreading diseases and terrific epidemics have full sway and are at liberty to increase without limit, carrying pain, anguish, desolation and despair to all? The next most important discovery is that the greatest number of these germs are easily killed, because they have no spores, such as the germs of plague, cholera, yellow fever and diphtheria. Experience shows that the germs of scarlet fever, measles, variola, although not as yet discovered, are also easily killed. The germs of tuberculosis, although not recognized as truly spore-bearing, are hard to kill. Anthrax and rabies are the only spore-bearing diseases which may affect men, and are therefore hard to kill. But these are rare compared with the other contagious diseases. We have learned that persons whose clothes are disinfected can not communicate a contagious disease until they become sick with fever. We are also realizing that clothing worn by persons not remaining in an infected room more than a few minutes, like physicians, do not carry disease.

How many days after the first appearance of the fever a contagious disease can be communicated is not known positively. It can be safely accepted that it requires at least two or three days, except for diphtheria. The mild cases are the most dangerous, because they escape attention, but they infect all the same and may beget grave and mortal cases. Therefore when there is the least reason to suspect the presence of a contagious disase in a locality, we should disinfect all cases of acute febrile sickness as soon as fever is discovered. It was by following regulations strictly that during the epidemic of 1897 in the City of New Orleans, inmates, that is, nurses, students, servants of the Isolation Yellow Fever Hospital, Touro Infirmary and Hotel Dieu, were not affected by the fever, although very few were immunes. When cases of fever occur under these circumstances they are exceptional and are due to some disregard of some regulation. A professional trained nurse is usually the best attendant, but a willing, intelligent and active person in good health can efficiently do the work of protection and salvation. The inmates who go in and out of the house must remove their clothes when they come in and leave their clothes in a room remote from the sickroom. This in case, through some negligence, the room has become infected. It is important that no clothes, no bedding, nothing leaves the room, to be used or not in another room, unless it has been thoroughly disinfected. There can be no such thing as partial disinfection. One handkerchief, towel, toy or other article sent out of the sick room without being disinfected may scatter infection. It is unsafe to remove from the room any article that has remained in the room forty-eight hours after fever has manifested itself. We must ever bear in mind that a mild case may cause a malignant case in another. Isolation is an additional precaution, but it is not absolutely necessary. At the Touro Infirmary, Dr. Loeber does not isolate his cases of yellow fever. He places them in whatever bed happens to be vacant, next to a case of typhoid fever or of pneumonia. But he instructs the nurse to be particularly watchful to disinfect at once all that comes from the patient. And yet no case he

says has ever originated in Touro Infirmary. These statements are in writing over his signature and on file in the office of the Louisiana State Board of Health. Isolation alone at best can only postpone the spread since it can not be eternal and as soon as it ceases those coming in contact with the infected room and fomites run great risk of taking the disease.

Nor is detention of patients after recovery any protection as far as the fomites are concerned. Disinfection, therefore, is the sheet anchor. Care and vigilance are required, of course. But we must remember that as eternal vigilance is the price of liberty, just so constant vigilance here is the price of freedom from disease, suffering and death of our loved ones. Disinfection means the destruction of the germs as they leave the body of the patient through the excretions before they turn into dust and infect the room. Disinfection is necessary of all that comes in contact with the patient; fingers, hands, attendant's clothing and the various objects that may have been in contact with him.

The room is the true battlefield. The fight must be made and won in it. Unless the air of the room is infected there is no risk of contagion. No details ever so small must be overlooked. The cheapest and the readiest reliable disinfectant is a 1 to 800 or 1 to 1000 solution of mercury bichlorid. It is made by dissolving three drams of mercury bichlorid with three drams of ammonium chlorid in a bucket of water (brimful). The patient's clothing and bedding should be changed at least once daily; twice daily is better. The clothing, bedding, etc., must not be shaken, but must be handled gently with care, so as not to shake the dust from them. They should be placed at once in the disinfecting solution, soaked thoroughly, then wrung lightly, enough to prevent dripping. They should be laid aside and allowed to stand wet two hours, then they can be sent to the wash without risk. The handkerchiefs, towels and rags used for cleansing and sponging the patient, or for any other purpose, must be treated likewise. The water used to sponge or wash the patient or to rinse the mouth must be mixed with one quart of the disinfecting solution, and allowed to stand two hours before being thrown away. The sputum must be disinfected with special care. It is best to use no spittoon, but a cup and keep it half full with the disinfecting solution. Let it stand five hours before throwing in the closet or the gutters. It is much better to use rags and burn them. The urine must be mixed with one quart of the disinfecting solution from the pail. It must stand five hours before being emptied into the closet. Stir up occasionally, specially before emptying. The liquid feces must be mixed with two quarts of the disinfecting solution if very liquid. Add in the bedpan the equivalent of one dram of mercury bichlorid and one dram of ammonium chlorid. Soft or solid feces should be burned. Build a small wood or charcoal fire in the yard, and when in full blaze throw the feces on it in small quantities at a time.

All vomited matter must be mixed with one quart of the disinfecting solution from the pail. Add in the vessel one dram of the bichlorid and one of chlorid of ammonium. Allow it to stand five hours before being emptied. The water used in washing anything about the room must be mixed with one or two quarts of the disinfecting solution and allowed to stand one hour before emptying. The glasses, plates and spoons used about the room must be disinfected every time they are used, by boiling for thirty minutes. The room must not be swept, but sprinkled and mopped with the disinfecting solution from the pail. The nurse's clothing must be also changed twice daily; all her clothes must be treated like the patient's clothes. The nurse must keep her hands aseptic all the time by washing them in the solution from the pail every time she touches the patient or soiled things; then she must rinse them in clear water to prevent the mercury from making the nails sore. The nurse or anyone else must never drink nor eat in the room, nor use any plate, glass, spoon, fork, knife, etc., which have been used by the patient. The nurse's hands should be frequently washed with carbolic soap and plain water. The disinfection of the patient after recovery must be done by being washed with a solution (tepid) of the disinfecting solution from the pail. Follow this by a wash with alcohol, or by bay rum or cologne water. The hair must be thoroughly washed with the disinfecting solution, then with alcohol or cologne water and then thoroughly dried. The corpse for burial should be wrapped up in a sheet, saturated with a solution of bichlorid of mercury from the pail. Add to the solution in the pail three ounces of the bichlorid and three of the ammonium. If all the details have been carried out, the disinfection of the room after the recovery (or even the death) of the patient is not absolutely necessary, but it is safer to do so.

Be particularly certain that no bedding, no clothes, etc., are removed from the room unless they have been thoroughly disinfected. Toys, books, etc., used by the patient must be burned. Formaldehyde from a Kuhn generator should be used in the sick room and adjoining rooms. When disinfection is not started within two days of the time the disease began, the disinfection of the room must be more thorough. Mattresses, quilts, heavy woolen articles, etc., must be burned. Carpets should be saturated with the disinfecting solution, dried, then swept, and again saturated. After the apartment and contents have been thoroughly fumigated, all the stuffed furniture should be dismantled and the stuffed fabrics, together with the mattresses, should be covered with sheets, taken into the yard and burned.

Special Remarks.—In cholera it is specially from the vomiting and evacuations that the disease is communicated. Therefore no one should drink or eat in the room. The same applies in typhoid fever. In plague, all little sores on the nurse's finger, etc., should be covered with plaster or collodion; all the rats, mice and vermin about the premises should be killed and burned. In diphtheria the germs are contained specially in the secretions from the mouth and nose. Therefore no one should eat or drink in the room. In smallpox, scarlet fever and measles, smear the patient's body with white vaselin as soon as the peeling is about to begin, so as to prevent its drying and turning to dust before it is destroyed by disinfection. As long as the least desquamation continues, the patient must not be discharged and the disinfection of the excretions, clothing and bedding must be kept up. In smallpox the scabs should be burned. Search the scalp of patients for scabs, remove them and disinfect the spot. Scarlet fever and measles, the peelings must be gathered with care and burned. Patients recovering from a contagious disease may communicate the disease as late as fifteen days after recovery. Therefore, continue all the disinfection of excretions, clothes, bedding for fifteen days after recovery.

Prevention of Spread in Houses of the Poor in Remote Localities.—When it is impossible to obtain the necessary chemicals, the next best is the following plan: Boil at once for thirty minutes the clothes, bedding, handkerchiefs, towels, rags, etc., in as large a kettle as can be obtained. Boil the sputum cup, plate, handkerchief, towel or rag, covering the kettle. Add one pint of water to the urine and boil, covering the kettle. Add one quart of water to the feces and boil, covering the kettle. Boil also the bedpan for thirty minutes after the urine and feces have been boiled, then rinse with clean water. As to the vomited matter, add one pint of water and boil, covering the kettle; boil the vessel which received the vomit. The water used in washing anything about the room must also be boiled, and the bucket that contained it be scalded inside and out. The glasses, plates, forks and spoons must be boiled thirty minutes, then rinsed with clean water. The mops must be boiled for thirty minutes. The water from the washing and moppings must be boiled also for thirty minutes. The bucket must be scalded inside and out. Bulky articles—blankets, quilts, mattresses—when partially soiled should be soaked thoroughly with boiling water for thirty minutes. Disinfect the hands by washing them in hot water, as hot as can be endured. After recovery wash the patient all over with hot water. The sheet for burial should be soaked in boiling water. To disinfect the room, wash the walls and furniture with boiling water.

Sanitation of Cities.—To prevent the spread, the prolongation and the return of contagious diseases, localities, cities specially, should be placed in the highest sanitary condition by the filling of lots, drainage, sewerage, asphalting of streets, Schillingering of banquettes, of yards, of spaces under houses, by planting trees; by a system of quick and thorough removal and dis-

posal of garbage; by sprinkling and sweeping streets; by an abundance of pure water and the abolition of cisterns and wells; by the inspection of milk, meat and all articles of food, liquid and solid; by regulating noxious trades and industries; by preventing the overcrowding of tenements and by inspecting the interior of premises to enforce proper condition of the plumbing and cleanliness. We shall add to this long list the destruction of mosquitoes, flies and of vermin of all kinds, since we are learning more and more the important role they play in spreading diseases. Another most important corollary factor of the discovery of germs as the cause of disease, is the certainty we all feel that in time, probably a short time, it will become easy to make a positive diagnosis by culture and inoculation, to make a positive cure by injecting antitoxins and to reliably protect the well by using the vaccine-viruses. All this would seem fanciful and fantastic did we not already possess it all for diphtheria. It is but a question of a few years when we will possess the same means of investigation and of action for all the other germ diseases.—*Edmond Souchon*, President Louisiana State Board of Health.

Book Notices.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. A New Edition, Completely Revised and Rewritten. Edited by Albert H. Buck, M.D., New York City. Volume II. Illustrated by Numerous Chromolithographs and 765 Half-tone and Wood Engravings. Cloth. Pp. 838. Price, $7.00 per volume. New York: William Wood & Co. 1901.

The second volume of the new edition of Wood's "Reference Handbook of the Medical Sciences" bears out the promise of the first and is equally deserving of praise. Its appearance shows that it is practically a new work, a large proportion of the articles contained being entirely new, many others rewritten and all revised to bring them up to date. The articles are much more full and complete in many instances than in the earlier editions, and therefore more valuable as monographic statements of the facts. The subject of the brain alone takes in, in its various points of view, over one-third of the volume, a very large part of which is entirely new. The paper on cerebral anatomy by Prof. B. G. Wilder, which was included in the Appendix in the earlier series, here occupies its proper place and has been extensively revised. Among the new articles here of note may be mentioned those on Cephalocele by Dr. Fred. Peterson, on Cerebellar Disease by Dr. J. Fraenkel, Cerebrospinal Fluid by Dr. H. B. Ferris, the very elaborate Neuroses of the Cerebral Circulation and Histology by Drs. Browning and L. F. Barker, that on the Development and on the Growth of the Brain by Professors Herrick and Donaldson respectively, and that on the Functions of the Cerebral Cortex by Dr. L. Witmer. We should also add to that list the article on Methods of Removing, Preserving, Dissecting and Drawing the Brain by Prof. Wilder, which seems to be exhaustive, and that on the Surgery of the Brain by Dr. Keen, which is an authoritative statement of what may be regarded as the best surgical opinion on this important subject. These do not include all the new and notable contributions by any means, but enough has been said to show how fully and elaborately the subject has been treated. When we consider that a page in this volume is equal to two or three in an ordinary octavo or duodecimo, the compass of the treatment of the various subjects can be better appreciated. In the remainder of the volume we find a similar condition of things, a general revision, and where specially indicated a fuller treatment of the subjects. The subject of Cancer is handled by Dr. W. B. Coley, but in addition we have papers on Carcinoma by Dr. Councilman and on Skin Carcinoma by Dr. J. A. Fordyce. There are other articles noteworthy for length and fulness of treatment, but enough has been said to give an idea of the work. It should be added that the illustrations are very numerous and well selected and include a very large number that are entirely new. The volume is one of the most valuable of a valuable series.

MOSQUITOES: HOW THEY LIVE: HOW THEY CARRY DISEASE; HOW THEY ARE CLASSIFIED: HOW THEY MAY BE DESTROYED. By L. O. Howard, Ph.D., Department of Agriculture, Washington, D. C. Cloth. Pp. 241. Price, $1.50. New York: McClure, Phillips & Co. 1901.

No more timely work has appeared in a long time than this one on mosquitoes. Owing to the discovery of the relation of the mosquito to malarial and yellow fever, there has developed an interest in these little pests that would have been incredible a few years ago. While this interest is manifested among laymen to a degree, it is especially so among physicians, and, as the author states in his preface, they will not be satisfied with half knowledge, but want to know the whole mosquito story. Dr. Howard's special work in the Department of Agriculture has well fitted him to tell this story, and he has told it in a straightforward manner. While it is technical and scientific, it is told in a way simple enough to be comprehended by all, for the book is intended for lay readers as well as for physicians. The subject is considered from the biological, from the medical and from the practical sides. We are told how the different kinds of mosquitoes may be distinguished, how to collect them and rear them for the purpose of study, and especial effort is made to indicate the character, habits and breeding places of those forms of mosquitoes which spread malarial and yellow fever. Directions are given for destroying the pests. In fact, as the title indicates, the author tells us all about mosquitoes, how they live, how they carry disease, how they are classified and how they may be destroyed. It is a book for the physician who desires to post himself on one of the important etiological factors in the spread of disease. The author deserves the thanks of the medical profession for his effort.

DISEASES OF THE THYROID GLAND AND THEIR SURGICAL TREATMENT. By James Berry, B. S. Lond., F.R.C.S., Surgeon to the Royal Free Hospital and Lecturer on Surgery at the London (Royal Free Hospital) School of Medicine for Women. Cloth. Pp. 367. Price, $4.00. Philadelphia: P. Blakiston's Son & Co. 1901.

This is a book that is to be commended for the thoroughness and painstaking efforts of the author. The various affections are gone through in considerable detail. The references to the literature are quite complete and, in addition, there is an appended alphabetical index of the authors referred to in the text. While the author necessarily has drawn largely from the literature in the preparation of the volume, he has been careful to select and utilize that material only which seems to him to be the best. It must not be inferred from this that the book is a mere compilation. Originality is shown in every chapter. A detailed report of 100 operated cases in the author's own practice is especially interesting. Citation and histories of other interesting cases are well and plainly set forth. The chapter on "Dyspnea caused by goitre" is especially good. Attention should also be called to the various chapters on "Treatment." The book itself, as regards the make-up, has good type, and is attractive, neat, well indexed, and worth careful study.

CLINICAL LECTURES ON STRICTURE OF THE URETHRA AND ENLARGEMENT OF THE PROSTATE. By P. J. Freyer, M.A., M.D., M.Ch., Surgeon to St. Peter's Hospital. Cloth. Pp. 115. Price, $1.50. New York: William Wood & Co. 1901.

These lectures were delivered at the Medical Graduate College and Policlinic and published in the *Lancet* and *Clinical Journal*. They contain a résumé of the present knowledge of the subject dealt with.

THE HYGIENE OF TRANSMISSIBLE DISEASES: THEIR CAUSATION, MODES OF DISSEMINATION AND METHODS OF PREVENTION. By A. C. Abbott, M.D., Professor of Hygiene and Bacteriology, University of Pennsylvania. *Third Edition, Revised and Enlarged.* Octavo, 351 pages, with numerous illustrations. Philadelphia and London: W. B. Saunders & Co. Cloth. Price, $2.50 net.

The author has taken advantage of the necessity for a second edition to revise certain parts of his book, and to add to many subjects. This especially applies to the articles on malaria, yellow fever, plague, filariasis, dysentery and tuberculosis. The original plan has not been altered.

ESSENTIALS OF REFRACTION AND OF DISEASES OF THE EYE. By Edward Jackson, A.M., M.D., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic. Third Edition, Revised and Enlarged. 12mo, 261 pages, 82 illustrations. Cloth, $1.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

This little compend is constructed on the principle of question and answer, and is equal to any in the series. Thereto are added the tests of vision required in the Navy, Army and railway services and in the public schools. The substances that cause "amblyopia ex abusa" are individually considered; the author's Latin, however, needs correction.

Married.

W. C. HESS, M.D., Yale, Iowa, to Miss Sarah Carr, Bagley, Iowa, June 12.

N. F. TILTON, M.D., Marysville, Ohio, to Miss Mabel Dolen, Stanton, Va., March 31.

WALTER A. GRESHAM, M.D., to Miss Mattie Wilson, both of Russelville, Tenn., June 24.

W. A. HARRIS, M.D., to Miss Dora Crismond, both of Spottsylvania C. H., Va., July 3.

JOHN T. DAVIS, M.D., Shawnee, Ohio, to Miss Bertha Bevelheimer, Columbus, Ohio, June 2.

FRANK W. BURNS, M.D., Stewartville, Minn., to Miss Mabel Knapp, Rochester, Minn., June 28.

L. W. STUDLEY, M.D., Beatrice, Neb., to Miss Josephine Mutton, Grand Island, Neb., June 26.

Deaths and Obituaries.

John Curwen, M.D., University of Pennsylvania, Philadelphia, 1844, died July 2, at Harrisburg, Pa., aged 80. He was for fifty years prominently identified with the care and treatment of the insane, assisting in the establishment of the State Hospital for the Insane at Warren, Pa., in 1880, and from that time until his retirement, June, 1900, continuing as superintendent of that institution. The Dauphin County (Pa.) Medical Society met and attended the funeral of their late fellow-member in a body.

James H. P. Wise, M.D., New Orleans School of Medicine, (now extinct), 1869, died at his home in Morgan City, La., July 10, aged 56. He was born in Northampton, Mass., and went to Louisiana with the 20th New York Volunteer Cavalry. He first served at the Marine-Hospital in New Orleans, and afterward as surgeon of the 1st U. S. Cavalry. He moved to Morgan City in 1880 and was mayor for ten years, also collector of the port, quarantine officer, and president of the board of trade.

Samuel G. Crawford, M.D., Kentucky School of Medicine, Louisville, 1880, mayor of Sedalia, Mo., died recently from paralysis, aged 63. He was surgeon major of the 7th Illinois Cavalry in the civil war, and during the Spanish-American war was regimental surgeon of the 2d Missouri Volunteers.

Tabor B. Reynolds, M.D., Albany Medical College, Albany, 1842, of Saratoga Springs, N. Y., died suddenly July 3, aged 81. He was an ex-member of the assembly, an ex-sheriff, a founder of the New York State Medical Association, and a member of the American Medical Association.

Henry G. Wagoner, M.D., University of Pennsylvania, Philadelphia, 1853, died July 2, at his home in Somerset, N. J., from heat prostration. He was president of the medical staff of Somerset Hospital and also a former lay judge of the county court. He was 78 years of age.

Oliver C. Williams, M.D., a pioneer physician of Muskegon, Mich., died at his home July 8, after a brief illness. He was a soldier in the 27th Michigan Cavalry during the civil war, and had been both city and county physician. He was 65 years of age.

Benjamin F. Hastings, M.D., New York University, New York, 1861, who was surgeon of the 18th Massachusetts Volunteers in the civil war, died at a hospital in Boston, where he had been undergoing treatment. He was 65 years of age.

John D. Pitablo, M.D., University of Minnesota, Minneapolis, 1896, who has been the quarantine physician for Minneapolis since Jan. 1, 1901, died July 3, as the result of an overdose of a self-administered opiate.

Robert H. Honner, M.D., Western University Medical Department, London, Ont., 1889, died in Detroit, Mich., July 3, after an illness of five days. He was a member of the faculty of the Michigan College of Medicine.

J. William Stokes, M.D., Vanderbilt University, Nashville, died at his home in Orangeburg, S. C., July 6, after a long illness. He was representative of the Seventh Congressional District of South Carolina.

Leslie M. Hoyt, M.D., Rush Medical College, Chicago, 1883, died July 3, in Augustana Hospital, Chicago, as a result of injuries received while on a vacation in Wisconsin. He was 42 years of age.

Edgar C. Hays, M.D., Washington University, St. Louis, 1868, who served in the ranks through the civil war, died July 8, at Hannibal, Mo., aged 60, after an illness of nine months.

Myron S. Brown, M.D., University of Nashville, Nashville, 1863, died at his home in Danville, Ill., aged 69. He was in the civil war, serving as assistant surgeon, in the 25th Illinois.

George Hay, M.D., University of Pennsylvania, Philadelphia, who devoted much of his time to a study of chemistry and metallurgy, died in Pittsburg, Pa., July 4, aged 64.

James H. Conway, M.D., New York University, New York, 1881, died very suddenly while on a brief vacation near his home in Woburn, Mass., aged 49.

James T. Young, M.D., Bellevue Hospital Medical College, New York, 1864, for the past year an invalid, died at his home in Washington, D. C., on July 3.

Johnson J. Bennett, M.D., University of Vermont Medical Department, 1889, died suddenly while driving from his home, Fenton, Iowa, to a nearby town.

Frank A. Jelleker, M.D., Bellevue Medical College, New York, 1892, died at a hotel in New York City from heat prostration, July 3, aged 32.

John Watts, M.D., Medical College of Ohio, Cincinnati, 1880, died at his home in Lafayette, Oregon, July 6. He was a presidential elector in 1876.

William R. Krissinger, M.D., Baltimore Medical College, Baltimore, 1878, was found dead in his bed on the morning of July 4, at Shanksville, Pa.

B. F. Hyatt, M.D., Starling Medical College, Columbus, O., 1869, died July 2, at his home in Ottumwa, Iowa, from peritonitis, aged 64.

Henry M. Revell, M.D., University of Maryland, Baltimore, 1876, died at Annapolis, Md., July 2, of typhoid fever, aged 46.

Martin H. Williams, M.D., Jefferson Medical College, Philadelphia, 1887, died suddenly at his home in Philadelphia, aged 39.

Thomas L. Taylor, M.D., Medical College of Virginia, Richmond, 1874, died July 2, at his home near Leedstown, Va., aged 67.

James Houston, M.D., Anderson College of Medicine, Scotland, died at his residence in Lawrence, Mass., from apoplexy, aged 51.

John W. Wilson, M.D., Jefferson Medical College, Philadelphia, 1851, died suddenly at his home in Chatham, Va., aged 75.

William H. Burritt, M.D., College of Physicians and Surgeons, Keokuk, 1873, died on July 2, at his home in Toledo, O., aged 59.

W. W. Hays, M.D., Georgetown University, Georgetown, D.C., 1861, died suddenly at San Luis Obispo, Cal., on July 3.

Laurence S. Smith, M.D., New York University, 1872, died at Haverhill, Mass., from a hemorrhage, aged 49.

John M. Brown, M.D., University of Buffalo, Buffalo, 1864, died July 3 at his home in Altmar, N. Y., aged 87.

John G. Lumpkin, M.D., Medical College of Virginia, Richmond, 1851, died at Richmond, Va., aged 71.

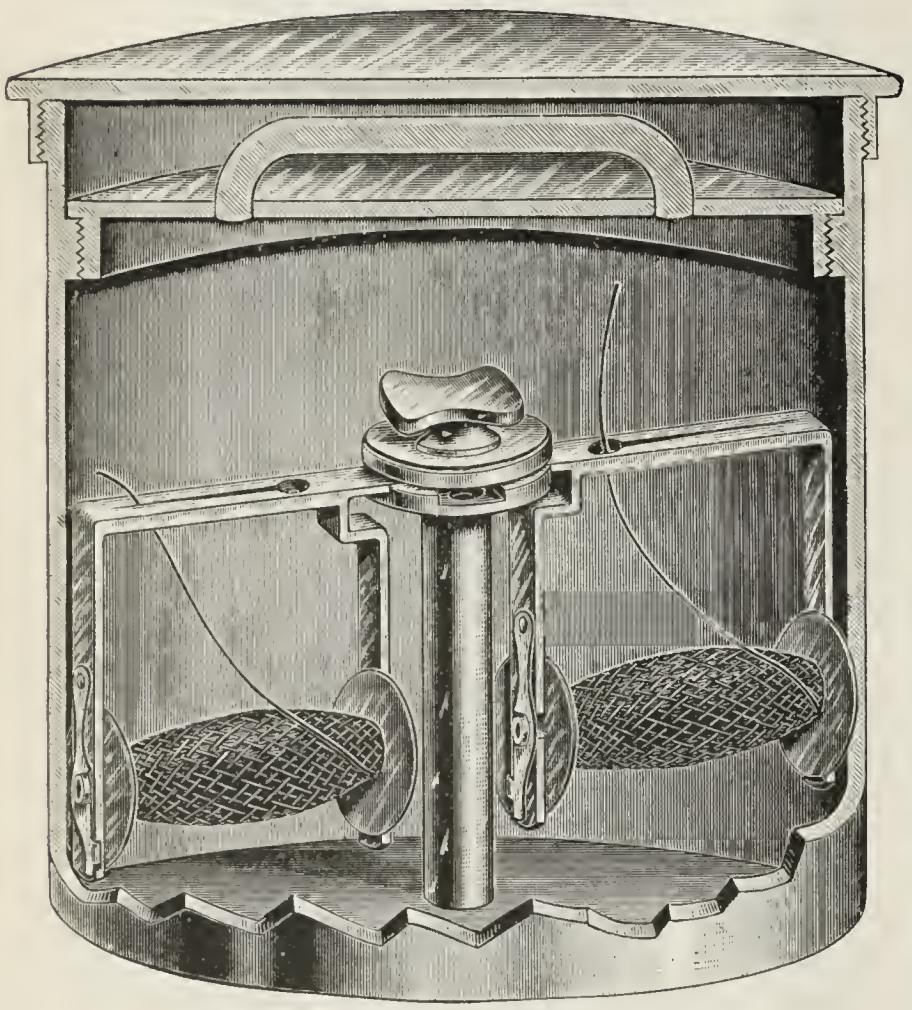
Aaron N. Braman, M.D., University of Buffalo, 1851, died suddenly at his home in Rochester, N.Y.

New Instrument.

A NEW CARRIER FOR SUTURE MATERIAL.

AUGUST SCHACHNER, M.D.
PROFESSOR OF SURGERY, LOUISVILLE MEDICAL COLLEGE.
LOUISVILLE, KY.

The ligature reel herein described was designed to replace the glass containers, which are generally considered the most aseptic arrangement at present at our disposal. This reel has all the advantages that apply to the glass arrangement and some additional ones, namely, being of metal it insures against breakage and thus is never exposed to the danger of an accident to the ligature outfit. The durability of the metal box is also greater than that of a glass one. It is true that a glass box has a slight advantage over the metal one in appearance, and for that reason the glass container may still receive the preference in hospitals.



Interior construction of reel. Two spools removed. Of the remaining spools one represents the catgut in the act of being unreeled, the other represents the catgut hooked into the slot.

It is in portability that the metal ligature outfit comes in for its full measure of advantage over its rival, the glass outfit. When we are obliged to operate away from hospitals where we can not always judge the amount and character of suture material that might be called for, we feel the need of an outfit that is practical in every sense, namely, portable, without danger of breakage and liberal supply of all possible material.

This reel will be advantageous in military surgery where a large amount of material can be safely carried.

Description.—The reel can be constructed in different sizes. The most convenient for ordinary purposes is a cylindrical box three and a half inches in circumference and three and a half in length. The box is supplied with a double cover to insure the greatest protection to its contents. The outside cover overlaps the case; the inside cover screws itself into security by means of threads cut into a strip that is soldered in the inside of the case about three-quarters of an inch from the top. The edge of the inside cover is supplied with a narrow flange. When this cover is screwed into position this flange rests upon the strip and thereby doubly sealing the interior. The space between the covers measures half an inch. From the bottom of the case arises a stationary upright rod. This rod is flared out at the top so as to present a circular surface about three-quarters of an inch in diameter. From the center of this surface arises a short screw, and radiating in a crucial manner from the base of this screw are found square excavations to receive the ends of the frames that hold the spools. These frames are held in position, 1, by accurately fitting into the square excavation; 2, by being supplied with a small peg which fits into an aperture near the edge of the square excavation; 3, by being held in this square excavation by the impingement from above. This screw arising from the center of the disc surmounting the upright pole receives its mate, a form of thumbscrew, the bottom of which is flared out to correspond to the flared-out top of the central pole. From this, it is apparent that the purchase gained by this arrangement is similar to a vise in its method but far more effective in its mechanism. The frame that holds the reels are thus firmly held in position without the possibility of any wabble in any direction.

The spools slip into the slots with which the square frames are supplied. The spools are held in the slots by a very simple slide which when in position closes the opening of the slot and prevents the release of the spool.

In unreeling the material (catgut or silk) it is drawn through a V-shaped opening. The base of this opening is rounded, giving the effect of a circular aperture while the apex is drawn to a very slender point. While unreeling it is drawn through the rounded base and when a sufficient amount has been obtained it is drawn into the slender apex, where it is caught and prevented from falling away.

Societies.

Chickasaw (I. T.) Medical Association.—At the regular meeting held in Roff, Dr. Thomas S. Booth, Ardmore, was elected president, and Dr. Chivers, Ardmore, secretary.

The Fifth International Congress of Criminal Anthropology.—Professor Wertheim-Salmonson, of Amsterdam, is the general secretary of this Congress, which is to meet at Amsterdam, September 9.

Cumberland County (N. C.) Medical Society.—At the recent meeting of this Society at Fayetteville, Dr. Jacob F. Highsmith was elected president; Dr. Thomas D. Haight, vice-president, and Dr. John D. MacRae, secretary and treasurer.

Perry County (Ohio) Medical Society.—At the annual meeting of this Society, held in New Lexington, June 27, Dr. B. F. Callinan was elected president, Dr. B. A. Thomas, vice-president, and Dr. John G. McDougal, secretary and treasurer.

Dallas (Texas) Medical and Surgical Society.—At the recent meeting of this Society Dr. Edwin J. Reeves was elected president; Drs. Frank J. Hall and Elbert Dunlap, vice-presidents; Dr. Emil R. Aronson, secretary, and Dr. J. Wilbur Bourland, treasurer.

Williamson County (Tex.) Medical Society.—This Society was organized June 28, at a meeting held in Georgetown. The following officers were elected: President, Dr. George W. Foster; vice-presidents, Drs. J. C. Anderson and W. P. Masterson; secretary and treasurer, Dr. E. M. Thomas.

Utah County Medical Society.—At the regular annual meeting of this Society, held at Provo, Utah, June 26, the following officers were elected: Dr. George L. Smart, Springville, president: Dr. Samuel H. Allen, Provo, vice-president; and Dr. John H. Slater, Spanish Fork, secretary and treasurer.

Somerset County (Maine) Medical Association.—At the thirty-seventh annual meeting of this Association, held at Skowhegan, June 27, Dr. Elba C. Andrews, North Anson, was elected president; Dr. Warren G. Sawyer, Madison, vice-president; Dr. Howard C. Taggart, Skowhegan, secretary and treasurer, and for the board of censors, Drs. T. M. Griffin, Pittsfield, and L. D. Rand, Fairfield.

Elkhart County (Ind.) Medical Association.—At the meeting of this Association June 27, the following officers were elected: Dr. Charles M. Eisenbliss, Elkhart, president; Dr. Fred N. Dewey, Elkhart, vice-president; Dr. Chester W. Merrill, Goshen, secretary and treasurer, and Drs. Herbert O. Statler and Daniel L. Miller, Goshen, censors.

Upper Peninsula Medical Society.—The sixth annual meeting of this Society was held at Menominee, July 5-6, and Dr. Walter R. Hicks, Menominee, was elected president; Dr. Albert B. Simonson, Calumet, vice-president, and Dr. Samuel E. Cruse, Iron Mountain, secretary and treasurer. Ishpeming was chosen as the next place of meeting.

Rutland County (Vt.) Medical and Surgical Society.—This Society held its twenty-fifth annual meeting at Rutland, on July 2, and elected the following officers: President, Dr. William N. Bryant, Ludlow; vice-president, Dr. James M. Hamilton, Rutland; secretary, Dr. George Rustedt, Rutland, and treasurer, Dr. Edwin R. Clark, Castleton.

Sioux Valley Medical Society.—The regular semi-annual meeting of this Society was held in Sioux City, Iowa, beginning June 14 and ending June 28. It was decided that the Society should have an official journal in which its proceedings should be published. Dr. Gilbert G. Cottam, Rock Rapids, Iowa, was elected president; Drs. Frank A. Swezey, Wakonda, S. D., and F. E. Walker, Worthington, Minn., vice-presidents; Dr. Maxwell E. Silver, Sioux City, secretary; Dr. S. A. Brown, Sioux Falls, S. D., treasurer, and Drs. E. R. Buck, Hudson, S. D., C. C. May, Adrian, Minn., and Geo. C. Rubel, Allen, Neb., as the board of censors. The next meeting will be held at Cherokee, Iowa, in January.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Burns.

INQUIRY: Please state what is meant by a burn of first, second and third degree, with treatment. H. H.

Burns are, for convenience, divided into three classes:

A burn of the first degree is one that produces redness of the skin without the formation of vesicles. The skin becomes a source of sensation of heat and burning. Burns ordinarily due to exposure to the sun's rays would come in this class.

In the second class, the skin must be exposed to a higher temperature and for a longer time and yet not sufficiently strong to destroy the texture of the integument. In this class vesicles are formed, after exposure for a few hours. These vesicles may be coalescent or discrete and when punctured, serum flows out.

In burns of the third degree the heat, in whatever manner applied, must produce a destructive effect upon the skin. The blood and lymph vessels are destroyed and a condition of gangrene is produced, and within a few days a ring of demarcation is formed, indicating the amount of skin destroyed. Consequently suppuration and sloughing take place, followed by granulations and formation of scar tissue.

Burns of the first class are usually treated by applying some sedative lotion. The following is of service:

℞. Aquæ calcis
Olei olivæ, āā ..... ℥i 32
M. Sig.: Apply on borated gauze.

Any application that will exclude the air is of service in relieving the itching and burning pain.

For the second grade, a great many dressings may be used, such as carbolized vaselin, ointments containing a large amount of boric acid, mild alkaline lotions, and when the blebs are very large, they may be punctured with an antiseptic needle, followed by the application of an antiseptic dusting powder, such as boric acid or subnitrate of bismuth. In order to exclude the air the following is recommended in the milder form:

℞. Acidi salicylici ..... gr. xv 1
Collodion (flexible) ..... ℥i 32
M. Sig.: Apply locally on antiseptic cotton.

In the third grade, the danger of infection and consequent suppuration must not be overlooked. The antiseptic powders are of great service, such as iodoform, europhen and boric acid. Kaposi and Hebra give preference to continuous immersion of the part in water at a temperature most soothing to the skin.

Treatment of Dysentery by Lavage.

Dr. W. L. Braddon, as noted in *Jour. of Tropical Medicine*, offers the following conclusions, arrived at by the treatment of 170 cases: 1, that lavage or irrigation of the colon is the best method of treating dysentery; 2, the irrigation, to be effective, should be copious and frequent; 3, the most useful solution is one composed of a weak solution of boracic acid; 4, the use of astringents and antiseptics such as bismuth, Dover's powder and salol, is beneficial along with the flushings.

Treatment of Eczema.

The following is recommended by Brownlie, of Edinburgh, in treatment of eczema:

℞. Ichthyol ..... ℥ss 2
Bismuthi subnitratis
Amyli, āā ..... ℥ii 8
Zinci oxidi ..... ℥i 4
Petrolati q. s. ad ..... ℥ii 64
M. Sig.: Apply locally once daily.

In cases of eczema occurring on the arms and legs he applied the following:

℞. Resorcin ..... gr. x 66
Hydrarg. ammoniati ..... gr. x 66
Ichthyol ..... ℥i 4
Zinci oxidi ..... ℥ii 8
Vaselini ..... ℥vi 24
Lanolini q. s. ad ..... ℥ii 64
M. Sig.: Apply locally twice a day.

Prof. L. D. Bulkley states that sometimes gelatin-glycerin preparations are of use in the treatment of eczema by forming a firm adherent coating on the part. The following is advised in certain conditions:

℞. Gum tragacanthæ ..... ℥iiss 10
Gelatin ..... ℥ii 8
Glycerini ..... ℥vi 24
Thymol ..... gr. 1/4 015
Aq. destil., q. s.
M. Soak the tragacanth and gelatin each in 10 oz. of water over a steam bath for twenty-four hours, strain and add water to 12 oz., then add the additional preparations.

Antisepsis in Gastro-Intestinal Disturbances.

Hare states that the most rational method of antisepsis is abstinence from food, followed by a diet of boiled or sterilized milk in small quantities. As an intestinal antiseptic he recommends the following:

℞. Benzo-naphthol ..... gr. ii 12
Bismuthi salicylatis ..... gr. v 30
Resorcin ..... gr. ii 12
M. Ft. chart. No. i. Sig.: One such powder every three hours.

For antiseptic irrigation he recommends one of the following in the strength indicated:

Acidi borici ..... ℥ii to Oi 8. to 512
Creolin ..... gr. vi to Oi .25 to 512
Thymol ..... gr. vi to Oi .25 to 512
Acidi tannici ..... gr. xxx to Oi 2. to 512
Acidi salicylici ..... gr. xv to Oi 1. to 512

The irrigations should be continued twice daily. If the number of stools should lessen or decrease in putridity and in the amount of mucus, the intervals between the irrigations should be lengthened.

Summer Diarrhea of Children.

In the treatment of diarrhea in infancy, the bowels should be emptied as thoroughly as possible. This can best be done by small doses of mild chlorid of mercury oft repeated, or by administering oleum ricini. It is advisable also to irrigate the lower bowel with a normal salt solution. The use of opiates should be avoided. To allay the irritation and to render the intestinal canal aseptic some one of the following prescriptions will render good service:

℞. Bismuthi subnitratis 3i 4
Misturæ cretæ .....℥ii 64

M. Sig.: Shake; one teaspoonful every three or four hours.

The above combination is used when the stools are frequent, watery and sour smelling. The following powder is of great value to produce astringent effect:

℞. Tannalbin 3i 4
Ichthoform 3ss 2
Bismuthi subgallati 3ss 2

M. Ft. chartulæ No. xv. Sig.: One powder every four hours.

In the diarrhea of adults preparations of opium may be used where pain is present. The following is of service as a sedative and astringent:

℞. Tannopin 3iss 6
Pulv. opii .....gr. vi 36
Salol .....gr. xlviii 2 75
Bismuthi subnitratis 3iss 6

M. Ft. chart. No. xii. Sig.: One powder every four hours until diarrhea is checked.

Where there is marked disturbances of the stomach, lavage is of undoubted benefit. In infants, of course, this must be accomplished by using the proper sized tube or catheter. In adults the ordinary stomach tube should be introduced and the stomach washed out thoroughly. Sometimes one of the following antiseptic solutions can be advantageously used:

℞. Sodii boratis 3ii 8
Creolin .....m. v 30
Thymol .....gr. ii 12

M. Sig. Use in a quart of warm water once daily, first washing the stomach out with plain water.

Or:

℞. Acidi borici
Sodii boratis, āā.....℥ss 16
Acidi salicylici 3i 4

M. Sig.: One or two teaspoonfuls to be added to a quart of warm water for lavage.

Gastric Ulcer.

Sir Lauder Brunton, in *Amer. Med.*, states that he can stop the pain in a large percentage of cases by the administration of sodium bicarbonate. He instructs the patient to dissolve one teaspoonful of the soda and slowly sip the solution until it is gone. He thinks it better to dissolve the soda in lime water, flavoring it with some of the mint waters. His reason for using lime water is that the sodium bicarbonate in plain water might soften the tissues to a great degree and thus predispose to hemorrhage. To lessen the constipation caused by the lime, fluid magnesia may be given in conjunction with the soda.

℞. Spts. menthæ pip.....3iss 6
Cretæ prep. 3ss 2
Mag. carb. calcined
Sod. bicarb., āā.....3i 4

M. Sig.: One teaspoonful should be stirred in half a tumbler of water and slowly sipped until the pain is relieved.

Hot Alkaline Douches in Inflammatory Diseases of the Uterus.

Talley, as stated in *Mod. Med.*, obtains very satisfactory results from the employment of the hot alkaline douche in both acute and chronic inflammatory diseases of the uterus. The solution used is sodium bicarbonate, one dram to a quart of water. The temperature ranges from 110 to 120 F., beginning with the former temperature and gradually increasing it. The douche should be continued until the parts become blanched.

Medicolegal.

Impairment of Eyesight as a Total Disability.—The eyesight of a brakeman on a railway became so much impaired that he was discharged from his position, because of unfitness to longer properly perform the services required. He was at the time carrying a form of insurance which entitled him to an indemnity for a total disability defined to include the loss of the sight of both eyes or a disability of such a nature as to totally and permanently incapacitate him from the performance of duty in any department of the train or yard service. To prove that he was entitled to the indemnity, he introduced in evidence the rules of the railway company for which he worked as to physical examinations, which were the rules applied to him, and introduced evidence to show that many other roads required physical examinations. In permitting him to introduce in evidence the rules of that company, the Supreme Court of Iowa holds, Lillie vs. Brotherhood of Railway Trainmen, was no error. Nor was the court impressed favorably with the contention that, in order to recover the indemnity, he must first show by substantive proof that there was no railroad anywhere which would employ him in its train or yard service. On the contrary, it thinks that he made a prima facie case when he proved that the railway company for which he worked, as a measure of safety to him and others, discharged him on account of his disability. Indeed, it holds that the evidence offered to show his disability and its character was not only admissible but sufficient. It was shown that his eyesight was so impaired that he could not see signals at a reasonable distance, or distinguish colors, and the court says that, manifestly, these are deficiencies fatal to efficient service about moving trains. Again, it declares that, while no road could make an arbitrary rule, without foundation in reason, fixing a requirement for service that would affect the insurer's contract, yet such a disability as this, every-day experience teaches, would necessarily destroy one's ability to perform yard or train duties.

Can Collect Bill Without Recording Certificate.—Section 2624 of the General Statutes of Colorado reads: "Every person holding a certificate from the state board of medical examiners should have it recorded in the office of the clerk of the county in which he resides, and the record shall be endorsed thereon. Any person removing to another county to practice, shall procure an endorsement to that effect on the certificate from the county clerk, and shall record the certificate in like manner in the county to which he removes; and the holder of a certificate shall pay to the county clerk a fee of $1 for making the record." It will be observed that the section, if mandatory at all, the Court of Appeals of Colorado says, in Riley vs. Collins, is such only to the extent of requiring a record in the county where the physician resides. Then, even conceding that the certificate must be recorded there before services are rendered in order to entitle a physician to recover for same, the court points out that a want of compliance with this requirement would not appear simply from the fact that the certificate was not recorded in the county in which the services were rendered. It must further appear that the physician resided in that county; and this would be a matter of defense, properly to be established by the party sued, if it could avail at all. The most strained construction of the statute, the court continues, would nowhere indicate an intent on the part of the legislature to require a physician, if called into a county other than that of his regular residence, to first file in such county, and have recorded, his certificate or license, before he would be authorized to attend a case, or be permitted to recover for his services rendered. Such a construction, the court declares, would be absurd. Nor does it believe that the statute will bear being construed to make the recording of the certificate in the county of residence a condition to maintaining an action for services. The recording of the certificate, it says, is probably a reasonable requirement, so that the public might have an opportunity of ascer-

taining from an examination of the public records who were licensed to practice, and could also see whether the certificate was issued upon a diploma of a college—and, if so, of what college—or upon examination, or by reason of practice for a term of years. But, in the absence of a provision that this must be done before the holder of the certificate could practice, or could recover for services rendered, the court feels that it would be an unwarranted construction to so hold. The party who employs a physician is not wronged nor imposed upon by the failure to file if the physician holds the required certificate of qualifications. The authorities cited in support of a contrary view were based, so far as the court can ascertain from the opinions in the cases, upon statutes essentially different from that here under consideration, of which another section (2628) plainly says that the issuance of the certificate by the state board "shall be conclusive as to the rights of the lawful holder of the same to practice medicine in this state."

Negligence of Clerk Filling Prescription—Privilege.—The Supreme Court of Iowa has affirmed, in the case of Burgess vs. the Sims Drug Company, a judgment for $900 damages caused by alleged negligence in the filling of a prescription. The party who brought the action claimed that his eye was injured by lime falling into it while he was at work at his trade as a plasterer, and that the application to it of a preparation secured from the druggists sued, on a prescription, so aggravated the injury that its removal was necessary. The druggists contended that, having employed a skilful, registered pharmacist, they were not liable for his negligence, if any there was, in filling the prescription. Among the cases which they cited as illustrations were some in which it has been held that a railroad company contracting with an employe to furnish surgical aid in case of accident was not liable for the negligent acts of the surgeon thus selected and furnished, if due care and diligence were used in the selection. Those cases, however, the court does not think analogous. It says that it was the duty of the railroad company by express contract to secure for the other party professional services, which the railroad company did not hold itself out as competent to perform. The railroad company did not pretend to be a surgeon. But the parties here sued did pretend to be druggists, and held themselves out as able and willing to fill prescriptions. Whether they performed the services individually or by the aid of an employe was immaterial. The master who undertakes to perform a service is liable for the negligence of his servant in performing the service undertaken. True, the legislature has provided, as a police regulation for the protection of the public, that no one who is not a registered pharmacist shall fill prescriptions. But when these druggists undertook, as a part of their regular business, that the prescription should be filled, it was wholly immaterial to the customer, so far as their liability was concerned, the court holds, whether the prescription was filled by one of them or by an employe. In other words, it holds that they were not relieved of their responsibility as employers by the fact that they were required by statute to employ a registered pharmacist. The court also says in this case that it thinks there is no question but that the patient is privileged, under section 4608 of the Iowa Code, from disclosing communications made to his physician, although the statute does not so expressly provide. That is to say, it has no doubt that the statute was intended to extend to communications between patient and physician the same complete protection, not only as to physicians, but also as to the patient, which by common law was recognized in regard to communications between client and attorney. Moreover, while the patient may waive his privilege by himself testifying as to the subject-matter of the privileged communication, the court holds that for his testimony to constitute a waiver it must be voluntarily given. Therefore, testimony given on cross-examination will not have the effect of a waiver, although he might refuse to answer on cross-examination when asked with reference to a privileged communication, and did not refuse. Then, too, the court holds that any waiver resulting from the giving or introduction of testimony on a trial should be limited to that trial. Nor does it regard a communication made by the patient to a third party a waiver of privilege, when the matter comes up in court.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), July 6.

1 *Experimental Yellow Fever. Walter Reed, James Carroll and A. Agramonte.
2 *A Medicolegal Aspect of Tubercnlous Joint Disease. H. Augustus Wilson.
3 Three Distinct Consequences of Myocardian Degeneration Following Coronary Arteriosclerosis, Illustrated by Typical Cases. A. P. Ohlmacher.
4 Occlusion of the Vena Cava from Compression. Diffuse Cancer, Chiefly Abdominal. R. T. Edes.
5 *A Brief Note on Aspergillus Keratitis. James Moores Ball.
6 *The Therapeutic Value of Adrenalin Chlorid. Dudley S. Reynolds.
7 *Pilocarpin Hydrochlorate and Its Uses in Croup. S. E. Wertman.

Philadelphia Medical Journal, July 6.

8 Eye and Ear Examinations of Railroad Employees. Wm. Thomson.
9 *Dystocia from Coiling or Occlusion of the Umbilical Cord. Edward P. Davis.
10 *Empyema of the Frontal and Ethmoidal Sinuses and Orbital Abscess. Thomas R. Pooley.
11 *Spinal Anesthesia. Augus McLean.
12 *Report of a Lipoma Removed from the Cheek Under Medullary Narcosis. A. W. Morton.
13 *The Recognition of Early Symptoms Indicating Dangerous Forms of Insanity. W. K. Walker.

Medical News (N.Y.), July 6.

14 Practical Notes Relative to Rabies. N. G. Keirle.
15 *Actinotherapy in Cutaneous Medicine: A Preliminary Communication. William S. Gottheil.
16 *Ideals in Physical Education. D. A. Sargent.
17 The Early Operative Treatment of Acute Mastoid Inflammation. Edward B. Dench.
18 Salient Points in an Epidemic of Typhoid Fever, Based upon Fifty-five Cases. Wm. J. Crittenden.
19 *A Case of Lobar Pneumonia with Hyperpyrexia; Recovery. Wm. R. Williams.

New York Medical Journal, July 6.

20 *Chronic Fluorin Poisoning. Fritz Schwyzer.
21 *The Limitation of Drug Therapy. Robert H. Babcock.
22 *Remarks on Appendicular Abscess. Ramon Guiteras.
23 *An Improved Form of Ambulance Would Increase the Value of the Treatment of Heat Prostrations. Frederick Griffith.
24 *Porto Rico: Its Climate and Its Diseases. C. H. Alden.

Medical Record (N.Y.), July 6.

25 *Observations in China and the Tropics on the Army Ration and the Post Exchange or Canteen. Louis L. Seaman.
26 *The Place of Cereals in Infant Feeding. Henry D. Chapin.
27 *The Value of Local Sanatoria in the Combat of Tuberculosis in Large Centers of Population. S. A. Knopf.
28 *Observations and Remarks on Removal of the Gasserian Ganglion in the Cadaver. Robert F. Amyx.
29 Primary Carcinoma of the Tip of the Appendix; Primary Epithelioma of the Sphincter Muscle of the Bladder. J. Riddle Goffe.

Boston Medical and Surgical Journal, July 4.

30 *Medical Prospects. George E. Francis.
31 A City Isolation Hospital. May S. Holmes.
32 Report of a Case of Porro-Cesarean Section for Placenta Previa Centralis. W. J. Gillette.
33 Forced Flexion and Adduction in Cases of Extreme Sensitiveness of the Hip-Joint. E. H. Bradford.

Cincinnati Lancet-Clinic, July 6.

34 *Anal Pockets. Louis J. Krouse.
35 Lithemia. F. W. Gavin.

St. Louis Medical Review, July 6.

36 *Nephropexy: The Operation. W. B. Dorsett.
37 *Unusual Dosage of Diphtheria Antitoxin. H. L. Nietert.
38 *A Consideration of Some Methods of Treating Epilepsy. W. J. Alexander.

Northwestern Lancet (Minneapolis), July 1.

39 Ringworm. F. M. Archibald.
40 Complications of Diphtheria. H. K. Read.
41 Internal Medicine from the Surgeon's Standpoint. A. W. Abbott.

American Journal of Obstetrics (N. Y.), June.

42 *The Prevention of Post-Operative Adhesions of the Peritoneum. George Gray Ward, Jr.
43 *Intrapelvic Intravaginal Perineorrhaphy Without Loss of Tissue. A. Goldspohn.
44 *The Alum Enema in the After-Treatment of Abdominal Operations. Virgil O. Hardon.
45 Report of a Cesarean Section in a Case of Obliquely Contracted Pelvis. W. Reynolds Wilson.

46 Clinical Memoranda: 1. Partial Hysterectomy for Puerperal Sepsis. 2. Ovariectomy Complicated by Aneurysm of the Aorta. 3. The Repair of Lacerated Cervices After Labor. B. C. Hirst.
47 The Technique of Nephro-Ureterectomy. J. F. Baldwin.
48 Remarkable Condition of the Kidneys in a Woman Dead from Eclampsia Parturientium. Henry J. Kreutzmann.
49 Dermoid and Other Cysts of the Ovary: Their Origin from the Wolffian Body. Samuel W. Bandler.
50 An Improved Sims Speculum. B. Curtis Miller.
51 Amputation of the Thigh for Advanced Tuberculosis of the Knee-Joint; Osteomyelitis Involving the Superior Maxilla; Gonorrheal Synovitis of the Knee-Joint; Tubercular Coxitis. N. Senn.
52 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Annals of Surgery (Philadelphia), July.

53 *Radical Cure of Inguinal and Femoral Hernia, with a Report of Eight Hundred and Forty-five Cases. William B. Coley.
54 *Two Cases of Ligation of the External Carotid for Severe Hemorrhage—One After Tousillotomy, the Other After a Slight Intranasal Operation. William W. Keen.
55 *The Operative Treatment for Exstrophy of the Bladder. Frank Hartley.
56 *The Treatment of Fracture of the Neck of the Femur. John Ridlon.
57 *Wounds of the Venous Sinuses of the Brain. Henry R. Wharton.
58 Splenectomy in Splenic Anemia or Primary Splenomegaly. Malcolm L. Harris and Maximilian Herzog.
59 *The Best Incision in Operations for Mammary Carcinoma. William L. Rodman.
60 *Aneurysm of the Thoracic Aorta of Traumatic Origin: Treatment by Introduction of Wire and Electricity. DeForest Willard.
61 *Left Cecal Hernia, with a Report of Two Cases. John H. Gibbon.
62 *The Treatment of Suppurating Hematocele Due to Extra-uterine Pregnancy. George E. Shoemaker.
63 *The Mortality of Operation for Obstructive Jaundice. John B. Deaver.
64 Report of a Case of Recovery from Perforating Typhoid Ulcer of Intestine After Operation. William Jones.

Medicine (Chicago), July.

65 The Heart Lesions of Infancy and Childhood. I. A. Abt.
66 Mental Impressions as a Factor in the Treatment of Disease. J. G. Biller.
67 The Etiology of Acute Rheumatism. F. W. Mann.

Providence Medical Journal, July.

68 *The Yesterday and To-day of Mental Medicine. G. Alder Blumer.
69 Transient or Simple Glycosuria. Stephen A. Welch.
70 Endocardial and Exocardial Murmurs. George S. Mathews.
71 A Case of Removal of the Entire Upper Extremity for Recurrent Angiosarcoma. George D. Hersey. With a Pathologic Report. F. T. Fulton.
72 Etiology of Acute Peritonitis in Children, with the Report of a Case. Edmund D. Chesebro.
73 The Menopause: Natural and Artificial. Winthrop A. Risk.

Hot Springs Medical Journal, June.

74 Address of Welcome to the Arkansas Medical Society During Its Annual Meeting at Hot Springs, May 14, 15 and 16, 1901. Randolph Brunson.
75 On the Modern Treatment of Acute Gonorrhea. George K. Swinburne.
76 Chronic Gonorrhea. John Van Der Poel.

Denver Medical Times, June.

77 *The Influence of the Climate of Colorado on the Nervous System in Health and in Disease. J. T. Eskridge.
78 *Clinical Value of the Ehrlich Diazo Test. W. T. Little.
79 *The Treatment of Typhoid Fever, with Special Refereuce to the Intrarectal Injection of Normal Salt Solutions. E. Stuver.
80 Dry Heat in the Treatment of Disease. R. W. Corwin.

New Yorker Medicinische Monatsschrift, May.

81 Kraurosis Vulvæ. L. A. Ewald.
82 Beitrag zur Hæmophilia Neonatorum. J. G. Wm. Greeff.
83 Eine Verbesserte Beinprothese. C. H. Doerflinger.
84 Klimatische und Balneologische Curorte in Tyrol. Dr. Jur. Baumfeld

Canadian Journal of Medicine and Surgery (Toronto), July.

85 *On the Use of Nitrous Oxid and Ether as an Anesthetic. L. Coyteux Prevost.
86 *Some Practical Features in the Treatment of Consumption. Edward Playter.

American Medical Compend (Toledo), July.

87 The Myometrium: Its Anatomy and Physiology. Byron Robinson.
88 A Few Surgical Suggestions. A. F. McVety.
89 Some Points in the Use of Diphtheria Antitoxin. F. P. Minton.
90 Further Observations on the Therapeutic Action of Ergoapiol. D. E. Bowman.
91 Illustrations of Uterus. Byrou Robinson.
92 Ergoapiol—(Smith)—as an Emmenagogue and Oxytocic. M. A. Auerbach.

Medical Examiner and Practitioner (N. Y.), June.

93 The Diagnosis of Heart Disease Considered in Its Relation to Life Insurance Examinations. Charles L. Greene.
94 Arteriosclerosis: The Greatest Foe of the Life Insurance Company. Talbot Jones.
95 Diabetes Mellitus: Its Relation to Life Insurance and Its Treatment. James H. Reed.
96 *Congestion of Population as Affecting the Death-Rate. J. E. Cowgill.
97 *The Envirouments of the Applicant. William W. Pennell.
98 *A Fallacy to Avoid When Using the Heller and Ferrocyanic Tests for Serum-Albumin. F. S. Grant.

Colorado Medical Journal (Denver), May.

99 *Diphtheria, and Treatment of Some of Its Phases. Wm. K. Robinson.
100 Suggestions to "The Country Doctor" as to How and Why He Should Equip Himself for Bacteriologic Work. H. G. Sigman.

Albany Medical Annals, July.

101 *The Pulmonary Form of Influenza. Howard Van Rensselaer.
102 *The Ocular Complications of Influenza. Charles H. Moore.
103 *Schools for the Insane. Francis M. Hamlin.
104 Report of a Case in Which a Scarf-Pin Was Swallowed and Passed Per Rectum on the Seventh Day. Edgar A. Vander Veer.

Journal of Mental Pathology (N. Y.), June.

105 Psychomotor Hallucinations in General Paralysis. A. Marie.
106 Clinical Researches in Circular Insanity. G. C. Ferrari.
107 Idiot and Imbecile Children. Louise G. Robinovitch.
108 Contribution to the Fissural Integrality of the Paroccipital; Observations upon One Hundred Brains. Edward Anthony Spitzka.
109 Suggestion During Natural Sleep. Paul Farez.
110 A Case of Verbal Blindness and Deafness and an Autopsy on the Body. Paul Serieux and F. Farnarier.

St. Louis Courier of Medicine, June.

111 A Case of Spleuectomy, with Remarks. J. P. Bryson.
112 *The Diagnostic Value of Blood Examinations in Septicemia. J. C. Da Costa, Jr.
113 Some Sociologic Problems in Relation to Marriage, Crime, Insanity, etc. R. R. Kime.
114 Vacciuation. Joseph Grindon.
115 The Technique and Use of Hypodermoclysis. Charles F. Hope.
116 A New Non-Surgical Treatment of Inflammatory Exudates and Their Residua in the Female Pelvis. Hugo Ehrenfest.
117 *On the Use and Abuse of Nasal Sprays. Dunbar Roy.

Atlanta Journal-Record of Medicine, June.

118 Excision in Tuberculosis of Joints—Hip and Wrist. Howard J. Williams.
119 Carbolic Acid Gangrene. W. H. Hudsou.
120 The Baneful Effects and Curability of Catarrhal Inflammations of the Upper Respiratory Tract. Arthur G. Hobbs.

Nashville Journal of Medicine and Surgery, June.

121 Minor Surgical Cases as Met with by a General Practitioner. T. J. Happel.

Georgia Journal of Medicine and Surgery (Savannah), June.

122 The Microscope—Its Aid to the General Practitioner. R. H. McGinnis.
123 Acute Yellow Atrophy of the Liver, with Report of Case. T. E. Oertel.
124 Some Points in the Administration of Chloroform. T. M. McIntosh.
125 Inflammatory Diarrhea in Which in Addition to the Systemic Infection the Symptoms of an Acute Local Inflammation Have a Prominent Part—Acute Ileocolitis. W. E. Fitch and Harold L. Warwick.

The Laryngoscope (St. Louis, Mo.), June.

126 Some Critical and Desultory Remarks on Recent Laryngological and Rhinological Literature. Jonathan Wright.
127 A Congenital Deformity of Both Auricles. Henry L. Wagner.
128 *Auscultation of the Mastoid. Albert H. Andrews.
129 *The Importance of Preventing Chronic Suppurating Ethmoiditis by Prompt Local Treatment. Clarence C. Rice.
130 Report of an Intubation, with Complications. Joseph Mullen.
131 Atrophic Laryngitis. B. Tauber.

Vermont Medical Monthly (Burlington), June 25.

132 Tuberculosis and Legislation. Clark Bell.
133 Contribution on the Curing of Tuberculosis in Sanitaria. Prof. Schrotter.
134 Brief Notes on the Treatment of Rheumatism. P. F. Gardiner.

Canada Lancet (Toronto), June.

135 A Case of Deformed Legs. G. A. Bingham.
136 *The Drink Evil. Noah E. Aronstam.

AMERICAN.

1. **Experimental Yellow Fever.**—Reed, Carroll and Agramonte report cases of yellow fever experimentally produced by blood inoculation from other cases of the disease, showing that parasites are present in the blood during the early stages and that its passage through an intermediate host, though this is Nature's method, is not essential in the life cycle of the parasite. In this respect it is analogous to malarial fevers. All the cases, moreover, in cultures produced from the blood drawn from a vein immediately after injection or from the same syringeful of blood that conveyed the disease, failed to show the presence of Sanarelli's bacillus. In one case colonies of staphylococcus pyogenes citreus were obtained, and in the others no growth whatever. They also report a number of cases of mosquito inoculation, which are of interest in various respects. One point made is the length of time during which a mosquito may remain capable of conveying infection. The periods intervening between the contamination of the insect and the production of the disease were as much as 39, 51 and 57 days respectively. This explains the late appearance of the fever and the persistence of infection in infected houses is hereby accounted for. As regards the production of yellow fever by other species of culex than the fasciatus there was only one negative observation to record, to which they attribute no importance. Future observations will therefore be required for settling this question. Touching the subject of the possible transmission of the parasite to the daughter parasite by means of the ovum, they have also but a single observation, likewise negative. Their experiments confirm the statements of recent writers that the period of incubation of yellow fever does not usually exceed four or five days, but they also maintain that it may be prolonged more frequently perhaps than has been supposed. They also call attention to the importance of the milder cases of yellow fever. Cases that are not suspected of being subject to the disease may introduce it and failure to detect such is one of the most important factors in the development of the theory of propagation of this disease by fomites.

2. **Tubercular Joint Disease.**—Wilson calls attention to the necessity of the early diagnosis of tubercular bone disease and the necessity of the immobilization treatment of these cases. He says that, unlike acute inflammatory processes, tubercular ostitis demands for its recovery perfect fixation for a long time, and any attempts at movement, etc., to prevent stiffness will provide the very traumatism that is needed to maintain and increase the destructive processes. The loss of joint usefulness should never be considered as a necessary or unavoidable result of tubercular joint disease, but rather more correctly as evidence, 1, of failure in not having the attention of the physician sufficiently early; 2, in failure to reach a correct diagnosis; 3, in inappropriate forms of treatment or correct forms of inappropriate treatment. Anything like attempting to apply massage to prevent muscular atrophy or encouraging early use of the affected limb or attempting to prevent adhesions may be disastrous.

5. **Aspergillus Keratitis.**—Only eight or nine writers altogether have reported a total of less than a dozen cases of this condition. Ball reports an additional case and calls attention to the following points: 1, aspergillar keratitis is a more common disease than has been supposed by writers on ophthalmology; 2, intense pain in the eye, followed by the development of a brownish or black mass within the substance of the cornea are pathognomonic signs of aspergillar keratitis; 3, removal of the mass early in the case is followed by uninterrupted cure; 4, failure to recognize the condition and apply proper treatment is followed by sloughing of the cornea, and in some cases by loss of the eye; 5, in the few cases of keratomycosis aspergillina where cultures have been made, only aspergillus fumigatus has been found (Schanz).

6. **Adrenalin Chlorid.**—Reynolds summarizes some of the effects he has witnessed from the use of this drug as follows: 1. It is a powerful hemostatic and acts promptly, generally within a minute. 2. Its effects persist from twenty minutes to four hours. 3. It promptly relieves ciliary pain and all forms of keratitis, iritis, and even the cyclitis of glaucoma. 4. It reduces ocular tension in glaucoma, and apparently prevents hemorrhage in iridectomy. 5. It promptly clears up interstitial opacities of the cornea, following contusions, and seems to modify favorably opacities of punctate keratitis in syphilitic iritis. 6. In many cases it will so reduce the swelling in the tear passages as to allow a stream of fluid to pass from Anel's syringe through the duct, without the use of the probe. In a great variety of tinnitus aurium, prompt and sometimes lasting benefit follows the injection of a drop of adrenalin solution through the eustachian catheter, blown into the tympanic cavity. Several cases without serious impairment of hearing have been promptly relieved in this way. 7. In all forms of swelling of the nasal mucosa, prompt relief followed the application of 4 or 5 minims sprayed into the passage, opening the superior crypts and making access easy to the parts. It renders operations in these passages nearly or quite bloodless and does not predispose to secondary hemorrhage, but has the opposite effect. The 1 to 1000 solution of adrenalin in sodium chlorid may be relied upon to relieve any case of epistaxis. In secondary hemorrhage after operation in the nasal cavities or tonsils, application of adrenalin solution on a cotton mop pressed on the bleeding surface is a promptly efficient hemostatic. The adrenalin solutions are in every sense of the word superior to any preparation of suprarenal extract, or of the desiccated glands which he has been able to procure.

7. **Pilocarpin in Croup.**—Wertman has had several cases of croup or diphtheria where antitoxin seemed to fail and which were treated by him with small doses of pilocarpin hypodermically, which he here reports. He thinks the rapid results from this method in checking the disease and the absorption of the membrane are specially noteworthy. His extreme doses of antitoxin do not, however, seem as large as some would advise, as he mentions only 2000 units used in a fatal case.

9. **Coiling or Occlusion of the Umbilical Cord.**—Davis reviews the conditions of the cord that may occur imperiling the life of the child or interfering with labor. These complications are of sufficient importance to call for prompt interference, and he gives a couple of illustrative cases. When the cord is coiled and it can not be uncoiled or stretched sufficiently to enable birth, it should be clamped and cut. Other subjects mentioned are knotting and prolapse of the cord and its occlusion, by bridles or adhesions, etc. A short cord may cause separation of the placenta and in one case mentioned there was umbilical hernia of the child, which, however, recovered. The treatment in these cases, the author advises, is first ascertaining the situation of the placenta before labor as nearly as possible, and by careful study of the fetal heart sounds, placenta and uterine bruits, the maternal aortic beat, etc., a murmur of the umbilical cord can be recognized. If this is clear it is evidence that the cord is coiled about the child. In the absence of murmur, tedious labor, recession of the presenting parts between the pains, ceasing or slowing of fetal movements, and the sensation of pain referred to the body of the uterus, form strong presumptive evidence that the cord is coiled about the fetus. The patient should be delivered as soon as possible and the use of forceps is advisable. When, however, the cord murmur is absent, if recession of the presenting parts and arterial hemorrhage between pains, pain in the uterus, uterine inertia, and delayed labor are present, a shortened cord is indicated, but the use of forceps is not necessary. The patient's labor pains should be stimulated, strength maintained, and the child delivered as soon as the head is born and the placenta removed as soon as possible. In knots or occlusion of the cord by amniotic adhesions, nothing can be done to save the life of the fetus and in the interest of the mother expulsion of the uterine contents should be hastened as soon as fetal death is diagnosed.

10. **Empyema of Frontal and Ethmoidal Sinuses.**—After reporting a case of empyema of the frontal and ethmoidal

sinuses and of orbital abscess. Pooley calls attention to the special points of interest: the sudden invasion of an acute exacerbation upon a chronic sinusitis of both frontal and ethmoidal sinuses with severe constitutional symptoms, viz., intense swelling of the lids, chemosis, exophthalmus, restricted movements of the eyeball, clearly pointing to the presence of orbital abscess in the cavity. This was undoubtedly induced by extension of the inflammatory processes in one or both sinuses and immediate surgical interference made imperative. Another interesting point is the apparent connection of the sinusitis with scarlet fever in the history of the case, and the neglect or rather insufficient treatment of the chronic process which caused the severe acute symptoms. Still another point is the complete and entire disappearance of numerous nasal polypi after the operation.

11. **Spinal Anesthesia.**—McLean has had experience with some twenty-five cases of spinal anesthesia and describes its symptoms and methods. The most annoying symptom following its use in his operations was the severe headache, somewhat relieved, however, by bromid, codein, etc. He has seen it follow when the precaution of removing, before injecting the cocain solution, an equal amount of cerebrospinal fluid was employed, thus keeping up the equilibrium of the fluid in the subarachnoid space. He finds it as difficult to select the patients that will react favorably under this method, as it is to select beforehand the cases which do well under general anesthesia. Some of the feeblest seem to have the least trouble from this method and some of the most robust suffer severely from its after-effects. He believes it will have a distinct position in surgery, but the boundaries of its domain have not yet been marked out. It can not supersede general anesthesia in all operations below the diaphragm until some technique or preparation of cocain has been found that will be followed by less distressing after-symptoms.

12. **Medullary Narcosis.**—Medullary narcosis is usually confined to operations below the diaphragm, but Morton reports a case of enormous lipoma of the cheek removed under anesthesia by this method, the injection being made in the second lumbar space with the needle pointing upward.

13. **Insanity.**—Walker calls attention to the importance of noticing the early symptoms of various forms of insanity, especially the dangerous ones, such as persecutory insanity, certain forms of alcoholic insanity, etc. He thinks the practical value of attention to these points is: 1. The prevention of mental disease in one predisposed by proper regulation of his life and placing the individual beyond the reach of diverting and disturbing circumstances. 2. In early placing him under the most favorable conditions, allowing his weakened cerebral centers to recuperate. 3. The better performance of our duty to society in more effectually preventing danger to the patient, property and others.

15. This article appeared in The Journal of July 6, p. 21.

16. **Physical Education.**—Sargent, who is a well known writer on subjects of physical culture, calls attention to the decay of certain forms of sports, the evils of setting up professional standards for amateurs, the tendency towards barbarism in certain games, which he does not specially deprecate, the need of more general physical training instead of encouraging special athletes and the danger of pushing special methods as ends in themselves, rather than as means toward improvement of the individual average man. We are not trying to make abnormal athletes, but to get the highest types of physical perfection in general, and in that we must be constantly on our guard to check abuses and restrain excesses.

19. **High Temperature in Pneumonia.**—In the case reported by Williams the temperature rose to 107.4 in the rectum on the second day and continued relatively high until the eighth day. The tongue throughout the disease was moist and but moderately coated; the stomach behaved well; constipation was constant; the heart action was much accelerated, but not alarming; the physical signs were those of consolidation and fibrinous pleurisy over the whole left lower lobe, and there was slight jaundice of the conjunctiva; but on the whole the symptoms were not such as would be alarming aside from the high temperature observed. The urine, however, contained large quantities of albumin and casts, continuing until the twenty-eighth day, but then became normal and so remained.

20. **Chronic Fluorin Poisoning.**—The object of this paper, as Schwyzer remarks, is to prove that fluorin salts may produce under certain conditions dangerous effects, and, therefore, should be used only with great precaution, and that they may have real dangers as food preservatives and therapeutic agents. He reports the case of a man who suffered from phlebitis and clots in the veins, of puzzling origin. Careful clinical observation, including urinary and blood examinations, detected uninuclear leucocytosis, greatly increased excretion of lime in the feces and urine, and pain in the bones; increased coagulation of the blood with a tendency to thrombosis and the presence of fluorin in the blood and urine. He sets down these indications with the detection of the substance as indications of chronic fluorin poisoning, attributing the rapid coagulation of the blood as a result of disturbed assimilation of lime and chlorin, while the uninuclear leucocytosis should be regarded as being caused by the presence of calcium fluorid in the bone marrow and spongiosa. There was an artificially produced leukemic condition of the blood. The only source of the fluorin that could be suspected was in the large quantities of beer which the patient took, always the same brand, from the same bottler. The beer was submitted to complete analysis. At first the researches were negative, but it was learned that fluorin combines with the glass of the bottle and produces fluorsilicum, which is precipitated on the inner surface of the bottle as a gelatinous substance. The beer was capable of etching glass by being evaporated in a glass dish. The treatment was the washing out with large quantities of water, care as to the excretion, especially the diuresis. The patient suffered from a spell of jaundice, which apparently seemed connected with the increased excretion of lime, forming concretions in the liver. At the time of reporting the patient was improved, but still only partially convalescent. The most important conclusion drawn by the author is that fluorin is capable of cumulative action in certain conditions. In small doses it is relatively harmless, but when it begins to accumulate in the body, continued administration is dangerous and its employment should be prohibited by law. This applies especially to beverages and food stuffs which are consumed regularly, such as beer, green vegetables, meat and milk. Schwyzer also suggests caution in the use of the numerous fluorin preparations which have been recommended for therapeutic purposes, especially in consumption, and there is no doubt in his mind that poisoning could also be produced by organic fluorin combinations if used too long. This is important as symptoms of fluorin poisoning are not very pronounced and it is difficult to detect the fluorin in the body. In conclusion he describes his method of determining coagulation of the blood, which is by means of a small capillary tube connected with a manometer and accurately constructed screw syringe. He considered coagulation is ended when the pressure of 3 c.c. of mercury does not move the blood column.

21. **Limitations of Drug Therapy.**—Babcock's article is a plea for simple methods of therapy, diet, etc. He calls attention to the distrust of medicine by the public as shown by the growth of such idiocies as "christian science," "Dowieism," etc., and this indicates a tendency which the medical profession should regard. The use of water is also specially mentioned and the need of healthy exercise, air, etc.

22. **Appendicular Abscesses.**—Guiteras reports a number of cases of appendicular abscess, several of them fatal; this, however, he remarks, is not the rule, but as such cases are more instructive they are reported. The abscesses he reports are not of the every-day type. He believes in operating at once in all appendicular abscesses and calls attention to the fact that the appendix may swing into various regions of the abdomen, according to its length and that of its mesentery;

that is, dislocating the abscess as it were, and no tenderness or swelling be revealed in the normal position. The question of counter-openings is also mentioned; he thinks the smaller the incisions and the fewer the number the better for the patient. In almost every case one incision is enough. There are, of course, cases where the abscess is in such a situation that drainage is not complete with one incision; a counter-incision may then be of assistance. As regards the removal of the appendix he thinks it may be said definitely that in all large abscesses no effort should be made to remove it, but in small recent ones or multiple abscesses of short duration it might be well to do so, if the condition of the patient is good. Care should be taken in all cases to avoid rough handling, as it may lead to serious consequences. The drain should be left in place for the first thirty-six to forty-eight hours. The diet should be fluid for the first week or as long as the temperature is above normal, the bowels be moved daily and in all cases a cautious prognosis should be given.

23. **Ambulances.**—Griffith suggests an improvement in ambulances for cases of heat prostration, such as have been so numerous of late. Linings of felt, asbestos, or fillings such as are used in refrigerator structures would mitigate the condition of the heated interior, which is not favorable to recovery of the patient transported.

24. **Porto Rico: Its Climate and Its Diseases.**—After giving the history and a general account of the island and its sanitary conditions, Alden notices the various diseases which occur there. Tropical anemia gives the highest death-rate and seems to be due to the ankylostomum duodenale, as shown by Ashford. Intestinal diseases are common; malaria of the milder types is frequent: yellow fever has been occasional, but not endemic and is not a serious disease in this locality. Malta fever he thinks is responsible for many cases of irregular fever that occur and is probably endemic in the island. Tuberculosis furnishes nearly 7 per cent. of the total deaths, with very little annual variation. Tetanus is frequent and fatal. Venereal disease is very common, and a large proportion of the lower classes are said to be subject to syphilis. Smallpox has been largely vaccinated out of existence since the American occupation. Cerebrospinal meningitis is a comparatively frequent condition, responsible for a considerable mortality. There are about 100 cases of leprosy, though elephantiasis, which is quite common, has often been mistaken for it. Sanitary conditions, etc., were in a very deplorable state when the island was taken possession of by the United States, but there is improvement already manifested.

25. See abstract in THE JOURNAL, XXXVI, p. 1722.

26. **Infant Feeding.**—The points made by Chapin in his discussion of the constitution of milk for infant feeding are: 1, that the chemical analyses of milk are not the only scientific basis of comparison; 2, that Nature adapts an animal's milk food to its digestive system; 3, that cow's milk and woman's milk are intended for different digestive systems; 4, that as cow's milk forms solid curds and woman's flocculent curds, the curd of cow's milk intended for an infant should be broken up mechanically; 5, that as cereal gruels mechanically break up the curds of cow's milk, and as infants are able to utilize them, their use is rational. He says it is often preferable to make the standard diluent of digestive gruels, as they not only break up the curds but furnish a certain amount of nourishment which is immediately available, taking the place of part of the soluble proteids and also form a satisfactory substitute for milk when it must be withheld for a few feedings. A great variety can be supplied to infants by means of digested gruels at a trifling expense and the tendency is always to get back to milk and not to keep on indefinitely with a diet of carbohydrates as with most infant foods used.

27. **Tuberculosis.**—Knopf pleads for the establishment of sanatoriums near large centers of population and points out how, even in smaller places, such sanatoriums might be profitable in prevention of the disease and rendering the patients again useful members of society. He also points out how these have a direct effect in reducing the consumption rate by the unconscious imitation of the cleanliness and sanitary precautions practiced in these institutions. This has been the effect in some German villages where sanatoriums are located.

28. **Gasserian Ganglion Operations.**—The method of removing the Gasserian ganglion is discussed by Amyx and he emphasizes certain points: 1. That careful resection of the ganglion from the dura and other contiguous structures must be made, the dissection being made upon the ganglion and its branches as much as possible. If we keep upon the ganglion and its structures there will be very little hemorrhage, whereas by working on the surrounding tissues hemorrhage will be profuse. 2. The ganglion must be dissected from its dural covering; the cavernous sinus, internal carotid artery, and the middle meningeal artery should be completely separated from the ganglion before any effort is made to evulse it. In his experience he has found it best to first divide the second and third branches, thus break through the trunk of the ganglion and pull it away from the cavernous sinus before any attempt is made to cut out the first branch of the ganglion. This procedure enables the operator to avoid the sixth nerve and the contents of the cavernous sinus. 3. The last consideration is hemorrhage. Packing has controlled the hemorrhage at all times in his experience, and in cases where he removed the ganglion himself the hemorrhage was practically nil. The ganglion was visible at all times and inspection of the middle fossa could be made to differentiate the tissues. Old age and arteriosclerosis favor hemorrhage, but in middle-aged and young persons little is met with.

30. **Medical Prospects.**—The subject of Francis' address is specialism, which he believes is likely to extend, but may not ultimately supplant the general practitioner; that specialism will increase and competition become more fierce, will, he thinks, be the case. That medical treatment will become more scientific and disease more effectively prevented; that hygienic agents will largely supplant drugs, all are strong probabilities. Very probably the family doctor is likely to be eclipsed for a time; perhaps to appear later in a more glorified aspect.

34. **Anal Pockets.**—These formations which appear only during life are claimed by Krouse to be nothing more than pouches and ridges mechanically produced, but which may be the cause of irritable ulcer by the hardened fecal masses tearing them out.

36. **Nephropexy.**—The operation suggested by Dorsett is admittedly a modification of Andrew's operation in which he sutured the fatty capsule to the true capsule of the kidney, to prevent any prolapse of the kidney in the fatty capsule itself. He thinks that a step farther might be taken, that is, to gather up a rim of the peritoneum around the margin of the kidney and draw it into the wound and attach it.

37. **Diphtheria Antitoxin.**—Nietert reports a case of diphtheria in a 21-year-old girl as of interest on account of the amount of antitoxin employed, 25,500 units having been given in eleven days. There was a streptococcus infection in addition to the diphtheria, which made the serum less effective. Venesection and transfusion were also used, and followed by rapid recovery, after opening of the small abscess which formed at the angle of the joint at the left side and which contained diphtheria bacilli.

38. **Epilepsy.**—The treatment of epilepsy suggested here is the Toulouse method, consisting in withholding of free salt from the food, the rationale of which is that bromin may be substituted for chlorin in the tissues. The results appear to be satisfactory in the cases in which the method was employed by the author.

42. **Post-Operative Peritoneal Adhesion.**—The means of prevention of this condition is summarized by Ward in the following: 1. The most perfect possible asepsis. The most rigid adherence to modern methods of securing surgical cleanliness. 2. Avoidance of all raw surfaces and pedicles by covering them with peritoneum or grafts of omentum and the abandonment of the ligature en masse. 3. Protection from

dry-air contact by the use of moist asepsis instead of dry asepsis, keeping exposed parts covered. 4. The time limit—rapidity of operation by technical skill, thorough preparation and trained assistants. 5. Keeping up the heat of the peritoneal cavity by frequent renewal of hot salt solution (115 F.) and by protection of exposed parts. 6. Avoidance of excessive manipulation by proper technique and ante-operative preparation, or posture. 7. Replacement of loops of intestine and omentum by filling the abdominal cavity with hot salt solution before closing, thus floating them, so that they can adjust themselves in their proper relations. 8. Encouraging free motion of the patient after operation instead of prohibiting it. 9. The early use of high enemas (during the first twelve hours) in conjunction with cathartics, and, on failure, the prompt use of oxygen in the Trendelenburg position.

43. **Intrapelvic Intravaginal Perineorrhaphy Without Loss of Tissue.**—The conclusions of Goldspohn's paper are: 1. The superficial muscles of the perineum, readily accessible from its skin side, are too delicate and not located right to furnish any such support as is demanded of the female pelvic floor. And since the skin and connective tissue composes the greater part of the triangular layers of tissue, which fills the space between the vaginal and rectal outlets to serve merely as a common fixation point for the various superficial muscles, no dependence for anything more than cosmetic considerations should be placed upon plastic operation that deal solely or chiefly with this so-called perineal body. 2. The levator ani muscle and the two layers of the deep pelvic fascia between which it is placed and by which it is influenced, are the potential elements in the true pelvic floor, as these structures lie within the pelvic cavity usually, not less than 2.5 centimeters from the outside skin, any actual or anatomically correct repairing of these must be done upon their inner surface, from within the pelvic lumen and beneath vaginal posterior and lateral walls. 3. The associated fascia of the levator ani should be, especially the recto-vesical fascia, our chief constant support of the internal organs and intra-abdominal pressure. Their action is intensified or assisted by contractions of the muscle periodically as required. Therefore, mere resection of the muscles of one or two sides of its longitudinal course and without uniting the two lateral portions of either or both of these structures, the median line in front of the rectum will, in all probability, be unable to subdue a well-developed rectocele completely or permanently, and also be incompetent to restore a sufficiently strong retentive pelvic diaphragm against forces from above. 4. These results, however, have been absolutely shown to result uniformly from a median approximation and union of the lateral halves of the levator ani and its fascia in front of the rectum and its posterior wall, temporarily detached and held out of the way. 5. In complete lacerations into the rectum, the rent in the bowel is first denuded by turning down a flap from its edge, and it is then sutured, the ends of the sphincter ani being dissected out and united. Its coaptation sutures are relieved of tension by a deeper tension suture. After this the vaginal portion of the operation follows in the usual manner.

44. **Alum Enemas.**—Hardon has found the use of alum enemas (an ounce to the quart of warm water injected into the rectum) always beneficial in promoting intestinal peristalsis in cases of post-operative paralysis of the intestine. The promptness and certainty of its action where other remedies fail is its special advantage and he offers it to the profession as a life-saving measure.

53. See Abstract in THE JOURNAL, XXXVI, p. 1583.

54. Ibid., p. 1803.

55. **Exstrophy of the Bladder.**—Hartley's article gives a complete critical historical résumé of the surgery of exstrophy of the bladder. He does not seem to especially favor Maydl's operation, as conservatism in this condition is still a powerful factor. To relieve lateral traction Koch's suggestion as to osteoclasis in early life seems worthy of a trial and Küster's suggestion of closing in the bladder or penis after approximation of the bone by the above method seems the most rational. This method is confined to children under 6 years of age in whom the bladder is large, the diastasis of the pubic bone is slight, and in whom the apposition of the pubic rami may be secured previous to closure of the bladder. In older children and adults König's suggestion to divide the horizontal and descending rami of the pubic bone and to displace them to the median line, if it can be proven to be less fatal, seems to be the most promising for successful continence in the bladder. He thinks it should be given a further trial in children over 6 or 8 years with large bladder and moderate diastasis of the symphysis. Where the bladder is deficient, and in adults where it has become concentrically hypertrophied and the diastasis of the pubic bone has greatly increased, uretero-intestinal anastomosis, unless distinctly contra-indicated, is the operation of choice. In some cases where this is unadvisable, he would extirpate the bladder and anastomose the ureters and urethra (Sonnenberg). He reports the histories of 5 cases operated upon by him since 1888, in only two of which were the results satisfactory. His work ends with an extensive bibliography referred to in the text.

51 **Fracture of the Neck of the Femur.**—Ridlon's article is a résumé of the methods of treatment of fracture of the neck of the femur, with illustrations showing the apparatus and modifications recommended. The first consideration, he thinks, in these cases is to relieve the patient from suffering, which can be done best by replacing the fragments as completely as possible and retaining them by the completest possible fixation. The second consideration in old people who suffer from this accident is the use of such immobilization dressing as will least irritate the patient, favor cleanliness, permit the use of the bedpan and turning of the patient in bed without pain, for pain means the movement of the fragments on each other. The third consideration should be to continue the immobilization of the fracture and protection from all sensitiveness. The fourth consideration is to continue the treatment of the hip until the joint is sound as well as the fracture united.

57. See abstract in THE JOURNAL. XXXVI. p. 400.

59. Ibid., p. 590.

60. Ibid.

61. Ibid., p. 836.

62. Ibid.

63. Ibid.

68. **Mental Medicine.**—Blumer's article is an interesting historic résumé of the advances made in mental medicine in the past century. He quotes from various authorities showing the ideas extant at the beginning of the 19th century and the barbarous methods then used in the treatment of the insane. His article calls attention to the modern advances, our knowledge of the toxemic origin of many cases of insanity, certain points in regard to prophylaxis and the prospects as to the future elucidation of the pathology of this class of cases.

77. **The Climate of Colorado.**—The effect of the climate of Colorado on the nervous system is first noticed by Eskridge. He finds that no unpleasant effects are experienced by healthy individuals on first going to Colorado, if they do not attempt over-exercise. There is a sensation of well-being and stimulation, a tendency rather to be doing. There is stimulation also of the motor system, restlessness and a tendency to over-exercise, and this in turn leads to irritability. Many of the nervous symptoms, also, are due to suggestion. With healthy and acclimated persons, who become accustomed to the rarified air, sleep is generally easily obtained and more refreshing and stimulating. There seems, however, to be a greater tendency to produce nervousness and sleeplessness than at lower levels, and he is inclined to think there is some truth in the opinion that nervousness and insomnia are aggravated by prolonged residence, but he does not believe that mental or organic nervous troubles are specially encouraged. He finds that insomnia due to malnutrition in tuberculous

subjects is greatly relieved with improvement in the condition of the lungs, and nervous irritability also disappears as the general health improves. Mental depression in tuberculous subjects is more common than at the sea level. This is largely due to isolation and other environmental conditions. He asks: Is tuberculosis more likely to attack the nervous system in Colorado than at lower levels? He thinks this may be safely answered in the affirmative for adults, but in the negative for children. Hysteric subjects do better at the sea level than in Colorado. The same is true to some extent of the neurotic cases, of migraine and chorea. Epileptics and those who are nervous and impressionable from childhood are less favorable than at a lower level. Insanity is less frequent than in the Eastern states in proportion to the population. Maniacal conditions seem to be somewhat aggravated. He has not been able to observe any special difference in frequency, occurrence and results of organic nervous disease in Colorado and elsewhere.

78. **Ehrlich Diazo-Test.**—The test is described by Little, who finds it of value in typhoid and tuberculosis; in the latter disease its continued appearance warrants a fatal prognosis. In typhoid fever its absence or early disappearance are usually favorable signs, while its reappearance indicates relapse.

79. **Normal Salt Solution in Typhoid.**—Stuver calls particular attention to his method of injection of cold normal salt solution into the bowels in cases of typhoid fever, together with other methods which have been found of value in the treatment of the disease.

85. **Nitrous Oxid and Ether Anesthesia.**—Prevost gives his experience in tabulated form of the use of nitrous oxid and ether with special regard to the occurrence of albumin before or after anesthesia, and the occurrence of vomiting. He describes his method of the combined employment of the two agents and finds that the appearance of albumin is very little affected by the quantity of the ether or the duration of the anesthesia. The amount is always small and where albumin has existed before the anesthesia the condition has been by no means aggravated. He holds that with the present methods of general anesthesia cerebrospinal cocainization has not a very large place in surgery.

86. **Tuberculosis.**—The practical features mentioned by Playter are outdoor life, or practically the increased respiratory function, which can also be obtained by the practice of special lung-expansion. He thinks that in his own case one-half century ago, he learned the value of this method and improved under it so satisfactorily that for forty years he has invariably employed this super-respiration as a remedy in phthisis. Habitual deep breathing, night and day, of pure outdoor air is the first remedy. Ozonized air has been found in the Manchester Hospital for consumptives to give better results than any other such remedy tried there, and he expects to give this a trial. As regards sunlight and sunbaths he says he does not need to write. Respecting feeding he has a positive fear of stuffing. Early cases with little fever, where considerable exercise can be taken, may improve in spite of being stuffed. The assimulating power should be closely watched and studied. An increase in weight is not always a positive indication of improvement. He never aims to increase fat or flesh, but rather tone and strength, and the majority of his patients lose weight for a time with improvement of all other conditions. He speaks well of bovinine as a nutrient and of the value of temperate baths for promoting a healthy vigorous skin; a tuberculous patient can hardly be treated successfully without them. Other remedies mentioned are cod-liver oil, creosote given by inunctions most generally at bedtime, inhalants, etc. Most advanced phthisical patients need rest rather than exercise, though passive exercise given before bedtime is often useful and promotes sleep. Night sweats and chills soon subside with abundance of oxygen, and nausea and diarrhea usually with a judicious diet. For hemorrhages, absolute quiet, cool air and opium, if necessary, are usually sufficient.

96. **Congestion of Population as Affecting the Death-Rate.**—This paper is the second of a series of articles on death-rates as affected by occupation, locality, ratio of population, etc. The author gives tables showing the excessive death-rate in urban populations as compared with that in rural districts, showing an increase in the states where he has studied it from 16 to nearly 74 per cent. against the urban population. The average excess of death rates in cities over that in the country districts is nearly 50 per cent. We find, he says, however, some charged to congestion of population which to some extent are due to other causes, such as unhealthy occupation in the cities; he gives a table of various occupations with their death-rate in cities of 25,000 and in the remainder of the district, which shows a corresponding discrepancy. He asks: Why do life insurance companies pay so little attention to this matter, which is one of the greatest importance and which should receive more careful consideration?

97. **Environments of Applicants in Life Insurance.**—Pennell calls attention to the surroundings of the applicant as affecting the life risk and the little regard which has been paid to the matter by many life insurance companies. Not only the surroundings, but the natural disposition should be considered. The foolish dare-devil individual is necessarily a greater risk, no matter what his physical excellence may be, than a person of the opposite disposition.

98. **Serum Albumin Tests.**—Grant had occasion to renew his chemical supplies and purchased two three-ounce glass vials furnished with glass-ground stoppered pipettes, surmounted by rubber tips, in which he kept acetic and nitric acids. After having used them daily for a couple of weeks, he found that every specimen of urine submitted to the Heller and ferrocyanic test gave apparently an albumin reaction, though not under other tests, and on investigation it was found that the action of the acids upon the rubber tip produced this effect. He calls attention to the possibility of error and the necessity of keeping the acid from such contamination.

99. See abstract in THE JOURNAL, XXXVI, p. 756.

101. **Croup in Pneumonia.**—Van Rensselaer describes the characteristics of the pulmonary form of influenza, more especially the pneumonia which occurs in this condition. He finds while any single portion of the respiratory tract may be primarily and exclusively affected, as a rule, the inflammatory process is a progressive one and extends over several. The common catarrhs of the nasal and contiguous cavities are first noticed. The larynx appears to him to be more commonly involved than supposed, though its involvment is frequently overlooked. The tracheal and bronchial inflammations are most frequent and perhaps the best known of influenzal processes, while pneumonia is the most frequent and important complication, and usually the one that causes death. True influenzal pneumonia is a catarrhal or bronchial pneumonia in which the influenzal bacilli are in pure culture: yet there are many cases of the ordinary croupous variety excited by the diplococcus lanceolatus and a proportion of cases where there is a streptococcus or staphylococcus mixed infection. Grassberger has found the staphylococcus aureus seems to favorably excite the growth of the influenzal bacillus. At the bedside, however, it is often impossible to distinguish these different inflammatory processes. The onset varies considerably; sometimes the pneumonia appears to be primary, but far more often the symptoms of influenza precede and the pneumonia may often seem to first develop during the convalescence. The physical signs may be indistinct and the symptoms of apparent dulness be easily overlooked. Sometimes there is no absolute dulness during the entire progress of the disease. There is a lobular tendency to pneumonia in these cases, but it rapidly extends from one lobule to another. The progress may be very slow, rapid or intermittent. Instead of the pneumonia flush there is often a flush that spreads over the forehead and about the nose and eyes. Profuse sweating from almost the beginning of the disease is another striking difference between it and the ordinary pneu-

monia. Convalescence may be slow. The height of the pyrexia often bears no relation to the inflammatory process or its severity. The resolution may be incomplete and sometimes so prolonged that it closely resembles tuberculosis, especially if the disease is in the upper lobe. Repeated examination for tubercle bacilli is advisable, especially where there is a tuberculous tendency. The mortality of consumption is greatly increased during influenza epidemics, and consumptives who contract la grippe, as Leichtenstern says, frequently get a pneumonia, though it is rare in other conditions.

102. **The Ocular Complications of Influenza.**—The literature of the eye conditions in la grippe are reviewed by Moore, who summarizes in the following conclusions: 1. Many cases reported due to influenza may be dubious as regards that etiologic factor. 2. The nervous apparatus of the eye is specially liable to become involved, as the infection of influenza produces a toxin which is a selective cause of nervous symptoms. 3. The ocular manifestations are usually first influenzal. 4. The complications of metastatic or embolic processes are usually severe and detrimental to the integrity of the eye. Aside from this the prognosis of these influenzal complications is usually good with care and attention.

103. **Schools for the Insane.**—The method of conducting schools in asylums for the insane is described by Hamlin, who points out that the idea is not imparting of instruction as much as encouraging self-control and proper concentration of thought. He gives the methods which are, of course, quite different from other schools, consisting in singing, reading the news of the day, with comment and remarks, excluding only arguments on religion and politics; talks on natural history, customs, etc. He remarks on the curious general forgetfulness as to facts manifested by the insane. As regards the benefit from the schools he gives one or two striking instances. It seems to give the patients self-confidence and self-respect and bring them out of their morbid ideas in suitable cases.

112. **Blood Examinations in Septicemia.**—The blood changes of most importance noticed by Da Costa in the diagnosis of septicemia are summarized by him as follows: 1. The marked increase in the fibrin, especially in the early stages of the disease. 2. The presence of bacteria in the circulating blood in occasional instances, always those of grave nature. 3. Anemia corresponding closely to the degree of severity of infection. 4. Leucocytosis except in very mild and very intense infections. The blood picture of septicemia is in no sense to be regarded as specific, but this does not annul its importance and in certain irregular types it would puzzle the skilled clinician. The presence of leucocytosis and fibrin increase is sufficient to exclude typhoid or malaria. If neither a leucocytosis or an increased quantity of fibrin are found, a bacteriologic examination of the blood may prove successful. The early development of decided anemia progressing rapidly is very suggestive of sepsis. Of course, the absence of the Widal reaction and of malarial parasites are also to be considered. Similarly, in differentiating from tuberculosis the leucocytosis and fibrin increase point rather to sepsis. He urges the more routine employment of blood examination as a means of clearing up the diagnostic fog, not only in this condition, but in others.

117. **Nasal Sprays.**—The utility of nasal sprays for their cleansing, stimulating and soothing effects are first noticed. Their abuses, as given by Roy, consists in their too general employment, encouragement of the spray habit, and the excessive force with which they are sometimes used. He thinks it is almost criminal to employ a cocain spray in the nose, especially in chronic cases.

128. **Mastoid Auscultation.**—Andrews reports his method, which he had previously published, of mastoid auscultation, pointing out the possibility of varying results that may be found by other observers according to the instrument which may be used. The principles underlying the method of examination and on which the conclusions are based, are the greater the density of the mastoid, the greater will be its sound-conducting power. The more nearly uniform the media, the same will be the case; and solid media of the same density transmit sound waves, within certain limitations, in proportion to their relative thickness. He does not think the method will take the place of other methods of examination, but believes it is an additional aid to the diagnosis where local symptoms are not clearly defined. Five cases are reported.

129. **Ethmoiditis.**—The principles of Rice's article are stated as follows: "1. No nasal disease should be allowed to progress far enough to produce obstruction, deficient drainage, the close contact of the tissues and the retention of muco-purulent secretions, because in these conditions there exists great danger of extension of disease to the sinuses, and especially to the ethmoid, and 2, all surgical procedures in the nose should be carefully and cleanly performed that no resulting infection can produce a chronic suppurating ethmoiditis."

136. **The Drink Evil.**—Aronstam and Rosenberg give a discussion of the bio-pathologic and legal aspects of drunkenness. They advocate controlling measures for the sale of liquor as follows: 1, moral qualifications for licensees; 2, limit as to their number, granting no new license until a vacancy has occurred; 3, liability and damages for all injuries. The saloonkeeper should be pecuniarily liable to the parents and guardians for the minor, and to wife and family of the man; 4, rules for the sale of liquor: no one should be allowed to sell liquor in conjunction with other business, nor be permitted to sell to aliens, minors, women and habitual drunkards; nor on any holiday, and on no day later than 11 p. m.; 5, a special tax should be put upon all manufacturers and vendors to defray the expenses of asylums built for the treatment of alcoholics and dipsomaniacs. These measures, if followed, they believe, would do much good.

FOREIGN.

British Medical Journal, June 29.

Clinical and Experimental Observations Upon General Paralysis. LEWIS C. BRUCE.—From observations on patients in the progressive stages and in the condition of remission, Bruce finds evidence of gastro-intestinal disturbance, which he considers directly connected with the pathology of the disease. He has examined the blood in these cases and found during the actively progressive periods a leucocytosis, together with the presence of bacteria in one case, resembling the bacillus coli. During the remissions the leucocytosis falls to that of ordinary health. Nature apparently checking the disease and producing remissions by first producing a hyper-leucocytosis, as he theorizes, and the leucocytes in their turn producing something like antitoxin in the blood, which protects the patient for a limited time against further action of the toxin. He comes to the conclusions that the majority of cases of general paresis are due to bacterial toxins absorbed through the stomach and intestines and that each febrile attack represents the actual entrance of bacteria and their toxins into the blood or tissues of the patients, and that during the periods of remission the blood must possess some antitoxic substance. He, therefore, placed two progressive cases of paresis in bed and injected subcutaneously 2 c. c. of defibrinated blood taken from a patient in the stage of remission, daily for three weeks. The first patient became so much improved as to be taken out by his friends and though still mentally damaged and with some of the motor symptoms of the disease, is able to work at his trade and support himself. The other case has shown physical improvement, but no mental change, but the progress of the disease seems to be arrested. He has experimented with the agglutinative power of blood serum of paretics upon the bacillus coli, which he believes is a producer of the toxins causing the disorder and finds agglutinative action present in 70 per cent. of the serums of patients taken during remissions of the disease.

Observations Bearing Upon the Question of the Pathogenesis of General Paralysis of the Insane. W. FORD ROBERTSON.—The author continues the subject of general paralysis, arguing for the views that are expressed in the following conclusions: 1. General paralysis is dependent upon the occurrence of a chronic toxemia of gastro-intestinal origin,

2. The toxins are mainly bacterial and are formed in consequence of a partial break-down of those forces by which the harmful development of the micro-organisms that constitute the ordinary flora of the alimentary tract is normally prevented. 3. The toxins are absorbed and tend especially to produce proliferative and degenerative changes in the vessels of the central nervous system. 4. These vascular changes tend to set in earliest in those parts of the brain that are relatively best supplied with blood, because their walls are brought in contact with the largest quantity of toxins. 5. Tabes dorsalis is dependent upon the same form of toxemia. 6. The part played by syphilis in the pathogenesis of general paralysis and tabes dorsalis is essentially that of altering the natural immunity. 7. There is some evidence in favor of the hypothesis that this alteration in the natural immunity is dependent upon the commencing exhaustion of the leucoblastic function of the bone marrow. 8. The treatment of general paralysis and tabes dorsalis should be directed primarily to the correction of the disorder of the alimentary tract. 9. Probably the only means by which it will be found possible to check the excessive growth of the gastro-intestinal bacteria is that of the employment of specific antitoxins. 10. To arrest the disease by such means may be more practicable than would at first sight appear, because it is probable that the specially injurious toxins are the products of only a few bacterial forms.

An Experimental Inquiry Into the Pathology of Gastric Tetany. W. D. HALLIBURTON and JOHN S. MCKENDRICK.—A case of gastric tetany, or tetany associated with gastric dilatation, forms the subject of the investigation of the authors. They made experiments with the gastric contents prepared by being treated with rectified spirit; the filtrate evaporated several times and finally a solution made after the last filtrate, injecting the matter into animals and testing the blood pressure in each case. It appears from three experiments made that the tetany fluid contains substances much more poisonous than hydrochloric acid itself, which was used as a control test. They supplemented their researches by injecting into an animal the gastric contents obtained from patients in health or suffering only from mild dyspepsia in the same manner and observed the results. The only plausible theory they find, which the experiments support, is that of auto-intoxication. The poisonous substance is formed in the stomach, which absorbed in the blood stream in sufficient amounts must give rise to tetanoid contractures and their well-known symptoms of disease. They find the toxic substance existing in the stomach of the case under consideration, which injected into the animal produces a marked fall of blood pressure and slowing of the heart beat. This substance was not present in the normal gastric contents of health and, moreover, after the neutralization of the tetany fluid, practically no fall of pressure was obtained. What this toxic substance is they can not say. It has a marked acid reaction and it is soluble in alcohol and in normal saline solution. By its injection into animals it causes either direct or reflex excitation of the cardio-inhibitory center. It is, therefore, probable that other centers in the brain and cord are likewise similarly affected.

The Lancet, June 29.

The Practical Points in the Treatment of Threatened Asphyxia. ROBERT L. BOWLES.—The author finds, according to his examination, that in cases of drowning in man, water does exist in the lungs, and is effectually expelled only very gradually and after a long time; and that it is absolutely impossible to produce relief in such a case by the Sylvester method only. He says it would be better to let the patient lie on one side and trust to Nature, rather than to have recourse to measures which would cause the forcible inspiration of air before evacuation of water had been sufficiently effected. Artificial respiration, valuable as it is, if injudiciously employed, becomes really a source of increased danger; therefore, the Marshall Hall method should be preferred.

Intestinal Suture by Means of Continuous Catgut Stitch and Excision of the Mucous Membrane. H. LITTLEWOOD.—The methods employed by the author are given as follows: "The abdomen is opened in the middle line, a suitable portion of the stomach is selected—either the anterior or posterior wall—and a loop of jejunum. These are now emptied and clamped by means of Doyen's pedicle forceps, the blades of which are covered with India-rubber tubing, and are held by an assistant so that the portions of the stomach and bowel to be operated on are in close apposition. The parts are surrounded with strips of gauze or flat swabs. An incision about one and one-half inches in length is now made into the stomach and bowel through all the coats down to the mucosa, and then with a pair of ophthalmic scissors and forceps the coats all around are separated from the mucosa for a short distance, so that a broad surface of all these coats may be brought into contact. The posterior edge of the stomach incision is now stitched to its full extent to a similar portion of the bowel with chromic gut by means of a small curved Hagedorn needle. The suture is knotted at both ends and left long. An elliptical portion of the mucous membrane is now excised from the stomach and a similar portion from the bowel, and the parts are cleansed. The cut edges of the mucous membranes are now stitched the whole way round by a continuous stitch of catgut, knotting it at the two extremities of the openings so as to prevent its drawing too tightly and narrowing the opening. This done, the anterior edges of the incisions into the stomach and bowel through the remaining coats are united by a continuous stitch, the same suture which was left long after uniting the posterior edges. I am not careful to bring serous coat to serous coat, but I rather prefer to bring the deeper layers into apposition. The clamps are then removed. As a rule there is no bleeding—the stitches preventing this. It is important not to pull the stitches too tightly. The gauze is removed and the abdomen is closed. The actual cutting and stitching can easily be done in from 10 to 15 minutes. In doing enterectomy he performs a very similar operation. The parts to be excised are clamped above and below with Doyen's clamps and removed with scissors. A portion of the mucous membrane is excised so that it retracts beyond the cut edges of the other coats, leaving a good broad surface for stitching. The two cut ends are approximated by the clamps and are then closed by continuous catgut stitches in the same way as for gastroenterostomy. Half the lumen, consisting of all the coats, with the exception of the mucosa, is first stitched and fastened, then the mucous membrane the whole way round, interrupting and knotting the stitches in two places. Finally the remainder of the coats are sutured. The clamps are removed and the cut surfaces of the mesentery are approximated by interrupted sutures. The long handles of the clamps enable them to be held in such a manner as to be well away from the field of operation.

Are Not Some Patients Said to be Afflicted with Gastric Ulcer Really Suffering from a Different Disease? W. HALE WHITE.—The author suggests that there is a disease met with chiefly, or perhaps only, in women between 20 and 40 years old, having as its chief symptoms gastric pain, nausea, sickness and hematemesis not dependent upon ulceration of the stomach, any such that is present being quite superficial and no more than might occur secondarily to hemorrhage. In spite of serious gastric symptoms extending over years the patient is not wasted, has been or is often chlorotic and has none of the mechanical effects of gastric ulcer, such as adhesions, pyloric stenosis, or subphrenic abscess. The prognosis is good, though relapses are frequent. He thinks that now since surgeons are opening the stomach for severe bleeding, he finds the existence of this condition which he has long suspected, being confirmed. The operators are already becoming accustomed not to find ulcer even after severe hemorrhage. He calls attention to the literature in support of his view and suggests that this disease may be like chlorosis associated with the period of high sexual activity in women, and hematemesis may have something to do with vicarious menstruation. He calls attention to the importance of separating gastric ulcer from this disorder, and rather deplores operation in these cases.

Bulletin de la Soc. des Hop. de Paris, June 13.

Technique of Cytodiagnosis. DUPRÉ.—The cerebrospinal

fluid is drawn into a tube and immediately centrifugalized for ten minutes with 2500 turns a minute, then carefully decanted. The centrifugalized coagulum is then spread on the plate fixed with alcohol-ether and stained with hematoxylin-eosin, Unna's blue, or Ehrlich's triacid.

Staphylococcus Septicemia. G. ETIENNE.—The septicemia may develop in an acute, a rapid or a protracted form. There is no specific symptom and the symptomatology is about the same for each variety, the extreme prostration and sunken eyes suggesting the second week of typhoid fever, respiration and pulse superficial and rapid, the contractions of the heart irregular and exaggerated, the sounds muffled, sometimes vomiting and fetid diarrhea, but usually the stools are formed. The spleen and liver may be hypertrophied. In a few days the patients look as if they were in the last stage of consumption. If they recover, convalescence is long and tedious. A streptococcus septicemia of such severity is invariably fatal.

June 20.

Purulent Pleurisy Tolerated for Forty Years. FAISANS.—At the autopsy of a man 55 years of age, a very old, purulent, pleuritic effusion was found which dated from his fifteenth year. Nearly 3.5 liters of pus had been enclosed in the indurated pleura, which was cartilaginous or bony where it was in contact with the ribs. Notwithstanding this purulent accumulation the subject had lived like other people, served his term in the army and died finally with an alcoholic liver cirrhosis. When admitted to the hospital for the latter disease the physical signs in the thorax suggested a pleuritic effusion, and a liter of pus was withdrawn. This proved a blunder as the long established equilibrium was destroyed by this measure, and congestion, hemoptysis and intense hyperemia rapidly followed, terminating in fatal asphyxia. Faisans warns that it is better to leave an old pleuritic effusion alone as long as it does not threaten suffocation. In case of serious interference with the respiration, an exploratory capillary puncture should be made and if the fluid is found to contain granulations and fat, with cholesterin crystals, empyema should be avoided and merely a small amount of the fluid withdrawn to ward off dyspnea. Non-intervention is much less dangerous than intervention in these cases. A recent effusion should be operated on as soon as possible; but an old effusion, with the lung fastened by adhesions, should be respected and left untouched unless absolutely necessary.

Tubercles of the Cerebellum. P. MERKLEN.—Headache on effort, with rigidity of the back of the neck, are considered by Merklen important differentiating signs in the diagnosis of a tubercle in the cerebellum. He relates several instances in which these signs were the key to the diagnostic problem. In one case a man had suffered from headache with "stiff neck" and dyspeptic disturbances since he had been thrown from a carriage. He suddenly became somnolent and apathetic, with slight facial paresis. On this basis a tumor in the cerebellum was diagnosed. A serous cyst was found and the patient recovered after simple evacuation.

Application to the Clinic of the Cytolytic Serums. F. WIDAL.—The bactericidal or cytolytic properties of a specific serum are due to the alexins and the "sensibilisatrice" it contains, according to Bordet's latest researches published in the *Pasteur Annales*. Widal has applied these laboratory experiences to clinical diagnosis and states that we have in the specific cytolysis, an actual and reliable means of diagnosis by means of the blood. He calls it "Bordet's fixation reaction." In tests with typhoid serum, the red corpuscles in blood from a typhoid patient remained intact, while the reds from normal blood were rapidly destroyed, staining the fluid red to the eye, and on shaking it becomes a smooth emulsion. This specific absence of cytolysis parallels the agglutination test. The technique of the "reaction of fixation" is still so complicated, however, that it will probably be restricted to dubious cases of typhoid fever, unless it should be found useful for the diagnosis of other diseases that have no agglutination test.

Intensive Dosage of Antitoxin in Protracted, Recurring or Malignant Diphtheria. BARBIER.—The first dose should be large and it should be repeated as often as necessary to cure these forms of diphtheria. Barbier has injected as much as 90, 110 or 140 c.c. of antitoxin in some cases with the final recovery of the child after the last injection, although the disease had apparently failed to respond to all that had preceded. Many cases are now lost from the timidity of the physician who fears to repeat the doses as many times as necessary. The same argument applies also to pseudo-membranous bronchitis and to the bulbar phenomena consecutive to diphtheria. He relates a number of convincing cases under each of these headings, showing how the most serious bulbar paralysis and other symptoms subsided after the injection of 10 c.c. repeated every day until 125 to 130 c.c. had been administered. This intensive treatment should be instituted before the paralytic or bulbar symptoms have become very pronounced. In many cases they are preceded by one to several days of euphoria, and are inaugurated by a period of depression with increasing weakness and arrhythmia of the pulse. Whatever may be the cause of this change, whether it is diphtheritic infection of some of the viscera, or intoxication at a distance, it is the duty of the physician to be on his guard and to treat it as if it were a typical diphtheritic sore throat, with a large injection of antitoxin, repeated daily as long as necessary. Even this intensive treatment may fail, but it proved successful in the large majority of apparently hopeless cases.

Presse Medicale (Paris), June 8.

Spinal Cocainization. T. TUFFIER.—Among the points of especial interest in this latest communication from Tuffier on the subject, we note that he attributes to Corning, not only the priority of subarachnoid injections but also of the epidural method of spinal analgesia, which Sicard and Cathelin have recently revived. Tuffier states that he found subarachnoid cocainization sufficient for the removal of a hydatid cyst of the lung, and Chipault has observed a case in which anesthesia of the entire body was obtained. In some cases it seemed to be impossible to obtain the analgesia, but instead of assuming an idiosyncrasy, he tried cocain from another source, and found it rapidly effectual. In other instances, one injection failed, but a second succeeded. If the hand of the operator trembles, or the needle is withdrawn a trifle, the fluid may not reach the subarachnoid space. No one should assert that a patient is refractory until he has made a second attempt, as usually it is the surgeon who is at fault. The fact that the patient is a spectator of the operation is scarcely an objection, if the surgeon does not talk. Tuffier makes silence the rule in his operations with any kind of anesthetic. He has noticed that the analgesia occurs more slowly in patients with arteriosclerosis. Guinard found it absolutely impossible to induce analgesia by this means in a patient with infectious meningomyelitis. Tuffier's experience has demonstrated the absolute benignity of spinal cocainization. The nausea can usually be controlled by instructing the patient to take deep inhalations. It is persistent in only 1 per cent. of the cases. Plugging the anus with an aseptic tampon will prevent any inconvenience from the relaxation of the sphincter. Coffee, tea, food, a purgative, are the most effective measures against the headache. It lingers in about 2 per cent. Complete repose frequently wards off all disturbances. The effect of the cocain is restricted to the nervous system, principally to the spinal roots that serve as conductors to pain. The organic disturbances sometimes noted are due to disturbances in the nerve functions, the symptoms resemble those of a transient attack of seasickness, and subside without leaving a trace. The respiratory organs and the circulation remain entirely unaffected during and after the analgesia. The renal functions were carefully studied in sixty cases, the results showing that there is no other method of anesthesia which respects the kidneys so completely. In the few cases of death after spinal cocainization that have been reported, visceral lesions were invariably found at the autopsy, of such severity that any operation was contraindicated. The absence of shock and vomiting and the rapid recuperation of the patient are among the chief advantages of this method. The analgesia usually commences in the genital organs. The general indications for spinal cocainization in

preference to general anesthesia are a visceral affection, pulmonary congestion, emphysema, and a renal or cardiac lesion. The special indications are in case of operations on the lower extremities, the genital organs and on the entire urinary apparatus. The surgery of the lungs will also benefit by this method; but for abdominal surgery it should only be used by operators who would not be disturbed if the patient should vomit during the operation.

Paraffin for Ocular Prothesis. J. CHAILLOUS.—Gersuny's injections of paraffin to substitute missing tissues for surgical prothesis, were applied by Chaillous in two cases after enucleation of the eyeball to give the stump a better shape. The results were extremely satisfactory. One or two cubic centimeters of the white vaselin as recommended by Gersuny, and described in THE JOURNAL, were injected into the stump, the injection repeated in five or six weeks.

Progres Medical (Paris), May 25,

Rhino-Pharyngeal Origin of Goiter. H. DU FOUGERAY.—A girl of 12 with chronic hypertrophic pharyngitis, chronic catarrh of the rhino-pharynx and a hypertrophic rhinitis, was treated locally for these troubles and it was noticed that a large goiter which had previously developed, subsided and disappeared completely and permanently by the end of three months. The coincidence of the disappearance of the goiter with the cure of the rhino-pharyngeal lesions, induced Fougeray to make further investigations in this line, and he found that rhino-pharyngitis was invariably present in every one of 211 cases of goiter he had opportunity to examine. Goiter not older than two or three years rapidly subsided under the local treatment he instituted in the rhino-pharynx—52 cases in all, the treatment lasting from one to eight months. If there is cystic degeneration the goiter does not entirely retrogress, although in one case, that of a man of 48, the cure was complete after a single puncture and evacuation of the cyst, supplementary to the local treatment of nose and throat. Old goiters, with fibrous nodules or cysts, diminished by a quarter to a half of their size in 133 cases, under treatment for five months to a year. Very large, old, fibrous or cystic goiters subsided somewhat but not very much under the treatment. He has treated 24 cases of this kind and succeeded in several in reducing the circumference of the neck by 5 to 10 cm. in goiters of thirty years' standing. Besides these 209 cases he has treated two cases of goiter with exophthalmus. In the first, the exophthalmus disappeared after two months, and the goiter began to subside in two weeks after treatment of the rhino-pharyngitis was instituted, which was the same in every case: painting the oro-pharynx with mentholized oil three times a day, aspiration of the same oil by the nostrils five or six times and cauterization of the affected portions of the naso-pharynx with chromic acid. The pharyngeal venous circulation communicates freely with that of the thyroid gland. When this plexus and the entire venous system in the pharynx are gorged with blood from the rhino-pharyngitis, the inflammation may extend into the gland and thus cause the goiter. Vascular lesions of the oro-pharynx he concludes from his extensive research, induce simple goiter; of the cavum and of the nose, exophthalmus; of the mucosa of the nose and pharynx, goiter and exophthalmus. Sympathetic lesions of the oro-pharynx, cavum, nose, or of the entire rhino-pharynx produce cardiac troubles without goiter or exophthalmus. Mixed vascular and sympathetic lesions of the oro-pharynx induce goiter and cardiac disturbances; of the cavum and nose, exophthalmus and cardiac disturbances; of the entire rhino-pharynx, the classic picture of Basedow's disease.

Revue de Chirurgie (Paris), June.

Coincidence of Symmetrical Lipomata with General Paralysis. CH. FERÉ.—A few rare cases of symmetrical lipomata occurring with a nervous affection, epilepsy, sciatica, tabes or neuralgia, have been published and the lipomata considered to be of trophoneurotic origin. Feré, on the contrary, believes that they are not trophic troubles developing in consequence of lesions in the nervous system, but teratomata or embryotomata indicating defective evolution. Their hereditary and congenital character in certain cases, their coincidence with other teratologic malformations, their symmetry and their appearance in young subjects, all plead in favor of this assumption. A case is described in which the lipomata appeared in youth and progressive paralysis about 50 years of age, with no syphilitic antecedents.

Importance of Investigation of the Blood in Surgical Diagnosis. J. SILHOL.—The presence of a malignant neoplasm can be assumed when the blood shows less than half the normal amount of hemoglobin, the red corpuscles are diminished in numbers and irregular in shape, with an unusual proportion of very small or very large corpuscles, and a leucocytosis of at least 15,000 to 20,000. Hartmann has the blood of all his patients examined before he operates, limiting the research to the estimation of the hemoglobin by Gowers' method, the enumeration of the corpuscles and determination of the varieties of leucocytes in dried specimens. The operation confirmed the information derived from the examination of the blood in every instance, although the clinical picture and history were usually unknown to those examining the blood. Cushing has called attention to the leucocytosis in typhoid fever as an indication of imminent perforation, and the same rule applies to appendicitis, etc. A young man had experienced brief pain in the right inguinal fossa, at one time, but there was no tenderness. The blood showed hemoglobin 80 per cent.; the number of reds, 4,600,000, whites, 19,200, with a large proportion of regular mononuclear reds. This leucocytosis decided Hartmann to operate even in the absence of any iliac symptom. He found the appendix fastened by adhesions with an almost complete perforation in the middle. In traumatisms, leucocytosis was noted in every case of fracture examined, while it was absent in simple luxations. Nineteen cases are described at length to show the remarkable concord between the blood findings and the conditions found at the operation. Mikulicz refuses to operate on patients with less than 40 per cent. hemoglobin, as he doubts their recuperative power.

Treatment of Severe Rectitis with Stenosis. A. NAVARRO.—Cases of chronic, painful rectitis, rebellious to ordinary measures, are best treated by abdomino-perineal extirpation as if for malignant disease. Four patients have been thus treated, including three published by Navarro for the first time in this communication. The rectitis involved the omega loop, and between the two rings of stenosis the rectum was a hard, narrow tube. He succeeded in making a continent artificial anus by observing the following points: In the first place, the anus is not merely an orifice, but a canal. The intestine is carried along the abdominal wound for 4 cm. before the orifice is reached, and fastened to the parietal peritoneum, which is closed beneath it. The intestine is then carried along the muscles, sutured to the wound and then to the skin, taking care to twist it *à la Gersuny* before suturing it to the parietal peritoneum. A still more important precaution is to see that the loop is taut between its ilio-pelvic or iliac attachment and the parietal peritoneum, cutting off any superfluous length if necessary. As fecal matters arrive in this taut loop they encounter an obstacle in the closed lumen of the intestine, which is a constant physiologic phenomenon at this point, as the lumen is opened only by the passage of the fecal matters. The obstacle of the closed lumen is sufficient, however, to detain them at this point and their weight in the arc formed by the loop dragging on the mesentery tends to keep the anus closed by traction. In two cases—one patient died from recurring angina pectoris soon after the operation—an actual anal canal was made, perfectly continent, giving the patients five minutes warning before defecation and even allowing postponement for an hour or more. The only essential difference between it and a normal anus is that it is not voluntary. One patient is a prostitute but does not find it necessary to wear a bandage.

Treatment of Abnormal Anus. X. DELORE.—Extraperitoneal operations are dangerous sometimes, frequently incomplete and are indicated only in case the anus has no spur and is recent. Entero-anastomosis for the cure of an abnormal anus seems a useless procedure and lateral enterorrhaphy should be reserved for the cases in which the anus is in the large

intestine and there is no danger of constriction. Enterectomy is the preferable operation. The loop with the anus is resected far into the sound tissues; a triangular piece is cut out of the mesentery and the two stumps are brought together with a Murphy button. This little device, Delore adds, renders enterectomy a certain, rapid and benign intervention in cases of abnormal anus.

Revue Hebd. de Laryngologie (Bordeaux), June 1.

Hysteria from Needle in Ear. M. LANNOIS.—A young woman had a habit of scratching her ears with a needle or pin. One night she experienced a violent pain in one ear and two weeks later became completely deaf. The hearing improved in one ear after a month, but the other remained deaf for more than a year. Daily attacks of hysteria commenced, sometimes as many as six a day, with hysteric pseudo-meningitis, paraplegia and other symptoms of hysteria, with occasional pains in the left ear, irradiating through the head. After the hysteria had lasted two years, the patient applied for treatment and a fragment of a needle was found in the left ear, evidently the source of all the troubles, as the hysteria gradually vanished after its removal. Lannois has had occasion to observe several cases of hysteria proceeding from an imaginary foreign body in the ear. Of course in all these cases the patients are naturally predisposed to the hysteria and a slight physical or psychic impetus is sufficient to induce its appearance.

Semaine Medicale (Paris), June 12.

Hemianopsia in Arteriosclerosis with Interstitial Nephritis. RENDU.—The co-incidence of arteriosclerosis with its complicating functional disturbances in the kidneys, and hemianopsia is far from exceptional. Even when the nephritis is in an incipient stage, the hemianopsia may be quite pronounced. It is, therefore, a very important early sign. In five cases observed by Rendu, two soon terminated fatally. The cerebral lesion causing the hemianopsia may be cured by absorption of the blood if it is connected with a capillary hemorrhage, but it always leaves traces if it is the result of thrombosis, as a focus of softening is left and terminates in a cicatrix in the most favorable cases. The functional disturbance—the hemianopsia—persists with it, but the patient becomes accustomed to it and ceases to notice it. The prognosis of the renal lesion is difficult to determine. Disappearance of albuminuria is considered a favorable sign, but it does not necessarily indicate that permeability has been restored. Polyuria is a good sign, especially when not accompanied by exaggerated arterial tension. Persistence of the headache is grave as it suggests impending recurrence of the attack. Treatment should aim to diminish the arterial tension with the danger of hemorrhages, by leeches and drastic purging. Iodids should never be administered during the acute phases of the headache nor the heart tonics, on account of the danger of congestions.

June 19.

Hematolysis in Cancerous Fluids. BARD.—The writer has never seen a spontaneously hemorrhagic cancerous fluid that was not hematolytic, nor a serous cancerous effusion that was hematolytic. The absence of hematolysis, therefore, in a pathologic fluid, spontaneously hemorrhagic, is a capital presumption against its malignant nature.

Berliner Klinische Wochenschrift, June 10,

Successful Dietetic Treatment of Epilepsy. R. BALINT.—Thirty epileptics were treated by the deprivation of salt which has been advocated during the last two years. The theory is that when the organism is deprived of salt it is much more sensitive to the effect of the bromids, which seem to take the place of salt in the tissues and fluids. Balint, after various attempts to induce his patients to do without salt, which he found destroyed the appetite in time, finally thought of the expedient of having bread made with sodium bromid in the place of salt. This does not affect the taste of the bread, while it substitutes the required medicine in the place of the banished sodium chlorid. The menu found perfectly satisfactory to the patients' taste, as well as from the therapeutic point of view, was 1 to 1.5 liters milk; 40 to 50 gm. butter; three unsalted eggs; 300 to 400 gm. bread, and fruit. This amounted to a total of 2300 to 2400 calories, the amount of salt was less than 2 gm. in all and 3 gm. of sodium bromid were taken, disguised in the bread. All seizures ceased on this diet in 7 of the 9 recent and in 15 of the 19 old, chronic cases, some of which had had a large number of seizures every day, and had been considered hopeless for years as the bromids had no effect on them previously. That is, in 80 per cent. the seizures were completely abolished and in the remaining 20 per cent. they were very much attenuated and the intervals became longer. In some patients all seizures ceased after the second or third day; in others the number was increased for a few days, but by the sixth or seventh, the beneficial effect was apparent in all. The mental faculties improved in proportion, and patients who had previously been dull and inert all the time, roused and took an interest in gardening, etc. They almost invariably gained in weight and all relished the diet. This menu was continued for thirty-five to forty days. When it was discontinued the seizures recurred in most cases, but much attenuated and they did not regain their former intensity for a long time. One patient continued this dieting for three months and there have been no seizures at all during the month since it was suspended.

June 17.

Enterogenic Origin of Pernicious Anemia. E. GRAWITZ.—Degeneration of the blood is never a primary blood disease. It is always secondary to some known affection such as malaria or malignant disease, or to slight, chronic hemorrhages or to an alteration of the bones or to some known or ignored poison, such as carbon dioxid, lead, toxins elaborated by intestinal parasites or to toxins generated in the putrefaction of albumin in the intestines. Every case of pernicious anemia can be traced to some cause of this kind if the anamnesis and clinical signs are carefully sifted. The conception of the enterogenic origin of pernicious anemia is an important progress in the domain of hematology. The nervous and the blood systems are the ones most liable to be attacked in case of auto-intoxication from the intestines, and the individual predisposition is the determining factor as to which one is to be affected. Grawitz describes an interesting case in which the pernicious anemia had unmistakably originated in a preceding severe, chronic intestinal catarrh pouring irritating substances into the liver by the portal circulation, and thus inducing extensive infiltration of the periportal connective tissue. The autopsy also showed extensive deposits of iron in the liver cells, which evidently must have been derived from destruction of the blood corpuscles, showing that the poisonous products must have been pre-eminently toxic for the corpuscles. The case is the more remarkable as the subject was a child 7 years of age. The glands in the alimentary canal were not atrophied in this case, which is another proof of the intestinal origin of the anemia. It also demonstrates that this atrophy is not an indispensable factor in the etiology of pernicious anemia, although it undoubtedly aggravates it when it exists. By appropriate dietetic measures, copious rinsings of the alimentary canal and the administration of arsenic, Grawitz has succeeded in curing 6 out of 12 patients with severe pernicious anemia, as he described in detail in the *Berliner Klin. Woch.*, 1898, 31. He has since treated 7 patients and cured each one. One has been in good health for eight, 3 others for four years and 4 others for nearly as long.

Centralblatt f. Chirurgie (Leipsic), June 22.

Immediate Cystorrhaphy After Sectio Alta. BALACESCU.—The method described was first worked out on dogs and has been mentioned in THE JOURNAL before: XXXI, p. 1369. Further experience has confirmed its extreme usefulness, dispensing with catheterization and drainage, allowing spontaneous urination from the start, absolutely preventing oozing of urine, and answering every requirement. Twelve cases are described. Primary reunion occurred in seven, eight and eleven days in 3 cases, in nine days in 5, in twelve in 2 and in fourteen in 1. Balacescu calls the method "cystorrhaphy by imbrication." The patient is prepared by a three to six days' course of treatment with salol or urotropin internally and perman-

ganate or silver nitrate locally. While the anesthetic is being administered the bladder is rinsed out once more and completely emptied. The incision in the vertex commences in the anterior and continues into the posterior wall. The side of the bladder-wound toward the operator is turned over outward, making a sort of flap with the mucosa exposed. The latter is then detached from the muscular layer beneath, forming a crescent-shaped flap of mucosa, and leaving the muscular beneath with a raw surface. The mucosa flap is then sutured to the intact mucosa of the other lip of the wound with No. 0 or 00 catgut, the stitches passing through the base of the flap. The muscular layers in each lip are then sutured together, the stitches passing through the base of the flap, and the raw flap of muscular tissue is then brought over the double row of sutures like a cover and sutured to the outside of the bladder wall beyond. This cover protects the danger points, the angles of the wound. The patients were allowed to urinate spontaneously in 4 cases from the start; a catheter was inserted occasionally in 2 for seven days and in 1 for four, and a permanent catheter for nine days in 4. All the patients were dismissed cured in twelve days. In one case the sutures had not been applied with the necessary care and there was slight infiltration of urine for a day or so, easily remedied.

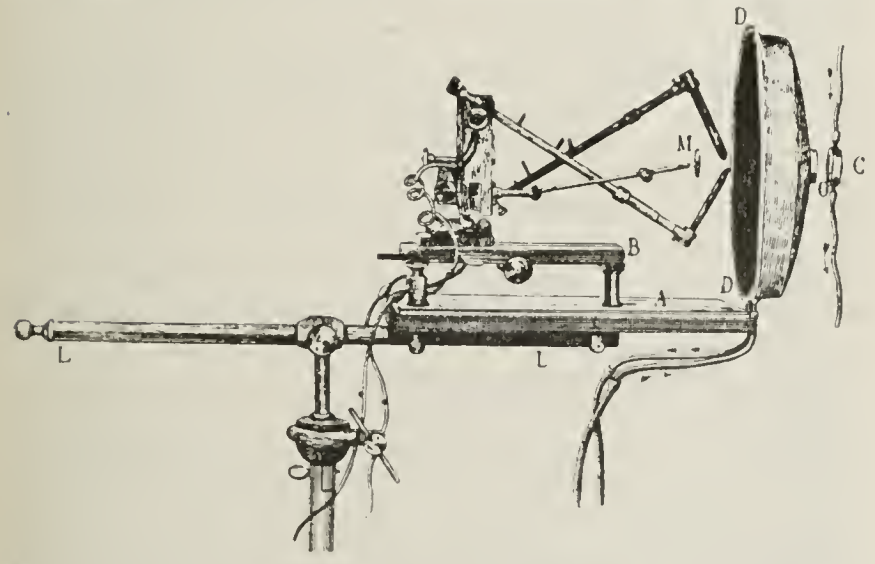
June 29.

To Hasten Consolidation of Fractures. F. COLLEY.—A working man with a fracture of both bones of the forearm was rendered helpless by the lack of union after months had passed. An exploratory incision showed that the bones were otherwise normal. Colley made a thin paste of freshly calcined, finely pulverized bone ashes from the femur of a beef, with gum arabic and distilled water. He injected 10 c.c. of this paste once a month at the points of the bones and found that the ulna and radius had become firmly consolidated by the sixth injection. He is now engaged in experiments on animals to determine whether the stimulation of the defective callus formation is due to the bone ash, or whether other irritating substances possess the same property.

Dermatologische Zeitschrift, June.

Relations Between Lupus Vulgaris and Erythematodes. E. SAALFELD.—As a typical case of disseminated, follicular lupus progressed it assumed some of the characteristics of common lupus and also of lupus erythematodes. Saalfeld regards it as the connecting link between these forms of lupus.

Improved Apparatus for Phototherapy. LORTET and GENOUD.—THE JOURNAL of June 15, p. 1742, quoted Leredde and Gastou to the effect that the apparatus described below is



a revolution in phototherapy, as it brings it within the reach of every physician on an electric light circuit, and at the same time simplifies and shortens the time of treatment required. The light is brought close to the part exposed, without the interposition of the condenser considered necessary by Finsen. The carbon tips are set at such an angle that the cone of rays passes through the aperture O in the center of the hollow screen vessel D. The walls of this vessel are 6 to 7 mm. apart, thus forming a space through which cold water is constantly circulating, to prevent the heating of the vessel. The carbon tips can be adjusted at any distance from the aperture O, but the most satisfactory is about 1 to 2 cm. In this position the projecting edge of the vessel D shields the light. The mirror M prevents backward radiation of the light and concentrates it at the opening O. The hollow obturator or compressor C is made of two discs of rock crystal allowing the circulation of water between them. The light can be approached to within 4 cm. of the compressor without danger of heating it, although it allows the passage of most of the heat rays. The part compressed is kept cool by the flowing water, and hence the effect of the heat rays is not felt, while the chemical rays pass through the compressor unmodified. The entire apparatus is adjustable at any position on the axle L, which is in turn adjustable on the standard. Only 40 to 45 volts are required, with 8 to 10 amperes. Besides the remarkable simplicity and inexpensiveness of this apparatus, the zone exposed can be from 1 to 6 cm. in diameter. Finsen's apparatus is restricted to an active zone the size of a franc-piece, less than that of a quarter. The photochemical intensity of the light is so strong that fifteen to twenty minutes or even less are ample to attain the desired therapeutic result, equal to an exposure of one to one and a quarter hours with Finsen's apparatus.

Deutsche Archiv f. Klinische Med. (Leipsic), lxx, 1 and 2.

Intercostal Phonation. E. WEISZ and L. KETLY.—As the glottis closes, the lung bulges out in the interspaces. This bulging does not occur of course over the liver and spleen, and consequently it is possible to determine with this sign the lower limits of the lung. The bulging can also be the result of pleuritic exudates or transudates and the examination of fourteen patients has shown that this sign is a reliable diagnostic measure, enabling the lower limits of the effusion to be located, unless interfered with or prevented by adhesions, indurations or reflex rigidity of the intercostal muscles. When this phonation sign is observed faintly in a circumscribed patch in the midst of an area of dulness, in the absence of other phonation phenomena, a small amount of exudate can be surmised, unless a thin layer of aerated lung tissue lies between.

Traumatic Diaphragmatic Hernia. T. STRUPPLER.—Very few of the 500 cases of diaphragmatic hernia on record were diagnosed during life and consequently Struppler calls attention to a case in which he made a correct diagnosis by the aid of radiography and Weisz' sign mentioned in the preceding paragraph. The patient complained of pain and oppression in the left thorax after eating, a burning sensation, dating from a severe fall six years previously. He had been punctured nineteen times for a supposed pneumothorax. The constant modifications in the physical findings after eating, drinking, or changing position, suggested the correct diagnosis. The area of dulness after eating included on the left side the third, fourth and fifth interspaces. Inflation of the stomach caused the left half of the thorax to swell and occasioned dyspnea, sweating and general distress, while the epigastric region remained flat. The cold sensation after drinking ice water was experienced in the center of the left part of the thoracic cavity. A quart of water injected into the intestines through a tube 47 cm. in length, caused this same sensation in the left breast, and the same sounds were heard as when water was taken into the stomach. The diagnosis was, therefore, traumatic hernia with displacement of the mediastinum and dextrocardia, with a portion of the intestine as well as of the stomach involved in the hernia.

Deutsche Med. Wochenschrift (Leipsic), June 27.

Significance of Eosinophile Cells in Tuberculous Sputum. E. STADELMANN.—Eosinophile cells in the sputum have no diagnostic nor prognostic importance in tuberculosis, according to Stadelmann's conclusions from the study of 82 cases. The cells were found in 15, that is, 18 per cent., and in severe as well as in mild forms of the disease; in one slowly progressive case they were found in moderate quantities through the entire course of the disease, irrespective of the presence of tubercle bacilli in the sputum. In other cases of incipient tuberculosis no eosinophile cells could be discovered at any time.

Contagiousness of Cancer. R. Behla.—Nineteen unpublished cases of conjugal cancer are reported; in all but two instances the internal organs were affected. Elsler has observed a case in which a man tending his father-in-law with carcinoma of the rectum, developed a carcinoma of the lip a few months later, and his wife a carcinoma of the mamma soon after he was operated on. Boas has observed 5 conjugal cases and Guelliot has collected 89. Four others are also on record. This makes a total of 118 cases in which man and wife both had cancer, the interval ranging from three months to twenty years. Besides these, there are 43 cases on record of a cancer of the penis and of the uterus in man and wife, and 6 of "family cancer" in which members of the family used the same pipe or syringe. Berger recently had occasion to remove a carcinoma from the penis of the husband and from the ear of the wife at about the same time. Ebert has collected 22 cases and Kaufmann has witnessed another, in which there was direct transmission of the malignant neoplasm from one lip to the other, the tongue to the palate, etc. In 8 cases on record surgeons or physicians have died of malignant disease traceable to inoculation with cancerous juices, and 4 instances have been observed in which persons apparently contracted the affection from a cancerous dog, cow or hen. Besides this evidence in favor of the contagiousness of cancer, Behla cites the spontaneous cancerous epidemic among the white mice at the Freiburg Institute of Pathology, and the successful experiments of Francotte, Rechter, Langenbeck, Follin and Lebert, in which animals were inoculated with cancer juices. Behla injected the secretion from a mammary carcinoma into the jugular vein of a 2-year-old dog, and found three months later a nodule of cancerous structure in the liver. He concludes from all these facts that conceding the influence of heredity in some of the cases, of transplantation in others and of the simultaneous action of some general causal agent in certain of the cases of "*cancer à deux*," there still remains a number of the above cases in which these factors must be excluded. Consequently the theory of the non-contagiousness of cancer has been shaken and the physician should institute prophylactic measures.

Preservation of Natural Iron Waters. O. Adler.—Natural iron water is apt to lose its iron by standing. Adler has found that it is taken up by a bacterium in the water, and that if the bacteria are destroyed by the addition of a little disinfectant, the water retains the same properties as when first drawn.

Trauma as a Factor in Extra-uterine Pregnancy. L. Seeligmann.—In five cases in the author's experience young women who had previously borne one or two healthy children, required operating on account of an extra-uterine pregnancy, and each related that she had had a severe fall from a ladder or on the ice, in a sitting position, shortly after her last menstruation.

Deutsche Zeitschrift f. Chirurgie (Leipsic), May.

Perimetry of the Joints. C. Huebscher.—The apparatus used in opthalmology to determine the extent of the visual field, has been adapted by Huebscher as a test and record of the mobility of a joint. The hand, foot or arm takes the place of the eye and the diagram is similar, enabling the entire condition to be seen at a glance, and locating the paralyzed muscles in case of paralytic deformity.

Splenectomy in Splenomegalia. M. L. Harris and M. Herzog (both of Chicago).—Two personal cases of classic primary splenomegalia are described and their cure by splenectomy. One, the patient a young woman, was a chronic case with leucopenia; the other, a man of 47, presented a comparatively rapid course, with leucocytosis. There was hyperplasia of endothelial cells in each case, a process closely resembling that observed in lymphangioma. The therapeutic success of splenectomy in such cases proves that the alterations in the spleen are evidently the cause of the degeneration of the blood. The facts observed suggest that, possibly, the lympho-endothelial spleen cells produce an erythrolytic enzyme which causes the destruction of the blood corpuscles in the spaces in the pulpa. When these cells are enormously enlarged as in case of splenomegalia, a great excess of this erythrolytic ferment is produced and consequently more corpuscles are destroyed in the greatly enlarged spaces in the pulpa than occurs under normal conditions. This hypothesis affords a plausible explanation of the prompt improvement in the blood and the complete recovery after splenectomy in cases of primary splenomegalia. In the seventeen cases that have been published, eight recovered. Median incision is generally recommended, continued downward until the lower end of the spleen can be drawn up and out. The veins are usually very much dilated, thin and fragile.

Muenchener Med. Wochenschrift, June 11.

Gelatin in Hemostasis. Gebele.—Clinical and experimental research has demonstrated that the blood acquires increased coagulating power as the amount in circulation is diminished. Gebele announces that this coagulating power can be directly augmented by the administration of gelatin. It has little if any power, alone, to induce coagulation, but after the loss of one-fifth to one-fourth of the total amount of blood, its hemostatic properties supplement the natural tendency of the blood to coagulation in these circumstances, and it proves a very effective hemostatic measure, injected subcutaneously in a 2 per cent. or applied locally in a 10 per cent. solution, at 37 to 38 C. It will thus prove useful after severe hemorrhages, while it fails in slight hemorrhage in which the usual thermic, chemical and mechanical measures are alone effective.

Pseudomyxoma of the Peritoneum. E. Fraenkel.—The condition known as pseudomyxoma is in reality merely a metastatic reaction of the peritoneum to the bursting of a pseudomucilaginous cysto-adenoma of the ovary or of the appendix vermiformis, with consequent accumulation of jelly-like mucus in the abdominal cavity, and a specific reaction on the part of the peritoneum to this foreign body. In women the symptoms are usually severe, the number of recoveries very small. In a case described at length, a man 79 years of age had died of a cerebral affection and at the autopsy the anatomic picture of pseudomyxoma of the peritoneum was discovered, and the cause traced to a cystic degenerated and ruptured appendix. The connection with the intestines had been closed before the rupture, and consequently the contents discharged were sterile and no symptoms were noted from the occurrence at any time. The peritoneum did not react as usual with the formation of pseudo-membranes, encapsulation of the foreign body and adhesions. The reaction took the form of proliferation of tissue histologically identical with normal tissue, the general aspect of the parts in contact with the glassy, compact mucus resembled that of a young chorion. Fraenkel believes that this is the first instance reported of this condition as a result of a lesion of the appendix.

Improved Pessary for Hemorrhoids. Scheffer.—The portion of the pessary introduced into the rectum is comparatively short, the upper half sloping at an angle of 90 and the lower tapering into the neck at an angle of 55 degrees. The neck is very slender and a projecting ring just outside the anus is constantly pressed against it by the muscular contraction exerted by the sphincter on the sloping sides of the pessary within. This ring keeps a prolapsed nodule reduced, while none of the pessaries in use accomplishes this.

Reindeer Tendon as Suture Material. Greife.—The Russian surgeons are using reindeer tendon more and more extensively as time is confirming Sneguireff's assertions that it is the ideal suture material. It has been used in 450 laparotomies and innumerable minor operations with the most satisfactory results. It is comparatively sterile from the start, no germs have ever been discovered below the surface, and it takes up the disinfecting fluids much more readily than catgut. Tests have shown that when the tendon is thoroughly imbued with a stain, only one-third of the catgut in the same fluid shows traces of the stain. The method of sterilization preferred in the Moscow clinics is for two days in ether, one month in juniper oil, ether two days, alcohol two to seven days, in aqueous 1 to 2000 solution of sublimate two days, and in conclusion, the tendons are kept in alcohol to which 30 per cent. water is added to render the tendons flexible.

Differentiation of Extragenital Syphilitic Infection on the Lips. LIEVEN.—It is not difficult to differentiate a syphilitic lesion of the lips when the physician has this possibility in mind. The difficulty is to bear it in mind, and yet statistics show that one out of every ten cases on an average is extragenital. In Russia the proportion is 50 to 60 per cent. The round or oval outline, the induration and the swollen glands may all be missing from the primary manifestation on the lip which may be erosive, scabby or ulcerative. The lesion frequently resembles the slight erosion made when a scrap of cigarette paper sticks to the lip and is roughly brushed off, carrying with it a patch of epithelium. No induration is perceptible to the eye, and there is usually merely a feeling as if the erosion contained a layer of parchment, when it is rolled between the fingers. The scab is usually dark brown, sometimes almost black. The glands back of the sterno-mastoid muscles are affected when the lesion is in the throat. The difficulty of differentiation is enhanced if the lesion has been cauterized or otherwise treated. The microscope will show that herpes has an outline made up of numerous arcs of small circles instead of the continuous circular outline of the chancre. A submaxillary bubo is indolent, with scarcely any tendency to suppuration, in which it differs from the glandular affection of acute infectious processes. The rule that general treatment must not be instituted until secondary manifestations appear, must be disregarded in case of lip lesions, on account of the danger of infection of others.

Wiener Klin. Rundschau, June 16.

Recovery from Bronzed Diabetes. A. MURRI.—A case diagnosed as bronzed diabetes terminated in recovery. The patient was a woman living in extreme poverty, and it is evident in this and in other cases of the kind, that the unhygienic mode of living, the insufficient nourishment and ventilation and the action of alcohol, lead or syphilitic toxins, may induce a gradual alteration in the elements of the vital cells of the body. This alteration may result in cachexia as the general effect, accompanied by a diffuse increase in the connective tissue, hemochromatosis and glycosuria, presenting the clinical picture of bronzed diabetes, but without cirrhosis of the liver. Consequently bronzed diabetes is not necessarily the expression of a pigmented hepatitis, and in its absence, recovery is possible. The frequent coincidence of diabetes, hemochromatosis and interstitial hepatitis does not indicate that they proceed from the same morbid process, but merely that each possesses certain features of a hygienic, toxic, biologic and otherwise morbid and pathologic character which all culminate in impairing the general metabolism. The nature of some of these causal influences explains why bronzed diabetes was never observed in a woman before this case, and also why one or the other of the triad may predominate, like the hepatitis in hard drinkers, or may be conspicuous by its absence, like the hepatitis in this case, the diabetes or the hemochromatosis in others.

June 23.

Technique of Roentgen Radiography. G. HOLZKNECHT and R. KIENBOECK.—It is impossible to obtain clear outlines of the shoulders, internal organs and even of the knee when the subject is breathing as usual. He should first be placed in the most natural, passive attitude—free from muscular strain at any point—and then be instructed to breathe rapidly and deep for a minute or more, then naturally for a minute. He is then requested to stop breathing and the apnea is sufficient to carry him for half a minute without a desire to breathe. This desire recurs during the third quarter of the minute but can be suppressed without much effort during the fourth quarter. Some persons are able to hold their breath for more than a minute. After the last inhalation the glottis is closed by slight pressure of the expiration muscles, and with a little intelligence the subject can hold the breath in his throat with open mouth, until compelled to breathe once more, when he closes his eyelids or moves a finger or by some other sign gives warning, and the exposure is arrested at the same instant. The shoulders can be supported by having the subject sit in an arm-chair and rest his arms, then slide forward until his shoulders are supported entirely and exclusively by the elbows on the arms of the chair, as he leans passively against the back. This eliminates the motion imparted by the thorax walls during breathing, and enables the shoulders to be radiographed as distinctly as in the cadaver. We have no means of controlling the peristalsis of the intestines which frequently interferes with radiography. Besides the comfortable, completely passive position, with fixation by tying, weighting with sand bags, etc., and the banishing from the room of every article that might distract the attention either of eye or ear, narcosis will be found useful and even indispensable in case of important radiographs in children.

Giornale della R. Academie di Med. di Torino (Turin), lxiv, 4.

Ovarian Cyst Containing Eggs of Oxyuris. G. MARRO.—The female oxyuris vermicularis usually deposits her eggs in the rectum or its vicinity, sometimes around the anus, sometimes in the vagina, and it has even been found in the uterus and bladder. In the case described the female must have traveled through the tube and reached the ovary, where it became encapsulated and the eggs liberated. They were preserved intact in the depths of the cyst growing around them. No live helminths could be discovered. The subject was an inmate of the Turin Insane Asylum and the cyst was found at the autopsy.

Influence of Oxygen on the Elimination of Carbon Dioxid. A. BENEDICENTI.—From experiments with animals who were injected with carbon dioxid in the peritoneum, Benedicenti has found that oxygen has a remarkable power in preventing the absorption of carbon dioxid by the blood, and hence promotes its elimination. Oxygen is, therefore, the best of all antidotes for intoxication with carbon dioxid. One-tenth of the dioxid injected in the peritoneum was eliminated unaltered by the lungs during the two hours thereafter. Equal parts of hydrogen injected at the same time had no influence on this elimination, but it was very much increased when equal parts of oxygen were injected instead. The elimination is materially diminished if the air breathed contains much carbon dioxid. Further experimentation demonstrated that the oxygen absorbed by the blood at the same time as the carbon dioxid, supplied the need of the corpuscles for oxygen and also opposed a chemical obstacle to the combination of the carbon dioxid with the hemoglobin. The dioxid, therefore, remains uncombined in the blood and is thus rapidly eliminated through the lungs.

Transplantation of Embryonal Tissue in the Ovary. R. TRAINA.—The abdomen of 116 gravid guinea-pigs was opened just before term and a fragment of an embryo transplanted into the maternal ovary. In every case the fragment continued to develop normally; nails and hairs appeared, etc., and in every case a cyst developed in the parenchyma enclosing the transplanted fragment.

Semana Medica (Buenos Ayres), April 4.

Mechanical Treatment of Aneurysms of the Aorta. A. RAMAUGE.—Watch springs made of palladium or of an alloy of palladium and iridium, do not lose their elasticity when kept in water and do not become oxidized in artificial serum. Ramauge suggests that a spiral spring of this kind, with eight or ten turns, might prove useful in inducing coagulation if introduced into an aneurysm. The iron or steel wires hitherto used for the purpose become oxidized in the blood and their elasticity suffers, while the oxidation causes the production of salts which may affect the newly-formed coagulum.

Vaccination as a Therapeutic Measure in Whooping Cough. D. LOFRUSCIO.—The children were vaccinated for the first time in 121 cases and revaccinated in 31 out of the 152 cases of whooping cough complicated with bronchitis or pneumonia in many instances, which Lofruscio had occasion to treat last year. He is convinced that vaccination solves the therapeutic problem of whooping cough. Five typical cases are described in detail; in most of them pneumonia and the convulsions ceased as if by magic after the vaccination and although the cough persisted for a few weeks in some cases, it was merely as an ordinary catarrhal cough.

Queries and Minor Notes.

ADVERTISING.

NORWICH, N. Y., July 5, 1901.

To the Editor:—Does the Code permit of the use of a card like the enclosed in our local papers? L. E.

ANS.—The advertisement accompanying the above is a "display" card and contains the following: "Doctors ——— & ———, Oculists and Aurists. Diseases of Eye, Ear, Nose and Throat only. Eyes properly fitted with glasses. Catarrhal diseases treated." This is followed by the street address, by the names of the doctors, with initials, and other non-essential matter. The Code says: "It is derogatory to the dignity of the profession to resort to public advertisements or private cards, or hand bills, inviting the attention of individuals affected with particular diseases. * * * These are the ordinary practices of empirics, and are highly reprehensible in a regular physician." A studied observance of law, doing all that it permits, taking advantage of its limitations and ambiguities, going as near to violation as is safe, is not in conformity to the higher standards of ethics in business or professional life. Fortunately, the citation is sufficiently explicit, and the intent unquestioned by most members of our profession.

WAY TO MEMBERSHIP TO AMERICAN MEDICAL ASSOCIATION.

HOUSTON, TEXAS, July 5, 1901.

To the Editor:—Is a physician who graduated from an irregular school the year 1856 and has been recognized as regular ever since the year 1864, and passed examination before regular board of examiners of this state (in Houston, Texas), and has certificate from them dated Sept. 5, 1893, granting the privilege to practice medicine as a regular, entitled to membership in the American Medical Association? W. O.

ANS.—Membership in the American Medical Association is obtained only through membership in an affiliated society. There is no objection to an affiliated society accepting for membership an individual as described by our correspondent.

AIR EXHAUSTION OF PLEURAL CAVITY IN EMPYEMA.

KANSAS CITY, MO., June 27, 1901.

To the Editor:—I recently noticed in some journal (I think it was in your valued paper) an account of a method of cure of empyema by exhausting the air from the pleural cavity, by means of a rubber dam and air pump. I can not find the article now; can you assist me? W. E. P.

ANS.—The special article, if recent, can not be identified in THE JOURNAL.

OWNERSHIP OF PATHOLOGIC SPECIMENS.

ST. CLAIR, MINN., July 9, 1901.

To the Editor:—After an operation for removal of gallstones, who is entitled to the specimens—i. e., the gallstones—the operator or the patient? Please state if this question has ever been decided by the courts. We removed 90 gallstones from a patient suffering with cholelithiasis and the husband claims and demands the stones. C. J. H.

ANS.—Custom and common usage awards pathologic specimens removed by a surgeon to the operator. Legally, they belong to the patient. The question has been decided by the courts as regards an amputated leg, but not, probably as regards gallstones. The principle is the same, however.

MEDICAL QUALIFICATIONS.

KILLEN, ALA., July 1, 1901.

To the Editor:—What will be necessary in order to legally practice medicine in Anardako, or any part of the Indian lands soon to be "opened for settlement?" A. Z.

ANS.—To secure a license to practice in Oklahoma one must either be a graduate of a reputable medical college or pass an examination.

CHICAGO, June 28, 1901.

To the Editor:—Will you please inform me relative to the law regulating the practice of medicine in Indiana? Is a diploma from a recognized and legal college a sufficient document to practice medicine under, according to the present law of the state? Or is an examination necessary, besides? C. C.

ANS.—A satisfactory diploma and an examination are both required.

WASHINGTON, IOWA, July 1, 1901.

To the Editor:—Will you kindly tell me where I can get the following information: What states require less than four years in a medical college as a requisite to the practice of medicine? G. H. P.

ANS.—It is impossible to answer this question, as the laws of some states are not definite with regard to this point.

PHYSICIANS NOT BIDDING AGAINST EACH OTHER.

"AUGUSTA, ILL., June 21, 1901.

"We, the undersigned physicians of Augusta, do hereby mutually promise and agree among ourselves and to each other to the following: 1. That we will not bid for pauper practice. 2. That we will not attend paupers at a less rate than the regular established and recognized fee bill of Augusta.

"It is also understood that no one physician shall be favored in the distribution of pauper practice, but that the patient shall be given the privilege of choosing his own physician.

"[Signed.] R. J. Grigson, R. C. Ditto, C. R. Hecox, J. P. Ellis."

It has been the custom heretofore for some one of the doctors to enter into a contract with the county to do the pauper practice of the township at a fixed price, which was generally ruinously low. The above will be, in our opinion, the better way to do. The county is abundantly able to pay the doctors for prompt practice. All other bills are always paid in full and we see no reason why a doctor's fee should not also be paid in full by the county.—*Augusta* (Illinois) *Eagle.*

An agreement similarly worded was also signed by all the physicians of Christian County, Illinois. We are glad to record such an evidence of united action among physicians in two counties in Illnois.

New Patents.

Patents of interest to Physicians, issued June 18 and 25, and July 2:

676,713. Therapeutical vaporizer. Joseph E. Cross, Brattleboro, Vt.
676,814. Formaldehyde fumigator. Leon Fevel, New Brunswick, N. J.
676,604. Massage instrument. Libbie S. Fritze, New York City.
676,636. Catamenial sack. Daisey P. Sonnehill, New York City.
34,664. Design, syringe nozzle. James G. Poe, Dallas, Texas.
677,172. Stethoscope. Robert C. M. Bowles, Brookline, Mass.
677,181. Surgical table. Carlos F. Dardano, San Salvador, San Salvador.
677,091. Vaginal syringe. Hartland and H. E. Law, San Francisco, Cal.
676,999. Stethoscope. Walter E. Scott, Adel, Iowa.
677,050. Exercising machine. Alexander A. Whitely, Chicago.
677,751. Soda-water fountain. Bernard Baron, London, England.
677,756. Lancet. Robert Caldwell, Auckland, New Zealand.
677,602. Device for lifting and handling invalids. Harry E. Sharrer, Hammond, Ind.
677,480. Syringe. Mary K. Thomas, Akron, Ohio.
677,824. Device for developing muscles of the hands and fingers. Gustavus Troxler, Jr., Newark, N. J.
677,489. Water bag. Sarah A. Woods, Flushing, N. Y.
34,708. Design, nasal cup. Wm. J. Evans, New York City.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending July 6, 1901:

Surgeon T. A. Berryhill, detached from the Naval Laboratory, Brooklyn, N. Y., and granted sick leave for three months.

Asst.-Surgeon J. H. Iden, detached from the Naval Hospital, Chelsea, Mass., and ordered to the *Lancaster,* July 8.

Asst.-Surgeon G. L. Angeny, detached from the *Lancaster* and ordered to the Naval Laboratory, Brooklyn, N. Y.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended July 4, 1901:

Surgeon G. W. Stoner, granted leave of absence for thirty days from August 3.

Surgeon J. J. Kinyoun, directed to proceed to Yokohama, Japan, and Hongkong, China, as inspector. Granted leave of absence for four months from completion of duty as inspector.

P. A. Surgeon J. B. Greene, granted leave of absence for two days from July 5.

Asst.-Surgeon Hill Hastings, granted leave of absence for two months from July 15.

Asst.-Surgeon H. B. Parker, relieved from special temporary duty at San Francisco, Cal., and directed to rejoin station at New Orleans, La.

Asst.-Surgeon W. C. Billings, relieved from duty at Baltimore, Md., and special temporary duty at San Francisco, Cal., and directed to proceed to Los Angeles, Cal., and assume temporary command of the service during the absence of medical officer in command, reporting to him for duty upon his return to station.

Asst.-Surgeon Dunlop Moore, relieved from duty at Port Townsend quarantine, Washington, and directed to proceed to Nome, Alaska, for special temporary duty July 1, 1901.

Asst.-Surgeon Carroll Fox, relieved from duty at Portland, Ore., and directed to proceed to Port Townsend quarantine, Washington, and report to medical officer in command for duty.

Hospital Steward G. C. Allen, relieved from duty at Mullet Key, Fla., and directed to proceed to Norfolk, Va., and report to medical officer in command for duty.

Hospital Steward F. H. Peck, relieved from duty at New Orleans, La., and from special temporary duty at San Francisco, Cal., and directed to proceed to St. Louis, Mo., and report to medical officer in command for duty and assignment to quarters.

Hospital Steward W. C. Phillips, directed to proceed to Chicago, Ill., and report to medical officer in command for duty and assignment to quarters.

APPOINTMENT.

W. C. Phillips, of Iowa, appointed junior hospital steward in the U. S. Marine-Hospital Service.

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Original Articles.

EMPYEMA OF THE FRONTAL SINUS.*

E. FLETCHER INGALS, M. D.

CHICAGO.

Suppurative sinusitis or empyema of the frontal sinus is a comparatively rare affection, although, all told, many cases have been recorded. It is frequently an acute disease characterized by pain over the frontal sinus, which continues persistently for several days and is finally relieved by a discharge of pus from the nose; or the pain may come on daily, lasting for a few hours only. These acute cases frequently run a rapid course and terminate in resolution. Chronic empyema may be of the variety known as latent sinusitis which, according to Mayo, Collier and Milligan, is characterized by symptoms and signs similar to those of acute empyema and yet not very different from sinusitis of a simple non-suppurative catarrhal character.

The latent disease is essentially chronic, but on account of the free opening from the sinus into the nasal passages there is no permanent collection of pus and none of the external manifestations are observed which appear when the outlet from the sinus is obstructed.

The common characteristics of the more formidable affection attended by obstruction of the outlet are: severe pain similar to that of the latent disease, more or less external deformity, such as swelling of the eyelids, tumor at the inner canthus or extending above the eyebrow, and external abscess of fistula.

ANATOMICAL AND PATHOLOGIC CHARACTERISTICS.

The manifestations of this disease vary greatly in different cases, largely because of variation in the anatomic formation of the parts. In not a few individuals the frontal sinus is absent either on one or both sides. The frontal sinus may be small on one side and large on the other; the small side being reduced to a mere slit, in some cases, while the other may constitute a large roomy cavern extending high up into the frontal bone and far into the zygomatic process. The sinus is commonly divided by bony ridges into more or less marked recesses, which account for the difficulty often experienced in obtaining free drainage. It is separated from its fellow of the opposite side by a bony septum which should be found in the median line, but which frequently passes obliquely to one side so that one sinus is enlarged at the expense of the other. The septal wall of the sinus frequently shows bony defects, but, according to Killian, actual communication between the two cavities is extremely rare because the opening in the bone is filled in by mucous membrane. In one of the cases that I shall report the septum had entirely disappeared and there was no bony posterior wall, though it is not improbable that these results came from the pressure of the long-pent-up pus. It is probable that defects in the cerebral wall are sometimes congenital. In a case reported by Gibson, the cerebral wall of the right sinus was absent. In my case it was absent on both sides. In Gibson's case septic meningitis followed suppuration of the sinus; he supposed on account of the absence of the posterior wall. Usually the thinnest of the walls of the sinus is its inferior, or orbital, plate, where the bone is only about one millimeter in thickness. This thin area is situated just back of the orbital margin, and, as Turner determined, is found about half an inch external to the middle of the root of the nose.

The sinus begins to develop about the seventh year of life and is not perfected until about the twenty-first year; therefore we do not find disease of this cavity in children. The anatomy of the outlet of the sinus, known as the canalis nasofrontalis, is even more complicated and variable than that of the sinus itself; in fact, the structures that surround it are so intricate in composition that it is hard to form a definite mental picture of its position. The opening into this canal may be situated either near the anterior or posterior wall of the sinus. The canal itself is a narrow tube which, according to Gustav Spiess, averages about nine-sixteenths of an inch in length and its usual diameter at its outlet is from one-twelfth to three sixteenths of an inch. Sometimes it is not a canal, but a mere hole leading from the frontal sinus directly into the infundibulum. Turner says that this aperture is usually from one-twelfth to five-sixteenths of an inch in diameter. It commonly starts from the anterior lower portioln of the frontal sinus and passes downward and backward, opening into the infundibulum; but it may open in front of the hiatus semilunaris under the anterior end of the middle turbinated body. The canal is sometimes transformed into a tortuous passage by the encroachment on its lumen of the fronto-ethmoidal cells of Bryan or the cellulæ frontalis of Killian. These cells are situated both in front of and behind the sinus, or they may open into the sinus or into the infundibulum. Some authors confound the canalis nasofrontalis with the infundibulum, an error very confusing to students. The infundibulum is that part of the middle meatus into which the frontal sinus and antrum of Highmore discharge by means of their natural openings. It is situated in the upper part of the hiatus semilunaris behind and external to the processus uncinatus of the ethmoid bone, high up under or external to the anterior third of the middle turbinated body. The hazy impression possessed by some concerning the location of the opening of the frontal sinus is illustrated by Milligan, who mars his otherwise superior article on empyema of the frontal sinus by directing that, in introducing a probe, it be passed upward between the

* Read in the Section on Laryngology and Otology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

middle turbinated body and the septum, a direction which would guide it to the inferior surface of the nasal bones and the cribriform plate. In order to pass a probe into the canalis nasofrontalis it is necessary to direct it to the outer or maxillary side of the anterior end of the middle turbinated body. It should not be forgotten that this canal opens into the infundibulum close beside the opening of the antrum of Highmore, and that occasionally the two discharge by a common opening into the hiatus semilunaris. This explains the fact that suppuration of one of these cavities often causes infection of the other; indeed, Milligan has observed that fluid injected into the antrum of Highmore is sometimes discharged through a surgically made external opening in the frontal sinus. Sometimes the canal leading from the frontal sinus is absent from one side, and the two sinuses discharge by a common outlet, while in other cases the sinus may discharge through the ethmoidal cells.

The normally thin mucosa of the frontal sinus is subject to varying degrees of swelling in both the acute and chronic forms of sinusitis. This is apt to lead, in acute cases, to great edematous thickening, and finally to polypoid proliferation. In the chronic aggravated forms of the disease most authors speak of granulations and polypi that may fill the sinus; nevertheless, true granulation tissue is rare, and for the most part the epithelium remains intact, with the exception of the loss of cilliæ, while mucous polypi and hyperplasia of the mucosa form the bulk of the mass that fills the sinus. The hyperplasia and polypoid masses are not confined to the lumen of the sinus, but appear also in the hiatus semilunaris under the middle turbinal. The mucous membrane in this latter position may also be found in a state of polypoid degeneration.

The mucosa over the processus uncinatus sometimes swells and forms a thick fold of hyperplastic tissue which fills much of the space beneath and to the outside of the middle turbinated body. This so-called lateral fold—*lateraler Schleimnhautwulst* of the Germans—interferes with the drainage of the sinus, which is also obstructed by masses of polypi in the middle meatus. On account of the anatomic formation it frequently happens that suppuration is not confined to the frontal sinus but extends to the ethmoidal cells, the antrum of Highmore, or even to the sphenoidal sinus. As a result of necrosis or caries of the bony walls the suppurative process may extend to the brain or the infectious material may be carried through the bony wall by way of the numerous venous channels, while the bone itself remains intact. Thus we may account for the orbital and intracranial complications which occasionally occur, such as abscess in the upper angle of the orbit, meningitis, abscess of the frontal lobe, and thrombus.

ETIOLOGY.

Acute frontal sinusitis usually results from an acute coryza, especially that attending influenza. In a limited number of cases, it follows acute infectious diseases. The most important factor in the etiology of empyema of the frontal sinus is infection from the other sinuses. It has already been shown how infection of the antrum of Highmore may lead directly to suppuration when the two cavities open by a common duct, and also how suppuration of the cellulæ frontales or ethmoid cells will, in many instances, lead to the same result. Most of the chronic cases are a continuation of acute sinusitis which is perpetuated by interference with free drainage, as for example by polypi, extreme deflections of the septum or large exostoses from this bone, or by hypertrophy of the turbinated bodies. Anything, indeed, which obstructs the natural orifice, to a greater or less degree, favors the development of empyema as the result of the acute catarrhal affection. Karutz reports one case in which frontal sinusitis followed cauterization of the inferior turbinated body, and it is easy to understand how this might result from an extensive burn in persons with certain idiosyncrasies or in conditions favoring inflammatory processes. In many cases the frontal sinus undoubtedly becomes infected from the ethmoidal or fronto-ethmoidal cells, and such an accident may happen during suppuration in any of the accessory sinuses of the naris.

SYMPTOMATOLOGY.

The symptoms of acute suppurative inflammation of the frontal sinus usually come on a week or two after the subsidence of the coryza which caused it. They commonly consist of photophobia and pain in the eye and free lacrymation, with pain in the region of the supra-orbital nerve. The pain is commonly intermittent, and is apt to come on at 9 or 10 o'clock in the morning, last for a few hours, and then pass off until the following day, when it is prone to return at the same hour. It is likely to last somewhat longer each successive day and it usually steadily increases until the eighth or tenth day, after which it may be constant, though in some cases the intermittent character of the pain continues throughout the disease. The pain is most prominent in the region of the supra-orbital nerve, but is for the most part limited to the area of the sinus. The severe symptoms usually subside when discharge of pus takes place. Rhinoscopy commonly furnishes no evidence until about the second week of the disease, when pus appears in the naris. Sometimes the pus is discharged in large quantity at once, with a gush, but usually it comes at first more or less freely and then continues to trickle away during the day, while the flow is apt to be much diminished at night.

In latent empyema of the frontal sinus there is sufficient drainage to prevent the accumulation of any great amount of pus or at least a sufficient amount to distend the walls of the cavity.

The disease usually comes on insidiously, and generally the first symptom to attract attention is pain in the region of the supra-orbital nerve; but later on this is likely to be felt at the root of the nose. When the pain is intermittent, it may be mistaken for neuralgia. It is apt to be aggravated by stooping over and sometimes is increased by lying down. It may be slight or quite severe, though it seldom becomes unbearable. This pain is frequently mistaken for syphilitic headache and is treated accordingly.

In a considerable number of cases the symptoms are not marked. The discharge is so slight that it attracts but little attention and the patient may go on for years suffering from what he denominates neuralgia or catarrh, without obtaining an accurate diagnosis. Symptoms referable to the eye, sometimes result from inflammation of the frontal sinus; as for example, sensitiveness of the upper lid or eyeball, photophobia, haziness or diminution of the acuteness and of the field of vision. Hyperemia of the fundus may also be noted in some instances.

When the canalis nasofrontalis is absent or is closed from any cause, the pus gradually collects and distends the walls of the frontal sinus so that a tumor may

appear at the inner canthus of the eye, at the root of the nose, or above the orbital ridge; such a manifestation, taken in connection with more or less intermittent pain, would at first lead us to suspect empyema of the frontal sinus, so that such cases are much less liable to escape observation than the latent variety of the disease.

One of the least difficult but, unfortunately, one of the uncertain aids in the diagnosis of this affection is transillumination. Kuhnt claims that the area of the frontal sinus can be accurately defined by this method, and A. Logan Turner has demonstrated the accuracy of this statement by opening the sinuses after they had been mapped out by transillumination; but unfortunately the anatomic variations already mentioned show that this method can not always be relied on in the diagnosis, although in Turner's investigations it did not suggest that a sinus was present in any case where none was found. In transilluminating the frontal sinus, we commonly use a small lamp enclosed in a cylinder about one-half inch in diameter, the open end of which should be applied as nearly as possible beneath the thinnest portion of the floor of the sinus, that is, about five-eighths of an inch from the middle of the root of the nose, just beneath the supra-orbital margin, and one must be careful to crowd it back far enough in the orbit to avoid illuminating only the soft parts of the eyebrow. If the patient directs the eyes downward, more room will be allowed for the application of the light in this position. Unusual density of the bones composing the walls of the sinus, unusual thickness of the anterior wall—that is, more than five-sixteenths of an inch—or a close approach to each other of the anterior and posterior walls at the bottom of the sinus, or actual absence of the sinus, will give a shadow and may lead the observer to suspect pus when it is not present. In rare cases the sinus appears light even though it contains pus, especially when the cavity is mostly occupied by mucous polypi or cysts. It will be seen, therefore, that transillumination, though a valuable aid, does not necessarily furnish diagnostic signs. Nevertheless, this method should be used in connection with other means of diagnosis. Transillumination also aids us in determining the position of the septum between the two sinuses. As I have already stated, this position is not necessarily in the median line. If one sinus is illuminated and the other yields a shadow, it is easily determined where an opening should be made in order to enter the affected cavity. Gradenigo claims that the empty sinus can be mapped out by careful, gentle percussion; therefore, sometimes this method of diagnosis may be of value. One of the most prominent symptoms of suppuration of the frontal sinus is a discharge of pus from one naris. On rhinoscopic examination and careful cleansing of the cavity, when there is not too much swelling, we may discover the point of exit of the pus. If this is found to be from the middle meatus, external to the anterior end of the middle turbinated bone, we may know that it comes either from the antrum of Highmore, the anterior ethmoidal cells, the fronto-ethmoidal cells or the frontal sinus, or from all of these combined. It will then be necessary to reach a diagnosis by a process of exclusion. Probing the frontal sinus through the naris is not exceedingly difficult when the outlet opens directly into the anterior part of the middle meatus, but if the opening is into the infundibulum, this proceedure is practically impossible. In any case there is liable to be considerable difficulty in determining whether the probe has passed into the frontal sinus or whether it has entered the ethmoidal or the fronto-ethmoidal cells. Killin suggests that sometimes a probe can be felt to run against the front wall of the sinus, and that in other cases the patient can localize the position by his own sensations. He also determines the depth to which the probe has been passed, and whether it has merely reached the orbital border or has passed well into the frontal sinus, by bending a second probe to the exact shape of the first and placing it externally against the face in a position corresponding to that of the probe in the nasal passages. The fluoroscope has been used by Max Scheier, to determine whether the frontal sinus has been entered by the probe. He found that in this way he could readily see the metal probe, but he also discovered that the depth to which the probe had been passed was a very uncertain guide, for sometimes the fluoroscope showed that it was in the ethmoidal cells when he supposed that it was in the frontal sinus. It is my custom, when probing the frontal sinus, to use a long silver canula, attached to a small syringe, Fig. I, through which air can be blown into the cavity, which will force out pus or air bubbles if the cavity contains liquid. Another satisfactory method is to have the syringe charged with a warm 50 per cent. solution of pyrozone, which is injected into the cavity. In case pus is present this will be immediately followed by a profuse frothy discharge. It should be remembered that exploration by means of a probe or canula is not entirely without

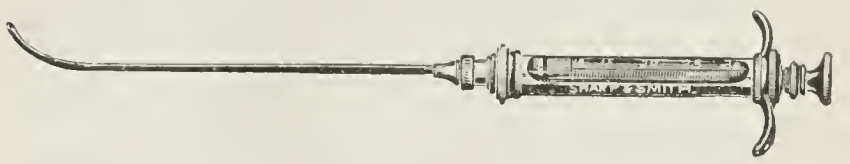


Fig. 1.—Long silver nozzle attached to hypodermic syringe.

danger, for it is recorded that one death from meningitis has resulted from piercing the cerebral wall of the sinus, and in another instance the cribiform plate of the ethmoid has been perforated by passing the probe in the wrong direction between the middle turbinated body and the septum.

DIAGNOSIS.

Notwithstanding all the factors that have been pointed out, the diagnosis in some cases will be extremely difficult, especially in the latent form of the disease. If the outlet from the frontal sinus has become obstructed so that external manifestations appear, the diagnosis is easier, but even then we must bear in mind that tumors of the sinus, dermoid cysts, distension of the lacrymal sac, and cellulitis of the orbit due to other causes than frontal sinus suppuration may give rise to external swelling. The diagnosis of latent empyema must be made largely from the symptoms, the shadow shown by transillumination and exploration through the canalis nasofrontalis with the probe or canula and the injection of air or peroxid of hydrogen. The diagnosis when the outlet from the sinus is obstructed will depend largely on the pain and external swelling, but even in these cases there may be some discharge from the sinus so that pus will appear in the middle meatus.

Tumors of the sinus may be attended by a purulent discharge, so that it may be impossible to make a differential diagnosis until the cavity has been opened. Dermoid cysts and dacryocystitis, both of which may cause some of the eye symptoms already referred to, may usually be excluded by the fact that they do not cause a purulent discharge into the naris. Orbital cel-

lulitis may result from inflammation of the ethmoidal cells or of the frontal or sphenoidal sinus. When the latter is the cause, the pain is severe and the inflammation is deep-seated and usually early blindness follows; whereas, when disease of the frontal sinus is responsible for this affection, the inflammation is more likely to involve the anterior part of the orbit with less serious consequences to the eye, which may be limited to diplopia and displacement of the globe.

PROGNOSIS.

The prognosis in acute inflammation of the frontal sinus, whether suppurative or not, is usually good. Most patients will recover within a few weeks if care is taken to keep down the swelling of the nasal mucous membrane. The prognosis in the latent variety of empyema is much less satisfactory as, in many of these, suppuration continues for several years. The prognosis in marked cases of empyema where the outlet from the frontal sinus is obstructed is equally unsatisfactory as to time, and it is occasionally grave on account of extension of the infection to neighboring parts.

TREATMENT.

Treatment is commonly recommended with such confidence as to lead a novice to believe that the affection may be easily cured, but unfortunately this confidence is apt to be rudely shaken by experience, for notwithstanding the most approved methods at our command, in some instances the suppuration will drag along for years. In acute cases the treatment should consist of warm and soothing detergent and antiseptic sprays for cleansing the nares, with the free use of a watery extract of adrenal glands or of a solution of adrenalin several times a day, or the more guarded use of small quantities of cocain three or four times a day to keep down swelling and thus permit free drainage. In most cases it will not be necessary to wash out the frontal sinus. In latent chronic cases detergent sprays or washes should be employed to keep the nares clean, and various mild antiseptic powders or sprays may be used advantageously three or four times daily; however, these measures will generally prove inadequate to check the suppuration, and it will be necessary to frequently wash out and disinfect the frontal sinus. To accomplish this, it is usually necessary to first remove the anterior end of the middle turbinated body in order to be able to introduce a canula. Many of the solutions that have been employed for disinfecting and cleansing this cavity act well, but owing to the various pathologic conditions, all will sometimes necessarily fail. One of the cases that I shall report shows the good effects of simple measures, but another well illustrates the disheartening lack of results even with persistent treatment by the usual remedies, though it also shows the marvelous effects that may sometimes be obtained by the injection of a solution of from 3 to 8 per cent. of the preparation of silver known as protargol. In chronic cases of suppuration of this sinus, it is important to establish free drainage and it is sometimes necessary to open the frontal sinus and remove diseased tissues. When the milder endonasal methods have failed, success has sometimes been attained by opening the sinus through the naris with a Palmer drill, or with Krause's antrum trochar. Under normal conditions it would be difficult with either of these instruments to enter the frontal sinus in safety, but when pus has been pent up in the cavity for a long time, the parts are sometimes so distended that it is comparatively easy to make the opening through the naris. If the Palmer drill (Fig. 2) is used the opening will necessarily close by granulation, in two or three weeks, but if a Krause's antrum trocar (Fig. 3) is employed it is practicable to introduce through it a drainage-tube, as I have elsewhere described.[1] The best surgical procedure in such cases undoubtedly consists of making an external opening into the sinus, of considerable size, and then breaking down the floor of this cavity and establishing a free communication with the naris, which should be maintained by the aid of a large funnel-shaped drainage-tube; however, as shown in one of the cases that I shall report, even this method can not always be counted on to effect a speedy cure. The anatomic variations from a typical form, already mentioned, sometimes render any of these operations unexpectedly difficult and dangerous. To facilitate endonasal operations it is often necessary to reduce hyperplasia, to remove polypi, and to open the anterior ethmoidal or fronto-ethmoidal cells with the cutting forceps or curette. In chronic cases, even when there is no retention, it should be remembered that there is constant danger while suppuration exists in the frontal sinus, as it may cause thrombosis of the cerebral sinuses, meningitis, cerebral abscess or pyemia.



Fig. 2.—Palmer's frontal sinus drill.

In any case, when there are marked ocular, orbital, or cerebral symptoms, and in the more violent types of the disease which cause severe pain, an external operation should be done at once. When a radical operation becomes necessary it is customary to shave off the eyebrow and make a central incision through this region down to the bone, pushing back the periosteum until sufficient space has been denuded. After the soft tissues have been removed the bony wall may be opened either by a trephine, chisel or circular saw. Tilley's central vertical incision, advocated by Collier, is much in vogue at the present time. This cut is made in the middle line from the root of the nose, and extends two inches upward. Collier removes a button of bone by the trephine at the median line, thus exposing the mucosa of both sinuses. In this way he determines whether one or both are involved in the suppuration. Milligan prefers the unilateral operation. After the mucosa is exposed he makes a small opening in it and passes a probe into the sinus: if pus is found the mucous membrane is then cut away, the sinus opened widely, and if hyperplastic tissue or polypi are found these are throughly removed by a curette. The deformity resulting from these external operations on the frontal sinus is chiefly due to the sinking in of the soft parts. To avoid this, German operators, during the last few years, have opened the front wall of the

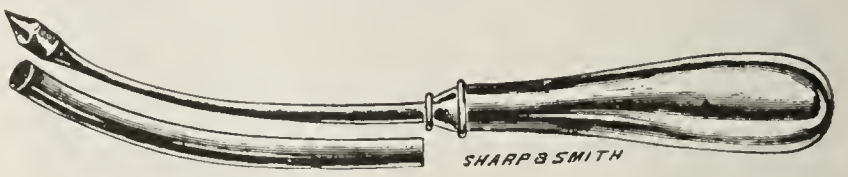


Fig. 3.—Krause's trochar.

1. Ingals: Dis. of Chest, Throat and Nasal Cavity, 4th Ed., p. 657.

sinus osteoplastically, that is, by creating a bony flap including the rim of the orbit. This flap is lifted upward so as to expose the sinus freely, and in addition the floor of the cavity is opened downward into the orbit so that all parts are freely exposed, permitting the removal of any diseased tissue that the sinus may contain. The bony flaps made in this way are reunited after a few days, while there is still hope of primary union. Some operators have contented themselves with opening the floor of the sinus only, but this does not give free access to the cavity: therefore, it should not meet with much favor. Where, on account of the extent of the disease, a very radical operation is indicated, both the anterior wall and the floor of the sinus can be removed, leaving a bridge of bone at the orbital edge. This operation is said to be followed by less deformity than that on the front wall alone, as the



Fig. 4.— Flanged frontal sinus drainage tubes.

soft parts of the orbit help to fill up the space of the sinus cavity.

Having opened the frontal sinus above the orbit, the next step in the operation should be to establish free drainage into the nasal cavities. This may commonly be done with a Krause's bent trocar, which is passed from above downward into the naris, where it is met by the little finger introduced as a guide into the nostril of the affected side. This opening should be of ample size to allow the introduction of a large-sized, funnel-shaped drainage-tube, like that of Luc, or a modification, like the tube I employed in one of the cases that I shall report, having a flange on the lower end to prevent it from creeping up into the sinus (Fig. 4). In most cases this drainage-tube will have to be kept in place for weeks or months and, as in one of my cases,



Fig. 5.—Drainage tube for antrum (½ inch long).

it is liable to creep upward into the frontal sinus notwithstanding the flange; therefore, it is best to leave a small opening externally which may be kept patent by a rubber tube flanged at both ends, like those recommended for drainage of the antrum of Highmore (Fig. 5). It is recommended that the external opening be closed at once, but patients will be unable to cleanse the frontal sinus from the nose; therefore, I think that a small external opening should be maintained in the majority of cases until suppuration ceases. It is often impossible to be sure whether the pus escaping into the nose comes altogether from the frontal sinus or from the ethmoidal or fronto-ethmoidal cells, consequently it is sometimes desirable to break down these cells, together with the floor of the sinus, by means of a gouge, in order to make very free drainage; even then granulations are liable to spring up which will soon close the opening; therefore, a large funnel-shaped drainage-tube should be introduced. In not a few cases the chief difficulty has been found in elimination of the ethmoidal suppuration and the maintenance of a free outlet into the nose. To overcome this difficulty, Barth, Winckler, and Killian recommend a temporary osteoplastic resection of the nasal process of the superior maxillary, and of the nasal bone. This procedure is carried out after the frontal wall of the sinus has been opened, by severing the nasal bone entirely from its fellow in the center, and extending the cut upward to the opening into the front of the sinus, then turning the flap outward like a door. Free access is thus gained to the nasal cavity and the floor of the sinus, which is totally removed and the suppurating ethmoidal and fronto-ethmoidal cells and all cavities clear back to the sphenoidal sinus, and even including this, are broken down and cleared out, if necessary. After all the diseased structures have been cleared away the flap is reunited in its normal position, and although the operation has been very extensive, it is said that healing occurs without much more deformity than in the ordinary operation. This operation is indicated when there is extensive suppuration, and in cases where the milder operations fail to effect a cure. In any of these operations great care should be taken not to puncture the cerebral wall.

The after-treatment consists of irrigation by warm boric acid solutions, followed by protargol in solution of about 5 per cent., or as strong as can be used without causing undue pain.. Among the instruments recommended for the operation are a small circular saw driven by a dental engine, which enables one to follow the incision in the line desired without shattering the bone. It is especially useful in saving the rim of the orbit. Dental burrs or nasal trephines may also replace the gouge or curette with advantage in some cases, as they are much better under the control of the operator; Krause's bent trocar is an essential aid. I have to report four cases, each illustrating one of the phases of this disease.

CASE 1.— Mrs. B. E. called on me with a history of catarrhal trouble confined largely to one side, which was of about three months' duration, though it had been much worse for two or three weeks. The affection had been exaggerated by chilly or damp weather and was attended at the time I first saw her by pain across the bridge of the nose. I found the middle turbinated body of the left side much swollen, with purulent secretion coming from the middle meatus. I made a diagnosis of suppurative inflammation of the frontal sinus. She was given a spray of a saturated solution of boric acid to keep the nasal cavities clean, and a 4 per cent. powder of cocain to reduce the swelling. The latter gave her great relief. The treatment continued for eighteen days, when it was noted that she had perfectly recovered. I have on several occasions since this first attack seen this patient when she was suffering from an acute frontal sinusitis without suppuration, but all attacks have been of short duration.

CASE 2.—Mrs. W. L. M. came to me complaining of supra-orbital pain and symptoms indicative of empyema of the antrum of Highmore. Her trouble had begun about six months previously. At times the supra-orbital pain would be severe for two or three weeks and then entirely disappear, but usually she had pain every forenoon, coming on about 10 o'clock and lasting for three or four hours. Upon examination I found free purulent discharge from the middle meatus of the left side. She told me that the antrum had formerly been diseased, but was now entirely well. She was given various antineuralgic remedies with but little relief. Monochloracetic acid was applied to the swollen tissues in the nares, and she was given mild antiseptic and astringent sprays to use at home, with a powder containing 3 per cent. of cocain and 25 per cent. of iodol. A portion of the middle turbinated body was cut away, which gave comparatively free discharge from the frontal sinus, after which she gradually improved. She continued the personal treatment faithfully, making the applications herself two or three times a day, and occasionally visiting my office. At the end of ten weeks I find it noted that she had been improving

steadily and that there was much less discharge, while what did come was nearly all mucous. There was no longer any large accumulation as had been present at the beginning of the treatment. But two months later I find that there was renewed suppuration of the antrum of Highmore, which necessitated a permanent opening. In the meantime the suppuration of the frontal sinus and the ethmoidal cells had increased. The cocain was used sparingly, but astringent and antiseptic sprays were continued and the disease dragged along altogether between three and four years. Sometimes it was hardly perceptible, while at others there was considerable discharge and supra-orbital pain, but finally the patient recovered without opening the frontal sinus, an operation to which she would not consent.

CASE 3.—Mr. S. M. H. came to me with a history of having been attacked, something over a year previously, with very severe pain in the frontal region of the right side. He had been told at that time that he had a polypus in the nose. He had received various internal and local treatments, and had considerably improved at the end of five weeks, but for several years previously he had been annoyed by considerable catarrhal discharge from the nasal cavities, and this had been aggravated since the beginning of the pain above the right eye. I found the lower portion of the left naris normal, but the middle turbinated body was pressing against the septum. The middle meatus of the right side was filled with polypi and purulent secretion and the body pressed against the septum. The inferior portion of the naris was normal. A diagnosis of suppurative ethmoiditis was made, to which was subsequently added the diagnosis of suppuration of the frontal sinus. The right antrum of Highmore finally became involved and it was necessary to make a permanent opening. This patient was under my care off and on, seeing me from once to twice a month or less frequently for a period of something over ten years. During the time various antiseptics and detergent sprays and washes were used for the nose, together with antiseptic and astringent powders. The suppuration of the antrum healed, the polypi were all removed, the middle turbinated body of the right side was removed and for several months, at the infrequent intervals when I saw the patient, the frontal sinus was washed out with a mild solution of peroxid of hydrogen and boric acid. The patient developed marked arteriosclerosis with distinct signs of atheroma of the aorta, and frequently suffered from rheumatic pains. He would never consent to a radical operation on the frontal sinus. All of this time the suppuration in the frontal sinus continued. On September 25, last, I injected into the frontal sinus, by means of a long silver nozzle attached to a large hypodermic syringe (see cut), about a dram of a 10 per cent. solution of protargol in warm water. The opening was large enough so that all of this could escape within a few hours at most, but it gave the patient a severe headache which lasted all day. Four days later I applied, in the same way, about the same amount of a 5 per cent. solution of protargol, and this application was repeated once in from three to four days, five times, when a 7 per cent. solution was applied, but this gave him severe pain. I then applied the 5 per cent. solution again, and at the next visit, thirty-five days after the first application, and when it had been applied only nine times altogether, it is noted that there is very little muco-pus coming from the frontal sinus. The 5 per cent. solution was applied two or three times more, after which I was never able to detect any purulent discharge, though a little mucus was usually found near the opening of the canalis naso-frontalis whenever I saw him, at intervals of about a week. It was found that even the 5 per cent. solution caused too much pain, and I was obliged to reduce the strength to 3 per cent. The remedy appeared to check the suppuration entirely in a sinus where empyema had been present over ten years. This was within a period of two months. Nevertheless, neuralgic pains still occur daily over the orbit.*

CASE 4.—Mrs. B. J. K. came to me with a swelling in the supra-orbital region, extending to the root of the nose. This was ovoid in shape and about one-half inch in thickness at its most prominent part. From the history the trouble appeared to have begun about four years previously. She complained, during this time, of severe supra-orbital pain. She stated that she had had a considerable nasal discharge all of her life. On examination I found the left naris normal and the right free, excepting that the middle turbinated pressed against the septum. There was no apparent discharge. She told me that she had had some polypi removed about eighteen months previously. I made a diagnosis of empyema of the frontal sinus and recommended an external opening with free drainage into the nose. Dr. Bevan made an opening extending from the root of the nose up into the eyebrow of both sides. The sinus was opened and we found a large cavity, fully an inch in its antero-posterior diameter and extending laterally about three inches. There was no septum between the two sinuses and the posterior bony wall had also disappeared so that the pulsations of the brain against the dura were marked. The cavity was packed with iodoform gauze and the wound closed, excepting at the root of the nose. A week later I gave the patient an anesthetic again, and with my little finger in the right naris passed a bent Krause trocar 6 mm. in diameter from the lower portion of the frontal sinus into the nasal cavity. Through this I introduced a drainage-tube, funnel-shaped at the top, with a flange at the bottom and an internal diameter of about one-eighth of an inch (see cut). The cavity was washed out daily, and as this part of the treatment had to be left largely to the patient, I decided to keep the opening in the forehead patent, for it was impossible for her to wash it through the naris. A few weeks later I introduced into the opening in the forehead, a drainage-tube such as I employ in the treatment of empyema of the antrum of Highmore, with a flange at each end. The end of this tube was kept covered with cotton when she was not washing out the cavity. Peroxid of hydrogen, boric acid and various other antiseptic and astringent washes were employed, and equal parts of boric acid and iodoform were insufflated into the sinus daily for months. There was no possibility of obliterating the cavity, therefore this treatment was continued for about a year, when I had the satisfaction of noting that there was very little, if any, purulent discharge. In the meantime the drainage-tube, notwithstanding the flange at its lower end, had worked up into the frontal sinus and had to be removed through the small opening in the forehead. Another tube with a larger flange was introduced, but this also worked out after five or six weeks. I then introduced a longer tube with a flange at the upper end only, which was to prevent it from falling down into the nose. The lower end of this tube came down to the floor of the nasal cavity. This tube kept its position very well, though on two occasions I found that it had nearly crawled into the frontal sinus. It did escape into the sinus at the end of sixteen months after the operation, but by this time there was little, if any, purulent discharge, and the canal into the nasal cavity, which was about 4 mm. in diameter, appeared to me to be sufficiently free to allow the withdrawal of the tube. During the treatment considerable granulation tissue had to be removed from the right naris. When I last saw the patient, seventeen months after the operation, there was no distinct suppuration in the frontal sinus, though there was a very small amount of muco-pus which readily discharged into the right naris. At this time, and once a month previously, I used a 5 per cent. solution of protargol, and she was given the same to use at home as a wash. The external opening, about 8 mm. in diameter, was still maintained and she preferred not to have it closed until all secretion had ceased. I have not seen the patient for the last seven months.

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* This patient was seen again after an absence of about three months, and there was no discharge whatever from the frontal sinus; indeed, the nasal cavity was perfectly healthy.

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ANOMALIES OF THE FRONTAL SINUS AND THEIR BEARING UPON CHRONIC SUPPURATIVE SINUSITIS.*

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SAN FRANCISCO.

My experience with chronic suppurative disease of the frontal sinus has been so unsatisfactory, regardless of the method of operation adopted, that I determined to find, if possible, where the fault lay. The necessity for this investigation was doubly impressed upon me from the fact that I found my colleagues in practice were likewise having the same experience with their cases. I speak now only of those old cases of chronic suppurative disease with rather free drainage of the inflammatory products into the nose, and of the small percentage of these where there is retention of the inflammatory products. Recent cases are readily handled by almost any one of the extranasal methods adopted, but when the process has been of long duration and every recess of the sinus has become involved, the whole lining membrane pyogenic, and in places gangrenous, and, in very old cases the bone itself involved,



Fig. 1.—Although our standard authorities usually refer to the frontal sinus as varying much in size, the sinus in this case is about that usually shown in most drawings and demonstrations. We are further left to believe the inner plate smooth and the cavity shallow; this is the case even in so beautiful and extensive a work as Deaver's recent "Surgical Anatomy." The right sinus in this case is at least four times the size of the left, very deep, backward as well as downward.

the problem of eradicating the disease becomes exceedingly difficult. Most of these old cases, as I have said, drain rather freely into the nose, producing no other discomfort, as a rule, than the discharge of pus into the nasopharynx or the development of polypi and other nasal conditions. The rule is that the process has gone on for a number of years, and the patient consults us for the relief of these nasal and the nasopharyngeal conditions, little suspecting that the source of the trouble lies in the frontal sinus, hence any operative measure directed toward the frontal sinus should be with the purpose of completely eradicating the disease found there and not simply providing for freer drainage. To do this requires that every recess of the sinus be reached, all diseased tissue curetted away and, if the lining membrane has become gangrenous, then its entire removal and the obliteration of the cavity. I

* Read in the Section on Laryngology and Otology, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

have not found it possible to do this by any operation short of removing portions of the anterior plate and exposing the whole field. Any attempt to treat such cases through the infundibulum has always appeared to me very dangerous, and certainly very unsurgical, and would always be condemned if we but recalled the the structures with which we were dealing, the exceedingly thin internal plate and orbital wall and the pinhole caliber of the ducts through which we expect to



Fig. 2.—In this case we have three distinct sinuses, the right one much larger than the other two. The walls exceedingly thin, in fact, there is no part of the internal plate which one can not see through very readily. The floor of the right leads at once to the superior opening of the infundibulum; the middle and left sinuses lead through two separate and distinct, though very tortuous, compartments to the superior opening to the left infundibulum.

get drainage. Intranasal methods by which an opening is forced through the floor of the sinus only provide freer drainage and can accomplish nothing else. Through such an opening one can reach but a very small part of the diseased cavity, and that very uncertainly.

Jansen's operation for the removal of the orbital roof and Walker Downey's plan of closing the original wound



Fig. 3.—This is an example of the great depth posteriorly, to which some of these sinuses reach, extending backward over the roof of the orbit almost to the optic foramen; note also the exceedingly thin orbital plate, roof of the orbit, and floor of the sinus, in this case as thin as paper; note further that this extension of the sinus backward is divided into two cavities by a thin vertical septum running across its center.

and bringing the gauze out through an opening made at the internal canthus both threaten cicatrices which may seriously deform the lid, especially if the wound is to be kept open any length of time.

I will not touch upon the various means of arriving at a diagnosis of old suppurative disease of the frontal sinus, except to say that the only positive one is by making an exploratory opening, an incision in the line of the eyebrow, extending from the root of the nose outward. Only a small opening in the anterior plate is necessary, and if a suppurating sinus is found I have come to believe a modified Kuhnt's operation best, where, instead of removing the whole outer plate so radically, which always leaves more or less of a depressed scar, I make successive openings, exposing every part of the sinus and leaving bridges of bone to support the skin. Another modification I find very necessary is to leave two openings, one at the external as well as one at the internal angle of the wound. This provides for very free irrigation. The external opening must be placed at the limit of the external angle of the sinus. If the cavity is large and the disease of long duration permanent drainage is secured by making a large opening into the nose along the line of the infundibulum, and the recesses of the cavity wiped over with a 20 per cent. solution of chlorid of zinc. The two external wounds which were left for irrigation are closed in from five to six days, the edges freshened and brought together carefully with a trifling scar. Care should be taken to have the patient avoid blowing the nose for two weeks after final closing of the external wound.

My results have been much better since following this plan. Every recess and diverticulum, however, must be reached. I have found it necessary to have made curettes of various sizes, on shanks of varying

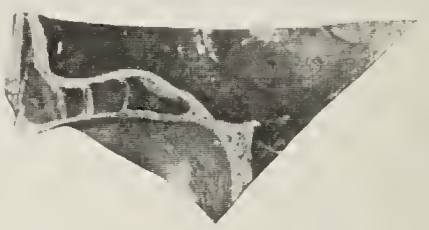


Fig. 4.—This is another example of a very deep sinus extending backward almost to the apex of the orbit, and with exceedingly thin walls; note that this sinus is divided into four distinct compartments from before backward, by three thin vertical septa running across the sinus from side to side.

lengths and angles, in order to reach every point. The necessity of this detail will be readily appreciated by referring to the photographs I present of the many anomalies of the sinus which one may have to deal with in such cases. These anomalies may also account for our failure to eradicate the disease in certain instances.

DISCUSSION ON PAPERS OF DRS. INGALS AND PAYNE.

Dr. Edward T. Dickerman, Chicago—I have recently completed a series of sections of the frontal sinus and the naso-frontal passage, the results of which may be of some diagnostic value. These sections were made upon 50 heads, or practically 100 naso-frontal passages. In about 40 per cent. of the cases the infundibulum ended practically in the naso-frontal canal. In 60 per cent. of the cases the opening into the frontal sinus from the nose lay in a plane internal to the infundibulum and, in the majority of cases, was practically an ostium. In three cases there were found to be no frontal sinus on one side, there being only an indication of it in the way of a very small anterior ethmoidal cell. In one case there was no frontal septum, one large frontal sinus occupying the place of both. One other section was very interesting to me. The right frontal sinus had two distinct openings, one opening being the normal naso-frontal passage, while there was also a tortuous canal leading into the left nasal cavity. In two cases there was direct communication between the frontal sinus and the maxillary antrum. These points are all of some importance in diagnosis of infection of this sinus and in the treatment of them.

Dr. Casselberry—In what proportion of cases was there a perforation of the frontal septum?

DR. DICKERMAN—In 2 per cent. was there a direct communication between the frontal sinuses. In 1 per cent. there was an absence of the frontal septum, and in three cases the frontal septum consisted in part of a membrane only.

DR. E. FLETCHER INGALS, in closing—I wish the gentlemen would read the parts of the paper that for lack of time I was forced to omit, as the subject is of great interest. President Harper, of the University of Chicago, told me of an acquaintance who said that whenever he wished to learn anything thoroughly he wrote a book on the subject, and I have had a similar experience in preparing this paper.

DR. R. W. PAYNE, in closing—We are all familiar with chronic suppurative diseases of the frontal sinus, and no doubt many of us have had failures whatever the method adopted for its cure. The investigation I made brought out a number of anomalies that explains the very deep recesses we find in many cases, and which we do not reach unless the operation is very radical and every corner of the cavity explored. These anomalous cavities and recesses also probably account for most of our failures in old suppurative cases.

ASTHMA AS A RESULT OF NASAL CONDITIONS.*

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The frequency of asthma as a result of a diseased nasal condition has so often been brought to my notice that I feel hopeful of effecting a cure in every case of this distressing malady that consults me. Unfortunately, I am occasionally disappointed, but only in a small minority of my cases. I will not go into the pathology of the disease, but will report the results obtained in selected cases not previously reported. I have found that cases of asthma in children under 10 years of age have, after the removal of the offending adenoids, given the best results.

While we, as rhinologists, know what a normal nose ought to be, we are not aware of the exact amount of deviation from the normal which may exist without discomfort in any given case. I find that it is difficult in many cases to know just what is the offending point within the nasal chamber. A deviated septum, hypertrophied turbinate, septal spur, or polypi individually or grouped, are at times the source from which the trouble arises. In cases of asthma it is my practice to remove all pathologic conditions and abnormalities. I have nothing new to offer in the matter of technique. The snare, curette, knife and saw are used in appropriate cases with equally good results. I have almost entirely put aside the galvano-cautery in nasal work. Suprarenal capsule extract, and its newer preparation, adrenalin, make the field of operation practically bloodless, and with ordinary surgical care and cleanliness my results are more satisfactory with the cutting instruments. The usual slow-healing ulcer and frequent irritable scar tissue of the cautery are avoided.

Prof. William Osler, of Johns Hopkins University, says: "Still physicians must acknowledge the debt which we owe to Voltolini, Hache, Daly, Roe and others, who have shown the close connection which exists between affections of the nasopharynx and many cases of bronchial asthma." Granting that asthma be due to vasomotor paresis and bronchial spasm, and admitting the alteration of the nerve centers with predisposition to nervous disturbance in the bronchial region, it is fair to assume that nasal as well as other forms of peripheral irritation may reflexly produce the asthmatic paroxysm. The irritation within the nose may be brought about by inflammatory pressure on the terminal nerve filaments in the mucosa, or may be due to turgescence of the erectile tissues caused by transmitted vasomotor alterations from distant parts of the economy.

There is nothing peculiarly pathognomonic in the symptoms or physical signs of nasal asthma, the paroxysms being identical with those due to other lesions. In the search for the underlying cause of the bronchial spasm, eliminate cardiac trouble, renal disease, gastric and intestinal disturbances, chronic bronchitis, rheumatism and gout, "then examine the nose."

My experience is in keeping with Bosworth, Kyle and other authors, that a large majority, if not all, cases of asthma, are due to some lesion in the nasal cavities. Because all cases of asthma are not cured by the removal of all diseased conditions and abnormalities discovered in the nasal chambers, we must not necessarily conclude that this is not the offending organ. We frequently find polypi that we can not remove, and more frequently, undoubtedly, we fail to discover abnormal conditions. I have a patient, a lawyer, aged 37, who had suffered with asthma from childhood, seldom a week passing without a severe attack. I removed several polypi, giving great relief. He continued to have slight attacks, until I removed a small septal spur, which effected a complete cure.

Anna C., aged 14, had suffered from asthma for nine years, the attacks being severe and frequently lasting for three days. The removal of profuse adenoids by the curette, and a septal spur with the saw, brought about a complete cure of her asthma, and a very rapid improvement in her general health. Her parents say she has grown more in the past year than in the previous five. Her mother stated that the first attack of asthma followed a "broken" nose, caused by a fall from a swing. I have found that a very rapid improvement in the general health of all children followed their relief from asthma.

H. L. G., aged 54, consulted me for asthma, examination revealed a greatly enlarged turbinate, pressing against the septum. He has been cured for nearly two years by the simple operation indicated.

I am sure that as our technique and methods of examination improve, our results in asthma will be greater. The simple operative methods we outline give permanent cure to a majority, and relief to a great number of others.

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DISCUSSION.

DR. G. N. JACK, Depew, N. Y.—I have done a great deal of special work along this line and I have yet to find a case of nasal asthma. That is to say, I have yet to find a case of asthma that was due wholly to any nasal complication. It has been my experience that the etiologic factor in asthma lies in the blood. The nerves and lungs take no part in any of the phenomena of asthma other than in the performance of their physiologic function. I have found three pathological lesions in the blood that will produce asthma, namely lymphocytosis, the asthmatic leucocytosis, and the anemic variety. Each of these three different blood dyscrasias produce distinct types of asthma, and there I think is one of the causes of so much complication and doubt in regard to the subject of asthma.

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Asthma due to lymphocytosis is a variety of asthma chiefly found in children, especially nurslings, and the blood count in all the cases I have investigated has shown a decided lymphocytosis. In one case the blood count showed 93,500 white cells, 70 per cent. of which were lymphocytes, and a vast majority of these lymphocytes were small, showing that they had come directly from the lymph channels and the chyle. The reason for the dyspnea in this variety of asthma is twofold: 1. A sufficient amount of oxygen can not reach the lungs, owing to the narrowed respiratory tubes, including the pharynx, larynx, trachea and bronchi, due to the collateral engorgement of their lymph channels. 2. The oxygen that finally reaches the lungs is handicapped in reaching the hemoglobin in the blood, owing to the hemoglobin being so thickly surrounded by lymphocytes.

Local treatment may do some good, but systemic treatment will do most good. The leucocytic variety of asthma I have found chiefly in adults and it usually starts from an intestinal indigestion and toxemia which cause a toxic leucocytosis, and an enlargement of the glandular structures of the larynx and trachea.

The glandular enlargement first appears in the larynx and is usually most pronounced during an attack following a long period, perhaps months, of freedom and not infrequently this enlargement will manifest itself in the patient weeks before an attack through the snugness of his collar and change of voice.

When the attack first begins, the obstruction and wheezing is confined entirely to the larynx. After a few days the laryngeal glands undergo a revolution and softening and the laryngeal dyspnea disappears, with the expectoration of mouthfuls of thick, viscid mucus containing Cursehmann's spirals, leucocytes and eosinophile cells. There has always been a doubt as to the origin of Curschmann's spirals. They always appear in the sputum first exuded in the leucocytic variety of asthma, whether this sputum comes from enlarged laryngeal or tracheal glands, but owing to the fact that they appear in the sputum coming from the enlarged laryngeal glands *before* the process has extended further down, proves conclusively that they do not in any case originate in the smallest bronchioles as their casts, as heretofore supposed. The anemic variety of asthma we find chiefly in the extremes of life. It comes on night after night simply from the lack of the action of sunlight on the blood. There is an individual peculiarity of the anemic asthmatic. The dyspnea is not alone due to the small amount of hemoglobin in the blood, but also to the fact that the hemoglobin does not readily absorb or carry oxygen, and this is in fact due to a deficiency in animal magnetism. The lack of the chemical effect of sunlight on the blood often proves to be the last straw. Altitude, by increasing the blood count, will in this variety effect an immediate cure.

DR. CASSELBERRY—I would like to know in which class the Doctor would place the asthma found in connection with hay fever?

DR. JACK—I think there is a close association between hay asthma and the leucocytic variety of asthma. I have in many cases found a leucocytosis in hay asthma, and I am of the opinion that pollen dust will, in susceptible cases, produce a leucocytosis sufficient to bring on an attack of asthma.

DR. EMIL AMBERG, Detroit—Blood counts have been made in cases of adenoids and it has been seen upon investigation that after an adenoid operation the conditions of the blood became more favorable. If merely the toxic effects in the blood were to account for it we should not expect this. If the symptoms appear to be due to mechanical obstruction and if the removal of the adenoids improves the symptoms, we may as well come to the conclusion that the mechanical obstruction furnishes the cause and that the changes in the composition of the blood must be regarded as the effect, and not vice versa.

DR. J. F. BARNHILL, Indianapolis—I should like to ask the gentleman, who had the floor before the last speaker, in what specialty he is practicing and from what field he has made his observation. I make that query because rhinologists have given long lists of cases in which they have cured asthma by operation alone. Some time ago I wrote to the professors of medicine in each regular college in the west, asking whether, in his experience, asthma had ever been cured by internal medicine alone, and there was in every instance a negative response.

DR. JACK—I am in general practice.

DR. J. H. FARRELL, in closing—It is all very well to go into the discussion of the blood in the production of asthma, but facts are very stubborn things. In my experience, as well as in the experience of men of longer practice, cases of asthma are often cured by operation. When in general practice I saw many cases of asthma, but I never saw a case in which the attack could not be cut short by the hypodermic injection of ¼ gr. of morphin, and 1-100 gr. of atropin. In Arizona I saw many cases, but I never saw a case cured by the change of climate, except such as we could attribute to the absorption of inflammatory conditions in the nasal chamber.

AN UNUSUAL ANOMALY OF THE FAUCIAL TONSIL.*

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The patient was a woman, 60 years old, who reported that her throat had been paining her for the past two years, and that for a long time, almost as long as she could remember, she had had more or less discomfort in the region of each tonsil. The right was found to be somewhat hypertrophied, and she had pain running to the ear from this region. She did not at first want the tonsil removed, and was treated for some weeks with chromic acid applications. This was followed by some improvement in the sensation. Later she consented to the removal of the right tonsil; the left one was not large. On applying a tonsillotome I was surprised to find that I was unable to cut through the tonsil, and on examining with the finger found that a bony mass penetrated the tonsil almost to its outer border. This was removed with a stout bone-cutting forceps, and on being examined was found to be a portion of the styloid process, the center of the bone showing a distinct marrow. I examined the other side with the finger, and found that, though not so prominent, the tip of the process could be felt through the left tonsil as well.

Not having seen any literature in reference to anything of the kind, I wrote to Dr. Thomas Dwight, professor of anatomy in Harvard University, in regard to the matter, and received from him the following reply:

"Your case is a very interesting one. I do not remember of hearing of a styloid that touched the tonsil, and yet I have not the slightest doubt that you had to do with a styloid, and the explanation is simple enough. Long styloids are not uncommon; and remarkably long ones are due to the ossification of the stylohyoid ligament. On its way to the lesser horn of the hyoid it must pass very close to the tonsil. There is in the museum a skull in which this is ossified throughout, though, I think, with one interruption on each side between the skull and the hyoid. I saw to-day a temporal bone with a styloid, the point of which was nearly two and one-half inches from the lower border of the external auditory meatus. This must have reached to the level of the tonsil.

"It is perfectly in accord with all we know of the process of growth of organs, that if a bony structure should encroach on the domain of adenoid tissue the latter should, so to speak, fold itself around it."

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If any member of this Section, or any reader, has seen anything similar, I would esteem it a favor if he would inform me as to the circumstances of the case.

THE EFFECT WHICH THE SO-CALLED CATARRHAL DISEASES OF THE NOSE AND THROAT MAY HAVE UPON THE GENERAL HEALTH.*

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> Myself when young did eagerly frequent
> Doctor and saint, and heard great argument
> About it, and about; but evermore
> Came out by the same door wherein I went.

Thus sings that old cynic Omar Khayyam, and Omar's criticism of theologic discussions applies with more or less force to medicine. It is so much easier to accept an explanation already made, than to think about the reason for ourselves, that what argument we hold is likely to be about the details or variations of already existing theories, without much inquiry whether they may be right or wrong. The explanation of any local disease which we do not thoroughly understand, and therefore fail to treat successfully, is simplicity itself. We say, with many variations of the wording perhaps, that it depends on the state of the general health. This explanation is very satisfactory to the patients and their friends, and it saves the physician the labor of finding the true cause for the condition. We are rarely very definite in our statements as to what the condition of the general health may be, and when we do come down to particulars, we are quite likely to think that the patient has the then fashionable disease. Fashions change in disease as they do in dress; just now the uric acid diathesis is a prime favorite; a few years ago it was congestion of the portal circulation.

In the treatment of disease of the nose and throat, we constantly meet with the explanation that the local disease depends on some disturbance of the general health. This has been so often and so confidently asserted, and so generally accepted, that it may seem too radical a statement to make, that the diseases of the nose and throat are not often caused by general conditions, and, further, that they are often the cause of the very state of the general health, which has been supposed to produce them. The exceptions to this statement are, syphilis, tuberculosis, rarefying osteitis, and some of the rarer forms of disease. The acute exanthematous diseases, as well as pneumonia and influenza, have not been considered because the involvement of the nose and throat is a part of the general infection. Certain conditions, as anemia and lowered vitality from whatever cause render the tissues more vulnerable, and other conditions which produce congestion, as indigestion, constipation, menstruation, may and often do cause an exacerbation of an already existing disease. This statement of the position which the state of the general health occupies as a cause of local disease, is perfectly consistent with the idea of the bacterial origin of the acute diseases of the nose and throat, and we have every reason to consider most of the so-called catarrhal diseases the sequelæ of the acute attacks. If we believe, as all progressive physicians to-day do, that most acute and many chronic diseases depend on germ infection, then the relation of the diseased conditions of the nose and throat becomes of the utmost importance.

Assuming the infectious origin to be accepted, the question then is: In what way do the bacteria gain entrance to the system? The principal ways in which this takes place are through wounds, or through the respiratory, digestive, or genito-urinary tracts. Of these different routes of infection, we will consider only the respiratory. During normal respiration through the natural passages, Nature has thrown up a barrier, which not only prevents the entrance of the bacteria to the deeper parts of the respiratory tract, but warms and moistens the inspired air as well. When this barrier is rendered inoperative by disease, or by nasal obstruction, the throat and lungs are exposed to the danger of infection. If, in addition to this loss of function of the nasal mucous membrane, there is a constant discharge of mucus or pus into the pharynx, the probability that the general health will be affected is very much greater. The effect that diseases of the nose and throat have upon the surrounding parts, as the ears, eyes, larynx and bronchial mucous membrane, and as a cause of headache, is a well-recognized clinical fact. If we attempt to analyze the different ways in which disease of the nose and throat may affect the general health, the subject naturally divides itself into two parts,1, the effect that may be produced by obstructed nasal respiration, and 2, the effects produced by the migration of bacteria or by the absorption of the products of their action.

Under the first division we find those effects which are produced by mouth-breathing, such as anemia from lack of oxygen, disturbances of sleep, aprosexia, maldevelopment of the face if the mouth-breathing is established in early life, and frequent attacks of inflammation of the oropharynx, the tonsils, the larynx, and the bronchial mucous membrane. The effect upon the nervous system, of nasal obstruction, is marked, and varies in different cases through a wide range of symptoms, the most prominent of which are mental dulness, loss of memory, irritability and chorea. The effects produced by mouth-breathing are too common and have been too often reported to need more than a passing mention.

The second division needs more extended notice, because, while the effects may be no more serious, the connection between the local disease and the general condition is more likely to be overlooked. The different ways in which a nasal or nasopharyngeal discharge may affect the general health are: 1, the extension of the inflammation on the surface of the mucous membrane, either to the skin, where it causes excoriations of the skin, or more severe inflammation, as erysipelas, acne, etc., or to the larynx and bronchi, causing in this way protracted attacks of laryngitis and bronchitis. There is no doubt that this extension of the disease occurs, and it is probable that most of the cases of chronic laryngitis not caused by mouth-breathing, depend on disease higher up in the respiratory tract. The bronchial mucous membrane is involved in a large percentage of these cases and, where the bronchitis has this origin, the treatment is unsatisfactory unless the disease of the nose and throat is treated also. An illustration of the failure of treatment directed to the general health, and to the bronchial mucous membrane only, is seen in those cases of winter cough which finally run on to the so-called twenty years' consumption. These patients have usually taken, literally, barrels of expectorants and emulsions, and very few of them have

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ever had any attempt made to control the disease higher up in the respiratory tract. Hajek's statement that it is better for the patients to have the fluid removed from the facial cavities, than to send them from a summer to a winter cure, where the symptoms are lightened, but the disease is in no way cured, is worthy of notice. I can add only that every case of chronic bronchitis should be subjected to a searching examination of the nose and throat, and if disease is found there it should be treated. By doing this, I am certain that many patients can be cured who are now thought incurable.

The second result of a chronic postnasal discharge is the inevitable swallowing of a considerable quantity of this mixture of mucus and muco-pus. That this takes place no one denies, and I am convinced that most, if not all, of the indigestion from which these patients suffer is caused, or at least aggravated, by this cause. Patients who have suffered a long time with postnasal catarrh are often thin, pale, and dyspepetic, and the indigestion is usually rather intractable, so long as the discharge continues. I have seen so many patients who have voluntarily reported that their indigestion was much better as soon as the nasopharyngeal discharge ceased, that I am forced to believe that the swallowing of the secretion has a decidedly bad effect upon the digestive process.

The third effect of the presence of disease in the nose and throat upon the general health, which I wish to discuss, is the migration of bacteria to the surrounding parts and to distant parts of the body. This very important phase of the question has been studied by such men as Ross, Stabell, Otto Seifert, Emil Mayer, Frederick Packard, A. L. Loomis, R. C. Cabot, and many others, who have reported cases of acute rheumatism and endocarditis as direct results of acute tonsillitis. Ziem reports a case of muscular rheumatism which was caused by chronic antral disease, and the disappearance of the rheumatism without treatment after the cure of the antral disease. He also maintains that nasal suppuration may cause abscess of the bones of extremities, or of the joints, and advises examination of the nose and sinuses in all such cases of obscure origin. The fact that a collection of pus in the nasal cavities may be a grave menace in surgical operations is just beginning to be recognized. In this connection H. O. Pantzer says that he believes the septicemia which followed a colotomy in one of his patients had its origin in a nasal disease. This statement is rather a hard one to prove, but it is nevertheless suggestive of a possible source of infection following surgical operations. The fact that migration of bacteria to the surrounding tissues and to distant parts of the body does occur during the course of acute and chronic disease of the nose and throat, has been established by such a number of observations of the leading men in the profession, that it seems hardly necessary to multiply proofs. This migration probably takes place in one of two ways, either through the lymphatic system or through the blood circulation. The first of these routes is the more common, the infection following the flow of the lymph current and causing in this way the involvement of the surrounding tissues. Infection of the lymph current may also be the source of the contamination of the blood current through the anastomosis of the lymph channels with the venous circulation: this will be alluded to later, when we come to consider the infection of the blood circulation. It is possible that infection can take place against the lymph current, but I have never observed it, and I think it not probable. The swollen tissues and enlarged glands of the neck, during the course of acute and chronic diseased conditions of the nose and throat, are illustrations of the migration of the bacteria by the lymph current, that all are familiar with. I wish in this connection to call attention to the purulent rhinitis of children as a source of infection causing cervical adenitis. I went fully into this subject in an article in the *Boston Medical and Surgical Journal* of Jan. 10, 1901. The second route of infection, that through the blood, is more rare, and occurs through the anastomosis of the lymph channels with the venous circulation, through the erosion of a small blood-vessel, which is in contact with the pus collection, or through venous thrombosis, in the same way as a thrombosis of the lateral sinus occurs in mastoid disease. When the infection has once gained access to the blood, it does not differ materially from infections from other sources. The quantity of the infective material from the nose and throat is perhaps not so large as that from other sources, but in other ways it acts the same.

The fourth way in which diseased conditions in the nose and throat may affect the general health is by the absorption of the toxins which are the result of bacterial life. This subject is so intimately connected with the actual migration of bacteria, that it is often impossible to determine which has actually occurred, except by the progress of the resulting disease. The diseases resulting from the absorption of toxins are generally of shorter duration than are those which are the result of the migration of bacteria, but the depression is perhaps greater in the toxemia. When toxins are absorbed every secreting surface in the body participates in the effort to excrete them, and from this participation we obtain a variety of diseases, that apparently are not related, but which in reality have the same source. Many of the transient cases of acute rheumatism, of nephritis, of pericarditis and of pleurisy following the acute inflammations of the nose and throat are examples of this effort of the system to free itself from toxins. Of equal and perhaps greater importance is the condition of chronic sepsis from which many of the patients with chronic purulent disease of the nose suffer. They are marked examples of the condition of the general health, which is supposed to cause nasal catarrh. If we found a collection of pus in any other part of the body, associated with this condition of the general health, we should, and rightly, assume that the patient had sepsis as a result of the pus absorption, but when we find precisely the same condition in connection with a purulent collection in the nose, we put the cart before the horse and say that the state of the general health is the cause of the purulent discharge. I have not considered the functional nervous accompaniments of the diseases of the nose and throat, the so-called reflex nervous systems, not because they are not real enough and distressing enough, but because it seemed better at this time to limit our inquiry to such diseases as had a definite pathologic basis. The field which I have attempted to cover is so far-reaching that it is impossible to more than call attention to a few salient points, and it is only by the reported observations of those who are interested in the subject that we shall be able to judge the extent of the subject. Enough has already been done to show that the acute and chronic diseases of the nose and throat are a grave menace to the general health, and that they may also be a source of infection in surgical operations. The conclusions to which I wish to call attention are:

1. Diseases of the nose and throat affect the general health through obstructed nasal respiration, or by extension of the diseases of bacterial origin.

2. The diseases of bacterial origin affect the general health: *a*, by extension upon the surface membrane; *b*, by the migration of bacteria to surrounding tissues or to distant parts of the body; *c*, by swallowing of the discharge; *d*, by the absorption of toxins.

3. The migration of bacteria takes place through the lymph current, or through the blood.

4. Septic infection originating from disease of the nose and throat does not differ materially from infections from other sources.

5. Much of the indigestion from which these patients suffer is caused or made worse by the swallowing of the secretion.

6. A condition of chronic sepsis may be caused by a purulent collection in the nasal chambers or accessory sinuses.

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DISCUSSION OF PAPERS BY DRS. RICHARDS AND COBB.

DR. W. E. CASSELBERRY, Chicago—I would first refer to Dr. Richards' paper. At the Atlanta meeting a few years ago, Dr. Sterling stated that he would be glad to show in his office three cases of "bone in the tonsil" which he would like to have elucidated. It was suspected at the time that there might be some delusion in the matter and a committee was appointed, of which I was one. Dr. Sterling had tried to make a tonsillotomy in one case and had encountered the bony projection. They were all cases in which the styloid process was rather long and turned in the direction of the tonsil, projecting into it.

With reference to the evil effect of catarrhal conditions of the nose and throat on the general health, I think that side of the subject will bear some emphasis, for we have heard so much on the effect of the general health on local conditions. The essayist has ably supported his contention that local diseased conditions are capable of producing systemic disease, but I do not think that we should therefore decide that systemic disease may not cause or aggravate catarrhal states of the nose. I recall cases, recovering from acute disease or cases that were run down from confinement indoors in which the general debility would seem to have caused vasomotor debility and disturbance in the nose with discomfort from over-secretion and obstruction, which discomforts passed away as the patients regained strength and vigor. In this connection we also recognize the importance of the uric acid diathesis, or whatever it may be called, whether due to uric acid or the alloxuric bases. Treatment directed towards a better mode of life and more active exercise demonstrates that this systemic state has an influence, especially upon chronic pharyngeal and nasal inflammations. That certain systemic conditions do produce local diseases, we need only instance syphilis, which has local lesions in the nose. There are doubtless other constitutional states with local lesions in the nose. The proposition which the essayist demonstrates in his paper is certainly important. The absorption of material from the sinuses produces a systemic state of toxemia which is associated often with an afternoon temperature, and produces anemia: it may even lead to confusion in diagnosis between it and tuberculosis of the lungs. We should be particular to search in all such cases for empyema of the maxillary sinuses. I am convinced that in a large majority of cases of excessive nasal secretion, especially of purulent, there is disease of one or more of the sinuses. Also a state allied to rheumatism may be due to tonsillitis, rather than the tonsillitis being due to rheumatism.

DR. G. V. WOOLLEN, Indianapolis—I have had a very distinct explosion of rheumatism after a slight infection of the nose, following an operation. It shows how readily the system is influenced by the nose. Probably nineteen out of twenty people in this country suffer from catarrh, or catarrh and rheumatism. If any other conditions were so often associated with bad health we would naturally look to local causes. Instead of a cuspidor, I make use of a pus basin and I have frequently tried to estimate the quantity of secretions that are discharged from these cases, who often have no idea that they have any local infection. I have made it a routine practice that patients shall always treat themselves before meals so that they will not swallow these infecting secretions. In consequence I do not use tonics and restoratives nearly as often as I did formerly. I was a general practitioner of twenty-three years before I went into this work, and would be naturally inclined to the general treatment rather than the local, but I have been driven to this conclusion by my observation. If you clean out the nose and head well after meals you will not find nearly so much secretion, showing that it is largely precipitated into the stomach with the food. The relationship between the local condition and the general health is so intimate that there can not be any mistake. I measure all my patients and weigh them repeatedly during treatment; I have found that 90 per cent. of them are under weight. A large percentage of these patients recover their normal weight under treatment.

DR. L. C. CLINE, Indianapolis—I think the class of cases referred to should be separated into groups. We have a certain group of cases in which the nasal troubles are brought about by systemic conditions and that are cured by systemic treatment. In another set of cases the disease is absolutely local and the systemic affection is brought about by the local conditions. If we can separate those cases and differentiate between them we will be much better able to determine the proper treatment. I believe that to operate on every case that comes along is a mistake and we should look a great deal to the systemic treatment of some cases by elimination, giving calomel and salines, and teaching our patients to look after their skin, which is a very important factor in many of these cases. I have repeatedly had cases in which I thought an operation was indicated and necessary, yet by using other measures, such as having them bathe and giving them such remedies as would eliminate retained poisons from the alimentary tract and putting them on a diet, they would recover without an operation.

DR. DUNBAR ROY, Atlanta—I think the tendency with us, like in every other specialty, is that we become too narrow. One gentleman has spoken of routine treatment. I do not believe that all the local conditions in the nasopharynx and the nose are the causes for so many systemic dyscrasias, but every case is an individual one and the treatment that would benefit the case may benefit the systemic condition, but that it would universally do that I do not believe. That cleansing the nose and throat will relieve the systemic conditions mentioned, I do not believe will be found true in every case. Whenever there is a local cause it must be removed; but the idea of any routine method of treating the nose, and cleansing the nasopharynx and nose before eating in every case I think is unwarranted.

DR. O. T. FREER, Chicago—It would be difficult to recognize epithelial cells derived from the nose in the gastric contents. If there is any digestion going on at all the delicate cilia of the nasal epithelium would entirely disappear, and the epithelial cells from the mouth, esophagus and nose would swell so that it would be difficult or impossible to differentiate them from each other or from other cells. As to pus cells coming from the nose—and leucocytes form a large part of the nasal discharge—these would not differ from leucocytes derived from other regions. I think that the effect of disease of the upper air-passages on diseases of the stomach and lungs is apt rather to be exaggerated than underestimated. In Rush Medical College our throat and nose patients are classed with those having diseases of the chest, and we systematically examine the throats and noses of the latter class; yet in spite of our large pulmonary material, especially numerous cases of chronic bronchitis coming under observation, it is not common for us to find diseases of the lungs strikingly associated with those of the upper air-passages.

The number of cases of chronic nasopharyngeal catarrh that improves after correction of gastric difficulty has seemed to me sufficiently noteworthy to suggest some connection between the affections, but only very extensive statistics could establish this as a fact.

DR. P. J. H. FARRELL, Chicago—Where the nasal douche is used in catarrhal conditions, particularly by the general practitioner, damage may be done. In my own work in the last six months I have been called upon to treat a dozen or more cases of middle-ear trouble following the use of one of the many instruments sold for this purpose. On Monday morning, before leaving home, I made a paracentesis on a medical man, which had become necessary as the result of this form of treatment, although I had cautioned him about the use of the nasal douche.

DR. COBB, in closing—The question of the relation of diseases of the nose and throat to general diseases, whether these other conditions cause or are caused by them, is a question that has been frequently thrashed out here. If you were to go to the Section on Gynecology you would probably find that somebody will read a paper on the effect of systemic disease on uterine diseases. Many of those cases are improved by general treatment, but do not get well that way. In fact they never get entirely well under general treatment, if we exclude syphilis. In nasal catarrh we have to deal with a disease caused by poor drainage, and when we improve the drainage the case recovers, but just so long as there is no improvement of the drainage the case does not recover. Such cases may improve, but they will not entirely recover under general treatment, but if you secure drainage from the cavities you will put the patient in a better condition to get well. I have been a firm believer in the uric acid diathesis, but I do not believe that it is the cause of the nasal catarrh from which even a uric acid subject suffers. Indigestion may be accompanied by catarrh and still not produce it. Intestinal absorption of decomposing food may and often does produce a profound and prolonged intoxication and in the effort which every secreting surface in the body makes to throw off the poison, the mucous membrane of the nose and throat participates; but this mucous membrane does not suffer more than mucous surfaces in other parts of the body. One attack of intestinal intoxication does not cause a post-nasal discharge for years afterward any more than it causes a diarrhea lasting the same length of time.

CHANGES IN THE FACIAL BONES DUE TO ADENOIDS.*

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The enormous amount of literature on the subject of lymphatic growths in the nasopharynx that our medical journals have been publishing lately is certainly presumptive evidence that the matter has been well sifted from a clinical point of view. It has, but only in consideration of the effects of the condition on children, under 15 generally. In these cases the assertions of Meyer of Copenhagen, thirty years since, have been thoroughly worked out. The definite connection between habitual mouth-breathing, and mental as well as physical development, has been established.

The peculiar characteristic departure from the composite type of human skulls shown by those who throughout life have had functionless noses is also defined, and as this essay hopes to show, logically.

The bones whose part is the greatest in this change are those making up the hard palate. From the gently rounded curve of the roof of the mouth, that is the normal type, we see extreme examples where the arch is high up and the encroachment on the space of the nares most extreme. The same factor is accountable for a nasopharyngeal space, but little larger than the finger tip of the examining hand, the nasopharynx of a new-born babe in a man.

While the mouth roof elevation has really encroached on space originally intended for nose development, yet to put the blame clearly on the part at fault, lack of development alone, of the upper respiratory tract, is responsible for setting in motion the entire vicious cycle. Although the matter of these changes in shape of the bones and of their relation to space is well known, and the remedy applied more and more generally and effectively by the medical profession, there has been, so far as I have seen, no recognition of the bearing of these conditions by dentists on what is a large field of their work, viz., the straightening of front teeth. If this be true, then work done with this object in view, on children, is a hopeless superfluous infliction in extreme cases, and in all cases can be aided by a properly performed, thorough removal of all blocks to the patulency of the upper respiratory tract before complete ossification. That it can be shown to be true, a consideration of the changes necessarily accompanying the altered direction of growth of the palate processes will demonstrate. This demonstration is simply the fact that the upward extension of the roof tends to bring the sides together. As the regular number of teeth begin to demand their space, they can find it in only one extension, and that is forward. The molars get more of the room available because they do the bulk of the work through the grinding motion given them by the pterygoids. The incisors and canines suffer the crowding and malposition the most because the front is the only way to expand, and also because man has largely passed much need for the prehensile and tearing function they were originally and respectively used for by the progenitors of the human mammal of to-day.

These two considerations will also account equally as well for the same malposition in a forward direction of the front teeth of the lower alveolus, i. e., the mechanical limitation to backward extension and the all-important need of the grinding process of mastication by the molars. It plainly follows that the inferior will be kept in apposition by the pterygoids.

It would seem, then, that attention to this condition in early life would be equally effective in lessening the number of people with prominent front teeth as it is in stopping the mouth-breathing with its accompanying evils, which are as apparent to a medical man as the teeth are to the public.

Without rehashing the well-known picture of running ears, constant coryza, etc., in children, I think I can show that even those who have only a small amount of this tissue, and who apparently get through to puberty with no damage are yet, as these cases will show, to be relieved of ear and throat conditions that have no plain, evident connection with adenoids only by due consideration of the atypical anatomy of the nasopharynx on the lines above set forth.

If, in a first view of the cavity, remnants of adenoids are still present, it is fair to assume their existence in greater amount in earlier life, and independent of elicited history, a minute, detailed examination of their present relations to a normal or abnormal pharyngeal vault is in order. The assumption is based on the well-known elimination of such glands as those composing the tonsillar ring, the thymus, etc., by the organism on reaching the limitation of growth; provided previous inflammations have not produced permanent hypertrophy by metaplastic or direct connective tissue proliferation, a common type of which is the persistent hypetrophied tonsil seen at all ages. Bearing in mind

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these facts the diagnosis of their presence has a relative value beyond the intrinsic.

A case illustrating this would be Miss G., aged 18, in whom the bone conformation was typical and the postnares small—a constant day and night mouth-breather. The removal of a piece of adenoid from its location just above, but close to the postnares was followed by a relief that was entirely out of proportion to the size of the tissue.

A case emphasizing particularly the point of location was Miss G., aged 15, a mouth-breather only at night. In her case the slight encroachment made on the available space by the soft palate when the horizontal position was assumed caused the trouble, because the remaining adenoids were all low down. The nasopharynx above was completely normal, save in roominess.

A case of obstinate salpingitis with hearing reduced to about half was relieved after about a month's ineffectual care, by my being able to get part of a growth with the Gradle guarded forceps not larger than a buckshot, but located above and to the inner side close to the orifice of the Eustachian tube. This was Miss S., aged 20.

It has been of prompt and decided benefit in another instance, Miss F., aged 25, who complained of chronic nasopharyngeal catarrh, to curette the area of most insignificant remnants.

I have been unable to find but the most meager references to it in the works of medical writers in this field. The standard text-book of dentistry that I have also seen failed to demonstrate the development of the alveolar processes with the corresponding dental manifestations in connection with perverted respiration due to adenoid hypertrophy. In fact, the text-books of human anatomy, such as Gray's, are less definite as to the development of the superior maxilla than as to any other facial bones. However, to repeat the fact that the grinding process is the most important demand the race now makes on the teeth, makes the maintenance of the apposition between the upper and lower molars by the pterygoids an assured and necessary fact. The upward growth of the palate is Nature's assurance that the mouth has assumed the added function of respiration thrust upon it. One center of development is, however, well understood; that is, the pre-maxillary that includes the four incisors, and that is the last one to become ossified to the palate process. This late ossification of this center of development is a positive confirmation of the facts expressed above, that the front teeth find space as best they can, and in a forward direction. Their junction to the line of the molars is the last process of the final arrangement. It has been my privilege to see many cases where an adenoid operation would have saved an unsightly physiognomy. The specimen submitted is a typical example, and while a cast of the familiar projecting alveolus, it is not extreme, but was selected from a collection as being a fair average. From the observation I have made in this connection, I feel confident that this anatomic process is developed in this way.

In recapitulating the points I wish to establish as worth the profession's attention, the first is that mouth-breathers' superior and inferior maxillaries, palates, vomers, turbinates, ethmoid and sphenoid bones show an alteration in development as compared with the normal, that I contend is inevitably accompanied by prominence of the alveolar processes in front and misplacement of the front teeth; that due significance should be attached to the recognition of evidence of previously existing adenoids in efforts to locate obscure sources of ear and throat disturbances; and lastly, the relative size of such evidences and that of the nasopharyngeal area, as well as their location, are factors opposing the apparent significance.

The few cases given are only those who were seen previously by other users of the rhinoscopic mirror.

THE DIAGNOSIS AND TREATMENT OF MASTOIDITIS.*

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In any case of acute or chronic middle ear inflammation, where there is a collection of pus within the middle ear, there is danger of extension of the inflammation to the mastoid cells. It is a question whether the mastoid is not involved to some extent in all cases of acute middle ear inflammation, as well as in all cases in which a chronic suppuration of the middle ear has existed for a considerable period of time. Naturally this statement is not meant to imply that the mastoid involvement requires any interference on the part of the surgeon, the condition disappearing on appropriate treatment of the middle ear. It is hardly conceivable, however, that in two regions so closely associated and so intimately connected as the pneumatic spaces of the mastoid and the tympanum, one part could be the seat of an inflammatory process without some slight extension to the other.

When we come to the recognition of mastoiditis from a clinical point of view there are certain well-marked signs and symptoms which enable us to make a diagnosis. The symptoms vary somewhat in adults and in children. In adults, the most prominent symptom is severe pain in the region of the mastoid. This may be accompanied by a very profuse discharge from the ear; or the discharge from the ear, which has been previously profuse, may suddenly become diminished, and this diminution in the discharge may be followed by a marked exacerbation of the pain. While pain is a very prominent symptom, it may not be excruciating. In phlegmatic individuals the pain is frequently not described as severe; the patient will simply pass sleepless nights, and on being questioned it will be found that the sleeplessness has been caused by the pain in the head. Prostration is also a symptom which should be borne in mind. It is impossible to have any considerable collection of pus within the pneumatic spaces of the mastoid without having the patient suffer more or less severely from prostration. The temperature is probably the least important guide in making the diagnosis. In some of the most severe cases in adults, which have been under my observation, I have found the temperature absolutely normal for a long period of time. In one case in particular the temperature observations were made every three hours for a period of two weeks. During this time the temperature never rose above the normal standard, yet on opening the mastoid the entire cellular structure was found to be broken down, and the cavity resulting was filled with foul pus. If temperature is present, it is an aid in diagnosis, and renders the presence of a purulent collection within the

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mastoid process probable; if absent, it does not exclude the possibility of a severe suppurative process existing within the bone. What I have said in regard to temperature applies to adults alone. In children, an involvement of the mastoid process, either following an acute inflammation of the middle ear or following an acute exacerbation of a chronic suppurative process is always attended by a rise in temperature. In children, and especially in young children, this rise in temperature may be considerable, the temperature frequently reaching 103 or 104 F., or even 105. It is also noticeable that in child life symptoms of general sepsis develop quite early as a result of mastoid suppuration. While in adults it is rather uncommon to observe a septic curve in the temperature, excepting in those cases which have been long neglected, and where all the signs are very well pronounced, it is quite common in children to find evidence of septic absorption within the first twenty-four or forty-eight hours after mastoid involvement is suspected. Temperature, then, in children is a valuable point in making a diagnosis of mastoid involvement; in adults, it is of but little value, and the absence of temperature should never be taken as an indication that the mastoid is not involved.

Coming now to the physical signs which characterize involvement of the bony structures behind the ear, we have, as I have said, either a very profuse discharge or a history of a previous profuse discharge which has suddenly become less. The reason why I say that a profuse discharge from the middle ear may be indicative of a mastoid involvement is that where an otorrhea has persisted for a long time and where the discharge is exceedingly free, the surgeon must ultimately come to the conclusion that a larger region than the middle ear is inflamed, in order to account for the profuse flow. Those cases which are attended by a very profuse discharge from the tympanum, and where the drainage from the ear seems to be perfectly free, are seldom accompanied by pronounced symptoms; there is very little pain, only moderate elevation of temperature in children, and the attendant notices simply that the patient is becoming weaker and weaker each day, and is gradually losing flesh and shows some signs of systemic infection. Those cases in which the discharge becomes suddenly diminished are usually characterized by slight elevation of temperature in adults and a high temperature in children. These cases are also accompanied by severe pain. The occurrence of facial paralysis during the course of a middle ear inflammation was formerly considered a pathognomonic symptom of involvement of the mastoid, but later experience has taught us that facial paralysis is quite as common in those cases of middle ear inflammation in which there is no mastoid involvement as in cases complicated by mastoiditis. Its presence is, therefore, of no diagnostic value.

Another sign of great importance in determining the presence of this condition is local tenderness. If the mastoid is palpated carefully, pressure being made over the external surface of the bone close to the attachment of the auricle, marked tenderness will be elicited in a very large majority of the cases where inflammation exists. The point of greatest tenderness is usually located immediately over the region of the antrum. It is important in making this examination that the mastoid alone be palpated, and that the palpating finger does not exert any pressure upon the auricle. If attention is not paid to this point, the presence of either circumscribed or diffuse inflammation of the external auditory meatus will cause sufficient tenderness to mislead the surgeon. The palpating finger should be pressed firmly upon the bone, pressure being exerted backward so that the auricle is not moved, and no motion communicated to the fibro-cartilaginous meatus. In this way we elicit true bone tenderness and absolutely exclude any tenderness due to inflammation of the canal. The presence of tenderness over the mastoid tip is not to my mind of great diagnostic importance, excepting in those cases in which a mastoid empyema has ruptured through the internal surface of the process, and the pus has been evacuated beneath the attachment of the sternomastoid muscle. Here tip tenderness is naturally present, but, in addition to tenderness, we have a diffuse brawny swelling beneath the attachment of the sternomastoid muscle. This tumefaction is a much more prominent and important sign than tenderness alone. Tip tenderness in other cases can be practically disregarded. It is always wise, however, to examine carefully the attachment of the sternomastoid muscle to be certain that the mastoid abscess has not evacuated itself in the manner above described. Considerable stress is laid by some upon the presence of tenderness over the mastoid emissary vein. In a rather large clinical experience I have never found this sign to be of any value in enabling me to arrive at a diagnosis.

To sum up, then: Local tenderness is an important sign and is almost always present; the point of maximum tenderness is almost invariably the region of the antrum, tip tenderness being significant only in those cases where rupture has occurred at the tip beneath the sternomastoid muscle.

Otoscopic examination is also of great value in enabling the surgeon to make a diagnosis of this condition. On looking into the external canal in cases where the mastoid is involved, one is immediately impressed by a marked shortening of the meatus on the upper and posterior aspect. The upper and posterior wall of the canal sinks down so as to partially fill the lumen of the meatus, and obscures more or less of the upper and posterior portion of the drum membrane. In certain cases this sagging portion of the canal wall seems to be a continuation of the membrana tympani. In such cases the area of the fundus is much diminished in the vertical diameter. Any bulging of the upper portion of the membrana tympani in cases of middle ear suppuration should always be regarded with suspicion. Bulging in this region, together with sagging of the upper and posterior wall of the canal, as already mentioned, is easily explained on anatomic grounds if we remember that the roof of the external auditory meatus at its inner extremity constitutes the floor of the aditus ad antrum and of a portion of the mastoid antrum.

I have not said anything so far about the presence of tumefaction behind the ear. A fluctuating swelling behind the auricle is usually indicative of mastoiditis, the pus having perforated the mastoid cortex and burrowed beneath the periosteum. At the present day this condition is seldom observed in adults, the cases being recognized at a much earlier period. In infants, a fluctuating swelling in this region is occasionally observed in neglected cases. While always indicative of mastoid involvement, it is not always a sign that the mastoid cortex has been perforated. In young children the pus not infrequently escapes from the mastoid antrum through the aditus ad antrum into the tympanic vault, and then through the Rivinian fissure outward

along the upper wall of the canal until it reaches the external surface of the mastoid. These cases should always be treated in exactly the same manner as those in which perforation of the cortex is present, but the cortex will frequently be found to be intact at the time of operation. Quite different from post-aural abscess is the presence of edema behind the ear. Post-aural edema is, in my experience, much more frequently a sign of a furuncle on the posterior canal wall than of any inflammatory process within the mastoid.

Turning now to the treatment of cases of mastoiditis, the first point to be observed is to put the patient at perfect rest. So soon as there is the slightest suspicion, on the part of the surgeon, that there is danger of mastoid involvement, the patient should be kept absolutely quiet, should be put upon a fluid diet and the bowels freely opened by means of a saline purge. Absolutely free drainage should be established through the external auditory meatus. This is best done by making a free incision through the drum membrane. The incision should begin close to the posterior periphery of the membrane at a point below the tip of the malleus handle, and should extend upward into the tympanic vault. When the vault has been reached the knife should be carried upward and a little backward so as to sever freely the reduplications of the mucous membrane, which are so richly distributed in this region. The knife should then be drawn out on the upper and posterior wall of the meatus for a distance of at least one-eighth, sometimes one-fourth, of an inch, dividing all of the soft parts down to the bone. This incision serves the purpose of not only draining the tympanum freely but causes a marked depletion of the inflamed tissues, and relieves tension along the floor of the tympanic vault and mastoid antrum. After such an incision has been made the ear should be frequently irrigated with a warm antiseptic solution. The warm irrigation cleanses the parts mechanically, and also favors the unloading of the congested tissues. A sero-sanguineous discharge frequently persists for twelve to thirty-six hours after the incision has been made. I think that the value of local depletion thus obtained is often underestimated.

With reference to the abstraction of blood from the external mastoid surface, I am not in favor of the procedure. It was formerly the practice to abstract from one to three ounces of blood from over the mastoid by means of leeches or of wet cups in all suspicious cases, the object being to abort the inflammation. I have never been convinced that this measure is of the least value in averting the involvement of the bone, and it certainly adds much to the discomfort of the patient.

Regarding the local application of cold, much is to be said both for and against its use. Several years ago I was quite an enthusiastic advocate of the local application of cold as an abortive measure in mastoiditis. Further experience has taught me that the results obtained by the use of the ice-coil are in many cases but temporary, and that the evidence of the inflammatory process within the bone is simply masked by the use of cold. It is quite possible that the ice-coil or the aural ice-bag may prevent a further extension of the inflammation to the superficial structures. In many cases I am convinced, however, that where the inflammatory process does not advance in this direction it invades the deeper portions of the mastoid, and often extends through to the lateral sinus or to the middle cranial fossa. In many instances after the removal of the ice-coil, where its action has seemed to be perfectly satisfactory, and where it has apparently aborted bony involvement absolutely, the surgeon finds that in the course of a few days or weeks evidences of mastoid involvement reappear, and upon operation extensive tissue destruction is found to have taken place. I would not be understood as entirely condemning the use of the ice-coil or the ice-bag. In a very limited number of cases which have been under observation from the inception of the middle ear inflammation I believe that the use of ice is justifiable. In cases which have not been under the personal observation of the surgeon until there are some evidences of mastoid involvement, I do not advocate the employment of cold. In all instances where an attempt is made to abort a mastoiditis by means of the coil or of the ice-bag it should be remembered that the cold application should not be kept on for more than forty-eight hours at the longest, and in most instances not longer than thirty-six. In this connection it should be emphasized that when cold is applied it should be used continuously; the coil or ice-bag having once been put in position should be kept there for the entire period of thirty-six hours, only being removed when it is necessary for the surgeon to thoroughly examine the ear. It should also be borne in mind that having once taken off the cold application at the end of thirty-six hours its use should not be repeated. Nothing is more dangerous than to use the ice-coil for twenty-four or thirty-six hours, then remove it because the patient is free from pain, and in a day or two reapply it because the pain has returned. The mere fact that the pain returns is decisive evidence that bony involvement is present, and that operative interference is absolutely essential. The question then arises: "What measures are to be taken in a doubtful case of mastoiditis; in those cases where the tenderness is but slight, where the temperature is of no diagnostic value, and where the pain is only moderate?" I am heartily in favor in these doubtful cases of doing what may be termed an exploratory mastoid operation. If the surgeon feels fairly certain that there is mastoid involvement, or if, on the other hand, he is not absolutely certain that there is not an inflammatory process deep down in the mastoid, I believe that he is perfectly justified in performing an exploratory operation. Such an operation should be undertaken merely for the purpose of exploration, and the position of the surgeon should be clearly defined to the patient. If this plan is followed I am certain that there will be fewer cases of grave intracranial complications following mastoiditis. During the past year I have followed this plan, and can only say that I have never yet opened a mastoid in which I have not found some evidences of inflammation. Fully one-fifth of these cases I would have treated some years ago by means of the ice-coil. The results of early operative interference have certainly been very flattering; the wounds heal quickly, the discharge from the ear ceases, the hearing returns practically to the normal standard, and the time of convalescence is markedly decreased. The general condition of these patients has invariably improved immediately after the operation, and contrasts most favorably with those cases where a suppuration of the middle ear has continued for many months after the use of abortive measures. In many instances this suppuration has continued for an indefinite period. The dangers of the mastoid operation are practically *nil*. Out of 316 cases operated on I have had but 14 deaths. One died of facial erysipelas, 1 of septic pneumonia, 1 of acute nephritis, 1 of diabetes and 1 of marasmus. In all the others intracranial

infection had occurred before the mastoid operation was done, and consequently the fatal termination was in no way dependent on the operation—in other words, there has not been a single death which could be in any way traced to operative interference on the mastoid, whereas the cases in which intracranial infection had already occurred would undoubtedly have been saved if an earlier operation had been performed.

Regarding the particular operation to be performed, this must vary with the individual case. It can not be too strongly urged that any operation in this region must be performed under the most rigid aseptic precautions. The parts about the ear must be shaved, thoroughly scrubbed and covered with a moist bichlorid dressing before the operation. The usual aseptic technique must be observed in keeping the field of operation sterile. All instruments must be sterilized, and careful attention must be given to the cleansing of the hands both of the operator and of his assistants. These precautions are of the utmost importance in exploratory operations as well as in those where pus is known to be present. Even in an exploratory operation I advocate a very free incision. The incision should begin just below the tip of the mastoid, and should follow the line of auricular attachment, to a point above the meatus, being situated about one-quarter of an inch behind this line. The incision should extend through the soft parts down to the bone. All bleeding vessels should be secured with clamps. The anterior flap is then pushed forward by means of a periosteal elevator, exposing the upper and posterior margins of the bony meatus. The posterior flap should be elevated in a similar manner, and the margins of the wound separated by means of retractors. In all operations the surgeon should first enter the antrum as the initial procedure. No matter whether a perforation exists through the cortex, or whether the cortex is intact, the aim of the operator in every instance should be to reach the large pneumatic space in immediate communication with the tympanum. If the operation is done for exploratory purposes, this would naturally be the first step. Given a case where the operator finds absolutely no pus or softened bone in the deeper parts of the mastoid in the region of the antrum, it is not necessary to continue the operation. The upper and lower angles of the wound can be sutured, a small drain inserted into the mastoid antrum and an antiseptic dressing applied, and the case will recover in a very short time. The operation can not but exert a beneficial influence on the suppurative process within the tympanum, the establishment of thorough drainage through the posterior wound causing a quick subsidence of the inflammatory process. Where pus or softened bone is found on exploring the antrum, I then advocate the complete destruction of all pneumatic tissue within the mastoid; all of the cells must be exposed and their walls broken down by means of the sharp spoon. It is of particular importance to remove the tip of the mastoid process. Not infrequently we find, on entering the mastoid antrum, a little softened bone in this region. The remainder of the mastoid may be fairly firm until the surgeon exposes the large cells at the tip of the process, which will be frequently filled with pus. It is not an uncommon experience to find fairly healthy bony tissue between the middle ear and some portions of the mastoid process which are in a very bad stage of caries—in other words, the surgeon, having once discovered softened bone in the region of the mastoid antrum, is not certain to what extent the bone may be involved until he has removed every vestige of cellular structure from the mastoid, and until instruments come in contact with the firm inner table of the skull.

In speaking of the exploratory operation it will not be out of place to mention the exposure of the lateral sinus as an exploratory procedure. All of us have met with cases in which mastoiditis has been suspected, and where the surgeon has not been called in until the temperature has become very high, and where there are absolute evidences of septic absorption. If there is any suspicion that the lateral sinus is involved, it is always justifiable to expose this venous channel for the purpose of exploration. If the sinus appears perfectly normal, it is not necessary to open it. If, on the other hand, there is the least suspicion of the presence of a thrombus, the sinus wall should be freely incised, and the thrombus removed. The exposure, or even the opening of a healthy sinus, if the technique of the operator is perfect, does not endanger the life of the patient in the slightest degree. In doubtful cases the exposure of the sinus at the first operation may save valuable time and preserve the life of the patient.

Knowing as we do the fatal results which so frequently follow unrecognized cases of mastoid inflammation, or cases operated on at a late period, I wish to impress on the minds of my hearers the necessity of watching with the utmost care every case of middle ear inflammation where the symptoms are acute. Mastoid involvement may come on so insidiously as to escape observation unless the possibility of its being present is continually in the mind of the surgeon. To wait until symptoms are so pronounced that there can be no question as to the advisability of operation will often mean the loss of the patient's life. I would not be understood as advocating an operation upon the mastoid process as soon as there are any symptoms of a congestion of the mastoid cells; on the contrary, I believe in attempting to abort mastoid involvement by free drainage through the canal. This should always be the first step taken by the surgeon except in cases where there is evidence of perforation through the cortex, or where marked septic symptoms are present. Canal drainage having been established, however, and in the few selected cases an attempt having been made to abort the involvement of the osseous structures by means of cold, the surgeon should not hesitate, if the symptoms do not immediately disappear, to open the mastoid for purposes of exploration. The procedure is not only justifiable, but is indicated, and the surgeon who hesitates when such a condition is present does not do his full duty to his patient. I also wish to bring out the importance of doing a complete and thorough operation in every instance where the mastoid is found to be involved upon exploratory operation. I know it has been my own experience, and I believe it is the experience of my hearers, that the more mastoid operations we perform the more radical is the procedure made. In following up my cases during the last five or six years I find that the period of convalescence is very much shorter where an absolutely complete operation is done, removing all of the cellular structure of the mastoid, than where an incomplete operation is performed. Every vestige of cellular tissue must be taken away if a perfect result is to be secured. The presence of a small focus of diseased bone in any portion of the wound, while it may not necessitate a secondary operation, will certainly prolong the convalescence of the patient. On the other hand, if the operation is thoroughly and completely done, the wound

heals very rapidly, and the patient is saved a long and tedious convalescence.

DISCUSSION.

DR. J. H. HOLINGER, Chicago—We have in the middle ear and the middle ear process, accessory sinuses, namely, the antrum and the different cells of the mastoid. The more postmortems one has made the better he knows that in the acute as well as in the chronic suppurations of the middle ear we find the cells more or less filled with pus. This pus in acute suppurations disappears under two conditions. First these cells are small and the area of absorption of the pus is favorable. However, not alone the size of these cavities is responsible for the quick or slow absorption of the pus, but there is another factor in the character of the epidemic. In some epidemics you find typical involvement of the mastoid, and after three, or four, or five days the inflammation disappears. Again, you have hardly any pain in the mastoid and for three or four weeks the suppuration still persists, slight tenderness persists, and if you operate you will find enormous changes in the mastoid, even though the cells are not necessarily large. The Doctor does not seem to lay stress upon the tenderness of the tip of the mastoid. It is very often found that just at the end of the tip of the mastoid you have one quite large cell. I have operated upon three cases this spring where the mastoid antrum and all the rest of these cells were free, but in the tip of the mastoid there was as much as a teaspoonful of pus under high pressure. If at any part of these cells you have a little isthmus that closes up the communication you will have a considerable cavity. I have found as a regular symptom pain caused by pressure on the anterior half of the mastoid process. I have found it much oftener there than elsewhere. I should like to refer to the use of the sharp spoon that the Doctor advocates. Of course we have to break down the bony walls of the mastoid between the cells, but generally I would not use the sharp spoon in the antrum for the simple reason that you destroy then the mucous membrane that is left. Suppose that you have one or two cells that you do not entirely open, then you will have caused solidification and complete closing of the mastoid antrum and in this way you will possibly leave a cell without drainage. These cells later on are prone to bring on suppuration and a new mastoiditis. I have operated in the last two years twice in such cases in which I found a cell entirely shut off from all communication with the middle ear, and there had been caused in this way renewed suppuration. In one case I had to open the sinus and found a sinus thrombosis that had been caused by one of these cells. Thorough asepsis in a case of this kind is important.

DR. REDMOND W. PAYNE, San Francisco—I would like to ask Dr. Dench what is his method of caring for the wound after the operation. Suppose the operation is so radical as to reach from the antrum to the attic, thus throwing these cavities into one large cavity with the whole bone surface uncovered, does he carry on dressing of the wound and allow the wound to granulate or does he line this cavity with skin flaps provided by slitting up the cartilaginous meatus, etc?

DR. EMIL AMBERG, Detroit—Politzer speaks of the presence of the pus in the mastoid in cases of otitis media suppurativa. We may have pus here, but that does not necessarily mean that we have inflammation of the mastoid cells. I prohibit these patients lying on their back, in order to prevent, if possible, the extension of the inflammation to the cavity. Dr. Dench spoke of prostration in connection with mastoiditis. The Eustachian tube in children is short and the pus may readily go into the stomach and so derange digestion. I differ with Dr. Dench concerning the diagnostic value of the facial paralysis. Trautmann reports that he saw a case in which an exudate in the tympanic cavity caused facial paralysis, and in that case the evacuation of the exudate brought about a disappearance of the facial paralysis, twice. In these cases the facial canal is supposed not to be entirely ossified.

We know that leeches are helpful and that often cold or hot applications are helpful. Whether cold or hot applications may be preferred depends largely upon preference on the part of the patient. It is peculiar that, in similar cases, both cold and warm applications serve practically the same purpose. We know that cold is, to some extent, inimical to the growth of microbes and at the same time the confluence of blood as caused by heat may give better conditions for the resistance of the tissues. For instance, we know that in a certain heart disease tuberculosis is reported as not occurring so often. Another factor which is mentioned only as very hypothetical is the importance of the chemismus of the cell; for example, it is surprising that in incising abscesses we do not produce an infection. There seems to me two possibilities: It is possible that the antiseptic qualities of the blood serum are effective, and further that we have to deal with some peculiar condition of the cells. These questions are mentioned as purely hypothetical. The decision must be reserved for the future.

DR. S. A. OREN, Lanark, Ill.—I would like to ask about the value of peroxid of hydrogen in these cases where we open the mastoid cells.

DR. H. WOODS, JR., Baltimore—I agree with Dr. Dench in the general principle—that one's operations tend to become more and more radical as he becomes experienced in mastoid work. Yet I can not help recalling, in regard to one class of mastoid cases, the good results that used to follow a much less radical operation. I allude to cases, occurring in young children, of "dissecting tympano-mastoid" abscess. I remember a personal conversation with Dr. Sexton, a year before he died, in New York, in which he laid great stress upon this kind of subperiostcal accumulation of pus over the mastoid process. He found that it was only necessary to evacuate that accumulation. While we can not know the condition of the mastoid cells without opening them, many cases, especially in children, will get well with the less radical operation. Opening of the mastoid is a safe operation: but we are sometimes confronted with the question, when we find no opening in the cortex, whether it is absolutely necessary. I recall a case in which it was impossible to get a child to stay in the hospital. She was taken into the dispensary operating room. A large periosteal abscess was opened, and the patient got well in three or four days. In two other cases, operated upon last year, the cells were opened freely and nothing was found. There was some little otorrhea at the time. Whether these cases would have gotten well without opening the cells is a question; but it seems to me well worthy of remembrance that these cases sometimes do well if only the periosteal abscess be opened. Dr. Dench's opinions regarding cold corresponds with my experience. I doubt if I have ever seen a case in which cold "aborted" a mastoiditis, which, in the light of later experience, would not have disappeared without it. I would like to ask about the tip tenderness. Does the Doctor mean to say that tenderness at the tip is indicative of perforation through the tip into the neck? If so, our operative procedures must be altered when this symptom is present. I have often seen all the upper cells in good condition, and the one large tip cell filled with pus. Tip tenderness was marked, but I could find no perforation through the tip.

DR. H. G. SHERMAN, Cleveland—Our friends who see patients in large clinics may look at this in a radical manner. But those who deal with a large class of patients should observe conservatism and certainly do their whole duty. When suppuration begins no one can tell where it will end. I believe that is one of the greatest truisms in this line of work. Any man who has made a careful study of the anatomy of the middle ear and the structures of the middle ear and the cerebrum and the external parts, will appreciate that we can afford to be rather conservative. The class of patients I see will not permit me to open the mastoid except as a last resort; and in a very large practice that rarely occurs. I find in these cases of acute middle ear disease that the operation advocated by Dr. Dench of a free incision into the membrana tympani in connection with the use of the pneumatic speculum will, in the great majority of cases, stop the disease process. I would condemn as radical as possible the injection of the parts with bichlorid. The bichlorid of mercury in 1 to 5000 solution will injure the delicate tissues and anybody who knows the anatomy of the pneumatic cells knows that the solution can find an exit

only through an external opening. This question came up at the Ninth International Congress, and while in a way operative interference was accepted I noted that such men as Politzer and Macewen of Glasgow were conservative. And no man has accomplished greater triumphs than Macewen. Politzer divided the symptoms into objective and subjective symptoms. If the mastoid is swollen and tender, that does not indicate radical operative interference in every case. The application of leeches and the old-fashioned mustard plaster should not be discarded. The leeches, associated with the slitting of the membrana tympani and the use of the pneumatic speculum, will possibly stop those cases. If not we should make a Wilde's incision down to the bone and apply heat, which will stop another class of cases. I can not understand how a man can make an incision down to the lateral sinus with perfect impunity. I have seen in the hands of eminent men death occur with scarcely a moment's warning. I have known clever men to meet with fatal hemorrhage from the sinus. Such an operation is not justifiable unless we find symptoms of cerebral involvement with vomiting, pain increased by palpation extending to the occipital region, and in short we must be sure that we are dealing with an abscess or leptomeningitis before we take such a radical position. I am opposed to it because I recognize that it is not a simple thing to do. If you are treating the daughter of a man who is very particular in regard to the cosmetic effects, you can not cut into the mastoid freely without leaving a large scar; and you are opening up an avenue of infection. I recently had an old lady under my care with an acute inflammation of the middle ear which continued some six or eight weeks. The Doctor had assured her that she could return to Cleveland and that she would get well. I wrote to the Doctor that it was a long distance from New York to Cleveland. The patient did as the Doctor suggested. There came on a chill and a rise of temperature to 103.5. I told the husband that in order to save his wife's life we must evacuate the pus. But they confronted me with the Doctor's statement that she would get well. Gentlemen, she is well to-day. So I have seen cases recover upon whom I was not permitted to operate. In fact, we do not know how many of these cases will get well if we are conservative in treatment. I must have the most typical symptoms of cerebral involvement before I will go into the lateral sinus.

Dr. C. M. Cobb, Lynn, Mass.—It seems to me we have the same problem here as in general surgery. If you have pus the probabilities are that in a large majority of cases the pus will have to be evacuated by an artificial opening. If the cortex is thin, the pus may readily burrow through there; or if the cortex is not thin, it may go in a more dangerous direction. The question of cases getting well is largely a question of drainage. If the natural drainage of the mastoid antrum is good you will rarely get a mastoiditis of any consequence. My explanation of the cases that get well is that the aditus ad antrum is small and the swelling of the mucous membrane closes it entirely, but when the congestion subsides the drainage may become fairly good and the case recover without operation. But if the drainage is not good, the pus in the mastoid cells differs not at all from pus in other bony cavities. It may become encysted, but the probabilities are that eventually it will have to be evacuated.

Dr. J. F. Barnhill, Indianapolis—I very much wish such plain and rational discussions could oftener reach the whole profession. It is astonishing how the subject of mastoid treatment is so lagging, considering that every other branch of special and general surgery has made great forward strides. Dr. Dench and a comparatively small number of other eminent gentlemen of the United States have done much to bring it where it belongs, yet the fact remains that in the large body of medical men there is not that complete understanding of the subject, or interest in it, which there should be, and which its importance demands. But there are present symptoms of increasing interest, and I predict that if it is often and forcibly brought before the profession it may become a formidable rival of appendicitis in professional thought. The best treatment for mastoiditis is based upon the most rational of surgical principles. Better drainage is the one great object to be attained. The progress of the case at a given time is the determining factor as to what method of procedure shall be undertaken. If the case is seen early when the mastoid is inflamed, but contains no pus in its cells or antrum, securing free drainage by means of a thorough paracentesis, as described by the author, is of the highest service in aborting mastoid abscess. However, if pus has already formed it would be irrational, because unsafe, to depend upon the paracentesis alone, and so the mastoid operation should be performed, because it is the only certain way of relieving the part of its septic contents. Dr. Dench's reported cases show how successfully the mastoid operation may be performed, and compares favorably with results of operations far better known and with more approved procedures. I know of no abdominal surgeon who has made 316 abdominal sections with a smaller death-rate than is here shown for mastoid surgery. Granting that the necessity for mastoid exploration is as great as in abdominal exploration, statistics as here given justify the one as much as the other. Dr. Sherman says his patients will not permit the mastoid operation. We all find some objection of that kind, but can remember when the abdominal surgeon experienced like difficulties, until he convinced the profession and public on every possible occasion by voluminous statistics that there is little danger in the operation itself, till now he operates with little opposition from profession or public. Otologists may profit by this example and become more aggressive to the betterment of their specialty.

As to how radical any mastoid operation should be, I wish to emphasize the statements already made, by saying that it should be as radical as the disease is extensive, and that any operation falling short of removing all the diseased tissue will not only fail to cure but will bring the operation into disrepute. The necessity for secondary operations is proof positive that the primary operation was imperfectly performed. Therefore no operator should undertake to do this work unless he is prepared to follow up the disease wherever it may lead, opening every cell, the middle fossæ, or even the lateral sinus, as well and thoroughly as in case only a simple opening into the antrum is all that is required. Extensive operations require large wounds, but large wounds, free from diseased tissue, heal better, quicker and more certainly than smaller ones with necrotic or suppurating areas within them.

Dr. A. E. Prince, Springfield, Ill.—I am not quite in accord with the conservative idea expressed by Dr. Sherman. I live in a very small town and I do not hesitate, whenever duty calls me, to suggest an operation, and I do not know that there is any difficulty on the part of the public in accepting my recommendations. I think too many of us discuss the question too much with the patient and leave the patient to make up his mind whether or not to have an operation done. I first make up my own mind and then tell the patient whether or not it is my advice to have an operation done. But when you discuss with the patient the advisability of doing the operation you raise many queries that often cause them to postpone the operation. For many years I have been doing what is called the conservative mastoid operation. I operate when there are swelling and tenderness and symptoms of suppurative mastoiditis. I believe in such cases Nature would probably attempt to make an external opening if I did not operate. The operations that we do deserve credit for are those upon cases in which the mastoid is not invaded, in which the escape of pus from the antrum through the infundibulum is obstructed and death from meningitis is likely to occur in a very few days. In those cases, when I go into the antrum before I find pus I think that I may save the life of the patient. I hope to educate the medical profession in my vicinity so that whenever there is a patient with severe pain and without any tenderness or redness of the mastoid, or with a very small amount of pus escaping through the meatus, it will be recognized as a case that requires the most careful and prompt decision about opening the mastoid before the patient should die. In my own observation in the vicinity where I live, the last few months there have been two cases die from meningitis that were distinctly ear cases and could probably have been saved by operation. In those cases the surgeon put off operation too long. After hearing a paper that I read before the Society recently, many of the members

said that they wished they could have known it twenty years before, for they felt they had all seen cases that probably would not have died had the operation been performed.

I do not regard the opening of the antrum as dangerous. The location is plain, and the free drainage will permit you to say to the patient that the operation, if done sufficiently early, will almost surely give a favorable result. But I must confess my ignorance in regard to the after-treatment in those cases in which we have opened the sigmoid sinus. I am not certain in those cases as to the best treatment after operation.

DR. DON M. CAMPBELL, Detroit—It seems to me that the aspect of this mastoid question in the last ten or fifteen years has changed markedly, as has been the case with many other forms of disease. My recollection of the status of the question and the clinical aspect of the cases as I observed them ten or fifteen years ago is that we seldom had in those days a serious involvement of the mastoid cells following or complicating an acute suppurative otitis media. I do not mean to say that it was an unknown thing, but compared with the condition to-day, those cases were much less frequently observed. To-day, since the widespread grip epidemics have invaded the country, we find many more of these cases go on to serious involvement of the mastoid cells and actually demand surgical interference for their cure. That condition has been a problem to me, and the investigation of the bacteriologic aspect of these cases has been of a good deal of interest. As far as my own investigation along that line has been concerned, I have not been able to find or demonstrate any special infection. We have found streptococcus, staphylococcus, and mixed infection. I would like to know Dr. Dench's opinion as to whether it is a special infection or the effect of the grip epidemics on the general economy that has made these cases so much more frequent.

DR. C. S. BAKER, Bay City, Mich.—I think Dr. Prince has hit the keynote. There has been too much conservatism heretofore in the handling of these cases. The old Wilde's incision and the old methods of operating have passed away. Every surgeon should be conservative, but I have an opportunity to observe the results of procrastination far oftener than should happen. The profession at large has not been sufficiently educated in the conduct and management of this class of cases. Wherever pus is found it should be evacuated. Of course, if the patient refuses evacuation of the pus then your responsibility ceases, but your duty is not done until you insist on doing what, in your judgment, is the proper procedure. We should not discuss the case with the patient but we should give him our advice as to whether or not the case should be operated upon. The trouble is, we do not know when the last safe moment for waiting comes and when the patient can not recover. I have seen a patient with the mastoid cells entirely filled with pus, the bone ulcerated through into the cranial cavity, within a week from the onset of her disease: again, I have seen a patient in whom the suppuration existed two or three months with few symptoms and only slight swelling or tenderness, and still there was great breaking down of the cells. In another case on operation the probe passed directly through into the temporal fossa, although the patient had not missed a day from school. So there is no symptom, or group of symptoms, that will absolutely indicate when the danger point is passed. When we are satisfied that the antrum is not having proper drainage we should give it a suitable outlet for the escape of pus externally.

DR. D. A. KUYK, Richmond, Va.—Much depends on the patient, his physical condition, etc. It is my experience that the symptomatology presented by the negro differs somewhat from that of the white race. National characteristics, tendencies, and idiosyncrasies demand careful consideration in forecasting the result of the mastoiditis or, in fact, almost any other inflammatory condition. For instance, I doubt very much if the American is as prone to mastoid inflammation following suppurative ear disease as is the European, either in point of frequency or severity. The education of the laity and of the profession has been referred to and is a most important feature. The surgeons have by persistent writing and teaching aroused the profession and laity to the importance of early recognition and treatment of appendicitis and many other surgical diseases, and so must aurists by concert of action, persistent writing and plainly worded, concise papers, before the various state societies, institute an educational crusade; the general practitioner will soon become so fully convinced of the urgent necessity and the great importance of the early recognition of mastoiditis that many lives will be spared that might otherwise have been lost by the indifference or ignorance of the physician. To me it seems that the average physician knows less about mastoid disease, a condition endangering life, than about glaucoma, of which there is still too little known, and too seldom recognized, a condition in which sight may be lost but in which life is not at stake.

DR. J. HOLINGER—I must state that in the two secondary operations I did not operate the first time, but only made the secondary operation. I do not want to have the impression prevail that a secondary operation was necessary after I had done the primary operation.

DR. ROBERT LEVY, Denver—The operation, it seems to me, shortens very materially the convalescence, whatever else may be said for or against it. The danger of the operation has never seemed to me excessive, although I must confess I approach it with a certain degree of temerity. This is not caused by my own experience, but the experience of others should increase the care with which we approach this operation. Again, the hearing is to a considerable extent much better preserved, and that should enter into our consideration of the necessity for the operation. I have in mind two cases in the same family, the patients being sisters. The first girl was taken during last winter with characteristic symptoms. The family physician did not see the necessity for operation and consequently did not call in consultation. During the time she was progressing slowly and her symptoms were disappearing gradually, the second sister was taken ill, but with so much violence in the attack that the physician could not help calling consultation. The second girl showed some constitutional symptoms. There was a double mastoiditis and she was operated upon. She was taken sick a considerable period of time after the first girl. A double operation was performed at one sitting and she made a very prompt recovery. When she was discharged her sister was still suffering considerable pain and the pus was still being discharged from the ear. The result was that the girl operated upon made a more rapid recovery and has much better hearing than the other girl. It seems to me that it is wise not to irrigate after a free incision in these cases, and in this respect I would beg to differ from Dr. Dench. Sometimes I find a much better procedure is to clean with sterile gauze, and then to drain with sterile gauze instead of irrigating. I am satisfied that in other cases in which irrigating has followed a free incision harm has been done. Another point which was brought out, is the character of the epidemic, so to speak, that should also determine very materially our action in the cases. It seems to me we too seldom make, after a free incision of the drum membrane, a bacteriologic examination. If this is done we may often find help in the determination of the nature of the infection and its prognosis.

DR. DENCH, in closing—I am in perfect accord with most of the statements Dr. Holinger makes, but there are one or two things that I do not believe. If we have pus in the mastoid I do not believe that it will be absorbed and the patient get well. But I do believe, as has been said by Politzer and as I mentioned in my paper, that in these cases we have congestion of the mastoid cells and we may then get absorption, but it is my experience that this never occurs after the formation of pus. In the epidemics of grip in successive years we find the mastoid complications vary exceedingly. In the present epidemic of grip, which has been rather severe in New York this year, I have failed to find a case of acute otitis without some tenderness over the mastoid tip. In reference to the use of the sharp spoon in the antrum, I feel as certain that the Doctor is wrong as he feels he is right. I think it is important to carry the sharp spoon down and make the passage from the middle ear to the antrum larger so the ear will drain thoroughly, and if the Doctor does that he will not have the infection of any cell in that neighborhood, because there is no cellular tissue left after you get down to the hard bone.

Failure to do this is a frequent cause of delayed convalescence and often the cause of a secondary operation being necessary. A little drop of pus may become imprisoned and not be evacuated at the time of operation, but if you use the sharp spoon you will evacuate it. I had a case this winter which brought that out very nicely. I entered the mastoid antrum; with the spoon I opened a cell and found a perforation with pus next to the dura, but separated from the collection in the mastoid antrum by a wall of apparently healthy bone. Simply by that procedure I saved the patient from serious infection. Dr. Payne has asked me about the after-treatment of these wounds. I simply pack them and let them heal up from the bottom. Turning-in of the skin flaps I have used only in the radical operation. As to filling up the large cavities with a blood clot, I have had no experience. One gentleman has had considerable success in filling up the cavities in this way, but I have had no experience with it. In New York they have tried that but the patients had promptly a temperature of 104 or 105, and the clots had to be taken out, and so I have not tried it. I find the operation in the way I do it gives good results and does not leave a very bad scar. As to the effect of gravity, I do not believe it makes much difference whether the patient lies on the back or on the side. As to facial paralysis, I do not think that is of any value as a symptom of mastoiditis: there are quite as many cases of facial paralysis without mastoid involvement as with mastoid involvement.

I am always afraid of peroxid of hydrogen, because the large amount of gas may force infective material into the deeper tissues. If we have a small perforation through the roof of the tympanum exposing the dura and there is an effort on the part of Nature to seal that off with adhesions, these adhesions may be ruptured and you may get a diffuse in place of a circumscribed meningitis. Dr. Woods spoke of the operation upon children in cases of so-called temporal mastoid burrowing abscess which Dr. Sexton described in his book. I am aware that many of those cases do get well with a simple incision, but I think it is unsafe. I was taught a lesson in regard to that by a little patient in whom I evacuated an abscess by simple incision. I did not go into the antrum. Everything seemed to be doing nicely and then the patient became comatose and I found an accumulation of pus over the squamous plate, with perforation through the squamous plate, and the patient died promptly of meningitis. So I think we should go promptly into the mastoid antrum; we should be certain of the condition with which we are dealing. Tip tenderness always indicates a rupture through the tip of the mastoid. If the tenderness spreads up in the direction of the antrum I operate. But I have never gone into a case for tip tenderness alone without rupture through the tip. I have operated upon cases in which I had tip tenderness first and antrum tenderness later on. But I rely upon the antrum tenderness. I do not believe that Dr. Sherman is the only one in this room who has good patients, and my remarks are not based altogether on hospital practice. I do not think that can account for the difference we have in our views. He says bichlorid of a strength of 1 to 5000 is irritating. If that is so we should make it weaker. After you open the tympanic cavity by means of an incision you could not, by forcing a fluid into the canal, drive it out through the mastoid antrum. The air in the mastroid cells would prevent the fluid entering there. While I agree with Dr. Levy that in some cases drainage with gauze may be successful, I do not believe there is any danger in irrigation and I believe that irrigation is the best means of cleansing the canal. In reference to Wilde's incision, I believe it to be absolutely useless. I would rather wait a day and then do a complete mastoid operation. In the first place, Wilde's incision is absolutely unnecessary. If you make an incision in the drum membrane and along the canal you relieve the tension much better than by incision over the mastoid. I do not think Dr. Sherman meant to say that he would wait for symptoms of cerebral involvement before he would operate, for certainly no man would wait for those symptoms before doing so simple an operation. Death from opening the lateral sinus is not likely to occur if the surgeon is careful. The hemorrhage can be stopped entirely by pressure with the finger and then the application of a piece of gauze. You can get at the sinus and do a thorough operation. Dr. Prince asked about the after-treatment. I am glad to hear the Doctor's remarks, for I think he is educating his people in the right direction. In reference to the after-treatment of these cases my practice is, after the incision of the sinus, to control the hemorrhage from above and then to clean out the cavity so that I get free hemorrhage both from above and below. My finger is then placed on the sinus which is bleeding. I then wind up a piece of gauze and pass it in so as to stop the hemorrhage from the sinus by pressure. To prevent infection of the sinus I tampon first the antrum and the mastoid cavity and then I put in a separate gauze tampon between the sinus and the tampon in the mastoid wound so as to wall that off completely from the infected area, that is, provided I have found the sinus healthy. Thus I tampon thoroughly and I have never had an infection. Probably I have done this, taking out clots, some twenty-five times, and I have never had a death. Dr. Amberg spoke about the particular kind of infection. I think that is important but I have never done any work along that line. From a number of colleagues I have heard that the infection most frequently present is the streptococcus infection, and such cases more frequently go on to mastoid involvement than when we have the pneumococcus or staphylococcus infection.

THE PREFERABLE METHOD OF URETERO-URETERAL ANASTOMOSIS.*

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Injuries to the ureters are so common in conjunction with pelvic and abdominal surgery that a familiarity with conservative methods of dealing with them is of great importance. This necessity is particularly noticeable when one reads discussions in which the foremost surgeons of the age report cases of nephrectomy for injuries of the ureter during abdominal operations and for uretero-vaginal fistulæ. It is not necessary to mention here the ease by which most of such grave operations are obviated by more conservative work. Recently I found six cases of this kind reported in one discussion, all of which apparently could have been successfully treated by ureteroplasty. Nor is it necessary to refer to the totally different indications of uretero-ureteral anastomosis and uretero-cystostomy. The former of these two, however, seems to be dreaded and misunderstood. A recent journal review of Von Gubaroff's case mentions the possibility of it for divided ureter when utero-cystostomy can not be done. To one familiar with both operations such a statement approaches the ridiculous. There can be no question that when both operations are practicable uretero-ureteral anastomosis is the better, as it restores the duct to its natural state and does not endanger a faulty vesico-ureteral junction as was noted in the cases of Pozzi, Boari and Polk.

Experiments on the very small ureter of the dog caused an unwarranted fear of urinary leakage and local injurious contraction. A sufficient number of operations have been reported to show that these points of danger have been exaggerated. But two cases of urinary leakage have been mentioned and in these it has not interfered with perfect results. In but one case (Schopf's), the first, has any subsequent narrowing been noted, and in this, to tuberculosis, which caused the fatal result, the narrowing may be attributed.

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This operation has been done by four different methods, namely, end-to-end, end-in-side, end-in-end, and lateral or side-to-side. These have been modified by different surgeons, as will be later mentioned. The end-in-side, known as the lateral implantation of Van Hook, has been done a sufficient number of times to prove beyond doubt its success. Since the preparation of my paper for the American Gynecological Society last year[1] in which were mentioned five cases, another successful one, done by Dr. George Goodhue, of Dayton, Ohio, has been communicated to me, making six in all.

The end-in-end plan has been followed 12 times, once by Von Gubaroff,[2] once by B. B. Davis,[3] once by myself and nine times quoted in the paper mentioned of last year. In Von Gubaroff's case an operation was done for the removal of an enormous uterine fibrosarcoma and a bit of the right ureter was carried away with it. Death occurred in one month. An autopsy revealed a perfect result of the operation on the ureter. Davis' case ended successfully.

The report of my case is as follows:

E. R., white, 32 years of age, widow, though married fifteen years IV-para, was admitted to Columbia Hospital, May 30, 1900, complaining of pelvic pain and an occasional irregular bloody vaginal discharge which had existed eighteen months, but had recently been much exaggerated though she was in the constant care of a quack doctor. The following day curettage and cauterization with chlorid of zinc was done and June 11 radical operation for cancer of the uterus was performed,[4] removing nearly the whole of the vagina with the uterus, its ligaments and appendages. The left ureter was in a mass of enlarged glands at the iliac bifurcation and about one inch of it was resected. The upper end was invaginated into the lower by the method of Poggi, using three sutures of No. 00 silk, which passed entirely through the lower end and the muscular and fibrous coats of the upper. These were doubly needed and served to pull the upper into the lower end after forcible dilatation of the latter. Over this interrupted catgut sutures were applied. The duct was free for three inches below the point of suture and at one point was sutured to the wall of the pelvis to prevent entanglement in the gauze packing, incident to the operation. She made a complete recovery without leakage and is still in good health.

Thus twelve operations by this method have been done with two deaths, neither of which was attributable to the operation, unless the shock which caused death in one of MacMonagle's three cases was partially due to this feature of the operation. MacMonagle and myself dilated the lower end before making the anastomosis and in the other eight cases the lower end was split on one side for varying distances up to 4 cm. in Von Gubaroff's case.

The end-to-end method has been done, both by transverse and oblique anastomosis. The latter has been done but once on man. In this case, done by myself more than five years ago, the patient is still free from any annoyance from the anastomosis. During the past year Kelly[5] has reported a case done by the transverse plan of this method, which resulted successfully, and which, added to my table prepared last year, makes a total of thirteen cases. Two of the thirteen ended in death in twenty and forty-two days, respectively, from conditions independent of this procedure. Henry Morris, on page 38 of his work on "Renal Surgery," 1898, mentions a case in which he divided a ureter, July 21, 1897, in doing abdominal hysterectomy. The ends were united, but the patient died on the third day. At the autopsy the junction of the two ends was found to be water tight. No description of the method employed is given.

Thus it will be seen the ends of the severed ureter have been united 33 times with no evidence of ureteral incompetency as a result. The side-to-side anastomosis has been done experimentally by D'Urso and De Fabii.[6] It has probably not been done on man.

RESULTS.

Experiments on dogs demonstrated the feasibility of Van Hook's lateral implantation, and on man the results have been equally good. The transverse end-to-end and the end-to-end-methods were dismal failures on dogs. But the oblique end-to-end seemed sufficiently safe on them. The side-to-side anastomosis experiments offer bright prospects in suitable cases. Notwithstanding the bad results attending some of the experimental work not one of the thirty-three operations on man has been unsuccessful, and twenty-six of them were done by the end-to-end plan, which was formerly thought to be impossible, or by the end-in-end method of Poggi that Tuffier and Budinger denounced so unqualifiedly as a result of their experimental work. They found peristalsis of the duct always pulled the upper end out of the lower, an accident that never occurred on man. As previously mentioned, all these methods, as practiced on man, have been highly satisfactory, though in six cases death occurred from conditions foreign to the ureteral injury.

The indications, however, are not the same for all. In a given case one may be easily applicable while another may be well-nigh impossible. Most of these operations have been for accidental section of the ureter. The duct has been firmly ligated above, or both above and below, and it has been crushed by forceps near the site of section. Such cases require a resection at times and in some a section of considerable length has even been unconsciously removed with a tumor of some neighboring structure. Such loss of ureteral tissue also creates one of the conditions to be met in these operations. Another one, encountered by Emmet and Kelly, is dilatation of the upper end and still another is the direction of the cut severing the ureter. The thickness of this duct is occasionally of the utmost importance.

According to Van Hook's description of his method of lateral implantation, one and a half inches of the duct must be utilized in the operation. The lower end is ligated and, beginning 0.5 cm. below the ligature, a longitudinal slit 1 cm. in length is made in it. Through this opening is drawn the upper cut end, by means of sutures passing outwardly through its wall some distance from its end. These pass outwardly through the wall of the receiving end of the ureter 1 cm. below the incision, or 2.5 cm. from the ligature. As the ligature is probably placed at least 1 cm. from the end, these sutures penetrate the wall of the lower fragments at least 3 cm. from the cut end. They have previously passed through the upper part about 1 cm. from the cut end. Therefore, when these sutures are tied they coaptate points of the ureter that have been at least 4 cm. distant from each other. This is in

1. Annals of Surgery, 1900, xxxii, 165-194.
2. Centralbl. f. Chir., Feb. 2, 1900, abstracted in Phil. Med. Jour., 1901, vii, 888.
3. JOURNAL A. M. A., 1900, xxxv, 1669.
4. Am. Gyn. and Obst. Jour., April, 1901.
5. JOURNAL A. M. A., 1900, xxxv, 862.
6. Supplemental Policlinico, Roma, 1898-9, v, 1249-1250.

the normal ureter. In Emmet's case, in which the upper end was dilated, the slit in the lower end must have been correspondingly longer, having always to be equal to the circumference of the introduced end. For the side-to-side method fully as much length of the ureter will be necessary. For the end-to-end method it is evident some portion of the length of the duct will be required. Robson found it necessary to utilize one inch of it in his case. Noble split the lower end three-eighths of an inch and the invaginated end probably passed fully as far beyond the split, making three-quarter inch invagination. In my case, in which the Pozzi plan was followed, the invagination was but about three-eighths of an inch. In the oblique end-to-end plan the amount of waste tissue varies from nothing, when the severing incision is oblique, to an amount depending upon the extreme diameter of the ureter with transverse ends, probably never more than three-quarters of an inch. It is readily understood that an oblique section of the ureter, by accident or otherwise, is readily sutured end-to-end, without loss of continuity. But if the section be transverse and the ends trimmed obliquely loss of continuity will depend in amount upon the degree of obliquity and the extreme diameter of the duct at the point of suturing. In the transverse end-to-end no loss of continuity is necessary to the process, provided the section has been made transversely. It will thus be seen the transverse end-to-end makes no demand on the length of the ureter, the oblique end-to-end requires a small amount, the end-to-end from three-eighths of an inch, by the Poggi method, to 4 cm. by Von Gubaroff's modification, the side-to-side about one and a half inches, and the Van Hook plan at least the same amount. In such cases as Emmet's, done by this plan, and Kelly's, by the transverse end-to-end, in which the upper end was much dilated, considerably more of the length of the duct would be required by the Van Hook method. Fortunately this duct is very elastic and can be successfully repaired if even three inches of its length be lost, without loosening the kidney and anchoring it nearer the bladder. But an operation that requires at least one and a half inches for such union will not be as applicable as one requiring less or even none of its length for this purpose, as shown by Allen's case. It would, therefore, seem the transverse end-to-end must be the preferable method so far as length of the ureter is concerned, except when the ends are already cut obliquely, in which case the oblique method would be the most economical. Next would come the end-to-end plan of Poggi, or the oblique end-to-end, next the Robson modification of the Poggi, and least available, the Van Hook, which practicably is inapplicable when more than an inch and a half of the duct has been cut away, or the side-to-side plan of D'Urso and De Fabii. When the upper end alone is dilated, as occurred in the two cases mentioned, the oblique end-to-end and the side-to-side are clearly the best plans to adopt. It is very difficult to get a large end into the lumen of a much smaller one, as related by Emmet, or to unite them transversely, end-to-end, as done by Kelly. In the former great forcible dilatation of the lower end is necessary, whether this enlargement be from urinary stasis, or thickening of the duct due to inflammation about a calculus, or other cause. And in such as Kelly's, considerable puckering of the upper end is liable to occur, unless a slender triangular piece be cut from one side of it, which complicates the operation and invites failure. In such cases the lower end could well be cut obliquely, thus giving a larger surface for approximation with the transverse end of the larger upper end. This would prevent puckering in the end-to-end and choking of the lower end in the Van Hook operation, and would not cause any urinary stoppage from angulation. The danger from this latter should not be expected to be as much as by the Van Hook operation, in which it has been proved, by Bloodgood, to be practically nothing in the normal ureter. If both ends are dilated, one of the end-to-end methods would be particularly easy, and even the Poggi would be simplified, but the Van Hook would be still less applicable, because of the necessity of increasing the lateral slit to receive the large upper end. On theoretical grounds constriction at the site of union should occur in the Poggi and Van Hook operations, but it has not been known in man. Whether such condition would result were the injury at either of the three narrow points of the ureter is yet to be learned. Certainly the end-to-end methods seem less likely to be followed by local undue narrowing of the duct.

From the points mentioned, the end-to-end or the end-in-end method are applicable to every case in which the end-in-side or side-to-side plans could be used, with one single exception. The reverse can not be said. With the improved technique they are as safely done and in even less time. It would, therefore, seem the ingenious plan of our splendid American surgeon, Van Hook, would scarcely ever be needed, that the end-to-end plan is most applicable, and next to it, the Poggi end-to-end. With these two latter methods the surgeon should be able to successfully repair any injury to the ureter, except of its very lowest part, involving a loss of its length not exceeding three inches.

OSMOTIC PRESSURE AND ITS RELATION TO UREMIC MANIFESTATIONS.

A CONTRIBUTION TO THE PATHOGENESIS OF UREMIA AND KINDRED AFFECTIONS.*

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It seems to me that we were laboring in a wrong direction when we—though in vain—tried to fasten the origin of uremia and kindred conditions upon a purely physiologico-chemical basis. By this I do not mean to imply that the various excrementitious substances which, by their retention in the blood, are alleged to give rise to these grave disorders, remain without any influence whatsoever upon the causation of the latter. Their participation, however, primarily at least, I deem not of a purely chemico-toxic nature.

Most of these effete products, with the exception of some inorganic urinary constituents, in themselves are, if at all toxiferous, certainly to a limited degree only. The greatest poisonous qualities are exhibited by the potassium salts—the chlorid, sulphate and phosphate of potassium. They are, however, contained in too insignificant amounts in the blood serum, even when an accumulation has taken place, to ever call forth paramount toxic phenomena. Besides, the syndrome of potassium is not entirely congruous with that of the

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uremic state. Intermediate substances in sufficient quantities to give rise to toxemia enter the blood current but rarely, and in case they do the subsequent intoxication is certainly not one to be confounded with uremia.

Intravenous injection of urine, first attempted by Feltz and Ritter, and later taken up with great vigor by Bouchard and his followers, has virtually demonstrated nothing beyond the facts known to us before, viz., the symptom-complex which we designate as uremia is not the consequence of a single toxic principle, but it results from the retention of all those substances which normally enter into the composition of urine.

Ignoring a hypothetic toxalbumin, which if present at all can not be a primary excitor, we do not find in the blood of uremia any other factors but those prevalent in the normal state. The only difference lies in the quantity. Uremia thus being an auto-intoxication by retention of normal products of metabolism and catabolism, in the first instance, is therefore rather due to a physical than a chemical anomaly.

OSMOTIC PRESSURE.

A salt or an organic compound which, when added to a liquid, unites homogeneously with it, is soluble in the liquid. If such a solution is brought into contact with the same solvent or with a less concentrated solution of its own nature, a transmission of the substance in solution will ensue and continue until both solutions have attained a congruous degree of concentration. This power of migration of the molecules is known as diffusion. If, on the other hand, the more concentrated solution is prevented from coming into direct contact with the solvent or the solution of lesser density by a semi-permeable membrane, permitting the passage of the solvent but not that of the particles of the dissolved substance, the inherent energy of the latter will display itself by exerting a certain pressure upon the membrane. This energy, designated as the osmotic pressure of dissolved substances, is analogous to the pressure of gases, is subjected to the same laws as the latter, and varies with the quantity of the salt or organic substance in solution. Accordingly, diffusion and osmotic pressure are but different phenomena of one and the same energy. If the latter manifest itself by the migration of particles of substances in solution it is diffusion; if by tension, it is osmotic pressure. Osmotic pressure is dependent upon the molecular concentration of the solution. In the first instance the degree of osmotic tension of a solution is determined by the number and not by the weight of molecules in a known volume of solution.

It is analogous with the pressure of gases and is an enunciation of the kinetic energy of the molecules. The importance of the osmotic processes for the organism in the healthy as well as in the pathologic condition has of late only found due consideration. All organic matter is saturated with water. The cells of the body are more or less permeable by water. This is the solvent for the salts introduced with the nutriment. If the contents of the organism on soluble salts and on water remain unaltered, so that for a certain period neither salts nor water are introduced nor eliminated, all the watery constituents of the organism would become one homogeneous liquid, and the same osmotic pressure would prevail over the entire system, in the cells as well as in the extracellular liquids.

Such an absolute equilibrium between intracellular and extracellular fluids, although the organism aspires to it during all phases of life, in reality does never occur in the normal state; for the moment fresh nutrient salt molecules are dissolved by, or thrown out of, the solution the equivalence of the osmotic pressure ceases to exist.

Augmentation of osmotic pressure in the cell through increase of dissolved molecules may call forth the following eventualities:[1]

1. If the cell walls are fully permeable for the salt molecules, these will pass from the cell, the place of higher concentration, to such of lower density, until the equilibrium is re-established.

2. If the cell wall is impermeable for the salt molecules, these will exert a pressure upon the former and water will penetrate into the cell; this is followed at first by concentration of the liquid in the immediate surroundings of the cell, and later on by uniform concentration of the liquid in a larger circumference.

3. If the cell wall is to some degree only, but not absolutely, impermeable for the salt molecules, a migration of the latter from the cell and an infiltration of water will ensue synchronously; thus a process of diffusion occurs with one of osmosis.

THE OSMOTIC CONDITIONS IN THE BLOOD.

The osmotic pressure of a solution for physiological purposes is generally compared with that of the blood serum. By the term "isotonic solution" we understand one which exerts an osmotic pressure alike to that of the serum; by the term "hypertonic solution," one whose osmotic pressure is greater than that of the serum; and by "hypotonic solution," one whose osmotic pressure is beneath that of the serum. If a drop of blood is permitted to fall into distilled water, the salts and coloring matter of the corpuscles are dissolved out. This phenomenon will not occur if, instead of distilled water, a salt solution of certain concentration is employed. The corpuscles, unaltered, slowly descend to the bottom of the vessel. A salt solution of just sufficient concentration to prevent the escape of the coloring material from the erythrocytes is tonic. Every specimen of blood thus requires a specific salt concentration.

Plasma and serum are always hypertonic, that is, they exert a greater osmotic pressure than do the salt solutions which are isotonic with the blood corpuscles. Were the former's concentration but isotonic it would not suffice to prevent corpuscular disintegration during active metabolism, as the admittance of but a limited amount of water into the circulation would cause a solution of a part of the corpuscles. The salts derived from the disintegrated erythrocytes increase the concentration of the surrounding liquid, thus checking further corpuscular solution.

The osmotic pressure of the plasma may be subjected to certain fluctuations during the course of the day, the most pronounced deviation from the mean occurring in the early afternoon hours. The fluctuations in osmotic tension must be due to an increase or decrease of salts in solution. We may assume that either the contents or salts of the plasma remain stationary, and the water diminishes, or that the amount of the latter persists unchanged and that new salt particles are carried into the plasma. Without going into further details as regards this point, I merely wish to state that, according to my observation,[2] the somewhat augmented afternoon alkalescence of the blood and the diminished urinary acidity

1. Koeppe: Physikalische Chemie, etc., 1900.

2. Heinrich Stern: Some Observations on the Chemical Reaction of Human Urine; Med. Rec., Oct. 29, 1898; and Some Observations on the Relation of the Alkalescence of the Blood to the Urinary Reaction; Med. Soc. of the County of N. Y., May 27, 1901.

or the latter's alkalinity during the same period occur independently from the ingesta, at least to a certain degree. The ingesta in this respect seem to act as accidental modifiers only. The increased osmotic pressure of the plasma and serum during the afternoon hours—it being entirely dependent upon the latter's concentration and consequently on the amount of salts dissolved in it—appears to be due to the same causes as is the increased alkalescence of the blood, that is, to certain processes in association with internal respiration or oxidation. Naturally the direct introduction of a sodium chlorid solution or the injection of large amounts of sodium chlorid or some other salts results in an increased osmotic tension of the blood plasma. The ingestion of water reduces the osmotic pressure to a limited degree; the more directly water is introduced into the blood current the more certain and pronounced is the action in this regard; by whatever mode water is introduced, however, the decline in osmotic tension is but for a very brief period.

The molecules of a number of compounds—salts, bases and acids—when dissolved are divided up, are dissociated into ions. The higher the dilution the more perfect the dissociation as a general rule. The electrical conductivity of a liquid is dependent on the movements of the ions which themselves are charged with electricity.

Substances capable of undergoing dissociation are electrolytes; an ion plays the same rôle in regard to osmotic pressure as a molecule. The osmotic pressure of an electrolyte, when dissolved, is dependent on the degree of its dissociation.

The more organic molecules or inorganic molecules in organic combination are contained in a liquid, the lower is its electrical conductivity. Blood-serum among the body liquids possesses a relatively high electrical conductivity; on the other hand, the blood-corpuscles, whose molecules are organic and whose salts are in organic combination, exhibit but minute conductive qualities.

There is no vital process, be it ever so unimportant, in which diffusion or osmosis does not participate. Conditions for the involvement of osmotic pressure always exist in the organism, for where and whensoever two solutions come in contact by means of a semipermeable wall, as for instance intracellular and extracellular liquids, osmotic tension is displayed. Circulation of blood and lymph, the various glandular secernments, urogenesis, and poiesis, are such processes, in the discharge of which osmotic pressure is a most potent factor.

The albumin molecule is a complex molecule. On account of its non-solubility it does not per se exert any influence upon the osmotic qualities of the body liquids. The soluble products of cell catabolism necessarily enhance the osmotic tension of the latter. It has been found that the solubility of the products of retrograde albumin metamorphosis stands in direct relation to the intensity of cellular oxidation. When oxygen is freely admitted to the tissues, soluble products of albumin disintegration are the result; the reverse ensues—that is, with difficulty soluble compounds are the outcome—when the internal oxidation has been reduced. In other words, normal intra-organic oxidation is followed by an increase of osmotic pressure in the body fluids, while diminished tissue oxidation exerts but little influence on osmotic tension.[3]

3. Poehl: D'un rapport entre les oxydations intraorganiques et la production d'énergie cinétique dans l'organisme, Comptes Rendus de l'Académie des Sciences: Paris, 24 Avril, 1899.

The conveyance of the soluble products of albumin disintegration, of sulphates, phosphates and urea, or its precursor into the lymph of the tissues, augments the latter's molecular concentration. The increased osmotic qualities thus exhibited tend to the withdrawal of water from the blood current to the lymph

When the crystalloid products, by their accumulation, occur in a higher concentration in the lymph than in the blood, they "diffundate" toward the latter, that is, they are dissolved by the blood-water. In this manner the products of metabolism and catabolism find entrance into the blood which carries them to the kidney, from which they are excreted.

In the same volume of water urine contains about three times as many molecules in solution as blood (Koranyi). Hence the assumption that the kidneys are instrumental in lowering the osmotic pressure of the total blood, and that they thus contribute materially toward the maintenance of a perpetual discrepancy in the osmotic pressure of the blood on the one side, and intercellular liquid and lymph on the other. The more of these crystalloid substances excreted by a certain volume of urinary water, the greater will be the resulting difference in osmotic tension between the blood and intercellular liquid, the faster will be also the motion of the lymph current. Accordingly, the osmotic conditions of the blood, intracellular liquids and lymph are reflected in the osmotic tension of the urine.

The foregoing outlines relating to the nature of osmotic pressure and to the osmotic conditions in the organism, although brief and in many respects incomplete, suffice for our present purpose.

UREMIA AS A DISTURBANCE OF OSMOTIC TENSION.

When the excretory activity of the kidney is materially interfered with, be it on account of a structural or functional anomaly or of both these together, the products of retrograde tissue metamorphosis already formed at the beginning of renal inactivity are retained in the blood. If the intensity of the metabolic processes has not become synchronously diminished, the crystalloid compounds rapidly accumulate in the blood current; they diffuse but slowly toward the latter if intra-organic oxidation is lessened substantially. Be that as it may, the concentration of the blood plasma is inevitable in either eventuality. A portion of the dissolved crystalloids may be excreted by other emunctories; however, this can be a comparatively small amount only, which, moreover, is not followed by a decrease in plasma concentration, as water is simultaneously secerned with the effete matters.

The great number of molecules dissolved in the plasma exert a high osmotic tension, and tend to "diffundate" toward the less concentrated body liquids. At this time the intercellular liquid in certain tissues may already possess a greater concentration than the blood plasma. Ultimately all the fluids of the body exhibit a similar degree of concentration.

This high degree of concentration is accompanied by a series of manifestations co-ordinate and successive, which have been grouped together under the designation of "uremia." This is really, if we may call it so, a mechanical intoxication, not one of chemical origin, not the obnoxious results of one or more substances, but the consequences of an abnormal increase in osmotic tension of the blood plasma and the fluids of the body. The symptoms of a secondary intoxication, due

probably to the presence of large amounts of potassium salts, may further complicate the clinical picture.[4]

The phenomena which occur in the blood after the injection of large amounts of concentrated salt solutions are the same as those in uremia; they make their appearance together with the increase in the concentration of the blood when the elimination of the accumulated substances from the blood, on account of the exhaustion of the resorptive qualities of the tissues, does not occur any longer.[5]

Novi[6] noticed tonic and clonic convulsions in dogs after intravenous injection of a 10 per cent. sodium chlorid solution, in such amounts that the blood had attained twice its former concentration.

In maintaining that the origin of these convulsions is due to withdrawal of water from the cortex cerebri, Novi, who could not then (1887) know of the more recent teachings of osmosis, practically occupies the same standpoint as the present writer.

The great number of sodium chlorid molecules introduced into the blood current exerted a high osmotic pressure, water passed from the tissues to the blood, the latter became more diluted, while the surrounding tissues and organs for the time being were deprived of some portion of their liquid. After a time the withdrawn fluids were again in the tissues, but they all exhibited a uniform high concentration.

The convulsive and other manifestations of uremia and kindred affections are attributable to the abnormally increased osmotic tension of the blood plasma and the fluids of the body in general; all or almost all of the substances which are forming urinary osmotic pressure —in an equal volume of water normally three times as large as that of the blood—are retained in the system.[7]

According to Landois,[8] the point of attack and the origin of the uremic convulsive phenomena is situated without any doubt in the psychomotor centers of the cortex cerebri. There is really nothing opposed to the view that the convulsions are caused by the same physical factors which give rise to similar phenomena after the injection of large amounts of stronger salt solutions. Landois, to be sure, alleges that the continuous irritation of some part of the central nervous system by the salts and excrementitious matters retained in the blood forms the premonitory stage of eclampsia. He bases his assumption upon experimental researches, in which he found that extractive matters and salts, applied upon the psychomotor centers of the cortex cerebri in dogs, call forth pronounced convulsive attacks resembling in all particulars the eclamptic or uremic convulsions in men. While Landois thus furnished conclusive evidence that the uremic convulsions take their origin in the external layer of the gray matter of the brain, he does not account satisfactorily for the mode of production of the continuous irritation. This, I conclude, may be accredited to the increased osmotic tension of the blood plasma and the body liquids in general.

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4. The blood of uremia, when injected into the circulation of animals, in spite of all precautions taken, does not exhibit the exact character which it possessed before its removal from the body; the nature of its toxicity may have changed to some degree, although phenomena analogous to those of uremia may be produced when it is injected. Certainly the introduction into the venous system of a comparatively small quantity of highly concentrated blood, or serum, can not there set up a similar high concentration of all the body fluids. On the other hand, the transfused blood may contain organic material which became obnoxious only after it had been removed from the organism. The serum of some convulsive patients appears to possess an abnormally high toxicity. This increased poisonousness is not exhibited by all uremic sera. I am of the opinion that such a serum attains virulency only after the blood has been removed from the body for some time. If the toxicity of uremic blood is to be determined, direct transfusion should be employed.

5. Ludwig Lindemann: Die Concentration des Harns und Blutes bei Nierenkrankheiten mit einen Beitrag zur Lehre von der Urämie: Deutsch. Arch. f. Klin. Med., 65, 1-80. (Referat von Andreasch in Jahres Bericht ueber die Fortschritte der Thier Chemie, etc., 1900.)

6. Lo sperimentale, 1887.

7. If complete anuria prevails so that no water at all is eliminated, a hydremic condition, as observed by some clinicians, may ensue, but only when the reactive stage has been reached. The general uremic attack is dependent on a high concentration of the blood.

8. Die Urämie, Zweite Auflage, 1891.

THE FIGHT AGAINST TUBERCULOSIS IN THE LIGHT OF THE EXPERIENCE GAINED IN SUCCESSFUL COMBAT OF OTHER INFECTIOUS DISEASES.*

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The task with which this Congress will have to busy itself is one of the most difficult, but it is also one in which labor is most sure of its reward.

I need not point again to the innumerable victims tuberculosis annually claims in all countries, nor to the boundless misery it brings on the families it attacks. You all know that there is no disease which inflicts such deep wounds on mankind as this. All the greater, however, would be the general joy and satisfaction if the efforts that are being made to rid mankind of this enemy, which consumes its inmost marrow, were crowned with success.

There are many, indeed, who doubt the possibility of successfully combating this disease, which has existed for thousands of years, and has spread all over the world. This is by no means my opinion. This is a conflict into which we may enter with a surely founded prospect of success, and I will tell you the reasons on which I base this conviction.

TUBERCULOSIS A PREVENTABLE DISEASE.

Only a few decades ago the real nature of tuberculosis was unknown to us; it was regarded as a consequence, as the expression, so to speak, of social misery, and, as this supposed cause could not be got rid of by simple means, people relied on the probable gradual improvement of social conditions, and did nothing. All this is altered now. We know that social misery does indeed go far to foster tuberculosis, but the real cause of the disease is a parasite—that is, a visible and palpable enemy, which we can pursue and annihilate, just as we can pursue and annihilate other parasitic enemies of mankind.

Strictly speaking, the fact that tuberculosis is a preventable disease ought to have become clear as soon as the tubercle bacillus was discovered, and the properties of this parasite and the manner of its transmission became known. I may add that I, for my part, was aware of the full significance of this discovery from the first, and so will everybody have been who had convinced himself of the causal relation between tuberculosis and the tubercle bacillus. But the strength of a small number of medical men was inadequate to the conflict with a disease so deeply rooted in our habits and customs. Such a conflict requires the co-operation of many, if

* An address delivered before a general meeting of the British Congress on Tuberculosis, London, July 23, and published concurrently with its appearance in the British Medical Journal, through courtesy of the Editor.

possible of all, medical men, shoulder to shoulder with the State and the whole population. The moment when such co-operation is possible seems now to have come. I suppose there is hardly any medical man now who denies the parasitic nature of tuberculosis, and among the non-medical public, too, the knowledge of the nature of the disease has been widely propagated.

Another favorable circumstance is that success has recently been achieved in combating several parasitic diseases, for we have learned from these examples how the conflict with pestilences is to be carried on.

SPECIAL PREVENTIVE MEASURES NEEDED FOR VARIOUS DISEASES.

The most important lesson we have learned from this experience is that it is a great blunder to treat pestilences according to a general scheme. This was done in former times; no matter whether the pestilence in question was cholera, plague, or leprosy; isolation, quarantine, useless disinfection were always resorted to. But now we know that every disease must be treated according to its own special individuality, and that the measures to be taken against it must be most accurately adapted to its special nature, to its etiology. We are entitled to hope for success in combating tuberculosis only if we keep this lesson constantly in view. As so very much depends just on this point, I shall take the liberty to illustrate it by several examples.

Plague.—The pestilence which is at this moment in the foreground of interest, the bubonic plague, may be instructive to us in several respects.

People used to act upon the conviction that a plague patient was in the highest degree a center of infection, and that the disease was transmitted only by plague patients and their belongings. Even the most recent international agreements are based on this conviction. Although, as compared with formerly, we now have the great advantage that we can, with the aid of the microscope and of experiments on animals, recognize every case of plague with absolute certainty, and although the prescribed inspection of ships, quarantine, the isolation of patients, the disinfection of infected dwellings and ships, are carried out with the utmost care, the plague has, nevertheless, been transmitted everywhere, and has in not a few places assumed grave dimensions. Why this has happened we know very well, owing to the experience quite recently gained as to the manner in which the plague is transmitted. It has been discovered that only those plague patients that suffer from plague-pneumonia—a condition which is fortunately infrequent—are centers of infection, and that the real transmitters of the plague are the rats. There is no longer any doubt that, in by far the majority of cases in which the plague has been transmitted by ocean traffic, the transmission took place by means of plague among the ship rats. It has also been found that wherever the rats were intentionally or unintentionally exterminated the plague rapidly disappeared; whereas at other places, where too little attention had been paid to the rat plague, the pestilence continued. This connection between the human plague and the rat plague was totally unknown before, so that no blame attaches to those who devised the measures now in force against the plague if these measures had proved unavailing. It is high time, however, that this enlarged knowledge of the etiology of plague be utilized in international as well as in other traffic. As human plague is so dependent on rat plague, it is intelligible that protective inoculation and the application of antitoxic serum have had so little effect. A certain number of human beings may have been saved from the disease by that, but the general spread of the pestilence has not been hindered in the least.

Cholera.—With cholera the case is essentially different; it may under certain circumstances be transmitted directly from human beings to other human beings, but its main and most dangerous propagator is water, and therefore, in the combating of cholera, water is the first thing to be considered. In Germany, where this principle has been acted on, we have succeeded for four years in regularly exterminating the pestilence (which was introduced again and again from the infected neighboring countries) without any obstruction of traffic.

Hydrophobia.—Hydrophia, too, is not void of instruction for us. Against this disease the so-called protective inoculation proper has proved eminently effective as a means of preventing the outbreak of the disease in persons already infected, but, of course, such a measure can do nothing to prevent infection itself. The only real way of combating this pestilence is by compulsory muzzling. In this matter also we have had the most satisfactory experience in Germany, but have at the same time seen that the total extermination of the pestilence can only be achieved by international measures, because hydrophobia, which can be very easily and rapidly suppressed, is always introduced again year after year from the neighboring countries.

Leprosy.—Permit me to mention only one other disease, because it is etiologically very closely akin to tuberculosis, and we can learn not a little for the furtherance of our aims from its successful combating. I mean leprosy. It is caused by a parasite which greatly resembles the tubercle bacillus. Just like tuberculosis, it does not break out till long after infection, and its course is almost slower. It is transmitted only from person to person, but only when they come into close contact, as in small dwellings and bedrooms. In this disease, accordingly, immediate transmission plays the main part; transmission by animals, water, or the like is out of the question. The combative measures, accordingly, must be directed against this close intercourse between the sick and the healthy. The only way to prevent this intercourse is to isolate the patients. This was most rigorously done in the Middle Ages by means of numerous leper houses, and the consequence was that leprosy, which had spread to an alarming extent, was completely stamped out in Central Europe. The same method has been adopted quite recently in Norway, where the segregation of lepers has been ordered by a special law. But it is extremely interesting to see how this law is carried out. It has been found that it is not at all necessary to execute it strictly, for the segregation of only the worst cases, and even of only a part of these, sufficed to produce a diminution of leprosy. Only so many infectious cases had to be sent to the leper houses that the number of fresh cases kept regularly diminishing from year to year. Consequently the stamping-out of the disease had lasted much longer than it would have lasted if every leper had been inexorably consigned to a leper house, as in the Middle Ages; but in this way, too, the same purpose is gained—slowly, indeed, but without any harshness.

SPUTUM THE MAIN SOURCE OF INFECTION IN TUBERCULOSIS.

These examples may suffice to show what I am driving at, which is to point out that, in combating pestilences, we must strike at the root of the evil, and must not

squander force in subordinate ineffective measures. Now the question is, what has hitherto been done, and what is about to be done against tuberculosis, really strikes the root of tuberculosis, so that it must sooner or later die.

In order to answer this question it is necessary first and foremost to inquire how infection takes place in tuberculosis. Of course, I presuppose that we understand by tuberculosis only those morbid conditions which are caused by the tubercle bacillus.

In by far the majority of cases of tuberculosis the disease has its seat in the lungs, and has also begun there. From this fact it is justly concluded that the germs of the disease, that is, the tubercle bacilli, must have got into the lungs by inhalation. As to the question where the inhaled tubercle bacilli have come from, there is also no doubt. On the contrary, we know with certainty that they get into the air with the sputum of consumptive patients. This sputum, especially in advanced stages of the disease, almost always contains tubercle bacilli, sometimes in incredible quantities. By coughing, and even speaking, it is flung into the air in little drops, that is, in a moist condition, and can at once infect persons who happen to be near the coughers. But it may also be pulverized when dried, in the linen or on the floor, for instance, and get into the air in the form of dust.

In this manner a complete circle, a so-called *circulus viliosus,* has been formed for the process of infection from the diseased lung, which produces phlegm and pus containing tubercle bacilli, to the formation of moist and dry particles (which, in virtue of their smallness, can keep floating a good while in the air), and finally to new infection, if particles penetrate with the air into a healthy lung and originate the disease anew. But the tubercle bacilli may get to other organs of the body in the same way, and thus originate other forms of tuberculosis. This, however, is considerably rarer. The sputum of consumptive people, then, is to be regarded as the main source of the infection of tuberculosis. On this point, I suppose, we are all agreed. The question now arises whether there are not other sources too, copious enough to demand consideration in the combating of tuberculosis.

Great importance used to be attached to the hereditary transmission of tuberculosis. Now, however, it has been demonstrated by thorough investigation that, though hereditary tuberculosis is not absolutely nonexistent, it is nevertheless extremely rare, and we are at liberty, in considering our practical measures, to leave this form of origination entirely out of account.

DIFFERENCES BETWEEN HUMAN AND BOVINE TUBERCULOSIS.

But another possibility of tuberculous infection exists, as is generally assumed, in the transmission of the germs of the disease from tuberculous animals to man. This manner of infection is generally regarded nowadays as proved, and as so frequent that it is even looked upon by not a few as the most important, and the most rigorous measures are demanded against it. In this Congress also the discussion of the danger with which the tuberculosis of animals threatens man will play an important part. Now, as my investigations have led me to form an opinion deviating from that which is generally accepted, I beg your permission, in consideration of the great importance of this question, to discuss it a little more thoroughly.

Genuine tuberculosis has hitherto been observed in almost all domestic animals, and most frequently in poultry and cattle. The tuberculosis of poultry, however, differs so much from human tuberculosis that we may leave it out of account as a possible source of infection for man. So, strictly speaking, the only kind of tuberculosis remaining to be considered is the tuberculosis of cattle, which, if really transferable to man, would indeed have frequent opportunities of infecting human beings through the drinking of the milk and the eating of the flesh of diseased animals.

Even in my first circumstantial publication on the etiology of tuberculosis I expressed myself regarding the identity of human tuberculosis and bovine tuberculosis with reserve. Proved facts, which would have enabled me to sharply distinguish these two forms of the disease, were not then at my disposal, but sure proofs of their absolute identity were equally undiscoverable, and I therefore had to leave this question undecided. In order to decide it, I have repeatedly resumed the investigations relating to it, but so long as I experimented on small animals, such as rabbits and guinea-pigs, I failed to arrive at any satisfactory result, though indications which rendered the difference of the two forms of tuberculosis probably were not wanting. Not till the complaisance of the Ministry of Agriculture enabled me to experiment on cattle, the only animals really suitable for these investigations, did I arrive at absolutely conclusive results. Of the experiments which I have carried out during the last two years, along with Professor Schütz, of the Veterinary College in Berlin, I will tell you briefly some of the most important.

A number of young cattle which had stood the tuberculin test, and might therefore be regarded as free from tuberculosis, were infected in various ways with tubercle bacilli taken from cases of human tuberculosis; some of them got the tuberculous sputum of consumptive patients direct. In some cases the tubercle bacilli or the sputum were injected under the skin, in others into the peritoneal cavity, in others into the jugular vein. Six animals were fed with tuberculous sputum almost daily for seven or eight months; four repeatedly inhaled great quantities of bacilli, which were distributed in water, and scattered with it in the form of spray. None of these cattle (there were nineteen of them) showed any symptoms of disease, and they gained considerably in weight. From six to eight months after the beginning of the experiments they were killed. In their internal organs not a trace of tuberculosis was found. Only at the places where the injections had been made small suppurative foci had formed, in which few tubercle bacilli could be found. This is exactly what one finds when one injects dead tubercle bacilli under the skin of animals liable to contagion. So the animals we experimented on were affected by the living bacilli of human tuberculosis exactly as they would have been by dead ones; they were absolutely insusceptible to them.

The result was utterly different, however, when the same experiment was made on cattle free from tuberculosis with tubercle bacilli that came from the lungs of an animal suffering from bovine tuberculosis. After an incubation period of about a week the severest tuberculous disorders of the internal organs broke out in all the infected animals. It was all one whether the infecting matter had been injected only under the skin, or into the peritoneal cavity or the vascular system. High fever set in, and the animals became weak and lean;

some of them died after a month and a half to two months, others were killed in a miserably sick condition after three months. After death, extensive tuberculous infiltrations were found at the place where the injections had been made, and in the neighboring lymphatic glands, and also far advanced alterations of the internal organs, especially the lungs and the spleen. In the cases in which the injection had been made into the peritoneal cavity the tuberculous growths which are so characteristic of bovine tuberculosis were found on the omentum and peritoneum. In short, the cattle proved just as susceptible to infection by the bacillus of bovine tuberculosis as they had proved insusceptible to infection by the bacillus of human tuberculosis. I wish only to add that preparations of the organs of the cattle which were artificially infected with bovine tuberculosis in these experiments are exhibited in the Museum of Pathology and Bacteriology.

An almost equally striking distinction between human and bovine tuberculosis was brought to light by a feeding experiment with swine. Six young swine were fed daily for three months with the tuberculous sputum of consumptive patients. Six other swine received bacilli of bovine tuberculosis with their daily food for the same period. The animals that were fed with the sputum remained healthy and grew lustily, whereas those that were fed with the bacilli of bovine tuberculosis soon became sickly, were stunted in their growth, and half of them died. After three months and a half the surviving swine were all killed and examined. Among the animals that had been fed with sputum no trace of tuberculosis was found, except here and there little nodules in the lymphatic glands of the neck, and in one case a few gray nodules in the lungs. The animals, on the other hand, which had eaten the bacilli of bovine tuberculosis had, without exception (just as in the cattle experiment), severe tuberculous diseases, especially tubercular infiltration of the greatly enlarged lymphatic glands of the neck and of the mesenteric glands, and also extensive tuberculosis of the lungs and the spleen.

The difference between human and bovine tuberculosis appeared not less strikingly in a similar experiment with asses, sheep, and goats, into whose vascular systems the two kinds of tubercle bacilli were injected.

Our experiments, I must add, are not the only ones that have led to this result. If one studies the older literature of the subject, and collates the reports of the numerous experiments that were made in former times by Chauveau, Günther and Harms, Bollinger and others, who fed calves, swine, and goats with tuberculous material, one finds that the animals that were fed with milk and pieces of the lungs of tuberculous cattle always fell ill of tuberculosis, whereas those that received human material with their food did not. Comparative investigations regarding human and bovine tuberculosis have been made very recently in North America by Smith, Dinwiddie, Frothingham, and Repp, and their result agreed with ours. The unambiguous and absolutely conclusive results of our experiments is due to the fact that we chose methods of infection which exclude all sources of error, and carefully avoided everything connected with the stalling, feeding, and tending of the animals that might have a disturbing effect on the experiments.

Considering all these facts, I feel justified in maintaining that human tuberculosis differs from bovine, and can not be transmitted to cattle. It seems to me very desirable, however, that these experiments should be repeated elsewhere, in order that all doubt as to the correctness of my assertion may be removed.

I wish only to add that, owing to the great importance of this matter, our government has resolved to appoint a commission to make further inquiries on the subject.

IS MAN SUSCEPTIBLE TO BOVINE TUBERCULOSIS?

But, now, how is it with the susceptibility of man to bovine tuberculosis? This question is far more important to us than that of the susceptibility of cattle to human tuberculosis, highly important as that is, too. It is impossible to give this question a direct answer, because, of course, the experimental investigation of it with human beings is out of the question. Indirectly, however, we can try to approach it. It is well known that the milk and butter consumed in great cities very often contain large quantities of the bacilli of bovine tuberculosis in a living condition, as the numerous infection experiments with such dairy products on animals have proved. Most of the inhabitants of such cities daily consume such living and perfectly virulent bacilli of bovine tuberculosis, and unintentionally carry out the experiment which we are not at liberty to make. If the bacilli of bovine tuberculosis were able to infect human beings, many cases of tuberculosis caused by the consumption of alimenta containing tubercle bacilli could not but occur among the inhabitants of great cities, especially the children. And most medical men believe that this is actually the case.

In reality, however, it is not so. That a case of tuberculosis has been caused by alimenta can be assumed with certainty only when the intestine suffers first—that is, when a so-called primary tuberculosis of the intestine is found. But such cases are extremely rare. Among many cases of tuberculosis examined after death, I myself remember having seen primary tuberculosis of the intestine only twice. Among the great postmortem material of the Charitè Hospital in Berlin ten cases of primary tuberculosis of the intestine occurred in five years. Among 933 cases of tuberculosis in children at the Emperor Frederick's Hospital for Children, Baginsky never found tuberculosis of the intestine without simultaneous disease of the lungs and the bronchial glands. Among 3104 postmortem examinations of tuberculous children, Biedert observed only sixteen cases of primary tuberculosis of the intestine. I could cite from the literature of the subject many more statistics of the same kind, all indubitably showing that primary tuberculosis of the intestine, especially among children, is a comparatively rare disease, and of these few cases that have been enumerated it is by no means certain that they were due to infection by bovine tuberculosis. It is just as likely that they were caused by the widely-propagated bacilli of human tuberculosis, which may have got into the digestive canal in some way or other —for instance, by swallowing saliva from the mouth. Hitherto nobody could decide with certainty in such a case whether the tuberculosis of the intestine was of human or animal origin. Now we can make the diagnosis. All that is necessary is to cultivate in pure culture the tubercle bacilli found in the tuberculous material, and to ascertain whether they belong to bovine tuberculosis by inoculating cattle with them. For this purpose I recommend subcutaneous injection, which yields quite specially characteristic and convincing results. For half a year past I have occupied myself with such investigations, but, owing to the rareness of the disease in question, the number of the cases I

have been able to investigate is but small. What has hitherto resulted from this investigation does not support the assumption that bovine tubercnlosis occurs in man.

Though the important question whether man is susceptible to bovine tuberculosis at all is not yet absolutely decided, and will not admit of absolute decision to-day or to-morrow, one is nevertheless already at liberty to say that, if such a susceptibility really exists, the infection of human beings is but a very rare occurrence. I should estimate the extent of the infection by the milk and flesh of tubercnlous cattle, and the butter made of their milk, as hardly greater than that of hereditary transmission, and I therefore do not deem it advisable to take any measures against it.

HUMAN SPUTUM THE MAIN SOURCE OF HUMAN TUBERCULOSIS.

So the only main source of the infection of tuberculosis is the sputum of consumptive patients, and the measures for the combating of tubercnlosis must aim at the prevention of the dangers arising from its diffusion. Well, what is to be done in this direction? Several ways are open. One's first thought might be to consign all persons suffering from tuberculosis of the lungs, whose sputum contains tubercle bacilli, to suitable establishments. This, however, is not only absolutely impracticable, but also unnecessary. For a consumptive who coughs out tubercle bacilli is not necessarily a source of infection on that account, so long as he takes care that his sputum is properly removed and rendered innocuous. This is certainly true of very many patients, especially in the first stages, and also of those who belong to the well-to-do classes, and are able to procure the necessary nursing. But how is it with people of very small means? Every medical man who has often entered the dwellings of the poor, and I can speak on this point from my own experience, knows how sad is the lot of consumptives and their families there. The whole family have to live in one or two small, ill-ventilated rooms. The patient is left without the nursing he needs, because the able-bodied members of the family must go to their work. How can the necessary cleanliness be secured under such circumstances? How is such a helpless patient to remove his sputum, so that it may do no harm? But let us go a step further and picture the condition of a poor consumptive patient's dwelling at night. The whole family sleep crowded together in one small room. However cautious he may be, the sufferer scatters the morbid matter secreted by his diseased lungs every time he coughs, and his relatives close beside him must inhale this poison. Thus whole families are infected. They die out, and awaken in the minds of those who do not know the infectiousness of tuberculosis the opinion that it is hereditary, whereas its transmission in the cases in question was due solely to the simplest process of infection, which do not strike people so much, because the consequences do not appear at once, but generally only after the lapse of years.

FOCI OF TUBERCULOUS INFECTION.

Often, under such circumstances, the infection is not restricted to a single family, but spreads in densely inhabited tenement houses to the neighbors, and then, as the admirable investigations of Biggs have shown in the case of the densely-peopled parts of New York, regular nests of foci of disease are formed. But, if one investigates these matters more thoroughly, one finds that it is not poverty *per se* that favors tuberculosis, but the bad domestic conditions under which the poor everywhere, but especially in great cities, have to live. For, as the German statistics show, tuberculosis is less frequent, even among the poor, when the population is not densely packed together, and may attain very great dimensions among a well-to-do population when the domestic conditions, especially as regards the bedrooms, are bad, as is the case, for instance, among the inhabitants of the North Sea Coast. So it is the overcrowded dwellings of the poor that we have to regard as the real breeding places of tuberculosis; it is out of them that the disease always crops up anew, and it is to the abolition of these conditions that we must first and foremost direct our attention if we wish to attack the evil at its root, and to wage war against it with effective weapons.

This being so, it is very gratifying to see how efforts are being made in almost all countries to improve the domestic conditions of the poor. I am also convinced that these efforts, which must be promoted in every way, will lead to a considerable diminution of tuberculosis. But a long time must elapse ere essential changes can be effected in this direction, and much may be done meanwhile in order to reach the goal much more rapidly.

THE NEED FOR HOSPITALS FOR CONSUMPTIVES.

If we are not able at present to get rid of the danger which small and overcrowded dwellings involve, all we can do is to remove the patients from them, and, in their own interests and that of the people about them, to lodge them better; and this can be done only in suitable hospitals. But the thought of attaining this end by compulsion of any kind is very far from me; what I want is that they may be enabled to obtain the nursing they need better than they can obtain it now. At present a consumptive in an advanced stage of the disease is regarded as incurable and as an unsuitable inmate for a hospital. The consequence is that he is reluctantly admitted and dismissed as soon as possible. The patient, too, when the treatment seems to him to produce no improvement, and the expenses, owing to the long duration of his illness, weigh heavily upon him, is himself animated by the wish to leave the hospital soon. That would be altogether altered if we had special hospitals for consumptives, and if the patients were taken care of there for nothing, or at least at a very moderate rate. To such hospitals they would willingly go; they could be better treated and fed there than is now the case. I know very well that the execution of the project will have great difficulties to contend with, owing to the considerable outlay it entails. But very much would be gained if, at least in the existing hospitals, which have to admit a great number of consumptives at any rate, special wards were established for them in which pecuniary facilities would be offered them. If only a considerable fraction of the whole number of consumptives were suitably lodged in this way, a diminution of infection, and consequently of the sum total of tuberculosis, could not fail to be the result. Permit me to remind you in this connection of what I said about leprosy. In the combating of that disease also great progress has already been made by lodging only a fair number of the patients in hospitals. The only country that possesses a considerable number of special hospitals for tuberculous patients is England, and there can be no doubt that the diminution of tuberculosis in England, which is much greater than in any other country, is greatly due to this circumstance. I should point to

the founding of special hospitals for consumptives and the better utilization of the already existing hospitals for the lodging of consumptives as the most important measures in the combating of tuberculosis, and its execution opens a wide field of activity to the State, to municipalities, and to private benevolence. There are many people who possess great wealth, and would willingly give of their superfluity for the benefit of their poor and heavily afflicted fellow creatures, but do not know how to do this in a judicious manner. Here is an opportunity for them to render a real and lasting service by founding consumption hospitals or purchasing the right to have a certain number of consumptive patients maintained in special wards of other hospitals free of expense.

As, however, unfortunately, the aid of the State, the municipalities, and rich benefactors will probably not be forthcoming for a long time yet, we must for the present resort to other measures that may pave the way for the main measure just referred to, and serve as a supplement and temporary substitute for it.

NOTIFICATION.

Among such measures I regard obligatory notification as specially valuable. In the combating of all infectious diseases it has proved indispensable as a means of obtaining certain knowledge as to their state, especially their dissemination, their increase and decrease. In the conflict with tuberculosis also we can not dispense with obligatory notification; we need it not only to inform ourselves as to the dissemination of this disease, but mainly in order to learn where help and instruction can be given, and especially where the disinfection which is so urgently necessary when consumptives die or change their residences has to be effected. Fortunately it is not at all necessary to notify all cases of tuberculosis, nor even all cases of consumption, but only those which, owing to the domestic conditions, are sources of danger to the people about them. Such limited notification has already been introduced in various places in Norway, for instance, by a special law, in Saxony by a ministerial decree, in New York and in several American towns, which have followed its example. In New York, where notification was optional at first and was afterwards made obligatory, it has proved eminently useful. It has thus been proved that the evils which it used to be feared the introduction of notification for tuberculosis would bring about need not occur, and it is devoutly to be wished that the examples I have named may very soon excite emulation everywhere.

DISINFECTION.

There is another measure, closely connected with notification—namely, disinfection, which, as already mentioned, must be effected when consumptives die or change their residence, in order that those who next occupy the infected dwelling may be protected against infection. Moreover, not only the dwellings but also the infected beds and clothes of consumptives ought to be disinfected.

EDUCATION OF THE PUBLIC.

A further measure, already recognized on all hands as effective, is the instructing of all classes of the people as to the infectiousness of tuberculosis, and the best way of protecting oneself. The fact that tuberculosis has considerably diminished in almost all civilized states of late is attributable solely to the circumstance that knowledge of the contagious character of tuberculosis has been more and more widely disseminated, and that caution in intercourse with consumptives has increased more and more in consequence. If better knowledge of the nature of tuberculosis has alone sufficed to prevent a large number of cases, this must serve us as a significant admonition to make the greatest possible use of this means, and to do more and more to bring it about that everybody may know the dangers that threaten him in intercourse with consumptives. It is only to be desired that the instructions may be made shorter and more precise than they generally are, and that special emphasis be laid on the avoidance of the worst danger of infection, which is the use of bedrooms and small, ill-ventilated workrooms simultaneously with consumptives. Of course, the instruction must include directions as to what consumptives have to do when they cough and how they are to treat their sputum.

SANATORIA.

Another measure which has come into the foreground of late, and which at this moment plays to a certain extent a paramount part in all efforts for the combating of tuberculosis, works in quite another direction. I mean the founding of sanatoria for consumptives.

That tuberculosis is curable in its early stages must be regarded as an undisputed fact. The idea of curing as many tuberculous patients as possible in order to reduce the number of those that reach the infectious stage of consumption, and thus to reduce the number of fresh cases, was therefore a very natural one. The only question is whether the number of persons cured in this way will be great enough to exercise an appreciable influence on the retrogression of tuberculosis. I will try to answer this question in the light of the figures at my disposal.

According to the business report of the German Central Committee for the Establishment of Sanatoria for the Cure of Consumptives, about 5500 beds will be at the disposal of these institutions by the end of 1901, and then, if we assume that the average stay of each patient will be three months, it will be possible to treat at least 20,000 patients every year. From the reports hitherto issued as to the results that have been achieved in the establishments we learn further that about 20 per cent. of the patients that have tubercle bacilli in their sputum lose them by the treatment there. This is the only sure test of success, especially as regards prophylaxis. If we make this the basis of our estimates, we find that 4000 consumptives will leave these establishments annually as cured. But, according to the statistics ascertained by the German Imperial Office of Health, there are 226,000 persons in Germany over 15 years of age who are so far gone in consumption that hospital treatment is necessary for them. Compared with this great number of consumptives, the success of the establishments in question seems so small that a material influence on the retrogression of tuberculosis in general is not yet to be expected of them. But pray do not imagine that I wish, by this calculation of mine, to oppose the movement for the establishment of such sanatoria in any way. I only wish to warn against an over-estimation of their importance which has recently been observable in various quarters, based apparently on the opinion that the war against tuberculosis can be waged by means of sanatoria alone, and that other measures are of subordinate value. In reality the contrary is the case. What is to be achieved by the general prophylaxis resulting from recognition of the danger

of infection and the consequent greater caution in intercourse with consumptives is shown by a calculation of Cornet's regarding the decrease of mortality from tuberculosis in Prussia in the years 1889 to 1897. Before 1889 the average was 31.4 per 10,000, whereas in the period named it sank to 21.8, which means that, in that short space of time, the number of deaths from tuberculosis was 184,000 less than was to be expected from the average of the preceding years. In New York, under the influence of the general sanitary measures directed in a simple exemplary manner by Biggs, the mortality from tuberculosis has diminished by more than 35 per cent. since 1886; and it must be remembered that both in Prussia and in New York the progress indicated by these figures is due to the first beginnings of these measures. Considerably greater success is to be expected of their further development. Biggs hopes to have got so far in five years that in the city of New York alone the annual number of deaths from tuberculosis will be 3000 less than formerly.

Now, I do indeed believe that it will be possible to render the sanatoria considerably more efficient. If strict care be taken that only patients be admitted for whom the treatment of those establishments is well adapted, and if the duration of the treatment be prolonged, it will certainly be possible to cure 50 per cent., and perhaps still more. But even then, and even if the number of sanatoria be greatly increased, the total effect will always remain but moderate. The sanatoria will never render the other measures I have mentioned superfluous. If their number become great, however, and if they perform their functions properly, they may materially aid the strictly sanitary measures in the conflict with tuberculosis.

CONCLUSION.

If now, in conclusion, we glance back once more to what has been done hitherto for the combating of tuberculosis, and forward to what has still to be done, we are at liberty to declare with a certain satisfaction that very promising beginnings have already been made. Among these I reckon the consumption hospitals of England, the legal regulations regarding notification in Norway and Saxony, the organization created by Biggs in New York—the study and imitation of which I most urgently recommend to all municipal sanitary authorities—the sanatoria, and the instruction of the people. All that is necessary is to go on developing these beginnings, to test, and if possible to increase their influence on the diminution of tuberculosis, and wherever nothing has yet been done, to follow the examples set elsewhere.

If we allow ourselves to be continually guided in this enterprise by the spirit of genuine preventive medical science, if we utilize the experience gained in conflict with other pestilences, and aim, with clear recognition of the purpose and resolute avoidance of wrong roads, at striking the evil at its root, then the battle against tuberculosis, which has been so energetically begun, can not fail to have a victorious issue.

Medical Tours.—For several years the French physicians have organized an annual tour to the various watering-places and spas in France as a trip combining both pleasure and instruction. The Germans are now following their example and two tours are announced, one to be in charge of Baginsky to embrace the saline springs of middle Germany, and the other, personally conducted by von Leyden and Liebreich, by a boat to the watering-places on the North Sea, the first in August, the second toward the end of September. It is proposed to make similar trips an annual institution.

Clinical Reports.

RESECTION OF THE CECUM.

J. H. STEALY, M.D.
FREEPORT, ILL.

In January, 1900, Miss S. presented herself to me complaining of severe and almost constant pain in the right iliac region, and also of persistent constipation, which latter condition at times amounted to obturation. The previous history was negative, the patient having no memory of former illness, nor of intestinal or other disease. The present trouble dated back three years, the pain, constipation, and tendency to obstipation having been the only symptoms complained of. At the time of my first examination she was anemic and slowly losing in weight, but otherwise appeared in reasonably good condition. A tumor, about the size of a small orange, indurated, and with no range of mobility, was made out in the right iliac region. The abdominal muscles were perfectly relaxed. In view of these findings and the progressing nature of the symptoms operation was decided upon.

An incision was made through the right rectus muscle, exposing the mass, which was found to involve the lower three inches of the colon, the cecum, the appendix, which was so involved as to make its identification a matter of extreme difficulty, and three or four inches of the ileum, being at the same time very adherent to the antero-lateral parietes, as well as to the surrounding intestines. The mass was released from its adhesions and excised by resecting the colon four inches above the ileo-cecal valve, and the ileum was severed at an equal distance from the valve. Evidences of glandular metastases were sought, but none found. The No. 3 Murphy button was inserted and held by the usual purse-string suture through both segments, and, although the lumina of the distal and proximal portions differed greatly as to caliber, it was not found necessary to attempt to reduce the size of the lumen of the portion of colon to be anastomosed, no difficulty being experienced in securing a close and perfect approximation of the ends. The line of union was reinforced by a few Lembert sutures and a wick drain inserted. Recovery was without incident, no tympanites or other untoward symptoms having developed, and at no time did the temperature rise above 100. Nourishment was withheld until the fourth day, at which time rectal alimentation was inaugurated, which was maintained for four days more, following which, liquid food was given until the twelfth day, when the button passed. Microscopic examination showed the mass to be old connective tissue.

This case well illustrates the applicability of the ordinary unmodified Murphy button to the resection of intestines of differing lumina, without any preliminary stitching of the larger bowel to reduce its caliber, which must necessarily consume that time, which is such an important factor in successful abdominal surgery.

A LARGE GALLSTONE.

A. L. RUSSELL, M.D.
MIDWAY, PA.

I recently removed, post-mortem, a gallstone from a lady aged 67 years; the stone measuring five and three-quarter by four and a half inches, and weighing 530 grains. The patient died from tubal rupture incident to carcinoma of the uterus, and had never complained of symptoms referable to the gall bladder, though she had been under my care for two years for the uterine growth. Great obesity, an enlarged liver, and absence of symptoms or complaint allowed this feature of the case to go unnoticed. I believe this to be an unusually large specimen.

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PROFESSOR KOCH'S ADDRESS.

The address of Professor Koch, delivered at the British Congress on Tuberculosis on the 23d, and which appears in this issue, is a noteworthy production in several respects. In the first place, any utterance by the discoverer of the tubercle germ, whose name has been intimately associated with acquisitions to our knowledge of the disease, would demand attention, and all the more so now since his views here expressed strike at some of the accepted dogmas, as it were, of the tuberculosis specialists.

It has been taken as a matter of fundamental belief by most of these that the dangers to the human species from tuberculosis in the lower animals, and especially from bovine tuberculosis, are real and formidable, and some have magnified the perils from ingested milk and flesh of diseased animals almost above those from aerial infection by the tuberculosis germ. A few bacteriologists and veterinarians have expressed doubts as to this danger or have reported facts that seemed to point to its minor significance, but they have had on the whole but little influence on the professional views of the majority. The desirability of more facts on this point, as well as the need of more conservatism of statement on the part of advocates of the transmissibility of bovine tuberculosis to man, has been editorially noticed by THE JOURNAL in an earlier issue,[1] where attention was called to the lack of evidence in support of the accepted views. In this address Professor Koch puts himself fairly on the side of the minority and it will be of interest to see how far the dictum of this coryphæus can swing the pendulum of medical popular opinion on that particular phase of the subject. We shall naturally look for some expression of contrary views, especially since the subjects of tuberculous meat and milk are on the program.

As the discoverer of the tuberculosis germ and one who is identified so largely as a bacteriologist with the germ theory of disease we would naturally expect Professor Koch to attribute the first importance to the direct action of the bacillus. It is possible, however, that he has allowed too little for systemic conditions, and especially the congenital lack of resistance, call it hereditary or not, that we see in the families and descendants of the victims of tuberculosis. The seed is important, but the soil is equally so, and the former is, in the opinion of many competent authorities, far more nearly ubiquitous than the latter. Koch's caution as to the exaggeration of the importance of sanatorium treatment is a timely one; it needs merely the statement of the figures he gives to demonstrate this.

The address as a whole is one that in its general tone will not be out of accord with what we hope will be the spirit of the Congress, that is, a conservative and reasonable one, avoiding the extremes to which the discussions and treatment of this subject of tuberculosis have too often gone.

1. Jan. 27, 1900, xxxiv, p. 238.

THE EFFECT OF VASOMOTOR INFLUENCES—ESPECIALLY OF THERMIC ORIGIN—ON THE CONSTITUTION OF THE BLOOD.

Most conflicting conclusions have been reached as a result of investigations by different observers into the influence of thermal agencies applied to the surface of the body upon the constitution of the blood. Thus, a reduction in the number of blood-corpuseles, that is, a diminution in the density of the blood, in the affected capillary area and the reverse conditions in the rest of the body have been found as a result of cold baths; and an increase in the number of corpuscles, that is, an increase in the density of the blood in the affected capillary area and the reverse conditions in the remainder of the body as a result of the action of heat. Precisely opposite results are described by others, although all are agreed that the changes are but transitory. Equal differences of opinion exist with reference to the explanation of the phenomena observed, which by some are attributed to alteration in the distribution of the blood, or the removal of stasis, while others ascribe them to a decrease or an increase in the amount of water present in the affected capillary area. The leucocytes likewise have by some been found increased and by others diminished in number.

In an endeavor to clear up in some degree the existing confusion, Dr. Ernst Beeker[1] undertook a careful enumeration of the red and white blood-corpuseles in a series of cases, some of which were exposed to a cold douche of short duration and others to a cold bath of longer duration. Comparative observations were also made of blood from the median vein. It appeared that the number of red and white blood-corpuseles is, under normal conditions, approximately the same in the capillaries and the related veins. As a result of the influence of cold upon the entire surface of the body an increase in the number of red and white blood-corpuscles was found in the capillaries of the skin, more marked with relation to the leucocytes. An increase in the number of erythrocytes was demonstrable likewise in the veins, while the number of leucocytes was generally diminished, and always distinctly less after the action of cold than in the related capillaries. These changes had almost wholly disappeared in the course of an hour, when often there was a reduction in the

1. Deutsches Archiv f. Klin. Medicin, 70 B., 1. u. 2 H., S. 17.

number of red corpuscles, even as compared with the condition prior to the application of cold.

The results described are, it is thought, due to two distinct influences, namely, the effect upon the blood in general, as a whole, and a special effect upon the leucocytes. As a result of contraction of the vessels in consequence of vasomotor influences, positive pressure is exerted and the blood is forced through the capillaries into the veins, while blood-serum escapes in part into the tissues. On the other hand, when dilatation of the blood-vessels occurs in consequence of vasomotor paresis, serum conversely is taken up from the tissue. As a result of the influence of cold the leucocytes are retained in the capillaries and form layers upon the walls of the vessels.

From the foregoing, it would appear that as a result of the action of cold upon the entire surface of the body there occurs a slight increase in the number of erythrocytes and generally a marked increase in the number of leucocytes in the capillaries of the skin. These changes in the constitution of the blood are due in part to vasomotor influences and especially to the loss of water from the blood and in lesser degree also to stasis of blood-cells in the capillaries. The increase in the number of leucocytes results besides and in largest measure from the formation of layers upon the vessel-wall in consequence of the action of cold. Under pathologic conditions the changes in the constitution of the blood may be explained also in part by the removal of stasis in limited degree.

THE HEATED TERM.

The present heated term, surpassing as it does all records in many sections of our country, is a matter of interest to physicians. It directly affects the mortality statistics, and would yet more affect those of morbidity were they available. It is, however, to be remembered that it is not necessarily so much the temperature itself as the environment in which it is experienced that affects these figures. Aside from infant sickness and mortality, which to some extent is another story, it is doubtful whether any degree of solar heat felt in ordinary temperate climates is not endurable with comparative comfort and safety, if the means for protection available are employed.

The average healthy adult in the country endures easily hard outdoor work at a temperature that strikes down hundreds in the crowded cities. A sunstroke or even a heat prostration is rare in the harvest field, where men and boys work in sweat-saturated clothing under a blazing sun often at a temperature well above the hundred mark. It is among the degenerates, the physically feeble, the ill-nourished and ill-lodged and intemperate in the great centers that the heat prostrations and other serious results of the heated term are most observed. The greatest aggregate of cost, aside from the effects on the crops, is in the human discomfort—to use the mildest term—that it produces. This is in proportion to the lack of experience of such temperatures; in our northern regions we are ill prepared for prolonged spells of such extreme heat and the known vicissitudes of the climate make us timid in providing for it. It has been said that in the lake region one needs both an ulster and a palm-leaf fan to meet the possible exigencies of a day's outing; the tropical outfit required for our recent experiences is an unknown quantity. Much depends upon the state of mind, as to whether one suffers or not. An idle day with nothing to do but to keep cool, generally taxes all one's philosophy, with the thermometer near 100 and a dash of humidity in the atmosphere to keep down radiation and rub it in. The question whether life is worth living then comes home to us.

Making the best of it, however, the present heated term is a serious matter in many ways. It is not alone in deaths it has caused, for, as already hinted, it probably has more credited to it directly than is its due, but also in the injury to the agricultural interests it promises, and in a hundred other possible ways. What effects on the health of the community will ensue can hardly be foretold, but it is likely it will be more or less debilitating to a large number of persons whose systems are not in a fit state to meet such extremes, and it will be especially trying to infants. The average adult who can avoid bodily exposure and mental strain, who eats only wholesome food and that in moderate quantity, keeps clean, avoids overheating, and chills, and does not stimulate with alcoholics, need not usually worry about his health in a heated term. Man was originally a tropical animal and if he can keep a pathogenic flora and fauna out of his system he can thrive under tropical heat.

ELECTROLYTIC DISSOCIATION OF INORGANIC SALTS INTO IONS.

The recent visit to this country of the great physical chemist, Van't Hoff, professor of physical chemistry in the University of Berlin, and the fact that honorary degrees were conferred upon him by the University of Chicago and Harvard University, may serve to recall briefly and in general elementary terms some part of the more important services rendered to medicine through his epochal investigations in pure physical chemistry, and those of others. The application of the theory of electrolytic dissociation to the study of life phenomena and of certain fundamental problems in physiology is sure to lead to its further application to pharmacologic and pathologic problems, and thus it will come to be a matter of direct, practical interest to the physician.

The development of the theory of electrolytic dissociation starts with the discovery by Traube of precipitation membranes, which permit water to pass through, but are impermeable to some sub-

stances dissolved in water. Then, Pfeffer, by allowing the precipitation to take place in the walls of vessels of earthenware, secured for the membrane sufficient support so that measurements could be made of the force with which water passes into solutions of various kinds in cups clothed by semipermeable membranes and immersed in water. The resulting pressure is known as "osmotic pressure," and is nearly proportional to the concentration of, i. e., the number of molecules in, a given solution. Pfeffer also pointed out that the walls of cells are semipermeable, thus explaining why vegetable cells burst when placed in water or in solutions of less concentration than the cell contents. Van't Hoff then showed that the osmotic pressure of a substance in solution equals the pressure when the same amount is volatilized and confined to the same volume as the solution. Furthermore, that equal volumes of all solutions at the same temperature and the same osmotic pressure contain the same number of molecules. To this last law a number of exceptions were soon met, especially in the case of solutions of acids, bases and salts, the pressure being greater, the boiling point higher, and the freezing point lower than warranted by the number of molecules present in the solutions. Now Arrhenius showed that the solutions which conduct electricity are the same as those that form exceptions to Van't Hoff's law, and so Arrhenius concluded that in electrolytic solutions the substances dissolved are split up into simple substances or parts, each of which acts as a molecule, making the osmotic pressure greater than indicated by the formula of the original substance.

This is the theory of electrolytic dissociation; the dissociation results in a splitting of the substances dissolved into particles or elements, called ions, charged either with positive or negative electricity. The greater the dilution up to certain limits, the greater the dissociation, and the greater the electric conductivity. Ordinarily, dissociation is complete when the weight of one molecule of an inorganic salt expressed in grams is dissolved in 1000 liters of water (gram-molecular solution). In sufficiently dilute electrolytic solutions there are ions charged with positive electricity—*cathions*—and ions charged with positive electricity—*anions*. Thus, sodium chlorid is split into Na -ions an Cl -ions, also written Na+ and Cl—. Hence, aqueous solutions of electrolytes acquire special properties due to the character of the ions which they contain, and it is the study of ions in relation to experimental morphology and to physiology that has resulted in a number of exceedingly important discoveries during the last years, to which reference has already been made in these columns.

Broncho-typhoid Fever.—Albarel describes, in the *Montpellier Med.* of April 14, a small epidemic of typhoid fever in which the lesions were exclusively limited to the bronchi and the disease was diagnosed acute tuberculosis. The patients were children, and recovered in the usual period for typhoid fever.

THE KANSAS LAW AND MEDICAL PRETENDERS.

The new Kansas medical registration law is, it is said, bringing to light a vast amount of disreputable qualifications, including diplomas from "fake" colleges, from some that never existed and from others with no instructors, whose sole function is to supply a sheepskin at such price as can be obtained, after the fashion of Armstrong, etc. One so-called school of practice, it is said, demanded that members of its state society should be given licenses on presentation of the certificates issued by the society to the members. Failing in this it demanded representation on the registration board, and threatened legal proceedings when this was refused by the governor. Thus far, however, their suit has not been instituted. Kansas has been so long a free ground for all sorts of irregular practitioners and quacks of every kind that it is very much as might have been expected; the new law is bringing a surplus of them to light. It is unfortunate also that it has a time clause which permits so many of them to continue to practice upon the ignorance and credulity of the public.

THE BRITISH MEDICAL ASSOCIATION.

The British Medical Association meets next week in Cheltenham. The Council in its report calls attention to the fact that it is sixty-three years since the Association met there before, and also to the coincidence that the previous meeting was held in the same year that Queen Victoria ascended the throne, and that this meeting is held in the year of the accession of her successor. The membership of the Association has increased only 20 during the year. The number of members last year was 18,382. During the year 1010 new members have been elected, 238 have died, and 752 have either resigned or been taken off the rolls for arrears, leaving the present membership 18,402. At the coming meeting the Association will consider the report of the committee on re-orgaization. The report, a preliminary outline of which was published some time ago, will recommend some most radical changes. These, if adopted, will add greatly to the expenses of the Association, and will necessarily increase the annual dues of the members. For this reason there will probably be so much opposition developed that the report will not be adopted. The profits made by the *Journal* during the past year are nearly $20,000, but even this, we understand, would not meet the added expense of the new plan as recommended by the committee.

DOGS IN WAR.

According to the New York *Evening Post*, the question of the use of dogs to carry water, etc., to the wounded in the war is now one of the problems before the British army medical authorities. The trouble seems to be how to secure enough dogs of approved qualities. The St. Bernard breed is naturally suggested, but the size and expense and relative rarity of these dogs are against them. Moreover, to be useful at the proper time a certain sort of dog courage is essential, and it is feared that many otherwise useful animals would prove gun-shy amid the racket on the battlefield. It is said that, in the German military service, dogs have

been trained to act discriminatingly to a certain extent, to recognize friendly uniforms and avoid others, and even to act as combatants as it were. This, if true, is a complication that might seriously interfere with the usefulness of the animals as succor-bearers, and might even be worthy of consideration by the Hague tribunal or some other equally competent authority. If the dogs of war are literally to be let loose it would be in every respect better that they be utilized exclusively according to the British proposition. There is a possibility in it of real usefulness that would be seriously affected if these animals were trained for other warlike purposes.

A STATUTORY INCONSISTENCY.

Connecticut has passed a law regulating the practice of osteopathy, which goes into effect August 1. It contains a provision that the Board of Registration "may refuse to grant a license to any person addicted to any vice to such a degree as to render him unfit to practice osteopathy." This raises an interesting question: What special form or degree of vice will unfit a person from practicing osteopathy? It remotely suggests the proposition that has, we believe, been made, namely, that a certain particularly immoral business should be licensed under certain restrictions, one of which was that the licensee should be a person of good moral character and reputation. This is, of course, from the point of view of an educated physician; but that it also seems somewhat incongruous even to the lay mind, the following comments from the Hartford *Post* are evidence. That paper says: "What is the standard of vice that unfits a person to practice this brand of healing? To how great an extent must a person be addicted to the vice of lying, or to the vice of drunkenness, or to the vice of immorality before he is unfit to cure according to the osteopathic code?" For ourselves, we give it up—the conundrum is too much for us. The provision of the bill is, as the *Post* says: a statutory inconsistency, a legislative Hibernicism, like the act as a whole an evidence of the benighted condition of the legislators.

SCHOOL FOR HEALTH OFFICERS.

A new departure in educational lines recently occurred in Burlington, Vt. This was the gathering together of those interested in sanitary science in that state into what is called a "School for Health Officers." This school was provided for in a law recently passed in that state and is held under the auspices of the State Board of Health. Every health officer in the state is expected to attend this school, he being paid per diem and mileage. Others interested in sanitary matters were invited to this first meeting, although only the health officers received any remuneration. Topics of interest to health officers were the main subjects considered, and these covered a variety of questions. From reports of this meeting, one is impressed with the fact that it has proved to be one of practical value, the papers and discussions being such as would help to give the health officers in attendance a thorough knowledge of the work they are supposed to look after and undertake. Health officers nowadays, if they are fit for the position they occupy, must have a broad comprehension of their duties and be thoroughly versed in all that pertains to the prevention of disease. They need something more than ordinary medical training. Perfect sanitation consists of good drainage, proper disposal of sewage, correct plumbing, perfect ventilation, wholesome water, pure milk, and much more that is outside of what the general practitioner is supposed to know. Until the time comes, if it ever should come, that men should be educated for this particular calling, it would seem that such a school as the one held in Vermont will soon become almost a necessity. Certainly, it is something that is worthy of imitation and it is hoped that other states will follow the excellent example.

BLUE URINE.

The urine may undergo various changes in color from concentration as in the presence of fever; from the ingestion of certain articles, as rhubarb, senna, santonin, carbolic acid, methylene-blue; from the existence of certain morbid processes, as jaundice, cholera, typhus fever, pernicious anemia, melanotic sarcoma; from the presence of blood, pus, etc. The urine has been observed to be blue in those taking methylene-blue, which has been employed in the treatment of malarial fever, gonorrhea, diabetes and other affections, and also from the formation of indigo in those in whom indican is present as a result of putrefactive processes taking place in the intestines. A unique instance of the latter variety is recorded by Mr. John Good,[1] occurring in an unmarried man, 43 years old, who had been drinking excessively, had vomited and complained of feeling sickly, with loss of appetite, pain in the loins over the kidneys and discolored urine. The conjunctivæ were yellowish and the bowels were "out of order." The urine on examination was found to be of a peacock-blue color and clear, with a specific gravity of 1010, and an acid reaction. It was free from albumin and sugar, but acquired a rose tint when boiled with dilute hydrochloric acid. On one occasion the urine passed had a sage-green color. Under treatment with calomel, salines and salicylates the peculiar hue of the urine disappeared. The patient was sure that he had taken nothing that could have brought about the strange condition of the urine, in explanation of which it is suggested that it was due to the formation of indigo through oxidation of the indican that results from the putrefactive activity of the bacillus coli upon the products of tryptic digestion.

ATROPIN IN ILEUS.

Cases of ileus are frequently reported in which relief was obtained by enemata of water or of air, by the external application of poultices, or by the administration of drugs. Among the latter atropin is credited with many cures. Attention is again called to this drug by Rumpel,[2] who, at the meeting of the Medical Society of Hamburg, reported two cases in which the subcutaneous injection of atropin had been promptly followed by relief of symptoms and by recovery. In the

1. Lancet, June 1, 1901, p. 1535.
2. Deut. Med. Wochenschrift, Vereins-Beilage, July 4, 1901.

first case, a woman of 64, there were severe abdominal pains, greatly distended abdomen, no visible peristalsis, no escape of feces or gas per rectum even with copious enemata, fecal vomiting, anuria and collapse. There was entire relief from atropin. The second case was somewhat similar, the results from atropin being equally prompt. The question arises, however, as to the nature of the obstruction: Was it mechanical or dynamic? The discharge of hard scybalous masses in the first instance leads Rumpel himself to suggest the probability of coprostasis and to feel that the good results came from the paralyzing action of the atropin on the nerve endings in the unstriped muscular fibers of the intestine, with consequent relaxation of spasm and alteration of meteoristic pressure. Yet he believes that benefit may be derived from atropin even in some cases of mechanical ileus and advocates a short trial of this drug before resorting to operation. Where there is probability that the obstruction is non-mechanical, atropin should be tried. But a long delay in mechanical ileus, when there is competent surgical aid at hand, is dangerous. As Kümmell said in the discussion of Rumpel's paper, atropin and opium are of service in relieving non-mechanical obstruction by relieving spasm; but the cases thus far published as cures of ileus by atropin seemed to him to prove that a genuine mechanical ileus is not influenced by atropin.

OVERSUPPLY OF MEDICAL GRADUATES.

There are probably between 115,000 and 125,000 medical practitioners in the United States, or one to about every 600 of the population. Every year about 1600 of them, more or less, may be expected to die. The loss by emigration is practically nothing. The territory is rapidly being filled up and some of the newer states have already a larger proportion of physicians than some of the older ones. In 1890 we were sixty-five millions, in 1900 we are seventy-five, an average net annual increase of 1,000,000, which at the ratio of one physician to 600 people (hardly a living ratio for the doctor) would make places for nearly 1700 additional physicians annually. This, therefore, with the 1600 or so vacancies by death would make room for nearly 3300 new doctors each year, provided the same annual increase in population continues, which is perhaps dubious. Our 160 medical colleges, however, turn out annually a crop of nearly 6000 graduates, or over 2000 more than can thus be provided for. These figures, it should be remembered, do not include a vast number of off-color practitioners, who nevertheless have their share of public patronage and thus serve to curtail the means of support of the recognized physicians, nor the accessions from outside the country by immigration. These facts are reviewed in a recent issue of the *Chicago Tribune* with comments such as would naturally be made upon such a showing. It is well for us to occasionally refresh our memory with these figures, bearing as they do on some questions of really vital interest to the profession. It is certain that the multiplication of doctor-factories has gone far enough in this country, though as yet it does not seem to have been checked. It is not a dignified comparison, that of the medical graduates to the output of a machine shop; but the same principles of political economy apply in a measure to both. Overproduction in either has its bad effects, and we have not the resource of a foreign market enjoyed by the ordinary manufacturers. The same evils of excess of doctors are complained of abroad, though infinitely less evident than here, and we will apparently soon have little prospect of a satisfactory future for the American medical graduate either here or elsewhere.

Medical News.

CONNECTICUT.

Dr. G. D. Higgins, West Hartford, has been appointed hospital steward and house physician of the state prison.

The State Board of Medical Examiners, at its recent session in New Haven, passed seven out of ten applicants for practice of medicine in the state.

Dr. Charles W. Page, Middletown, who has resigned the superintendency of the Connecticut Hospital for the insane, will leave the institution August 1, and will, it is believed, be succeeded by Dr. Henry S. Noble.

Tablets are to be used by the physicians for the poor of New Haven. The superintendent of the department of charities and corrections has decided to economize by not allowing the town physicians to give prescriptions. In lieu of this they are expected to carry medicine in tablet form, which they will dispense as required.

ILLINOIS.

Dr. A. J. Lennon has been appointed interne at St. Joseph's Hospital, Joliet.

Dr. Frederick A. McGrew, Davis, sails for Europe, July 7, on the *Graf Waldersee.*

Non-Medical Management of Hospital.—The affairs of Sherman Hospital, Elgin, are said to be much disturbed by the objection of the medical staff to the conduct of the hospital by the Elgin Woman's Club. The objecting physicians have pledged, thus far, $7000 toward a new hospital, to be under the charge of the Sisters of St. Joseph.

Per Capita Expense at State Institutions.—The quarterly bulletin of the State Board of Charities shows that net average expense per capita of the inmates in state institutions was $38.78, and the gross average cost, $43.91 for the quarter. The greatest expense was at the Hospital for the Criminal Insane, Chester, $54.05, and the minimum at the Illinois Southern Hospital for the Insane, Anna, $23.74.

Chicago.

Dr. Carl Wagner is sojourning for the summer at Bonn on the Rhine, Germany.

Dr. Ralph S. Porter, who first saw service as lieutenant and assistant surgeon, assigned to the Second Illinois Infantry, U. S. V., and who after his muster-out served acceptably in the Philippines, has been appointed major and surgeon of volunteers.

Volunteer Medical Service for Poor.—More than fifty physicians and nurses have volunteered for medical service in the crowded tenement districts during the summer months, in response to the appeal of Dr. John R. Neely, of the health department.

The hypnotist, who applied to the mayor for a permit to bury a young man alive while in a hypnotic state, has been summoned to appear before the State Board of Health on the charge of falsely representing himself to be a physician. His name does not appear on the list of registered physicians.

Mortality of Chicago and New York Compared.—During the week ended July 6, the death-rate in Greater New York was 40.82 per 1000, and in the Borough of Manhattan (old New York) it was 42.14. For the same week in Chicago the death-rate was 13.59 per 1000, or 66 per cent. less than that of Greater New York and more than 67 per cent. less than that of old New York. In the eastern city there were 989 deaths from sunstroke direct during the week; in Chicago there were but 12 deaths from sunstroke direct, while the general death-rate was increased only from 12.54 to 13.59 per 1000.

Low Mortality.—July promises to be unprecedented as regards low mortality. For the first twenty days of the month the total deaths from all causes numbered only 1273—an average of 63.6 per day, or a monthly aggregate of 1971, as against a monthly average of 2435 July deaths during the previous decade, 1891-1900. There were 27 fewer deaths last week than during the week previous, and 33 fewer than during the corresponding week of last year. One of the principal factors in this low July mortality rate is the fewer deaths among infants and young children, from the acute intestinal diseases, diphtheria, convulsions, meningitis, marasmus and other diseases of childhood influenced by hot weather. The deaths under five years of age last week were 149, as against 189 last year. A notable feature of last week's records is the great difference in the number of deaths of males and females; 254 deaths of males were reported and 173 females—an excess of nearly 50 per cent. of males. Greater exposure to the heat and irregular habits of life among the sterner sex are the probable causes of this disparity. This is borne out by the statistics of deaths from sunstroke; of the 28 deaths from this cause during the month all the adults were males.

IOWA.

A hospital has been established at Fort Madison by the Sisters of Mercy.

Dr. David W. Smouse, Des Moines, is attending the British Congress of Tuberculosis.

The Iowa Sanatorium and Benevolent Association has been incorporated at Des Moines, with Dr. John H. Kellogg as the medical representative of the incorporators.

Dr. Hoffman, pathologist of the State Hospital for the Insane, Mount Pleasant, has resigned to accept a salaried position on the faculty of Drake University, Des Moines.

Davenport has been fearing an epidemic of smallpox since the public funeral of a man who died from the disease. A private funeral was permitted, but without the sanction of the health authorities public services were held.

MARYLAND.

Maryland Pharmaceutical Association.—The annual meeting of this Association was held at Ocean City last week. H. P. Hynson, of the committee on adulteration, reported that he had found wood alcohol in the products of but one concern, although several had been examined. One lot of essence of ginger contained but 33 per cent. of ethyl alcohol when it should have contained at least 95 per cent. No wood alcohol was found in tincture of iron, but several specimens contained but 50 per cent. of grain alcohol; the pharmacopeia requiring 75 per cent. Of six lots of tincture of iodin, one sample contained but 5 per cent. of ethyl alcohol; two were made with wood alcohol, and all but three were greatly deficient in iodin. Seidlitz powders exhibited much adulteration.

Dr. Parnell F. Sappington gave a lawn fête at his country place, Wrenwood, near Govanstown, on the evening of July 19. He is president of the North-Eastern Dispensary of Baltimore, and the object was to raise funds to procure surgical instruments for that institution. The Dispensary was founded in 1853 and it is proposed shortly to pull it down and erect a larger and more modern building. A fresh supply of spring water, more than adequate for its needs, has recently been obtained. Dr. W. J. Todd read a history of the physicians who lived at Mt. Washington, Baltimore County, when it was known as Washingtonville, and the doctors' fees were twelve and one-half cents a month for each member of the family, sick or well, while babies were exempt from any tax until they were 30 days old. The earliest physicians were Dr. Septimus Dorsey and Mr. Hollingsworth. The hospital is beautifully situated at an elevation of 500 feet above sea-level.

Baltimore.

The Baltimore County Medical Association held its July meeting on the 18th, at Endowood Hospital for Consumptives, about 40 members being present. The society was the guest of the Hospital Board and a handsome luncheon was served. The large mansion and 75 acres of forest land surrounding were inspected. Since its opening in 1896, 154 cases have been treated, of whom 42 have been cured or improved. At present there are 20 inmates. A cottage is in course of erection. The treatment consists of concentrated diet of highly nutritious foods, regulated bathing, regular hours and few drugs. Creosote has given good results.

At the University of Maryland, Dr. José L. Hirsh has been made associate professor of pathology and bacteriology and visiting pathologist to the University Hospital; Dr. D. M. R. Culbreth, professor of materia medica and pharmacognosy; Dr. R. Tunstall Taylor, associate professor of orthopedic surgery; Dr. John G. Jay, associate professor of clinical surgery; Dr. H. H. Arthur, associate professor of diseases of women; Dr. S. B. Bond, associate professor of genito urinary diseases; Dr. Harry Adler, associate professor of diseases of the stomach; Dr. Hughlett Hardcastle, lecturer on diseases of the nose and throat; Dr. Geo. A. Fleming, demonstrator of ophthalmology; Dr. E. V. Millholland, demonstrator of diseases of the throat and nose; Dr. H. C. Hyde, demonstrator of pathology and bacteriology.

Personals.—Dr. J. Edwin Hengst and Harry Boyd have gone to the Pan-American Exposition. Dr. J. Whitbridge Williams is at Watch Hill, Rhode Island. Dr. C. Urban Smith is at Atlantic City. Dr. S. B. Wrightson has gone to the Pan-American Exposition and Niagara Falls. Dr. J. H. Hartman left on the 23d for a trip to Rhode Island and Maine. Dr. John C. Hemmeter is at Cape May. Drs. J. Frank Crouch and J. J. Carroll sailed on the 11th inst. for Germany. Dr. Harry M. Thomas is at Blue Ridge Summit, Pa. Dr. Rosell Berryman, of this city, while on a visit to a friend in Washington, was seized with appendicitis; he was removed to the Emergency Hospital and operated on the 14th by Dr. Vaughn. Dr. Sidney Cone is in the mountains of western North Carolina. Dr. Wm. T. Howard is at Bedford Springs, Pa. Dr. Howard A. Kelly has closed his sanitarium for the summer and will make a canoe trip on the Susquehanna of 101 miles, accompanied by Drs. F. P. Bull, Justus Barth and others; later he will go to Northfield, Mass., to attend a bible conference; he will spend September at his camp in Canada.

MASSACHUSETTS.

A medical house is being built in connection with the Epworth League Settlement in the North End, Boston.

Dr. C. J. Leary, Waltham, has entered on his term as assistant surgeon at St. Vincent's Hospital, Worcester.

Dr. John F. McHugh has been made resident physician of Lowell General Hospital, vice Dr. F. Herbert Coffin, term expired.

The Isolation Hospital at North Brookfield, which was ready to receive patients, was burned July 3. The loss was $1200 without any insurance.

MICHIGAN.

Smallpox has appeared at the Michigan Asylum for the Insane, Kalamazoo. On July 19 there were twenty-nine cases of the disease among the attendants and patients.

Grand Rapids Medical College.—The litigation over the ownership of the stock of this college was temporarily concluded July 15 by Judge Wolcott, who held that the contract contemplated that the stock should be paid in money and that each of the fourteen physicians is entitled to but ten shares and that they can secure control of the remaining thirty, which they bargained for, by paying in $75 within thirty days. The college is to bear the expense of the litigation.

Health of Michigan.—For June, 1901, compared with the average for that month for the last ten years, pneumonia, scarlet fever and smallpox were more than usually prevalent; and consumption, inflammation of kidney, intermitten fever, measles, erysipelas, inflammation of bowels, remittent fever, cholera morbus, dysentery and cholera infantum were less than usually prevalent. Cerebrospinal meningitis was reported during June, at 6 places; whooping cough at 30 places; diphtheria at 48 places; typhoid fever at 52 places; scarlet fever at 117 places; smallpox at 118 places, and consumption at 216 places. Reports from all sources show cerebrospinal meningitis reported at 4 places less; whooping cough at 5 places less; diphtheria at 13 places less; typhoid fever at 18 places less; measles 4 places less; scarlet fever at 40 places less; smallpox at 35 places less; and consumption at 15 places less, in June than in May, 1901.

MINNESOTA.

Dr. Charles L. Greene, St. Paul, is attending the British Congress of Tuberculosis.

Dr. Henry S. Nelson has succeeded Dr. William J. Byrnes as city physician of Minneapolis.

Dr. William E. Todd, Albert Lea, has been appointed physician of Freeborn county at a salary of $600 a year.

Dr. William F. Milligan, Wabasha, sailed for Southampton July 17, on the *St. Louis*. He expects to spend three months abroad.

Dr. Charles F. Warner, Mankato, accused of failing to report a case of contagious disease to the local health officer, has been acquitted.

Dr. Oscar C. Heyerdale, Rochester, has returned from a trip to Norway and Sweden, where he took two insane patients ordered to be deported to their native towns.

Smallpox.—The report of the State Board of Health for the fortnight ended July 1 shows 527 new cases of smallpox, 63 less than in the preceding two weeks. Of these Duluth has 53 new cases, St. Cloud, 29, and Grand Marais, 26.

A fresh air hospital is to be established on Harriet Island, St. Paul, equipped with all essentials for the care of sick children. The hospital is to be under the immediate control of the health commissioner, Dr. Justus Ohage, and will be open until the end of September.

MISSOURI.

Dr. English J. Warth has been appointed assistant physician at State Lunatic Asylum, No. 3, Nevada, vice Dr. Rufus Gillaspy, deceased.

Dr. Edwin E. Hunter, St. Joseph, formerly city physician, is now surgeon of the *Montreal*, a steamer plying between New Orleans and Cape Colony, South Africa.

Dr. M. Hayward Post, St. Louis, has been appointed by the governor a member of the Board of Managers of the Missouri School for the Blind, vice Dr. J. Harvey Moore, resigned.

NEBRASKA.

Dr. Charles C. Allison, Omaha, left last week for Europe, and will return in September.

Nebraska Physicians.—Labor Commissioner Watson has completed a compilation of statistics regarding Nebraska physicians. On July 2 there were 955 regulars practicing in the state, 119 homeopaths and 100 eclectics. Classed among physicians in these statistics were 17 osteopaths.

Dr. Mabel Dunn, Syracuse, a graduate of the Northwestern University Woman's Medical School in 1876, has been appointed assistant physician to the Hospital for the Insane, Lincoln. She succeeds Dr. Minerva Newbecker. Dr. Dunn was formerly connected with the Illinois Eastern Hospital for the Insane, Kankakee.

NEW JERSEY.

Dr. James W. Smith has resigned as assistant health officer of Paterson and physician-in-charge of the Isolation Hospital. Dr. Frank E. Agnew succeeds him in the latter position at a salary of $1,000 per annum.

Testimonial to Dr. Wienges.—The Medical Board of Christ Hospital, Jersey City, has passed resolutions in which it records with sincere sorrow the death of Conrad Wienges, M. D., in whose death it mourns a citizen of high character, one long and honorably identified with the hospital, in the records of which he will always live as a faithful, intelligent and esteemed member of his profession, and it tenders heartfelt sympathy to his bereaved family, and trusts that the memory of his good work may soften their great sorrow.

Mercer Hospital, Trenton.—The board of managers of the hospital has appointed the following staff: Consulting surgeons, Drs. Samuel W. Latta and Thomas H. Mackenzie; consulting physicians, Drs. William Elmer and Cornelius Shepherd; gynecologist, Dr. Joseph B. Shaw; pathologist, Dr. Irenaeus M. Shepherd; attending surgeons, Drs. John Bruyere, Nelson B. Oliphant, John S. Jamison and William McD. Struble; attending physicians, Drs. Irenaeus M. Shepherd, William A. Clark, Charles J. Craythorne and Charles F. Adams; medical director, Dr. William Elmer; resident physician, Dr. Frank Harris, and registrar, Dr. George H. Parker.

NORTH DAKOTA.

The State Medical Board, at its meeting in Fargo, July 11, admitted seven out of nine applicants for license to practice medicine in the state.

Dr. Frederick J Duggan, Grand Forks, has been appointed superintendent of the Grand Forks County Board of Health, vice Dr. Samuel H. Irwin, term expired.

OHIO.

Dr. Thomas C. Hoover, Columbus, on the completion of his twenty-fifth year of service with St. Francis' Hospital, was presented with a handsome silver tea and coffee set and salver by the Sisters of the Poor.

Protestant Hospital, Columbus, at the annual meeting of its trustees, July 9, elected Dr. David N. Kinsman, chief of staff, and the following as members of the medical and surgical staff: Drs. Will J. Means, Sherman Leach, John H. J. Upham, Clovis M. Taylor, Yeatman Wardlow, William L. Dick, Thomas G. Youmans, John W. Wright, Andrew Timberman, Harvey C. Fraker, Carl L. Spohr, George M. Waters, Edwin F. Wilson, James N. Barnhill, John E. Brown, Charles S. Means, Charles A. Cooperrider and Eugene G. Carpenter.

TENNESSEE.

Dr. Louis Leroy, Nashville, State Bacteriologist, has gone to Washington, where he will study the methods pursued by the Marine-Hospital Service in the Government laboratory, with a view to their application in Tennessee.

Tribute to the Memory of Dr. William L. Nichol.—The physicians of Nashville, at a meeting recently held, prepared and passed resolutions expressing their sorrow at the death of Dr. William L. Nichol, and their appreciation of the great good he had accomplished as a physician, a humanitarian and a citizen.

Medical Department of the University of the South.—The progress of this school has been such in the past two years that it has been found necessary to add a new wing to the main building. The amphitheater has also been enlarged to accommodate 250 students. A new chemical laboratory and lecture room have been added and a new pharmaceutical laboratory fitted up. The equipment of the pathologic and bacteriologic laboratories is being improved.

TEXAS.

Drs. E. D. Capps, Fort Worth, and R. F. Miller, Sherman, have gone to New York and will sail for Europe for the purpose of studying in the hospitals for several months.

Dr. J. E. Gardiner has been elected professor of anatomy, and Dr. Roy W. Dunlap, demonstrator of anatomy in the medical department of the Fort Worth University.

New Medical Law for Texas.—The new medical law passed by the last legislature went into effect on July 9 and Governor Sayers appointed the three boards as required. While the new law is not all that was desired, it is a great improvement over the old method under which the diploma and certificate mills flourished.

The Board of Medical Examiners for the State of Texas has been appointed by the governor. The representatives of the regular school are Drs. Joseph W. Scott, Houston; John H. Evans, Palestine; Don. J. Jenkins, Daingerfield; J. T. Wilson, Sherman; Matthew M. Smith, Austin; John C. Jones, Gonzales; Joseph H. Reuss, Cuero; Frank Paschal, San Antonio and Sam R. Burroughs, Buffalo. The board met for organization July 23 at Austin.

UTAH.

Dr. W. A. Wright has been appointed interne at St. Mark's Hospital, Salt Lake City.

Dr. Theodore B. Beatty, Salt Lake City, started July 3 for a two-months' trip to Japan.

Eight New Physicians.—As a result of the examination for license to practice, which was concluded July 3, eight applicants were granted permission to practice in the state.

The State Board of Medical Examiners has been reorganized by the election of Dr. Elias S. Wright, Salt Lake City, president, and Dr. Robert W. Fisher, Salt Lake City, secretary.

VERMONT.

Dr. H. Edwin Lewis, Burlington, is in attendance on the British Congress of Tuberculosis in London.

Dr. Fred K. Jackson, Barre, has been appointed instructor in physiology in the medical department of the State University.

The University of Vermont Medical Department, Burlington, held its annual commencement exercises, June 27, graduating a class of 23. The doctorate address was delivered by Dr. John Ordonoux, emeritus professor of medical jurisprudence.

Dr. Ashbel P. Grinnell, a practitioner of Burlington, who was arrested in New York in March last, on the complaint of Edward Weston, of the Weston Electrical Instrument Company, has entered suit for $50,000 damages in the United States Court against Mr. Weston, who admitted that the case was one of mistaken identity.

WISCONSIN.

The State Medical Board has ordered the arrest of a magnetic healer of Ripon, on the charge of unlawful practice of medicine.

Dr. Hiram P. Melville, Milwaukee, has been elected surgeon of the Wisconsin Veterans' Home, Waupaca, vice Dr. George B. Noyes, deceased.

Drs. Edwin J. and John F. Farr, Eau Claire, have been appointed by the surgeon-general, examining surgeons of recruits for the National Guard of the State.

GENERAL.

Plague in New York.—A case of bubonic plague has been discovered on the steamer *Hohenfels* in New York.

Governor-General Wood Convalescent.—Governor-General Wood has almost recovered from a severe attack of typhoid fever. He purposes starting for a short Atlantic cruise on the 29th.

Yellow Fever in Cuba.—Latest reports indicate that yellow fever is developing in certain parts of Cuba. Surgeon Glennan, of the Marine-Hospital Service, reports that there are two cases of yellow fever at Cienfuegos and one suspicious case at Santiago. It is also reported that there are five cases at Santiago de Las Vegas, a town of 6000, 23 miles from Havana. Spaniards are the sufferers in each instance. The cases at the latter city are not verified at this time.

CANADA.

Dr. A. A. Biron, Manchester, N. H., is spending a holiday in Montreal.

Dr. E. B. Prettyman, Baltimore, is at the Place Viger, Montreal.

Dr. Hunter Robb, Cleveland, Ohio, is spending a four weeks' holiday at Murray Bay, Quebec.

The Western Hospital, Montreal, has elected Drs. W. E. Deeks, W. G. Reilly and R. H. Craig to positions on the medical staff.

Winnipeg General Hospital, during the week ending July 13, treated 192 patients, 106 men, 63 women and 23 children; 36 out-patients were also treated.

A new isolation hospital for smallpox patients is about completed in Toronto and the work of removal of patients commenced. There are now about six cases of smallpox in that city.

The city water of Toronto was never in a purer condition than at present. The city bacteriologist states that in the spring there are as many as 20,000 colonies of bacteria in each cubic centimeter of water, but at the present time there are only 150.

Toronto sewage disposal has again become a live question. The city engineer has recommended that a trunk sewer be constructed and the sewage carried into Lake Ontario at least three miles distant from the Eastern city limits. The whole scheme of sewage disposal is to cost $1,750,000.

The Sick Children's Hospital, Toronto, has appointed the following resident staff for the coming year: Drs. Allen B. Rutherford, John D. Chisholm, W. B. Lowry and Margaret McCallum, the latter being one of the first women to be appointed on any hospital staff in Canada.

A dangerous cattle affection, splenic disease, has broken out in Stormount County, some forty miles from the city of Ottawa. A large number of cattle have been lost within the last couple of weeks. The disease is spreading to horses. Healthy animals take sick and die within twenty-four hours.

The Montreal Health Department had a busy month in June. During the month there were 165 new cases of infectious diseases, of which 44 were made known only at the time of death. Typhoid fever was the most prevalent, with 80 cases, of which 14 proved fatal. Measles came next in order, with 13 deaths in 40 cases reported; scarlatina with 8 deaths in 39 cases, and diphtheria, 5 deaths among 18 cases.

The Medical Society of New Brunswick held its twenty-first annual meeting at Monekton on the 16th and 17th of July, with Dr. S. C. Murray, the vice-president, in the chair. Among others who contributed papers were Drs. J. H. Ryan, of Sussex, A. J. McCully, of Monckton, G. A. B. Addy, of St. John, J. C. Webster of Chicago, J. R. MacIntosh and W. L. Ellis of St. John. The following officers were elected: president, Dr. S. C. Murray, Albert; vice-president, Dr. G. A. B. Addy, St. John; corresponding secretary, Dr. J. O. Calkins, Sackville; recording secretary, Dr. W. L. Ellis, St. John. St. John was selected as the next place of meeting.

The Medical Association of the District of St. Francis was held in Sherbrooke, recently. Dr. Brown, Richmond, Quebec, presided and there was a good attendance of members. Dr. Russell Thomas, Lennoxville, was appointed to represent the Association at the coming meeting of the Canadian Medical Association in Winnipeg; and the delegate was authorized to bring before the Association the scheme of the medical defense union which was started by the St. Francis Association, and to offer to the Canadian Association the scheme which is already in working order, so that it may be put into operation at once instead of having to wait several years as they would have to do if the matter was left to a committee scattered all over the Dominion. A resolution favoring Dr. Roddick's Registration Bill was passed unanimously by the Association.

Canadian Medical Association.—The coming meeting of the Association at Winnipeg, the last four days in August, promises to be one of the most successful yet held. Many Eastern practitioners have already signified to the secretary their intention to be present and letters of inquiry are coming in daily. The profession in the prairie city are laying themselves out to entertain their confrères from the East right royally. Amongst other functions there is going to be an excursion to Old Fort Garry and a specially arranged excursion through the great wheat belt of Manitoba. After the meeting many of the members will take advantage of the cheap rates offered by the Canadian Pacific Railway to Banff and the Pacific Coast. Among others who are to take part in this meeting will be Dr. J. R. Jones, of Winnipeg, who is to deliver the address in medicine; Dr. O. M. Jones, Victoria, B.C., who will deliver the address in surgery, and Dr. Thomas S. Cullen, of Baltimore, who will deliver the address in gynecology. Visiting members may well look forward to a rich treat both socially and scientifically in Winnipeg.

FOREIGN.

Italian Congress of Pediatrics.—The fourth congress of pediatrics will convene at Florence, October 15 to 20.

The Medico-Psychological Association of great Britain and Ireland will be held in Cork, Ireland, on July 25 and 26.

Bubonic Plague at Marseilles.—The French steamer *Laos* arrived at Marseilles from Yokohama, July 7, with several cases of plague on board. Two of the crew, Arab stokers, have died, the last on July 20. The others are progressing favorably.

Virchow's Eightieth Birthday.—Professor Virchow's eightieth birthday will be celebrated in Berlin October 12, and it is expected that representatives from the scientific bodies of various countries will attend and present congratulatory addresses to the learned scientist.

Suspected Plague on British Steamer.—The steamer *Ormuz,* from Sydney to London, landed two cases, believed to be bubonic plague, at Plymouth, on July 22. One case developed after leaving Marseilles. During the passage, it was refused admittance to the harbor of Gibraltar.

The seventieth birthday of Professor His, of Munich, was celebrated July 9. The *Muenchener Med. Woch.* reviews his scientific achievements, and more than 100 publications. His great work on the anatomy of the human embryo and his studies on the nerve cells opened the way for the discoveries of Golgi, Ramon y Cajal, and others, besides his own important contributions on the subject of the nervous system. The uniform nomenclature of anatomy is to a certain extent his work.

French Appropriation for the Study of Yellow Fever.—The French government has appropriated 100,000 francs to defray the expenses of a scientific mission for the study of yellow fever in America. The *Semaine Médicale* states that the party will go to Rio Janeiro, as yellow fever is more frequent there than in Havana and the Gulf of Mexico, and better facilities are afforded for research. It is expected that the further expenses of the mission will be borne by the French Senegal colony, in West Africa, which is directly interested in the study of yellow fever.

Congress of Czech Physicians and Naturalists.—Slavic physicians and scientists gathered at Prague in May to the number of a thousand to hold the third Czech congress, the last having taken place nineteen years ago. The congress was divided into eleven sections, and more than 360 communications were presented. The Czechs have a university at Prague, whose scientific importance is thoroughly appreciated abroad. The number of students is so large that it is proposed to found a second university and medical department at Maehren. Hlava presided over the congress. The title of one of the chief addresses was the "Influence of Civilization on the Nervous System," by Thomayer; he does not consider this influence deleterious. Knighthood of the Order of Leopold was conferred by the emperor on Professors Pribram, Eiselt and Jirus, and other decorations on Janovsky, P. J. Piek, F. Friedreich and J. Rychna, on this occasion.

Miscellany.

Production of Biliary Calculi.—Italia concludes that the proliferation of attenuated non-virulent, micro-organisms in the gall-bladder causes the bile to become more acid. This in turn induces the precipitation of granules which agglomerate to form calculi, agglutinated by the mucus secreted by the walls of the gall-bladder.—*Policlinico*, viii, 4.

The Anopheles as Host of a Trematode.—The Rome correspondent of *The Lancet* states that Marbirano, while examining the stomach and salivary glands of hybernating mosquitoes, found that a large number of these insects acted as hosts of a small trematode worm of the distomida family. These were encysted, and also found free in the thorax and abdomen. "Each cyst contained only one distoma of a flat leaf-like form, oval, somewhat elongated, becoming during its active progressive movements after its liberation from the cyst narrow and ribbon-like in shape." Several of the anopheles were also infected with filaria, which were found in the Malpighian tubes.

The State Reformatories in England, according to their rules just published, have three grades, the Licensed Retreats in which inebriates seek voluntary retirement, the certified Inebriate Reformatories, to which commitments may be had and the State Inebriate Reformatories for persons led by drink into crime. Where an inmate has any property available for his maintenance an order may be obtained from a county court judge for that purpose. The inmates are, too, separated into three classes each with a distinctive badge. A system of rewards and punishments promotes or degrades from one class to another. Members of the special class may become eligible for positions of trust in the reformatory or they may be lowered to the penal class. According to the multiple regulations the reformatory element is to be in the ascendant and in no case is a discharge on "leave" impossible. Still the combination of prison discipline with remedial treatment may not be altogether acceptable to the subjects, who as a whole never seem to forget their grievances.

Uniform Medical Legislation.—The preliminary report of the Committee on Organization of the American Medical Association (see THE JOURNAL of the American Medical Association, May 25, 1901), while speaking of the reorganization, mentions prominently medical education and medical legislation and reciprocity. We sincerely hope, not only that these two most important questions will receive due consideration on the part of the House of Delegates, and of the General Meeting, at Saratoga, but also that material progress will be made by advocating and endorsing such steps as may be recognized as commendable. It appears to us that a high standard of preliminary education, and a thorough medical course in a well equipped and continually inspected medical college, should be insisted upon. The example set by the New England Medical Boards, which formed a working group, should be recommended. These and similar considerations suggest themselves to the American Medical Association. Although a sub-committee on uniform medical legislation was appointed by the Conference of the Committees on National Legislation of the American Medical Association and affiliated societies, the responsibility, we think, rests upon the House of Delegates, and upon the General Meeting. Circumstances place the reorganized Association face to face with great problems. We feel assured that the American Medical Association will be equal to the task. —*Philadelphia Med. Journal*, July 13.

Staining the Tubercle Bacillus.—For the rapid detection of the bacillus tuberculosis in sputum and urine Dr. H. W. G. MacLeod has found the following method satisfactory with the Ziehl-Neelsen carbol-fuchsin stain. He employs extra thin slips of white crown glass, 76 mm. by 25 mm., and circular cover glasses (16 mm. = ⅝ "). On a slip cleared of all grease by means of ether and rectified spirit, three separate films are spread in the usual way, and fixed by passing the slide rapidly over the flame of a spirit lamp. By means of a small pipette filled with the stain, two or three drops of carbol-fuchsin are placed on each film. The slip is then held about 10 inches above the flame and gently moved about, the fluid being allowed to "steam" for five minutes without boiling. Fresh stain is dropped on with the pipette to prevent the films drying. The slide is then washed and decolorized in the usual way by dipping it into 25 per cent. of nitric or sulphuric acid, etc. A spot of Loeffler's methylene-blue is placed on each film, the slide is gently warmed for a few seconds, and then washed. The bacilli are usually stained perfectly. By this method, 1, three specimens can be prepared at once; 2, by applying the film to the slide and not to the cover glass all chances of breaking or dropping the latter and of losing the specimen are avoided. The circular cover glass is more easily manipulated and is less fragile than the square, and it encloses the largest space in the smallest boundary. By holding the slide in the fingers when "steaming," and not with Cornet's or other forceps, overheating is prevented. This also does away with heating the film in a capsule over a sand bath, which takes a much longer time; and if in this process a cover glass is used it is stained on both sides, and matters are complicated. Forceps holding a slide or cover glass get smeared at their points with carbol-fuchsin, and may re-stain the film after it has been decolorized by the acid. By the other method this is avoided. For saving time in clinical work and at examinations it is rapid and effective.—*British Medical Journal*, June 6.

French Congress of Otology and Laryngology.—The principal addresses at this congress which convened at Lille, May 1, were on "Sphenoidal Sinusitis" and "Nasal Hydrorrhea." The great benefit of hot air in the treatment of affections of the mucosa of the upper air passages was corroborated by Lermoyez, who related among others the case of a man who had suffered for thirty years from nasal hydrorrhea with sycosis of the upper lip, rebellious to all measures. Under treatment with hot air, a surprising improvement became evident in a few seances. Affections on a nervous foundation seem to be most susceptible to the benefits of this treatment, which probably acts by stimulating the natural forces, similarly to electricity and light in therapeutics. Sarremone described a case of facial neuralgia consecutive to nasal catarrh and subsiding as the latter was cured. Collinet reported two cases of primary chancre in the nasal fossæ. One patient, a merchant, had a habit of scratching the inside of his nose with a pencil that lay on his counter and was used by his customers, who probably wet it in their mouths. The symptoms were obstruction of the right nasal fossa with a mucopurulent discharge and a characteristic and painful adenopathy in the corresponding submaxillary region. The lesion was diagnosed by the appearance of secondary manifestations. Castex has been investigating 323 deaf mutes and concludes that this condition is the result of defective evolution or of pathologic alterations in the receiving auditory apparatus. A preceding meningitis was noted in 40, convulsions in 37, brain fever in 20, typhoid fever in 17, scrofula in 16 and traumatism in 9. Concomitant affections are frequent, especially ocular alterations; the dentition is often defective, the skeleton unsymmetrical, the skull oval and slanting. Congenital deaf and dumbness was to the acquired in the proportion of 145 to 178, and consanguinity in the parents was noted in 8.94 per cent. Tuberculosis, syphilis, lead poisoning and alcoholism in the parents are important factors. Brothers and sisters were affected in 45 out of the 323 cases. Emotions during pregnancy and abnormal deliveries also figure in the etiology. The autopsies show the predominant importance of lesions of the labyrinth, brain, and cerebellum, congenital rather than acquired. Goris described three cases of cancer in which after extirpation or resection of the larynx, he found it necessary to reopen the wound and excise a portion of the esophagus and surrounding muscles to prevent suffocation. The next congress will discuss the treatment of "Acute Suppurative Otitis" and of "Fibrous Stenoses of the Larynx."

An Encouraging Outlook.

The Nebraska State Medical Society and the Nebraska State Homeopathic Medical Society met in annual session this year at the same time and in the same city. From the minutes of the

Nebraska State Medical Society's transactions, as published in the *Western Medical Review*, we copy the following:

"Lindell Hotel, Lincoln, Neb., May 7, 1901.

"To the Nebraska State Medical Society: The Nebraska State Homeopathic Medical Society, in convention assembled, hereby send greeting to your honorable and scientific body. We wish you success in all your noble efforts and investigations. Our aims are mutual in the researeh of truth, and in the noble and benign effort to ameliorate and relieve the ills of suffering humanity. Respectfully, W. H. Hanchett, M.D., W. A. Cate, M.D., A. V. Holmes, M.D., Committee."

It was moved and seconded that the secretary acknowledge the communication from the Homeopathic Society in a courteous and ceremonious manner. Carried.

"Walsh Hall, Lincoln, Neb., May 8, 1901.

"To the Nebraska State Homeopathic Medical Society: The Nebraska State Medical Society, in convention assembled, acknowledge with thanks the very cordial greeting from your honorable and scientific body and express its best wishes for you. May the unfolding of the great science of medicine lead all honorable physicians nearer together and stimulate the growth of a more fraternal feeling. A. D. Wilkinson, Secretary."

An Eddyite Prayer Against Dyspepsia.

The following sample of "christian science" is quoted by Samuel Lloyd Luckey in the *Journal of Physical Therapeutics* from one of the Eddyite publications, "Faith Healing and Christian Science," by Miss Alice Fielding, p. 214. It is a prayer for a dyspeptic, drawn up by Mr. Hazzard, president of the New York School of Primitive and Practical Christian Sciences. The capitals and italics of the original are followed:

"HOLY Reality! We BELIEVE in Thee that Thou art EVERYWHERE present. We *really* believe it. Blessed Reality, we do not pretend to believe, think we believe, believe that we believe. WE BELIEVE. Believing that Thou art everywhere present, we believe that Thou art in this patient's stomach, in every fiber, in every cell, in every atom, that Thou art the sole, only Reality of that stomach. Heavenly, Holy Reality, we *will* try not to be such hypocrites and infidels as every day of our lives to affirm our faith in Thee and then immediately begin to tell how sick we are, forgetting that Thou art everything and that Thou art not sick, and therefore that nothing in this universe was ever sick, is now sick, or can be sick. Forgive us our sins in that we have this day talked about our backaches, that we have told our neighbors that our food hurts us, that we mentioned to a visitor that there was a lump in our stomach, that we have wasted our valuable time, which should have been spent in Thy service, in worrying for fear that our stomach would grow worse, in that we have disobeyed Thy blessed law in thinking that some kind of medicine would help us. We know, Father and Mother of us all, that there is no such thing as a really diseased stomach; that the disease is the Carnal Mortal Mind given over to the World, the Flesh, and the Devil; that the mortal mind is a twist, a distortion, a false attitude, the HARMATIA of Thought. Shining and Glorious Verity, we recognize the great and splendid FACT that the moment we really believe the Truth, Disease ceases to trouble us; that the Truth is that there is no Disease in either *real* Body or Mind; that in the Mind what *seems* to be a *disease* is a False Belief, a Parasite, a hateful Excrescence, and that what happens in the Body is the shadow of the LIE in the Soul. Lord, help us to believe that ALL Evil is Utterly Unreal; that it is silly to be sick, absurd to be ailing, wicked to be wailing, atheism and denial of God to say, 'I am sick.' Help us to stoutly affirm with our hand in Your hand, with our eyes fixed on Thee, that we have no Dyspepsia, that we never had Dyspepsia, that we will never have Dyspepsia, that there is no such thing, that there never was any such thing, and that there never will be any such thing. Amen."

Married.

FRANK L. ROSE, M.D., Chicago, to Miss Jessie Allen, Charlotte, Mich., June 25.

ELMER AYRES IRWIN, M.D., to Miss Emma Louise Jenks, both of Chicago, July 10.

E. C. ANDERSON, M.D., to Miss Belle Coulter Moore, both of Hopkinsville, Ky., July 15.

GRIFFIN W. HOLLAND, M.D., to Miss Grace Addison Wilkins, both of Eastville, Va., July 10.

HENRY C. HOLTZENDORFF, M.D., Mishawaka, Ind., to Miss Grace McDonnell, Titusville, Pa., July 9.

GEORGE J. LOCHBOELER, M.D., Washington, D.C., to Miss Mary Margaret Schmitt, Baltimore, June 26.

SCOTT PARKER CHILD, M.D., Kansas City, to Miss Mary Townsend Hotchkiss, Buffalo, at Lewiston, N. Y., July 10.

Deaths and Obituaries.

Harvey W. Harkness, M.D., Berkshire Medical College of Massachusetts (now extinct), 1847, died at his home in San Francisco, July 10, at the age of 80. He went to California soon after his graduation, and, after practicing his profession for twenty years, retired from active practice and devoted his attention to scientific studies. He was president of the California Academy of Sciences for nine successive terms, 1887-1896, and at the time of his death was a Regent of the University of California. As a scientist, Dr. Harkness devoted his investigations chiefly to the study of the fungi of the Pacific coast and upon that subject became an authority. His collection of cryptogams, containing 10,000 specimens and one of the finest known, was presented by him several years ago to the Academy of Sciences.

Edwin S. Lemoine, M.D., University of Pennsylvania, 1848, died of Bright's disease, July 17, at his home in St. Louis, Mo., aged 74. He was secretary of the AMERICAN MEDICAL ASSOCIATION, 1853-55. He was a member of the St. Louis International Medical Society, the Medical Association of Missouri, the St. Louis Academy of Science, and the Missouri Historical Society. He was elected president of the Missouri Obstetrical and Gynecological Society in 1892 and again in 1893. He was on the consulting staff of the Martha Parson's Hospital for Children and was first physician to the Memorial Home at St. Louis. He graduated from Princeton University in 1845, and at the time of his death was vice-president of the Princeton Club, St. Louis.

Milton T. Carey, M.D., Medical College of Ohio, Cincinnati, 1851, died at his home in Cincinnati, July 15, after a brief illness, aged 79. He was resident physician at the old Commercial Hospital and Lunatic Asylum, and was later attending physician to the Contagious Hospital. At the beginning of the civil war he was commissioned surgeon-major of the 48th Ohio Volunteer Infantry and served throughout the entire war, and was captured at the battle of Shiloh; toward the close of the war he was placed in charge of Woodward Post Hospital, Cincinnati.

Freeman H. Chase, M.D., Medical School of Maine, Brunswick, 1866, died from apoplexy at his home in Bangor, Me., July 11, aged 62. He enlisted, when 21, in the 12th Maine Volunteers and served for three and one half years, rising to the rank of lieutenant, and was mustered out because of impaired health, due to his imprisonment in Libby and Andersonville prisons. He was also a graduate of Bowdoin College.

William H. Gobrecht, M.D., University of Pennsylvania, 1849, died in Washington, D.C., July 19, aged 72. During the civil war he was surgeon of the 49th Pennsylvania Infantry and served on General Hancock's staff. He had been demonstrator of anatomy in the Universities of Pennsylvania and Ohio.

Sanford S. Riddell, M.D., Tulane University, New Orleans, 1860, who had come from his home, Chippewa Falls, Wis., to attend the meeting of the Inter-County Medical Society, held at West Superior, dropped dead on the street at the latter place, as the result of a cerebral hemorrhage. He was 65 years of age.

Ellis P. Hamer, M.D., Jefferson Medical College, Philadelphia, 1851, died at his home in Lincoln, Neb., July 18, aged 78, after an extended illness. Since 1877 Lincoln has been his home; before that time he practiced in Fulton County, Illinois. He retired from active practice a number of years ago.

R. N. Cooley, M.D., Castleton Medical College, Castleton, Vt., (now extinct), 1859, died at his home in Hannibal, Neb., July 17, aged 70. He resided many years ago in Oswego County, N. Y., and at an early date identified himself with the New York State Medical Association.

Newton Calhoun, M.D., for fifty years a practicing physician at Warsaw, Ohio, committed suicide by taking morphin, July 13. He was 83 years of age, and had been despondent since the recent death of his wife.

Edward Hewes, M.D., physician and lawyer, died at his home in Frederick, Md., July 15, aged 44, of pulmonary tuberculosis. He was a descendant of Joseph Hewes, a signer of the Declaration of Independence.

James A. Harris, M.D., Jefferson Medical College, Philadelphia, 1884, died at Asheville, N.C., where he had gone in the hopes of being better able to combat the pulmonary tuberculosis with which he was affected.

Moses F. Bassett, M.D., died at his home in Quincy, Ill., July 11, aged 81. He practiced first in Barnstable, Mass.; he came to Quincy in 1853, and until a few years ago continued to practice there.

Leonard W. Groce, M.D., Texas Medical College, Galveston, 1868, was struck by a switch engine and killed, July 6, while crossing the track at Hempstead, Tex., where he lived.

Thomas J. Cheatham, M.D., Medical College of Virginia, Richmond, 1850, died at his home near Chesterfield Courthouse, Va., July 13, of cancer of the stomach, aged 74.

Morris Fussell, M.D., who has practiced medicine in Chester County, Pa., for over fifty years, died at his home near Chester Springs, after a long illness, aged 72.

Stephen S. Wason, M.D., who has lived and practiced medicine in Wisconsin for over fifty years, died at his home in Black River Falls, July 13, aged 73.

John L. Gilbert, M.D., Keokuk Medical College, Keokuk, Ia., 1892, died suddenly while on a visit to his parents at Grantville, Kansas, July 13.

Joseph A. Chandler, M.D., who was a veteran of the 152d Indiana Infantry, died from the heat at his home in Warsaw, Ind., July 18, aged 73.

Samuel W. McEwan, M.D., Rush Medical College, Chicago, 1881, died at his home in Alexandria, Minn., after an illness of two weeks, aged 50.

John D. Weaver, M.D., Jefferson Medical College, Philadelphia, 1883, died of heart failure at his home in Norristown, Pa., July 12, aged 44.

Stephen Vankirk, M.D., Jefferson Medical College, Philadelphia, 1901, died at Grafton, W. Va., July 14, from Bright's disease, aged 27.

Francisco Ezell, M.D., Washington University, St. Louis, Mo., 1881, died at his home in Fayette, Mo., July 10, aged 54.

William M. Vaughn, M.D., Cherokee, Texas, was burned to death in his bed by the explosion of a lamp, July 10.

John F. Trenchard, M.D., Jefferson Medical College, Philadelphia, 1847, died at Fairton, N. J., July 12, aged 81.

Nelson L. Griswold, M.D., died July 8, at his home in Utica, N. Y., after a long illness, aged 79.

George H. McMurray, M.D., Albany Medical College, 1887, died from diabetes, July 12, aged 36.

Societies.

Buffalo Academy of Medicine, Section on Pathology.—At a recent meeting of this Section Dr. George W. Wende was elected chairman, and Dr. Irving P. Lyon, secretary.

Brainard Medical Society.—At the annual meeting of this Society, held at Milwaukee, Wis., Stephen S. Stack, Milwaukee, was elected president, and William Hausman, Kewaskum, secretary and treasurer.

Buffalo Academy of Medicine.—The following officers have been elected for 1901-02: President, Dr. Charles G. Stockton; secretary, Dr. Frank W. McGuire; treasurer, Dr. Charles S. Jewett, and trustee, Dr. Matthew D. Mann.

Wayne County (Ind.) Medical Society.—This Society, at its recent meeting in Richmond, elected the following officers for the coming year: President, Dr. H. B. Boyd, Camden; vice-president, Dr. Harrison Gable, Centerville, and secretary and treasurer, Dr. Stephen C. Markley, Richmond.

Stephenson County (Ill.) Society of Physicians and Surgeons.—At the annual meeting of this Society, held at Freeport, July 11, the following officers were elected: Dr. Smith C. Thompson, Cedarville, president; Dr. John F. Fair, Freeport, vice-president, and Dr. Robert J. Burns, Freeport, secretary and treasurer.

Wood County (O.) Medical Society.—This Society was organized at Bowling Green, July 10, and the following officers were elected: Dr. Joseph C. Lincoln, Bowling Green, president; Dr. Frank D. Halleck, Bowling Green, secretary, and Dr. Byron S. Cranston, Rudolph, treasurer. Drs. C. S. St. John and W. L. Mathers, Bowling Green, and Dr. C. M. Deibert, Milbury, were named as a censor committee.

Wyoming County (N. Y.) Medical Association.—At the annual meeting of this Association, held at Warsaw, July 10, it was voted to join the New York State Medical Association, the advantages of such a step being brought out in a general discussion. The following delegates were chosen to attend the state convention to be held in New York, October 21: Dr. Zera J. Lusk, Warsaw; Dr. George W. Blackmer, Pike; Dr. T. A. Way, Perry Center; Dr. Lyman C. Broughton, Castile; alternates, Dr. L. H. Humphrey, Silver Springs, Dr. George S. Skiff, Gainesville, Dr. Philip S. Goodwin, Perry, and Dr. Carl C. Mann, Warsaw. Officers chosen for the ensuing year were Dr. Carl C. Mann, president, Dr. Philip S. Goodwin, vice-president, and Dr. Gifford Truesdell, Warsaw, secretary and treasurer. The next meeting will be held at Silver Lake.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, June 24, 1901.

The President, Dr. N. P. Dandridge, in the chair.

Cutaneous Treatment by Roentgen Ray.

DR. E. H. SHIELDS presented a case of pigmented nevus of the foot which he was treating by means of the *x*-ray. The result so far had been only fairly satisfactory, though he thought unquestionably healing had taken place in some portions. He also reported three cases of lupus, treated by the same method, one in which the result had been decidedly encouraging; a second is negative; third, still under observation, progresses nicely toward recovery. Exposure to the ray lasted from ten to thirty minutes, average fifteen minutes, without burn in any instance. The parts exposed varied from six to twelve inches from the tube.

DR. MERRILL RICKETTS said that some months ago he had reported a case of multiple sarcoma, in which skin nodules of the right side of the body were particularly prevalent and gave much pain to the patient. Under the influence of the *x*-ray the pain had entirely disappeared and curious to state many of the nodules apparently atrophied, or dried and scaled off. The patient ultimately died of dissemination of the disease but throughout the course pain was absent while under the *x*-ray treatment.

DR. SHIELDS said that he had seen several cases of chronic rheumatism entirely relieved of pain by subjecting them to the rays.

Fibroid of the Uterus Complicated with Pregnancy.

DR. A. G. DRURY reported the following case: M. A., colored, aged 37, primipara; on his first visit, June 2, 1901, he had obtained this history. The woman, a servant, was pregnant. Fearing detection she had procured an abortion on May 21. After the operation she had gone home and continued her usual work. The fetus and placenta were not expelled until the 24th, three days later. She had hidden them in a barrel in the cellar, continuing her work, notwithstanding the pain and hemorrhage, and had worked until she fell in a faint from sheer exhaustion, when he had been hastily summoned. He found her almost pulseless, with short rapid respiration. Thinking death imminent, she gave the above statement when slightly revived. The fetus and placenta were found as she

had stated. Examination showed a patulous os, and an offensive, bloody discharge. On the right side was a hard mass, the size of a fetal head and firmly attached to the uterus. A few hours later she had a chill during which her temperature rose to 102.8. From the second to the eighth the discharge from the uterus was continuous, and the temperature varied from 100 to 104. Pain at times was so severe as to require morphia. Quinin and strychnia were given as tonics and stimulants. The uterus was flushed out each day until the 18th. From the 12th decided improvement was noted until the 16th when she had a severe chill followed by increased pain. At times she was delirious. On this latter date there was a marked increase in the discharge, which was greenish in color. On the 17th a diminution in the size of the tumor was noted. On the 18th he had been called at noon and was informed by the nurse that she had had severe bearing-down pains and that something was protruding from the vulva. On entering the hand for vaginal examination the flow of a greenish fluid saturated the bed. The mass was readily removed and was found to be of about the size of a large orange, sacculated and with dense walls. On the 19th there was marked improvement, diminution in the pulse respiration and temperature, and in the amount and odor of the discharge. She has continued to improve up to date.

Two Weeks' Ovum.

DR. E. G. ZINKE presented a specimen of a two week's ovum aborted by a woman who was already seven weeks pregnant, the latter pregnancy going on to term. He thought that abortion took place on account of insufficient room for development.

Presentation of Specimens.

DR. B. MERRILL RICKETTS presented the following: Case 1.—Wire mattress (Phelp's hernia operation). This specimen was from a dog's abdominal wall in which a mattress of silver wire had been placed fourteen days before the dog's life had been taken. The tissues had grown through the meshes of the mattress, forming an impervious wall. Silk, silkworm gut, kangaroo tendon, catgut and wire were used for sutures and could be seen in their respective places, demonstrating the comparative life and usefulness of these materials for sutures. The catgut evidently became useless two or three days after insertion while the kangaroo tendon lasted much longer. Case 2.—Gall-stone with abscess formation, simulating appendicitis. Patient, a woman, aged 54 years, had suffered from gall-stones for many years, though she had never had clay-colored stools, and at this time there was no icterus. Patient was very frail and was much debilitated; did not weigh over 100 pounds. The entire right abdominal wall was hard and boggy, indicating underlying pus. Chloroform was administered and the incision made a little above the ordinary appendicitis incision, over the point of greatest bogginess, the preponderance of evidence being in favor of an appendicitis. A half pint of thick, non-offensive pus was evacuated immediately under the incision, exposing a cavity below the gall bladder and extending downward. A gall-stone weighing 285 grains, which had sloughed through the gall bladder and which was surrounded by dense adhesions, was found in this cavity. The cavity was packed and drained. The intestine which had been adherent to the abdominal wall and had been cut in the primary incision was then sutured and the woman put to bed. Convalescence was very rapid and the temperature never reached 100 degrees. Case 3.—Gall-stone in a woman of 70 years of age; she weighed 225 pounds; gave a history of severe pain in the region of the gall bladder for a number of years and at the time of examination suffered from intense icterus and clay-colored stools. A cholecystotomy was made and revealed a ball-valve stone in the common duct, which stone was divided and removed in fragments. Weight of stone was 22 grains. Uninterrupted recovery took place. Case 4.—Typhoid fever, operation, recovery. Gall-stone. Woman, aged 21, who had suffered from an attack of typhoid eighteen months previous to the onset of her present trouble. Icterus extreme, stools clay-colored, and complaint of severe pain in the region of the gall bladder. Cholecystotomy was made and the gall bladder was found to contain two ounces of a light-colored albuminous fluid. Sound revealed a stone in the common duct and some small fragments of the stone were removed by means of the curette. In the manipulation the stone disappeared, presumably into the hepatic duct and could not be located thereafter. This stone was also of the ball-valve variety. The cavity of the gall bladder was drained externally, and most of the bile was seen coming through this external opening; the stools are naturally still clay colored, but the icterus is rapidly disappearing and the patient improving greatly in general health. The interesting point in the case is the probable rôle of the preceding typhoid in the production of the stone; this probability is still further strengthened by the age, 21 years, of the patient. Case 5.—Ovarian tumor with twisted pedicle. A woman, 54 years of age, weighing in the neighborhood of 225 pounds, had been bed-fast for three days on account of excruciating pain in the lower right abdominal region. Examination revealed a large tumor apparently in connection with right ovary. Abdominal wall incised and after cutting through about four and one-half inches of fat peritoneal cavity was opened, which opening immediately gave exit to over three quarts of a dark-red fluid. A large ovarian cyst in connection with the right ovary was found with a badly twisted pedicle; this cyst contained a clear fluid and on removal proved to weigh 15 pounds. The abdominal cavity was then irrigated with hot water. The muscular layer was sutured with kangaroo tendon, and the subcutaneous tissues with silkworm gut; recovery uneventful. Case 6.—Cystic tumor, left ovary; hematoma of the right; purulent appendicitis; operation and death in 75 hours from ileus. Patient was aged 24, slight in build, not over 90 pounds, mother of one child, was suddenly attacked with very severe pain in the right side. Examination revealed an enlarged and tender ovary. On opening the abdomen, the right ovary was found to contain a hematoma and the left ovary cystic; both were removed. Examination of the appendix showed it to be enlarged and containing pus; this was also removed. The temperature never exceeded 99 and she declared she suffered no pain. No medicine of any kind was administered. She began to vomit stercoraceous matter 75 hours after operation and died at the end of 80 hours, of ileus.

Villous Polypus of the Rectum.

DR. JOHN H. LANDIS gave the following history: Age of patient, 64 years, occupation, farmer. He had an attack of grippe four years ago lasting one month and has had occasional attacks of what were diagnosed as inflammed hemorrhoids. The polypus was noticed for the first time one year ago when it was suddenly protruded during an act of defecation. It bled slightly and was replaced without special difficulty or pain. Since its first appearance it has been expelled from two to five times daily, the bowel movements during this time containing blood and mucus. It has always been replaced without much difficulty and has been more of a source of annoyance than of suffering. The most distressing symptoms due to its presence have been headache and backache. Both of these symptoms promptly disappeared after its removal. Histologically these tumors are made up of hypertrophied villi, follicles of Lieberkühn and connective tissue, and have a generous blood supply. Clinically they present the characteristics of simple tumors. Occasionally they show malignant tendencies. According to Cripps they are very rare, appear after adult life, usually in old age and frequently attain a large size. The specimen presented this evening was attached to the anterior wall of the bowel about an inch and a half above the sphincter by a short pedicle over an inch wide and one-quarter inch thick.

Branchial Fistula.

DR. H. J. WHITACRE presented a specimen of branchial fistula. The fistulous tract had extended from just above the larynx to right tonsil, and he had removed the entire tract with good result.

Addison's Disease.

DR. G. F. SUDHOFF reported this case: W. J., white, German, single, physique poor, height five and one-half feet, weight

110 pounds, of good habits, occupation porter, admitted to the German Protestant Hospital May 26, 1901. Father died at the age of 75, mother at 58, cause of death in both instances unknown. Has brothers and sisters in Germany, but he knows nothing of them. He had pleurisy four years ago and apparently made a good recovery; was in the German Protestant Hospital on Dr. Sudhoff's service from Dec. 27, 1897, to Feb. 20, 1898, with symptoms of incipient phthisis such as cough, fever, debility and the physical signs of consolidated areas at both apices. Had diphtheria two years ago and follicular tonsillitis one year ago. Present trouble began seven days previous to admittance to the hospital with headache, languor and general debility, loss of appetite; vomited two or three times. Patient appears very nervous and extremely weak; complains of severe pains in the loins especially after sitting awhile; frequently walks with hands on back to render some support; muscular debility seems general and the patient appears almost too weak to walk; has slight cough but no expectoration, and himself states that the cough is on account of the dryness of the throat. Voice feeble and speaking requires considerable of an effort. Temperature 100.8; pulse 84 and very feeble. Appetite poor, has some nausea and vomits occasionally, bowels regular, stools of rather a light color. Micturition frequent, but urine is normal in amount. Skin of face and neck brownish-yellow in color, conjunctivæ white. Heart sounds normal except that the action is very feeble. Slight dulness over both infra-clavicular regions; respiratory sounds feeble and expiration somewhat prolonged over both apices; no rales. Liver dulness normal; muscles tense over lower half of the abdomen, but there was no special point of tenderness. Extremities normal; skin on hands also darkened as though sunburned. Urine amber; reaction acid; sp. gr. 1010; no sugar, no albumin, no bile pigment. He died on May 26.

Autopsy, 14 hours after death. Lungs: small consolidations about the size of a bean at both apices, no cavities in any part of the lungs. Heart: small, paler than normal, myocardial tissue slightly softened. Abdomen: liver and pancreas normal; spleen somewhat enlarged and softened; stomach dilated and mucous membrane pale; intestines normal. Suprarenals; both enlarged, measuring three inches long, two inches wide and one and one-half inches thick, very hard and nodular (nodules about the size of a pea); on section some of these nodules seem to contain cheesy and chalky deposits surrounded by firm fibrous tissue. Microscopic examination: characteristic structure of the adrenals entirely destroyed and the entire organs consist of uniform masses of white, firm, fibrous, wavy bands enclosing lymphoid cells. Here and there masses of a caseous material resembling degenerated tubercle. The points of special interest in this case were: progressive asthenia, cardiac enfeeblement and gastric irritability; pains in the loins without apparently sufficient cause; while the bronzing of the skin to which so much importance has been attached was not well marked, the skin being about the color of one who is badly sunburnt and this latter condition did not increase any in the last two years, during which time he had been more or less under Dr. Sudhoff's observation.

Miscellaneous Cases.

DR. J. L. CLEVELAND. Case 1.—Abscess of the liver. A woman, 70 years of age, with a distended and tender abdomen and a tumor evidently in connection with the liver extending downward as far as the umbilicus. Ten days after his first visit he was called suddenly and found a large puddle of pus on the floor. A sinus was found in the neighborhood of the umbilicus connecting the liver tumor, and was still discharging when he entered the room. He has every hope for her recovery. Case 2.—Splanchnoptosis; strangulated hernia with peritonitis. He was called suddenly to see this patient, 75 years of age, who had been seized with sudden pain in the abdomen and the vomiting of what was described by the family to be pus; he himself did not see any of the vomit. On examination of the abdomen, mindful of the case just reported, he thought he could outline a tumor of the liver also extending downward to the umbilicus. He did not advise operation on account of the age and weakness of the patient, who died in a few days. On autopsy there was a most pronounced enteroptosis, with also descent of other contents of abdomen. The liver was of normal size; what he had mistaken for an enlargement was merely the lowered border of the downwardly displaced liver. There was also present a strangulated hernia with peritonitis. Case 3.—Uremia. Every three or four weeks this patient would have attacks of nausea, vomiting and headache; examination of the urine during this spell would show an almost entire absence of urea and a specific gravity of about 1002, notwithstanding which not more than one pint or at the most two of urine were passed in the 24 hours. The attacks would last three or four days and then entirely disappear.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Hay Fever.

Dr. J. Robertson, Cincinnati, in *Med. Council*, states there are four facts dependent on their relation to each other as a basis for theory and treatment of hay fever: 1. There is a constitutional idiosyncrasy. 2. There is an exciting cause. 3. These two acting in conjunction produce the disease. 4. If either the constitutional idiosyncrasy or the exciting cause can be corrected the disease will be mastered.

To remove the exciting cause he dwells upon the inefficiency of the spray and its method of application, as it can only reach the larger and more direct passages, while the inflammatory process extends to tracts of the Schneiderian membrane, which can not be reached by the spray. He therefore strongly recommends the nebulizer as a means of reaching these out-of-the-way places, such as the finer air passages, the sphenoidal and ethmoidal sinuses, the antrum of Highmore and other cavities lined by the Schneiderian membrane. However, he states, it is better, as a first step in the treatment, to spray the nose and throat out with some one of the following:

℞.	Zinci sulphatis	gr. x	66
	Aquæ destil.	℥iv 128	

M. Sig.: Use as a spray in the ordinary cases having a watery discharge.

Where the discharge is profuse, with pain and tenderness, use the following:

℞.	Morphinæ sulph.	gr. ii	12
	Atropinæ sulph	gr. iss	09
	Zinci sulph	gr. xvi	1.00
	Aq. camphoræ, q. s. ad	℥iv 128	

M. Sig.: Use as a spray locally. After using the spray, apply the following in the form of a vapor in the nebulizer to reduce the turgescence and to give temporary relief:

℞.	Cocainæ (pure alk)	gr. viii	50
	Menthol		
	Camphoræ, āā	gr. xx 1	33
	Ol. caryophylli	m. xii	75
	Liq. albolene	℥ii 64	

M. Sig.: Use in the form of a nebula.

For the permanent but less immediate effects he advises one of the following, administered by means of the nebulizer or comminuter:

℞.	Zinci sulphatis	gr. xxx	2
	Creosoti (Beechwood)	℥ss	2
	Glycerini	℥i	32
	Aq. destil., q. s. ad	℥iii	96

Or:

℞.	Quininæ hydrobrom.	3ss	2
	Iodi (crystals)	gr. x	66
	Acidi carbol.	3ss	2
	Alcoholis	3iv	16
	Glycerini, q. s ad	℥ii	64

Or:

℞. Aspidospermin æ ..... gr. xv 1
Alcoholis
Aquæ, āā ..... ℥iv 16
Glycerini, q. s. ad ..... ℥ii 64

M. Sig.: Use in nebulizer.

[Aspidospermin is a respiratory stimulant and antispasmodic. It can be given internally in doses of one to two grains.]

Or:

℞. Acidi tannici ..... ℥ss 2
Glycerini ..... ℥i 32
Aq. destil., q. s. ad ..... ℥ii 64

Or:

℞. Salol
Chloralis hydratis
Camphoræ, āā ..... gr. xv 1
Ol. caryophyl ..... m. x 66
Hydrocarbol, q. s. ad ..... ℥ii 64

M. Sig.: To be used in the form of a nebula.

Coakley, New York City, recommends the following to render the mucous membrane less sensitive to irritants:

℞. Menthol ..... gr. xl 2 66
Camphoræ ..... gr. xx 1 25
Eucalyptol ..... ℥i 4
Ol. pini pumilionis ..... m. xxx 2
Benzoinol, q. s. ad ..... ℥ii 64

M. Sig.: Use in an oil atomizer, every two hours, if necessary.

For six weeks prior to the expected attack he recommends the following:

℞. Potassii iodidi ..... ℥iv 16
Ext. grindeliæ robustæ fl ..... ℥vi 24
Elixiris simplicis
Spts. vini rectif., āā q. s. ad ..... ℥iv 128

M. Sig.: One teaspoonful well diluted in water three times daily.

The following is recommended by *Jour. des Pract.*, as a local application:

℞. Acidi acetici ..... m. iv 25
Resorcin ..... gr. iii 18
Sodii chloridi ..... gr. viii 50
Aquæ ..... ℥ii 64

The following combination is of service to relieve the attack:

℞. Heroin ..... gr. i 06
Atropinæ sulph. ..... gr. 1/25 0025
Caffeinæ cit ..... gr. xv 1
Salophen ..... gr. lxxv 5

M. ft. Cap. 220. xv. Sig.: One capsule every three hours.

It is evident that constitutional disturbances as well as hereditary dispositions enter into the etiology of hay fever. The sufferers from hay fever are usually neurotic, anemic and poorly nourished. The gastro-intestinal tract and the general elimination should receive due attention in the treatment of patients suffering from this disease.

Dr. E. B. Gleason, in a paper published in the *Internat. Med. Mag.*, states that the attention of the profession has been directed to the fact that the neurotic condition of the patient and the hypersensitiveness of the nasal mucous membrane are often due to an excess of uric acid in the blood, and that this excess should be eliminated by the ingestion of mineral acids. Probably any mineral acid would prove efficacious, but there are two which suggest themselves as particularly efficacious: hydrobromic acid, because of its sedative qualities, and nitro-muriatic acid. He states that he prefers the latter prescribed in doses of 3 to 5 minims of the freshly prepared, concentrated acid, after meals and at bedtime, well diluted in half a glass of water. The patient should be instructed to rinse out the mouth each time after taking the medicine. He states that he has observed good results from the above preparation within forty-eight hours, and the relief of all the symptoms is usually sufficient to enable the patient to remain at home in comparative comfort. To prevent a recurrence of the attacks Dr. Bruce, of Cincinnati, recommends a tonic treatment as follows:

℞. Strych. sulphatis ..... gr. 1/50 0012
Quininæ sulphatis ..... gr. ss 03
Acidi arsenosi ..... gr. 1/50 0012
Ferri reducti ..... gr. ss 03
Ext. gentianæ ..... gr. i 06

M. ft. Capsula, No. i. Sig.: One such capsule after each meal for a month, then continue with two capsules after each meal until the underlying condition is cured.

Dobbs, in *British Medical Journal*, relates that he has obtained apparent immunity from hay fever by the use of a strong ointment of liquor carbonis detergens made with benzoinated lard, and not too thick, to be easily painted on the inside of the nostril and snuffed up well from the loaded brush.

Temporary relief may be obtained by reducing the turgescence of the mucous membrane; to do this, the best preparation is without doubt adrenalin, made up in normal salt solution, in strength of 1 in 5000. It quickly and surely reduces the extreme congestion and swelling of the turbinate bodies and enables the patient to breathe easily through the nasal passages, which previously was an impossibility. Chloretone may be used in conjunction with the above preparation.

Non-Operative Treatment of Hemorrhoids.

According to *Clin. Med.*, a careful and thorough washing of the parts after each defecation should not be neglected, and then the use of astringents will be found of value. But should be preceded by a thorough cleansing with soap and hot water. The following is recommended:

℞. Tinct. catechu ..... ℥ii 8
Aquæ ..... ℥ii 64

M. Sig.: Use as an injection.

To Avoid "Prickly Heat."

Not a few people are distressed during the hot months with an itching and burning sensation of the skin, accompanied by a fine eruption. This is caused by the perspiration, which can not readily evaporate and thus produces the irritation. As stated in *Clin. Med.*, it will be found better to resort to soap and water, used frequently, and to avoid alcoholic and alkaline washes. Once a day, perhaps, the irritated parts should be gently bathed, then dried thoroughly, and afterwards anointed with cocoanut oil. It is absorbed readily and should be applied with the hand. It is not greasy and will not soil the clothing unless an excessive quantity is used.

Specific Mucous Patches.

M. Lutaud recommends the following as a local application to vulvar mucous patches when mercurials are not tolerated:

℞. Chloralis hydratis ..... ℥iiss 10
Tinct. eucalypti ..... ℥v 20
Aquæ ..... ℥v 160

M. Sig.: Apply locally.

Treatment of Constipation.

Sir James Sawyer, as noted in the *Med. Record*, states that too many people desire a strong purge, but they should be educated to a more reasonable idea. He states the following rules should guide the practitioner: 1. We should never leave these things to our patients; all should be under our control. 2. We should never give drugs until constipation can not be cured without them. 3. We should never give drugs without well regulated adjuvants of alvine relief. The steady use of purgatives shortens life. He emphasizes the importance of exercise before breakfast and dinner, as follows: 1. Exert pressure on the liver, by placing the heels together, raise the arms at right angles to the body and rotate them backwards and forwards two or three times. 2. Separate the feet, raise the arms and sway from side to side until the hand touches the leg below the knee. 3. The chief points of accumulation are

the cecum and the sigmoid; these parts may be compressed by the psoas and iliacus muscles by standing beside a table and putting first one foot and then the other upon it.

Green vegetables should be taken; fruits, especially apples (cellulose excites peristalsis), and marmalade are excellent. As to treatment by drugs, he prefers some preparation of aloes, and considers that belladonna and nux vomica are of little value. He prescribes the following:

℞. Aloes soc.....gr. i-iii
Ferri sulph.....gr. 1/4
Ext. hyoscyami .....gr. i

M. ft. pil., No. i. Sig.: At bedtime when necessary.

The quantity requires readjustment, generally a reduction.

Medicolegal.

Right to Make and Use Medical Preparations.—The Supreme Court of Minnesota holds, in the case of the J. R. Watkins Medical Company vs. Sands, that a medical preparation may be used and manufactured by any one who lawfully and in good faith acquires knowledge of its composition, and such person may publish the fact that the product is manufactured in accordance with the original formula, and the fact that such preparation has become popularly known by the name of a certain person gives no exclusive right to any one to appropriate the name as a trade-mark.

Discretion as to Allowances for Care of Sick.—Section 3391 of Mills' Annotated Statutes of Colorado provides that when any person, not coming within the definition of a pauper, shall fall sick in any county of that state, not having money or property to pay his board, nursing, or medical attendance, the county commissioners shall give such assistance to such person as they may deem just and necessary and may make such allowance as they shall deem just and equitable. This statute, the Supreme Court of Colorado holds, in the case of the Board of County Commissioners of Rio Grande County vs. Lewis, was intended to and vests in the board a discretion to allow and pay, in cases of this character, what may be deemed reasonable and fair. Such discretion, as applied to public functionaries, it goes on to say, means the power or right of acting officially, according to what appears just and proper under the circumstances. Courts will not interfere with the exercise of such discretionary authority unless it has been abused. All reasonable intendments must be made in favor of the acts of officials who are under obligations to perform their duties correctly, so long as they appear to be acting in good faith. In order to constitute an abuse of such discretion, it must appear that it was exercised on grounds, or for reasons, clearly untenable, or to an extent clearly unreasonable.

Rendering Services at Agent's Request to Strangers.—The case of Smith vs. the Georgia & Alabama Railway was brought by a physician to recover for services rendered in response to a telephone message to go to the railway depot to see a man who had been seriously hurt. The message, it would seem, was sent by a local agent of the railway company. The injured man was an employe of a drayman, and was injured while endeavoring to move a heavy box from the railway company's warehouse to a dray. The theory on which the action was brought was that the railway company was liable for the professional services rendered to the man, because a local agent of the company at that station had employed the physician to perform such services. And the physician undertook to establish authority on the part of the agent to employ him for the railway company by showing that he had previously, while local agent for the company at another station, repeatedly employed him to "perform medical services of a similar character," and that the company had in every such instance paid for the services rendered. But this evidence, the Supreme Court of Georgia holds, was not sufficient to warrant a finding that the railway company held out this local agent as possessing authority to employ for it physicians to attend strangers—persons to whom the railway company owed no legal duty whatever. While the railway company may have previously paid the physician when employed by that agent "to perform medical services of a similar character," as alleged, the court points out that it did not appear that the agent ever previously employed him or any one else to perform such services to one to whom the company owed no duty, or that the company had ever in any way recognized his authority so to do. Ratification by the railway company could not be implied from its previous acts in paying the physician when employed by the agent "to perform medical services of a similar character," when it did not appear that they were performed under substantially similar conditions and circumstances. Wherefore, the court holds that, as there was an entire failure to show that the agent had any authority to employ the physician to perform the services in question, there was no error in directing a verdict for the railway company.

Quarantine Power no Authority to Buy Vaccine Matter.—The question before the Supreme Court of Georgia, in the case of Daniel vs. Putnam County, was as to the liability of the county to pay for certain vaccine points alleged to have been furnished to and for the use of the county through and by the orders of the commissioners of roads and revenues of the county, and which were actually received and used by and for the benefit of the county. The state constitution provides that the general assembly shall not have power to delegate to any county the right to levy a tax for any purpose, except, among certain other things, for quarantine. Because of this and the fact that the commissioners could not bind the county by the creation of a debt for the payment of which it had no power to levy a tax, the court pronounces it perfectly plain that they had no power to bind the county to pay for the vaccine points, unless the word "quarantine," as used in the constitution, is broad enough in its meaning to include the purchase of vaccine matter to be used in preventing the spread of the smallpox; and the party suing, recognizing this, contended that the vaccine matter which he furnished to the county authorities was purchased and used by them for "quarantine" purposes. But the supreme court does not think that this was a sound contention. It says that to quarantine persons infected with or who have been exposed to the smallpox is one way of preventing the spread of the disease in a community: to vaccinate people who are not infected with the disease, in order that they may become immune therefrom, is another way of accomplishing the same purpose. But vaccination is one thing, and quarantine is another. To quarantine persons means to keep them, when suspected of having contracted or been exposed to an infectious disease, out of a community, or to confine them to a given place therein, and to prevent intercourse between them and the people generally of such community. Persons who are merely vaccinated, and then allowed to go when and where they please and to mingle freely with the other members of the community, are in no sense of the word quarantined. The preventive measure adopted in their case tends to protect them both from contracting the disease and from being quarantined. Moreover, the court says of the ordinary that he is empowered to provide a hospital for those afflicted with the smallpox, and to furnish them (not the members of the community at large) with medical or other attention that, in his judgment, those so afflicted may require, but he cannot furnish vaccine matter and employ physicians to vaccinate the outsiders. He is not authorized to furnish people outside of the hospital, and not afflicted with the disease, with medical or other attention. He can provide regulations to prevent the spread of the smallpox, but the regulations must be quarantine regulations. The expenses of quarantine and other attentions, either medical or nursing, which he is authorized to incur, and of which he must render a proper and just account, are limited to the cases of those whom he may have under control, and who submit to the quarantine regulations. The law has not, however, the court says, left the counties of Georgia powerless to procure vaccine matter to be used in preventing or checking the spread of the smallpox. The governor is authorized and required to procure the necessary quantity of genuine vaccine matter, either by purchase or manufacture and have the same transmitted to the ordinaries of each county in the state for immediate use.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), July 13.

1 *Hydrophobia and the Pasteur Methods. Charles W. Dulles.
2 *The Etiology of Alopecia. Delos L. Parker.
3 *The Future Treatment of Hay-Fever. H. Holbrook Curtis.
4 *The Present Status of the Carcinoma Question. N. Senn.

New York Medical Journal, July 13.

5 *The Home Treatment of Pulmonary Tuberculosis. Robert H. Babcock.
6 *Antitoxin and Intubation in the Treatment of Laryngeal Diphtheria, with a Summary of 230 Operations. Burt Russell Shurly.
7 *The Influence of Mouth-Breathing upon the Dental Arch. M. D. Lederman.
8 A Leaf from the Ancient History of the Anatomy of Catarrh. Jonathan Wright.
9 Address in Pathology. Delivered at the Meeting of the Texas State Medical Association, at Galveston, Texas, April 26, 1901. Allen J. Smith.
10 *Neuroses as Seen in Orthopedic Practice. B. E. McKenzie.
11 Sexual Intemperance: Some Explanation of What Is Meant by the Term. Jennie G. Drennan.
12 *An Operation for Prominence of the Auricle. Thomas R. Pooley.

Philadelphia Medical Journal, July 13.

13 The Father Reigel Murder Case. William G. Porter.
14 *Coxalgia. E. H. Coover.
15 The City's Obligation to Provide Special Education for Defective Children. Clarence E. Meleney.
16 *Remarks on the Treatment of Eczema. W. R. Inge Dalton.
17 *Skin Grafting by Means of Freezing, with Reports of Some Cases. Gaston Torrance.
18 Report of a Case of Complete Right Oculomotor and Complete Left Trifacial Paralysis. C. A. Veasey.
19 Photo-Mechanical Reproduction. (To be continued.) R. H. Buxton.

Boston Medical and Surgical Journal, July 11.

20 *Two Cases of Pregnancy Complicated by Mitral Insufficiency. Henry D. Chadwick.
21 *Albuminuric Retinitis and Uremic Amaurosis, with Especial Reference to Their Occurrence in Pregnancy. Edmund W. Clap.
22 Congenital Pelvic Malposition of Left Kidney in a Woman. John W. Dewis.
23 A Case of Extra-uterine Pregnancy; Diagnosis at End of Second Month; Operation; Recovery. Oscar J. Pfeiffer.

American Medicine (Philadelphia), July 13.

24 *Removal of the Female Urinary Bladder for Malignant Disease. Matthew D. Mann.
25 *Total Extirpation of the Urinary Bladder. J. Wesley Bovée.
26 *Ankylostomiasis in the United States. Report of a Case. Herman B. Allyn and M. Behrend.
27 *Phlebitis Following Abdominal Operations. Albert Vanderveer.
28 Report of a Case of Carcinoma at the Cardiac End of the Esophagus, a Distance of 21 Inches from the Incisor Teeth, in a Man 5 Feet, 3 Inches Tall. C. D. Spivak.
29 A Medico-Surgical Bedstead. Adolfo Luria.

Medical News (N. Y.), July 13.

30 The Diseases of Nutrition in Infants. T. M. Rotch.
31 *The Medicinal Treatment of Summer Diarrhea. Thomas S. Southworth.
32 *The Hygienic Treatment of Summer Diarrhea of Infants. Henry C. Hazen.
33 *After-Treatment of Summer Diarrhea of Infants and Children. William M. Taylor.
34 *The Clinical Features and Treatment of Acute Bronchitis in Children. Charles O'Donovan.
35 *Empyema. John A. Hartwell.
36 *Sexual Neurasthenia in the Male: A Plea for a More Accurate Use of the Term; Treatment of the True Form with Citation of Cases. Ramon Guiteras.
37 *Masturbational Neuroses. William C. Krauss.

St. Louis Medical Review, July 13.

38 The Heart Lesions of Infancy and Childhood. I. A. Abt.

The Cincinnati Lancet-Clinic, July 13.

39 *The Etiology and Treatment of Rheumatoid Arthritis and Allied Affections. Gilbert L. Bailey.
40 The Old Doctor. George J. Monroe.
41 Urethral Laceration; Union Without Suture. C. S. Muscroft and H. A. Ingalls.

Medical Age (Detroit), June 25.

42 Nature in Obstetric and Gynecologic Practice. B. D. Harison.
43 The Protyle as the Basis of Elemental Individuality. Noah E. Aronstam.
44 The Treatment of Epilepsy. Daniel R. Brower.

American Practitioner and News (Louisville), May 15.

45 *Adenomata and Adenocystomata of the Ovary; Cysts and Cystic Degenerations of the Kidney. August Schachner.
46 *Some Questions Regarding the Danger of Septic Infection from Certain Remedies and Methods in Common Use. A. G. Blincoe.

Louisville Monthly Journal of Medicine and Surgery, July.

47 Two Cases of Cholecystitis Associated with Gall-stone, Simulating Appendicitis. F. W. Samuel.
48 Valves of the Rectum. Geo. J. Monroe
49 Ventral Hernia: Prevention and Cure. Louis Frank.
50 The Necessity for Medical Legislation J. N. McCormack.
51 Suspension of Uterus. R. Lindsey Ireland.
52 Popular Address, Kentucky State Medical Society. Young E. Allison.
53 Some Remarks upon the Treatment of Various Types of Anemia. R. D. Moore.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), July.

54 *Sarcoma and the Sarcoid Growths of the Skin. James C. Johnston.
55 A Case of Gummatous Ulcer of the Bladder with Abscess of the Prostate and Left Seminal Vesicle, Complicated with Retention, Treated by Sectio-Alta and Excision with Curettement. Granville MacGowan.
56 *Examinations of Urine in Diseases of the Male Sexual Organs. Louis Heitzmann.
57 *Inversion of the Tunica Vaginalis for Hydrocele. Robert H. Greene.

Toledo Medical and Surgical Reporter, July.

58 General Considerations of Fractures. S. S. Thorn.
59 Mastoiditis. Frank Jacobi.
60 Therapeutic Uses of Eucalyptus, with Report of a Case. C. Wm. Newton.

Indiana Medical Journal (Indianapolis), July.

61 *The Ambulatory Treatment of Fractures. J. H. Cannon.
62 *Some Uses of Local Anesthesia in Genito-Urinary Surgery. Wm. N. Wishard.
63 *The Present Position of the Diagnosis of Cancer of the Stomach. Alois B. Graham.
64 A Consideration of the Ureter, Particularly as Affected by Pregnancy. Frederick R. Charlton.
65 Glioma of the Retina. F. C. Heath.
66 Shock: Its General Consideration and Relation to Surgical Procedures. William M. Wright.

New Yorker Medicinische Monatsschrift, June.

67 Ein Fall von angeborenem Colobom des oberen Augenlides. A. Schapringer.
68 Casuistische Faelle aus der Praxis. Carl Hoening.
69 Klimatische und balneologische Curorte in Tyrol. (Conclusion.) Dr. Jur. Banmfeld.

Medical Summary (Philadelphia), July.

70 The Diet of Typhoid and Some Cases of Interest. Wm. Edgar Darnell.
71 Impacted Cerumen. B. A. Washburn.
72 Post-Abortion Hemorrhage: How to Control It. Geo. H. Candler.
73 Treatment of Hypertrophied Prostate Glands. (Continued.) H. B. Stanley.
74 Typhoid Fever—Pneumonia with Effusion; Operation. Ira A. Marshall.
75 Is It So? Some Sense Wanted—Curious Case, Etc. (Methylene Blue, Rabies, Etc.) Ben H. Brodnax.
76 The Seidlitz Salt in Catarrh of the Stomach and Rheumatism. W. C. Buckley.

Buffalo Medical Journal, July.

77 *The Prevention of Tuberculosis. B. G. Long.
78 How Are We Educating Our Children? A. W. Bayliss.
79 Malaria Representing Three Varieties Observed in Buffalo. Julius Ullman.
80 Physiology of the Kidney. (Continued.) Byron H. Daggett.

Kansas City Medical Index-Lancet, July.

81 Headaches. George N. Thomas.
82 What Has the Bacillus Pestis to Do with the Bubonic Plague? James Clements.
83 The Relative Value of Medical Advertising. John Punton.
84 Fistula in Ano. J. M. Frankenburger.

Oklahoma Medical Journal (Guthrie), June.

85 *Some Diseases Complicating Pregnancy. Bertha H. Campbell.
86 The Use of Anesthetics in Normal Labor. S. F. Roberts.

Columbus Medical Journal, June.

87 Address Delivered before Ohio Medical University. Louis E. Holden.
88 Address on Behalf of the Faculty—Ohio Medical University Commencement. Josiah Medbery.

89 Fibrinous or Plastic Bronchitis. Starling Loving.
90 Sewage Disposal or Purification: The Chemical Treatment. C. O. Probst.
91 Septic Treatment. A. M. Bleile.
92 The Filtration or Land Process. D. N. Kinsman.
93 Water Pollution. G. M. Clouse.

Medical Mirror (St. Louis), June.

94 *Internal Medicine in the Nineteenth Century. N. S. Davis, Jr.
95 *The Value of Clinical Microscopy, Bacteriology and Chemistry in Surgical Practice. John A. Wyeth.

International Journal of Surgery (N. Y.), July.

96 Rheumatoid Arthritis. W. H. Neilson.
97 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
98 Management of Placenta Previa. J. G. Kelly.
99 Regional Minor Surgery. (Continued.) George G. Van Schaick.
100 The Surgical Assistant. Walter M. Brickner.
101 Clinical Observations on Amenorrhea and Dysmenorrhea. F. Levasseur.
102 Fracture of the Cervical Vertebræ—Report of a Case. D. C. Bowen.
103 Treatment of Burns. W. W. Pugh.

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104 Events in the History of American Surgery—A Brief Review. Franklin Staples.
105 *The Successful Treatment of Aural Pain. H. A. Beaudoux.
106 The Science and Art of Surgery: Its Progress During the Nineteenth Century, and Its Prospects for the Twentieth. R. W. Garrett.

Mississippi Medical Record (Vicksburg), July.

107 Gastro-Intestinal Infection of Children. J. C. Ballard.
108 Quinin Hypodermically—Its Indication and Technique. J. M. Dampeer.
109 What Was It? (Post-Delivery Spasms.) Ben H. Brodnax.

Alienist and Neurologist (St. Louis), July.

110 The Physician's Duties in Committing Insane to the Hospital. Prof. Hoche.
111 Heredity and Epilepsy. Sanger Brown.
112 Fatigue in Its Relation to Consciousness. W. Xavier Sudduth.
113 *The Prophylaxis of Insanity. A. DeBord Young.
114 Combined Monobrachial Chorea and Writer's Cramp from Occupation Strain. C. H. and Marc R. Hughes.
115 Degeneracy Stigmata as a Basis of Morbid Suspicion. (To be continued.) James G. Kiernan.
116 *Race Degeneracy and Dental Irregularities. E. S. Talbot.
117 The Development of the Sexual Instinct. (To be continued.) Havelock Ellis.
118 The Legal Disabilities of Natural Children Justified Biologically and Historically. E. C. Spitzka.

Archives of Pediatrics (N. Y.), July.

119 *The Early History of the Summer Diarrheas of Infants. W. D. Booker.
120 *A Report of Twelve Operations on Infants and Young Children During Spinal Analgesia. William S. Bainbridge.
121 *Hemorrhage from a Pyothorax. A. Jacobi.
122 Report of Two Cases of Tuberculosis of the Hip and Spine, Treated with Large Doses of Creosote. Agnes Walker.

Medical Standard (Chicago), July.

123 A Few Selected Cases from a Surgical Clinic (Enlarged Prostate, Keloid, Etc.). John B. Murphy.
124 Appendicitis and Its Treatment. A. J. Ochsner.
125 Rectal Fistula. J. Rawson Pennington.
126 Drug Habits and Their Treatment. T. D. Crothers.
127 Some Obstinate Digestive Disorders. David Paulson.

Texas Medical News (Austin), June.

128 State Medicine—Medical Jurisprudence. R. H. Harrison.
129 Typhoid Fever. M. M. Myers.
130 When and Where to Operate for Appendicitis. Albert G. Krueger.
131 A Few Remarks on the Treatment of Albuminuria. John S. Lankford.
132 Hernia Complicated by Hydrocele of Chord and Retained Testicle; Operation. H. B. Hill.

Memphis Medical Monthly, July.

133 Comparative Value of Iodids and Mercury in the Treatment of Syphilis. Eugene Carson Hay.
134 Observations Based on Additional Experience with Intubation of the Larynx in Laryngeal Diphtheria. Richmond McKinney.
135 Observations on the Use of Hypnotics. H. P. Coile.
136 Hypodermic Medication. L. G. Bouton.

Southern Practitioner (Nashville), July.

137 Annual Address at the Meeting of the Association of Medical Officers of the Army and Navy of the Confederacy. James M. Keller.
138 Corneal Ulcers. Hilliard Wood.
139 Thiocol and Bisol. Q. C. Smith.
140 Summer Diarrhea in Children. H. S. Baketel.

AMERICAN.

1. **Hydrophobia.**— Dulles' article is an attack on the Pasteur method of treatment for rabies. He claims that it has not lessened the death-rate from this cause and that the statistics in its support are fallacious. He states that we will never get any correct ideas of that disease until the profession gives up the use of caustics, narcotics and violent restraint in the treatment of the fully developed disorder.

2. **Alopecia.**—The theory of Parker—elsewhere formerly noticed—that the loss of hair is due to defective breathing and air stagnation in the upper lung is here repeated and the author has attempted experiments to demonstrate it. The superior costal type of respiration is favorable to hair growth and as women use this more than men, they are less likely to suffer from loss of hair. The experiments he performed were done by the use of respired air in a closed receiver with water so that the latter absorbed the air and was used as an injecting liquid. The experiments were on pigeons and he gives illustrations showing what he considers the effects of this cause. He suggests the name trichotoxicon for the toxic product which is the cause of alopecia and asks if it is developed when respired air is chambered in the presence of warmth and moisture outside the lungs whether the same substance will be developed when respired air is chambered with the same surroundings inside the lungs. It certainly is difficult, he says, to think of any reason why it should not. Again, if trichotoxicon circulating in the blood current of lower animals exerts a specific action on certain tissues of that animal, is it proof that the same substance introduced into the blood of a human being will exert a like influence on tissues of an analogous nature? While proof seems to be too strong a word to use in this connection, it is not too much to say that it is a great probability that it will; hence, he thinks it not unreasonable to conclude that alopecia of the type under consideration is caused by an auto-infection in which trichotoxicon is taken up by the blood from the air-cells in the lungs where it has been elaborated during decomposition of organic matter normally present in respired air.

3. **Hay Fever.**—After first referring to his former paper on the subject, Curtis gives further results and testimonies as to the effect of the use of preparations of ragweed for the cure of hay fever, that is, more particularly, for that form which is induced by the pollen of this plant. He thinks it is possible that tincture of golden rod or some other plant may be found efficacious in those cases where ragweed fails. Thus far his investigations have been very encouraging in affording a means for checking this uncomfortable ailment.

4. **Carcinoma.**—According to Senn, carcinoma is due to atypical proliferation of the epithelial cells from the matrix of embryonic cells of congenital or post-natal origin. The law of legitimate succession of cells holds true in the origin and growth of tumors, both benign and malignant, as well as in the production of normal and inflammatory tissue. Being primarily epithelial, carcinoma in the mesoblastic tissue is impossible except by displaced inclusions of epithelial tissue. The histology and histogenesis of carcinoma are against the parasitic origin of the disorder. The stroma of carcinoma consists of pre-existing connective tissue fibers and their descendants. Carcinomatous cells usually multiply by irregular atypical karyokinesis and this pathologic segmentation is an important indication of malignancy and of considerable diagnostic value. The progressive extension of tumors to adjacent tissues and organs, regardless of their structure, is strong proof of carcinomatous character. Regional metastasis takes place exclusively through the lymphatic channels and the pre-existing lymphatic structures take no active part in the origin and growth of secondary tumors. The general dissemination of carcinoma usually takes place by direct implication of veins in the primary or secondary tumors. The carcinomatous cells reach the venous circulation through the formation of an

intravenous tumor thrombosis or carcinomatous endophlebitis or through perforation of the vein walls by carcinomatous cells. Retrograde intravenous extension is due to the transportation of minute emboli of carcinoma cells against the current surrounded by a mantle of blood corpuscles which move step by step on the intima. Retrograde extension through lymphatics may take place in the same manner, but is more frequently the result of carcinomatous endolymphangitis. The increase of carcinoma is more apparent than real and heredity is a generally recognized predisposing cause. As a rule it occurs in elderly persons, but occasionally is met with in individuals under 25 and then is specially malignant. It seldom follows a single injury, but generally follows repeated or prolonged irritation. Among the predisposing causes must be enumerated racial, climatic, and topographical influences. Chronic inflammatory products, cicatrices, and benign epithelial tumors are favorable local conditions. The positive results of implantation and inoculation experiments have thus far failed in establishing the parasitic theory and a careful study of the experimental researches and the bacteriologic and histologic investigations do not warrant us at present in claiming a parasitic origin for carcinoma. The experience of centuries with medication has demonstrated that thus far carcinoma is not materially bettered in this way. Direct medication of carcinomatous tissue by parenchymatous injections has no influence, while the injection of sclerogenic substances into the surrounding connective tissue appears to restrain the local extension by impairing the blood supply. Local applications of any kind for ulcerative carcinoma can be only palliative at best. The actual cautery and chemical caustics have only a limited field of usefulness in open inoperable carcinoma and should never be used in treatment of closed carcinoma in place of the knife. The serum treatment has yielded only negative results. The early and radical operative treatment offers the only prospect for permanently eliminating the disease, which can be determined only after a lapse of ten years or more after operation. Radical operation should never be attempted unless local conditions and the general health are such as to warrant it. Admitting carcinoma to be the product of erratic, planless cell growth, not governed by the influence of the regular normal tissue change, it appears logical to make experiments and observations to find the remedy which will destroy the tumor by causing early and steady degeneration of its parenchyma, or which possesses the property of converting embryonic into mature epithelial cells, thus converting a carcinoma into a benign epithelioma.

5. **Home Treatment of Tuberculosis.**—The essentials of success in the treatment of pulmonary tuberculosis are building up the hygiene of the patient's daily life, this including the building up of tissue resistance by super-alimentation, sojourn in the open air as much as possible under conditions determined by the patient's temperature, hydrotherapy, and careful and methodical regulation of life. While these conditions can be best met in a sanatorium, they can be obtained by patients at home, regardless of climate. For building up the system Babcock relies largely on a concentrated nutrition with milk and eggs properly seasoned, and absolute rest in the open air as long as the temperature rises above 99 F. There is no antipyretic so suitable and efficient as fresh cool air. Hydrotherapy is also important because it is stimulating and generally invigorating. Beginning as a sponge bath with tepid water given by a nurse and followed by vigorous friction, it should gradually be made more and more severe until at length the invalid can endure a shower bath of cold water or the so-called "pail douche." The only essential condition is that it be always succeeded by good reaction. Lastly, the daily regime must be faithfully and systematically persevered in. The physician should see his patient often enough to keep control of him, to give in detail the requirements and to enforce carrying out of all orders.

6. **Antitoxin in Diphtheria.**—Shurly gives a summary of results from 230 operations and insists on the value of the antitoxin and early use of the tube when respiration is obstructed. He says no method of treatment in any case demonstrates more fully than antitoxin the value of bacteriologic and chemical research and there are few greater medical inventions than the O'Dwyer tubes.

7. **Mouth Breathing.**—The various theories as to the influence of mouth-breathing in the development of the dental arch are noticed by Lederman, who holds that it does influence the growth. He insists on the removal of post-nasal adenoids as early as possible.

10. **Neuroses in Orthopedic Practice.**—The cases published here appear to be purely neurotic or functional disturbances relieved by judicious treatment. McKenzie insists on the importance of early diagnosis, systematic training and careful individual treatment. If there is an actual organic condition co-existing, it should be thoroughly attended to, but the main key to treatment is discipline, not that which calls for submission, but that which succeeds in educating patients to be self-reliant.

12. **Auricular Deformity.**—Pooley recalls here the operation first performed and described by the late Dr. Edward T. Ely and reports a case in which he closely followed Ely's method for reducing deformity of the auricle. The operation consisted essentially in excising a strip of skin and subjacent tissue on the back of the auricle at the groove between it and the side of the head, the inner border of the excision being on the auricle, and a smaller portion of cartilaginous substance then, as it were, taking a gore or reef out of the prominent auricle. The results were good. He calls the attention of the profession to this method, which he thinks can be highly recommended.

14. **Coxalgia.**—A new form of treatment recommended by Coover is the surrounding of the joint with an ice-cap, kept constantly replenished. Cure soon followed the application in the case reported. Night-sweats disappeared within a week and sleep was better and free from pain. In fifteen days the patient was relieved of all suffering, though the knee and heel taps were still painful. Cure seemed complete in about six months. No extension or counter-extension was employed. He reports two other cases, one of a lady who was cured, and the other of traumatism of the hip joint, which was greatly improved.

16. **Eczema.**—Dalton maintains that the treatment of eczema consists in taking into consideration the general underlying conditions, not forgetting the stage of the disease and any abnormal conditions of the other organs which may aggravate the condition. Neurotic or anemic patients should have tonics, such as phosphorus, iron and mineral acids. A rigid dietary should be enforced; meat, if allowed at all, should be given only once a day; no oatmeal, no strawberries and no sugar, even in tea or coffee. This should be kept up for several weeks. Water should be drunk in large quantities. The alimentary canal should be kept as antiseptic as possible by naphthalin, charcoal, and ipecac. He has lately been using ichthyol combined with arsenic in doses of 1/60 to 1/30 of a grain of ammonium sulph-ichthyolat with 1/20 to 1/40 of a grain of arsenic, three times a day after meals. Water for bathing purposes should be rendered alkaline, and local irritants of any kind avoided. If the eczema is caused by parasites, germicides are required and in squamous varieties 5 per cent. ointment of chrysarobin and pyrogallol or ichthyol ought to be exhibited, if there is not much secretion. All those etiologic factors springing from neurotic conditions, anemia, leukemia, constipation, etc., whether of local or general nature, internal or external, should be completely regulated and proper remedies prescribed.

17. **Skin Grafting.**—While looking around for some convenient and simple method of skin grafting without using general anesthesia, freezing with ethyl chlorid suggested itself to Torrance and he reports four cases in which it was employed with excellent results. He thinks the method specially applicable where the surrounding tissue has become degenerated, as the newly formed skin apparently partakes of the character of the graft. The method is painless and enables one to cover considerable areas at a sitting and, of course, anesthesia is

not required. It may be employed in private practice as well as in hospitals.

20. **Mitral Insufficiency in Pregnancy.**—Chadwick reports two cases which have filled him with a wholesome dread of mitral insufficiency in the pregnant condition, and led him to think that the only appropriate treatment of these cases is to watch the patient closely from the beginning, and as soon as lack of compensation is seen, to advise and urge, for the necessity of saving her own life, the termination of pregnancy as soon as possible.

21. **Albuminuric Retinitis and Uremic Amaurosis.**—These conditions are rare in pregnancy, but very important when they occur. Albuminuric retinitis is a disease accompanied by immediate visible changes in the eye with albumin always present in the urine. It may occur at any time during the pregnancy, especially beginning during the first two months or after the sixth month, and its prominent symptom is gradual failure of vision. It is apt to recur in successive pregnancies, though not necessarily so, each recurrence producing more and more damage. Uremic amaurosis is a disorder of the visual apparatus not accompanied by immediate visible signs though it may finally lead to atrophy. It occurs late in the pregnancy, usually with other signs and symptoms of eclampsia, so that it seldom has to be considered alone. It apparently never destroys the vision at the first attack and is apt to recur in successive pregnancies. The treatment of both conditions is the treatment of albuminuria with rest for the eye, influenced by atropin and dark glasses, if necessary. The prognosis of both forms is generally favorable for the first attack but less so for recurrences. The prognosis for the sight is bad in albuminuric retinitis if it comes on before the sixth month, especially if it begins during the first two months. Abortion should be considered in albuminuric retinitis, occurring early, if the retinitis is of a very severe type and hemorrhagic, or if a slight retinitis progresses under treatment, remembering that in these cases the life of the child is uncertain, and that the mother runs grave risks of eclampsia if the pregnancy goes on to term. Occurring after the sixth month it is better to wait and watch and not to induce labor unless other symptoms are demonstrated. In subsequent attacks it may be necessary to do so.

24. **Extirpation of the Bladder.**—Mann reports two cases of extirpation of the bladder by implantation of the urethra and ureters into the vagina, the method being described. The abdomen is opened by incision down to the symphysis, the patient put in the Trendelenburg position, the peritoneum cut from side to side across the fundus of the bladder and then stripped away. The bladder is also separated from the front wall of the pelvis as far down as the neck. After the bladder is all loosened except at the base, the neck is first tied and then cut with the scissors, the finger being introduced into the urethra as a guide. The incision is then carried through the anterior vaginal wall, so as to include the whole base of the bladder, and to cut the ureters just as they enter the bladder wall, the finger in the vagina aiding materially in this step. The piece to be removed from the anterior vaginal wall to which the base of the bladder is attached, is about as large as a silver dollar. In this way both the ureters and urethra open directly into the vagina. It is entirely unnecessary to try to do anything with the ureters as they continue patulous and discharge into the vagina after cicatrization. The hemorrhage is slight and after the removal of the bladder and the body of the uterus, the tubes and ovaries can be removed. The peritoneal wounds made by removing the bladder and uterus are closed separately. If the uterus is involved in the carcinoma the technic will be somewhat different. After opening the abdomen and cutting the broad ligaments to the uterine cervix, a flap of peritoneum should be stripped from the back of the cervix and the vagina in the cul-de-sac. A peritoneal flap is also separated from the anterior surface of the cervix and the uterine arteries tied, or the anterior branch of the anterior branches of the internal iliacs may be tied so as to cut off all the blood-supply of the pelvic floor. The peritoneum over the bladder is then cut transversely and the bladder enucleated. After the neck has been tied and cut across, the vagina is incised in front and the incision then carried around on each side so as to meet the opening already made in the posterior fornix. In this way the bladder, the whole anterior vaginal wall and the uterus are removed without separating them and the danger of infection of the surrounding tissue is much lessened. The peritoneum covering the bladder and cervix in front and behind must be left intact, unless it be infected. When sutured it should entirely cover the peritoneal floor. For the after-treatment, the newly-made bladder should be kept drained by a self-retaining catheter introduced into the urethra and the cavity washed frequently with some antiseptic solution. The administration of benzoate of ammonium in 20 gr. doses, aids in keeping the urine free from germs and favors healing. If the vagina is not closed, frequent vaginal douches must be used, care being taken to ensure the douche entering the space left by the removal of the bladder. He thinks the method has its advantages, but whether the vagina should be closed at the time of extirpation is a thing to be decided. In the future he will do it, if the patient's condition warrants.

25. **Extirpation of the Bladder.**—After a discussion of the subject and giving a tabulated report of cases from the literature, Bovee offers the following conclusions: 1. Until a more satisfactory plan of disposal of the ureters is found cystectomy should never be undertaken for conditions other than exstrophy, when partial extirpation of the organ is possible. Even a very small portion of the bladder into which the ureters may be debouched is practically free from the great danger of infection incident to bowel grafts, and further such disposition of the ureters is more easily executed. 2. For exstrophy the Maydl and the Pozzi operations are quite satisfactory, though the danger of infection seems ever present. 3. Rectal graft of the ureter in its continuity and skin grafting of this duct are highly dangerous. 4. Uretero-vaginostomy is practically free from ascending infection though it gives far from perfect results. 5. The urethral graft of the ureter seems free from infection, but the constant dribbling of urine is but slightly ameliorated by the use of a urinal. 6. The Mauclaire-Gersuny operation is worthy of a further application, inasmuch as it provides for both sphincterec bladder and bowel.

26. **Ankylostomiasis.**—Allyn and Behrend report a case and briefly notice the previous cases that have been reported as occurring in the United States. They describe the symptoms and think that the parasite is not so rare in this country as has been generally supposed. With our increasing intercourse with the West Indies, it is likely to become more frequent.

27. See abstract in THE JOURNAL, p. 1502.

31. **Summer Diarrhea.**—The acute gastro-intestinal infections in children during the heated term are of three types: 1, that due to indigestion; 2, that due to bacterial action in tainted milk, and 3, cholera infantum, another often fatal type probably also due to milk infection. The first of these treated early by prompt evacuation of offending substances and suitable feeding, tends naturally to recovery. The successful treatment of the second class depends largely on the complete stoppage of the use of milk, and the promptitude with which any vestiges of its residue are evacuated from the intestines. Breast milk should be stopped in all cases of summer diarrhea in children under two years of age, which begins with vomiting, and temperature, and the dextrinized barley-water, rice water, egg-albumin water, mutton broth, and beef broth used. If there is thirst, plenty of plain boiled water should be given. Feeding should not be oftener than once in every two or three hours and in case of vomiting the stomach should be allowed to rest as far as possible for twelve hours. The medicinal treatment consists in producing thorough action of the intestinal tract for the removal of decomposing and fermenting matters and all milk residue. Castor oil and calomel are both useful. Calomel further acts as a local disinfectant. When given in small doses repeated it is hardly ever necessary to follow it with salines. Where the case has existed for some time and pyrexia and prostration are marked, irrigation of the bowels should at once be resorted to. The choice of tempera-

ture depends on the pyrexia. Primarily it should be lukewarm, but may be cool if the fever is high. Allowing the fluid to flow while the oiled catheter is introduced distends the tube and bowel in advance, facilitating the introduction. To be effective the catheter should go above the sigmoid, and at least four quarts should be allowed for the irrigation with a pressure of not over three feet. The excess will escape in gushes beside the tube. If there is blood in the stools a little tannic acid should be added. Increased peristalsis causing frequent evacuations needs special treatment, opium best serves our purpose to check it; high fever, however, contra-indicates this. In severe types the hypodermic use of morphin sulphate .01 of a grain for a child one year of age not only acts upon the peristalsis, but steadies the pulse and should be employed with 1/800 of a grain of atropin. Where the loss of fluid is very great and can not be made up by ingestion, high saline enemata should be given, or, if necessary, saline hypodermoclysis. A tendency to frequent stools may persist after the acute symptoms and Dover's powders and tannalbin are often useful, but the author recommends a mixture of pepsin in the following prescription:

℞ Pepsinæ ..... gr. i
Acid hydrochlor. dil ..... m iii
Glycerini ..... m iiii
Aquæ menthæ pip 3ss
Aquæ 3i

M. Sig: In water four times a day after food. Stimulants are often required during an acute stage. When the stools have improved in color and consistency, and the child's general condition indicates a return of more normal conditions, cow's milk may be employed, beginning with a dram to the ounce, or even less. Recovery from a severe attack is usually slow and may take considerable time. Extreme care should be exercised for ten days or two weeks at least.

32. **Hygienic Treatment of Summer Diarrhea.**—The measures recommended by Hazen are the best quality of food, given at regular intervals, prevention of overcrowding of the room and absolute quiet, light loose clothing, use of water and trips, if possible, on the water or in floating sanatoria.

33. **After Treatment of Summer Diarrhea.**—This, according to Taylor, is essentially hygienic and dietetic. Of the various prepared foods the most satisfactory is cow's milk with dextrinized barley-water as a diluent. He describes the method of making the percentage of milk and cautions against beginning with too high a percentage. A good plan he says is to decide on the number of feedings, the amount of sugar, cream and diluent to be taken by the child. For example, he would take three ounces of whole milk, one dram each of sugar and cream, and three ounces of barley-gruel. Seven feedings of this amount in proportion may be given in the twenty-four hours. The gruel is prepared by adding two full tablespoonfuls of barley-flour to one quart of water and boiling for fifteen to twenty minutes. Then add two teaspoonfuls of Cereo, or dextrinize the barley water with any other reliable preparation. If the above treatment fails, kumyss stands next in his estimation. Beef juice three times a day is of value. If the child is two or three years old beef, mutton, and chicken broths with fat carefully removed, and dry toast, etc., may be given. Inunctions of cod liver oil are specially indicated in children with sluggish circulation. Tonics are nearly always needed, and the syrup of ferric iodid seems the best of all forms of iron treatment. Other requisites are the relief of constipation by abdominal massage if possible, or some laxative, such as the fluid extract of cascara,—from 5 to 8 drops in older children,—and lancing of gums if required; a morning sponge bath and life in the open air in the daytime as far as possible and in a well-ventilated sleeping room at night. High irrigation of the colon with normal saline solution is better for the mucous colitis following summer diarrhea than any medicinal remedies.

34. **Infantile Bronchitis.**—O'Donovan describes the treatment of acute bronchitis in children, which is imperative as soon as the case is diagnosed. In the milder cases, regulation of the diet, mild laxatives, comfortable warmth of surface, with good ventilation are all that is required. Babies take medicine badly and are best treated by local applications and inhalations, such as the oiled silk jacket and stimulating liniments to produce mild irritation of the skin, steam inhalations, etc. Of expectorants he would use very little; the compound syrup of hypophosphites is best in young children. Older children take medicines better. They should contain muriate of ammonia in proportion to the age of the child. Hypnotics should be given with judgment; sodium bromid will sometimes be all that is necessary. In prolonged cases where the heart-action is rapid and the organ becomes fatigued, strychnin hypodermically is of great service. In every case the child should not be allowed full liberty until the disease is completely cured and should remain indoors until the bronchial catarrh has entirely disappeared. The cure may be hastened by judicious feeding, stimulants, frictions of the chest, and the use of cod liver oil, iron and arsenic if the child is anemic.

35. **Empyema.**—The following is the summary of Hartwell's article: 1. Children are especially liable to empyema following pneumonia. Unless promptly relieved by drainage of pleura the prognosis is bad. With such relief the prognosis is good. 2. Pneumonia caused empyema in 50 per cent. of the cases here considered, and such cases were of severe type. 3. Tuberculous family history exerts little influence on empyema. 4. In about one-sixth of the cases the empyema was saccniated. 5. The pneumococcus was found in 50 per cent. of the cases where examination was made; the streptococcus in 33 1-3 per cent.; the staphylococcus in 8 per cent.; the tubercle bacillus in 4 per cent., and no bacterium in 16 per cent. The pneumococcus produced the most virulent infection. 6. Chloroform was the anesthetic of preference. Deep narcosis is contra-indicated, owing to the danger of pus being drawn into the other lung from a ruptured bronchus. 7. In adults with general empyema two inches of the seventh and eighth or eighth and ninth ribs in the posterior axillary line should be resected. In children the same length of the seventh rib. Simple incision, with our present knowledge, is rarely advisable. 8. Operation is indicated as soon as diagnosis is made. 9. Irrigation of the abscess cavity with bichlorid solution, 1-5000, or carbolic acid, 1-100, is indicated, unless drainage is perfect and no sepsis is present. In children the solution may be weaker. 10. The mortality from the empyema proper was 15 per cent. We may hope to reduce it to one-half that number by earlier and more radical treatment.

36. **Sexual Neurasthenia.**—Guiteras deplores the inaccurate use of the term and insists on the necessity of thorough examination of the genital tract as a routine practice in every case of neurasthenia. Frequently the relief of local lesions will be sufficient for the cure. The symptoms of the condition are described and the term, he maintains, should not be limited to those cases which show prominent sexual symptoms; it should be extended to include any cases of neurasthenia in which lesions of the genital tract are found. The treatment is local or general, the former consisting in the relief of morbid conditions, strictures, prostatic inflammation, varicocele, etc., and the latter, in the regulation of diet, attention to the digestion, exercise and hydrotherapy. The cold sponge bath, he thinks, is of prime importance. Exercise, if not fatiguing, is of value, and in conclusion he mentions the use of static electricity.

37. **Masturbational Neuroses.**—Krauss holds that the bad sexual habits are the cause of a large proportion of the neuroses, if not of all, and he advises against giving a favorable prognosis in cases of nervous disease with an underlying history of masturbation coupled with a neurotic family history.

39. **Rheumatoid Arthritis.**—Bailey holds to the bacterial origin of this condition and favors the use of dry hot air followed by massage. He has seen great benefit thus produced. He thinks it is by no means a hopeless disease, but the earlier the treatment is instituted the better. Special attention should be given to lesions of the mucous membranes during middle life and especially to the menstrual disorders in women near the climacteric. Patients should be warned that the slight inconvenience attending the Heberden's nodes may be pre-

monitory of a more serious trouble. No case, however, is too old to be benefited by treatment.

45. **Ovarian Adenomata.**—The article of Schachner is a discussion of the literature on the subjects included in its title. He gives the characteristics of malignant tumors, using as his text the cases personally observed, defining also the Waldeyer cysts which arise from paroophoritic cystic degeneration of the kidney, with discussion of special points as to the diagnosis.

46. **Septic Infection.**—Blincoe calls attention to certain dangers that appear to him possible in the therapeutic methods as commonly practiced. First he asks whether in the light of modern pathology, aided by bacteriology, the promiscuous use of blisters as ordinarily employed is not a dangerous practice, leaving as it does a raw surface in which diseased masses can gain access to the body, unless all the antiseptic precautions are observed. The same question is also asked in regard to the use of wet cups. Another point is the carelessness of dentists and others in handling the instruments used in extracting teeth and still another is the use of the Kelly pad commonly employed in ordinary obstetric practice. He believes that the average practitioner pays little attention to sterilization of the rubber bag. Another common and dangerous practice is the careless use of the uterine sound.

54. **Cutaneous Sarcomas.**—The wide variance in regard to the subject of sarcomas in the medical literature is first noticed by Johnson, who remarks that the etiology of the entire class of disorders is unknown. The classification which he follows here in this article is a histogenetic one. He divides sarcomatous neoplasms into three groups: Fibroblastic sarcoma, the lymphoid cell class, and sarcoid growths. 1. The first of these comprises spindle- and round-celled tumors. True giant-celled sarcoma is not primarily in the skin. The origin is the same for all types from the fibroblast. Between the cells there is present invariably a delicate reticulum, probably composed of collagen, which is absent in epitheliomata. The tumors are all vascular. 2. The lymphoid-celled class is unique. In lymphatic leukemia, Hodgkin's disease, and lymphoma, the cells are all of one type and transition states from one to the other exist. There is no intercellular substance as a product of new cells. There are no vessels ramifying between them and the pre-existent tissue does not melt away before their advance. So far as the skin is concerned, these disorders give rise to true tumor formation, and this may be asserted also of myelogenous leukemia. This class is not related histogenetically to either of the other two. 3. Sarcoid tumors are undoubtedly all fibroblastic in origin, but two of them are probably granulomas of undiscovered source. These are granuloma fungoides and sarcomatosis and with them should be classed Boeck's sarcoid as a granuloma. Modern histologists regard idiopathic sarcoma as having the same character, but it closely approaches sarcoma on one side and endothelioma on the other. The reticulum is present here as in sarcoma and productive inflammations, but these tumors do not metastasize and—except granuloma fungoides—are curable by arsenic. Perhaps the spindle-celled sarcoma, which disappears under the same treatment, is a near relative to Kaposi's sarcoma, so that a transition may be traced by easy and well-known steps from the most malignant of neoplasms to benign tumors, hardly distinguishable from granuloma, a class of infective, generally productive neoplasms, as lymphoid tumors shade from lymphoma through lymphemia to inflammatory hyperplasia. It will be interesting to see whether an infectious agent is ever discovered for fibroblastic sarcoma, or whether a sharp line is to be drawn through the sarcoid group between it and granuloma.

56. **Urine Examination in Male Sexual Disorders.**—Heitzman insists on the importance of urine examination in this class of cases, though they have hitherto been considered as generally of slight importance. Their field of usefulness must necessarily be limited, but in diseases of the prostate, vesicles, and ducts, as well as the urethra, the microscope will often enough determine the exact conditions and will lead to more careful examination of the patient. Inflammations, even if mild, whether acute or chronic, suppuration, ulceration, as well as tumors are all to be recognized and their exact location determined. Thus he mentions the cuboidal epithelia of the prostate gland, while its ducts are lined with columnar epithelia, similar to the columnar epithelia in the seminal vesicles, but not so studded with pigment granules, while the ejaculatory ducts are lined by columnar ciliated epithelia. The smallest cuboidal epithelia in the male genital tracts are those from the prostate; the only ones for which they may be mistaken are those of the ureter, but the columnar epithelia from the ducts will easily clear up the diagnosis. Prostatitis is a more common disorder than is supposed, but the presence of red blood corpuscles will lead to the diagnosis. In the chronic form the red blood corpuscles are either entirely absent or scanty, while pus corpuscles are present in moderate numbers and both these and the epithelia are studded with small, highly glistening, refracting granules or globules, never found in acute cases. In abscess, the finding of connective tissue shreds is important; without these the diagnosis can not be made. They are easily distinguished from mucous-threads, which are pale, more or less regular, and may often run parallel for a considerable distance, while the connective tissue shreds are fibrinous and frequently finely granular. Hypertrophy of the prostate gland may be diagnosed in many cases from urine examinations, viz., the evidence of chronic prostatitis, and malignant tumors when they occur can also be determined by their peculiar epithelial castings. The diagnosis of vesiculitis is also of importance and the most characteristic changes are in the spermatozoa, some of these have the normal appearance, while in others the heads become larger, round and granular, having almost the appearance of pus corpuscles with tails. For examination, only the complete ones are valuable, since broken-off heads may easily lead to errors in diagnosis. Prostatic epithelia are always seen, and mucous-threads and cylindroids may be numerous. In urethritis microscopic examination of the urine is not as important as in the conditions just described, though the symptoms may be so slight as to render such examination important. The presence of so-called gleet-threads is significant, as is also that of urethral epithelia, varying in amount with the intensity of the inflammation. In the mild superficial inflammations only the flat cells are seen, while in the deep-seated lesions, such as ulcerations, the irregular cuboidal and columnar forms are present. Ulceration also is characterized by connective tissue shreds surrounded by zooglea masses and epithelia from the deeper layers with red blood globules. When the columnar epithelia are quite abundant and endogenous, new forms may be found in either the epithelia of the urethra, the prostate gland or the bladder, according to the seat of stricture.

57. **Inversion of the Tunica Vaginalis for Hydrocele.**—Greene recommends this operation, giving Winkelman's description of the procedure—incision down to the sac and incision of the sac 3 to 4 cm. long from above downward, more toward the upper than the lower pole. After the hydrocele fluid has escaped the testicle is drawn completely out so that the entire tunica vaginalis is seen. The incision of the tunica then comes in relation with the insertion of the spermatic cord into the testis, which incision may be shortened by a suture or two so that the testicle can not return through the opening. The tunica and testicle are replaced in the scrotum with the result that the entire serous surface of the tunica vaginalis faces outward toward the loose connective tissue, with which it may soon become fused, the testicle lying outside the tunica, between it and the scrotal wall. The operation is completed by closure of the external wound, and in the majority of cases the testicle is dislocated upward as a result of the operation. He concludes as follows: "1, that this is an easy operation to perform, and that it results in the cure of the hydrocele seems undoubtedly true; 2, the fact of so many operations having been recorded with the history of no unfavorable result as regards suppuration or neuralgia of the testis offers pretty conclusive evidence as to the safety of this operation from the above complications, and 3, the effect it may have in causing atrophy of the testicle or changes in the function of that organ is a subject concerning which clinical data, extending

over a long period of time, are necessary before final conclusions can be drawn."

61. **Fractures.**—The present treatment of fractures, according to Cannon, is traditional rather than rational. We should rid ourselves of the idea of immobilization. No pains should be spared to obtain perfect apposition of the fractured ends, but a moderate displacement, if it is not rotary, does not necessarily impair function. We should endeavor to prevent adhesion of the soft parts to the callus by allowing the patient free movement of the joints above and below the point of fracture as early as possible. Any splint will do for the first dressing that will give support and comfort, provided it is light and simple, without mechanical contrivances. The first dressing should be well padded and lightly bandaged. Complete immobilization of the fractured ends is not possible, and a limited movement facilitates union. The limb should be redressed two or three times the first week to attend to blebs, etc. After eight to twelve days the primary swelling will have sufficiently subsided for permanent dressing. After perfecting the adjustment, apply plaster bandages smoothly laid on over a generous layer of cotton, for leg fracture from toe to knee; for the lower half of the thigh the dressing should extend to the perineum, the cast being as light as possible with strength. After ten to twelve hours it will be hardened and if without crack or flaw, have the patient sit up in bed until he gains his equilibrium. Then he should be supplied with a pair of good crutches, and have the shoe heel on the well foot somewhat raised. He should then be instructed to move about the room at will until the foot swells so as to become painful. After two or three days, the tendency to swell is not great, and quite free exercise may be permitted. Four weeks after the application of the cast remove it and firm bone union will nearly always be found. While the patient may not have much confidence in his slim-looking "prop." in a few hours it will appear much more substantial. Bathing in hot water with much rubbing is now useful for the circulation and flexibility of the joints. After sixty or seventy-five days from date of injury the patient can return to his usual employment.

62. **Local Anasthesia.**—Wishard believes in the use of local anesthesia in genito-urinary operations, such as circumcision, for which, however, it is not applicable in young children and in some cases of excessive adhesions in adults. In shortening the scrotum, in varicocele, in stricture operations, and in perineal section he considers it of the greatest practical value.

63. **Gastric Cancer.**—After a review of the symptoms and diagnosis, Graham concludes that there is no pathognomonic symptom. We must consider carefully all the circumstances of the case to make a proper diagnosis. Experience in handling the cases has not as yet been superseded by ready-made tests that make a diagnosis for us.

77. **Prevention of Tuberculosis.**—The ideas conveyed in Long's article are the contagiousness of consumption and its prevention. Its mortality makes its prophylaxis the most important question before the medical profession of the day; therefore, legal enactment should require the reporting of all cases to the health authorities who should be authorized to inspect them and supervise their control and to compel all inmates of the infected house to have their sputa examined by the city bacteriologist. Societies for the prevention of consumption similar to the one now existing in Philadelphia should be formed to interest the public in and educate it upon this important question. All cases well advanced should be placed in suitable hospitals, if they are not so situated as to avoid infecting others at home. Finally, all patients with consumption detected in its incipiency should be urged to go to a favorable climate and colonies should be established, ultimately by the state, where those who have no means can be employed at outdoor work to maintain themselves under rigid medical supervision.

85. **Diseases of Pregnancy.**—The disorders here mentioned are insanity, of which a case is reported, constipation, dysentery, nausea and vomiting, ovarian and mammary abscess and vulvar edema. As regards the first of these, Campbell thinks that while the asylum is probably the best place, often an even-tempered nurse of good disposition for a constant companion and building-up of the system will effect a cure. As regards constipation she insists on the importance of keeping the bowels freely open. Dysentery appears sometimes to come on in epidemics among pregnant women and when it first appears during the last month it is almost useless to try to control it. She has had some serious cases of dysentery complicating pregnancy in Oklahoma and thinks that the surroundings are probably the causative factor. She reports cases of abscess of the ovary, mammary abscess and edema of the vulva.

94. This article has appeared elsewhere. See THE JOURNAL, xxxvi, p. 1606.

95. Ibid., p. 1611.

105. **Aural Pain.**—The causes of aural pain are noticed, and the failure of routine methods remarked upon by Beaudoux. He thinks that in the ordinary cases accurate diagnosis of the existing condition, whether due to inflammatory myringitis, acute or chronic, etc., should be noted. One common form of earache is due to alveolar periostitis or dental caries, and its diagnosis must necessarily be by the exclusion of purely aural causes, and the conditions of the mouth. Where necessary, drainage through the Eustachian tube or tympanic membrane, evacuation of the tympanum by gentle Politzerization, rest of the parts, prompt removal of the cause, and attention to the nose and throat are the first steps to be attended to. The neuralgias and otalgias should be treated locally or constitutionally. Ethyl chlorid sprayed in the front or back of the auricle or in the external meatus, and oil of peppermint, are often useful as a local treatment, while the constitutional treatments for neuralgia should be employed.

113. **Prophylaxis of Insanity.**—Young says the first method to prevent the increase of insanity should not be in the regulation of marriage or of unsexing persons whose mental infirmity is traceable to or aggravated by sexual abuses. The only method he says is education from the child up, avoidance of over-pressure in education, the disuse of all nerve stimulants, and a healthy mode of life.

116. **Dental Irregularities.**—The causes of jaw deformities are noticed by Talbot, including the hereditary intra-uterine conditions, etc.; but one of the great factors, he says, is extraction of temporary and permanent teeth. The early removal of the teeth before the jaws have developed tends to degeneracy of the jaw, which is a regular condition of civilization, increasing from the East westward in Europe and most frequent among English-speaking and amongst the Scandinavian races. The struggle for existence between the organs dependent on race, evolution, etc., has resulted in the higher races in the triumph of the brain and skull at the expense of the face. The higher the intellectuality the greater the degeneration of the face, jaws and teeth.

119. **Infantile Diarrhea.**—Booker's article is a summary of the literature of cholera infantum up to the fourth decade of the last century, quite full in its details and of interest from a historic point of view.

120. See abstract in THE JOURNAL, xxxvi, p. 1805.

121. Ibid., p. 1413.

FOREIGN.

British Medical Journal, July 6.

Our Duty to the Consumptive Bread earner. J. BURDON-SANDERSON.—The condition of the destitute consumptive and what should be done with him is discussed by Burdon-Sanderson. He calls attention to the importance of prompt admission to some sort of institution where his condition can be treated, and the selection of suitable cases for such, the relation between poverty and the prevalence of phthisis and the beneficial influence of sanatoria. The essential conditions of success in these institutions are the choice of suitable sites, the maintenance of suitable buildings and the selection of suitable cases, their prompt admission together with their medical treatment

and regime, and finally the medical supervision of cases after their discharge. Of course, all these things would cost an immense amount in England. The most feasible mode of meeting the requirement seems to him to be that employers of labor should consent to levy upon themselves a contribution of which the amount would be proportional to and deducible in whole or in part from the wages paid to their workmen. Within its scope that would give equal or greater advantage to the insured than would compulsory insurance as practiced in Germany, but instead of being universal it would exclude the very poorest class, who should be chiefly benefited. Still it may be the best that can be done and he leaves the matter with the profession and calls their attention to the facts.

The Arrest of Pulmonary Tuberculosis. C. Theodore Williams.—The various methods of the arrest of pulmonary tuberculosis are described by Williams, who notices first the quiescent tubercle in the form of caseous masses containing tubercle bacilli which are often found in the lung. Miliary tubercle is sometimes converted into fibroid tissue, but with the caseous masses fresh local infection is quite possible and intelligible. Another form of arrest is that tubercular nodules become obsolescent, surrounded by chronic localized emphysema, which prevents the detection of tubercle by physical signs. This is one of the commonest endings of tubercles, the owner of the lungs which have gone through this process is generally a short-breathed individual with a large motionless chest, and is credited with being asthmatic. Many such eventually perish from an attack of hemoptysis through the cracking of some degenerated vessel exposed in the old cavity or the bursting of a small pulmonary aneurysm. The third form of arrest mentioned by him is contraction of the cavity and increase of fibrosis, causing shrinking of the whole lung; the walls of the cavity approximate and sometimes become obliterated by cicatrization, though this is rare. Calcareous degeneration is sometimes observed and undoubtedly indicates obsolescence of tubercle, but is found oftener in the bronchial glands than in the lung tissue itself. Calcareous expectoration of itself must not be accepted as proof of arrested tuberculosis, for active disease may be going on in other parts. Still we sometimes find large calcareous deposits in postmortems, indicating old arrested tuberculosis. As regards the clinical aspects of arrested phthisis he says there are many young men and women who have a history of phthisical symptoms that have disappeared and they seem to do well, especially in high altitudes. Nevertheless in these cases even many years of absolute immunity is not an absolute security from relapse. Some authorities perhaps would regard these relapsed cases as instances of fresh infection, but they show constitutional liability even then. When fibrosis is extensive and firm, as in one case reported, there is not much danger of their breaking down, but such patients are greatly disturbed by shortness of breath and phthisical matter, or latent tuberculosis may still remain in the parts not involved in the extreme fibrinous condition. He, therefore, concludes that the permanent arrest of tuberculosis is not a simple matter, but it is surrounded by many difficulties and one is tempted to imitate Solon's famous dictum and say: Pronounce no case one of arrested tuberculosis till you have seen the necropsy. There is, no question, however, but that there are many cases of real arrest as shown by autopsies of patients that have died of other diseases and a distinction is not always made between general and local arrest, which is very important. He doubts the propriety of using the term "cured," in many cases; arrest is a more appropriate term. This should only be applied when all general symptoms have ceased; when cough, expectoration, night sweats, wasting and physical signs are absent altogether; or in the case of former cavities, when signs of consolidation or contracted cavity have replaced those of the active disease.

The Lancet, July 6.

The Practical Points in the Treatment of Threatened Asphyxia. Robert L. Bowles.—The occurrence of stertor in disease is considered a danger signal by the clinician and becomes the chief subject of this third lecture of Bowles. He describes the forms and characteristics, recognizing two conditions of palatine stertor, and the pharyngeal type, and what may be named mucous stertor dependent upon the presence of mucus in the bronchial tube. He reports cases and offers the following general conclusions: "1. That a 'laryngeal stertor' may be added to the three forms formerly defined. 2. That the three forms of stertor which have a most important connection with the apoplectic state are the palatine, the pharyngeal and the mucous stertor. 3. That these three varieties, whatever their remote cause, are the immediate result of a local mechanical condition—a condition which may always and at once be changed to the great relief of the patients and sometimes to their permanent recovery. 4. That it is necessary to keep the patient on one side, that that side should not be changed, and that the paralyzed side should be downwards. 5. That mucus and other fluids gravitate into and fill up the lower lung; and that therefore if the sides be reversed the mucus will find its way into the opposite lung. 6. That the fluid, crossing from the large bronchi of one lung to those of the opposite, becomes churned into foam and causes dangerous obstruction to the respiration. 7. That the lung, by remaining inactive and filled with mucus, for a long period, is not injured. 8. That these principles apply to all conditions allied to the apoplectic, whether there be mucus or not."

A Contribution to the Pathogenesis of Cancer. John Marnoch.—The author has experimented with the transposition of epithelial tissue into other tissues, especially those of mesoblastic origin and various cavities of the body, to ascertain whether Kaufmann's experiments can be confirmed. His experiments are reported, and he finds that the epithelial tissue dies quite irrespective of the skin being entirely separated from its natural surrounding and blood supply or whether the blood supply is still continued. There seems to be an antagonism in the results of these experiments and those of Kaufmann, and he suggests that possibly the use of cock's comb or wattle by the latter may have something to do with it—it may possess greater vitality than ordinary epidermis. He notices also the experiments of Lack and Plimmer, and does not account for them, but thinks that they should be further repeated, and successfully, to be convincing.

The Practitioner, July.

On the International Relations in the Prevention of Tuberculosis. Hermann Weber.—Weber pleads for general international co-operation in the control of phthisis, and offers recommendations. He thinks there should be numerous sanatoriums in all countries independent of private charity and supported by the state. There should also be in every country an international board of health with a special anti-tuberculosis department, and an international anti-tuberculosis commission watching over the carrying out of international duties against the spread of tuberculosis and efforts for the ultimate extinction of the disease.

Should the State Undertake the Prevention and Treatment of Consumption? Nathan Raw.—The benefits of sanatorium treatment are first noticed by Raw, who calls attention to the work that is being done in other countries and quotes the resolution passed in the Canadian Tuberculosis Conference, crediting one-fifth of the deaths in the Dominion to tuberculosis, as evidence of the appreciation of the importance of the subject. He offers the following suggestions: 1. That a short bill should be introduced in Parliament authorizing county councils, municipalities, district and urban councils for the erection of sanatoria. 2. That the local government boards should directly undertake the inspection of all public offices and insist on the removal of all consumptive employes to sanatoria, to be kept there at the expense of the government if unable to pay themselves. 3. That all factories, workshops, workrooms, and offices should be carefully inspected by the government inspectors as to their sanitary and hygienic condition and all cases of consumption among the employes removed to proper sanatoria at the expense of the municipality if their means do not suffice. 4. That the local board of health should insist upon all cases of consumption in public institutions, such as prisons, barracks, workhouses, reformatories, asylums, orphanages, schools, boarding houses, and hospitals, being isolated in separate wards or building so as not to be a danger to

others and that they should receive as far as possible the benefit of open-air treatment. 5. The government should give every encouragement to the local health authorities to appoint special inspectors for dairies, milkshops, and abattoirs, to insure that only non-tuberculous meat and milk are sold. 6. That tuberculosis should be included among the list of infectious diseases, but only to be voluntarily notifiable and that a special code of rules and regulations should be drawn up for the guidance of the health authorities. By-laws should be drawn up by the local authorities in regard to spitting in public places and leaflets be distributed free of charge to the public setting forth the dangers of the disease. He concludes his article with a postscript endorsing the action of the United States Government in excluding tuberculous immigrants.

The Notification of Phthisis Pulmonalis. ARTHUR NEWSHOLME.—The author believes in the compulsory notification of tuberculosis, believing it would be more complete and thorough and would remove the ethical scruples that practitioners feel in voluntary notification, and would have numerous advantages in other obvious ways.

A Personal Experience of "Galloping Consumption." R. MANDER SMYTH.—The author gives a graphic account of his own experience under the Nordrach treatment when in the state of very advanced and galloping phthisis, from which he apparently completely recovered.

The Diagnosis of Tubercular Disease of the Lungs by Means of the Roentgen Rays. E. CLIFFORD BEALE and HUGH WALSHAM.—This article is fully illustrated, showing the use and advantages of the skiagraphic methods in diagnosis of pulmonary phthisis. They do not, however, indicate that it is of value in the earliest conditions, but it would appear that a certain amount of tubercle aggregation must take place before a perceptible shadow is caused. They are useful, therefore, where definite deposits occur, but absence of such shadow must not be considered as positive evidence of the absence of tubercular lesions.

The Early Diagnosis of Pulmonary Tuberculosis. J. J. PERKINS.—The importance of the early diagnosis of tuberculosis is dwelt upon by Perkins, who notices that in many cases it may occur in the sudden, acute form, so that patients can often tell the day on which they fell ill. The special signs of importance noticed are tachycardia, hyperesthesia over the affected apex in the early stages, and initial hemoptysis occurring before physical signs are present, probably due to a very small focus in relation to the wall of the vessels. He thinks the symptom is underestimated. According to his views, hemoptysis in almost every case is a pathognomonic sign of tuberculosis. Pleurisy, he holds, is always tuberculous.

Tubercular Infection Through the Air-Passages. ST. CLAIR THOMSON.—The points of attack of phthisis are noticed. Thomson calls attention, as a special place for suspicion, that ring of lymphoid tissue surrounding the naso-pharynx, the tonsils. The commonest mode of infection, he thinks, is by inhalation and that the inhaled bacillus has infected the system before the air current has reached the larynx, most probably through the lymphoid tissue of the naso-pharynx and pharynx. There appears to him to be no justification for the generally accepted idea that the bacillus is inhaled directly into the pulmonary alveoli.

Tuberculosis in Childhood. GEORGE F. STILL.—Still holds views similar to Thomson as regards the commonest cause of tuberculosis being by inhalation. He holds that the idea that milk infection is chiefly responsible for the heavy incidence of tuberculosis is unclinical. He points out the difference in the condition as it occurs in children and in adults, due to some extent, he holds, to the frequency of caseation of mediastinal glands.

The Surgical Treatment of Tubercular Disease. ALBERT CARLESS.—This is a lengthy paper dealing with the treatment of tuberculosis by surgical methods, but the various conservative methods are mentioned: the cinnamic acid treatment, on which his conclusion is unfavorable, and the tuberculin treatment, which he thinks is defunct as a treatment at least in the surgical cases. The tubercular condition of various organs and their management are noticed in detail. He does not mention some methods that have been used in this country, like the Murphy gas injection.

Some Tuberculous Affections of the Nervous System. FREDERICK E. BATTEN.—Tubercular neuritis is the principal subject discussed by this author, who notices the question whether it is due primarily to some toxic or some concomitant condition. As regards the first he thinks the solution is not yet possible, but as regards any further infection in addition to tubercle being the cause of neuritis, he calls particular attention to the action of alcohol which is frequently given in cases of advanced phthisis as being a possible factor.

Zomotherapy in Phthisis. LEONARD ROBINSON.—The findings of Robin and Binet in regard to the respiratory change in phthisis are noticed, and the deductions of Robin that remedies used to diminish its exaggeration, including cod-liver oil, cacodylate of sodium, and raw meat are indicated, in addition to the rest and fresh-air treatment. This latter, raw meat and serum, is specially considered and the experience of Richet and Hericourt with this so-called zomotherapy. This is not a method of hyper-alimentation, for in the amount of meat juice used the quantity of albuminoids is almost negligible. Cooked meats given in similar quantities act as a toxic substance and rather favor the tubercular process. The success of zomotherapy seems to be a question of dose; it depends upon a minimum ratio between the weight of the patient and the quantity of muscle juice or raw meat taken. Below this minimum limit, amelioration is possible, but a cure must not be expected. He gives in an addendum the formula of the treatment drawn up by Hericourt.

Gazette de Gynecologie (Paris), May.

Phosphoric Acid in Dyspepsia and Neurasthenia.—Worry, grief or any over-exertion of the nervous system causes an exaggerated elimination of phosphoric acid, entailing in time neurasthenic cachexia. Besides this primary neurasthenia, which is always first manifested in the acidity of the urine, the nerve cell may lose its phosphorus from some physical, debilitating cause, usually the defective functioning of the gastro-hepatic apparatus. The missing phosphorus must be supplied and Joulie prescribes for this purpose a diurnal 12 drops of medicinal phosphoric acid: Bardet prefers a lemonade made of 28 gm. of medicinal phosphoric acid; 29 gm. of extract of orange and 250 gm. simple syrup, with water to make one liter. Another formula less styptic and acid, is white of egg, 60 gm.; phosphoric acid, 58 gm., and water to make 400 c.c. Boil until completely dissolved and add extract of orange 20 gm., syrup 400 gm. and water to make one liter. Dose 10 to 15 teaspoonfuls in water during meals. Phosphoric acid deserves an important place in the treatment of dyspepsia. It has the advantage over other acids that it supplies a substance needed in the organism and repairs losses. Its laxative action, however, contra-indicates it in diarrhea or chronic enteritis.

Tubercular Abscess of the Mamma. PLUYETTE.—More than 40 cases of this affection have been published. In the personal case described, the patient, a young woman, noticed that her breast had tripled in size one and one-half months after a slight traumatism with erosion. There was no adenopathy, no retraction of the nipple, no local temperature, distinct redness nor cutaneous edema. The parenchyma of the gland was found almost completely destroyed and the cold abscess was encapsulated in a thick membrane lined with miliary tubercles. Complete recovery, to date, twenty months after extirpation. Two other patients were well, nine months and three years afterward, respectively, when published. A number have died from recurrence on the same, or the other side. In one case the abscess developed eight days after the primary trauma.

June.

Irrigation With Gelatinized Serum in Gynecology.—LAFOND-GRELLETY.—The Anvard curette allows the passage of

a fluid through it and a solution of 10 per cent. gelatin and 1 per cent. carbolic acid, at 37 C. will disinfect the surface as it is curetted and will also prevent hemorrhage. The slow, continuous irrigation thus obtained does not obstruct the already limited field of operation in gynecologic maneuvers. It arrests and diminishes the frequency of hemorrhages in inoperable tumors and relieves the pain temporarily at least. It is well to conclude the operation with a stronger stream of the fluid to wash away detritus.

Presse Medicale (Paris), June 22.

Spasmodic Constipation. A. MAZERAN. — Constipation from spasmodic contraction of the large intestine requires entirely different treatment from constipation due to intestinal atony. It is a distinctly neuropathic affection, the result of diminished nerve force. It differs from constipation due to atony by its prevalence in women; the influence of emotions, brain work, responsibilities, etc., on its production and exacerbations, the lack of dyspeptic antecedents and its variability and absolute irregularity, and its absence of connection with the diet. The abdomen is liable to be tympanitic, sensitive, irregularly painful, with peristaltic waves, abdominal hypertension, and bunches and pseudo-tumors from the contractions. It is difficult to detect fecal matter by palpation. False desires to defecate are experienced. The constipation is exaggerated before menstruation and diminished after it is once established, which is the exact reverse of the condition observed in constipation from atony. The feces are flat or in tiny balls, covered with dried mucus. Flatus is rare and odorless. There are frequently organic spasms and reflexes corroborating the neuropathic origin, gastric hiccough and constriction of the chest. Rectal enemata are sometimes introduced with great difficulty and frequently are retained, causing colic. Medication should be antispasmodic, both local and general, with adjuvants of various kinds to restore tone to the nervous system. Belladonna heads the list under the first indication. Even a small dose, 1 or 2 cg. in a pill or suppository, may prove effective. Asafetida, zinc valerianate and laudanum are also valuable, combined with warm sitz baths, compresses and rectal irrigation—all between 33 and 36 C., with very light massage and measures to strengthen the nervous system and the general health. All depressants, such as the bromids, must be avoided, with alcohol, hot drinks, spiced foods, etc. Purgatives are contra-indicated, but a mild laxative is required during the exacerbations of the constipation. A good combination is 1 or 2 cg. of belladonna, followed in an hour by a teaspoonful of castor oil or 40 cg. of cascara sagrada. The treatment should be completed by a course of tonic-sedative waters.

June 26.

Exploratory Incision in Doubtful Tumors. QUENU.—When a doubtful tumor has acquired the characteristics of malignity, it is inoperable. It should be extirpated while still in the benign stage. Quenu makes a practice of incising all doubtful, operable tumors, in order to determine their nature, proceeding to their ablation if found necessary. He disapproves of specific treatment in cases of doubtful tumors of the mamma, believing that valuable time is wasted on this differentiating measure, while an exploratory incision answers the same purpose and allows the removal of a malignant growth in its incipiency.

Medical Practice in China.—E. JEANSELME.—Among other points of interest in this communication, based on several years of experience in the far East, we note that Chinese barbers massage their customers before proceeding to shave them, and that all classes appreciate the refreshing effect of sponging the body with cloths dipped in very hot water. During an interlude in grand banquets the guests wip. their faces with hot water in the same way. Medical practice is the same as it was centuries ago. The tyranny of routine is so excessive that it has suppressed not only progress but the fluctuations of fashion. Medicine, like the clothes, the laws and beliefs, has become immutable. Whenever the Chinese rouse and break with their superannuated traditions they will undoubtedly proceed with rapid strides. They readily appreciate all that is concrete. Profoundly materialistic, they are supremely interested in all that affects their welfare and their health, and Jeanselme believes that when the time comes, the Chinese may not only copy and assimilate our methods but improve upon them. Chinese physicians have already empirically learned to understand syphilis, its hereditary tendency to the third generation and the necessity of treating it with mercury "until the gums bleed." They combine it with ten other ingredients, and the pills are wrapped in a piece of banana to prevent injuring the teeth. The person making the pills must also hold water in his mouth, for the same purpose.

June 29.

Primary Cancer of the Large Bronchi. D. MERKLEN.—An epithelioma developing in the left bronchus in a dyer, 45 years of age, caused dyspnea, a cough and hoarseness as the first symptoms of its presence, accompanied by blood-stained expectoration. Later there were attacks of suffocation. The diagnosis of constriction of the larynx or trachea was excluded by the indications of compression in the mediastinum and the respiratory silence, betraying the impermeability of the lung owing to the bronchial obstruction, and the accumulation of mucous secretions in the dilated bronchi below the primary tumor. It it generally accompanied by bronchitis, infiltration of the parenchyma of the lungs by secondary cancerous nodules, and sclerous thickening of the pleura, causing dullness with or without exaggeration of the vocal vibrations.

Progres Medical (Paris), June 29.

Food for Idiot Children. BOURNEVILLE.—Two cases of fulminating hematemesis in consequence of swallowing bones, induce Bourneville to emphasize once more the necessity of strict supervision over the food of idiot children, that such accidents may not occur.

Centralblatt f. Chirurgie (Leipsic), June 6.

Topography of the Appendix Vermiformis. P. MUELLER.—It is easy to locate the appendix, even in the midst of adhesions, exudates and perplexing lesions, if it is borne in mind that the root of the appendix is invariably at the point where the three teniæ, passing downward from the colon, meet at the cecum. This point varies in different individuals, but it is readily located by following the tenia libera downward to the cecum.

Centralblatt f. d. Grenzgebiete d. Med. u. Chir. (Jena), June 8.

Death from Burns. EYFF.—Reviewing the various hypotheses that have been advanced to explain death during the first few hours after a burn, EYFF concludes that none of them explains all the phenomena observed. The theory of rapid alterations in the blood seems the most plausible, as clinical and experimental research have demonstrated that the cellular elements of the blood and the red corpuscles in particular, are rapidly destroyed after a burn, forming extensive thromboses, with secondary alteration in the parenchyma of various organs. The consequent shock may result from the rapid development of ptomains supplementing the suspension of the functions of vital organs by these alterations in the red corpuscles.

June 18.

Typhoid Affections of the Bones and Joints. C. HOEDLMOSER.—Since Hubener's article on this subject appeared in 1895, there have been more than sixty-seven communications published, and all are reviewed in this critical summary of the surgical sequels of typhoid fever. The prognosis depends on the strength of the patient, but in general it is favorable, although cases of mixed infection have been known to prove fatal. As soon as an abscess has formed it should be evacuated and early, energetic treatment is usually followed by a rapid cure. Trauma favors the development of these affections. Tapie states that a protracted expectant treatment is indicated in the non-suppurative cases. In one of his patients complete recovery was observed after a year's course. He recommends the application of cold and resolvents. Clarke has reported a case of post-typhoid periostitis of one phalanx in a boy cured by antistreptococcus serum after the failure of

other treatment. He is convinced that there was no streptococcus infection in this patient. The tibia seems to be most frequently affected, in some statistics in 87 per cent., in others in 50 out of 103 cases, with suppuration in 34; the ribs in 29 per cent., the femur in 23. In 38 of the 103 cases mentioned several bones were affected. In Catrin's case the affection appeared first in the right elbow, then in the finger, with pain in one scapula and clavicle, then in both tibiæ, and finally periosteal swelling and suppuration of the right tibia, lasting for a long time. Tuffier found the typhoid bacillus in a suppurating tibia sixteen months later. The protracted, comparatively mild course distinguishes post-typhoid bone-processes in general. Mixed infection is probably the cause of the formation of sequestra. As a rule, these post-typhoid affections appear during convalescence, but Sultan has observed a case in which the abscess appeared six years after the typhoid fever and pure cultures were derived from the pus. The more severe cases of typhoid fever, with a lingering convalescence, seem to be most liable to consecutive bone lesions. The young are most frequently affected. Wurtz states that 46 of 68 patients were under 25, and Bourgeois, 44 out of 52. Such lesions have occurred, however, in patients 60 to 70 years of age. Wurtz witnessed a severe necrosis of the sternum at the height of the febrile process in a boy between 8 and 9. The frequency of osteomyelitis or periostitis consecutive to typhoid fever, was 48 cases in the 6563 cases reviewed, but some were due to the staphylococcus. Keen found preceding typhoid in 39 out of 50 cases of affections of the bones consecutive to a severe febrile infection. Articular rheumatism may develop with the clinical picture of typhoid fever or may complicate it, and typhoid may simulate or complicate rheumatism. Sodium salicylate is useful in differentiating them. Robin and Pribram distinguish four varieties of this borderland typhoid: 1, arthrotyphoid fever, commencing with pains and swelling in the joints followed by the typical symptoms of typhoid fever; 2, suppurative inflammation of the joints in the later stages of typhoid fever, due to typhoid or mixed infection; 3, pseudo-rheumatism with typhoid conditions, localization in the joints with serious general symptoms, and 4, true rheumatic polyarthritis with typhoid conditions, that is, with high fever and delirium. The joint affections during convalescence from typhoid are much more frequent than the above and the suppurative form is most usual. Keen distinguishes a rheumatic, a septic and an essential typhoid form of joint complication. It is usually localized in the hip joint.

Frauenarzt (Leipsic), June.

Hypnosis in Therapeutics. FREUDENBERG.—Treatment of patients with hypnosis or suggestion is not a scientific toy but an actual science which has already reached a high stage in its development. The influence of the mind on the vasomotors, that is, on the nerves that determine arterial tension, is a fact beyond question to-day, and the physician should not hesitate to utilize this science when other means fail. As vasomotor disturbances are the chief element in gynecologic affections, suggestion may prove a valuable therapeutic measure in these cases, which are so often rebellious to medical means. Freudenberg cites several recent cases of miracle cures, and regrets that the physician first in charge of the case had neglected to utilize suggestion which might have proved as successful in his hands as in those of the miracle-worker. He describes an interesting personal case, a teacher whose intense dysmenorrhea incapacitated her for several days every month, seriously interfering with her profession. Nothing pathologic or hysterical could be discovered, and as it was a question of morphin or suggestion during hypnosis, Freudenberg ventured on the latter. She was influenced in profound hypnosis and amnesia of the suggestion commanded. A lasting impression was induced in the third seance and since that time the menses have recurred without pain and normal in every respect.

Miteilungen a. d. Grenzgebiete d. Med. u. Chir. (Jena), viii, 1 and 2.

Curability of Tubercular Peritonitis without Operation. W. ROSE.—In fifty-one cases of tubercular peritonitis, one-third recovered without surgical intervention, while the statistics of operative treatment claim but one-fourth cured. Of the patients between 14 and 20, 7 recovered and 7 died; between 21 to 30, 5 recovered and 7 died; between 31 to 40, 1 recovered and 13 died; between 41 to 50, 3 recovered and 3 died, and between 51 to 70, none recovered and 4 died. Of the male patients, 70 per cent. died and of the 20 women 65 per cent. There were no tubercular antecedents in half of the cases and the mortality with such antecedents was 76 per cent. There were 11 cases of the tumor variety; 36 per cent. recovered; 18 of the ascitic variety with 33 per cent. of recoveries, and 21 of a mixed form with 29 per cent. recoveries. Of the 18 acute cases, 50 per cent. recovered; of the 13 subacute cases, 31 per cent. recovered, and of the 19 with an insidious course, only 16 per cent. terminated favorably. The duration of the cured cases was five months to one and one-third years. The fatal termination occurred in 71 per cent. in less than a year after the first symptoms; in the remainder after two, four and five years. If the peritonitis does not heal in one and one-half to two years there is little prospect of recovery. Most of the patients recovered spontaneously without special treatment. Rest with good air and food seem to be all that is necessary. As the patients are usually free from pulmonary complications and have no sputum there is little if any danger of infection from them. The most rapid recovery occurred in two patients who were able to live at a sanatorium. The diuretics were found capricious in their action. The most satisfactory were 20 cg. calomel three times a day and 3 gm. theobromin, supplemented by saline baths three times a week or a course at a spa. Rose recommends these baths in every case of serous tuberculosis. His article is based on 69 cases at Naunyn's clinic and 2 in private practice. Nine died, 4 were operated on and 11 were lost sight of. Sixteen or 31 per cent. of the remaining 51 cases have recovered; 34 or 67 per cent. died and 1 is apparently in *statu quo*.

Four have been permanently cured for one to two years: 13 for two to ten years. The fibrous variety, with or without effusion, seems to recover as frequently without as with an operation.

Aid to Diagnosis of Infection of the Biliary Passages. F. PICK.—As a contribution to the solution of the question whether it is possible to determine severe infection of the biliary passages by the leucocytosis, Pick describes the case of a woman 49 years of age who in the course of six months had forty-six periodical attacks of chills and fever to 40 C., lasting for eight to eighteen hours, sometimes with and sometimes without pain, icterus and enlargement of the liver. The symptoms indicated intermittent bile fever with a pyemic process, but during the first two months the leucocytes numbered only 4400 to 7000. Later, a leucocytosis of 23,300 was observed during the febrile attacks, falling to 7000 or 9000 the next day. The autopsy disclosed a gall-stone impacted at the outlet of the common bile duct; the biliary passages very much dilated and filled with an abundant, tenacious, glassy mucus, sown with fine white flakes in which bacilli resembling the colon bacillus were found. No suppurative focus could be discovered anywhere in the body. The findings in a second similar case were almost the same. Pick queries whether it is possible that the absence of leucocytosis at first and during the intervals may serve to determine the absence of suppurative processes in other affections of the biliary passages. The gradual increase in the leucocytosis may have been due to the progressive loss of the protective functions of the liver against the toxins generated in the biliary passages, thus allowing the toxins in the circulation greater chemotactic power. The attacks grew less violent and the fever did not rise above 38 C. during the last six weeks—this suggests that the bacilli may have grown less virulent. Experimentation on animals has shown that attenuated cultures induce leucocytosis, while the animal succumbs without leucocytosis to the inoculation of virulent cultures.

Monatsheft f. Prakt. Derm. (Hamburg), May 15.

Disinfection of the Hands from the Dermatologist's Point of View. P. G. UNNA.—A single pyogenic coccus is of

infinitely more importance to the patient during an operation than an army of saprophytes, and consequently every suppurative lesion on a surgeon's hand must be not only disinfected but thoroughly and persistently treated until long healed. Disinfection is less important than the after-treatment of the surgeon's hands in case of any morbid process. Alcohol is a harmless and effective disinfectant and its bactericidal power might be enhanced by adding the tincture of benzoin or benzoic acid. The alcohol, however, is not fully effective unless it is kept in contact with the tissues for a long time, over night at least. As a practical dermatologist, Unna recommends that the surgeon should scrub his hands before retiring, and wrap them in an alcohol compress and then in rubber tissue. When this alcohol dressing is removed in the morning the hands should be thoroughly lathered with a medicinal superoleaginous soap (Unna's *ueberfettete Seife*), and wiped on a sterile towel. The soap closes the pores and all germs alighting on the surface are washed off with the soap just before operating. In order to thoroughly appease the surgical conscience, he adds, soap containing sublimate might be used.

Muenchener Med. Wochenschrift, July 2.

Recovery after Crushing of the Thorax. Heineke.—A keg weighing 180 pounds rolled from a cart on the right chest of a man lying on his back. The ribs were broken in twenty-nine places, but the patient, a man of 39, recovered with no symptoms on the part of the heart or lungs, except a transient pneumonia and bronchial affection. Several of the fractures healed in a defective position, including one in the clavicle, and the patient still complains of a pain in the chest when he takes a deep breath or coughs.

Treatment of Syphilitic Sciatica. F. Mendel.—Three out of the twelve severe cases of sciatica in Mendel's experience during the last three years were of syphilitic origin. They were refractory to the ordinary mercurial treatment but rapidly yielded to five intramuscular injections, in the gluteal region, of 10 c.c. of a 10 per cent. emulsion of hydrarg. salicyl. and paraffin. The injection was repeated every three or four days. Improvement was marked even after one injection. Mendel has made 1500 injections during the last five years. The after-effects are so minimal that many patients prefer this method of mercurialization. They seem to become accustomed to the injections and find them scarcely painful at all after the first. He has never had an abscess follow an injection.

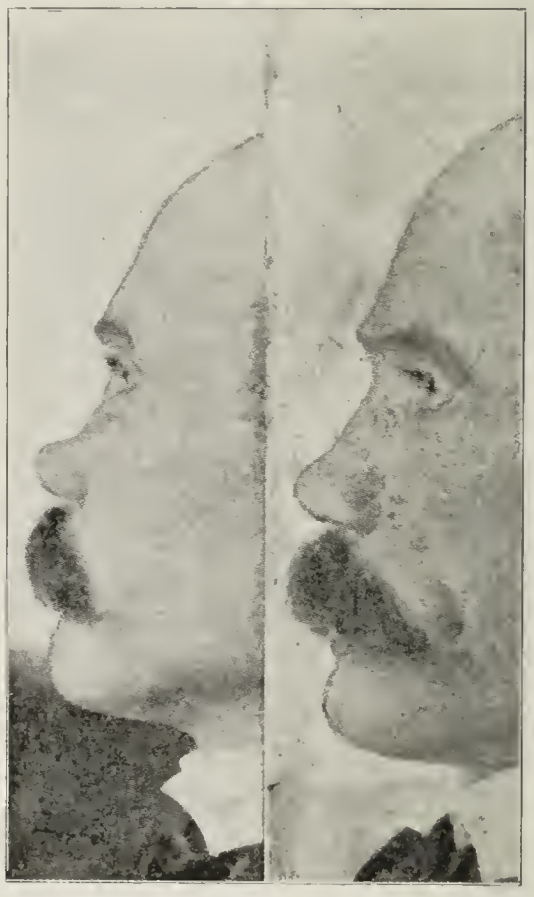
Wiener Klin. Wochenschrift, June 13.

Suppuration Without Bacteria. K. Kreibich.—Seven cases of herpes zoster were examined at Kaposi's clinic and the contents of the vesicles found completely sterile. An extensive eczema in another case presented the same phenomenon. All the vesicles suppurated in the course of twenty-four hours and yet no bacteria could be discovered in the contents of the vesicles. A recent case has corroborated this possible absence of bacteria in suppuration. All the vesicles in a vesicular eczema of the arm were transparent. The next day they were all turbid and the day after all contained pus, but no micro-organisms could be discovered in the fifty pustules examined by three different methods. The serous contents had become transformed into pus without the aid of micro-organisms. Kreibich concludes that suppuration is merely a quantitative stage of inflammation and not a qualitative, different form of inflammation.

Reflex Cough from Foreign Body in the Ear. M. Breitung.—The loud barking cough of a high-school scholar was most annoying and suggested tuberculosis or some other infectious disease. The superintendent therefore considered it necessary to suspend him from school, but Breitung persuaded him not to take this step, assuring him that no clinical evidence of a pulmonary affection could be discovered. He finally found that one ear was plugged with an accumulation of wax around a foreign body. The cough vanished with its removal.

June 20.

Gersuny's Subcutaneous Paraffin Protheses. L. Moszkowicz.—Gersuny has now an experience of thirty cases treated by the subcutaneous injection of paraffin and the results have been invariably satisfactory. Two years have elapsed since his first experiments and the result now is the same as at first, demonstrating that the prothesis can be considered permanent. The paraffin evidently becomes encapsulated in time and persists indefinitely without change. The patient first treated—a prothesis of the testes, May, 1899, after bilateral castration—has since passed through a typhoid fever with temperature of 40 C. The paraffin seemed to be temporarily much softer at this time. Otherwise the artificial testes are the same as at first. No. 2 was a woman cured of incontinence of urine due to total loss of the sphincter and urethra—already mentioned in The Journal. The paraffin was injected around the vesical sphincter and the ring pushed into the bladder. This forms a valve projecting inward, which has put an end to the oozing of urine which had been continuous for five years. The effect has been permanently satisfactory. Pfannenstiel failed in a similar case as he did not reduce the paraffin ring and consequently the valve opened outward, and was not water-tight. He injected paraffin with a melting point at 45 C., which is much too high, as it can not be injected unless it is hot, and this favors its absorption and



Traumatic saddle nose, before and after injection.

is liable to cause pulmonary embolism, which, in fact, did occur in his case. In patients Nos. 3 and 4, paraffin was injected into the palate or roof of the mouth to close a defect interfering with speech. Nos. 5 to 8 were injected in the anal sphincter to close a cicatricial defect in the sphincter left from a periproctitic abscess or extirpation of a rectal carcinoma. Prolapse of the rectal mucosa was cured in one patient by injecting 10 c.c. under the prolapsed tissue. His artificial anus was also rendered continent for the first time by the injection of 6 and later of 8 c.c. of paraffin around the orifice, partially closing it. The anus is thus rendered continent and the desire gives ample warning, but hard stools require some effort to void them. Nos. 9 to 11 were patients with hernia who refused operation. By the injection of a ring of paraffin around the hernia, an internal pad was formed, which supplemented the action of the truss and kept the hernia definitely under control. The paraffin injections have also proved useful in operations on the joints to prevent anchylosis, as the unabsorbable substance interposed between the articulating parts, prevents their growing together. Gersuny added a disinfectant to the paraffin for these cases, and after the joint had completely healed he removed most of the paraffin by puncture. In a case of resection of the upper maxillary bone, a violent neuralgia appeared in the domain of the trigeminus, requiring

resection of a portion of the second branch. In order to prevent the regeneration of the nerve, 2 c.c. of the paraffin were injected. The patient has been completely cured since. In the balance of the thirty cases, the paraffin was injected to cure deformities, usually of the nose consecutive to syphilis or trauma. Two cases are illustrated, showing the bridge of the nose completely sunken in—the "saddle-nose" of syphilis—transformed by the mere injection of .5 c.c. of paraffin into a normal, handsome nose. In another patient the paraffin was injected to remedy a defect in the cheek from an operation, first detaching the parts from the bone beneath. The paraffin was also injected in a case of extensive pitting from smallpox. Gersuny injected for this purpose a mixture of four parts olive oil to one part of the paraffin. This caused the tissues to swell, but after the olive oil had been absorbed, the cicatrix was left level with the surrounding skin, from which it was distinguished only by its smoothness. A young girl was injected with 65 c.c. of paraffin to remedy the cicatricial retraction of the thorax left after resection of several ribs on account of an empyema. The cosmetic results have been most satisfactory in every case. There have been no inconveniences of any kind and the results persist indefinitely the same as at first. The technique which Gersuny follows and which he claims is the only safe method as determined by his experiences in the clinic and by experimental research conducted under his direction, is as follows: The paraffin or unguentum paraffini must have a melting point between 36 and 40 C. This is a soft salve at the temperature of the room and is nearly fluid at that of the body. This soft, yielding body does not irritate the tissues but usually heals in place without reaction and can be palpated as a doughy mass at first, gradually growing harder, until after two months it feels cartilaginous from the proliferation through it and the encapsulation by connective tissue. Intense edema appears after injections in the scrotum or eyelids. In one case some of the vaselin had to be removed on this account. The vaselin is heated to boiling and then cooled by standing the dish in cold water. The syringe is filled while it is still warm and fluid, but it is not injected until it has cooled to the temperature of the room when it emerges like a worm from the point of the fine needle. Embolism from vaselin of this consistency seems to be impossible as there is no absorption as of a fluid. In loose tissue the vaselin must be protected from pressure and muscular movements to keep it at the desired point. In compact tissue a place must be made for it by a previous infiltration anæsthesia and only a small amount should be injected at a time. In injecting paraffin to correct a deformity in the nose, Gersuny inserts the needle from the bridge of the nose down to the tip and injects the paraffin as he gradually withdraws it. When the entire framework of the nose is destroyed, the paraffin must be injected also under the alæ nasi. In injecting cicatricial tissue, if the needle is inserted too close to the surface a visible reaction follows and the parts become red for three or four weeks. The exact melting-point is determined by coating the bulb of a thermometer with the vaselin and then placing the thermometer in water gradually heated. After it melts and floats on the surface of the water the temperature of the cooling water should be noted when the transparent drops become opaque once more.

Objective Disturbances in Sensibility in Case of Aneurysm of the Aorta. H. FRICK.—The only subjective symptom of the large aneurysm in two cases reported, was intercostal neuralgia. The sensory disturbances in the trunk were peculiar in their fleeting, changeable character. One day the zone of anesthesia and hypo-algesia extended from the sternum to the axillary line. The next day there would be hyperalgesia with the sense of contact entirely lost. Sometimes the zone would indicate a lesion of a peripheral nerve, or with hypo-algesia there would be retarded sensation of pain. The two cases indicate that these abrupt changes in the sensory domain may prove to be characteristic of aneurysm. The anesthesia always corresponded to the course of some intercostal nerve in which spontaneous pains were experienced at the time. Hysteria could be excluded in each case.

June 27.

Local Mercurial Treatment of the Fetus. G. RIEHL.—Thirty-three pregnant women in the secondary stage of recent syphilitic infection were treated by Riehl with the usual general specific measures, and in addition a suppository of 1 gm. mercurial ointment in 1 to 2 gm. of cocoa butter was introduced in the vagina to the portio, where it was held in place by a tampon. He commences this local treatment with the beginning of the pregnancy and continues it to the end. Abortion occurred only once, and premature delivery three times in the 33 cases. The total mortality was 12 and the morbidity 21 per cent.; 88 per cent. of the children were born at term and healthy; 2, i. e., 6 per cent. died and the same number showed signs of inherited syphilis. The women were all hospital patients. This local specific treatment seems to exert its influence chiefly on the fetus, as the mother showed no signs of intensive mercurialization. Stomatitis was no more frequent than with the general treatment alone.

July 4.

Cure of Osteomalacia by Diaphoresis. R. SCHMIDT.—It seems now to be generally accepted that the anatomic foundation of osteomalacia is a disturbance in the circulation of the bones, especially in the bone marrow, a hyperemic inflammation, secondary to some unknown process, possibly in the ovaries. To combat this hyperemia and inflammation, Neusser causes an intense superficial hyperemia to draw the blood away from the deep tissues. He accomplishes this with local hot-air baths and the results have established that this treatment is based on sound principles. Schmidt describes two cases of puerperal osteomalacia thus treated. The children were born very rachitic. The first patient had grown shorter by two finger-breadths and walking was impossible on account of the intense pains. The second patient had grown shorter by three finger-breadths and had been bed-ridden for ten months. The hot-air baths were given daily for one to one and one-half hours, usually in the evening, as the patients feel drowsy afterward. The subjective improvement was evident after the first few baths. In nine days the patients could walk and in one month the first patient and in three months, the second, could walk with ease and climb stairs without pain. Both patients resumed their household occupations and consider themselves perfectly well. The second patient notices a slight pain in the sacral region after working all day; the first has no symptoms. The latter took fifty-nine baths in all; the other patient a daily bath for three months. It is possible that the elimination of acids in the diaphoresis may have something to do with the brilliant success of this method of treating osteomalacia. The regulation of the circulation in the bone marrow puts an end to the acid-formation which some assume to be a factor in the process. Schmidt urges others to try this new method of treating osteomalacia and to refrain from combining other measures with it, for the present, in order to judge it on its own merits.

Functional Disturbance of the Tubes after Resection of Jaw. G. ALEXANDER.—Two cases were recently observed at Politzer's clinic in which deafness followed an operation on the upper jaw. The deafness could have been prevented if a small portion of the posterior part of the hard palate had been saved in operating, to preserve the point of attachment of the muscles governing the opening and closing of the tube.

Books Received

DISEASES OF THE INTESTINES. By Dr. I. Boas, Specialist for Gastro-Intestinal Diseases in Berlin. Authorized Translation from the First German Edition, with Special Additions by Seymour Basch, M.D., New York City. With 47 Illustrations. Cloth. Pp. 562. Price, $5.00. New York: D. Appleton & Co. 1901.

OPERATIVE SURGERY. By Joseph D. Bryant, M.D., Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College. Volume II. Operations on Mouth, Nose and Esophagus, the Viscera connected with the Peritoneum, the Thorax and Neck, Scrotum and Penis, and Miscellaneous Operations. This Volume contains 827 Illustrations, 40 of which are Colored. Cloth. Pp. 1302. Price, $5.00 per volume. New York: D. Appleton & Co. 1901.

TWENTY-FOURTH ANNUAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY, and Report of the Bureau of Vital Statistics, 1900. Cloth. Pp. 409. Trenton, N. J.: John L. Murphy Publishing Co. 1901.

CRAZES, CREDULITIES AND CHRISTIAN SCIENCE. By Charles M. Oughton, M.D. Cloth. Pp. 121. Price, $1.00. Chicago: E. H. Colgrove. 1901.

PRACTICAL SURGERY: A WORK FOR THE GENERAL PRACTITIONER. By Nicholas Senn, M.D., Ph.D., LL.D., Professor of Surgery, Rush Medical College, Chicago. Handsome octavo volume of 1133 pages, with 650 illustrations, many in colors. Cloth, $6.00 net. Philadelphia and Londou: W. B. Saunders & Co. 1901.

MURDER AS A MONEY-MAKING ART. A Social Study. By John C. McKowen, M.D., Member of the American Social Science Association. Paper. Pp. 63. Eaton Rouge, La.: Benton Print. 1901.

CLINICAL AND PATHOLOGICAL PAPERS FROM THE LAKESIDE HOSPITAL, CLEVELAND. Paper. Series 1, 1901.

Queries and Minor Notes.

GOD AND THE DOCTOR.

Some time ago, a correspondent asked for the author of the following lines:

"God and the Doctor we alike adore
When on the brink of danger, not before;
The danger past, both are alike requited:
God is forgotten, and the Doctor slighted."

The same question has been asked of the editor of the *British Medical Journal*, who replies as follows (Juue 6, 1901):

The lines are quoted in Styrap's *Code of Medical Ethics* (London, 1890, p. 75), but the author's name is not mentioned. They have a generic resemblance to the Latin quatrain said to have been written by a mediæval physician, whose name escapes us:

"Tres medicus facies habet: unam quando rogatur,
Angelicam; mox est, cum juvat, ipse Deus;
Post, ubi curato poscit sua præmia morbo,
Horridus apparet, terribilisque Sathan!"

The following translation of this epigram is taken from Timothie Kendall's *Flowers of Epigrams* (1577):

"Three faces the Phisition hath.
First as an Angell he,
When he is sought; next when he helpes,
A god he semes to be;
And last of all, when he hath made
The sicke, deseased well,
And asks his guerdon, then he semes
An oughly Fiend of Hell."

It has been cynically suggested that the gratitude of the patieut is a part of his disease. It comes on with the fever, improves during convalescence, and disappears on the return of health.

TUBERCULOSIS AND HEART DISEASE.

PHILADELPHIA, July 17, 1901.

To the Editor:—I should be obliged for answers to the following queries:

1. In what perceutage of the cases of chronic valvular disease affecting the mitral aud aortic segments has pulmonary tuberculosis developed as a secondary eveut?

2. If notes have been kept, kindly give the total number of cases, both of valvular disease and pulmonary tuberculosis, as well as the percentage.

3. If no records have been kept, kindly state opinion as to the frequency of the occurrence of pulmonary tuberculosis secondary to chronic valvular disease at the orifices mentioned above.

4. What is the effect of valvular disease—mitral and aortic—upon the course of chronic pulmonary tuberculosis?

5. Have lesions of the pulmonary artery valves seemed to predispose to pulmonary tuberculosis? (Statistics on this head are also desired.)

6. If chronic valvulitis affecting the mitral and aortic cusps exercises a preventive effect, what is the explanation?

7. If disease of the pulmonary valves (I refer especially to stenosis) predisposes to phthisis, how is the effect accounted for?

1605 Walnut St. J. M. ANDERS, M.D.

SECRETARIES OF STATE BOARDS.

MILWAUKEE, WIS., July 15, 1901.

To the Editor:—I would be greatly obliged for the names and addresses of the secretaries of the Medical Boards of the following states: Arkansas, Colorado, Kentucky, Nebraska, Nevada, New Mexico, Oklahoma and Wyoming. W. A. L.

ANS.—Arkansas: Only registration of diploma with county clerk required, or examination by county board if a non-graduate. Colorado: Dr. C. K. Fleming, Denver. New Mexico: W. G. Hope, Albuquerque. Kentucky: J. N. McCormack, Bowling Green. Oklahoma: L. Haynes Buxtou, Oklahoma City. Nevada: Dr. S. L. Lee, Carson City. Wyoming: G. R. Johnston, Cheyenne.

STATE BOARD EXAMINATIONS.

In our reference in the issue of July 6, back to the previous answer to the question as to the states where a satisfactory diploma was a sufficient qualification for practice, an exception should have been made of Wisconsin. That state passed a law approved May 8, going at once into effect, requiring an examination in all cases, and also a diploma from a reputable medical college requiring four years' course, and also, after 1901, advanced preliminary educational requirements.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending July 13, 1901:

Asst.-Surgeon R. T. Atkinson, ordered to the Washington Navy Yard, July 8.

Asst.-Surgeon A. W. Balch, ordered to the *Wabash*, July 8.

Asst.-Surgeon J. R. Whiting detached from the *Dixie* and ordered home to wait orders.

Asst.-Surgeons P. E. McDonald and R. M. Young appointed assistant surgeons from July 2, 1901.

Asst.-Surgeon M. V. Stone, ordered to Naval Hospital, Mare Island, Cal.

Asst.-Surgeon R. T. Orvis, detached from Naval Hospital, Mare Islaud, July 20, and ordered to the *Pensacola*.

Asst.-Surgeon R. R. Richardson, detached from the Naval Hospital, New York, and ordered to Naval Hospital, Newport, R. I.

Asst.-Surgeon A. E. Peck, detached from the *Pensacola*, July 20, and ordered to the Asiatic Station as relief of Asst.-Surgeon F. L. Benton.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended July 12, 1901:

SMALLPOX—UNITED STATES.

Iowa: Ottumwa, June 1-29, 8 cases.
Kansas: Wichita, June 29-July 6, 4 cases.
Louisiana: New Orleans, June 29-July 6, 2 cases.
Massachusetts: Fall River, June 29-July 6, 7 cases; New Bedford, June 29-July 6, 1 case; Worcester, June 21-July 5, 4 cases, 3 deaths.
Michigan: Detroit, June 29-July 6, 1 case.
Nebraska: Omaha, June 29-July 6, 6 cases.
New Hampshire: Manchester, June 29-July 6, 1 case.
New Jersey: Newark, June 29-July 6, 4 cases, 1 death.
New York: June 29-July 6, Dunkirk, 1 case; New York, 91 cases, 25 deaths.
North Dakota: June 29-July 6, Buffalo, 2 cases; Glaston, 5 cases; Lakota, 2 cases; Lidgerwood, 2 cases; Valley City, 12 cases.
Ohio: Cincinnati, June 28-July 5, 1 case; Cleveland, June 29-July 6, 18 cases, 2 deaths; Toledo, June 29-July 6, 1 case.
Pennsylvania: Juue 29-July 6, Philadelphia, 2 cases; Pittsburg, 4 cases.
Rhode Island: Providence, June 29-July 6, 1 case.
Tennessee: June 29-July 6, Memphis, 1 case; Nashville, 3 cases.
Washington: Clallam County, June 18, 3 cases.
Wisconsin: Green Bay, June 30-July 7, 4 cases.

SMALLPOX—FOREIGN.

Austria: Prague, June 15-22, 2 cases.
Belgium: Antwerp, June 8-15, 4 cases, 1 death.
China: Hongkong, May 18-25, 2 cases, 1 death.
Colombia: Panama, June 25-July 1, 5 cases, 1 death.
Egypt: Cairo, June 10-17, 2 cases.
France: Paris, June 15-22, 11 deaths.
Germany: Berlin, June 18, 2 cases.
Gibraltar: June 16-23, 1 case.
Great Britain: Glasgow, June 21-28, 10 cases, 1 death; London, June 15-22, 1 case.
India: Bombay, June 4-11, 5 deaths; Calcutta, June 1-8, 12 deaths; Karachi, May 26-June 2, 1 case.
Italy: Naples, June 16-23, 149 cases.
Netherlands: Rotterdam, June 15-29, 3 cases, 1 death.
Russia: St. Petersburg, June 8-15, 1 death.
Switzerland: Geneva, June 1-15, 3 cases.

YELLOW FEVER.

Colombia: Bocas del Toro, June 29, 1 death.
Cuba: Havana, June 22-29, 1 death, case came from Santiago de las Vegas.
Jamaica: Kingston, June 1-30, 1 death.

CHOLERA.

India: Bombay, June 4-11, 2 deaths; Calcutta, June 1-8, 63 deaths.
Straits Settlements: Singapore, May 18-25, 1 death.

PLAGUE—FOREIGN AND INSULAR.

Africa: Cape Town, to June 15, 714 cases, 338 deaths.
China: Amoy, May 11-28, 1050 deaths; Hongkong, May 15-25, 200 cases, 87 deaths.
India: Bombay, June 1-8, 86 deaths; Calcutta, June 1-8, 40 deaths: Karachi, May 26-June 2, 45 cases, 41 deaths.
Turkey: Constantinople, July 3, 2 cases.
Hawaii: Honolulu, June 25, 1 death.

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Original Articles.

A FURTHER STUDY OF PSEUDO, OR MODIFIED SMALLPOX (?)*

T. J. HAPPEL, M.D.

TRENTON, TENN.

At Atlantic City one year ago I reported my experience with 300 cases of pseudo, or modified smallpox (?) This report was made from a personal, bedside study of these cases in all stages of this disease. I presented statistics showing that in some cases not one of the family escaped; in others, only one or two members of a large family showed any signs of the disease; and in others but one case in a large family, even though the members of the family came in daily contact with the disease. It was further shown that the disease lacked many of the distinctive features of true smallpox. Of the 300 cases seen by me, the ordinary fever, or the fever of invasion, was, in a large majority of cases, slight; the headache, backache and other symptoms were often severe, but the gravity of these prodromata were not always in a direct proportion to the amount of the eruption, indeed this ratio was sometimes reversed; a syphilitic or scrofulous dyscrasia, or diathesis was an important factor in determining the gravity of the disease; and finally, in every case presenting any grave symptoms at all—these cases were extremely rare—syphilis or scrofula could be proved to be present.

It was further shown that none of these cases presented any secondary symptoms; that the temperature did not rise above normal in 80 per cent. of these cases, and that I never found it above 101 in any case; that the pustular stage was lacking in all of these cases—there being formed in the vesicles, instead of pus, an opaque, lymphoid fluid, which began to show in the vesicles within twenty-four hours from the beginning of the vesicular stage; that the vesicles were unilocular, not multilocular, as in variola vera; and that when opened in any way they would collapse at once, a condition which did not take place in true smallpox.

I also demonstrated that around the base of these vesicles there was no puckering, that while some of them appeared umbilicated, it was an apparent, not real umbilication, due to the escape of some of the fluid contents of the vesicle at the apex which permitted a puckering at the base, and this fluid becoming discolored by contact with air gave it an appearance of a central depression. In my paper it was likewise pointed out that in not one of the 300 cases reported was there, after the appearance of the initial papule and subsequent vesicle, any inflammatory area around their bases or in the interspaces between them, a thing claimed to be one of the distinctive features, along with the secondary fever, of variola vera. Then, too, in none of these cases was there any prostration. After the disappearance of the prodromic fever the patients all felt well and were ready and willing both to eat and to work, except in the few cases where the eruption involved the palms of the hands and the soles of the feet. No patient was in bed longer than a week, three days being the rule with 80 per cent. of these patients. In what should have been the pustular stage, but in these patients was the stage of desiccation, or desquamation, there was no odor, even when several were kept in one room; the only smell present being the odor peculiar to the negro race. It was also noticed that not more than 10 per cent. of these cases were at all pitted, and that in many of the cases, which appeared at first to be typically marked, the pits have gradually disappeared, leaving no more pits than you would find in any severe case of varicella.

In that paper I did not attempt to designate the disease by any special name, but suggested, "pseudo-smallpox." In closing my paper I asked: "What is it?" In the discussion which followed, the state health officials largely took the position that it was true smallpox, reasoning by exclusion, and holding to the position that it could be nothing else, because it did not correspond as nearly with any other eruptive fever as it did with smallpox. Whenever any discussion of this disease has been had, the same question has been asked so often that, to use a slang expression, this query has appeared to be a part of the stock in trade of those who have opposed the idea of a new disease: "If this is not smallpox, what is it?"

The very way in which the question has been put implies on the part of the one putting it a doubt as to the certainty of the identity of the disease with true variola. I also stated in my paper the fact that it was evident that to express any opinion as to this disease being other than smallpox was to oppose the position taken by the state and county health officials, as a rule, but that many of the members of the medical profession, who have been familiar with variola vera during and immediately after the war, doubted that these two diseases were identical. Several of the state boards of health had issued pamphlets describing it as a mild, and others, as a modified smallpox, but not many undertook to advance any reason for this modification of the disease, except, indeed, one weak brother who timidly suggested that it was due to long-continued vaccination—a suggestion totally at variance with the facts in the case, for it was shown that for generations the negro had been vaccinated scarcely at all, and that there had been no systematic vaccination in the country districts since the sixties, and yet this disease was most common and milder among negroes in the rural districts. The possibility of this disease being smallpox modified by long-continued vaccination is absurd.

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

Equally absurd is it to claim that the low mortality has been due to our better understanding of the disease and a more common-sense management of it; for the facts are, that if let alone, no medicine given and no transference to pest-houses made, the mortality would be practically nil; but with all the diverse managements and mismanagements of the disease in the state of Tennessee, in 8197 cases reported from Oct. 1, 1899, to April 1, 1901, there had been but 162 deaths, and 50 of these were in the pest-houses at Memphis and Nashville, where cases of variola vera are found and treated every year. No doubt some cases of variola were included in this report, yet the death-rate has been about 2 per cent. It is also significant that in many counties of the state the presence of this disease was utterly ignored and in others the treasuries were almost bankrupted in their effort to stamp out the disease—one county spending $32,000 in a vain effort to suppress it, and another, after spending $10,000, with the disease constantly on the increase, declined to maintain longer any pest-houses or to go to any further expense to suppress it, and in spite of this fact, found itself free from further new cases within thirty days.

The plea, therefore, that improved methods of treating and managing the disease could have been a factor in the lessened death-rate was unsustained. If from the reported deaths are subtracted all the cases in which the deaths occurred during, and not caused by, the disease, as I found in several of my 400 cases, the death-rate becomes practically nil, outside of the pest-houses in the larger cities.

The grouping together of cases of any disease, with all the unsanitary surroundings of the modern smallpox buildings in the country counties, arranged for the care of the negro population, would tend much to increase the mortality rate of the disease. Those of you who are accustomed to the arrangements made in cities for the care of infectious and contagious diseases, seeing the rough board shanties in which dozens of cases, old and young, male and female, in all stages of the disease, are placed on cots or on the floor in one large room, would expect a death-rate of at least 25 per cent. Instead, our state authorities give you an epidemic of variola vera, with a mortality of less than 2 per cent., with many of the cases never confined to bed; and in the large majority of cases—two-thirds at least—in bed less than a week, and returning to work in less than two weeks, complaining of no loss of strength and having no sequelæ.

The cases, somewhat over 100, coming under my own observation since my report of 1900, have served to confirm my doubts as to the possibility of the epidemic being one of variola vera. The State Board of Health predicted, from former experiences with variola, that the cases would become more severe, and the epidemic more difficult to control with the advent of cold weather; that so long as the weather was warm and good ventilation could be maintained, the cases would do well, and the prognosis would be favorable, but that when the cabins and huts of the poor had to be closed to secure proper warmth, then the death-rate would grow.

The first case to which I was called in the second epidemic began about the middle of December, 1900, and, as before, among the negro population of our county. Children, whose mother had died in an infected house, and who had themselves been exposed to the disease in an adjoining county, were sent by rail with their bedding and household effects into this county. About ten days after their arrival they began to suffer with backache and headache, but, having the whooping-cough, their grandparents suspected nothing until the appearance of the eruption. At that time I was called, and recognized my visitor of the year before. The persons who hauled the bedding and personal effects from the station to their home, a distance of several miles, never developed the disease; nor did any of the visitors to the house, of whom there were several, although they did not sleep in the house. All of the children in this family, four in number, contracted the disease; the father and mother escaped, one of them having been vaccinated, the other not. A daughter, visiting and remaining in the house, carried the disease to her family, four in number, but this was the only family which contracted the disease from the original focus. One of the children was taken by relatives and kept by them. This child entered the public school of the neighborhood, had a mild attack of the malady, was out of school but one day, and was a regular attendant after that till he was taken to Illinois; he was then in the stage of desiccation. His relatives with whom he lived both had the disease. This ended the epidemic in that neighborhood, making a total of 16 cases.

From that time until April 1, cases were reported in the southern portion of the county. In one house there was one case, an adult male, who had been vaccinated several years before. His wife and child, who had not been vaccinated and who were with him all the time in the same room, escaped, as did another adult male, who occupied another room. In another case, but one in a different locality, every one had the disease, while but a short distance away, in another family, there were only two or three cases.

In January, I saw one case of variola vera, contracted in Texas. No cases developed from this one, as all in the neighborhood had been forewarned. This patient was white, as was one other in the 110 cases constituting the epidemic in the county.

In March, on a tour of inspection, I saw about 35 cases, in seven or eight families. They were in all stages of the disease, many of them at work, and but one in bed; he was a male, aged about 50, and had a typical vaccine mark on his arm. In the 110 cases reported, one died *with,* but not on account of the disease. She was 86 or 87 years of age, bedridden for months from la grippe—simply waiting for some disturbing factor to occasion her death.

Some of the many anomalies met with in the epidemic of 1899-1900 and 1900-1901 have already been mentioned. In one large family there was but one case, and in that the patient had been in close contact with all the household during the period of invasion and first three days of the eruption, supposing that he was developing a case of measles. After that time he went to work on his own premises, never being shunned by any member of the family, although he slept by himself. As stated, his was the only case in the family, and there has been no case since that time, in spite of the fact that neither was an effort made to fumigate his house, nor were any other preventive measures taken, except to boil the bedding and wearing apparel. All the members of this family were vaccinated as soon as his case was discovered, but on not more than half was the result successful.

In another family there developed among the children, who were attending school within a few hundred yards of their house, case after case before their condition was

reported. None of the children affected had been vaccinated, nor had any of the children attending the school, and although the children did not lose more than two days from school, yet no one contracted the disease. Certainly continued and oft-repeated vaccination was no factor in this and several other families.

Another case attended by me this year was located within fifty yards of a schoolhouse where school was held daily. The patient, aged about 20, was very popular among the school children, who visited him daily. Not one contracted the disease, neither did his mother nor a smaller sister, who slept in the same room with him, and none of them had been vaccinated.

I reported in my paper of last year, a family of ten, in which one member developed the disease, and was seen by me on the seventh day of the eruption. All the other members of the family were vaccinated on the next day. The virus failed to "take" in three cases. Of the three who escaped the disease, two were the wife and child of the sick man, and on whom vaccination had proved a failure. On the sixth day after vaccination the other six had typical arms, and yet on the thirteenth day after vaccination the usual prodromic symptoms developed and all of them had the disease, but in a milder type than did the first patient. Query: "How many would have escaped had they not been vaccinated?" Since that family vacated the house in which they suffered with the disease, another family moved in and lived there without contracting it.

The house had not been disinfected, nor was any systematic work done in that line in any house where the disease had been present. Anyone who knows anything about a typical negro cabin would realize how completely any effort in that line would fail. If the germs of any disease can be retained in any house or bedding, the negro cabin of Tennessee would be a typical abiding place.

I have to-day—May 15, 1901—visited a white male, with the eruption peculiar to this modern smallpox. This man is able to prove that he has not been off his premises for a month, and that no one, aside from his family and known friends, has been on the premises. He has a typical vaccination scar on his arm, due to vaccination in boyhood. On the fourth day of the eruption we find it papular, vesicular and opaque lymphoid; and some of the vesicles desiccating. Not a vesicle has any inflamed area around its base. To all intents and purposes the man is well, and yet the eruption is more extensive than in severer cases seen by me. I advised him to keep himself from contact with any one except his family, and to work on his own premises. His wife was vaccinated, and so were several others who were exposed. This case stands, thus far, as one originating spontaneously in a person previously vaccinated.

In one town in this county the city board of health refused to vaccinate further and allowed those with the disease to pursue their usual vocations, except when the eruption was in the vesicular, or early so-called purulent stage. Their reason for pursuing this course was said to be that there was less suffering and inconvenience from the disease than from the vaccination. In that town of 600 or 700 inhabitants there were 100 cases, with one death; and that occurred in the case of an old, feeble invalid who was reported to have died as the result of drinking a throat-wash containing carbolic acid. The cause of this death was given as: "Congestion of the lungs." The hotel-keeper's whole family had the disease, but the house was kept open for guests during the entire time of their sickness.

In one of the civil districts of this county, about fourteen miles distant from this town, there were about 50 cases of this modern, modified smallpox, but I was politely informed that I was not needed there, as they would be cared for at no expense to the county, and that they did not want any sore arms from my vaccinations. With this message, couched in polite terms, the vaccine virus, sent to the physicians of these districts, was returned to me, and I heard nothing more from them; in one trip through that section I had satisfied myself as to the nature of the disease.

In no previous epidemic of variola have there been so many cases reported occurring among those vaccinated. It is a well-known fact that a person who has been vaccinated may contract varioloid, but this rarely occurs, and then the mortality in such cases of varioloid is more than 5 per cent. In this epidemic, vaccinated persons suffered together with the unvaccinated, and apparently just as much. So few persons in this county have been vaccinated since the civil war that no comparison can be instituted along that line. Soldiers, who returned from prisons, brought back such horrifying reports of the suffering from vaccination that nothing short of a case of smallpox could induce them to permit any of their families to be exposed to what they conceived to be the dangers of vaccination. The medical journals abundantly confirm this statement, as do scores of private letters received by me in regard to this point.

I tabulate, from a paper read by Dr. Runyon, of Clarksville, Tenn., 106 cases of modern (?) smallpox, or variola. The tables show 70 in persons either not vaccinated or unsuccessfully vaccinated, and 36 in cases vaccinated, many of them within twelve months. This shows a little over one-half as many cases among persons vaccinated as among the non-vaccinated. In these 106 cases one death is reported, that of an unvaccinated person. In this report of Dr. Runyon's, he writes me: "Dr. McReynolds (Elkton, Ky.) wrote me that, with the exception of the first case that died and the one vaccinated with humanized virus, he could discern no difference between the course of the disease in the vaccinated and the unvaccinated. The one vaccinated with humanized virus was exceedingly mild." It is neither necessary to reiterate the same point made in the letters with my report of last year, nor to more than refer to the fact that many letters received during 1901 have emphasized the same point.

Now, if, when the ratio of the non-vaccinated to the vaccinated, at the beginning of this epidemic, was not less than ten to one, the ratio of those who had been vaccinated and yet had this disease, to the number of non-vaccinated who had it, was about equal, can vaccination be said to have controlled to any great extent the epidemic? Then, too, it must be remembered that in the South the better class of people only had been vaccinated, that the lower class of whites and negroes were almost wholly without the protective influence of vaccination; does not the ratio presented above appear peculiar? I might thus continue to point out peculiarities in this epidemic, but enough has been done in this line.

I may add one more peculiarity. Every layman who has ever had or seen smallpox, every soldier who was conversant with variola vera in the sixties, is prompt to make this statement when he sees one of these cases, "It is not like the smallpox I had, or nursed." All of

the laity are not fools. Neither do I believe that every physician who hesitates to call this epidemic variola, "should change his vocation," as do some of our health officers, any more than I should think the same course right and proper in the case of the physician who doubts the propriety of styling every case of continued fever refusing to respond to quinin, typhoid fever. Some of us at least are not seeking notoriety by attempting to discover some new disease, but are honestly trying to determine what this disease may be. Personally, I know that my position is not one popular with the profession as a whole. The position of "me too," is an easy one to assume, but to call every eruption, which is first papular and then vesicular, met with in adults, smallpox, is, to say the least, not up to my standard of common honesty.

I append here a tabulated statement of the diagnostic points between this eruptive disease and variola vera. In compiling it I am indebted to Dr. Mayo, of Salt Lake, Utah, for valuable suggestions.

DIFFERENTIAL DIAGNOSIS.

Type of Prevailing Disease.	*Smallpox.*
There are no varieties. All are of the same general character and differ in degree only.	The varieties are: Varioloid, discrete, hemorrhagic, confluent.
INCUBATION.	
Fourteen to eighteen days.	Fourteen to twenty-one days.
SYMPTOMS, FIRST TO THIRD DAY.	
At onset patient complains of cold; feels as though an attack of grip or tonsilitis were coming on. Temperature 102-105. Little or no vomiting. Pulse full and rapid. Little or no prostration. No delirium. No convulsions in young. In a few cases there may be sleeplessness.	Onset sudden, violent chill, persistent vomiting, agonizing pain in back and head, shooting down the limbs. Temperature, 103-104. Pulse full, strong and rapid. Prostration great from onset. Eyes injected. Sleeplessness, delirium, convulsions in young.
SYMPTOMS, THIRD DAY.	
No coarse red spots appear.	Coarses red spots appear on lips and forehead. With appearance of these spots temperature falls to normal and patient is comfortable.
SYMPTOMS, FOURTH DAY.	
Eruption appears. Its character is generally that of acne. In some instances the shot-like papulæ appear, but rarely. Temperature falls to normal and patient almost invariably gets up, if he has gone to bed, and says he is well. The eruption appears on face first. In men, about the forehead, cheek and chin. In women and children, irregularly about the face. There is usually a sore throat.	Small, red spots appear on forehead at juncture of hair, followed by their appearance on extremities. Papulæ follow red spots. They have a shot-like feeling.
SYMPTOMS, FIFTH DAY.	
Acne-like eruption and papulæ develop into vesicles, which assume an opalescence at once. These vesicles are unicellular and are not umbilicated. The serum which exudes at their apices dries and turns brown, which in some cases give them the appearance of umbilication. There is no puckering of the vesicle at its border. The temperature is generally normal unless it rises from abscess formation or other causes. The vesicle may dry up and the disease may be said to have aborted. A rapid recovery follows.	Papulæ appear on wrists and forehead.
SYMPTOMS, SIXTH TO NINTH DAY.	
The vesicles become filled with an opaque, lymphoid fluid, in some cases with a brown nucleus in the center, which gives it an umbilicated appearance. This vesicle with its opaque fluid, miscalled pus, shrinks to one-half its diameter and b comes a thin, brown scab, perfectly circular. No stench. The patient is well after the appearance of the eruption. He insists on getting up and having plenty to eat. If the eruption is copious he looks bad, but he will tell you he feels well. The eruption in a few cases affects the conjunctivæ. There is no secondary fever. From this time on it is simply a matter of scabs dropping off. By the tenth day the patient may be entirely clear. If the eruption spreads over the entire body he may not be clear of scabs until the fourteenth day.	Vesicles appear in place of the papulæ, and eruptions spread gradually over entire body. The vesicles are umbilicated and multicellular. On the eighth and ninth days the vesicles become pustules and each is surrounded with a broad, red band, or efflorescence, features become distorted; severe rigors and fevers; original symptoms return; stench is beginning. Great delirium and convulsions in young. Very critical period.
SYMPTOMS, TENTH TO TWELFTH DAY.	
	Pus oozes and forms scab, stench exceedingly bad.
SYMPTOMS, SEVENTEENTH TO TWENTY-FIRST DAY.	
	Scabs drop off, leaving red, glistening pits, which soon become white. Ulceration is deep, reaching the corion. Ophthalmia is generally present. Pustules have invaded mouth, larynx, pharynx and trachea. Petechiæ form on lower part of abdomen and inner aspect of thighs, on first and second days in some cases.
PAPULÆ.	
Papulæ when present same size as smallpox, perhaps a little smaller, but fewer in extent. There may be no papulæ. Vesicles range in size from the head of a pin to the size of a split pea. Not umbilicated and when punctured collapses. The vesicle is unilocular. Convalescence begins on appearance of eruption. The so-called pustule does not extend into the derma. The epidermis is the only structure of the integument involved. Hence, there is no pitting. The vaccinated take the disease.	Papulæ are about size of No. 4 shot and have a translucent appearance, encroach on entire body, including palms and soles. Appears on face and hands first. Vesicle is umbilicated and multilocular. So is the pustule and neither will collapse *in toto* if pricked with a needle.
PROGNOSIS.	
Good. Death rate nominal. When all cases are included for a whole state, both of those cases dying with this disease, and with similar diseases reported under the general name of smallpox—less than 2 per cent.	Discrete, 6 to 25 per cent. Confluent, 50 per cent. Hemorrhagic, all perish. In general the progress depends on age of patient, variety of attack and vaccination. In an ordinary epidemic, all cases included, the mortality is from 25 to 35 per cent.

Fourteenth International Medical Congress.—The preliminaries of this congress, to be held at Madrid, in 1903, are well under way. The date is April 23 to 30, and the fee 30 pesetas. The executive committee has organized sixteen sections, which includes odontology and military medicine. The president is Professor Julian Calleja y Sanchez; treasurer, Dr. Jose Gomez y Ocena.

SMALLPOX—OLD AND NEW.*

W. L. BEEBE, M.D.
ST. CLOUD, MINN.

The above title evidences our belief that the epidemic which has been prevailing throughout the United States and our new possessions for the past two years, is not identical with the old-fashioned smallpox of twenty years ago. I have been identified with two epidemics—twenty years apart—and though they were evidently both species of smallpox, they were nevertheless very dissimilar in many characteristics. Without exception, the descriptive adjectives applied to our later epidemic, whether through the reports in our daily papers, or in the more authoritative reports in the medical journals, all contain such terms as "mild," "modified," "light type," etc., and many medical men, even up to this day, deny that our present disease is, in fact, smallpox.

It is safe to assert that more of the recent cases have been diagnosed chicken-pox than smallpox, and I am free to confess that in the first two cases that I saw—a year having elapsed between the cases—I was of the opinion that they were not true smallpox. When we passed through the epidemic twenty years ago there was never any difficulty in diagnosing the disease, though I had never previous to that time seen a case. The attacks then were so typical of the disease, as described in our text-books, that there could be no mistaking it. This season when we went, confident of our ability to differentiate this disease from all others, and were compelled very meekly and modestly to say: "Well, I do not know. I am in doubt as to whether it is a very severe case of chicken-pox or a very mild case of smallpox," and had to send to our state boards of health for a decision, you can readily imagine our embarrassment.

I want to show two or three peculiarities of our recent epidemic. The first case was the wife of a man who was markedly pitted from an attack of smallpox occurring several years previously. This man contracted the new disease from his wife; a sister and little child, neither of whom had been vaccinated and who were in the same rooms with my patient throughout the attack, were not affected by it. In fact, the question as to whether immunity or mitigation of the severity of our recent cases was conferred by vaccination was very much of a question. It is not at all a settled fact that the patients previously vaccinated showed a modified form in any manner. We had several patients that had never been vaccinated, but we are unable to say that the disease was more severe in their cases than in those who had been vaccinated. Of course, here would come in the question of an inherited immunity, vaccination having been very thorough of late years on the part of the parents of most of the patients. This fact has been advanced as a possible cause of the unquestionable mildness that the present epidemic has assumed. Whether through the thorough vaccination of generations of ancestors partial immunity can be established admits of some doubt; and yet it is a very ingenious explanation of an otherwise unexplainable fact.

I recently saw a family of thirteen that had passed through the disease, all having been afflicted; the parents only had been vaccinated, and yet I was unable to see that the vaccination had in the least mitigated the severity of the disease. The parents were pitted as much as the eleven children, and they claimed they had been just as sick. This family had been infected by a child with what a local physician called chicken-pox.

Notwithstanding these stubborn facts, we do not desire to be classed in the ranks of the disbelievers in the efficacy of vaccination. In fact it is our intention, when opportunity offers, to act on the suggestion of Dr. Stern, of New York. He presented, in a paper to the Manhattan Clinical Society, in April, 1901, a report of ten or twelve cases of uricacidemia, gouty, rheumatic and neuralgic diseases that had been materially improved in condition and entirely relieved of pain by vaccination.

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

SANITARY FEATURES OF SMALLPOX.*

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Smallpox is a disease which possibly above all others should be dealt with by health authorities. The question as to whether it is best handled by local or state boards of health will depend, of course, largely upon the organization and efficiency of the former. In well-organized communities, such as is usually found in the larger cities, it is wisest to deal with the cases at the place of development rather than to attempt any transportation. In some of the more scattered cases, which will come under the jurisdiction of the county boards of health, oftentimes the intervention and usually more rigid management of the state authorities is unquestionably required. This occasionally will meet with some local opposition by individuals who may regard it as an act usurping the local rights, but experience had shown that a great many personal interests are constantly at stake and these often tend greatly to hamper the thoroughness of the physician in charge. Upon the outbreak of one or more cases in a locality, a competent physician should be placed in charge and be given as nearly as possible absolute power. By so doing, all unnecessary and dangerous delay, which results from debates and diversities of opinion and interests, will be avoided and a better concentration of action be obtained. The physician in charge should be in communication with the Board of Health, preferably by means of a telephone from the infected district. In this way he will avoid much unnecessary traveling about, which, even though all precautions are observed, tends to unnecessarily alarm the community.

The strongest possible police co-operation should be obtained, in order to prevent the numerous acts, which are almost certain to occur, in a disregard to the orders, and vigorous legal prosecution should be instituted at once upon the least wilful infringement of quarantine regulations.

This is necessary, because if the slightest laxness is permitted in the beginning, it will be almost an impossibility to again establish the necessary discipline. Great care should be exercised also, in the granting of any privileges, which might be construed as special dispensations. Again, in all epidemics there will always be found floating about all kinds of reports and rumors, which tend to keep the community in an unnecessary state of excitement and have an injurious effect upon all commercial enterprises of the locality. In order to avoid this as much as possible, we have found it a satisfactory plan to make a daily official report to the newspapers, stating the exact condition of affairs as

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nearly as possible, without exaggerating or belittling any feature of the situation.

The question of treating the cases in their own homes is an ever-present one, and in many cases must be considered seriously. In the finer houses this can frequently be done with some degree of satisfaction. There will, of course, be a larger amount of furniture, hangings, carpets, etc., to disinfect subsequently, and there are liable to be more people exposed to infection; but, on the other hand, the people are more apt to follow directions intelligently and not to try wilfully to deceive the authorities. A special room is more easily devoted to the purpose and special nurses can more readily be obtained. In the poorer class of houses it is often difficult to obtain complete isolation or care and frequently less intelligent nursing will be obtained. In the case of tenement houses, the treatment at the home should not for a moment be considered. As a general rule, it may be stated that the treatment of smallpox in a private house is at best but a makeshift.

As soon as the authorities are informed of a suspicious case, it should be isolated completely for a few days, until further development of the symptoms render diagnosis certain. During this time no one but the physician in charge and the nurse should, under any circumstances, be allowed to enter the room, for, although the chances of infection at this stage are comparatively slight, still there is always a possibility of transmitting the disease, and the additional risk of permitting visitors in the sick-room is not justified. All articles which the patient uses, such as knives, forks, dishes, etc., should be well boiled before being used by anyone else.

If, in the course of a day or so, the characteristic symptoms and eruptions appear, making the diagnosis certain, the patient should be removed immediately to a hospital devoted to the care of such cases. All persons who have been exposed to the patient should be immediately vaccinated and kept under surveillance for a period of fifteen days from the last possible chance of their having been infected. The room and all its furniture should be disinfected, as mentioned later. No pains should be spared to determine the source from which the disease was contracted, as, by so doing, we may frequently be able to find a large number of persons who may have been subsequently exposed to the same source of danger, and who, therefore, should also be vaccinated and watched by the health authorities.

In some places, for financial reasons, it has been the custom to allow all persons known to have been exposed, to go about absolutely unhindered during a period of incubation pending the development of further symptoms. First obtaining, however, a promise from such persons to report to the authorities in case any symptom of the disease manifests itself. We can not condemn this method too severely, for it can not be applied to all cases, for the reason that, unfortunately, many people will use the time thus gained to make good their escape from the community, or, if they develop a mild case, will occasionally fail to report it until the disease is well developed and many more people have been exposed. It is true that if proper precautions are taken to disinfect the clothes and persons of the ones suspected, comparatively little danger will be produced by this system, providing that we have the intelligent and conscientious assistance of the persons exposed. As this is not possible, however, we can not make special laws or regulations for certain individuals during an epidemic without creating too great an opposition from public sentiment, particularly from those quarters from which we naturally expect and invariably find the greatest opposition to any sanitary regulations.

In large cities it is generally an easy matter to obtain a large building for the organization of a pest-house, and this can usually be done very satisfactorily. In the less densely populated locality, however, tents offer the most convenient and efficient means of isolation. They are cheap, easily procured, can be erected immediately, and, from the standpoint of the patient, are probably more wholesome than buildings. If possible, two large tents and two or three smaller ones should be obtained. The two large ones can be utilized respectively for male and female patients. One of the smaller ones as a kitchen and commissary department, another for the physician in charge and his assistants, in which may also be kept the medical stores and, if possible, above all things, a telephone. The tents should be floored with matched boards or sawdust to a depth of one or two inches, should be provided with good flies, and be well ditched. If possible, they should be upon high, sandy ground and not within 300 yards of other residences. If the weather be cold, they can be easily heated by small stoves placed near the center of the tent, and we have found that the small wood-burning stoves give better satisfaction and can be tended with less trouble than the larger coal stoves. Cots can be obtained cheaply, and straw mattresses easily improvised. Two sets of bedclothes will usually be found sufficient and should be boiled and changed alternately every two days. The cooking can be done in one tent and brought and deposited on a table just outside of the hospital tent, from which place the nurses can carry it to the patients. All unused remnants from the plates should be thrown into the fire, and the dishes, etc., dropped into boiling water by the nurses before being handled by the cook. In this disease, as in many others, much depends upon the nursing, and it is a poor economy which seeks to save unduly in this respect. Night and day nurses are indispensable where there are many or severe cases.

Where there are quite a number of cases to handle a horse and wagon is almost a requisite. Arrangements should be made with the merchants of a town to furnish all necessary articles. These can be ordered by telephone and delivered to the edge of the quarantined line, where they are called for by a guard or a wagon and carried to headquarters. In this way, there is no exposure of the deliverer in handling supplies, and no time is lost in receiving them. Strict account of all articles ordered should be kept by the physician in charge and handed in with his report.

As soon as the patient leaves his house, whether recovered or removed to a hospital, the premises and all articles, which have in any way come in contact with him, should be disinfected. Everything possible should be burned. The carpets may be removed and disinfected, where possible, by being ripped into the original strips and placed in the steam autoclaves, or, where these are not available, may be thoroughly sprinkled with formalin. For articles of clothing or finer articles, such as draperies or curtains, a tight, wooden box may be improvised, into which they may be placed and liberally sprinkled with formalin. Other articles, as sheets and pillow-slips, should be boiled and the contents of the pillows and mattresses, in case they can not be burned, should be exposed to the air of the room during subsequent fumigation.

All wooden articles, the floor, walls and ceilings should be thoroughly sponged with a 1 to 1000 solution of bichlorid of mercury. In the houses which are tightly built, formalin may give good results, but in our work in Tennessee, we have not been satisfied with any of the forms of formaldehyde generators which we have tried. This possibly can be accounted for by the fact that most of the houses in which the disease has been present have been of the poorer class of negro hovels. It is impossible to render these even approximately air-tight. In these cases, we have found that sulphur has given the best results, and have used relatively large quantities of it, burning several piles of ten pounds each in a room at the same time, in order to liberate as large a volume as possible of sulphur dioxid at a time, care being taken to make the room as tight as possible. Near the hospital tents, pits are dug and filled with quicklime, for receiving all discharges and waste material, and the discharges are mixed with an equal volume of a saturated solution of ordinary chlorid of lime and allowed to stand a half hour before being thrown out.

When a patient is ready to leave the hospital, he is made to thoroughly bathe himself and shampoo his hair. He resumes his clothing, which has been sterilized thoroughly. A large dry-goods box may be rendered air-tight by coating the inside with a mixture of equal parts of resin and paraffin, which is melted and poured into all cracks and crevices.

The clothes may be placed in this and sufficient formalin added to moisten them, when the lid will be closed, and they are allowed to remain for twenty-four hours. This has always proved satisfactory in our work and does the clothes no injury.

When the epidemic is terminated all the cots and bedding, together with the tent-floors, should be burned, and the tents themselves thoroughly saturated with a 1 to 1000 solution of bichlorid of mercury. The ground under and around the tents can be sprinkled with a saturated solution of chlorid of lime. When the tents have dried and been allowed to air for a day or two they should be taken down and stored away for future use, without fear of carrying any infection: the ropes must be burned.

At present there are practically two methods of vaccination in use, that with a dry point, and with the glycerinated lymph. The latter is unquestionably the best, but, unfortunately, has its drawbacks. Elgin has shown that in the dry points the pus-producing bacteria will live long after the virus of vaccinia has lost its potency, so that we not infrequently will find, as a result of vaccination with old points, septic arms, which, while they may be extremely sore, have absolutely no protective value. On the other hand, the glycerinated lymph in a short while becomes comparatively sterile as far as pyogenic organisms are concerned, but the virus loses none of its potency.

One of the main objections to the glycerinated lymph is, that it requires a long time to dry, and, that being somewhat viscid, it tends to cause foreign substances to adhere while it is exposed to the air. In this way we have a constant liability to infection at the time of inoculation. In order to obviate this I have introduced into Tennessee this year on a large scale, the hypodermic needle as a means of introducing the vaccine beneath the skin. I have not had an opportunity to search the literature of the subject to see whether this method has been used by other workers in the field. The writer first employed this method in Philadelphia in 1895, at which time he used an aqueous solution from the dry points. Later, however, when the glycerinated lymph came more into vogue, that was substituted for the aqueous solution, with the result of an almost perfect method of vaccination.

In order to use this method a solid-piston hypodermic needle is used, and, if a large number of vaccinations are to be performed, the barrel of the needle may be filled with the glycerinated lymph, which may be obtained in large tubes, containing sufficient of the lymph for fifty cases. A short and rather large caliber needle is most satisfactory. The skin is cleansed in the usual way and a drop of the lymph injected, with the concave surface of the needle downward. In this way the drop of lymph is forced between the epithelial cells and diffuses in exactly the locality desired. As a rule, a single minim is sufficient, although we have injected upward of ten minims without deleterious results. Another advantage of this method is, that in cases of compulsory vaccination the virus can not be removed by washing, as is frequently done when the ordinary point is used. Again, in the South, where we have a large colored population, there exists among them a universal superstition which leads them to expectorate into the vaccination, with the almost constant result of a septic sore. This not only is undesirable for the patient, but is also a menace to the safety of the community, because this septic sore is not protected, while believed to be so, and the result is a feeling of false security. It also offers a pseudo-argument for a class of anti-vaccinationists and individuals, who, from one motive or another, are but too glad to deny the existence of the disease, or who, through a process of vicious reasoning, try to assert that any disease which presents itself upon a vaccinated individual can not be variola. Then again, there is an absolute freedom from danger days after. If it does not "take," there will be no further inconvenience whatever, as no immediate dressing is necessary. The process is entirely painless, a point which will not be lost sight of in the case of a child or nervous patient, to whom the repeated scratching necessary in scarifying is generally extremely irritating. The great rapidity with which the process can be carried out is of great value where large numbers must be immunized in a short time.

A materially larger percentage of successful results will be obtained in this way than by simple scarifying, and we have repeatedly had cases develop a typical, clean vaccination, which had proved refractory to several previous vaccinations with points.

We also believe that by repeated vaccinations by this method, and by slightly increasing the amount injected, that a higher grade of immunity can be produced than where the point is used. The writer has immunized himself in this way and performed some dozens of autopsies with bare hands upon smallpox cadavers, without any further inconvenience than a slight septic infection of two fingers on the left hand. It can not be said that the same immunity might not have been produced by vaccination with the point, but reasoning from the analogy of other immunizations, we should be able, by using and getting absorption of a larger amount of the virus, to develop a higher resistance to the disease.

Where it is possible to handle the work in any other way, extensive quarantines should not be executed, and where they are, it is most usually an evidence of inefficiency of the local boards, which should have charge of the outbreak. When, however, a quarantine is decided

upon as a necessary step, it should consist of at least two separate areas. One to be used by the sick, the other as a camp of detention, in which suspected or exposed cases may sojourn until the presence or absence of the disease can be determined, then their case can be dealt with accordingly.

In the case of large establishments or mines, it often becomes a very serious question in the minds of the authorities as to the wisest course to pursue. If the case has been recognized early and but few of the employes have been exposed, it is manifestly unjust to require the closing of the entire establishment. But, on the other hand, if precautions are not taken there may result a very serious outbreak of the disease. In these cases, if the co-operation of the managers can be obtained, a universal compulsory vaccination, and directions that foremen keep close watch upon all employes for any evidences of sickness, and that any employe who may not be well be returned home until entirely recovered, will generally prevent danger of a severe outbreak. But if, as unfortunately is sometimes the case, the management evinces an inclination to deceive the authorities, the whole institution should be uncompromisingly closed for a period of fifteen days. By that time any which were infected at the time will have developed.

In a mine, where the working population is of a floating class, a compulsory vaccination, with the issuing of individual certificates bearing the name and description of the holder, should be instituted and the foremen instructed to see that each man under his direction be provided with such certificate before being allowed to work. This will usually be sufficient, but we have found in some cases that it was further necessary to send inspectors occasionally through the plant to see that each individual had with him his certificate.

Again, as unscrupulous physicians have been encountered who have issued spurious certificates of vaccination over their own signatures, or who have wilfully made sterile scarifications to simulate vaccination, it may at times be wisest for the physician in charge to recognize or accept absolutely no certificate but his own or that of his assistants, thereby avoiding all personal discrimination, and, by revaccinating all doubtful cases, be positive of having discharged his duty to the best of his ability.

THE DIAGNOSIS OF MILD AND IRREGULAR SMALLPOX AS FOUND IN THE PRESENT OUTBREAK IN THE UNITED STATES.*

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In this paper I will mention and describe only the cases of smallpox which have come under my personal observation during the past two years. Previous to 1899 Chicago had been practically free from smallpox for more than a year, having had but one case in 1898. From March 9, 1899, to the present time—about 27 months—310 cases of smallpox have been found in Chicago. Sixty-four of these in various stages of the disease were imported into the city from nineteen of the surrounding states. The cases came from as far east as New York and as far west as California. In the meantime, I visited three of the neighboring states where the diagnosis of this disease, variously called impetigo contagiosa, giant chicken-pox, Cuban itch, or some other indefinite name, was in dispute. With this opportunity of observing cases imported from such widespread and various sources, I think it is fair to assume that the disease we call smallpox in Chicago is the same disease which has been the subject of controversy in all parts of the United States.

On February 15, 1899, a colored man and wife, named Edmonson, arrived in Chicago from Cincinnati, sick with smallpox in a mild form. A physician was called, who promptly made a diagnosis of chicken-pox and treated them for that disease. Several cases of smallpox resulted from this mistake in diagnosis. This was the beginning of periodic importations of smallpox to Chicago from neighboring cities and states, which have continued up to the present time.

From the date of the discovery of this first case, March 9, 1899, to August 16, 1900—17 months—we had 72 cases of smallpox, 25 of which were direct importations. From this last date, August 16, 1900, to November 30, a period of three and a half months, we were entirely free from the disease. This marked the end of the first influx of the much-discussed disease. On November 30, 1900, Charles L., in the pustular stage of smallpox, came to Chicago from Ashland, Wis., over the C. & N.-W. Ry. He walked into the City Hall, mingled with the crowds in the halls and elevators, visited various departments of public service and finally came to the Department of Health, where he was safely cared for. The day before this man arrived the Health Department had issued a warning to the public to vaccinate and revaccinate, as smallpox was to be found in all of the surrounding states. This case from Ashland was the beginning of a succession of importations and exposures which during the last six months have given us 238 cases of smallpox, 39 of which came from without the city. These two outbreaks of smallpox, with but three months intervening, gave us an opportunity to study 310 cases in the Chicago Isolation Hospital. Numerous forms of the disease were found. The typical case was always present, but the greatest number were deviations from this type. These deviations represented such a variety of forms that almost every case had something peculiar to itself, but the following classifications which I have made will aid in giving an intelligent description of the various forms:

1 Hemorrhagic case, resulting in death.
13 Confluent, with 3 deaths.
24 Semi-confluent, with 2 deaths.
54 Severe discrete cases, with no deaths.
179 Mild discrete cases, with no deaths.
39 Modified form—cases in which there was evidence of a more or less successful vaccination, with no deaths.

In this outbreak I have seen no cases of smallpox without eruption. I am satisfied this form—variola sine eruptione—exists. In the epidemic in Chicago of 1894-5, I carefully observed and studied thirty cases of this form. The evidence was conclusive to me that such cases exist. All the cases I saw of this form were in adults with old vaccination marks.

I have seen no cases with the initial rash in this present outbreak, though one man stated he had a rash over the body the second day of the disease, which disappeared the following day.

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The hemorrhagic case had no unusual features. It was not a typical case of purpura variolosa, as vesicles formed on the face and hands, though not elsewhere, before the hemorrhages took place. After severe prodromal symptoms with high fever for three and a half days, a diffuse redness with thickly studded spots that seemed to be slightly infiltrated appeared on the hands, wrists and face. As this change in the skin appeared, the temperature dropped to normal and the headache, backache and nausea had ceased. This attempt at a variolous eruption went no further except on the hands and face, where small, flat, imperfect, confluent vesicles could be discerned. The skin became dark-red or copper-colored with general diffused inflammatory swelling; petechial spots appeared in the skin, and hemorrhages from the mucous membranes became constant. Deep-seated hemorrhages under the skin could be seen, dark-blue and bulging, giving the appearance of a bullet buried beneath the integument. The man died on the sixth day of the disease.

The typical confluent form is well described in numerous books, but as it is necessary to keep in mind the typical case as a basis from which to study all cases deviating from this type, I will briefly mention the essential symptoms. All cases, no matter how mild, will, in a more or less modified, imperfect way, follow the symptoms and clinical course of the typical case.

The typical case has a chill or a chilly feeling—a child often has a convulsion—followed by fever, sometimes high and sometimes not severe, nausea, pain in epigastrium, backache, headache usually frontal, dizziness, sweating during the initial febrile stage; the eruption appears the evening of the third or the morning of the fourth day, and as this eruption appears, the fever and all painful and distressing symptoms subside. The patient at this stage, if not prevented, will get up and walk about. The eruption, which is macular for a few hours, becomes papular, has a thick covering within the skin, which gives it the appearance of small shot forced up from below the skin, bringing with it this tissue as a covering. It feels like shot beneath the skin, if you care to feel of it. As a matter of fact, the papillary layer of the skin is not a part of the covering, but is involved in the inflammatory process. For diagnostic purposes, I think the most valuable distinguishing feature about smallpox is the fact that the papule develops next to the *cutis vera* and by extension downward always involves the true skin. This eruption first appears on the most vascular parts—forehead, nose, lips, throat, hands, wrists and penis. These papules at once begin to form into vesicles, and generally in 36 hours they appear to the eye as small vesicles, usually but not always depressed in the center.

About the fifth day the vesicle, with its thick, tenacious covering unbroken, and all the time enlarging, begins to appear opaque. It is the color of a pearl and is entering the pustular stage. The face is swollen and the eyes partly closed. At this stage, or a day or two later, the secondary fever begins. The pustules, with their thick investment which resists natural decay and accidental pressure, continue to fill and grow till the 11th or 12th day, when they begin to dry and by the 18th day of the eruption the pustules will have dried and dropped off, leaving large pigmented spots, and if the inflammation has been severe enough to destroy the skin, pitting will occur.

Besides the 13 confluent cases, we had two that were abortive confluent, which were very interesting. The cases had all the classical symptoms of smallpox up to the 6th day of the eruption in one case, and the 5th day in the other. Both were pustular, and secondary fever was present. They were very sick and in one case I predicted a fatal termination. At this stage of the disease the fever disappeared and the pustules which were undersize for the 5th and 6th days, stopped filling, rapidly dried and had scaled off in the next five or six days. These patients, who were in a serious condition on the 5th and 6th days, were walking about the ward three days later. When desquamation was completed, at the site of the pustules there was infiltrated, inflammatory thickening of the skin. These were aborted cases known as hornpox (variola cornea), but I have described them here because they were confluent and the subjects had never been vaccinated.

The semi-confluent form, 24 in number, followed closely the symptoms and course of the typical case and needs no separate description.

The severe discrete form numbered 54. These followed closely the symptoms and course of the typical case. Under this form I have classed several cases which have been designated by the various writers as variola corymbosa. These are cases having thickly studded patches or clusters of pustules resembling herpes zoster. These patches are usually more advanced in the course of development than the lesions on the other parts of the same subject. There is nothing puzzling about a case of this kind, and to avoid mistakes it is only necessary to know that such cases are occasionally to be seen. A severe irritation of the skin in a smallpox patient will produce a cluster of lesions the size of the surface so irritated. A mustard plaster will have a similar effect. In one case a confluent patch as large as a hand appeared on a man's leg above the knee as the result of friction of a shovel handle which the man was using while in the prodromal stage of smallpox. One patient had clusters of thickly-studded pustules following the intercostal nerves on both sides of the spinal column. It resembled a double herpes zoster. Two reputable physicians, both familiar with smallpox, pronounced this herpes zoster, but after observing the case for several days, changed their diagnosis and reported it to the health department. The man had all the clinical symptoms of smallpox, with a discrete, general eruption in addition to the clusters on the back.

The mild discrete form, 177 in number, presented a great variety of deviations from the typical case. It is astonishing that there should be 177 mild, discrete cases in unvaccinated subjects out of a total of 310 cases of smallpox. None of these had ever been vaccinated, yet the disease was so mild that nearly all of them would have been wandering about the city or attending to business if some one had not stopped them. In these mild cases numerous deceptive aspects are presented. In a majority of the cases the eruption will appear after two days of prodromal symptoms instead of the evening of the third or the morning of the fourth day, as is usual. In some instances there were violent prodromal symptoms, chills, high fever, headache, backache and profuse sweating, followed by so insignificantly few eruptions as to be misleading to a physician who is inexperienced in the diagnosis of smallpox and somewhat surprising to the experienced doctor. More often the prodromal symptoms are very irregular and insignificant, as well as the eruption. There was sometimes absence of headache, and frequently the backache was wanting. Nausea was a pretty constant symptom in all

mild cases. Except the fever, I think it was the most constant symptom. Close inquiry brought out the fact that there was always some fever. The presence of the chill or chilly feeling was frequently denied. The symptoms were so mild in most cases as not to stop the subject from his work. The patient always felt better as soon as the eruption appeared, no matter how mild the symptom. If he had stopped work for a couple of days because of indisposition, he would return to work in most instances when the eruption on the skin appeared. I have found men in this form of smallpox in the pustular stage of the disease, working in printing houses, packing houses and factories. They felt no inconvenience and were not aware of the nature and danger to others of the disease with which they were afflicted.

The secondary fever in these mild cases was rarely present. In the mild discrete form were found numerous abortive cases. In these cases most of the vesicles were conoid, though a few usually would show umbilication. There was frequently an appearance of a difference in the age of the vesicle, some twenty-four to forty-eight hours in advance of others. These cases resembled modified smallpox. In three or four days the vesicles became dried pustules, and in eight or ten days desquamation was complete. The form known as wartpox (variola verrucosa) was occasionally seen. In these cases no vesicle was formed. The lesions remained papular; they enlarge by inflammatory infiltration, gradually dry up and scale off irregularly and imperfectly.

One of the cases remained in the hospital sixty days before he was through scaling. Another form, known as hornpox (variola cornea), was more frequently seen than this form. In hornpox the vesicle forms, but before it becomes pustular the contents of the vesicle are rapidly absorbed; a scab forms and scaling begins as early as the sixth day and is completed before the tenth day, or a couple of days later, if it is a confluent case. Some of the imperfectly filled vesicles dry up and have the color and appearance of pustules, but if cut into the contents are found to be dried, hardened and horny. In these cases no secondary fever is present, except for a day or two in the confluent abortive cases. The inflammation is not severe enough to destroy the skin and leave marks. When the vesicles dry up and fall off there is left a red nodule slightly elevated above the surface of the skin. This is an inflammatory infiltration, which is absorbed in a couple of months, leaving no scar. In some of these very mild cases, part of the vesicles were quite superficial, resembling chicken-pox in structure, but a careful examination always resulted in finding some deep-seated characteristic lesions with thick investment, which is the great distinguishing feature between chicken-pox and smallpox.

The modified form, 39 in number, represents cases in which the subject has some evidence of a successful vaccination, though none of more recent date than sixteen years. These 39 cases were all that entered the hospital with any signs of vaccination.

Right here I wish to say that the term "varioloid," meaning like smallpox, should no longer be used. The writers do not agree as to what to include under that name, some calling all mild cases of smallpox varioloid, while others include in the term only such cases as are modified by vaccination. Frequently I have had to spend valuable time in explaining the identity of varioloid and variola to people afflicted with the former, and sometimes had considerable difficulty in inducing them to be sent to the Isolation Hospital, because their physician had told them the disease was varioloid, but had failed to explain to them that the term means mild smallpox. Many have the impression that varioloid is not smallpox, and think if they are taken to the Isolation Hospital while sick with the former disease they are liable to contract the latter. In other instances, people who were told they had varioloid took no precautions to prevent the exposure of others, because they thought varioloid less contagious than smallpox. The term is a useless one and confuses the laity. Smallpox is smallpox, mild or severe, and should be called by that name, or its equivalent, variola.

Under the modified form we had one confluent abortive case. This case was identically the same in every symptom and feature as the two abortive confluent cases described under the confluent form, and has been placed here only because he had an old, imperfect scar, said to be from vaccination. The scar was forty-five years old. Another irregular case was one of abnormal distribution. The man afflicted was 39 years old and said he was vaccinated when a child. The scar was imperfect and doubtful. The patient had the usual prodromal symptoms up to the third day, when the eruption made its appearance and the fever subsided. The eruption appeared confluent on the face and semi-confluent on the arms. No sign of any eruption appeared elsewhere on this patient. The case ran a typical course with secondary fever and recovered. I think both of the above cases were unmodified smallpox, but the presence of the old scar said to be from vaccination compels me to place them here as of the modified form. One subject, vaccinated thirty years previous, had the form of smallpox mentioned by the elder Flint as variola variceloides. Smallpox was present in this case, but there was also present on the first day of the eruption large, round, well-developed vesicles identical with those found in chicken-pox. The vesicles disappeared in forty-eight hours and the smallpox ran a short course without secondary fever. I saw a similar case in the epidemic of 1894-95. Nearly all these modified cases ran their course and scaled off in from six to ten days without secondary fever. In this modified form we frequently found a condition which is generally recognized to be characteristic of chicken-pox and not present in smallpox, viz., as many as three stages of development of the lesions side by side. A few papules, numerous vesicles, some pustules, and even scabs, are found at the same time. These cases run their course and desquamate in six to eight days. In all these mild cases there will be some prodromal symptoms, with cessation of fever when the eruption shows, and though many of the vesicles may be quite thinly covered, some of the lesions will be deep-seated, invading all the layers of the skin.

The vaccinal status of these 310 cases was as follows: Five had typical old scars. The most recently vaccinated was sixteen years previous to the attack. This was a patient 40 years old whose statement may be doubted. The date of vaccination of the others ranged from twenty to fifty years previous to the attack. Nine had fair old scars, twenty-five had old, imperfect, doubtful scars. Two hundred and seventy-one never had been successfully vaccinated. All patients were carefully examined by three experienced physicians for evidences of vaccination and the record here given can be relied upon as correct.

An absolute diagnosis of smallpox can not be made before the eruptive stage, except in the hemorrhagic form. In all these mild cases there was a general conformity to the history and course of the typical case of smallpox. There was always the prodromal symptom with the subsidence of fever when the eruption appeared. But we have to remember that chicken-pox is sometimes preceded by prodromal symptoms and that chicken-pox attacks adults and that the prodromal symptoms in smallpox are sometimes irregular and slight, so that we are compelled in some cases to make the diagnosis on the character of the eruption alone, as presented to the eye. The diagnosis can be made, for there is a difference in the appearance to the eye and the clinical course of the development of the skin lesion. The smallpox lesion has a deeper origin than chicken-pox. The papule rests on the cutis vera and by inflammatory extension this tissue is implicated. Not all of the lesions are so deep-seated, but I was always able to find some of the vesicles with thick, tenacious investment which keeps the vesicle and pustule intact longer than is the case in chicken-pox. Chicken-pox lesions have only the outer layer of the skin for a covering. This covering is fragile, easily broken and is broken from the first to the third day of its growth. The vesicles or pustules of chicken-pox, no matter how robust, will not resist accidental violence or natural decay more than four days, except on the hands and wrists of an adult negro, where the covering of the pustule is so thick as to resemble or merge into the life history of smallpox lesions. The external layer of skin in an adult negro is thick, and the eruption of varicella here looks and feels like the papule of variola, but an examination of the lesion on other parts of the body will aid in determining the nature of the disease. Measles is a papular disease, and the first day of the eruption is often mistaken for variola. Such a mistake should not be made. In measles the fever is highest on the day of the eruption, while in smallpox this is a time when the temperature drops to the normal usually.

In making a diagnosis of variola, remember there are some prodromal symptoms in the mildest cases, if you are successful in getting the truth out of the patient; that when the eruption appears the patient will always feel better, unless there is present some intercurrent disease, and that the fever will subside as the eruption appears. Look for the early appearance of the eruption on the vascular parts, on the face, in the throat, on the wrists and hands, on the foreskin and glans penis. If you find a papule on the ears it will help in the diagnosis. Do not depend too much on finding umbilications of the vesicles; you will be disappointed in the mild cases, as it is often absent.

Of the 310 cases treated in the Chicago Isolation Hospital, but six died. It is this low death-rate in this epidemic that has led the laity and the inexperienced physician to doubt the diagnosis. To convince the inexperienced, the typical case must be constantly in evidence.

Why there should be so few serious or fatal cases in this outbreak I do not know, and I am equally ignorant as to why the epidemic of scarlet fever prevalent at the same time in Chicago has been so mild. Our knowledge does not reach far enough to say why one epidemic is severe and another mild in any of the epidemic diseases. These mild forms of smallpox are always present in all epidemics of this disease and have been recognized and written about from the time of Rhazas down to the present. In Chicago and elsewhere I have had no difficulty in making a diagnosis of smallpox. Occasionally chicken-pox was encountered, but I never met any disease not well known and described. The occasional occurrence of chicken-pox in adults always has been a source of confusion to medical men who are not in constant touch with variola and varicella and have not become perfectly familiar with the clinical aspects of the two diseases in all their forms. An unrecognized case of chicken-pox in an adult may account for some of the reported successful vaccinations in a subject recovering from smallpox. Dr. Rawlings, of the Isolation Hospital, vaccinated more than 100 who had recovered from the mildest form of this debatable disease, and in no instance did he get a successful result, though they had never been previously vaccinated. In Chicago we placed all patients with smallpox—hemorrhagic, confluent, and cases so mild that they would be at work if not prevented—in the same wards in the hospital. Of these, 271 never were vaccinated. None of these afflicted with the mild form of the disease contracted smallpox from the severe typical cases, of which variety we always had a few in the wards, making exposure prolonged and certain. If these mild cases in unvaccinated subjects had not been smallpox, with this prolonged exposure numerous cases of smallpox would have resulted. Another fact to be remembered is that these irregular mild cases have conveyed typical confluent smallpox to other members of the family. One of the wandering variety, singing in concerts in various towns, had her case diagnosed as chicken-pox by several physicians in two states, yet she conveyed the disease to four members of her family, one of whom died of confluent smallpox in its most hideous form. This mild form of the disease gives immunity from smallpox, and will transmit typical, confluent, or hemorrhagic smallpox. Of this we have had abundant proof in Chicago. Further, the disease follows the rule of smallpox in attacking exclusively those not protected by vaccination.

THE DISTINGUISHING CHARACTERISTICS BETWEEN MILD DISCRETE SMALLPOX AND CHICKEN-POX.*

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There are probably no other diseases, surely no other contagious diseases, so commonly mistaken one for the other as is the case in smallpox and chicken-pox. The error is seldom made of calling chicken-pox anything else than what it is, while some physicians are loth to acknowledge smallpox by its right name. They prefer instead to call it pustular syphilis, acne, bromism, chicken-pox; they go out of their way, seemingly, for names like Cuban itch, Philippino rash, yaw, etc. It is quite remarkable how persistent we have been that smallpox must be something else. It would look as though the profession had fairly forgotten about the discrete form of this disease. Physicians, as well as laymen, may have pictured in their minds the repulsive confluent or hemorrhagic variety to the exclusion of the milder kind.

Discrete smallpox is sometimes so extremely light, that medical men who have formed their conceptions of the disease from descriptive lectures and pictures,

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

do not understand how so simple an ailment can possibly be smallpox, and, rather than create a panic by naming it variola, they are often persuaded to call it by some milder term.

From all sections come reports of the benign character of the present epidemic of the disease, several hundred cases without a death being known. Take the whole country over, the mortality will not exceed an average of 2 per cent. Such a favorable prognosis can hardly be made in any of the other eruptive fevers, excepting, perhaps, the single one of chicken-pox. In fact, many of the cases are little, if any, worse than vaccination. If it were not for the fact that now and then a patient has the severe confluent form with consequent pitting, or dies with variola hemorrhagica, I, for one, would advocate letting the contagion run its course.

To one familiar with both diseases there seems almost no similarity, no matter how mild may be the smallpox or how severe the chicken-pox. Personal observation of many hundred cases of both diseases has emphasized the distinguishing differences as stated in our text-books. I shall not attempt anything more than a reiteration of what has already been said by some of our most trustworthy writers.

There have been no new diagnostic signs advanced, as far as I know, except the diazo-reaction of the urine, which is of relative value only, since it may occur in several other pathologic conditions. It is stated to be present in more than 90 per cent. of smallpox and absent in chicken-pox.

In the first place, a varicella is distinctly a disease of childhood. Nevertheless, like all other generalities, there are exceptions to the rule. We have all seen grown people with chicken-pox. With variola there is no age that escapes. The infant at the breast may take the disease from its grandparent, and vice versa. In one household I found the grandfather, grandmother, father and baby all sick with smallpox. The only one to escape was the mother, she alone having been vaccinated. It is stated that adults do not have chicken-pox oftener because they may have had it in infancy. Few are able to tell whether they have or not had the disease. On the other hand, smallpox is not so easily forgotten. Some one is likely to know, even though the patient himself has no marks to prove it.

The rule is almost absolute that smallpox attacks the exposed parts of the body, or more correctly speaking, the extremities, that is, the face, wrists, feet and ankles. Chicken-pox appears invariably on the covered or middle portions, like the thorax. The germ—doubtless the etiological factor in both ailments—of smallpox prefer those thicker portions of the cuticle, while the milder and less venturesome microbe of chicken-pox lays claim to the tender pasture-lands of the chest. At any rate one rarely sees a case of variola that the eruption is not threefold as profuse on the face and hands as on the thorax. Of varicella the reverse is quite as true. In determining the former I would examine the hands, in the latter the back. I have never found the eruption of chicken-pox on the palms of the hands or on the soles of the feet that had the characteristic shotty feel of smallpox, and indeed, only once have I found any eruption of chicken-pox on these surfaces at all, and then only a few delicate vesicles on the ball of one foot.

The eruption in smallpox undergoes definite progressive changes. First papules, then vesicles, and finally pustules. In chicken-pox we seldom see anything but vesicles, some few of which become slightly pustular. In the transition from vesicles to pustules we commonly find umbilication, more particularly about the face and neck. The smallpox vesicle becomes depressed at its summit when ruptured, but in chicken-pox it will collapse. Later the injured vesicle in one case will round up with pus, while in the milder disease it begins at once to desquamate and will disappear in a few days. The eruption in variola is multilocular and in varicella unilocular. One is a deeper inflammation than the other and forces its way up through the lower layers of the skin, while the whole process in chicken-pox is superficial and does not extend deeper than the horny layer. One is spoken of as "shotty" to the touch, while the other is "velvety." The eruption of smallpox is so firm and hard that at no stage is it easy to break down the lesion by pressure with the finger. A child with chicken-pox, however, will rupture the vesicles simply by moving about in the bed. Another distinguishing characteristic of the two eruptions is, that in smallpox there is uniformity, one pustule looking almost exactly like its neighbor. In chicken-pox there is marked dissimilarity and irregularity in their size and development. Then, too, the manner of erupting is somewhat different. In smallpox the crop is ripened at the same time, usually reaching its height in seven or eight days. In chicken-pox the vesicles that appear to-day are collapsed to-morrow and new ones may spring up in their stead. Altogether the process is seldom longer than three days reaching the stage of desquamation.

More marked than all, perhaps, are the clinical differences. Smallpox, even in the mildest form, has a pronounced prodroma. The invasion is so severe that the victims of the disease rarely fail to mention how badly they felt for a few days before breaking out. Headache, backache, high fever (104 to 105 F.), frequently accompanied with chill and vomiting, are typical symptoms. The temperature even in severe cases of variola drops as soon as the eruption appears. The other affection occasions discomfort and fever progressively proportionate to the severity of the attack—the worse one looks the worse he feels. It is a continuous fever, resolution taking place by lysis. The fever of smallpox is always intermittent. Upon the first appearance of papules the temperature returns quickly to normal, the subject of the disease seems well, and, though he may take on the contour of a nutmeg-grater, there is slight discomfort for several days, or until the beginning of pustulation. Even then it amounts to little or nothing in the mild discrete form of the disease.

No one, be he physician or layman, will look on even a moderately severe case of smallpox and call it chicken-pox. The whole difficulty has been with the mild form; at least 90 per cent. of the cases reported being of this type. Some of those examined by the writer have been so insignificant that quarantine seemed needless. Yet their true nature has been frequently demonstrated by noting the development of other and serious forms of the disease from exposure to these apparently harmless cases.

SUMMARY.

SMALLPOX.	CHICKEN-POX.
Any age.	Childhood.
Incubation, 2 weeks.	Incubation, 13 to 17 days.
Headache, backache, fever, gen. malaise; lasting 3 or 4 days.	No prodroma, or at most only slight indisposition.
Worst on the exposed parts—extremities; invariably on the palms.	Worst on the covered portions—thorax; rarely or never seen on the palms or soles.

SMALLPOX.	CHICKEN-POX.
Progressive eruption: papules, vesicles, pustules, crusts.	Vesicles and crusts.
Lesion includes the lower layers of the derma. Hard to rupture. Multilocular.	Lesion very superficial. Easy to rupture. Unilocular.
Temperature high (103-105) till eruption appears. Then drops and does not rise again for a week, and not then in the milder discrete forms.	Rises with the severity of the attack.
Eruptions quite uniform in size: has a reddened area at base; frequently umbilicated.	Not uniform. Also inflamed area about the vesicle, but less marked.
Painful to the touch; may itch.	Not painful to touch.
Lasts 2 to 4 weeks.	Lasts 1 week to 14 days.
Vaccination protects.	Does not protect.
Pits when confluent on face; will occasionally mark in the discrete form.	Seldom unless infected.
Generally no complications.	No complications.
High mortality in the severe confluent and hemorrhagic types.	Nil.
Resolution by crisis.	Resolution by lysis.

VARIOLA.*

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This disease has prevailed so generally throughout the United States since 1897 that time spent in describing it might well be considered wasted. That it has been remarkably mild in type every one who has had any experience knows, but in spite of this fact experts are practically a unit in their diagnosis. I am aware that at Atlantic City a year ago a member of this Association presented a paper, with a title made up largely of interrogation points, in which he attempted to prove that the disease as he had seen it in Tennessee was not variola, but this paper had not a single convincing argument to those who have had an opportunity of studying the disease, that it was anything else than variola.

In spite of the fact that this disease of mild type was epidemic in Kentucky and other Southern States in 1897; was well described by Dr. Wm. M. Welch, of Philadelphia, in 1898; and that one state after another during the past four years has been compelled to fight against the epidemic, we still find individuals who with little if any knowledge beyond that gained from medical books are willing to place their personal opinions against those of experts the country over, and who insist that the experts are wrong in calling it by its right name. These mischief-makers are found in the medical profession as well as among the laity.

Recognizing the fact that it is no longer necessary to discuss with experts the question as to whether this is or is not variola, it is my purpose to present certain topics, that should be of interest, for discussion.

It may be apropos to state that in Minnesota during the past two years there have been 7211 cases of variola reported, with 49 reported deaths. I wish to emphasize the word reported as applied to deaths, for I have positive knowledge that there have been deaths from this disease in this state reported as due to other causes, or not reported at all. Some of these errors have been committed innocently; others intentionally. A similar experience, I have no doubt, has been met with in other states.

It may be well in beginning this paper to ask whether the picture presented by the typical cases in this epidemic conforms with that given for variola in our medical text-books? There can be but one answer: It certainly does. Time after time during the past two years I have seen the classically described discrete, semiconfluent, confluent, and hemorrhagic forms, as also the variola sine eruptione. Can we be governed in our diagnosis of all cases in this present epidemic by the usual text-book descriptions of variola? Most assuredly no. We will in all probability find fairly typical prodromal symptoms, but the rash may vary in degree, in form, in type of progress and in final disappearance in a way that is described in but few text-books.

In Reynold's "System of Medicine" a mild form of variola quite similar to that of our present epidemic is well described. Various writers refer to the fact that an epidemic of varicella frequently accompanies an epidemic of variola. While this is possible, I am rather inclined to think that in the past the mild cases of variola have often been called varicella, and epidemics that have been said to represent two distinct diseases have in fact been only differences in degree of one and the same disease. It must be admitted that too often in the past have only the severely typical cases of various diseases been given their right name, while the mild cases of these diseases have been given some other name. This has been true of typhoid fever, of diphtheria, of variola, and even of scarlatina, in the past, and in each instance the result of such action has been to falsify and make much higher the mortality rates of these diseases.

Dr. Louis Leroy, of Tennessee, in his recent article on smallpox, draws attention to a mild type of variola described as early as 1827 by John Mason Good.[1]

A little reasoning on the part of a fairly intelligent physician should enable him to clear up or correct his doubtful diagnoses in the present epidemic. It often happens that the first cases in any given community are mild in type and in consequence wrongly diagnosed. Later, however, with the appearance of one or more typical cases, the disease should be properly designated, and with the line of infection recognized as one and the same it becomes plain that the first cases though atypical must also have been variola. For example: In a village in Minnesota several cases of an eruptive disease, occurring among school children, were called varicella. However, a typical case of variola presented itself, the patient dying; thereupon the attending physician said, this case being one of variola and the line of infection for this and the so-called varicella cases having been one and the same, our first diagnosis must have been wrong; the cases must all have been variola. His reasoning was good and his conclusions correct. In this village there were in all 64 cases, with 3 deaths.

Occasionally we find physicians who have made a mistake in diagnosis and who persistently hold to their errors. This was notably true in Winona, Minn., last winter, when from first to last there were over 2000 cases of variola with probably 7 or 8 deaths.[2] Several of the Winona physicians still hold to the diagnosis

* Read in Symposium on Smallpox, in the Section on Practice of Medicine, at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

1. Study of Medicine, vol. iii, J. & J. Harper, New York, 1827.

2. Winona is one of the places that gave the returns of *no* deaths from smallpox, but I have good reasons to believe that my statement above is correct. In addition to the deaths there were undoubtedly cases of miscarriage due to the disease.

of varicella for their epidemic, in spite of sufficiently strong evidence to the contrary.

Does vaccination protect against this disease? Most assuredly yes. This has been thoroughly demonstrated. For example: Of 662 cases in 244 houses, but ten patients had been successfully vaccinated at any time prior to their infection, and of these ten, 30 years had elapsed since successful vaccination for two of them, over 25 years for four, 20 years for one, and 6 years for one. Only two of these ten were said to have had recent successful vaccination (three months prior) and in both of these the disease was mild. Of these 662 cases there was one who years ago had an attack of variola. In one family seven non-vaccinated individuals had variola; the one vaccinated member escaped. In one family four non-vaccinated members had variola, all the vaccinated escaped. In eight other families the vaccinated members escaped; while in each one of the eight families one, the only non-vaccinated individual, had variola.

In one instance a physician who was at first in doubt regarding the disease before him, wrote me: "One thing is certain, if this is smallpox vaccination does not protect against it." I at once made him a visit, and together we went over his patients, with this result; some had misstated facts to him, and had said they had been successfully vaccinated when the reverse was the case; others had told him of vaccination, but had neglected to state that it had not been successful. It was fully shown that in all successful recent vaccinations the individuals were in each and every instance protected from this disease.

Dr. Ohage informs me that from May 1, 1899, to May 10, 1901, there were in St. Paul 104 cases of variola. But 2 of these cases had been vaccinated—one fifteen, the other twenty years prior to contracting the disease. There was not a single instance in which a properly vaccinated person contracted the disease.

Dr. P. M. Hall, of Minneapolis, informs me that of 191 cases of variola that came under his care between the dates of January 7 and May 8, 1901, but one had any evidence of a previous successful vaccination, and that was in childhood. The patient was about 40 years old.

Regarding the protection furnished by vaccinia against variola, the Chicago Board of Health makes the following statement: "Out of the total 171 cases of smallpox found in Chicago between Nov. 30, 1900, and April 10, 1901, 140 had never been vaccinated. Of the remaining 31 cases, 29 were adults showing faint, poor or irregular scars, claimed to be evidence of attempted vaccination in infancy or childhood—the most recent being 23 years old. Only 2 out of the 171 cases exhibited typical scars of successful vaccination. Of these, one was 35 years old 'vaccinated when a child'; revaccination was attempted three years ago, without result; vaccine lymph was probably inert. The other was 40 years old, also successfully vaccinated in childhood, but never revaccinated. These are the only 2 cases out of the total 171 upon whom vaccination was ever successfully attempted, and the most recent of these was over 30 years ago. Since vaccination was made compulsory in the schools of Chicago, smallpox has disappeared from them. The requirement was first put into effect in 1867, and from that year until 1881 there were only 17 cases all told of smallpox and varioloid in the schools, and these are explained by the health department as due to the imperfect inauguration of the compulsory vaccination system. Since the latter date the disease has entirely disappeared. For twenty years the schools of Chicago have been immune from smallpox cases, for although four cases were reported last winter they were all pupils who had been let in on fraudulent certificates and who had never been vaccinated—a confirmatory proof of the efficacy of vaccination. Another significant fact of the same character is that since vaccination has been universally practiced by the police of Chicago the officers have been free from smallpox. The policemen go everywhere, into all the haunts of crime and disease, and are exceptionally liable to exposure. Yet though several thousand in number they enjoy immunity from the disease."

It may be well at this point to discuss the terms variola, varioloid, vaccinia and vaccinoid, and their relation to each other. There is an indefiniteness in these terms that is annoying. It would seem that there should not be two names for one and the same disease as presented by different degrees of severity, yet this is too often true in the use of these terms. People have such a dread of variola (smallpox), that a milder name is sought for. We thus too often find cases of severe type called by their right name, while the same disease under milder form is misnamed varioloid. This is a faulty, misleading and dangerous procedure. Under the term variola we should include all types of the disease in its unmodified form. Under the term varioloid we should include only those cases of variola which are modified by a previous infection. This, of course, should be recognized as not making of these two conditions two distinct diseases. So, too, of vaccinia and vaccinoid. The first presents to us a disease of typical form; the second a disease of modified form, the result of previous infection.

The nature of "previous infection" giving rise to varioloid or vaccinoid, requires some consideration, and to begin with we are confronted with the question as to the relationship of variola and vaccinia. Probably we are ready to admit that these two are in fact one and the same disease; that a successful and recent variola will prevent an immediate recurrence of this disease, or of an immediate successful unmodified vaccinia; so, too, that a recent successful vaccinia will prevent the immediate recurrence of this disease, as also of an immediate unmodified variola. It is not generally admitted, however, that a recent successful variola may be followed by a modified vaccinia called vaccinoid—quite the reverse. The statement is generally made by leading authorities that evidence of successful vaccination after an eruptive disease would positively exclude the possibility of the disease having been variola. In spite of the general admission of a possible varioloid after a recent successful vaccinia and the general denial of a possible vaccinoid after a recent successful variola, I venture to assert that vaccinoid may be present as the result of vaccination immediately following a successful variola as frequently as varioloid immediately following a successful vaccinia; in other words, that the appearance of a modified vaccinia (vaccinoid) following a recent variola does not disprove the disease diagnosed as variola to have been such. The possibility of having a second attack of variola (or varioloid) or of vaccinia (or vaccinoid) depends entirely upon the duration and degree of immunity conferred by a previous attack of variola or vaccinia. A recent vaccination is, in all probability, more marked in its protective action against variola than is an old variola.

The duration of immunity conferred by either variola or vaccinia depends upon the individual. In either case it may be for life, or for but a few months.

It is no uncommon thing to find those who insist that the present epidemic is not variola, trying to prove their point by following up the disease in a given individual with vaccination. Were such successful in securing vaccinia or vaccinoid, to me, they would not disprove the previous variola, but would rather establish the line of argument that I have just presented tending to show an insufficient immunity following a mild variola.

In passing, it may be well to draw the attention of those who are trying to disprove a variola by a subsequent vaccinia to the fact that there are opportunities of error which they must guard against most carefully. If vaccination is made during the progress of variola an eruption (variolus) will, in all probability, occur at the seat of scarification or irritation. This should not be mistaken for a successful vaccination. Even after the patient has fairly recovered from variola an appearance simulating vaccinia might be produced at the point of irritation. Dr. Pitblado, of Minneapolis, informs me that he has vaccinated a number of smallpox patients while in detention, and has in a number of instances succeeded in producing a rash at the point of scarification. But this rash was plainly that of variola. It is a generally recognized fact that the eruption of variola is apt to be confluent in form at any seat of special irritation, as along the line of a cut or scratch. Undoubtedly a modified variolus eruption at the seat of scarification for vaccination has been mistaken for a successful vaccination by not over careful observers who have shown themselves rather too zealous in their efforts to disprove the existence of variola among their patients. Still further, the eruption of variola and vaccinia may exist at one and the same time in a patient.

It is hardly necessary to refer to those who give an opinion of successful vaccinia when they have nothing upon which to base their opinion but the dry "scab" present as the result of too vigorous scarification. Yet in my own experience this condition has been pronounced a successful vaccinia and used to disprove my diagnosis of variola.

Since the epidemic in Minnesota first appeared, early in 1899, I have been closely watching for these reported "successful vaccinations" after variola, not for the purpose of disputing with those opposed to my diagnosis of variola, but in order to prove the line of reasoning already presented in favor of such possible occurrence. I might, therefore, be considered as one with prejudices favoring my antagonists' line of argument. In all my inquiries I have been able to find but one case that bears out the possibility of an immediate successful vaccination after variola, and this one case had vaccinoid, instead of vaccinia. Its history is as follows:

Early in the outbreak in Minneapolis, when the health officials of that city were denying the existence of the disease, a young woman in due time after exposure had mild prodromal symptoms and a very mild variolus eruption. When she had been released from quarantine she went to a physician and was vaccinated, her purpose being to bring suit against the city for wrongful detention in quarantine should she secure a successful vaccination, she having been informed that this would be absolute proof that she had not had variola. The physician who vaccinated her knew nothing of her intention. He revaccinated himself about this same time and secured the same result in both cases—a condition that would have been called a successful vaccination by some physicians, but which was undoubtedly vaccinoid, in the one case due to a previous variola, in the other due to a previous vaccinia. The young woman was pleased, and announced to her physician her intention to bring suit against the city. He, however, refused to accept the evidences of vaccinoid as sufficient to disprove a recent attack of variola.

The following cases demonstrate the possibility of a successful vaccinia following variola:

Case 1.—Male, vaccinated about March 1; reported as successful March 16. This party states that he had variola thirteen years ago. Has smallpox scars from the first attack.

Case 2.—Male, had variola in 1891. At the time was ill three weeks and was in quarantine seven weeks; was successfully vaccinated in March, 1901.

Case 3.—Mrs. S., said to have had varioloid in 1885, vaccinated successfully in spring of 1900.

Case 4.—Young woman, whose case has already been referred to in this paper, who was vaccinated immediately after release from quarantine for variola. She had vaccinoid.

Case 5.—Policeman who had variola twenty years ago, was successfully vaccinated February, 1901.

Case 6.—Paris case (20th Century, Vol. XIII, page 522). Woman had variola in 1868, at age of 32, and again in 1871; was successfully vaccinated in 1873, and upon six different occasions after this at intervals of six months. She was lost sight of after the sixth vaccination.

Every physician will admit that an individual may have variola more than once; also that there may be an attack of variola at some date following a successful vaccinia. Quite an interesting case of relapsing variola was reported to me March 25 of the present year. A young man had a typical history of variola and was about to be released from quarantine, when he was again taken ill with all the prodromal symptoms of the disease. He developed an eruption on the fourth day and was more seriously ill with this second than with the first attack. The physician in attendance assures me that he could not have been mistaken in his diagnosis of the first attack. Variola was epidemic in the village at the time.

The following are interesting cases as bearing upon immunity to vaccinia, but not to variola, or possibly to impaired immunity:

Case 1.—Dr. O. C., aged 30 years, had vaccinia when a child. In 1900 he was attending cases of variola, but did not contract the disease from the first cases. He revaccinated himself, but without success. He therefore considered himself immune to variola. A short time after, however, he contracted varioloid from a variolous patient whom he was attending.

Case 2.—Dr. P., aged 28 years, had vaccinia when a child. During the early part of 1900 he was in attendance upon cases of variola, but did not contract the disease. He vaccinated himself at this time, but without success. Shortly after this apparent immunity this physician, while suffering from septic infection received from a cadaver, was in attendance upon some severe cases (afterward fatal) of variola. He contracted the disease and was decidedly ill. His little boy, who had been apparently immune to vaccinia now contracted variola from his father and was seriously, although not fatally, ill. The physician's wife, vaccinated at the same time as her husband and child, had vaccinia and escaped variola.

Case 3.—Dr. F., aged 30 years, was apparently successfully vaccinated in 1898 and again in June of 1900, when he was attending cases of variola. He had occasion to attend a woman ill with variola during her accouchement, and to resort to instrumental delivery for the child. Nine days later he began to feel ill. These symptoms were prodromal of a variola of severe type. His wife and children, who had been recently vaccinated escaped the disease.

Case 4.—Mr. A., who had variola in 1880, was apparently immune to vaccinia in 1900, but not immune to a second attack of variola.

CASE 5.—Mrs. P., aged 39, had "cowpox" when a girl. In 1900 she was apparently immune to vaccinia, but contracted variola.

CASE 6.—Seven children in the family of Mr. G. were apparently immune to vaccinia, for repeated attempts failed to produce the disease. All seven of these children contracted variola, although resistant to vaccinia.

The following would seem to demonstrate immunity to variola, but not to vaccinia:

Dr. H. was successfully vaccinated at the age of 14 years, and again at 24. In 1900, at the age of 43, he had many cases of variola under his care. He revaccinated himself five times at intervals of about four weeks. He obtained "partial reaction" to the first four of these and a "good scar" the fifth time. He did not contract variola. It would appear that while the immunity conferred by vaccinia against variola is quite positive, it may be limited in duration, and also in degree. This is equally true of variola against variola, and of vaccinia against vaccinia. It must also be admitted, I think, that there may be an immunity due to a previous vaccinia against vaccinia, but not against variola; as also an immunity due to a previous variola against vaccinia, but not against variola.

It is not my wish through these statements of facts to belittle the protective powers of vaccinia against variola, for of these I have already fully attested. We must, however, recognize the fact that there are exceptions to the general rule of immunity as regards both variola and vaccinia, and that we must not be too positive in our statements regarding the absolute protection of a previous variola or vaccinia against a repetition of one or the other disease, directly or interchangeably.

Before closing it may be well to ask ouselves the question: Is the present mild type of variola an unusual occurrence? In the United States, possibly yes; although this is an open question. Undoubtedly in the past when little or no attention was given to quarantine methods, mild epidemics of variola were ignored at the time of their existence and soon forgotten when once passed. The epidemics in which the disease prevailed in severe form were the ones which made a lasting impression upon all. Even in my limited study of the unrecorded mild epidemics, I have been able to secure records from residents of Minnesota which go to show that within the past thirty years there have been at least two localized epidemics in which the mortality from this disease was little, if any, greater than at the present time.

I believe it is generally recognized that variola does at times exist in very mild form in tropical countries. Of this I have no personal knowledge. On the other hand, variola may occur in most virulent form in tropical countries.

DISCUSSION ON PAPERS IN SYMPOSIUM ON SMALLPOX.

DR. WILLIAM BAILEY, Louisville, Ky.—I am much pleased at the opportunity given me to open this discussion, although most of my remarks will pertain to the first paper read by my neighbor, Dr. Happel. I regard the teachings of the paper by Dr. Happel as unfortunate and hurtful, and I believe that its bad influence will not be confined to his own people, but to the people throughout the breadth and length of this country. It is difficult to control smallpox in Kentucky if we depend upon the teachings in Tennessee; whatever the disease may be in Tennessee, when it crosses the line into Kentucky it is smallpox.

Regarding his remarks about a farmer remaining a month without seeing a neighbor, I think that is a remarkable thing in Tennessee; at any rate, for a man to be in Tennessee with smallpox with no possibility of any man coming in contact with it for a month, seems a remarkable statement. It seems to me that the consensus of opinion, even among the experts, is that the disease prevailing is smallpox; I am certain that it is nothing else but smallpox and, in many instances, the severe case can be traced to a mild case where it is decidedly typical. Therefore, we must regard the disease that is prevailing at the present time as smallpox and we should take such measures for its control as are radical.

DR. JAMES J. WALSH, New York City—In discussing the question of modified smallpox, or pseudo-smallpox, it is well to remember certain advances that have been made in the recognition of exanthematous diseases in very recent years. During the last ten or fifteen years, the medical world has come to recognize the existence of a third disease in the measles and scarlet fever group of diseases. This new disease, German measles, is now admitted by practically all medical men to be absolutely independent of either measles or scarlet fever. Certain observations in England, especially during the last two or three years, seem to point to the fact that there is perhaps a fourth eruptive disease in this group, independent of measles and scarlet fever on one hand and also of German measles on the other.

It is perfectly possible then that a third disease, independent of varicella and variola, may be found in the smallpox group. Of course, board of health experts will not readily admit the existence of such a disease, if it does occur. They are paid to determine whether a disease is smallpox or chicken-pox, not to make observations on a possible third disease. Any hesitancy on their part might easily lead to serious dangers to the community. The mass of the medical profession, however, should not commit themselves to definite opinions on this subject. It would not be surprising to find many more exanthematous diseases. At the beginning of the century most of the eruptive diseases we now know were grouped together. For a long time measles and scarlet fever masqueraded as smallpox. We know that there are ten different kind of nutgalls in this country, all produced by the sting of different, but very closely similar insects and upon the same kinds of leaves. The possible characteristic reaction of the human skin are by no means exhausted, and we have recently learned from Professor Widal's work in Paris on cytodiagnosis in pleurisy that even the cells of the serous membranes react quite differently to different forms of microbic irritant.

It must be remembered that the Vienna school of dermatologists has never quite given up the idea that varicella and variola may be only modified forms of the same disease. Their influence is considered of so much importance in Europe that in the last important text-book of medicine, Professor Nothnagel's, the treatise on varicella begins with the discussion whether variola and varicella are due to the same cause and it takes up some six octavo pages. So acute a clinician as Senator has recently expressed the opinion that varicella and variola are due to the same cause and that varicella especially spreads at a time when smallpox has crept into a locality.

We have had some 30,000 cases of smallpox this year and the number is not diminishing. Opportunities are provided for the study of smallpox, such as we never had before. Careful observation of the disease as it exists at present should be made. Dr. Happel's work in calling attention to the differences which exist between the disease as he sees it in some parts of Tennessee, and classical smallpox is deserving of commendation, not condemnation. Further observation, not resolutions of medical societies, are needed to settle the vexed question of a possible third disease in the smallpox group.

DR. LOUIS LEROY, Nashville, Tenn.—I concur very much with what Dr. Leavitt said about people approaching the disease and having such a very uncanny idea about it. In regard to leprosy people have been taught to think of this disease as nasty, uncanny and horrible in the extreme. The same is true of smallpox and the popular notion has even extended to medical friends who have seen very little of it, and whose idea of this disease is vague and hazy, and who expect that the patient should stand fifty feet away in the open air lest they should be exposed to the contagion. The intensity of the infection certainly varies a great deal, but, I have seen patients with typhoid fever who

could not be made to take to the bed; also, cases of pneumonia and scarlet fever in children who could not be made to stay in the room; and yet, other children exposed to them, contracted the disease and died.

Why should we insist upon a dozen names for smallpox; there is but one smallpox. Giving the disease so many names has a vicious effect upon the public. Dr. Happel mentions that the severity of the disease following was not dependent upon the severity of the onset; that is certainly true, and I wish to call attention to the fact that text-books on practice say the same thing. The observations made are certainly in favor of smallpox rather than against it. As to the statement that there was no pitting, I would also call attention to what is said by many writers; they claim that, in the discrete types of smallpox, pitting is absolutely the exception. I was exceedingly glad to hear Dr. Bailey, of Kentucky, say that when the disease crossed the border line and got into Kentucky it became smallpox. I would like to say that there is no transition at that border line. I have had an opportunity of seeing a number of cases on that line and I have tried to prevent a good number of cases crossing the line. Near that Tennessee-Kentucky line there are a large number of light cases of smallpox. I made a diagnosis of smallpox at Clarkesville, Tennessee, and I was ridiculed, but I had the State Board of Health behind me, and the case was quarantined. This year I traced this epidemic successfully to the Tennessee side; in the epidemic there was a a mortality of 60 per cent. I have here a number of photographs taken of that case which was diagnosed as pseudo-smallpox at Clarkesville and from which the epidemic was traced that gave a mortality of 60 per cent. If this is called "pseudo-smallpox" it is a term applied to something which should be killed before it becomes too common.

Speaking of the individual who went to school with an eruption on the body, I have one question to ask: If it was in the knowledge of the health officers that this case was one of smallpox or any other disease possibly contagious, what was the physician doing when he allowed this person to mingle with the school-children?

Dr. Happel—The health officer knew nothing about it until the disease had been there.

Dr. Leroy—How about the school teachers?

Dr. Happel—The school teachers were negroes.

Dr. Leroy—As to the statistics of vaccination I beg leave to read the following, taken from one of my former articles: "In one series of records made by the writer this year, 1100 miners were examined, variola having been prevalent in that locality for a year previous. Of that number 800 had been vaccinated and had passed through the epidemic unscathed. Of the remainder, 100 had suffered from the disease and 200 had neither had the disease nor been vaccinated. Of 30 odd cases suffering at the time in their midst not one had been vaccinated. Only in four instances did any of those who had had the disease show evidences of previous vaccination, and in one of these the mark was over twenty years old; the other three gave evidence of having been only septic sores and not typical vaccine scars."

Dr. William Thomas Corlett, Cleveland, Ohio—I am impressed with the fact that there is a great waste of energy here this year. Yesterday we showed a large collection of slides, in the Section of Dermatology, which would well illustrate many of the phases of variola described this morning. I consider myself fortunate in being able to hear the papers read, and I heartily concur in the general soundness of the views expressed. I had hoped, however, that I could congratulate myself on not hearing such a paper as was read last year at Atlantic City, which I believe has done much injury. In Cleveland we have a very extensive epidemic of smallpox, which has increased to 1000 cases since last January, and which I believe was brought about by the fact that many did not recognize the disease as being smallpox. Physicians who had had experience with the disease in former times ridiculed the idea that the pest-house contained a true case of variola. So far as I have been able to observe the disease which has been recognized as smallpox during the past twenty years presents a distinct entity, just as syphilis does. In regard to Dr. Leroy's method of vaccinating by means of the hypodermic syringe, I consider it a good one, although I have never used it, but it will bear further consideration. Another point made was that variola was often followed by a successful vaccination. About a year ago Dr. P. asked me to investigate this subject, but as I have always regarded the occurrence of a successful vaccination following variola as evidence of a mixed infection, the subject did not seem to me to be of sufficient importance to call for further investigation. Dr. Bracken says that he has seen successful vaccination following variola, and I must agree with him.

What I shall now say I know will be unpopular because of the great difference of opinion which prevails. I began the study of diseases of the skin by entering a smallpox hospital in 1882 in London, and during my time there I saw nothing but skin diseases and I never saw a case of varicella occurring in a person over 15 years of age. I do not deny that it sometimes occurs in adults; John Hutchinson has seen one, possibly two cases, of varicella in adults. Dr. J. Louis Smith has seen one case of varicella in an adult which he has referred to in his work. Still another case was referred to by Dr. Austin Flint. Therefore, when a case presents itself to me with a supposed diagnosis of varicella, in an adult, I am inclined to do as is recommended by the author of the paper on smallpox in Zeimmsen's Cyclopedia, in cases of supposed varicella occurring in an adult—to always treat the case as one of smallpox.

Dr. F. S. Raymond, Memphis, Tenn.—I want first to endorse Dr. Leroy's practique, as detailed in his paper, with reference to the management of smallpox hospitals. His paper is up to date, and such rules as he lays down should be carried out in the conduction of smallpox hospitals everywhere.

With reference to the papers of Drs. Spalding, Leavitt and Bracken, I must say they were all most excellent; the gentlemen have arrived at the same conclusions from the same line of reasoning which I have and which I believe to be correct. I endorse the three papers entirely, except Dr. Leavitt's statement that chicken-pox is a child's disease and never seen in the adult. I have seen a number of cases in adults, and even in people past middle age.

I beg pardon for consuming the time of so intelligent a body of men and women, discussing the only feature of this subject about which there is a discussion, namely, the diagnosis of this almost national epidemic of variola vera, and I hope such a discussion will not occur in this Association during the next fifty years, if I am so fortunate as to be in attendance at that time. I feel sure that 95 per cent. of all intelligent physicians, who have had opportunities to study this disease, believe and in fact know it to be genuine smallpox.

From personal observation, the disease and the special cases described by Dr. Happel in his paper are just such cases as we have been treating in our smallpox hospital near Memphis for five years, and I know that many of our cases have been employed as nurses and other helpers in our hospital for months after recovery and we have never had a single instance of such persons contracting any like disease in a severer form.

While Dr. Happel claims faith in vaccination against "smallpox," he states that the negroes in his county have not been and will not be vaccinated. Every physician conversant with the subject at all, knows that in the South 90 per cent. of all cases occur in the negro race, which to my mind is the best evidence that Dr. Happel's pseudo-smallpox is variola vera; as it is a well-known fact by everybody that the whites are much more generally vaccinated than the negroes. Dr. Happel mentions persons who had been seemingly successfully vaccinated, having the disease. I take it that every one knows that to have had a sore arm leaving a scar is not proof positive of thorough vaccination, rendering immunity.

Dr. Happel is health officer of his town and county, and as such will he say to this body that he does not require physicians to report mild cases of diphtheria and scarlet fever, and that he does not require the usual precautions as isolation and disinfection in mild cases, that I am sure he does of the severer forms of both diseases? If not, then why not take the same

view with reference to handling mild diphtheria and scarlet fever that he does of so mild a form of smallpox?

DR. J. F. MARCHAND, Canton, Ohio—The relations of the health officer and the physician to a community are of a two-fold nature; first, the best interests of the community demand that this disease be called by its right name; second, the commercial interest of the entire community should not be neglected. If this disease that is prevailing is smallpox, call it smallpox, and, if it is smallpox, it ought to be quarantined. I am sorry that Dr. Happel read that paper; at Atlantic City, last year, he read a paper that was hurtful and harmful. Gentlemen, the time is at hand when everyone should unite in endeavoring to crush out smallpox, and there should be a united action on the part of every state and territory, and some plan of action should be formed. I have watched with great interest the spread of this disease all over the country, and it seems to me that there is no diminution of its prevalence in the rural districts, because there the physicians often hesitate in calling it smallpox. In the cities the only successful way of dealing with these cases is in municipal hospitals. I am glad to hear the papers read telling us how to protect the interests of the community. I visited the eastern section of Ohio last year to help out in some doubtful cases in diagnosis, and there was one thing that I emphasized, that is, treat all suspected cases as cases of undoubted smallpox.

I think, gentlemen, that the time will come when the science of medicine will demonstrate to the whole world that instead of 50,000,000 people in Europe alone dying in 100 years before the days of Jenner, the disease will almost be obliterated from the face of the earth. If the mortality is low in this form of the disease, which has been prevailing so long in the United States, it does not prove that this disease is not smallpox.

DR. D. B. PRITCHARD, Winona, Minn.—During the past seven months I have had a large experience with this disease in an epidemic where we had 1758 cases of smallpox; of this number there were but 17 that had ever been vaccinated, only 3 of these being recent, the balance having been vaccinated from ten to sixty years ago. There were 646 houses quarantined, and in 152 houses there was but a single case of the disease. In these houses only the unvaccinated members of the families caught the disease.

DR. J. A. BARR, McKee's Rocks, Pa.—I should like to raise the question as to what constitutes a "successful vaccination." This subject came up two or three years ago, during an outbreak of smallpox. The school board said that every child should present a certificate of successful vaccination. The secretary of the school board came to my office, when I refused to grant a certificate to one of the children, and asked me why I did this. I said: "Suppose that I give your children a certificate of successful vaccination, how are you going to view it?" He said: "I would believe that the children would be immune from smallpox." I replied: "Exactly." I also told him that statistics showed that, out of 6000 cases, 14 per cent. or more died after having been vaccinated; and out of the same number, that had been vaccinated twice, over 4 per cent. died; and of those that had been vaccinated, three times, only 1.75 per cent. died; and of those that had been vaccinated four or more times .75 per cent. died. Therefore, in order to render these children immune, I said that they should be vaccinated four times. People should be taught that immunity is not conferred by one vaccination; that, according to statistics, it takes at least four vaccination scars, well marked, to produce successful vaccinations. On this account, I refused to sign the school board's certificates.

A VOICE—Why not vaccinate four times at once?

DR. BARR—That is the German idea.

DR. E. H. MARTIN, Clarksdale, Miss.—When the recent epidemic of smallpox made its first appearance it was in such a mild form that it was only by means of certain cardinal symptoms that it could be recognized as the smallpox of the text-books. There naturally followed a very widespread sentiment of doubt, among the profession and the laity, with regard to the disease, as it then appeared, being the genuine article. However, since during the past year so many malignant cases have occurred, that doubt has been swept away. No one could treat a dozen, or even one, case of confluent smallpox and fail to recognize its identity. And when it is at the same time observed that those who had had the disease in its earlier, mild form are protected from the malignant form there is no longer room to doubt that the disease has all along been real variola. Nevertheless, it is equally certain that there are distinct varieties of smallpox, as well as various types of each variety. In observing several hundred cases during the past two years I have recognized at least four distinct varieties of smallpox. The individuality of each variety is established by the fact that persons contracting the disease would develop the same variety of smallpox as had the patient from whom the disease was contracted. This was true when as many as three varieties, brought from three separate outside foci, were prevalent in the same locality at the same time. In short, each variety breeds true to seed. It is needless to state that these observations were made where unvaccinated parties contracted the disease, and in cases where it could not have been modified by vaccination, otherwise the observations would be of no value. The fact that each variety is really variola vera is proven by the immunity which each variety gives to itself and all other varieties. Isolated instances of a lack of immunity after one of the mild forms proves nothing, as we have just as many instances in which severe types of the disease gave no immunity. They are merely the exceptions. As to the claim that vaccination does not protect against all of these varieties of smallpox, such claim is absurd when coming from a member of the profession as universally and as satisfactorily protected as the members of the medical profession have been by vaccination. One hundred thousand doctors have probably been exposed to smallpox in this country during the past two years, and those contracting the disease would probably not number a dozen.

What we can claim in behalf of the public and as an excuse for the cranks who are doing antivaccination talk, is that much of the virus now on the market has been so attenuated that it is practically useless. It may be well enough to use attenuated virus for routine vaccination of children in the absence of variola; protection may be gradually acquired by repeated vaccinations with such virus. But in the troublous times of an epidemic it is more important to give protection to the greatest number than to try to avoid a few bad arms, especially as secondary infection can not be always avoided even when the mild virus has been used.

It may be worthy of note to observe that the only "single-scar" cases of protection are every one from arm to arm vaccinations done fifteen or twenty years ago. We can not return to that method, but we, at least, should have a more highly vital virus on the market than is some of that most used.

DR. G. W. GOINS, Breckinridge, Mo.—As a scientific body I think we do Dr. Happel an injustice; as scientific men we ought to recognize the fact that as yet the exanthemata can not be scientifically diagnosticated and until further research has been made in those diseases there is still room for doubt. I think this Section, as a scientific body, in attacking Dr. Happel so vigorously does him a great injustice.

DR. C. F. DWIGHT, Minneapolis—The question for discussion is: What can be done? We are practically all agreed that smallpox prevails throughout the country and that it can be prevented in 99 cases out of 100 by successful vaccination. Therefore, I think the question before us is: What is the best course to pursue to get all the people in the country vaccinated?

DR. HAPPEL, closing the discussion—I had no idea a physician living in a town of 2500 or 3000 inhabitants could stir up so much discussion as I have done; there must be something in it. I do not wish to be misunderstood or misrepresented, as I have been, upon the question of vaccination. There has never been said by me anything in opposition to vaccination; on the contrary, I have ever been an earnest advocate of compulsory vaccination. In the city in which I live, under an ordinance which I drew myself, no child is permitted to attend our public schools who can not make proof of recent vaccination. So much has been done along that line that 90 per cent. of our

population has been vaccinated. Had the same zeal been displayed in the cities in which the "bosses of the State Boards of Health" live, not only in Tennessee, but in other states, smallpox would long ago have been a thing of the past. Our cities are the breeding places of the disease. Had as much gas been used around our legislatures, as has been wasted here this morning, helpful legislation could have been gotten long ago.

You call this disease "mild" smallpox; the Illinois State Board of Health calls it "modified" smallpox; then why should not a different adjective, "pseudo," be applicable?

I know nothing of the disease seen by Dr. Bailey, in Kentucky. He says it was smallpox, and I suppose that to be the case. He saw none of the cases reported by me, nor have any of the members of the Tennessee Board of Health. The papers claimed that the infection in those cases was carried by dogs, and the authorities had the dogs killed, but I suppose that the real scapegoat was the poor "nigger," but he was not killed.

In reply to the gentleman from Minnesota in regard to the "interrogation points" in my former paper, I have only this to say, that interrogation points give more evidence of study and thought than quotation marks, and many of the things that have been read here to-day should be properly inclosed in quotation marks. Nearly all of many of the papers can be gotten from any of our text-books on Practice.

One other point in regard to experts. We are being told almost daily that no one, except an expert, can give a positive opinion upon any subject. I asked a member of the Tennessee State Board of Health for a definition of an expert, as bearing upon this epidemic of so-called smallpox. He answered me that an expert was "a man sent to see and report." In view of the work done in Tennessee by the Board I readily accepted that definition of an expert. Now, if that is what is meant by an expert, God save us from experts. In some instances it can be proven that these experts, not only in the State of Tennessee, but in other states, have visited these cases, and looked at them through windows, and in other cases have examined them from afar with the aid of opera glasses.

I believe that any honest practitioner can recognize a vaccine mark when he sees one, but the teaching of to-day is that an expert is needed for even that purpose. If a vaccinated person contracts this disease (and the records and reports show numbers of such instances), we are at once told that the vaccination was not properly done. Dr. Runyon, cited in my paper, reports thirty-seven cases where persons who had been vaccinated contracted this disease. My position in regard to these cases is that they are not cases of genuine variola vera, and in this position and opinion I have been sustained by physicians in the city of Nashville, Tenn., eminent in their profession, filling the chairs of some of the medical colleges in that city, as well as by others, who, like my distinguished friend, have also passed the 400-mark in the number of cases seen by them. They saw the cases in person, as I did, and not as has been done by some who have occupied the floor here to-day, through the eyes and reports of others.

The consideration of the commercial aspect of the case has been brought into this discussion. In the State of Tennessee, thousands of dollars have been spent to no purpose. One county paid out as much as $32,000 in a vain attempt to crush out the disease, even being aided by the wisdom of the State Board of Health, and then failed. In my own county we spent less than one-sixteenth of that sum, and have kept the epidemic under perfect control, except when some other county furnishes us with a fresh supply.

As to the management of these cases without guards or pest-houses. When I am called to see one of these cases, I put out a yellow flag, and notify the inmates that they have a contagious disease, and must stay on their own premises till I give them permission to leave. The same notice is given to outsiders about going about the quarantined house, and all parties are emphatically informed that any violation of this notice will be punished by a heavy fine. These orders are never violated, and I have never had the disease spread from its starting point. I do not mean to be understood that you could manage in the same way in the large cities. I have so far found no need for guards or pest-houses. The most of our cases are among the negro population, but few occurring among the whites.

I do not care to reply to the gentleman who referred to my last case reported in my paper read, as apparently one of spontaneous origin. I regret that he should have, in the presence of ladies, illustrated his meaning as he did. A lady is or should be a lady, and is entitled to be treated as such, even though she be engaged in the practice of medicine.

Speaking of the resolution offered to declare this disease smallpox, I have only this to add: Your resolution amounts to nothing. It says to the public that those of you who vote for it are of the opinion that the cases reported, which you have never seen, are cases of variola vera. It carries with it no weight so far as the minority vote is concerned. Such action reminds me of my early day readings in Greek, where an account is given of an assemblage of the citizens of Athens held for the purpose of discussing the management of one of their many wars, by their at that time numerous generals, who were made or unmade by popular vote. After a lengthy discussion of the merits and demerits of the then general, a suggestion was made to elect another general in his stead. A motion to amend was offered that they vote all their asses horses. The one offering this amendment was laughed at, but proceeded to explain that if they could create a general by a vote of the assembly, then they certainly, in the same way, could change their asses into horses. The adoption of this resolution will come as near convincing the general public that this disease is variola vera, as would the adoption of the amendment offered in the Grecian meeting have had in changing their asses into horses. The chairman of this same section last year very properly ruled this same resolution out of order, and it is as much out of order now as then.

Mr. Chairman, there are many more things that I would have liked to have considered in my closing talk, but my engagement with the Board of Trustees prevents my remaining longer.

Dr. Spalding, closing the discussion.—Dr. Happel favorably refers to the control of epidemics of smallpox by leaving the patients in their homes. In Tennessee this method resulted in permitting five cases to escape to Chicago. No case came to us from Kentucky. Regarding the question of vaccination as a protection against smallpox: In our hospitals over 200 students were admitted in order that they might study the cases. Every student admitted had to have three vaccinations. In not a single instance did a student contract the disease.

Dr. Leavitt, closing the discussion—In reference to the diagnosis as made by Dr. Happel, it struck me while he was reading his paper that some of the cases he saw and described were cases of varicella, particularly in the vesicular stage.

Dr. Bracken, closing the discussion—Dr. Happel speaks of the terms used—mild smallpox, modified smallpox, etc.—and asks why not use the term pseudo-smallpox. The reason is that those who speak of a mild or modified smallpox speak of a variety of a given disease, and all who speak of it in this way recognize the fact that vaccination will protect against the mild or modified smallpox. Dr. Happel, on the other hand, makes a point that vaccination will not protect against the disease which he calls pseudo-smallpox.

Another party speaks of the different varieties of the disease. I think you may recognize as many varieties as you please so long as you keep within the limits of the varieties of the one disease.

Dr. Happel refers to the expense. If the sentiment of this meeting had been in support of Dr. Happel's paper, this would have been the most expensive paper read at this meeting of the American Medical Association. Such a paper would have cost Minnesota many thousands of dollars.

The period of infection of this disease is during the desquamative stage. I do not take the position that it is not infectious from the beginning, for I remember a case in a hospital with a diagnosis of typhoid fever. The patient was placed in a private room. The next morning the eruption of smallpox made its first appearance. There were only two or three persons who had been in this room prior to the time

when the diagnosis of smallpox was made. The patient was removed as quickly as possible to the quarantine hospital. One nurse, who was not nursing the patient, but who was in the room but a few minutes, contracted smallpox. This shows the possibility of infection during the early stages. I have in mind another case of a young man, who, in probably the first day of the eruption of the disease, picked up a child and carried it a short distance. This child, his nephew, was in due time taken down with smallpox, the result of this exposure.

NOTE.—The following resolution was adopted by the joint Sections on Practice of Medicine and Hygiene and Sanitary Science, after the above discussion:

"*Resolved*, By the joint Sections on Practice of Medicine and Hygiene and Sanitary Science, That the disease now prevailing extensively in the United States and called in some instances 'pseudo-smallpox' is genuine smallpox, and should be so treated with vaccination and quarantine by all health authorities. Carried."

CANCER OF THE UTERINE NECK.

WITH COMMENTS ON THE PRESENT-DAY TEACHING.*

J. M. BALDY, M.D.
PHILADELPHIA.

Cancer of the neck of the womb is practically incurable. This statement is made advisedly and the proof of its correctness lies in the reports of results of treatment from all quarters of the world. At the present time there is no cure for cancer short of surgery, and it is no abuse of language to state that this disease is surgery's disgrace. Such statements I am well aware will be called radical by timid men or by men of little knowledge, they will be called bold by even men of knowledge and experience, but it will be a bold man indeed who can conscientiously call them untrue. I repeat that cancer of the neck of the womb as far as results go to-day is practically incurable. It is a reproach to our art, nay it is even a reproach to ourselves, but still unpalatable as the statement may be, it is the full truth. No amount of juggling with figures or facts will alter this state of affairs, nor will spurious nor exaggerated claims make matters better for those of us who want the truth and not garbled statistics. It will do little good to ostrich-like bury our heads in the sands of self-complacency, accept statements made from any and every source and sit with our hands folded whilst our patients die. What man of large experience can look over the past dozen years of his practice and put his fingers on any considerable number of patients who have suffered from this disease and are alive to-day? Who but can count the dead by scores, and this despite any and all methods of treatment known to us?

It is not possible to state with any degree of accuracy the exact proportion of such cases which it is possible to save, but judging from the past it is an absolute, although lamentable fact that it is less than 5 per cent. The best statistics on this subject with which I am familiar in this country which pretend to sufficient accuracy to be of any value have come from Johns Hopkins Hospital. Their cases cover all which have come to that institution since the institution began its work. On the face of these statistics 20 per cent. or more of such patients are cured—and this is a small claim as such claims go—at least such is the impression given the profession, although the facts are there and any one can deduct the real truth from them himself if he so chooses. As these statistics are a fair representation of all other reliable reports both from home and abroad, it may be well to examine them somewhat critically and draw our own and probably different deductions as to percentages. The facts are there and we are just as capable of judging the results and forming conclusions as are their compilers.

Seventy-three cases of cancer of the cervix were operated upon: 15 cases, or somewhat over 20 per cent. are alive to-day. But then, 68 cases were rejected as non-operable—incurable—all of whom are of course dead to-day. Consequently, when we draw our own conclusions they are that a little over 10 per cent. instead of over 20 per cent. of cases of cancer of the uterus which have come to that institution are alive to-day.

Nor is this all. It will be recalled that Johns Hopkins Hospital has availabe a magnificent pathological department and that all gynecological cases passing through that institution have a thorough and systematic overhauling by men specially trained and skilled in this work. Patients are freely examined under ether, all curette specimens are examined microscopically and every safeguard as far as can be is thrown around the diagnosis. The consequence is that a diagnosis is not infrequently made in cases where the disease is so early as not to have been suspected and in a few where the diagnosis is even then (after the microscopic examination) doubtful the patient is given the benefit of the doubt. It is no news to the pathologists to state that there is often a wide difference of opinion amongst them as to what is and what is not cancer in the very early stages of the disease. Not infrequently we find men claiming certain minute changes as *surely malignant;* whilst others say *perhaps* (but not certain) and still other say *not at all.* What is the practical deduction in all this? Simply that the man who operates as the result of the microscopic examination and gives his patient the benefit of any doubt, occasionally operates on a case which is not cancer and which of course has no recurrence. This is exactly what they do (and properly so) at Johns Hopkins. Is it then out of the way to think that probably there may be a case or two (or even more) amongst the 15 patients of that institution who are still alive who would come in this category? If even a single such case exists in that group what then becomes of the 10 per cent. of cures?

Nor is this all; probably the most serious aspect of the danger of these statistics remain to be considered. Fifteen cases are reported alive. Analyse that statement for one moment and see what a false impression it gives. Of these 15, 9 have only passed from 10 months to two and one-half years since their operation. Only 6 cases alive from 3 to 6 years after their operation. Who can say that every one of the 9 cases under two and one-half years will not die of the disease in the next two and one-half years. Even the 6 who are alive after three years are by no means safe. These same statistics report a number of cases who have died four and one-half and five years after the operation.

What now becomes of the 10 per cent. cures? Am I too radical when I state that less than 5 per cent. of cases of cancer of the womb are cured? I would probably be nearer the real truth if I said 2 per cent. In view of these facts am I not justified in my opening remarks that "cancer of the neck of the womb is practically incurable?" The same analyses of the recent statistics from Germany gathered and reported by Winter shows almost exactly the same results, although reported for entirely the opposite effect.

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If those then be the facts what is the remedy, or is there any remedy? It matters little what the line of treatment, be it medical or surgical, although the surgical side of the question is the one which appeals to me, the remedy to my mind is plain: 1, a full realization of the facts as they stand, and 2, a sound understanding as to the importance of the early discovery of the disease.

The tendency of the teaching in the schools of to-day is in these respects bad; if I may be candid, abominable. I, in no way, mean to state that the facts of the present day teaching are unture, but I do mean to say that the tendency is to lay such undue stress on certain points as to practically obliterate from the ordinary medical mind the more important and vital points. The two particular points to which I refer are the statistics and the use of the microscope for diagnostic purposes. We well know that there are periods of fads in medicine as well as in other affairs of life and that these fads often result in disaster in more ways than one. This question of the laboratory is rapidly becoming a dangerous fad, and unless there is a halt the coming generation of doctors will be incompetent to early distinguish this disease and will show even worse results in cancer of the cervix than our own.

Let me illustrate for a moment what I mean by the two abuses to which I have referred. It must be apparent to everybody, if we wish for better results, that the earlier the diagnosis is made and the earlier the case is brought to the surgeon the greater the chance of a cure. This appears to me to be axiomatic. It then behooves those of us who know the truth about the results of treatment to bring this matter home in no indecisive manner to the minds of the present and future practitioner of medicine into whose hands these cases first come. It behooves us no longer to deceive him directly or indirectly, consciously or unconsciously. If we are to continue to indirectly deceive him by our statistics in talking and writing of 20 to 60 per cent. of cures when we are fully conscious that when the whole group of cases be studied together, as they in all fairness should be, the percentage of real cures is from 2 to 5 per cent. only, what are we to expect from him?

First, a great laxness in the attempt to discover these cases early; second, a disinclination to hurry them at once to the surgeon, because forsooth his conscience is easy in the supposed knowledge that when he does decide to send them a large percentage can be saved at any rate. In other words, he is not impressed with the terrible nature of the disease and the almost certain fate which awaits his patient. Quite the reverse is the result of the teaching of the day; his mind rests easy, his patient rapidly approaches inevitable death and we who should enlighten him as to the real truth sink him deeper in his complacency by feeding him with our statistics of successful operations, ourselves as successful operators. They may not be direct falsehoods, but they are the more dangerous in that they have a semblance of truth and are indirectly most abominably deceptive.

If he knows that of all the cases of cancer of the cervix it falls to his lot to see in practice but from 2 to 5 per cent. at most are permanently cured, he will become the more cautions in his observations, will discover these cases the earlier and when a case is once suspected will be the more likely to seek consultation at once, both for the sake of his own reputation as well as for the safety of his patient. Once beginning to watch all his female clientele with this object in view, will he place his dependence on the laboratory and the microscope for his diagnosis? Far be it from me to decry these valuable aids to modern medicine or to belittle all that has been and is being done by the laboratory men, but far be it from you even indirectly to decry the clinician and all he has done and is doing in the way of acute observation and deduction from accurately observed facts. The clinical observation of facts comes before the laboratory examination: the laboratory examination is an impossibility without the prior clinical work and is after all at best corroborative; it rarely originates. Few cases of cancer of the cervix are diagnosed by the microscope where the diagnosis is not possible by the clinical study of the case. Had the case not been strongly suspected of cancer the aid of the microscope had never been sought. The few exceptions to this have occurred in routine examinations of specimens in well appointed institutions with all modern advantages in the way of appliances for teaching and study. It may be claimed that this is the goal for which we should all strive; that such examination and study should be made universal. The millennium has not yet come nor is it yet in sight, consequently we are forced to content ourselves with being practical (rather than theorists) and accepting situations as they exist obtain the best practical results from them possible. For instance, we are faced by these indisputable facts:

The great bulk of the profession live away from the teaching centers and laboratories and have few or no facilities for such routine work. They have not time for it. They have not the special knowledge necessary to make it of much use. They have not the apparatus. There are few communities in which there is even a single man with the requirements necessary for this work, to whom it might be referred. What is the use then of laying so much stress on the microscope to the belittling or exclusion of methods which are within the reach of all practitioners where ever they be, and upon which they must of necessity rely? I mean by this the clinical study of cancer patients, be the disease early or late. The most recent book on cancer of the uterus (Cullen), a work which is based on the accumulated experience of one of the great teaching institutions of medicine in this country (Johns Hopkins), a useful work for the specialist who can read between the lines and who can not be contaminated by its false teaching, a work which should be excluded from the hands of every practitioner of medicine (other than specialists) in the land, has this to say on the subject of diagnostic symptoms (our only apparent hope of advancement in the treatment of this disease): "After thoroughly analyzing our own cases, and studying the records of others, we find that diagnostic symptoms at best are meagre, and in the early stages give little or no clue to the real nature of the disease." The teaching throughout the whole book is consistent with this statement and it is sad to relate that this fairly represents the tendency of the teaching on this subject to-day, not only in this great medical institution, but in many others. No greater mistake was ever made; no falser teaching was ever promulgated than this. The statement is absolutely without foundation in fact, and if any of us arrive at a similar conclusion it is because we have allowed the laboratory craze to blind our best judgment and obscure our acuteness of observation, to say nothing of blunting our reasoning faculties. Quite the reverse is true. The symptoms of early cancer are as plain as those of any other disease in its early stages and the reason it is not oftener detected early is the fault of the observer,

not of the symptoms had they been properly observed and interpreted. And it is just such teaching as is contained in this book (all microscopic, nothing clinical) which will make careless men more careless and untaught men ignorant. I repeat that the symptoms of cancer, although meager in the very early stages, are sufficient, and it has been the rare case indeed in which the microscope has made the diagnosis that a retrospect of the case has not caused great surprise at the number of symptoms present and their significance. I protest against such teaching and look in the future for a return from the will-o-the-wisps of the laboratory to the sound ground of educated and accurate clinical observation. It is not my intention to drift into an exhaustive study of the symptomatology of early cancer of the uterus, but there are a few points to which I will refer briefly.

There are three great symptoms of cancer, pain, odorous discharges, hemorrhages; these taken in conjunction with progressive loss of flesh and strength present a picture which becomes so significant that no one is justified in failing to see their significance. This picture complete is however the picture of well-advanced cancer and is never present in the disease in its early stages. Hemorrhage with possibly beginning loss of flesh and strength is the diagnostic sheet-anchor in the early stages. No one knows how early bleeding begins, but begin it does very early; early enough to give plenty of warning of what is coming. In this connection there are one or two circumstances which should be considered almost pathognomonic, so few are the exceptions. They at least should make the suspicion so strong as to demand a most careful and immediate overhauling of the patient.

A woman once having passed the menopause, the menstruation having entirely ceased and a year or two, or six or more years later but a single show of blood from the genitalia be noticed no matter from what supposed cause (traumatism excluded), cancer will be found with but rare exceptions. Personally I have never found an exception.

Even during the menstrual life of a woman, if a blood stain be noticed after coition; if after the use of a syringe a stain appears or the water is bloody; if following excitement or exercise, or from any similar cause; if a slight stain be observed in the mornings on arising or following constipation (reasonable cases being excluded), cancer should always be suspicioned and a mistake will rarely be made. It is true some non-cancerous ulceration and mucous polypus will cause this symptom, but rarely.

These symptoms are so readily observable and are so significant that it is a mystery how often they are ignored and the patient allowed to drift into an incurable state. They are so plain that he who runs can read. Not so with others which, although taking a little more acuteness of observation, are none the less significant.

All women from puberty to the menopause bleed, fortunately with more or less regularity. The bleeding itself is not so significant as the comparison with what it has always been before in the same woman. Naturally, then the man who can make the most valuable comparison is the one who is familiar with all the details of the woman's menstrual life—the family doctor. It is quite easy for such a man to know almost any irregularity in a woman's bleedings, to know of any reasonable cause for such irregularity, to compare such irregularity with the past and to consider it in conjunction with the present state of general health, progressive or persistent otherwise unexplained loss of strength or flesh. Being always on the look-out and suspicious for his patients, being always determined in every case to exclude cancer where the symptoms (irregular bleeding) are not readily explainable by other lesions, as a careful man always considers and excludes pregnancy in any abdominal growth, how could the case escape a suspicion where the bleeding from the woman's genitalia becomes profuse or comes at unusual times. It is not so much the quantity of blood lost which is important as the fact that blood even in minute quantities is observed at times not expected and which is incompatible with the physiologic flow or a prolongation of this function (due so often to a neoplasm or an inflammatory lesion.) Any or all these points are significant and call vigorously for a careful examination. They may be readily explained at the examination by a polyp or an erosion or a benign ulceration, but most frequently cancer will be found; early often, even so early that the laboratory man will decline to make a positive diagnosis from any small specimen you may present to him; so early at times that he will be uncertain while you will be so certain that you will operate on the case in spite of his hesitaney. Many a time have I done this, many a time I hope and expect to do it again. In few cases have I ever found that after a careful and prolonged study of the removed organ he (the pathologist) has not finally fully agreed with my diagnosis—so far superior is elinical observation and deduction to the microscope in this disease. So far convinced am I of the truth of this position that in cancer of the uterus I never expect to allow the microscope to stay my hand—no matter what its decision may be. If it agrees with my clinical deduction well and good; if it is uncertain and hesitates, it is not going to prevent me trying to save the life of the patient.

I repeat that all our statistics on cancer of the cervix uteri (or rather the interpretation of them) are false and grossly misleading. The microscope as a means of diagnosis is vastly inferior to clinical symptoms and observations.

The teaching of the day in most of our great schools of learning in the respect is as bad as it well can be; consequently the outlook for competent observers and diagnosticians for the future is bad.

DISCUSSION.

Dr. J. H. Carstens, Detroit, Mich.—There is no one who has been more inclined to become pessimistic in reference to the discussion of cancer than I, but I feel grateful that I have not become such a pessimist as my friend Baldy. I am not at all astonished that he can not show a greater number of permanent recoveries if he absolutely discards laboratory investigation. If he waits until as the result of the smell and the discharge he can make a clinical diagnosis, if he waits that long, there is no wonder that the number of recoveries will be very small indeed. Our object has always been to get these cases early, and if you wait until you can smell the bacillus or until you can hear them sing, your patients will certainly die inside of a year. When you have a woman who flows more than she ought for two, three or four months, curette that uterus and carefully examine the curettings with your microscope. You will find that it is probably a benign adenoma. The hemorrhage will probably recur in spite of your curettage. You curette again two or three months afterward and find that your case is a malignant adenoma; then is the time to operate. If you wait another three months and again examine the scrapings with your microscope, you will find that it is an adenocarcinoma. Then it is too late to try to save the woman's life. Early investigation and early operation is the

proper thing to do. I will give Dr. Baldy every opportunity to look at a little plug removed from a lacerated cervix and tell me whether it is malignant or not, but I know that some of these cases are malignant before I have them examined microscopically, and if I get the report that they are malignant, then I take out that uterus within four weeks. In that way I save the woman's life. If I wait until I can smell it, then an operation will do no good. The trouble is, we get them too late. I can show you cases operated on ten years ago, where the microscope showed beyond question that it was a cancer, in which there has been no return of the disease. Other cases that seem to be just as mild or milder would have a recurrence *in situ* or some other part of the body within a year. We can not tell by the appearance of a case whether there will be a return. Sometimes the most favorable cases will recur and the most unfavorable cases will have no recurrence. What I plead for is early diagnosis; then we will have fewer recurrences.

Dr. J. G. Clark, Philadelphia—Three great objections can be raised to Dr. Baldy's paper. The first objection, a very strong one, is that the paper comes from a man who has not gone into the pathologic side of the question, a man who criticises from the standpoint of one far removed from the scientific aspect of this subject. The second objection, also a very potent one, is that the statistics of others are taken as his basis for criticism. Why does he not bring forward his own statistics? Third, a special point he made, he does not recall a single instance in which he ever took out a uterus which he diagnosed clinically as a carcinoma, and which was proven to be otherwise after that. If he absolutely excludes the microscope as a factor in diagnosis, I would like to know how he can tell whether or not he made a mistake.

Dr. Baldy has attacked the work of Dr. Cullen, and as he is not present I feel that I must say a word in his defense. One of the first things Dr. Cullen brought out in his book is the clinical side of these cases. He dwells especially on the three cardinal symptoms of carcinoma; then he says in a general way that failing in this we should curette and examine the scrapings microscopically, because the microscope is unquestionably superior to our ordinary crude diagnostic methods. In this way we can positively determine whether or not it is a carcinoma. If there is any one point which I lay stress upon in my lectures and in my clinical demonstrations to students, if there is one thing I try to impress on these men, it is the early diagnosis in these cases of carcinoma, a fact which Dr. Baldy himself has alluded to. Wherever there is a typical discharge, wherever there is anything out of the ordinary in a woman of a carcinoma age, that is a case for careful clinical study. Then, when in doubt, or where there is none, resort to the microscope, and if it confirms our diagnosis we can be absolutely certain of our convictions.

The surgical aspect of the subject is a weak one. We have done our best in a general way for carcinoma. I am certain that on the microscope must hinge the final diagnosis of these cases, especially where there is doubt. The negative factor is often greater than the positive factor. Within the last three months I have had two cases, in one of which, at least, from the clinical standpoint, no man could say it was not a carcinoma. The woman was 39 years old, had had periodical hemorrhages for several months, and had had a carcinoma of the breast. The first curettage showed areas that were suspicious, but I felt safe and waited three or four weeks for a recurrence of the hemorrhage to again curette so as to be absolutely certain before making a major operation. A second curettage absolutely showed the benign nature of the case, a simple inflammatory condition of the endometrium. Since the last curettage, five months ago, there has been no hemorrhage. The positive factor is the confirmation of the diagnosis through the microscope. The negative factor is the ruling out in just such cases as this. Many a woman will have her uterus removed if we are guided solely by clinical symptoms. I have never seen a single instance where Dr. Cullen was mistaken when he said that a certain case was carcinoma. I have seen cases where he was in doubt, but in those cases the carcinoma was so little that it was better to wait two or three weeks and then be able to say positively that this is carcinoma. If it is a benign tumor you can let the woman go with a simpler operation.

Dr. E. G. Zinke, Cincinnati, Ohio—Dr. Baldy's paper deserves praise for the manner of its presentation rather than its contents. There is plenty of room for just criticism. I want to limit myself to the consideration of two points: The question of early diagnosis, and the curability of cancer of the cervix. If Dr. Baldy's description of the early symptoms of cancer is correct, then I have never known what the early symptoms of cancer of the cervix are. The symptoms given by him mark an almost hopeless condition. The early diagnosis, in the majority of cases of cancer of the cervix, is exceedingly difficult; and it is for this reason that these cases come to us, usually, when too late. I saw a striking example, in 1891, in Chrobak's clinic in Vienna. A well-nourished, rosy-cheeked woman, aged 29, was brought into the clinic one day, and, after the professor had made an examination, he asked that the patient be taken out of the room. He then turned to his audience and said: "Gentlemen, I am sorry to say that this poor woman is hopelessly lost to the ravages of a carcinoma coli." The symptoms present in this case would not have warranted the suspicion even of the existence of this disease.

Several years ago I saw three women in one year (aged respectively, 23, 26, and 27), every one of them seemingly a picture of health, yet all hopelessly lost to cancer of the cervix. They were being treated for irregular menstruation, menorrhagia, metrorrhagia, etc., by their physicians. They did not suspect malignancy. These cases were reported, at the time, to the Cincinnati Obstetric Society, and published in the *Journal of Obstetrics and Diseases of Women.*

As to the possibility of curing these cases: I am convinced that they can not be cured unless the disease is removed by the knife in the earliest stage. Occasionally a patient, advanced in years, recovers even though the disease was extensively present. Carcinoma coli seems less violent and rapid in its progress when it occurs in advanced than in early life. An early diagnosis of cancer of the cervix is only possible when examinations are made promptly and thoroughly in every instance when complaints or irregularities point to the internal genitalia for their site or origin.

I believe in the curability of cancer of the uterus. The disease must, however, be attacked early and completely removed. I have seen good results follow the removal of the uterus in seemingly hopeless cases. Too many cases are abandoned as incurable. Every case should be treated until the last.

Dr. Emil Ries, Chicago—The statistics which Dr. Baldy attacked, teach a very eloquent lesson, and the way Dr. Baldy has disfigured them and juggled with them in order to fit them into his logic is astonishing. He starts out to prove that carcinoma of the cervix is incurable, and then figures on cases that come to the hospital when they are already incurable. He mixes up the incurability of cancer if left alone, with the incurability if operated. Of course, those cases not operated are incurable; they are lost; everybody admits that; no one ever said they were curable. If he uses those statistics he can only take those cases that were operated. That 15 or 20 per cent. of the cases are operated and survive for a time, merely proves just what that means and no more. But to take into consideration the cases not operated, and to attempt to prove with them that cancer is incurable, is an injustice. The injustice is the more severe because it strikes a man and a work which are worthy of the highest praise. Cullen's work on cancer of the uterus is excellent because it teaches the importance of laboratory work in spite of Dr. Baldy. Every modern man must subscribe to what Dr. Cullen says concerning laboratory methods and the necessity of the microscope in the early diagnosis of carcinoma. The man who does not agree with him is antiquated.

The doctor fails to take into account that there is a new operation which proves the cure of carcinoma to be possible, has proven it to a certain extent already, and is going to prove it still more in the future. It also explains why such a large number of cases which are operated on under the old methods have recurred. I speak of the method which I had the honor

of proposing six years ago, and which has been followed in Europe as well as in this country and Canada. This method consists of the complete removal of the regional lymphatic glands, together with the broad ligaments, round ligaments, utero-sacral ligaments, tubes, ovaries and uterus. When I proposed this operation I suspected that the glands would be involved early in carcinoma. Most gynecologists teach that in carcinoma of the uterus the glands are not infected early. They know nothing about it, because they have not examined the glands. Very few men have; Cullen is one of them; Wertheim, of Vienna, is another, and I have examined a few. A number of men have examined these glands but have found no carcinoma. Suffice it to say that those who have not found carcinoma have not examined all the glands or they would certainly have found the carcinoma.

As to results, Wertheim has operated on fifty cases, but he went far beyond my indications. His mortality from the operation has been high, therefore he comes back to what I have always said, limit the operation to the early cases, as it gives you a much better chance of curing the patient completely. What is the result of all cases operated on in the last two years? Not one has recurred. We all know that recurrence takes place in the majority of cases within six months. I have operated on a number of cases, the oldest over four years ago, and it has not recurred. I saw the patient a month ago and she is well. The results of the Johns Hopkins operators in this work are not valuable. I do not know whether their cases have recurred nor is anything known about the glands in those cases. In Wertheim's cases and in mine, the glands were carefully examined.

The objections to this operation are first, high mortality. The mortality is about 20 per cent. in the hands of skilled operators. What is the mortality without the operation? Dr. Baldy says 95 per cent. If you want to give your patient a chance, operate on her. It has been said that you can not remove all the glands and connective tissue. That is a mistake. It can be done if you keep at it. Practice the operation on the cadaver before you do it on the living. Learn the anatomy perfectly and then operate. You can clean out the pelvis as completely as you can the axilla. It has also been said that these glands may not be carcinomatous. My reply is that the case which has been examined thoroughly and which did not contain carcinoma, is still to be shown, but the cases in which the uterus was freely movable and the carcinoma small, where the case appeared to be a favorable one for vaginal removal, and where the glands were not enlarged but did contain carcinoma, are cases that have been shown by Wertheim and myself.

The last objection is that the carcinoma might be beyond the glands so that even if we removed the glands we did not remove the entire carcinoma. That is true. If the carcinoma is in the liver we can not remove it, but by removing the glands you give your patient a better chance for a complete and radical cure.

DR. E. E. MONTGOMERY, Philadelphia—We should welcome anything that throws light on this subject, whether through increased clinical knowledge or increased observation with the microscope; as yet we know little about the progress of carcinoma. There are cases in which the disease has extensively involved the cervix and where it is questionable as to the wisdom of an operation. I have seen cases where I have hesitated, but removed the uterus nevertheless. One of the patients is living after six years, and another two years, without any recurrence in either case. I have seen other cases in which there was apparently but little involvement and in which I looked forward to a most favorable result. Within six months after the operation the patient would have a recurrence of the disease and die.

The importance of an early diagnosis has been impressed on us, and I fully endorse this; yet there is no means of determining the early presence of carcinoma. The recurrence of hemorrhage, the presence of a foul discharge, the existence of pain, not infrequently occurs after the disease has made great progress and has extended so far that even a radical operation offers but little hope. I recall a case in which there was nothing to indicate the existence of a malignant disease, and yet the cancer had passed through the cervix. The external os looked healthy, but the cervical wall was infiltrated. I operated, but the disease recurred in the vaginal wall in different places, affording an opportunity for seven operations during the last three and a half years, the seventh resulting fatally. I repeat, therefore, that any means which affords us increased knowledge with regard to the development of cancer of the uterus, whether it comes through the microscope or through clinical observation, is welcome.

DR. G. B. MASSEY, Philadelphia—In selecting an operation for cancer of the cervix we should bear in mind the progress that has been made in the determination of the causes of cancer. This is now practically established to be a protozoon, a low form of animal life. That fact should direct your attention to the method of operating which I have referred to before, by which the dissemination of the oxychlorids of mercury in the midst of the growths causes immediate necrosis. It is a major operation and is done under anesthesia. Of course, certain risks are run because of the separation of the eschar, but there is no immediate risk because of the absence of hemorrhage. I have one case of cancer of the cervix to operate upon in which there has been no recurrence after about five years. In another case I obtained palliative results lasting six months. It has also been used as a palliative measure in two cases that were evidently inoperable. It relieved the pain and stopped the hemorrhage and odor, but did not save the life of the patient.

DR. J. WESLEY BOVÉE, Washington, D. C.—I think that Dr. Baldy is correct in saying that this disease is incurable. We must all admit that the ultimate mortality rate is very high. I would not, however, take quite so gloomy a view of it as he does, nor am I willing to forget the microscope as a diagnostic measure. I always required that these cases should be early ones, and a case does not need to be much advanced for me to throw it out. If we were all to follow that line we would have better results. I have done fifteen radical operations along the line mentioned by Dr. Ries. I did fourteen without a death, and the fifteenth and last case died on the table, so that the primary mortality rate is not any higher than that of ordinary abdominal work. I do not know whether we can go deep down in the pelvis and remove all the glands. I begin above, ligating the ovarian vessels, slitting down along the ureters, separating it down to bladder, ligating the uterine arteries near origin and cleaning out the pelvis as well as I can. I remove all the appendages, the ligaments, the uterus and the vagina down to the vulva; dissect out the glands, etc., and pull them out from below, following the plan of Werder. I do not know whether I remove all the glands, but I am sure that the method gives better results than any other. Thus far I have had two recurrences, but it takes time to determine whether we will have as many recurrences from this method as from the others. Certainly they are fewer compared with other procedures for the same amount of time.

DR. GUSTAV KOLISCHER, Chicago—Dr. Baldy's manner of handling statistics is perfectly correct. Last year, Winter used the same statistics for another purpose, and this year he made a similar report which shows that the figures mentioned by Baldy are absolutely correct. In cases where a carcinoma of the cervix must be dealt with, the best operators do not have a better percentage of definite cures than 5 per cent. Most of our statistics are absolutely useless because they do not distinguish between a carcinoma of the cervix, the intermediate portion and the vaginal portion. We know that all cancers of the portio are relatively harmless; in fact, statistics show that they achieve about 20 per cent. of cures. All these cases of cancer of the cervix are cases in which we can get better results than 5 per cent.

I think Dr. Baldy was carried a little too far in denouncing the microscope. Even masters of microscopy admit that there are a great many cases in which they are absolutely unable to decide whether or not there is a carcinoma. If we have a case where the woman has hemorrhages and is losing flesh, and if the microscopist who examines the scrapings which we have obtained by curettage, tells us that he is not sure whether or not

there is a carcinoma, are we going to wait three or four months until he is able to decide positively? By no means, we should at once do a hysterectomy. Whether our results will be improved by abdominal operation or vaginal operation, can not be decided on at the present time. Wertheim and others report that in a great many cases the glands are infected. Men like Fraenkel, and others, say that in cases of carcinoma of the portio the glands are rarely ever involved. The only statistics which are valuable, those of Wertheim, are too small to decide on this question. He has only 49 cases, and in 15 the perimetrium was not examined at all. Ten years ago I gathered 250 operations for carcinoma of the breast, and it showed that cleaning out the axilla had nothing at all to do with the results. The results improved after we began the removal of the pectoralis. Baldy's outlook is certainly a very gloomy one. If we make a distinction between carcinoma of the portio and carcinoma of the cervix our results are certainly better. If the gentleman stated that he cured hopeless cases, I am unable to see how he did it. Hopeless cases are inoperable cases and can not be quoted. There is another point in which I think Dr. Baldy was misquoted; he said carcinoma of the cervix was incurable and that we have to remove the whole organ.

DR. FREDERICK HOLME WIGGIN, New York City—We are all under obligations to Dr. Baldy for calling the attention of general practitioners once more to the primal importance of thoroughly investigating and determining the cause of the trouble in every case which comes under their observation of a woman who complains of suffering from menstrual irregularities tending to an increased loss of blood, regardless of her age; even if she does not also complain of having pain in the region of the uterus or of a foul smelling discharge. It should be constantly borne in mind that these last symptoms instead of being indicative of the early stages of malignant uterine disease are those of the late or inoperable stages of the disease. If we are to have a lessened mortality from this fearful disease and better results than are at present obtained from radical operations performed for the relief of patients suffering from malignant uterine disease, the condition must be recognized early and the surgeon called in and allowed to operate without delay. During the last few years I have had a large number of patients referred to me suffering from this disease where it had progressed to a hopeless condition from an operative point of view, while they were under the care and observation of their family physician; he had really paid little or no attention to their complaints, had made no local examination till long after the patient had repeatedly called his attention to her troubles; the physician satisfied himself with writing a prescription for some simple medicine or ointment for piles, especially when the patient called attention to the fact that her nightgown was often slightly stained with blood in the mornings, or was told in the same offhand way that her trouble was due to change of life, and that if she would only be patient all would come right of its own accord. When these patients finally succeeded in getting their physician to examine them, on which they said that they did not wish to insist too strongly for fear of being considered immodest, he found much to his consternation evidence of advanced malignant disease too late for radical operative procedures to be undertaken with much hope of permanent benefit, whereas if the patient had only been examined carefully when she first complained, the condition might readily have been recognized and permanent relief afforded.

This is certainly a sad state of things, and should not be allowed to continue. Physicians should not satisfy themselves and their patients by prescribing simply a remedy to hide the symptoms complained of, but should study them, and by careful investigation seek for their cause; they should cure their patients by having the cause removed when possible, and make a proper charge for their then really valuable services. In my experience many of the careless acts of physicians in regard to their patients is due not to lack of knowledge, but to the ridiculously small fees which they are in the habit of receiving for their services; consequently they feel that they can not afford to give much time for the consideration of the case of any one patient.

In regard to the removal of tissues in cases of suspected malignant disease for the purpose of confirming the diagnosis, I have in the past, several times seen bad results follow it, especially where there had been some delay in getting a report from the microscopist, for even during that short interval of time, owing to the slight operative interference, the case had passed from an operative to an inoperative stage. Therefore, I believe it wisest as a rule, where the history and clinical evidences of the disease are fairly clear, to operate first and then to have the microscopical examination of the diseased organ made afterwards.

DR. J. M. DUFF, Pittsburg—Our discussions are certainly for the benefit of the general practitioner as well as for that of the specialist. The idea that pain and hemorrhage are always symptoms of carcinoma of the uterus is certainly false and misleading. Some of the worst cases I have ever seen did not have any hemorrhage until very late, and others equally as bad did not have any pain. I know of one case where the woman did her housework until the evening before she had a severe hemorrhage, ending in death. If we lengthen a woman's life by operating, we benefit her. But if we do not get the cases early, we can not expect to obtain as good results, even in the lengthening of life. It is our bounden duty to always seek for the cause of trouble when a patient comes to us. Let us not be satisfied, until we find out what is the cause of any symptom. This will very frequently lead us to an examination of the genitals and there you will find the seat of disease. Very frequently that disease is cancer. In such way we can get hold of it early. Ordinarily, as the cases come to us from the general practitioner, the microscope is really not needed so far as diagnosis is concerned, because the clinical findings are sufficiently prominent to give us positive assurance as to the existence of cancer.

DR. BALDY, closing the discussion—It is impossible to answer all the criticisms of my paper. Dr. Kolischer has answered so many of them so well as to have almost taken the words out of my mouth. Dr. Clark objected to my paper for three reasons: 1, because I did not judge from a pathologic standpoint; 2, because I did not bring forward my own statistics and base my paper on them; 3, that Cullen's book dwelt fully on the clinical aspect of cancer. If Cullen dwelt on the clinical aspect of cancer in his book, he himself does not know it, because he apologizes for not having done so in unmistakable words and anyone reading the book will fully appreciate this fact.

As to my own statistics, my paper is based on them, and Dr. Clark himself has heard me state in public discussion a number of times that I do not know but the rare case of cancer of the cervix that I have ever seen that was alive to-day. These two objections are therefore incomprehensible to me. I fail also to understand the objection as to my not judging from a pathologic standpoint, as I began to study that aspect of the question long before Dr. Clarke graduated in medicine.

As to the microscope work being valuable in its place, I have not one word of criticism to offer. No man who will read my paper in his leisure hours, will find any criticism of laboratory work or the microscope. Most of the speakers have misunderstood the entire drift of my paper. Dr. Bovée misinterprets the meaning of my use of the word "fad" in connection with the microscope. One can use words in order to bring out a certain meaning more strongly without condemning a method. One's opinion must not be judged by a single word, but by the whole of what he says. It is a dangerous thing to quibble in literature, as we are frequently caught by it. Of course, the microscope is the final test, but who will use the microscope if they have not first made the clinical test. What do these gentlemen mean?

To curette every woman who consults them and to examine the scrapings? They will hardly dare to go beyond doing this to suspected cases. I believe that a man's clinical judgment is better than a doubtful microscopical report in nine cases out of ten. Dr. Clark informs us that Cullen can always diagnose cancer with the microscope, and he cites a case in which the microscope showed a cancer, etc. The best pathologists differ from this opinion and my experience with all I have any knowl-

edge of is that they differ greatly and are often mistaken. I had a patient come to me recently, I curetted and sent the scrapings to a prominent pathologist. He called it cancer. I sent it to another, who said he could not see anything suspicious of cancer, and advised me to wait three months. I concluded not to wait, so I performed a hysterectomy. I took the specimens to the pathologist who then admitted that it was cancer. The pathologist is no better than we are. He makes the same mistakes and has the same weaknesses.

I deny that I have juggled statistics; it is perfectly fair to consider cases described by other surgeons, as I have in my paper. The juggling is by the other man, and men usually object to having such manipulation exposed. I have my compliments as yet to pay to the gentleman who talks of removing the pelvic glands in operation for this disease. Dr. Ries admits 20 per cent. mortality in his operation, an enormous mortality, and that in the hands of an expert. What would it be in the hands of an inexpert? Consider a moment, where does a cancer of the cervix recur? It invariably recurs at the site of the wound where the cancer was removed. It does not recur in the glands that are inches away from the uterus. That is the rare method of recurrence. You might just as well remove the glands in the neck and axilla. That is common sense and practice versus theory. The proposition to remove the glands is an absolute impossibility. The surgeon does not live to-day who can remove all the glands in the pelvis of any living woman. I have thrown out that challenge before and I throw it out again and it will be only a short time when every one of these gentlemen will admit that what I say is true. It is all theory, but it is all wrong practically.

I fail to understand my friend Carstens. He has built up his own theory, and then knocked it down; but it has nothing to do with my paper, as I have said practically what he says. He misunderstands the drift of my paper entirely. If he did not grasp the fact that I was pleading with the general practitioner to learn clinical diagnosis, and with the teachers to teach the general practitioner to be able to diagnose these cases early, then my paper, as far as he is concerned, has been an utter flat failure; and I suspect from your discussion, most of you who have discussed the papers, are as much at sea as Carstens. That was the only object I had in presenting the paper. Teachers should teach good clinical medicine and not too much microscope, so that the general practitioner would be able to suspect these cases, and then give the microscopist a chance. It is the only hope we have for the future as far as this disease is concerned.

ACUTE MASTOIDITIS AFTER SUBSIDENCE AND WITHOUT RECURRENCE OF TYMPANIC INFLAMMATION.*

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The symtomatology of acute mastoiditis is so generally known that it is almost useless to write of it. Two modes of onset are most common. While otorrhea continues, or increases in amount, mastoid symptoms develop. This, in my experience, is the rule. Less frequently otorrhea ceases, perhaps gradually, more commonly, suddenly, with simultaneous lighting up of mastoid disease. Politzer, in his text-book, says that only once has he seen suppuration in the tympanic cavity cease, while the symptoms of inflammation in the mastoid continued undiminished. And again he states: "Occasionally cases are observed in which, several days after local symptoms disappear, abscess formation in the mastoid process is manifested." In the clinic of the Presbyterian Eye, Ear and Throat Hospital of Baltimore, so far as I find recorded, there have been only two such cases in twenty-two years: one, a child three years ago, where there was no otorrhea; the other a woman, during the past winter, in whom mastoiditis required operation three weeks after recovery of all ear symptoms and restoration of good hearing. Both were treated by my associate, Dr. J. F. Crouch. The following three cases have come under my own care within the past two years:

Case 1.—Anne W., 8 years of age, was referred to me Dec. 14, 1899, by Dr. I. E. Atkinson of Baltimore. For six days the child had been somewhat deaf, with occasional pain in the right ear. For three days there had been a discharge. There was an indefinite history of aural trouble two years previous. Prior to the present attack the child had had coryza. She heard the watch at three inches in the left; contact, right ear, conversational voice about two feet. Stiff neck, the head inclined to the right, was marked. There was a small perforation in the lower anterior quadrant of the membrane, while the anterosuperior angle was congested. There was no pain. Politzerization was used in the office, and the ear irrigated with warm boric acid solution every third hour for two days. On the third day there was no otorrhea, and neither spontaneous nor pressure mastoid pain. Temperature during the entire course did not go above 100. On December 26, nine days after otorrhea had ceased, the little girl came to my office complaining of pain in the right mastoid region. There was tenderness on pressure. Torticollis was still present. There was no redness or swelling of the mastoid. The ear was dry, the drumhead showing no evidence of renewed tympanic disease. My voice in loud whisper was heard at 20 feet. Rest, cold locally, and calomel were employed. On the 27th there was no pain. But for the stiff neck and general lassitude the child seemed well for the next three days. During the night of the 30th, she awoke with pain referred to the mastoid. On the 31st, the canal, membrane and tympanum showed no evidence of trouble. The mastoid was tender, red, and hearing the same as four days previously. The next day, Jan. 1, 1900, I operated under chloroform. Necrosis was found on the cortex, near the tip, leading into a shallow but vertically large cavity containing only a drop or two of pus in the lower part, and filled for the rest with granulations. This whole cavity was not over a quarter of an inch deep. Its floor was exposed dura, covered with granulations. The cavity was cleaned carefully. When I began to work up into the antrum and tympanum, I found the latter apparently shut off. I refrained from opening into these cavities because of the disappearance of tympanic symptoms nine days before, improved hearing in the ear since otorrhea had ceased; shallowness of the process, exposed dura, and, finally, Politzer's authority for the correctness of not entering the antrum as a routine in acute cases. Recovery was uninterrupted. Torticollis was gone in three days, and after three weeks the ear had normal hearing, with the wound entirely closed.

Case 2.—Harry G., 14 years old, was brought to me by his father, a physician in one of the counties near Baltimore, on February 23 last. The boy's history was sore throat, for nine days, with earache on both sides for about half this time. There had been slight left otorrhea, and there was still a little moisture in the left canal. The malleus plexus in each drumhead was injected, Shrapnell's membrane showing the degree of congestion usually seen in a subsiding acute otitis media. The right membrane was intact, the left had a nearly healed perforation in the anterior-superior angle. Neither aural nor mastoid pain was present. Temperature was 100.6; the pulse 90. Hearing was reduced to moderately raised voice at four feet, and watch on contact. The boy was put to bed, given a dose of salts, and a few drops of a solution of cocain and atropia instilled into the ear. In twenty-four hours the temperature was normal, the ear free from discharge. To March 4, eleven days, he was given politzerization, and astringent throat applications. Then there was normal appearance of the drumhead, and hearing had increased to whisper at ten feet, watch R. 36/36; L. 24/36. He now returned to his home,

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with instructions to come to me again if he developed ear pains or fever. On March 16, twelve days after his return home, he was back with deep-seated pain in the left ear for two days. There was no evidence of relapse of tympanic inflammation, but the mastoid was painful to pressure. Temperature was 99.5. He was put to bed and a saline purgative administered. No local application was used. The next day he was comfortable, and tenderness gone. On the 19th, he was about town, and came to my office during the morning to say he was all right; apparently he was. Early in the afternoon he returned, having an epistaxis which he could not check. I sent him to his aunt's house, where he was stopping, and to bed. That night the temperature reached 100. From this time to the 22d, when I operated, he developed typical symptoms of acute mastoiditis. My friend, Dr. Harlan, saw him the morning of the 21st, and it was decided to apply cold. It had no effect in twenty-four hours. Hearing remained as good as it had been two weeks before. Such part of the drumhead as could be seen for the bulging postero-superior canal wall was normal. On operation at the Presbyterian Eye and Ear Hospital, the mastoid cortex was found necrotic, while, as in the first case, the interior of the process was converted into a large cavity, containing pus and granulations. Here, as seen also in Case 1, the process was shallow, not over a quarter of an inch deep. The sinus was exposed by necrosis of the inner mastoid wall, with pus and granulation tissue on its surface. Entrance to the tympanum was reduced to a thread-like passage, which was enlarged, but no further disease found. After operation, the wound was closed by suture, which held throughout except at the junction of the vertical and a horizontal back incision made to secure more room. Here the wound opened, but healed by granulation in three weeks. Early in May the boy had normal hearing.

Case 3.—William D., 14 years old, was first seen Jan. 24, 1900. For a month the boy had been ailing from colds, and under the care of a homeopath. Ten days before I was given charge of the case, there had been left earache, followed by otorrhea. There seems to have been pretty continuous but mild pain for three days, subsiding as the otorrhea increased. On the 20th, one week after the first symptoms and three days after the disappearance of pain, the discharge ceased, with onset of deep ear pains and left torticollis. He had been kept quiet by opiates and hot applications. I found the ear dry, a healed perforation in the membrane, up and back, no bulging, slight hyperemia of the malleus plexus moderate mastoid pain, increased by pressure. Temperature was 102; pulse 84. Hearing for watch, 14/36, for moderately raised voice, ten feet. Cold was applied during the night. The next morning, with temperature 101, pulse 80, and little or no pain the boy was removed from his home in the county to the Eye and Ear Hospital. After twenty-four hours in bed, and a calomel purge, there was marked improvement. The temperature fell to 99.2; the mastoid was free from pressure pain. There was some earache, apparently accounted for by the hyperemic malleus plexus, and a small tender area in the cartilagenous canal. Under chloroform the membrane was incised along the posterior border of the malleus handle, and the sensitive canal surface opened. On the 27th, the day after incision of the drumhead, evening temperature was 101, and on the 28th, 100. The pulse ranged from 70 to 76. Save for these two elevations, the temperature varied from normal to 99.4, there was no pain, the neck rigidity subsided, and hearing improved. On the 31st he went home apparently well. Two days later—a week after incision of the membrane—evening temperature, taken by the boy's mother, was 101, pulse 80. The next evening's record was 103.4, pulse 90. This was attributed by the family to indiscreet eating, and salts were administered. On the morning of the 4th, there was a drop to normal temperature and the pulse was 62. At the same time left hemicrania, with special reference to the supraorbital region, was complained of, and the past three days' record sent to me. I visited the boy immediately. He was lying on his bed, feeling weak, and suffering from left headache. Temperature was still normal, pulse 66. Hearing for voice, speech and tuning-forks was normal. There was neither spontaneous nor pressure pain in the mastoid. There was no otorrhea, and but for a slight hyperemia at the upper end of my incision in the membrane, the latter was normal. The eyes presented nothing of interest. Functionally and organically they were faultless. Tonic doses of strychnia were ordered, and the headache eased. From the 4th to 7th there developed slowing of the pulse, with occasional intermission. It reached 52 on the 7th, temperature ranging from normal to 100. Headache, confined to the left side, persisted, most severe in the supra-orbital region. The afternoon of the 7th, I found the left pupil two-thirds dilated, with positive but sluggish contraction to light. Accommodation was unaffected. From this to the date of operation—16th—Dr. M. Thomas, neurologist at the Johns Hopkins Hospital, and consulting neurologist at the Presbyterian Eye and Ear Hospital, was associated with me. We watched the case daily, becoming more and more convinced that we were dealing with otitic intracranial disease. The head, eye and ear symptoms remained unchanged. Temperature ranged from normal to 100.5, once, on the 13th, reaching 101.5. The pulse fell as low as 46 on the 9th, but averaged about 50. With the temperature of 101.5 recorded on the 13th, the pulse rose for a little while to 80, but, with the fall of temperature to normal on the 14th, fell to 52. The boy grew weaker each day, and nothing definite developed. The ears seemed absolutely normal. On the 15th we moved him to the city in order to be prepared for operation, if indicated. Early the next morning, with Dr. Thomas's approval, I submitted to the parents the question of exploratory mastoid operation. The apparent recovery of the ear disease, and the significance of the very indefiniteness of such symptoms after middle ear inflammation were explained. But the transient signs of mastoiditis and neck rigidity, present when I was first called, were the only positive guides we had. The boy was failing, and we ought to find his trouble if possible. I operated the same afternoon. It seemed to me that symptoms pointed, so far as they could be interpreted, to an epidural abscess. Headache, slow pulse, slight hyperpyrexia and stiff neck indicated, more or less clearly, meningeal irritation. But we did not account for the left pupillary dilatation, nor, with our present ideas of causation of epidural abscesses—contiguous bone necroses—did the local conditions indicate the probability of finding a necrotic area to guide us. Sinus thrombosis and leptomeningitis were hardly more than possibilities. We had waited for development of symptoms of cerebral abscess, but they were still, in our opinion, too vague to justify exploration unless bone necrosis showed the way. I had in mind the remark Dr. Knapp, in his short but comprehensive article in "The American Text-Book," by De Schweinitz and Randall: "Meningeal irritation is * * * difficult to distinguish from intracranial inflammation. The course will show; and if on account of the persistence of alarming symptoms an operation is decided on, the condition exposed by the chisel will lead to the diagnosis." My intention was to open into the mastoid antrum and tympanum and to stop there unless dead bone told me where else to go. The process was cellular, and no difficulty was experienced in reaching the mastoid antrum and aditus. As the probe passed into the latter there was a gush of clear fluid, which came out as though under great pressure. The opening to the tympanum was enlarged, and the bone found apparently healthy. Then attention was turned to the tip, and in a large cell here a little pus was found. I regret that no culture was made from it. A few hours after operation the temperature was 99.6, the pulse 75; it fell to 58 next morning, and then gradually rose to between 60 and 70 the first ten days, then remaining steady at about 76 until the boy was discharged. Temperature reached 100 during convalescence, but after the tenth day kept below 99. Headache disappeared at once, and the day after operation the pupils were equal. The boy was discharged from the hospital two weeks from the day of operation. He has been entirely well for fifteen months, and now has normal hearing.

An interesting question is, when did the mastoids become infected? In the second case there was no sign

of mastoiditis until twelve days after tympanic disease had disappeared. Of the other two, Case 1 had neck rigidity throughout. In Case 3 there was this rigidity at first, with sudden cessation of otorrhea, and simultaneous mastoid pain, disappearing in two days and never returning. Dench speaks, in his text-book, of neck rigidity in otitic meningitis, and mentions difficulty in turning the head from side to side as occurring in mastoiditis in children. In connection with temporary pain and later developments, in the last case, this rigidity probably meant mastoid involvement. If we add to it, in Case 1, the extensive destruction of the cellular structure and inner mastoid wall, found on operation, and the same condition found in Case 2, though there were no early symptoms, the probability is great that the cells were infected in the beginning, and inflammation progressed although tympanic disease subsided. My friend, Dr. Lee Cohen of Baltimore recently called my attention to reports by Zaufal[1] and Korner[2], of similar cases, due to infection from the diplococcus pneumoniæ. Both authors regarded the infection as having remained latent since the middle ear was first affected. In the last case meningeal irritation, or hyperemia, was probably the cause of the pupillary dilation, headache and slow pulse, all of which disappeared after evacuation of fluid held under tension in the antrum. Reflex influence from increased pressure suggests itself as a possible cause of symptoms. Friedrich gives a most interesting account of these reflexes in his book "Rhinology, Laryngology and Otology in General Medicine." Turning of the eyes toward the side from which sound proceeds is a well known reflex. Others mentioned, but which I have never seen, are nystagmus, ocular palsies and disturbances of pupillary action. He quotes a case of Lucæ in which ear syringing produced vertigo if the eyes were open, but not if they were closed. Cerumenous deposit has been known to cause nystagmus. In all these reflexes, however, the reflex course must lie in the vestibular, or possibly the cochlear, nerve. There is more difficulty, he says, in tracing it along the cochlear. Such reflex is always bilateral. In my case but one pupil was involved, and there was no symptom of larbyrinthine trouble. The case is interesting, apart from persistence of the mastoiditis, after tympanic disease subsides, as showing how mastoiditis can stimulate more serious lesions or, possibly, produce dangerous meningeal hyperemia.

As to the use of cold, in these three cases it was employed and in two its use was apparently followed by benefit. I was taught to use cold years ago, and have done so frequently. Yet, I doubt whether I have even seen a case of threatened mastoiditis "aborted" by it which, looked at in the light of other experiences, would not have subsided without it. In cases in which I have subsequently operated, I believe that all obtained from the faithful and persistent use of cold for several days was masked symptoms. Dr. J. O. Tansley presented a most instructive paper on this subject to the American Otological Society, in 1899. His conclusions are about the same as experience has taught me, with the addition of increased trouble from hemorrhage and difficulty in distinguishing healthy from diseased bone during operation, slow recovery, and demonstration of the impossibility of securing a sufficient degree of cold to kill organisms in the mastoid. He thinks cold masks symptoms. I am inclined to agree with him.

842 Park Avenue.

1. Prager Med. Woch., 1889.
2. Eitrige Erkrankun des Schlafenbeins.

DISCUSSION.

Dr. E. B. Dench, New York City—I think the histories of the cases very unique. As to the question of infection, I think that was coincident or followed closely upon the middle ear trouble and the germs were simply not sufficiently virulent to develop until after the subsidence of the trouble in the middle ear. I agree with the Doctor in regard to the use of cold. I recall two cases that I saw after my return from a vacation. In both of these cases it was supposed that the inflammation had been aborted by the use of cold. In one case an operation could not be done because of pneumonia, and after the pneumonia was over the symptoms had apparently disappeared. When I returned I opened a brain abscess. In the second case, everything went along well until several weeks later, and I then operated and found an epidural abscess about the size of a pigeon's egg. Both cases had apparently improved by the application of cold, but both afterwards required operation.

Dr. Herbert Harlan, Baltimore—Dr. Woods refers to closing up the wounds and allowing one small point to heal by granulation. My rule has been to close up these cases, and I have yet to regret adopting that procedure. If we do not close them up so absolutely tight as to make it difficult, we have a soft blood clot, and if suppuration does take place it breaks down one or two stitches and the dressing can be carried on very nicely. I would refer to one case especially, a little girl I was asked to operate upon; it was an acute, violent case, with pain, swelling and pus. The operation was a complete one. On the tenth day it had healed up completely. She was then perfectly well and she asked permission to go back to school the following Monday, which was just two weeks afterward. The scar was scarcely perceptible. I have had a great many cases heal up completely and with almost no perceptible scar at the end of two weeks. I had the pleasure of seeing the writer of the previous paper, Dr. Dench, operate in New York, and I would make the suggestion that he close up a half dozen or so in this manner, and I am sure he will be very well satisfied with the method. In the few cases in which you do not get complete healing you have only a comparatively small opening and the final deformity is certainly less. The cases that you treat in the other way require a long time, and do not show so little deformity. The sinus cases, of course, have to be packed. But where these cases can be closed up I believe it is advisable to do so.

Dr. Dench—Will you kindly explain the technique of that operation? Do you allow the wound to fill with blood?

Answer—Yes.

Dr. Dench—You simply allow it to fill with blood before you suture?

Dr. Harlan—No; I just suture it up entirely independent of the inside, but it always does fill up with blood. In most instances I make a cross incision so that I have a T-shaped wound. It simplifies the operation and gives you more room to work in. If one stitch does break down it usually does so at the branches of the incision where you did not perhaps have complete coaptation. I use sometimes silver wire and sometimes silk, but I rather prefer the silver wire.

Question—Does the discharge cease?

Answer—In most cases it does, and you do not have any more discharge from the ear.

Question—Is it necessary to have the discharge cease from the ear to have perfect healing in this way?

Answer—No; I have known it to continue for a week or two.

Dr. Emil Amberg, Detroit—I would like to call attention to the abuse of the nasal douche, and I think we can do much towards preventing middle ear disease by calling attention to the disagreeable results following the use of the nasal douche. Some general practitioners, especially when treating children, use it too frequently.

Dr. George C. Stout, Philadelphia—The Doctor speaks of fluid being let out; what was that, blood?

Answer—I wish I knew, Doctor. It simply made a gush and escaped. I think it came from the mastoid antrum.

Dr. Cornelius Williams, St. Paul—The case mentioned reminds me of the case I first operated upon. A boy 6 years

old had mastoiditis and died a couple of days afterward of meningitis. It occurred to me that this fluid might have come from the cranial cavity, because I can not see where else it could come from.

Dr. Hiram Woods, in closing—In regard to the shutting up of these wounds, after Dr. Blake's method, I think he makes it pretty clear that it depends largely upon the thoroughness of the cleaning, and if an area of infection has been left behind you are likely to have trouble. In the case I have mentioned, there was a large wound with a T-cut, and it all healed except a small area, a quarter of an inch in diameter, at junction of two cuts. That closed in two weeks, which is a considerable gain over the ordinary time. And then the wound is not one that can not be readily opened. At the Presbyterian Hospital we have treated several cases in this way. Some healed promptly and entirely; in others, there was some breaking down; in all there was a perceptible gain of time. Of course, the onset of high temperature or any symptoms of sepsis would indicate opening the wound. In regard to the use of the Politzer air-bag, I confess I am rather opposed to the orthodox teaching. In acute otitis media without evidence of fluid, without bulging of the membrane, but with hyperemia of the malleus plexus, I think one can do good with politzerization. I am quite sure I have seen the pain of otitis media relieved by application to the nasal passages of cocain, followed by antipyrin solution and gentle inflation of the middle ear. In cases recovering from suppurative otitis media, I invariably use politzerization. I read an article a few months ago in which the writer insisted that if those of us treating these cases would lose our Politzer air-bag we would not have mastoid cases. I can not agree with him. In regard to the question as to what the fluid was and where it came from, in my third case, I would like very much to be able to answer. It occurred to me, as the Doctor said of his case, that it might come from the cranial cavity. I curetted down until I came to apparently solid bone, and failed to find any necrotic area. The symptoms seemed to point to meningeal hyperemia produced by mastoiditis. What the fluid was I do not know, unless it was serum.

LEITER'S APPARATUS FOR THE EAR, MODIFIED BY AMBERG.*

EMIL AMBERG, M.D.
DETROIT, MICH.

The modified Leiter's apparatus, for the application of hot and cold water to the ear, is made of inflexible



Fig. 1.—Unfinished.



Fig. 2.

Amberg's Modification of Leiter's Apparatus for the Ear.

material. The long lead tubing is avoided. The apparatus is slightly bent, adapting itself to the contour of the head.

Figures 1 and 2 fully explain the construction. The short tubes can be easily cleansed. Different sizes are required for different ears. The opening of the inlet is about twice as large in diameter as the opening of the outlet. For this latter idea I am indebted to the instrument maker, Charles Karlson, of Detroit.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, W. E. Casselberry and J. N. Mackenzie.

THE PRESENT STATUS OF RENAL AND URETERAL SURGERY.

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The treatment of diseases of the kidneys by surgical means dates back as far as the tenth century when we find that operations were described which had for their object the removal of accumulations in or about the kidney. These operations were permissible only in cases where the disease had been progressing for some time, and where the evidence of the accumulations was plainly visible. During almost ten centuries very little progress was made, and it is only within the last ten or fifteen years that any marked advance has been made in the diagnosis and surgical technique of renal and ureteral affections.

The advance in surgical methods was due principally to the improved methods devised for the purpose of making accurate diagnoses. Until a few years ago we were unable to determine positively the presence of calculi in the kidney or ureter before operating, and even at the time of operation, calculi were overlooked which were found at the postmortem. This is now almost inexcusable, except in very fleshy patients, because we possess in the *x*-ray a means, not only of determining the presence of calculi, but also of showing their size and location. The best surgeons have reported cases in which they have cut down on the kidney in order to remove a supposed calculus, and have not found one, and on the other hand, cases have been allowed to drift along for years without operation because the symptoms were not sufficiently marked to warrant the diagnosis of stone, and the postmortem disclosed the fact that the individual might have been saved years of misery, and that his life might have been prolonged if a correct diagnosis had been made.

The following case illustrates the last statement:

J. V., aged 62, was operated on by me in January, 1899, for several perineal fistulæ with two openings into the urethra, the cause of which was ascribed to a fall on the perineum, which had occurred ten years before. The result was perfect, except that the stricture, which was the immediate cause of the fistulæ, had to be dilated every month or two in order to keep the urethra patent. The patient remained perfectly well until July, 1900, when he began to complain of pain in the right lumbar region, which was increased after any exertion. Examination disclosed absolutely no tenderness on pressure, and no mass could be made out on palpation. The pain was described as dull and aching in character, and did not radiate down towards the penis, but was located directly over the right kidney, at the back. Examination of the urine showed large quantities of pus and numerous streptococci. The reaction was acid and it contained an excess of uric acid. A diagnosis of pyelonephritis was made and after having treated the case for several weeks with urinary antiseptics—urotropin, hydriodic acid, etc.,—I advised operation to drain the pelvis of the kidney, and prevent, if possible, the extension of the disease to the other kidney.

The patient refused operation and the medical treatment was continued without definite result. For a week or two he would feel quite well, and then the pain would gradually become worse; and it was noticed that when the urine contained large quantities of pus, the pain would be very much less, and that, when the pus began to diminish, the pain would slowly increase. At no time was there any blood in the urine, and in spite of the fact that there were large numbers of streptococci present, there were neither symptoms of cystitis, vesical tenesmus, or frequent urination or pain during or following the passage of urine. The patient was suffering from mitral in-

sufficiency, and had had frequent attacks of articular rheumatism, and therefore I did not urge operation. He was able to attend to his work, which was clerical in character, until early in December, 1900, when he was obliged to go to bed on account of an attack which appeared to be multiple neuritis, at which time he suffered intense pain almost everywhere excepting in the region of the right kidney.

The temperature ranged between 99 and 104 F., pulse 120. After two weeks of this condition, he began to feel something in the right lumbar region, and I was able for the first time to detect a mass which appeared to be connected with the right kidney, and was tender on pressure. It was extremely difficult to palpate accurately on account of the thick abdominal walls, but as the temperature remained high and the urine contained pus in large quantities, I insisted on immediate operation.

A lumbar incision was made, skirting the anterior border of the latissimus dorsi muscle, while the right arm was pulled backward in order to bring this border as near the middle of the back as possible, thereby avoiding cutting through the muscle; and the lumbar fascia was then cut through at the anterior border of the retracted quadratus lumborum. This incision enables us to reach the kidney without cutting through any muscular tissue, but if it becomes necessary to obtain more room, we may do so by cutting through the abdominal muscles near their attachment to the crest of the ilium. This is necessary only when it is desired to reach the ureter, or when the abdominal wall is very fat.

The kidney was found enlarged to three times its normal size and fluctuated as far as I could reach. It was incised at the presenting part and about half a pint of pus evacuated. The finger in the pus pocket did not reveal the presence of any calculus, and as the patient's condition did not admit of any extended exploration, drainage tubes were inserted and dressings applied. He rallied nicely from the operation and for three weeks appeared to be doing well, the wound discharging less and less and granulating satisfactorily. His heart suddenly began to act badly, increasing from 60 to 160 in a few hours, and he died just four weeks from the date of operation.

I was able to obtain the right kidney only, and so can not say whether the left kidney was diseased or not, but the right kidney presented a most interesting state of affairs. Projecting from the opening which I had made at the time of operation, was the end of a large calculus, which was evidently the cause of all the renal affection, but which had given little evidence of its presence. The calculus was nine centimeters long, three and a half centimeters wide at the widest point and a little over two centimeters thick.

The peculiar feature about the case is the fact that the patient had never had the slightest pain in the right side prior to six months before his death, although the calculus must have existed for several years. Cases of this kind illustrate the necessity of examining all patients for stone, who complain of pain over one kidney, or who have pus in the urine, which can be shown to be renal in origin.

Through the inventive genius of Dr. M. L. Harris we are enabled to collect the urine from either kidney separately, and to determine exactly the quality and quantity of urine which each kidney secretes in a given time. This invention is one of the most brilliant that has been made in recent years, as it places the surgeon in a position to know positively before operation whether his patient has a properly functionating kidney on one side, if he has any intention of doing a nephrectomy on the other. It is of much more practical value than the male cystoscope, because it can be used by any ordinary practitioner, while the male cystoscope requires extraordinary skill, and in cases where there is the slightest hemorrhage from the bladder or mouth of the ureter it is impossible to use it successfully. There are few if any conditions where the Harris segregator can not be successfully used.

In using this instrument, if we wish to be sure of having the elevator between the two catheters we must be careful to adjust it in position in the rectum before turning the catheters down, and to see that it is in the median line.



Calculus removed from kidney postmortem.



Skiagraph showing calculus in pelvis of kidney.

In the female the segregator is not so essential because we can catheterize the ureters directly by means of Kelly's cystoscope and catheters. This enables us not only to collect the urine from each kidney separately, but to determine the patency of the ureter in cases of renal calculus, and if any obstruction is noted, we can tell by coating the tip of the catheter with soft wax whether the obstruction is due to a calculus impacted in the ureter or not. This is determined by examining the coated tip with a magnifying glass after having rubbed it against the obstruction; if a stone is present, we will find that the wax is scratched, whereas if the obstruction is due to any other cause, the wax will remain smooth.

After determining the exact locality of a renal or



Showing loop of small intestine anastomosed between ureter and bladder.

ureteral calculus, it is comparatively easy to effect its removal. If the stone is in the kidney, it is best reached by cutting down according to directions previously given and bringing the organ outside, which can be done in all cases where the abdominal wall is not unusually thick. Even where there is a large amount of fat, the kidney may be brought in full view and the pelvis reached by making an incision through the kidney substance from a quarter to a half inch behind the median groove, being careful not to prolong it downward beyond the lowest point of the pelvis, otherwise we may have a urinary fistula which will be difficult to close. The hemorrhage is usually slight and may be controlled by pressing the renal vessels between the index and middle fingers while holding the kidney in position. It has been found that the incision through the kidney substance is less likely to leave a fistula than an incision into the renal pelvis.

The wound in the kidney should be sutured with catgut and provision made for drainage of the external wound. If a stone is found impacted in the ureter it may be reached either by the lengthened lumbar incision, or by the trans-peritoneal route, which will have to be used if the calculus is low down.

The ureter is to be incised longitudinally, the stone extracted, and the cut sewed with fine catgut. It is advisable before doing so to pass a bougie up into the pelvis of the kidney, and also downward into the bladder to be sure that the ureter is patent.

The following case is of interest in this respect:

W. W. sent for me to get relief from pain which had been gradually getting worse for several days. He located the pain at a point on the left side of abdomen corresponding to the place where the ureter crosses the brim of the pelvis, and stated that it occasionally radiated toward the end of the penis. He was unable to pass water and I withdrew it with a soft catheter which entered the bladder without difficulty, showing that there was no stricture of the urethra. The pain increased, and when morphine had no further effect on it, I used chloroform, and the patient was kept partly under the influence of this drug for hours at a time. A skiagraph was made, as the symptoms all pointed to a stone impacted in the ureter at a point where it crosses the brim of the pelvis, but the result was negative.

The condition was becoming desperate and I decided to operate. I opened the abdomen through the border of the left rectus and cut through the peritoneum over the ureter. It was found dilated to the size of the index finger, and was followed down to the bladder without finding a stone. I opened it with a small longitudinal incision, and passed a probe upward into the pelvis of the kidney, but was unable to pass it downward into the bladder. There was a complete obstruction of the ureter at its junction with the bladder, but no foreign body could be discovered after the most careful palpation. The opening in the ureter was closed with fine catgut, and the abdomen sutured in three layers.

A lumbar incision was then made and the pelvis of the kidney opened, in order to allow the exit of urine, otherwise the pressure of urine in the ureter would have caused leakage at the point of suture.

The kidney drained a large amount of urine for two weeks, when it was noticed that it gradually lessened, at the same time the amount passed per vias naturales correspondingly increased, until the kidney ceased to drain through the artificial opening and the patient was passing between 40 and 55 ounces of urine in 24 hours. Examination of the urine previous to operation disclosed nothing abnormal, except a diminution in quantity, and a slight increase in specific gravity; and it remained in this condition until the drainage from the other kidney began to diminish.

The urine then showed large numbers of pus cells and renal epithelium, and increased in quantity until five weeks from the day of operation when the amount was normal. The pus and epithelium kept diminishing, but did not disappear until several weeks later. The actual cause of the obstruction was not definitely ascertained, but was probably due to some inflammatory disturbance at the base of the bladder, which caused pressure on the opening of the ureter. By draining the kidney the pain and irritation caused by the distention of the ureter were relieved, and as the inflammatory process subsided, the urine began to flow into the bladder through the orifice which had been occluded.

Some of the most important work which has been attempted on the ureters has been the endeavor to find a method by which the urine could be deviated from its natural course into the bladder, either for the cure of exstrophy of that organ or in cases in which it is so diseased that its removal is indicated. Implantation into the rectum has been done by many operators in many ways, but so far the results are not encouraging, because practically all patients suffer from ascending pyelonephritis sooner or later. During the past year I have

been doing some experimental work in the laboratory of the Medical Department of the University of California, with the following results:

Before I had had the pleasure of reading the work of Gaspare D'Urso and Achille de Fabri in this line I began my experimental operations by utilizing a piece of the small intestine to bridge over a gap between the cut ends of a ureter. A loop of bowel, preferably the ileum, which is found lying near the site of the removed ureter is chosen, and isolated from the fecal tract by cutting the gut transversely across in two places, leaving a piece sufficiently long to stretch easily from the bladder to the proximal end of the ureter. Great care must be taken not to tear the mesentery, or the vitality of the bowel will be impaired and disaster result. The proximal and distal ends of the cut intestine are united by means of the Murphy button, leaving the short piece free; this is then thoroughly washed out with a 1 to 1000 solution of formalin, and the other end partly closed by inverting at least one-quarter of an inch of the gut. Sufficient space is left unclosed to introduce the ureter, which must be drawn in by means of fine catgut sutures, for a distance of half an inch; this insures a large surface for rapid union and prevents leakage. Three or four sutures are placed to hold the ureter in position. The bladder is now opened near the fundus, the incision being of the same length as the width of the flattened bowel, the lower end of which is sewed to the bladder incision with through and through sutures of catgut. A second layer of sutures is placed one-eighth of an inch beyond the tract, taking in all except the mucus layers.

Three operations were done, and the results were perfect, except in the last dog, which died five weeks after operation from ascending infection, due to the fact that the bowel was not sufficiently washed out. The specimens from the other two cases were perfect and the kidneys did not show any evidence of infection. One dog was allowed to go three months and the other, six months before removing the specimens.

These experiments show positively that we can replace a portion of the ureter by a piece of bowel without very much risk, and the operation is preferable to nephrectomy or rectal implantation.

In case both ureters were cut the operation was modified somewhat, the loop of bowel being cut long enough to reach from one ureter to the other, and dipping low enough to touch the bladder, with which a lateral anastomosis is made in the same manner as though a gastroenterostomy were being done with sutures. One operation of this kind was done, but the dog died shortly after from an overdose of strychnin, and too soon to determine the feasibility of the procedure.

An operation for the complete removal of the bladder, and its replacement by a loop of intestine although rather extensive in character, will be found useful in some cases, and can be made much safer by doing it in two stages. The first stage consists in isolating the loop of intestine and waiting until the individual recovers before undertaking the second stage, which consists in implanting the ureters into the isolated loop, then dissecting the bladder from all its attachments and removing it, sewing the urethra into the lower part of the new bladder. This operation was done on one dog, who survived three days, and I believe would have lived if we had been able to catheterize it, as we found postmortem that the new bladder had become enormously distended, and had finally leaked at its junction with the urethra.

I believe that these operations will find their place in the surgery of the future, and as our technique improves, the danger of such formidable operations will grow less, and we will be able to save lives which are now lost on account of our timidity.

A NOTE ON THE USE OF THUJA OCCIDENTALIS IN REMOVAL OF PAPILLOMA OF THE LARYNX.

JAMES MOREAU BROWN, M.D.

CHICAGO.

Several cases of papilloma of the larynx have come under my observation, occurring in the practice of Dr. Moreau R. Brown, which were treated by removal of parts with forceps and the subsequent application of thuja. The following case is one in which good results were obtained by this treatment.

Mrs. W., an elderly woman, had been hoarse for about two years, had slight dyspnea, and at times noticed some little noise located in the larynx during respiration. She tried change of climate several times but found little relief. Upon examination with the laryngeal mirror, a papilloma about the size of the end of a finger was seen springing, with a broad base, from the false vocal cord of the right side, and extending beyond the true cord to the median line. The growth was of an unusually hard consistency. A portion of it was removed by the laryngeal forceps and tincture of thuja applied by means of a cotton swab. The piece removed was subjected to a microscopic examination and found to be papilloma. It having been found impracticable to remove the papilloma at one sitting, the patient returned at intervals of about a week and the treatment as above outlined was employed. At each visit the tumor was found to be perceptibly diminished in size. After it had been reduced to about one-half the original size, the thuja only was applied without any further attempt at removal with forceps and under this treatment the tumor entirely disappeared. After an interval of many weeks there was no indication whatsoever of the recurrence of the growth.

In addition to the foregoing, cases of a recurrent type have come to my notice which have entirely disappeared, with no evidence of recurrence after several years, in which thuja had been employed. Also a case of multiple papilloma in an adult, where the growth recurred rapidly after removal with forceps and where the thuja caused great shrinkage of the growth and consequent relief to the patient. In this case, although the sittings were but few and the results satisfactory to the patient as well as to the operator, the former disappeared from view and I am unable to state whether or not there has been any recurrence of the growth.

Venetian Building.

The Doctor's Little Daughter.—Here is a story of a little girl, the daughter of a local physician. She is a bright child of 6, and has been much petted by her admiring friends. Perhaps this has spoiled her a little, but she is so sweet and entertaining that visitors can't keep their hands off of her. One of these visitors, a new neighbor, made a call on the little maid's mother, and it wasn't but a few moments before the little maid was on her lap. In the chatter which followed the woman made some allusion to the little one's grandmother. "Why, didn't you know?" cried the child. "Know what, dear?" said the visitor. "Why," answered the child, "grandma is dead, and grandpa is dead, and Aunt Jane is dead—and most all of papa's patients are dead, too!"—*Albany Times-Union.*

SCIENTIFIC RESEARCH.

THE INDISPENSABLE BASIS OF ALL MEDICAL AND MATERIAL PROGRESS.*

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ONE HUNDRED YEARS AGO.

The medical orator of to-day, standing, as it were, between two centuries, must naturally, whilst regarding the present, glance also backwards and forwards. Now what was the condition of medicine a hundred years ago? Well, thanks to the work mainly of Haller, of Göttingen, and of Morgagni, of Padua, the old mysticism had to a large extent been dissipated, and a physiological foundation was laid by the first, and a pathological one by the second, for that vast superstructure of facts on which are based the medicine and surgery not only of 100 years ago, but of to-day. Haller and Morgagni were true disciples, though at a considerable interval, of Vesalius, who, following Mondino de Luzzi, first broke completely through the deadening influence of the Galenical tradition, and founded human anatomy on direct observation alone. Then it was that the paralyzing effect of the Roman edict of the first century was effectively removed, that for 1200 years had arrested the progress of anatomy, and with it all medical and surgical progress, by forbidding postmortem examinations —just as many good people now would tie our hands in other directions, and keep us stagnant till the world grew wiser.

It was that great medieval ruler, the Emperor Frederick II, of the illustrious house of Hohenstaufen, who once more, after its long neglect, revived the study of practical anatomy in the thirteenth century, by forbidding the practice of surgery to any but well-instructed anatomists, an injunction which led to the establishment of a school of practical anatomy at Salerno, in Lower Italy, and soon afterwards of another at Bologna.

The schools of Salerno and Bologna, with those of Milan, Montpellier, and Padua were, however, still too reverent of antiquity, and it was not before the advent of that greatest of anatomists, Andrew Wittings, commonly known as Vesalius (from Wesel on the Rhine, the original home of his family), who taught at Padua, Pavia, Bologna, and Pisa between 1539 and 1564, the reappointed, though never the actual successor of his own pupil Fallopius at Padua, that modern anatomy really began. I say reappointed, for he had been professor before at Padua, when he was only 23 years old, and after long wanderings, occasioned by accusations of impiety, had been honorably recalled, when, owing to a shipwreck, he lost his life—of such priceless value to science—at the too early age of 49. I must not attempt to describe the discoveries of Vesalius, though I may mention that, apart from his well-known corrections of the osteology of Galen, it is to him that we owe our first exacter knowledge of the inferior vena cava, the vena azygos, the ductus venosus, the cerebral ventricles, the peritoneum and the internal ear. One hundred and fifty years later arose one of Boerhaave's scholars, Albrecht von Haller, of Göttingen—himself a great anatomist—who, animated by the teachings of Vesalius, by his love of truth and Nature, and by an aptitude for physiological research, which was all his own, stands forth as the father of modern physiology.

In 1791 Morgagni, of Padua (a pupil of Valsalva, whom he constantly quotes), published what Matthew Baillie styled his stupendous work on the "Seats and Causes of Disease, investigated by Anatomy," thereby at once earning the title of the Father of Pathology.

Vesalius, Haller, and Morgagni were the true founders of modern medicine, and we can not even now peruse their writings without instruction and surprise. It was Glisson—Harvey's successor in the Anatomical and Surgical Chair of the College of Physicians (not Royal in those days)—who first declared that the great characteristic of living matter is that it moves, the ground of motion being irritability; but it was Haller who first distinguished between muscular irritability and nervous sensibility (the vital properties of Bichat), and explaining the great facts of physiology as largely dependent on both, removed at once the *Deus ex machinâ,* the extraneous spirit, so fondly imagined by the old physicians. The Pneuma of Hoffmann, the Nervous Liquor of Mead, the Anima of Stahl, the Archæus of Van Helmont, being no longer hypothetically needed, were gradually discarded. So it was that Haller and Morgagni, the great physiologist and the great morbid anatomist of the eighteenth century, led up to the improved practice of 1801 and later. This was to some extent due to John Brown, of Edinburgh, the representative in modern times of the so-called "Methodists" of the first century. Brown it was who first divided diseases into sthenic and asthenic, who first gave beef-tea in debility and who first fed fevers. The Brownian or Brunonian system, or the plan of stimulating or lowering as required, obtained a large vogue at the beginning of the nineteenth century, and still largely influences the practice of to-day. It must be freely conceded, however, that the highly philosophical doctrines of Brown were by no means judiciously or consistently carried out by himself and his immediate successors.

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A hundred years ago Edward Jenner was practicing in Cheltenham, and here the *genius loci* reminds me that I must not dismiss our greatest medical celebrity with a single line. To me the most interesting point about Jenner is that he was educated by John Hunter, which is to say that he became and remained a naturalist. He was not, however, neglectful of medicine—indeed he manufactured an improved tartar emetic—but he was at first more interested in fossils, hedgehogs, and cuckoos. His celebrated paper on the cuckoo, describing for the first time the inconsiderate conduct of the young cuckoo to his fellow-nestlings, need not be referred to here further than to state that for a long while he reckoned a personal visit to all the young cuckoos in his neighborhood as the first of his or his nephew's duties in May and June. It was this kind of training in natural observation which led at last to such productive fruit as his celebrated "Inquiry into the Causes and Effects of the Variolæ Vaccinæ," published in 1798. Wishing to test a tradition of Berkeley, where he was born and practiced at first, as to the smallpox immunity conferred by cow and swine pox, and fulfilling Hunter's injunction, "Don't think, but try," he made his first experimental inoculation from swine pox on his eldest son, aged 1½ years, in November, 1789. It was nearly eight years afterwards before the next step was made, for it was on May 14, 1796 (two years before the publication of his book), that lymph was taken from the hand of Sarah Nelmes, of Berkeley, who had been infected by her master's cows, and was inoculated into the arms of James Phipps, a healthy boy, 8 years of age. A typical vesicle and areola were produced, and two subsequent attempts to inoculate James Phipps with smallpox proved perfectly futile. Jenner next sent lymph to London to Mr. Cline, whose patient also resisted all attempts to inoculate him with smallpox. Jenner was thereupon invited to London, and wrote from Cheltenham in reply on September 29, 1798, his often-quoted letter in which he expresses his preference for the "lowly and sequestered paths of life, the valley and not the mountain," declaring his contentment and contempt of fame and fortune, "fame being only a gilded butt, forever pierced by the arrows of malignancy." He took up his regular abode in Cheltenham in July, 1800, living at first in the High Street, and afterwards at 8 St. George's Place. Though often absent he spent much of his time here for many years, as letters of his dating from 1802 to 1813 testify, vaccinating gratuitously at Alpha House Bayshill, the residence of the present Mayor of Cheltenham, all the poor who made application to him.

You know the rest, the rapid extension of the practice the world over, the parliamentary grants to him of £30,000, his medals and diplomas and honors from every nation, and the tardy and unwilling acceptance of his teaching by his own. Later came detraction, obloquy, and neglect, followed at last by

* Abstract of the President's Address, delivered at the Sixty-ninth Annual Meeting of the British Medical Association, Cheltenham, July 30, 1901, by courtesy of the Editor of the British Medical Journal.

443 smallpox deaths in 1896 in his own county, in the neighboring city of Gloucester; and finally the perilous experiment of leaving the decision as to whether vaccination should be done or not to the discretion or indiscretion of each head of a family. I am bound, however, to state that the perilous experiment is turning out much better than could have been expected. Truly you will mourn with me over those 443 preventable deaths in Gloucester, 1 of them of a vaccinated and 297 of them of unvaccinated children under ten years of age, when you reflect that during the same year and the next one there were, in well-vaccinated and revaccinated Germany, only 15 deaths from smallpox throughout a population of 53,000,000. Does anyone want more proofs? If so, they have them in the records of our own profession, which suffers from a general zymotic mortality far beyond, but from a smallpox mortality far below, the average; and this though we of necessity are much more than the general public exposed to the infection of smallpox. We, ladies and gentlemen, know the truth and how to act up to it, and most earnestly do I wish success to Dr. Bond and to the Jenner Society in their truly philanthropic enterprise of combating error and disseminating truth. I will say no more of Jenner and his work, though in this town, the former center of his activity, I could not well say less. I must, however, add that the sad experience of Gloucester has not been fruitless, and that Jenner's county is now perhaps the best protected against smallpox of any in England.

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THE MEDICAL STANDPOINT OF TO-DAY THE RESULT OF SCIENTIFIC RESEARCH

Pondering over medicine as it stands to-day, the main fact that strikes me about it is, how much more it owes to the biologists and to the men of pure science than to the so-called practical men. The practical man is indispensable, but he is not like the great biologists, a High Priest of the Arcana of Nature. The cell theory, for example, lies at the very foundation of modern medicine, and this theory certainly originated entirely with the biologists. The term cell was first used in reference to plants in the seventeenth century (1665) by Hooke, who, with his contemporaries, Grew and Malpighi, distinctly foreshadowed the cell theory of modern times. The cell nucleus was actually seen and drawn by F. Bauer so long ago as 1802, though it was not before 1831 that it received that name from Robert Brown, the botanist. Little notice, however, was taken of the subject before the publication of Schleiden's paper on "Phytogenesis" in *Müller's Archives* for 1838, in which he asserted that "every plant is an aggregate of individualised, independent, separate beings—namely, cells." Theodor Schwann, also in the next year, made a similar assertion regarding animals in his "Microscopical Researches," of which, and of Schleiden's paper also, the Sydenham Society published a translation in 1847.

Schwann was first impelled to his conclusion by noticing the extraordinary resemblance between the microscopic structure of the chorda dorsalis of the tadpole and that of the onion and of certain pollen matrices. Schwann, however, fell into error in asserting that cells arose spontaneously, and here he was set right by Barry in 1838 and later by Goodsir, who established the direct descent of every cell from a pre-existing one. This is Virchow's "continuity of life," his *omnis cellula e cellulâ*, the aphorism which he offers us in the place of Harvey's *Omne vivum ex ovo*. That *punctum saliens*, the nucleolus, was first noticed by Schleiden, though it was Schwann who gave it that name. Next came Hugo von Mohl in 1846, who recognized what we now call protoplasm in the cells of plants; the identity of which with a similar substance in the cells of animals was soon afterwards proved by Cohn and Remak. To Schwann a cell without a wall and a nucleus was no true cell, but Leydig in 1856 adduced pus and mucous corpuscles as instances of wall-less cells, and so step by step the ground was cleared for the now historical Cellular Pathology of Virchow, which influenced so profoundly the medical thought and practice of forty-three years ago. To Virchow as to Schwann a cell wall was a necessity, though this idea was soon afterwards dispelled by Lionel Beale and independently by Max Schultze in 1861. To Max Schultze we owe not only the extension of the term protoplasm (the bioplasm or living matter of Beale) to the contents of animal cells also, but the best description of an animal cell, namely, that it is a protoplasmic mass containing a nucleus; though even this last, we may add, is non-essential. All this work on the cell theory gave the original inspiration to Pasteur, and Pasteur leads up to Lister, of whom I will forbear to speak, for he needs no speech, though he might well say of himself, *Quæ regio in terris nostri non plena laboris!* I may mention this significant fact, however, that visiting the Polyklinik in Vienna two years ago, I noticed that the only name of a contemporary Briton inscribed on its façade was that of Lister. The cell theory, further leads up to bacteriology, the most imposing and the most impressive department of medical biology.

Now bacteriology, which originated with the labors of Cohn and De Bary, rests on cultivation and staining; and if year by year more and more of the germs of disease are recognized, it is because improved methods are constantly being perfected for coloring and making visible these formerly invisible entities. The modern practice of staining, so essential to the physician and surgeon of the day, began with the botanists Göppert and Cohn, who used carmine in 1849, and here again the pure scientists showed the way to the practical investigators of medicine, such as Gerlach of Erlangen, who first applied the method to anatomy. In 1871 and later Weigert succeeded in demonstrating nuclei by ammoniated carmine, and cocci by methyl violet. In 1872 Eberth and Wagner began the use of that admirable stain, hematoxylin. Looking through some old preparations of mine not long ago, I found that most of those stained with aniline dyes were faded, but those stained with hematoxylin were still bright and good. In 1879 Ehrlich enunciated his remarkable generalization that the basic coal tar colors (like fuchsin, methylene blue, and methyl green and violet) stain nuclei; whilst the acid ones (like orange-green) stain plasm, and the neutral ones (like rosaniline-picrate) stain special cell contents. Weigert, later, found that acid fuchsin was specially useful in the study of the nervous system, and Strasburger, the botanist, used the basic methyl-green to demonstrate those mitotic figures which are of such importance in embryological work, and have afforded a basis for the wide generalizations of the biologist Weismann. Nor need I pursue the matter much further than to state that in 1882 Koch, who had previously devised the method of cultivation of bacteria, first stained with methylene blue and thus discovered the bacillus tuberculosis, the consequences and far-reaching results of which discovery are well known to all of you. That I have said so much on this point is to strengthen my contention that the true basis of modern medicine is essentially scientific. As an admirable instance of the kind of debt that modern medicine owes to bacteriology, of its power and promise, as also of the extreme difficulty and complexity of the subject in its recent developments, I cannot do better than to advise the re-perusal of Dr. Horton-Smith's Goulstonian Lectures on Typhoid Fever.

In surgery the discovery of the Roentgen rays has been of priceless benefit, and the Cheltenham Hospital was, I believe, among the first of provincial hospitals to make use of them, but most certainly Roentgen was thinking of nothing less than of surgery when in the modest Physical Institute of Würzburg he undertook his epoch-making research on the cathodic rays of Sir William Crookes. I have been to that modest but celebrated laboratory at Würzburg, and heard there the true story of the discovery, which I must not here stop to relate, though I may remark that I have never seen it correctly reported in English.

I spoke of the antitoxins as among the most valued resources of remedial art, and it is to strictly scientific investigators, to such men as Loeffler and Roux, Behring and Kitasato, Haffkine and Yersin, that we owe these great discoveries.

Soon, I believe, we shall possess antitoxins for most of the febrile and infective diseases, as undoubtedly effective as is that one now so successfully employed against diphtheria. Personally, I place much faith in the antityphoid inoculations of Professor Wright, of Netley, and in the antitetanus serum: and I feel sure that many more equally effective and similar means will soon be in our hands against other diseases. But it

is not the practical physician and surgeon who will discover them, but the intellectual devotees of pure science, steadily pursuing, through good and evil report, their self-appointed task of universal beneficence.

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In thinking of the standpoint of to-day, I next recall the splendid work—purely scientific again—of the French and Italian investigators of malaria, of Laveran in 1880, and more recently of Marchiafava and Celli, Bignami and Grassi, but more especially of Golgi, who first proved that the feverish attacks coincided with the sporulation of the malarial amebæ. To which I am pleased to add, that it is, as you know, the President of our Tropical Diseases Section, Major Ronald Ross, who, following the promptings and surmises of Dr. Patrick Manson, has discovered nearly the whole life-cycle of the protozoon, and not only that, but has identified the true delinquent and disseminator of malaria with the mosquito Anopheles, a fact subsequently demonstrated by experiment on a human subject by the celebrated Italian biologist, Grassi; and still more recently by the experiment at Ostia in the Roman Campagna, where Drs. Low and Sambon and three others living by night for four months in their mosquito-proof hut, retained their health; whilst Messrs. T. P. Manson and George Warren (courageous sufferers for science), bitten in London by infected mosquitoes from the Sancto Spirito Hospital in Rome, developed soon afterwards every symptom of malarial fever. It seems that the hemamebidæ of malaria pass the whole of their life-cycle between animals and mosquitoes, and Dr. McCallum, of Baltimore, has further supplied the missing link of their sexual reproduction in the mosquito only. But the original hemameba can hardly have evolved itself in either. Whence, then, can it have originated? That is a question which I can not answer, though I may refer to the statement made by Captain L. Rogers, I.M.S., officiating Professor of Pathology in the Medical College of Calcutta, that where pure and filtered water is drunk there but little intermittent fever will be met with. At all events, it is quite clear that vertebrate animals are the intermediate hosts of the malarial germ, and that it has hitherto never yet been found in water or anywhere else, save in mosquitoes and in some vertebrated animals only. Elephantiasis, whose hematozoon, the filaria nocturna, was discovered in the blood by Surgeon-Major Timothy Lewis in 1872, is distributed by another mosquito, the Culex pipiens or ciliaris, as first proved by Dr. Manson. And even this does not exhaust the delinquencies of these dangerous insects, as there can be little doubt that they also disseminate yellow fever; witness the experience of the American army surgeons in Cuba, where that scientific martyr, Dr. Jesse W. Lazear, though isolated from yellow fever cases, yet died of it seven days after submitting to the puncture of an infected mosquito, and Dr. James Carroll, under similar conditions, narrowly escaped with his life. This particular mosquito has recently been recognized by the United States surgeons as the Culex fasciatus, and it is probable that the transmission of yellow fever is due to it alone. The study of tropical diseases has, in fact, now become a refined department of biological investigation. Smith and Kilborne have shown the part played by ticks in disseminating the cattle fever of Texas, and ticks also are said to be responsible for the miana disease of North Persia, and for a dysenteric fever of the Zambesi. Some forms of dysentery, as first suggested by Lösch in Russia in 1875, are probably originated by an ameba. In this town of Cheltenham old cases of malarial fever are often met with in returned officers and civilians, and I have yet to see the case that will resist six subcutaneous injections of 3 grains each of the acid hydrobromate of quinin.

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MORE UNIVERSITIES AND RESEARCH INSTITUTIONS NEEDED.

I think I have said enough to prove that the progress of pure science means medical progress also, and that it is to the men of pure science that we must still look to hold aloft for us the torch of progress. I can only hope that in the great advances still to be made Great Britain and Ireland may play their worthy part; but I confess I have my misgivings unless some improvements are made in our educational arrangements. As the result of several recent Augusts spent in many of the Continental capitals, I have been struck with the thoroughness and scientific spirit everywhere there manifested; being very different, I regret to add, from the antiscientific spirit which characterizes most of the wealthier and more cultivated classes in this country. This antiscientific spirit is only eradicable by the better education of the young. To what other cause can we ascribe the fact that although the aniline dyes were discovered in 1858 by an Englishman, Dr. W. H. Perkin, yet almost the whole of their manufacture is now carried on in Germany. One company, the Badische Anilin und Soda Fabrik, employs 146 scientific chemists, 75 civil engineers, and 6300 workmen in one alone of its three factories. I know not if any words of mine will reach the eyes of those who govern in this country, but if they do, I will implore them to give to our youth more facilities, similar to those enjoyed on the Continent and in America. I know that much has been done, and no fault is to be found with our primary education. The National Physical Laboratory and the Jenner Institute of Preventive Medicine, have been established, the former in principle, the latter in reality, thanks to the splendid munificence of Lord Iveagh. New colleges, universities, and technical schools have been started, and some 15 to 17 research scholars are appointed every year, one half of whom, I may remark, proceed at once to Germany to make their researches! What has been done, however, is as nothing to what ought to be done.

Depend upon it, there is as much scientific ability and aptitude for research in the country of Cavendish and Priestley, of Faraday and Kelvin, of Darwin and Huxley, of Jenner and Lister, of Rayleigh and Ramsay, as in any foreign nation; but here the chances and opportunities are much fewer, and many a great discoverer that might have been, one of whom it might have been written that—

> He broke his birth's invidious bar,
> And grasped the skirts of happy chance—

spends his untrained energies in futile efforts and vain regrets, and wholly wastes his commanding intellect for the want of instruction and opportunities easily accessible.

But the cost? It would be as nothing in proportion to the gain, and a Faraday, a Koch, or a Pasteur would be a cheap purchase at a million. Whereas France, Germany, and the United States educate at their universities approximately one student in every 1500 of the population, we in the United Kingdom are content with less than 1 in 2000. Whereas Germany spends £753,000 a year on its twenty-two universities and France £740,000 a year on its sixteen, we in Great Britain and Ireland are content with less than one-fifth of that amount, namely, £135,339 among seven of our thirteen. Although the Leland Stanford University of California has received no less than nine millions sterling from private munificence, and many others of the 480 American universities and colleges have likewise received huge sums—I may specify the Chicago University £2,000,000, the Johns Hopkins University £1,400,000, and the Cornell University over £1,000,000—no such general largesse is, I fear, to be expected from our British millionaires. The help must come from the government, supplemented by local contributions, or it may not come at all. Yet the matter is one of life or death for the country, for more and more every year the victory in every department, and the predominance in arts and trades, will pass to the possessors of the latest knowledge, the deepest science, and the most perfect and most economical processes. I can not but believe that this great need will soon be remedied, and that at the cost of a few battleships real universities of teaching and research, like the new University of Birmingham, will be established in every large town, and technical and research institutions—there are twenty-five of these in Germany and forty-three in America—in most of the smaller ones. At present we are feeling keenly the competition of America, a competition that is not likely to diminish, for it possesses over 100 schools of chemistry, and has 10,000 students of engineering. This competition that we can only hope to resist by imitating the foresight, generosity, and enthusiasm for science by the American Governments and of the American men of wealth.

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THE MORBID ANATOMY OF PROGRESSIVE MUSCULAR DYSTROPHY.

The pathology of the group of diseases comprehended in the designation progressive muscular dystrophy and including so-called idiopathic, hereditary, juvenile or scapulo-humeral, infantile or facio-scapulo-humeral muscular atrophy and pseudohypertrophic muscular paralysis is yet surrounded in dense obscurity. For a time confusion with progressive muscular atrophy of spinal origin existed clinically, but postmortem examinations failed to disclose the characteristic lesion of this disease. Such anatomic abnormalities as have been found were not uniform or distinctive and the most probable explanation is that the disease represents some defect in development. A case somewhat confirmatory of this view has recently been reported by Dr. Jenö Kollarits.[1] The patient was a boy, 10 years old, presenting the pseudohypertrophic type of progressive muscular dystrophy, the exact time of the beginning of which could not be determined. He had been totally helpless and unable to walk for more than two years, and contractures were marked. Postmortem examination disclosed characteristic fatty degeneration of portions of muscle, with atrophy of some and hypertrophy of other fibers. In the nervous system there were found dilatation of the central canal, diminution in the number of fibers in Lissauer's zone, as well as in the gray matter surrounding the central canal, in the anterior and posterior gray commissures and in Clarke's columns from the cervical to the upper lumbar portion of the spinal cord. This absence of fibers was less marked in the anterior horns, whose ganglion-cells were structurally intact, although reduced in size. It will thus be seen that there is no relation between the muscular and the nervous lesions —unless we except the diminutiveness of the ganglion-cells in the anterior horns—so that it may not unreasonably be concluded that both are the results of a common defect in development. It may possibly be, however, that there is some etiologic connection between the small size of the ganglion-cells and the developmental deficiency in the muscles.

In this connection the report of a fatal case of progressive muscular dystrophy of pseudohypertrophic type by B. Sachs and Harlow Brooks[2] is not without interest. The patient was a man, 25 years old, in whom symptoms had been noticed for about fifteen years and two of whose brothers suffered from similar disease. Death resulted from pneumonia, and on postmortem examination there were found extensive atrophy involving nearly all of the skeletal muscles, to which it was confined, the muscular tissue being replaced by diffuse areolar connective tissue and adipose tissue; slight general perivascular connective-tissue hyperplasia; moderate interstitial myocarditis; extensive degenerative changes in a few of the cells of the posterior-root ganglia; and rare and irregular types of cytoplasmic alterations without morphological change in the ganglion-cells of the spinal cord.

Great significance is attached to the changes found in the posterior-root ganglia, although it is admitted that they do not necessarily bear a direct relation to the muscular atrophy, the number of cells affected being disproportionately small as compared with the extent of the atrophy. It is thought probable, on the other hand, that secondary alteration in the ganglia might result from primary disease of the muscles. Occasional, isolated degenerated fibers were found in the posterior columns, but these were thought to be probably ascending central branches of the degenerated spinal ganglion-cells. The cytoplasmic degeneration of the ganglion-cells of the spinal cord is attributed to postmortem change or to terminal infection. The ganglion-cell changes are not considered sufficient or of such a character as would be expected if the process were a secondary one following the long-standing muscular atrophy. Chromophilic changes in certain of the cells of dorsal segments are referred to nutritive disturbances, particularly affecting this portion of the cord following extensive and rapidly progressing curvature of the related portion of the spinal column.

The opinion is expressed in conclusion that the disease may be dependent upon some defect in embryonal structure that prevents satisfactory development of the muscular system. The disorder is thought to represent a primary affection of the muscular fibers, the fatty degeneration of which is secondary to the hypertrophy and atrophy of the muscular tissue.

1. Deutsches Archiv f. Klin. Medicin, 70, B., 1 u. 2. H., p. 157.
2. American Journal of the Medical Sciences, July, 1901, p. 54.

THE SO-CALLED CARDIAC NEUROSES.

"Cardiac neuroses," so-called, have been attributed as a general rule to disturbances in the normal workings of the nervous apparatus of the heart. In this, as in many other instances, the effort at classification has probably gone beyond our actual knowledge of the nature of the processes in question, because it is not yet clear how much of cardiac function depends on the nervous mechanisms, and how much on the muscle cells of the heart. Just at present physiologists are inclined to lay especial stress on the automatism of the muscle cells and to refuse to attach much if any importance to the nervous influences.

In a recent paper by L. F. Barker[1] this subject is reviewed from the anatomic, physiologic, and pathologic points of view. It is pointed out that the heart has no nerves at all when it begins to beat in the embryo, and that the vagus fibers grow out to the heart, while the sympathetic neurons, at first entirely distinct from the heart, gradually enter its walls and locate there permanently. Furthermore, that modern physiologists by experimental work have shown that the normal rhythm of the heart is inherent in the muscle cells of the adult heart and not due to the rhythmical discharge of nervous impulses along nerve fibers. The automatic rhythmic activity of the heart is favored by the Na -ions in the blood, associated in a certain proportion of Ca -ions. The muscle cells of the heart have three distinct properties, namely, contractility, conductivity, and the power to initiate primary automatic stimuli at regular intervals. These properties are influenced in various ways, especially by nervous influences. It has been proposed by Engelmann to call the nerve fibers that affect the force and extent of the contractions, inotropic; those that affect conductivity, dromotropic; and those that modify the frequency of primary automatic stimuli, chronotropic. These designations need not be restricted to nervous influences alone, but may be well applied to any and all influences operating in the manner indicated.

Barker then discusses the abnormalities of cardiac rhythm—the tachycardias, bradycardias, embryocardias, pulsus intermittens, etc., and it is shown that the analysis of irregular heart action promises valuable results when based on modern anatomic, physiologic, and pharmacologic research. The most prominent feature of the present analysis is the importance assumed by the cardiac muscle itself, and Barker suggests that until the dynamics of the processes concerned are better understood the term "cardiac neuroses" should be left in the background, and the arhythmic states grouped rather under a more general term, such as "disturbances of cardiac motility."

Just at present we know little concerning the functions of the nervous mechanisms of the heart, be it under normal or under pathologic conditions. Indeed, it is not at all unlikely that many morbid conditions, now called "nervous," will be found later to depend on factors better and more correctly described by other terms.

1. Chicago Medical Recorder, May, 1901.

BIRTH-RATE IN NEW ENGLAND.

A high Canadian official, the Hon. David Mills, Minister of Justice for the Dominion, has indulged in some remarks on the degeneracy of the New Englanders. The head and front of his accusation is that they do not raise large families, and he thinks the United States has a serious problem before it in this decrease, or rather lessened increase, of its population. The amount of misinformation, or, to put it more plainly, gross ignorance, at the bottom of his jeremiad is remarkable. It is true that there has been a decreasing birth-rate in New England, but this is not so wonderful or alarming when one considers the facts. There are plenty of towns in that section where the birth-rate is low simply because there are few of the population of the productive age; they are kept up largely by the return of old people to their former homes, by summer residents from the cities who do not count in their statistics, and to a certain extent by immigrants from the outside. The young people very largely leave home before marriage, some at the time of marriage. It is not an ideal state of affairs, but it is better than it looks in official vital statistics. The New England blood has permeated the whole country and still in its present condition that section sends out a quota of energetic vitality that makes its mark in every way.

As regards other portions of the country which this critic seems also to include in his condemnation, it should be remarked that birth-returns are almost everywhere defective; in only a few of the older sections can they be relied on as approximately accurate, and the errors are altogether in omissions. The problem of school accommodation for the rising generation is a perpetual one in many of our cities, and yet the birth-rate is practically non-existent according to the returns. There is also in nearly every prosperous community a tendency to a decreasing birth-rate and this seems to be enhanced by some conditions of modern civilization.

Take the United States as a whole and it would probably be found, were the true figures available, that it is not much worse off than most other countries and better off than some. Among these last we have to reckon Canada, and more particularly that portion of it that claims the Hon. David Mills,[1] namely, Ontario. According to the registrar-general's report last year the birth-rate of that province was lower than that of any state in the Union, being only 19.9 per 1000. It seems, therefore, a little gratuitous, to say the least, for this Canadian cabinet minister to send out such utterances. If they were justified by the facts the case would be bettered, but they would seem to show a prejudice causing him to ignore his own vulnerable glass house. As it is, we have to consider them the result of either prejudice or inexcusable ignorance.

KOCH'S ADDRESS AND THE NEWSPAPERS.

The reception which Professor Koch's address before the British Tuberculosis Congress has received by the lay press is amusing. Glaring scare-heads have called attention to the remarkable and wonderful things that will now happen; to the fact that tuberculosis has been discovered to be a curable disease; that it is not transmitted from animals, and heaven knows what else. As we published the address in full last week, our readers have had the opportunity of reading for them-

1. See The Journal A. M. A., xxxvi, p. 819.

selves just what Koch did say, and what there was in the paper that should cause all this furor.

Briefly, he announced that tuberculosis is preventable; that special measures are needed for the prevention of different diseases, illustrating this by showing how plague, cholera, hydrophobia and leprosy must be met, each by different methods, and that the prevention of tuberculosis must also be opposed by special measures peculiar to itself. All this has been announced before, time and again, and had been accepted by the very large proportion of the medical profession. The measures he recommends for prevention and cure in the incipient stages were only such as had been recommended by others and by himself before, not one being new. The only thing that was startling as coming from Koch was the announcement of his belief that bovine and human tuberculosis are not intercommunicable diseases. This, too, is not a new idea, for while the opposite has been generally accepted as true, many have held to the views as now announced by Koch.

The only important announcement in Koch's paper is that in which he gives the result of his experiments in the investigation regarding the transmission of human tuberculosis to animals. But this is important only as it apparently confirms the view held by some for a long time, but which has not been accepted by the many. He failed, in each of the nineteen experiments he made, to convey human tuberculosis to bovines, but succeeded every time in conveying bovine tuberculosis to bovines. Similar experiments have been reported before by others with similar results. He made no experiments in the transmission of bovine tuberculosis to human beings, neither has anyone else. He advances no positive proof that bovine tuberculosis is not transmissible to man, but bases his opinion that it is not transmissible on theory and inference. Dr. Koch proves by positive facts one thing, viz., that the human form of the disease is not communicable to bovine animals. Thus far do his positive results go; the rest is negative. There has been no reason for all the wild talk on the subject. Had the experiments been made and the paper written by any one but Robert Koch, there would have been hardly a ripple even in the hall in which it was read.

VACCINATION IN PORTO RICO.

One of the first things that American imperialism forced upon the people of Porto Rico was the loathsome disease, vaccinia! The result has been that the privilege of having smallpox, wholesale and retail, *ad libitum,* as under Spanish rule, has been almost destroyed. During the last six months of 1899 there was but one death from this disease, against 272 in the first six months, and since then the regular epidemic has been a thing of the past: the resource of six or seven hundred annual deaths that used to be such an appreciable factor in reducing the surplus population has been entirely lost. The new generation of Porto Ricans will have to grow up unpitted! One would think that such brutal oppression as this of a subjugated people would have been made the most of, and that the antivaccinationists and other "aunties" would have stormed the White House and the Capitol with their protests. But no, they never even mention it, and the Porto Ricans themselves are so unappreciative of their wrongs that it has never been even suggested by them as a grievance. As a lay paper says, "Though to ordinary intellects such a proof of the efficiency of vaccination to prevent smallpox will be convincing, there is no doubt that the Spartan band of antivaccinationists will continue to flourish. For, how can the actual experience of a million or so weigh in the balance against the theories and the dicta of those who are bound to differ from the rest of the world and to expose themselves, their children and their neighbors to contagion in the cause of independence and enlightenment!"

AUTHORITY IN MEDICINE.

It is fortunate that in medicine we are not wedded to precedent as in law, and that authority is only presumption. Every dictum, no matter from how high a source, must be tested by the rigid rules of evidence, rules much more exacting in medicine than in law, though not laid down with such precision. When, therefore, Professor Koch expresses an opinion that is opposed to the generally accepted views, no matter how high his authority, its correctness must be shown by experimental methods or adequate clinical observations before it can form a part of the admitted medical beliefs. The evidence that has been convincing to him must be tested by others and, it is safe to say, be supplemented by further facts before it is fully satisfactory to many of those tuberculosis specialists that have, so to speak, staked their reputation upon the truth of opposing views. We can expect, therefore, a lively controversy, a thorough discussion of the facts thus far available, and a very general search for new ones that will bear upon one or the other side of the question. His utterances will, beyond doubt, call out also many who, like him, have experienced doubts, but have been hesitant in their expression; he will not stand alone on his side of the debate. They will also stimulate active research, experimental so far as is possible, both private and by public boards of health, etc., and all this will be a distinct gain to science and ultimately also of practical benefit in guiding public policy on this important question. What we know or suspect will be proven or disproven: we shall stand at last, whatever the decision may be, on firmer ground. This is the utility of authority in medicine; it is not slavishly accepted, but is a stimulant to thought and work and thus a direct factor in scientific progress. Whether Professor Koch is right or wrong, his open statement will, it is hoped, help to put an end to dogmatic assertion which has too much prevailed in the discussion of tuberculosis; we shall have less words and more work on the subject, and therefore more reliable results. There are many who believe in the transmissibility of bovine tuberculosis to man who have yet felt a want of reasons for the faith that is in them. Medical science is not safely based on *a priori* deductions, however expedient they may seem

to be, and we certainly lack a sufficient body of evidence on this particular point. Let us hope that it will be soon supplied.

RETENTION OF DIPHTHERIA BACILLI IN THE VENTRICLES OF THE LARYNX.

It has now been firmly established, and it is generally recognized, that diphtheria bacilli may be present in the throat in the absence of symptoms of diphtheria, lodgment, but not infection, taking place; and also that the bacilli may be found in the throat long after recovery from the disease has occurred. A further possible site and source of infection that is likely to escape detection, unless specifically looked for, is pointed out by Dr. W. J. Horne,[1] namely, the ventricles of the larynx. This observer relates the case of a child, nine months old, who presented symptoms of laryngeal obstruction requiring tracheotomy, but no positive evidence of diphtheria, as an instance of which it was nevertheless regarded. Treatment with antitoxin was instituted, but death ensued. On postmortem examination, the pharynx and the larynx were found free from membrane, and cultures from these parts failed to disclose the presence of diphtheria bacilli, which were found, however, in cultures made from the interior of the ventricles of the larynx. Reference is made to a second and precisely similar case that subsequently came under observation. It is pointed out, further, that the fatal cases of so-called membranous laryngitis that have been regarded as non-diphtheric because diphtheria bacilli were not found, from failure to examine the ventricles of the larynx, may really have been of this nature. The same observer had previously called attention to the frequency with which he had detected tubercle bacilli in the recesses of the ventricles of the larynx in subjects dead of tuberculosis when this organ presented entirely normal naked-eye appearances.

CLINICAL EXAMINATION OF BLISTER-FLUID.

The last decade has witnessed a great advance in our knowledge of changes in the blood. As is the rule, while we have become acquainted with a large number of new facts, we are without explanation for many of them. Enough, however, it would seem, has been learned to show that the blood-making organs react in peculiar and special ways to various forms of infection, so that not a little diagnostic information is to be gained from systematic examination of the blood. Thus, it has been shown that an increase in the number of leucocytes occurs not only physiologically—in the sequence of digestion, in the newborn, during pregnancy, after parturition and after violent exercise—but also as a pathologic manifestation, as in association with leucemia, in the train of hemorrhage and in conjunction with various infectious and toxic processes; while it is as characteristically absent from some others of the last named. Under some conditions the increase involves especially certain of the white cells, as in the eosinophilia attending the presence of intestinal parasites and also asthma. Two French observers, Roger and Josué, have gone a step further and have shown that important diagnostic information can be gained by examination of the fluid contents of blisters induced artificially. In health they found as many as 25 per cent. of polymorphonuclear eosinophile cells, while in the presence of various infectious processes the number of these cells, if any were present, was much smaller. These changes, it is thought, are dependent upon the influence exerted by the toxins upon the bone-marrow, in consequence of which the latter is stimulated to the production of an excess of polymorphonuclear neutrophile cells, to the exclusion of the polymorphonuclear eosinophile cells. The application of a blister, however, stimulates the production of eosinophile cells and the result of the examination is to disclose the ability of the bone-marrow to produce them. In ordinary cases of pulmonary tuberculosis especially, though not exclusively, the polymorphonuclear neutrophile cells preponderate, while the eosinophile cells are present in small number, if at all. The cells, besides, appear swollen and distended. There seems to be good reason, therefore, for believing that much valuable information is to be gained from a careful study of the blood in its varying phases and under varying conditions, and the subject is one deserving of further investigation.

1. Jour. of Laryngology, Rhinology and Otology, June, 1901, p. 275.

IMPOSTORS AMONG ANIMALS.

In an article with this title in the *Century Magazine,* Professor Wheeler of the University of Texas quotes from Henry Drummond to the effect that before the masterpieces of deception among animals "the most ingenious of human impositions are vulgar and transparent." The article deals with deceptive disguises, which affect the form, attitude, and especially the color of animals. Every student of animal life is familiar with the close resemblance of many birds and other animals to the soil and vegetation. Certain chameleons, tree frogs, cuttle-fishes and shrimps are actually able to so change their appearances as to harmonize in color with their surroundings. Insects and spiders have reached the greatest degree of perfection in disguises of this kind, which subserves both defensive and offensive purposes. Numerous examples are cited of insects which copy in their appearances almost any of the exposed parts of the plants among which they exist. There are also insects and spiders that imitate the excreta of other animals, as for instance, the bird-dropping spider described by Forbes; and Drummond describes a harmless insect in similar garb which is thus shielded from its natural enemies. While some animals are protected by these resemblances to their surroundings, others present loud colors and a fearless behavior coupled with poisonous or painful stings or with pungent nauseating secretions which furnish their possessors a certain degree of protection from attack. These so-called warning characters generally consist of alternating bands of contrasting colors. The wasps, hornets, poisonous king snakes, and the skunk are examples of this category. Animals of this group seem to be copied by animals that possess the warning colors but no disagreeable traits. The mimics occupy the same geographic areas as their models and associate with

the latter, being thus protected from their enemies, who confound them with their disreputable company. Butterflies have furnished most material for the study of mimicry. In the Northern states harmless two-winged flies mimic the warning colors of wasps and bees. The comparative small number of mimetic animals is explained on the ground that any considerable increase among them is sure to result in detection of the fraud and in destruction of the species by its natural enemies. Then, there are a number of animal impostors which, though quite inoffensive, assume colors and attitudes calculated to terrify. Chameleons may puff, mammals and birds may cause their hair and feathers to become erect, and lizards may spread out special frills, all without being able to inflict any real injury. Of course, it is evident that animals are not impostors in the ordinary sense of the word, because they are not conscious of their hypocrisy. While they seem to pose for a purpose and while "their whole life is a sustained lie," at least in the sense that they seem to be what they are not, yet their often highly successful efforts at deception can not be attributed to teleologic motives, but are the result of natural chemical and physical processes, which are not clearly understood.

ECONOMIC VALUATION OF VISION.

That the mathematical valuation of vision and the estimation of its relation to the earning powers is possible is not as yet known to the courts of law and the business world. Indeed, there is but little medical literature upon the subject. Damage to the eyes and sight is a common cause of complaint in suits for injury, and where pecuniary compensation is allowed the amount is often improperly estimated, and is largely influenced by empirical ideas, as in the case of a recent decision of a Texas court[1] allowing $7,000 for the loss of an eye. Cases constantly occur where less amounts are allowed. The accident insurance companies and the United States Bureau of Pensions allow comparatively small amounts. That a loss of vision has a direct detrimental effect upon the earning powers[2], where impairment of sight is considered total disability, is certainly conceded. H. V. Würdemann, of Milwaukee, and H. Magnus, of Breslau, in a recent article,[3] show that the earning ability for most trades and professions is practically synonymous with the visual earning ability, and that damage to vision invariably entails a loss of earning power and of wages. The factors entering into economic vision are the functional power, the technical knowledge, and the ability to compete in the labor market. The technical knowledge depends upon the other factors and the formula may be simplified by its elimination. These factors are compound. Vision is composed of the sub-factors of the central acuity, the visual field and the muscular functions, each of which have their relative value. Other sub-factors are likewise included in estimation of the preceding. The ability to compete depends upon the bodily health in large part and is given appropriate valuation in the formula. Damage to any or all of these factors produces a definite effect upon the whole valuation. We may exactly estimate the value of each of these factors by the ordinary means of scientific examination, that is, the acuity by the test letters, the visual field by the perimeter, etc. Thus the percentage of loss from injury may be readily figured. Although such estimation involves use of the higher mathematics, by the use of tables and diagrams prepared by the expert mathematician the computation is brought down to the mathematical ability of the average physician or lawyer, a simple multiplication example being used for the solution of the individual case. The authors show that the loss of one eye, for the worker whose trade has higher visual demands, entails a loss of 30 per cent. of his earning ability for the first year after the accident and 20 per cent. afterwards. For the lower class of trades the loss is 27 and 18 per cent. Other factors of visual loss are fully considered. The prospective loss in wage earning in the individual case may be readily calculated. They figure with the compensation the individual has been getting and his prospective future earnings, which depend upon his age, business and state of his visual functions. Similar propositions are involved in these calculations as are so successfully used by such immense interests as the modern insurance companies in their estimations of probabilities, the results being not the exact amount that a man will earn, but what he might reasonably expect. This probable pecuniary or economic damage should be the basis for settlement of claims for damage, of course modified by the legal circumstances involved in the individual case.

1. Court of Civil Appeals, Texas; De la Vergne Refrigerating Co. vs. Stahl.

2. Vide decision Lillie vs. Brotherhood of Railway Trainmen, abstract in JOURNAL A. M. A., July 20, 1901, et al.

3. Annals of Ophthalmology, April, 1901. See p. 350, this issue.

Medical News.

ILLINOIS.

Dr. Sanford E. Winget, Kewanee, has been appointed director of the Joplin, Mo., Medical and Surgical Institute.

Dr. Omar A. Kell has been appointed a member of the medical staff of the Illinois Eastern Hospital for the Insane, Kankakee.

Dr. A. B. Middleton, Pontiac, has been appointed physician to the reformatory to succeed Dr. James A. Marshall. Dr. Middleton is at present in Europe.

Chicago.

Dr. and Mrs. Plumer M. Woodworth and Mrs. Nicholas Senn, who have been traveling in Europe, sailed for New York, August 1.

Dr. John D. Marshall, examining and supervising dental surgeon, U. S. army, has been transferred to the Presidio, San Francisco, California, and has gone to his new post of duty.

Betiero Registered.—After investigation by the State Board of Health it has been found that the physician who recently applied for permission to bury a hypnotic subject, is a regularly licensed practitioner.

Antitoxin in Zion.—After the recent death of a child from diphtheria in Dowie's Zion, Chief Medical Inspector Spalding of the Health Department succeeded in inducing the mother to allow antitoxin instead of prayer to be employed as a prophylactic in the case of her other children.

Former Deputy Coroner Weckler pleaded guilty to malfeasance in office and was fined $200 and costs, July 30. The charge was that a fraudulent inquest had been held in the case of Marie A. Defenbach. Weckler in pleading guilty said that his fault was due to negligence, and that he had no part in the conspiracy.

Co-Education and Rush Medical College.—The newspapers have announced with great headlines that Rush Medical College will hereafter admit women. This, however, is true only as it applies to the first two years, which courses are taken at the University of Chicago. It being a co-educational institution all its classes must be open to women; this is as far as women have been admitted to Rush Medical College. What will be done in regard to their admission in the junior and senior years has not yet been decided. Through the announcement by the Rush Medical College that a change had been made in the plan of quarterly examinations, the erroneous idea gained circulation that the quarterly system had been abandoned. The officials at the college say that the quarterly system has proved one of the best divisions of the scholastic year that the college has ever adopted. They pronounce it a great convenience to many students and highly advantageous to the faculty and the institution. The change in examinations was deemed necessary and provides a final examination before a student is graduated.

Last Week's Increased Mortality,—There were 617 deaths reported to the Health Department during the week ended July 27, an increase of 190 as compared with the preceding week and of 175 as compared with the corresponding week of last year, making an annual death-rate per 1000 of 18.29 as compared with 13.42 in 1900. A great part of this increased mortality is due to the excess of deaths from the acute intestinal diseases, there being 175 deaths recorded from these causes as against 80 the preceding week. Of the total deaths during the week 199 occurred among those under one year of age, 77 between one and five years and 98 over sixty—a total of 374 at these age divisions, or 60 per cent. of the total mortality. This is probably the culmination of the disastrous effects of the prolonged heated term, to which the excess of deaths at the extremes of life is clearly ascribable, as well as the excess of deaths from the acute intestinal diseases. Contrary to the usual experience this latter excess bears no relation to the character of the water supply. Since July 5 the water from all sources has averaged 96 per cent. "good" or "usable," and on only three occasions during this period has the supply from any station been "suspicious" or "bad."

INDIANA.

Licenses to practice were granted to 75 of the 90 applicants who appeared for examination before the State Board of Medical Registration in July.

Dr. Frederick R. Charlton, who served during the Spanish-American war as surgeon of the 158th Indiana Infantry, U. S. V., has been appointed a member of the Board of Pension Examining Surgeons for Indianapolis.

Smallpox in Indiana.—The State Board of Health has ordered that, while smallpox exists in Indiana, and the time of its disappearance will be officially announced by the State Board of Health, it shall be the duty of all physicians to immediately report to the health officer having jurisdiction, all cases of eruptive disease which may remotely resemble smallpox and which may come under their care. It shall then be the duty of the health officer to promptly quarantine the case or cases of eruptive disease and maintain the quarantine until fourteen days have elapsed from the time of the outbreak, or until the eruptive disease is positively determined not to be smallpox.

KANSAS.

Dr. Arthur E. Hertzler has returned to Halstead after a two years' post-graduate course in Germany.

Registration fees amounting to $1069 have been turned over to the state by the secretary of the State Medical Board. These are the first-fruits of the new medical law.

The State Board of Medical Registration has set apart August 13 for examination of applicants for practice and for inspection of diplomas of practitioners of Wichita and vicinity.

The Physio-Medical Institute of Kansas City is not considered a "standard" institution by the State Board of Medical Registration and Examination, and the certificates of the institute will not be accepted as proof of practice. The board is upheld in its action by a decision from the attorney-general.

MASSACHUSETTS.

Dr. George L. Richards, Fall River, is in Europe. He will return in October.

Dr. and Mrs. Francis D. Donoghue, Boston, have recently returned from their trip to Europe.

The City Hospital, Worcester, is to have an isolation ward on the hospital grounds, to cost about $75,000. The ward as planned will be a two-story brick building, so divided that communicable diseases may be separated from one another.

MINNESOTA.

Morrison County has organized a board of health with Dr. Norman W. Chance, Little Falls, as health officer.

Asbury Hospital, Minneapolis, has received a gift of $1000 from Mrs. Abigail Knight. It is announced that the walls of the new building will be erected and the building enclosed before winter.

A Smallpox Conference is to be held at Duluth, August 13, which will be attended by many health officers, physicians, county commissioners, railroad men and lumbermen, representing the northern portions of Minnesota, Wisconsin and Michigan.

MISSOURI.

Dr. Eugene A. Scharff, city dispensary physician of St. Louis, has resigned and will devote himself to private practice.

The Warrensburg quarantine, on account of smallpox, which has been in force for forty days, was lifted July 24, and the guards discharged.

On account of smallpox the Nodaway County Board of Health has prohibited the holding of all public gatherings, such as picnics, reunions, etc., until further orders.

Free Medical Course.—The University of Missouri, Columbia, has increased its medical course to four years, and tuition has been made free in this department. The General Assembly has appropriated $40,000 for a new medical building and the Parker Memorial Hospital will be ready to receive patients this fall.

NEW YORK.

The Oneonta Hospital Society, which was founded in 1894 by Dr. Ozias W. Peck, was dissolved July 18 and has been succeeded by the Aurelia Osborne Fox Memorial Hospital Society.

Biennial Examinations.—The State Board of Regents has decided to divide the final state examinations for license to practice medicine and surgery so that students may take their examinations in anatomy, physiology and chemistry at the close of the second year.

A New Bellevue.—John W. Keller, commissioner of public charities, fully endorses the action of the State Board of Charities which has condemned Bellevue Hospital as unfit for hospital purposes and has called on the municipal authorities to provide more suitable quarters. Commissioner Keller says that if he has his way, Bellevue Hospital will be razed and a new building will be erected on the present site, or further uptown, equipped with every modern appliance at a cost of $2,000,000.

The New Antitoxin Laboratory, Albany, the establishment of which was provided for by the last legislature, has been started under the charge of Dr. H. D. Pease, of Sheffield Scientific School. Diphtheria, anti-tetanus, anti-typhoid and other sera will be prepared at the laboratory and distributed free of cost to state institutions and local health boards. It is intended to supply to all the health officers throughout the state the same facilities for investigation, diagnosis and treatment of infectious diseases as are now supplied by the City of New York.

OHIO.

Dr. J. W. Jones, Sharon, Butler County, has been appointed assistant physician at the Toledo State Hospital.

Dr. Ralph Holmes, Columbus, has been appointed assistant physician at the Columbus State Hospital for the Insane, vice Dr. Robert C. Tarbell, resigned.

OKLAHOMA.

Dr. Elmer E. Cowdrick, Enid, formerly of Toledo, Ohio, has been made Territorial Superintendent of Health, vice Dr. L. Haynes Buxton, Oklahoma City, term expired.

The Territorial Board of Medical Examiners, consisting of Drs. Elmer E. Cowdrick, Enid, chairman, Dr. Grant Cullimore, Oklahoma City, secretary, and Joseph A. Overstreet, Kingfisher, treasurer, met for organization at Enid, July 17.

OREGON.

Smallpox is said to be epidemic in Portland. Since May 1 twenty-five new cases have been reported.

The State Board of Medical Examiners examined 20 applicants July 2 and 3, and on July 16 issued licenses to practice to 17 of them.

PENNSYLVANIA.

Drs. J. Purd Kerr and Christopher C. Hersman, of the staff of the South-Side Hospital, Pittsburg, have resigned.

The McKeesport Hospital has been seriously crippled by the cutting down of its appropriation from $37,500 to $14,000. As the hospital is already heavily burdened with debt, this reduction in its resources may necessitate the closure of its doors to all except pay patients.

Blockley Hospital.—The Department of Charities and Corrections, Philadelphia, have asked for bids for the erection of three new buildings for the Philadelphia Hospital, a children's hospital, to cost $35,000; a hospital for communicable skin diseases to cost $35,000 and a maternity to cost $10,000.

Commonwealth Control of Hospitals.—Representative Ford, of Pittsburg, claims that the establishment and absolute control of hospitals by the state would remove the greatest drain upon the resources of the state and render it unnecessary to cut down the appropriations at the end of every legislative session, as is necessary now.

RHODE ISLAND.

Smallpox.—The State Health Board has been aroused by the discovery of 18 new cases of smallpox in the Blackstone and Pawtuxet valleys.

Dr. Joseph N. Roy, Harrisville, has yielded to law and surrendered his certificate to practice after a fierce legal struggle extending over many months.

TEXAS.

The estate of the late Dr. Robert H. Chilton, Dallas, is valued at $75,000.

Dr. John E. McClung, Corsicana, has been appointed health officer of Navarro County.

New Licensees.—The State Board of Medical Examiners has passed favorably on thirty-three candidates for license to practice medicine.

The State Medical Board held its meeting for organization at Austin, July 23, and elected Dr. J. T. Wilson, Sherman, president; Dr. Sam R. Burroughs, Buffalo, vice-president, and Dr. Matthew M. Smith, Austin, secretary and treasurer.

Galveston Medical College.—The following changes have occurred in the faculty of this college: Dr. Henry P. Cooke has resigned the deanship and the chair of pediatrics; Dr. William S. Carter, professor of pathology, will be lecturer on pediatrics; Dr. Allen J. Smith has been made dean; Dr. William Gammon has been promoted from demonstrator to associate in pathology; Dr. Louis E. Magnenat has been made demonstrator of pathology; Dr. M. Charlotte Schaefer has been made demonstrator of normal microscopy; Dr. Kenneth H. Aynesworth has been made demonstrator of anatomy and Dr. Thomas Flavin, emeritus demonstrator of anatomy.

VIRGINIA.

The Newport News Hospital Association has decided to begin the erection of the main building of the proposed hospital immediately.

Plans for the new hospital at Winchester, Va., have been adopted and construction will begin at an early day. Of the $15,000 required all but $1000 has been secured.

The dispensary building at the Norfolk navy yard has been completed at a cost of $10,000, and is a model of its kind. The lower floor is devoted to the surgeon's office, dispensary, examining and operating rooms, storeroom, and the apothecary and his family live in the second story.

Not Proven.—The Board of Directors of the Southwestern State Hospital, after careful investigation of the charges preferred by Dr. Zeb V. Sherrill against Dr. Robert J. Preston, superintendent of the hospital, has found that the evidence does not sustain the charges, and has so informed the governor.

WASHINGTON.

Dr. William L. Ludlow, Seattle, has returned from a six-months' course of study in Europe.

The Board of Health of Seattle has appointed Dr. Frank M. Carroll, health officer and city physician, and Dr. William L. Ludlow assistant health officer.

State Law Upheld.—In the case of the state against Dr. W. D. Meyers, charged with practicing medicine without a license in Spokane County, the defendant was found guilty and fined $50 and costs.

The State Board of Medical Examiners met in Seattle the first week in July and elected the following officers: Dr. William Grant Tucker, Port Townsend, president; Dr. Charles E. Grove, Spokane, vice-president, and Dr. John P. Turney, Davenport, secretary.

GENERAL.

Dr. Milo B. Ward, Kansas City, Kans., died July 28. A more extended notice will be given next week.

Bubonic Plague.—Reports of the plague reach us from an apparently increasing area of the world. In South Africa it is not confined to Capetown alone, but has spread to Maitland, Simonstown and Port Elizabeth, while in Egypt it has broken out in Zagazig, Alexandria, Minieh, and sporadic cases at other towns; the Marine-Hospital Service reports 63 cases and 25 deaths at Zagazig alone, up to July 3. In China it is prevalent at different points, but most particularly in the seaport town and island of Amoy, where the estimated number of deaths from plague is 700 weekly in a population of 400,000. At Hong Kong it is at present decreasing. India is still firm in the grasp of the scourge, with weekly and local variations in decrease and increase, but with a steady annual increase. The *Lancet* correspondent gives the 1889 outbreak as consisting of 1336 seizures and 1223 deaths; in 1900 there were 7897 cases and 7373 deaths, whilst this year's list amounts to over 9000 cases and 8000 deaths already. The Marine-Hospital Service reports in all India 7600 cases and 5770 deaths from May 12 to June 8. Its presence in Brisbane and other points in Australia, and the quarantine against that infected port necessitated changes in the movements of the Duke and Duchess of Cornwall. Europe has had a few sporadic cases, notably in the port cities of Glasgow and Marseilles, but its chief danger is by land from Constantinople, where it now exists. Roumania, Bulgaria and Greece have instituted a rigid quarantine against Turkey. In South America, 6 cases have appeared in Asuncion (Paraguay), and Rio Janeiro. Beyond the confines of the continents it has shown itself to a greater or less extent in the following islands: Philippines (112 cases and 91 deaths, from May 11 to June 15 in Manila), Mauritius, Hawaii and Japan.

Plague Reports.

The following are reports of recent autopsies made in San Francisco on those dead from the plague:

Miyo, Japanese female, died July 9, and an autopsy was made the same day. She was taken sick on June 30 along with two other Japanese girls in the same house. There was marked enlargement of the glands in the right inguinal region, reddening and edema on the overlying skin. There was slight enlargement on the left side. The axillary and cervical glands were not palpable. The intestines were not injected; no fluid in the abdominal cavity. Spleen tore while being removed; was red brown, with here and there splotches on its surface. It was soft and enlarged to over twice its normal size. There was no fluid in the thoracic cavity. Right lung was adherent anteriorly about the apex and base. Pericardium contained 20 c.c. of clear yellowish fluid. Heart showed signs of an old pericarditis. It was about normal in size. The kidneys were somewhat enlarged. The right lung was in a condition of chronic interstitial pneumonia; left lung was normal. The liver was yellowish-red in color, with areas of dark purple. It was normal in size. Slides made at autopsy showed nothing distinctly. Some fluid flowed from a cut made in the right inguinal glands; these glands formed a mass as large as a hen's egg. They were injected and red and contained large areas of coagulation necrosis. No pus exuded upon section. Guinea-pigs inoculated with 1 c.c. of a bouillon culture obtained from the spleen of this girl died 48 hours after with a typical pest infection. The organisms were obtained from the subcutaneous tissue, spleen and heart blood.

Shina, Japanese female, aged 26, was taken sick June 30, died July 9, and an autopsy was made the same day. This girl was seen the day before her death by the writer in consultation through the courtesy of her attending physician. She was a well-nourished but very anemic girl. Temperature was 101.5, pulse 106. She had a distended abdomen, which was slightly tender on pressure. There was considerable diarrhea, and the dejections were involuntary. There was a blowing murmur heard over the apex of the heart during systole.

The glands in the inguino-femoral region on both sides were enlarged, the left side particularly so. The overlying skin was somewhat reddened and edematous, and exquisitely tender on pressure. The mass was not fluctuant. Dr. Ryfkogel, who was present, punctured the gland, and from the serum thus extracted smears were made which showed enormous numbers of bipolar bacilli, decolorizing by Gram's method of staining, and identical in size and form with the bacillus pestis. A blood specimen was taken from the ear lobe, but no bacilli were found microscopically in the smear. The blood count showed a leucocytosis of 27,600, of which the differential count of white cells was as follows: neutrophiles, 91 per cent.; lymphocytes, 6 per cent.; mononuclears, 3 per cent; no eosinophiles. Two basophiles were seen in the thousand counted. The blood gave an immediate characteristic agglutination reaction with a bouillon culture (48 hours) of the bacillus pestis. A guinea-pig was inoculated with the gland juice. This girl died on the morning of July 9, and an autopsy was made in the afternoon of the same day. The posterior and anterior cervical glands, as well as the axillary and popliteal, were palpable. In the right inguino-femoral region there was a firm, somewhat movable mass 5 cm. in diameter, the overlying skin was not inflamed. In the left inguino-femoral region was a large mass. The periglandular edema was more marked on the left than the right. Intestines were moist and distended with gas; spleen was much enlarged; pulp much swollen and soft. Mesentery glands were enlarged and hemorrhagic. The kidneys were enlarged, cortex swollen and markings indistinct. The left ovary was hemorrhagic; endometrium normal; no sign of inflammation in the vagina. The liver was normal in size, cut surface was pale, and several areas showed distinct tendency to hemorrhagic infiltration. The pericardium was normal, pericardial fat abundant. Aortic and mitral valves appeared normal. There was marked congestion of the lungs, and no pleuritic adhesions, and nowhere did they show signs of consolidation. Bipolar bacilli were seen in large numbers on smears from both inguino-femoral enlargement; none were found on smears from the spleen and heart blood. The cultures taken from the gland before death by Dr. Ryfkogel showed in 36 hours a pure culture of an organism identical in its cultural reactions with bacillus pestis. The growth on agar was very viscid and showed the characteristic ground-glass appearance. The organism was transferred to bouillon, Dunham's solution, glucose agar, 3 per cent. salt agar, gelatin, and milk. Microscopic examination of the agar showed growth to be composed of bipolar bacilli, decolorizing by Gram's method. In bouillon it grew in short chains which formed a deposit at the bottom and sides of the tube. The growth in bouillon showed a very characteristic agglutination reaction with anti-pest serum from the Institut Pasteur, the dilution used being 1 to 200. The reaction occurred within ten minutes. No indol was formed in Dunham's solution (test controlled with B. coli communis). Gas was not formed in glucose agar; no alteration could be seen in the milk; gelatin was not liquefied; the characteristic involution forms were present on salt agar.

The guinea-pig inoculated with tissue juice from Shina died in 72 hours, and at autopsy showed the characteristic lesions and distribution of bipolar bacilli seen in experimental pest. A guinea-pig and pigeon immunized with anti-pest serum were inoculated by Dr. Ryfkogel, with a pure culture obtained from this girl, and at the present writing are alive and apparently healthy six days after inoculation. A control pig, although inoculated with one-half the dose of the same culture as the immunized, died in forty hours.

Fuku Inaki, also a Japanese girl, died at the same place on July 11, with clinical history and autopsy findings, similar to the other cases. A pig inoculated from this girl's tissues by Dr. Kellogg died in from seven to eight days, showing typical plague infection.

CANADA.

Dr. Ethier, late superintendent of the Notre Dame Hospital, Montreal, has gone to Paris to spend the next three years in study.

The Protestant Hospital for the Insane at Verdun, Quebec, is shortly to be enlarged by the erection of two new buildings, one of which will be known as the isolation wing. In it there will be as many as forty private wards with accommodation for nurses. The additions will cost $70,000.

Analyses of Foods.—Mr. Milton Horsey, who has been recently appointed corporation analyst of Montreal, has been making analyses of various and sundry foods used by the citizens of that city. He finds that milk was not well kept, that the drinking water is satisfactory and will compare favorably with the supply of many American cities, that there is abundance of impure ice in use and that certain canned goods, notably lobsters and tomatoes, were quite bad and unfit for food.

Anthrax in Eastern Ontario.—The Department of Agriculture at Ottawa has received reports of outbreaks of anthrax in three different sections of the Province of Ontario. The disease so far is confined to cattle and horses, of which 25 of the former and 4 of the latter have died of the disease in one district. The disease is also prevalent a short distance from Ottawa and precautions are being taken to prevent its spread. The employees of a tannery in the neighborhood are being carefully watched for signs of the disease.

Deaths in Toronto Maternity Homes.—A maternity home on the northern confines of the city has been attracting some little attention the past week owing to the fact that the mortality in the institution has been put down at 50 per cent. This has called attention to the condition of these places in the city proper and the medical health officer has given out some statistics with regard to them. There are fifteen maternity homes in Toronto and thirty-five baby farms, which are all subjected to a very close inspection by a special medical officer, and careful records kept thereof. The babies born in these homes of the city last year number 130, of whom 14 died, 13 were adopted in good homes; the rest remained in the homes.

Barbers in Montreal Object to Association.—At the present time there appears to be no end of trouble among the barbers of Montreal and it is all due to the act passed at the session of the legislature of 1899 incorporating the Barber's Association of the Province of Quebec. For some time past a petition has been in circulation requesting the Lieutenant-Governor to revoke certain clauses of the act. Clauses seven, eight and nine of this petition have particular reference to the hygienic conditions of the shops. Clause nine sets forth their objections to the medical inspection and examination of the employees. This examination, if made seriously, they consider visionary, inasmuch as the barber examined may be contaminated from one moment to another, and to make such examination really useful and serious, it would be necessary to examine the barber after each and every operation, which would be utterly impracticable. Members of the Association have to pay $2 for this medical examination and a further $2 for a certificate.

Toronto Physicians and Professor Koch's New Theory.—Several Toronto physicians have been interviewed with regard to Professor Koch's recent paper. Dr. Sheard, the medical health officer, considered that any statement from Dr. Koch must be received with a certain amount of belief on account of his illustrious and untiring work in that field. He thought that the investigations of the Royal commission appointed in England fifteen years ago clearly showed that there was not so much to be dreaded from the production of tuberculosis through meat and milk as some were inclined to fear. If the statement of Professor Koch were substantiated it would not affect the inspection of dairy and food products in Toronto. Dr. H. B. Anderson, professor of pathology in Trinity Medical College, did not think that the announcement if true would make any difference in the regulations looking to the food products and the sanitary conditions of their source. Dr. P. H. Bryce, secretary of the Provincial Board of Health said that if Koch's statements were true, the saving of cattle from the terrible ravages of tuberculosis was a sufficient justification for the measures that are being taken to stamp out bovine tuberculosis.

FOREIGN.

The Northern Congress of Surgery will be held at Copenhagen, August 29 to 31.

Medical Schools are to be established at Bagdad, Damascus, Smyrna and Adrianople, by a recent decree of the Sultan of Turkey.

An International Medical Congress is being organized to meet at Cairo, Egypt, February, 1902, according to the *Gazette Méd. de Paris.*

Professor Lapersonne, of Lille, has been invited to fill the chair of ophthalmology in the Paris Faculté de Médecine, left vacant by the retirement of Professor Panas on account of the age limit. Summoning a professor to Paris from the provinces is a rare occurrence.

Deaths Abroad.—Dr. Delpeuch, of Paris, connected with the Cochin hospital, a frequent contributor to the medical press.——G. B. Laure, of Turin, assistant professor of anatomy,

whose mounted specimens were awarded a gold medal at medical congresses at London and Genoa.

A New English University Proposed.—It is proposed to found a university in Liverpool by making University College a degree-conferring institution. In 1900 the College had 490 students in arts and science, and 166 in medicine. The nearest university to Liverpool is Victoria University in Manchester, which naturally opposes the proposal.

Royal Honor for Britons.—King Edward recently conferred knighthood on Thomas Smith, F.R.C.S., Deputy Surgeon-General Henry Julius Blanc, and William Henry Bennett, F.R.C.S., and likewise invested them with the insignia of Knight Commanders of the Royal Victorian Order. The following were invested with the insignia of Commanders of the Order: Dr. Donald W. Hood, Mr. John H. Morgan, F.R.C.S., and Mr. Charles Arthur Morris, F.R.C.S.

Italy Opposes Foreign Practitioners.—The British government extended reciprocity of recognition of medical qualifications to the kingdom of Italy last March, as stated by the *Brit. Med. Journal*, but the Italian practitioners are doing their utmost to prevent outside physicians from attending even the foreign tourists. They contend that whatever custom that exists in favor of those holding foreign diplomas was in vogue before the unification of the kingdom and does not hold good now. Recently a graduate of Berne University and clinical assistant to Professor Kocher passed the required final examination in medicine in the University of Pisa, but the faculty, assisted by the Ordine dei Medici, of Rome, have presented resolutions to the Minister of Public Instruction asking that no permission to practice be granted.

German Practitioners' Association.

The Deutscher Aerztevereinsbund, or Practitioners' Association of Germany, is the national organization made up of 302 local societies, with 18,337 members. The total number of physicians in the German empire is about 27,400. The aim of the Bund is to promote the ethical and material interests, and the honor and dignity of the profession. Strictly scientific addresses are not included in the program of the annual meeting or published in the organ of the Bund. The annual meeting was held this year at Hildesheim, June 28, with Professor Loebker in the chair. The Bund has increased by 9 societies and 1751 members since last year, and 195 of the societies were represented at the meeting or Aerztetag, by 175 delegates, representing 16,473 votes, an increase of 57 delegates over last year. The income of the Bund in 1900 was 72,852 marks, the expenses nearly 50,000. The organ of the Bund is an expense instead of being a source of income, and certain members urged extension of the advertising department, as a journal reaching more than 18,000 persons ought to be a good advertising medium. The president, in his address, voiced the general disapproval of the profession of the new government regulations affecting admittance to the medical courses mentioned in THE JOURNAL of July 6, p. 28, and of July 20, p. 208. The amendments proposed and submitted by the Bund were disregarded by the authorities. The address on the subject of "Quackery" stated that it was on the increase in Germany and that physicians are apathetic in the matter. Only 903 replied to the 6313 circulars of inquiry sent out. A number of serious physical injuries resulting from quack practice were related and the members urged to collect such examples. The authorities seem to be indifferent and the laws are inadequate to protect the public, but the Berlin physicians have waged an effective warfare against the titles paraded by charlatans.

THE BATTLE WITH THE CLUBS.

The chief interest of the meeting centered in the discussion of the attitude to be observed toward the new Leipsic Medical Union, the "Verband der Aerzte Deutschlands zur Wahrung ihrer Wirthschaftlichen Interessen." This society was organized by those who were dissatisfied with the lukewarm methods of the Aerztevereinsbund in regard to the burning question of the Krankenkassen, the sickness insurance societies, clubs, etc., which grind down their medical officers to the lowest possible rates. The *Allg. Med. Central Zeitung* of June 29, states that in 1899 there were 22,872 of these clubs, with a membership of 9,155,582. Their cash balance at the end of that year was practically $30,000,000. These figures show the magnitude of the "battle with the clubs." The Leipsic Union was organized for the purpose of procuring a fund sufficient to inaugurate a general strike throughout the country of all the medical officers of the Krankenkassen, to clear the ground for a new and more equitable arrangement than now prevails. The idea of a general strike was soon abandoned, however, and the Union aims now to assist individual physicians or a single group against the extortions of the Krankenkasse, supporting them materially and morally in case they find it necessary to resign their positions, and bringing strong influence to bear to prevent other physicians from stepping into their places. The Union was hailed by many as the long-sought means of relief from the oppression of the Kassen, which the existing organizations had neglected or failed to oppose with any effectiveness. The Union now numbers 1500 members. Each contributes a mark a week toward the fund. All have confidence that the promoters of the Union are bending every energy to realize their ideal, although it has not as yet accomplished anything except, perhaps, to arouse the Aerztevereinsbund to renewed energy.

The latter voted at the annual meeting to establish a central office at Berlin with a physician in charge, on a salary of 8000 marks and a reserve fund of 10,000 marks to draw on. The duties of this official representative of the Bund are, 1, to promote the ethical and material interests of the profession and defend them against attacks; 2, to edit the organ of the Bund and serve as general secretary; 3, to supply information on legal questions affecting the profession and its relations to the authorities, the legislature, the professional and lay press, etc., and to assist in the organization of new sub-societies; 4, to endeavor to have the sums paid physicians by the Krankenkassen increased, to strive to have "free choice of the physician" introduced by the Kassen, and to combat quackery in every possible way; 5, to guard the interests of physicians in contracts with the Kassen and other corporations, and 6, to secure positions for German physicians at home and abroad. After long discussion the meeting voted to appoint a delegate to represent the Bund on the managing board of the Leipsic Union, but a resolution advising members to join the Union was voted down. It was claimed that the aims and intents of the new Union are practically identical with those of the Bund and that, instead of organizing new societies and splitting up the united forces of the profession, all should rally to the existing association and strive to improve and perfect its methods with loyalty to the Bund, to each other and to the profession as a whole.

LONDON LETTER.

Army Medical Reform.

Considerable dissatisfaction is felt in the profession as to the constitution of the committee appointed to consider the future organization of the Army Medical Service. The subject has already been referred to in THE JOURNAL. The committee does not contain a single senior officer of the Army Medical Staff, yet two combatant officers have been appointed. This is only the old story of slighting as much as possible the army surgeons by the military authorities. Mr. Broderick, the secretary for war, has promised "drastic reforms" of the medical service. It is curious that while the Commission of Investigation into the South African hospitals found that the principal defect—undermanning—was due to the failure of the military authorities to comply with the request of the medical staff for more men, and while the army surgeons have on the whole been shown to be perfectly competent the combatant officers have often proved to be gravely deficient in tactics and strategy, yet not a word has been heard of "drastic reforms" of the army itself. The reason is not far to seek. The army is controlled by the so-called upper classes, and under the present conservative government effete caste prejudices have full sway. The attitude of the high officials towards the surgeons has always been hostile. Again and again, reforms by which their status has been improved have been won with the greatest difficulty, only with the help of pressure from the medical profession outside. The South African war has shown the need of many further reforms. The medical staff should be placed in a position of greater independence and have more autonomy. The question of improving the knowledge of army surgeons urgently calls for consideration. To obtain this result, more secure status, better pay and leave of absence for study from time to time at hospitals must be granted.

The National Hospital for the Paralyzed and Epileptic.

The long struggle between the medical staff and the board of this famous hospital, which has been described from time to time in THE JOURNAL, has at last come to an end. The request of the staff for two seats on the board has been granted. The anomalous office of secretary-director by which the whole power of management was placed in the hands of a paid official, who was at once master and servant of the institution, has been abolished. This individual, whose attempt to ride rough shod over the medical staff has been the principal cause of the trou-

ble, has resigned. Naturally, having ruled for so long, he did not like to become simply the secretary of the hospital. In the report of the committee of inquiry which has been unanimously adopted, it is declared that there are no foundations for the fears entertained that the character of the hospital as a religions and philanthropic institution will be imperiled by the presence of two medical men on the board—an assertion made by the latter body.

Blindness from Sodium Salicylate.

At the Ophthalmological Society Mr. Simeon Snell related the following very rare case: A girl suffering from acute articular rheumatism was given sodium salicylate. At 7.30 a. m. she awoke and said that everything was dark in front of her. When her physician visited her between 11 and 12 she could not distinguish light from darkness. Next day, Mr. Snell saw her and found her perfectly blind. Ophthalmoscopic examination revealed nothing abnormal. On the following day when she was succumbing to endocarditis and pericarditis she was again examined with negative result. She died that evening without return of vision.. The total quantity of sodium salicylate taken was 140 grs. at least, possibly 160 grs. in 60 hours. Mr. Snell thought there could be very little question that the sodium salicylate was the cause of the blindness.

Rupture of the Uterus in Placenta Previa: Treatment of Rupture of the Uterus by Gauze Packing.

At the Obstetrical Society Mr. J. P. Maxwell, of Amoy, China, read a paper on spontaneous rupture of the uterus in placenta previa, of which he had seen three cases. In the first the woman died undelivered within a few minutes of the rupture; in the second the uterus was found ruptured posteriorly after delivery and there was dangerous hemorrhage, but recovery took place after antiseptic gauze packing of the rent. The following is the third case: A Chinese woman, aged 23, had poor health during pregnancy. At term she had weak pains and the cervix did not dilate well, especially posteriorly. The edge of the placenta was felt behind. Twelve hours later, the cervix had closed and admitted one finger with difficulty. Slight hemorrhage occurred. After fourteen days, labor came on, but the os did not dilate well behind. When it was nearly dilated severe hemorrhage began. The membranes were ruptured and the child was born in ten minutes without assistance. The moment it left the vagina blood simply poured out and death seemed imminent. The speaker turned the patient on her back, expressed the placenta, and forcibly pressed the uterus downwards and backwards. Ergot was administered hypodermically and by the mouth. The hemorrhage, which had been checked by the pressure, came from a rent in the posterior wall of the uterus and cervix. The finger could be passed into Douglas's pouch. The rent was packed with gauze wrung out of biniodid of mercury lotion and pressure was kept up on the uterus for two hours. The gauze was removed in twenty-four hours. No douche was given and recovery was uneventful. The child was puny, weighing 5 pounds. There was placenta previa marginata and the rupture had occurred through the entire cervix and lower portion of the placental site. In cases of placenta previa the wall of the uterus is not strong, and in some cases fatty degeneration of the uterus muscle has been discovered, and severe pain is apt to start a rent, which then enlarges mechanically.

In the discussion which followed, Dr. Herbert Spencer expressed his appreciation of the treatment by gauze-packing. Last year in a paper read before the Society he called attention to this method of treating rupture of the uterus and related four successful cases. In his previous experience all the cases of rupture of the uterus (8) were fatal. At present abdominal section is usually recommended for complete rupture of the uterus; but that operation, especially if followed by hysterectomy, is generally too severe for a patient suffering from rupture of the uterus. If others with experience of the accident would publish all their cases, Dr. Spencer has little doubt they would compare unfavorably with those of gauze-packing.

Dr. Armand Routh had seen one case of rupture of the uterus with placenta previa. The patient was eight months pregnant and had several attacks of hemorrhage. Under deep anesthesia the cervix was rigid and it was not easy to insert a finger. Anterior marginal placentation was found. The tongue of placenta was separated from the lower uterine segment, podalic version was performed, and the leg was brought down to the half-breech, which was left *in situ* for nature to complete the delivery. In about twenty-four hours labor pains came on and the child and placenta were spontaneously expelled. In two days septicemia was evident and the patient's physician then found that the uterus was ruptured anteriorly. The patient died.

The president (Dr. Horrocks) thought that gauze packing was the best treatment of rupture of the uterus. It was the most successful in saving life. He described a case of most extensive rupture treated by packing which was renewed under chloroform every day for twelve days, then less frequently. The patient after this became very ill, and at last a large slough was extracted from the right broad ligament. Recovery ensued.

PARIS LETTER.

Arterial Tension in Neurasthenic Patients.

The variations of arterial tension have been studied by Professor Potain, and especially by one of his former house physicians, Dr. Vaquez, and though the researches on this subject were at first confined to a relatively narrow field, they have of late been extended to other regions. Dr. Fleury read a report recently on this subject to the Academy of Medicine, and he said that neurasthenic patients might have a low tension, and they would in such a case be improved by rest and tonics, whereas there were others, suffering at the same time from symptoms of gout, uricemia, alcoholism, and diabetes, who showed excess of tension and were cured by all that would favor the elimination of toxins such as exercise, lacto-vegetarian diet and diuretics. It would, therefore, be advisable to consult the condition of the patient from this point of view before formulating a treatment. At the Society of Therapeutics Professor Sluchard, the well-known heart specialist, said there were three varieties of hypertension: 1. Arterial hypertension, which was due to arteriosclerosis, required a special treatment, consisting of a lacto-vegetarian diet, massage, veratrum viride, and nitrite of amyl. 2. Pulmonary hypertension, brought on by mitral stenosis, caused what is called palpitating arythmia. 3. As for portal hypertension, the best treatment consisted in the use of a lacto-vegetarian diet and abdominal massage.

Antitetanic Serum—Four Good Results.

In one of the last meetings of the Society of Surgery, this serum did not seem to elicit much enthusiasm from certain members of the Society. A week later, however, Dr. Tuffier cited an observation furnished him by Dr. Letoux, of Vannes, who, in a case of lockjaw resulting from a wound of the foot, made two injections of 10 cubic centimeters into each hemisphere. The symptoms observed began to be less apparent, and the patient was quite cured seven days after. This proved to be the fourth case Dr. Letoux had treated in this manner with success.

Cocain in Sciatica.

Intrarachidian injections of cocain have been used recently in Paris as a method of treatment of sciatica, and Dr. Lougues has just tried it in injection outside the dura mater. Two centigrams of cocain were injected. The patient had been suffering from sciatica since five months. After the first injection there was immediate relief, but the pain came back after a time. A second injection was followed by a complete cure, which has already lasted five weeks. Dr. Achard said that he made both sorts of injections, and he found that the intrarachidian injections were more active, and relieved the patient sooner. According to Dr. Lamy, the epidural method is safer, when the patient can not be kept in bed a certain length of time.

Case of Death After Medullar Cocainization.

Dr. Broca, surgeon of the Paris hospitals, has recently communicated to the Society of Surgery a case of death after spinal cocainization furnished him by Dr. Prouff. The patient, a woman 62 years old, thought she had a foreign body in one of her feet. She was suffering at the same time from chronic arthritis of the hip-joint and knee, and Dr. Prouff did not hesitate to make an injection of one cubic centimeter of a 1 per cent. solution of cocain. The incision in the foot was readily carried out, and the patient was able to go home on foot an hour after the injection was made, and go up several flights of stairs. Dr. Prouff was called to see his patient in the afternoon, and found her suffering from most intense pain in the back. The pulse was extremely weak and there was extreme paleness of the face. Dr. Prouff had the patient get up and walk, and saw that there was no motory or sensory trouble. He did not prescribe any treatment. The patient died next day. This would seem to be a bona fide case of death after rachi-cocainization, and would tend to show, as Dr. Broca has said, that such a method should not be entrusted to everyone. Dr. Nélaton, the son of the celebrated surgeon

of Napoleon III., said that he had had occasion to witness recently very severe cardio-pulmonary symptoms in a patient who had been anesthetized in this manner. There was a good deal of dyspnea and pallor, and a weak and rapid pulse. These accidents lasted a whole day and were in part relieved by repeated injections of caffein. The solution of cocain was analyzed, and was found to contain elements resulting from the disintegration of the cocain.

Correspondence.

Patent for Vaccination.

BALTIMORE, MD., July 30, 1901.

To the Editor:—Probably the only patent ever granted for vaccination in this country is one I recently found in the archives of the Medical and Chirurgical Faculty of the State of Maryland, which is rich in medical documents of great historical interest to the state. The patent is dated July 10, 1822, and is granted to Dr. James Smith, of Baltimore, for a new and useful improvement in the art of vaccination. It was good for 14 years and cost the patentee $30. It was signed by James Monroe, president: John Quincy Adams, secretary of the state, and Wm. Wirt, attorney-general, and contains the seal of the United States. It is upon a large sheet of parchment. The following is an abstract of this unique document: "The Variola Vaccina or kine pock and the Variolæ Pestilentia or smallpox are both perfect plants that may be classed according to the system of Linnæus in the cryptogamous class, order Fungi (of same genus, but different species) of the vegetable kingdom. They are respectively produced each from their own proper seed and they can not be produced in any other way. When mature and perfect they exist in the form of crusts or scabs, which are naturally organized and uniformly of a like appearance, and may be distinguished from any other scabs by their shape, size, color, texture, and consistence. The appearance of the vaccine crusts is a true criterion of a true vaccination and one can so determine without having seen the case. Vaccine crusts may be preserved for the longest time by setting them in bees-wax or wrapping them in waxed paper. Vaccine matter in any other form may be preserved in the same way. Vaccine matter may be taken at any time from a fresh vaccine crust by applying a little water to it and then rubbing it with any rough or sufficiently hard instrument to break its natural texture. When thus grated or filed, the vaccine matter may be put up on small pieces of glass or plates of ivory or any other hard and smooth substance to which it will adhere when dry and in this state it may be transmitted by letter to the most distant places. When put up on glass, ivory, etc., as above, the vaccine matter taken from any genuine crust may be known and distinguished by its being less transparent than matter taken from the arm on the 8th day, as commonly recommended."

The following is the record of Dr. James Smith taken from my forthcoming volume, "The Medical Annals of Maryland": "Smith, James, deceased, born Elkton, Cecil County, Maryland, 1771, A.M., Dickinson College, 1792. Pupil of Benjamin Rush, 1794. Said to have taken M. D. at University of Pennsylvania. A founder and attending physician to Baltimore General Dispensary, 1801-7. Resident physician to Baltimore Almshouse, 1800-1. Began vaccinating in Baltimore, May 1, 1801, and opened a Vaccine Institute there March 25, 1802. State vaccine agent, 1809-13. United States vaccine agent, 1813-22. Editor of *Vaccine Inquirer*, 1822. Treasurer Medical and Chirurgical Faculty of Maryland, 1811-17. Died Pikesville, Baltimore County, Maryland, June 12, 1841. No man in America did so much to spread the benefits of this great discovery over the land, and Dr. Smith's services entitle him to be held in everlasting gratitude. He may be justly called the 'Jenner of America.'"

EUGENE F. CORDELL, M.D.

Treatment of Laryngitis.

ST. LOUIS, July 24, 1901.

To the Editor:—In an article on "The Treatment of Laryngitis," which appeared in THE JOURNAL of July 20, page 180, the author, in speaking of pachyderma laryngitis, ascribes the salicylic acid method of treatment to Fein. If I mistake not, Dundas Grant was the first laryngologist to advocate this method of treatment in 1897, and I am under the impression that Fein gives Grant credit for first advocating this method. Several years ago I had the privilege of seeing Grant treat a number of these cases thus, with most excellent results. Grant's method of treating these cases and results can be found in an article by him in the *Journal of Laryngology, Rhinology and Otology*, October, 1899. Very truly,

W. B. SHIELDS, M.D.

Association News.

New Members.

The following is a list of new members of the American Medical Association for the month of July, 1901:

ALABAMA.
Stelner, S. F., Montgomery.

ARKANSAS.
Miller, Otey, Fayetteville.
Wood, H. D., Fayetteville.
Henderson, A. G., Fayetteville.
Young, F. B., Springdale.
Hardeman, D. R., Little Rock.
Foltz, Jas. A., Ft. Smith.

CALIFORNIA.
Barlow, W. Jarvis, Los Angeles.

COLORADO.
Sanford, Jas. Brownlee, Castle Rock.

CONNECTICUT.
Shepard, Durell, West Haven.
Gaylord, Chas. W., Branford.

GEORGIA.
Smith, E., Atlanta.

ILLINOIS.
Collins, Rufus J., Chicago.
Holmes, Rudolph W., Chicago.
Betts, Geo. S., Banner.
Cuthbertson, Wm., Chicago.
Smith, W. A., Galena.
Hopper, H. C., Galesburg.

INDIANA.
Norris, Sam'l E., Anderson.
Gobe, Henry E., Indianapolis.

IOWA.
Mueller, J. A., New Vienna.
Tyler, Edw. K., Muscatine.
Bennett, Theophilus W., Lenox.
Dewitt, Chas H., Glenwood.

KANSAS.
Richard, Chas., Ft. Leavenworth.

KENTUCKY.
Stallard, J. M., Sparta.
Hummel, J. L., Jeffersontown.
Drake, John W., Louisville.
Kelsall, O. H., Louisville.
Hobbs, P. A., Normandy.
Kinnaird, J. B., Lancaster.

MARYLAND.
Hardcastle, Hughlette, Baltimore.
Kemp, C. Percy, Kent Island.
Simpson, G. W., Baltimore.

MEXICO.
Gregory, Veedo B., Tampico.

MASSACHUSETTS.
Flewelling, Douglas S., Summerville.
Potter, Lester F., New Bedford.

MICHIGAN.
Davis, J. E., Detroit.
Moll, G. W., Foster City.
Orr, Geo. W., Lake Linden.

MINNESOTA.
Persons, C. E., Marshall.
Cochrane, Wm. J., Lake City.
Mayo, Chas. H., Rochester.
O'Hara, J. J., Alma City.
Williams, Henry L., Minneapolis.
Valin, Honore D., St. Peter.
Rothrock, John L., St. Paul.
Wilcox, Hamilton H., Albert Lea.
Edmunds, Ira Leslie, Clearwater.

MISSISSIPPI.
Anderson, Wm. J., Increase.

MISSOURI.
Lane, J. W., Linneus.
Bradbury, Richard M., Maryville.
Halman, J. H., Hartford.
Haynes, Lee, Mendota.
Buchanan, J. Robt., Nevada.

MONTANA.
Bernheim, L., Butte.

NORTH DAKOTA.
Bennett, Chas. E., Aneta.
Sihler, W. F., Devil's Lake.

NORTH CAROLINA.
Goodwin, Andrew J., Raleigh.

NEW MEXICO.
Hart, T. N., Raton.
Pearce, John F., Albuquerque.

NEBRASKA.
Talboy, Wm. R., Newcastle.

NEW JERSEY.
Allen, Chas. L., Trenton.

NEW HAMPSHIRE.
Anthoine, I. G., Nashua.
Hodsdon, B. F., Manchester.

NEW YORK.
Reed, Albert, Highland.
Sturtevant, Jeremiah R., Theresa.
Stillwell, Alex., Dwaarkill.
Johnson, W. D., Batavia.
Schofield, E. A., Bemus Point.
Schofield, E. M., Jamestown.
Kaufmann, Franklin J., Syracuse.

OHIO.
Devers, A. B., Cincinnati.
Haarlammert, Chas. J., Loveland.
Woodford, Erwin W., Cleveland.
Howell, W. E., Rio Grande.
Swartsel, C. S., Cincinnati.
Smith, B. Decatur, Cincinnati.

OREGON.
Brooks, F. M., Silverton.

PENNSYLVANIA.
Harding, R. A., York.

SOUTH DAKOTA.
Alway, Robt. D., Aberdeen.
Rock, Henry J., Aberdeen.

TENNESSEE.
Duncan, Wm. A., Chattanooga.
Drouillard, L., Memphis.

TEXAS.
Moore, Jno. Thos., Galveston.
Baze, R. J., Mason.
Vinyard, Geo. T., Crafton.
Cummings, H. W., Hearne.
Taylor, M. A., Honey Grove.
Jones, Robt. Harrison, Will's Point.
Smith, Forrest B., Houston.
York, J. B., Brenham.
Moorhead, John D., Levita.
Brown, John R., Hutto.
Hall, Chas. M., Rico.
Berrey, D., San Antonio.

VIRGINIA.
Irving, Paulus A., Richmond.
Firebaugh, T. C., Harrisonburg.

WEST VIRGINIA.
Pritchard, Thos. J., Huntington.

WISCONSIN.
Lasche, P. G., Milwaukee.
Gramling, Henry J., St. Martins.
Mason, Geo. Franklin, Milwaukee.
Loops, Walter A., Milwaukee.
Connell, J. B., Fond du Lac.
Wehle, W. J., West Bend.

Miscellany.

Temperature of Mouth and Rectum.—Dr. M. S. Pembrey, according to the *Brit. Med. Jour.*, has been experimenting upon the effect of muscular work on the temperature of healthy men. The temperature of the rectum or urine may rise as high as 38.5 C. (101.3 F.) during muscular work without causing any distress. The rise of the temperature of the mouth is hindered by the inhaled air and the loss of heat by radiation and evaporation of sweat from the face and neck.

Such is Fame!—The *New York Times* magazine supplement for June 16 is responsible for the following: "Some years ago," said Bishop Potter, in a recent speech, "I was traveling in Minnesota. A man approached me on the railway platform and scanned my features closely. 'Excuse me,' he said, finally; 'but haven't I seen your picture in the papers?' I was compelled to confess that he might have done so. 'I thought so,' continued the inquisitive one. 'May I ask what you were cured of?' "—*N. Y. Med. Journal.*

Test of Leukemic Blood.—Sabrazés states that a drop of blood from a normal subject mixed with twenty drops of pure or distilled water, produces a clear, reddish fluid as the red corpuscles are instantly dissolved. But if the blood is from a patient with myelogenic leukemia, the fluid remains turbid and opalescent. The white corpuscles are not destroyed by the water and remain in suspension, rendering it less limpid than the solution of normal blood. The same phenomenon would probably occur in case of much leucocytosis from any cause.

Research on the Hematology of Typhoid Fever.—An article in a recent issue of *Sperimentale* describes the results of the repeated examination of the blood of eighteen patients with typhoid fever. The red corpuscles progressively diminished in number: no leucocytosis occurred. If noted, it indicated some complication. The polynuclears and the lymphocytes progressively diminished in numbers, but increased again as convalescence commenced. The eosinophiles sometimes vanished completely during the fever, but reappeared in progressive numbers as recovery progressed.

Subcutaneous Injections for Relief of Vulvar Pruritus.—Siebourg of Barmen has been very successful in the relief of rebellious cases of vulvar pruritus with local subcutaneous injections of 300 c.c. of a very weak solution of cocain or phenic acid. The nature of the fluid is of less importance than the quantity. It lifts the skin and pulls on the nerve terminals, thus benumbing them and abolishing the pruritus. He reports in the *Cbl. f. Gyn.* of June 27, several cases of vulvar, anal and other pruritus relieved for a week or longer by this means, which can be repeated as required, combined with local applications until cured.

The Cedron Seed in Yellow Fever.—Dr. S. H. Hodgson, of the Marine-Hospital Service, at Progreso, Mexico, in his report of July 8, gives the following account of this bean: Among the remedies used in Central and South America as an antidote for the stings of insects and the bites of snakes, the seed or bean of the cedron has been found to be a specific. A tincture is made from the grated or mashed seed and is also made into a fluid extract. He made a tincture from the beans and used it as an antidote for stings of insects and the bite of a snake, and found that the action was almost immediate and the relief complete. The antitoxic properties of this remedy were so great that he thought that it might be of some benefit in yellow fever, and had an opportunity to try it in several cases of that disease, and from the results concluded that it is as specific for yellow fever as quinin is for malaria. The experiments with the drug were under the most unfavorable circumstances. He was the government physician stationed at Jiminez, Costa Rica, at the time, and his patients were the native laborers on the near-by farms. Their surroundings were very insanitary, and the only nurses available were uneducated, unclean, and, as a rule, ignorant. The tincture was home-made, not guaranteed to be antiseptic, and of very uncertain strength. Dr. Hodgson kept no notes of the cases treated, and about the time that he realized that the remedy was valuable the epidemic played out, and there was no more material to experiment on. Every case that he treated with the tincture recovered. It relieved the headache, stopped the nausea, and in the cases where it was injected early in the disease there was very little congestion. The tincture was used in hypodermic injections of about 20 minims three times a day.

The Quantity of Water in Foods.—It is not very generally realized how much water there is in solid food. Certain it is that no natural food is without water, varying in amount from 5 to 97 per cent., or only 3 per cent. short of pure water itself. Milk, of course, must be taken as the type of a complete food and yet it contains, even straight from the cow, very nearly 90 per cent. of water, or, to be more accurate, from 87 to 88 per cent. That is to say, more than four-fifths of milk consist of water, and as this is the condition in which it is naturally furnished the inference is that the fats, the sugars, and the proteids were intended to be taken in a diluted state. Indeed, the composition of other foods would teach the same thing, although, paradoxical as it may seem, some solid foods contain more water than does milk. This is especially true of vegetables and fruits. Thus the turnip contains over 90 per cent. of water, the cabbage nearly the same amount, and the cucumber and the vegetable marrow about 95 per cent.; whilst amongst fruits the strawberry contains nearly 90 per cent. of water, the apple 82 per cent., and grapes 80 per cent. Even the various meats used as food contain an amount of water far in excess of the amount of solid constituents. Thus three-fourths of beef and mutton consist of water. The housekeeper, perhaps, scarcely realizes when consulting the butcher's price-list that three-fourths of the meat are water and are paid for with the rest at the rate of a shilling or more per pound. Lamb contains less water, namely 64 per cent., pork still less, 60.9 per cent., and bacon only 22.3 per cent. It would appear that as the flesh foods increase in the amount of fat the proportion of water, as a rule, diminishes. Coming to birds, the flesh of the fowl and duck contains about 70 per cent. of water and that of the pigeon 75 per cent., while the flesh of the goose contains only 38 per cent., the last being another example of the fat increasing with a corresponding diminution in the proportion of water. Fishes contain from 40 to 80 per cent. of water. The egg, one of the most powerful of nutritives, contains 65.5 per cent. of water, the white, consisting of 86 per cent. and the yolk of 50.9 per cent. The latter, of course, is the more nourishing part. As a rule foods containing a small proportion of water are not fit for human consumption until they are cooked, which commonly means reducing them to a digestible state by adding water and boiling or baking, and so when they are actually partaken of they contain a good percentage of water. Wheat flour, for example, contains only 12 per cent. of water, while bread contains nearly 50 per cent. It would appear to be necessary, therefore, that food should be in a decidedly moist condition before it is fit for use, and thus water plays a rôle in food which at first sight perhaps does not seem evident. Bacteria can not live or act except under a wet environment and chemical change under absolutely dry conditions is impossible; therefore without moisture life would cease and the great vital processes would come to an end.—*The Lancet.*

Saline Infusion in Chronic Anemia.—O. Kose states that the improvement in five cases was so striking that he considers himself justified in proclaiming that the injection of physiologic salt solution induces a vigorous reaction on the part of the organism in chronic anemia. The temperature rises, fever may follow, the pulse is stronger and all the secretory organs are stimulated in their functions. After a number of injections a rapid regeneration of the blood corpuscles ensues and all the physical forces feel the beneficial effect, especially

the cells of the blood forming organs, while the sluggish circulation is roused to new activity.

Curability of Leprosy.—Ehlers states in the new international periodical *Lepra*, 1, 4 to 6, that he found two cases of complete, spontaneous recovery in his study of leprosy on the island of Crete. Danielssen and Lie have reported thirty permanently cured in the course of their long experience at the Bergen leper hospital. Ehlers has been investigating the Guber springs at Srebrenitza, Bosnia, which for ages have had the reputation of being a cure for leprosy. He is amazed and delighted at their unmistakable curative influence. The ulcerations healed over and the nodules and all symptoms disappeared under a course of these waters, internal and external. Glueck of Serajevo also describes a series of similarly successful results of the treatment of leprosy at the Guber springs.

Alcohol Fomentations in Pleurisy with Effusion and Arthritis.—The stimulation of the natural recuperative forces by the local, prolonged application of alcohol has been found extremely beneficial in pleurisy with effusion, articular rheumatism and also in acute gout. Burwinkel reports in the *Allg. Med. Centrlztg.* of June 1, the application of an alcohol compress over night banished the pain in a peculiarly severe and rebellious case of articular rheumatism. A pleuritic effusion which had persisted unmodified by any measures, rapidly subsided after four applications of alcohol for two hours each. The relief obtained in two cases of gout surpassed that secured by other measures in years of experience. He describes several other cases benefited in the same way.

The Three Hypertensions.—Huchard has recently been calling attention to the three hypertensions—the arterial, the pulmonary and the portal. The arterial is the condition preceding sclerosis, the only manifestation being the increased arterial pressure. THE JOURNAL has previously cited his views in regard to the necessity of energetic treatment of this antesclerosis. Pulmonary hypertension occurs in gastric affections and in the mitral stenosis of arteriosclerosis. The chief symptom is palpitating arrythmia, aggravated by digitalis. The third hypertension is the portal stasis or abdominal plethora, the frequent cause of enlargement of the liver, of intestinal disturbances, recurring bronchitis, torpid kidneys, hemorrhoids, obesity, etc. The portal stasis immobilizes a large amount of blood in the abdomen and thus entails various symptoms from the resulting anemia, arterial hypotension and auto-intoxication from the hepatic insufficiency. It is also one of the principal factors of the disturbances of the menopause and of obesity from anemia.

Married.

MAYER SHOYER, M.D., Lawrence, Kas., to Miss Edna Denton, Leavenworth, July 18.

DANIEL E. EISELIN, M.D., to Miss Mabel E. Brown, both of Shortsville, N. Y., July 18.

EUGENE WORTHEN, M.D., to Miss Jessie B. Davison, both of Holderness, N. H., July 12.

THOMAS E. MACAULEY, M.D., Gilberts, Ill., to Miss Amanda A. Swanson, Genoa, Ill., July 17.

GEORGE D. BRINKMAN, M.D., Springfield, Ohio, to Miss Anna Masefield, Columbus, Ohio, July 16.

WILLIAM W. RUCKS, M.D., Guthrie, O. T., formerly of Rome, Tenn., to Miss Martha Gibson, Nashville, July 16.

Deaths and Obituaries.

George A. Blanchard, M.D., University of Pennsylvania, Philadelphia, 1895, who served as assistant surgeon in the Thirteenth Pennsylvania Infantry, U. S. V., during the Spanish-American war, died at his home in Scranton, Pa., July 24, after an illness of three weeks, from typhoid fever, aged 35.

James H. Southall, M.D., University of Louisiana, New Orleans, 1861, died at his home in Little Rock, from cancer of the tongue, July 22. He was a member of the American Medical Association, and formerly held the chair of theory and practice of medicine in the University of Arkansas.

Joseph R. Caldwell, M.D., University of Pennsylvania, Philadelphia, 1867, late state quarantine physician at Marcus Hook, Pa., died, July 21, in Upper Chichester Township, after a long illness. He was a member of the American Medical Association.

George D. Ramsey, M.D., Jefferson Medical College, Philadelphia, 1852, a veteran of the Mexican war and a pioneer physician of Illinois, died at his home in Xenia, July 18, aged 77. He was formerly a member of the Illinois State Legislature.

Washington B. Remington, M.D., Philadelphia University of Medicine and Surgery (now extinct), 1871, died suddenly at Rochester, N. Y., July 19, aged 57. He was a veteran of the civil war, having served in the 138th New York Volunteers.

Addison S. Moon, M.D., Western Reserve University, Cleveland, 1884, a member of the American Medical Association, and a practitioner of Beaver Falls, Pa., died at Hot Springs, Ark., after a long illness, July 17, aged 42.

T. W. Leftwich, M.D., University of Virginia, Richmond, who has been in failing health for some time, died in Bedford City, Va., July 14, aged 70. During the civil war he served as a surgeon in the Confederate service.

H. E. Raub, M.D., Pennsylvania Medical College, Philadelphia, 1857, died at Quarryville, Pa., July 20, aged 71. He was the first burgess of Quarryville borough, and was prominently identified with educational affairs.

William A. Mitchell, M.D., University of Louisiana, 1868, formerly a member of the American Medical Association, and a prominent physician of Eufaula, Ala., died at his home in that place, July 15, aged 53.

John C. Beach, M.D., Berkshire Medical College, Pittsfield, Mass. (now extinct), who for many years practiced in Springfield, Mass., died at the home of his daughter, in St. Louis, Mo., July 23, aged 84.

Donald W. MacDonald, M.D., University of Vermont, Burlington, 1898, died at his home in Brookline, Mass., July 21, from concussion of the brain, received in a bicycle accident, aged 42.

Lawrence L. Wolff, M.D., Jefferson Medical College, Philadelphia, 1880, died from Bright's disease, July 21, at his home in Philadelphia. He was on the staff of the German Hospital.

Joseph T. Pero, M.D., College of Physicians and Surgeons, Baltimore, 1891, died at his home in Indian Orchard, Mass., from pulmonary tuberculosis, July 19, aged 34.

James L. Taylor, M.D., Northwestern Medical College of St. Joseph, St. Joseph, Mo., 1882, died July 18, after a brief illness, at his home in St. Joseph, aged 45.

Adolph W. Dunbar, M.D., Bellevue Hospital Medical College, New York, 1897, died from typhoid fever, at his home in Brooklyn, N. Y., July 20, aged 28.

Charles E. Cooper, M.D., Cooper Medical College, San Francisco, 1889, died of myocarditis, at his home in San Francisco, July 21.

James W. Wright, M.D., Medical College of Indiana, Indianapolis, 1888, died at his home in Fairmount, Ill., July 17.

Charles A. Mohr, M.D., University of Alabama, Mobile, 1884, formerly of Mobile, died at Asheville, N. C., July 17.

Elnathan J. Bond, M. D., Rush Medical College, Chicago, 1865, died at his residence in Ord., Neb., July 17, aged 73.

George Schmidt, M.D., Toronto School of Medicine, 1874, died at his home in Milwaukee, Wis., July 18, aged 53.

Charles G. Robertson, M.D., University of Buffalo, 1862, died at his home in Clarkston, Mich., July 18, aged 70.

John A. Westerhold, M.D., University of Halle, Germany, 1873, died from apoplexy at Ojibwa, Ont., July 18.

Societies.

Laclede County (Mo.) Medical Society.—This Society met at Lebanon, July 5, and re-organized by electing Dr. James McComb, president, Dr. James M. Billings, vice-president, and Dr. O. N. Carter, secretary and treasurer.

Scott County (Iowa) Medical Society.—The annual meeting of this Society was held at Davenport, July 18, and the following officers were elected: President, Dr. John H. Culp; vice-president, Dr. Frank N. Stiles; secretary, Dr. John Cantwell; treasurer, Dr. Charles H. Preston.

Wabasha County (Minn.) Medical Society.—At the meeting of this Society, held at Wabasha, July 11, the following were elected for the ensuing year: Dr. Leonard F. Claydon, Mazeppa, president; Drs. French, Plainview, and J. F. Bond, Wabasha, vice-presidents; Dr. William F. Wilson, Lake City, secretary and treasurer. The next meeting will be held in Mazeppa.

Multnomah County (Ore.) Medical Society.—This Society was organized at Portland, July 5, and the following officers were elected: President, Dr. James T. Walls, Portland; vice-presidents, Drs. Thomas Darling and Malcomb J. Denny, Portland, and J. M. Short, Gresham; secretary, Dr. Aaron Tilzer, Portland, and treasurer, Dr. Arthur J. Vial, Portland.

Onondaga County (N. Y.) Medical Association.—This Association was organized at Syracuse, July 18, by the members of the Third District Branch residing in Onondaga County, and the following were elected to membership: Drs. Franklin J. Kaufman, Thomas B. Dwyer and Merritt B. Fairchild, all of Syracuse. By-laws were adopted and the officers elected to serve until the annual meeting, which will be held the third Monday in February, 1902, are as follows: President, Dr. Henry D. Didama; vice-president, Dr. Adelbert D. Head; secretary, Dr. Bernard S. Moore; treasurer, Dr. Alexander J. Campbell; member of the executive committee, Dr. Amos E. Edwards; fellow, Dr. William J. Ayling; alternate fellow, Dr. Charles B. Gay, all of Syracuse. The next meeting of the Association will be held August 19, the place to be decided by the executive committee.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Gastro-Intestinal Disturbance in Infancy.

In the treatment of acute diarrheas of infancy, according to a recent writer as stated in the *Internat. Med. Mag.* the physician who wishes to do his full duty to the patient must stop the milk diet at once; it matters not whether the diet is breast milk or cow's milk, or whether the cow's milk is sterilized or not sterilized; it matters not whether the stools are frequent or infrequent, nor is the character of the stool of any importance. As long as there is evidence of intestinal derangement, the milk diet must be discontinued. It is useless to give laxatives and wash out the few bacteria, and then feed milk to the hosts that remain.

Dr. H. S. Baketel, of Melrose, Mass., in an article in *Can. Jour. of Med. and Surgery*, states that there are three well-defined classes to be observed in the summer diarrhea of children, namely, catarrhal enteritis, entero-colitis and cholera infantum, named in the order of their frequency.

The characteristic feature of the first class is marked looseness of the bowels, accompanied by fever, pain and localized tenderness. The treatment consists in the administration of oleum ricini, to which laudanum is added to prevent griping, and sodium bicarbonate to counteract the acidity. The diet is milk and lime-water. He employs the following mixture in such cases:

R.	Tinct. opii deod.	gtt. i	06
	Bismuthi subnit.	gr. v	30
	Mist. cretæ	3i	4
	Essentiæ pepsini	gtt. x	66

M. Sig.: One such dose every four hours.

The symptoms of the second class were anorexia, fever, nausea, vomiting with greenish semifluid stools. Along with careful diet he gave the following:

R.	Tinct. opii camph.	3iii	12
	Tinct. catechu comp.	3iv	16
	Mist. cretæ	3i	32

M. Sig.: One teaspoonful every two hours.

In the last class the colon was flushed and irrigation repeated every two hours until the food flakes and mucus had entirely disappeared and clear fluid shown. Food was prohibited, small doses of protonuclein being administered every two hours in brandied water, and the following prescription used:

R.	Acidi sulph. arom.	gtt. xxx	2
	Tinct. opii camph.	m. viii	50
	Spts. chloroformi	gtt. xlviii	3 10
	Syrupi zingiberis, q. s. ad	3iii	96

M. Sig.: One teaspoonful every two hours.

Dr. J. D. Windle, in the *Clin. Jour.*, states that thirst is an important factor to be observed in the treatment of summer diarrhea of infants. He explains that the amount of water lost in the stools and by vomiting and perspiration is out of all proportion to that taken in; in many cases none is absorbed, vomiting being constant. The excess, then, must come from the blood. Thirst, therefore, is the cause of restlessness and moaning—symptoms which are very frequently misinterpreted as due to pain. The vital indication in the treatment, then, is to supply water, which relieves the most urgent symptom—thirst—and it is quickly absorbed, rapidly raises blood pressure and gives vigor to the heart. He summarizes by stating that in the severe cases all food should be stopped; give boiled cold water as often and as much as the child will take. The exclusive water diet may be continued with perfect safety for forty-eight hours, but it is rare that the vomiting and diarrhea will not stop within twelve hours. Tepid sponging for the fever, hot dry packs if there is collapse, and linseed poultices to cover the abdomen if there is pain.

In an article in the *Miss. Med. Rec.* the following outline of treatment is given: 1. Adopt the hygienic treatment, which consists in proper care of the bottles if used, boiling them in a soda solution for at least two hours. If breast-fed instruct the mother not to wean the infant in hot months. The nursing should be at regular intervals; give the child all the boiled water it will drink and keep it in the open air as much as possible. 2. The diet should be dropped for twenty-four hours and the bowels thoroughly cleansed out either with mild mercurous chlorid or oleum ricini. Flush out the colon twice a day with tepid water prepared as follows: Water one quart; sodium bicarbonate and sodium chlorid, of each one teaspoonful. This is cooling to the mucous membrane and healing. It neutralizes also any acid secretions present. After twenty-four hours, if the fever has disappeared and the child shows improvement, a teaspoonful of oatmeal boiled in one quart of water for an hour and strained and sweetened with a half teaspoonful of extract of malt may be used. In weak children beef tea and chicken broth may be used after forty-eight hours. When there is considerable pain present, small doses of tincture of hyoscyonms is of great service as follows:

R.	Vini ipecac.		
	Tinct. mucis vom. āā	m. xx	1 33
	Ext. hydrastis flu.	3iss	6
	Tinct. hyoscyami	3ii	8
	Elix. lactopeptin cum bismutho, q. s. ad.	3ii	64

M. Sig.: One-half teaspoonful after each feeding.

In cholera infantum the first item in the treatment is to empty the bowel. A hot saline irrigation of the colon immediately and small doses of mild chlorid of mercury every half hour till two or three doses are taken and retained. Follow it in four hours with castor oil in quantity sufficient to sweep out the bowel. If the collapse is great an injection of normal saline solution into the cellular tissue of the buttocks is often of service. In treating cholera infantum always remember that we are treating a poisoning of the system and bend every effort to rid the system of all toxic substances and maintain the strength of the child.

W. C. Hollopeter, of Philadelphia, in an article in the *Internat. Med. Mag.*, states that, in the treatment of the febrile stage of gastro-intestinal disorders in children, the feverish stage can be best managed by hydrotherapy, by intestinal antiseptics and by rest. First empty the stomach if it has not already been accomplished and then give slight enema by the use of glycerin and water, a teaspoonful of the former to a tablespoonful of warm water; after this, a high enema of an alkaline solution. This is to be followed by small and repeated doses of calomel until the characteristic stool is found, succeeded then by a dose of oleum ricini. As an intestinal antiseptic, the following is preferred by Dr. Hollopeter:

R.	Bismuthi subnit.	gr. ii	12
	Salol	gr. ss	03
	Pulv. arom.	gr. ss	03
	Sacch. lactis	gr. i	06

M. Ft. Chart. No. i. Sig.: To be given dry on the tongue every two hours, or with every movement.

After thorough sterilization of the intestinal tract he observes the feeding, which consists in complete withdrawal of milk and solids and the substitution of albumin water or gum-water. He does not favor the use of meat juice until all fever has disappeared and the temperature has remained normal for at least four days.

Dr. W. Blair Stewart, in the same journal recommends the following prescriptions in obstinate cases of cholera infantum where there is obstinate nausea and vomiting:

R.	Hydrarg. chloridi mitis	gr. 1/10	006
	Pulv. ipecac. et opii	gr. 1/10	006
	Bismuthi subgallati	gr. i	06

M. Ft. Chart. No. i. Sig.: One every half hour.

If this fails he advises as follows:

R.	Bismuthi subgal.	gr. xv	1
	Glycerol. acid. carbol.	gtt. xii	75
	Spts. chloroformi	ʒi	4
	Elix. lactopeptin q. s. ad	ʒii	64

M. Sig.: One teaspoonful every half to two hours.

If the case is a mild one, the following is recommended as an antiseptic and anodyne:

R.	Bismuthi subnit.	gr. i	06
	Zinci sulphocarbol.	gr. ss	03
	Pulv. opii et ipecac.	gr. ¼	015
	Sacch. lactis	gr. i	06

M. Ft. Chart. No. i. Sig.: One such powder every two hours.

Hirst of Philadelphia recommends in the colic of the newborn, careful attention to diet. Pepsin grain, one in a teaspoonful of hot water may be given, with a few drops of brandy added. When diarrhea is present, and the movements are frequent and watery, draining the child's strength, it may be checked with the following:

R.	Acidi sulph. arom. Tinct. opii camph. āā	gtt. iv	25

M. Sig.: At one dose, not to be repeated.

In nurslings the following is recommended to check the diarrhea:

R.	Tannalbin	ʒii	8
	Spts. vini gallici	ʒii	8
	Syrupi	ʒiv	16
	Aq. destil. q. s. ad	ʒii	64

M. Sig.: One teaspoonful four to six times a day.

The following is recommended in diarrhea of older children:

R.	Bismuthi subnitratis	ʒii	8
	Syrupi feniculi	ʒvi	24
	Aq. destil. q. s. ad	ʒiii	96

M. Sig.: One teaspoonful every one or two hours.

Resorcin is a splendid intestinal antiseptic, and admirable results may be obtained in combination with a bismuth salt:

R.	Resorcin	gr. xx-xxiv	1.33-1.66
	Bismuthi subnit.	ʒi	4
	Aq. destil q. s. ad	ʒii	64

M. Sig.: Shake; one teaspoonful every three hours.

H. C. Hazen, of New York, states that tonics are nearly always indicated, and recommends the syrup of ferric iodid as the best of all forms of iron tonics for children, as it produces fewer unpleasant effects than any other. It should be given in from two to five minim doses to a child of 2 years. The tincture of nux vomica for older children is valuable in these cases of malnutrition with poor appetite and sluggish bowels, being best given after meals in two minim doses to children of three years or older.

Dr. A. D. Blackader, of Montreal, states that all intestinal antiseptics that we are acquainted with, give us but a modicum of assistance in this disorder, and their use is not unassociated with a tendency to depress the heart and circulation, an action which we are especially anxious to avoid. Alcohol, as a heart stimulant, is of much value and is the best in the acute diarrheas of children. Used in moderate quantities it improves digestion, stimulates absorption and is to some extent a food.

Medicolegal.

What a Dying Declaration Is Admissible to Show.—The Court of Criminal Appeals of Texas says, in Medina vs. State, that it understands the rule to be that dying declarations relate only to the res gestæ or essential circumstances of a homicide. That is, the statements must be confined to what actually transpired at the place of the killing—i. e., who were the actors, where it occurred, the position of persons, what was said by the parties, the instrument used, and how the homicide was committed. A dying declaration is admissible to show all the facts immediately connected with the homicide to which a witness, were he present, could testify. This would exclude narratives of past transactions and opinions or mere conclusions of the declarant.

Twenty Thousand Dollars for Injuries to Child.—The second appellate division of the Supreme Court of New York holds, in the case of Lacs vs. James Everard's Breweries, that a verdict for $20,000 damages can not be said to be excessive where a child 3 years of age was run over by a team attached to a wagon, and was so injured that he must go through life with one arm, at least, completely paralyzed and gradually shrinking away, while it was by no means certain that he would ever recover the use of his legs to any great extent, and it was reasonable to conclude that his mental faculties were permanently impaired, the evidence of the physicians leading to the conclusion that he was a physical wreck, and that this defect extended to his mental capabilities, likely to result in making him a constant source of expense, with very little hope that he would ever be of use to himself in providing for his necessities.

A Libelous and Not Privileged Communication.—The Supreme Court of Iowa says that the conclusion was fairly warranted, in the case of Hollenbeck vs. Ristine, that the surgeons of a street railway company, incensed at the conduct of a conductor with regard to the settlement of a bill of $15, brought their complaint to the notice of the president of the street railway company, either as a means of inducing the conductor to pay the debt, or for the purpose of causing his discharge, or both; and that the president, preferring to act upon written complaint, asked one of the members of the firm to put it in writing. This the doctor did, stating that for some five years the conductor had owed them a bill for professional services rendered his family in the way of consultation, and, "having no other defense," when finally being sued, "he cowardly slinks behind that of statutory limitation," and that they would prefer not to be connected in an official capacity with a corporation giving employment to men of this character, especially when permitted to occupy positions of trust. And the court thinks it clear that the conductor was discharged because of this communication. Nor does it consider the communication privileged. The result is that it affirms a judgment for $683.33 damages in favor of the conductor and against the writer of the letter.

Police Power to Regulate Practice of Medicine.—The Supreme Court of Michigan holds constitutional, in the case of

People vs. Reetz, Act No. 237 of the Public Acts of Michigan of 1899, entitled "An act to provide for the examination, regulation, licensing and registration of physicians and surgeons, and for the punishment of offenders against this act, and to repeal acts and parts of acts in conflict therewith." It says that the first act passed by the legislature of Michigan to regulate the practice of medicine and surgery was Act No. 167, Public Acts of 1883. This was amended by Act No. 268, Public Acts of 1887. Then followed the act of 1899, covering the entire subject, and providing for a board of examiners. The act of 1899, it goes on to say, is not different in principle from the other acts. If the act of 1883 was valid, then the act of 1899 is valid. And so it holds it. But it was further argued that such legislation is an interference with the inalienable right of a citizen when ill to employ anybody he chooses as his physician. The court's answer is that this contention is not supported by authority or reason. The practice of medicine affects the public health, and it is clearly within the police power of the state to provide that those dealing with disease shall be amply qualified to do so, so far as human experience and education may qualify them. If this contention be adopted, then the law providing for the admission of attorneys to practice law is unconstitutional and void. This legislation has been almost universally sustained by the courts of other states, and the Supreme Court of the United States.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, July 18.

1 *The Alleged Increase of Cancer in Massachusetts. William F. Whitney.
2 *The Clinical Value of Some of the Newer Hypnotics. Albert E. Brownrigg.
3 Case Illustrating Minor Surgery of the Kidney. John B. Blake.
4 *Advantages of Sanatorium Treatment of Pulmonary Tuberculosis. Henri T. Fontaine.
5 Ovarian Cyst with Twisted Pedicle; Acute Symptoms; Operation; Recovery. Charles L. Scudder.

New York Medical Journal, July 20.

6 *Cyst of the Omentum. A. Jacobi.
7 *On the Home Treatment of Pulmonary Tuberculosis. Leonard Weber.
8 *Some Remarks on Tetanus. Fielding Lewis Taylor.
9 *Common Law Rights and the Physician's Prescription. J. Wilkinson Jervey.
10 A Unique Case of Dupuytren's Contraction; Operation by the Open Method. Frank E. Peckham.
11 A Case of Traumatic Rupture of the Intestine. Frederick T. Wright.

Medical Record (N. Y.), June 20.

12 *The Suture of Wounds of Large Blood Vessels, with Report of a Case of Recovery After Suture of a Wound of the Axillary Artery. A. E. Halstead.
13 *Clinical Observations on Syphilis. J. A. Fordyce.
14 Headaches. H. H. Seabrook.
15 The Tampon in Gynecologic Therapy. Maxwell Benjamin.
16 *Latent Pulmonary Tuberculosis. Chas. R Upson.
17 *Mediate Palpation. E. W. Whitney.

Philadelphia Medical Journal, July 20.

18 Spastic Ileus. (To be continued.) Edward Quintard.
19 *A New Method of Making Tannin Available as an Intestinal Astringent. Albert C. Barnes and H. Hille.
20 Some Observations Respecting the Value of the Present Methods of Medical Education. Augustus P. Clarke.
21 A Few Interesting Obstetrical Experiences. J. Thompson Schell.
22 Photo-Mechanical Reproduction. (Continued.) B. H. Buxton.

Cincinnati Lancet-Clinic, July 20.

23 Christian Science. H. V. Sweringen.
24 Address Delivered at Opening of Training School for Nurses of Speers Memorial Hospital, Dayton, Ky. J. O. Jenkins.
25 One Treatment for Gonorrhea. Clarence Martin.

American Medicine (Philadelphia), July 20.

26 A Review of the Progress of Therapeutics for the Preceding Twelve Months. Reynold W. Wilcox.
27 *Pneumotomy for Abscess of the Lung, with Exhibition of Patient. W. Joseph Hearn.
28 *On the Evils Arising from the Failure to Recognize the True Nature of Neurasthenia, and Some Causes of This Failure. W. W. Johnston.
29 *Anesthetization as a Specialty: Its Treatment and Future. S. Ormond Goldan.
30 The Relation of Pharmacists to Physician and the Relation of Pharmacy to Materia Medica and Drug Therapeutics. F. E. Stewart.
31 Foreign Bodies in the Rectum, with Report of a Case. Lewis H. Adler, Jr.
32 Removal of Ovarian Cyst, Broad Ligament Cyst and Appendix at the Second Month of Pregnancy—Delivery at Term. Maurice Kahn.

Medical News (N. Y.), July 20.

33 *A Study of Sixteen Hundred and Fifty Blood Examinations for the Widal Reaction with Special Reference to So-called Partial Reactions. Robert J. Wilson.
34 *A New Method of Determining Approximately the Amount of Hydrochloric Acid in the Gastric Contents. Max Einhorn.
35 Local Treatment of Female Diseases; Its Abuses. A. L. Beahan.
36 Disinfection Within and Without the Body in Diphtheria. M. A. Veeder.
37 Cerebral Apoplexy: Its Relation to Testamentary Capacity. Charles Schram.
38 Surgical Diagnosis. James J. McKone.
39 *Static Electricity in the Treatment of Sprain. Leonard C. Stanford.

St. Louis Medical Review, July 20.

40 The Epidemic of So-called "Smallpox." J. D. Brummall.
41 Speech: Its Development and Some Impediments. G. A. Roberts.

Virginia Medical Semi-Monthly (Richmond), July 12.

42 New Findings in Ophthalmology. E. H. Hazen.
43 *The Relation of Pelvic Diseases to Insanity. John C. Doolittle.
44 Coccygodynia—Case and Specimen. A. R. Shands.
45 Europhen in the Treatment of Cystitis and Urethritis. C. W. Canan.

Pennsylvania Medical Journal (Pittsburg), June.

46 The Duties of Individual Members to Their County Societies. Joseph M. Corson.
47 The Pupil in Health and Disease. E. D. Payne.
48 The Needs of a Live Medical Society. Francis Schill, Jr.
49 Two Autopsies: 1. Cancer of Peritoneum. 2. Tubercle of Peritoneum. Duration of First Case Nine Months; of the Second Case, Three Months. I. H. Betz.
50 The Pathology of Gastric Ulcers. Jos. B. Johnson.
51 Gonorrheal Pyelitis. Report of a Case. W. L. Atlee.
52 Home Treatment of Phthisis. Guy Hinsdale.
53 Castration by Gangrenous Process Following Injury: Recovery. W. V. Riddle.
54 Some Suggestions for the Treatment of Compound Fractures of the Extremities. L. Le Moyne.
55 Sanitation and Prevention of Tuberculosis. W. H. Seibert.

Chicago Medical Recorder, July.

56 Chlorosis, Its Diagnosis and Treatment, and Its Relation to Tuberculosis and to Round Ulcer of the Stomach. Gustav Fütterer.
57 *Hydriatics in the Treatment of Chlorosis. G. W. McCaskey.
58 Chlorosis and Metabolism. Fenton B. Turck.
59 Report of a Case of Removal of the Superior Cervical Sympathetic Ganglion for Glaucoma. H. W. Woodruff.
60 Removal of a Piece of Steel from the Interior of the Eye with the Giant Magnet. William A. Mann.
61 Injury to the Eyeball. Thomas Faith.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), July.

62 President's Address, American Neurological Association. G. L. Walton.
63 A Case of Simple Serous Cyst of the Cerebellum, with Autopsy. George W. Jacoby.
64 Binocular Hemianopsia and Optic Nerve Atrophy in a Case of Diabetes Mellitus. Howard F. Hansell.
65 Report of a Case of Melancholia Followed by Stupor Lasting Three Years and Eight Months; Recovery. Cecil MacCoy.
66 A Case of Peroneal Muscular Atrophy (Type Charcot-Marie). Charles G. Chaddock.

American Journal of Obstetrics (N. Y.), July.

67 *The Corset for Movable Kidney. A. Ernest Gallant.
68 *A New and Better Method of Opening and of Draining the Bladder in Women. Howard A. Kelly.
69 A Method of Operating Upon Intraligamentous and Subperitoneal Fibroids, Based upon the Establishment of Mobility and Symmetry. W. R. Pryor.
70 Recent Developments in Our Knowledge of Cancer of the Uterus. Emil Ries.
71 Pregnancies Following Ventral Fixations, One Ending in Rupture and One in Cesarean Section. Robert L. Dickinson.
72 *The Value of Hegar's Sign in Differentiating Pregnancy from Uterine Myoma. Robert G. LeConte.
73 Case of Gelatinous Disease of the Peritoneum, or Pseudomyxomatous Peritonitis. A. Lapthorn Smith.

74 A Congenital Longitudinal Septum of the Vagina Forming a Double Vaginal Orifice. Jacob Frank.
75 Occipito-posterior Positions of the Vertex. William Gillespie.
76 Styptlcin in Uterine Hemorrhage. H. J. Boldt.

St. Paul Medical Journal, July.

77 Injuries to the Spine from an Orthopedic Standpoint. Arthur J. Gillette.
78 Observations in China and the Tropics on the Army Ration and the Post Exchange or Canteen. Louis L. Seaman.
79 Asphyxia Neonatorum. E. W. Benham.
80 Smallpox, Vaccination and Aseptic Glycerinated Vaccin. James W. Robertson.
81 Some Thoughts on the Ethics of Medical Journalism. Burnside Foster.
82 Eclampsia Infantum, with Reference to Etiology and Diagnosis, with Report of a Case. C. L. Brimi.
83 Miliary Tuberculosis; Cerebral Hemorrhage. Mabel F. Austin.

Brooklyn Medical Journal, July.

84 *The Application of Water in Chronic Diseases. Simon Baruch.
85 Tuberculosis of the Testicle, Seminal Vesicles and Prostate. Henry H. Morton.

Kingston Medical Quarterly, July.

86 The Eye in General Diseases. John R. Shannon.
87 Ectopic Gestation. R. W. Garrett.
88 Effects of Polluted Water on Fish Life. A. P. Knight.

Medical Review of Reviews (N. Y.), June 25.

89 Ethyl Alcohol. (Concluded.) Winfield S. Hall.

Cleveland Journal of Medicine, July.

90 *Epigastric Pain. Henry Wald Bettmann.
91 *Affections of the Cranial Nerves Following Influenza. Charles J. Aldrich.
92 *Abnormal Conditions of the Foot as Cause of Knee Symptoms. Albert H. Freiberg.
93 Influence of the Physician in Public Affairs. Edmund C. Brush.
94 Report of a Case of Gall-Stones with Exhibition of Specimens. A. F. House.

Hot Springs Medical Journal, April.

95 *Further Observations on the Clinical Application of the Suprarenal Capsule. W. H. Bates.
96 A Funeral Delayed in the Philippines. J. C. Minor.

Medical Sentinel (Portland, Ore.), July.

97 Eye-Strain—Its Origin and Treatment. Carl Schulin.
98 A Rare Case of Sudden Death. Thomas W. Musgrove.
99 The Legal Duties of Physicians and Surgeons. W. W. Cotton.

Annals of Ophthalmology (St. Louis), April.

100 Exophthalmos, the Result of an Osteoporosis. P. N. K. Schwenk.
101 Myosis and Ptosis from Paralysis of the Cervical Sympathetic by Gunshot Wound. George C. Harlan.
102 New Test-Types for Determining the Acuteness of Vision. Edmund Landolt.
103 Evisceration Without Necessity of Wearing Artificial Eyes. J. G. Huizinga.
104 A Series of Demonstration Lenses Intended for Teaching Purposes. Charles A. Oliver.
105 *The Economic Valuation of Vision. H. V. Würdemann and H. Magnus.

Medical Bulletin (Philadelphia), July.

106 Seborrhea—Acne Rosacea. J. V. Shoemaker.
107 Further Experience with Tannigen. George A. Hewitt.
108 The Expression of the Eye. Giuseppe Albertotti.

The Post-Graduate (N. Y.), July.

109 Some Remarks on Chronic Post-Nasal Discharge. Thomas J. Harris.
110 Ectopic Pregnancy and Its Early Symptoms. Neil MacPhatter.
111 Report of Proceedings of Section on Ophthalmology at American Medical Association. A. Edward Davis.
112 Report of Clinic. Wendell C. Phillips.
113 Report of Clinic. Dr. Chapin.

Denver Medical Times, July.

114 The Late Epidemic of Typhoid Fever in Fort Collins, Colo. P. J. McHugh.
115 *Persistent or Cyclic Albuminuria Without Clinical Symptoms. G. E. Tyler.
116 The Administration of Anesthetics in Renal Diseases. Wm. Dow.

St. Louis Medical and Surgical Journal, July.

117 Synopsis of Dr. J. Ashburton Thompson's Report of Plague in New South Wales. Albert S. Ashmead.
118 A Case of Myxedema. Cheves Bevill.
119 The Treatment of Nasal Catarrh by the General Practitioner. Eugene C. Underwood.
120 The Treatment of Diphtheria Other Than with Antitoxin. J. P. Crozer Griffith.
121 What Is Bovinine, Its Composition, and Method of Preparation?—An Independent Investigator's Discoveries. C. W. Canan.
122 General Considerations of Treatment of Placenta Previa. Charles P. Noble.

Woman's Medical Journal (Toledo), May.

123 Hydatid Mole, with Report of a Case of Mola Hydatidosa Totalis. Elizabeth F. Kearney.
124 Association in Women of Pelvic and Hepatic Disease. Inez C. Philbrick.

Maryland Medical Journal (Baltimore), July.

125 *Osteitis Deformans. A. D. Atkinson.
126 Spontaneous Version of a Fetus with Hydroperitoneum Requiring an Operation Before Delivery Was Possible. L. George Taylor.

New York State Journal of Medicine (N. Y.), July.

127 *Acute Tuberculosis of the Mesenteric Lymph Glands. Maurice H. Richardson.
128 The Resources of Modern Minor Gynecology. Augustin H. Goelet.
129 General Septic Peritonitis. Irving S. Haynes.

New Orleans Medical and Surgical Journal, July.

130 Superstitions, Fads, Fetiches and Facts: A Retrospect and Forecast; the Lines on Which the Progress of the Future Must Be Worked Out. F. W. Parham.
131 The Blood in Syphilis, Before, During and After Treatment. L. H. Warner.
132 Observations on Scarlet Fever. Whyte G. Owen.
133 Acute Vitreous Phosphorus Poisoning with Suicidal Intent, Followed by Death in 144 Hours. L. J. Y. Genella.

Southern California Practitioner (Los Angeles), June.

134 Treatment of Hypertrophy of the Prostate Gland, by Ligature of Spermatic Cord. J. Ewing Mears.
135 Spinal Cocainization. C. Van Zaelenberg.
136 *Spinal Anesthesia. Louise H. Clarke.
137 *A Practical Method for Demonstrating Tubercle Bacilli When Associated with Influenza Bacilli. A. J. Comstock.
138 A Short Clinic on the Skin—Treatment of Eczema—A Difficult Case of Catheterization—The Use of the Sun's Rays in Diseases of the Skin. George E. Abbott.

Atlanta Journal-Record of Medicine, July.

139 Gonorrhea as a Social Problem. Drs. Childs and Champion.
140 Tincture of Yellow Jessamine in the Treatment of Spasms, Fevers, Nervous Affections, etc. N. F. Howard.
141 Some Remarks on the Treatment of Dysenteric Diarrhea. George Torian.
142 Albuminuria Without Manifest Organic Renal Lesions. W. A. Deas.

Medical Herald (St. Joseph, Mo.), July.

143 Puerperal Sepsis. Charles C. Allison.
144 *The Pathological Importance of Diseases of the Accessory Sinuses of the Nose. D. C. Bryant.
145 *Facial Paralysis. J. M. Aikin.
146 *A Plastic Operation for Pruritus Ani. H. P. Hamilton.
147 Compensation and Failure of Compensation in Heart Disease. Millard Langfeld.

Medical Times (N. Y.), June.

148 The Bearing of Alimentation on the Excretion of Acetone. F. Schuman-Leclercq.
149 Progress in Treatment of Typhoid Fever. H. P. Cook.
150 Ulcerations of the Rectum. Samuel G. Gant.
151 Congenital Dislocation of the Hip. A. M. Phelps.

July.

152 Practical Remarks on the Treatment of Specific Urethritis. L. J. Davis.
153 Acne Vulgaris. Ellice M. Alger.
154 Blindness from Habit, Amblyopia, Strabismus. Norbourne B. Jenkins.
155 Satyriasis: A Study in Medical Jurisprudence. N. E. Aronstam and L. J. Rosenberg.
156 Two Cases of Supposed Carcinoma of the Tonsils. William Cheatham.

New England Medical Journal (Danbury, Conn.), July.

157 *The Limitations of Surgery in the Treatment of Nervous and Mental Diseases. William B. Pritchard.
158 Gonococcal Auto-Reinfections of the Urethra. Ferd C. Valentine.
159 On the Diagnostic Test and Constitutional Treatment in Joint Injuries. Thomas H. Manley.
160 *Nutrition and Stimulation. I. N. Love.
161 An Ointment for Diseased Mucous Surfaces. A. S. MacDonell.

Carolina Medical Journal (Charlotte), June.

162 The Importance of an Early, Definite Diagnosis of Appendicitis. J. Ernest Stokes.

163 The Need for Greater Care in Making Examinations and in Sending Patients to the State Hospitals. Isaac M. Taylor.
164 Etiology and Treatment of Menorrhagia and Metrorrhagia. W. W. McKenzie.

AMERICAN.

1. **Cancer in Massachusetts.**—The Shattuck lecture by Wm. F. Whitney is an elaborate discussion of the studies of cancer with special relation to its increase in the state of Massachusetts and the author recapitulates the substance as follows: 1. If death from cancer should go on at the apparent geometrical rate of increase of the past fifty years, in two and a quarter centuries every person over 30 years would die from that disease. 2. This rate is probably only arithmetical at its worst. 3. The increase is probably due to better diagnosis and registration, and until the ratio of deaths over 30 years has reached 8 to 9 per cent., which is shown by autopsies to be the true rate for cancer, it is not justifiable to speak of the increase as inherent in the disease itself. 4. For purposes of comparison with other places or years, a "graphic picture," composed of both the rate and ratio curves, covering the period over 30 years, divided into decades, is the best. 5. Comparison with other states and countries shows the rate for Massachusetts to be about the same as theirs, with greater variation between the males and females than is the case in Austria, which is remarkable for the correspondence between the two sexes. 6. In the distribution in the New England States, there is no geographical feature that explains the slight variation, which is easily within the limits of better registration. 7. In the state itself there is a slight increase westward for groups of counties of the same density of population. The densest populated part of the state, apart from these, shows a little higher rate.

2. **Some Newer Hypnotics.**—The newer hypnotics here discussed are dormiol, which is a chemical compound of equal molecules of chloral and amylene hydrate; chloretone, and hedonal, a derivative of urethane. The author speaks highly of dormiol as a hypnotic producing quiet sleep for four or five hours. If the patients are awakened within that period they frequently show drowsiness, but after a satisfactory sleep no uncomfortable after-effects are observed so far as his experience goes. In some cases it seems that the dose had to be repeated, and he thinks it better to give a large single dose than several smaller ones. [The opinion given by the author in this regard would seem to indicate a little caution on the part of those using the drug, as idiosyncrasies might develop and as experience with it has not been as great as with some of the other hypnotics.] It is rapid in action, sleep generally occurring within one-half hour. In rare instances no effects whatever were obtained from its administration. He has used chloretone in 71 instances in which he studied its effect, and he thinks a larger dose is needed than is yet generally recommended. The duration of sleep seems to be longer and some patients complain of disagreeable subjective after-sensations. Its anesthetic and analgesic effects are peculiar to it, not being possessed by the other two hypnotics here studied. Hedonal is chemically methyl-propyl-carbinol-urethane, disagreeable to the taste, and is evidently a less effective hypnotic than the other two, though it does not appear to produce any depression or uncomfortable effects in the 35 cases tried. It is inapplicable, however, to other than the milder cases of insomnia.

4. **The Sanatorium Treatment of Tuberculosis.**—The advantages of the sanatorium treatment in pulmonary tuberculosis, as stated by Fontaine, are: The constant supervision by physician or trained attendant, regulated exercise, rest, etc.; the securing of fresh air; super-alimentation; rest cure; sanitary precautions and mental atmosphere. The patients who go there make it a business to get well and they help each other.

6.—See Abstract in THE JOURNAL, XXXVI, p. 1340.

7. **Tuberculosis.**—The home treatment of pulmonary phthisis forms the subject of Weber's article. In a case of fresh febrile tuberculous infection the following are the indications for treatment: 1. Put the patient to bed and keep him there until the thermometer shows practically normal temperature. Rest cure at the outset and repeated at intervals is needed, together with careful nursing of the patient, for success. 2. A well-ventilated and lighted room some distance above ground, arranged like an ordinary hospital private room, heated by an open fire place or grate-stove, with proper arrangements for the collection of sputa, etc. 3. Food, selected according to the cases, given every two or three hours in small quantities or in the shape of meals four times a day, as soon as the patient can take and digest them. That fat-producing materials should be largely taken is self-evident. In the acute febrile stage the patient is sponged with alcohol and water three times daily and when he has improved and become convalescent he is advised to take cold sponge baths every morning and later, with improvement, the douche or rain bath, beginning warm, and cooled. Short procedures and low temperature of the water are the essentials for successful hydrotherapy in these cases. 4. For keeping down the temperature in the early stages and at all times he prefers a combination of acetanilid, phenacetin, and antipyrin, 1 grain of the former to 3 each of the latter to be given when the temperature goes above 101 F. 5. For hemoptysis he advises placing the patient in bed with head elevated, ice on the chest, and to give a tablespoonful of table salt two or three times the first day and milk and water only for nourishment; control the cough with codein. From the second day on he gives fluid extract of arbor vitæ, 1 dram in a glass of water three times in twenty four hours, which remedy he learned to use from the late Dr. Loomis. 6. For the cough and irritability he uses a formula of chloroform water, 6 ounces; sodium bicarbonate, 1 dram; morphin sulphate, 1 grain, and cherry-laurel water, 1 dram. From 1 to 2 drams in an ounce of water every three hours. 7. After the acute symptoms have subsided creosote is prescribed. 8. In case of weak heart and poorly developed muscles, tonics such as strychnin, with or without digitalis, and with or without quinin in small doses should be given. 9. When the stage has been reached that the patient can be sent away from the city, he is advised to go to the uplands in the country, securing a light, airy house, avoiding wind and dust as much as possible. He does not think it advisable, however, to have a patient in delicate health sent a long distance away from home and be without a physician. 10. Popular education on the subject of tuberculosis is an essential measure and he thinks that it should be brought before the public in such a way that they can seek to have intelligent treatment in time. He can count 110 private patients treated as above described, about 50 of whom have been restored to health, 20 greatly improved, and only about 30 have died of consumption. He gives brief abstracts of a few of the cases.

8. **Tetanus.**—After reporting several cases, Taylor remarks generally upon the disease and its treatment. He thinks that the prophylactic use of tetanus antitoxin admits of little question, but after the disease has fairly begun the prognosis can not be said to be satisfactory, although it seems to have improved according to the statistics of Lambert since the use of antitoxin. In conclusion he mentions the Bacelli method with carbolic acid which is claimed to give remarkably good results in the hands of its originator and fairly good results under Tizzoni and Behring.

9. **The Physician's Prescription.**—The following is a summary of the common sense and legal status of the physician's prescription, so far as it has been defined, according to Jervey: 1. The patient has no legal nor other right to demand a written prescription or written directions from the physician. 2. It is right and wise that the druggist demand and procure from the physician his written orders for the compounding of prescriptions. 3. The physician has the undoubted right to designate what pharmacist shall fill his prescription. 4. The written prescription is simply an order from physician to pharmacist. It is, through courtesy, and by virtue of custom and convenience, handed to the patient for transmission; but the latter has not, at any time, the slightest right of possession in the instrument. 5. The druggist has at least the right of permanent guardianship (perhaps of outright possession) of the prescription, and he must keep it on file for reference and

for any form of proper investigation. 6. There can be no right, extenuation, or excuse for a copy of a prescription, with physician's name attached, to be taken by druggist, patient, or any one else, without the authority of the physician. 7. The careful physician should invariably retain a carbon-paper facsimile copy of every prescription he writes. 8. The druggist has a legal right to utilize any formula that is uncopyrighted that may fall into his hands, but he can not, unauthorized, use the name of its author in connection with it. In most states, however, statutes would bar his selling intoxicants or other poisons except by direct order of physicians. 9. If a druggist refills a prescription without the order of the physician who wrote it, he does so on his own responsibility, and he has no legal or moral right to leave or place the physician's name on the container.

12. **Suture of Wounds of Large Blood Vessels.**—Halstead reports a case of successful suture of the axillary artery, and reviews the literature of the subject, showing that with the exception of isolated cases in the past, as far back as 1762, little has been done until comparatively late years in this particular line. He mentions the technique and reports some experiments that he has made on dogs. He thinks in cases of longitudinal wounds of arteries it is best to use the continued catgut suture penetrating only two outer coats. After closure of the wound, an additional suture of the perivascular connective tissue may add strength to the union. In complete wounds or where more than one-half of the circumference has been divided, the best method is by invagination as practiced by Murphy, the proximal end being invaginated into the distal by two or three silk sutures, which are first fastened to the proximal end and are then passed through the walls of the distal end from within outward. Tying these sutures draws the proximal end into the distal. After this four or five interrupted sutures continuing only as far as the intima of the invaginated vessel are used to bind the two together. Septic wound conditions contraindicate the operation. For controlling the hemorrhage, temporary elastic constriction is best where it is possible; in other cases digital compression or hemostatic forceps with light flexible blades covered with rubber drainage tube have been used, though there is a possibility of injuring the vessel by them. Temporary ligation is dangerous. In the treatment of wounds of the arteries where there has been a loss of substance, it has been suggested by Payr that the opening be closed by a magnesium plate fastened between the adventitia and media. Gluck, in a wound of the common carotid of this kind where end-to-end union could not be obtained, closed the defect in the artery by suturing over it a flap taken from the internal jugular vein. In suture of any large blood vessels, the operation wound should be closed by buried sutures of catgut without drainage. The accurate coaptation of the wound will help the strength of the vascular suture.

13. **Syphilis.**—Fordyce remarks on cases of gangrene of the initial lesion, which he has observed, also other complications, and on the diagnosis between the specific eruption and those of other diseases, such as lichen planus, pemphigus, psoriasis, lepra, seborrhoic dermatitis, etc.

16. **Latent Pulmonary Tuberculosis.**—Upson calls attention to a summary of 197 cases of pulmonary tuberculosis which called for the treatment of other conditions, such as naso-pharyngeal catarrh, hypertrophic rhinitis, tonsillar hypertrophy, etc., the lung disorder not being suspected. In these cases 115 were females and 82 males. The family and personal histories were good in the majority. The home environment was satisfactory in 99. The greater number of the patients were factory operatives. In 125 cases the eye conditions were more or less noticeable, showing exaggerated brilliancy or dilated pupils. In 20 cases the pupils were unequally dilated. The physical signs were more or less prominent in the majority and in 118 cases there was a slight rise in temperature. All the symptoms are reviewed in detail and the author calls attention to the importance of noticing carefully such cases where there are symptoms of general malaise, loss of strength, appetite, weight, etc., to examine for the existence of pulmonary tubercular complications.

17. **Mediate Palpation.**—Whitney has used the phonendoscope to measure the vibratory thrills brought to our cognizance through the tactile sense. This method of examination, for which he suggests the name mediate palpation, gave such brilliant results in his hands that he thinks it is well to call the attention of the profession to the procedure. The method of use is as follows: The phonendoscope is placed upon the chest, as is usual for auscultation, and then after the rubber tubes are removed the palmar surface of the hand is laid upon it and receives the vibrations which have been reduplicated by passing through the instrument. Its action is akin to that of a sounding-board, delivering the result, however, to the sense of touch instead of to the auditory apparatus. One instrument can be shifted from one side to the other, or two can be used, one for each palm. Any good conductor of vibration may be used, but the phonendoscope does excellently, and if one has it, he need look no further at present, as it fulfills in this way a double office—namely, that of auscultation and mediate palpation.

19. **Tannin.**—Barnes and Hille have produced a tannin nucleo-proteid which gives off its tannin gradually, and is, therefore, of special advantage as an intestinal astringent. Only a small quantity comes in contact with any one portion of the intestinal mucous membrane, thus avoiding local irritation that might defeat the object of treatment. They experimented on calves suffering from diarrhea and found this to be very useful, and clinical trials now being conducted indicate that it is equally effective in the human being.

27.—See abstract in THE JOURNAL, XXXVI, p. 1583.

28. **Neurasthenia.**—Johnston utilizes the history of Charles Darwin as an illustration of the results of neglect of early neurasthenia and his great success in literature and science is, he thinks, largely attributable to the course followed in later life, probably under the direction of Sir Andrew Clark. He calls attention to the failure to apply for early treatment in these cases and the lack of appreciation of disease symptoms by young medical men.

29. **Anesthetization as a Specialty.**—Goldan pleads for a better recognition of importance of the function of the anesthetist and his better remuneration. He should not be considered as a mere satellite of the surgeon, but should be recognized as a factor of distinct importance in the operation, and a class of skilled anesthetists should be demanded and supplied.

33. **The Widal Reaction.**—Wilson studied this in over 1600 blood examinations; "33 per cent. of the positive reactions occurred in the first week, 84 per cent. before the end of the second week, 16 per cent. in the third week, and 4 per cent. in the fourth week." So large a percentage occurring so early in the disease as the second week indicates that the blood examination is of material value to the physician. Of all the typhoid bloods where no reaction was obtained, all but 27 per cent. were seen before the tenth day of the disease. If second samples had been seen, he thinks the reaction probably would have been found. Lastly, only 7 per cent. of partial reactions are found in the typhoid infection of hospital cases, through partial reactions occur more frequently in tuberculosis and malaria than in typhoid. Thirteen different conditions were represented. The value of the partial reaction is nil, in his opinion, except as a suggestion of a second examination. He sums up the results of his study as follows: 1. That these cases where the Widal reaction has been present are only further evidence of its well-known practical value. 2. That the so-called partial reactions are valueless.

34. **Hydrochloric Acid Determination.**—A new method, here described by Einhorn, which he believes in exactness to be equal to that of Günzburg, is as follows: A minute quantity of stomach contents is placed by means of a glass rod upon a strip of dimethyl-amido-azo-benzol paper (one-half by eight centimeters). If the paper turns red one drop of the contents is diluted with two drops of water in a small porcelain dish. A glass rod is dipped into the mixture and the test paper again touched. If it still turns red, one or two more drops of water are

added and the precedure repeated as before. This is done until only a slightly red or almost no red color is produced by the mixture upon the test paper. In this way the amount of dilution required for a trace reaction with the test paper is determined. It is clear that the more HCl there is in the stomach-contents the more they can be diluted, still giving a trace reaction with the dimethyl-amido-azo-benzol paper. He considers this method of examination valuable: 1. in examination with the stomach-bucket or where from other causes only small quantities of gastric contents are at our disposition, and 2, in cases in which it is of importance to obtain at once an idea regarding the amount of acid, and the necessary solutions for titration are not at hand.

39. **Sprains.**—Stanford recommends the use of static electricity in the treatment of sprains, reporting briefly a number of cases. He thinks that for sprains with little or no effusion, such as ankle sprain, the spark affords a very satisfactory method of treatment, giving immediate relief, which lasts for from two to four hours, after which some reaction follows, depending upon the work put on the limb. Aside from immediate relief, there is marked permanent improvement in the majority of cases. In ordinary cases of sprained ankle, daily applications of the spark made for 5 to 7 days removed all lameness. Where effusion is present to any extent, as in synovitis of the knee, the spark, while it affords relief for a short time, seems to have little other effect. When, however, the effusion has been removed by other methods it is a valuable aid, stimulating and strengthening the weakened structures. In cases of long standing, the results are not quite so satisfactory as in acute sprains, but still they may be of use to a certain extent. Care should be used in the administration, as in one or two cases an unpleasant reaction followed.

43. **Pelvic Diseases and Insanity.**—Doolittle has examined 276 patients admitted within twenty-two months to the Iowa Hospital at Independence and reports the findings. In quite a large proportion there were remediable lesions and there was a positive heredity in 47 per cent. of the cases. In only a very small percentage could it be excluded, but a reliable history could not be obtained in the rest of the cases. The results of operative treatment are reported and the author concludes as follows: 1. Pelvic disease is often associated with mental disease, and may be a factor in its etiology, but is seldom, if ever, the sole cause of insanity. 2. Pelvic disease and menstrual disorders are not associated with any particular characteristic psychosis. 3. There is no apparent relation between the intensity of the mental disturbance and the severity and extent of the pelvic disease. 4. Pelvic diseases in insane women should receive the same treatment when practicable as in the sane, and for the same reasons. 5. Surgical operations on those of unstable and defective mental organization, and on those hereditarily predisposed, will usually result unfavorably and leave the patient in a worse mental condition than before the operation, and this is particularly true when there is no local pelvic disease. 6. The best results from surgical operations may be expected in the hysterical and those especially disturbed at the catamenia.

57. **Chlorosis.**—McCaskey recommends the use of hydrotherapy, especially the douche, but it is essential that the application of cold be preceded by the storage of heat, whereby the tonic effects of cold are obtained without undesirable depression or lowering of the tone. In average cases he has satisfied himself that the hot *douche mobile* of the French, followed by cold similarly applied, and gradual force of impact adapted to the physiologic state of the patient, improves cardiovascular tonicity, stimulates general innervation of all the organs and hastens the restoration of blood, to the normal state.

67. **Movable Kidney.**—Every physician should be acquainted, Gallant says, with the special symptoms of movable kidney. For routine work the hand is placed just below the hypochondium and the kidney is displaced by deep inspiration, held and palpated, and allowed to escape during expiration. In some cases the dorsal or upright inclined posture will be more satisfactory for bimanual examination. While a certain number are subjects for operation, 90 to 95 per cent. can be cured symptomatically by the corset and for this purpose one must be secured as long in front as can be worn to elevate and support the redundant abdominal walls and form at the waist line a shelf upon which the kidney may rest. The so-called straight front corset has given good results. It must not be less than two inches smaller than formerly worn, laced at the back from top to bottom with two flap laces as an open V to prevent cutting and chafing and must be laced very snugly from the lowest point to the waist line, loosely from the waist upward, while the patient is standing. Having thrown the corset around the waist she should lie down on the bed, draw up her knees, place her head upon a pillow to relax the abdomen and permit the viscera to gravitate upward toward the diaphragm, and while in this position fasten the corset. Before hooking, she must push the kidney into its nest under the edge of the ribs. This is a simple matter after it has once been learned. The last hook must be fastened first and so on from below upward. As each succeeding hook is secured, the redundant abdominal wall must be drawn within the corset. Any woman with nephroptosis must not be permitted to maintain the upright position without her corset. A corset applied in this way will retain a replaced kidney in a position from which it can not be dislodged downward, thus relieving the symptoms by supporting and elevating the lower abdominal wall; it will tend to prevent or overcome the effects of visceral ptosis; it will, with the kidney at rest, determine whether the symptoms are due to mobility of that organ or disease in adjacent structures and as the patient's condition improves and she puts on flesh, the kidney will descend less and less, and in some cases, freedom from symptoms has resulted; risks of operation, scars, after-pains, and failures are avoided. Operation is always available as a last resort if everything fails.

68. **Opening the Bladder.**—Kelly describes a new method of opening the bladder, which consists in putting the patient in the knee-chest position, elevating the posterior vaginal wall and introducing the catheter, allowing air to enter the bladder. A knife fixed at nearly a right angle to the handle is then passed through the vesico-vaginal septum, opening up the bladder into the vagina about 1.5 centimeters to the front of the cervix. The incision can be made any desired length. By putting the finger into the incision, the internal orifice of the urethra is located, guiding the knife as far forward as desirable. This can be done under cocain anesthesia, and in case of irritable urethra or other reasons for desirable drainage for a short period he introduces a mushroom catheter, leaving it in for a week or ten days. As soon as it is withdrawn, the wound heals spontaneously. The method is of great advantage to operations about the urethra and is the best for opening the bladder for removal of the vesical calculus. As soon as the stone is removed, the incision may be closed with the utmost ease and accuracy; with the patient in the same position.

72. **Hegar's Sign.**—LeConte has found Hegar's sign apparently reliable in differentiating myomata from pregnancy. In three cases the womb resembled pregnancy in appearance, except that compressibility of the lower uterine segment was absent. The absence of this sign permitted him to proceed with the operation with the utmost confidence. If the sign has value, it is of the highest importance: if it has not, his good fortune, he says, has been superior to his knowledge.

84. **Hydrotherapy.**—The stimulating effect of water is elaborated upon by Baruch, whose confidence in this agent has been gained after years of study and observation. The first diseases in which he mentions its use especially are phthisis and neurasthenia. In the former the use of douches and systematic hydrotherapic treatment often seem to be very effective. In neurasthenia he believes that the methodical employment of hydrotherapy in combination with proper diet and environment will work wonders in many cases. The most useful procedures are the dry pack, which consists in the snug wrapping of the patient in heavy woolen blankets for about an hour, followed by uncovering of successive parts of the trunk, then treated to a rapid and brisk rubbing with a bath glove or washrag squeezed out of water at 85 F. After drying and friction the

patient is sent into the air for general exercise. The process is repeated daily, the water temperature being reduced 2 or more degrees each day until 60 F. is reached. When the patient bears this well, he is subjected to more decided measures. Standing in water at 100 F., in a warm bathroom, the patient may be subjected to affusions from a foot-tub containing water at a temperature of 80 F., daily reducing it 2 or 3 degrees until the temperature of 60 F. is reached. Water is dipped and thrown with force on the back and shoulders with a long handled basin or large tin dipper. If this is done forcibly, followed by rapid drying and dressing and exercise, the patient will not be chilled. Every day larger quantities of water may be used, always avoiding chattering of the teeth and cyanosis. He thinks this method can be applied at home and that the stimulant arouses the depreciated neurons, increases the vascular activity of the brain and improves general and local nutrition. Those cases of neurasthenia in which insomnia is prominent are specially amenable to hydrotherapy judiciously added to treatment of the general condition. Diabetes is another disease in which he finds hydrotherapy of decided benefit. He has frequently observed that strict dietetic rules may be relaxed if systematic exercise is added to the treatment of diabetes. Nervous dyspepsia, hysteria, obstinate neuralgia, sciatica, neuritis, lumbago and allied diseases are relieved by cold applications. Spasmodic and bronchial asthma which has resisted other treatment is remarkably relieved under hydrotherapy and we are aware of what has been done in the Nauheim method of treatment of cardiac disease. In angina pectoris, which is more often of the false than the true type, hydrotherapy has often relieved after failure of other methods employed by his colleagues and himself. In gouty rheumatism and lithæmic disease remarkable cures are effected by the judicious application of baths and douches under the direction of a skillful physician in watering places. Their treatment may be imitated at home, wherever douches under pressure of twenty to thirty pounds can be had. This treatment stimulates the emunctories, especially when combined with abundant and the methodical drinking of water. He has observed great relief in this type of patients and often complete restoration obtained under hot bath and douche and massage treatment at home. His deductions are from an experience of more than 100,000 recorded procedures in neurasthenia, hysteria, some of the psychoses, phthisis, gout, rheumatism, dyspepsia, cardiac diseases, sciatica and other neuralgias, obesity and neuritis. He cautions, however, against the empirical application of treatment or its use in unskilled hands. If water is to be a valuable remedy it must be only in the hands of the medical man: its theory and practice must be taught in our schools and its application in our hospitals.

90. **Epigastric Pain.**—The points to which special attention is called by Bettman are the part played by gall-stones in producing local pain, and he says it should be laid down as a clinical rule that cholelithiasis should be suspected whenever patients complain of special epigastric pain occurring several hours after eating and when a careful examination of the secretion or digestive function reveals no abnormality. He reports several cases which seem to him proof that the demonstrable absence of gastric lesions of tabes, severe paroxysmal gastric pain in the vast majority of cases indicates gall-stones. The relation of epigastric pain to spinal trouble is also mentioned, and he says that in a certain number of patients pressure against the anterior surface of the spine about an inch below the umbilicus produces a severe pain located in the epigastrium and radiating to the hypochondrium. Persistent epigastric pain may be produced by pelvic lesions and much more rarely by eye-strain. A very interesting form occurs in young chlorotic girls, who complain of symptoms suggesting gastric ulcer. The special features are the chlorotic background, absence of nausea or vomiting, localization in the median line, normal or diminished gastric acidity and tender spots, and most of all, the rapid disappearance of symptoms under treatment with iron and arsenic. Another form worth mentioning is that accompanying arteriosclerosis in elderly persons, coming on usually after meals when exercise is indulged in. It is not accompanied by local tenderness, heart disease or dyspnea, and the digestion is little if at all impaired. It does not affect the general health, but is simply an annoying symptom. Van Valzah and Nisbet ascribe it to the gastric localization of the arteriosclerosis and liken it to the ordinary muscle cramps of this condition. In conclusion, he says that we can not be too careful in estimating the significance of epigastric pain. In some cases it is associated with angina pectoris, and it may be the herald of severe or even fatal cardiac disease. Occasionally we locate in the stomach pains situated in the left lobe of the liver; we should be careful to study each case and determine its causation.

91. **Post-Influenzal Neuralgia.**—Aldrich quotes Clouston, Mills and Knapp as to the deleterious general effects of an epidemic of influenza, but especially considers the severe infectious manifestations that follow it, particularly neuralgia of the cranial nerves. He thinks that seven-tenths of the cases in the last ten or twelve years date the beginning of their trouble to an influenzal attack. The frequency of zoster both of the trunk and trigeminal region, occurring in la grippe, is also evidence of the vascular origin of many of the cranial and spinal affections following the disease. The treatment which he has found to cure many initial cases of trigeminal post-influenzal neuralgia is a combination of the castor oil and strychnia treatments. After thorough examination, if the case is found suitable, the patient receives an initial dose of castor oil, which is 1 ounce if opiates are not being taken and 2 if they are. A solution of nitrate of strychnia, 1 minim representing 1/200 of a grain, is given in doses of 20 minims four times a day, increasing 1 drop every twenty-four hours and is pushed until systemic effects are obtained, the oil being given daily. The patient should be unaware of the nature of the treatment. If the patient has been taking morphin, it should be tapered off. He finds this method specially calculated to cure post-influenzal neuralgia of the spinal or cranial nerves.

92. **Knee Symptoms from Foot Disorders.**—The summary of Freiberg's paper is: 1, that abnormal conditions of the foot may be the cause of pain in the knee with or without themselves showing any local subjective symptoms; 2, pronated and flat-foot being the most frequent cause of this character, it is possible for shortening of the calf-muscles to be the underlying cause of such knee pain in cases of contracted or pronated foot, and 3, the attachment of the calf-muscles to the knee capsule through the medium of the plantaris may serve to explain this phenomenon. He mentions in conclusion an article by Pal describing cases where he has been able to determine flat-foot as the cause of the symptom known as meralgia paresthetica.

95.—See abstract in THE JOURNAL, xxxv, p. 1050.

105. **The Economic Valuation of Vision.**—The authors show that a correct estimation of the effect of injuries to the visual apparatus upon the earning powers may be obtained by a simple mathematical calculation. The complete earning ability depends upon three factors: 1. The unimpaired functional power of the bodily organs. 2. The technical knowledge necessary for the carrying on of the vocation. 3. The ability to compete in the labor market. Normal physiologic vision consists of a series of different factors, i. e., the central acuity, visual field, light and color sense, adaptive faculty, muscular movements and cerebral processes all acting together to produce sight. Each of these numerals is given its specific and relative value in the equation, the whole sum equaling normal physiologic vision. Although the formula given is a rather heavy mathematical one, its handling is extremely easy, for we simply replace its several factors by the value of the function. Thus, if all be uninjured, the earning ability = 1, the valuations are very easily determined by looking at the tables which have been compiled by Würdemann and Magnus, or by estimation by a diagram; thus the calculation involves but a simple example in multiplication and takes but a few minutes' time. There is a considerable difference between the scientific definition of blindness and that of economic blindness. The highest and lowest points of scientific visual acuity do not correspond to those used in business; i. e., a day laborer may have his visual acuity reduced to as low as 50 per cent. of normal, yet be able

to continue his work just as well as before, but if it were reduced below 5 per cent. of normal, he would be unable to do any of his work: in the case of a skilled workman, the reduction to any marked extent would greatly interfere with the work and thus a skilled mechanic could not lose more than 25 per cent. of his visual acuity without economic damage, and if he should be reduced to 15 per cent. he could not do any of his work. From the results of experience and of mathematical calculation by means of this formula, it is clearly shown that in trades demanding high vision, a one-eyed person loses 30 per cent. of his earning ability for the first year after the accident and 20 per cent. thereafter: for the lower grades it is 27 per cent. for the first year and 18 per cent. thereafter. Where there is a gradual loss of sight in one eye following an accident, in trades requiring higher visual demands, the proportion is 21 per cent. and in professions with lower visual demands, 18 per cent. The question of claim for damages by reason of the loss of one eye through accident is exhaustively discussed as well as specific injuries affecting the visual field, color sense or causing weak vision in any way. Consideration is likewise given to weak vision existing before the accident. The economic damage to the individual from loss of vision through accidents, depends on the percentage of the loss of earning ability on the wages that the plaintiff has been earning and on the character of his work and his age. Taking these facts into consideration, and accepting certain wage standards and probable duration of working life and the percentage of economic damage as factors, the damage to the individual can be exactly shown in dollars and cents. The settlement of claims for damages should take this economic damage into consideration as the principal element for settlement. This, however, is only one of the legal factors involved. It should be modified according to American law by reduction being made in favor of the defendant in case of extenuating circumstances or contributory negligence and addition made thereto of actual expense incurred by the plaintiff during his illness and damages for pain and anguish suffered by reason thereof; the amount thereof must always be empirically estimated by the courts.

115. **Cyclic Albuminuria.**—This condition is noticed by Tyler, who finds it present mostly in young persons, especially in those of neurotic temperament and with poor digestive systems. The distinguishing feature is that albuminuria is present part of the twenty-four hours and absent the remainder of the time, usually being absent on rising and at bedtime and appearing during the day. The theories of the condition are discussed but not very well determined. The upright position appears to be the essential factor in the production of this symptom. Its diagnosis is important and the following factors are necessary: "1. The demonstration of a persistent intermittent albuminuria unaccompanied by casts or other evidence of renal disease. 2. The elimination of disease of other organs, especially of a left ventricular hypertrophy. In order to reach this diagnosis the separate urine of each micturition for the entire twenty-four hours must be examined, and this examination must be repeated several times. Extreme care must also be taken, by means of centrifugation, to prevent overlooking casts, and there must be the most painstaking systematic examination of the heart and other organs. If the urine is never entirely free from albumin there is structural disease." The condition is probably harmless, although some claim that it means ultimate organic change. Medicines seem to be ineffectual. It may be present for years and disappear without obvious cause. A well regulated life without excesses is probably the best treatment.

125. **Osteitis Deformans.**—After reporting a case and discussing the condition, Atkinson summarizes the more modern views of the disease, that it commences as a chronic rarifying osteitis in which the normal compact tissue becomes finally porous and fresh bone is formed beneath the periosteum, finally undergoing the sclerotic changes so well marked in the latter stages of the disease. He calls attention to the resemblance between rachitis and osteitis deformans and mentions cases which seem to indicate that the dividing line between the bone deformities of children and adults is not always marked, though the disease described under the title of osteitis deformans is really seen only during middle and advanced life.

127.—See abstract in THE JOURNAL, XXXV, p. 143.

136. **Spinal Anesthesia in Obstetrics.**—The following is the summary of Clark's article: "1. That the subarachnoidal injection of cocain during labor is not without danger to both mother and child. 2. That the essential points in the technique of the operation are the same as those taught by Prof. Tuffier, absolute asepsis being the chief cornerstone. 3. That painless uterine contraction goes on, but that the loss of the force exerted by the contraction of the abdominal muscles delays the labor and instrumental delivery has frequently to be resorted to. 4. That in obstetrical practice, the headache and rise of temperature after the injection are as constant as in surgical cases, but the vomiting is more frequent. 5. That 'Explorations, versions, extractions, placental removal are readily done, but not with quite as great ease as under chloroform.' (Marx.) 6. That where the condition of the child or mother renders necessary the immediate use of forceps, or where manual dilatation of the cervix is indicated, the results under spinal anesthesia have been most gratifying. 7. That, so far, there have been no unpleasant sequelæ following these injections noted. Finally, that the consensus of opinion at present is that spinal anesthesia in obstetrical practice will not take the place of chloroform or ether narcosis."

137. **Differentiation of Tubercle Bacilli.**—The method suggested by Comstock for differentiating tubercle from influenzal bacilli when both are combined in the same preparation are: "1. Thinly spread the suspected sputa, or other containing media, upon a cover-glass or slide. Allow it to become air-dried; then flame. Next apply Ziehl's solution, with the aid of heat, as for staining tubercle bacilli. Pass the preparation through 15 per cent. aqueous solution of nitric acid and wash in 60 per cent. alcohol. Rinse thoroughly in fresh water. Dry the preparation and then apply Loeffler's alkaline-methylene-blue, aided by heat, as Ziehl's solution was previously applied. Then wash thoroughly under a stream of fresh water. This will remove most of the stain from other elements in the sputa without danger of washing the fuchsin from the tubercle bacilli or the methylene-blue from the influenza bacilli. Lastly, dry the preparation and mount in balsam. The tubercle bacilli will retain a brilliant red color and the influenza bacilli will be stained blue. This method he claims to be original with himself.

144.—See abstract in THE JOURNAL, XXXVI, p. 982.

145.—Ibid.

146.—Ibid.

157.—See abstract in THE JOURNAL of July 13, ¶38, p. 145.

160.—This article appeared in THE JOURNAL, XXXVI, p. 537.

FOREIGN.

British Medical Journal, July 13.

On the Evolution of Myelopathic Albumosuria. T. R. BRADSHAW.—There is one point in the clinical history of this rare condition which, according to Bradshaw, has never before been determined, viz., the manner in which the albumose appears first in the urine. In all reported cases it has been present in large quantities, but it has never been ascertained whether it appears to begin in minimum quantities, and gradually increases or whether the maximum amount appears almost from the first. The possibility of the latter being the case is suggested by what we know of the onset of pancreatic diabetes. He has lately been consulted by a physician of eminence, a subject of this disorder, who has carefully observed his own case. The albumose was first observed in December, 1899, during an attack of mild pneumonia. The quantity was at that time minute, but has subsequently gone on, continually increasing and has reached a maximum of 10 parts per 1000. The case illustrates two important points, one of which is new: 1. The presence of the albumose in the urine is the earliest symptom of the disease, and may be observed for many months before there are any other indications of failing health, or any local signs of alterations in the skeleton. 2. If we may be permitted to generalize from the only case in which the point

has been investigated, the albumose is first excreted in small amounts; but, owing to the fact that at this stage the subject of the disease does not suffer any inconvenience from it he is not likely to consult a medical practitioner, and so the urine is generally not examined until the albumose has risen to a large amount. Its early discovery in the present instance was doubtless due to the fact that its onset closely coincided in time with an acute illness, and that the subject of it was a member of our own profession.

On Some Cases of Hemorrhage into the Skin and Suprarenal Capsules. PERCY S. BLAKER and BERNARD E. G. BAILEY.—The authors report four cases of children who were taken suddenly ill with vomiting in the night, followed by diarrhea with subcutaneous hemorrhages and death within a comparatively short period—less than twenty-four hours. The postmortem examinations showed engorgement of the suprarenal bodies with hemorrhages. In two cases the blood from the unopened heart was examined bacteriologically, with negative results. The history throws no light on the causation of the disease, but the authors think the presence of hemorrhages under the skin and in the suprarenal capsules indicate some form of toxemia, and in the patients the similarity of symptoms and rapid and fatal termination indicate that the poisoning belongs to the same group as that in epidemic diarrhea and vomiting of children. In the latter, however, he has never met with the hemorrhagic conditions here observed and in three of the cases there was a hyperemic condition of Peyer's patches which is also absent in diarrhea. The question arises: What is the disease? They state the possibility of hemorrhagic smallpox of the fulminating variety. In one of these cases, however, the patient had two very good vaccination scars, and there was no history of smallpox or known source of contagion and no other cases followed. Infantile scurvy might suggest itself, yet there was no spongifying of the gums or tenderness of the limbs and the rapid course of the disease was against it. On the whole, they conclude that we have here a special disorder due to blood poisoning of some form, the nature of the poisoning being unknown. Reference is made to cases reported by Talbot, Andrews, Garrod, and Drysdale, apparently similar, with sudden onset, rapid fatal termination; but hemorrhages occurred in only two of them. Convulsions were prominent in the other two. The only morbid change found postmortem was hemorrhage of the suprarenal capsule, all the other organs being apparently healthy.

The Lancet, July 13.

Diagnosis and Treatment of Typhoid Fever. R. W. MARSDEN.—Marsden considers a recent acute illness commencing with lassitude, headache, chills, epistaxis, splenic enlargement, continuous pyrexia, rose spots, appearing in successive crops for several days, and lasting for three or four days with absence of leucocytosis and terminating by remissions, temperature gradually subsiding after seventeen or eighteen days, and accompanied by sudden profuse intestinal hemorrhage or symptoms of intestinal perforation, or further followed by a definite relapse; such a symptom-group may be with certainty diagnosed as typhoid. He lays stress on the serum diagnosis as important, considering the uncertainty of symptoms. In 209 out of 214 cases the blood examination was either in agreement or not at variance, but there are some possibilities of error, and he summarizes the Widal reaction as follows: A negative result, say at the end of the first week of illness, is against the diagnosis of enteric fever, while each succeeding negative result increases the doubt, so that if it is negative throughout the disease it is certainly something else than typhoid. In fact in all cases in which with approaching convalescence the serum reaction is still found negative, diagnosis of typhoid must be abandoned unless the physical signs and symptoms form such a group as he has before given. In all cases the diagnosis must be uncertain during the first week of illness. The only sign upon which absolute reliance can be placed is the appearance of the rose spots on several consecutive days, either during the primary attacks of a continuous fever at least seventeen or eighteen days in duration or during the relapse, though an otherwise similar attack accompanied by temporary enlargement of the spleen, or intestinal hemorrhage, etc., would require very clear bacteriologic evidence to prove its non-typhoid nature. As regards treatment, he favors the liquid diet in the beginning. The physical processes are so altered during the febrile state as to interfere with the proper digestion of other forms of food, and any other form of diet may irritate the ulcerated and catarrhal bowel. There are, however, many things which are more readily digested and assimilated than the precipitated casein of cow's milk. It is a matter of experience that in some cases of diarrhea the improvement is best obtained by altering the diet. The most constant objection urged is the danger of producing perforation by undigested particles, increasing the catarrhal state or mechanically causing rupture; this objection he considers comparatively slight. Another objection is the possibility of production of a temporary fever or either a definite relapse; this he also doubts. A more probable supposition is the increasing supply of bile by the administration of solid foods in such a way as to increase the number of bacilli poured into the intestines; but this is purely theoretical. As regards treatment, the use of baths with altered dietary is emphasized. He thinks that these are important factors in reducing temperature with its attendant evils; that the intellect is kept clearer and stupor lessened, and a general tonic action on the system exercised; that headache and insomnia are relieved; that the skin is kept softer and circulation improved; that emaciation is retarded, and the chances of cardiac failure and asthenia are reduced. The surgical treatment in typhoid is mentioned and the importance of improvement in our diagnosis specially emphasized in this regard.

Journal of Laryngology, Rhinology and Otology, July.

Some Observations and Remarks on the Air-Currents in Nasal Respiration. CHARLES A. PARKER.—Parker has investigated the air currents in normal respiration by insufflation of lycopodium powder in inspiration and the course of cigarette smoke in expiration, and gives his results as follows: "1. That during quiet inspiration in a normal nose the air traverses the middle, superior, and probably the fourth meatus. 2. That inspiration is impeded by: *a*, Spurs and deviations of the septum and enlargements of the inferior turbinated body, if they project forwards and upwards. (For practical purposes I think a rule may be laid down that if such abnormalities cross and break an imaginary line drawn from the anterior extremity of the inferior meatus—i. e., just internal to the vestibule—to the anterior end of the middle turbinate, they will cause obstruction.) *b*, Enlargements of the middle turbinate body, polypi, etc. *c*, Hypertrophies and growths springing from the vault of the nasopharynx. 3. That in expiration the air traverses chiefly the inferior meatus. 4. That expiration will be more especially affected by: *a*, Hypertrophies of the posterior end of the inferior turbinate. *b*, Hypertrophies, etc., causing stenosis of the inferior meatus."

The Dublin Journal of Medical Science, July.

Inoculation as a Preventive Against Typhoid Fever. HENRY M. CULLINAN.—The author believes in the efficiency of inoculation with anti-typhoid serum as a prophylactic of disease. During the epidemic which occurred at the Richmond District Asylum he commenced and inoculated in rapid succession 307 female patients; it was suggested by some of his medical friends that he should inoculate only one-half and leave the rest for control, but he could not follow the suggestion. Of those inoculated out of a total of 511 altogether only 7 contracted the disease and almost all of these were in the incubating stage, he believes, at the time of inoculation. Before this the disease had rapidly spread and 18 cases had occurred among the patients. The employees, who were generally not inoculated, suffered much more severely than did the patients. The constitutional disorders from the inoculation were not of much importance, though the temperature rose in some cases to 103 and 104. The total number of cases inoculated were 511 out of a total of 655 who were liable to be attacked. Of the 511 only 7 were attacked after the operation, and 47 of the cases of typhoid occurred among the uninoculated. Out of 114 nurses, 17, that is 14.9 per cent. were attacked, as against 6.83 per cent.

of the patients. He believes that the method was certainly of use in the epidemic at the Richmond District Asylum.

Annales de Dermatologie (Paris), June.

Lupiform Syphilis. Gaucher.—A number of cases of lupus have been reported recently as cured by mercurial treatment. Gaucher believes that these must have been cases of unrecognized syphilis and relates the following observation in support of this view. An ulcerative lesion appeared on the nose of a girl of 15, involving both skin and mucosa. After many fluctuations between improvement and aggravation, the lesion became chronic and destroyed a portion of the integument. A number of dematologists declared the lesion to be lupus, but it resisted all the usual measures. When seen by Gaucher, the patient was 47 years old. He instituted mercurial treatment with the result that the lesion healed at once. This phenomenon suggested that it must have been a manifestation of tardy heredo-syphilis, and examination of the eyes revealed the ocular stigmata of hereditary syphilis, which no one had suspected before.

Bazin's Indurated Erythema. U. Mantegazza.—Two cases are described in detail to confirm the writer's theory that this erythema is a variety of scrofuloderma. The symptoms, pathologic anatomy and the marked reaction to tuberculin indicate the tuberculous origin of both. The differences are due to the different virulence of the pathogenic agent and the different route it travels.

Chronic Ulceration of the Face in Tabes. G. Thibierge. The patient was a man of 45, and the ulcerations developed under the same conditions as the buccal mal perforant of tabes, evidently a tabetic trophodermatosis, but they appeared twenty years before any other symptoms of tabes. They occupy the right side of the upper lip and nostril—the skin around them being normal—secrete a little serum and shed a brownish scab from time to time, but are always painless and never more than 1 mm. in depth. The teeth dropped out spontaneously after a few years, and typical tabes developed after twenty years. Girandeau has reported a similar case, nine years before the appearance of the tabes, in a man of 29. The ulcerations involved the brow, both sides of the nose and both ears. The sensation of pain in the face was lost in both cases; but heat and contact perceptions, and the sensibility of the remainder of the body were intact. Both patients presented eye symptoms, the visual field being much reduced, with ocular vertigo and external strabismus in one eye, and there was a history of mild and brief syphilis in youth. Mercurial treatment had no influence on the ulcerations.

Archives Orientales de Med. et de Chir. (Paris), June.

Phimosis as a Cause of Lithiasis. Reccas.—Congenital phimosis is an important factor in the production of lithiasis of the urethra and bladder. A dozen cases are described showing the evident connection between the phimosis and the development of calculi in infants and adults, and the complete recovery, without recurrence, after the phimosis had been operated. Reccas observes that he has never seen a case of lithiasis, even of the bladder, nor of phimosis among the Jews, who practice circumcision the eighth day after birth. Both are frequent among the Mahometans, who do not circumcise until much later.

Bulletin de l'Academie de Medecine (Paris), July 2.

Pulmonary Affections Originating in Upper Air-Passages. M. du Magny.—Pulmonary congestion and bronchopneumonia may be the direct result of the propagation of some suppurative process in the nose, frontal or maxillary sinus, ear or pharynx. The connection with the primary lesion may be unrecognized, or the latter may be ignored. The pulmonary process, if acute, commences with a sudden invasion of the upper lobe of the lung, with retroscapular pain and signs of parenchymatous congestion and possibly fever of 40 C. The lesion is shown by auscultation to be located principally at the hilus of the lung, at the opening of the upper bronchus into the lung. The attack reaches its height in a few hours and usually subsides in five or six days. This character of sudden and transient congestion and its frequent recurrence, are significant in the diagnosis of the affections originating above. Subacute and chronic cases simulate the onset of tuberculosis: the persisting congestion of the apex, the sputa, loss of appetite and emaciation. The differentiation is possible only by the bacteriologic evidence of pyogenic microbes, instead of the tubercle bacillus, in the sputa and the discovery of the purulent focus above. The physical signs resemble more tracheo-bronchial adenopathy than the permanent indurations of tuberculosis, and their location at the angle of the scapula and at the origin of the upper bronchus, is an important aid in diagnosis. He describes eight cases followed for months or years. The bronchitis recurred winter after winter and simulated tuberculosis, until the discovery of the suppurative lesion and its cure, abolished the pulmonary affection. The removal of nasal polypi or adenoid vegetations or the cure of sinusitis or of a suppurative otitis, banished in a few days the pulmonary symptoms that had resisted all treatment for months or years. He noticed that the pulmonary lesion was always on the side on which the patient habitually slept. Experiments on animals showed that methylene blue injected into the nasal fossæ or a trephined sinus, induced catarrhal symptoms in the upper lobe of the lung on the side on which the animal was forced to recline. The stain could be traced in its course down the side of the larynx, trachea and upper bronchus. It was never detected in the lower bronchus, thus confirming the invariable clinical experience. Tests with pyogenic microbes confirmed these data, and also demonstrated that the lung was not affected if the animal reclined in its usual position, that is, not on the side.

Bulletin de la Societe des Hop. de Paris, June 27.

Success of Gasterin in Therapeutics.—Several communications on this subject appear in the *Bulletin*. Le Gendre states that in his experience at the Tenon hospital he has found the natural gastric juice from the isolated stomachs of dogs, as prepared by Frémont, to which he has given the name of gasterin, the most powerful remedy we possess against insufficient gastric digestion and intestinal fermentations. He reports several instances of its efficacy, especially marked in some cases of postoperative gastric disturbances, in the anorexia and gastric intolerance of pregnancy and subsequent to abortion, in arresting the excessive thirst accompanying certain dyspepsias, and in rebellious diarrhea. Rendu confirms these assertions and cites the case of the daughter of a physician who was evidently passing into a rapid decline after a pleurisy, with absolute gastric intolerance. A few doses of gasterin restored the appetite and digestive functions to normal. Frémont describes a case of enteritis and emaciation from months of diarrhea, cured in a few days with gasterin. The enteritis was evidently due to secretory insufficiency of the stomach. There is no pain in these cases. The nerves are insufficient for transmitting pain as well as for controlling the muscular action of the stomach and its secreting functions. The intestine takes care of the insufficiently digested matters for a time, but finally they irritate the walls and diarrhea follows. He concludes: "How many debilitated, anemic, neurasthenic persons vegetate in an apparently incurable condition because their physician has not discovered their gastric insufficiency—the primal cause of the trouble—and prescribed the appropriate remedy." Mathieu describes fifteen cases cured with gasterin and concludes from his experience that it frequently improves the digestion in hypochlorhydria, accompanied by more or less neurasthenia. Strength returns under its influence and he considers it "a most remarkable remedy, actually superior to all those that have been used in analogous conditions." Even in case of cancer of the stomach, he adds, if it is tolerated, it may produce marked improvement for a time.

Chronic Diarrhea and Insufficiency of the Gastric Juice. Soupault.—The connection between insufficiency of the gastric juice and chronic diarrhea proclaimed by Frémont, is confirmed by Soupault's experience. He cured ten patients with rebellious protracted diarrhea, by administering hydrochloric acid in the form of a lemonade, a glass to be taken at meals. His formula is 6 to 8 gm. hydrochloric acid: 150 gm. syrup of

lemon and water to make one liter. The hydrochloric acid acts in the same way and seems to be as effective as gasterin. He has confirmed the fact noticed by others that the stomach in these cases is emptied very rapidly. Food ingested only fifteen to thirty minutes before is frequently found in the stools. The food matters which pass into the intestine without having been digested by the gastric juice, evidently irritate and induce an exaggerated peristalsis, which entails their rapid evacuation and results in a chronic enteritis. Gasterin or hydrochloric acid aids in the gastric digestion of the food matters, retards their evacuation from the stomach and thus removes the cause of the diarrhea.

Echo Medical (Lille), July 7.

Effect of Yeast on the Leucocytes. DELEARDE.—The therapeutic administration of brewer's yeast has a decided influence on the leucocytes in the blood. In some persons the number of white corpuscles rapidly increases and then diminishes; in others the number decreases from the start. The polynuclears, generally speaking, are increased in numbers. The tests were made on healthy and tuberculous persons, and about an equal number of each reacted with the increase or the decrease. When yeast is administered in furunculosis, the benefit first experienced rapidly subsides, and it is necessary to suspend it and commence over again. This may correspond to the marked but transient, leucocytosis observed. The absence of leucocytosis in others may explain why some persons fail to derive any benefit from the yeast.

Progres Medical (Paris), July 6.

Membrano-Ulcerative Tonsillitis. A. RAOULT.—Thiry has recently observed 14 cases of membrano-ulcerative lesions, 4 of which were tonsillitis and 5 stomatitis. Raoult describes 5 new cases, the patients all adults, in all of which the fusiform bacillus and Vincent's spirillum were found more or less numerous. Several were bilateral lesions. They frequently resisted treatment for a long time in the city, but healed in a few days after removal to the country. Stomatitis and tonsillitis co-existed in one case. One tonsil had been completely destroyed by secondary infection. The patients complained of slight fever, difficulty in swallowing and general depression, painful and swollen glands in the vicinity but no chills. The patches of membrane were wiped off by the patients themselves, in some cases leaving an ulcerative lesion. The breath was fetid and there was considerable pain at the site of the lesion. The affection is evidently identical with Vincent's diphtheroid angina, and Athenasiu's membrano-ulcerative angina in children, of which it is a later stage. In one case there was a double relapse, at first on the same side and then on the other, the patient much debilitated by the protracted course. Recovery was not quite complete December 15, and the first symptoms had been noted September 15.

Elimination of Urea in the Sputa in La Grippe. DELORE. Three months after an attack of la grippe, the effects of which lingered in a bronchial affection, the patient, an elderly arthritic brain-worker, presented symptoms indicating uremia, but the kidneys showed normal elimination of urea. Fine fern-shaped crystals of urea were found also in the transparent, mucous sputa. Expectoration was accompanied by a smarting sensation. The diagnosis was intoxication from nicotin, as the man smoked six times a day, and the assumption was that the nicotin enhanced the organic susceptibility to the urea, which was being eliminated in normal amounts in the blood, sweat and sputa. A prolonged hot bath and deprivation of tobacco cured the bronchitis and, with it, all the other symptoms.

Jahrbuch f. Kinderheilkunde (Berlin), May.

Empyema in Childhood. A. WUERTZ.—Eight out of 18 children with empyema recovered, 4 without and 4 in spite of complications. Four of those who died—from 5 to 16 months old—had no complications. All the cases were unilateral and the little patients preferred to lie on the affected side. The respiration varied from 32 to 148 and the pulse from 120 to 148. The heart was displaced in 10—to the right in 7. The liver rose above the costal arch in 6. In 4 cases furunculosis and abscesses denoted a tendency to suppuration.

June.

The Anemia of Young Children. GEISSLER and JAPHA.—It is evident that some of the cases now classified as pseudo leukemic anemia belong to the group of the simple, severe, chronic anemia of young children—splenic anemia. Others possibly should be classed as leukemia, but cases observed at Heubner's clinic, indicate that although the blood presents the leukemia formula, the affection may terminate in recovery. Alterations in the red corpuscles, especially the appearance of megaloblasts, should be considered pathologic in young children. The total number of leucocytes and the proportion of lymphocytes in this splenic anemia is normally larger than usual. A polynuclear leucocytosis may be transient. The severe forms of anemia in children are invariably accompanied by an enlargement of the spleen, but it may be enlarged also in mild anemia and even in its absence. The twenty-six cases described demonstrate the existence of this disease of the blood, in young children, especially in those with rhachitis. It ranges from a slight decrease in the hemoglobin and the number of the reds to the appearance of megaloblasts.

Histologic Examination of the Bones of Children Treated with Suprarenal Extract. W. STOELTZNER.—Anatomic and histologic study of sections of the bones of children who had been treated with suprarenal extract during life, showed almost normal composition of the bones at the points usually occupied by the pathologic osteoid tissue in rhachitis. This research establishes a scientific foundation for treatment with suprarenal extract, which is lacking for other methods of treatment.

Wiener Klinische Rundschau, July 7.

Biologic Differentiation of Blood Specimens. I. HONL.—The Uhlenhuth and Wassermann method of differentiating specimens of blood has been thoroughly tested by Honl, who confirms in every respect the claims of the discoverers of the method.

[Other exchanges bring similar corroboration from all parts of the world.—ED.]

Pneumotyphoid. A. HOFF.—A young man, previously healthy, complained of persistent headache, depression, weakness and trembling of the limbs and lips; the tongue was dry and coated, and the throat congested. The other organs were sound except for a slight unilateral bronchial lesion. In a few days the right lower lobe was entirely involved. The fever and cerebral symptoms indicated typhoid, which was confirmed by roseola and enlargement of the spleen. Widal's and the diazo-test were positive by the third day. The course of the disease corroborated the diagnosis of typhoid fever localized in the lung. There was no expectoration and after the crisis the symptoms subsided by the twenty-second day. Three days later an extensive, rebellious erysipelas appeared on the right thigh, and the much debilitated patient succumbed in three days. Klebs has shown that erysipelas in typhoid patients can be caused by the typhoid bacilli and Hoff considers it in this case an indication that the typhoid bacilli had regained their virulence, and that it was thus a kind of relapse. He considers it possible that the bacilli might have reached the lung by way of the blood from the intestines or urogenital tract, passing from the stomach into the intestines and thence into the lymph and blood circulation, without causing a lesion in the intestines. Kreibich has reported a case, in which he found the colon bacillus in pure cultures in a case of pneumonia. Hoff admits, however, that the typhoid bacillus might have been inhaled. Gerhardt has noted that 10 per cent. of typhoid patients have an ulceration in the pharynx, and that this ulceration may appear as the first localization of the disease.

Zeitschrift f. Tuberkulose (Leipsic), ii, 2.

Four Cured Cases of Tubercular Pneumothorax. L. SPENGLER.—The fact that tubercular pneumothorax is curable, has been demonstrated again by four new cases reported by Spengler of Davos, and a fifth cured except for the persistence of a serous exudate. In four of the cases a pulmonary lesion was healed at the same time. The most favorable chances for recovery are afforded by the development of an extensive exudate, but no means have yet been devised to safely induce this

exudate in man, although injections of silver nitrate accomplish this result in dogs. The formation of the exudate is favored by leaving the bed, but when a certain amount of fluid has accumulated, symptoms of compression and dyspnea appear, compelling the patient to return to bed. Spengler waits before puncturing until three weeks have passed without evidences of air in the pleural cavity. This indicates with considerable certainty that the hole in the pulmonary pleura has become permanently closed. Every exudate is accompanied by more or less deposit of fibrin on the pleuræ. This tends to glue the edges of the hole together, aided by the pressure of the accumulated fluid. By the end of the three weeks, this deposited fibrin has become organized into connective tissue more or less, and the compressed organs can now be relieved by withdrawing a small amount of the fluid—not more than 500 to 700 c.c.—after the nature of the exudate has been determined by exploratory puncture. A week or two later, a liter of the fluid may be withdrawn and two to four weeks after this, 1.5 to 2 liters. Further aspiration is seldom necessary. Sero-fibrinous exudates, the sero-purulent and the exudates resembling pus but free from pyogenic micro-organisms, are all amenable to this method of treatment. One of his five cases recovered without the necessity of a puncture, but he punctured twenty-two times in the other four cases. The character of the exudate remained unchanged by the intervention.

Operative Treatment of Pulmonary Tuberculosis.—H. SARFERT.—As the result of extensive experimental research Sarfert announces that tubercular cavities do not form in the lungs from the action of the tubercle bacillus alone, nor from the streptococcus alone. There must always be a primary tubercular lesion. The streptococcus will then colonize in it and the combination of the two micro-organisms results in the production of the cavity. Treatment with tuberculin or other specific measures affects only one of these parasites, which explains its failure to cure these cases. If the other parasite could be evacuated by an operation, the specific treatment would then have a chance to succeed. When a cavity has been spontaneously evacuated, the walls are covered with caseous matter in which various bacteria continue to vegetate. The vessels are dilated with imminent danger of rupture and flooding of hitherto sound parts of the lung with blood from the lesion, spreading the infection even if the hemorrhage is not directly fatal. These conditions, as well as an active cavity, require operative treatment. Sarfert has devised a method of operating, worked out on hundreds of cadavers, and has applied it on one patient with entire success, as mentioned in THE JOURNAL at the time, xxxvi, p. 693. He resects the second rib from the sternum to the axilla; mobilizes and shells out the apex of the lung. He is then able to determine by palpation the site of the cavity, its size, etc., through the wall of lung tissue, which feels like a thick rubber ball. He then incises the wall and tampons the cavity. This incision affords ample oversight of the cavity, vessels, etc. In the patient operated on, an isolated, large cavern of the right upper lobe was correctly diagnosed. The apex of the lung with the cavity was shelled out, and the latter entered through a pleuro-fissure. The bleeding was minimal, and respiration undisturbed. There was no danger of the development of a pneumothorax, as in consequence of the extensive adhesions between the pleural walls there was no longer a pleural cavity. The large space left after the operation between the apex of the lung and the wall of the thorax gradually filled up with granulations and the cavity became obliterated by cicatricial retraction. Sarfert's monograph has been published in book form (J. Booch, Werdau i. Sa.), with illustrations. One shows the tubercular infiltration of a rabbit's lung after intratracheal injection of a culture of tubercle bacilli, and later, the formation of cavities, after injection of streptococci.

Gazzetta degli Ospedali (Milan), July 4.

Tubercular Pleuritis. DIEULAFOY.—Acute, sero-fibrinous, cold pleurisy, even the apparently idiopathic variety, is always tubercular, although it may commence with a sudden, acute onset. The pleurisy may be secondary to a pulmonary lesion or it may be the sole localization of the tubercular infection. The cytodiagnosis depends on the composition of the effusion in case of cardiac lesions, in Bright's disease on the endothelial desquamation, in pneumococcus pleurisy on the leucocytosis and in the tubercular, sero-fibrinous pleurisy on the lymphocytosis. Clinical experience demonstrates that this acute, *a frigore* pleurisy may terminate in complete recovery, but this is no evidence against its tubercular nature, as tubercular manifestations on the pleura heal more readily than on any other serous membrane. Persons recovering from a pleurisy of this kind should be treated by the hygienic and other measures indicated for tuberculosis.

Giornale della Accademia di Medicina (Turin), lxiv, 5.

Microscopy of the Vessels of the Conjunctiva. P. BAJARDI.—With a microscope magnifying 63 diameters, it is possible to watch the circulation in the vessels of the conjunctiva and retina during life. Bajardi observed the effects of various drugs in this way: cocain induces in ten to fifteen minutes a pronounced constriction of all the vessels, the smaller ones being entirely emptied of blood. With a 5 per cent. solution, this constriction was pronounced for nearly four hours after instillation, after which it rapidly subsided. After instillation of two drops of suprarenal extract, all the superficial and deep vessels become constricted to an intense degree for about an hour, gradually returning to normal by the end of the second hour. Instillation of a 1 per cent. solution of eserin constricts the vessels for one and one-half hours. All these substances retard the circulation, and the conjunctiva appears less transparent, as if it were suffused with a yellowish fluid, which brings certain capillaries, previously invisible, into view.

Books Received.

ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. By Charles E. de M. Sajous, M.D., and one hundred Associated Editors. Assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromo-lithographs, Engravings and Maps. Volume VI. Cloth. Pp. 1043. Price, $5.00 per volume. Philadelphia, New York, Chicago: F. A. Davis Co. 1901.

ANESTHETICS AND THEIR ADMINISTRATION. A Text-Book for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M.A., M.D. Cantab., Anesthetist to His Majesty the King. With Illustrations. Cloth. Pp 528. Price, $4.00. London and New York: MacMillan & Co. 1901.

THE JOHNS HOPKINS HOSPITAL REPORTS. Paper. Pp. 131. Baltimore: Johns Hopkins Press. 1901.

EIGHTEENTH ANNUAL REPORT OF THE PRESBYTERIAN HOSPITAL OF THE CITY OF CHICAGO, with the Seventeenth Annual Report of the Ladies' Aid Society, 1901. Paper. Pp. 65.

MILITARY GOVERNMENT OF PORTO RICO from October 18, 1898, to April 30, 1900. Appendices to the Report of the Military Governor. Paper. Pp. 359. Washington: Government Printing Office. 1901.

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY, March, 1901. Paper. Pp. 17. New Rochelle, N. Y.: Published by the Society. 1901.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA, July, 1901. Paper. Pp. 13. Philadelphia: Published by the Society. 1901.

THE NEWER REMEDIES, Including Their Synonyms, Sources, Methods of Preparation, Tests, Solubilities, Incompatibles, Medicinal Properties, and Doses as far as Known, Together with Sections on Organo-Therapeutic Agents and Indifferent Compounds of Iron. A Reference Manual for Physicians, Pharmacists, and Students. By Virgil Coblentz, A.M., Phar. M., Ph.D., F.R.C.S., Professor of Chemistry and Physics in New York College of Pharmacy. Third Edition, Revised and very much Enlarged. Pasteboard. Pp. 247. Philadelphia: P. Blakiston's Son & Co. 1899.

New Patents.

Patents of interest to Physicians, etc., July 9 and 16:

678,212. Fumigating apparatus. Gilbert E. Alphin, Mount Olive, N. C.

678,330. Halogen albumin, and making same. Ferdinand Blum, Frankfort-on-the-Main, Germany.

678,333. Tonsillotome. George Ermold, Elizabeth, N. J.

678,334. Tonsillotome. George Ermold, Elizabeth, N. J.

678,242. Atomizer. Hermann Goltermann, East Orange, N. J.

677,879. Hernial truss. Wm. A. Middaugh, Kalamazoo, Mich.

678,272. Divider and bag-filler for powders. Ludwig Neumayer, Merseburg, Germany.

678,284. Medicine chest. Jacob Schaffer, New York City.

678,714. Vaporizer. Anton Bulling, Munich, Germany.

678,401. Salicylic ether of quinin. Fritz Hofmann, Elberfeld, Germany.

678,568. Syringe. Richard J. Hughes, Dedham, Wis.

678,417. Surgical jaw splint and support. Wm. G. E. Muller, Paterson, N. J.

34,779. Design, inhaler. John J. McPherson, Montgomery, Ala

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., during the period June 27 to July 17, 1901, inclusive:

Frank E. Artand, major and surgeon, Vols., leave of absence granted on the expiration of which he will proceed from Lake Providence, La., to San Francisco, Cal., en route for duty in the Division of the Philippines.

Percy M. Ashburn, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

John M. Banister, major and surgeon, U. S. A., member of a board at West Point, N. Y., to examine candidates for admission into the U. S. Military Academy.

Irvin E. Bennett, captain and asst.-surgeon, Vols., leave of absence from China Relief Expedition extended to include Aug. 26, 1901, when he will report for transportation to Manila, P. I., for duty in the Division of the Philippines.

Horace D. Bloomberg, lieutenant and asst.-surgeon, U. S. A., recently appointed, will proceed from Easton, Pa., to Plattsburg Barracks, N. Y., for temporary duty.

Reuben M. Bonar, captain and asst.-surgeon, Vols., recently appointed, is relieved from duty at Camp McKinley, Honolulu, H. I., and will proceed to Manila, P. I., for assignment in the Division of the Philippines.

William C. Borden, major and surgeon, U. S. A., leave of absence granted.

Roger Brooke, Jr., lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Sandy Springs, Md., to Fort Myer, Va., for temporary duty.

Robert Burns, major and surgeon, Vols., recently appointed, leave of absence granted.

Robert E. Caldwell, captain and asst.-surgeon, Vols., recently appointed, is relieved from duty on the transport *Rosecrans* and will report for transportation to Manila, P. I., for assignment in the Division of the Philippines.

George H. Calkins, contract surgeon, from Tonawanda, N. Y., to Fort Meade, S. D., for post duty.

William B. Davis, major and surgeon, U. S. A., member of a board at West Point, N. Y., to examine candidates for admission into the U. S. Military Academy.

Matthew A. DeLaney, lieutenant and asst.-surgeon, U. S. A., recently appointed, is assigned to temporary duty at Fort Monroe, Va.

John Ryan Devereux, lieutenant and asst.-surgeon, U. S. A., recently appointed, will report for duty to the commanding officer, Washington Barracks, D. C.

Guy L. Edie, major and surgeon, U. S. A., from the Department of California to Columbus Barracks, Ohio, for post duty.

Peter C. Field, lieutenant and asst.-surgeon, U. S. A., recently appointed, will proceed from New Brunswick, N. J., to Fort Slocum, N. Y., for temporary duty.

Charles C. Geer, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Belton, S. C., is assigned to temporary duty at Fort McPherson, Ga.

George H. R. Gosman, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Brooklyn, N. Y., is assigned to temporary duty at the U. S. Military Academy, West Point, N. Y.

William W. Gray, major and surgeon, U. S. A., from the Division of the Philippines to Fort Thomas, Ky.

Abram L. Haines, major and surgeon, Vols., recently appointed, and now at Albany, N. Y., will proceed to San Francisco, Cal., en route for assignment to the Division of the Philippines.

Paul S. Halloran, lieutenant and asst.-surgeon, U. S. A., recently appointed, will proceed from York, Pa., to Fort Wadsworth, N. Y., for temporary duty.

George L. Hicks, Jr., major and surgeon, Vols., is assigned to the 38th Infantry, Vols.

Henry F. Hoyt, major and surgeon, Vols., leave of absence from the Division of the Philippines extended.

Thomas T. Jackson, captain and asst.-surgeon, Vols., having tendered his resignation, is honorably discharged, to take effect July 15, 1901.

Nathan S. Jarvis, captain and asst.-surgeon, U. S. A., having been duly examined by a board of officers under the provisions of an act of Congress, approved March 2, 1901, and pronounced by the board eligible for retirement, and having been duly appointed an assistant-surgeon under the authority conferred by the said act, is, by direction of the President, placed upon the retired list of the army, to take effect June 29, 1901.

William P. Kendall, major and surgeon, U. S. A., member of a board at West Point, N. Y., to examine candidates for admission into the U. S. Military Academy.

H. Newton Kleruff, contract surgeon, from the transport *Kintuck*, to Fort Stevens, Oregon, for temporary duty.

Conrad E. Koerper, lieutenant and asst.-surgeon, U. S. A., recently appointed, will report to the commanding officer, Washington Barracks, D. C., for temporary duty.

William C. Le Compte, contract surgeon, from Fort Du Pont, Del., to duty at Fort Niagara, N. Y.

William F. Lewis, captain and asst.-surgeon, U. S. A., is detailed as a member of an examining board at Fort Leavenworth, Kan.

Robert J. McAdory, contract surgeon, relieved from duty at Fort McDowell, Cal., and will proceed to Honolulu, H. I., for duty at Camp McKinley.

George L. Marion, contract surgeon, leave of absence granted.

Charles F. Mason, captain and asst.-surgeon, U. S. A., member of an examining board at San Antonio, Tex., vice Lieut.-Col. C. B. Byrne, deputy surgeon-general, relieved.

Paul Mazzuri, captain and asst.-surgeon, Vols., recently appointed, relieved from the Department of Cuba, to proceed to San Francisco, Cal., en route to the Division of the Philippines for assignment.

William O. Owen, major and surgeon, U. S. A., from Fort Thomas, Ky., to San Francisco, Cal., en route to the Division of the Philippines for duty.

Rudolph S. Porter, major and surgeon, Vols., recently appointed and now at Chicago, Ill., will proceed to San Francisco, Cal., en route for duty in the Division of the Philippines.

Ernest L. Ruffner, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Buffalo, N. Y., is assigned to temporary duty at Columbus Barracks, Ohio.

John L. Shepard, contract surgeon, now at Chicago, Ill., will proceed to Fort Logan, Colo., for post duty.

Henry R. Stiles, captain and asst.-surgeon, U. S. A., leave of absence extended.

Robert M. Thornburgh, lieutenant and asst.-surgeon, U. S. A., leave of absence granted, on the expiration of which he will proceed to Fort Slocum, N. Y., for temporary duty.

Robert P. Updyke, contract dental surgeon, from Washington, D. C., to duty at Fort Leavenworth, Kan., ten days' delay granted in complying with this order.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending July 20, 1901:

Asst.-Surgeon F. M. Fogan, detached from the *Scorpion*, when put out of commission, and ordered to the *Machias*.

P. A. Surgeon C. P. Bagg, detached from the *Culgoa*, and ordered to the *Yorktown*.

Surgeon C. J. Decker, detached from the *Newark*, when put out of commisssion, and ordered home to wait orders.

Asst.-Surgeon W. H. Bucher, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Dixie*, July 22.

Asst.-Surgeon P. E. McDonnold, ordered to duty at the Naval Museum of Hygiene, Washington, D. C., July 25.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended July 19, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, June 30-July 7, 1 case.
District of Columbia: Washington, July 6-13, 1 case.
Illinois: Chicago, July 6-13, 3 cases.
Kansas: Wichita, July 6-13, 1 case.
Louisiana: New Orleans, July 6-13, 1 case.
Massachusetts: July 6-13, Boston, 1 death; Holyoke, 2 cases; New Bedford, 1 death.
Michigan: Detroit, July 6-13, 1 case.
Minnesota: Minneapolis, June 30-July 7, 2 cases.
New Hampshire: Manchester, July 6-13, 1 case.
New Jersey: Newark, July 6-13, 1 death.
Ohio: Cincinnati, July 5-12, 3 cases; Cleveland, July 6-13, 8 cases, 1 death; Toledo, July 6-13, 1 case.
Pennsylvania: Lebanon, July 6-13, 6 cases; Philadelphia, July 6-13, 3 cases, 1 death; Pittsburg, July 6-13, 2 cases.
Tennessee: Memphis, July 6-13, 1 case.
Utah: Salt Lake City, June 30-July 6, 2 cases.
Washington: Tacoma, June 30-July 7, 1 case.

SMALLPOX—FOREIGN.

Austria Hungary: Prague, June 22-29, 1 case.
Belgium: Antwerp, June 15-29, 2 deaths.
Canada: British Columbia, Victoria, June 15-30, 2 cases.
China: Hongkong, May 25-June 1, 1 case, 1 death.
Colombia: Panama, July 1-8, 5 cases, 1 death.
Ecuador: Guayaquil, May 11-June 8, 7 deaths.
Egypt: Cairo, June 18-24, 1 death.
France: Paris, June 22-29, 10 deaths.
Great Britain: Dundee, June 22-29, 1 case; Glasgow, June 28-July 5, 9 cases, 1 death; Liverpool, June 15-29, 4 cases, 2 deaths; London, June 22-29, 5 cases, 2 deaths.
India: Bombay, June 11-18, 6 deaths; Calcutta, June 7-15, 6 deaths; Karachi, June 2-9, 1 case, 1 death; Madras, June 1-13, 9 deaths.
Italy: Messina, June 22-29, 12 cases; Naples, June 23-30, 170 cases, 32 deaths.
Russia: Moscow, June 15-22, 7 deaths; Odessa, June 15-29, 3 cases; St. Petersburg, June 15-22, 1 death; Warsaw, June 8-15, 3 deaths.
Spain: Corunna, June 22-29, 3 deaths; Valencia, June 8-23, 1 death.
Switzerland: Geneva, June 15-22, 1 case.

YELLOW FEVER.

Costa Rica: Port Limon, July 4, 1 case.
Cuba: Cienfuegos, July 15, 1 case.
Mexico: Vera Cruz, June 30-July 6, 6 cases, 4 deaths.

CHOLERA.

India: Bombay, June 11-18, 3 deaths; Calcutta, June 8-15, 53 deaths; Madras, June 1-14, 1 death.

PLAGUE.

Africa: Cape Town, to June 22, 735 cases, 354 deaths; June 15-22, 21 cases.
China: Hongkong, May 25-June 1, 215 cases, 207 deaths.
India: Bombay, June 11-18, 54 deaths; Calcutta, June 8-15, 48 deaths; Karachi, June 29, 28 cases, 25 deaths.
Japan: Formosa, June 23, epidemic; Nagasaki, June 1-10, 1 death on U. S. S. *Kintuck*.
Mauritius: June 13-20, 2 cases, 1 death.

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Original Articles.

RESULTS OF OVARIAN SURGERY.*

WITH FURTHER REPORT UPON INTRA-IMPLANTATION OF OVARIAN TISSUE.

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It has become a well-established fact that the ovaries in women can be treated surgically, in an aseptic manner, almost with impunity, and that, after such treatment, they recover their lost function and continue to do their full duty in the human economy for many years. Abundant evidence of this fact is on record in medical journals of this country and Europe, published during the past fourteen years. Early in 1887, I began what was then experimental work in surgery on the ovary. At the present time it is no longer experimental. The results of that work have been published. (See bibliography.)

As the title of my paper indicates, it is not my purpose at present to ask you to listen to reports of detailed cases, in an effort to prove to you my previous statements, but to give you some of the results of such work that will be of interest—not from a statistical standpoint—but from my own individual cases. Others have added largely to the list of successes, especially Drs. Polk and Goffe of New York, and Dr Burrage of Boston, who, in a discussion before the Academy of Medicine, on February 7 of the present year, reported many interesting and successful cases of ovarian surgery. At that time I reported and showed histories for 182 individual cases in which I had performed consecutive conservative operations upon the uterine appendages, without the loss of a single case, and these not selected, but taken, in the parlance of athletics—"catch as catch can." I am now able to add to that number 8 cases, making in all 190 operated on, up to the present day, without a single failure. Although I have abstract histories of these cases, to call attention to them individually would weary you, and cause you to lose interest in my subject. I shall not attempt it, but shall merely describe in a general way some of the results I have obtained in such of the number as I have been able to trace the after-history of—which is not an easy matter when dealing with hospital patients. Among this number are six cases of intra-uterine implantation of the ovary, which I shall discuss later on. In nearly all of the cases, some other form of surgical work was performed besides that upon the ovary.

It must be borne in mind that only a very small number of the sum total of all cases for which one man is called on to make abdominal section, will be suitable ones on which to do conservative ovarian surgery. I have been fourteen years in finding the 190 suitable cases for such work in the sum total of all laparotomies I have made. It must be borne in mind that an operator is put to the test of deciding on the spot the question of suitability for such work. I have no doubt that many of the cases that I have passed by as unsuitable in the past, I could with my present knowledge of ovarian surgery have saved some portion of.

Many of you will express your disbelief in such work. My criticism of your opinion would be to ask you to place yourself in the woman's position. Would you desire to be totally unsexed? You would ask the question: What constitutes unsexing? My answer would be: Depriving you of any physical function with which nature endowed you. From such a standpoint I desire that you should criticise my work. In the results attending the same I shall offer descriptions of major cases where the patients have been for years chronic invalids and where the results of the work have been to restore not only health to the patients but normal function to the organ. Included in this number are cases in which the ovary has been completely buried in plastic exudate, in which the tube involved in the same has been completely occluded in its outer half; where the uterus has been displaced and firmly bound in such displacement; in fact, where every organ and function in the genital system of these women have been pathologic. It is nonsense for any man in the profession at the present time to say that because a woman's appendages are diseased she should therefore undergo hysterectomy, and forever after be what is commonly called an "it"; and I will offer, before I close, sufficient proof of the truth of my statement. The only difficulty in this field of work is the ability of the operator to determine which are suitable cases that come under his observation. Let me offer for your consideration the points that guide me in my selection of cases. I will divide them into two classes.

1. The age of the patients to be operated on; social position; previous family history; and patient's preference in the matter—the three former conditions being taken into consideration.

2. The diseased conditions associated with that of the appendages which I find upon opening the abdomen.

To return and give my reasons which govern my action for each condition mentioned.

As to the age of the patient, I would not dream of doing such plastic work on the ovaries of a patient who was nearing the menopause. It is only the young, or those hopeful of bearing children, that I would consider suitable for such work.

Social position would influence me materially. I mean by that, the hardworking, daily toiling woman is

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not as fit a subject for such work as the woman so situated in life as to be able to conserve her strength and, if necessary, to take a prolonged rest, in order to secure the best possible results from such work. The history of hereditary taint from syphilis, tuberculosis, or other diseases, liable to influence the result would deter me from such work.

The patient's preference in the matter would influence me considerably to depart from the previous position taken, providing her domestic happiness depended upon it.

The second consideration would be the diseased condition of the genital organs which I found, associated with that of ovarian disease. For instance, uterine gonorrheal infection still active, syphilitic infection still active, either secondary or tertiary, fibroidal conditions that would require such extensive myomectomy that the ultimate result would be a deformed uterus, and probably occluded tubes, resulting in peritoneal complications that would prevent the result we desire to obtain.

The first series of reasons I have given are more or less sentimental with me, which possibly those that listen to me would not indulge in. The second series are hard facts, which we meet with at the operating table and must decide on at the moment. Hence it is that occasionally our most sanguine hopes fail us, and the disbeliever who afterward gets the case is in a position to make it hot for the previous operator; but faint heart never won fair lady, neither will the disbeliever be able to win the argument respecting the results of ovarian surgery until he can do so from the basis of an equal number of cases, and their results at his hands. I started out to give you my results, and in my enthusiasm I have drifted somewhat from the subject, but before recording results, I will state that in each and every case of the 190 which I report, the work done upon the appendage was a surgical removal of some portion of it, and a repair of the structures allowed to remain, by suture. I have with me and will distribute drawings representing the average work. Those relating to implantation of ovarian tissue in the uterus will allow of description when I take up the discussion of that portion of the subject. I have previously made the statement that in many of the cases multiple operations were performed—other than those upon the ovaries—at the same time. This, as you can readily see, would be absolutely necessary as a part of the cure. My records show the following: Plastic work upon both ovaries, 128 cases; one tube and ovary removed, 60 cases; gonorrheal tubes bisected and one-half of each removed, 5 cases; vaginal section for drainage, 14 cases; kidney fastened, 4 cases; and hysterorrhaphy, 73 cases. The appendix was removed in 14 of the cases, curettage was done in 29, and cervix and perineum in 14. As a result of this work, and this is the point of my paper, I am able to report to you that of those cases I have been able to keep trace of, 137 were cured; 11 suffered some pain with menstruation and are therefore recorded as improved, leaving 42 unheard from after leaving my service. From this number, 148, I am able to report 23 cases of pregnancy with delivery at full term, and 5 cases of miscarriage; in all, 28 pregnancies, an average of about one in every five and one-third cases, which I am sure would have been much diminished could I have followed the after-history of all the cases I have operated upon. The sole object of this work being to preserve the ovarian influence and the function of menstruation to the woman, care must be taken to operate in such a manner that the circulatory and nervous supply shall not be cut off. I therefore take care to section the ovary lengthwise, rather than crosswise. In operating for the removal of cysts of considerable size, I do not hesitate to split the ovary in two, down to the hylum, but I take care not to sever the ovarian artery and nerve which transverses the ovary at this point. I invariably use very fine floss silk suture which can not be obtained from an instrument-maker, but which I purchase at the silk-embroidery counter of a dry-goods establishment. I do not hesitate to place several rows of this suture material through and through an ovary, always using a cambric needle. I never, under any circumstances, use catgut suture in the ovary. I do not subscribe to the use of the thermo- or galvano-cautery in the treatment of cystic degeneration, although I am well aware that it is employed by the most eminent of gynecologists in both France and Germany, because it is my belief that no man can tell just how far beyond the part touched by the cautery the heat will destroy the ovarian cells, and in this way cause large portions of the healthy ovarian tissue to become permanently injured. I prefer to open the cysts, curette out the cyst sac with a small sharp curette and then stitch the cavity up with fine suture. I have yet to see the first case of suppuration of the ovary follow such work, although, as I have previously stated, I made vaginal section for drainage 14 times. I am positive that the ovary heals kindly, having had occasion to reopen the abdomen on two occasions after such work was performed. In both of these cases I found the ovary perfectly healed. In one, which you will find note of in the reprints, the woman, after undergoing the second abdominal section, gave birth to a full-term healthy child. The case is a most interesting one, but it is already in print. Dr. Burrage, in his article, reported one of his cases as having become pregnant, although both tubes had been removed. This, although an unusual occurrence, is not by any means the first to occur. Robertson, in 1890, reported a case of pregnancy after double ovariotomy; in 1896, at a meeting of the American Gynecological Society, Dr. Gordon, of Portland, Me., reported a case, and Dr. Sutton, of Pittsburg, one, and in the discussion I reported a case of pregnancy after hysterectomy, which occurred in the practice of a German operator. The operator's name I am unable to give you, for I have lost the notes of the case. Vaginal hysterectomy was made, the tubes and ovaries were allowed to remain, as is done in many cases operated upon abroad. The broad ligaments, including the stumps of tubes, and ovaries, were brought into the vagina and fastened to the vault. The impregnation was a tubal one, which she carried six weeks, and he curetted the ovum from the tube dependent from the vault of the vagina, and from microscopic examination, recognized the chorionic membrane and a portion of the fetus. These reports, together with the 28 pregnancies which have followed in the wake of my operative work upon the ovary, seems to me to be sufficient evidence that the ovary, or healthy portions of it allowed to remain, if given half a show, will perform its function in a manner satisfactory to those interested. I am even prepared to go farther than that, with sufficient evidence, I think, to satisfy even the most skeptical, that ovarian tissue is capable, even of change of habitation, and still will not shrink from doing its duty. In August, 1899, I read a paper before the International Gynecological Congress, in Amsterdam, in which I reported several cases of transplantation of

ovarian tissue into the broad ligament and cul-de-sac of the vagina, successfully performed, notably by Drs. James H. Glass, of Utica, and Robert T. Morris, of New York. At the same time I showed drawings and described my method of procedure, in my first case of intra-uterine implantation of the ovary, which, so far as I had been able to learn up to that time, and in fact up to January 19 of the present year, was the first case so treated. At that time, Jan. 19, 1901, Dr. Morris, of New York, published an article read before the Society of Alumni of Bellevue Hospital, Dec. 5, 1900, in which he reports six cases of ovarian grafting. In the first case a small portion of ovary was transferred to the interior of the stump of the right oviduct. I sincerely desire the privilege of criticising the case, as well as the next following, from his published report, a copy of which I have present. This case, I find, together with Case 2, was published in his book, in 1897, and again referred to in his article on Dec. 5, 1900. The results savor so of incompatibility with any that I have been able to obtain that I desire to quote from them to some extent.

In Case 1, a small piece of the patient's ovary was transferred to the interior of the stump of the right oviduct. The patient became pregnant about a month after leaving the hospital, but lost a well-developed fetus by abortion the third month. This graft was placed in the stump of a septic tube of long standing, and still in four weeks' time she became pregnant. He saw the patient in May, 1900. She had ceased to menstruate, although only 26 years of age, without the record of a pregnancy following that of the first six weeks after the grafting. How does this compare with the statement made to me by the gentleman on May 13 last, at 10:30 a. m., that he thought his case had been one of extra-uterine pregnancy. Regarding the second case, a patient 20 years of age, who has an infantile uterus and rudimentary adnexa, neither of which are reported to have been removed. She received an ovarian graft in the fundus, as adjunct to her own ovaries. Are we therefore sure that the menstruation that appeared six weeks later was from the grafted ovary, or the influence of the work performed exerted in influencing the action of her own ovaries? I confess I am skeptical regarding both these cases. With respect to the grafting of ovarian tissue into the broad ligament near the horn of the uterus, which the Doctor reports as having been doing since 1899, I confess I have not resorted to it, neither can I see the utility of it, because of the dangers attending it. These are three-fold: 1, the possibility of grafting diseased ovarian tissue in a position where it could not be reached, except through another abdominal or vaginal section; 2, the development of an ovarian cystoma from such grafting of diseased ovarian tissue, and 3, the possibility of pregnancy, which, of course, could only be abdominal, cases of which we know are on record.

I prefer the intra-uterine implantation of the ovary, as first performed by me on May 24, 1899, and reported before the International Congress, at Amsterdam, in August of the same year: and I have the records of 5 successful cases performed since that time, all of which are now menstruating. Unfortunately, only two of the six cases are married women living with their husbands, two are widows, and two are single girls. As yet I am unable to report a pregnancy that I can verify. As I have modified the method of operation somewhat since my first published report, I shall only take the time to call to your attention the change in my method of operation. Instead of severing the ovarian tissue completely from its ligamentous attachment, and planting it in the center of the fundus, after removal of the Fallopian tube, I split the horn of the uterus and implant the ovarian structure, reduced in size to suit the occasion, but still attached to its own ligament. By this method the ovarian tissue is nourished by its own circulation until such time as collateral circulation shall give it a better supply. By this method the proper nervous supply to the ovary is not cut off, and should the ovarian tissue subsequently give trouble it is within the cavity of the uterus where it can be quickly reached with a sharp curette and removed without danger to the patient.

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DISCUSSION.

Dr. A. Goldspohn, Chicago—I am glad that Dr. Dudley has again spoken on the subject which he has repeatedly touched on heretofore. In my paper I cite him as one of the recent contributors in this work. The question is not altogether decided. One of the gentlemen in the discussion said he had done it, but had given it up. If such men shall be benefited by these publications, then it is necessary for us in publishing cases to be very particular in observing them and to give the exact details in order that they may carry conviction. I published ninety-seven cases of resection of the ovaries in my paper, the majority of which were carefully examined after an average period of nearly two years, and of the remainder repeatedly. Conclusions were arrived at from accurate statements of the patient in answer to specific questions. Thus, all unbiased parties can judge of the evidence themselves and from their own opinion of the value of the treatment. The Doctor suggests in regard to the indications for operations, that we should naturally consult the wishes of the patient and her general circumstances. That is true to a certain extent. But the physician is supposed to know best what is best for his patient. The only question that is not decided, from the pathological standpoint, is how far dare we go in saving ovarian tissue in cases of actual neoplasm. The universal opinion of all good men who have spoken on this subject is that it is a safe practice in all cases of dermoid cysts. But the question becomes more sensitive when we deal with actual proliferating glandular cystomata of the ovary. The majority of men specify simple, non-proliferating cystomata, not having any papillomata on the surface nor other evidence of malignant disease in the patient.

I make my incision precisely like Dr. Dudley's if there are a number of cysts or if they are deeply located. If single and on the surface, we can enucleate the cyst without incising. If there are multiple cysts it is better to make a longitudinal incision and dissect out the individual cysts or follicles. Any membranous edges of the wound should then be cut away and the wound united.

In regard to the suture material I must differ with Dr. Dudley. I would never use any suture material that is not readily absorbable; not because of its forming abscesses, nor because of any disadvantage in the primary result, but because of the bad secondary results from the introduction of a foreign body into living tissue to remain there indefinitely. There follows a throwing out of round cells, an attempt on the part of nature to carry on war, to eliminate the foreign body, by an extrusion of round cells which form connective tissue, and you have a cirrhotic ovary, a painful ovary. As we can now sterilize catgut perfectly, there is no objection to using it. Great care should be used in regard to how to suture. Avoid many knots. I generally begin at one end, make a continuous row of sutures, see that each one grasps deeply enough to stop the hemorrhage, and then return with a superficial row of co-

aptation sutures and tie to the original end. You have thus a minimal amount of foreign substance in the ovary, and only temporarily. I look at the thermocautery much like Dr. Dudley does. I have found that the cases suffered from amenorrhea sometimes for a long time after its use. Thermoeautery should be used in operating through the vagina and where we are not absolutely certain that the field of operation and all the things coming in contact with it are practically sterile.

Dr. J. Riddle Goffe, New York City—There is no more important subject at the present day than conservative work upon the uterine appendages. Indeed, I go so far as to agree with a member of our profession who declared that the only excuse for the existence of a gynecologist was that he was able to do this kind of work. I go still farther and say that the *raison d'etre* of the gynecologist consists in his power to do conservative work and do it through the vagina. I prefer that route. The reason for declaring myself so positively is because I believe it important to preserve to the woman the faculty of ovulation and the ability to bear children. Some men go as far as to say that the ovary is not the woman and that it is better to get rid of it. I say that the ovary plays a large part in the woman's existence and the possibility of becoming a mother is an extremely important element in a woman's life. By this conservative work we are able to preserve for her the function of ovulation and the possibility of motherhood. Dr. Dudley reports 23 women who have become pregnant after this conservative work. These women were in the position where, if they had not been interfered with, they would have been sterile for the rest of their lives. Even if a woman does not become pregnant she is free from that nervous storm that so frequently follows total ablation of the appendages. The principal opposition to this is offered by the general surgeon, who thinks it is better to remove the appendages than to do conservative work and, as he says, not cure the case. That, however, is based on the hypothesis that we do not cure our cases, but as Dr. Dudley tells you, the majority of our cases are cured not only of their symptoms but are also placed in the position where they can go on with their menstrual functions, ovulation and child-bearing. This work involves curing the patient as well as the preservation of function. I have done about a hundred of these operations; eleven of these patients have become pregnant, two miscarrying. Many of them had been sterile for years. I make no distinction in regard to the social condition of my patients, but do conservative work on all of them. In stitching the ovary after exsection, I use silk and my results have been entirely satisfactory. Dr. Dudley, and the gentleman who preceded me, were both opposed to igni-puncture, but I have a patient now that was delivered of a child last September in whom I removed the appendages on the left side, punctured the right ovary seven times with a Paquelin eautery and shortened the round ligaments. She was a young woman, married seven years and never pregnant. Eighteen months afterward she gave birth to a fine baby. One such successful case is compensation for one hundred failures. Indeed, I am more proud of that case in my history book than a thousand ovariotomies.

Dr. W. H. Humiston, Cleveland—I would like to ask Dr. Dudley in reference to so-called sclerocystic ovaries in neurotic subjects that finally suffer pain continuously without any of the ordinary symptoms of inflammation. I wish to know whether this class of patients can be restored by this method of operating.

Dr. Dudley, closing—Regarding the possible fact that I might have been mistaken in my cases reported, I record the condition as compared with that when last seen. I do not mean to say that if they went out and ate heavily, or worked hard, that they would not have pain, the same as any other woman. If they got chilled during the menstrual period they would have pain. I agree with Dr. Goffe in what he says, although I have not operated so many times as he through the vagina. The fact has been that, in the cases I have operated on in this manner, they have had so many things the matter with them that I chose to do the work through the abdomen rather than through the vagina. In these cases I was able to remove the appendages and do multiple operations. Regarding the number of pregnancies, I said I had records of 28 pregnancies, 5 miscarriages resulted, and 23 were delivered at full term.

Regarding the sclerocystic ovary, I never operate on it. These ovaries are pre-eminently diseased, and in one of the six cases I implanted, I think the failure to get a good result was because of the fact that the only ovarian tissue I had was a half of one ovary (the other having been removed years before), and that was sclerotic. This lady suffered from intrauterine pain. I would bar such an ovary from such work. An ovary which shows an absence of its function by the absence of scars, is not suitable for such work. A man is put to the test at the operating table.

ELIMINATION OF PERITONEAL INFECTION AND PREVENTION OF SURGICAL PERITONITIS.*

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The physiologic, anatomic and pathologic laboratories are scientific workshops from which both the physician and surgeon may constantly derive points of the greatest value in the advancement of his science. In fact, the remarkable evolution in medicine and surgery of the past decade is largely based on principles established and accurately tested in the laboratory. Instead, therefore, of the laboratory archives being mere repositories of dry scientific facts, they may be of absorbing interest and incalculable value when carefully scanned by the practical eye seeking suggestions which may be applied in everyday medical and surgical work.

For the last six years all investigations upon the functions and anatomy of the peritoneum have been of constant interest to me, for upon the facts established in these researches we are justified in reversing some of the apparently well-grounded principles in surgery. In 1896, as a result of the combined study of seventeen hundred abdominal section cases, and the review of the literature bearing on the structure and function of the peritoneum, I took radical ground against abdominal drainage as then generally employed, and advocated certain measures which were in direct opposition to principles generally in vogue.

Briefly stated, I strongly favored the thorough irrigation of the abdominal cavity at the completion of an abdominal operation, to remove as far as possible all debris, blood and infectious matter, and then the leaving of a considerable quantity of salt solution—0.6 per cent—in the peritoneal cavity to disseminate and promote rapid absorption. These two terms, "disseminate" and "promote rapid absorption," were radically combated by several writers, for they appeared to be not only unsurgical, but positively dangerous especially when coupled with the postural method of drainage which I then advocated. In other words, the teacher of the past had largely been in favor of a dry peritoneal toilet, and the liberal use of drainage through glass tubes, gauze, etc., whereas this meant the complete reversal of these principles for a very wet technique and the dissemination of the peritoneal debris. Five years have passed since my publication, and from practical experience, laboratory investigations and study of autopsy records, I feel perfectly convinced of my position, and upon the

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

basis of these studies I now reiterate these statements and will detail the various lines of work which sustain these principles.

I shall merely epitomize some epoch-making points in the anatomy, physiology and pathology of the peritoneum, and then consider in greater detail a most interesting research on the action of streptococci upon the peritoneum, which will largely be applied in sustaining my position concerning the natural peritoneal method of drainage.

IMPORTANT EPOCHS IN THE ANATOMY, PHYSIOLOGY AND PATHOLOGY OF THE PERITONEUM UP TO 1899.

1874-1876: Histology of the peritoneum described by Rindfleisch, Bizozzero, Tourneux and Paladino, 1883; Ranvier, 1891; Kolossow, 1892; Muscatello, 1895; Byron Robinson.

1876 (Wegner): The peritoneum has an enormous absorbing function, taking up in an hour 3 to 8 per cent. of the entire body weight, as confirmed by subsequent investigators without exception. Through this function the peritoneum is protected against infection.

1896 (Grawitz): In general, the statements of Wegner were sustained and he reached the conclusion that: "The introduction of pus-producing cocci into the normal peritoneal cavity produces a purulent peritonitis: 1, if the culture fluid is difficult of absorption; 2, if irritating material is present which destroys the tissues of the peritoneum, and thus prepares a place for the lodgment of the micro-organisms; 3, a purulent peritonitis will certainly be produced if a wound of the abdominal wall is present which forms a nidus for the infectious process." These views were subsequently sustained by Bartscher and Veitzel, 1888; Rinne, 1889; Waterhouse, 1890; Halstead, 1891; Walthard, 1892; Silberschmidt, 1894; Tavel and Lanz, 1893; Wieland, 1895.

1889 (Pawlowsky): Radical views against Grawitz's conclusions were taken as a result of his experiments. A deadly peritonitis may be induced by comparatively small doses of virulent pyogenic bacteria injected into the peritoneal cavity, the lethal effect being still more pronounced under the conditions last named by Grawitz.

1890: Reichel, in endeavoring to settle the controversy between Grawitz and Pawlowsky, reached the conclusion that the infection depends on the virulence of the micro-organisms. The peritoneum may free itself of bacteria of milder infectious properties, but virulent organisms may produce lethal effects. This was sustained by Burginsky, 1891; Alex. Fraenkel, 1891; Kraft, 1891.

1894 (Issaeff): This investigator removed, from time to time, through capillary tubes, fluid from the peritoneal cavity, infected with cholera bacilli, and discovered that shortly after the inoculation the fluid was very poor in leucocytes and the bacteria flourishing; later, however, there was a reversal of this order, the leucocytes gaining the ascendency, and the animal recovering. This was confirmed in a similar research on the typhoid bacillus by Pfeiffer and Kolle, 1896.

1895 (Muscatello): Fluids and solids may pass through the endothelial layer of the peritoneum, the fluids in many places (Recklinghausen, Starling, Tubby, Orlow, Heidenhein, Adler and Meltzer), the solid particles only through the spaces in the central tendon of the diaphragm.

Minute solid particles are carried in an incredibly short time from the peritoneal cavity through the diaphragm into the mediastinal lymph-vessels, and glands, and thence into the blood circulation, by which they are distributed to the abdominal organs, to appear later in the collecting lymph-glands of these organs.

The leucocytes are largely the bearers of foreign bodies from the peritoneal cavity, through the diaphragm into the mediastinal lymph-vessels, and thence into the blood circulation. Large quantities of fluids may be absorbed by the peritoneum in an astonishingly short time.

There is normally a force in the peritoneal cavity which carries the fluids and foreign particles toward the diaphragm, regardless of the posture of the animal, although gravity can greatly favor or retard the current.

Muscatello's experiments confirmed by Byron Robinson, Clark, and others.

1897: Bordet, in testing the effect of Marmorek's antistreptococcic serum in the peritoneal cavity, discovered that streptococcic infection, when not interfered with, is accompanied by the following phenomena: 1. There is a decrease in the number of leucocytes, but within an hour an increase begins, and the polynuclear cells are markedly in evidence. Streptococci decrease in number by being taken up by the leucocytes (phagocytes). The more vigorous streptococci form a repellent zone about themselves and begin to multiply enormously. Six or seven hours later both leucocytes and streptococci occur in myriads, but the leucocytes do not contain streptococci, and many appear impaired or degenerated. The animal dies through ascendency of the streptococci. This was confirmed by Wallgren, in 1899.

Wallgren[1] has taken up the investigation of streptococcic infection of the peritoneum, following the same line of experimentation as Bordet. His work appears to have been most thorough, and the various phenomena transpiring in the course of the infection have been so minutely and vividly described as to give his research the stamp of great accuracy. His article is very extensive, consisting of notes and comments on a long series of experiments. In the following review I have greatly epitomized his statements, endeavoring, however, faithfully to preserve their true sense.

The normal peritoneal lymph contains a few endothelial cells and a considerable number of white blood-corpuscles. The latter are mostly mononuclear leucocytes. Occasionally a polynuclear cell is seen, which, however, is considerably smaller than the mononuclear. Immediately after the peritoneal inoculation large numbers of streptococci may be found in every cover-glass preparation, but within a short time they begin to decrease rapidly in number, and later many cover-glasses may be passed in review before a single streptoccoccus is found. This change is not solely due to the deportation of the micro-organisms from the peritoneal cavity, but to the destruction of myriads within the cavity.

Notwithstanding this decrease, many of the most active and strongest bacteria still survive upon the peritoneal surfaces. After the first hour those remaining are usually found in the form of diplococci or very short chains. They then begin to develop and to form vigorous growing, and in some instances long chains of bacteria. About this time, also, a peculiar zone or halo develops about the streptococci, which has a vigorous repellent or destructive influence upon the leucocytes—negative chemotaxis.

In autopsies on animals dying twenty hours after the injection, large numbers of streptoccoci in active growth were found in the peritoneal cavity. The cyclical events

1. Ziegler's Beiträge, vol. xxv., p. 206.

in the growth of the streptococci are influenced by their own virulence, the activity of the leucocytes as phagocytes, and the absorbing ability of the peritoneum.

Shortly after the intraperitoneal inoculation the leucocytes which are largely of the mononuclear type collect in groups about the streptococci and develop an intense phagocytic action, and not only the degenerate and weak, but also the strong growing cocci are taken up. This phagocytosis in the peritoneal streptococcic infections is looked upon by Wallgren as a beneficial process, and may be taken as an evidence of protection or a defence of the peritoneum against the further multiplication of the micro-organisms. Within a short time these mononuclear leucocytes, laden with their streptococci, almost completely disappear, and then for a short time the peritoneal fluid becomes poor in leucocytes—leucopenia. This decrease in the number of cells, according to Pierallini, who worked under the guidance of Metschnikoff, occurs after the injection of all fluids into the peritoneal cavity, and is especially pronounced after the injection of physiologic salt solution. According to Metschnikoff, this phenomenon is due to the destruction or solution of the leucocytes—phagolysis. Durham, on the contrary, is of a different opinion, for he believes that the leucocytes become adherent to the peritoneal surfaces. The few mononuclear leucocytes which remain within an hour generally contain altered streptococci, while the free streptococci are in large part well preserved. After one hour the few mononuclear leucocytes which remain are usually degenerated, and contain vigorous-appearing streptococci. About this time the polynuclear and polymorphonuclear leucocytes begin to appear in the peritoneal cavity in large numbers. If the dose of streptococci is large or the micro-organisms are virulent, this phenomenon appears quicker than if the dose is small or the toxic action is attenuated. In the presence of the streptococci these new leucocytes show the same intense phagocytic tendencies as the mononuclear cells, and at once begin actively to take them up.

Six hours after the injection the number of these leucocytes increases markedly, but a multiplication of the streptococci occurs almost in an equal ratio. By this time the bearing of the cells toward the micro-organisms has, however, changed, for now these contestants exist in separate groups, and only here and there are leucocytes found containing streptococci. This cessation of the phagocytosis, at least in the greater part, is due to the fact that the streptococci, through their growth and evolution, acquire the ability to repel the leucocytes —negative chemotaxis.

As an evidence of this negative chemotaxis, the streptococci begin at this stage to show a faint enveloping zone or halo. As time passes the streptococci continue to increase both in virulence and numbers, while in nine hours after the injection the multiplication of the leucocytes is at a standstill. As may naturally be inferred, the animal now begins to develop fatal symptoms.

While in the first six-hour experiments the leucocytes were well preserved, after nine hours marked signs of degeneration were noted, consisting in the disappearance of the cell granules and alterations in the nuclei, in the complete destruction, in some instances, of the cells, and in their coalescence in groups. In a still later stage of the infection the peritoneal fluid becomes poorer and poorer in leucocytes, while the streptococci markedly increase in numbers, and by the time death occurs scarcely one well-preserved leucocyte is found. Likewise, the red blood-corpuscles, which are present in greater or less numbers in the early stage of the infection, have, to a large extent, disappeared or show signs of degeneration.

Wallgren summarizes his most interesting observations in the following conclusions: Small doses of virulent streptococci injected into the peritoneal cavity may, without any special predisposition on the part of the animal, produce a deadly infection. The peritoneum may free itself of a minimum dose of streptococci although the abdominal wall in the immediate neighborhood of the injection is infected. This wound infection plays no active part in the production of the peritonitis. The protection of the peritoneal cavity depends on the activity not only of the leucocytes normally contained therein but on those escaping into the peritoneal cavity, and to a certain extent also upon the endothelial cells of the peritoneum. The leucocytes combat the streptococci through their phagocytic action, through their degeneration products, and possibly also through their secretions—alexins. Phagocytosis occurs early in the infection, but in the latter stage, when the streptococci have acquired the ability to repel the leucocytes, it almost disappears; later it may reappear in the stage when the leucocytes are being destroyed. In the presence of streptococci of decreased virulence phagocytosis progresses without interruption so long as any micro-organisms remain in the peritoneal cavity. Streptococci may destroy the leucocytes. This process manifests itself through the alteration and disappearance of the cell granules of the polymorphonuclear and polynuclear leucocytes. The destructive action appears most marked in the cells which enclose streptococci and about the streptoccocci most numerously surrounded by these granules. So long as streptococci may be demonstrated in the peritoneal cavity the majority of the leucocytes are of the polymorphonuclear and polynuclear types, although for a short time, immediately after the injection, the leucocytosis consists of the mononuclear type.

In abstracting the points from Wallgren's research which may serve as surgical finger-boards, I consider the following the most important:

1. Great decrease in the number of micro-organisms within an hour, both through their intraperitoneal destruction and through their rapid absorption into the general system where they are dealt with. There is, therefore, no possibility of limiting septic matter through gauze or glass drainage to any free surgical field within the abdomen.

2. Vigorous streptococci which remain behind develop within six hours a repellent or destructive qualtiy for leucocytes, and the lethal fight is therefore inaugurated and well under way before drainage, as ordinarily employed, can possibly exercise any beneficial action. In many cases, therefore, in which drainage is employed, the patient recovers in spite of and not because of it. To assist this eliminating function of the peritoneum the liberal infusion of salt solution is invaluable.

NATURAL METHOD OF DRAINING THE PERITONEAL CAVITY.

As a result of a critical study of Muscatello's most interesting research on the transportation of granules from the peritoneal cavity, which was supplementary to Wegner's investigations concerning the great absorbing function of the peritoneum, I suggested in 1896 a postural method of draining the peritoneal cavity. This consisted in leaving a liter of salt solution in the peritoneal cavity at the completion of the abdominal opera-

tion, and then elevating the foot of the patient's bed for twenty-four hours with a view to hastening absorption and thus preventing the stagnation of fluids in the peritoneal cavity. After I had made this suggestion I felt for a time some little trepidation as to its ultimate results, for although I had most efficiently tested it in very severe cases before offering my observations for publication, I nevertheless had some misgivings lest a more extensive experience with such a radical departure might prove it to be disastrous in some cases.

Although at the present time I seldom use the elevated posture I am strongly convinced that no danger is entailed by its use, for I have never seen a post-operative complication which I felt was in the slightest degree attributable to this elevation of the pelvis. My reasons for now leaving the patient in the prone position are that the absorption is almost as rapid, and the churning of the intestines about in the saline fluid after the operation facilitates the distribution of the debris and, therefore, it is more quickly and effectively eliminated.

Another advantage is that the intestines and omentum are floated out into the normal positions. Since the use of peritoneal infusions I have never had a case of post-operative obstruction.

Without qualification, therefore, I am now prepared to say that the routine use of normal salt solution in the peritoneal cavity, under the conditions which I have advocated, is not only free from danger, but is of the greatest value, both as a life-saving measure and as a prophylactic against general or local peritonitis.

TRANSPORTATION OF SMALL GRANULES FROM THE PERITONEAL CAVITY.

Since the publication of my first article, in 1896, I have lost no opportunity to make observations on the method of peritoneal absorption, and lately, in connection with my assistant, Dr. Charles Norris, have carried out a series of experiments to confirm Muscatello's conclusions.

For this purpose we have used carmin, India ink and ultramarine granules, and our results are in entire accord with Muscatello's statements as to the rapidity of transportation of granules from the peritoneal cavity and their method of elimination.

We have found the route of transportation to be the same as that described by Muscatello. Shortly after the injection of the black or red granules the central tendon of the diaphragm, which normally has a ground glass appearance, is intensely colored through the deposition of the granules in the diaphragmatic lymph spaces. From these spaces they are transported through the anterior mediastinal lymph channels, and thence through the thoracic duct, to the vena cava and the right heart. From the heart they are distributed through the blood current, first to the lungs, and then to the liver, spleen, kidneys, intestinal tract, and many of the bodies are also deposited in the bone marrow. During the first hours of transportation, the granules are carried as free bodies by the lymph currents; later, however, they are largely contained in polynuclear leucocytes which may be distended almost to the bursting point.

Our investigations have been conducted with a view to discovering the ultimate disposal of these foreign bodies, for we believe the fate of micro-organisms under similar conditions must be analogous.

In the distribution of the blood the lungs are the first organs to catch a considerable quantity of the granules. So far as I know, investigators have not called especial attention to this point.

The smaller granules pass through the pulmonary capillaries and thence to other organs, but a large number are stopped by the alveolar capillaries and are either deposited in the bronchial lymph glands, or, as we believe, are largely thrown out into the alveoli.

In our investigations we have been struck constantly with the presence of granules in the alveoli, which leads us to believe that these may be common points of exit from the blood for minute foreign bodies and micro-organisms.

The next organ to take up large quantities of foreign bodies is the liver. Here we have been able to trace some granules through the hepatic artery into the capillaries and thence into the biliary ducts, and finally into the gall-bladder. A considerable number of bodies appear also to be expelled through the capillaries of the villi into the intestinal tract, while a considerable number are eliminated through the kidneys.

As to the rôle played by the spleen, we have not reached satisfactory conclusions. We have, however, found that a large number of granules are deposited in the bone marrow.

In all experiments we have examined the marrow of the femoral bones, and in almost every instance, after a few hours, we have found some of the smaller granules in this tissue. In one rabbit the carmin granules were found in this situation within five hours after their deposition in the peritoneal cavity.

I shall not attempt to detail our experiments in this paper, but will make the preliminary statement that the foreign bodies are found, within a very few hours, generally distributed throughout the organs of the body in the following order: In the lungs, then in the liver, spleen and gastro-intestinal tract, then in the kidneys, and finally in the bone marrow and in the lymph glands and dependent parts of the body.

From this investigation we conclude that the lungs, liver, intestines and kidneys are normal points of exit for minute foreign bodies, and under the head of foreign bodies we include all granular debris and micro-organisms left in the peritoneal cavity.

It may appear to some of my readers that the peritoneal infusions of normal salt solution, in cases in which infection is suspected, is to condemn the patient to certain septicemia or even pyemia, through the wide distribution of the micro-organisms. On the contrary, we believe this very action is prevented.

I base my argument on the following proposition: Given a minimum amount of peritoneal infection, it is infinitely better to distribute it at once before the micro-organisms undergo manifold sporulation than to hope for its elimination after it has gained virulent headway through stagnation or clinging to operation fields within the abdominal cavity. By at once distributing a minimum amount of infectious material generally throughout the body, the micro-organisms are promptly placed in the most favorable situations for their destruction and elimination.

Whether we accept the alexin or the phagocytic theory concerning the destruction of micro-organisms, is immaterial, for in either case it is better that the micro-organisms be quickly deposited in the places where these two factors are dominant than to be left behind in the peritoneal cavity, into which the leucocytes and the serum more slowly flow.

ACTION OF STREPTOCOCCI ON THE LUNGS, LIVER AND KIDNEYS.

In my review of the literature bearing on the action of pyogenic micro-organisms when injected into the blood currents, I find some very interesting articles concerning the effect of the streptococci on the lungs, liver and kidneys. As the streptococcus is one of the most pathogenic micro-organisms with which the surgeon meets, and as these three organs are especially involved in the natural peritoneal method of drainage, these recent researches may be most opportunely quoted at this point.

An investigation by Silfvast,[2] on the action of streptococci upon the lungs, is especially interesting. In general, his conclusions are that the lung of the rabbit is relatively resistant to the action of streptococci either injected directly into the trachea or inhaled, and, further in line with our work, that the lungs are still more resistant to the action of streptococci when carried to them by the blood currents. Both with active growing streptococci and with their toxins there is at once a reaction on their entrance into the lungs, as evidenced by a diapedesis of leucocytes, light shedding of the alevolar epithelium and extravasation of lymph. Within fifteen minutes after the intravenous injection, large numbers of leucocytes appear in the alveoli, which at once take up the streptococci and then only a few extracellular micro-organisms are seen. After the second day the streptococci appear degenerated and begin to disappear. In twelve days only a granular debris remains, consisting of degenerated organisms. At this time cultures are negative, and the micro-organisms can not be discovered in microscopic sections. Streptococci of decreased virulence are much more rapidly destroyed, and within twenty-four hours only a few isolated, irregular, badly staining forms are found.

The cells making up the debris in the alveoli consist of epithelium, and polynuclear and large mononuclear leucocytes may also be found in the bronchial lymph glands, where the cocci likewise appear to be destroyed. The largest number of streptococci are destroyed in the lungs, while a certain number are carried away by the lymph channels.

From these experiments it is seen, as stated by Silfvast, that the lungs are comparatively resistant, especially to micro-organisms brought to them by the blood streams. This action is in entire accord with my own observations, for in a series of over three hundred cases in which I have used large quantities of salt solution in the abdominal cavity, which has been rapidly absorbed and quickly poured into the blood streams, and thence to the lungs, I have never seen a serious pulmonary attack, either of bronchitis or pneumonia; in fact in this entire series I have never seen a case of pneumonia. What better practical demonstration can be given of the harmlessness of peritoneal infusions on the lungs?

If as is unquestionably the case micro-organisms pass through the capillaries of the lungs to other organs, what is their action upon these organs? Again, interesting experiments are at hand which give us some insight upon this point.

Von Bonsdorff[3] has carried out a series of experiments to discover whether micro-organisms are excreted by the urine and what action they have upon the kidneys. His results, briefly, are as follows: When large doses of streptococci are injected into the ear vein of a rabbit the bacteria are not at once excreted by the urine. In twenty-four experiments six rabbits showed foci of bacterial nephritis consisting of isolated inflamed points in the cortex. These areas surrounded the walls of the blood-vessels, from whence small foci of bacteria spread outward and involved the surrounding tissue. Except in these cases this investigator says the changes in the kidneys incited by the streptococci are comparatively slight. Besides a very slight grade of cloudy swelling, there was, in some instances, a limited shedding of the epithelium. In lighter infections a slight degeneration of the epithelium was noted. Simple round-cell infiltration or well-marked general nephritis was never observed.

When cultures of streptococci were obtained they were discovered on section in the glomeruli, less frequently in the intertubular capillaries, especially of the cortex, and very seldom within the uriniferous tubules. In the intracapsular space around the Malpighian bodies no bacteria were found.

From these investigations, which as yet are not completed, it would appear that the streptococci are not excreted by the normal kidneys, and that they occur in the urine only after structural lesions are induced. As an incidental remark I may say that other investigators have claimed that micro-organisms are quickly excreted by the normal kidneys. While my investigations are entirely too meager to decide this point, I incline to the latter view. Whether they are actually excreted or destroyed in the kidneys, and then excreted, matters little.

The chief point in this research, which is of value in my discussion, is that notwithstanding the fact that large doses of streptococci have been introduced into the blood, comparatively slight structural lesions have occurred in the kidneys in the large majority of cases.

Björksten[4] has carried out similar investigations to discover the action of streptococci upon the liver. In his experiments he has injected cultures of toxin directly into the liver and has studied the action of the micro-organisms when deposited in this organ through the blood currents. As would naturally be expected, injections directly into the liver usually cause marked reaction and the animal finally dies as the result of infection. The animal, on the other hand, stands intravenous injection very much better. The results of the latter injection were shown in a general wasting of the animal rather than in local disturbances of the liver. In autopsies on animals dying during the course of the infection, the liver appeared to be somewhat over-filled with blood, and on its surface small yellow spots were noted. The peritoneum appeared perfectly normal, sometimes, however, somewhat moistened and glistening. Until the tenth day streptococci can be, as a rule, obtained in culture from the liver. Many times, however, the cultures from the bile were sterile. After thirty days the cultures both from the liver and bile were invariably sterile.

This investigation is entirely too limited to arrive at any sweeping conclusions in our work, but it appears to conform in a general way with the foregoing investigations upon the lungs and kidney. If, therefore, I were to formulate a provisional working statement from these investigations, and from my practical experience in the use of saline injections into the peritoneal cavity, it would be as follows: The normal lungs, liver and kidneys may withstand and eliminate comparatively large quantities

2. Die Wirkung der Streptokokken und ihrer Toxine auf die Lungen; Ziegler's Beiträge, vol. xxv, 1899.

3. Experimentelle Untersuchungen üeber die Ausscheidung der Streptokokken durch die Nieren; Ziegler's Beiträge, vol. xxv.

4. Die Wirkung der Streptokokken und ihrer Toxine auf die Leber.

of infectious matter when carried quickly from the peritoneal cavity to these organs. It is the continued action of infectious matter, carried hour after hour from a generating focus in the peritoneal cavity which works destructively on these organs, and secondarily on the general system.

PATHOLOGIC CONDITIONS ARISING SECONDARILY FROM PERITONITIS.

In order to reach some conclusion as to the action of infection matter upon the lungs, liver and kidneys, when transported from the peritoneal cavity through the diaphragmatic lymph spaces to the general blood currents, we have analyzed the autopsy notes in thirty cases of peritonitis. These notes have been taken at random from the files in the pathologic laboratory of the Johns Hopkins Hospital, and include cases arising from typhoid perforations, perforations of gastric ulcers, post-operative peritonitis following such operations as salpingo-oöphorectomy, appendectomy, gastro-intestinal anastomosis, etc. In the majority of these cases we have found characteristic conditions within the lungs which are in accord with those noted by Silfvast in his experimental work, and those found in our own experimental investigations.

Our attention had been especially called to the appearance of the lung in rabbits, killed at various stages of the experimentation after the injection of foreign bodies. On comparing these observations with the autopsy records in the peritonitis cases, we found almost identical conditions. These changes are also in accord with those described by Silfvast in the preceding pages. In many autopsy records of patients dying of peritonitis, the notes on the histologic examination of the lungs are follows: "Blood-vessels enlarged and engorged, cells of air sac somewhat thickened and edematous; in many places alveoli are packed with coagulated fibrin, polymorphonuclear leucocytes, large mononuclear leucocytes, epithelial debris and more or less red blood-corpuscles. Also, in many instances, bacteria are found in large numbers free in the alveoli."

In some cases, notwithstanding the fact that large numbers of micro-organisms have been poured into the general system through an extensive peritonitis, the kidneys and liver appear frequently to be comparatively normal and, structurally, are slightly or not at all impaired.

No doubt those who dissent from my theory as to the natural method of eliminating peritoneal infection may see in these notes an argument against it. As I have already stated, however, it is to prevent this very condition that I have advocated the liberal use of salt solution in the peritoneal cavity. My object in using the peritoneal infusions is to free the peritoneal cavity as rapidly as possible of a minimum quantity of infectious matter and debris, which the lungs, liver, intestines and kidneys may eliminate without functional or anatomical disturbance, rather than to trust to inefficient surgical drainage, or to wait until this minimum number of organisms have generated into myraids which are poured into these eliminating organs day after day,, and thus ultimately so impair them as to destroy the patient's life. With the use of the salt solution in the way which I have described, it does not produce any serious complications or after-effects, as shown by the long series of cases of which I now have careful notes. In one hundred and fifteen operations, performed at the University and Presbyterian hospitals, only three deaths occurred. Of the fatal cases one patient was practically moribund from purulent peritonitis arising from a perforated appendix, when she was taken to the operating-table, and the operation was only performed as the last possible chance of saving her. That the salt solution did neither good nor harm in this case is certain, for the patient died within twenty minutes after leaving the operating-table.

The second case, of extensive cancer of the uterus, operated upon one day, died within twenty-four hours from pulmonary embolus. In this case no salt solution was left in the peritoneal cavity, on account of the open pelvic diaphragm produced by the hysterectomy.

In only one case of this series in which salt solution was used could there be any question as to its rôle as a provocative factor in the ensuing peritonitis. This was a large myomatous tumor extensively adherent to the bowel. During the operation the bowel was lacerated in two places but was carefully sutured. Only a small amount of salt solution was used in this case. Within twenty-four hours the patient became excessively tympanitic and died shortly afterward. Unfortunately, no autopsy was permitted in the case and we therefore do not know the real cause of death. From the rapid collapse and excessive tympanites, it is possible that the intestinal sutures gave way or that there was a fulminating streptococcic infection. In all of the remaining cases quantities of salt solution varying from 500 to 1,300 c. c. were left in the peritoneal cavity.

A recent report by Dr. Hunter Robb of 114 abdominal sections without a single death goes far to prove two points, at least, upon which I insist, first, drainage is superfluous in all but a minimum percentage of abdominal section cases; and second, to say the least, peritoneal infusion and irrigations, even if not beneficial, are not harmful, as insisted upon by many opponents of this method. Dr. Robb and Dr. Griskey were the first investigators in this country to systematically study the bacteriologic side of drainage, and as a result of their work they insisted that the employment of glass drainage-tubes was dangerous rather than beneficial. In the final steps of his technique, Robb says: "After every abdominal section the abdomen is thoroughly washed out with sterilized salt solution, after which from 300 to 500 c.c. of salt solution are left in the abdominal cavity and the patient is placed, with the head low, in the postural position for drainage for twenty-four hours." In all of his 114 cases thus treated the patients recovered. Such a splendid series of cases as this is a very telling argument in favor of the points which I am endeavoring to establish.

ADDITIONAL ADVANTAGES OF PERITONEAL INFUSIONS.

If the salt solution has no deleterious or harmful effects, what are its other beneficial effects?

These I may briefly state as follows: 1. In case of shock from loss of blood it is one of the best general stimulants. Time and time again, in operations where the pulse has been as high as 160, and weak and thready at the completion of the operation, I have seen it drop to 120 or lower within three hours, and become full and regular.

Another great advantage to the patient, derived from its use, is the large increase in the urinary excretion. In 1896[5] I described a method for the prevention of thirst after abdominal operations. Briefly stated, this consisted in the high injection into the sigmoid flexure, with the patient in the Trendelenburg posture, of one liter of salt solution. In comparing

5. Am. Jour. of Obst., vol. xxxiv., No. 2, 1896.

two series of cases, one with and one without the saline enemata, I found a striking quantitative difference.

The urine of the cases in which the saline solution is given usually presents a normal color, and where more than 900 cubic centimeters are voided in the first twenty-four hours it may even have the clear, limpid appearance of a urine deficient in solid constituents.

The average daily quantity of urine excreted for the first seven days after operation, in the two series of 100 cases each, is as follows:

With Saline Enemata.		Without Saline Enemata.	
First day.	752 cubic cm.	First day.	481 cubic cm.
Second "	626 " "	Second "	505 " "
Third "	605 " "	Third "	498 " "
Fourth "	635 " "	Fourth "	550 " "
Fifth "	595 " "	Fifth "	654 " "
Sixth "	672 " "	Sixth "	656 " "
Seventh"	646 " "	Seventh"	591 " "

The first series of 100 cases shows an average of 752 cubic centimeters at the end of the first twenty-four hours, while the second shows but 481 cubic centimeters.

A point which I also emphasized was the equalization of solid constituents of the urine. Dr. W. W. Russell had previously called attention to the frequency of vesical irritation in post-operative cases, and attributed it to the retention of small quantities of highly concentrated urine in the bladder, which possessed more than a normal amount or organic elements with a greatly decreased watery diluent.

After the adoption of the method just referred to, vesical irritation became much less frequent and catheterization after operation was necessary in less than one-half of the cases. The specific gravity of the urine dropped to normal, whereas, in the cases without enemata, it ranged between 10.25 and 10.30. This study demonstrated that the quantity of urine can materially be increased by saline enemata. Since then I have made similar analyses of the urine in cases after saline infusions into the peritoneal cavity, and find that the quantity of urine is likewise increased and that vesical irritation is greatly alleviated or almost unknown in these cases. What practical conclusions may we draw from these phenomena?

Flexner has shown, in a magnificent research on terminal infections, that many patients with chronic disease, especially of the kidneys, die of some insignificant terminal infection, and that the primary disease itself really does not terminate their lives. If, therefore, in abdominal cases, the kidneys are also impaired, as is not infrequently the case, especially in chronic pelvic inflammatory cases and large tumors, the increased irritability from concentrated urine, combined with micro-organisms, which may be introduced or left in the peritoneal cavity and either they or their toxins will inevitably be carried, regardless of any measure which may be employed to prevent this action, into the general system, the safety of the patient may be endangered from these terminal infections.

To increase, therefore, the functional activity of the kidney and prevent the concentration of the urine, is, unquestionably, a very potent factor in assisting and hastening the recovery of the patient. This, without doubt, is promoted by the use of these saline infusions into the peritoneal cavity.

One of the very gratifying results of this method is the lessening of the severe thirst from which the majority of abdominal section cases so severely suffer. Many times, after the use of large quantities of salt solution, the patient will go as long as twelve hours without asking for water. In some instances, there is more or less thirst, but seldom, if ever, is it so severe as in cases treated in the older way.

A factor which largely promotes peritoneal absorption and facilitates the absorption of lymph in the peritoneal cavity, is active peristalsis. I hold, therefore, that after operation the more vigorous the peristalsis the more certainly will our patients be protected from infection. After the use of salt solution as I have described, I find that the bowels are much more easily acted upon by laxatives. Following the suggestions of Newman and Ramsey, I make it a rule to administer the cathartic the night of the operation, and if the bowels have not acted the next morning, to give a simple enema, and if not effectual, follow it by a more active stimulating one. Under this plan, marked tympanites is a very rare complication after operation.

There is one objection which may be offered to the saline infusions, but in no case have I found it to be serious. Within the first twenty-four to thirty-six hours after operation, patients not infrequently complain of distress over the diaphragm, similar to a pleuritic pain. There may also be a tendency to gastric and colonic distention. In no instance, however, have any of these conditions been obstinate or of long standing and they invariably have passed off without ill effects to the patient.

To offset the discomfort produced by the diaphragmatic pain, my rule is to strap the base of the chest, as soon as the patient complains of it, with a 2-inch strip of adhesive plaster, in order to limit the diaphragmatic movements. This will frequently give almost immediate relief. I attribute this pain to a simple increase in functional activity of the absorbing areas of the diaphragm. It is certainly not due to pleurisy or peritonitis, for it has invariably passed off in a short time, and in no instance have signs been discovered indicative of either of these conditions.

In order to further supplement the action of the salt solution in the peritoneal cavity, it is my invariable rule in all abdominal section cases to use the saline enemata while the patient is still in the Trendelenburg posture.

The chief tenet in my argument is based upon the enormous and rapid absorbing function of the peritoneum, which absolutely precludes the possibility of limiting to any surgical field in the peritoneal cavity, septic matter or micro-organisms.

Accepting this hypothesis as proved, I link my next basal theory to it, as follows. Given an infection at the time of operation, it is infinitely better to promote its rapid elimination from the peritoneal cavity than to retard it or attempt to definitely localize or remove it by surgical drainage.

CONCLUSIONS.

1. The peritoneum has an enormous absorbing function, being capable of taking up 3 to 8 per cent. of the entire body weight in an hour.

2. Minute solid particles are carried in an incredibly short time from the peritoneal cavity through the diaphragm into the mediastinal lymph vessels and glands, and thence into the blood circulation, by which they are quickly distributed to the abdominal organs and to the bone marrow.

3. The granular bodies are at first largely transported as free bodies, swept along by the lymph currents, but later the leucocytes act as the carriers.

4. There is, normally, a force in the peritoneal cavity which carries fluids and foreign particles toward the

diaphragm, regardless of posture, although gravity may greatly favor or retard the current.

5. After the introduction of micro-organisms into the peritoneal cavity, there is great decrease in their number within the first hour, both through their intraperitoneal destruction and through their rapid absorption into the general system where they are dealt with. There is, therefore, no possibility of limiting free infectious matter to any part of the peritoneal cavity by mechanical means.

6. Vigorous streptococci which remain behind, develop, within six hours, a repellent or destructive quality for leucocytes, and the lethal combat is, therefore, inaugurated and well under way before drainage, as ordinarily employed, can possibly exercise any beneficial action. In many cases, therefore, in which surgical drainage is employed, the patient recovers in spite of and not because of it.

7. A moderate amount of even virulent organisms, carried by the blood to the lungs, liver, spleen, kidneys, gastro-intestinal tract and bone marrow, may be destroyed or eliminated without the least harm to the patient, whereas, if the same amount of infectious matter is detained about a surgical field in the abdominal cavity, or stagnates in a dependent pocket, they may generate myriads of others, and thus overwhelm the patient.

8. In many cases, therefore, drainage, as ordinarily employed, is superfluous, or even dangerous, and the rational method is to remove all possible débris and infectious matter by thorough irrigation and then leave one liter of salt solution—0.6 per cent.—in the abdominal cavity, and in order to promote and hasten natural drainage, supplement this by an enema of a liter of salt solution, given while the patient is well under anesthesia and in the Trendelenburg posture.

9. Under this plan the patient is greatly stimulated, shock is minimized or averted, the urinary excretion is greatly increased, and thus toxic matters are more easily eliminated without irritation to the kidneys or bladder, peritoneal infection is quickly eliminated while yet minimum in amount, thirst is alleviated or entirely prevented, intestinal peristalsis is promoted, and consequently tympanites is of less frequent occurrence, and the early action of the intestines evacuates infectious matter thrown out into this canal by the blood-vessels of the villi.

All of these factors combine to reduce mortality after abdominal sections, to decrease pain, discomforts and complications of the first forty-eight hours, and finally to hasten the recovery of the patient.

CASES IN WHICH PERITONEAL INFUSIONS MAY BE DANGEROUS, AND THEREFORE SHOULD NOT BE EMPLOYED.

1. Ascites accompanying the surgical lesion, which indicates that the natural peritoneal drainage is already deficient; therefore, to add an additional burden through the saline infusions, is not advisable.

2. General purulent peritonitis.

CASES IN WHICH GAUZE PACKING MAY BE INDICATED.

From a critical review of all classes of drained cases, I feel justified in greatly reducing the conditions in which gauze packing may be indicated.

Since the publication of my review[6] of 1700 cases of abdominal sections from the standpoint of intraperitoneal drainage, I have seen no reason to change my indications for gauze packing. I discard the word "drainage" purposely, for I do not believe the gauze is of any great service as a conducting medium, but simply acts as a plug to keep the external opening patulous and prevent the closure of the drained area by normal granulation tissue. Even the conditions enumerated below may be reduced to a minimum by the most painstaking technique. It is in these cases that the greatest skill is shown, and an evidence of this skill is the absence of gauze packing or other surgical drainage.

The following conditions are quoted from my former article:

1. In appendicitis when the peritoneum and tissues adjacent to the appendix are infiltrated with inflammatory products, preventing a secure closure of the stump after amputation of the appendix, and when the appendix has ruptured and either caused a localized abscess or a general peritonitis. If the operation can be performed early, when the inflammatory process is confined to the dependent portion of the appendix, *never drain.*

The objections to drainage in these cases are probably not as great as when the gauze is introduced deeply into the pelvis, because the site of the operation is more superficial and therefore the possibility of effecting true drainage is better; but if a clean operation has been performed the drain is superfluous. A distinct objection to drainage in the appendical area is the liability of post operative hernia occurring in its track.

2. Localized collections of pus in the pelvis: In these cases either the abscess sac should be enucleated cleanly, and the abdomen closed without surgical drainage, or it should not be opened through the abdomen if it is too adherent to be enucleated safely. These cases are, *par excellence*, the ones for incision and drainage through the vagina.

3. Suture of intestine: A drain should only be employed when there is doubt concerning the integrity of the suturing.

4. Excision of fistula leading from the intestine to the abdominal wall: In these cases it is safer to pack a gauze drain down to the sutured areas in the intestine, for they are especially prone to break down and re-establish the track. In case this accident occurs the gauze forms a safe avenue for the escape of fluids and gas, and the subsequent contraction of the drainage track may close the intestinal fistula.

5. Purulent peritonitis: Pawlowsky has shown that the usual avenues for the absorption of fluids from the abdominal cavity are closed in purulent peritonitis, consequently, we can only endeavor to supplement them by thorough irrigation of the abdominal cavity and free drainage. In order that the drain shall serve the best purpose it should be a large one, and, if necessary, in addition to a central opening in the abdomen, lateral openings in the flanks as advocated by Dr. Kelly, may be made. The prognosis in these cases is always grave, but this method of treatment gives the patient the best chance of recovery.

DISCUSSION.

Dr. Frederick Holme Wiggin, New York City—I have been specially interested in this paper because about 1889 I came to the conclusion that the technique employed at that time in abdominal operations, namely, the cleansing and drying of the abdominal cavity after operating with sponges, was wrong, as intestinal adhesions followed by obstruction occurred frequently and patients often died a year or two after their apparent recovery from the abdominal operation, from intestinal obstruction resulting from adhesions caused by the manipulations at the time of the operation. With a view to preventing the occurrence of this difficulty, I began to wash out the abdominal cavity with hot normal saline solution instead of sponging out the cavity as formerly, and then to leave a quantity of this solution in the abdominal cavity, closing the abdominal wound without damage. I also found that this might be done even in those cases where there was pus, provided the source from which the pus was derived could be removed, even if some of the septic matter had been spilled in the peritoneal cavity in the course of the operation by using some peroxid of hydrogen to disinfect it.

6. Am. Jour. of Obst., vol. xxxv, No. 4, 1897.

I called the attention of the profession to these points in a paper read before the Alumni Association of Bellevue Hospital in November, 1893, the paper being afterward published in the *New York Medical Journal* for Jan. 20, 1894, in the following words: "The use of hydrogen dioxid in full medicinal strength for the purpose of disinfecting the general peritoneal cavity. The closing of the abdominal wound, leaving the peritoneal cavity full of hot, sterilized salt solution, the object of this being to lessen shock, to prevent adhesions, to aid in the readjustment of the intestines and omentum to their proper positions, to lessen the danger of septic peritonitis, and to aid by osmosis the action of the bowels." I have had no reason to change my original views on this matter. I am positive that the low rate of mortality in my work has been due largely to the use of the saline solution and to peroxid of hydrogen. The saline solution left in the abdominal cavity not only in my opinion tends to lessen the danger of septic peritonitis, but also makes the patient much more comfortable, increases elimination through the skin, kidneys and intestines, and also, I believe, lessens the danger of the forming of intestinal adhesions.

Dr. W. H. Humiston, Cleveland, Ohio—I well remember in 1896 when Dr. Clark first published his monograph on this subject, and what a comfort it was to me. At this time I operated upon a bad case of tubo-ovarian abscess, and in separating the adhesions ruptured the abscess and soiled the peritoneum. The surroundings of the patient were such, and not having a graduate nurse in charge, I felt it safer, after thoroughly flushing with normal saline solution, to close the incision without drainage. At this time Dr. Clark's able paper came and you may rest assured I read and reread it with great profit and no little comfort. I watched my case closely, and I state that in quite an extended experience in abdominal surgery I never saw one recover with fewer unfavorable symptoms. From that time to the present I have not drained 2 per cent. of my cases. The principles that Dr. Clark has established have not been successfully combated. In my humble way I desire to endorse the position he has taken.

Dr. Howard A. Kelly, Baltimore—Retrospection is pleasant when it shows progress, and I know nothing in which the progress of abdominal surgery has been more marked than in the matter of drainage. The entire status of the subject is changed. In the early eighties from 75 to 90 per cent. of all cases were drained by means of a little glass tube. This percentage was gradually reduced to 20 and 30 or even lower. In my own work I had largely given up drainage when Dr. Clark then took hold of the question, analyzed it, and put our work on a more scientific basis. Since I have been confirmed by this work I have never used drainage, except in cases of general septic peritonitis following appendicitis of persistent capillary hemorrhage from the pelvic floor and walls. I do use gauze occasionally in the abdomen, but not for the purpose of drainage. Drainage implies a continuous outward discharge of fluids used to prevent an inward accumulation. What I do now in cases of septic foci which can not be removed, or where there is burrowing, is to wall off the infected area with a loose gauze pack. I use "sequestration" and not drainage. I shut off these diseased areas, which can not be extirpated, until the intestines have thrown out a protective barrier, shutting off the rest of the peritoneal cavity. Such a drain ought to be left in 6 or 8 days. Please remember then that sequestration and drainage are different principles.

Dr. J. M. Baldy, Philadelphia—It seems to me that sometimes small details will turn men away from the real truth, which is at the bottom of a general principle. What has been said in regard to the infrequency of drainage at the present time is all true, but what is given us by the reader of the paper as the cause? The leaving of salt solution in the abdominal cavity to be eliminated by the peritoneum, thus preventing or removing septic material and germs. It would seem that the change from the old method of drainage to the new method of non-drainage must have been made with some object and with some good reason. Perhaps there is something in the statement that the leaving of salt solution in the abdominal cavity has had something to do with this. Long before the gentlemen at Johns Hopkins ever gave this subject a thought, while they and I and everyone else were draining 70 to 90 per cent. sections, I watched Dr. B. F. Baer, of Philadelphia, closing cases without drainage that made my hair stand on end. I felt positive that they would die inside of twenty-four hours from sepsis and could hardly believe my eyes as I saw these cases get well. Ever since that time I have given up the drainage tube. All this was years before leaving salt solution in the abdominal cavity was heard of, and before Dr. Clark's first paper on the subject was written. I never leave fluid in the abdomen, and I will place my statistics, books and hospital records beside those of Johns Hopkins, or any other institution in the world, and if they can show me any difference I will believe it is the fluid they leave in the abdominal cavity which brings about their better results. I do not believe, however, that the fluid in that cavity has anything to do with the saving of the patient. We all know that the vast majority of these cases are non-septic. If you smear streptococci into the abdominal cavity, you can flood it with gallons of water and drain and drain, and the case will inevitably die. It is to a large extent a matter of luck, because it is impossible, on the operating table, to tell the character of the pus. If the pus and fluid be wiped away carefully, and the cavity cleared of debris and well cleansed, the peritoneum being stitched over all raw surfaces, there will be no complaint of results. The fluid that is left has nothing whatever to do with the result. The fact that Dr. Humison had one case in which he left the fluid get well is hardly worth considering—one swallow does not make spring. I have had hundreds get well without fluid. Before these illogical claims can be allowed you must reconcile my statement of results (where no solution was left) with those of the gentlemen who leave salt solution; and you must explain to yourself and me why as many of mine get well as theirs.

Dr. J. Henry Carstens, Detroit—Years ago I read of experiments made in Germany with indigo dye, which demonstrated that the tendency of fluid in the abdominal cavity was to go down to the cul-de-sac. Therefore, when I read the description of Dr. Clark's work, I was surprised. I thought that it was very strange, if we want to drain from the peritoneal cavity, to drain high. I did not know where I was at, and I don't know now. I agree with Dr. Baldy that there are two sides to this question. I want to criticise one thing in the paper. He says that it did not make much difference when you spilled pus into the peritoneal cavity, because you can wash it out afterwards. That is bad surgery. If you can prevent a single drop of virulent or attenuated pus from getting into the peritoneal cavity, you should do so. If I have a peritoneal cavity from which I have removed a pus tube, I have a surface which is raw and the cavity around it more or less contaminate with pus. Suppose the tube ruptured. The rectum is on one side, the bladder lies in front, and the two come together and prolapse when you put the patient into the horizontal position. Remember that you have a raw surface. Inside of a few hours these parts are all agglutinated, they are solid, and the peritoneal fluid can not wash this septic material up to the diaphragm, and you can not have it absorbed by the diaphragm, the liver, or anything else. We know that the abdominal cavity is walled in; the walling process starts in within fifteen minutes after the operation. Therefore, if I put a little tube down here in the vagina, and let this septic material run out, if there is any, I claim that I am doing the best kind of surgery. It all depends upon the kind of peritoneal fluid your patient has. It may be thin, like water, and no agglutination takes place. When I have a septic case in which union does not take place, I know that the peritoneal fluid is thin, and my septic material runs all over the peritoneal cavity and the patient dies. I would like to ask the Doctor why, in a case that has good plastic lymph, he puts in a lot of fluid and washes the septic material up near the diaphragm, and on to the stomach and liver, when it would otherwise never get there. This question must be considered carefully, and from both sides. I think the Doctor is correct in his investigations, and that there is something in it, but I hold that it is better to have your peritoneal cavity absolutely dry than to be throwing a quantity of fluid into it.

Dr. William H. Wathen, Louisville, Ky.—My experience leads me to believe that the suggestion of Dr. Clark is not in the interest of our patient. I have not drained through the abdominal incision, nor in an abdominal operation, for three years. Neither have I put any kind of liquid into the cavity. Instead of that, I have been scrupulously careful to wipe away all the fluid I could find, whether blood or pus, and have closed the cavity without drainage. My results have been better. I have had less peritonitis, less distention of the abdomen, a lower mortality, and patients get well more rapidly. The liquid put into the abdominal cavity by Dr. Clark is all absorbed within a short time, and that is the last of its influence. Therefore, if it has any influence at all, it is only temporary, whereas the germs may develop for an indefinite length of time. I do not think the explanation he gives will justify the conclusion that a condition is produced within this short period that makes the germs less virulent, or which increases the resistance of the peritoneum to the germs. I believe the time will come when everybody will wipe away all the liquid and leave the cavity dry. Where there is fluid that is absolutely septic, and septic matter or tissue which can not be removed, we introduce gauze as a protection against drainage. We want to isolate these poisons and prevent the diffusion of the germs throughout the system. This question must be decided by individual experience.

Dr. John B. Deaver, Philadelphia—I should like to raise my voice against the question of doing away entirely with abdominal drainage. I am sure that these gentlemen who close up their cases, like Drs. Kelly and Clark, do not have the cases of bad infection. I am sure, furthermore, that if you fill the abdominal cavity with salt solution, and allow it to diffuse, in cases of bad infection, you leave the last state of the patient worse than the first. I have had sufficient experience in dealing with pelvic operations to contrast and draw comparisons between the sepsis of pyosalpinx and appendicitis. You can rupture a pus tube and fill the peritoneal cavity with pus, and your patient will get well in spite of you. That may be an explanation why many of these cases get well. On the other hand, if you rupture an appendiceal abscess and spread the infection in the peritoneal cavity, every one of your patients, with few exceptions, will die. I therefore raise my voice against what I call bad teaching, even if it is done by the gynecologists. The surgeon who surveys the entire field, and does not limit himself to gynecology, has a right to raise his voice against bad teaching. I open the abdomen and survey the abdominal cavity with my finger. Then I place the patient in the Trendelenburg position, pack off with gauze, put them down and enucleate. If I am unfortunate in bad cases, and no man can enucleate pus tubes without rupturing some, I irrigate the pelvis, wipe it dry, remove the gauze, close the cavity, and my patients all get well. Where I can thoroughly dry the pelvis I do not drain in the pus tube cases, but where I can not I do drain. In the presence of considerable oozing I drain. I am not foolish enough to trust to the peritoneum that which the surgeon should accomplish. The use of the Fowler position I strongly advocate. I believe I have stood by the patient's welfare better than the gynecologist who flushes the peritoneal cavity with salt solution. As Dr. Carstens has said, it is not over fifteen minutes before it is all absorbed, and consequently it has nothing to do with the getting well of the patient. I have seen some of the most fearful forms of suppuration in the abdominal cavity, and therefore will always advocate practice versus theory.

Dr. Seth C. Gordon, Portland, Maine—I agree fully with the speaker that a surface abscess should be drained. An appendiceal abscess is a surface abscess, and it has nothing to do with the pelvis. Every such case I would drain. For a good many years I have not drained. When I took this stand at the Detroit meeting, a very good friend of mine said he should like to know where this gentleman comes from that he never drains. I told him, adding that I would be glad to show him how to do abdominal surgery without drainage. If you have septic material there, you can not take it out with a glass drainage tube, because these streptococci will not hustle to get to the outside through that little glass tube. In fact, the moment you put in the drainage tube you prevent these germs from getting out. Therefore, if you are not positive that you have your case aseptic, your drainage tube will not help it. If it is aseptic, you do not need the tube.

I do not endorse Dr. Clark's idea of filling up the pelvic cavity with fluid. I do not think it counts in producing good results. I do believe, however, that saline infusion allays the thirst and influences prompt action of the kidneys.

Dr. J. Wesley Bovée, Washington, D. C.—I think this discussion would be a great deal more interesting to us if these gentlemen taking sides will give us their experience with salt solution in the abdominal cavity. My belief is that many of them, especially those who are strong in their opposition, have never used it. Dr. Clark did not say to fill the abdominal cavity with fluid. He simply advocates washing out and leaving a small amount behind.

Dr. W. O. Henry, Omaha, Neb.—Until about three years ago my experience in the matter of drainage was like that of most of you. I believe it wise to drain in some cases where we are in doubt. I think it would be a serious mistake for us to say never drain in abdominal or pelvic cases. In regard to the use of saline solution, I have used it for several years in some of these cases, leaving it in as recommended by some one several years ago. I flushed the abdominal cavity, got out all the pus I could, and left in a quart, or even a larger amount in some cases, but my results were not satisfactory. I then left off both flushing and draining. I wall off my pelvic cavity or appendix, wipe out the pus, flush the cavity, dry it carefully, and close it up, and I have gotten the best results. While I believe that Dr. Clark's paper is a valuable one, I can not agree with his conclusions, and I would not use either drainage or general flushing in a very large majority of these cases.

Dr. Gustav Kolisher, Chicago—The practical value of Dr. Clark's conclusions can be easily judged by the statements of Drs. Kelly and Baldy. Dr. Kelly himself said that he did not use the so-called drainage simply because we are really unable to drain. Everyone who knows what becomes of the intestinal surface in the proximity of a so-called gauze-drainage knows that this packing does not drain, but enhances and perfects the formation of adhesions around the infected area. Dr. Baldy quite rightly challenges Dr. Clark to prove that his results are better than Baldy's and of those operators who follow his conviction.

The procedure of leaving salt solution in the peritoneal cavity was put to an actual test about nine years ago in Schauta's clinic. If in removal of a pyosalpinx the tube burst, we examined at once, and we drained, as the usual term is, in all cases where streptococci were to be found, and closed up without packing when we did not find them. Our results, however, did not improve much in spite of this drainage. So it was given up, and Herzfeld suggested, because difficult pyosalpinx operations take a long time, not in order to disinfect the peritoneum, but to give the patient a chance to absorb fluid as rapidly as possible, to put about one quart of salt solution in the abdomen in such cases. The results, however, were just the same. The patients who became infected with virulent streptococci died salted or non-salted.

Dr. Clark is unable to give us any proof of his statement that all the peritoneal lymph currents sweep toward the diaphragm. For that reason his conclusion is without foundation. It is necessary to distinguish between the superficial currents on the peritoneal surface and the current which circulates in the subperitoneal tissues. If Clark's statement would be true there would not be any circumscribed or isolated infection in the peritoneal cavity. And we see cases of circumscribed infection operated in Trendelenburg position, where the force of gravity trends toward the diaphragm, and the infection remains circumscribed. According to Clark's statements, we leave fluid in the peritoneal cavity in order to enable the peritoneum to dispose of the bacteria as quickly as possible. One method for isolating germs is to dilute their medium. If Clark's theory is correct, what would we do but transplant the germs all over the peritoneum and give them a much better chance to produce an extensive infection. On the other hand we know that if we inundate the peritoneal cavity with fluid

the absorptive power of the peritoneum is greatly reduced. Thus, premises and conclusions of Dr. Clark's theory are wrong. The only thing that we can gain from a rapid absorption of the saline fluid is an improvement of the action of the patient's heart, and a quicker elimination of toxins through the eliminatory organs. If Clark could prove that out of a certain number of cases, where virulent peritoneal infection was proven by microscope, culture and inoculation, he saves a greater percentage than other operators, then we could positively determine that his method saved patients who otherwise would have died.

As long as he can not prove that, I do not believe in his theory, his method, nor this saline monument.

DR. T. J. WATKINS, Chicago—Dr. Clark's paper is based almost entirely upon two statements: One, the direction of the lymph current, and the other, that it is impossible to localize septic matter in the peritoneal cavity. The latter statement I do not believe to be true, because we have all seen cases of localized pelvic suppuration without any general manifestations of sepsis. Therefore, I firmly believe that if Nature can localize septic matter in the pelvic cavity, we can, by the aid of Nature, use gauze for the purpose of quarantining septic and necrotic tissue in the peritoneal cavity. As to the lymph current, I fail to see the practical application, for I do not believe that the lymph current is strong enough to overcome the effect of gravity, which causes fluids to flow into Douglas' cul-de-sac. In the study of abdominal drainage the lymph current, if not of much importance, as drainage, can have but little effect upon the lymphatics. Most that can be accomplished is: 1, To quarantine septic and necrotic tissue; and 2, to guard against the accumulation of bloody serum, which is an excellent culture medium for most bacteria.

DR. PALMER DUDLEY, Chicago—I have had sufficient experience with both saline solution and with drainage to warrant holding an opinion. It is a well-known fact that the peritoneal sac is a balancer of the circulation. If you infuse two quarts of saline solution into the right vein of the circulation and open the abdomen afterward, you will find the excess in the peritoneal cavity as a free solution. If it is a septic case, I invariably have the patient transfused as soon as the ether is started. The current is then towards the pelvic cavity, and I never fail to drain a septic case through the vagina. In such cases the current is established from the over-pressure of blood; the drainage is through the abdominal cavity, and out through the vagina. When Dr. Kelly or any other man says that you can not drain with iodoform gauze, I say he is talking from inexperience or up toward the ceiling, because it can be put in and drained. Look at your charts twenty-four hours afterwards, and ask the nurse what the patient's condition is, and she will invariably tell you that he is draining well.

DR. ANDREW SMITH, Portland, Ore.—In the extreme West we owe a great deal to the writer of this paper. I and my colleagues were in the habit of draining frequently. When Dr. Clark's first paper was published, quite a reaction set in, and since then it has been a progressive matter with us not to drain. I have come to the conclusion that there is no such thing as effectual drainage of the peritoneal cavity. Peritoneal absorption is so rapid that sepsis is taken up before it can be drained away, and the drainage material is soon walled off, thus precluding further drainage of the general cavity. We must, therefore, trust to our toilet to remove as much sepsis as possible, and trust to Nature to handle that which is already absorbed. Drainage is, therefore, not only useless, but harmful. But this applies only to the general cavity. When there is a walled-off cavity which is septic it should be drained; or rather, it should be packed with iodoform gauze, which serves the double purpose of absorbing the septic contents of the circumscribed cavity, and of stimulating the walling-off process.

DR. EMIL RIES, Chicago—I wish to point out that Dr. Clark's paper of to-day suffers from two basic and fundamental mistakes. He says that if in the course of an abdominal operation we have infection of the peritoneum, we have pus in the cavity, and he thinks that is the beginning of the infection. The infection spreads because the germs in the pus spread all over the peritoneum. That is one fundamental mistake. The peritoneum is a living membrane, and if any pus is spilled on it and infection occurs, it will not stay on top, as it would on a piece of sheet-iron, but it goes right into that membrane, and if you examine an infected peritoneum with the microscope, you do not only find signs of inflammation or germs on top, but in the substance of the membrane. Therefore, when he washes out the cavity, he only reaches what is on top and not what is in the peritoneum. That is the greatest mistake, a mistake against which we all should protest. It is the greatest mistake that can be taught.

The second mistake I can point out in a few words. According to his idea, the importance of the distribution of the germs in the abdominal cavity lies in the fact that a large number of cells take hold of these microbes and carry them off. That is the old Metschnikoff theory, which has been exploded and is long dead. Therefore, Dr. Clark's theory is also exploded. He can take all the germs in the peritoneal cavity and carry them off, but that does not do away with the infection and does not prevent the death of the patient. It has long been known that the body of the micro-organism is not the cause of the disease, and is not the cause of the death of the patient, but the products of this individual micro-organism, the toxins, which are present and spread throughout the body are the disturbers. The important thing is to prevent infection, to prevent these germs from getting into the peritoneal cavity. All the surgeons who have spoken here have shown us the different ways in which this can be done. I do not know that it is necessary to pour saline solution into the peritoneum. I have seen patients die and I have also seen patients recover after its use. It is, after all, a question of the virulence of the micro-organisms. It is not whether he has staphylococci or streptococci, because we have staphylococci that are very insignificant and harmless, and we have staphylococci that are very dangerous. The Metschnikoff theory applied to this treatment of the peritoneum is exploded, and so are the two fundamental principles of Dr. Clark's theory of treatment of peritonitis.

DR. CLARK, closing—On account of the fact that my paper has run counter to the opinion of many previous writers, I was quite prepared for the very vigorous discussion which it has drawn forth. I shall not attempt to reply to all of the criticisms that have been offered to the paper, although I have endeavored in my completed paper to cover all of these points. As I have stated, when I first proposed the postural method of drainage in 1896, I did so with some trepidation, notwithstanding the fact that I had used it in a large number of cases with uniform success. As the teaching of the past had been so radically opposed to the theories which I advocated, I naturally feared that possibly the future might bring forth cases which would prove that the method was open to serious objection. Five years have passed since the publication of my first article, and I have paid especial attention to the practical side of this question, and, therefore, the intimation on the part of some of the speakers that my conclusions are based upon theoretical, rather than upon practical grounds, is without foundation.

As to Dr. Ries' criticism that the phagocytic theory has long since been exploded, I may say I have distinctly stated in the body of my paper that I do not know whether the so-called "alexin" or the phagocytic theory is the proper one. But from the very careful discussion of the action of the leucocytes by Bordet and Walgren and others, I can by no means agree that the phagocytic theory is exploded. At the same time, however, I give the very greatest credence to the alexin theory. After all, it matters little in the practical consideration of this question, whether the leucocytes are directly acting as phagocytes, or whether they merely secrete the germicidal agent (alexins). From the trend of the discussion on the part of some of the gentlemen, I see distinctly that they have not understood the purport of my paper. As a preliminary and absolute requisite for the employment of the natural peritoneal method of drainage, the operation must have been conducted with absolute care, and the most painstaking attention to every detail of the operation. To leave a suppurating area which would subsequently continue to be a focus of infection would be

a contra-indication to the use of the natural method of drainage. A simple spilling of pus during the course of the operation is not a dangerous complication, provided the general abdomen has been well walled off with gauze or sponges, and that the pus is immediately sponged out. Several speakers who have said that they have gradually stopped the use of drainage have shown that their results are better now than ever before. If they go one or two steps further along the line of progress. I thing they will probably find that their results will be even much better yet.

The point emphasized by one or two speakers as to the action of virulent streptococci is well taken. I do not, for one moment, feel that salt solution will wash out all the germs from the peritoneal cavity, but I do believe that we eliminate more debris and foreign matter in this way than in any other, and subsequently, the leaving behind of salt solution greatly facilitates the rapid absorption of matter which is not removed by irrigation. If a virulent streptococci infection is present, I do not believe that a barrel of salt solution will save the patient, and, at the same time, I do not believe that yards of gauze drainage will effect any better results. These are the sporadic cases which terminate with the symptoms of the most virulent poisoning. Some of the gentlemen present who have misinterpreted my remarks, seem to think I have advocated the complete abandonment of drainage. If they will read my "Indications for Drainage" they will find that this is by no means the case. In my paper I have endeavored to put upon a scientific basis the routine employment of peritoneal infusions of salt solution. Outside of the postural method of drainage which I advocated in my first paper in 1896, I claim no originality in the use of salt solution as other operators had employed it before I took up the subject.

My object has been to endeavor to explain on a scientific basis the undoubted benefits derived from the liberal employment of peritoneal infusions.

PRIMARY CARCINOMA OF THE NASOPHARYNX. A TABLE OF CASES.*

CHEVALIER JACKSON, M.D.
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Primary carcinoma of the nasal fossæ is rare, yet most rhinologists of considerable experience have seen cases. Primary carcinoma of the nasopharynx is so rare, judging from the fewness of reports, that but few rhinologists have had even one case. A careful search of the various indexes of the medical journals published in French, German, English, and Italian during the last twenty years has failed to unearth more than 14 cases. It is probable, however, that some reports have not been found; others have doubtless escaped because buried under misleading titles. Cases primary in the nasopharynx, later invading the oropharynx, velum, tonsil, nasal fossæ, antrum and brain, probably have been reported, if at all, as of these regions. Politzer[17] mentions 5 cases where the Eustachian tube was involved by cancerous extension from the tongue and the superior maxilla, but none of these seem to have been primary in the nasopharynx. It scarcely seems possible that all medical records should contain so few as 14 cases of carcinoma of the nasopharynx, yet Moritz Schmidt,[5] in a total of 32,997 nose and throat patients, did not meet with one case, though 75 of laryngeal carcinoma were seen. Reports of 5 cases were collected by Bosworth,[6] in 1889, to which he added 1 of his own observation. To these I have added 8, including one of my own, making 14 in all, tabulating them as well as the incomplete reports would permit. The table is incomplete, because 5 of the cases were evidently not under observation to their termination, and consequently only record symptoms to a certain stage. All of the cases were primary in the nasopharynx, with the possible exception of Lotzbeek's,[3] in which the nasopharyngeal portion was discovered at the autopsy. So small a number of cases is not a very safe basis for deductions; yet we must draw conclusions by the light we have. Before proceeding to the consideration of the table, I beg leave to give the history of the case that came under my observation.

On March 5, Miss J. P., aged 23, a cork-worker, was referred to me by Dr. Leon Sadowski. She was white, American born, of German parentage, her family history negative as to cancer, syphilis and tuberculosis, and no personal specific history. She complained of constant lancinating pain in her right cheek, above her right eye, deep in the right ear, and in and under the right lower jaw, so severe at night that she had been unable to sleep for three months. Dr. Sadowski stated that during the few days she was under his care one-half grain doses of morphin had no effect. Prior to three months, the pain had been intermittent for a year. Right nasal stenosis was first noticed three weeks previous to her consulting me, but had probably existed longer. The discharge anteriorly and posteriorly was odorless, thick and yellow, with no admixture of blood, and there was no history of hemorrhage. There was infiltration and tenderness of the cervical, parotid and submaxillary lymphatic glands. Ankylosis of the jaw prevented separation of the incisors more than one-half inch. The face was asymmetrical, the right cheek somewhat swollen, the general appearance of the patient somewhat cachectic, and the temperature subnormal, 97.6. Dr. Theodore Diller, after a careful examination, reported the functions of the fifth and seventh nerves unimpaired, and the brain uninvolved. Dr. C. A. Wishart kindly examined the eye-ground and reported a low-grade optic neuritis in both eyes: Visual acuity, O. D. 15/30; O. S. 15/70.

Upon inspection of the fauces I found a slight redness and infiltration of the right pillars and a bulging downward of the velum on the right side. The rhinoscopic mirror brought into view a large cauliflower-like mass completely hiding the right choana and fossa of Rosenmüller, and burying from view all of the Eustachian prominence except the border of the orifice, which was in line with the vomer, owing to the swollen and infiltrated condition of the eminence. This lateral mass was in contact with large masses of adenoid tissue which hung downward from the vault, and which in appearance differed from adenoid hypertrophy only in a red-bordered ulceration at the free extremities of some of the masses. The jaws could not be separated sufficiently wide to permit the finger to reach the vault, but on palpitation through the velum a soft pultaceous mass could be felt above a harder mass, which latter was evidently the infiltrated Eustachian prominence. On anterior rhinoscopy after depletion with adrenalin and cocain, a grayish-pink mass could be seen back in the nasopharynx, but it was apparently not attached to the turbinals, and was certainly not in the nasal cavities. Several fragments of the growth were removed anteriorly with alligator forceps. Pending a report the patient was put on a specific treatment, with large doses of morphin and antipyrin to control the pain. Microscopic examination of the fragments, by Dr. Edward Mayer, showed nothing to indicate malignancy. For the purpose of getting a more satisfactory specimen, and of making a digital examination, the patient was chloroformed, a gag inserted and the rigidly ankylosed jaws forced open. The finger determined the growth to spring from the right wall of the nasopharynx, both anterior and posterior to the Eustachian eminence; though the point of greatest degeneration, and therefore probably of origin, was at the junction of the vault with the right wall of the nasopharynx, between the Eustachian orifice and the choanal margin. The pterygoid plates could be plainly felt as the soft degenerated tissue gave way under the finger. The right Eustachian eminence was three times the size of its

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, W. E. Casselberry and J. N. Mackenzie.

fellow, and quite hard, except on its anterior aspect, where it was ulcerating. The posterior ends of the middle and inferior turbinals were infiltrated, but not breaking down, evidently having been but recently involved. With the aid of Dr. Milligan I removed all of the growth that would come away readily, along with the involved right Eustachian eminence, by means of the cold snare, Gottstein curette, side curette and Juraz adenoid forceps. The masses aggregated the size of a hen's egg. Anterior and posterior plugs were necessary for hemorrhage. Dr. Edward Mayer examined sections of the growth microscopically and reported it to be a columnar epithelioma.[14] Dr. Linnæus H. Prince, of Philadelphia, pronounced it glandular-celled carcinoma. There is now, three months after the operation, a deeply excavated ulcer at the junction of the vault with the outer wall. The region of the removed Eustachian eminence is slightly swollen and infiltrated, but there seems at present no tendency to repullulate. The nasopharynx is free and roomy, the choanal margins are visible all around and free from encroachment. The powder insufflated posteriorly comes like smoke out of both anterior nares. The natural hollow externally at the angle of the jaw on the right side is filled out more than level by the infiltrated parotid glands, and this region is the seat of pain, which is often darting in character, shooting across the face to the temple and upper jaw. This and the "pain deep in at the root of the ear" are, or would be, severe at night, but are perfectly controlled by 1 grain of morphin sulphate at bedtime. There is occasionally a slight fluttering twitch on the right side of the face, such as we see when the facial nerve is touched in the tympanum. As the membrana tympani is normal and there are no signs of middle ear trouble, I have thought this due to pressure or irritation of the facial nerve, either immediately before or after its emergence from the temporal bone, probably by the infiltrated parotid lymphatic glands. There is now no fixation of the jaw, mastication is easy and painless, but the maximum separation of the incisors is one inch. Beyond this, severe pain is produced apparently by pressure on the parotid lymphatic enlargement. Swallowing is painless and unimpeded, all the palatine muscles moving normally. The temperature has not been above normal since the post-operative rise of 1.5 degrees; it is, however, often subnormal, occasionally down to 97 degrees. There is no hemorrhage, no blood in the discharge, which is muco-purulent, small in quantity, never acrid and there is absolutely no fetor.

No.	Age.	Sex.	Reporter.	Family History.	Nativity.	First Symptom.	Ear.	Eye.	Fixation Max.	Pain.	Discharge.	Odynphagia.
1	75	M.	Durand-Fardel	. . . . .	. . . . .	Dysphagia, Dyspnea.	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
2	50	M.	Maissonneuve.	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
3	37	F.	Lotzbeck . . .	. . . . .	. . . . .	. . . . .	. . . . .	R. and l. amaurosis exophthalmos.	. . . . .	. . . . .	Fatal hem. from inf. max., carcinoma, not naso-phar.	. . . . .
4	39	F.	Flour.	. . . . .	. . . . .	Adenopathy .	R. deafness. .	Contract pupil, press. on sympathetic.	. . . . .	Slight.	Epistaxis. . . .	. . . . .
5	65	M.	Schmidt . . .	. . . . .	. . . . .	Coryza; bloody discharge.	. . . . .	. . . . .	. . . . .	. . . . .	Bloody muco-pur. Epistaxis.	. . . . .
6	59	F.	Bosworth. . .	. . . . .	. . . . .	Discharge; r. nasal stenosis.	. . . . .	. . . . .	. . . . .	Slight throughout.	Bloody, fetid muco-pur.	. . . . .
7	45	M.	St. Mary's Hospital.	Acquired syphilis	. . . . .	L. nasal stenosis.	. . . . .	L. corneal anesthesia, l. int. strabis.	Present..	Headache, left side.	Bloody muco-pur.; r. epistaxis.	Late. . . .
8	40	M.	S. A. Fox . . .	Negative. . . .	. . . . .	Otalgia, deafness, autophony.	Otalgia, deafness, autophony.	Invaded, diplopia, strabismus.	. . . . .	Sharp in ears. Headache.	Fetid muco-pur.	. . . . .
9	63	F.	McBride. . . .	. . . . .	. . . . .	Otalgia, "pain throat."	Otalgia. . . .	. . . . .	. . . . .	Ears and throat.	Bloody expectoration.	. . . . .
10	14	M.	J. M. Elder. . .	Mother, cancer, liver and stomach.	Canada; Irish parentage.	Adenopathy. .	. . . . .	. . . . .	Present .	Severe at base of brain.	Not fetid, muco-pur.	. . . . .
11	40	M.	E. J. Brown. .	Mother, abdominal tumor.	. . . . .	Chr. catarrh, r. otalgia; tinnitus, deafness.	Otalgia, tinnitus, deafness.	. . . . .	. . . . .	Otalgia, headache.	. . . . .	. . . . .
12	56	F.	Robertson. . .	Abdom. tumor, obstruction of bowel.	. . . . .	L. otalgia; l. anosmia; l. nasal sten.	Otalgia, 2 attacks, l. o. m. a.. recovery.	Pain.	. . . . .	Ears, eye. . . .	Muco-pur. . . .	Present. .
13	42	M.	Roncalli . . .	Negative...	Italy. . .	Bloody discharge; otalgia.	Otalgia (darting).	. . . . .	Present..	Darting l. ear, l. side face.	Bloody muco-pur.; epistaxis, hemor. fauces.	. . . . .
14	23	F.	Ch. Jackson. .	Negative. . . .	U. S.; German parentage.	Neuralgia 5th n.; reflex.	Otalgia, cartilag. tube involved.	Optic neuritis. Pain.	At 6 mos.	Neuralgia, 5th nerve; otalgia. Later lancinating in growth.	Not bloody; not fetid; muco-pur.	None yet..

ETIOLOGY.

Sex.—This does not seem to be a factor, as the cases are nearly equally divided, 57 per cent. being males, 43 per cent. females. This is in marked contrast to cancer of the larynx, where about 75 per cent. are males, and in greater contrast to cancer of the oropharynx, where about 90 per cent. are males, and in still greater contrast to cancer of the lip, where practically all cases are males. Moritz Schmidt, in a total of 32,997 nose and throat patients, found carcinoma in the nasal passages in 5 (3 males, 2 females), 60 per cent. males; in the nasopharynx in none; in the oropharynx in 16 (15 males, 1 female), 94 per cent. males; in the larynx in 75 (61 males, 14 females), 81 per cent. males.

Irritation.—This brings up the interesting question of the part played by irritation in the location if not causation of carcinoma. Most authorities now agree that, in general, irritation may favor the development of carcinoma, just as trauma does sarcoma; but the question that interests us is the bearing on the subject of the relative frequency of the disease in the nasal passages and larynx as compared with the relative rarity in the nasopharynx. My own opinion, based on fifteen years of observation of the upper air-passages of persons who inhale Pittsburg's smoky and dust-laden atmosphere, is that the nasopharynx is the most irritated portion of the respiratory tract. My case-books show an average of 48 cases of chronic catarrh of the nasopharynx to one of the larynx. We all know of the warming, cleansing and moistening duty performed in large

part by the abrupt turn of the nasopharynx. In doing this duty the mucous membrane is very much irritated. All this is so much the less irritation for the larynx. This organ has its duty of vocalization, but ordinary use of the voice does not irritate. In making the comparison the use of tobacco does not enter, as, in ordinary smoking and the "inhaling" of cigarette smoke the larynx does not seem to be subjected more than the nasopharynx to either direct contact with the smoke or continuity with tissue exposed to the direct contact. As shown by the relative frequency of carcinoma of the larynx and of the nasopharynx, then, it would seem that irritation was not a factor in the production of carcinoma.

Occupation.—This is only mentioned in a few instances, but in only one is it of a particularly irritating kind. Case 14 was a cork-worker, exposed to the very irritating dust of the cork works, but this isolated instance is no basis for argument.

Location.—In 66 per cent. of the cases, where the location is given, the growth sprung from the vault. This is the most irritated portion. At the upper part it is the seat of the pharyngeal tonsil, and if it were not for the rarity of the disease we might be justified in thinking the retrograde changes in this structure were a factor. In one case the growth appeared some years after removal of what appeared to be adenoids, giving rise to the queries: Did the benign growth develop malignancy? If so, was the irritation of removal a factor? Reasoning from analogy, we may conclude benign growths may become malignant, but operative removal is not a factor, as shown by Semon in disproving Lennox Browne's view that repeated endolaryngeal operations cause benign growths to develop malignancy. Delie[19] reports "sarcomatous recurrence" after adenectomy. Age does not eliminate adenoids as a predecessor of malignancy, as we have all seen adenoids at 30 and over. In the writer's case there were large adenoid masses not yet invaded by cancerous tissue, as demonstrated by the microscope, but whether they existed prior to the cancer, or whether the pharyngeal tonsil proliferated by reason of the peri-carcino-

Dysphagia.	Dyspnea.	Miscellaneous.	Origin.	Extension.	Lymph glands involved.	Secondary dep.	Operation.	Termination.	Clinical diag.	Microscopic Report.	Duration.
Obstructive.	Obstructive	. . . . .	Posteri'r surface velum.	Oropharynx	R. and l. cervical and parotid.	Lymphatic glands	None	Death by exhaustion, inanition.	Scirrhus.	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .	Vault. . .	. . . . .	. . . . .	. . . . .	Exsection maxilla	. . . . .	Carcinoma	. . . . .	3 yrs. to date reported.
. . . . .	. . . . .	. . . . .	Vault. . .	Cranial and nasal cav.; r. orbit antrum; slight l. orbit.	. . . . .	Inf. maxilla, secondary in naso-ph.(?); primarily in thyroid.	. . . . .	Death by hemorrhage inf. max. carc.	Carcinoma	. . . . .	"Some time."
. . . . .	. . . . .	Paral. r. voc'l cord; pressure of vagus by glands.	Vault. . .	. . . . .	R. cervical sup. and deep r. submax.	Lymphatic glands	None	. . . . .	Carcinoma	. . . . .	6 years.
Obstructive.	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	Gussenbauer resect.; both s. max; surv. few weeks.	Death. . . .	. . . . .	Small-celled Medullary.	1 year.
. . . . .	. . . . .	. . . . .	Vault. . .	Cranial cav., "brain symptoms."	R. cervical, ulcerated and healed.	Lymphatic glands	Cold snare: palliative; surv. 1 year.	Death by exhaustion.	. . . .	Medullary .	3 years.
Paralytic (?)	. . . . .	Par. of face; motor and sens. Vertigo	Left wall	Cranium, l. turb., l. antrum.	L. cervical submax.(?)	Lymphatic glands	. . . . .	Death. . . .	. . . . .	Epithelioma	2 years.
. . . . .	. . . . .	. . . . .	. . . .	Cranium, l. orbit.	None	. . . . .	Annandale; survived two months.	Death. . . .	. . . . .	Epithelioma	2 years.
. . . . .	. . . . .	. . . . .	Right wall	Velum, right tonsil.	R. cervical. .	Lymphatic glands	None	. . . . .	Epithelioma.	. . . . .	1 yr. to date of exam.
. . . . .	. . . . .	Albuminuria tube casts.	Vault. . .	. . . . .	R cervical; l. slightly.	Lymphatic glands	Lymph. glands extirpated; surv. 2 mos.	Death. . . .	. . . .	Scirrhus. . .	2 years.
. . . . .	. . . . .	. . . . .	Vault. . .	. . . . .	R. cervical; l. cervical.	Lymphatic glands	Cold snare; extirpated lymph.	Death. . .	. . . .	Epithelioma	5 years.
. . . . .	Early, prior to obstruc.	. . . . .	Vault. . .	. . . . .	L. cervical .	Lymphatic glands	None	. . . . .	. . . . .	Epithelioma	1 yr. to date of exam.
. . . . .	. . . . .	Temperat're elevated.	Vault. . .	. . . . .	. . . . .	. . . . .	Galvanic igni puncture.	Death, marasmus, hemorrhages.	Telangiectasic carcino.	. . . . .	1 year.
None yet. .	None yet.	Adenoids invaded, temperature sub-normal.	Right wall	None at this date.	R. cervical; r. parotid.	Lymphatic glands	Cold snare; curette forceps.	. . .	. . . . .	Epithelioma (glandular-celled carcinoma).	1½ yrs. to date of report.

RESUME.

Number of cases, 14; 8 males, 6 females. Range, 14 to 75 yrs: mean, 46: 86 per cent. between 30 and 40: 57 per cent. males, 43 per cent. females.

Fam. History.—Negative, 3; cancer, 1; "abdominal tumor," 2; acquired syphilis, 1.

First Symptom.—Otalgia, 5; adenopathy, 2; nasal stenosis, 3; bloody discharge, 2; dysphagia, 1; neuralgia, 5th nerve, 1.

Ear.—Otalgia, 6; deafness, 3; tinnitus, 1. Otit. med. cat. acuta followed by recovery, 2 attacks in 1 case.

Eye.—Strabismus, 2; pain, 2; amaurosis, 1; exophthalmos, 1; corneal anesthesia, 1; diplopia, 1; optic neuritis, 1.

Fixation Max.—Present, in 4; not mentioned, in 10.

Pain.—Ears, 6; slight, 2; headache, 2; throat, 1 (?); neuralgia, 5th nerve, 1; lancinating in growth, 1 (?).

Discharge.—Muco-pur., 8; bloody, 5; fetid, 2; not fetid, 2; fetor not mentioned, in 10; acrid, no mention; epistaxis, 4; bloody expect., 2; none, 2; not mentioned, 6.

Odynphagia.—In 2; none, 1; not given, 10.

Dysphagia.—In 3; obstructive, 2; probably paralytic, 1; none, 1; not given, 9.

Dyspnea.—Obstructive, in 1; prior to obstruction, 1; none mentioned, 12.

Miscellaneous.—Face paralysis, motor and sensory, 1; vertigo and albuminuria tube casts, 1.

Origin.—Vault, 8; R. wall, 2; L. wall, 1; velum, 1; not given, 2.

Extension.—Cranial cavity, 4; orbit, 2; oropharynx, 2; none, in 1; not given, 7.

Lymph Glands Involved.—Cervical, in 9; (R. 4, L. 2, both, 3); parotid, 2; submaxillary, 2; none, 1; not given, 4.

Secondary Dep.—In lymphatics, in 9; none elsewhere. No carcinomatosis. One case nasopharynx, inf. max. and thyroid all involved.

Operation.—Radical preliminary, 3; palliative, 4; none, in 4; not given, 2.

Termination.—Death in 8; not given, 6; by exhaustion, in 2; by inanition, 1; by hemorrhage inf. maxilla, 1; immediate cause not given, 4.

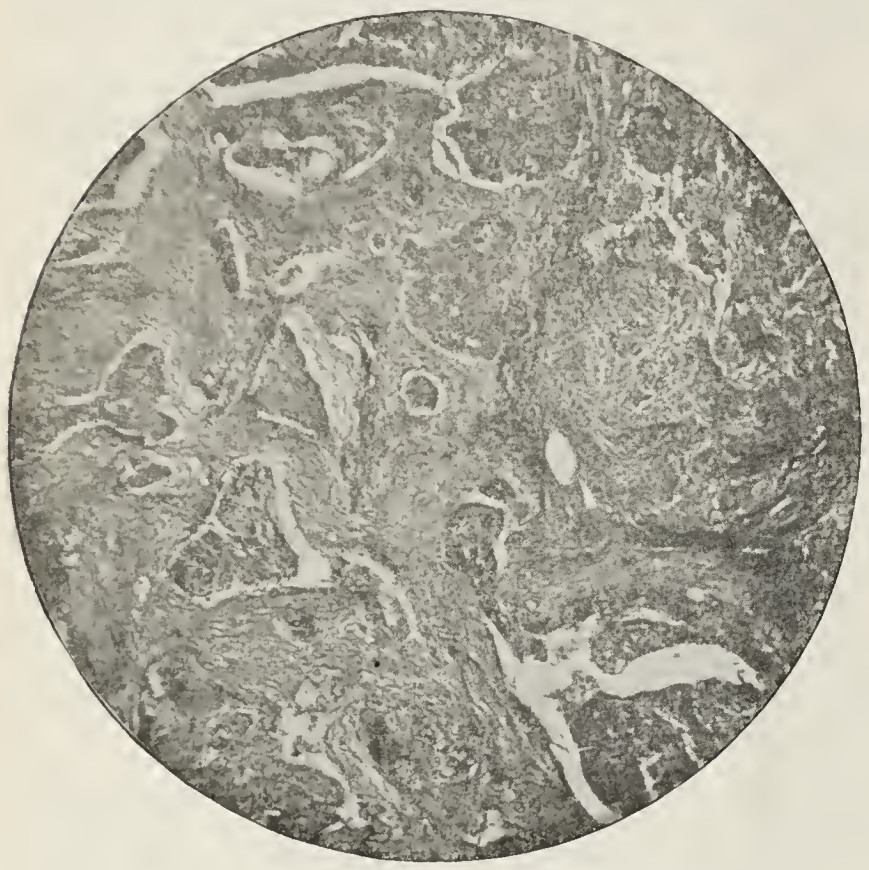
Micro. Report.—Epithelioma, 6; scirrhus, 2; medullary, 2; telangiectasic, 1; variety not given, 3.

Duration.—Range, 1 to 6 yrs.; mean, 2 yrs. 9 mos.

matous hyperemia, the writer does not know. His opinion is that the adenoids were there since childhood, though they were not large enough to produce stenosis. In Case 13 Roncalli says "there is the presumption, sufficiently founded, that the adenoids had spontaneously changed into a malignant neoplasm."

Age.—This is a recognized etiologic factor in carcinoma. The age of the cases in our table may be analyzed as follows: 10 to 20, 1 or 7 per cent.; 20 to 30, 1 or 7 per cent.; 30 to 40, 2 or 14 per cent.; 40 to 50, 4 or 29 per cent.; 50 to 60, 3 or 21 per cent.; 60 to 70, 1 or 7 per cent.; under 30, 2 or 14 per cent.; 40 to 60, 7 or 50 per cent.; 30 to 80, 12 or 86 per cent. The text-books state that carcinoma of the nasopharynx is rare before 30, yet 14 per cent. of the reported cases occurred in the first three decades. The score between 40 and 60 includes half the cases.

Heredity.—All authorities agree as to heredity being a factor in carcinoma. Of the cases in our table the family history is only given in 6. In 3—50 per cent.—of these there was a history of cancer or "tumor"; in



3 cases—50 per cent.—it was negative. The right side seems to have been involved twice as often as the left, judging by the lymphatic infiltration, but we are apt to err in deductions from so few cases. Beyond the three etiologic factors, heredity, age and irritation, all is theory.

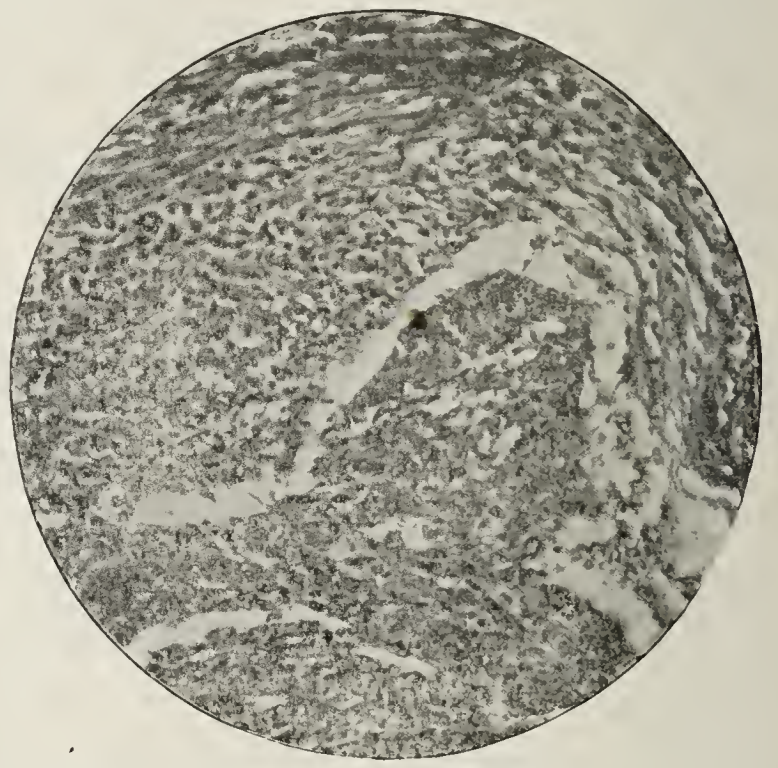
SYMPTOMATOLOGY.

Of course there are the symptoms common to all nasopharyngeal growths; coryza, obstruction to nasal breathing, postnasal discharge, pain, and, late in the disease, dyspnea, dysphagia, odynphagia, otalgia and deafness. To these must be added, in malignant disease, cachexia and intracranial extension. Of the symptoms that are usually enumerated as pointing particularly to carcinoma in the nasopharynx may be mentioned pain, fetor, hemorrhage, bloody discharge, and glandular involvement.

Pain.—This characteristically lancinating at, or near, the seat of the growth, is reported in only 2 cases, though it may have been present in others, being referred to the ear or throat. Six of the 14 cases—43 per cent.—report otalgia. The laity can not describe the location of a sensation in the nasopharynx, and a sensation arising on one side of the cavity is generally referred to as in the "root of the ear" of the corresponding side. Therefore we may conclude that of the 10 where pain is mentioned, 6 had more or less characteristic cancer pain. It was not characteristic in 3, and in 2 of these it was very slight. In Case 10 relief was sought for enlarged glands, the pain being slight early, but later—Dr. Elder informs me in a personal letter—it became very severe and was referred to the base of the brain, though without symptoms of meningitis or mental disturbance. Pain evidently may be: 1, reflex neuralgia due to irritation of nerve filaments, as in the early stages of Case 14; 2, aching from pressure of the growth on a nerve trunk, as in the later stages; 3, true lancinating pain in and reflected from the seat of growth, as characteristic of cancer elsewhere; or 4, very slight from the onset to euthanasia, as in Case 6.

Pain on swallowing would likely only be complained of early when the growth involves the velum, or, when late, its bulk causes the growth to be pressed by the velum in swallowing.

Fetor.—This is one of the most constant symptoms of carcinoma elsewhere on mucous surfaces, especially in



the stage of ulceration, but it is not mentioned in the reports of 71 per cent. of the cases. It may have been omitted, but it is so obtrusive a symptom that the observer is not likely to omit it. In Case 10 there was no fetor from the beginning to the death. This case was scirrhus, which usually is later in ulcerating than epithelioma. In Case 14 there never was any fetor though the growth had existed a year and a half, with ulceration for at least six months.

Hemorrhage.—This and bloody discharge, while set down in the text-books as usual symptoms, do not, from the cases reported, seem to be the constant accompaniment that is found elsewhere, in uterine cancer for instance. In the writer's case, after one and a half years' progress, there has been no bleeding or bloody discharge, except for a day or two after the growth was extirpated. In Case 10, Dr. Elder informs me there never was any expistaxis or other hemorrhage. In Case 13 hemorrhage was an early symptom, blood flowing from both nose and mouth, and an effort to get a specimen for microscopy resulted in such free bleeding that, the case being an out-patient, the attempt was given up.

Lymphatic Involvement.—The absence of lymphatic involvement would have been so remarkable that it would surely have been reported, so that we are justified in assuming it present when not mentioned, especially as in 3 of the 4 instances the diagnosis was not microscopic. No one would make a clinical diagnosis of carcinoma in the absence of lymphatic enlargement. Therefore we may count it present in all cases—93 per cent.—except one and possibly here the deep glands may have been infiltrated but not palpable, a possibility demonstrated by Lack[16] in carcinoma of the tonsil, where they were discovered in an external radical operation. Glandular enlargement in the neck was the first symptom noticed by the patient in two instances, and seems to have been a very early symptom in the others, though set down in some text-books as late. It progressed slowly in all cases; and sloughed out and healed up spontaneously in one.

Intracranial extension.—This is mentioned in some of the text-books as a less frequent occurrence in sarcoma than in carcinoma. We find, in our table, cerebral extension in 50 per cent. of the cases that were observed to their termination. This is exactly the same percentage as in 14 of sarcoma under observation to the end. It would be misleading to base the calculation on cases the later history of which is not reported, because cerebral involvement is a late symptom. There seems remarkably little tendency to extend downward, only 2—14 per cent.—having reached the oropharynx. This, with the rarity of involvement of the velum, accounts for the rarity of dysphagia and odynphagia as symptoms. Dysphagia was present in one case before the bulk of the growth would interfere with deglutition. This may have been paralytic, or due to enlargement of the deep cervical glands lying close to the esophagus.

Cachexia doubtless was present in all the cases, but the date of its onset was not definitely stated so tabulation is useless. General carcinomatosis does not appear on the records, and metastasis appears but once,—Case 3,—though here there is some doubt as to where the disease was primary. In 2 of the cases reported no growth in the pharynx was suspected. In 1 case—No. 11—the patient came for the removal of enlarged glands supposed to be tubercular; in the other,—No. 14,—for trifacial neuralgia, for which exsection of the Gasserian ganglion had been urged, and would have been submitted to had not the patient consulted Dr. Sadowski who suspected nasopharyngeal trouble and sent her to me. She had had trifacial neuralgia for a year before the growth attained sufficient size to occlude one posterior naris.

Inspection of the fauces will show nothing early, later a bulging downward and forward of the velum. Anterior rhinoscopy might show at least the presence of a growth of some kind if the nasal passages were unobstructed and the soft tissues contracted with cocain and adrenalin. Posterior rhinoscopy would reveal a warty ulcerating mass in the later stages; early it is altogether possible that a hasty routine examination might yield a diagnosis of adenoids. Indeed, it seems to the writer, from observation of his patient, that there might have been a stage where nothing but the microscope could have demonstrated that there was anything more than adenoid hypertrophy.

As to *touch,* one text-book refers to the "hard warty feel so characteristic of this form of cancer." Prior to seeing this I had written that "it would be impossible for a surgeon who had once experienced the soft mushy sensation of burying his finger to the bone in an ulcerating epithelioma of the nasopharynx to mistake it for anything else excluding tuberculosis and syphilis," but both myself and the author referred to each evidently had a certain stage of a single case in mind. In my case the sensation was like a mass of fresh blood clots, though the enlarged Eustachian eminence was hard. Case 13 is described as "very soft" to the touch. Doubtless the density varies so greatly that touch will serve little beyond determining a broad-surfaced, broad-based, undefined growth bleeding freely from the fingering.

DIAGNOSIS.

The text-books describe the chief characteristics of carcinoma of the nasopharynx as sessile tumors causing nasal stenosis, dyspnea, epistaxis, coryza, postnasal discharge of bloody, fetid, ichorous secretion, enlargement of cervical lymphatic glands, ear-ache, deafness and cachexia—occurring in a patient over 30 years of age. Doubtless at some time or other most of these symptoms appear, but they are of little use for early diagnosis. Only rhinoscopy long before the appearance of any symptom of malignant neoplasm will make the early diagnosis which is the desideratum in all cancers. This early diagnosis is only likely to happen in a patient coming for some other condition. In this stage, before the infiltration becomes a distinct neoplasm diagnosis is difficult if not impossible. Fetor is not always present in carcinoma (usually not prior to ulceration), is present always in ulcerating gummata, frequently in tuberculosis, always in sarcomata and ulcerating fibro-



Case of Miss J. P.

mata. Pain is not an aid to a differential diagnosis, as shown by our table. Glandular involvement being present in 93 per cent. of the cases, its absence would exclude carcinoma almost positively, if we could be sure there were no involvement of the deep glands. Its presence is not to be relied on to exclude sarcoma, nor is any other symptom. It would be misleading to follow the text-books and exclude carcinoma if the patient were under 30, for 14 per cent. of the cases occurred before that age. Then we should always remember Rehn's case of laryngeal carcinoma at 3 years of age. Theoretically, it should be possible in the nasopharynx at the same age. Touch will determine a fibroma to have a narrow base in proportion to its size, with a smooth, rounded projection toward the oropharynx, its fixedness, firm consistence and sharp definition resembling and usually exceeding those of the Eustachian eminence, which we all so readily distinguish in adenectomy. Usually a fibroma attains a large size and produces mechanical difficulties before affecting the general health or producing much pain, whereas our table shows obstructive dysphagia present in only 2 cases—14 per cent.—and in these it was a very late symptom, appearing long after cachexia became marked. In 2 cases cachexia appeared before the growth attained sufficient bulk to produce even nasal stenosis. Fibroma is rare after 30, when it is apt to retrogress, or at least cease to progress. Both fibroma and sarcoma of the nasopharynx are usually accompanied by much more hemorrhage and bloody discharge than the records show

in carcinoma. In the early stages, carcinoma may simulate adenoids, as in Case 11, or both conditions may coexist, as in the writer's case—No. 14.

Syphilis as an ulcer or a gumma can be excluded with certainty only by the failure of specific treatment to benefit. In the writer's case of carcinoma the pain was very much increased by potassium iodid, diminishing when discontinued, increasing again when resumed. This does not seem strange when it is remembered how some patients complain of aching in the parotids and at the angles of the lower jaws, and how others are affected with coryza, from iodism.

Pharyngo-mycosis rarely extends to the nasopharynx, but its appearance and history ought to render its recognition easy without the microscope.

The writer has not seen a report of a case of lupus —as distinct from tuberculosis—of the nasopharynx, though as it occurs in the oropharynx and nasal passages it would seem a possibility. The history, cicatrices, and associated skin lesion of lupus vulgaris should distinguish it.

Tuberculosis might simulate an ulcerating carcinoma, but it would not be fungoid and warty, and with its temperature record, thick, tenacious, bacillus-laden secretion, pulmonary and laryngeal accompaniment, does not seem difficult of exclusion. However, a hair-splitting clinical diagnosis is not worth while, for the microscope is the 'final arbiter"; but the microscopist's negative report must not be acted on unless a large specimen has been submitted to him. When a clinical diagnosis of carcinoma has been made it would seem best to anesthetize, make a thorough digital examination and remove all of the growth that can be readily removed. This will permit of a microscopic examination of value even if negative. If it prove carcinoma, the best possible has been done; if otherwise, a more radical operation may be done if deemed advisable.

PROGNOSIS.

Termination is utterly hopeless with present methods of treatment. As to duration, from two to six years may be promised under palliative treatment. Radical operation, if survived, will shorten life to a few months, though one patient survived a year. The progress of the disease in the published cases seems quite slow in the early stages, rapid in the later.

TREATMENT.

This may be classed under two heads, radical and palliative. Special surgeons favor palliative methods by natural channels, general surgeons favor radical operations with radical preliminry operations to create an artificial channel. The aim of the radical operator is to get the growth out; the palliative advocate, recognizing the hopelessness of thorough removal, aims at comfort. The palliative methods include the cold snare, cutting forceps, possibly the curette in very soft growths, electrolysis, the galvanocautery, lactic and nitric acids, and possibly some other caustics, local soothing applications, and Chian turpentine internally. Extirpation of the enlarged lymphatics should probably also be included here. The 14 cases afford us examples of only the snare, forceps, curette, galvanocautery, glandular extirpation, Chian turpentine and absolute alcohol injections.

Radical procedures, of which there are many, vary considerably in technique, but they all contemplate the creation of an artificial channel by the resection, temporary or permanent, of more or less of the inferior or superior maxillary and palatine bones. Three cases are reported as radically operated on. Case 2 lived a year, by which time repullulation had filled the space left by the exsection of the superior maxilla. Case 3 survived exsection of both superior maxillæ a few weeks. Case 8 survived an Annandale operation two months. There are no records of deaths on the table from preliminary operations for nasopharyngeal carcinoma, as there are for fibroma in the same location, probably because of the rarity of the disease and consequent fewness of the operations. There may be cases in which radical preliminary operations are necessary for the removal of fibromata, but malignant disease confronts us with a somewhat different problem. There is no hope here of retrograde metamorphosis during the third decade. It is not a question of limiting the bulk within harmless bounds. Since no one has yet reported a cure by radical operation there seems to be no basis for argument. It can not increase comfort to add postoperative anemia to cancerous cachexia. There is the laudable ambition to eradicate the disease so thoroughly that there will be no return, but the results with carcinoma more accessibly located, are not such as to warrant the procedure, and, furthermore, in the writer's opinion, thoroughness is not as attainable at the bottom of a deep artificial channel, necessarily different in every case, as through the old familiar natural passages where every remaining landmark is familiar from manipulation of thousands of cases and every variation from the normal is apparent to the rhinologist's touch, and where combating hemorrhage does not take up so much valuable time.

Contrast these radical operations, with their mutilation, disfigurement and early death, to the example of palliative treatment shown by Case 6, where Bosworth, by gentle manipulation of the cold snare, removed the bulk of the growth, followed by quiescence and comparative comfort. True, this was one of the cases in which there was little pain, but radical operations, followed in a few weeks by recurrence of the growth, can not offer any hope of controlling pain if present. In Case 4, McBride prescribed Chian turpentine, which he considers his duty in all cases of cancer, though he has seen no marked results and the effect in this case is not recorded. In Case 11, the removal by the snare of what were at the time thought to be adenoids notwithstanding the age of the patient—40—gave complete relief for 3½ years, when the sudden onset of deafness and very loud tinnitus marked the attainment of a large-sized recurrence, on which injections of absolute alcohol had no appreciable effect. In the writer's case—No. 14—removal of the growth with the cold snare, forceps and very gentle curetting was followed by a month of little or no pain and a period of quiescence. In the second month periodical attacks of pain commenced and were easily controlled by morphin. At the present time—three months after the operation—the patient goes about the house, and is happy and cheerful in the belief that the growth will not return. About one grain of morhpin sulphate at bedtime controls the pain, rarely any being needed during the day. The addition of 1/100 grain of atropin sulphate seems to prevent nausea from the morphin. The only local application that seems to increase comfort and not to irritate is that suggested by Kyle for carcinoma of the nasal passages—aristol, 20 grains to the ounce of zinc stearate. Iodoform is disagreeable, and used in the nasopharynx daily for months, might cause toxic symptoms. Detergent and antiseptic gargles

are used to clear the oropharynx of secretion, but their use in the nasopharynx by way of either nose or mouth seemed to irritate in this case. None of the cases were treated by electrolysis, but in Case 13 Roncalli used galvanic ignipuncture under the preliminary diagnosis of angioma or fibro-angioma, and thinks he did harm; hastening the fatal result, though the part of the growth treated, diminished, while the untreated portion increased in bulk. In Case 10 extirpation of the enlarged lymphatic glands seemed to add comfort for a time. In Case 11 extirpation of the glands afforded relief from headache. As to whether the extirpation in these two cases lengthened or shortened life, we have no basis for an opinion. But if there is a chance of making the patient more comfortable there seems to be no contra-indication, as the healing was prompt and no ill result seems to have followed. In Case 6 the glands sloughed out and healed over, followed by rapid increase in cachexia. Dawbarn's method of ligation of the external carotids and a number of their branches has never been tried for the starvation of carcinoma of the nasopharynx.

CONCLUSIONS.

In conclusion, the points that I should like to hear discussed by this able assemblage are these: 1. Why is carcinoma of the nasopharynx relatively so rare? 2. Has the relative infrequency of carcinoma of the nasopharynx any bearing on the subject of irritation in the etiology of cancer? 3. Is a radical operation ever justifiable in undoubted carcinoma of the nasopharynx? 4. If justifiable in the very early stages, at what stage does a radical operation become unjustifiable.? 5. If a radical operation be unjustifiable, what can we do to make the termination euthanasia, not cacothanasia?

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Determination of the Motor Activity of the Stomach.—Schuell describes in *Fortschritte der Med.*, No. 18, an accurate method of determining the status of the gastric motor functions. After a test meal the stomach is rinsed out in three hours. The contents are filtered, the filtrate dried and then weighed. It weighs about five grams in normal conditions, and variations in this weight indicate different pathologic conditions.

CASE OF NASAL SARCOMA, WITH REMARKS.*

DUNBAR ROY, A.B., M.D.

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ATLANTA, GA.

Sarcomata within the last few years has certainly seemed to be on the increase. This may be due to the fact of a closer microscopic examination being made than formerly of all suspected tumors, especially those occurring in the nasal passages. Nor can rhinologists be too diligent in this direction. It is not my intention to go into the pathology of the sarcoma, but simply to add a few personal experiences to the report of a case.

Warren, in his late book on "Surgical Pathology," states "that sarcoma of the nasal passages is not a very rare disease." Bosworth has collected 41 published cases, but I believe this number is but a small proportion of the cases which have occurred. If statistics were really obtainable, they would show a much larger percentage of these growths than is at present the case.

The round-cell and alveolar forms of sarcoma seem to be the prevailing types of the growth occurring in the nasal passages, although there are sometimes seen the fibrosarcoma, myxosarcoma, and even angiosarcoma and melanosarcoma. Some writers hold that it is extremely rare for a sarcoma to originate primarily in the nasal passages, but that such a one nearly always has its origin in one of the continuous cavities, especially the maxillary antrum. This is a difficult question to decide, since the rhinologist rarely sees a case and follows it from its very incipiency. Warren says that the tumors are pediculated with about equal frequency on the outer and inner wall of the nasal passages. Histories of reported cases do not seem to substantiate this statement, rather showing a greater frequency on and around the turbinates than at any other point. The average age at which the disease appears is about 40 years, and it is seen about equally between males and females. Warren further says, that sarcoma does not appear to show the same malignant tendencies in the nasal passages that it does in other localities. There have been several cases reported where the disease had not shown a recurrence several months after its removal.

ETIOLOGY.

The etiology of sarcoma appears as yet to be enveloped in obscurity, but the majority of pathologists incline to the theory of Cohnheim, that it depends on a disturbance of embryonic tissue. Nasse says that trauma is more frequently the cause of sarcoma than any other tumor, and observation teaches that there is certainly a close relationship between the two, especially in this class of tumors occurring in the nose. In my own mind I firmly believe that there is a possibility of benign growth in the nasal passages, such as the myxomata, being transformed into malignancy through traumatic irritation. Such a statement is difficult to verify, since I have been unable to find any authentic case which has been traced from its very incipiency to the point where it has become malignant. There is enough evidence to show that this possible transformation has been seriously considered by others.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, W. E. Casselberry and J. N. Mackenzie.

Last year, Würdemann, of Milwaukee, reported a case of sarcoma of the nasal passages in which he seemed very much inclined to the belief that it was a transformation from benign to malignant neoplasm through rough instrumental manipulation. If such then be a possibility, how necessary it is for the rhinologist to be certain of the character of every growth which he finds in the nose, and the radical removal in the very beginning, when there are the least signs of malignancy, and this too with the least traumatism possible.

PROGNOSIS.

The prognosis in these cases is anything but favorable, and any treatment which will stay the progress of the growth should be welcomed. The case which I report is cited for two reasons: 1, because of the probable transformation of a benign into a malignant growth; and 2, because of the surgical method used in the treatment.

Miss B., aged 28, from the southern part of the state, was referred to me in June, 1899. Her family history was most excellent. The patient herself had always been perfectly healthy up to February, 1899, when the right nasal cavity began to stop up and cause difficulty in breathing. She consulted her family physician, who told her she had a polypus and at the same time removed it with a pair of scissors. In a short time the growth returned, and he again removed it. After a short interval the nasal cavity still being stopped she went to a neighboring city to consult a surgeon. He told her that it was a surface polypus and could be removed. She remained there a month and at various times the growth was curetted and torn away. There was always excessive hemorrhage at each operation. At the end of a month the patient returned home with the assurance that the place would soon heal up. However, the growth gradually increased in size, the whole side of the face on that side swelling enormously and a swelling also appeared in the roof of the mouth.

On June 6, four months after the appearance of the first symptoms, she came to Atlanta. On examination I found the right nasal cavity, septum and right antrum involved with a growth which was evidently a sarcoma. The mother was advised that the case was hopeless, but at her solicitation I began a trial of Coley's mixture of erysipelatous toxins. This was used for two weeks with decided reactions, but no change in the growth. At this time Dr. W. P. Nicholson, a general surgeon, saw the case with me and advised, as a last resort, not as a curative but palliative, the cutting of the blood-supply to the tumor, by ligating both external carotids. The consent was given, and on June 19, at St. Joseph' Infirmary, Dr. Nicholson ligated both external carotids, the operation being accomplished in half an hour. The patient reacted nicely from the operation. On the second day the temperature rose to 102, but only for a day. The only thing complained of was pain on deglutition, on account of the soreness in the pharyngeal muscles. The growth seemed to decrease some in size after the operation and began to lose its fiery-red color so noticeable previously. The color became more of a purplish hue. For a few days there seemed to be an improvement and the patient complained much less of the throbbing sensation. No material change being noticed, at the end of two weeks, the patient gradually growing weaker every day, she was taken home. She died on August 16, seven months after the appearance of the first symptoms.

The prognosis in this case was unfavorable from the very beginning. It is certainly one which adds something to the idea of transformation of benign into malignant neoplasms. The question as to whether the growth considered in the beginning as a mucous polypus was not even then malignant could not be answered, as no microscopic examination was made, but it at least opens up the question for further investigation. Another interesting point was the rapidity of growth within the space of six months. Kyle, in his late text-book, says that the nasal sarcomata are of slow growth, and this view is held by the majority of writers.

The symptoms of severe bleeding whenever any growth within the nasal cavities is touched should make us very suspicious, and such should be removed early in the most radical way possible. I am opposed to the vigorous curetting of any growth in the nose, for if transformation of benign into malignant growths is possible, then curetting opens up the best chance for such to occur.

The thorough cutting-off of the blood supply to these growths, by ligating the vessels supplying the same, has recently been strongly advocated. One case is not sufficient for drawing deductions as to the curative effect of any treatment. In the case reported both external carotids were tied, so as to remove all possible source of bilateral anastomosis. Our operation produced no lasting beneficial effect. Such an operation might be effective in the early stages of the growth, but I do not think it will be of any benefit after marked infiltration of the tissues has occurred.

The use of the toxins was not persisted in because, as is well known, such are effective by destroying the tumor, and if such had happened in this case, the disfigurement would have been worse than death.

REPORT ON A CASE OF "EPITHELIOMA" INVOLVING TONSIL, FAUCIAL PILLAR, TONGUE AND BUCCAL SURFACE, WITH TREATMENT AND APPARENT CURE.*

S. A. OREN, M.D.
LANARK, ILL.

The history of the patient is as follows: H. S., a male, aged 73, white, married, father of a family of seven healthy adult children, had always enjoyed good health, and had not been sick enough to call a physician in thirty years; to all intents and purposes he was a healthy, robust, active man. His family history was negative. He formerly used tobacco, but not of late years; was not a total abstainer, though not a drinking man. He denied ever having had a specific lesion.

About December, 1899, while in Iowa, I was asked to look at the case. At that time the patient was complaining of a little sore throat, which he was pleased to call "a canker sore." A little white spot was discovered on the left anterior faucial pillar, rather high up, not larger than a pin-head, which I thought a simple ulcer, and so prescribed a simple application of powdered borax and a mouth wash.

Early in March, 1900, I was again asked to see the case. At that time the tonsil seemed to be involved, and the anterior faucial pillar had a rose-colored ulcer about one-half inch in diameter, surrounded by a zone of fiery inflamed tissue radiating in every direction. At this time the case was being occasionally treated by a local physician, with a gargle of some sort. The possibility of the case being malignant was suggested, and I advised thorough cleansing with an antiseptic spray, then cauterization, to be followed by a dust of iodoform.

I heard nothing more of the case until some time late in April, when a letter was received from his

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daughter, appealing to me for advice, stating that the throat was much worse, that they had consulted with two very able physicians, neither one of whom gave him any encouragement, and advised him to go to a hospital to have treatment or removal of the growth. One of them, however, suggested the possibility of it being a gumma, and, in addition to a local wash, had the patient on iodid of potassium in "auld lang syne" doses for some three weeks. The throat was steadily growing worse and the ulcer spreading.

On May 1, 1900, Dr. S. S. Bishop and Dr. Moreau R. Brown saw the case with me. At this time there was an angry ulcer on the anterior faucial pillar. The tonsil seemed entirely absent. Forward from the faucial pillar, alongside of the tongue, was an angry ulcer about an inch in length, with four ashy-colored coxcomb growths projecting above the surface; also a similar ulcer extending along outside of the gum and contiguous buccal mucous membrane, the gum being spongy and honeycombed. The patient complained of lancinating pains extending to the left ear, and much difficulty in swallowing, but otherwise seemed in good health.

Dr. Bishop thought the growth malignant, and wished Dr. Nicholas Senn to see the case; after the latter had made a careful examination, he pronounced it malignant, and was certain that the glands of the neck were involved, and probably the inferior maxillary. As treatment, he suggested Kocher's incision, or modified Kocher's incision, removal of a portion of the tongue, faucial pillar, soft palate, glands of the neck, and probably a portion of the inferior maxillary. To this operation the patient refused to consent.

Before going to see Dr. Senn, a section of the growth was sent to a pathologist for examination, the report of which I herewith submit:

Chicago, May 2, 1900.

Drs. S. S. Bishop and S. A. Oren, Lanark, Ill.

Dear Sirs:—Sections show a covering of squamous epithelium—underneath this a mass of epithelioma—squamous. There are large numbers of horny pearls. There are many nests of younger and more active cells—epithelioma shows round cell infiltration beyond the epithelioma. Diagnosis, epithelioma.

Very truly,

Columbus Medical Laboratory.

Per Evans.

Dr. Moreau R. Brown suggested palliative treatment, consisting of iodoform and ether spray locally, and continuance of the iodid and mercury internally.

Thus we have the history of the case with the diagnosis of epithelioma confirmed by the laboratory, consequently a serious prognosis.

Discouraged and despondent as the patient was, he consented to return with me and remain until it could be ascertained whether or not he could be helped. He was kept on potassium iodid and mercury internally on general principles. He called at my office morning, noon and night. For a few days a spray of iodoform and ether was used, then changed to iatrol. Later, I washed the ulcer with a spray of listerin, using considerable air-pressure, then dusted with iatrol, using air-pressure sufficient to drive the powder to the very bottom of the spongy ulcer, then covering with a spray of ichthyol and oil.

Under this treatment the inflammation greatly subsided, and a cure was apparently in sight. Then it would increase and spread again. On May 22, noticing that the place where the pathologic specimen had been removed healed over kindly, I took scissors and snipped off all the coxcomb growth, curetted and cauterized the base. A hole one-eighth of an inch in diameter had ulcerated through the faucial pillar at this time, and fiery rays of inflammation extended well up on the soft palate.

Both local and internal treatment were continued, as before mentioned, until June 15; oftentimes the trouble seemed under control, but again apparently spread. A hypodermic injection of pure alcohol was made in several places outside of the periphery of the ulcer, and in and above the anterior faucial pillar, which was followed by considerable inflammation, swelling and pain. This, however, subsided in a few days, after which there seemed to be a circumscribed hard mass with a fiery point near the original seat.

On June 22, assisted by my son, Dr. S. L. Oren, after injecting a solution of suprarenal extract and cocain, with scissors, scalpel and forceps, I dissected, out of the side of the tongue and buccal wall, a mass about the size of an almond, curetted the base of the wound, also all apparent diseased tissue, cauterized with nitric acid, dusted with iatrol and sprayed with ichthyol and oil. This treatment was continued three times a day until July 12, 1900, when patient was apparently cured, and returned to his home in Iowa, to all intents and purposes a well man. He has taken no medicine for months, and up to this date, June 1, 1901, has no sign of any recurrence, and is as healthy as average men of his age. I acknowledge my obligations to Drs. Bishop, Brown, and Senn. It will be noticed that this case had double treatment—internally, as if specific, locally, as if malignant.

That the alcohol injection checked the spreading, there is no doubt in my mind; that the close observation and frequency of the treatment, together with the thoroughness of the applications, had much to do with the result, there can be but little question. If it was epithelioma, then we learn that these cases need closer watching than is usually given, as well as more energetic treatment.

This case is reported that it may stimulate us not to abandon these apparently hopeless cases. I saw one other similar case years ago, which was not treated, except by an antiseptic mouth wash, result fatally. The same was expected in this case.

Note: July 6, 1901, case shows no signs of return at this date.

DISCUSSION ON PAPERS OF DRS. JACKSON, ROY AND OREN.

Dr. O. T. Freer, Chicago—In Dr. Roy's paper nasal mucous polypi are referred to as myxomata. Modern histologists consider these growths fibromata and not myxomata. Then, as to the transformation of mucous polypi into malignant growths, I think that only actual histologic demonstration of such change should be accepted as evidence of it. A growing sarcoma or carcinoma of the nose produces a chronic congestion of the surrounding mucosa that is apt to take the form of polypoid hypertrophy. For this reason polypi may be removed several times from the affected naris before the deeper seated malignant growth has obtained sufficient size to become apparent. The malignant nasal growths are thus hidden and covered by the polypi created by their advance and the picture presented is apt to lead to the false conclusion that there is a transformation from a benign nasal mucous polypus to a malignant growth.

Semon's statistics prove that the change from a benign to a malignant tumor is certainly a matter of such rarity that its existence may be doubted. This is the opinion of Jurasez, who thinks the danger of malignant changes in benign neoplasms so slight that it need have no weight in the prognosis. It certainly need not deter from operative procedures on

benign growths on account of possibly exciting malignant change.

Benign growths are more in gross appearance than in fact near relatives of malignant ones; histologically they are closely allied to the hyperplasias. It is not common experience to find that the cell type of either the benign or malignant tumors undergoes change and though a malignant tumor can select a benign growth for its origin as it can other parts of the body, the actual change of the component cells of a fibroma—and mucous polypi are fibromata—into the spindle or round cell of the sarcoma or the entirely different type, the epithelial carcinoma, seems to me highly improbable.

I will state in conclusion that no one should speak of the transformation of a benign into a malignant growth unless he can prove his statement by microscopic demonstration of portions of the neoplasm before, during and after completion of such transformation. Otherwise it is well to keep silent on the subject.

Dr. John N. Mackenzie, Baltimore—This is a subject of very great importance and I can not allow the discussion to close without referring to one phase of the cancer question in the upper air-tract. I do not desire to be at all personal or speak in words of criticism of anything said this afternoon. The gentlemen have simply followed the universal practice which is authoritatively given in text-books. They have followed the general rule which is usually obeyed under the circumstances. There is no chapter in the whole history of laryngology that needs revision more than the chapter on carcinoma of the upper air-passages. It will not only have to be revised, but rewritten. I wish again to go on record as entering an earnest protest against the reckless removal of portions of a suspected malignant growth for microscopic examination. Of course, sometimes a microscopic examination will have to be made, but until every resource and refinement of clinical examination has been exhausted, the microscopic examination should not be resorted to. The microscope should be the court of last appeal. The objection I have urged to the removal of a piece of suspected neoplasm for microscopic examination is that it subjects the patient at once to the danger of autoinfection at the point of incision, and to the development of metastases elsewhere. In the second place, it stimulates the growth of cancer, and thirdly, the microscopic examination is often unsatisfactory and in the larynx itself sometimes practically impossible. When a doubtful case is presented the laryngologist loses no time in removing a piece for microscopic examination, and that too often means but the beginning of the end. In dealing with this disease we should remember that we are dealing with cancer, an infectious process. We should leave the microscope severely alone until we have exhausted every possible refinement of clinical diagnosis. The question of the operability of cancer often comes up. Whether these cases are operable or not should be decided on general surgical principles. If they are operable let them be radically operated upon; if not, let them alone. More harm is done and life is often shortened by curetting and taking off pieces, in cancer of the larynx, than by any other known procedure. I want again to go on record, in the face of the adverse criticism I have received from many, and reiterate what I have said before with all the emphasis at my command.

Dr. C. M. Cobb, Lynn, Mass.—I would like to call attention to the amelioration which may be obtained through the use of formalin. It certainly has a very good effect on the ulceration after there is breaking down. The injection of a weak solution does no harm other than the pain it produces. If you inject a solution into the growth it will produce a pain that lasts for a number of hours, but it does seem to favorably influence the growth.

Dr. J. Holinger, Chicago—I do not like to see this Section go on record as having listened to the report of a case of carcinoma of the tonsil that has been entirely cured, and nobody object to the possibility of such a thing or to the undoubted reality of the fact. There are just a few possibilities that may explain the result that we have heard. We know that there are a number of possibilities that may suggest, especially in the tonsils, the idea of the microscopic finding of carcinoma. The specific growth may have the identical appearance of a malignant growth in the tonsil. The Doctor tells us that he used specific treatment at the same time. I do not think that we should rely too much upon the microscopic diagnosis and call the case one of pure cancer of the tonsils.

Dr. C. Jackson, Pittsburg, in closing—In regard to Dr. Freer's statement, that in no case has malignant growth of the upper air-passages followed a benign growth, I would refer to a case reported by Ward, where a complete removal of a laryngeal papilloma, leaving no tissue behind, was followed by carcinoma. The carcinoma having occurred after a complete removal of the papilloma, would seem to indicate that it was not a simple papillomatous covering over a carcinomatous growth. The statement by our esteemed chairman that the text-books should be revised in regard to carcinoma of the upper air-passages is certainly true as to the naso-pharynx. I have found the text-books in that one department give statements that are radically wrong in the light of my analysis of reported cases. Of course some of the writers may have seen cases that they did not report. In regard to metastases following the removal of specimens for microscopic examination. I will say that, in regard to the naso-pharynx, of the eight cases in which specimens were removed in none were metastases reported. I doubt if that great desideratum, a very early diagnosis, can be made without the microscope. In regard to operative treatment by removing portions of a radically inoperable growth, Bosworth's case survived a year and was comparatively comfortable; Brown's case survived three years after removal with the snare. The let-alone plan yielded no better results in any case.

Dr. Dunbar Roy, Atlanta, Ga., in closing—In regard to formalin in the case reported, I was satisfied that nothing would do the patient any good, although I used formalin by injection and also by application on the surface in varying strengths. I used the formalin as high as 20 per cent., but it had no effect whatever. I am in full accord with Dr. Mackenzie in regard to his views. In the short professional life I have had so far in nose and throat work I have seen four cases of naso-pharyngeal sarcoma, and I have seen two cases of nasal sarcoma. The case I reported, when it came to me, was in the state where practically nothing could be done. The question of the change from benign into malignant neoplasm I do not think is yet settled, nor will it be settled by the microscope. That things do occur that we can not explain is true every day and by theoretical reasoning we can not always explain the changes. Where the diagnosis can be made without the microscope we should not open up any point that might lead to the spread of malignancy.

Dr. S. A. Oren, Lanark, Ill., in closing—I have reported the case as one of apparent cure. We have the clinical diagnosis by very able authority on epithelioma, and we have the laboratory diagnosis of epithelioma, yet I have not said that I was not doubtful as to its being epithelioma. I have my opinions in regard to it, but with all the inquiry I could make I could get nothing to show that it was a specific case. I am perhaps a crank on iodids. In the majority of cases of kindred troubles, whether I can get any specific history or not, I put the patients on iodids, and usually get pretty good results. The diagnosis in this case was made by as good authority, both clinical and microscopic, as we could get, and I myself do not care to criticise either the laboratory diagnosis or the authority I called in consultation. Others can do so if they choose, I have only given you the results and the treatment. I have had one other case which appeared to be an epithelioma, in which I injected alcohol in the periphery, and then dissected the growth out. I think there is a great deal in the injections of absolute alcohol in the healthy tissue to check the spread of such growths.

It will be noticed that this case grew steadily worse for weeks under specific treatment, and did not improve until after local treatment was vigorously and frequently repeated. This I also take as evidence of its not being specific and confirmatory of the diagnosis of epithelioma.

Freiburg University has conferred an honorary degree on the Khan N. H. Choksy, superintendent of the Bombay general hospital.

THE BRITISH CONGRESS ON TUBERCULOSIS.

Held in London, July 22 to 26, 1901.

LONDON, July 26, 1901.

Opening Exercises.

The British Congress on Tuberculosis has been a great success and promises to be fraught with results of the highest importance. The Congress was opened on July 22 and attended by the 2000 members from all parts of the civilized world. Arrangements of the most elaborate and complete character had been made and the proceedings were gone through in the most orderly fashion and without a hitch. H. R. H. the Duke of Cambridge, at the request of the King, opened the Congress. Seated around him were diplomatic representatives of almost every civilized power, as well as the eminent physicians specially delegated by their governments. Among those present on the platform were Mr. Choate (American ambassador), M. Cambon (French ambassador), the Netherlands, Greek, Swedish, Portugese, Danish, Roumanian, Servian and Peruvian ministers; representatives of the governments of the British colonies; the presidents of the Colleges of Physicians and Surgeons of London, Edinburgh, Dublin and Glasgow; Lord Lister, and many other well-known medical men. A very strong contingent of Americans were present. Foreign governments and medical societies were strongly represented. Thus the French government sent no less than 23 delegates. In addition various French medical societies sent a number of delegates: L'Académie de Médecine, 4; Société de Biologie, 3; Société Médicale des Hôpitaux de Paris, 6, etc. German medical societies were also well represented, but not so strongly. The American delegates numbered 30, and represented the following institutions: Board of Agriculture, Universities of Michigan and Pennsylvania, State of Michigan, American Academy of Medicine, Massachusetts General Hospital, Boston Board of Health, American Climatological Association, American Medical Association, Pennsylvania Society for Prevention of Tuberculosis, Chicago Medical Society, Chicago Otological and Ophthalmological Society, Mississippi Valley Association, Commonwealth of Massachusetts, American Veterinary Medical Association. Town and borough councils and corporations of the United Kingdom were largely represented. The arrangements were excellent and the proceedings were marked by great cordiality and animation. A long list of speeches of representatives of the various countries were disposed of in about half an hour. They were marked by admirable brevity and to the point. Many compliments were made to England as the "native land of hygiene," to use Professor von Schrötter's phrase. Professor Brouardel, the *doyen* of the Medical Faculty of Paris, speaking on behalf of the French Republic, said that nothing could be done in the prevention of tuberculosis without public opinion, which was effectually enlisted and stimulated by those in high places. The whole ceremony was thoroughly successful.

MR. MALCOLM MORRIS, the honorary secretary-general, then read his report. He said that the movement originated at the German Congress on Tuberculosis held at Berlin in 1889, when representations were made to the British delegates as to the desirability of a London Congress. The delegates reported the matter to the National Association for the Prevention of Consumption, which took the necessary steps. Programs and circulars were sent to representatives of medical, sanitary and veterinary science, and to prominent persons in other departments of science, agriculture, architecture, education, commerce and philanthropy. Invitations were sent to the foreign governments, and to all the Colonies of the Empire. A museum had been established containing exhibits illustrating every known form of tuberculosis in man and animals.

THE DUKE OF CAMBRIDGE sent a telegram to the King informing him of the opening of the Congress. The King replied, welcoming the eminent men belonging to almost every nation who had assembled, and expressing the earnest hope that the valuable information which their deliberations would give to the world would assist in mitigating the dire disease which had baffled medicine.

LORD LANSDOWNE, the foreign secretary, said that the government would have the greatest pleasure in assisting and giving every facility to the Congress. They fully realized the immense significance of the problem. The country was passing through the sorrows of a prolonged war; but no war ever waged had brought such a burden of misfortune to the nations as tuberculosis had from time immemorial.

LORD LISTER said that they met under immeasurably better circumstances than were possible some years ago. They now knew the enemy they had to deal with, which before the discovery of the tubercle bacillus was shrouded in obscurity. Thanks to Pasteur they also knew that that microbe could not originate *de novo* in the human body; that it was always derived from the external world: hence, the splendid prospect of prevention. But they also aimed at cure. In this respect matters were much more hopeful than they had been till quite recently. The physician might learn much from the experiences of the surgeon. In surgical tuberculosis, if irritation of the part were scrupulously avoided and the general health improved, cure could be obtained. The bacillus was swept away and the part became again healthy. The Congress would also be useful by enlisting the aid of the public which was essential to the movement of the suppressing of tuberculosis.

PROFESSOR WILLIAM OSLER, of Baltimore, said that one of the largest American delegations that had ever crossed the Atlantic had come to that Congress. They had not come like some of the "trusts" of which they had heard so much of late; and yet they represented a magnificent "trust." He caused much amusement by saying that the motto of the ordinary "trust" was "damn the public," but their motto was *pro bono publico*. The work of preventing tuberculosis in the United States was being carried on with energy and zeal. He thought the Congress would educate the medical profession, which needed education, and the public which needed it more. Speaking of tuberculosis, he recalled Bunyan's striking phrase "captain of the men of death," and said that this captain had already been reduced to a lieutenant, and would be reduced to an ensign; but he could not hold out the hope of reducing him to a private, and still less of drumming him out of the regiment.

Professor von Schrötter (Austria), M. Montefiore Levi (Belgium), Profs. Gram (Denmark), Brouardel (France), Von Leyden (Germany), Ruata (Italy), Thomassen (Holland), Koranyi (Hungary), Holmboë (Norway), Cortezo (Spain), Printzjold (Sweden), and Dr. Secretan (Switzerland), also addressed the meeting.

Koch's Address on the Combating of Tuberculosis.

The address on this subject which appeared in full in these columns,[1] was delivered by Professor Koch before a large and enthusiastic audience with Lord Lister in the chair, and is undoubtedly the most important and original communication made to the Congress.

In the discussion which followed, Professor Koch was much congratulated on his valuable paper.

PROFESSOR NOCARD could not accept its conclusions with regard to the bovine and human disease. He thought experiments in France demonstrated that it was transmissible from man to cattle and vice-versa.

PROFESSOR BANG, of Denmark, feared that the opinion of so eminent an authority as Dr. Koch, which he could not accept, would be highly detrimental to the efforts now being everywhere made to secure purity of milk.

DR. SIMS WOODHEAD, president of the section on pathology and bacteriology, after paying the highest tribute to the services of the Berlin professor, expressed his own conviction that bovine tuberculosis had played some part in the extension of tuberculosis among mankind. He suggested that experiments should be made in England under the agricultural department, to test the views now propounded.

On the motion of Lord Lister, a warm vote of thanks was accorded to Dr. Koch, the whole company standing.

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1. JOUR. A. M. A., July 27, p. 259.

The Notification of Tuberculosis.

DR. HERMANN BIGGS, New York City, in opening the discussion, in the State and Municipal Section, presented a paper, read by Dr. Janeway, dealing with this subject as existing in various cities in the United States. Sanitary regulations having this object have existed in New York and some other States since 1893. The State of New York was, indeed, the first to enforce a scheme of compulsory notification. Later, Michigan, Pennsylvania, and other States had followed the example, but in some places the notification was only voluntary. It might be taken that tuberculosis was preventable, contagious, and not hereditary, and with regard to preventive measures, the following were most important—namely, careful attention to meat and milk, educating the public with regard to the harm arising from bad habits, such as indiscriminate spitting, and the necessity of careful attention to the sputa of consumptives, and the careful disinfection of houses wherein patients had died of consumption. The compulsory notification of tubercle had not been complete. Physicians had been only invited to give information as to patients suffering from tubercle, such information to be treated as confidential; but it was compulsory to notify cases in public institutions, and inspectors were then sent to make inquiries as to their sanitary conditions. In all cases where death occurred from tuberculosis, and it came to the notice of authorities, steps were taken to disinfect the premises where the death occurred. The authorities also, free of charge, examined by their medical officers the sputa of patients if submitted to them by the physician in attendance. After this regulation was introduced, during the first year 4000 samples of sputum were examined. The second year over 5000, and the increase went up in a few years to 8000. Dr. Biggs had made a report to the authorities as to the want of suitable institutions to treat poor tuberculous patients and as to the neeessity for such; and that tuberculosis ought to be put more on the basis of the exanthemata. In 1897 it was resolved by the Board of Health of New York that tuberculosis was a dangerous and contagious disease, and that every physician should report to the Sanitary Bureau in writing as to patients suffering from that disease within a week of being called in. A sum of $60,000 was also appropriated to the care of poor tuberculous patients, to afford them better treatment. The notification chiefly applied to pulmonary tuberculosis as the most contagious. The law was not strictly enforced in regard to the notification of private patients by physicians and it could not therefore be said that the regulations were strictly compulsory; but public opinion was gradually diminishing the number of cases not notified. In consequence of these various measures and the better treatment of patients there had been a reduction of 30 per cent. in the mortality arising from tuberculous diseases.

PROFESSOR OSLER, moving a vote of thanks to Dr. Biggs for his paper, said that the Board of Health of New York had the greatest difficulty in resisting Tammany in their endeavor to carry out sanitary reforms. Their success, in spite of this, has been wonderful and formed an object lesson as showing what could be done in spite of opposition.

DR. S. A. KNOPF, New York, then spoke in criticism of some of the papers. He approved of everything said by Dr. Biggs on compulsory notification, provided the sanitary inspector has the power of isolating poor patients in a public sanatorium. Sufficient means must be supplied from public sources for the family when the bread-winner was thus removed. Voluntary notification was good, but if the burden on friends was increased by it he would protest against it. At a conference connected with tenement houses in New York it was shown how terrible an incidence of tubercle there was at such places, and he considered the greatest blot on the sanitary administration of New York was the failure to carry out sanitary regulations in these buildings.

DR. REYNOLDS, Chicago, said that in Chicago they had not come to the conclusion that it was right to insist on the notification of consumption, believing that it was the duty of the government to educate the public in this respect. They had a hospital for the tuberculous poor, and he thought the education of the public was best brought about by the daily visits of physicians, by the public press, and by medical men giving lectures at public institutes.

Prophylaxis of Tuberculosis During Childhood.

DR. S. A. KNOPF, New York, read a paper on the state and individual prophylaxis of tuberculosis during childhood, and the need of children's sanatoria. He said that the prevalence of tubercle in childhood was very great, and was often contracted by contagion, so that consumptives ought to be kept away from children. Even at birth the careless midwife might infect the child by applying her mouth to that of the infant to inflate the lungs. Tuberculous mothers would often put spoons containing food for their children in their own mouths before feeding them. Infection from kissing was also not unknown, or from the application of the mouth to the prepuce after circumcision. Children should be prevented from crawling on the floor in the dust, which often harbored bacilli, and the infant was only too prone to suck its dust-polluted fingers. Lady schoolteachers ought not to be allowed to wear trailing dresses. No teachers or children with early symptoms of tubercle should be allowed to remain at a school, and all the inmates should be examined several times a year for symptoms. Overcrowded tenements, syphilis and alcoholism tended to the production of tubercle, as also the employment of children under 14 years of age in factories for ten hours a day. The giving of poor children at public schools of a periodic sandwich or glass of milk would often ward off the onset of phthisis.

Control of Meat Supplies.

MR. SHIRLEY F. MURPHY, London, communicated a paper entitled "What Administrative Measures Are Necessary for the Prevention of the Sale to the Public of Tuberculous Meat?" He gave a review of the procedures adopted in his country for restraining the sale of diseased meat, of the prevalence of tubercle in cattle, and of the difficulty of inspecting all meat brought into the market, as at the present time there was no need to have an animal presenting signs of disease slaughtered under conditions that would insure its inspection.

COUNCILLOR O'NEILL, M.D., Belfast, referred to meat inspection in his city. For eight years he had had to contend with the butchers, but by studying the means employed on the Continent, he had gained good hints as to what ought to be done to carry out proper meat inspection. In this he had been backed up by his profession. He did not agree with Dr. Koch as to bovine tuberculosis. He was strongly of the opinion that tuberculous meat was not fit for human consumption. There was an abattoir in Belfast where every animal was examined before being slaughtered, and at the market the meat was always examined when killed outside the burough. All meat killed outside the city must be brought for inspection before being exposed for sale, and was stamped by the inspector on the request of the owner.

DR. COGGAN asked whether Dr. O'Neill had ever seen tuberculous meat give rise to human tuberculosis.

DR. O'NEILL could not give any particular case where this result could be proved, but he was firmly convinced that tuberculosis might be acquired in that way.

SIR CHARLES CAMERON, Dublin, thought at present there was not sufficient inspection in many towns, especially where there was no abattoirs. In Dublin there was a public abattoir, but there were also forty private slaughterhouses, so that uniform and sufficient inspection was difficult. He had known a case where in the carcass of an animal which had suffered from pleuropneumonia the lungs of a healthy animal were substituted for the diseased organs. In public abattoirs this could not take place; the carcasses of animals had been known to be brought into Dublin in a hearse to disguise the fact from the authorities. He thought a skilled veterinary surgeon of great service to a sanitary department in attending to this work. There ought to be a systematic examination of all animals, and private slaughterhouses ought to be got rid of by giving equitable compensation to the owners.

DR. MARSDEN, Birkenhead, Eng., said that medical officers of health were meeting under a cloud with regard to tuberculous meat. It seemed that Dr. Koch had thrown a bomb in their midst, which, whether right or wrong, was likely to impair

their influence with sanitary authorities. He did not think that procedure ought to be changed. He knew no medical officer of health who ordered the destruction of animals on account of a trace of tubercle. Public abattoirs were urgently required, and there was no question as to their being necessary, both in urban and rural districts, but then came the question of compensation. A difficulty often arose in inspecting carcasses when the offal and other contents had been removed. He did not believe that the difference between general and localized tubercle was of much use for distinguishing between good and bad meat. He had known the case to be called localized tubercle when every gland in the carcass had been found diseased.

Climatology in the Treatment of Consumption.

Sir Douglas Powell, the President of the Medical Section, said that tuberculous lesions tend to heal if secured from contamination by putrefactive and suppurative organisms. A good climate might be marred by impurities, and the vivifying power of the sun might be exhausted on organic débris in the atmosphere. The best climates were Switzerland, Egypt, the Riviera, and parts of the Colonies and America; but there were many nooks and sun-traps in the British Isles where good results might be obtained for those who could not go abroad. Gain in weight was not the best test of treatment. The object was not to train the consumptive into a gastronomic athlete. Excess of weight beyond that normal to the individual was a disadvantage.

Dr. Theodore Williams opened the discussion. He divided climates into, 1, marine; 2, dry; and 3, mountain. Of marine climates the temperate ones of the British Isles were suitable for a large number of cases of chronic pulmonary tuberculosis, especially in its strumous form. The warm climates of Madeira, the Canaries, and the West Indies, were beneficial in catarrhal tuberculosis. Sea voyages were most successful, but the following conditions were necessary: 1, the patient's cabin should be well ventilated, so that abundant fresh air was supplied night and day; 2, the food should be good; 3, the voyage should be in temperate, and not in tropical seas. Sea voyages were most beneficial in, 1, hemorrhagic phthisis; 2, in strumous phthisis, accompanied by affections of glands and joints; 3, in cases of a single cavity. Dry, warm climates included the Egyptian Desert, and the Mediterranean basin. The improvement observed from them was general, more than local. The desert climate appeared to act rather in preventing the spread of the disease than in arresting that present. It seemed to most benefit cases of chronic cavity, especially in elderly persons, and in those incapable of much exercise. The climate of the Riviera and the Mediterranean was more stimulating, but liable to more vicissitudes than that of the desert. It was to be recommended in chronic phthisis, especially when complicated by inflammatory attacks, in strumous and laryngeal phthisis, and in patients with extensive tuberculization of the lungs, who were unable to bear the effects of high altitude. As to mountain climates, the effect in cases of early consolidation was remarkable. Local pulmonary emphysema was produced around the tubercular nodules, and the healthy portions of the lung became hypertrophied, necessitating enlargement of the thorax which could be proved in several ways. Expansion of the chest took place unless opposed by extensive lung fibrosis, or pleuritic adhesions. He suggested that the arrest of the disease was greatly owing to the pressure on the tubercular masses by the increasing bulk of lung tissue, which by emptying vessels, increased caseation and cretification of the tubercle. The high altitudes gave the best results of all climates, but they were most successful in early consolidation where they produced complete arrest in most cases; they were not so successful in cases of excavation. They were more beneficial to the young than to the middle-aged.

Devitalized Air Toxemia a Prime Cause of Tuberculosis.

Dr. Charles Denison, of Colorado, read a paper on "Devitalized Air Toxemia a Prime Cause of Tuberculosis." He said that life out of doors was enhanced by altitude. The perfect quality and facility in the use of the open air, the long sunshine, and the stimulation of the low temperature were the factors. The mechanical effects of diminished atmospheric pressure favored the circulation of the blood. The free and constant motion of the air, and the rapid radiation vivified the air by the production of electricity and the resulting ozone. He insisted that free ventilation, and an out-of-door life were more necessary at a high altitude than at the sea level, for the rarity of the air necessitated a greater quantity for breathing. Thus, in a hospital at the sea level 2000 cubic feet per patient would be sufficient; at the elevation of a mile, 2400 feet should be allowed. Tuberculous infection was very rare in Colorado; deaths from tuberculosis acquired in this way formed only 2 per cent. of the total mortality. A remarkable fact was that of all the cases so acquired two-ninths were of meningeal tuberculosis. The wonder was that in the crowded city of Denver in which tuberculous patients often lived with a family and expectorated on the rough wooden floor, infection was so rare.

Professor Lannelongue, Paris, contributed a paper to the discussion prepared in conjunction with Dr. Achard and Dr. Gaillard on the "Comparative Influence of Climate and Individual Resistance in Experimental Tuberculosis." Experiments as to the influence of the climate on the evolution of tuberculosis inoculated in the pleura of guinea-pigs shows that this influence was inconsiderable, and had not the importance clinically attributed to it. It was found in animals, as in man, that different individuals of the same species showed marked differences in the progress of the disease and in the nature of the lesions. Although the guinea-pig was a susceptible animal, some of these animals afforded a remarkable resistance. Some increased in weight, or even became fat, although suffering from generalized tuberculosis. In one guinea-pig a true Pott's disease was produced; there was tuberculous destruction of the third and fourth cervical vertebræ. The conclusion arrived at from these experiments might be thus summed up. In man, as in animals, it was the constitutional peculiarity of the individual—call it what you would—it was the "soil" which determined the progress of the lesion, and whether the disease should remain localized or become general, not the climate in which the patient found himself. Further, it was shown that animals kept under careful conditions of temperature, of freedom from dust in the air, and of rest—such conditions as were observed in sanatoria—had their chances of life prolonged.

Sir Hermann Weber, London, said that the previous speakers seemed to hold that though climate was valuable, open air was more important, and this view was to some extent borne out by his experience many years ago. When bakers, or clockmakers for example, came to hospital suffering from the result of their occupation or indoor life, he used to advise them to give up making bread or clocks, and to go about selling these things instead. This haphazard open-air treatment gave excellent results, although it did not include the rest which was so important a factor in sanatorium treatment. His experience did not lead him to take quite as favorable a view of marine climates as Dr. Williams. The high winds which occurred on the sea coast were unfavorable, as could be seen on studying a map of the distribution of consumption. It was not the southwest wind in particular which is disadvantageous, as was said in a recent paper before the Royal Medical and Chirurgical Society, but any strong wind. The climate of the Riviera and Egypt has not always proved satisfactory, but this was probably due to the fact that patients did not put themselves under medical supervision and did foolish things—such as over-exerting themselves—which undid the good effects of climate. Whatever climate was chosen the need of supervision was of the utmost importance, and in estimating the value of any climate it would be well to compare the results attained in that climate before and after sanatorium treatment was available. Although he had a very high opinion of climate he had a still higher opinion of hygienic and dietetic management, and great as were the disadvantages of our English climate we could cure our patients here if they would submit to the hygienic management which formed so important a part of sanatorium treatment.

SIR JOHN WM. MOORE, Dublin, said that in his experience climate played a very secondary part in the treatment and prevention of consumption. In proof of this, he instanced a family who, under the unfavorable conditions of poverty, had gradually overcome the effects of tuberculous infection and had recovered from tuberculosis without leaving Dublin. This has been accomplished not by change of air, but by teaching them how to live and manage themselves hygienically. In striving to prevent tuberculosis we must take into consideration the ignorance of the people, as instanced by the closed bedroom windows. The disadvantages of marine climates and of strong winds might be attributed to a common cause, namely, humidity of the air. Many persons suffered marked depression whenever the air becomes nearly saturated with moisture, and this was the case at and by the sea and with southwest winds.

PROFESSOR GRAM, Denmark, said that in Denmark the mortality from pulmonary tuberculosis was greater inland than on the coast. They, therefore, built all their sanatoria at the seaside.

DR. SANDWITH, Cairo, said that though Egypt was lowlying, a visitor to the desert would be struck with the similarity of the air to that one got on a mountain. Europeans living in Egypt did not develop tuberculosis, though the natives did. This showed the influence of hygiene rather than of climate, for the European lived much in the open air, whilst the native lived in foul air whilst indoors, and with unhygienic surroundings.

A paper by the late DR. AMREIN, Arosa, specially prepared for this Congress, was read by the Honorary Secretary of the Section. The diagrams of the chest of patients showed the unsound side was always best developed in the early stages of pulmonary tuberculosis. The diminished atmospheric pressure of high altitudes tended to bring about the symmetric improvement in the shape and capacity of the chest.

MR. QUARRIER, Glasgow, founder of the Scottish Orphan Homes, gave the experience of sending the children of consumptive parents from Glasgow to a farmhouse in Renfrewshire, and expressed the opinion that locality and climate had not so much to do with the cure of consumption as the practical management of the patient when he was taken in hand. The climate of Scotland was not usually considered good, yet even in this unsatisfactory climate as good results could be obtained as elsewhere, as was shown by the records of the sanatorium connected with the Scottish Orphan Homes.

Therapeutic and Diagnostic Value of Tuberculin.

SIR RICHARD DOUGLAS POWELL presided at the meeting of the combined Sections of Medicine and Pathology, on Wednesday, July 24.

DR. HERON said it was now recognized that tuberculin was worse than useless in cases of tuberculosis with marked infection. For diagnostic purposes tuberculin was most valuable, for it produced its characteristic reaction whenever tuberculosis was present, and by no other means could tuberculosis be diagnosed in man so early. Dr. Heron described at some length a case in which a girl of 17 died twenty-seven hours after the injection of tuberculin for diagnostic purposes, and gave reasons against supposing that tuberculin was the cause of death. He concluded by expressing the belief that the day was not far distant when the discovery of tuberculin would be ranked amongst the most valued of the many gifts mankind already owed to Robert Koch.

PROFESSOR KOCH, Berlin, said that he had shown in 1890 that tuberculin had both a diagnostic and therapeutic value. In his experience a single injection was sufficient to give a correct diagnosis in 97 to 98 per cent. of cattle. If the diagnostic injections were properly made, in the human subject, it was a very valuable method and without danger. The injections should be small enough; in weak patients one-tenth of a milligram was enough to begin with, and no second injection should be given until the temperature was again normal. When the first injection gave a faint reaction a second injection of the same quantity frequently or indeed generally gave a very marked reaction. This was the usual occurrence in tuberculosis. Over 3000 cases had come under his own observation, and from the study of these he had come to the conclusion that as a diagnostic test tuberculin was almost absolute. It was specially valuable in cases of apical pneumonia, particularly when influenza was suspected, and also in cases of pleurisy. He had never seen disadvantageous effects from the use of tuberculin when used as he had directed. In using tuberculin as a therapeutic agent, he felt no doubt that in early uncomplicated cases it was of great value, and when used in such a case a complete cure frequently followed. If the tuberculin was used in cases of tuberculosis which were somewhat advanced, it was necessary, in order to obtain the full value of the tuberculin, that the temperature should be normal before the injections were begun. The treatment, if necessary, should be extended over a considerable period, with intervals of from three to four months, until the injections gave no reaction.

SIR RICHARD DOUGLAS POWELL said that the great difficulty which physicians experienced was that most of the cases of tuberculosis which they saw had raised temperatures, and in the cases of mixed infection even Professor Koch did not think the use of tuberculin was advantageous.

PROFESSOR OSLER said that in the Johns Hopkins Hospital, Baltimore, tuberculin had been used for a considerable time as a routine method of diagnosis. The tuberculin was, in his experience, harmless. As a therapeutic agent, although his experience was not large, he thought it must have a very limited value.

PROFESSOR FRAENKEL, Berlin, pointed out that the great danger attending the use of tuberculin was that the doses were increased too much and at too short intervals, but when these errors were avoided the results in his experience had been most beneficial.

DR. LEHYS, Louvain, gave an account of the experiments which he had made with dogs and tuberculin. He found that the injection of tuberculin subsequent to that of tubercle bacilli exercised a considerable delaying influence upon the action of the bacilli, whereas without tuberculin, the animals died with disseminated tuberculosis; after tuberculin was used well-marked tubercles were formed and the dogs remained alive for very considerable periods or recovered.

DR. THOMAS C. WILLIAMS disagreed entirely with those who said that tuberculin was harmless. At the Brompton Hospital he had used tuberculin in cases of early phthisis, and was satisfied, first, that the use of tuberculin caused a certain amount of destruction of lung tissue, and, secondly, that even if at the best, tuberculin only caused a remission of the symptoms and did not cure the patient.

PROFESSOR MCCALL ANDERSON, Glasgow, thought that tuberculin was safe. As a diagnostic test it was invaluable, and as a therapeutic agent in external tuberculosis it had been almost invariably beneficial; while in internal tuberculosis relapses which undoubtedly did occur were probably due to other causes than the tuberculin.

DR. FRANCE, Claybury, gave an account of his experiences with the patients in an insane asylum. He inoculated 75 cases, of which 20 were clinically free from tuberculosis. These 20 gave no reaction. Of the 55 suspected cases, 45 reacted; of these 45, 34 had since died, and upon 29, postmortem examinations had been made; each of the 29 showed active tuberculosis. Of the 11 who were still alive, 6 had very obvious tuberculosis. From these figures he concluded that the value of tuberculin in diagnosis was enormous.

DR. MOELLER, Brussels, said he had seen no ill effects from the injection of appropriate doses of tuberculin, but had found that some patients never seemed able to stand a quantity more than about 1 mg., even after repeated injections.

PROFESSOR NOLEN, Leyden, pointed out that tuberculous patients nearly always experienced a rise of temperature if they were out of bed or at work, and did not believe that a rise of temperature was a necessary sign of mixed infection.

DR. HERON, in closing, said that one outcome of the present discussion was the fact that in the earlier treatment with tuberculin too large doses had been given, and that the best effects were undoubtedly obtained by the use of small doses. He had never seen a reaction to tuberculin in a syphilitic patient not suffering from tuberculosis.

PROFESSOR KOCH said that the tuberculin was made from tubercle bacilli of human origin, but that the reaction was produced both in man and in cattle, and, although the two bacilli were different they possessed a common "group" reaction. It was essential that patients who were to be treated with tuberculin should be in bed. Finally, he did not wish anybody to get the idea that he himself thought there could be any antagonism between treatment by tuberculin and the outdoor treatment in or out of sanatoria. He has always insisted that the two shall go on together.

Morphologic and Physiologic Variations of the Tubercle Bacillus.

PROF. G. SIMS WOODHEAD, President of the Section on Pathology, presided at the meeting of that Section, July 23.

DR. ALFRED MOELLER, Berlin, in opening this discussion, said that quite recently it had been shown that all bacilli which were acid-fast were not necessarily tubercle bacilli. The smegma bacillus had the acid-fastness, and might be mistaken for the tubercle bacillus in such excretions as urine. The bacillus of avian tuberculosis differed, according to Fischel, from the tubercle bacillus practically only as regards its pathogenicity. Tuberculosis in cold-blooded animals was probably a modification of mammalian tuberculosis. Bataillon, Terre, and Lubarsch modified mammalian tuberculosis by passage through frogs. The author succeeded in modifying the tubercle bacilli by passage through the slow-worm. After this the bacilli only grew up to 30 C., and even after passage through warm-blooded animals. Recently a series of microorganisms closely resembling the tubercle bacillus had been found in the outer surroundings of man. As well as "Petri Rabinowitsch butter bacillus," there was the timothy bacillus (B. phlei), which had been isolated by him from timothy grass. This bacillus had all the acid-fastness of the tubercle bacillus; it grew better at 37 C. than at 20 C., but in all cases thrived better than the tubercle bacillus. The injection of cultures of the timothy bacillus into the guinea-pig was followed by results similar to those produced by the butter bacillus; but in rabbits when injected intravenously it set up lesions very similar to those caused by the tubercle bacillus. The latter, like all the acid-fast bacteria, appeared to belong to the streptothriciæ.

DR. BULLOCH, London, had repeated the experiment of Aronson, and showed that the constituents of tubercle bacillus and of the B. phlei were fat, fatty acids, wax, lipochrome, proteids, salts, and a residue of a body which contained both a nitrogen nucleus and a polysaccharid, and partook of the nature of chitin. After the removal of the fat the bacilli retained their peculiar staining power, but after the extraction of the wax with boiling benzin or chloroform they were no longer acid-fast. Moreover, the wax itself was acid-fast, so that the acid-fastness was due to the wax. There was no doubt that there were many acid-fast bacilli in nature, some obligatory parasites, some facultative parasites, and others saprophytes, and the relation of these acid-fast bacteria to one another required careful investigation. There was no evidence that there were genuine endospores formed by the members of this group of bacteria.

PROFESSOR ADAMI, Montreal, was impressed with the great differences which were shown by the cultures which came from the different laboratories, and thought that no great progress could be made in determining the relationships of the different acid-fast bacteria until bacteriologists had determined to use standard media. The effects of the use of this standard medium were well exemplified in the cultures of Mr. Swithinbank exhibited in the museum, and he thought that the time had arrived for an international standardization of media.

DR. MARMOREK, Institut Pasteur, Paris, was of the opinion that the close connection which had been shown to exist in the external aspect of the acid-fast bacteria made it very necessary to be careful in making distinctions between the tubercle and paratubercle bacilli. One could say that of all these microbes only those were tuberculous which gave to laboratory animals the lesions known as tuberculous.

DR. KOSSEL, Berlin, pointed out that Weber had not succeeded in producing the "progressive lesions terminated by death," which were so characteristic of the true tubercle bacillus, by the injection of other acid-fast bacilli.

Milk Infection.

DR. LYDIA RABINOWITSCH, Berlin, gave an account of her experiments with the milk of cows, both tuberculous and normal. She had failed to find tubercle bacilli in cows which had stood repeated tests with tuberculin; on the other hand, she had frequently found tubercle bacilli in the milk of cattle which had sound udders. She had failed to find them, on occasion, in the milk of cattle suffering from tuberculous udders, although their presence was easily demonstrated in the tissues of the udders after death. The microscopic examination of the centrifugalized deposit of milk was unsatisfactory. The only reliable test was that of animal experiment, which was wearisome. The tuberculin test was therefore the only rapid and reliable method of diagnosis.

DR. E. J. MCWEENEY said that in his experience tuberculous mastitis was rare. His experiments with 16 cows which reacted to tuberculin showed that unless the udder was tuberculous no tubercle bacilli could be demonstrated in the milk and considered that in such cases the tubercle bacillus gained access from the sputum, dirty cans, etc.

PROFESSOR NOCARD, France, spoke of the danger of spreading tuberculosis in the butter and the cheese-making countries on account of the custom of giving the residue to calves and pigs. He considered that it had been conclusively shown that there was also a great danger for young children. In England the mortality from general tuberculosis had declined 49 per cent. in 90 years, whilst it had been increased in the case of abdominal tuberculosis by 27 per cent. It was very important, therefore, to take every precaution with the milk.

PROFESSOR HAMILTON, Aberdeen, raised the question whether a calf would become tuberculous if suckled by a tuberculous cow with sound udders. According to Wilson, of Aberdeen, the calves were unaffected.

DR. RAVENEL, Philadelphia, said that he inoculated guinea-pigs with the mixed milk from 5 cows which were tuberculous, but which had sound udders; 12.5 per cent. of these died of tuberculosis. In Pennsylvania the tuberculin test was implicitly relied on, but periodic bacteriologic examinations of milk were made, and also inspection by veterinary surgeons.

PROFESSOR WOODHEAD, Cambridge, agreed that feeding experiments were useless for diagnostic purposes, intraperitoneal injections being the only reliable method of diagnosis in the case of milk. He was of the opinion that the milk of a cow with mastitis which gave the tuberculin test should be condemned or sterilized. He felt certain also that the tonsillar glands might be infected through ingestion of tuberculous milk, even though the mucous membrane of the alimentary canal resisted the bacilli.

PROFESSOR BANG, Copenhagen, said that in his experience it was rare to find tubercle bacilli in milk when no tuberculous lesions of the udder were present. Out of 63 cows with advanced tuberculosis, but with healthy udders, only 9 gave milk which produced tubercular lesions in the guinea-pig, and only one which caused the death of the guinea-pig.

Diagnosis of Tuberculosis in Animals.

SIR GEORGE BROWNE presided at the meeting of the Veterinary Section, on July 23.

PROFESSOR DEWAR, principal of the Royal Veterinary College, Edinburgh, in opening the discussion limited his remarks to the bovine species. The first appearance of the disease was not unfrequently manifested by a rough, harsh sound in the throat during respiration. The diagnosis might be confirmed by the presence of tuberculosis in the herd and clinched by the appearance of a lump in the neck, which became adherent to the skin over a single central area. In about 75 per cent. of the cases the thoracic organs were easily affected, and the question became that of diagnosing the disease within the chest. The essential points of distinction from chronic bronchitis, bronchopneumonia, pulmonary hydatids, contagious pleuropneumonia, and the passage of foreign bodies forward from the stomach, were discussed. The prolongation of the vesicular murmur during expiration was pathognomonic of the

disease, but this sign could only be depended on when the surroundings were absolutely quiet. With regard to other organs the udders were affected in about 3 per cent. of the tuberculous cows; swelling was as a rule diffuse, and the physical characters of the milk were little if at all changed. Bacteriologic diagnosis was of most value when applied to the examination of milk, but might also be employed in the investigation of mucus from the nose or pharynx, and of fragments removed from the mamma or elsewhere by means of the pathologic harpoon. Tuberculin was the most efficient, reliable and practical means of diagnosing tuberculosis. For its full and successful use it was necessary, 1, to have a thoroughly reliable tuberculin prepared by a competent pathologic chemist, and carefully tested before being sent out for general use; 2, to keep the herd to be tested quiet and undisturbed for ten or fifteen days prior to the application of the test; 3, to allow the veterinary surgeon perfect freedom and every facility in the application of the test. In the use of the test the temperature should be estimated in relation not to arbitrary standards, but to the average normal temperature of the animal itself; most animals show after the injection a rise of more than 2 F.; more than this should indicate tuberculosis. The temperature should be taken every two hours after the injection. If all these precautions were followed, at least 98 per cent. of the results would be correct and definite.

PROFESSOR NOCARD regarded the tuberculin test as almost infallible. He gave details as to the diagnosis of tubereulous disease of the udders and uterus, and strongly advocated the use of the pathologic harpoon.

DR. MALM, Norway, had had the tuberculin test in constant use since 1891, and strongly advocated taking the temperature hourly, or at longest every two hours, after the injection. He had seen many cases where it reached its maximum from the second to the fourth hour after injection, and had become normal again by the twelfth hour. The test was absolutely decisive if used under stringent conditions. He employed Koch's 1890 tuberculin, of uniform strength, gave large doses, 0.5 to 1 grm, and took the temperature hourly for twenty hours. The fever which might be induced in non tuberculous animals was not typical. If the beast had become accustomed to tuberculin by repeated injections, stronger doses must be employed. All his results had been confirmed by necropsies.

DR. SCHUTZ, Berlin, held that the microscopical diagnosis of tuberculosis was not nearly so easy in the lower animals as in man; caseation was specially ill-marked in the pig and sheep. In the mammæ of cows the appearances were much more those of chronic mastitis than of ordinary tubercle. Moreover, in the milk itself other bacilli might be found which were microscopically indistinguishable from those of tuberculosis, which could only be certainly detected by inoculation into guinea-pigs. By experiments on artificially infected animals it was found that the susceptibility to tuberculin had a latent period, then rose suddenly and fell gradually.

DR. BANG, Copenhagen, agreed with Professor Nocard as to the importance of clinical examination of the mammæ and uterus. He objected to Dr. Schutz's criticisms of the microscopic diagnosis and stated that 99 per cent. of cows whose milk he had pronounced tubereulous after microscopic examination were found to have tuberculosis of the udder.

PROFESSOR MCFADYEAN, London, held that bacteriology was more essential in diagnosis than Professor Dewar had made out, as the diagnosis had to be made earlier than in man. In 80 per cent. of these early cases the tuberculin test was alone conclusive; harpooning was not readily permitted in England. He thought Dr. Malm's views as to the infallibility of the tuberculin test were a little in excess of the truth. Experiments both in England and France had shown that artificially tuberculous cows might show no reaction for as long as fifty days after infection. He considered the test at an early stage better than all the others together, but not infallible.

DR. HUYTRA, Hungary, had found only 2 per cent. of failures with the tuberculin test. He regarded a rise to 40 C. as a positive indication of infeetion.

PROF. OWEN WILLIAMS commented on the absence of reference to such sources of infection as the horse, dog, eat and bird. He held that the failure of inflamed mammæ to subsequent atrophy was strong presumptive evidence of the tuberculous nature of the disease. He had found the tubereulin test almost infallible.

PROFESSOR EDGAR held that our clinical powers of diagnosis had, if anything, deteriorated during the past twenty years. He strongly supported the tuberculin test when sources of error, for example, its application by unscientific people, were eliminated.

PROFESSOR MCEACHRAN, Montreal, stated that the errors in the use of tuberculin in Canada and the United States amounted to less than 2 per cent. Udder infection was rarer, but uterine more common, than generally believed.

MR. VILLAR confirmed the value of tuberculin in early cases, but stated that animals which had mastitis and reacted to injections were yet subsequently shown to be non-tuberculous.

MR. LAITHWOOD, Cheshire, had found that 96 per cent. of the cases in which tuberculin gave a positive result were confirmed by slaughter, and that 80 per cent. of the infected animals showed a maximum temperature from the twelfth to the fourteenth hour after injection. He found that many cases recovered after six months' isolation and open-air treatment. He had come to the conclusion that manual examination of udders was insufficient to exclude tuberculosis from the milk supply.

MR LLOYD, Manchester, stated that about one-third of indurated or hypertrophied udders were tuberculous.

Tuberculosis and the Milk Supply.

MR. J. A. W. DOLLAR, M.R.C.V.S., continued the discussion in the Veterinary Section on July 24, by first considering the relations between bovine and human tubereulosis. He thought that Professor Koch had brought his evidence forward at an inopportune time. Mr. Dollar, while admitting Professor Koch's logic, quoted what he regarded as almost experimental facts illustrating the transmission of tuberculosis from lower animals to man.. He considered that for the transmission of bovine tuberculosis to man a certain concentration of the bacilli by the digestive tract was necessary, and gave this as one of the reasons for the rarity of primary tuberculosis of the bowel in children and in men. He proceeded to review the statistics of bovine tuberculosis in Europe, comparing the proportion of tuberculous cows as shown respectively by the slaughterhouse and tuberculin tests; his facts as regards tuberculosis of the udder were in general agreement with those of previous observers. He warned his hearers against the fallacy of believing that goats were insusceptible to tuberculosis, upon which view goat's milk was commonly given to children. Nocard has shown that tuberculous mastitis could be induced in goats by injecting tuberculous milk beneath the stripped udder. Tuberculosis was also found to attack asses and sheep. Mr. Dollar next discussed the methods of preventing the spread of tuberculosis by milk, comparing the advantages and drawbacks of pasteurization and sterilization, and giving examples of commercial establishments supplying pasteurized milk. He cited examples showing the possibility of eradicating tuberculosis from herds of milch cows, and the success which had attended commercial establishments supplying milk from guaranteed tubercle-free herds. He commended Professor Bang's system of stamping out tuberculosis, and quoted the experiments made on this system in Belginm, Canada, and the United States of America.

PROF. MCLAUGHLIN YOUNG thought that the expressions of opinion hitherto given had erred somewhat on the side of overcaution, and that the Congress should give an authoritative opinion on the points at issue. He stated that the authorities were much laxer in milk than in meat inspection. He pointed out that the tuberculin test was a good one, but abused by unscrupulous persons who fortified diseased animals against it by previous injections. He held that powers of examination of all cows by the test should be granted.

DR. STOCKMAN stated that he did not believe that milk could be infected in the absence of tubereulosis of the udder. He held that there should be compulsory notification of udder tubereulosis and slaughter of the beasts. He considered that

harpooning was not superior to bacteriologic examination of the milk, and that inoculation experiments were impracticable. The presence of inflammatory cells in the milk should render a cow suspect.

PROF. OWEN WILLIAMS suggested that tuberculin should be sold as a poison in order to avoid its fraudulent use, and that funds for compensation of owners might be raised by small duty on all sales.

MR. MONTEFIORE LEVI, Belgium, stated that there had been great difficulty in Belgium owing to the use of imperfect tuberculin. He recommended the use of milk from good strains of hornless goats for use in sanatoria.

MR. MARTIN recommended the bi-monthly inspection of cows, the isolation of all having udder disease, and the prevention of the sale of tuberculin to unqualified persons to fortify their cattle against the test.

PROFESSOR AXE, representing the British Dairy Farmers' Association, stated that the conviction of the Association that bovine tuberculosis was transmissible to man was much weakened by Professor Koch's statement. He himself had found that the proportion of animals in a herd giving the tuberculin reaction varied directly as the amount of confinement within doors.

PROFESSOR BANG said that since 1898 all cows in Denmark with udder tuberculosis had been killed. Milk from all suspected cows was sent to his laboratory, and the diagnosis of tuberculosis there made was confirmed by necropsy in 99 per cent. He had found that in only 14 per cent. of tuberculous cows with clinically healthy udders did the milk cause tuberculosis when injected into guinea-pigs. Ostertag had shown that the milk of cows which were tuberculous only to the tuberculin test was non-infective. Professor Bang admitted the value of the outdoor treatment, but held that infection was all-important; a sound herd might always be kept within doors without becoming tuberculous.

DR. MCWEENEY was so satisfied with the tuberculin test that he regarded a necropsy as faulty which failed to reveal tubercular lesions in an animal which has responded to it. He had, however, seen two cases which proved to be tuberculous after having failed to respond.

MR. DOLLAR, closing, said that in France peasants who had herded with their cattle had been found very liable to tuberculosis, and that in Queensland cattle tuberculosis was very rife, in spite of the herds being constantly in the open air. He thought the Section was in general agreement upon four points, namely: 1. The necessity for periodical inspection of herds. 2. The advisability of slaughtering cows with tuberculosis of the udders. 3. The advisability of compulsory legislation for the whole country. 4. The unwisdom of allowing Professor Koch's dictum to cause a relaxation in present efforts to keep the milk supply pure.

Tubercle Bacilli in Cow's Milk as a Source of Tuberculosis in Man.

The general meeting of the third day was taken up with the consideration of tuberculosis in animals. Earl Spencer presided over the large gathering, and spoke of the distinguished position of the essayist of the afternoon, one of the vice-presidents of the Section on Tuberculosis in Animals. He is principal and professor of comparative pathology and bacteriology of the Royal Veterinary College, and editor of the *Journal of Comparative Pathology*.

PROF. JOHN MCFADYEAN, M.B., C.M., B.Sc. (Edin.), F.R.S.E., M.R.C.V.S., then delivered his address on the above subject. He said that "to-day" the position of anyone who undertook to discuss the intercommunicability of human and bovine tuberculosis was very different from what it would have been a week ago, for in the interval the greatest living authority on tuberculosis—the world-renowned discoverer of the tubercle bacillus, and the man to whom we were mainly indebted for our knowledge of the cause of tuberculosis—had declared his conviction that human and bovine tuberculosis were practically two distinct diseases. He did not know how far the reasons assigned by Dr. Koch for the opinion which he now held on this question might have commended themselves to the members of this Congress, and he was overwhelmed at finding himself in a position which compelled him to offer some criticism on the pronouncement of one the latchet of whose shoes he was not worthy to unloose. That bovine and human tuberculosis were identical diseases was generally supposed to have been finally determined by Dr. Koch himself when he discovered that the human and the bovine lesions contained bacilli that were identical in morphological, tinctorial, and cultural characters, and showed that the artificial cultures from both sources produced indistinguishable effects when they were employed to infect a variety of animals.

What were the grounds upon which they were asked to discard convictions that appeared to rest on such a solid basis? He should endeavor to state them briefly, as he understood Dr. Koch's train of reasoning: "1, The bacilli found in cases of bovine tuberculosis are much more virulent for cattle and other domestic quadrupeds than the bacilli found in cases of human tuberculosis. 2. This difference is so marked and so constant that it may be relied upon as a means of distinguishing the bacilli of bovine tuberculosis from those of the human disease, even assuming that the former may occasionally be found as a cause of disease in man. 3. If bovine bacilli are capable of causing disease in man, there are abundant opportunities for the transference of the bacilli from the one species to the other, and cases of primary intestinal tuberculosis from the consumption of tuberculous milk ought to be of common occurrence. But postmortem examination of human beings proves that cases of primary intestinal tuberculosis are extremely rare in man, and, therefore, it must be concluded that the human subject is immune against infection with the bovine bacilli, or is so slightly susceptible that it is not necessary to take any steps to counteract the risk of infection in this way." He ventured to submit that at least one of the premises contained in that argument was not well founded, that the others had little or no bearing on the question, and that there still remained reasonable grounds for regarding tuberculous cows' milk as distinctly dangerous to human beings. The evidence in favor of the view that the ingestion of tuberculous milk was one of the causes of human tuberculosis included a number of recorded cases in which the relationship of cause and effect appeared to be obvious. In the Hospital for Sick Children in Great Ormonde Street, London, George F. Still found that in 29 per cent. of the cases of tuberculosis, primary infection appeared to have taken place through the intestine. In the Royal Hospital for Sick Children at Edinburgh, Dr. Theodore Shennan found 28 per cent. The late Sir Richard Thorne was convinced that tuberculous milk was the main cause of tabes mesenterica in children. His reason was that the statistics for the last 50 years show a marked decline in the death-rate from phthisis—the form of tuberculosis resulting from inhalation, while only a slight decline took place in the death-rate at all ages from that form of tuberculosis which is ascribable to alimentary infection and in children under one year there was a notable increase. The number of persons who became infected by milk could not be ascertained, but some estimate might be formed from certain facts. About 30 per cent. of all the milch cows were tuberculous in some degree. But the milk did not appear to be dangerous until the udder became diseased, and only about 2 per cent. of milch cows were so affected. Milk from tuberculous udder contained bacilli in enormous numbers, and the disease was not attended by any pain or tenderness for a considerable time; so that the gravity of the condition was not realized. To prevent this danger Professor McFaydean advocated a periodical examination of cows by competent inspectors. Less effective, but more easily carried-out measures, were a compulsory notification of udder disease and of any symptoms of tuberculosis in milch cows, and the interdiction of sale of milk from animals suffering from this disease.

A great deal of the milk in the market contained a considerable quantity of dust and dirt, most of which came from the cow's udder and the hands of the milker, and part from the dust of the air of the cowshed. When thirty per cent. of the cows in a byre were tubercular, the dirt in that building, and the atmosphere in it, were almost certain to contain tuber-

cle bacilli, and some of these were very likely to find their way into the milk. The more dirt milk contained the greater was the chance that tubercle bacilli from that source might be present. The present state of the law in Great Britain, or rather the almost entire absence of any law, dealing with tuberculous udder disease in cows was a scandal and a reproach to civilization. It scarcely sounded credible, but it was a fact that the owner of a cow in the most advanced state of tuberculosis, and exhibiting the most manifest signs of udder disease, might sell that cow's milk for human food as long as the sale had not been specially interdicted on the certificate of a veterinary surgeon, and no penalty attached to this crime of deliberately or carelessly placing on the market a food material charged with the germs of a dangerous disease. In the interests of public health, the sale of milk from tuberculous udders, and from cows that were obviously tuberculous in any part of the body must be stopped, and it must be declared illegal to keep such animals alive. In conclusion, he would venture to express the earnest hope that the Congress would not endorse the view that it was inadvisable to take any measures to prevent the transmission of tuberculosis from the lower animals to human beings. To justify the introduction of measures to that end it was not necessary to contend that this was a common method of infection, or that the danger arising from milk could for a moment be compared with that present in human sputum. The inhalation of tubercle bacilli expelled from the bodies of human patients was, doubtless, the great cause of human tuberculosis, and every practicable means of preventing infection in that way ought to be employed; but, at the same time, they ought not to concede to the milkmen the right to sell tubercle bacilli, even if they were assured that—like Dr. Koch's experimental pigs—they had nothing to fear beyond the development of "little nodules here and there in the lymphatic glands" of our necks and "a few gray tubercles" in our lungs.

SIR J. CRICHTON BROWNE, who had taken the chair, said the attention with which they had followed the address showed how fascinating Professor McFadyean had made a rather grim and unesthetical subject. The address confirmed the view that further investigation was necessary before they could accept Dr. Koch's conclusions, and he urged the need for a Royal Commission. He hoped there would be no unnecessary delay in the investigations at home. In the meantime, he thought we should run no risks in Great Britain. He moved a vote of thanks to Professor McFadyean.

PROFESSOR NOCARD, France, expressed his complete accord with Professor McFadyean's views. In France they realized that all forms of tuberculosis were dangerous and to be guarded against. The French Government carried out exactly the suggestions with regard to the inspection of dairies suggested by Professor McFadyean. He seconded the motion.

The Sanatorium Treatment of Consumption.

PROF. CLIFFORD ALLBUTT read a paper on this subject. He said that there was much supineness as to the early diagnosis of phthisis. Whenever a man complained of being overwrought, of off color, consumption should be suspected, cough or no cough. Hemoptysis should never be set down to the rupture of a blood vessel in the throat. The absence of bacilli from the sputum should not be regarded as an indication of safety. Pleurisy, however old, should never be forgotten. If there was no fever, a high pulse with low arterial pressure should cause watchfulness, especially if there was a loss of weight, and a tendency to sweat. The chest should be percussed with the patient seated on a wooden chair without a cushion. The larynx should be examined, if only for detecting change of color. There was no specific climate for consumption, nor even a best climate. The importance of sunlight had been exaggerated. At Davos, patients did as well in the darker, as in the brighter winters. The most general terms in which the question of climate could be expressed were these: The coldest climate which the patient can tolerate, if the air is dry, clear, and still, is the best. It calls for the most food, and stimulates the appetite, but much depended upon age. Air which would stimulate a patient of 35, might cause one of 55 to shrivel up. In the sanatorium treatment of consumption three degrees of recovery might be distinguished: 1. rest; 2, obsolescence; 3, *restitutio ad integrum*. The last was too curious to be considered. If the term of residence sufficient to obtain obsolescence were required sanatorium treatment would be nipped in the bud; for to obtain obsolescence even in the first stage, two winters and one summer at least were necessary, and in many cases three winters and two summers. But how many even of the easier classes could do this? However, a distinction should be made between a pathologic and an anatomic cure. To obtain the latter, a period of three to six months' residence was required. Then the patient could return to a clean home and a wholesome occupation. Professor Allbutt protested against the treatment of phthisis as an abstraction, and not of the individual; and of thrusting too much food on the patient. In one case that he observed a patient was stuffed on the most modern system; was nauseated and losing ground, much to the disappointment of his medical attendant. On examination, Professor Allbutt found that his stomach was dilated with food and enlarged, like a haggis. Milk, he thought, was given too profusely.

DR. PHILLIP, of Edinburgh, said that hyperaeration was a *sine qua non*. The freest access of air should be allowed day and night, provided the patient were sufficiently clad. He never troubled as to what was the temperature of the air to which he exposed patients. Rest should be enforced if the temperature was over 100.5 or the pulse above 90. As the patient improved exercise should be taken, which should be gauged by the pulse and temperature. The regular use of the cold bath was quite possible and advantageous. No special climate was necessary for the erection of a sanatorium. One might be erected anywhere, provided the place was not exposed to any noxious influence. He had never seen any harm from the open-air treatment. Even in dying patients the distressing symptoms were relieved, and euthanasia promoted. The proportion of cures obtained by him, in his sanatorium near Edinburgh, the climate of which had been described as one of the cruelest in the world, was 50 to 60 per cent., and with admission of the cases in an earlier state, he had no doubt that a still higher proportion could be obtained.

Mortality from Phthisis in England and Wales During the Last Forty Years.

DR. JOHN TATHAM, of the general register office, read this paper. He said that the mortality from phthisis in the four years 1896 to 1899 was in males 1521 per million living, and 1141 in females. The liability to phthisis began somewhere between the 15th and 20th year. In males the death-rate at the age group 15 to 20 was 908 per million, and attained its maximum at 45 to 55, when it reached 3173. Among females of 15 to 20 it was 1165, and attained its maximum, 2096, at 35 to 45. Comparing the period 1896-99 with 1851-60, the phthisis mortality in males had been reduced from 2579 to 1521 per million: in females from 2774 to 1141. The effect of employments is remarkable. Thus between the same adult ages the tin miners had 508 deaths from phthisis, as against 69 among the coal miners. Dr. Körösy, of Buda-Pesth, reported that in Hungary printers suffer most from consumption, and after them come shoemakers, dyers, millers, joiners, masons, tailors, bakers, and so on—showing how largely trade influences the mortality.

Heredity in Tuberculosis.

DR. EDWARD SQUIRE, physician to the North London Consumption Hospital, said that in 1894 in a paper presented to the Royal Medical and Chirurgical Society, he gave reasons for considering that the influence of heredity was not so great as was believed. Although about 33 per cent. of consumptives gave a family history of tuberculosis, there were reasons for attributing the disease to occupation in the greater number of the cases, and he placed the influence of heredity at 9 per cent. Recently, on looking through a number of life insurance claims, he obtained some figures bearing on the subject. Of 469 claims in which the required information was available, he found 78 deaths from tuberculosis, of which only 7 had a history of consumption in the family. Twenty-two other cases of death

from causes other than tuberculosis, gave phthisical histories. Thus, in 440 cases, free from consumptive taint, 71, or 16 per cent. died of tuberculosis, and in 29 cases with consumptive family history, 7 or 24 per cent. died of tuberculosis. Therefore the excess in percentage of deaths from tuberculosis, in cases with a consumptive family history over deaths in those without it was 8 per cent.—a result curiously near the original figure at which he had arrived.

Influence of Raw Meat on the Evolution of Experimental Tuberculosis.

Professor Chantemesse read this paper, which he had prepared in conjunction with Professor Cornil. Richet and Hericourt published experiments showing the beneficial effects of raw meat in tuberculosis, in dogs; but their observations were open to the objection that the quantity of meat given was not measured, and that the good effect obtained might have been merely due to the fact that the dogs preferred ate larger quantities of raw meat than they would have eaten of boiled. To exclude this influence the following experiments were made. Six couples of dogs, each of the same weight and appearance, were taken. One of each couple was fed with boiled meat to satiety; the other was given an equivalent quantity of raw meat. Both were inoculated in a vein of the leg with tuberculosis. The dogs fed with boiled meat died at intervals varying from 3 weeks to 4 months. The necropsies showed general tuberculosis, more or less voluminous caseous granulations, and advanced fatty degeneration of the liver. Those fed on raw meat were killed at the same time. They were all plump: they showed less numerous tubercles than did the others, and less voluminous and less caseous granulations. In another experiment a dog was inoculated with tuberculosis and given 750 grams daily of raw meat. He preserved his strength, weight, and healthy appearance. He was killed at the end of 12 months. The necropsies showed a small number of tubercles in the viscera and tubercular interstitial nephritis. He was on the way to recovery. Two monkeys were inoculated with tuberculosis. One was fed on the ordinary diet, and died at the end of 23 days of general tuberculosis: the other was fed on raw meat from 15 days before the inoculation, and lived for 49 days. Professor Chantemesse and Cornil therefore conclude that the utility of a raw meat diet in tuberculosis, consisted not in over-feeding, but in the anti-tuberculous quality of the diet.

The Treatment of Tubercular Laryngitis.

Dr. St. Clair Thomson said that the statistics of the Brompton Consumption Hospital showed that the larynx was affected in over 50 per cent. of fatal cases of pulmonary tuberculosis. As 70,000 persons died annually from this disease, at least 35,000 of them would require treatment to mitigate their sufferings. Few of the recent text-books on laryngology contained any reference to the treatment of laryngeal tuberculosis by modern hygienic treatment. He deprecated the various local methods which from time to time had been vaunted. Their very number was eloquent of their inefficiency. Applications of lactic acid in the last ten years had obtained such vogue that they were used even in the most unsuitable cases, injuring the patient's health. Freudenthal, who used it freely, stated that "it ought to be dispensed with as antiquated and barbarous torture of the patients." (Jour. A. M. A., March 16, 1901.) We must look elsewhere than to surgical measures for progress in the treatment. This progress was ready to hand in the making of an earlier diagnosis. Then under this condition the sanatorium treatment with good food could be carried out, and rest of the voice should be insisted on. Catarrhal, or obstructive affections of the nose and throat, and intercurrent conditions of the larynx should receive suitable treatment

Reception by the King.

The King received the foreign delegates to the Congress, who were presented by the Earl of Derby. His Majesty said: "Gentlemen, let me express to you the great pleasure and satisfaction it has given me to ask you to come here to-day. It has been a source of great concern to me that, owing to circumstances over which I had no control, I was prevented from presiding at the opening of your important Congress, and attending its meetings; but I can assure you that, though not present, I take the deepest interest in its proceedings, and that I follow, through the medium of the daily press, with much interest the papers and discussions. There is no more terrible disease than consumption, and I only hope and trust that you may be the means of minimizing its evil effects, and thereby receive the gratitude of the world."

Final Meeting: Resolutions.

The final meeting of the Congress was held on July 26, with the Earl of Derby in the chair. The following resolutions were unanimously adopted:

1. Tuberculous sputum is the main agent for the conveyance of the virus of tuberculosis from man to man. Indiscriminate spitting should, therefore, be suppressed.
2. All hospitals and dispensaries should present every out-patient with a leaflet on the prevention of consumption, and insist on the use of a pocket spittoon.
3. That notification of tuberculosis should be established, when possible. If compulsory notification is impracticable, voluntary should be encouraged.
4. The provision of sanatoria is an indispensable part of measures for the diminution of tuberculosis.
5. Medical officers of health should use all their powers and relax no effort to prevent the spread of tuberculosis by milk and meat.
6. That in view of the doubts thrown on the identity of human and bovine tuberculosis, the government be requested to institute an inquiry into the subject.
7. That the educational efforts of the great national societies for the prevention of tuberculosis are deserving of support.
8. That a permanent international committee be appointed to report on the measures for the prevention of tuberculosis in different countries, to publish a popular statement of these measures and to keep and publish a record of scientific research in relation to the disease.
9. Overcrowding, defective ventilation and the damp and insanitary dwellings of the working classes diminish the chances of curing consumption and are predisposing causes of the disease.
10. The attention of governments and charitable persons be called to the necessity for establishing anti-tuberculous dispensaries.

The following subject was proposed for the consideration of the next Congress: "The constitutional conditions of the individual, which predispose to tuberculosis, and the means by which they may be combated."

A pleasant feature of the closing procedure was the heartiness with which Professor Brouardel and Dr. Gerhardt, as spokesmen of the foreign delegates, joined in the vote of thanks to the organizing committee, and especially to the chairman, Lord Derby. The French professor, in the name of the President of the Republic, invited those present to the Congress two years hence, in Paris. Lord Derby, replying in French, accepted the invitation, and assured M. Brouardel and his colleagues of the heartiest co-operation of the "Section Britannique" when the assembly gathered in the capital of the Republic. The last meeting was well attended, a large portion of the 2500 members of the Congress being present, and all expressed themselves as realizing that no expense had been spared to make the gathering one worthy of the high object for which it was called together. Its members have gone to their homes realizing that a new gospel of hope has been proclaimed.

Antiseptic Function of the Pancreas.—Zaremba affirms the existence of an antitoxin for diphtheria in the pancreas, and states that it is found in quantities even in the newly born. Experimental diphtheria intoxication was neutralized in every case with the extract of the pancreas from newborn infants and children, except in the case of death from chronic affections of the gastro-intestinal canal. The antitoxic function of the pancreas is therefore destroyed or checked by certain chronic affections of the intestinal infections. The antitoxin in the pancreas rapidly vanishes after death, and consequently, this research required an extract made from the pancreas two hours after death.—*Sem. Med.* from *Arch. f. Verdau. Kr.* vi, 4.

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A NOVEL THEORY OF CANCER.

An Australian physician, J. H. Webb,[1] offers a theory of cancer that will be novel to at least a majority of the profession. He rejects the parasitic theory that has lately been so prominently to the fore, holding that thus far no sufficient evidence has been adduced to support it. Nor does he look to the microscope for the solution of the question of the origin of malignancy; "all the microscopes that were screwed up and down could never have revealed to us the connection between myxedema and the thyroid gland—one of the most important discoveries made in recent years." Supposing, he says, myxedema had only been recently recognized and our knowledge of the function of the thyroid still withheld, what a search there would have been after its germs. Taking what clues we have to the disease, he sees little to favor the irritation theory of the excitation of the irregular cell proliferation and much more to suggest a secretory derangement. All secretions, he postulates, have their uses and the plus or minus of any secretion beyond certain limits means disease. All reproduction requires control or, given nutrition, it would be indefinite. There must, therefore, be something that limits the proliferation of the cell, and on account of its variability, he thinks, it can only be a secretion, which may be disordered in nature or in its control. If inhibition is lost and food supply continues, proliferation becomes indefinite; hence, there must be something in the organism that regulates the multiplication of the cell.

Cancer is the uncontrolled proliferation of one of the two ultimate tissue element—cells and fibers. If one of these can lose its control it stands to reason, he says, that the other can do the same, and we find this in myxedema, which is uncontrolled proliferation of the fiber. We know that myxedema is due to defect of the thyroid secretion and by analogy we should expect to find somewhere in the economy a similar body controlling cell proliferation, though the conditions are not exactly the same, since the cell, like a flask, can contain its own control. Reasoning thus, Webb turns to the liver secretion, the coincidence of gallstones and malignancy and our ignorance of the real function of the liver secretion suggesting the analogy. Mayo Robson and others have noticed this coincidence and some have written of cholesterin irritation in the causation of cancer. Cholesterin, which Webb at first believed to be the controlling agent of cell growth, is only isolated in its crystalline state, that is, when it has become a morbid product. In the organism it is in solution and kept thus by its own solvent soap. Under this impression, that cholesterin was the controlling agent and had become deficient, he tried injecting it hypodermically in cancer cases in solution with soap, at the same time administering thyroid. Later he has apparently used soap solution alone with the thyroid, and he reports some striking results as well as frankly acknowledging some failures. He reports two cases of epithelioma as cured and two more strikingly relieved; also one case of scirrhus of the breast and one of rodent ulcer cured. The cell element first disappears under the treatment, leaving the fibrous tissue behind, to be absorbed later.

It is not the lack of cholesterin that causes cancer, according to this theory; its crystals can be isolated from cancer discharges; it is the want of the saponifying agent in Webb's opinion, and he thinks it is one of the functions of the liver to produce this. Both the ultimate elements, fiber and cell, enter into cancer, hence the use of the thyroid. The cell, it may be from an injury, "sheds its cholesterin and the succeeding offsprings acquire the habit," and this is where Adami's "habit of growth" hypothesis comes into play.

Whatever may be thought of this theory of the pathology of cancer, if Webb's diagnoses can be relied upon, and their apparent lack of pathologic verification suggests a possible doubt, the results reported by him are worthy of consideration in a disease that is so generally resistant to our best efforts. Any therapeutic suggestion that is not itself deadly is at least worth investigation in such an almost universally hopeless disease. The theory is an ingenious one and seems to us novel. The idea of glandular influence on cancer production is, it is true, not altogether new; it has been suggested by Beatson, but in an entirely different way. The parallelism here drawn between myxedema and cancer and the idea of a lack of cell-controlling secretion analogous to thyroid secretion as the chief factor has not, according to our observation, so far at least, been thus emphasized in the theories of the origin of malignant disease.

In the current issue of the *New York Medical Journal*, Dr. Robert Abbe reports two cases of oöphorectomy performed under the suggestion of Beatson's theory, with striking results in the cure of mammary cancer, and mentions several others in which temporary arrest seemed to follow the operation, to a certain extent at least. These and other cases reported, together with the remarkable therapeutic results, open up, as Abbe says, a rather new field of thought upon the subject and justify further experiment and observation.

The secretory theory of cancer in one form or another may probably have a future.

1. Intercolonial Medical Journal of Australasia, June 20, p. 260.

IONS IN PHYSIOLOGIC AND OTHER PROCESSES.

The theory of electrolytic dissociation, discussed briefly in a preceding issue, is being applied with good results to various questions in general physiology. Among the first experiments in this field are those of Kahlenberg and True, who succeeded in demonstrating conclusively that the toxic action upon the bean *Lupinus albus* L. of dilute solutions of various salts and acids is due to the ions and not to undissociated molecules. By experimenting with various solutions allowed to act on germinated seeds it soon became clear that H-ions and OH-ions are the carriers of the toxic properties. From the work of these men it was shown that the properties of solutions of electrolytes are due to the ions as well as to undissociated molecules; and in very dilute solutions the action may be dependent wholly on ions.

Loeb has demonstrated that when the gastrocnemius muscle of frog is placed in a 0.7 per cent. NaCl solution it neither loses nor takes up water, as this solution has the same osmotic pressure as the tissue fluids. If, however, small amounts of inorganic acids and alkalies are added to the salt solution the muscle absorbs water and increases in weight, due to the H-ions and HO-ions causing increase in the osmotic pressure of the muscle by inducing hydrolytic splittings in the latter and a corresponding increase in the number of its molecules. When the muscle remains in salt solution for some time molecular changes also occur in its interior associated with the production of acid reaction, secondary molecular changes, and absorption of water. Now, muscular activity is accompanied with the production of acid and the absorption of water, and Loeb is inclined to attribute to the latter factor a large share in the cause of labor hypertrophy. He also emphasizes the fact that vegetable and animal organisms probably are protected against lack of water by adaptation through variation of osmotic pressure to prevailing conditions. Loeb has also shown that the rhythmic contractions of certain muscles are dependent on the presence of certain ions in the surrounding solutions. Different ions have different actions in this respect. Ca-ions and K-ions retard or prevent contraction, whereas Na-ions and a number of anions induce contractions in the presence of a certain number of Ca-ions. It seems as if contractility and loss of contractility depend on the formation of certain definite protcid compounds with Ca-ions and N-ions in different proportions, thus indicating the fundamental importance of chemical composition of living matter in its relations to function. It has furthermore been proved that rhythmic contractions are wholly independent of the nerves connected with the muscles; and this has led to valuable studies of the automatism of the heart with the general result that there is probably no real basis for the prevalent doctrine in regard to the so-called cardiac neuroses.

Richards has demonstrated that the sour taste of acids is dependent on the H-ions in the solutions; and Kahlenberg formulates the general law that the taste of electrolytic solutions is due wholly to the ions in them. Among other results of the study of the rôle of ions in electrolytic solutions may be mentioned those of Kahlenberg and True, and of Paul and Krönig, showing that the bactericidal action of mercurial solutions is dependent on the number of Hg-ions in the fluids, and that the action of various antiseptic solutions are to a large extent ionic in nature.

Enough has been adduced to show the wide influence the theory of ionization is to have in various fields of medicine. Wherever physiologic, pathologic and pharmacologic problems involve the consideration of solutions of inorganic substances, the peculiar actions of the constituent ions of the latter must not be neglected. The study of a number of powerful medicines from this point of view will probably yield interesting results.

THE UNSOLVED PROBLEMS OF TUBERCULOSIS.

The echoes of the recent British Congress on Tuberculosis are likely to be heard for some time and the one pre-eminent question raised by Koch's address is not likely to be downed until some authoritative dictum based on conclusive research has been given out. It may be that as a profession we have not taken exactly a scientific position heretofore on this matter; we have accepted inconclusive evidence as final, and have been guided in our opinions more by the sense of expediency than by the careful weighing of facts. If this is true Professor Koch has done the profession a service by raising the issue definitely and clearly. The fact that the majority of authorities are against him is perhaps a fortunate one as it will insure a more thorough study on their part to find data to support the theory so rudely shaken by his authority.

The investigation, however, is not a simple one, not so much so indeed as Professor Koch would seem to believe. It is not a self-evident *a priori* fact that cultures of tubercular lesions in the human subject derived from tubercular meat or milk will still present the characteristics of bovine tuberculosis. If this could be definitely accepted as true the matter would be easy. But the fact is there will be objectors to this acceptance who will require demonstration that the organism does not become modified according to its environment, and with our present lack of knowledge of the biologic qualities of the tubercle bacillus in all its varieties there seems to be a very wide field for investigation and infinite puzzling possibilities. On the other hand, it does not follow that latent human tuberculosis or its almost ubiquitous tuberculous germs may not be aroused into malignant activity by the inoculation of animal tuberculous toxins, or that a possibility of transmission of bovine tuberculosis to man by inoculation proves that it is also transmissible by introduction into the unwounded digestive tract. As one of the foreign delegates is reported to have said in the Congress, the

inoculation of man from animals is a different thing from infection by way of the alimentary tract. There may, moreover, be differences in the development and virulence of the tubercle bacillus in different parts of the organism to still further complicate the question. There is still another factor with which to reckon, and that is the universal distribution of the germs of human tuberculosis which renders impure almost every possible experiment in this line. We can not well exclude the possibility of other sources of infection in any alleged case of transmission of animal tuberculosis to mankind.

It would seem that after all the study will be largely confined to the lines already followed by Koch, viz., clinical and postmortem observation. There are, however, many suggestive side-lines, and there is a wide range of possibly useful facts in the enlargement of our at present imperfect knowledge of the natural history of the microbe and its closely allied forms. The study of human resistance and immunity is also promising; it may come finally to the problem of just how much microbic invasion the average organism can stand under different conditions. We may find the danger of bovine tubercle a minimal one, and yet have to decide how far we are justified in neglecting it, and whether it can be differentiated in any case from that due to numerous other sources of infection that are ever about us. In the meantime we will do wisely to keep on the safe side, avoiding, however, the tendencies to exaggeration and unwarrantedly positive statements that have existed in the rather recent past. If Koch has excited a healthy scientific skepticism to stimulate research and replace the self-satisfied assurance of positive knowledge on a subject in regard to which there is yet so much unsettled, his utterances will have done an infinite amount of good.

THE MEDICAL PROFESSION ORGANIZING.

Whatever may be the reason the fact is the medical profession everywhere has become aroused to the necessity of organizing for something more than purely scientific purposes. This is true not only in the United States, but in the Old World also.

Last week[1] we gave an account of the Deutscher Aerztevereinsbund, or the German Practitioners' Association, which showed that this association during the past year had increased its membership in a remarkable manner. The most important fact shown, however, is that the Bund has taken up in an active, business-like manner the problems that are affecting the profession in Germany, problems that have their counterpart with us. It decided to establish a central office, or headquarters, in Berlin, and to place one of its members in charge; and it appropriated a good sum to carry out the objects the Bund has in view. Among these are to promote the ethical and material interests of the profession; to publish an organ; to supply information on questions affecting the profession and its relation to the authorities, to the legislature, and to the professional and lay press, etc.; to assist in the organization of new sub-societies, and to endeavor to have the sums paid physicians by the sick-benefit societies increased; to combat quackery in every possible way, and otherwise to look after the material interests of the profession. This action was stimulated no doubt by the movement taken some time ago by those who were dissatisfied with the lukewarm methods of the Aerztevereinsbund, and who organized another society for the express purpose of carrying on the "battle of the clubs," and of solving the problems affecting the welfare of the profession. It is felt that this action on the part of the Bund will make it unnecessary to keep up the new organization that is having the effect of dividing rather than uniting the profession, a result which naturally follows a multiplicity of societies not working in a co-operative way.

The profession in Great Britain has been feeling the necessity of a more compact organization for years, and this culminated last week in a report to the British Medical Association by its committee on reorganization which calls for radical changes. From our foreign exchanges we learn of the same earnest effort in nearly every country to unite the profession for mutual good, for political influence, as well as for scientific purposes.

Coming back home we find that at least three-fourths of our state societies have appointed committees on organization, and that these committees are actively considering the problem of how to bring every physician in the state into the state society or one of its branches. The important changes made in its organic law by the American Medical Association at its last session, is only one of the events which is leading up to that much to be desired condition—a united profession in the United States.

1. Jour. A. M. A., August 3, p. 338.

PRO BONO PUBLICO.

Professor Osler got off a good thing the other day at the British Congress on Tuberculosis. During the opening exercises much was said of a nature flattering to the profession. Dr. Osler remarked that a large delegation had come over from the United States, but that it had not come like some of the "trusts" of which we have heard so much of late, and yet they represented a magnificent "trust." But while the motto of the ordinary trust was "damn the public," their motto was *pro bono publico*.

PROGNOSTIC SIGNIFICANCE OF OPTIC ATROPHY IN TABES DORSALIS.

It is a well-recognized clinical fact that the development of optic atrophy in the course of locomotor ataxia is generally attended with an arrest of the disease; so that this occurrence is considered of relatively favorable prognostic significance. No satisfactory explanation has hitherto been given for this strange coincidence,

but it is suggested by Dr. E. F. Cyriax,[1] that it may be found in the progressively increasing reliance that the tabetic patient, in consequence of his failing vision, is compelled to place for all of his movements upon his muscular sense, ordinary sensibility, sense of localization and co-ordination; and in re-educating these and in trying to restore the impairments he is actively and constantly engaged. The same reason is aimed at therapeutically by co-ordinate gymnastic and regulated exercises.

SUCH IS FAME.

According to the newspaper reports, the president of the New York City Department of Health first heard of Professor Koch and possibly also of the tubercle bacillus when a reporter called upon him to interview him on the sensation of the day. "Who is this man Koch?" was the official's inquiry, and when informed, he said: "Well, I don't know anything about him," and then turned to weightier matters. It is probable, as the newspaper says, that he does not think Professor Koch is half as great a man as he is. With some New York City officeholders the vision is limited to the Tammany jurisdiction and nothing outside of that is worth knowing. The official in this case, however, is, as many of us can testify, not a bad type of a too large class of individuals who get into places in our large cities through political machination and pull. It is a public disgrace when they occupy positions such as the presidency of the Department of Health of New York City, which should be filled by qualified men, and have such an opportunity to show their ignorance.

DIPHTHERIA BACILLI IN THE THROATS OF HEALTHY CHILDREN.

Attention has repeatedly been called to the fact that diphtheria bacilli may persist for long periods of time in the throats of those who have had an attack of diphtheria, and also that they may be found in the throats of those apparently healthy who are compelled to associate more or less intimately with such patients. In addition to these possible sources of infection, Drs. R. T. Hewlett and H. M. Murray[2] call attention to another that is even more insidious and more dangerous, because not suspected, namely, the throats of children suffering from other diseases than diphtheria. It was found that of 385 children under the age of 14 years admitted during the year 1900 to the Royal Victoria Hospital for Children, in London, for operation or some illness other than diphtheria, bacilli of diphtheria were isolated on culture from the throat in 58, or 15 per cent.; and pseudo-diphtheria bacilli in 92, or 24 per cent. Among patients 2 years old and upward, the diphtheria bacilli were present in the throat in less than 13 per cent. and the pseudo-diphtheria bacilli in nearly 28 per cent., while among those under 2 years of age diphtheria bacilli were present in 21 per cent. and pseudo-diphtheria bacilli in 14.5 per cent. In only seven of the entire number of cases was there any clinical evidence in favor of diphtheria, and in three of these neither diphtheria bacilli nor pseudo-diphtheria bacilli were found on the first examination. These observations show the importance of keeping the buccal cavity clean in children, and they may also serve to explain the mode of infection in not a few cases of obscure origin.

1. Lancet, June 29, 1901, p. 1861.
2. Brit. Med. Jour., June 15, 1901, p. 1474.

UNDILUTED MILK AS A FOOD FOR INFANTS.

Notwithstanding tireless research and wonderful ingenuity a perfect substitute to replace mother's milk as an article of food for the nourishment of infants yet remains to be discovered. This is greatly to be regretted, as the occasions are not rare on which mother's milk is not available or it is desirable or even necessary to have recourse to such a substitute. The fact is that there is yet not a little to learn concerning the assimilative processes in children, and knowledge, particularly of a practical character, concerning food is not so extensive or so precise as it might be. As K. Oppenheimer[1] points out in a recent communication, an article of food for the infant, to serve as a perfect substitute for mother's milk, should be as useful as the latter in the nourishment both of healthy children and of those suffering from gastro-intestinal catarrh. These requirements, however, are not met by any of the large number of artificial foods that have been devised. For the purpose of establishing the usefulness of undiluted cow's milk as judged by this standard, Oppenheimer made comparative observations in normal healthy children, in infants suffering from gastro-intestinal derangement and in atrophic children. In almost all of the 11 cases of the first group the bodily weight exhibited a steady and uniform increase; while of 36 cases of the second group only 6 failed to do well; and of 12 cases exhibiting marked atrophy 8 failed to do well. All of the foregoing cases were under observation for periods of more than four weeks. Of 33 additional cases under observation for a shorter period than four weeks 20 thrived and 13 did not.

CRIMINAL ADVERTISEMENTS.

A daily newspaper which is often sensible in its editorial comments on medical subjects, replies to the criticisms on certain of its advertisements made by a physician, that it assumes no responsibility for the reliability of their representations. If they interfere with the practice of physicians, as it assumes is the case, the latter can not be considered impartial censors. It therefore rejects the suggestion of scrutiny and revision of its advertising columns as made by its correspondent as inadmissible. A rapid inspection of the advertisements in the same issue reveals, among other scattering more or less objectionable drug "ads.," a special corner headed "Medical" containing four advertisements. One of these is an alleged gonorrhea cure, and ends with the significant sentence, "Rubber goods carried." The three others are all of the "ladies' safe remedy" class and if they do not openly profess an evil purpose are open to hardly any other construction. If the remedies are harmless and will not accomplish the results covertly claimed for them, then they are frauds and humbugs

1. Archiv f. Kinderheilkunde, 31 B., v u. vi. H., p. 321.

of the most villainous kind. On the other hand, if they are effieacious in the manner intended, then their sale and use is eriminal and the newspaper that admits sueh advertisements is a participant in the erime. The editor can take which ever horn of the dilemma he ehooses; in advertising sueh remedies he is either selling his space to humbug people or is allowing the space to be used for criminal purposes. He ean not plead ignorance. When certain pills are advertised as "monthly regulator; safe and sure; never fails;" and when the advertiser says, "send for woman's safeguard," there is no doubt as to what is meant. The editorial apology is pitifully weak, not to eall it anything worse. "Money talks" altogether too much with the advertising department of the daily press, and morality and even common decency must take a second place.

Medical News.

CALIFORNIA.

Sanatorium Burned.—The Sanatorium at Byron Springs was destroyed by fire, July 25. The loss was total.

State Board of Medieal Examiners.—The following members of the Medical Society of California comprise the regular board of examiners: Drs. F. Dudley Tait, San Francisco; David Powell, Marysville; Daniel E. Osborne, St. Helena; Cephas L. Bard, Ventura, and Charles C. Wadsworth, San Francisco.

San Franeiseo's Deaths.—The report of the statistician of the health department for the fiscal year which closed June 30, shows 9687 deaths during the year, an increase of 751 over 1899-1900. Of this number, 2762 deaths were of soldiers and non-residents. The net mortality among residents was therefore 6925. Tuberculosis caused 1100 deaths; cancer, 187; diphtheria, 93; typhoid fever, 70; heart disease, 524, and suicide, 125.

DISTRICT OF COLUMBIA.

Dr. R. Henderson Graham, Washington, will sail for Europe on the *Wilhelm der Grosse,* August 13.

Extension to Insane Hospital.—Bids for the construction of the extension to the Government Hospital for the Insane, for which $1,000,000 was appropriated by the last Congress, elosed August 2.

New First-aid Poueh.—Major J. Van R. Hoff has designed a first-aid package, to be carried by the soldier in the field, especially in time of war, where a great many soldiers mislay, lose or throw away the valuable packages. The package consists of a pouch fitted with a flap, the whole made of the same webbing as the Mills cartridge belt, to which it is attached, and from which it is suspended by means of two small wire hooks. The pouch is detachable, and the flap is secured by means of fastenings such as are in common use on the wrists of gloves. The board of ordinance and fortifications has allotted $500 for the purchase of probably 2000 of these pouches, which will be issued to the army for practical trial.

FLORIDA.

Dr. Louis De M. Bloeker, for ten years physician and surgeon to the Florida Hospital for the Insane, Chattahoochee, has resigned, and after post-graduate studies expects to resume private practice.

Dr. William D. McNamar, Jacksonville, has been appointed medical inspector by the Jacksonville Relief Association. After the discontinuance of the emergency hospital it was found that there still remained many worthy fire-sufferers who needed medical care, and the office of medical inspector was created to look after these patients.

Transfer of Quarantine Stations.—The State Board of Health has entered into an agreement with the Treasury Department for the transfer to the U. S. Marine-Hospital authorities of all the state's quarantine stations, that at Mullet Key to be purchased on an appraised valuation and the others to be leased for a nominal rental with privilege of purchase. The stations will continue to be operated by the force now employed. Payment for the Pensacola quarantine plant, under the act passed by the legislature at its recent session, will, of course, depend on the purchase of the same by the Treasury Department.

GEORGIA.

Dr. Dunbar Roy, Atlanta, who has been ill with appendicitis, is now convalescing from the operation.

The Hospital for Ineurables, Atlanta, is embarrassed financially so that in spite of the fact that there are 82 applicants for admission to the institution, it can accommodate only 10. An effort is being made to raise a maintenance fund by popular subscription.

The Presbyterian Hospital, Atlanta, was opened to the public last month. It has an initial capacity of 25 to 30 beds. Its medical staff consists of Dr. Marion McH. Hull, chairman, and Drs. Stephen T. Barnett, Cyrus W. Strickler, James N. Ellis, Edward C. Davis, Miller B. Hutchins, Michael Hoke, John L. McDaniel, James McF. Gaston, Jr., Arthur G. Hobbs, James M. Crawford, and Walter B. Emery.

ILLINOIS.

Dr. Carl G. Muehlmann, Pekin, has been appointed physician of Pekin Township, succeeding Dr. William Niergarth.

Peoria's new Isolation Hospital is completed and was inspected by the mayor and the aldermanic committee, July 27. The building is large, roomy and airy, and has wards for men and women.

Dr. Harry R. Lemen, Upper Alton, who served as a medical officer in the war with Spain, and thereafter in the Philippine Islands, has been commissioned captain and assistant surgeon of volunteers.

Barnes Medieal College.—At a recent meeting of the Illinois State Board of Health, the Barnes Medical College of St. Louis was declared a medical institution not in good standing with the Illinois State Board of Health.

Anthrax is abroad in Northern Illinois. A farmer at Lake Zurich is said to have died from the disease, and farmers at Lake Zurich, Palatine and Long Grove are ill, but will recover. An epidemic among the cattle is threatened.

St. Louis physieians who practice in East St. Louis must hereafter possess an Illinois license. The local board of health has issued an order to this effect on account of the alleged failure of certain St. Louis physicians to comply with the law regarding the notification of the local health board of communicable diseases.

Chieago.

The Graduate Nurses' Assoeiation of Illinois, whose object is to obtain state recognition for trained nurses, was organized August 3.

Dr. Joseph E. Rayeroft, acting athletic director of the University of Chicago, has been appointed past assistant surgeon with the rank of lieutenant, and assigned to the Illinois naval militia.

The volunteer medieal inspeetors have done such efficient service in improving sanitary conditions and reducing infant mortality during the recent heated term that the Department of Health has issued a call for fifty more physicians and nurses.

Epizootie.—Bacterial investigations in the laboratory of the secretions from the throats of horses affected by the prevailing epizootic show some similarity of the germ to that of influenza, but with such differences as to allay the apprehension that the disease is communicable to mankind, as was at one time feared.

Betiero Not Registered.—The secretary of the State Board of Health informs us under date of August 3 that the news item stating that Betiero, the hypnotist, who claimed to be a physician, was duly registered is incorrect, that the individual does not hold a certificate from the Board and that the Chicago Department of Health has been authoritatively so informed.

Dr. George W. Webster, because he contravened the inalienable rights of physicians of Ludington, Mich., to treat emergency cases gratuitously, has had a warrant sworn out against him for praeticing medicine in Michigan without a license. Dr. Webster's offense consisted in removing a fishhook from a little girl's hand, and for this service he made no charge. The warrant, however, was not served.

The eontinuous session which is in foree at Rush Medical College has not been a failure, as was suggested in the lay press. Dr. John M. Dodson, dean of students at this institution, states that the quarterly system has been found especially

adaptable to the medical school, possessing great advantages, and is deemed by the faculty and trustees of the college to be a great advance in medical education. The example of Rush Medical College in instituting such a plan has already been followed by two or three other medical institutions and promises to be followed by others.

Public Health Conditions.—A decrease of 91 deaths, during the week ended August 3, from the total of the previous week confirms the anticipation expressed in the Health Department bulletin of that week that the disastrous effects of the unprecedented hot weather had then culminated. So, too, as to the excessive typhoid-fever mortality, due to the continuous water pollution between June 24 and July 3. Although there were 20 typhoid deaths reported last week, as against 13 during the previous week, the numbers reported toward the close of the week indicate that the outbreak from that pollution is substantially at an end—the daily deaths having been 6, 6, 3, 2, 1, 1, 1. It is probable that there will be another increase within three or four weeks from the pollution of last Monday, but it is not likely to be so severe. In all other respects the public health conditions are entirely satisfactory; there were fewer cases of the contagious diseases reported last week than in any other since the contagious-diseases division was established. But one case of smallpox was discovered, three were discharged and there are only six remaining in the Isolation Hospital. The publicity given by the daily press to the efforts of the department to improve the quality of the milk supply has already effected a great improvement in quality. Formalin adulteration has almost entirely ceased and the percentage of samples found below grade has greatly diminished within the past two weeks.

IOWA.

Dr. Smith A. Spillman, Ottumwa, has been made a member of the pension examining board, vice Dr. Benjamin F. Hyatt, deceased.

Smallpox.—The Health Department of Des Moines received reports of 19 cases of smallpox for the last week in July. There are 8 cases in the isolation hospital.

Dubuque physicians have been notified by the health officer that they must report communicable diseases to the Health Department within the time prescribed by law. The city recorder stated that two recent cases of smallpox had not been reported to him.

Faculty Changes.—The Sioux City College of Medicine announces the following changes in the personnel of the faculty: Dr. J. H. Robbins becomes professor of pathology, histology and bacteriology, vice Dr. Hal L. Huvetson; Dr. John A. Dales succeeds Dr. Jastram as professor of anatomy and Dr. Willis W. Dean takes the chair of physiology formerly held by Dr. Dales.

MARYLAND.

Dr. F. C. Davis, Baltimore, sailed on July 25 for Germany.

General Vaccination.—The Health Commissioner of Baltimore has determined to enforce strictly the law requiring general vaccination.

Dr. Florence R. Sabin has been appointed to the fellowship in the Medical School of Johns Hopkins University, provided by the Baltimore Association for the Promotion of the University Education of Women.

Consumptives in Street Cars.—Objection has been made to persons riding to the Consumptive Hospital on the street cars in Baltimore, on the ground that the disease is liable to be thus communicated to the well.

Hospitals and Delirium Tremens.—Some comment has been occasioned by the refusal of four hospitals and the city almshouse to admit a man with delirium tremens, who afterwards died in the city jail. Some of these institutions are recipients of city appropriations and the supervisors of city charities are making an investigation.

Smallpox.—Dr. John S. Fulton, secretary of the State Board of Health, was summoned to Washington County on July 22 by Dr. O. H. W. Ragan, Hagerstown, local health officer, and found a family of four near the Pennsylvania line, suffering with smallpox. None of them had ever been vaccinated. Dr. Fulton quarantined the house. These are the only cases of smallpox at present in Maryland.

MICHIGAN.

Dr. George Dock, Ann Arbor, is in Europe.

Dr. William E. Jones, a physio-medical physician and health officer of Hinchman, is ill with smallpox.

Dr. Robert T. Tapert, Detroit, has been appointed assistant surgeon of the police department and assigned to duty at Belle Isle.

New Disease in Michigan.—At the Michigan Asylum for the Insane several cases of contagious disease have occurred which it is said is not smallpox, chicken-pox or varioloid and which the physicians hope to classify. The ultimate result will probably be smallpox, as has been the case in so many other epidemics of pseudo-variola during the past two years.

MISSOURI.

Smallpox in Kansas City.—Eight new cases of smallpox were discovered by the Board of Health, July 25, and since that time the average has been about one a day. The isolation hospital on that date had eighteen patients.

Detention Hospital for Insane.—Dr. George O. Coffin, city physician of Kansas City, has requested the city council to appropriate $5000 for the erection of a detention hospital for the insane. At present the only accommodation for insane individuals pending their commitment to asylums, is the City Hospital.

Milo B. Ward Memorial.—At a special meeting of the Kansas City Academy of Medicine, held July 29, the following resolutions regarding the late Dr. Milo B. Ward were adopted: WHEREAS, Almighty God, in his infinite wisdom, has seen fit to call from his earthly field of usefulness to that haven of rest above, Dr. Milo Buel Ward, our associate and Fellow of this Academy, therefore be it *Resolved*, That Kansas City Academy of Medicine, appreciating his sterling worth, ability and many virtues, feels keenly the great loss it has sustained in his untimely death. He was our friend as well as our colleague, and his labors were for us and for the profession of medicine in general. His death is a loss, not only to his family and to his circle of friends, but to the profession of Kansas City, of this state and the nation. *Resolved*, That we extend to the stricken family our sincere sympathy in this our common bereavement. And be it further *Resolved*, That a copy of these resolutions be spread upon the minutes of this association, a copy be sent to the family and one to each of the daily papers and medical journals.

MONTANA.

St. Peter's Hospital, Helena, which was damaged by fire in May last, has received $15,000 from an anonymous source, for its rebuilding.

Smallpox is prevalent among the Kootenai Indians on the Flathead reservation, near Dayton. Five deaths have occurred in the last month, and there are now 35 cases of the disease.

Cree Indians infected with smallpox are being held in quarantine—one band near Kalispell, the other near Missoula. They belong in Canada and came across the border after the Riel rebellion.

Four Butte physicians who neglected to comply with the law requiring filing of birth certificates and notification of communicable diseases were arrested, plead guilty, were fined and paid their fines.

NEBRASKA.

Dr. Andrew B. Somers, Omaha, has been appointed secretary of the State Board of Health, succeeding Dr. Ole Grothan, St. Paul.

Osteopaths Licensed.—Thus far, 35 osteopaths have been licensed in Nebraska. At the last meeting of the State Board of Health 19 regular physicians and 17 osteopaths were licensed.

Returned to Ord.—Dr. Charles E. Coffin, formerly superintendent of Nebraska State Insane Asylum, and Dr. Minerva H. Newbecker, late assistant physician of the State Insane Asylum, have relocated at Ord.

NEW YORK.

Dr. Lemon Thomson has been elected health officer of Glens Falls, vice Dr. George H. McMurray, deceased.

Smallpox mortality in the state during June reached 74, the highest number for any month in the state's history as verified by the records of the Health Board.

Employees at State Hospitals.—Governor Odell intends to institute a policy of retrenchment as regards the state hospitals. He found in his recent tour of inspection that at Kings Park Hospital there were 500 employes to care for 2800 inmates, and a similar proportion at other institutions.

The Weather in July.—According to the United States Weather Bureau with its temperature records of thirty-one

years, July, 1887, had an average temperature of 77 degrees. The highest record for July, 1901, was 99 degrees on the second day. The lowest was 64 degrees early in the morning of the 27th. The mean maximum temperature was 85 degrees for the month and the mean minimum was 71 degrees. The mean temperature for the month was 78, or 1 degree higher than that of 1887. The local forecaster up to within a few days of the closing expected the record to be at least 79, but was disappointed to the extent of one degree.

Buffalo.

Dr. Alvin A. Hubbell, for several years associate editor of the *Buffalo Medical Journal*, has resigned from the editorial staff.

Dr. Roswell Park's excellent medical organization at the Pan-American Exposition has been warmly complimented by visiting physicians and sanitarians, who speak in the highest terms of the conduct of the hospital.

The medical department building of the University of Buffalo is to be enlarged by an additional story. The new story is to be used for laboratory purposes. The college amphitheater is also to be raised and improved.

New York City.

Brooklyn Beneficiaries.—The will of Mrs. Harriet Bacon Smith, of Brooklyn, provides for bequests of $10,000 to the Eye and Ear Hospital of Brooklyn and $4000 to the Diet Dispensary of Brooklyn.

Dr. John S. Billings has sailed for Europe on the *Teutonic*. His destination is Skibo Castle to see Andrew Carnegie. He takes a letter from the city controller and a contract which requires Mr. Carnegie's signature.

War on the Staten Island Mosquito, having for its purpose the extermination of the malaria-spreading pest, has been begun by Dr. Alvan H. Doty, health officer of the port of New York. Selecting a little hamlet known locally as Concord, Dr. Doty began his experiments. He found a series of ponds filled with stagnant water, above which clouds of mosquitoes swarm every evening. Dr. Doty has an oil tank car and a tank wagon, loaned by the Standard Oil Company, which has also contributed all of the crude petroleum oil to be used in the experiments. The fluid is passed from the wagon through rubber hose to the perforated iron pipes, arranged like a gridiron and suspended from a wooden float. The float is pulled from one side of a pond to the other until the entire surface receives a coating of the oil. After all the ponds have thus been treated samples of the water will be examined for the larvæ, and a second census of the locality afflicted with malaria will be taken to ascertain if there has been any diminution in malaria in this region.

OHIO.

Dr. William H. Knauss, Newark, has been appointed captain and assistant surgeon in the Ohio National Guard and assigned to the Fourth Infantry.

Dr. P. Maxwell Foshay, Cleveland, has been appointed a member of the Board of Trustees of the State Hospital for Epileptics, Gallipolis, vice J. D. Brown, Athens, resigned.

Deaths Due to Heat.—On July 29, what proved to be the culmination of the late hot spell, 50 deaths, the largest number in the history of the city, were reported to the health office of Cincinnati.

Dr. H. C. Rutter, superintendent of the State Hospital for Epileptics, Gallipolis, has resigned, to take effect September 1. His resignation has been accepted by the trustees and a leave of absence granted him for four weeks.

G. A. R. Encampment.—Dr. George C. Ashmun has been placed in charge of the medical arrangements for the Grand Army encampment in Cleveland next month. He will establish headquarters from which medical aid will be furnished as required. He has a corps of 24 physicians to assist him.

Vaccination and Tetanus.—Vaccination has been temporarily suspended in Cleveland on account of tetanus developing in four cases in which the infection appeared to have been received from vaccination sores. The Health Department is now arranging for a preliminary testing of all vaccine that shall hereafter be used. In one of the fatal cases the vaccination was made by a physician on his own sister, and was closely watched.

PENNSYLVANIA.

Compulsory vaccination has been ordered in Lebanon.

Dr. J. L. Forwood, Chester, has been re-appointed a member of the State Quarantine Board.

The White Haven Sanatorium for Consumptives was opened for the reception of patients last week. At present only 20 patients can be accommodated.

TENNESSEE.

Dr. Heber Jones, Memphis, president of the State Board of Medical Examiners, has resigned and has been appointed a member of the State Board of Health.

Dr. Howard A. Ijams, Knoxville, has resigned from the medical department of the National Guard. He was an assistant surgeon and assigned to the Sixth Infantry.

Dr. William A. Duncan, smallpox physician of Chattanooga, has resigned and re-assumed his duties as city physician. Dr. H. P. Larimore has been appointed smallpox physician in his stead.

Changes in Vanderbilt Faculty.—Drs. Richard A. Barr and Lucius E. Burch, Nashville, have been appointed adjunct professors of abdominal surgery and gynecology, vice Dr. Richard Douglas, resigned.

CANADA.

Dr. Heiser, the representative of the United States Hospital Service at Quebec, is detaining on an average eight immigrants a week destined for United States points.

A military medical board will shortly convene in the Northwest Territories to consider applications for pensions by those who served in the South African campaign.

Anthrax Vaccine from Chicago.—The Dominion Department of Agriculture has at last overcome the difficulty in obtaining sufficient anthrax vaccine from a vaccine company in Chicago for the use of stock holders in Stormont County, Ontario.

The Health of the Province of Quebec.—The secretary of the board of health has issued a statement which shows the number of cases of smallpox since January 1 last. Thirty-four municipalities have now a clean bill of health. There is a record of 337 cases with one death.

Animal tuberculosis is communicable, according to the expressed opinion of Dr. Laberge, health officer of Montreal, the statements of Dr. Koch to the contrary, notwithstanding; Montreal will still continue to guard against the spread of the disease from animals to human beings.

Toronto's bill of health for July, according to medical health officer Dr. Sheard, is the best in eight years. There are very few cases of contagious diseases, and only three cases of typhoid have occurred. The purity of the drinking water has not been surpassed since 1894. It at present shows only 104 colonies of bacteria to every cubic centimeter.

The mortality statistics for Montreal for the past week were much lower than what they have been for some time. There were only 118 deaths; and the infant mortality has dropped off considerably. There was one death each from diphtheria, scarlet fever, measles and whooping cough; two from typhoid fever; infantile debility, 56; consumption and other chest diseases, 19.

Decision on Site of Hospital.—A judgment re the proposed contagious diseases hospital for Ottawa, which is very lengthy, covering ten pages of foolscap paper, has just been handed out by Judge McTavish. It is the result of an application which sought to restrain the city from erecting a hospital on what is known as the Wurtemburg site. The judgment dismisses the application and establishes the 150-yard limit for that city, and so is of great importance in its bearing on other sites.

Conflict on Smallpox between Military and Civil Surgeons.—The provincial health authorities of Ontario have recently been devoting some time to investigating the origin of several outbreaks of smallpox in the province, notably at Burlington, Nelson and Toronto, and they have succeeded in tracing the infection to a case alleged to have been present at the Niagara Camp in May last, which annually assembles at Niagara-on-the-Lake, Ont. It would appear from the investigations, that the soldier who had the disease while in camp had been, according to the military instructions given out before the assembling of the camp, vaccinated, and the vaccine had taken well, but smallpox had run its course concurrently with it, and the military surgeons had diagnosed the rash as being due to the vaccine, whereas, in fact, it was the genuine smallpox. There are some thirteen cases which the health authorities claim they can directly trace to this one case at Niagara; but the military men deny the source of the infection, and the whole affair has caused some little friction be-

tween the provincial health department, the Toronto health department and the surgeons who were in camp at Niagara.

FOREIGN.

The Caduceus.—Under this title a new journal, devoted exclusively to military medicine and surgery, has commenced publication in Paris.

Australian Physician Knighted.—The honor of knighthood has been conferred on Dr. James Graham, mayor of Sydney, during the recent visit of the Duke and Duchess of Cornwall and York.

Dr. J. Roussel, of Geneva, Switzerland, author of numerous works on the transfusion of the blood, and editor of *Médecine Hypodermique*, a journal founded to proclaim the advantages of oil injections, died recently.

New Journal of Gynecology.—At a recent meeting held in London, presided over by Sir John Williams, it was decided to commence a new journal to be called the *British and Colonial Journal of Obstetrics and Gynecology.*

The French Congress of Surgery will meet this year at Paris, October 21. Lucas-Championnière will preside. Février will deliver the principal address on the "Surgery of the Spleen," and Broca on "Tubercular Adenitis."

The Virchow Building.—The Berlin Medical Society has decided to erect a permanent building in honor of the eightieth birthday of its honorary president, Virchow. The site for the new "Virchow Haus" is to be donated by the city. Nearly $50,000 have already been subscribed to the building fund.

Journal for Chemical Physiology and Pathology.—Professor F. Hofmeister, of Strassburg, has founded a new periodical for biochemistry, with the title *Beitraege zur Chemischen Physiologie u. Pathologie.* It is to be published by F. Vieweg & Son, of Braunschweig. Twelve numbers will form a volume, to cost 15 marks.

Vacant Chair in Australia.—The chair of pathologic anatomy at Sydney is seeking an incumbent. The salary is about $750 with a pension of $300 after twenty years of service. Traveling expenses out will be paid. The candidates must not be more than 40 years of age. Applications are received at the London General Agency for New South Wales, 9 Victoria Street, London, S. W.

Student Riot in Naples.—The students considered Professor d'Antona too severe in the recent examinations in the medical course at Naples. They commenced to upbraid him riotously, and when expelled from the hall, waylaid and injured him. The report in the *Gaz. Med. de Paris* states that he was only saved by the efforts of the police from being lynched. The professor is said to have caused the death of a patient by a mistake, not long ago, and the students made this a pretext for their rebellion.

Married.

RICHARD S. PATTILLO, M.D., to Miss Anna M. Doyle, both of Chicago, August 6.

ALBERT E. MOWRY, M.D., Chicago, to Miss Ruth P. Lehman, of Forsyth, Ill., July 29.

W. H. EARGLE, M.D., Fleming, Texas, to Miss Effie Anderson, of Comance, Texas, July 21.

JULIUS P. SEDGWICK, M.D., Eveleth, Minn., to Miss Emily Weeks, of Lincoln, Neb., August 2.

Deaths and Obituaries.

Milo Buell Ward, A.M., M.D., College of Physicians and Surgeons, Keokuk, Ia., 1879, died at his home in Kansas City, Mo., July 28, aged 53, after an illness of thirty-two weeks. His health was broken by an attack of dysentery, which he contracted while in camp at Chickamauga, Tenn., during the Spanish-American war. At the outbreak of that war he was appointed chief surgeon of the Second Brigade, U. S. V., and at the end of the war was a member of the board inspecting the camps of volunteers. He was professor of clinical gynecology in the University Medical College, Kansas City; member of the Judicial Council and ex-chairman of the Section on the Diseases of Women of the American Medical Association; ex-Fellow of the American Associaton of Obstetricians and Gynecologists; ex-President of the Western Surgical and Gynecological Association, and Fellow of the Kansas City Academy of Medicine. At a special meeting of this Academy, called for that purpose, resolutions expressing their sorrow at their loss and that of the medical profession in his death and paying tribute to his memory, were adopted.

Henry Buckingham Horlbeck, M.D., Medical College of the State of South Carolina, Charleston, 1859, died at his home in Charleston, August 2, aged 62. He was appointed surgeon in the First South Carolina Infantry at the beginning of the civil war and served until the end of the war. For many years he was health officer of the Charleston port and did much toward perfecting the quarantine service for the protection of the southern ports against yellow fever. He was vice-president of the American Public Health Association, 1890-91, and was a member of the American Medical Association.

William Argyle Watson, M.D., University of Pennsylvania, Philadelphia, 1851, died from Bright's disease, at his home in Newport, R. I., July 27, aged 74. At the beginning of the civil war he entered the navy as a surgeon and performed valuable service with the gulf squadron. After retiring from the navy at the close of the war, he practiced in New York until two years ago, when he retired to his country home at Newport. He belonged to many social and patriotic organizations.

Leonidas Russell, M.D., Jefferson Medical College, Philadelphia, 1855, at his home in Washington, July 26, aged 66. He was practicing in Owensboro, Ky., when the civil war began. He was appointed assistant surgeon in the Second Kentucky Volunteers and served until the battle of Shiloh, where he was severely wounded and so incapacitated for further service that he resigned in 1862. He afterward served in the Tennessee legislature.

Abel C. Roberts, M.D., University of Michigan, Ann Arbor, 1853, physician and editor, died at his home in Fort Madison, Ia., July 28, from a cerebral hemorrhage, aged 71. He was appointed as a surgeon at the outbreak of the civil war, and in 1863 was commissioned major and surgeon of the Twenty-first Missouri Infantry, serving in that capacity until mustered out in 1866. He was editor of the Fort Madison *Democrat*, which paper he founded July 4, 1869.

John S. Hurd, M.D., University of Pennsylvania, Philadelphia, 1855, died while visiting at Hampton, Ia., July 23, from a heat stroke, aged 70. He graduated from Bowdoin College in 1851, and after studying medicine went to Franklin County, Iowa, where he has practiced since that time, with the exception of the three years that he served in the Thirty-second Iowa Infantry during the civil war. His home was at Chapin.

John H. Warren, M.D., Rush Medical College, Chicago, 1849, died at Palmyra, Wis., August 1, after a long illness, aged 76. He was elected to the State Senate of Wisconsin in 1857 and served for five years; he was appointed collector of internal revenue by President Lincoln, in which capacity he served for seven years. He lived in Janesville for the past thirty years.

Stephen Foss, M.D., Harvard University Medical School, 1859, died at his home in Brooklyn, August 1, after a long illness, aged 76. He was a graduate of Bowdoin College and was an excellent Greek scholar. When the civil war began he was practicing medicine in Cleveland, Ohio, and he enlisted as an assistant surgeon.

Charles C. Yemans, M.D., Detroit Medical College, 1872, died at his home in Detroit, Mich., July 21, as the result of the heat. He was a lieutenant in the 24th Michigan Infantry during the civil war, and was president of the Wayne County Medical Society for two years.

Charles St. John, M.D., acting assistant surgeon, U. S. army, was shot and killed in a skirmish with the insurgents near Mantangas, P. I., May 22, while voluntarily accompanying a detachment from the 26th U. S. Infantry, sent out to surprise an insurgent outpost. He was buried at Dact, P. I.

Charles W. Hayt, M.D., College of Physicians and Surgeons, New York, 1889, was missed from a steamer on Lake Erie between Buffalo and Cleveland on the night of July 23-24. He was a practitioner of Corning, N. Y., and a Fellow of the Academy of Medicine of that city. At one time he resided in New York City.

Edwin R. Bishop, M.D., Trinity Medical College, Toronto, 1888, died from pulmonary tuberculosis, at Brantford, Ontario, July 24, aged 44. He was on the staff of the Willard (N. Y.) State Hospital for eight years, and up to a few months ago practiced in Geneva, N. Y.

R. F. Lewis, M.D., University of New York, died after a long illness, at his home, Lumberton, N. C., July 14, aged 64. He received his academic training at the University of North Carolina, graduating in 1858, and served as a surgeon during the civil war.

P. Calvin Mansch, M.D., Bellevue Hospital Medical College, New York, 1889, died of phthisis at his home, Collegeville, Pa., July 30. Since 1894 he has been director of the biologic and chemical departments at Ursinus College.

William D. Maddux, M.D., New York University, 1842, which was the first class graduated at that school, died at his home in Monticello, Ga., July 22, aged 87. He was a charter member of the Georgia State Medical Association.

James P. McCombs, M.D., New York University, 1860, died at his home in Charlotte, N. C., July 23, aged 65, from a stroke of paralysis. He served through the civil war, since which time he has practiced in Charlotte.

George W. West, M.D., Richmond Medical College, Richmond, Va., died at his home in Washington, July 24, as the result of a heat stroke, aged 58. He was a member of the American Medical Association.

John R. Crosswhite, M.D., Missouri Medical College, St. Louis, 1877, died from heat prostration, at his home in St. Louis, July 24, aged 48. He was demonstrator of anatomy at the Missouri Medical College.

Oren C. Wright, M.D., Western Pennsylvania Medical College, Pittsburg, Pa., 1894, died at Luray, Va., where he had gone for his health, July 26, aged 55. He formerly practiced in Pittsburg.

Loreston J. King, M.D., Columbus Medical College, Columbus, Ohio, 1880, died at his home, Santa Rosa, Cal., July 22, after a long illness, aged 52. He was a native of Jamestown, N. Y.

Cort F. Askern, M.D., Kentucky School of Medicine, Louisville, 1883, died at Terra Haute, Ind., August 1, as the result of a fall from a second story window. He was 60 years of age.

Katherine Miller, M.D., Northwestern University Woman's Medical School, Chicago, 1882, died at a hospital in Chicago, August 1. She was practicing at Lincoln, Ill.

Joshua Miller, M.D., University of Michigan, Ann Arbor, 1872, medical superintendent of the Arizona State Insane Asylum, died during July, at Flagstaff, Arizona, aged 55.

Gilbert E. Palen, M.D., Albany Medical College, 1855, died at his summer home in Ocean Grove, Pa., July 28, from pneumonia, aged 69. He practiced in Philadelphia.

William Singleton, M.D., Kentucky School of Medicine, Louisville, 1851, died at his home in Covington, Ky., July 23, after six weeks' illness, aged 73.

Edgar H. Heflin, M.D., University of Iowa, Iowa City, 1883, formerly of Minneapolis, died in the Stillwater prison, Minn., July 26.

Thomas J. Clancy, M.D., University of Arkansas, Little Rock, 1897, died suddenly at his home in Scales Mound, Ill., July 29.

John H. Welch, M.D., Barnes Medical College, St. Louis, 1898, died at his home in Beecher City, Ill., July 23, aged 30.

Max G. Kellner, M.D., Rush Medical College, Chicago, 1882, died at his home in Chicago, August 2, aged 50.

Valentine Walsh, M.D., University of Dublin, 1871, died in New York at the Presbyterian Hospital, July 29.

Societies.

COMING MEETINGS.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 10, 1901.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.

Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

The American Electro-Therapeutic Association will hold its eleventh annual convention in Buffalo, September 24, 25 and 26. Dr. George E. Bill, Harrisburg, Pa., is secretary.

Southwestern Minnesota Medical Society.—This Society met at Adrian, Minn., July 27, and elected the following officers: President, Dr. William J. Taylor, Pipestone; vice-president, Dr. Emil King, Fulda; secretary and treasurer, Dr. Herbert D. Jenckes, Pipestone.

The American Public Health Association will hold its twenty-ninth annual meeting in Buffalo, September 16, 17, 18, 19 and 20, at the armory of the Seventy-fourth Regiment. The headquarters of the Association will be the Hotel Niagara. Special rates will be offered on all railroads.

Franklin County (Pa.) Medical Society.—This Society met at Chambersburg, July 16, and the following officers were elected: Dr. P. Brough Montgomery, Chambersburg, president; Dr. Oliver P. Stoey, Roxbury, and Dr. J. W. Croft, Waynesboro, vice-presidents; Dr. John J. Coffman, Scotland, recording secretary; Dr. Henry C. Devilbiss, Chambersburg, corresponding secretary, and Dr. David Maclay, Chambersburg, treasurer.

American Association of Obstetricians and Gynecologists.—This Association will hold its fourteenth annual meeting at the Hotel Hollenden, Cleveland, Ohio., Sept. 17, 18 and 19, 1901, under the presidency of Dr. William E. B. Davis, Birmingham, Ala. The committee on arrangements is composed of Drs. M. Rosenwasser and William H. Humiston, Cleveland, either of whom may be addressed concerning rooms or other local information regarding the meeting.

Tri-State Medical Association.—This Association, composed of physicians of Western Maryland, West Virginia and Western Pennsylvania, met at Cumberland, Md., July 25. The following officers were elected for the ensuing year: President, Dr. William F. Barclay, Pittsburg; vice-presidents, Dr. Henry W. Hodgson, Cumberland, Dr. Frank L. Baker, Burlington, W. Va., and Dr. Bruce Lichty, Meyersdale, Pa.; recording secretary, Dr. Percival Lantz, Alaska, W. Va.; corresponding secretary, Dr. Frederick W. Fochtman, Cumberland, and treasurer, Dr. E. B. Claybrook, Cumberland.

Mississippi Valley Medical Association.—The twenty-seventh annual meeting of this Association will be held September 12, 13 and 14, at Put-in-Bay Island, Ohio, and indications point to a very large attendance. The preliminary program contains names of the foremost men in the country and the variety of the papers to be presented has never been equaled at previous meetings. The annual orations will be delivered by Dr. Frank S. Billings, Chicago, in Medicine, and Dr. Reginald Sayre, New York City, in Surgery. The meeting will be presided over by Dr. A. H. Cordier, Kansas City. Unusually attractive railroad rates will be in effect: one fare for the round trip, via Cleveland, and one and a third fare for round trip on the certificate plan, via Toledo, Sandusky and Detroit. The secretary is Dr. Henry E. Tuley, Louisville, Ky.

Correspondence.

Bovine Versus Human Tubercle Bacillus.

BALTIMORE, Aug. 3, 1901.

To the Editor:—The idea occurred to me, while reading Dr. Koch's address, made before the British Congress on Tuberculosis, London, July 23, 1901, that much light might be thrown on the relations of the bovine tubercle bacillus with the human tubercle bacillus, about which lately there has been so much controversy, if injections of tuberculin prepared from

the bovine tubercle bacillus were contrasted with those prepared from the human tubercle bacillus in their effects on persons afflicted with tuberculosis. I can find no evidence in the literature that tuberculin has ever been made from the bovine bacillus and tried on human beings, a very simple and harmless thing to do. Steps have been taken by me to obtain this tuberculin, and I desire you to publish this as a preliminary announcement to some subsequent work on this subject.

Very truly yours,

Clement A. Penrose, M.D.

A New Operative Method for Exposing the Seminal Vesicles and Prostate for Extirpation.

Toledo, Ohio, August 2, 1901.

To the Editor:—Dr. Fuller, in the issue of The Journal, July 6, in replying to my letter failed to notice that my contention was with him, and not Zuckerkandl. I know nothing about a Zuckerkandl operation upon the prostate. I have been contesting the claims of Dr. Fuller, trusting that if I showed that my claims and those that he makes were alike, that he would accept his own construction that there is a real difference between the claims of Zuckerkandl and the claims which I made and published in the *Medical Record*, August 6, 1892. My charge is that Dr. Fuller has changed the position of my patient from the dorsal to the ventral decubitus, after the suggestion of Von Dittel and Kraske, and, in an unimportant way, altered the U-shaped form of my incision through the skin to two horizontal lines along the pubic rami, which encroach upon each other, but before meeting, a transverse incision is made immediately in front of the sphincters and behind the transversus perinei. This, I claim, is merely altering the appearance of the outside cut, and that the incision through the loose skin over the ischio-rectal region is unimportant to the success of the operation; that the real encroachment upon my operation is in opening into the loose intermuscular connective tissue between the anal sphincters and levator ani internally, and the transversus perinei and the pubic rami externally, and ascending through this space to the prostatic region, so as to perform an operation without the necessity of ligating blood-vessels, in accordance with my statements in the *Medical Record*, in 1892. Those acquainted with the anatomy of the ischio-rectal region will clearly understand that it is impossible to reach the prostate through any other perineal route without great loss of blood. This is because the branches that supply the parts are derived from two distinct sources; namely, the internal pudics and the inferior mesenteric arteries. The internal pudics lie deeply to the outside of the field of operation and send off no branches until the anterior border of the transversus perinei in the perineal space is reached. The hemorrhoidal vessels, from the inferior mesenterics, descend on the rectum and supply the sphincters without giving off anastomotic branches to join the branches from the internal pudics. This makes the ascent to the prostates, in the space above described, possible without the division of any vessels needing a ligature. In Dr. Fuller's criticism of the Zuckerkandl operation, which appeared May 4, he stated that it was "a bloody and tedious operation, with numerous vessels to be ligated in inaccessible positions," and further "that the space afforded by the Zuckerkandl incision was too limited to allow a surgeon to do any accurate work in connection with organs so deeply situated as the seminal vesicles." These were the points which he gave out as being corrected by what he characterized as his "new method" of operating. Now, if Zuckerkandl made an operation which justified this criticism how can Dr. Fuller associate the Zuckerkandl operation with that of my own? My U-shaped incision around the front and sides of the anus can be extended to any depth posteriorly to suit the needs of the operator and the case. I have varied it without thinking that it in any way changed the principles of my original operation. Replying to Dr. Fuller's statement that Dr. Samuel Alexander, of New York, had written to me informing me of the Zuckerkandl operation, I wish to say, that Dr. Alexander never communicated a word to me on the subject; that I wrote to him on two different occasions and lastly wrote a letter to the *Medical Record*, which was published in the issue, December 10, 1898, complaining about his encroachments upon the operation which I had previously described. Dr. Alexander has never replied to this open letter. Respectfully,

John S. Pyle, M.D.

Oversupply of Medical Graduates.

Burlington, Iowa, July 29, 1901.

To the Editor:—Your editorial on the subject of "Oversupply of Medical Graduates" (The Journal, July 27, 1901), coming closely upon the heels of certain invitations to "kindly furnish the undersigned" (in each instance a secretary of a medical faculty) with the names of those I know who expect to study medicine, encourages me to make one reply for all such requests and thus publicly. In the first place, I will say that if I knew any who contemplated the study of medicine I would, because of the oversupply to which you have referred, use all of my powers of dissuasion. Should I succeed in this there would of course be no need to make reply.

But, if I should fail to dissuade, could I honestly comply with the invitation? I take it that the average person who contemplates studying medicine has selected some established practitioner of medicine to act as an adviser and guide; and that he has also made it his business to look up the announcements of medical colleges extensively and in detail. He has therefore the advice he desires and a competent knowledge of the facilities offered at the various schools. Under such circumstances one naturally asks in this age of "graft" what inducements medical colleges have to offer that they should desire to be put in position to solicit business.

To some of us who graduated twenty-five or thirty years ago the teaching methods of to-day present no more revelations than the business methods in medical schools; and we are simply wondering what will come next.

Will the schools devote more time (as in our day) to the teaching of *noblesse oblige* (the spirit of medicine and the sacrifices of its devotees), or will they be sending out commercial travelers to get what can not be gotten by correspondence?

Truly yours, H. B. Young, M.D.

Oversupply of Medical Graduates—A Remedy in Medical Missions.

Cincinnati, Ohio, July 30, 1901.

To the Editor:—Your editorial[1] on "Oversupply of Medical Graduates," presents statistics which are startling, because they prove that relief from the present oversupply is impossible under present conditions. There is also little prospect that those conditions will be altered so as to reduce the output of the "doctor factories" to any appreciable extent. In fact, we can only expect an increase. While everybody knows that there are four or five times more medical colleges than are necessary, the benefits attached to a professorship in even the poorest of them are such that "few die and none ever resign," while in order to attract the guileless student, and incidentally, his matriculation and other fees, we find the free clinics and hospitals are multiplied, in order that they may be advertised as evidence of "teaching facilities" and "abundant clinical material," etc.

It would be right and proper if the student attended medical college merely for his personal pleasure and information, or to broaden his mind, as he does when he studies the dead languages, higher mathematics, physics, etc., with no intention of using either of these subjects as a life work or to gain his daily bread. But we know that the majority of medical students cherish the expectation and the hope—poor deluded mortals—of making a living for themselves and their families by the practice of medicine. As a matter of fact it might be set down as a rule, that at present no man should deliberately enter on the practice of medicine unless already possessed of sufficient means to live comfortably without depending upon earnings from grateful patients.

If, as stated, there are 115,000 to 125,000 doctors to our population of 75,000,000, then there are 40,000 to 50,000 in

1. The Journal A. M. A., July 27, p. 270.

excess of what is necessary or desirable, as a ratio of one doctor to one thousand of population is certainly none too small if the doctors are to make their living from their practice. And, if the present excess of physicians is increasing at the rate of three thousand per year, it requires only brief calculation to show that there will be a vast "army of unemployed" in a very few years.

Now, what is to be done in the matter? The "grinding-out" of graduates will surely continue. 1. Because the average student can not be brought to see and appreciate the situation; he knows only that the study is interesting and attractive and with the enthusiasm of youth, he sees only success before him. Because the selfishness, if not cupidity, of college faculties will seldom permit a college to close or consolidate, so long as sufficient cash can be secured from students to pay expenses. 3. Because state legislative bodies can not be brought to look at proposed medical legislation from the doctors' standpoint, but always regard any restrictive medical legislation as emanating from a "doctors' trust," therefore we can not hope for relief by state legislation and the National Government has no authority to limit or control such matters. "So, there ye are," as Mr. Dooley says.

Nothing remains but to find something for these surplus thousands to do with their valuable technical knowledge, acquired at large expense of time, labor and money. There is a field which could absorb the services of every one of them and many more. It all depends upon the sentiments which actuate the graduate in determining to adopt the profession of medicine as a life work. If he be actuated only by the selfish, mercenary instinct of making a living in a genteel occupation, I have nothing to say to such a one. But if he regards the healing art as intended primarily for the relief of the miseries and sufferings of humanity and that the physician practices best who relieves the largest number of the "ills that flesh is heir to," then I say we can not for many decades have a surplus or oversupply of graduates, for the services of every qualified physician in our land are needed badly, right now, in fields where clinical material is more than ample; where opportunity for operative work is abundant; where vast unexplored fields of tropical diseases and new therapeutical remedies await the scientific labors of the modern doctor to be brought to light; where a man who desires to work has the opportunity; and where he can feel that in performing his work he is acting up to that high standard which places the medical profession side by side with the most earnest work of the church.

I refer to the work of medical missions in such lands as Africa, South America, China, India, Syria, Persia, Siam, the Philippines, etc. From all these lands comes an urgent appeal for medical missionaries. The ignorance, superstition and malpractice displayed by native physicians are appalling, and the number of patients, medical, surgical and ophthalmological, who crowd the mission stations for relief, is simply tremendous. Their entire absence of knowledge of even the rudiments of anatomy, physiology, pathology, antisepsis, and of any surgical proecdures or modern therapeutic remedies, makes the native doctor a positive danger to those whom he attends and opens up a vast field for success for a modern physician of only ordinary ability. Not only this, but the thousands of faithful missionaries in foreign fields need medical protection for themselves and families against the ravages of climatic diseases and the sickness and injuries connected with their exposed life. Very many of these men and women now have to travel hundreds of miles to secure medical assistance.

The practical experience gained by many medical missionaries has been immense. Two such surgeons at one hospital in India, during one year made 1200 operations on the eye, and operated on one hundred malignant tumors. Dr. Kerr, of China, during thirty years, attended 700,000 cases and performed 40,000 operations, including 1300 for calculus, a record second only to that of Sir William Thompson.

Several important commercial ports have been opened to European trade as a result of the splendid services of a medical missionary breaking down opposition and disarming prejudice against foreigners. In 1879, at Tien Tsin, Dr. Mackenzie cured the wife of Viceroy Li Hung Chang, and thereby gained the favor of that powerful official toward western nations, which has done so much to open China. The same results have been secured in many formerly inaccessible places, which space will not permit mention of here.

Dr. Allen, an American medical missionary, was the first protestant foreigner to reside permanently in Korea. The king built him a hospital and later sent him as one of a Korean embassy to the United States Government. The beginning of the modernizing of Japan is to be credited to the medical missionaries more than to any other one thing. In Manchuria, and other points in China; at Beirut in Syria, and at several points in India, large and excellent medical schools, conducted by medical missionaries, have been in operation for a number of years.

I have mentioned these points to show the largeness and the importance of the work which lies ready for men and women who are willing to devote their lives to such fields of labor. It is therefore incorrect to say that there is a surplus or oversupply of medical graduates, if the whole world be considered the field for their usefulness.

In America there is one physician to every 600 of population, while in the foreign lands I have named there is only one to every 2,500,000. The supply of physicians here is therefore four thousand times greater than it is abroad. New York City has more physicians and medical helpers than among eight hundred millions of heathen and Mohammedans. America has twice as many physicians for the population than has Great Britain; yet on the basis of England's supply, India could busily engage 190,000 doctors and China, 260,000. At present Chicago has more physicians than both these two countries combined. Africa also needs more than 100,000 doctors; and Siam, Persia, Syria and Turkey could furnish work for 100,000 more.

Those who are interested in this work will do well to read "The Healing of the Nations," by J. R. Williamson, and "The Medical Mission," by Dr. W. J. Wanless, both of which publications can be obtained from the "Student Volunteer Movement for Foreign Missions," 3 West 29th St., New York City.

Let me conclude by quoting Dr. Livingstone's last words, written as he was dying in the heart of Africa: "All I can add in my solitude is, may Heaven's richest blessings come down on every one, American, English or Turk, who will help to heal this open sore of the world."

Frank W. Hendley, M.D.

Misstatements of the Antivivisectionists Again.

San Francisco, July 8, 1901.

On January 21, 1901, I sent a reply to James M. Brown, president of the American Humane Association, in response to a letter from him challenging me to produce proof of inaccuracy in the references to a number of certain alleged experiments and of garbling of the reports of the same. My reply was published in The Journal of the American Medical Association and the *Philadelphia Medical Journal* of Feb. 23, 1901.

In reply I received a letter from Mr. Brown saying that he expected to spend the month of February in California, and could not give attention to my letter until his return.

Mr. Brown seems to have been detained in California much longer than expected, for up to the present moment—nearly six months—I have received no further reply whatever. Indirectly, however, a certain reply has been published in the form of an anonymous pamphlet entitled "The Reality of Human Vivisection," which is called a "review" of my letter.

Not long since I had the pleasure of attending a lecture to one of his classes in moral science by Rev. Dr. Faunce, the accomplished president of Brown University. Among the virtues which he discussed was "Courage" and he pointed out the moral cowardice of anonymous letters. While such a letter is an instance of private moral cowardice, an anonymous pamphlet such as this is an instance of public moral cowardice. An honorable open foe I at least respect; one who skulks behind anonymous pamphlets I despise. The antivivisectionists seem to delight in such secrecy and anonymous attack.

There are four publications on this subject up to the present moment, to which I shall hereafter refer by number, except the last which I shall call the "review." 1. In senate document No. 78, 55th Congress, 3d Session, the last of a collection of certain antivivisectionist papers is one entitled "Human Vivisection," signed "A. Tracy." I should like to know who this mysterious "A. Tracy" is.

2. There is a pamphlet entitled "Human Vivisection," third edition, printed for the American Humane Association in 1900, which reprints this paper (with the omission of "A. Tracy's" name) and adds to it a long continuation of the misstatements of the first. This is anonymous.

3. There is a small pamphlet entitled "Human Vivisection," published by the Humane Society, Washington, D. C., chiefly a rehash of the misstatements of pamphlet No. 2. This is also without the name of any author.

4. Now comes the last pamphlet, the "review" of my letter. This is not only without the name of any author, but without even that of a publisher. It is simply dated "Boston, 1901."

The character of every one of these publications, however, is such that I do not wonder that the author wishes to conceal his identity.

The "review" (No. 4) re-prints Mr. Brown's letter to me and at the end adds: "No sufficient rejoinder to his [my] letter [in reply to Mr. Brown] would be admitted to the columns of these medical periodicals." (THE JOURNAL of the American Medical Association and the *Philadelphia Medical Journal*). The duplicity of this sentence is evident. The ordinary reader, for whom it is evidently intended, would understand that a reply had been sent to the editors of these medical journals and that they had declined to print it. This is absolutely untrue. No such communication has ever been received by the editor of either of these journals. The critical reader will see that the sentence just quoted does not definitely state that such a communication has been rejected. But for one critical reader a thousand casual readers will get the impression which the sentence was evidently intended to convey.

It is impossible for me to take up all the misstatements and misrepresentations contained in the 32 pages of this last anonymous "review," nor is it necessary to do so. That I should be honored from such a source by vilification and misrepresentation, I expected, of course, but I did hope at least that there would be an honesty of statement to which no exception could be taken.

The author, however, is a very curious person who does not seem to be limited by the ordinary laws of either fair dealing or truthful statement.

Moreover, he would be a very poor lawyer. Most of the evidence cited by him is derived from published reports by certain medical men. Having, therefore, chosen his witnesses, and put them on the stand, he would not be allowed in any court of law to discredit his own witnesses by selecting part of their testimony as trustworthy and rejecting part as unworthy of credence. And, yet, throughout this "review," while the anonymous author is eager to accept the statements of the various authorities as to what they did, he declines to admit their statements as to their results, or else misstates them, going so far as to assert that the statements of the physicians cited, concerning the recovery of their patients are "utterly valueless."

In my reply to Mr. Brown, I used the following language: "Let me again state clearly the question at issue. *It is not whether the experiments meet with my approval*, but solely whether the reports of them in the pamphlet issued by the American Humane Association are reliable and accurate both as to their sources and substance." At the Hearing before the Senate committee, I distinctly twice over expressed *my utter disapproval* of many of the experiments referred to in the original pamphlet (No. 2). This condemnation is quoted both on page 1 and page 5 of the anonymous "review"; yet, in spite of these two statements and the third in my letter to Mr. Brown, just quoted, the author represents me throughout his "review" as the apologizer and the advocate of such experiments, thus publishing, yet at the same time wilfully ignoring my repeated statements to the contrary.

In my letter to Mr. Brown, in support of my accusation that many of the references in the pamphlet on "Human Vivisection" are "vague and indefinite," I cited fourteen instances of quotations from newspapers, five of which were without date, and I added six other instances of "vague and indefinite" references not to newspapers. I commented upon the unreliability of newspapers as a source of authority in medical matters.

Let us see how the anonymous reviewer attempts to meet this issue. The facts he does not and can not deny. In the first place he claims that I have changed the issue from "the question of "vague and indefinite quotation" to that of vague and indefinite *references*. When I stated at the Senate Hearing (stenographer's report): "Many of them are so vague and indefinite that I could not look them up," it must have been clear to anyone of common sense that I referred to the references to the experiments, and there was no misunderstanding on this point in the letter of Mr. Brown, who asks: "To what other of the references above given did you refer when you informed the Senate Committee that "*many of them were so vague and indefinite that I could not look them up?*" I was challenged by Mr. Brown to adduce examples of "vague and indefinite references," and this challenge I successfully met.

On page 22, the anonymous reviewer says: "Of the fourteen journals referred to, *every one* conveying a statement of fact—save one—had its name and date of publication plainly given." Here it will be observed that a distinction is drawn between references to articles "conveying a statement of fact," and those which do not relate to statements of fact. My indictment against the pamphlet on "Human Vivisection" (No. 2) was and is that many of the references are so "vague and indefinite" that the original sources of alleged quotations can not be consulted, and that some of the reports are "garbled and inaccurate." It may be just as important to determine the accuracy of a reference to an expression of an opinion as to learn the facts upon which the opinion is supposed to be based, and to charge me with an evasion of the issue because I did not restrict myself solely to one particular class of references, but pointed out the vague and indefinite character of all classes of references in the pamphlet, is too absurd to require further comment.

As a matter of fact, as pointed out in my letter to Mr. Brown, there are no less than five citations or reports of experiments in pamphlet No. 2 for which either no reference whatever is given, or the one inserted is wrong or so vague and indefinite that the original can not be consulted.

On page 9, the anonymous reviewer says: "It was pointed out by the president of the American Humane Association that, with one exception, every phase of experimentation specifically mentioned had some reference to a medical authority." It is incredible that the reviewer should not have known the falsity of the statement attributed by him to the president of the American Humane Association, or he may think that in this strangely worded sentence he has constructed some loophole of escape through such avenues as may be afforded by throwing the responsibility for a false statement upon another, or by such equivocal phrases as "every phase of experimentation," "specifically mentioned," "some reference." There are in fact in the pamphlet of the American Humane Association seven instances in which reference to a medical authority for the experiments mentioned is lacking, and in addition the sole authority for an important part of the statements regarding Sanarelli's experiments are the correspondent of a daily newspaper and a speaker at a convention of the American Humane Association.

Let us see how the reviewer tries to meet my demonstration of numerous instances of "garbled and inaccurate" quotations in pamphlet No. 2. Here again the facts can not be denied, but an attempt is made to minimize their importance.

1. "Brevity of quotation is often absolutely necessary" ("review" p. 9). Why, then, as I pointed out in my letter, are whole sentences added, which do not appear at all in the original?

2. Errors are described in the "review" as a "translator's exaggeration" (p. 6), "blunders of a copyist" (p. 6), "errors

of a translator" (p. 7). So, then, it is now conceded that the pamphlet does contain "exaggerations," "blunders," and "errors." It contains not merely "errors of a translator," but deliberate falsification and misrepresentations. When a translator says what the author did *not* say; when the word "collapse" is translated "final collapse" and an oration is made upon the death of patients who did not die; when the American Humane Association in reference to these very cases quotes on the cover of its pamphlet "Is scientific murder a pardonable crime?" in spite of the published fact that the patients referred to did not die; when the translator again and again interpolates words, phrases and sentences which do not exist in the original; when essential phrases and paragraphs are omitted, these I submit are not the mere "errors of a translator" but deliberate misrepresentations. Instances of all of these I furnished Mr. Brown in reply to his challenge.

The pamphlet, moreover, contains, as I have pointed out, false or misleading quotations which could not be attributed to "errors of a translator" as they were from English sources. One can only hope that hereafter the "translators" and "copyists" employed by the antivivisectionists may be more accurate, or rather that the men and women back of these poor employes may be willing not to distort and suppress the truth in order to effect their purpose. It is a safe rule, I find, not to believe any statement of an antivivisectionist until its accuracy is established by reference to the original source from which the alleged statement or quotation is derived.

3. My charge of garbling and inaccuracy of quotation is practically admitted, but the reviewer states (p. 15): "For none of them [the translations] was the American Humane Association responsible in any way whatever." It is now rather late in the day to advance this disclaimer, after the insertion on the inside of the cover of the pamphlet of the sentence: "The facts are indisputable," and in the preface over the signature of the president and secretary of the Association; "In each case, the authority is given." It is a favorite trick of antivivisectionists to attempt to throw off in this way responsibility, when confronted with incontrovertible evidence of false statements, as is illustrated in the controversy between Miss Cobbe and Mr. Horsley.

I shall be curious to see the fourth edition of this pamphlet. For it I now furnish one more instance of false statement, the evidence of which was not in my possession last January. Even Mr. Brown admits that to this "the reference may, perhaps, be called indefinite." I submit that "perhaps" it may, for no book, journal or any other publication was named. The instance I refer to is Jansen's lecture purporting to be quoted on page 26 of pamphlet No. 2. The lecture was published in a well-known journal, the *Centralblatt f. Bakteriologie u. Parasitenkunde,* 1891, Vol. x, p. 40. So gross is the falsification that the reference was "perhaps" wisely omitted. The first phrase of the quotation is as follows: "When I began my experiments with smallpox pus, etc." This is an absolute untruth. What Jansen used was not smallpox pus at all, but sterilized, diluted vaccine lymph, and sterilized blood serum from vaccinated calves, which could do no more harm than injecting so much water. The entire extract is inaccurate as a translation. There can be no question but that the substitution in this alleged quotation of "smallpox pus" for "sterilized vaccine lymph" can not be attributed to the mere "error of a translator," but is a deliberate falsification, and this in a pamphlet introduced with the statement to the reader: "The facts are indisputable"!

Much has been made of my statement that I could only find in the pamphlet references to "two experiments" in America. My reason for this statement was very simple and perfectly evident to any honest-minded reader.

In the pamphlet "Human Vivisection" (No. 2) there are a number of experiments related, the numbered ones beginning with the following on page 4: "1. Vivisection Experiments upon the Insane." Under this title several experiments, all of the same nature and by the same individual, are reported, eight being referred to in all. On page 5, appears "2. Vivisection of Children in Boston," and under this a number of experiments, all by the same person, are referred to. Anybody with common sense would see that when I referred to "two" instances, I did not mean two individual experiments, but using the classification of the pamphlet, I referred to Nos. "1" and "2" on pages 4 and 5. In fact I specifically referred to these pages and mentioned various experiments under each caption.

I presume, however, that it is useless to expect fairness from an ambushed enemy.

The anonymous "reviewer's" suggestion that as I was President of the American Medical Association last year therefore I am responsible for every paper read before that body—when there were hundreds of papers read in over a dozen Sections before several thousand members—is so amusing that I pass it by with a smile at the author's simplicity.

One sentence of my letter I wrote perhaps better than I knew. In the account of Sanarelli's experiments a certain sentence, "I have seen unrolled before my eyes, etc." was quoted by "A. Tracy" in the original paper (No. 1). In that pamphlet two references were given, one to the *British Medical Journal*, the other to the *New England Medical Monthly.* I stated that this entire sentence occurred in neither of these journals and I added: "Whether it is quoted from some *other source not indicated* or has been deliberately added, I leave you or A. Tracy to explain." The "reviewer" explains that this quotation *was* from another source not indicated (surely this was "vague and indefinite"), namely, Sanarelli's original Italian paper, though no reference was made to it.

Inasmuch as in my letter to Mr. Brown I gave the reference to Sanarelli's original paper the anonymous author of the "review" pays me the compliment of supposing that I am a facile Italian scholar, and therefore, that I was perfectly aware that Sanarelli himself wrote this sentence. "With the volume in his hands, the original article open before his eyes," says the "reviewer," "would he have us believe that he did not take the trouble to compare and verify the only quotation from it which appears in the pamphlet? He did not see it? Credat Judæus Apella! There are limitations to credulity. But how queer must be that sense of honor which would permit a man to make a disgraceful imputation knowing all the while that every word of it was false!"

The simple facts of the case are these. Unfortunately I am not an Italian scholar, and have never even seen Sanarelli's original article. In order to find out the *real* facts, I wrote to a friend who reads Italian well, to learn whether these five patients really died, as the American Humane Association pamphlet (No. 2) asserted. He replied giving me the original reference, and stated that not one of them died.

As the "reviewer" points out that this quotation by "A. Tracy" was from Sanarelli's original paper, a very interesting enquiry arises, viz., if "A. Tracy" in Senate document No. 78, as is now claimed, quoted from this original paper of Sanarelli, it is in order for him now to explain how it is when Sanarelli's original paper states that all of these patients recovered he states that some, if not all of them *died,* and how he dares to quote nearly a page of oratory about "scientific murder" and "assassination," based upon this false statement.

On page 26 of the anonymous "review" the author disputes the value of tuberculin as a test for incipient consumption in children. Were it worth my while I could give him references to disprove this statement, but in view of his amazing ignorance of modern medical progress as evinced by the next statement, I do not propose to take the trouble. He says "Dr. Keen knows perfectly well, in the first place, *that phthisis, however early discovered, is not in all probability a curable ailment.*" Has he never made a postmortem examination and found a cured phthisis? Has he never visited, or even read of, the Adirondacks, or Denver, or Colorado Springs, or Minnesota, or Arizona, or New Mexico, or a score of other such places? Has he never read of the many books and pamphlets on sanatoria for consumptives? Does he know nothing of these modern movements? Koch's discovery of the bacillus of tuberculosis by experiment upon animals in 1882 has done more to help in curing consumption and other forms of tuberculosis than any other one means and especially by its early recognition. If he will

consult the recent Prize Essay on "Tuberculosis as a Disease of the Masses and how to Combat it," by Dr. S. A. Knopf of New York he will be made aware of the facts. This essay was awarded the prize by the International Tuberculosis Congress last year in Berlin in a competition in which 85 prize essays were presented from all over the world.

When I see the statement that phthisis is not curable even when discovered at an early stage, put forth seriously by my anonymous reviewer, I throw down the pamphlet in despair. One can not argue further with such dense ignorance. It is equal only to the assertion of another medical light among the antivivisectionists, that brain tumors can not be located outside the motor area. W. W. Keen, M.D.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Typhoid Fever.

MANAGEMENT AND TREATMENT.

Dr. Frank Billings emphasizes the advantages of hygienic over drug treatment. The room should be properly selected for its conveniences and freedom from all unnecessary draperies and furniture. Thorough cleanliness is necessary. All soiled garments and linen should be disinfected in a solution of corrosive sublimate (1 in 1000). The skin of the patient may be sponged with the same. Competent nursing will prevent dry parched lips, foul tongue, sordes and decubitus. Milk is the best diet. Animal broths should not be used alone as a food, nor given when diarrhea is present. When patients are suffering from nausea, vomiting, poor digestion, constipation or diarrhea, milk constitutes the ideal diet. Drug treatment will not lessen mortality. Emergencies, however, must be met as they arise. The Brand bath is of great merit because of its increasing to such a degree the elimination of the toxins. The bath is indicated when the temperature reaches 102.2. The temperature of the bath should be about 68 F. and the duration about fifteen minutes, with good friction. This is to be repeated every three hours if the temperature reach 102.2 again. The antipyretics are harmful, because they do not prevent the formation of toxins but do diminish their elimination. Treat the delirium, heart failure and bronchitis with drugs if necessary. Constipation requires enemata and laxatives.

Tyson, of Philadelphia, states that milk is the safest and by far the most satisfactory diet, for the reasons that it is a properly constituted diet of proteids, fats, sugars, minerals and water, which demands modification as to proportion by reason of age, occupation and climate. As to the quantity required, it may be for adults 4 ounces as a minimum, to 8 ounces as a maximum every two hours. If diarrhea is present he instructs the milk to be boiled or peptonized. A deviation from the milk diet must be made in some cases because of its disagreement with the patient or because of some prejudice against it. In his experience such patients are seldom found. A second consideration is that milk sometimes increases the tendency to constipation. In such cases the milk should not be boiled. This condition may be further counteracted by the addition of buttermilk. He believes that there is but little danger in substituting the meat broths as far as their favoring the multiplication of bacteria in the intestines is concerned. He states that such preparations should be made by the use of heat and thus should be sterile at the outset and consequently should not be any more of a culture medium when introduced into the bowel than other articles of diet permitted in typhoid fever. He says in case milk cannot be assimilated after reducing the quantity to the minimum amount, that there is no more satisfactory nourishment than albumin water. The whites of two eggs to a pint of cold water is an average proportion, to which a teaspoonful of lemon juice may be added as a flavor. As to the diet in the convalescent stage, he always adheres to one rule, namely: Adhere to the liquid diet until the temperature has been normal one week, then allow one soft boiled egg daily and after a few days other articles may be added, such as well-boiled rice or well-cooked oatmeal, two or three raw oysters, etc.

Dabney, in *Virg. Med. Month.*, observes the following points in the treatment of typhoid fever: Clean the intestines with a mild cathartic. Stimulate the vasomotor system by the regular application of cold water with constant friction. Colonic flushings should be given when necessary. The patient should be allowed an abundance of cold water. Clean bedclothing, sunlight and air are demanded. Give a readily assimilable diet at long intervals. Watch very carefully for complications by studying carefully the pulse and temperature. Never give a remedy that tends to increase vasomotor paresis. The coal-tar products especially are to be avoided. [The nitrites produce marked dilatation of the peripheral vessels, producing a paresis of the same.] Avoid, he states also, all stimulants as a routine practice, such as alcohol, strychnin, nitroglycerin and ammonia. The use of digitalis he regards as unphysiologic and at times positively dangerous in this disease.

William Osler, as noted in *Phil. Med. Jour.*, states that the treatment of typhoid fever should consist in: 1. A careful and thorough nursing to which as much as to any other single feature is attributed the low rate of mortality. 2. The diet should consist of milk with lime-water and egg albumin during the febrile stage. Rarely should artificial foods be ordered, but an abundance of cold water. 3. Hydrotherapy, either the full tub at 70 F. or, if occasion requires, ice cold sponges. 4. No drugs should be given unless the pulse becomes rapid and feeble; alcohol in the form of good whisky should be given and strychnin in full doses if necessary. No antipyretics and no intestinal disinfectants are neecssary. Special complications require special treatment.

TO DISINFECT THE URINE AND FECES.

The importance of disinfecting the urine is now universally recommended, as the presence of the typhoid bacillus has been demonstrated in 40 per cent. of the cases at some stage of the disease. Any of the chemical disinfectants may be used to produce disinfection of the urine and stools of the patient. Carbolic acid is probably the best by making a 5 per cent. solution, and using one part of this solution to two or three parts of urine. The bed-pan and urinal should be partly filled with an antiseptic solution constantly.

The following may be of service as an intestinal antiseptic and to relieve tympanites:

℞.	Beta naphthol	gr. xl	2 | 66
	Salol	gr. xxx	2 |
	Pulv. arom.	gr. xv	1 |

M. Ft. chart. No. xii. Sig.: One powder every four hours.

The following may be administered as a heart tonic:

℞.	Caffeinæ citratis	gr. viiss	| 05
	Tinct. strophanthi	℥i	4 |
	Aq. q. s. ad	℥ii	64 |

M. Sig.: Shake; one teaspoonful every four hours.

F. C. Keays, in *Med. Record*, employs the tub bath as a routine treatment, given every three hours when the temperature is 103 or over. The bath is usually started at 80 F. and run down to 70 or 65 for a period of ten or fifteen minutes. As a substitute in some cases, alcohol sponge baths are used, the alcohol being cooled by ice. The baths generally prevent delirium. Whisky is very efficacious in alcoholic patients. Hypnotics may be given per rectum in delirious patients. Nausea and vomiting are relieved by milk modified with the following:

℞.	Cerii oxalatis	gr. v	| 33
	Sodii bicarb.	gr. x	| 66

M. Ft. chart. No. i. Sig.: Add to eight ounces of milk.

Tympanites may be treated by turpentine stupes, rectal tube and turpentine by the mouth, five to ten minims. If hemorrhage occurs, the patient should be kept quiet, cold ice coil applied to the abdomen and saline enemata or saline infusions should be given to replace the blood lost by hemorrhage.

To relieve the tympanites, Hare recommends an enema of soap and water, and if a more active carminative is indicated a pint of the milk of asafetida may be used. If this fails to move the bowels, then one or two drams of oil of turpentine may be thoroughly mixed with the asafetida or the soap and water, and used in the form of an injection. The injection should be administered gently with a fountain syringe which should be elevated not more than two feet above the patient.

H. C. Wood emphatically states that turpentine should be administered in every case, commencing about the end of the second week. He states that both laboratory and clinical experience are positive in their concordance in showing that the drug has a specific local action on the typhoid ulcer and the bacillus which it contains.

As an intestinal antiseptic in typhoid fever, the following has been recommended:

℞.	Acidi thymici		
	Guaiacol carbonatis		
	Saponis (medicinalis) āā.....3iss	6	

M. Ft. pil. No. xxx. Sig.: One pill every four hours.

TREATMENT OF THE DIARRHEA.

Hare states that the diarrhea is not to be interfered with unless the patient has more than three movements a day or unless these movements seem to weaken the patient. Under these circumstances he administers the following:

℞.	Acidi sulphurici arom. 3i	4	
	Ext. hematoxylin. fl. .....ʒss	16	
	Spts. chloroformi .....ʒss	16	
	Syr. zingiberis q. s. ad.....ʒiii	96	

M. Sig.: Two teaspoonfuls every two to four hours.

If the diarrhea is very marked and the patient is weak, he adds spirits of camphor to the above mixture, and small doses of morphin if insomnia is present.

Some of the bismuth preparations act very efficiently in combination with other intestinal astringents, as follows:

℞.	Bismuthi subnitratis 3ii	8	
	Tannalbin 3ii	8	

M. Ft. chart. No. xii. Sig.: One powder every two or three hours.

Or, as stated in Merck's Archives:

℞.	Morphinæ sulph. .....gr. ii		1
	Bismuthi phos. (soluble) 3iss	6	
	Tinct. krameriæ 3iv	16	
	Syr. tolutani .....ʒi	32	
	Aq. destil. q. s. ad .....ʒvi	192	

M. Sig.: One dessertspoonful every three hours.

In the diarrhea of typhoid fever Yeo recommends the following to be given in the form of an enema:

℞.	Pulv. opii et ipecac. .....gr. v		33
	Acidi tannici .....gr. x		66
	Pulv. acaciæ .....ʒi	32	

M. Sig.: Mix this with two ounces of warm water and inject after each movement of the bowels.

And internally the following:

℞.	Bismuthi salicyl.		
	Bismuthi carb. āā.....gr. xl	2	66
	Pulv. acaciæ 3ii	8	
	Aq. q. s. ad .....ʒii	64	

M. Sig.: A dessertspoonful every three hours until the diarrhea is relieved.

In case of hemorrhage use the above enema, increasing the Dover's powder to ten grains. The object is to arrest all intestinal movement and keep the intestine at absolute rest. At the same time give the following by the mouth:

℞.	Acidi gallici .....gr. lx	4	
	Spts. vini rectif .....ʒi	32	
Dissolve and add:			
	Acidi sulph. arom. 3i	4	
	Liq. opii sedativi. .....m. xv	1	
	Aq. cinnamomi q. s. ad .....ʒvi	192	

Fiat mist. Sig.: Take two tablespoonfuls every hour for six doses, and then every three hours.

Medicolegal.

Determining Compensation for Pain and Suffering.—It is impossible, the Supreme Court of Kansas says, in the case of James vs. Hayes, to fix any rule by which damages compensating for pain and suffering can be estimated, or for ascertaining what will exactly repay for permanent injury. It is not possible, in the nature of things, to accurately estimate the money value of pain. It can not be said that so many hours or days of suffering of such intensity shall be estimated at so many dollars; neither can it be estimated with any close accuracy the permanent damage that may come to one from a serious injury. The amount to be awarded must be left to the enlightened consideration of the jury, under all the evidence; and a verdict therefore will not be set aside unless the court can say that the amount thereof is so excessive as to indicate passion or prejudice on the part of the jury.

As to Christian Scientists Reporting Diseases.—The case of the City of Kansas City vs. Baird, which has been somewhat summarily disposed of by the Supreme Court of Missouri, Division No. 2, so far as it is concerned, was an action for the violation of a city ordinance by a "christian scientist," who was in the habit of receiving compensation for attending cases of sickness, and who failed to report a case of diphtheria. The ordinance in question provides that "every physician who shall prescribe for or treat any case of * * * diphtheria * * * shall immediately, on receiving knowledge that the person or persons are afflicted with any of said diseases, report the same to the board of health; and any physician who shall fail, neglect, or refuse to so report," etc., "shall be deemed guilty of a misdemeanor, and on conviction fined not more than $50." The petition charged that Mrs. Baird did "unlawfully fail, neglect, and refuse to report to the board of health of said city a certain case of diphtheria of which she had knowledge, which said case of diphtheria the said Amanda J. Baird, physician, attended and treated in professional capacity, and had knowledge that said patient was afflicted with diphtheria." She pleaded not guilty, was tried, and fined $50. Then she appealed to the above court, but it holds that the appeal was improperly taken to it, and has ordered the record transferred to the Kansas City Court of Appeals. The reason for this is that it holds that there was no constitutional question involved in this case. It is true, it says, that in her motion for a new trial she stated that the judgment was in violation of section 5, article 2, of the constitution of the State of Missouri, which contains a guaranty of religious freedom, but, the court declares, she might as well have named any other provision of the organic law, as it is evident that her constitutional right of religious freedom was in no sense involved in this action.

Medical Examiner's Knowledge—Serious Illness.—The United States Circuit Court holds, in Caruthers vs. Kansas Mutual Life Insurance Company, that there is a distinction to be made between certain cases where the agent was authorized to issue the policy and his knowledge was imputed to the company, and one where a medical examiner is only authorized to reduce the applicant's answers to writing, and the company issues the policy at its home office, in reliance upon the written warranty of the assured that the answers are full, true, and complete, and correctly recorded. In such case, the knowledge of the medical examiner at the time the application is made, it holds, can not affect the company, especially when a copy of the application, with the answers, is attached to the policy when delivered to the assured. The doctrine of estoppel, as it is termed, as laid down by the authorities in actions of this kind, it states, is that, if the assured has truthfully answered the questions propounded to him, and the agent of the company, authorized to ask the questions and write the answers down, putting his own construction upon such facts, deduces therefrom an erroneous answer, which he writes down, or writes a different answer down, the assured is not estopped or precluded by his warranty from showing that he gave true answers; and,

if he establishes that fact, the company is estopped or precluded from questioning the truth of the answers as written down. Hence, the court holds that the mere fact that a medical examiner knows when writing them down that certain answers are false will not of itself create an estoppel in a case where the application has to be forwarded to the home office in another state, and the medical examiner has neither the power to pass upon the question whether the risk be accepted, nor anything to do with the delivery of the policy if issued. The word "serious" in a question asked of an applicant as to whether he has ever had any serious illness, constitutional disease, injury, or undergone any surgical operation, the court holds, means a grave, important, and weighty trouble. It does not consider it within the meaning of the question a case where the applicant suffered a fracture of the tibia fibula of one lower limb, the fracture being reduced and the limb placed in splints and bandages, a doctor attending him a week, and he being confined to the house about six weeks, besides which he had chills and fever a couple of days growing out of his confinement to his bed.

Liability for Neglect of Patient During Vacation.—The first appellate division of the Supreme Court of New York says, in the case of Gerken vs. Plimpton, that a physician who undertakes the treatment of a patient is bound to exercise not only the skill required, but also care and attention, in attending his patient until he notifies the patient that his professional relations are terminated. A physician and surgeon engages to bring to the treatment of his patient care, skill, and knowledge; and while, when exercising these, he is not responsible for mere errors in judgment, he is chargeable with knowledge of the probable consequences of an injury, or of neglect in its treatment, or unskilful treatment. And when a physician is employed to attend upon a sick person his employment continues while the sickness lasts, and the relation of physician and patient continues, unless it is put an end to by the assent of the parties, or is revoked by the express dismissal of the physician. Here, a physician and surgeon, whose qualifications as such were conceded, was called in as a surgeon in connection with a physician who was first summoned, who did not consider himself competent to treat a case of the kind, to treat fractured left arm. As a surgeon, the court says, he undoubtedly undertook the case, and in doing so assumed to give it the care and attention required. He put the arm in splints, and directed the patient to carry it in a sling. Thereafter, for about six weeks, he attended the case, and all of the physicians called as witnesses united in saying that the method of treatment adopted till then was proper. Then, however, he went away for a vacation. The bones had not yet united. But when he returned, after five weeks' absence and again examined the arm, he found that the bones had slipped from their position, overlapped, and in this position formed a union. He testified that, prior to his leaving, he told the patient that he was going away on his vacation for two or three weeks, and that, if she desired him to call again, she must send for him. Her testimony was that he stated that he was going away for a vacation, and that he would be back again within ten days or two weeks, and in the meantime directed her to keep her arm in the sling. Under all the circumstances, the court thinks that the jury was justified in finding, if it believed the patient's version of that interview, that the doctor had been negligent in the discharge of his duties which he had assumed in relation to this patient. The jury returned a verdict in her favor for $2000, which was reduced by stipulation to $500 to avoid a new trial being granted by the judge, who considered the amount of the verdict excessive. And whatever may be said of the original verdict of $2000, the appellate division thinks it quite evident that $500 was not excessive, especially when there was evidence tending to show that the only practicable treatment at that time was to fracture the bones where the union had taken place, and then to wire the bones in their proper position, and that the reasonable value for such an operation would be $500, after which the patient would be in the position she was when the doctor left for his vacation, but with no certainty that there would be a union of the bones.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record (N.Y.), July 27.

1 *Incbriety: A Study of Its Causes, Duration, Prophylaxis, and Management. Charles L. Dana.
2 Primary Resection of the Intestine for Gangrenous Hernia; Report of Two Cases of Successful Joining by Lateral Anastomosis, with the Connell Suture. Thomas H. Manley.
3 *The Use of Sulphate of Copper in Affections of the Cornea and in Affections of the Lid Other That Trachoma. J. Herbert Claiborne.
4 Needed Reforms in the Management of Youthful and Insane Criminals. Wm. G. Somerville.

American Medicine (Philadelphia), July 27.

5 *On the Classification of Intoxications from a Pathologic Standpoint. J. George Adami.
6 *Maternal Impressions Do Not Cause the Stigmata of Degeneration. Chas. E. Woodruff.
7 Two Cases of Emphysematous Gangrene Caused by Bacillus Aerogenes Capsulatus. L. M. Loeb.
8 Cystadenoma of Pancreas; Extirpation. Joseph Ransohoff.
9 Lithemic or Recurrent Coryza. B. K. Rachford.
10 Early Stage of Extrauterine Pregnancy. E. H. Trowbridge.
11 Inflammation of the Sigmoid and Colon. R. D. Mason.
12 *An Address on the Fight Against Tuberculosis in the Light of the Experience Gained in the Successful Combat of Other Infectious Diseases. Robert Koch.

Medical News (N. Y.), July 27.

13 *An Improved Method of Treating High-seated Cancers of the Rectum. Robert F. Weir.
14 A Case of Embolism of One of the Right Lenticulo-optic Arteries Complicating Pneumonia, with Autopsy. Charles J. Aldrich.
15 An Attempted Investigation of Some Christian Science "Cures." Lawrence Irwell.
16 *A Nasal Condition Affecting the Ocular Muscles. Heber N. Hoople.
17 Criminals and Defectives: How Best to Reduce Their Numbers. J. C. McCassey.

New York Medical Journal, July 27.

18 *The Wesley M. Carpenter Lecture on Conjugation in the Asexual Cycle of the Tertian Malarial Parasite. James Ewing.
19 *Some of the Conditions Following the Bottini Operation for Prostatic Obstruction. L. Bolton Bangs.
20 *Mental Disturbances in the Course of Cardiac Disease. A. Zederbaum.
21 The Ophthalmoscopic Examination for Kidney Disease. Edward Jackson.
22 What Is the Best Way of Prescribing Calomel as a Purgative? Adrian Landry.

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23 *Specialism in Medical Practice: Its Present Status and Tendencies. F. H. Davenport.
24 After-treatment of Operation on Nasal Accessory Sinuses. Walter A. Wells.
25 *Diphtheria as a Complication of Measles. David N. Blakely and E. G. Burrows.
26 *Adhesive Plaster Strapping in Umbilical Hernia. J. C. Hubbard.
27 A Case of Nasal Deformity from a Medial Furrow, Corrected by Subcutaneous Implantation of a Portion of the Septal Cartilage. J. L. Goodale.

Philadelphia Medical Journal, July 27.

28 Atypical and Unusual Varieties of Appendicitis. John B. Deaver.
29 Appendicitis with Thrombosis and Suppuration in the Right Iliac and Femoral Veins. John G. Sheldon.
30 *Gastrointestinal Autointoxication Occurring with Forms of Mucous Colitis in Children. Henry Koplik.
31 Treatment of Infantile Diarrhea. William H. Robey, Jr.
32 Spastic Ileus. Edward Quintard.
33 Report of Cases Examined for the National Jewish Hospital for Consumptives, at Denver, Colo. Saling Simon.

Cincinnati Lancet-Clinic, July 27.

34 Some Reflections upon the Disturbances of the Liver and Alimentary Tract. J. L. Cleveland.
35 Heredity. H. H. Spiers.

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36 *Pessimism in Cancer. G. Wiley Broome.
37 Report of a Case of Placenta Previa Marginalis with Infection of Placenta before Delivery. A. J. Detweiler.

Medical Fortnightly (St. Louis), June 25.

38 Pelvic Peritonitis and Exudates. Byron Robinson.
39 The Surgery of Syphilis. G. Frank Lydston.
40 Diseases of the Stomach. (Continued.) J. M. G. Carter.

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41 The Social Evil. A. L. Benediet.
42 Diseases of the Stomach. (Continued.) J. M. G. Carter.

Northwestern Lancet (Minneapolis), July 15.

43 *Practical Gynecologic Work in Hospitals for the Insane. Dwight S. Moore.
44 Diagnosis and Treatment of Acute Peritonitis. J. W. Bell.
45 Sights and Experiences of a Prairie Doctor. F. W. Maercklein.

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46 Gastrointestinal Autointoxication. W. L. Bierring.
47 A Brief Report of Some Interesting Surgical Cases. William H. Wathen.
48 Diseases of the Upper Respiratory Tract and Ear. B. A. Waddington.

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49 Foods. Food Economics and Food Adulteration. Charles F. Mabery.
50 Cases of Prolonged Fever Not Typhoid. J. Park West.
51 Report of a Case of Tabetic Arthropathy of the Knee-Joint, Occurring in a Case of Paretic Dementia. Walter G. Stern.

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52 A Case of Arterial Disease, Possibly Periarteritis Nodosa. Florence R. Sabin.
53 *Typhoid Infection Without Lesion of the Intestine: A Case of Hemorrhagic Typhoid Fever with Atypical Intestinal Lesions. Eugene L. Opie and V. H. Bassett.
54 *Frequency of Typhoid Bacilli in the Blood. Rufus I. Cole.
55 A Portable Operating Outfit. J. M. T. Finney.
56 *Ulcer of the Stomach Caused by the Diphtheria Bacillus. William R. Stokes.
57 *Ovarian Organotherapy. William Krusen.

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58 Demonstration of a Model of the Abdominal Viscera at the Annual Meeting of the Massachusetts Medical Society, June 12, 1901. Thomas Dwight.
59 The Diseases of Nutrition in Infants. T. M. Rotch.
60 The Relation of the Medical Editor to Original Communications. Harold N. Moyer.
61 Some Thoughts on the Ethics of Medical Journalism. Burnside Foster.
62 Improvements in Medical Education. Dudley S. Reynolds.

American Gynecological and Obstetrical Journal (N.Y.), July.

63 *The Relative Merits of Bipolar Version with Slow Extraction and Accouchement Force in the Treatment of Placenta Previa: Report of Fourteen Cases. Henry D. Fry.
64 *The Status of Hysterectomy for Uterine Cancer. Cyrus A. Kirkley.
65 *Some Observations on Cases of Tuberculosis of the Kidney Treated Surgically. Beverly MacMonagle.
66 *The Status of Menstruation or What Is Menstrnation? Eugene C. Gehrung.
67 *Painful Menstruation as a Factor in Determining the Character of Operations on the Uterine Appendages. Philander A. Harris.
68 *Prolapse and Procidentia of the Uterus. Henry T. Byford.
69 *Ridges, Furrows and Prominences on the Imparous Uterus. Robert L. Dickinson.

Canadian Practitioner and News (Toronto), July.

70 The Roentgen Rays in the Diagnosis of Urinary and Biliary Calculi. S. Cummings.
71 A Report of Three Cases of Diabetes Mellitus. Geo. Hodge.
72 The Reduction of Turbinal Hypertrophies. D. J. Gibb Wishart.

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73 Memoir of William Pepper. James Tyson.
74 *A Report of the Nasal Septum as Found in the Skulls of Forty Mound-Builders. George B. Wood.
75 Report of the More Interesting Obstetric Operations and Cases in the University Maternity from September to January, 1900. A. H. Remington.
76 *A Statistical Digest of Epithelioma of the Penis. Francis D. Patterson.
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78 Treatment of Typhoid Fever. W. W. Reed.
79 Notes on New York Surgery. W. W. Grant.
80 How to Conduct a Case of Labor, Normal or Emergent. W. W. Woodring.
81 Historical Sketch of the Plagues of the World. Clarence L. Wheaton.

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82 The Career of Medicine: A Glorious Heritage of Golden Opportunity. Frank T. Lodge.
83 *Hysteria. George F. Butler.
84 *The Treatment of Acute Rheumatism. George Dock.
85 Tuberculosis of the Larynx. Preston M. Hickey.
86 Surgical Treatment of Cirrhosis of the Liver. Hal C. Wyman.
87 Recent Experience with Smallpox. (Continued.) Theodore Sehmalzriedt.

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88 Some Ancient Therapeutics. Albert Schneider.
89 The Treatment of Rheumatism with Acetyl-salicylic Acid (Aspirin). C. A. Protln.
90 Treatment of Typhoid Fever. Virginius W. Gayle.
91 An Essay on Opium and Its Alkaloid Morphin, and Their True Value in Modern Therapeutics. (Continued.) Adolfo Luria.

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92 *Address to the Graduating Class of the John A. Creighton Medical College. W. O. Henry.
93 Therapeutic Orthodoxy W. B. Ely.
94 Cerebral Cyst—Further Report of a Case. Van Buren Knott.
95 *Pernicious Anemia, with Report of a Case. Leroy Crummer.
96 The Office Treatment of Rectal Diseases. R. D. Mason.
97 Medical Colleges and Professional Standards. Inez C. Philbrick.
98 *The Operative Management of Retro-peritoneal Abscess of Appendicular Origin. Gilbert G. Cottam.
99 *Surgical and Pathological Observations in Epityphiitie Abscess. Angustus C. Bernays.

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100 Present and Former Use of Alcoholic Stimulants George W. Wells.
101 A Case of Cardiopulmonary Murmur Illustrating the Importance of Differentiation. P. Maxwell Foshay.
102 Occupation as Affecting the Death-Rate. J. E. Cowgill.
103 What Are the Consequences of Gonorrhea or Its Treatment in the Male or Female, Which Will Affect the Eligibility of an Applicant for Insurance? Frederick W. Main.
104 Collargolum and Unguentum Crede. Arthur De Voe.
105 Should the Fact that an Applicant Has Had Dropsy Necessarily Debar Him from Insurance? John L. Dickey.

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106 *The Present Status of the Teaching of Orthopedic Surgery in the United States. Harry M. Sherman.
107 *Chromic Acid as a Caustic in the Treatment of Epithelioma of the Skin. Douglass W. Montgomery.
108 A Case of Cesarean Section. Charles R. Harry.
109 Heroin, the Newer Silver Salts, the Intestinal Antiseptics. George F. Hanson.
110 The Treatment of Immature Cataract, with Report of Two Cases. Albert B. McKee.
111 Aural Gymnastics. M. W. Frederick.

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113 More About "The Life Needlessly Sacrificed." D. A. Robinson.

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114 Case Resembling Septic Meningitis and One of Septic Thrombosis of Cavernons Sinus, with Exophthalmus and Orbital Cellnlitis. Death. Don M. Campbell.
115 A Case of Blindness from Drinking Cologne Spirits (Methyl Alcohol). H. Gifford.
116 Rupture of the Iris from Contusion of the Eyeball. William M. Sweet.
117 The Operation of Couching Performed by a Mule. Lewis H. Taylor.
118 A Case of Conjunctival Tuberculosis, with Peculiar Onset, Ending in Spontaneous Healing—Report of a Case from the University Eye Hospital, Rostock, Germany. A. Levy.
119 *The Controversy About the Dioptric Value of the Cornea. Carl Weiland
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121 Report of a Unique Case of Dermatitis Herpetiformis Pustulosa, with Its Histopathology. Wm. P. Loth.
122 Address before the American Dermatological Association at the Meeting in Chicago, June, 1901. Francis J. Shepherd.

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123 Adenoid Growths in the Nasopharyngeal Space. Charles D. Thomas.

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124 Report of a Few Extraordinary Cases, with Exhibition of Specimens. A. L. Fulton.
125 *A New Method of Controlling Morphin Sickness, and the Nausea Incident to Chloroform Anesthesia. E. Kuder.

The Canada Lancet (Toronto), July.

126 President's Address, Ontario Medical Association. Angus Mackinnon.
127 A Case of Laryngeal Stenosis from Papillomata. Geoffrey Boyd.
128 Scaling in the North Atlantic. John Macwillie

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129 Puerperal Infection. S. S. Crockett.

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130 *Tropical Diseases and Tropical Remedies. T. P. Porter.
131 Desire First—Diet Afterwards. C. B. Stockwell.
132 Trachoma: Treatment by Salicylic Acid. W. F. Strangways.

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133 Foreign Bodies in the External Auditory Canal. L. G. Woodson.
134 Malaria. E. O. Williamson.

Hot Springs Medical Journal, July.

135 *Simple Methods in Pelvic Surgery. John B. Deaver.
136 Gonorrhea and Its Treatment from the Present Standpoint. Henry J. Scherck.

Georgia Journal of Medicine and Surgery (Savannah), July.

137 Some Observations in a Series of Fifty Cases of Malaria. E. E. Murphy.
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140 A Hysterectomy with Complications. J. G. Earnst.

AMERICAN.

1. **Inebriety.**—In this article Dana analyzes some hundreds of cases of inebriety observed by him during the years 1891 to 1895. He finds that drinking habits in the parents are very general, but that, as the patients generally come from a class where such are common and as environment is favorable to their acquiring the habit, the stress on heredity is not important. Among 30 periodical inebriates, in 20 there was a distinct history of heredity: in 14 the father drank, and in 8 both parents drank. He thinks that drinking is largely a matter of habit and environment. The greater proportion of drunkards is furnished from amongst small tradesmen, mechanics, artisans, though laborers furnish a notable percentage. About two-thirds were males. In the majority of the cases the habit was commenced early; after 30 the danger is less. The average duration of a drunkard's life is about 15 years. The liquors used were mainly beer and whiskey and he sees no safety from alcoholism in the much lauded malt liquors, though among wine drinkers there was a marked absence of alcoholism. He is inclined to think that alcoholism weeds out the degenerate and in this way helps the state; he therefore thinks it has some beneficial effects. He holds, however, that it is always a poison when used in excess, and that when used in moderation, it is equally pernicious to a large class of human beings. The methods of prevention he suggests are the control of the sale, making it difficult to secure drinks, and the avoidance of the transmission of degeneracy by the marriage of alcoholics, together with public instruction. As regards treatment, he has comparatively little faith in the popular cures, though in the hands of a skilled physician they may be the best for the patient. He gives his prescription of tincture of nux vomica, tincture of capsicum, and tincture of cinchona rubra, advises thorough feeding, baths, etc., but does not speak very hopefully of any treatment of the habitual inebriate.

3. **Sulphate of Copper.**—After reporting a number of cases of eye affections other than trachoma treated by the use of solid-stick sulphate of copper, Claiborne sums up the use of this agent as follows: 1. In all acute attacks of inflammation of the cornea in which there is thickening with a succulent, velvety appearance of the upper lid. 2. In all recurrent attacks of superficial keratitis in which the same condition of the upper lid prevails. 3. In infiltrations of the cornea which are the result of preceding inflammations, associated with the same condition of the upper lid. 4. In maculæ of the cornea in children and adults which have occurred a reasonable time after an inflammation, whether the upper lid presents the characteristic appearance or not. 5. In chronic conjunctivitis attended by thickening of the lid associated with blepharitis. 6. In chronic dacryocystitis (particularly in those cases in which the canaliculus has been slit) attended by chronic conjunctivitis.

5. **Auto-Intoxications.**—The ordinary classification of intoxications in medicine is criticised by Adami, who calls attention to the fact, as it appears to him, that intestinal intoxications are exogenous as well as those on the external surface of the body. An auto-intoxication is an intoxication set up by the action of substances formed by or from the cells of the body; that is to say, either by the secretion of these cells or by the products of their disintegration. Such auto-intoxication is endogenous when the poison so formed acts without any preliminary passage out of the system. It is exogenous when it is due to resorption of the secretion, as, for example, when the obstruction of a duct is followed by reabsorption of the excretion. He thus classifies the intoxications in general: I. Exogenous, due to the actions of poisons entering the system from without. 1. Exotic or introduced; due to action of substances foreign to the organism, which gain entrance through the skin, digestive, respiratory or genito-urinary tract. 2. Indigenous or excretory. (*a*) Indirect auto-intoxication, due to absorption of retained excreta. (*b*) Disintegrative, due to absorption of decomposition and fermentation products developed in the external secretions through the action of these secretions. II. Endogenous. 1. Direct auto-intoxication. (*a*) Internal secretory, due to the action of excessive or unneutralized or modified discharges from the cells of one or other tissues acting directly upon the other tissues or body without previous discharge from the system. (*b*) Disintegrative, due to action of the products of decomposition and necrosis of one or other tissues acting in a similar manner. 2. Parasitic. (*a*) Microparasitic, the infections. (*b*) Macroparasitic.

6. **Maternal Impressions.**—Woodruff discusses the subjects of maternal impressions and endeavors to show the absurdity of the belief in their existence.

12.—See THE JOURNAL of July 27, p. 259.

13. **Cancer of the Rectum.**—The objections to Kraske's operation are first discussed by Weir, who mentions his attempting to follow the method in extirpation of high rectal cancer after the plan of Maunsell, whose method consists in opening the abdomen above the pubes, separating the peritoneum from the bowel extensively and passing a loop of tape by a long mattress needle from the opened pelvis through the rectum and out the previously enlarged anus. In this way he proposed to loosen the neoplasm, excising it and suturing the two parts of the bowel together. This plan did not work satisfactorily and Weir changed his procedure as follows: The fingers had freely detached the divided peritoneum so that the bowel and the entire contents of the sacral curve were liberated behind nearly to the tip of the coccyx and in front to the edge of the prostate. This gave room to tie around the bowel some three inches from the anus a couple of iodoform tapes about an inch apart. The intestine was then cut through and being free was readily raised out of the abdominal wound and held aside by an assistant. The lower end of the rectum was then seized by forceps in the hands of an assistant who drew it down and out of the anus in an everted condition. Untying the tape that closed this everted bowel, its lumen was opened so that a long pair of forceps could be carried through it up into the pelvis, when the end of the upper bowel was brought down within its clasp and by it the latter was drawn through the lower bowel out into the world. A couple of needles passed through the invaginated ends of the bowels, near their margins, allowed easy union by sutures of their edges with their knots inside the bowel and replacement of the same then was done. After the peritoneum had been sewed together and to the bowel, so that the pelvis and general abdominal cavity had been separated from one another by the peritoneal shelf, he deemed it best to provide drainage from the peri-intestinal space below by a tube introduced from just in front of the coccyx.

16. **Intra-Nasal Pressure and Asthenopia.**—The proposition advanced by Hoople is that mechanical pressure in a limited nasal area, called by MacKenzie the reflex area and confined chiefly to the middle turbinate, may produce muscular asthenopia. He quotes a number of authorities who have supported this view and reports observations confirming it. He thinks that we have ground for postulating the following: A moderate amount of pressure or mechanical irritation of the middle turbinate and adjacent septum will temporarily impair the

function of the ciliary muscle. The pressure is such as is produced by a spur or bend in the septum when it digs into a too-closely applied middle turbinate. The asthenopic disturbance in this particular class of cases and probably in all cases he thinks is from sympathetic fibers.

18. **The Malarial Parasite.**—In the Wesley Carpenter lecture Ewing discusses the life cycle of the tertian malarial parasite and notes the significance of the conjugation phenomena. He says: "The malarial parasite may be said to begin its existence in the human host, by a series of generations of ameboid bodies produced after conjugation of partially differentiated individuals. After the capacities of this method of reproduction have been exhausted, the sexes become separated, the male forms being represented by the flagellating bodies, microgametocytes, and the female by the large, pale, hyaline, non-flagellating bodies—macrogametocytes. These forms are sterile for the human host, but in the mosquito fertilization of the macrogametocyte by the flagellum or microgamete takes place, and the resulting motile form, the vermiculus, penetrates the tissues of the mosquito and becomes encysted. From this cyst develop the germinal rods which are inoculated into the human host through the salivary glands of the mosquito, to begin anew the pyrogenous or ameboid cycle. At several points in the series there remain wide gaps in our knowledge. We do not yet know how the germinal rods are transformed into ameboid bodies. The development of the sexual forms of the tertian parasite, as described by the writer, can at present only be offered as a probability, not as a demonstrated fact, while the origin of estivo-autumnal crescents is as yet entirely obscure. At the other end of the series there is possibly an entire new phase of development of the parasite or the production of some "resistant body" in the external world apart from either man or mosquito.

19. **Bottini Operation.**—The after-conditions of the Bottini operation are noticed by Bangs, who claims that the process of repair begins immediately after the operation, and he publishes and illustrates the appearance in a case of successful operation where the patient died some time later of pneumonia, showing the conditions found. He thinks that the spontaneous urination that follows the operation is due not only to the formation of grooves, but to contraction of the cicatrices and atrophy of the gland tissue, and gives his reasons for this belief.

20. **Cardiac Disease and Insanity.**—After the causes of certain cases of insanity associated with cardiac disease and especially puerperal insanity, which he thinks has some relation with cardiac disease, are discussed by Zederbaum, he concludes that the heart in a number of women during the puerperium and insanity is subject to hypertrophy, which may become permanent and pathologically affect the valves, and that latent cardiac disease of rheumatic and other origin may first come to the front during pregnancy or even after labor. Puerperal insanity, where a diseased condition of the heart is certainly known to exist, has not been, thus far, as he has learned from the literature, specially correlated with this condition, and he offers these views as a contribution to the subject.

23. **Specialism.**—The growth of specialism is noticed by Davenport who believes that it should be encouraged, as in this way only a healthy growth is to be obtained. The notion or impression that the limiting of one's self to a special branch of study has a narrowing or deleterious effect is, he believes, not against specialism in the abstract, but is true as regards specialists individually to some extent. This tendency to narrowing should be counteracted by catholic methods of practice in the early years and a gradual growth into specialism. He favors the larger use of consultations, and, in conclusion, notices certain lines of practice where the tendency to specialism has had its good effects.

24. **After-Treatment of Operations on the Nasal Accessory Sinuses.**—The main point in the after-treatment of operations upon the nasal accessory sinuses are stated by Wells as follows: 1. Persistence of suppuration is generally to be looked for with one or several of the following causes: Syphilis or tuberculosis, incompleteness of operation, presence of polypus or other obstructions in the nose, empyema of the neighboring accessory sinuses, inadequacy of the local treatment. 2. After-treatment requires not merely antiseptic precautions, but general supervision of the patient's health, and a careful supervision over the nasal fossæ, which must be kept free of secretions, and obstructions in which must be removed whenever found. 3. Empyema in a neighboring sinus, whose ostium is in close relation with the sinus operated upon, will maintain the suppuration in the latter unless cured. The frontal sinus is frequently the cause of antrum disease and the ethmoidal, the cause or effect of disease of both. 4. The cause of the continuance of suppuration is, in many cases, the non-removal of all diseased tissue. The irregularities and anomalies in the form of sinuses are often responsible for such failure. Curettage must be repeated from time to time according to indications. 5. The use of local after-treatment is extremely important. The so-called dry treatment is insufficient and unscientific, as it does not provide for the removal of products of suppuration; only a mass of powder is added to a mass of decomposing debris, whereby an unabsorbable accumulation results, which may retard recovery and give rise to unpleasant symptoms. 6. Frequent and thorough irrigations are the most rational method and protargol in 2 to 5 per cent. solution has given the best results, especially when alternated with a thorough swabbing of all parts of the inner walls of the sinuses with 20 to 40 per cent. solution in water and glycerin. 7. Immediately after operation the sinus should be packed with iodoform gauze, kept in place from 36 to 48 hours and subsequently the sinus should be irrigated daily, and later every other day. A thorough rubbing of the walls of the sinus is to be made with the solution mentioned every three, four or five days as required.

25. **Diphtheria in Measles.**—In two and a half years in the South Department of the Boston City Hospital 157 patients had been treated suffering from this complication, with 54 deaths, or 34 per cent. The death-rate for the uncomplicated diphtheria patients at the same time was less than 13 per cent. Of the whole number, 82, or 52 per cent., had laryngeal diphtheria, and of these 36 died. The greater number of laryngeal cases and the higher death-rate is most striking. The earlier in the course of measles diphtheria develops the more serious the disease. The causes of death are noticed by Blakely and Burrows. In 31 of the 54, diphtheria poisoning alone seems to be the factor, hence the importance of early diagnosis. The existence of diphtheria or the possibility of its onset should be borne in mind in every case of measles. Where the air-passages are especially vulnerable, nasal or laryngeal obstruction occurring in measles almost certainly means diphtheria. If the initial fever disappears and there is a later sudden rise of temperature or if the cough becomes "brassy" in quality or paroxysmal in character and is accompanied by rise in temperature, the possibility of diphtheria must be considered. If the initial fever persists and aphonia develops, diphtheria is probably the cause. The purulent or muco-purulent discharge of partial, or complete nasal obstruction with glairy discharge suggests diphtheria. If the general condition, in addition, suggests it, antitoxin should be given at once without waiting the results of cultures. In all obscure cases the patient should be given the benfit of the doubt.

26. **Umbilical Hernia.**—From the records of 66 cases of umbilical hernia in the Infant's Hospital here studied by Hubbard, he finds that umbilical hernia is ordinarily cured by the adhesive plaster strapping. The younger the child, the earlier the cure may be expected; the possibility of recurrence or failure is slight.

30. **Mucous Colitis in Children.**—The case described by Koplik is one of a class by itself, in children who have a tendency to constipation in infancy and in whom slight derangements of diet are liable to produce alarming symptoms, such as mucous colitis, the cause of which is very obscure. The symptoms are described in detail. In the primary period, capricious appetite, vertigo, waking in the morning with nausea, epigastric pain, vomiting, rapid, high-tension pulse, albumin in the urine, abdominal pain, and prostration are noticed. After the subsidence of these symptoms and emptying

of the bowel, passage of large mucous casts, or masses or small amounts of mucous with the movements occurs. The treatment must be by rest in bed for the immediate attack, stoppage of all food for a while, the use of large warm enemata of the Cantani salt solution twice daily, followed by a nutritive enema of somatose salts, a teaspoonful to 8 ounces of cold water; the vomiting and pain being relieved by small doses of codein. Strychnin should be given later in the case after the first twenty-four hours of the onset of symptoms, and the recumbent position maintained until the patient is strong and the heart returns to its natural action. Later a careful rigid diet, enforced, consisting of skimmed milk, fat being obnoxious, cereals, meat, and vegetables which leave very little residue, avoiding all such as appear undigested in the feces. To forestall an attack give a dose of Carlsbad salts, which seems to be a safe and effective cathartic.

36. **Cancer.**—Broome advocates the parasitic origin of cancer and deprecates the pessimistic views in regard to the possibility of discovery of the germ. He thinks that cancer in its character resembles diseases known to be due to microbic action and asks if it is not due to that, to what is it due?

43. **Gynecology and Insanity.**—Moore reports his experience in the North Dakota Hospital for the Insane. Of 154 females examined only 27 were found to be normal, or 1 in 6. Retroflexions and retroversions were found in 77 per cent.; perineal lacerations in 66 per cent., and other lesions in lesser percentage. Operations were performed on 18 patients for the relief of menorrhagia, metrorrhagia, endometritis, endocervicitis and cervical and perineal lacerations. He claims that in most cases there was benefit in the patient's physical condition. Two patients have been discharged recovered since the operation. In a number of cases there was no improvement. In some there was temporary improvement, subsequent relapse, and a worse condition than before. In a large proportion the disposition was modified and the patients were more pleasant and more easily managed.

53. **Typhoid Without Intestinal Lesions.**—Opie and Bassett report a case which is apparently one of those in which the intestinal lesions are lacking, and review the literature. In other ways the appearance was that of typhoid, rose spots were present and a positive Widal reaction confirmed the diagnosis. Death occurred after complications, and at the autopsy the usual intestinal lesions of typhoid fever were not found, and Peyer's patches and the solitary follicles showed very little appreciable change, only minute points of pigmentation were visible in the solitary follicles of the large intestine. The presence of blood in the stools during the latter part of the disease was not the result of ulceration, since the mucosa was intact. The child evidently died of typhoid fever complicated by a condition resembling purpura hemorrhagica. The authors doubt the entrance of the bacilli into the blood through the uninjured intestine and think it not definitely proven. The case reported, however, emphasizes the fact that the localization of typhoid bacilli is not exclusively in the lymphatic apparatus of the intestine and that the intestinal lesions of fatal cases may be so slight as to be unrecognizable at the time of autopsy.

54.—See abstract in THE JOURNAL, xxxvi, p. 592.

56. **Gastric Ulcer from Diphtheria Bacillus.**—After reporting a case with carefully detailed autopsy, microscopic and bacteriologic examination, Stokes gives the following summary: "It is a point of some interest to note that the stomach is not always able to destroy large numbers of diphtheria bacilli, especially when the powers of resistance have been lessened by an acute disease. The ulcer which was found was certainly produced by the diphtheria bacillus, and it may appear later that these stomach lesions are not as rare as was formerly thought."

57.—See abstract in THE JOURNAL, xxxvi, p. 592.

63.—See abstract in THE JOURNAL, xxxvi, p. 1653.

64.—Ibid., 1651.

65. **Tuberculosis of the Kidney.**—MacMonagle treated and studied 5 cases. He treated the first 3 by nephrotomy; in 2 of these nephrectomy as a secondary operation brought about a condition as satisfactory as a cure. The third had six months of comparative comfort and then died of pulmonary tuberculosis. In the last two cases nephro-ureterectomy was done at once and the patients now seem to be cured. While admitting that 5 cases are not enough to draw definite conclusions from, they seem to be in line with the experience of others and he ventures to offer the following: "1. All cases with vesical symptoms should be put through an exhaustive examination to exclude tuberculosis in the beginning of their symptoms. 2. This examination should embrace staining and animal inoculation with urine taken from each kidney. 3. In all cases of primary tuberculosis—the other kidney being healthy—nephro-ureterectomy is indicated and will give good results. 4. In advanced cases involving one kidney and ureter, nephro-ureterectomy is indicated and preferable to nephrotomy. 5. In cases where but one kidney is involved, early nephro-ureterectomy promises good results in a high percentage of cases.

66.—See abstract in THE JOURNAL, xxxvi, p. 1650.

67.—Ibid.

68.—Ibid., p. 1651.

69. **Uterine Ridges and Folds.**—Dickinson calls attention to the fact that one or more longitudinal or transverse folds dividing the body of the non-gravid uterus into separate prominences or incomplete compartments are of common occurrence and are probably due to muscular contraction. Different points of the corpus uteri may present contrasting degrees of softness and hardness, and thus an irregular contraction occurs. The findings strongly resemble the pregnancy signs of early weeks. He illustrates the different forms and types and remarks that a study of the changes in greater detail and a comparison between them and the alterations found in the early weeks of pregnancy are reserved for another paper.

74. **Nasal Septums of the Mound-Builders.**—In the 40 skulls examined, Wood finds the conditions correspond with the results obtained by Price-Brown, in which 50 per cent. of the septas were found deviated. In only 32 per cent. were the septas actually straight and in the median line, though in 22 per cent. more the deviation was very slight. The 32 per cent., of course, did not include any possible deviation of the cartilage that might have existed during life. The figures do not warrant the assertion of Lennox Browne, who says that in aborigines of Africa, America and Australia there is one asymmetrical to every four symmetrical. He thinks these findings tend to disprove the theory that the commixture of races is accountable for the great majority of septal deformities developed during the growth of the child.

76. **Epithelioma of Penis.**—The summary of this lengthy paper is that epithelioma is by far the most frequent form of carcinoma of the penis and that it furnishes us about 2 per cent. of all cancers, and that phimosis is a strong predisposing factor by chronic irritation. As a rule, the epithelioma is more frequent after middle life, though this has its exceptions. Syphilitic virus has nothing whatever to do with epithelioma, the scars of old lesions being nothing more than an area of decreased resistance or a cause of chronic irritation. Traumatism is a predisposing factor by decreasing resistance. The question of the contagiousness of epithelioma is still to be decided. It usually begins in the glands or prepuce; its origin in the urethra is very rare. Visceral metastasis is very rare. The prognosis in the precancerous stage is favorable, if radical treatment is employed; later it must be guarded. The only safe treatment in any stage consists in thorough eradication of the area of disease and of all the lymphatic glands involved. He gives an extensive tabulated statement of the cases in the literature.

83. **Hysteria.**—Butler points out the manifold symptoms that may be present, the peculiar forensic relations of the disease, hysterical accusations, crimes, etc. He suggests, in regard to the diagnosis, that it must be remembered that it bears the same relations to neurasthenia as paretic dementia does to locomotor ataxia, that is to say, hysteria is the cerebral type of a neurosis, the spinal

symptoms of which are most commonly found in neurasthenia. It may complicate any one of the neuroses as well as constitutional disorders. The underlying state of hysteria is to be taken into consideration. As regards treatment, the removal from home environment and sympathetic friends is essential. Any source of irritation that can be removed surgically should be attended to, as the morbid mentality of the hysteric centers around such. As regards medicinal treatment, the conscious or unconscious sexual factor in hysteria requires regulation, and here camphor monobromate may be found of value, but a course of healthy reading should be prescribed. The rest-cure treatment as carried on at home is a failure, since the psychic element is neglected. What the hysteric needs is not fat, but increased powers of higher inhibition and the rest cure which neglects this factor is worse than useless.

84. **Rheumatism.**—Dock says that we have no specific against pyogenic bacteria, which are probably the basis of rheumatic disease. Serum experiments have not been specially successful. Rheumatism is more than arthritis, and a complete examination of the patient must not be neglected, and the most important lesions are often concealed in the early stages. The first thing in treatment is rest in a well-aired room free from draughts and the proscription of all physical and mental exercise. Flannel or flannelette night clothes should be worn and be kept dry. The affected joints should be set at rest by bandaging and sometimes light splints to hold them in position. The bed should be kept as long as there is fever and joint-pain and longer if the heart has been involved, though in the disease with sound heart it is sometimes useful to allow the patient to be up even with a little fever and pain, but the effect must be carefully observed. The diet in the febrile stage must be light, consisting largely of milk with eggs, broth, gruels, and fruit juices and plenty of water. Carbonated water should be used sparingly on account of the danger of stomach dilatation. Tea, coffee and alcoholics should be prohibited, and mild purgatives, such as calomel in small doses, should be given in the beginning and care taken to avoid constipation throughout the attack. The salicylates are undoubtedly valuable remedies, relieving pain and lowering temperature. Failure to secure good results is often due to insufficient dosage. The close relation between the effective therapeutic and the toxic dose inclines Dock to think that these drugs act, partly at least, by checking bacterial growth. Another cause of failure is premature cessation or diminution of the drug. To get good results we must saturate the body well with the remedy. Generally not less than 120 gr. of sodium salicylate or a similar preparation should be given within twelve hours after the patient is put under the treatment in the average-sized man. Two or three large doses can be given in the next day or two, but are not often necessary. After a definite effect has been produced, the drug should be continued in doses from 30 to 60 gr. per day, stopping entirely as soon as the temperature and joint-conditions permit, but renewing on the first signs of relapse. The salicylates can be well combined with alkalies such as sodium bicarbonate given in camphor water or any other vehicle. It may be given per rectum in doses of .5 to 1 dram in water, and salol or salophen may be substituted. In a young girl with severe rheumatism, 360 grs. of sodium salicylate were taken along with alkalies in 18 hours, causing considerable hematuria and some other symptoms which soon ceased. Recovery from the effects rapidly followed cessation of the medicine. Smaller amounts, however, have caused dangerous symptoms and even death in severe cases where idiosynerasy perhaps is to be suspected. Dock doubts whether local applications for the joints are specially valuable and says nothing in favor of antipyrin or other drugs of this class. The cardiac involvement should be looked for, prophylaxis by rest and diet is essential and we must remember that endo- or pericarditis is often latent. When evidences of heart disease, of whatever kind, are present, the salicylates should be used carefully and ice-packs, which he prefers to blisters, kept over the heart. Hyperpyrexia should be treated with the cold bath at 65 to 70 F. with ice water poured over the head, and friction to the extremities. For the delirium the bromids and chloral may be used in addition. For collapse, hot coffee, and hot-water packs over the heart or strychnin should be used. In convalescence the food should be cautiously increased, observing the effect on the heart, temperature and joints. Constipation should be guarded against. Iron is often of benefit, but sometimes aggravates, and arsenic and corrosive sublimate may seem then the more effective. Exercise and bathing should be taken up with care, and the condition of the heart followed for weeks or months.

92. **The Successful Physician.**—The address to the graduating class to the John A. Creighton Medical College by Dr. Henry reviews the conditions of success in practice. The young man may become a successful physician by: 1. Being competent, understanding his profession so far as his abilities and opportunities will permit. 2. By being honorable to his professional brethren, his patrons and the public. 3. By being friendly, agreeable and cheerful, but chary of boon companions, for a man is known by the company he keeps. 4. By not giving too much attention to politics, that is, while being a loyal citizen and faithfully discharging civil obligations, not actively entering political movements as such. 5. Sticking to the calling, and not being discouraged. 6. By always showing a deep and sincere interest in every case under one's care.

95. **Pernicious Anemia.**—This condition is discussed and a case reported. The diagnosis depends not on a single finding, but on the coincidence of many, as follows: The percentage of reduction of hemoglobin must be less than the reduction of cells; in this case 89 per cent. of cells and but 85 per cent. of hemoglobin. Billings adds by saying, that the individual count must be less than the volume count. Poikiloeytosis and polychromatosis must be present. More importance is placed by some on the latter than the former, which is present in many other forms of anemia. There must be nucleated blood cells, including the megaloblasts. These were found in great numbers in the case reported. All these points together, together with the physical examination, and the absence of demonstrable disease elsewhere, confirm the diagnosis of idiopathic pernicious anemia—the Addison-Biermer-Ehrlich disease of the Germans.

98.—See abstract in THE JOURNAL, xxxvi, p. 128.

99.—Ibid.

106. **Teachings of Orthopedic Surgery in the United States.**—Circulars were sent out by Sherman to all the members of the Association of American Medical Colleges, asking facts in regard to instructions in orthopedic surgery in the institutions. In only 38 was it mentioned as being taught either didactically or clinically, it being behind most of the other subjects, the only one having a lower representation being genito-urinary surgery, which was taught in only 37 institutions. Nineteen of these colleges have commenced the teaching of orthopedic surgery since 1887. In 12 schools merely the statement that the subject was taught was given; 9 schools limited the teaching to didactic lectures a certain number of hours per week. The showing, he thinks, is a poor one, considering the importance of the subject.

107. **Chromic Acid in Skin Cancer.**—Montgomery recommends the use of chromic acid as a suitable treatment for skin cancer. He calls attention to the importance of thorough cleansing and curetting of the friable diseased tissue before the application, and the insurance of the sore being dried at the time. The pain is quite severe for a few minutes. The advantages are that the scab is tough and durable, which is an important matter in the subsequent healing of the wound. A number of cases are reported in which this treatment was used.

119. **Dioptric Value of the Cornea.**—This article is a controversial one replying to the statements and views of Dr. W. Suter in a former issue of the *Ophthalmic Record*. The exposition by Weiland is necessarily too technical to be reproduced, but his conclusions are that the cornea has a fixed dioptric value which is expressed by a convex lens, the dioptric power of which equals the reciprocal of the anterior focal distance, the lens being placed at the center of the cornea. Such a lens of 43.20 D. for a cornea of 7.8 mm. radius, placed at the

corneal center, will give of distant objects an air image of exactly the same size and at the same place as the real cornea does. This lens does the same refractive work on the parallel rays of light and air as does the cornea; both, therefore, have the same dioptric value. The formation of equal images of distant objects as an essential condition to be fulfilled by the lens which is to be the equivalent of the dioptric power of a refracting surface or system has been entirely overlooked by Dr. Suter and has caused him to make the untenable assertion that the cornea has no fixed dioptric value.

120. **Exophoria.**—The normal position of the visual lines is not definitely settled, but, according to Parker, in the opinion of most careful observers it seems to be at from 1.5 to 2 dioptries esophoric. The average normal exophoric in accommodation is from 4 D. to 5 D. He does not think the opinion of those who claim that 2 D. exophoria for 13 inches is normal, is borne out clinically. The average difference of divergence between far and near is about 5 D. Thus the patient with 2 D. of esophoria for distance will have about 3 D. of exophoria at 14 inches. In orthophoria the average normal power of divergence is about 7 D., and the ratio of power of divergence to the power of convergence is about 1 to 3 or 4. There is no one symptom pathognomonic of exophoria; headache, asthenopia, dizziness, nausea, rapid exhaustion, diplopia, etc., may any of them be present. To determine the amount of exophoria, repeated tests should be made after careful refraction under a mydriatic and the treatment should be with consideration of the patient's general health, and hygienic surroundings as well as the condition of the ocular muscles. Never hope to cure a case by treating a single symptom. He summarizes the treatment of exophoria as follows: "1. Eliminate the possibility of the ambalance being a symptom of some general disease or nervous disturbance. 2. Refract carefully under a mydriatic. 3. If deviation is under 5 D. increase the power of convergence to 50 D. 4. If glasses must be worn for refractive error, decenter or add prisms up to 4 D. 5. Tenotomy or advancement.

125. **Anesthesia, Nausea.**—Kuder finds a valuable gastric sedative in chloretone, especially after the use of morphin in the sickness that it sometimes produces. He has also tried it as a preventive of nausea during or after general anesthesia. In a series of 7 cases, 15 grains of chloretone were given before administering the anesthetic; none of the patients vomited during or after the inhalations of chloroform or showed any gastric disturbance whatever. In one case in which it was necessary to give the anesthetic immediately after a full meal, chloretone was used as a preventive of vomiting with great success.

130. **Tropical Remedies.**—Porter suggests attention to local remedies employed by the natives in tropical regions, many of which are specially effective, as he has observed. One of these used for yellow fever consists in verbena officinalis and guinea-hen-weed (pentiveria alliacea) and has good results. He thinks if it were necessary, instances of the efficiency of aboriginal therapeutics in the treatment of almost all tropical diseases might be multiplied, and the subject is well worth following up.

135. **Pelvic Surgery.**—Deaver pleads for simplicity in surgical operations. He claims that it means safety, surety, confidence, neatness and saving of time. He prefers the abdominal route in the majority of cases as being simpler of performance, safer, avoiding distributing infection, and reducing the danger of general peritonitis by the use of gauze packing. It offers less liability of injury to the bowel, ureters, and important blood vessels, and adhesions are less likely to follow. It minimizes the danger of hemorrhage and aids generally by the facility offered for inspection. It also enables the surgeon to operate with very few instruments. One of the greatest advantages is the possibility of the use of the Trendelenburg position. Radical operations per vaginam are with few exceptions, he thinks, to be discountenanced on account of the limited area for manipulation, and the impossibility of inspection without destruction and removal of the uterus, which should not be done except for good and sufficient disease of that organ itself. The greater liability to hemorrhage, primary and secondary, the greater danger of injuring the ureters, bowels, bladder and large blood vessels, and the danger of doing incomplete surgery are mentioned, also the inability to repair satisfactorily injuries to the bowels or bladder, and lastly, he mentions the inability to deal safely with inflammatory masses which involve the vermiform appendix. It is good practice, he says, to remove the appendix when the abdomen is opened for other reasons, if it can be done without added risk to the patient, as every human being who is without an appendix has a better chance in the struggle for existence than he who is menaced by the treacherous and touchy little organ.

FOREIGN.

British Medical Journal, July 20.

Total Extirpation of the Prostate for Radical Cure of Enlargement of that Organ. P. J. Freyer.—The author has operated in four cases successfully for complete enucleation of all the lobes of the prostate through a suprapubic opening. After introducing the rubber catheter the most prominent portion of one lobe is caught if possible by long forceps and the mucous membrane covering it snipped by scissors. Through this incision a forefinger is introduced and the tumor enucleated, the same process being followed on the other side and subsequently on the middle lobe. During the removal of the lower lobe the finger is passed forward as far as the triangular ligament. Introduction of the assistant's finger into the rectum pushes forward and steadies the tumors, thus facilitating their removal. The bleeding, though a little profuse at first, is easily stopped. No vessels have to be tied or sutures introduced. A one-half inch drainage tube is inserted in the suprapubic wound for a short period; the results have been good. He discusses the subject and the anatomy of the parts and shows that each of the lateral lobes is really independent, the prostate being a double organ in early fetal life. In the removal by the method under consideration, the organ is enucleated in its capsule from the surrounding sheath, and then stripped off the urethra, which with its enveloping tissue is left intact. The ejaculatory ducts are also left uninjured when the lobes come away separately, or the urethra was pushed between them; he is not so certain as to this when the prostate comes away as a whole, as happened in one of his cases, but this is not of practical importance at the age at which the operation is performed. The large cavity left after enucleation of the prostate rapidly contracts by the inherent elasticity of the sheath, the contraction of the surrounding muscles and pressure of the neighboring parts; its surfaces being brought together, and the parts being vascular, union by first intention probably takes place. In this operation there was complete restoration of the power of voluntary micturition after habitual catheterization had been employed in one case for five or six years.

The Danger of Anthrax from the Manipulation of Horsehair, and its Prevention. Alexander Scott.—The dangers of infection from horsehair are noticed by Scott, who reports a case in which anthrax was produced by contact with this substance, and he thinks that such possibilities are frequent. For the prevention of the condition he would suggest that the workers in horsehair should always wear overalls and no one with abrasions or sores should be allowed to work unless absolutely protected. All workers should wash themselves frequently, and especially before taking food and any case of illness. Boils or swellings should be reported to the manager so that the disease may be taken in its early stages, and that other workmen similarly exposed can be warned. The bales should be immediately immersed in water, and no handling of the raw material be permitted, except in the wet state. With this, risk of contagion will then be only possible through abrasions of the skin. He has no faith in fans, respirators or currents of air; the germ must be killed; by such means it is simply shifted. The hair should be boiled, say for thirty minutes, in water to cleanse it and soften the agglutinative discharges, which may contain the germs. Afterwards steam should be applied for some time at pressure of 0.15 atmosphere. If complete disinfection by boiling is desired it can be accom-

plished by the use of a 2 per cent. solution of potassium permanganate, afterwards bleaching with 3 per cent. solution of sulphurous acid. All dust and residue should be carefully burned. With these precautions he thinks the disease may finally be stamped out.

Progress of Abdominal Surgery. CHARLES S. KILNER.—The history of abdominal surgery is reviewed by Kilner, who credits McDowell's first ovariotomy as the starting point. He also says the most scientific and valuable advance in the whole range of abdominal surgery has been the various operations for anastomosis between the stomach and intestines and between the different portions of the intestinal canal, for the principle of which and the rendering it of practical utility we are indebted to Professor Senn. He also gives credit to another American, Fitz of Boston, for our knowledge of appendicitis.

Some Considerations in Relation to the Investigation of Cancer. HERBERT C. MAJOR.—The alleged increase of cancer, and Newsholme's view that it is possibly largely due to improvement in registration and thoroughness in its recognition, etc., is first noticed by Major, who, while recognizing that the general opinion and weight of evidence appear to be in favor of actual increase, still thinks there is some basis for Newsholme's theories. As regards the question of specific parasites of cancer, he says: Can we admit it as settled that especially when the difficult and highly-special nature of the investigation is considered, that any number of failures should necessarily outweigh the apparently definite successes of Sjöbring and others in producing true cancer by inoculation, few as the successes have as yet been? May it not, on the contrary, be reasonably assumed that these results are well founded and the cause of failure should be looked for by further investigation?

The Lancet, July 20.

The Pathology of Hysteria. THOMAS D. SAVILL.—After first showing a typical hysteric syncope, the author calls attention to the special clinical features: an innate, or inherited tendency to fainting spells, etc.; the sex of the patient, almost invariably female; the determining cause, usually either emotional or shock; the liability of the patient to flushings or flush-storms, which are interchangeable with one another and with faints; pallor lasting through the attack, indicating that it is almost certain to be due to vasomotor disturbances. The copious urination after the shock, on account of the kidneys being very sensitive to any alteration of the blood pressure, furnishes a sort of clue to the pathology. The cerebral blood pressure, as Leonard Hill has shown, is largely if not entirely regulated by the amount of blood in the sphlanchnic area where the arterioles are capable of an enormous amount of expansion and contraction, and this, Savill believes, is the basis of the pathology of the faints and some of the other symptoms. It seems highly probable that the nervous apparatus of the sphlanchnic area of hysteric individuals is unduly susceptible, readily influenced by emotional conditions. Next he notices the hysteric diathesis, characterized by the lack of will power, emotional instability and physically by vasomotor symptoms, such as flushing and sometimes even localized erythema or stigmata. Also these patients have the superficial and deep reflexes slightly exaggerated and there is a variability of vital phenomena from day to day which is characteristic. Sooner or later, generally before 25 or 30 years of age, a large proportion of these subjects has some decided manifestation of hysteric effects, such as hysteric attacks, anesthesia, etc. As regards the causes of hysteria the two predisposing ones are sex and heredity. Out of 336 cases which he collected, only 26 were males. He calls attention especially to the heredity in these cases, either direct or indirect, and to a point which he thinks has not been sufficiently emphasized, alcoholism in the parents as a cause of this condition. Among the exciting causes may be mentioned anything that will lower the bodily resistance, the will power or the emotional stability. He does not take any stock in the theory that celibacy and unsatisfied sexual desire are causes, though he says it is not a question easily settled. Environment undoubtedly has its effects, and education and social position count for something; the proportion of hysteric cases is largest amongst the leisure classes, though the difference in percentage is not great. He quotes Briquet that hysteric mothers lose their children more generally at an early age, possibly not knowing how to take care of them so well. The pathology of the condition, as already noted, is due to sensitiveness of the splanchnic circulation, and he finds in the ileo-hypogastric nerve a hysteric center. This nerve is apparently the centripetal depressor nerve of the abdominal sympathetic, and irritation of it by pressure in this region causes dilatation of the sphlanchnic area and consequently cerebral anemia.

Prognosis and Treatment of Ascites Occurring in Alcoholic Cirrhosis of the Liver. H. CAMPBELL THOMSON.—The author divides ascites which during life appears to be due to hepatic cirrhosis, into three groups: 1. Those in which the diagnosis is erroneous. 2. Those in which the ascites is associated with cirrhosis, but actually due to some other cause. 3. Those in which the ascites is directly dependent upon the cirrhosis. The liabilities of error in the diagnosis of cirrhosis are numerous and the first class is only mentioned for the purpose of emphasizing the necessity of basing the evidence of cures upon ultimate postmortem examinations. The commonest causes of ascites associated with, but not directly dependent on, hepatic cirrhosis are undoubtedly chronic peritonitis and chronic perihepatitis. The third group, where the ascites depends directly upon the cirrhosis, has a very bad prognosis, the majority of the patients dying within a few weeks after the ascites is first observed. The chances of cure of actual cirrhosed liver, of course, are minimal; but the condition of ascites due to other causes may be somewhat different. He refers here to Morison's operation, and gives a table of the cases thus operated on; concludes that if the operation is to have any future it must be yet shown that it possesses some distinct superiority over tapping. It should not be undertaken if there is reason to believe that ascites is directly dependent upon cirrhosis.

Tuberculosis of the Choroid. GEORGE CARPENTER AND SYDNEY STEPHENSON.—The summary of the paper is as follows: "1. Tubercle of the choroid may be met with in any form of tuberculosis, whether acute, chronic or obsolescent. 2. It is common in acute miliary tuberculosis and tuberculous meningitis, since it was present in 50 per cent. of our cases. As a rule the lesion was of small size, solitary, and limited to a single eye. 3. It is far more important in chronic tuberculosis than is generally supposed. It was present in 9.24 per cent. of our cases. The tubercle in this form of disease may be single, multiple, disseminated, or diffused. In very rare instances it may attain great dimensions and eventually even perforate the tunica of the eyeball. 4. It is present in a certain number of cases of quiescent tuberculosis. It generally takes the form of a large, more or less pigmented, area situated in or about the central region of the fundus oculi, with or without satellites."

Infantile Scurvy. EDMUND CAUTLEY.—The author reports four cases of infantile scurvy, two due to prolonged diet of sterilized cream and milk, and two to patent foods; in these cases the treatment consisted in a diet of unboiled milk, with fruit juice, meat juice and barley water. He believes that the use of boiled milk is by no means contra-indicated, and considering the possible infection of this food it is advisable; any harmful effects can be usually met by proper methods of treatment. While sterilized milk for a continuous diet may produce scurvy it will not, unless continued many months, and will then only produce a mild form of the disease. Any health infant can be brought up on a diet of boiled milk, suitably diluted, and mixed and given in proper quantities and at proper intervals. Failure to bring up the infant on such a diet is rarely if ever due to the fact that milk is cooked, but is due to some error in the mode of feeding or the amount given. A very slight tendency to scurvy can be usually remedied by addition of barley water and a little fruit juice.

Intercolonial Medical Journal of Australasia, June 20.

Value of Peroxid of Hydrogen, Chlorid of Cobalt ($CoCl_2$) and Ferrous Hydrate as Antidotes in Poisoning by Cyanid

of Potassium. C. J. Martin and R. A. O'Brien.—The possibilities of poisoning from cyanid, now used extensively in gold mining, led the authors to make a series of experiments on the antidotes to this chemical. They find that there is no physiologic antidote to hydrocyanic acid or any remedy available that can follow this powerful poison into the circulation and neutralize it. All we can do is to endeavor to stop further absorption by converting the unabsorbed balance into some non-poisonous compound. To do this, chemical reaction must take place very rapidly, and hydrogen peroxid fails entirely from its slow action. The cobalt salts are poisonous; otherwise they would be very useful, since their reaction with hydrocyanic acid is instantaneous. Ferrous salts, administered with sufficient alkali, are as efficacious as cobalt salts. At body temperature the formation of ferrocyanids is instantaneous; but they possess two disadvantages: The difficulty of keeping them in solution and the absolute necessity of administering enough alkali at the same time to completely neutralize any stomach contents. This can be best effected by simultaneous administration of magnesium oxid. The displacement of ferrous salts by other remedies of recent years is no doubt due to inadequate appreciation of this fact. The extreme rapidity of the action of cyanid poison leaves no time to prepare solutions and collect remedies. The authors, therefore, recommend that in all mines and mining laboratories where the chances of accidental poisoning from cyanids occur, solution of ferrous sulphate, weak potash, and a small package of magnesium oxid, together with a stomach tube and suitable receptacle for mixing, should be kept ready prepared in some suitable position, so that they can be administered with only a few seconds' delay.

Bulletin de la Soc. Med. des Hop. de Paris, July 11.

Clinical Determination of the Coagulability of the Blood. G. Milian.—The blood coagulates much more rapidly after it has been flowing a few minutes than at first, especially in the drops squeezed out after the hemorrhage has ceased. Retraction of the clot may not recur at the commencement of a hemorrhage, but may appear toward the end. For these and other reasons, Milian recommends that a hundred glass slides should be arranged along the edge of the table and the patient whose finger is pricked should deposit a drop of blood on each slide, while the number of the drop, the moment of its contact with the slide and the moment when coagulation occurs, are recorded and also the few drops squeezed out of the finger after all hemorrhage has ceased. The exact moment of coagulation can be determined by raising the slide upright. While still fluid, the drop of blood takes the shape of a tear, but as soon as it is coagulated it retains the shape of an inverted saucer. It is important to note the number of drops that fall during each minute of the hemorrhage. In a normal person it lasts two or three minutes and about 20 drops fall. In a person with atrophic cirrhosis, the hemorrhage lasted nine minutes, with 220 drops. In Recklinghausen's disease the curve was intermediate between these extremes. Coagulation occurred in the first drop from the first subject in thirteen minutes; from the second in twenty-nine and from the third in twenty. In the last drop, in twenty-two minutes in the first case: in forty-five minutes in the second, and in thirty minutes in the third. Milian announces that very valuable information can be derived from this comparative study of the coagulating power of the blood in various affections, and promises further details later.

Protracted Uremia with Bulbar Symptoms. P. Londe. In a case of protracted uremia with a bulbar syndrome, the first symptoms were vomiting, distress, with or without gastralgia, suffocation and tachycardia, with indications of progressively increasing uremia, while the condition of the heart did not change. The affection induced vasomotor disturbances, pulmonary and intestinal hemorrhages, vasodilatation, interrupting habitual arterial hypertension, edema, emaciation, various psychic disturbances connected by a typical "anxiety," respiratory disturbances with paroxysmal distress, periodic respiration and a terminal labio-glosso-laryngeal paralysis. Londe calls attention to this bulbar form of protracted uremia. The bulbar syndrome includes the paralysis, vomiting, tachycardia and dyspnea—simple, pseudo-asthmatic or with periodic respiration—the latter a symptom of juxta-bulbar origin—the attacks of distress and the intestinal hemorrhages as vasomotor disturbances. The distress is a symptom which may appear isolated, in the latent form of awaking with a start, and may herald periodic respiration. The Cheyne-Stokes respiration observed does not belong in the bulbar or basilar syndrome proper, but must be due to some transient or permanent derangement in the supra-bulbar tonic centers. The anxiety observed explains to a certain extent the mental condition of certain patients with Bright's disease, who resemble anxious melancholiacs. In these special cases of protracted uremia small doses of opium (5 or 10 cg. in a suppository) are useful in relieving the anxiety. During the periodic respiration, theobromin proved more effective than digitalin, alternately given and suspended for three days. It is possible that lumbar puncture might prove a useful measure in these cases of uremia with Cheyne-Stokes respiration. This case and others observed by Londe, indicate that the medulla oblongata plays a more important rôle in certain cases of uremia than has been hitherto appreciated.

Revue de Chirurgie (Paris), July.

Disturbances Caused by Wisdom Teeth. Moty.—The real pathogenic cause of the troubles due to wisdom teeth, is the inclusion of proliferating epithelial debris around the roots of the tooth. This debris may remain latent, and the proliferating evolution usually starts under the influence of various causes, such as the infection of the gum during the eruption of the tooth, repeated traumatisms from the action of the jaws and caries of neighboring teeth. In many cases, however, the epithelial proliferation occurs without appreciable cause. This vicious evolution is as frequent in the upper as in the lower jaw, but causes less disturbance in the former. Sixteen typical cases are described in detail in support of this new theory, which is proved by the discovery of gingival epithelium proliferating more or less, and, occasionally, irregular particles of enamel around the roots of the extracted teeth. Another proof is the persistence of a fistula with no phlegmonous conditions nor actual dental lesions, and its spontaneous healing as soon as the tooth is extracted; also the comparatively frequent subacute cases with no symptoms except a moderate pain and a certain amount of mobility of the tooth and hyperostosis of the jaw; also the lack of relief from the methods ordinarily employed against strangulation: extraction of the second molar and multiple incisions of the apparently phlegmonous focus. The upper wisdom teeth never cause severe disturbances as strangulation does not occur. Slight disturbances are due to irritation of the gum during the eruption of the tooth; severe, to the proliferation of the epithelial debris, the total inclusion of the tooth or caries. The gravity of the disturbance is usually on account of the invasion of the dental canal by the inflammatory process, the infectious character of this process in case of caries, rendering it especially serious. Strangulation complicates nearly every case, and extraction is the only rational treatment. If necessary to preserve the tooth, the fungus growths at the roots must be scraped off through the external surface of the jaw without opening the buccal cavity.

Archiv f. Gynekologie (Berlin), xxxvi, 1 and 2.

New Method of Extirpating Uterus and Vagina. A. Doederlein.—The entire uterus is drawn down and bisected on the median sagittal line and each half is at once seized in a clamp. The advantages of this procedure are that the entire field of operation is exposed at one stroke and the uterus can be removed without touching the surrounding tissues or wound. Experience with thirty-six patients thus treated has been extremely satisfactory, Doederlein reports.

Remote Results of Extirpation of Primary Carcinoma of the Vagina. Kroenig.—A large number of cases that have been followed are tabulated and the details described. The best results were attained in the cases in which the uterus was removed at the same time. The carcinoma was in the posterior portion of the vagina in 75 per cent. of all cases, and in these the corresponding circle of the rectal tissue should always be

removed. In a personal case described the vagina was so infiltrated with tumors that the finger could scarcely reach the portio. The patient was pregnant and Kroenig waited until term. When labor became vigorous he curetted with a large sharp spoon, the protruding cancerous masses and delivered a living child with forceps. Hemorrhage was controlled with tampons, and the patient left the hospital the ninth day.

Treatment of Eclampsia. A. GLOCKNER.—In 6902 births at the Leipsic clinic, eclampsia followed in 143, that is in 2.07 per cent. Of this number, 80 per cent. were primiparæ; 85.44 per cent. of the 158 children survived the birth. More than 1 per cent. of albumin was noted in 77.5 per cent. Omitting the moribund cases the mortality was 15.49 per cent. In two instances epilepsy developed subsequent to the eclampsia in patients 22 and 26 years of age, respectively. The treatment was venesection, with or without infusion of salt solution; the os was dilated with a rubber bag or enlarged by incision between clamps, and delivery was accomplished at once in profound narcosis. In four cases the convulsions were arrested for twenty-five to seventy-nine hours after one to three venesections. Every case was treated by lavage of the stomach and injection of a solution of some vegetable acid, usually tartaric. In one case a primipara was delivered in seventeen minutes after operative and bloodless dilatation of the cervix. None of the patients succumbed to hemorrhage and only .68 per cent. to sepsis.

Congenital Atresia of the Small Intestine. R. BRETSCHNEIDER.—In eleven cases in which this condition was recognized, an operation was performed for its relief; entero-anastomosis in 4 and an artificial anus in 6. In Franke's case the artificial anus became obstructed with food matters. A mucilaginous substance administered with the food would have prevented this. In the personal case described, the visible intestinal peristalsis, lack of spontaneous feces and vomiting of fetid masses by a new-born infant, in connection with the general depression, indicated intestinal occlusion. A circular constriction at the lower third of the ileum was found at the laparotomy, fifty hours after birth. The atresia and 4 cm. of the intestine were excised. None of the children recovered, but as the operation is the only chance of saving life, it should be undertaken at once and the earlier the diagnosis, the better.

Surgical Treatment of Post-Operative Peritonitis. K. HINTZE.—There is a chance of recovery in apparently the most unfavorable cases of diffuse post-operative peritonitis. Hintze reports two patients successfully operated on. The earlier and the simpler the operation, the greater the chances of recovery. As a rule merely evacuation and drainage of the exudate, with dry asepsis, are necessary.

Treatment of Chronic Endometritis in General Practice. C. MENGE.—Every case of chronic endometritis requires appropriate general treatment, including suggestion in case of hysteria and neurotic complications. The curette should be banished and the general practitioner is also warned against zinc chlorid, but formalin is earnestly recommended for local application in both the hemorrhagic and the secretory varieties of endometritis. It does not cause colic; the scabs are not so hard and thick as with other caustics. It is strongly bactericidal, but there is no toxic absorption, as part of the formalin is retained in the chemically altered tissues, and the rest can not penetrate through this shield. Menge recommends formalin to the general practitioner as especially adapted for ambulant treatment of chronic endometritis, in the proportion of 30 parts of formalin to 70 of water. It is applied on a hard rubber sound wound spirally with a strip of cotton 15 cm. long by 1 to 1.5 cm. wide, thin enough to be transparent, commencing to wind at the tip, the edges of the strip just touching. When the winding is complete, the sound is drawn spirally through the fingers once more to smooth the cotton. Two or three of these cotton-wound sounds are used for each patient. The formalin is never applied at the time of the preliminary investigation, but two or three days later. After insertion of a speculum the external os is washed with sublimate; the cervix is opened with a retractor and the cotton sound then applied. A little gauze is inserted in the vagina afterward to catch any exudation, and is removed by the patient in twenty-four hours. The patient lies quiet on the table five minutes and is then dismissed, to return in eight days. Seven years of experience have shown the great benefits to be derived from this method of treatment and the absence of all danger. The contra-indications are pregnancy, gonorrheal affections, polypi or myomata, and tubercular or malignant alterations of the uterine mucosa.

Berliner Klinische Wochenschrift, July 1.

Hysteria Masking Carcinosis. LILIENFELD.—A woman of 60 who had been a notorious hysteric complained of digestive disturbances and constantly increasing weakness of the legs. The only objective symptom observed was the absence of knee-jerk, which was supposed to be explained by a gouty affection of the knees. After four weeks the patient died with indications of apoplexy. At the autopsy a carcinoma was discovered in the stomach with multiple metastatic carcinosis of the nerves and meninges.

Centralblatt f. Bakteriologie (Jena), June 5.

Third Annual Report of the Italian Society for the Study of Malaria. CELLI.—This society was founded by private initiative and has had only 13,000 lire, or about $2600, at its disposal. The reports and bulletins with recent works on malaria, are distributed to all parts of Italy, and physicians in malarial districts are kept posted in the progress of the study of malaria. The recent regulations to supply even the most remote hamlets of the kingdom with pure quinin at the lowest rates are due to the exertions of the society. It is now urging legislation to render quinin treatment of malaria obligatory, in certain cases, to prevent fatal pernicious fever. Pamphlets written in a popular style and profusely illustrated are to be distributed among the working-classes.

June 10.

Value of Euchinin in the Prophylaxis of Malaria. A. MORI.—Forty-two laborers in an extremely malarious region were treated with .5 gm. euchinin as a preventive measure, in two doses before meals, daily, and all but 5 escaped malarial infection, that is, all but 11.9 per cent. Of the 47 who did not take the euchinin 39, that is, 82.97 per cent., contracted some form of malarial fever.

June 13.

Mechanical Protection Against Malaria. C. FERMI.—Tests with 104 persons are described, who traveled on foot, sleeping in the open air, through the most pestilential malarial regions of northern Sardinia, protected only by bee-keepers' caps, veils and gloves, during the most dangerous seasons of the year. Not one who wore them faithfully contracted malarial infection, but a few boys who occasionally relaxed the necessary vigilance were prostrated by it.

Centralblatt f. Chirurgie (Leipsic), July 20.

Retrograde Esophagoscopy. C. HOFMANN.—A patient who had applied for relief from disturbances traceable to the swallowing of a small nail two years previously, was operated on by an incision in the region of the cardia. Through the fistula thus formed the constriction could be readily dilated from below. It also allowed the introduction of the esophagoscope, which entered for 25 cm. without force. The heart action was noticeably increased but subsided as the patient was reassured. The existence of a diverticulum was thus ascertained, with other important information.

Cure of Phlegmon Consecutive to Perforation of the Esophagus. VON HACKER.—Gastrotomy was done to relieve a woman 37 years of age who had an impermeable stricture of the entire esophagus, resulting from swallowing lye. Before the treatment was completed she was compelled to leave the hospital and returned two months later with the gastric fistula closed. Attempts to eat by the mouth had resulted in perforation of the esophagus and an acute, purulent phlegmon of the mediastinum, in the upper portion of the thorax. A tumblerful of fetid pus was evacuated through a large incision in the neck, with much gas. The cavity was irrigated with a solution of salicylic acid and a strip of gauze was carried down to

the deepest point of the cavity which extended from the spine to the sternum, 10 cm. below the jugular. It was drained and the patient kept in the Trendelenburg position, at first. The perforation in the esophagus closed spontaneously the fourteenth day. This was ascertained by inserting a sound covered with a strip of gauze dipped in potassium cyanid, to the bottom of the cavity. The patient then took a swallow of a 2 per cent. solution of citrate of iron and the gauze was stained bright blue for 3.5 cm. from the tip of the sound. This test was positive until the fourteenth day, after which the blue stain failed to appear. The aspirating drainage was maintained for two months, the patient wearing a bottle for the purpose after she left the bed. Five cases of phlegmon of the mediastinum have been operated on by an incision in the neck and three promptly recovered. Von Hacker's first patient was in such an advanced stage of sepsis that the operation was unable to arrest the consequences. Radiograms showed that the cavity was easier of access from the right side, which was the point of the incision. Von Hacker was prepared to make a second incision from the back, lower down, if the first proved insufficient for thorough drainage of the cavity.

Exploratory Excision Through the Esophagoscope. G. Gottstein.—At the Breslau clinic small fragments of dubious tumors have been excised through the esophagoscope 47 times in 34 cases. This procedure is not at all dangerous or inconvenient; the point bleeds but slightly and the excision frequently opens a passage into the stomach and thus relieves the patient. Gottstein uses a special forceps for the excision. In 29 cases the microscope showed a carcinoma, in 3 an adenoma, in 1 a peptic ulcer and in 1 actinomycetic infection of a gland.

Resection of the Lung. L. Heidenhain.—The patient was a man of 42 with an extensive suppurating bronchiectasis. The left lower lobe of the lung was disseminated with multiple abscesses, the upper lobe not suppurating and the other lung sound. The resection of the lower lobe produced a remarkable improvement in the patient's general condition. There was considerable hemorrhage, controlled by clamps. Cicatrization was promoted by fragments of lung tissue adherent to the walls of the cavity. Seven months after the operation the cavity was lined with bronchial mucosa. The fistula was still secreting a muco-purulent fluid mostly derived from the open bronchi, which required cleansing twice a day. A carcinomatous nodule was found in the resected tissue. The patient died nearly eight months later—cause unknown.

Bone Charcoal After Operations for Local Tuberculosis. A. Fraenkel.—Bone charcoal is as effective as iodoform in promoting the healing of wounds after operations on account of local tuberculosis. It can be used as a powder or in a glycerin emulsion. Fraenkel recommends the former, and believes that the proliferation of tissue induced by the mechanical action of the powder gives it an indirect bactericidal influence, similar to the action of iodoform.

Pure Carbolic Acid for Septic Wounds. Von Bruns.—Phelps' method of treating wounds with pure carbolic acid is highly commended by Bruns, who endorses it after much clinical and experimental research.

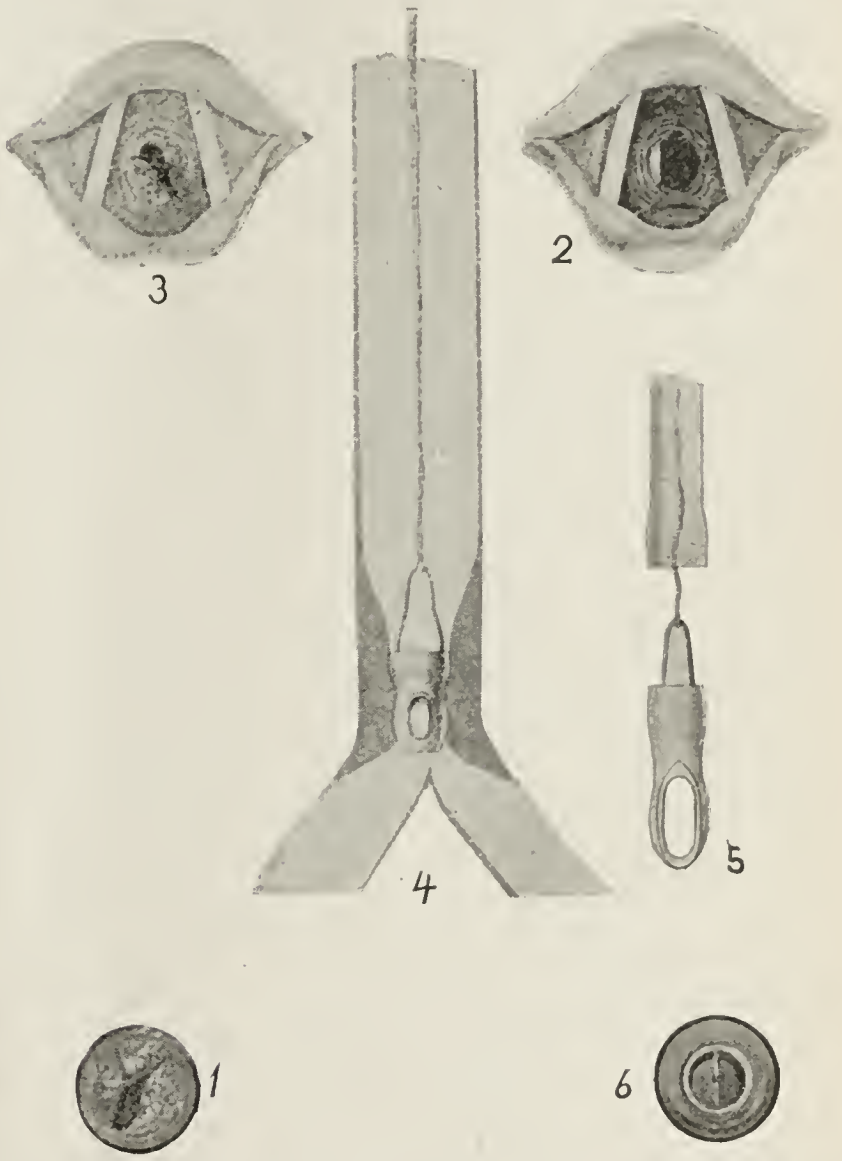
Post-Operative Pneumonia. Stolper.—Fat embolism of the lungs is a factor in the production of post-operative pneumonia which has not yet been sufficiently regarded. Stolper found extensive fat embolism in the lungs of an elderly woman who died eight hours after a laparotomy to relieve ileus from gallstones.

Remote Results of Castration for Tuberculosis of the Testis. Von Bruns.—Reviewing 111 cases treated at Tübingen during the last fifty years, Bruns finds that 46 per cent. of the patients treated by unilateral castration have been cured for from three to thirty-four years, and that 56 per cent. of the patients treated by bilateral castration have been cured for three to thirty years. One-half of all the castrated patients were permanently cured. In all of these the tuberculosis was restricted to the genital organs. Almost all have died who had tubercular lesions of the urinary or other organs.

Deutsche Med. Wochenschrift (Berlin and Leipsic), July 11.

Cinnamic Acid and Igazol in Experimental and Clinical Tuberculosis. M. Wolff.—Numbers of guinea-pigs infected with tuberculosis were treated with cinnamic acid and other groups with igazol. Neither treatment had any influence on the development of the infection, which progressed the same as in the control animals, and the anatomic lesions were identical when killed after several months of treatment or the animals died spontaneously. Similar negative results were obtained in 42 patients treated with cinnamic acid and in 27 treated with igazol.

Treatment of Deep Stenosis of the Trachea. H. von Schroetter.—The accompanying illustrations show the benefits derived from direct bronchoscopy and the application of a mechanical device to dilate tracheal stenosis. The patient was a woman of 47 with a primary tubercular constriction of the trachea, shown in Fig. 1, as observed by bronchoscopy, 23 cm. below the teeth. The stenosis was curetted and treated with



lactic acid, securing the result seen in Fig. 2. The constriction recurred, however, Fig. 3, and with recurring bronchitis threatened danger of suffocation. To remedy this Schroetter inserted under bronchoscopy the device shown in Figs. 4, 5 and 6. It was made of German silver as a certain weight—4 gm.—was necessary to facilitate its insertion and maintain it in place; the polished surface offered less friction to secretions than rubber, and it cast a distinct shadow in radiograms. The thread was fastened outside of the mouth. The relief was so great that the patient clamored for the dilatation. The tube was left in place for seventy hours in the course of twenty-one days, an average of a little more than three hours a day. It fitted so perfectly that a slight effort was necessary to draw it out, and even the most violent coughing failed to dislodge it. The tube was 18 mm. long, and 10 to 12 mm. in diameter. The patient was seen for the first time in July, 1900. The systematic dilatation occurred in January, 1901, during three weeks and the patient has since been free from all disturbances from stenosis, and there have been no symptoms of irritation or decubitus from the compression of the dilator. This method of

treatment would probably prove efficient in scleroma of the trachea, post-syphilitic cicatricial formations or traumatic stenosis after tracheotomy with struma, of which Schroetter has recently had occasion to observe a case.

Muenchener Med. Wochenschrift, July 9.

Septic Endocarditis. LENHARTZ.—Four recovered out of 38 cases of septic endocarditis at the Hamburg General Hospital, and 1 patient is still under treatment. In 22 cases the endocarditis was acute, lasting from four days to eight weeks, eleven days being the average of 18 cases. In 16 cases the disease assumed a chronic course of between three and seven months. Few physicians are aware of the fact that septic endocarditis can run such a protracted course. In Huebner's wide experience he has seen but 4 chronic cases, the duration ranging from four to nine months. In 12 patients there were evidences of old valvular defect, but in 2 of these the recent extensive vegetations were at points remote from the old, once at the aorta and once at the tricuspid. In 3 other cases of severe sepsis, the blood swarming with streptococci during life and innumerable metastases, in spite of old, extensive endocarditis, there was no trace of recent valvular lesions. In 11 cases the fatal endocarditis followed an injury of the urethra, in 7 from the introduction of a catheter, bougie or something of the kind and in 4, fresh gonorrheal lesions. In 5, it followed the puerperium, in 5 croupous pneumonia and in 2 each, angina and cholecystitis with inflammation of the portal vein. Loeb has recently collected 62 cases of endocarditis after gonorrhea, including a number of recoveries. Lenhartz observed one case—a housemaid 16 years old—with violent, acute gonorrhea for eight weeks, when suddenly severe general symptoms appeared, dyspnea and oppression in the cardiac region with an unusually loud systolic and diastolic murmur at the base of the heart, chills and intermittent fever. Gonococci were still numerous in the secretions. The abnormal murmurs disappeared on the tenth day and patient recovered. In another, a fatal case, the autopsy after eight weeks' illness with high, intermittent fever, chills and abrupt changes in the temperature of 4 to 5 degrees C., showed extensive ulcerative endocarditis of the pulmonary valves from which pure cultures of the gonococcus were derived. In one of the 5 cases of endocarditis subsequent to croupous pneumonia, the patient, a woman of 54, had apparently recovered from the pneumonia by the eleventh day, although pneumococci had been found in the blood the seventh day. After five days of almost normal temperature and two days of the prodrome, a severe chill was followed by fever of 40.6 C. and a loud heart murmur was audible above the sternum. The autopsy revealed an ulcerative endocarditis of the tricuspid with enormous thrombotic deposits and fresh suppurative meningitis. Pure cultures of pneumococci from the blood developed 1000 to 2000 colonies in 1 c.c. In 3 other cases the endocarditis followed a non-febrile period of two to five days. The patients were all between 48 and 54 years of age. Bacteriologic investigation of 28 cases disclosed the staphylococcus in 8, the pneumococcus in 9, the streptococcus in 10 and the gonococcus in 1, as the cause of the endocarditis. In the chronic cases, the blood showed the same bacteria each time, after intervals of two to four weeks, the number of colonies ranging from 68 to 450 in one case consecutive to the puerperium, from 98 to 276 in another, consecutive to a mechanical injury of the urethra, and from 75 to 2000 colonies of the streptococcus parvus in a case consecutive to angina. The streptococcus parvus was found six times. Anemic and suppurative infarcts may coincide even in the same organ and consequently do not differentiate any special infection, but if the above-mentioned bacteria are found in the blood, the septic character of the infection is established, while their absence classifies the endocarditis as of rheumatic origin. In genuine rheumatism the investigation of the blood and joint effusions has always been negative, but the symptoms indicate a specific agent. Pseudo-rheumatism may be induced by various germs and complicate numerous diseases, scarlet fever, diphtheria, etc., but has nothing to do with genuine rheumatism. In chronic septic endocarditis the affection commences occasionally with a chill, but more often with merely general depression and fatigue in the limbs. Circumscribed pains are at times noted in the vicinity of the joints, aponeuroses and similar points. The illness of the subject early impresses those around him, but he may resist the increasing prostration until chilliness or severe erratic chills, with violent fever compel him to keep his bed. The pallor, enlargement of the spleen, heart murmurs and general appearance are the only objective signs that can be detected except the frequent retinal hemorrhages.

Rheumatic Exanthemata. M. BEHREND.—Several cases are described to establish Behrend's theory that articular rheumatism—personal or the inherited tendency—induces a predisposition to exanthemata and enanthemata. Multiform erythema exsudativum is frequently accompanied by swelling or pains in the joints. In these cutaneous affections the salicylates are indicated on account of their favorable influence on the rheumatic soil. The tendency to recurrence renders the prognosis unfavorable.

Inexpensive Asepsis in the Operating Room. A. HAMMESFAHR.—By banishing sponges, catgut, silk and wire, great saving in the expense of supplies for the operating room, and also in time, is effected. Gauze takes the place of sponges, and the inexpensive celloidin thread is superior in every respect to catgut and silk, and even to wire. Many dangers are avoided and much time saved if the principle is strictly enforced that the hands are never allowed to come in contact with septic matters. Instruments should be used to handle infected dressings, etc. Hammesfahr adds that he has performed 126 major aseptic operations in the last six months in a single small operating room in which he operates also for phlegmons, empyema, gall-bladder infections, etc., and has not had a single case suppurate.

Remote Results of Extirpation of the Gasserian Ganglion. F. KRAUSE.—Krause reports twenty-seven patients treated for excruciating trigeminal neuralgia by extirpation of the Gasserian ganglion. All were between 47 and 72 years of age, except two who were 30 and three between 41 and 46. In several the neuralgia had lasted for twenty-two years, and suicide seemed the only relief. All have been completely cured, without a twinge of the neuralgia since. The first six cases were operated on in '93. Ligature of the middle meningeal artery requires but a few seconds, while it affords much better chances for success and the avoidance of complications. The length of the operation depends on the hemorrhage—in one case it prolonged the operation for three hours. The average time was one and one-quarter hours, but some were completed in twenty, twenty-five and thirty-three minutes. If the bone is sacrificed, fifteen minutes are saved, and this is important in much debilitated patients. Three patients died, one from collapse in a few hours, an elderly woman, much debilitated and a sufferer from chronic nephritis. The second death occurred six days after the operation, the patient a man of 72 with pronounced arteriosclerosis and irregular heart action which had compelled the postponement of the operation. The wound was healing smoothly and the death occurred from heart failure. No cause could be discovered for the third death which occurred twenty days after the operation, a woman of 72, the wound healing normally. In all the patients a portion of the trigeminus had been previously resected with transient, if any, effect on the neuralgia. The resulting lagophthalmus rendered the condition unfavorable for the later operation and caused trouble in a few cases, but he found that corneal ulcers and even severe hypopyons may finally heal. To prevent paralysis of the lower lid, Krause incises parallel with the fibers of the facial nerve. The cornea has to be protected only for the first few weeks. In several cases neuralgic pains have appeared in the other side, but the only sensory disturbances on the side of the operation are occasional twitchings and itching, with a rare, brief burning sensation. Two patients complained of the absence of sensation in the half of the mouth and tongue as a hindrance to mastication. In one case a mental disturbance was cured by the operation. In all cases in which the neuralgia is of a hysteric or neurasthenic nature Krause refuses to operate. The details of each case are described in full in the article which is concluded from the two preceding numbers.

Queries and Minor Notes.

AIR EXHAUSTION OF PLEURAL CAVITY IN EMPYEMA.

MINNEAPOLIS, MINN., July 23, 1901.

To the Editor:—If W. E. P., of Kansas City, will turn to page 1026, Volume II, Bryant's Operative Surgery, he will find a description of the pleural air-pump apparatus he seeks.

Very truly yours, W. M. BECK, M.D.

OXYDONOR.

STAPLES, MINN., July 25, 1901.

To the Editor:—What is an "Oxydonor?" I know that it is not new It is being sold by local agents about here, and I have been asked what it is. I know what they say it is, but want to know what it really is. Has it any virtues or is it pure faith cure? I never saw the instrument. Yours truly,

F. H. KNICKERBOCKER, M.D.

ANS.—Dr. N. C. Morse, Eldora, Iowa, in an article in THE JOURNAL of Dec. 1, 1900, page 1404, entitled "Modern Empirical Inventions," exposes the make-up of three quack inventions, the "electropoise," "oxydonor victory" and the "oxygenor king." There are several of these fakes on the market, and the number is rapidly increasing, as the people are still emphasizing the truth of Barnum's oft-quoted statement.

GOD AND THE DOCTOR.

ST. PAUL, MINN., July 28, 1901.

To the Editor:—On page 294 of your issue of July 27, you discuss the authorship of the familiar lines beginning: "God and the Doctor we alike adore." The original Latin epigram which you quote was written by Euricius Cordus, of Simmershauseu, in Hesse, who was born in 1486, was professor of medicine in Marburg about 1520, and died in Bremen in 1534. It is known of him that he was an eminent physician and a popular teacher of medicine. He introduced the term "Scharbock" (scorbutus, scurvy) into the German language. His son, Valerius Cordus, was also a successful physician, and was the author of the first German pharmacopeia, the printing and introduction of which into the pharmacies of Nuremberg was authorized by the senate of that city in 1535. The following is still another translation of the epigram:

"Three faces wears the Doctor: When first sought,
An angel's—and a God's, the cure half-wrought—
But when, the cure complete he seeks his fee,
The Devil seems then less terrible than he."

An amusing story illustrative of the sentiment expressed in this epigram, in more recent times, is related by Pettigrew: M. Bovart had been attending during a long and sever illness a certain French marquis; one morning during the patient's convalescence, the following conversation took place: "Good day, Monsieur Bovart," said the marquis, "I feel quite in spirits to-day; I think my fever has left me." "I am sure of it," replied the doctor; "your first remark has quite convinced me of it." "Explain yourself," said the marquis. "Nothing more easy," said the doctor. "In the first days of your illness, when your life was in danger, I was 'your dearest Bovart'; as you began to get better I was your 'good Bovart'; this morning I am plain 'Monsieur Bovart'; depend upon it, you are quite recovered." Yours very truly,

BURNSIDE FOSTER, M.D.

Dr. W. L'Heureux Blenkarne sends another translation of the verse to the *British Medical Journal*. This translation was made by Dr. Moxon and printed in his introductory lecture delivered at Guy's Hospital, in 1868. Dr. Moxon's version is as follows:

"God and the doctor they alike adore
Just in the hour of danger and no more,
The danger o'er, both are alike requited:
God is forgotten, and the doctor slighted."

CODE OF HEALTH OF SALERNUM.

MUNCIE, IND., July 31, 1901.

To the Editor:—Can you tell me where I can get Dr. Ordronaux's "Code of Health of the School of Salernum?" C. W. H. K.

ANS.—We do not know the publisher, but believe it was printed for private circulation. Address Dr. John Ordronaux, Roslyn, Queens Co., N. Y.

TREATMENT OF TUBERCULOSIS.

SCRANTON, PA., Aug. 3, 1901.

To the Editor:—Can you inform me concerning the Nordrach treatment for Tuberculosis as spoken of by R. Mander Smyth, in a late edition of THE JOURNAL? R. B. M.

ANS.—The Nordrach method is essentially an open-air treatment with regulated diet, exercise and rest. The method is largely educational, teaching what can be practiced elsewhere. The personality of the superintendent, Dr. Walther, is an important factor.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., July 18 to 24, inclusive:

Frank E. Artand, major and surgeon, Vols., honorably discharged from the service of the United States, to take effect July 31, 1901.

Percy M. Ashburn, lieutenant and asst.-surgeon, U. S. A., from Fort Sheridan, Ill., to duty at Fort Assinniboine, Mont.

Charles N. Barney, lieutenant and asst.-surgeon, U. S. A., recently appointed and now at Key West, Fla., will report for temporary duty to the commanding officer of that post.

William H. Brooks, lieutenant and asst.-surgeon, U. S. A., recently appointed, is relieved from further duty in the Department of California and will proceed to Fort St. Michael, Alaska, for duty at that post.

Charles Y. Brownlee, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Benicia Barracks, Cal., will report for temporary duty to the commanding officer of that post.

Robert Burns, major and surgeon, Vols., now at Plymouth, N. J., will, upon the expiration of his present leave of absence, proceed to San Francisco, Cal., en route to duty in the Division of the Philippines.

Robert E. Caldwell, captain and asst.-surgeon, Vols., leave of absence granted.

George H. Calkins, captain and asst.-surgeon, Vols., recently appointed, from Fort Meade, S. D., to San Francisco, Cal., en route to the Division of the Philippines.

William H. Chambers, contract dental surgeon, from Montgomery, Ala., to Fort Monroe, Va., for duty at that post.

William D. Crosby, major and surgeon, U. S. A., leave of absence granted.

Robert J. Gibson, major and surgeon, U. S. A., member of a retiring board at San Francisco, Cal.

Abram L. Haines, major and surgeon, Vols., leave of absence granted.

John D. Hall, lieut.-col., deputy surgeon-general, U. S. A., member of a retiring board at San Francisco, Cal.

Edwin P. Hayward, captain and asst.-surgeon, Vols., is honorably discharged, to take effect July 18, 1901.

George P. Heard, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Fort McPherson, Ga., will report to the commanding officer of that post for temporary duty.

Lloyd LeR. Krebs, lieutenant and asst.-surgeon, U. S. A., recently appointed, will proceed from Kansas City, Mo., to Fort Leavenworth, Kan., for temporary duty.

Milton E. Lando, lieutenant and asst.-surgeon, U. S. A., now at San Francisco, Cal., is assigned to temporary duty at the Presidio of San Francisco.

Arthur M. Lee, lieutenant and asst.-surgeon, U. S. A., recently appointed, from Marion, Ind., to temporary duty at Ft. Sheridan, Ill.

Franklin A. Meacham, major and surgeon, Vols., having tendered his resignation, is honorably discharged, to take effect July 19, 1901.

John A. Murtagh, lieuteuant and asst.-surgeon, U. S. A., recently appointed and now at the Presidio of San Francisco, Cal., is assigned to temporary duty at the general hospital at that place.

Kent Nelson, lieutenant and asst.-surgeon, U. S. A., recently appointed, is assigned to temporary duty in the U. S. General Hospital, Washington Barracks, D. C.

Roderick P. O'Connor, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Winchester, Va., to Fort Myer, Va., for temporary duty.

Robert M. O'Reilly, lieut.-col., deputy surgeon-general, member of a board at Fort Monroe, Va., to formulate a general scheme of construction and improvement at that post.

Robert U. Patterson, lieutenant and asst.-surgeon, U. S. A., recently appointed, from Baltimore, Md., to Fort McHenry, Md., for temporary duty.

George R. Plummer, captain and asst.-surgeon, Vols., relieved from further duty in the Department of Cuba, and, on the expiry of his present leave of absence, to proceed to San Francisco, Cal., en route to the Division of the Philippines.

Adrian S. Polhemus, major and surgeon, U. S. A., member of a retiring board at Fort Leavenworth, Kan.

Ralph S. Porter, major and surgeon, Vols., leave of absence granted.

Charles Richard, major and surgeon, U. S. A., member of a retiring board at Fort Leavenworth, Kan.

Robert Smart, lieutenant and asst.-surgeon, U. S. A., recently appointed, from New York City, to Fort Monroe, Va., for temporary duty.

Verge E. Sweazey, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Sabinsville, Pa., to Fort Columbus, N. Y., for temporary duty.

C. L. Sweet, contract surgeon, leave of absence from the Department of the Columbia extended.

Hugh G. Voorhies, contract dental surgeon, now at Mt. Vernon, Mo., will proceed to Governor's Island, N. Y., en route for duty at San Juan, District of Porto Rico.

Eugene R. Whitmore, lieutenant and asst.-surgeon, U. S. A., recently appointed, from Chicago, Ill., to Fort Sheridan, Ill., for temporary duty.

Compton Wilson, lieutenant and asst.-surgeon, U. S. A., is honorably discharged from service as captain and asst.-surg., Vols., only.

Halsey L. Wood, contract surgeon, now at Washington, Conn., to proceed to Seattle, Wash., for duty on the transport *Rosecrans*.

William P. Woodhull, lieutenant and asst.-surgeon, U. S. A., recently appointed, and now at Fort Clark, Texas, will report for temporary duty to the commanding officer of that post.

Appointments, Promotions, Retirements, Etc.,

Of commissioned officers of the Medical Department of the Army.

During the month ending July 15, 1901, the following changes in the status of medical officers of the regular and volunteer forces were reported from the Adjutant-General's Office, War Department.

Washington, D. C. Previous changes of this character were reported in THE JOURNAL, of July 13, 1901:

REGULAR ARMY—APPOINTMENTS.

To be assistant surgeons, with the rank of first lieutenant, June 29:

Henry H. Rutherford, of Missouri.
Charles C. Geer, of Georgia.
Ernest L. Ruffner, of New York.
William H. Brooks, of North Carolina.
Charles N. Barney, of Massachusetts.
Compton Wilson, of Maryland.
John A. Murtagh, of Pennsylvania.
Eugene R. Whitmore, of Wisconsin.
Patrick H. McAndrew, of Pennsylvania.
Charles Y. Brownlee, of California.
Milton E. Lando, of California.
George M. Ekwurzel, of Pennsylvania.
Gideon McD. Van Poole, of North Carolina.
Irvine W. Patton, of Alabama.
William W. Reno, of Michigan.
Carroll D. Buck, of Minnesota.
George H. R. Gosman, of New York.
Conrad E. Koerper, of the District of Columbia.
John H. Allen, of Tennessee.
Robert U. Patterson, of Maryland.
Roderic P. O'Connor, of Pennsylvania.
William Roberts, of ———.
George P. Heard, of Alabama.
Robert E. Noble, of Alabama.
James W. Van Dusen, of Ohio.
Roger Brooke, Jr., of Maryland.
Wallace De Witt, of ———.
Albert B. Henderson, of Michigan.
Robert M. Thornburgh, of New Hampshire.
Robert B. Grubbs, of Virginia.
Edmund D. Shortlidge, of Delaware
Arthur M. Line, of New York.
Verge E. Sweazey, of Pennsylvania.
Matthew A. DeLaney, of Pennsylvania
Horace D. Bloombergh, of Pennsylvania.
John R. Devereux, of the District of Columbia.
Paul S. Halloran, of Pennsylvania.
Kent Nelson, of Minnesota.
Peter C. Field, of New Jersey
Herbert G. Shaw, of California.
Robert Smart, of New York.
Louis Brechemin, Jr., of Pennsylvania.
Lloyd LeR. Krebs, of Iowa.
William P. Woodall, of Texas.
Clement C. Whitcomb, of Maine.

For the purpose of retirement:

Nathan P. Jarvis, late captain, asst.-surgeon, U. S. A., to be asst.-surgeon, with the rank of captain, June 29, 1901.

VOLUNTEERS—APPOINTMENTS

Richard S. Griswold, of Connecticut, to be surgeon, with the rank of major, June 4, 1901.

Frank E. Artand, of Louisiana, to be surgeon, with the rank of major, June 6, 1901.

Robert E. Caldwell, of Virginia, to be asst.-surgeon, with the rank of captain, June 19, 1901.

Paul Mazzuri, of Louisiana, to be asst.-surgeon, with the rank of captain, June 19, 1901.

Allen J. Black, of Virginia, to be asst.-surgeon, with the rank of captain, July 1, 1901.

PROMOTIONS.

Thirty-eighth Infantry—Captain George L. Hicks, Jr., asst.-surgeon, to be surgeon with the rank of major, May 11, 1901.

Fortieth Infantry—Captain Edward A. Romig, asst.-surgeon, to be surgeon, with the rank of major, May 10, 1901: First Lieutenant William J. Boyd, asst. surgeon, with the rank of captain, May 10, 1901.

HONORABLY DISCHARGED.

Major Samuel T. Armstrong, surgeon, June 30, 1901.
Major Herbert W. Cardwell, surgeon, June 30, 1901.
Major Wilfrid Turnbull, surgeon, June 30, 1901.
Major William B. Winn, surgeon, June 30, 1901.
Major Frank H. Titus, surgeon, June 30, 1901.
Major Henry C. Fisher, surgeon, June 30, 1901.
Major Eugene L. Swift, surgeon, June 30, 1901.
Major John S. Kulp, surgeon, June 30, 1901.
Major Frederick P. Reynolds, surgeon, June 30, 1901.
Major Merritte W. Ireland, surgeon, June 30, 1901.
Major William F. Lewis, surgeon, June 30, 1901.
Major Paul Shillock, surgeon, June 30, 1901.
Major Alexander N. Stark, surgeon, June 30, 1901.
Major Powell C. Fauntleroy, surgeon, June 30, 1901.
Major Charles Wilcox, surgeon, June 30, 1901.
Major Henry A. Shaw, surgeon, June 30, 1901.
Major George W. Mathews, surgeon, June 30, 1901.
Major John Carling, surgeon, July 3, 1901.
Captain James J. Erwin, asst.-surgeon, June 30, 1901.
Captain Charles E. McDonald, asst.-surgeon, June 30, 1901.

DISCHARGED ON ACCOUNT OF MUSTER-OUT OF REGIMENTS.

Major Henry D. Snyder, surgeon, 43d Infantry, June 30, 1901.
Captain Dudley W. Welch, asst.-surgeon, 43d Infantry, June 30, 1901.
Major Joseph T. Clarke, surgeon, 4th Infantry, June 30, 1901.
Major Charles F. Kieffer, surgeon, 48th Infantry, June 30, 1901.

COMMISSIONS VACATED BY NEW APPOINTMENTS.

Major Thos. U. Raymond, surgeon, 40th Infantry, May 10, 1901, by appointment as major and surgeon, U. S. Vols. (act Feb. 2, 1901).

Major Wm. D. Bell, surgeon, 42d Infantry, May 18, 1901, by appointment as major and surgeon, U. S. Vols.

Major Lawrence C. Carr, surgeon, May 31, 1901, by appointment as major and surgeon, U. S. Vols.

Captain Simon J. Fraser, asst.-surgeon, June 14, 1901, by appointment as major and surgeon, U. S. Vols. (act Feb. 2, 1901).

Captain Howard A. Grube, asst.-surgeon, June 17, 1901, by appointment as major, surgeon, U. S. Vols. (act Feb. 2, 1901).

MUSTERED OUT OF THE SERVICE.

Major Abram L. Haines, surgeon, 31st Infantry, June 18, 1901.
Major George L. Hicks, surgeon, 38th Infantry, June 30, 1901.
Major Edward A. Romig, surgeon, 40th Infantry, June 24, 1901.
Captain Wm. J. Boyd, asst.-surgeon, 40th Infantry, June 24, 1901.
Captain Thomas R. Marshall, asst.-surg, 41st Infantry, July 3, 1901.
Lieutenant Edward J. Barrett, asst.-surgeon, 41st Infantry, July 3, 1901.
Major Charles L. Forbush, surgeon, 44th Infantry, June 30, 1901.
Captain Charles M. Galbraith, asst.-surgeon, 47th Infantry, July 2, 1901.
Captain William P. Purnell, asst.-surgeon, 48th Infantry, June 30, 1901.
Major Robert Burns, surgeon, 49th Infantry, June 30, 1901.
Captain William C. Warmsley, asst.-surgeon, 49th Infantry, June 30, 1901.
Lieutenant Joseph H. Carroll, asst.-surgeon, 49th Infantry, June 30, 1901.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending July 27, 1901:

Asst.-Surgeon E. O. Huntington, detached from the *Newark* when placed out of commission, and ordered home to wait orders.

Surgeon C. F. Stokes, ordered to the *Oregon*, immediately.

Surgeon P. Leach, detached from the *Oregon*, upon reporting of relief, and ordered home to wait orders.

P. A. Surgeon A. Farenholt, detached from the *Oregon*, and ordered home to wait orders.

Surgeon G. T. Smith, detached from the *Mayflower*, when put out of commission, and ordered home to wait orders.

P. A. Surgeon D. N. Carpenter, detached from the Naval Hospital, Chelsea, Mass., and ordered to the *Franklin*.

Asst.-Surgeon B. R. Richardson, detached from the Naval Hospital, Newport, R. I., and ordered to the Naval Hospital, Chelsea, Mass.

Asst.-Surgeon J. B. Whiting, resignation accepted to take effect from August 3, 1901.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended July 27, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

Alaska: Juneau, July 3, 9 cases.

California: Los Angeles, July 6-13, 1 case; San Francisco, July 7-14, 1 case.

Illinois: Chicago, July 13-20, 1 case.

Louisiana: New Orleans, July 13-20, 1 case.

Massachusetts: Boston, July 13-20, 2 cases; Fall River, July 13-20, 1 death.

Michigan: Detroit, July 13-20, 1 case.

Minnesota: Minneapolis, July 7-20, 6 cases; Winona, July 6-13, 1 case.

New Jersey: Jersey City, July 14-21, 2 cases; Newark, July 14-20, 8 cases.

New York: Elmira, July 6-13, 2 cases; New York, July 13-20, 35 cases, 12 deaths.

Ohio: Cleveland, July 13-20, 1 case.

Pennsylvania: July 13-20, Lebanon, 1 case; Philadelphia, 4 cases, 1 death.

Tennessee: Memphis, July 13-20, 1 case.

Utah: Salt Lake City, July 13-20, 1 case.

Washington: Tacoma, July 7-14, 1 case.

Wisconsin: Milwaukee, July 13-20, 1 case.

Philippines: Manila, May 25-June 15, 8 cases.

SMALLPOX—FOREIGN.

Austria: Prague, June 29-July 6, 4 cases.

Belgium: Antwerp, June 29-July 6, 2 cases, 1 death.

China: Hongkong, June 8-22, 4 cases, 3 deaths.

Colombia: Panama, July 8-15, 4 cases.

France: Paris, June 29-July 6, 10 deaths.

Great Britain: Glasgow, July 5-12, 5 cases, 1 death; Liverpool, June 29-July 6, 1 case; London, June 29-July 6, 6 cases.

India: Calcutta, June 15-22, 6 deaths.

Japan: Nagasaki, June 21-30, 1 case.

Italy: Messina, June 29-July 6, 21 cases, 1 death.

Netherlands: Rotterdam, July 6-13, 4 cases.

Russia: Moscow, June 22-29, 11 cases, 1 death; Odessa, June 29-July 6, 2 cases; Warsaw, June 15-22, 6 deaths.

Spain: Corunna, June 29-July 6, 1 case.

Straits Settlements: Singapore, June 1-8, 1 death.

Switzerland: Geneva, June 22-29, 1 case.

Turkey: Smyrna, June 8-15, 1 death.

Uruguay: Montevideo, May 25-June 8, 49 cases, 3 deaths.

YELLOW FEVER.

Mexico: Vera Cruz, July 6-13, 3 cases, 2 deaths.

Salvador: San Salvador, June 20, present

CHOLERA.

India: Bombay, June 18-25, 3 deaths; Calcutta, June 15, 37 deaths.

PLAGUE—UNITED STATES AND INSULAR.

California: San Francisco, July 6-11, 5 cases, 4 deaths.

Hawaii, Honolulu, July 6, 1 death.

Philippines: Manila, May 25-June 15, 57 cases, 43 deaths.

PLAGUE—FOREIGN.

Africa: Cape Town, to June 29, 749 cases, 341 deaths; Maitland, June 9-15, 2 cases; Port Elizabeth, June 9-15, 3 cases; Simonstown, June 9-15, 1 case.

China: Amoy, May 25-June 1, 700 deaths; Hongkong, June 8-22, 306 cases, 303 deaths.

India: Bombay, June 18-25, 62 deaths; Calcutta, June 1-22, 22 deaths.

Japan: Yamanashi Ken, July 5, 1 case.

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Original Articles.

ELECTRO-THERMIC HEMOSTASIS IN ABDOMINAL AND PELVIC SURGERY.*

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With the development of aseptic surgery arose the necessity in hemostasis, not only of a certain method of occluding the vessels, but of doing it with an agent which would not add a complication to the case either immediately or remotely. No method of hemostasis generally used fulfills this definition. The use of the actual cautery leaves carbonized tissue, a slough and the danger of subsequent hemorrhage. The objections to silk ligatures, especially the size required for large blood vessels and pedicles in the pelvis, are only too well known. The introduction of sterile absorbable ligatures bid fair to solve the problem; yet we have lately the angiotribe, which is also uncertain, for Doyen and those following him use it now simply to compress a groove in which the animal ligature is applied without danger of its slipping. The angiotribe alone, without the addition of the ligature, is slow and with safety can not be removed much under three minutes. If applied four times in a case nearly a half-hour is consumed, for the time used in removing and applying is considerable. In the shorter process by the angiotribe with the ligature added we retain some of the dangers of the ligature. In the use of the ligature the personal equation is a great and important factor in the results obtained. Yet allowing absolutely perfect technique and sterile material the ligature in an infected field or when thrown around such a body as the appendix or Fallopian tube is especially objectionable. I will make no attempt to cite cases showing the various effects following occasionally the use of ligatures. I will say this: If it is possible to control hemorrhage within the abdomen and pelvis without the use of any extraneous material which remains after hemostasis and by a method which is rapid and fulfills the definition of a perfect hemostatic as given in the beginning of this paper, we have added very materially to the resources of surgeons. Is there any hope of such a possibility? I believe so. As already stated, the angiotribe is slow, and after its use a fair percentage of cases bleed. There is something missing in this instrument, that is, sufficient heat in the compressing blades to cause coagulation of the albuminous constituents of the compressed area. This compressed and coagulated area under the proper amount of heat becomes desiccated. The constituent histological elements, whether blood vessels, nerves or mucous membrane, in the areas so treated lose their identity so that the microscope does not discover them. The only practical method of obtaining heat in the blades in a measurable and controllable form is by electricity. Hence the instruments are electrothermo-hemostatic.

The credit for the introduction of such instruments and methods belongs to the late Dr. Skene. While he gives Keith the credit for having first used heat to the compressing blades of a forceps in the control of hemorrhage, and while he leaned on Keith's experiences, the application of electric heating for this purpose and the development of the first electrothermo-hemostatic instruments was an original procedure with Dr. Skene, and so important a one that with its reduction to the proper degree of practicability it bids fair to at no distant day displace the ligature, especially in the hospital operating room. The introduction of new methods is attended nearly always by imperfect agents. Skene's electrothermic forceps and clamps were a wonderful innovation and a great advance over the crude application of pressure and heat as practiced by Keith. Skene's instruments were open to some objections, which partly accounts for the slowness of their adoption by the surgical world. When I became interested in the subject the two chief objections were that the conducting cord was rubber-covered, interfering with perfect asepsis, and second, the heating medium was not capable of heating sufficiently rapidly the heavier instruments. I decided to use irido-platinum for the heating medium, a ribbon of which an inch and a half long and one-quarter wide was concealed and insulated in one blade of my first forceps. It required a much heavier current than the Skene forceps and gave a more rapid and greater amount of heat. My second improvement was to insulate and inclose in metal the conducting cord, which made a waterproof instrument, capable of standing boiling indefinitely. The Skene instruments have now this improvement. My experience with the various forceps I had made led me gradually to a better understanding of the greatest deficiency in this method of hemostasis for thick surfaces and pedicles, namely, the inability to get sufficient pressure between the blades of any instrument, forceps or clamp, in which unfortified hand pressure alone was used. On more than one occasion, after supplying even more than enough heat to the blade of my forceps, bleeding occurred from some vessels running through the compressed area, after section, requiring re-application of the instrument to these points. Another objection I found to my own early instruments was, that owing to the great resistance of the comparatively large platinum surface the conducting cord became so hot as to heat the whole length of the forceps, and the handle rendering it dangerous when in contact with the tissues and necessitated great care in protecting them. I finally had made an electrothermic angiotribe with the conducting poles emerging

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at right angles from the proximal portion of the heating blade. This instrument was made with a screw at the end of the handles and with teeth at the end of the blades to prevent recession of the compressed tissues. Both the teeth and the screw were found objectionable. The teeth were removed and the screw replaced by an easily-working lever. Subsequently I modified the lever angiotribe of Doyen into an electrothermic angiotribe with the poles from the heating blade. This is an extremely useful instrument, can be made both light and heavy, and will answer all indications in electrothermic hemostasis, except very small bleeding points, as in the omentum, mesentery, and incisions, for which indications I have devised an artery forceps electrotherm to be presently described.

The heating medium in my large forceps and angiotribe is a piece of irido-platinum, one and a quarter to one and a half inches long, three-sixteenths wide and of 24 gauge, and is split down the middle after the fashion of a cautery knife to near the end. This is concealed and insulated in one blade, and with a current of 5 volts and 60 amperes will heat the blade in from twelve to thirty seconds, according to the thickness of the metal forming the blade. By increasing the voltage and amperage within safe limits the heat may be generated more quickly. The longest application with the heaviest instrument need never exceed one minute, including the time of heating. The lighter instruments for occluding the appendix and hemostasing the meso-appendix and isolated points in the broad ligament are affected in from fifteen to thirty seconds. I have found from practical use that the proper degree of heat to be generated in the blade is that which causes a few drops of water placed on it to boil. When this point is reached the current is shut off. This temperature is higher than Skene recommends. It will not char or burn the tissues. It may not be generally known that a current of steam projected against incised tissue for a few seconds has not interfered with primary union. If we remember that the tissue to be hemostased by the electrothermic method is first compressed and freed from considerable moisture and that the temperature I advocate is exceedingly brief at this point, being dissipated rapidly, it is easy to see that it is safe and that no carbonized tissue will be left. The largest size angiotribe has the blades wide enough to make section through the hemostased area, rendering operations like hysterectomy practically bloodless.

By the use of one angiotribe and one medium forceps with strong compressing blades any major hemostatic problem can be solved. For small vessels, bleeding points in incisions, as in the removal of the breasts, in the omentum, mesentery, or isolated points anywhere that can be grasped by hemostatic forceps, I have devised what I call an artery forceps electrotherm. It consists of a small oblong block of steel hollowed out for the reception of a piece of platinum as a heating medium. My electrotherm heats with the proper current in five seconds. It is grooved to rest against the blades of an artery forceps near the point, to which it transmits heat. I adopt as an artery forceps a straight one like Pean's. The forceps should be straight with a fairly long blade. The electrotherm can be made to accommodate itself to any such forceps. The method of use is as follows: The artery forceps remain on points where pressure is not enough for hemostasis. The electrotherm is applied against the blade as near the point as convenient without touching the tissue, and the current turned on for the few seconds required to obtain the proper heat. The current is turned off, but the electrotherm kept applied about five seconds longer. The electrotherm is then adjusted to another forceps in the same manner, and another, and so on until all the forceps have had their points heated to the proper degree and all hemorrhage is controlled. During this procedure everything except the points to be hemostased are protected. On the removal of the forceps small white agglutinated and desiccated spots mark the site of the former bleeding points. The quantity of agglutinated material in these spots is very much less in bulk than the catgut which ordinarily would have been used as a ligature; it is not so foreign to the tissue, is perfectly sterile, is not a painful spot, even if a small nerve was included; its lymphatics are closed and it will not interfere with primary union. I have timed a few rapid operators applying ligatures to small bleeding points. The forceps electrotherm enables us to control the bleeding as quickly at least. With greater practice I believe it will be a quicker process.

With the above variety of instruments, the artery forceps electrotherm for small bleeding points, the electrothermic forceps for tissues of moderate thickness, the appendix and so on, and the electrothermic angiotribe for heavy pedicles, the broad ligament, and so on, it is conceivable that the use of ligatures can be entirely dispensed with and operations be performed more quickly and in almost a bloodless manner.

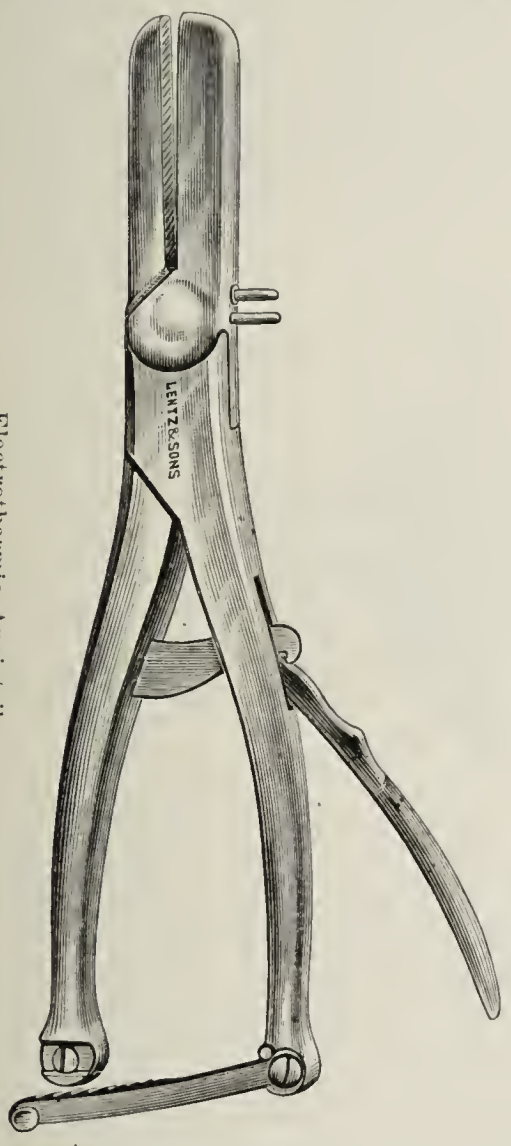
My use of electrothermic hemostasis since my first case has been quite intermittent and the number of cases to be reported is small. The excuse for the paucity of cases is that I have refrained from using this method except occasionally until I could have the instruments in a practically perfect form. I have made a variety of instruments, improving always on the last, all retaining a common feature—rapidly-heating blades. In the beginning, the rendering of the instrument perfectly sterile with the conducting cord metal-covered, and the blade air and water tight, seemed the only requirement. I then had teeth at the end of the blades to prevent recession of the compressed tissue, only to find this a great disadvantage. Ordinary heavy bladed forceps were then found to yield when used on thick pedicles, the Fallopian tube, and so on, and necessitated the introduction of the electrothermic angiotribe. In all, I made seven different instruments before I obtained the proper three. Another reason for not using the method more often is, that owing to the building operations at St. Mary's Hospital and the absence of the electric current, I found it inconvenient to transport and charge a storage battery, and was not always equipped when I might have used the method.

The essentials in this method of hemostasis are, 1, the requisite amount of even pressure between the blades, because with too little pressure even more than enough heat may not control the bleeding; 2, the proper amount of heat, because we must not char or carbonize, and 3, a measurable source of electricity. These three essentials form a unit, and being given there is only one danger, namely, the contact of bowel and other surfaces with the heated blades, which is avoided by using gauze or other means of protection. As to technique, the only other point to mention is that the operating field shall be as dry as possible.

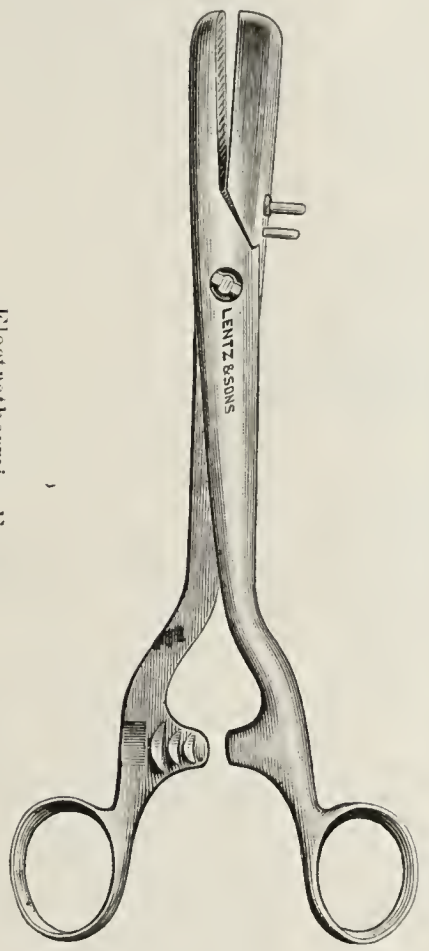
The third essential, a measurable source of electricity, means that it is a dangerous method of controlling hemorrhage without an amperemeter in the circuit. Up to the present I have used storage batteries of two and three cells with a meter attached. As I conceive it, a

meter is absolutely essential, because in a procedure that could be so dangerous, mathematical exactness is required. Every piece of platinum in the heat chamber gives the proper temperature to the blade for a certain voltage and amperage in so many seconds. In other words, when our meter registers we know we will have the proper heat in the blade in so many seconds. To exemplify, the heaviest angiotribe, when connected with the strongest current of my two-cell storage battery, which is approximately 5 volts and 60 amperes, will heat in thirty seconds. My three-cell battery when fully charged gives a little over 7 volts and will heat the same blade in twenty seconds. If the batteries are not fully charged the voltage and amperage decreases and the time required for heating is longer. The small electrotherm can be heated in five seconds with a 5-volt current, whereas it can be safely heated in three seconds with a 7-volt current. This means that according to the voltage and amperage the time required to heat a piece of platinum of a certain size varies. The heating time for each instrument with a given voltage current should be known. It is practical knowledge that a surgeon must acquire before using this method of hemostasis. Guess-work is out of place. Our work will only be safe and scientifically correct when we use a meter. Up to the present I have used storage batteries only, and in a hospital having the continuous current, where they can be constantly charged without transporting, they are very easily managed and serviceable. They give always an even current and when equipped with a proper meter and rheostat are free from objections if sufficiently used. Disuse hurts a battery. In place of a storage battery we can have a motor and transformer connected with the continuous current, the only difficulty is whether a meter can be used in connection to register an alternating current of so low a voltage as we require. In the new gynecological operating room just finished at St. Mary's Hospital, I expect to use a transformer, provided the electricians can guarantee a meter in connection. The arrangement of the apparatus in the operating room should be such that the operator has the meter opposite to him. The handle of fiber connecting the cable and instrument should have a current breaker. With a watch in sight the surgeon is thus absolutely in control.

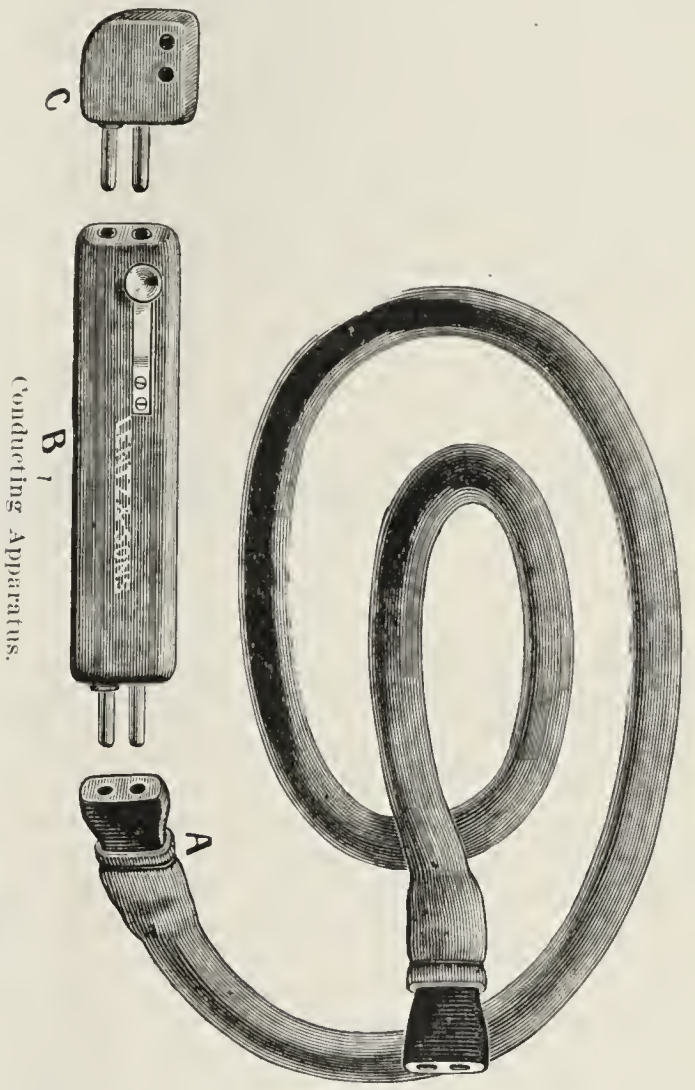
So far reference has been made to the use of these instruments in hemostasis. They are as useful in occluding tubular structures usually requiring ligation, as the vermiform appendix, the Fallopian tubes and the ureter. In dealing with the appendix and the Fallopian tube, if its canal contains pus or is infected, the stump should be left thoroughly sterile and occluded. Tying a ligature around either and sterilizing the exposed end of the stump is not enough. Before sterilizing the exposed stump we have exposed the source of infection and our sterilizing as usually done does not extend through the canal as far as the ligature. The ligature, especially if of silk, may ulcerate through to the infected canal and a localized abscess or infected area result, which often gives much trouble and which perhaps explains some of the secondary effects following in the wake of appendicitis operations. It is chiefly for this reason that many surgeons cut out the head of the appendix and treat the hole in the cecum as an intestinal wound. There is always by this method the danger of contamination, with the intestinal contents and infection. Included in the cases to be reported, the appendix was removed eleven times by the electrothermic forceps as follows: Blades heated in ten seconds or less were applied to the appendix, extending some distance into the meso-appendix, one-third of an inch from the cecum and allowed to remain thirty seconds. Section was made in the compressed agglutinated area near the distal edge, so that no escape of contents was possi-



Electrothermic Angiotribe.



Electrothermic Forceps.



Conducting Apparatus.

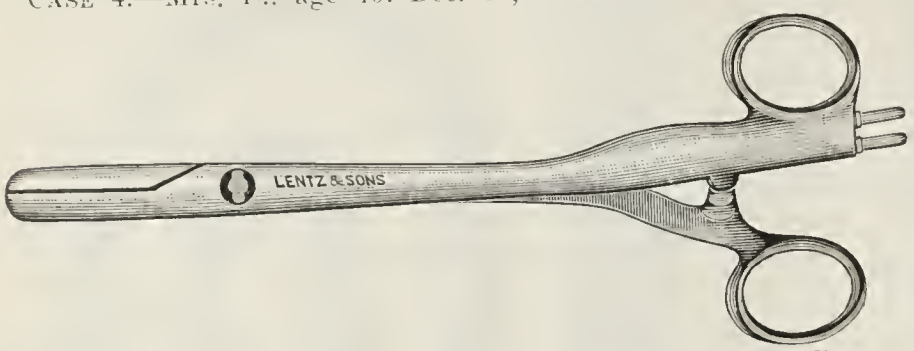
ble. The meso-appendix and its artery are controlled in the same manner and the appendix removed by section through this area. By this method even the scissors that have made the section through the compressed appendix remain sterile and require no special care. In all but three cases I passed a purse-string suture of catgut in the cecum around the head of the appendix, to invaginate and conceal the white, sterile occluded stump. I believe this step is not necessary, but without it the procedure is so radical that with these three exceptions I have refrained as yet from relying on thermic pressure alone. In two cases the purse-string used was of No. 1 catgut, which is perfectly useless as a ligature to the appendix, and proves that heat and pressure alone may suffice.

CASE 1.—Mrs. B., age 35; Nov. 20, 1899. Complete prolapse of the vagina, excoriated suspicious cervix. Vaginal hysterectomy electro-forceps.

CASE 2.—Mrs. N., age 28; Nov. 23, 1899. Several attacks of appendicitis, adherent retroflexed uterus. Ventro-fixation and then appendectomy by electro-forceps. The stump of the appendix allowed to remain without additional suture.

CASE 3.—Miss S., aged 26; Nov. 24, 1899. Appendectomy 36 hours after onset of pain. Appendix swollen to three times the normal, full of pus and becoming gangrenous. Electro-forceps used and section made through the compressed area without escape of pus. Invagination of white desiccated stump by purse-string suture of catgut.

CASE 4.—Mrs. D., age 40. Dec. 11, 1889. Removal of left



A special forceps with short blade and poles from end of handle: used for hemostasing isolated arteries or blood vessels the size of the uterine and ovarian. Water will boil on the end of the heating-blade in less than five seconds. Ten seconds is the proper application of a sufficiently heavy current.

tube and ovary and an old diseased appendix by electro-forceps. Purse-string to stump of appendix.

CASE 5.—Miss X., age 17; Oct. 9, 1900. Inflamed left tube and cystic ovary and varicose veins of the broad ligament, removed by electro-forceps.

CASE 6.—Mrs. F., age 40; Oct. 9, 1900. Left tubo-ovarian abscess and diseased appendix. Electro-forceps. Purse-string suture in addition to invaginate stump of the appendix.

CASE 7.—Mrs. T., aged 34; Dec. 13, 1900. Polycystic ovarian tumor growing from the right side and large enough to nearly cover the bowel surface. Pedicle and very thick adhesion from the right side of the bladder controlled by electro-forceps. Large appendix during acute attack, the primary object of the operation, removed by electro-forceps, with additional purse-string suture.

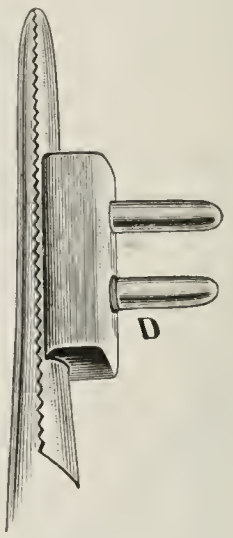
CASE 8.—Mrs. O'D., age 49; Dec. 19, 1900. Appendectomy; also hysterectomy for multiple fibroids by electro-forceps. Death in 40 hours. Acute angulation and sepsis from interference with the blood-supply to the cecum and colon. Patient had been moribund for eight weeks with appendicitis five years before and had never been well since. On operating it required 40 minutes to isolate the appendix, so matted and adherent was the bowel. The mesentery near the ileo-colic junction was badly torn during manipulation and a little of the cecum denuded of its peritoneum. Two sutures of catgut were applied in the mesentery to control severe hemorrhage and an attempt was made to cover over the raw surfaces by peritoneum. The electro-forceps were first applied to remove the appendix and then to the sides of the uterus to perform a hysterectomy. The electro-forceps were not placed near the mesentery. On autopsy the cecum and colon were angry black in places for nearly twelve inches and were acutely angulated and septic, due to the interference with circulation. No evidence of hemorrhage. The hemostatic stumps after the hysterectomy were clear and white, as was also the appendix stump.

CASE 9.—Mrs. C., age 70; Jan. 11, 1901. Spinal anesthesia; vaginal hysterectomy by electro-forceps.

CASE 10.—Mrs. S., age 45; Jan. 29, 1901. Abdominal panhysterectomy by electrothermic angiotribe. Patient had bled almost constantly for two years. She was extremely pale, and had had asthma for several years. She had just recovered from influenza. A fibroid uterus extended to above her umbilicus and bled on the least exertion. This is the first case on whom the electrothermic angiotribe was used. No abdominal pain or the slightest tympany followed the operation. Flatus passed naturally after twenty-four hours and the bowels moved by salines after forty. On the fourth day the temperature suddenly rose, breathing became quick, chest filled, so that on the fifth day there was dulness, friction and higher temperature, and death occurred just after the beginning of the sixth day from pneumonia. An immediate post-mortem of the abdomen revealed an aseptic abdominal cavity. No adhesions, even of the bowel, to hemostatic stumps. The pelvis was perfectly pale and healthy. No carbonized tissue or slough.

CASE 11.—Mrs. K., age 48; Feb. 22, 1901. Ventro-suspension and appendectomy, with extra purse-string suture around stump.

CASE 12.—Mrs. B., age 29; Feb. 23, 1901. Supravaginal hys-



Electrothermic Attachment for Artery Forceps.

terectomy for puerpural sepsis six weeks after labor. Both tubes and ovaries full of pus, with purulent foci in the uterine wall near the cornua. Electrothermic angiotribe.

CASE 13.—Miss R., aged 49; Feb. 25, 1901. Spinal anesthesia. Liomyoma extending to umbilicus, with complete prolapse of vaginal walls and cervix. Vagino-abdominal panhysterectomy by electrothermic angiotribe. Death on the eighth day after an aseptic course for the six first days. Rupture of the peritoneal reflections shutting off the vagina on the sixth day caused by vomiting a long round worm, and entrance of infection. Postmortem showed perfect hemostasis.

CASE 14.—Miss J. S., age 26; April 15, 1901. Appendectomy during an acute attack characterized by severe pain and high fever. Electro-forceps and purse-string suture. No pain in six hours.

CASE 15.—Miss S., age 25; April 18, 1901. Appendectomy during acute attack with high fever and severe pain; 7th attack in twelve years. Electro-forceps: additional purse-string suture. No pain in six hours.

CASE 16.—Mrs. B., age 25; April 23, 1901. Left ovarian abscess two inches in diameter. Thickened infiltrated broad ligament. Indurated adherent omentum in front of the uterus pressing on the bladder and feeling per vaginam like a fibroid. Left tube and ovarian abscess and portion of the broad ligament removed by electrothermic angiotrobe. Bleeding points in the omentum and on the surface of the uterus, from which it was freed, were controlled by artery forceps against which the electrotherm was placed. The appendix was exposed and found swollen with old adhesions and was removed by electro-

forceps and an additional purse-string suture. First case in which artery forceps electrotherm was used.

Case 17.—Miss M., age 35, May 27, 1901. Had already undergone five operations by eminent surgeons, the original one being for appendicitis. I opened for the third time the original incision, freed many adhesions, finally dug out both tubes and ovaries and removed them by electrothermic angiotribe. The possibility of removing adherent tubes and ovaries through an old right-side incision speaks for the practicability of the method.

Case 18.—Mrs. B., age 40; May 29, 1901. Intermittent pain in the right side beginning with a septic miscarriage twelve years ago. On section uterus found retroverted and fixed by light adhesions in the right side of the pelvis. Tubes and ovaries healthy except occlusion of the left fimbriated end. Uterus suspended. Cecum found and appendix exposed; adhesions and shortened stumpy appendix with contracted meso-appendix indicated that some of the right-sided pain had been caused by appendicitis. The appendix was twisted so that the meso-appendix could be included in the grasp of the blades of the electrothermic forceps. The current was turned into the blades for twenty seconds, the forceps allowed to remain on for forty seconds and the stump after section allowed to drop into the abdomen. This is the first case that one application of the forceps included the appendix and meso-appendix, and the third in which no additional purse-string suture was applied.

Case 19.—Application of electrotherm to twenty artery forceps to control twenty bleeding points after removal of the breast by the Halsted method.

Case 20.—Electrothermic angiotribe to hemostase and remove hemorrhoids. No bleeding and little or no pain followed.

While the number of cases reported here is small, the variety is such as to indicate greater practicability for the method than is generally known. The great success attending the application of sterile ligature material in the hands of men doing a large amount of abdominal surgery, may be used as an argument against its adoption or necessity. The use of so much and so complicated armamentarium, it will be argued, will counterbalance any increased safety as regards secondary hemorrhage. My experience proves it offers many advantages independent of hemostasis. There is much greater freedom from pain following section than after the older operative measures. The three post-mortems made show little or no adhesions of bowel surface to the agglutinated sterile non-adhering stumps. When we consider the great number of cases with intestinal adhesions secondary even to aseptic operative work and the suffering entailed therefrom, there is reason to seek for better methods.

While many men advocate the isolation and ligation of the separate blood vessels and their covering by peritoneum as many others still use mass ligation. There is no comparison in the relative advantages of mass ligation and mass electrothermic pressure. By the latter the stump is painless, non-adherent; its lymphatics are sealed and its mass reduced to the smallest possible bulk. But even isolated arteries, as the ovarian and uterine, may be occluded by this method and more quickly than by ligation. There is no abdominal or pelvic operation or particular method of operating in which the ligature is used that this hemostatic procedure can not be used. It is possible to do hysterectomies almost without seeing blood within the abdominal incision. By using the wide angiotribe we may make section within the compressed area, rendering unnecessary forceps to the uterine sides. In operating then the only blood we need see in the pelvis is where we sever across the cervix. The pedicle of an ovarian cyst may not be even tinged on section. In the removal of each appendix reported no blood was seen. A thin white area near the head of the appendix and in the meso-appendix and section through these areas indicates how it can be bloodless. While I have been timid of leaving the stump without other treatment, with my last instruments, which give the proper pressure, I believe it practicable. Dr. Rosenberger, pathologist of St. Joseph's Hospital, in reporting on an appendix, wrote, "upon microscopic examination the area of the clamped portion shows entire obliteration of the mucous, submucous and muscular coats. The opposite serous coats seemed to be in apposition." This means that an area of homogeneous agglutinated tissue forms the stump.

In conclusion, I wish to state that this paper is a preliminary one. I am only one of the early workers in this field. I have given a great deal of attention and time to the study of the method and the development of the instruments.

DISCUSSION.

Dr. Franklin H. Martin, Chicago—I congratulate the Doctor upon his paper and his ingenious improvement on the Skene instrument. When Dr. Skene showed me his outfit, I remember the point was made that they were imperfect because they would become exceedingly hot and he forecast these improvements at that time. Combining heat with pressure is certainly an advantage, and the author seems to have accomplished that combination. I think no one will doubt or criticise the conclusions arrived at by the author that this instrument will enable us to accomplish hemostasis anywhere, and that it will enable us to dispense with ligatures, either permanent or absorbable. The short time necessary to heat this instrument possibly would count for something, but I do not believe that even a rapid operator will be able to secure each point in a shorter time than ten seconds.

Dr. G. B. Massey, Philadelphia—If you consider the physics carefully, you will see that Drs. Skene and Downes have made a mistake in calling this an electrothermic cautery. The fact that a white color follows its use is an important point. Heat applied to the human body never turns the tissues white; it turns them black. It converts the carbon in the body into charcoal. In this instrument we have powerful electrolysis. It probably did not occur to Dr. Skene that he could get so much electrolysis from only four volts, but you have 60,000 milliamperes going through the tissues for a second. The laws of physics prove that an electrical current going through moist tissue always causes decomposition. It can not go through by conduction, but by electrolysis. I think Dr. Martin will bear me out in that.

Dr. Martin—The electricity does not pass through the tissue, as it does not pass from one blade to the other, and therefore you do not get electrolysis. You simply get the heat of the blade.

Dr. Massey—This may be so, as I have not had an opportunity yet to examine the instrument.

Dr. Emil Ries, Chicago—I was interested by the Doctor's statement that the application of this instrument is sufficient to make the tubes impermeable. You remember that when Skene published his book about this electro-hemostasis, he referred to some research I had made on the patency of the tube after salpingectomy. He also made some experiments on the appendix, but unfortunately I never had a chance to see his specimens. The descriptions in the book are incomplete, because he says nothing concerning the condition of the appendix some time after the operation. He mentions that the instrument would be sufficient to close up the tube in a salpingectomy. It is found impossible to close the tube by a ligature of any kind except by folding the peritoneum over the end of it. I should like to have the Doctor tell us about his experiments and the result of his examination of the tubal stump after the use of this instrument.

DR. JOSEPH EASTMAN, Indianapolis—It has occurred to me that possibly the sharp edge on this instrument is an objection because it might cut through tissue and thus produce a hemorrhage. Would it not be better to have the edges rounded, so that the line between the compressed and desiccated and the healthy tissue would not be so abrupt?

DR. J. WESLEY BOVÉE, Washington—I would like the Doctor to tell us what conditions he has found in these cases after the operation, as regards the presence of adhesions.

DR. HENRY P. NEWMAN, Chicago—It is not necessary to apply the angiotribe for three minutes, as stated by the essayist, if a proper instrument of 3000 pounds pressure is used; one minute is usually sufficient. The instrument is therefore (instead of being a time-consumer) an expeditious means of operating upon the broad ligaments or other soft tissue amenable to its use. That the means of hemostasis has been unsatisfactory is evidenced by the introduction of the ecraseur, the retention forceps, the absorbable suture, and more lately the electric-heat apparatus of Skene, and the angiotribe. All of which are indications that the surgeon wishes to get away from the time-honored conventional ligature. The angiotribe has certain definite indications and when appropriately used will be found most satisfactory. The essayist's instrument seems well adapted to certain selected cases, and I see no reason why it should not prove highly satisfactory, providing the instrument is carefully made and reaches the requisite degree of compression.

DR. DOWNES, closing—The electrothermic angiotribe compresses about one-third of an inch of tissue. I have examined it microscopically and found a homogeneous mass, no mucous membrane, no blood-vessel, no nerve. About one-sixteenth inch beyond the compressed end is a coagulation necrosis due to extension of the heat. It is a buffer which causes clotting. There is absolutely no evidence of any histological structure in the compressed area. One of the objections to the angiotribe is that it cuts tissue, but we can apply it carefully, and with this method you can apply it slowly, turning on a little heat and then compressing it. If it should crush, you must include the point crushed. That might occur in an extrauterine pregnancy, in softened infiltrated tubes, and, as in a case of puerperal sepsis I had, where both tubes and ovaries and the uterine walls contained pus, six weeks after a septic labor. I used this instrument, cutting right through, but the blood-vessel was in the compressed area. I felt that her recovery was due to the fact that, without ligatures, I had produced a complete hemostasis. There were two essential objections to Dr. Skene's instruments: one was that they did not give enough heat; and the other, not enough pressure. Therefore, it required much time, three minutes, for heavy pedicles. My first instrument was stronger than Dr. Skene's, but at a point near the center it would not compress because the blades did not meet. I used it twice and in the center of the tissue found an artery not compressed. I modified the instruments until I now have them, I believe, nearly perfect.

This method has nothing to do with electrolysis. It has nothing to do with electricity, except as an agent. The electric current goes into the instrument, into a resistant metal, to give heat by the resistance of that metal to electricity. If you can get any other agent that will give heat it will be just as good as the electricity. I do not know of an instance where this instrument will not safely supplant the ligature. I removed a breast by Halsted's method and rapidly hemostased all blood vessels. The insulation is affected by mica. I am rather timid of pressure alone, and, therefore, have not used the cold angiotribe, but I can turn any angiotribe into this apparatus. I have had three deaths, but they had nothing to do with hemostasis. I have performed an autopsy and found the stumps sterile, white and sweet. I am inclined to believe that there is no such thing as adhesion following the stumps left by this method. The point of contact is sealed and exudes nothing that would make it adherent.

AN EXHIBITOR of Roentgen apparatus in Berlin developed a typical, chronic *x*-ray burn on one hand, which recently became gangrenous and the prompt amputation of the entire member was unable to avert the fatal termination.

A NEW OPERATION FOR RETRODISPLACEMENT OF THE UTERUS.*

EMIL RIES, M.D.

PROFESSOR OF GYNECOLOGY, POST-GRADUATE MEDICAL SCHOOL, CHICAGO.

The vaginal route for operations on uterus and appendages, aside from hystereetomy, is recognized at present by a large number of gynecologists as a safe and convenient method, and is considered by them preferable to the abdominal route wherever it appears applicable. After long and exhaustive discussions the following advantages may be regarded as peculiar to the vaginal route in preference to the abdominal incision:

1. The vaginal route exposing only a limited portion of the abdominal cavity is less liable to lead to infection or so-called shock.

2. The vaginal route, requiring no exposure or handling of intestines or omentum or parietal peritoneum to any extent, avoids the post-operative troubles liable to follow such exposure or handling—adhesions with their consequences, loss of water from evaporation with the disagreeable subjective symptoms caused by it.

3. The vaginal route does away with the visible scar and the possibility of ventral hernia.

4. The vaginal route excludes the possibility of long confinement due to wound suppuration.

5. Operations by the vaginal route are followed by a very short detention of the patient in the hospital.

6. The after-treatment of vaginal operations is extremely simple and the patients are able to resume their work very early.

These advantages of the vaginal route were pointed out from the beginning of its use by Duehrssen and Mackenrodt. These authors used the vaginal route first in the treatment of retrodisplacement of the uterus. The vaginal route for operations on the uterine appendages and the uterus, aside from displacement of the uterus, was an early offspring of their original methods, an offspring which by its valuable adaptability soon threatened to overshadow the original idea. For while the use of the vaginal celiotomy spread and increased, the original vaginal operation of vagino-fixation, as used by Duehrssen and Mackenrodt, began to show serious after-effects. Though the vagino-fixation in itself was comparatively simple and the operative recoveries were rapid and uneventful, the remote results soon proved disappointing, even sometimes disastrous. If the operation was done so as to leave to the uterus a certain degree of mobility, recurrence came early and in numerous cases. If, on the other hand, the uterus was made firmly adherent, the adhesions proved a serious detriment in subsequent pregnancies.

As the general principle of the vaginal operation was desirable, various modifications were tried in order to avoid the disappointing remote results while preserving the advantages of the vaginal route. Intra-peritoneal fixation, extra-peritoneal fixation, fixation above the internal os, and below it, vesico-fixation, all were tried and found wanting. A large number of gynecologists wanted to abandon the vaginal operations for retrodisplacement altogether. In consequence of some confusion as to the terms vaginal celiotomy and vaginal fixation, some went so far as to condemn the vaginal

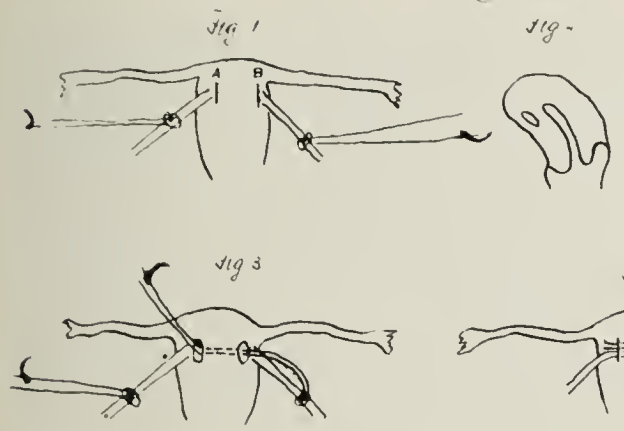
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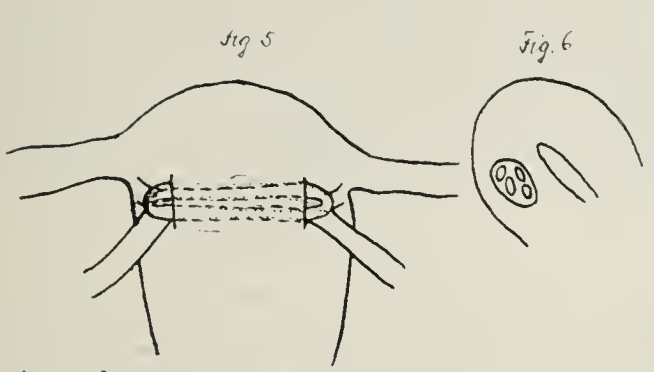
* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

celiotomy together with vagino-fixation. However, the splendid results of the vaginal celiotomy, reported from all parts of the world, placed this operation securely among the best acquisitions to modern gynecology.

At this time (about 1896), though vagino-fixation continued to be the method of choice in the hands of a few, others tried to find such improvements as might recommend anew the vaginal route for the treatment of retrodisplacement. The methods which were the outcome of these endeavors are the methods of shortening the round ligaments as devised by Bode, Wertheim, Vineberg, and a method of shortening the sacro-uterine ligaments as devised by Wertheim and used by him in combination with the shortening of the round ligaments through the vagina.

While the method of shortening the sacro-uterine ligaments does not seem to have gained many friends, the methods of shortening the round ligaments through the vagina were used to a considerable extent in Europe as well as in America. The principle of these methods was to shorten the round ligaments either by folding them in a loop and sewing this loop together and on to the uterus or by sewing the round ligaments into the vaginal wound.





Both of these methods were used in my personal work up to 1898, but on one hand I met with some technical difficulties and on the other hand the remote results were not absolutely perfect.

When the operation of shortening the round ligaments was done by folding them in a loop and fixing this loop by sutures, it was found, especially where the vagina was small, that the suturing was at times difficult, if it was done while the uterus was in the peritoneal cavity. If on the other hand the ligaments were sutured to the fundus of the uterus, while it was displaced into the vagina, it was found that on attempting to replace the uterus into the peritoneal cavity, there was either difficulty in replacing the uterus or the ligaments and the stitches were put on a considerable stretch during this act of the operation. The operation performed in this way produced adhesions between the serosa of the round ligaments and the serosa of the uterus. The result was a sero-serous union which, as is sufficiently known from intra-abdominal work in general, is apt to give way. The examination of the patients months or years after such operations did not fail to reveal this undesirable instability of sero-serous adhesions.

If the round ligaments were shortened by sewing them into the vaginal wound, it was to be feared that the short piece of round ligament between the uterus and the vaginal incision might not become sufficiently elongated in the case of a subsequent pregnancy and thus give rise to similar troubles as the original vagino-fixation.

Another objectionable feature was observed whether the ligaments were sutured to the uterus or to the vagina: When the round ligament was pulled down into the wound for the purpose of suturing it into its new position, it was seen that the tube near its insertion in the uterus was bent at a more or less sharp angle. This formation of an angle or kink in the tube is the natural consequence of the anatomic arrangement by which the peritoneum which covers the round ligament can not be pulled downwards or inwards to any extent without also pulling on the peritoneal coat of the tube. This kink threatened to interfere with the physiologic function of the tube and though I had no positive evidence by which to prove damage due to the kink in the tube I tried to improve on these methods.

The desirable points which the new method was intended to embody were the following:

1. A vaginal operation which would allow of all necessary operations on the appendages at the same time and through the same incision with that for the treatment of the retrodisplacement.

2. An operation that would preserve the mobility of the uterus so as not to interfere with possible pregnancy.

3. An operation that would not depend on sero-serous adhesions, as these had proved unreliable.

4. An operation that required as little suturing as possible in the peritoneal cavity and still would leave no raw surfaces that might give rise to adhesions.

5. An operation that would not interfere with the physiologic function of the tube.

The operation which I have devised and which meets the above mentioned five requirements had been done by me the first time, Jan. 13, 1899, and I have done it since on 20 patients, all of whom have recovered. The operation was first published in a paper read before the Chicago Medical Society,[1] Oct. 4, 1899. The operation is performed in the following way:

The patient is placed in lithotomy position and catheterized. A volsellum is placed on the anterior lip of the cervix. The uterus is dilated, irrigated with bichlorid, curetted and again irrigated, but not packed.

In front of the cervix a convex incision with the convexity towards the external orifice is made down to the uterine tissue. The bladder is then pushed away from the uterus until the fold of the peritoneum of the vesico-uterine pouch is reached. Then this fold is pulled down, taken hold of with two artery-forceps and incised between the two. Thereby the peritoneal cavity is opened. Now the volsellum which so far had pulled down the uterus, is pushed into the hollow of the sacrum and therewith the cervix shoved backwards and upwards. The fundus of the uterus is thereby made to come down into the vaginal incision and can be grasped with a volsellum and delivered into the vagina. Now

1. Chicago Med. Recorder.

the volsellum which held the cervix is removed, the uterus being held only by the vosellum in the fundus. the appendages are now delivered into the vagina and whatever operation has to be done upon them is performed and the rest is returned into the peritoneal eavity.

Now the right round ligament is taken hold of at the necessary distance from the uterus and pulled down into the vagina. With a blunt instrument it is detached from the peritoneal fold which binds it to the broad ligament to the length of about four centimeters from its point of insertion in the uterus. Now a catgut suture is passed first through, then around it, but not tied. The needle is left on the thread and needle and thread are temporarily held in an artery forceps. The proccdure is then repeated on the opposite side (Fig. 1). Now a small, pointed knife is pushed through the anterior wall of the uterus from the point of insertion of one round ligament to the point of insertion of the opposite ligament (Fig. 1. A B). A tunnel is thereby made in the anterior uterine wall midway between the uterine cavity and the peritoneal coat of the body of the uterus (Fig. 2). Now an artery-forceps is passed from the left opening of the tunnel through the tunnel until it emerges at the opposite end of the tunnel. The needle and thread which hold the right round ligament are grasped in the artery-forceps and pulled through the tunnel until needle and both ends of the thread appear outside the left mouth of the tunnel. Again the needle and thread are held temporarily in an artery-forceps. Now an artery-forceps is passed through the tunnel from right to left and the needle and thread holding the left round ligament are grasped and carried through the tunnel (Fig. 3). When they emerge from the right mouth of the tunnel they are again secured in an artery-forceps. At this stage of the operation the two threads which hold the ligaments are crossed in the tunnel and the uterus is still in the vagina.

At this point the uterus is returned into the peritoneal cavity with the volsellum still holding on to the fundus. Now by pulling on the two threads the round ligaments are pulled into the tunnel in opposite directions (Fig. 4) and thereby the uterus pulled forwards as far as desirable. The threads are now held taut and the volsellum forceps is removed from the fundus. The needle which holds the thread on the left round ligament is now passed through the lips of the right mouth of the tunnel and the needle which holds the thread on the right round ligament is passed through the edge of the left opening of the tunnel. The stitches are then tied and cut short. With these two stitches the ligaments are fastened and at the same time the tunnel is closed so that no raw surface remains in the peritoneal cavity (Figs. 5 and 6). Now the edges of the peritoneum are united by continuous catgut suture and in the same way the edges of the vaginal incision are brought together.

Certain modifications of this technique are made under special conditions. For instance, where a cystocele complicates the retroversion, the first incision is made V-shaped and a flap of vaginal tissue as outlined by the V is dissected up and afterwards removed completely for the purpose of the anterior colporrhaphy Where the uterus is imbedded in numerous and firm adhesions, it is sometimes impossible to deliver it without a previous posterior colpotomy through which the posterior adhesions are broken up. It has happened to me once, that when I tried to pull the ligament into the tunnel, it was torn. In this case I took the distal end of the ligament and pulled it through the tunnel and disregarded the uterine end entirely. Where the retrodisplacement is associated with a fibroid in the anterior uterine wall and where the fibroid has been enucleated, the ligaments, instead of being passed through a specially made tunnel, may be inserted into the cavity resulting from the removal of the fibroid.

The after-treatment is that of all vaginal celiotomies, as I have described it at the meeting of the American Medical Association in Columbus.[2] The patients leave the hospital as a rule at the end of a week.

Fourteen of my cases were operated on during 1899 and 1900. Seven of the patients live at more or less considerable distances from Chicago and could not be examined. Seven patients have been re-examined recently and in all of them the uterus was found movable and in good position. One case, the first one operated upon, is particularly interesting, because in this case, aside from the adhesions which held the uterus in retroversion, there was occlusion of both tubes which was treated by bilateral salpingostomy. The patient conceived three months after the operation, went through her pregnancy without any difficulty and gave birth to a healthy, living child. She was examined again after the birth of the child and the operation had stood this supreme test of all operations for retrodisplacement. The uterus was found in good position about three months after the confinement.

The operation described here is easily performed and easily combined with all kinds of operations on uterus, appendages, vagina and perineum. It involves very slight loss of blood. It leaves a movable uterus. It produces a sero-fibrous union between uterus and round ligaments. It requires only two stitches in the uterus after the organ is replaced in the peritoneal eavity. It does not kink the tube.

100 State Street.

SURGICAL TREATMENT OF RETROVERSION OF THE UTERUS.*

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CHICAGO.

Two operations have become established in surgery as procedures of necessity in the successful treatment of persistent retroversion of the uterus. One is the operation of shortening the round ligaments of the uterus in the inguinal canal or the Alexander operation; the other that of fixing the uterus by some means to the abdominal wall through a laparotomy incision, or the operation of ventral fixation of the uterus.

THE ALEXANDER OPERATION.

The names of Alquie, of Montpellier, Alexander and Adams, of England, should be inseparably coupled with the inception of this operation. Alquie,[7] the Frenchman, conceived the idea and presented a memorial to the Academy of Medicine, Nov. 17, 1840. No operation had been performed. Alexander,[2] of Liverpool, performed his first operation. Dec. 14, 1881, but did not publish until January, 1883. Adams,[3] of Glasgow,

2. The Journal A. M. A.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

operated independently two months later than Alexander, but published more than six months earlier.

From the first the operation has been held in varying favor by the profession. It has been condemned on theoretical grounds by those to whom the operation has not sufficiently appealed to lead them to make a trial of it, but has been almost universally approved by those who have given it a fair test by actually familiarizing themselves with the results of the procedure in actual personal operating.

Many modifications of the technique of the operation have been made by a number of operators since the operation was first given to the profession. These attempts at improvement demonstrate that the original technique has not been entirely satisfactory. The weakness and smallness of the ligament at the external ring, making it difficult of recognition at that point, has led a number of operators to make the incision over the internal ring and attack the ligament at that location, among them being Kellogg and Newman.

The unyielding external pillars have led operators to seek less solid tissues to which to attach the ligaments.

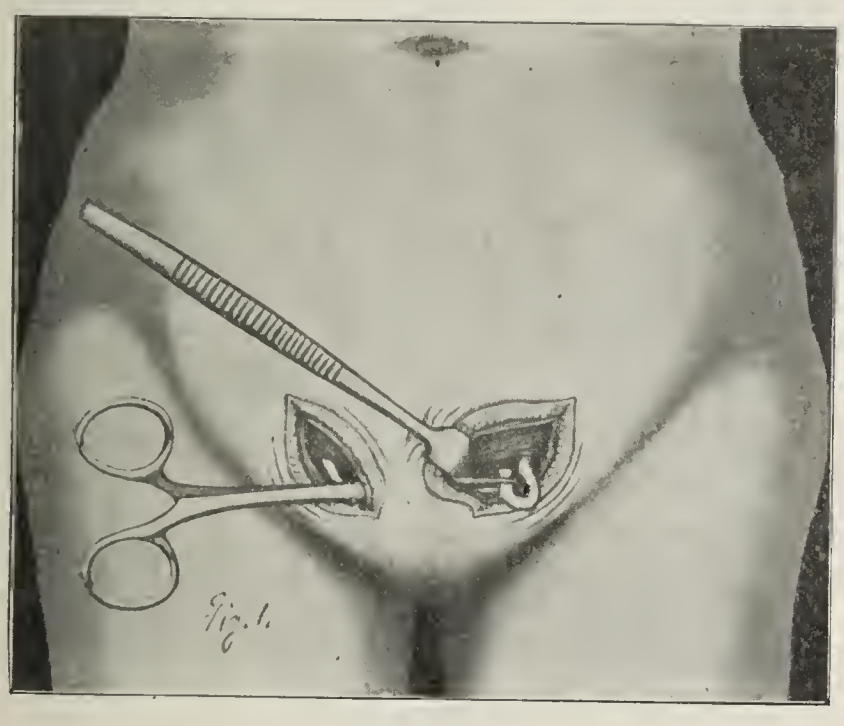


Figure 1.

The occasional subsequent infection of silk, silkworm gut and any form of permanent suture material for fixing the round ligaments, leading frequently to troublesome fistulæ, caused operators to abandon the permanent suture for an absorbable one, as kangaroo tendon of catgut.

In order to unite the ends of the ligaments, Casati,[4] of Rome, joined the lower ends of the ordinary lateral wounds by a curved incision between their lower ends, crossed the ends of the incised ligaments and fixed them with continuous catgut ligature. Doleris[5] accomplished the union of the ligaments by drawing one beneath the skin and subcutaneous tissues to the opposite wound and there uniting it to its fellow and the pillars of the external ring with catgut. Sigond[6] secured the ligament after drawing it taut in the superior angle of the wound with silk and then tied the free end of the ligament to the external pillar lower down through small longitudinal incisions in their margins and thus closed the ring solidly with the ligament. Goldspohn[7] seeks to extend the limitations of the operation by first breaking up adhesions which may exist in the pelvis, or to remove the minor pathologic conditions of the appendages, when necessary, through the dilated internal ring before proceeding to shorten the ligaments; also Buettner, of Geneva, and Edebohls, of New York.

February 13,[8] 1896, I did an Alexander operation by what I considered an original method, and described it before the Chicago Gynecological Society, Feb. 21, 1896, as follows: To avoid the use of buried sutures of any kind, and at the same time to get perfect and more reliable shortening of the ligaments than is possible with any form of suture, I adopted the following method in a case operated on at the Woman's Hospital, February 13. I made the ordinary incision of one inch and a half on either side, beginning half an inch inside of the spine of the pubes and extended it in the direction of the anterior superior spine of the ilium. The lower ends of the incisions were about an inch and a quarter apart. I exposed the round ligaments, freed and drew them out, each having a superabundance of about two inches and a half. I then passed a closed pointed artery forceps from the bottom of the lower end of the wound on the right side beneath the suprapubic tissues to the corresponding point in the lower end of the wound on the left side, grasped the round ligament of the left side in the forceps, and, by withdrawing the instrument,

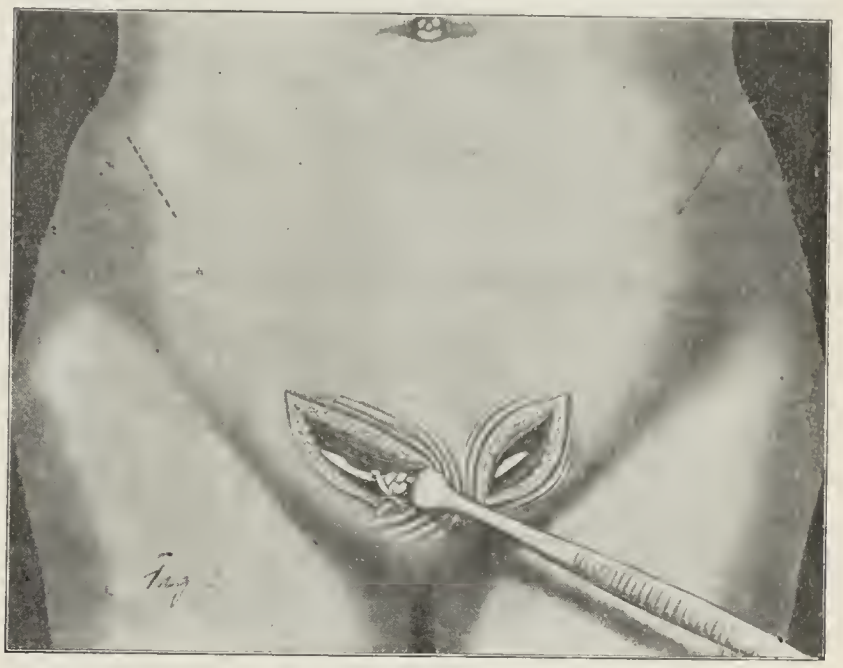


Figure 2.

brought the left ligament beneath the skin, fat and superficial fascia, between the lower ends of the wounds to the lower end of the right wound. (Fig. 1.) I next freed the pubic attachments of both round ligaments, drew the uterus well forward by drawing taut the two ligaments, and then securely fastened the ligaments by tying them together with a double knot directly over the center of the pubes, accomplishing this by drawing the edges of the wound strongly to the left (Fig. 2) and then allowing the tissues to retract and bury the knot beneath the subcutaneous tissues of the mons veneris. This procedure shortened the ligaments thoroughly and at the same time fixed them. (Fig. 3.)

I now close the external ring with interrupted catgut sutures and close the skin with a subcutaneous silver-wire suture, which is subsequently removed.

In the discussion of my paper, Dr. H. P. Newman brought out the fact that practically the same operation had been performed and described by Dr. F. C. Bachelor,[9] of New Zealand, in 1894. To my surprise I discovered this to be true. This, however, has not deterred me from continuing to perform this operation, and with the utmost satisfaction, for the following reasons: 1. Because it insures a uniform shortening of the

ligaments. 2. It insures a permanent and strong fixation of the ligaments. 3. It accomplishes this result without the necessity of placing sutures of any kind, temporary or permanent, for the purposes of fixation and shortening. 4. It eliminates the possibility of fistulous tracts being established, because of the infected deep permanent suture, and obviates the occasional suppurating wound due to the buried absorbable suture. 6. It seldom gives rise to any pain at the point of attachment of the ligaments, like that frequently complained of when the ligaments are attached separately by a permanent suture.

As a part of this report, I present a table including 61 cases of the Alexander operation performed by this method. The record extends from Feb. 13, 1896, to Dec. 29, 1900, a period of nearly five years. The following is the summary of this report:

SUMMARY OF REPORT OF THE ALEXANDER OPERATION.

Between Jan. 1, 1896, and Jan. 1, 1901, a period of five years, I have operated on 61 cases of retroversion by the method I have described. I have been extremely careful in selecting my cases, as this comparatively small



Figure 3.

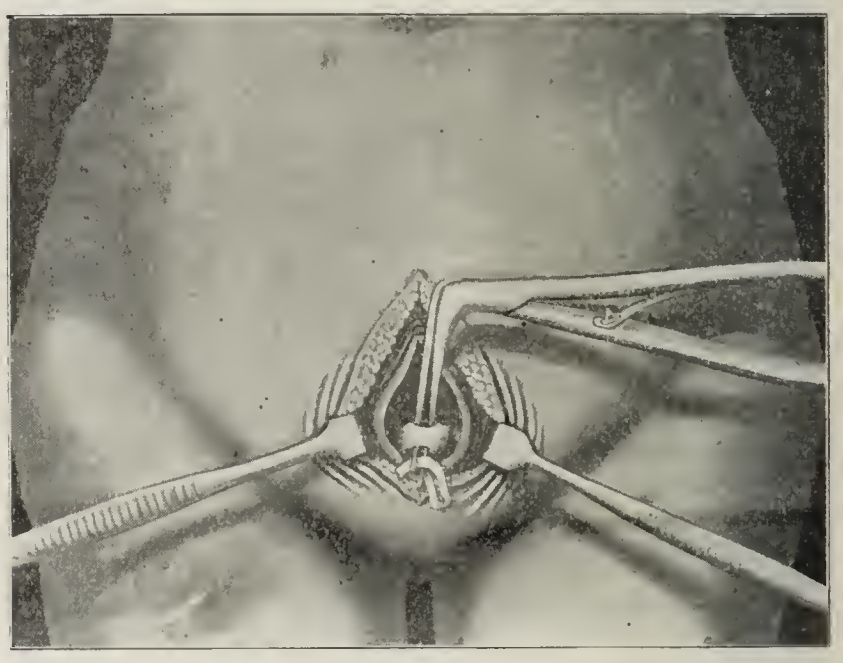


Figure 4.

number would indicate, and my uniformly favorable and gratifying results undoubtedly are due to this careful selection fully as much as to the method of operating.

On Jan. 1, 1901, I communicated by letter with as many of these patients as I could reach, and requested that they report in person at my office, or when that was impracticable, to their family physician, or at least to state to me the condition of their health since the operation. By this correspondence, and in other ways, I have been able to get some kind of a report on 34 of the 61 cases. My records show that the other 27 cases were in perfect condition when they left the hospital.

From 34 cases I received letters, reports from family physicians, or in the majority of the cases had personal interviews and examined the condition of the pelvis. These reports were obtained from five to one quarter years after the operation. There was one failure to accomplish a tying of the ligaments, because of one ligament breaking, and the ligaments were secured to the external rings with silkworm gut sutures. The operation was successful. In case 31 the ligaments were exposed and when stripped were so small that I abandoned the Alexander for a ventral fixation.

Of the 32 remaining, which I examined, all are reported well. One after 5 years; three after 4 years; six after 3 years; thirteen after 2 years, and nine less than 2 years.

There have been 7 cases of pregnancies reported. Of these 6 have progressed and terminated as perfectly normal cases. One case aborted at the fourth month without apparent cause. Case 7 was confined two years after the operation. An examination one year after the confinement demonstrated the uterus in normal position. Case 8 was confined two years after the operation and the uterus was in perfect position two years after the confinement, as shown by bimanual examination. Case 18 was confined two years after the operation. One year afterwards the uterus remained normal. Case 22 was confined two and a half years after the operation. The perineum was lacerated. The uterus remained in position. Case 28 gave birth to a full-term child eight months after the Alexander operation and an operation for repair of the perineum. The pregnancy was not suspected at the time of the operation. Case 41 was confined two years after the operation. The uterus still remains in perfect position. Case 54 is the one reporting the four months' miscarriage one and a half years after the operation. The uterus remained in position after the miscarriage.

There is no operation in surgery which gives me more genuine satisfaction than this one of Alexander. Chronic retroversion is one of the most distressing of walking diseases. While it makes of its subjects miserable invalids, they are still well enough to be expected to drag about on their feet. The Alexander operation relieves instantly. The operative procedure is simple, does not remove important organs, simply restores original conditions, and the results of accomplishing restoration to perfect health often appear miraculous to the sufferers.

VENTRO-SUSPENSION OF THE UTERUS.

Koerbele,[10] from observing that the uterus was influenced in its position in the pelvis from the attachment of the tumor pedicles in the abdominal incision after laparotomies, conceived the idea of fixing a portion of the uterus or its appendages in the abdominal incision as an operation of election for retrodisplacement of the uterus, consequently he was the first to execute such an operation, on March 27, 1869, when he stitched the pedicle of an excised ovary in the lower angle of an abdominal incision. Sims,[11] Feb. 22, 1875, cured a patient with persistent painful retroflection by practically the same operation as that employed by Koerbele. Schräder[12] reported in 1879 a similar operation. Feb. 20, 1880, Lawson Tait,[13] on closing an abdominal wound after removing the appendages in a case complicated with retroversion, allowed the sutures employed for closing the abdominal incision to include the fundus of the uterus and thus deliberately accomplished ventral

fixation. He reported this case and another done in April, 1880, as cured in 1883. Sanger[14] reported that Hennig performed this operation in 1881.

The operation of ventro-suspension of the uterus will always be inseparably connected with Ohlshausen, of



Figure 5.

Berlin, and our own Kelly, of Baltimore, for having the genius of proposing, executing and describing a systematic operation. Professor Ohlshausen[15] was fortunate in publishing first, Oct. 23, 1886. Kelly,[16] while

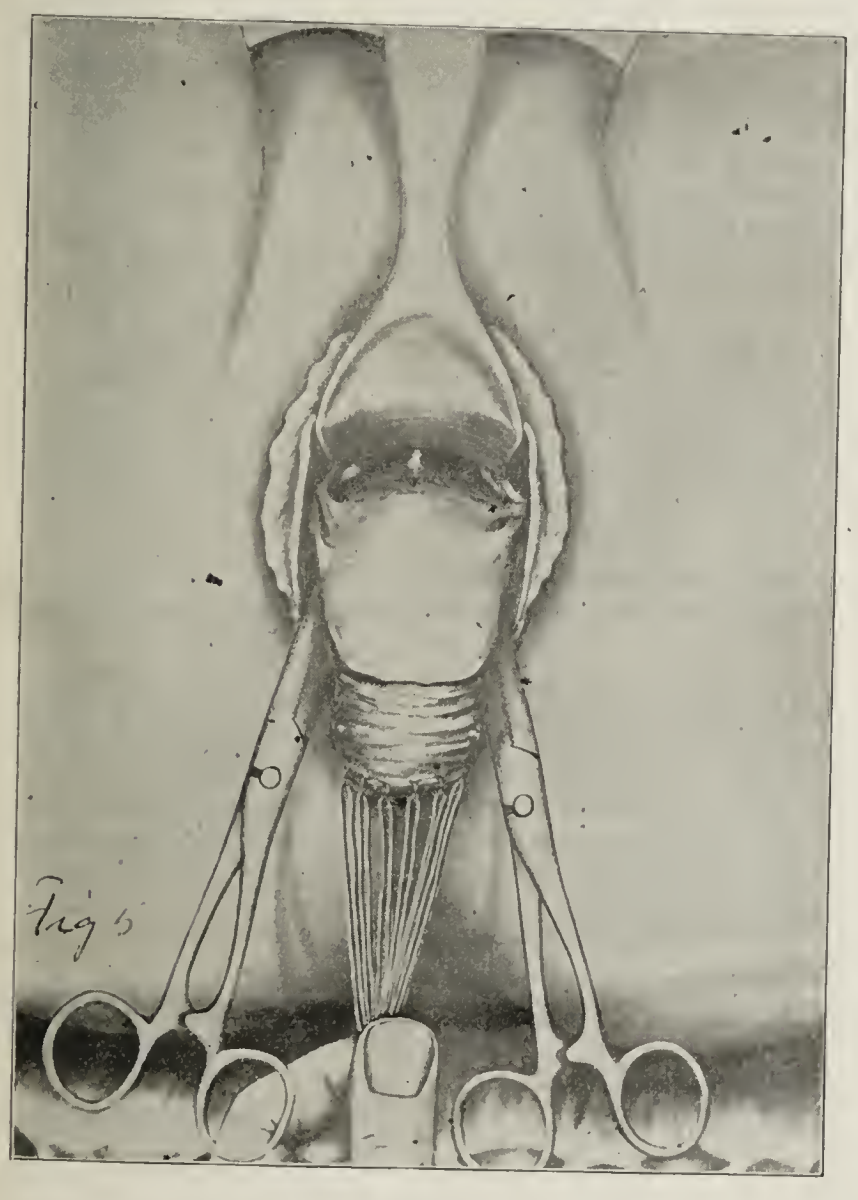


Figure 6.

having the subject under consideration for some time and operating April 25, 1885, did not publish until January, 1887. Too much praise can not be given to Kelly for having the persistency to bring into prominence by his many articles this very practical operation.

From these pioneer operations many unimportant and a few important modifications have been made. From the large grist of experience one may draw a number of important lessons. I think that the following are a few of the lessons which may be drawn from this abundant experience: 1. A ventral suspension which does not depend on some form of a permanent suture or method of direct fixation and must depend on the uncertainties of unsupported adhesions between the uterus and its appendages and the parietal peritoneum will frequently fail to afford permanent suspension. 2. Experience shows that while silk, silkworm gut, or silver wire give permanent results they will occasionally give rise to fistulous tracts and prolonged convalescence, with secondary operation for removal of the dead and septic sutures.

The above facts have led surgeons to seek means of avoiding the use of absorbable suture and substituting

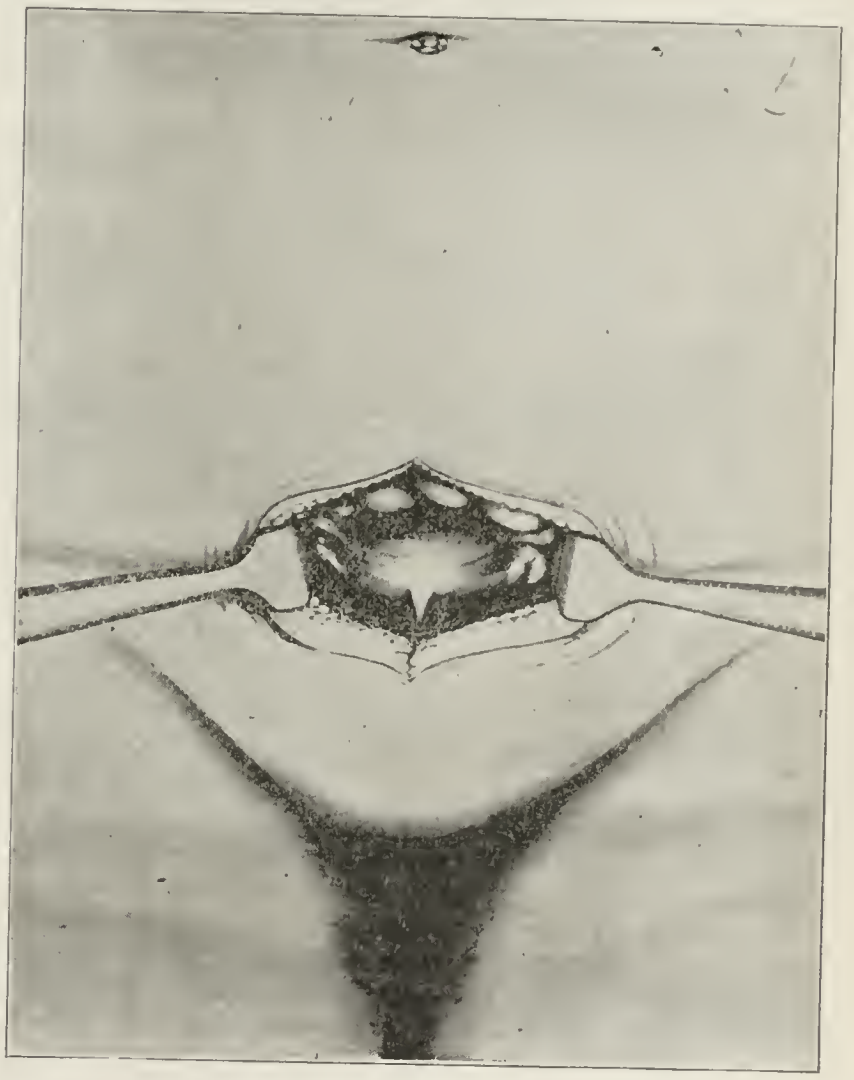


Figure 7.

something for the permanent dead suture. One of the most ingenious and at the same time most rational modifications, to my mind, for overcoming the above difficulties was that made by Dr. George R. Fowler,[17] in which he substituted for all sutures a suspensory ligament or suture from the patient's own living tissues, by suspending the uterus on the urachus. This operation appealed to me as a distinct advance and I adopted it in a number of cases, until I discovered that the scope of its principle might be decidedly advanced by utilizing a strip of peritoneum instead of the urachus.

My reasons for abandoning the urachus for a strip of peritoneum, I think will be admitted, are well taken. They are as follows: 1. The urachus is a subperitoneal structure of great firmness, which makes a solid fixation of great strength and, therefore, makes it inapplicable for a means of suspension where subsequent pregnancy is possible. 2. In about twenty-five per cent. of cases

ALEXANDER'S OPERATION.

No.	Date.	Residence of patient.	Additional operations.	Result, date of last examination.	Hospital.
1	2, 13, '96	Chicago. .	Curettement, trachclorrhaphy, perineorrhaphy .	Perfect when left hospital; no subsequent report or ex. . . .	Woman's.
2	5, 7, '96	"	. . . . .	Perfect when left hospital.	"
3	6, 4, '96	"	Curettement, trachelorrhaphy, perineorrhaphy . .	Ex. in '98; result found perfect	"
4	6, 18, '96	"	Dilating, curcttem't, trachelorrh., perineorrhaphy	Ex. 1 year afterward; showed perfect condition	P. G.
5	8, 22, '96	"	Curcttement, perineorrhaphy..	Perfect condition when left hospital	Woman's.
6	9, 7, '99	"	Curettement, perineorrhaphy, trachelorrhaphy . .	Ex. Feb., 1901; shows uterus in perfect position.. . . .	P. G.
7	9, 8, '96	Kansas. . .	Currettement, perineorrhaphy	Health good; baby 2 yr. ago; no laceration; nursed this child; first she could.	
8	11, 11, '96	Iowa. . . .	Perineorrhaphy	Dec. 15, ex. shows uterus in perfect condition; child 2 yr. ago.	Charity.
9	11, 24, '96	Chicago. .	. . . . .	Perfect when left hospital.	"
10	4, 1, '97	"	. . . . .	" " "	Woman's.
11	4, 9, '97	Indiana. .	. . . . .	Jan. 29, 1901, ex. showed perfect condition; could not be better	"
12	4, 9, '97	Wisconsin.	Dilation, curettement	Perfect when left hospital; no subsequent report or ex	"
13	4, 13, '97	Chicago. .	Perineorrhaphy	" " "	Charity.
14	4, 28, '97	"	Nephrorrhaphy	Ex. 2 years afterward; showed perfect condition.	P. G.
15	5, 25, '97	"	Perineorrhaphy	Ex. 3 yrs. after; perfect health; 1901, perfect condition	Woman's.
16	5, 25, '97	So. Ill . .	Curettement	Perfect health	"
17	6, 28, '97	Chicago .	. . . . .	Perfect when left hospital..	P. G.
18	7, 21, '97	"	Curettement, perineorrhaphy	Child uncomplicated in 1899; perfect health since..	Woman's.
19	7, 21, '97	"	Perineorrhaphy, trachelorrhaphy.	Ex. 2 yrs. afterward; shows perfect condition	"
20	7, 26, '97	"	Trachelorrhaphy, perineorrhaphy	Perfect when left hosptial.	Charity.
21	8, 22, '97	"	Curettement	" " "	P. G.
22	9, 27, '97	"	Curettement, perineorrhaphy	Well until April 27, 1900; delivered of a child; laccrations resulting in prolapsus of the bladder.	Charity.
23	9, 14, '97	"	Curettement, trachelorrhaphy, perineorrhaphy . .	Ex. Dec. 8, 1900, shows wound tender; uterus in perfect posit'n	Woman's.
24	10, 4, '97	"	Curettement..	Perfect when left hospital..	P. G.
25	10, 20, '97	Tenncssee.	Curettement, perineorrhaphy	Jan. 4, 1900, perfect health	Woman's.
26	10, 25, '97	Chicago .	Curettement, perineorrhaphy, trachelorrhaphy . .	Not perfect..	Charity.
27	10, 26, '97	Minnesota	Curettement, perineorrhaphy..	Oct., 1900; was in good health; uterus in perfect position.. . .	Woman's.
28	11, 6, '97	Nebraska..	Curettement, perineorrhaphy..	General health good; baby boy 8 mo. after opera.; position of uterus perfect.	"
29	11, 8, '97	Chicago. .	Perineorrhaphy	Perfect when left hospital..	Charity.
30	11, 15, '97	"	Curettement	" " "	"
31	11, 22, '97	Michigan .	Curettement, perineorrhaphy, trachelorrhaphy; abd. sect.; ventral fixation strip of p.	" " "	P. G.
32	11, 29, '97	Chicago. .	Curettement	" " "	Charity.
33	11, 29, '97	"	Curettement	" " "	"
34	11, 30, '97	"	Vag. sect ; l. sal. os	One year after, perfect condition	Woman's.
35	12, 6, '97	"	Curettement, perineorrhaphy, trachelorrhaphy .	Patient writes she is well	P. G.
36	12, 20, '97	"	" " "	Perfect when left hospital.	Charity.
37	1, 17, '98	"	" "	Perfect when left hospital; no subsequent ex. or report. . . .	"
38	2, 24, '98	Indiana.	" "	Eighteen months after operation, in perfect health	Woman's.
39	2, 27, '98	Chicago .	Curettement, perineorrhaphy, trachelorrhaphy . .	Ex. Dec 6, 1900, in splendid condition.	"
40	4, 11, '98	So. Ill. . .	" "	Perfect when left hospital.	P. G.
41	4, 25, '98	W. Iowa. .	Curette., perineorrhaphy; liga. broken not tied; sutured to facia with two buried silkworm gut .	Well; child 1 year ago; nearly died, but is all right now; never before so well.	"
42	5, 9, '98	Chicago. .	Curettement, perineorrhaphy, trachelorrhaphy . .	Ex. Dec. 10, 1900; perfect health.	Charity.
43	. . . '98	. . . . .	. . . . .	. . . . .	. . . . .
44	6, 1, '98	O. P. Ill. .	Curettement, perineorrhaphy, trachelorrhaphy . .	One year after, in good health.	Woman's.
45	6, 15, '98	Chicago. .	" " "	Well; refuses examination	Charity.
46	6, 20, '98	"	" " "	Perfect when left hospital; no subsequent report or ex	Woman's.
47	6, 28, '98	"	" "	" " "	Charity.
48	9, 19, '98	L. Mich. .	Curettement, ex. of bladder	Uterus remained in posit'n; patient not cured of other trouble	P. G.
49	2, 14, '99	Nurse.. . .	. . . . .	Examined Dec. 6, 1900; condition O. K	Woman's.
50	3, 21, '99	Illinois. . .	Curettement, perineorrhaphy, hemorrhoids .	Perfect condition Jan. 22, 1901.	"
51	5, 19, '99	Indiana . .	" "	Letter tells of somewhat irrita. bladder; thinks position good	P. G.
52	. . . . .	. . . . .	. . . . .	. . . . .	Charity.
53	. . . . .	. . . . .	. . . . .	. . . . .	"
54	9, 20, '99	Chicago. .	Curettement, perineor.; pregnant, 1st time aborted	. . . . .	P. G.
55	10, 16, '99	"	"	Dec., 1900. condition perfect.	"
56	11, 1, '99	Illinois. . .	" perineorrhaphy.	Perfect when left hospital; no subscquent report or exam . .	Charity.
57	4, 21, '00	Chicago . .	"	Condition no better	Woman's,
58	5, 7, '00	"	Trachelorrhaphy, perineorrhaphy.	Perfect when left hospital.	Charity.
59	6, 18, '00	"	Curettement; abscess on hand opened	" " "	"
60	6, 27, '00	O. Illinois.	" perineorrhaphy..	Still some backache..	Woman's.
61	12, 29, '00	Wisconsin	Alexander operation..	Perfect health when left hospital..	. . . . .

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES.

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
1	23	1, 16, '97	W. . . .	South Chicago.	Double salpingo-oöphoritis; retroversion of the uterus.	Laparotomy, removal of appendages, suspending uterus on strip of periton.	In perfect health 12, 10, '00, almost 4 years afterward.
2	30	2, 11, '97	Chi. .	Chicago. .	Large multilocular cyst, small cyst on left ovary.	Double ovariotomy, ventral fixation of uterus with strip of peritoneum.	Uterus in perfect position when patient left hospital.
3	34	2, 15, '97	Chi. .	"	Cystic right ovary with hematoma and retroversion of the uterus.	Right ovariotomy; uterus suspended on a strip of peritoneum.	In perfect health 2 mos. after operation; no later history.
4	32	2, 17, '97	P. G..	"	Double salpingo-oöphoritis endometritis, retroversion of the uterus.	Double salpin. oöphorectomy, mal-posi. u. cor., suspen. on strip of peritoneum.	In perfect health when she left the hospital.
5	31	2, 22, '97	P. G..	"	Double salpingitis, oöphoritis with retroversion.	Laparotomy, appendages removed, uterus suspended on urachus	Same as above.
6	30	3, 1, '97	P. G..	"	Cystic ovaries with small fibroids in uterus.	Appendages removed, fibroids nucleated and uterus suspended on urachus.	Made ideal recovery.
7	.	3, 11, '97	Chi. .	"	Diseased appendages, retroversion of the uterus with adhesions.	Laparotomy, removal of appendages, replacing of u., suspen. on urachus.	
8	40	3, 17, '97	P. C..	Illinois . .	Diseased append., ovarian menorrhagia, metrorrhagia, retroversion	Curettement of appendages, suspension of uterus on urachus.	Exam. 2 yr. afterward, u. in perfect posi.; discomfort in pelvis; letter Dec., 1900, complains not much imp.
9	30	3, 17, '97	P. G..	Chicago. .	Diseased appendages, retroversion of the uterus with adhesions.	Removal of appendages, replacing u., suspension on strip of peritoneum.	In perfect condition when she left hospital.
10	37	4, 1, '97	Chi .	Michigan..	Double pyosalpinx, retroversion of the uterus, dysmenorrhea.	Laparotomy, removal of append , suspension of u. on strip of peritoneum.	In perfect health 2 years after operation; uterus in position.
11	27	4, 3, '97	W. . . .	Illinois . .	Diseased appendages, retroversion of the uterus with adhesions.	Removal of append., correc. of malposi., suspension on strip of peritoneum.	Exam. 12, 14, '00, u. in position, large range of movability, health perfect.
12	25	4, 5, '97	Chi. .	Chicago. .	Salpingitis with adhesions, retroversion.	Laparotomy, append. removed, cor. malposition, u. suspended on urachus.	In perfect health when she left the hospital.
13	30	4, 13, '97	Chi. .	"	Large cysts of both ovaries, retroverted and impacted uterus.	Removed both ovaries, malposi. u. cor., suspended on strip of peritoneum.	Same as above.
14	29	5, 3, '97	Chi. .	"	Double pyosalpinx with retroversion of the uterus.	Removal of append., malposi. correc., u. u. suspended on strip of peritoneum.	Examined in Dec., 1900; u. in perfect position and movable, patient well
15	27	5, 5, '97	W. . . .	Illinois . .	Diseased appendages, retroverted and adherent uterus.	Laparotomy, removal of appendages, u. suspended on strip of peritoneum.	Examined 12, 17, '00, u. in perfect condition, movable, patient well.
16	38	5, 10, '97	P. G..	Chicago. .	Laceration of perineum, dysmenorrhea, retrov., diseased append.	Curett., perineor', laparotomy, append. removed, u. replaced on strip periton.	Examined Dec. 10, 1900, perfect condition.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Continued.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
17	25	5, 10, '97	Chi. .	Chicago. .	Diseased appendages, retroversion with adhesions.	Append. removed, u. replaced, u. suspended on strip of peritoneum.	Examined in 1900; perfect health; u. in position.
18	.	5, 13, '97	Chi .	Missouri .	Diseased appendages, uterus retroverted.	Laparotomy, append. removed, u. suspended on strip of peritoneum.	Reported by letter Dec., 1900, that she was in perfect health.
19	25	5, 15, '97	W . .	Chicago. .	Double pyosalpinx with retroversion and adhesions.	Append. removed, u. replaced, u. suspended on strip of peritoneum.	Same as above.
20	29	5, 24, '97	Chi. .	"	Double pyosalpinx with retroversion and adhesions.	Same as above	Uterus in perfect position one year after operation.
21	35	6, 10, '97	Wis. .	"	Double pyosalpinx, retroversion, adhesions; periodical insanity.	Laparotomy, u. replaced, u. suspended on urachus.	Two yr. after, u. in perfect position, mental condit'n better, perf. health
22	45	6, 21, '97	P. G..	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. replaced, u. suspended on strip of peritoneum.	In perfect health, u. in position and movable 1 year after operation.
23	28	6, 25, '97	W. . .	Missouri .	Pyosalpinx on the right side; pregnancy on the left.	Gestation sack and r. append. removed, u. suspended on urachus.	
24	.	6, 28, '97	C.. . .	Chicago. .	Disease of both appendages, retroversion with adhesions.	Laparotomy, appendages removed, u. suspended on strip of peritoneum.	In perfect health 6 months after operation.
25	32	7, 6, '97	Chi. .	"	Double ovarian cysts with retroversion.	Laparotomy, both ovaries with cysts removed, u. suspended on strip periton.	Dec., 1900, u. in perfect position, in fair health, abdomen a little sore.
26	31	7, 10, '97	P. G..	Illinois . .	Double salpingitis with ovarian cyst	Appendages removed, u. suspended on strip of peritoneum.	Letter Dec., 1900; well, works 14 hr. a day, 10 in family, does all the work.
27	29	7, 10, '97	P. G..	Chicago. .	Double pyosalpinx, retroversion with adhesions.	Laparotomy, appendages removed, u. suspended on strip periteneum,	In perfect health 6 months after the operation.
28	27	8, 2, '97	Chi. .	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. suspended on strip of peritoneum.	In perfect health when she left the hospital.
29	29	8, 5, '97	P. G..	"	Right tube and ovary diseased, endometritis, retroversion, adhesions.	R. append. removed, u. replaced, u. suspended on strip of peritoneum.	Writes Dec., 1900: no better, backache, headache; no oppo. for exam.
30	23	8, 11, '97	Chi. .	"	Double salpingitis oöphoritis	Appendages removed, u. replaced, u. suspended on strip of peritoneum.	Exami'd Dec., 1900; in perfect health, u. in perfect position and movable.
31	48	8, 12, '97	W.'s .	"	Retrov., lacerated perineum, diseas'd appendages, menorrhagia, metrorrhagia, with periodic insanity.	Curette., perineorrhaphy, appendages removed, u. replaced, u. suspended on strip of peritoneum.	In perfect health 1 year after operation; insanity cured.
32	42	8, 16, '97	C.. .	"	Double pyosalpinx, retroversion and strong adhesions.	Appendages removed, u. replaced, u. suspended on strip of peritoneum.	
33	39	8, 18, '97	P. G..	"	Double pyosalpinx, retroversion, strong adhesions,	Appendages removed, replaeement of uterus on strip of peritoneum.	
34	35	9, 9, '97	W.. . .	Kansas . .	Double pyosalpinx and hematoma of left side.	Appendages removed, u. suspended on strip of peritoneum.	Examined in 1900; in perfect health, uterus in position.
35	41	10, 9, '97	W.. . .	Chicago. .	Double salpingitis and oöphoritis. retroversion with dense adhesions	Appendages removed, u. replaced on strip of peritoneum.	Same as above.
36	23	10, 4, '97	C.. . .	Iowa . . .	Retroversion with adherent uterus, severe dysmenorrhea.	Curette., parovarium of r. ovary resected, u, replaeed, u. suspended on strip of peritoneum.	Letter in '99; child with norm. labor, worked till confined, health never better, u. in nor'al posi. after confin.
37	28	10, 6, '97	P. G..	Chicago. .	Double pyosalpinx, retroversion and adhesions.	Appendages removed, u. suspended on strip of peritoneum.	Letter 1 year after; patient in perfect health.
38	39	10, 11, '97	C. . .	"	Double pyosalpinx, retrov., adhesions, small fibroid in uterine wall	Appendages removed by myomeetomy, u. suspended on strip of peritoneum.	Patient had uterus removed one year afterward.
39	21	10, 18, '97	P. G..	Wisconsin.	Double pyosalpinx, parovarium cysts of right side, uterus retroverted	Append. remov., parovari. cyst enueleat., u. replaeed, suspend. on strip periton.	
40	25	10, 23, '97	W . .	Chicago. .	Double salpingitis and oöphoritis, small fibroid in top of uterus.	Appendages removed, fibroid enueleated and u. suspended on strip of periton.	Examination, Jan., 1901, u. in perfect position, patient in perfect health.
41	39	10, 23, '97	C. . .	"	Double salpingitis; patient is unbalanced at menstrual periods.	Appendages removed, u. suspended on strip of peritoneum.	Patient much improved at the end of 1 year.
42	41	10, 25, '97	C. . .	"	Double salpingitis, fibroid in wall of uterus, retroversion.	Fibroids removed, appendages and u. suspended on strip peritoneum.	
43	36	11, 3, '97	W.'s .	Iowa . . .	Large multilocular of left ovary, fibroids of uterus.	Ovarian cysts remov., fibroids on u. walls enucleat., u. suspended on strip of p.	Letter Dec., 1900; best of health, no return of symptoms of any kind.
44	40	11, 1, '97	P. G .	Chicago. .	Retroversion with adhesions	Laparotomy, u. replaced and suspended on strip of peritoneum.	
45	38	11, 8, '97	P. G .	"	Double salpingitis hematoma of r. side, parovarium cyst on left side	Cyst removed, ovaries exeised, u. suspended on strip of peritoneum.	Dec. 17, 1900, u. in perfect position and movable, some tenderness on l. side, health perf., with above exeep.
46	28	11, 6, '97	C.. . .	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. replaced and suspended on strip of peritoneum.	
47	33	11, 22, '97	P. G..	"	Retroversion but movable; attempt to antifix, but ligament breaking, ventral suspension performed with strip of peritoneum.	. . . . .	
48	35	12, 28, '97	W.'s .	Illinois . .	Double pyosalpinx with cystic ovaries, retroversion with adhesions.	Appendages removed, u. replaced and suspended on strip of peritoneum.	Jan. 1, 1900, patient strong, perfect health and thankful
49	35	12, 30, '97	W.'s .	Indiana.. .	Double pyosalpinx, retroversion with adhesions.	Same as above	Exam. within 2 yr. afterward, u. remained in position, general health not markedly improved.
50	18	1, 3, '98	C.. . .	Chicago. .	Double pyosalpinx with retroversion.	Same as above	
51	43	1, 3, '98	P. G .	"	Double pyosalpinx, hematoma of ovary.	Curette., appendages removed, u. suspended on strip of peritoneum.	Exam. Dec. 16, 1900, u. in perfect position and patient in perfect health.
52	30	1, 17, '98	P. G .	"	Double pyosalpinx, retroversion with adhesion.	Append. removed, u. replaced, u. suspended on strip of peritoneum.	Patient in perfect health 2 years after operation.
53	33	1, 24, '98	P. G .	"	Double pyosalpinx, cystic ovaries, retroversion, nymphomania.	Same as above	Patient much improved in health.
54	31	1, 31, '98	C. . .	"	Double salpingitis and oöphoritis, retroversion with adhesions.	Same as above	
55	28	2, 7, '98	P. G .	"	Salpingitis, cystic ovaries, retrov., adhesions, occasional convulsions and unconscious during menses.	Same as above	Examined Dec. 15, 1900, u. in perfect position; patient considers herself in perfect health.
56	23	2, 14, '98	C. . .	Illinois . .	Double pyosalpinx, broad ligament 4 inches in diameter.	Appendages removed, cyst removed, u. suspended on strip of peritoneum.	Exam. Dec 19, 1900, in perfect health, u. in perfect position.
57	24	2, 14, '98	C . . .	Chicago. .	Tubercular abscesses of both ovaries, retroversion.	Appendages removed, u. replaced on strip of peritoneum.	Exam. Dec. 18, 1900, improved and strong, considers herself in perfect health, u. in perfect position.
58	28	2, 23, '98	C.. . .	Indiana . .	Intramural fibroid of the uterus, cystic ovaries.	Same as above	Letter in 1901 states, patient in perfect health and thankful.
59	34	3, 12, '98	C.. . .	Illinois . .	Fibroid nodule in broad ligament, right ovary cystie.	Fibroids removed, ovary exeised, ovary suspended on strip of peritoneum.	Patient died next day from exhaustion.
60	.	3, 14, '98	C. . .	Chicago. .	Double pyosalpinx, retroversion, laceration of the perineum.	Curette., perineorrhaphy, append. removed, u. suspend. on strip of periton.	
61	21	3, 21, '98	P. G .	Illinois . .	Double pyosalpinx, retrov., adhesions; excess. nervous at menses.	Appendages removed, suspension of u. on strip of peritoneum.	Exam. in 1900, absolutely well, u. in perfect position.
62	37	3, 21, '98	C.. . .	Chicago .	Tubal pregnan. of r. side, pyosalpinx on l., retroversion with adhesions.	Ovum removed, 1 append. exeised, u, restored and suspend. on sttip of periton	
63	36	3, 22, '98	P. G .	"	Double pyosalpinx, general adhes'ns of uterus and appendages to intestines, retroversion.	Appendages removed, u. replaeed and suspended on strip of peritoneum.	
64	24	4, 14, '98	P. G .	"	Double pyosalpinx, retrov., adhes., replaeement of uterus and suspension on strip of peritoneum.	Same as above	Seen in 1900, in pefect health, u in perfect position.
65	41	4, 24, '98	C. . .	"	Double pyosalpinx, retroversion, adhesions.	Same as above	In perfect health, u. in position.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Continued.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
66	40	5, 9, '98	P. G.	Missouri.	Laecration of perineum and eervix, double pyosalpinx, retroversion	Curette., perineum restored, laparotomy, appendages removed, u. suspended on strip of peritoneum.	Patient in perfeet health 2 years after.
67	31	5, 31, .	P. G.	Iowa . . .	Retroversion with adhesions, endometritis.	Curette., laparotomy, one ovary exeised, u. replaeed, susp. on strip of periton.	Exam. 2, 12, '01, in perfeet health, u. in position.
68	31	5, 16, .	P. G.	Illinois . .	Multiloeular ovarian tumor, retroverted uterus.	Tumor and ovary removed, u. replaced and suspended on strip of peritoneum.	Exam. 12, 16, '00; husband writes she is in perfect health, better than he ever expeeted she would be.
69	46	6, 9,	W. . .	"	Cystic right ovary, small fibroid in fundus of uterus, retroversion, endometritis.	Curettement, laparotomy, enueleation of fibroid, removal of appendages, suspension of u on strip of periton'm	
70	.	6, 15, .	C.. . .	Chicago . .	Double pyosalpinx, retroversion with dense adhesions	Appendages removed, u. replaeed and suspended on strip of peritoneum.	
71	27	6, 28, .	W... .	"	Same as above	Curette., appenda. removed, u. removed and suspended from strip of periton'm.	
72	34	6, 28, .	P. G.	"	Salpingitis, oöphoritis, retroversion of uterus with adhesions.	Appendages removed, u. suspended on strip of peritoneum.	Seen in 1900, in perfect health, u. in perfect position.
73	35	7, 9, .	W... .	"	Same as above. . . .	Same as above	
74	21	7, 11, .	P. G	Iowa . . .	Double pyosalpinx, laeerated perineum, hemorrhoids, periodic insanity.	Curette., u replaced, hemorrhoids exeised, appendages removed, u suspended on strip of peritoneum.	Reported 1 yr. after; nervous symptoms praetically cured, strong and mueh improved in general health.
75	24	7, 21, .	W... .	Washington.	Cystic ovary, retroversion with adhesions.	R. ovary resected, u. replaced and suspended on strip of peritoneum.	Exam. in 1900, in perfect health, u. in perfect position.
76	39	9, 27, .	W... .	Illinois . .	Fibroid in fundus of uterus, retroversion.	Append. removed to establ. artifieial menopause, u. suspended on strip.	
77	61	10, 7, .	W... .	Wisconsiu.	Retroversion with adhesions	Laparotomy, ovaries exeised, u. replaced, suspended on strip of periton.	Reported in 1900, slight pain in side, otherwise praetieally well.
78	33	10, 10, .	W... .	Michigan.	Double pyosalpinx, fibroid of uterus.	Appendages removed, fibroids excised, u. suspended on strip of peritoneum.	Reported quite well, some nervous symptoms
79	19	10, 17,	P. G.	Chicago. .	Cystic ovaries, severe menorrhagia and metrorrhagia with nervous symp, exaggerated at menstrua.	Appendages removed, uterus suspended on strip of peritoneum.	Exam. 12, 20, '00, in perfeet health, nervous symptoms improved, u. in perfect position.
80	22	10, 17, .	P. G.	"	R. tubal pregnaney, suppurative dis of ovaries on l. side, marked retrov.	Ovum, left tube and ovary removed, u. suspended on strip of peritoneum.	Patient in perfeet health when she left hospital.
81	28	10, 27, .	W.'s .	"	A broad ligament cyst 6 inches in diameter, l. appendages diseased.	Cyst removed, l append, tube and ovary freed, u. replaced and susp on strip	Same as above.
82	39	10, 30, .	P. G	Indiana. .	Double ovarian and tubal suppura., retrov., menorrhagia, period. insan.	Appendages removed, u. replaced and suspended on strip of peritoueum	Letter from patient's parents Dee., 1900, states she is absolutely well.
83	32	11, 7, .	C . . .	Chicago. .	Double pyosalpinx, retroversion.	Same as above	Patient in perfeet health when she left hospital
84	28	11, 14, .	P. G.	"	Salpingitis and oöphoritis with retroversion.	Both append. repaired, care taken to preserve ovaries; u replaeed and suspended on strip of peritoneum	Six months after operation, patient was well.
85	19	11, 14, .	C. . .	"	Double salpingitis with adhesions.	Appendages removed, uterus replaced on strip of peritoneum.	Patient in perfect health when she left hospital.
86	26	12, 29, .	P. G.	Iowa . . .	Double pyosalpinx with adhesions, retroversion	Append. removed. u. replaced and suspended; Mikulicz drain employed.	Dee 20, 1900, letter states patient well.
87	24	1, 18, '99,	W... .	Chicago. .	Double pyosalpinx, salpingitis and oöphoritis.	Appendages removed, u. suspended on strip of peritoneum.	Examination Dec. 29, 1900, perfect condition in every way.
88	39	1, 30, .	P. G.	"	Cystic ovary, double salpingitis with oöphoritis.	Same as above	
89	49	2, 13, .	P. G.	Montana...	Retroversion with adhesions.	Uterus replaeed and suspended on strip of peritoneum.	
90	29	2, 23, .	W... .	Nebraska.	Retroversion with adhesions, cystie ovaries.	Appendages removed, u. replaced and suspended on strip of peritoneum.	Patient died suddenly next day.
91	22	3, 13, .	P. G	Chieago. .	Double pyosalpinx, adhes., ovarian abseesses, salpingitis, oöphoritis.	Same as above	
92	25	3, 21, .	W... .	"	Double pyosalpinx, salping., oöphoritis, retroversion with adhesions.	Same as above	
93	29	3, 27, .	C . . .	"	Double pyosalpinx, salpingitis, oöphoritis, adhesions.	Same as above	Exam Dec. 17, 1900, uterus in perfect position and well.
94	32	3, 27, .	C. . .	"	Double pyosalpinx, retroversion, adhesions, salpingitis, oöphoritis.	Same as above	
95	30	3, 31, .	W... .	Montana...	Ovarian cyst, retroversion with adhesions, resection of ovary.	Same as above	
96	28	4, 4, .	P. G.	Michigan..	Cystic ovaries, resection of ovary.	Same as above	"A great sueeess." May eall in Jan.
97	.	4, 10, .	C... .	Chicago. .	L. Hydro-salpingitis, r. pyosalpinx, ovarian abscesses and adhesions, double sal., oöphoritis.	Same as above	
98	30	4, 12, .	W... .	Illinois . .	Right ovary cystic beneath broad ligament, left ovary papilloma.	Same as above	Exam. 12, 18, '99, health perfeet, uterus in perfect position.
99	30	4, 12, .	W.,. .	Chicago. .	Cystic ovary and tube, retroversion, adhesions, salpingitis, oöphoritis.	Same as above	Patient well; occasional attack of dysentery.
100	26	4, 18, .	W... .	"	Double hydro-salpingitis, retroversion with adhesions	Same as above	Writes she is in perfeet health Feb. 14; uterus in perfect position.
101	28	4, 19.	P. G.	Illinois . .	Cystie ovary, salpingitis, laceration of perineum, retroversion.	Curette., perincorrhaphy, ovaries resected, u. restored and suspended on strip of peritoneum.	Examined Dec. 29, 1900, uterus in perfect position.
102	26	4, 25, .	P. G.	"	Dysmenorrhea, retroversion, salpingitis	U dilated, eurette., appendages remov'd, u. suspended on strip of peritoneum	
103	19	5, 1, .	C... .	Chicago. .	Broad ligament cyst, cystic ovaries with retroversion.	Cysts removed, u. suspended on strip of peritoneum	
104	44	5, 1, .	C... .	"	Persistent retroversion.	Uterus suspended on strip of peritoneum.	
105	30	5, 8, .	C... .	"	Lacerated perineum, double pyosalpinx, dense adhesions, retrov.	Appendages removed, u. replaeed and suspended on strip of peritoneum.	Patient died of shock in 12 hours.
106	32	5, 8, .	C...	"	Retroversion with cysts of left ovary.	Resection of cyst of left ovary, suspension on strip of peritoneum.	
107	19	5, 15, .	C... .	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. suspended on strip of peritoneum.	
108	28	5, 15, .	C... .	"	Double pyosalpinx, retroversion with adhesions.	Same as above	Died 40 hours after operation from shock.
109	17	5, 22, .	C . . .	"	Same as above.	Same as above	In perfect health 12, 17, '00, uterus in perfect position.
110	18	5, 29, .	P. G.	Indiana.. .	Double pyosalpinx, endometritis . .	Curette., append removed, u. restored and suspended to strip of peritoneum.	Examined Dec, 1900, slight baekache, uterus in perfect position.
111	24	5, 29, .	P. G.	Michigan..	Left pyosalpinx	Curette., l. ovary and tube removed, cyst reseeted from r. ovary, u. suspended on strip of peritoneum.	General health much improved, still some pain at menstruation.
112	.	5, 29, .	. . . .	Minnesota	. . . . .	Appendages removed, u. suspended on strip of peritoneum.	
113	.	5, . . .	. . . .	"	Double pyosalpinx, laceratiou of perineum and cervix	Curette., eervix and perineum repaired, u. suspended on strip of peritoneum.	Patient very much improved after one year.
114	.	6, 1, .	W... .	Indiana.. .	Cyst of left broad ligament, retroversion.	Appendages removed. u. suspended on strip of peritoneum.	Patient's health much improved.
115	38	6, 8, .	W...	Kansas . .	Double salpingitis, retroversion with adhesions.	Same as above	Much improved one year after operation.
116	.	7, 5, .	C... .	Chieago. .	Cyst of right ovary, 4 by 3 inches in diameter, small eyst on left.	Same as above	
117	56	7, 5, .	W... .	"	Adenosus cystoma of both ovaries. .	Cysts removed, uterus suspended on strip of peritoneum.	Patient died from return of disease, Jan., 1900.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Continued.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result
118	24	7, 24, '99	P. G.	Chicago. .	Double pyosalpinx, retroversion. . .	Appendages removed, uterus suspended on strip of peritoneum.	One year after, patient in perfect health.
119	24	7, 31, .	P. G.	Illinois . .	Laceration of perineum, r. pyosalpinx, retroversion, adhesions.	Same as above	Examined 12, 18, '99, perfect health.
120	25	7, . . .	W. .	"	Cystic degeneration of ovary, anteflexion, retroversion.	Dilation, curettement, cysts of both ovaries resected, uterus suspended on strip of peritoneum.	Jan. 8, 1901, perfect health.
121	35	8, . . .	W. .	Chicago. .	Extra-uterine pregnancy, pyosalpinx.	Ectopic pregnancy and appendages removed, u. suspended on strip of perito	
122	26	8, 18, .	W. .	"	Retroversion with adhesions, cystic ovaries.	Appendages removed, u replaced and suspended on strip of peritoneum.	
123	27	8, 14, .	P. G.	"	Double pyosalpinx, retroversion with adhesions.	Same as above	Examined 12, 17, '00, perfect health.
124	38	8, 22, .	Str't'r	California	Chronic retroversion with adhesions, cystic ovaries.	Dilatation, curettement, cyst and right ovary excised, u. replaced and suspended on strip of peritoneum	Seen 3 mo after operation, uterus in perfect position; reported Dec., '00, condition very much improved.
125	27	9, 30, .	W. .	Iowa . .	Tubercular peritonitis, retroversion with adhesions, cystic ovaries.	Ovary resected, uterus replaced and suspended on strip of peritoneum.	Letter Dec., 1900, states she is in perfect health; thankful for operati'n.
126	32	10, 2, .	P. G.	Chicago. .	Double hydrosalpinx, retroversion with adhesions.	Appendages removed, u replaced and suspended on strip of peritoneum.	
127	20	10, 2, .	C.. . .	"	Double pyosalpinx, retrover., adhes.	Same as above	
128	.	10, 3, .	W. .	Illinois . .	Retroversion with adhesions.	Curettement, uterus suspended on strip of peritoneum.	Examined Dec., 1900, uterus in position, much improved in health.
129	22	10, 3, .	W. .	Chicago. .	Tubercular salpingitis, retroversion with adhesions.	Appendages removed, u. replaced and suspended on strip of peritoneum.	Improved first 6 mo.; now has symptoms of returning tuberculosis, uterus remained in perfect posit'n.
130	.	10, 10, .	P. G.	"	Retroversion with adhesions.	Laparotomy, adhesions sepa., u replac'd and suspended on strip of peritoneum.	
131	23	10, 10, .	W. .	"	Cysts of right ovary, subperitoneal fibroid on anterior wall of uterus.	Curette., cyst excised, fibroid, u. suspended on strip of peritoneum.	Exam. in last 6 mo., considers herself well, uterus in perfect position.
132	36	10, 23, .	P. G.	"	Retroversion with adhesions.	Adhesions broken up, uterus suspended on strip of peritoneum.	Pregnant since opera., normal labor. Confined by Dr. Milimo; exam. 1 mo. after confinement, u. in perfect posi.
133	.	11, 20, .	C.. . .	"	Cystic ovaries, salpingitis.	Ovary resected, appendages removed, u. suspended on strip of peritoneum.	
134	.	12, 11, .	P. G.	"	" " hydrosalpinx.	Ovary resected, uterus replaced on strip of peritoneum.	
135	21	12, 12, .	W.	Wisconsin.	Tubercular salpingitis, retroflexion.	Appendages removed, u. replaced and suspended on strip of peritoneum.	
136	.	3, 19, '00	C. . .	Chicago. .	Double pyosalpinx, retroversion. . .	Same as above	
137	.	4, 7, .	P. G.	Indiana .	Double salpingitis..	Same as above	Letter 12, 22, '00; she states she is but little better.
138	.	3, 28, .	C.. . .	Chicago .	Double salpingitis, retroversion. . .	Same as above	Exam. 12, 21, '00, in perfect health, uterus found in perfect position.
139	.	4, 21, .	W. .	Illinois . .	Cyst of left ovary, with retroversion.	Cyst resected, u. replaced and suspended on strip of peritoneum.	Exam. Apr., 1901, relieved of former symptoms, u. in perfect position.
140	.	4, 26, .	P. G.	Iowa . .	Double pyosalpinx with retroversion	Removal of appendages, uterus suspended on strip of peritoneum.	Letter 1, 1, '01, was in perfect health until she had fall a month previo's.
141	.	4, 30, .	P. G.	Chicago. .	Double pyosalpinx, retroversion, adhesions.	Same as above	Perfect health 6 mo. after operation.
142	25	4, 26, .	C. . .	"	Double pyosalpinx with retroversion	Curette., appendages removed, uterus suspended on strip of peritoneum.	
143	.	5, 7, .	C. . .	"	Pyosalpinx, endometritis, laceration of the perineum.	Curette., perineum restored, r. ovary resected, uterus suspended on strip of peritoneum.	
144	.	5, 1, .	C. . .	"	Double pyosalpinx, retroversion. . .	Curettement, uterus replaced and suspended on strip of peritoneum.	
145	.	5, 1, .	W. .	Indiana . .	Cyst of right ovary, laceration of cervix and perineum, with retroversion.	Curettement, perineorrhaphy, trachelorrhaphy, uterus suspended on strip of peritoneum.	Letter Jan., 1901, not markedly improved, headaches, menstruation scanty and delayed.
146	.	5, 14, .	C. .	Chicago .	Removal of cyst from right ovary. .	Same as above	Letter from fam. physician Jan., '01, states she is much impr'd, but not entirely reliev'd of symp. at menses.
147	.	5, 17, .	P. G.	"	Retroversion, with adhesions and appendicitis.	Appendix removed, uterus replaced and suspended on a strip of peritoneum.	
148	.	5, 14, .	P. G.	"	Double pyosalpinx, retroversion. . .	Perineorrhaphy, appendages removed, u. suspended on strip of peritoneum	Letter Jan., 1901, states patient considers herself in perfect health,
149	.	6, 15, .	W. .	Wisconsin,	Retroversion, endometritis	Curettement, uterus suspended on strip of peritoneum.	Letter states, gained steadily, good as new, little nervous as yet.
150	29	6, 18, .	C. . .	Chicago. .	Parovarian cyst of left side, endometritis, laceration of the perineum.	Curettement, perineorrhaphy, appendages and cyst removed, uterus suspended on strip of peritoneum.	
151	.	6, 20, .	P. G.	Indiana.. .	Right-tube ovarian cyst four or five inches in diameter, l. ovary cystic.	Cyst and both appendages removed, u. suspended on strip of peritoneum.	Let Dec., 1900, considers herself well, but not as strong as she would like.
152	.	6, 29, .	W. .	Illinois . .	Laceration of the perineum, retrover. with adhesions, coccyodynia.	Perineorrhaphy, u. replaced, suspend. on strip of peritoneum coccyx removed.	Letter of Dec. 28, states the patient is absolutely well.
153	28	7, 28, .	C. . .	"	Retroversion with adhesions. . .	Uterus suspended on strip of peritone'm	Jan., 1901, patient in perfect health.
154	.	7, 13, .	P. G.	Chicago. .	Double salpingitis, oöphoritis, with retroversion.	Appendages removed, uterus suspended on strip of peritoneum.	
155	.	8, 18, .	W. .	"	Small fibroid of the u., perineum lacerated, endometritis, retroversion.	Curette., perineorrhaphy, appendages removed, u. susp. on strip of periton.	Died 2 mo. later from a trouble not connected with the operation.
156	.	8, 7, .	P. G.	Iowa . . .	Double salpingitis with retroversion	Appendages removed, uterus suspended on strip of peritoneum.	Let Jan. 1, complains of pain on r. side, down limb; not much better.
157	.	8, 28, .	W. .	Illinois . .	Laceration of perineum, retroversion with adhesions.	Curette., perineum restored, uterus suspended on strip of peritoneum.	Jan. 1, '01, patient in perfect health.
158	20	9, 4, .	W. .	Chicago .	Retroversion with fixation, endometritis.	Curettement, uterus replaced and suspended on strip of peritoneum	May 1, '01, patient in perfect health.
159	.	9, 12, .	P. G.	Indiana....	Retroversion, endometritis with severe dysmenorrhea.	Curettement, uterus replaced and suspended on strip of peritoneum.	Fam. physician states 1, 1, '01, she is in perfect health, no dysmenorrhea, uterus in perfect condition.
160	.	9, 20, .	W. .	Chicago. .	Double pyosalpinx, endometritis, retroversion.	Curettement, appendages removed, u. suspended on strip of peritoneum.	Exam. 12, 27, '00, considers herself well, organ in perfect position.
161	.	10, 8, .	P. G.	Illinois .	Double pyosalpinx, endometritis.	Same as above	
162	39	10, . . .	C. . .	Indiana.. .	Laceration of perineum, retroversion with adhesions.	Curette., perineorrhaphy, laparotomy, u. suspended on strip of peritoneum.	
163	23	10, 31, .	P. G.	Chicago. .	Double salpingitis with retroversion	Curette, appendages removed, u. replaced and susp. on strip of periton.	Four months later the patient was in perfect health.
164	36	10, 31, .	P. G.	"	Laceration of the perineum, double pyosalpinx, retroversion.	Perineum restored, curette, appendages removed, u. suspended on strip perito.	Four months after operation the patient was in perfect health.
165	28	11, . . .	P. G.	"	Double salpingitis, retroversion. . .	Appendages removed, uterus suspended on strip of peritoneum.	Patient in perfect health 6 months after operation.
166	.	11, . . .	P. G.	"	Double salpingitis with retroversion	Appendages removed, curettement, u suspended on strip of peritoneum.	Patient in perfect health 3 months after operation.
167	21	11, 12, .	C. . .	"	Double pyosalpinx..	Same as above	Patient now in normal condition.
168	41	11, 26, .	P. G.	"	Laceration of perineum, retrover. with adhesions, double pyosalpinx	Perineum restored, curette., appendages removed, u. susp. on strip of periton.	Death in 30 hours.
169	32	12, 6, .	W. .	"	Double pyosalpinx, retroversion with adhesions, endometritis.	Appendages removed, uterus suspended on strip of peritoneum.	Patient in perfect health 3 months after operation.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Concluded.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
170	.	12. 17. '00	C. .	Illinois . .	Double pyosalpinx, endometritis . .	Append. removed, u. suspended on strip.	Perfect health 6 wk. after operation.
171	.	12. . . .	P. G .	"	Laceration of perineum, endometritis, retroversion.	Perineorrhaphy, perineum restored, u. suspended on strip of peritoneum.	Patient's condition satisfactory in 6 weeks.
172	40	12. 29. .	W . .	Indiana.. .	Small fibroid in walls of uterus, myomectomy for fibroid.	Appendages removed, myomectomy, u. suspended on strip of peritoneum.	Patient in perfect health 2 months after operation.
173	.	12. 31. .	P. G .	Chicago. .	Laceration of perineum, endometritis, retroversion.	Perineorrhaphy, curettement, uterus suspended on strip of peritoneum.	

the urachus is entirely absent. 3. In a very small percentage of cases the urachus remains pervious from its bladder end.

The Writer's Method of Ventral Fixation by Suspension of Uterus on Strip of Peritoneum.—I first described my operation and reported several cases to the Chicago Gynecological Society, Nov. 19, 1897.[18] One hundred and seventy-three cases upon which this operation has been performed I now have the honor to present to you for analysis.

I have finally adopted this operation exclusively for all cases requiring a ventral suspension of the uterus for the following reasons: 1, because of its simplicity and ease of accomplishment; 2, because of the thoroughness of fixation; 3, because it positively does away with any form of permanent buried sutures; 4, because it accomplishes a fixation which allows of a large range of movability; 5, because the fixation does not directly involve the appendages; 6, because experience demonstrates that the point of fixation is not the source of subsequent irritation or pain; and 8, because of the possibility of pregnancy occurring and going on to normal confinement after the operation.

The technique of the operation is very simple. It is performed in the same manner whether the appendages are removed or remain intact. The abdomen is opened with the patient in Trendelenburg's position with a median incision two to three inches in length extending from two inches below the umbilicus to about one to two inches above the symphysis pubis. The uterus is carefully freed from adhesions of every kind well down to the Douglas pouch. The posterior surface of the broad ligaments are also carefully freed from any fixation. The uterus is then brought well forward with its fundus pressed upon the parietal peritoneum just beneath the lower end of the abdominal incision. From one side of the abdominal incision, and parallel to it, a ribbon of peritoneum, with its subperitoneal connective tissue about one-half inch in width with one edge of it corresponding to the free edge of the abdominal incision is rapidly dissected free with the scissors or knife; the end of this ribbon corresponding to the upper end of the wound is severed and the lower end is dissected until it extends beneath the lower angle of the incision. This prepares a firm band of peritoneal and subperitoneal tissue about one-half inch in width, about three inches in length, with an attachment to the peritoneum beneath the lower angle of the wound, in the median line directly over the fundus of the uterus. The uterus is now supported well forward with the two fingers of the left hand of the operator, a Cleveland ligature carrier is made to penetrate the fundus just posterior to its crest in a direction from behind forward just beneath the peritoneum and a width of grasp of three-quarters of an inch. After the blades of the carrier have penetrated well through the tissues, they are opened to the extent of an eighth of an inch and are made to grasp the free end of the peritoneal ribbon, and then to draw it through the opening made (Fig. 4). The uterus is now pushed well forward on the ligament until it is arrested by its lower fixed end, and then, by means of a small antiseptic catgut buried suture, the uterus is temporarily fixed. This catgut suture is passed through the aponeurosis, the muscle and the peritoneum on one side of the lower angle of the wound, then transversely through the peritoneal and subperitoneal coat of the uterus, just posterior to the point of exit of the new suspending peritoneal ligament, and finally passed to the peritoneum muscle and aponeurosis of the opposite side of the abdominal wound and tied, thereby firmly fixing the uterus for a time corresponding to the life of the catgut, and until such a time as a new suspensory ligament will be securely fixed again to the peritoneum (Fig. 5).

SUMMARY OF ONE HUNDRED AND SEVENTY-THREE OPERATIONS FOR VENTRAL-SUSPENSION.

By correspondence with patients direct or with their family physician and by personal interviews I have been able to learn of the condition of 114 of the 173 cases I have operated on for ventral fixation of the uterus by this new method.

In the 173 cases representing all operated on for ventral fixation by this method in the four years beginning Jan. 1, 1897, to June 1, 1901—many of the cases including operations for laceration of the perineum, cervix, and removal of the appendages and even myomectomies for fibroids—there were six deaths, or a primary mortality of 3.5 per cent. In but 13 cases were there no complicating conditions requiring operations other than the laparotomy for the ventral fixation. In these there was no death. The appendages were removed for septic lesions as an accompanying operation of the ventral fixation in 114 cases. In five large ovarian cysts were removed. In four the appendages were removed for tuberculosis. In five for parovarian cysts. In 12 cases the appendages were removed and myomectomy was performed for accompanying fibroids of the uterus. In 29 cases the appendages were not removed. In twelve of these 29 cases conservative surgery was necessary on one or both ovaries. One case was accompanied by an operation for appendicitis. Of the 173 operations there were four which had an accompanying operation for ectopic pregnancy. Perineorrhaphy was an accompanying operation in twenty-five of the 173 cases. Curettement of the uterus was performed in twenty-eight of the 173 cases. Trachelorrhaphy was performed in 19 of the series of cases.

Serious mental disturbances existed previous to the operation and was the paramount symptom for which relief was sought in 9 cases. These were cases 21, 31, 41, 53, 55, 61, 74, 79, 82.

In case 21 the patient was considered mentally unbalanced by the family, with exacerbations at the menstrual period. The retroversion was accompanied with infected appendages. The appendages were removed and the uterus suspended. The patient was examined by me two years after the operation and the uterus was in perfect position and condition, and she was said to be cured of her mental symptoms by her family.

Case 31 had mental disturbances since birth of her last child, which was exaggerated at menstruation. She had severe dysmenorrhea and menorrhagia and a laceration of the perineum accompanying the retroversion. Curettement, perineorrhaphy and removal of the appendages were done at the time of the ventral fixation. In one year after the operation the patient was in perfect health.

Case 41 was a duplicate of the above case precisely except that the perineum did not have to be restored. At the end of one year the mental condition was improved, but not entirely relieved. The uterus remained perfect.

Case 55, unmarried, had cystic appendages, a retroverted and adherent uterus. She had "severe convulsions and became unconscious at her menstrual periods." The appendages were removed and the uterus replaced and suspended. Examination of the patient by me three years later revealed the pelvic organs perfect and the patient stated that she had been in perfect health since the operation.

Case 61 gave a history of being mentally disturbed at the menstrual period. Her appendages were infected and the uterus was fixed in retroversion. The appendages were removed. Three years afterward I examined the patient. Her uterus was well supported and her health absolutely perfect.

Case 74 gave a history of periodic insanity much aggravated at menstruation. The woman was 21 years old and married. The appendages were infected and the uterus retroverted and adherent. The appendages were removed and the uterus suspended. One year afterward the patient was well.

Case 79. Married, aged 19, had large cystic appendages and suffered with excruciating dysmenorrhea and excessive menorrhagia. She had alarming nervous symptoms which assumed a marked form of mania at menstrual periods. The appendages were removed and the retroverted uterus replaced and suspended. Two years afterward I examined the patient and she was in perfect health.

Case 82. Married, age 39, had double pyosalpinx retroversion with adhesions. She had symptoms of severe menorrhagia and periodic insanity aggravated at menstrual periods. The appendages were removed and the uterus replaced and suspended. A letter from the patient's parents two years afterwards discloses the patient to be absolutely well.

In the 173 cases 9 failures must be recorded. These were cases 38, 49, 59, 90, 103, 108, 117, 155, 168. Among the nine failures I place 6 deaths, leaving but three to count for failures out of the 167 which recovered. Of these case 38 submitted to a vaginal hysterectomy one year after the first operation, for carcinoma. The fundus was found well forward and well fixed with a broad movable attachment.

This case (38) and another one of June 13 gave me an opportunity of making an antemortem examination of my handiwork.

Case 38 was operated on one year after her ventral suspension for cancer, the operation being vaginal hysterectomy. During the progress of this operation I found the fundus suspended to the abdominal wall above the bladder by a well-defined cord of tissue about one eighth inch in diameter and three-fourths of an inch in length, which preserved a structure resembling a connective tissue center covered with peritoneum. Fig. 6 gives a very accurate representation of this ligament as it appeared through the vault of the vagina when the uterus was freed from its attachments and drawn well down.

Case 78 was a case in which a secondary laparotomy became necessary because of persistent pain in the left side of the pelvis, accompanied with periodic partial obstruction of the bowels. A diagnosis of intestinal adhesion to the point of repair of the ovary of the left side, decided a second operation. When the incision was made the beautiful picture shown in Figure 7 was presented. A portion of the intestine was adherent to the line of repair of the left ovary. With this relieved the abdomen was closed. The new ligament was one-eighth of an inch in diameter at its center and smallest part, and was about one inch in length. The ligament was shaped like a round ligament rather than a peritoneal strip.

Case 49 was not examined or interviewed by me, but she replied by letter that her health was not much improved. Her operation included the removal of very seriously diseased appendages.

Case 117 at the time of operation for ventral fixation had adenocystoma of both ovaries removed. The patient died in a year and a half from malignant disease in the pelvis.

There were two cases of pregnancy occurring in the 173 cases. Case 36 gave birth without complications to a healthy child two years after the operation. There were no abnormal symptoms during the carrying of the child. One year after the confinement the uterus was in normal position and the patient well. Case 132 was confined in normal labor one year after the operation, giving birth to a healthy child. She had no abnormal symptoms during the child-carrying period. One and a half years after her uterus was in normal position and the patient well.

Ninety-seven of the 173 cases have communicated with me directly either by personal interviews and examination, reports from the family physician or direct correspondence at periods of from a half to five years after the operation. Four thus reported between 4 and 5 years after the operation; twenty-nine between 3 and 4 years; twenty-one between 2 and 3 years; twenty-two between 1 and 2 years; twenty-one between one-half and one year.

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DISCUSSION ON PAPERS OF DRS. RIES AND MARTIN.

Dr. J. Riddle Goffe, New York City—These two papers open up the whole subject of treatment of retroversion. We can perhaps consider this question in a more systematic and logical way if we will first discuss the dynamics of the female pelvis. The misunderstanding and divergence of opinion on this subject of displacement has been largely due to a misconception of the dynamics of the female organs—the position of the organs when the woman is on her feet. We have been getting our ideas from frozen sections, which merely represent the condition in an individual case. We must examine living patients when they are on their feet. It is then that the forces are at work that hold the organs in place and that influence displacement. When a woman is on her feet, the symphysis pubis is on a lower level than the tip of the coccyx. Normally the symphysis is in a line with the center of gravity of the body. The uterus is in the center of the space with the bladder filling in the space between the uterus and the symphysis. The uterus lies on its anterior face and is held in place by its ligaments. [This was illustrated by a free-hand drawing on the board.] It was formerly supposed that the uterus must be held up by something under it, and we built up the perineum as a uterine support. That theory has been exploded long ago. The supports of the uterus are its ligaments. All organs in the body are supported by ligaments; none are held up by anything under them, and the uterus corresponds to nature's plan of suspension.

The most important supports of the uterus are the utero-sacral plus the utero-vesical ligaments, which form a sling in which the uterus rests. The uterus can rise or fall according to the fulness of the bladder and can slide backward or forward. With the uterus in this position we have the intra-abdominal pressure, carrying the fundus toward the front, and gravity pulling it down. To keep the uterus in place we must keep the cervix well up in the hollow of the sacrum. The utero-sacral ligament is most important for retaining the uterus in this position, and it is impossible for the fundus to retrovert as long as the ligament is not relaxed.

The ideal operation for the restoration of the uterus to its normal position will eventually be found by working on this utero-sacral ligament. I have attempted it, but as yet we have not succeeded in the operations on the utero-sacral

ligament. We must turn then to the other ligaments, the broad or round ligaments, for that support. I believe that the operations we do on the round ligaments tend to hold the fundus to the front long enough for the sacral ligament to recover itself and thereby we restore the normal support. In the processes of involution and sub-involution the ligaments take as much part as the uterus; in pregnancy the ligaments are also enlarged and lengthened. If after parturition involution does not take place properly, in the ligaments, the fundus sags and eventually tips backward.

What shall we do in cases of retroversion? We can not shorten the utero-sacral ligament, and the next best ligament is the round ligament, or we can attach the fundus to the abdominal wall as has been suggested. I am unalterably opposed to any operation that necessitates an incision through the abdominal wall for a condition so easily relieved as a retroverted uterus. Dr. Martin has laid stress upon the seriousness of a retroverted uterus, but I must disagree with him. There is a large school of gynecologists who take the position that if the uterus and its appendages are healthy it makes little difference where the fundus rests. It is the complicating diseases and the adhesions that make trouble. I believe it is better that the uterus should be in the normal position, but I do not believe that retroversion, when uncomplicated, justifies us in making an incision through the abdominal wall on account of the immediate danger of peritonitis and the immediate or remote danger of hernia. Any man who has had much experience in ventral fixation or the Alexander operation will have to admit that in the hands of every operator a certain proportion of these women eventually suffer from hernia. Such a woman is a thousand times worse off than she was before the operation, so that I denounce the Alexander operation *in toto*.

I can not approve of Dr. Martin's procedure, although he has brought out very ingenious methods of shortening the round ligament. The operation is not indicated in cases in which there is disease or adhesions of the appendages; indeed, the Alexander operation is contraindicated. It is applicable only in simple retroversion. The operation he has suggested of tying the round ligaments in the subcutaneous tissue necessitates still further manipulation, and the more we manipulate the tissue about the symphysis and mons veneris, the greater the danger of sepsis, which is almost invariably followed by hernia. The simpler we can make these operations, the better. These same remarks will apply to ventral fixation.

I believe that Dr. Ries is working in the right direction. He has presented a very important procedure. He attacks these conditions through the vagina, an operation which is exceedingly simple and which is free from the dangers that attend a laparotomy. It is entirely free from the subsequent danger of hernia. If we can attain just as good results by operating through the vagina as we can by doing a laparotomy, then, I say, by all means that is the operation of choice. Whether it is necessary to resort to the method described by Dr. Ries or whether it can be accomplished in a simpler manner, is a question. I operate through the anterior fornix. I make a transverse and then a longitudinal incision along the whole anterior wall of the vagina, dissect up the bladder, pull the uterus down into the vagina and draw down the appendages. Through this incision I am able to do any amount of conservative work on the appendages. After I have completed the work in that direction, I shorten the round ligament through the same incision. I draw them up, double them on themselves, stitch them together with three stitches and pin the loop to the anterior face of the uterus. I believe Dr. Dudley suggested the latter step. My results have been most satisfactory. I first used catgut ligature, but it absorbed too quickly and I had three recurrences. I now use silk and in six years have had no failure so far as recurrence is concerned. My results in the matter of pregnancy and subsequent delivery have been most satisfactory. I believe the true method of treating this condition is to do it through the vagina, and at the present time the best method is the shortening of the round ligaments.

DR. W. H. HUMISTON, Cleveland, Ohio—It seems to me that Dr. Ries' operation is the most feasible one where an operation is necessary. I have but one theoretical objection: I do not believe that the round ligaments support the uterus. I think they act as guy-ropes, and prevent the retrodisplacement. If they are shortened to the extent described, will it not complicate the bladder space. and will it not produce frequent micturition?

I can not agree with the statement that displacement of the uterus produces no symptoms. A retrodisplaced uterus remaining in that condition any length of time becomes congested, and a little later inflammation arises, and symptoms of this condition is evidenced by pain, leucorrhea, backache and headache, and is also followed by indigestion, constipation and nervousness. The intra-abdominal pressure, when the uterus is in its normal position, is on the posterior surface of the uterine body, and straining at stool carries the fundus away from the rectum. Misplace the uterus so that the intra-abdominal pressure is exerted on the anterior surface of the uterus, and you have it crowded into the concavity of the sacrum and acting like a ball valve in preventing the feces from passing.

I studied the Alexander operation, saw it done, and did several myself, but without permanent relief to my patients. I believe it is an operation not indicated if you have diseased appendages. Shortening the round ligaments will not relieve the disease in the tubes and ovaries. In every simple case of retrodisplacement, without diseased appendages, I find curetting the uterus, putting it in place and supporting it with a pessary, reduces its size and hardness. When you remove the pessary six or ten weeks later, the uterus will remain in position. If you have diseased appendages you can, by operating through the vagina as Dr. Ries described, take care of that condition. If necessary you can open the posterior cul-de-sac, separate the adhesions, pull down the appendages and either do a conservative operation or remove them, if hopelessly diseased. In cases of diseased appendages with adhesions, remove them and suspend the uterus. If you leave diseased appendages, you will fail to relieve the suffering patient.

DR. SETH C. GORDON, Portland, Me.—The particular way I want to criticise Dr. Martin's paper is that of a protest against this so-called conservative surgery. Will any reasonable man, woman or child tell me why, when the abdomen is opened and the appendages are removed, you should stitch the uterus up to the abdominal wall? It is simply a gestation bag which is never to be used for gestation. The ovaries and tubes are gone and pregnancy can not possibly take place. The function is lost, but the uterine arteries continue to pump blood into this bag and you have a congested condition of the pelvis as long as those arteries are intact. I do not wonder that the cases reported as not well did not get well, because this condition of things existed. I believe in conservatism but I believe in a conservatism which conserves a woman's health. We are bound to look as it from the patient's standpoint. I do not want it to go out from this Association that we are in favor of removing the uterine appendages and then stitching the body of the uterus up to the abdominal wall. Get rid of it. It is of no further use to the woman and often is the source of a great deal of pain and suffering later on. "If an eye offend thee, pluck it out." I do not know whether you all believe in the authority, but I think it is pretty good. Let us consider this thing carefully, and let us act sensibly.

I can see no reason for leaving these organs which are of no possible use and which contain arteries which are pumping blood into them all the time. In the days when they sacrificed so many uterine appendages, they said the patients did not get well. They did not in many cases, simply because the uterus was left behind. I protest vigorously against any such teaching and against any such practice. We ought to be guided by common sense.

DR. A. GOLDSPOHN, Chicago—I want to congratulate my colleagues for the very commendable papers which they have given us and particularly because they both squarely denounce direct or immediate fixation of the uterus to anything. They

do not do any more than to anchor the uterus by means of some ligaments. With regard to Dr. Ries' ingenious operation, I have a few objections that weigh very seriously with me when we consider not merely the immediate welfare of the patient but more especially the ultimate results, those which pertain to the condition of the organs after the woman has had one or more children. The round ligaments are the only things that can be rationally used as a means to cure retroversion, for the reason that they are a part of the uterus. The musculature of the uterine body passes directly into these ligaments. They are arms of the uterus, and its only arms, and as such they undergo both evolution and involution with the uterus during and after the pregnancy respectively. Therefore they are the only rational and effective means, no matter what, if anything, was their office previously. The only question is: Which is the best way of using them? While I do not believe that Dr. Ries' method is the best, the same objection pertains to the shortening of round ligaments through the abdomen, namely, that the shortening is secured by doubling up the strong portion of the ligament, and not by strengthening or eliminating the weaker parts. The round ligament is not a structure of uniform size, but is like a slender pyramid. Near the uterus it is from six to nine times larger and stronger than where it enters the abdominal wall; and all that these vaginal and ventral operations can do is to double up the strong proximal ends and leave the slender distal parts near their insertions as weak as ever. Therefore, the results can naturally not be as good as when we get at these ligaments from their distal ends, double up or eliminate their distal slender portions, and bring their central strong parts alone into use, as is done in good Alexander operations.

With regard to the conservative operations on the appendages, in general, there is this plain fact which was alluded to by Professor Sanger, of Leipsic, five years ago, that in order to get those organs to present themselves for treatment we have to draw them a great distance away from their normal habitat, i. e., the lateral wall of the pelvis, and do violence to their lateral supports. If they are already prolapsed we improve their condition, but not their position, and the improvement of condition will be only of temporary benefit. Sanger expresses a fear that vaginal operations upon the appendages are likely to induce such prolapse. Furthermore, we can not get them into position, that they will lie there without uncomfortable tension. We can not do as good work as when we draw the ovary into the ventral wound, and not at all as well as we can if we draw it into the dilated internal inguinal ring in conjunction with an Alexander operation. The reason why the ovary and ampulla of the tube can be drawn into the dilated internal inguinal ring and that they will lie there so well for us to do work on them, is that the fixation point of the ovary and ampulla of the tube is immediately back of the internal inguinal ring and right near it. Simply put your finger into the ring to the second joint and you are upon it. The organs are swung around in a forward direction, and out they are. You can not draw them into any other opening in the abdomen or pelvis as easily as you can in that opening.

In regard to the whole business of surgery for displacement, most operators have not demanded enough as to ultimate results. The operators who have merely followed their cases up to their next childbirth have not done enough. If no catastrophe has occurred in the next labor, they have called it well and good. That is not sufficient, however, and none but Alexander operators have done better. They have followed their cases and have carefully noted the status of their pelvic organs after subsequent labors. We have now some 70 cases, all of which have had one or two full-term births after Alexander operations. Out of that number there are no recurrences of retroversion except two that occurred in the clinic of Zweifel in Germany, and in these the technique was defective and the indications wrong.

I beg the author of the term ventro-suspension, who has done that operation more than any other man in the world, and all the gentlemen who have preferred other operations to the Alexander, to follow up their cases not merely to the next baby, but beyond that point, and to report the status of their pelvic organs.

Dr. Howard A. Kelly, Baltimore—I am indebted to Dr. Ries for adding still another of the number of operations devised for the treatment of retroflexion of the uterus, of which I hold a list of over 50 in my hand. These have all accumulated since my first paper on this subject in 1887. I do not myself hold to any one procedure but I think a variety of different methods are valuable under different conditions. I am particularly interested in Dr. Ries' new method, as it reminds me of some work of my own not altogether dissimilar. I have, for example, in several instances, operating through the abdomen, utilized the round ligaments by cutting them off near the uterus, and then drawing the ligament over the cornu uteri and suturing it into a little incision at the back of the uterus. In another instance I attached the ligament by doubling it on itself and passing it under the tube close to the uterus and suturing it there.

My usual method consists in attaching the uterus by its posterior surface just over the top of the fundus, by two silk sutures, to the peritoneum and sub-peritoneum fat behind or above the symphysis. This is a more rational operation than that of shortening of the round ligaments, for if you will examine an anteflexed uterus when the abdomen is open, you will see that the fundus lies well anterior to the ring in the wall of the abdomen by which the round ligaments take their exit. The round ligaments have nothing to do with the support of the uterus under normal conditions except in pregnancy.

The final result of my methods is an attachment of the uterus to the abdominal wall by one or two thin peritoneal strings; the womb thus lies in a posture of easy mobile anteflexion. There should be no fixation of the organ such as follows scarification of the peritoneal surfaces.

I have made an analysis of some 214 cases of suspension, to study the effect of pregnancy on the new position of the uterus when the operation is done strictly as I desire. Out of this number 43 became pregnant and in no case was there any special difficulty with the labor. As to the permanent success of the operation, the uterus remains in its new good position in all but about 2 per cent. of the cases. I consider my operation of suspension the simplest and safest of all. It can be done through a tiny incision, and done rapidly, and I have never had a death from the operation nor any serious immediate result.

Dr. A. McDermid, Chicago—The question of the effect of these operations on pregnancy is an important one. A short time ago I reversed this process by liberating the adhesions in a case of pregnancy. I had operated upon the young lady about two years before, removing one ovary and doing a ventro-suspension of the uterus. She afterward married and became pregnant and at about four and a half months, finding that she was suffering great discomfort from the fixation of the uterus, I opened the abdomen, placed a double ligature around the band of adhesions and dividing these, allowed the uterus to ascend. So far as I am aware, this is the first instance of this operation. Professor Hirst, in his text-book of obstetrics, recommends, when labor comes on and there is dystocia from ventral fixation, to open the abdomen, free the fixation and allow the uterus to assume its normal position. I consider it advisable to do so in the early months, enabling the uterus and its contents to develop normally.

Dr. Ries, in reply—Dr. Kelly's suggestion can be carried out through the abdomen, but not through the vagina. I have thought out all the possible uses of the round ligaments in operations for retroversion, and to-day I use the method I described. There are several other methods. For instance, you can take the round ligaments and cut off a piece, then make a slit in the uterus in which you insert the ligament. By this method there is less wounding of the uterus than in the tunnel method. As to whether the bladder would be interfered with by my operation any more than it is interfered with by the normal round ligaments in the normal position of the uterus, or where the uterus has been retroverted, or where the round ligaments have become elongated, I always allow for

sufficient mobility so that the bladder can distend between the uterus and the abdominal wall.

Dr. Kelly said he could not understand how the ligaments which he makes can hold after one or two labors. He expects them to break or stretch. That is a very important admission, one which I would not make for my operation. It means that if that retroversion must be treated, the woman must be operated on after each pregnancy. Dr. Goldspohn has brought out the points which we have discussed in Chicago before. The statement that the distal portion of the round ligaments is thinner than the proximal is correct. What about it? When Dr. Goldspohn looks for the round ligament in the inguinal canal he almost invariably finds it. It is not pulled out, and if it holds on then it will hold on just as well after I have folded it on itself. Dr. Goldspohn quotes Sanger. Sanger does not say what Dr. Goldspohn makes him say. Sanger says as follows: "If other observations should prove to be a fact what I from my personal experience will not at all represent as firmly established, namely, the fact that the tubes and ovaries may become prolapsed after a vaginal celiotomy, then, etc., vaginal operation might be objectionable." That is not what Dr. Goldspohn makes him say. Dr. Goldspohn also mentions that it is difficult to operate on the appendages through the vagina, that it is difficult to do delicate conservative operations on the ovaries and tubes. Operations on the tubes are as easily performed through the vagina as through the abdomen if you only know how. The first case I operated on after the method published here had a double salpingostomy and the woman conceived three months after the operation.

As to puncturing the ovaries, I do not want to say much. I merely will say that all those little cysts that are punctured and scraped and cauterized are normal follicles, a trifle enlarged, and the microscope reveals a perfectly normal ovum in each one. I have been doing this operation for retroversion for over two years and can not, of course, know what the results will be ten years from now. It is desirable that we examine these cases again and again after labor, but unfortunately we can not always do it ourselves because patients move away from the city. It is important to mention this here because we have to call on the collaboration of all practitioners to keep the operators informed of the results of their operations years afterward.

Dr. Martin, in reply—From the discussion it must be apparent to all that the operation for retroversion resolves itself into a matter of personal equation. One operator follows one method and succeeds because he has become proficient in it, and another follows another method and is also successful. My paper presented to-day represents five years' work. It is work that has been thoroughly tested and I have brought no case in which less than a year elapsed since the operation. Therefore, I bring results and it seems to me that results like these ought to be commended. I believe they will be.

As to Dr. Goff's criticism on the occurrence of a hernia, it is true that operations through the abdominal wall improperly performed are followed by hernia. It is also true that if operations are not properly done through the vagina we will have a hernia. A number of such cases have been reported. In the cases reported by me here to-day, I had no hernia. If a hernia had occurred, I certainly would have put it in the paper, because I did not cover up the failures.

In the treatment of diseased appendages, and in doing work on the round ligaments, the vaginal route is the route for experts, but it is ridiculous for us to expect any one who is not an expert to perform the operation as described by Dr. Ries with the same degree of facility as he does. Those of you who have done vaginal hysterectomies realize that Dr. Ries' operation is a very difficult one. While Dr. Ries might do that operation on my wife if she required it, I would not have the rank and file of surgeons do it. Why? Because the first thing would probably be the wounding of the bladder; second, the opening of the peritoneum at a point where it is difficult not to do it, and third, all the work must be done in the dark. The Alexander operation, as I have described it, has no mortality; the operation of shortening the round ligaments through the vagina or anywhere where the peritoneum must be opened, has a mortality of at least 5 per cent. and that in the hands of experts.

Dr. Humiston criticises the operations for ventral fixation and Alexander's operation where there are no adhesions. He states that no operation on the round ligaments should be necessary unless it is also necessary to open the abdomen for the purpose of doing repair work on the appendages. I do not agree with him, and I believe that no gynecologist who does much of this work will agree that every case of retroversion can be cured without an operation, even if there are no adhesions. I treat many of these cases, and every case of simple retroversion where there are no adhesions nor diseased appendages. I treat for months with the idea of causing the ligaments to shorten and to restore conditions to their normal state. I am sure that I work over these cases carefully and yet I only cure one case out of four by office treatment. The other three have to submit to some operation and I do not believe it is necessary to go into the peritoneum in order to shorten the round ligaments. In these cases where I am absolutely positive of normal appendages I shorten the round ligaments according to the method described. Dr. Humiston also criticises opening the abdomen for operations for retroversion. I did not advocate this, except where there is disease of the appendages. Of the 173 cases reported by me, the appendages were removed in all but 29. Therefore, the appendages were repaired in only 29 cases.

Dr. Gordon criticises any one who will not clean out the pelvis completely when it is necessary to open the abdomen. The reason we see many cases of removal of the appendages followed by severe sequences when the uterus has been preserved, is because the uteri were not suspended at the same time. The appendages are removed, the uterus curetted, and the abdominal wound closed. The uterus will invariably become retroverted. In every case of removal of the appendages I suspend the uterus on a strip of peritoneum so that it has a movable support, and no retroversion will result. Furthermore, I preserve to the woman a uterus which is a matter of a great deal of sentiment. The uterus is also a support to the abdominal viscera. It supports the vault of the vagina and the woman walks about without feeling that vacuum in the pelvis that she invariably feels if the uterus is removed. If you remove the uterus entirely it also means the removal of the top of the vagina, and if you do this, the vagina is shortened.

REPORT OF A CASE OF UNUSUAL TERTIARY MANIFESTATIONS.*

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The patient, H. H., aged 22, had scarlet fever, followed by a severe attack of Bright's disease, at the age of 3 years. He made a speedy recovery, and was in good health up to September, 1899, when he contracted syphilis, while at school. The disease was recognized by his school physician, and for several months he was kept on the usual anti-syphilitic treatment. Upon his arrival home, however, in the summer of 1900, he decided not to reveal the fact of his infection, even to his family physician, and he gave up all medication. In August he enlisted in the war with Spain, and while in camp contracted intermittent fever. When he returned home in the autumn, he was much debilitated and had several paroxysms of what his family physician, in the absence of a history of specific disease, and, indeed, not suspecting it, on account of his long acquaintance with the family and the high moral character of the patient, diagnosed as malaria

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, W. E. Casselberry and J. N. Mackenzie.

and treated accordingly for several weeks. Failing, however, to get the usual satisfactory results and observing that the patient continued to lose flesh and strength, he decided to get a specialist's opinion on some of the more important features of the case, and therefore referred him to two of Philadelphia's leading physicians and medical teachers, the one an ophthalmologist, and the other a general diagnostician.

The ophthalmologist informs me that the visual acuity was normal; there were no external evidences of disease, except some prominent baggy swellings on the under lid of each eye; the iris was healthy, and the media were clear. In the right eye the following striking picture of neuro-retinitis was revealed to the ophthalmoscope: the nerve-head was swollen, its summit three diopters above the general fundus level; the edges of the disk were obscured by a grayish-red, striated exudate, and the retinal veins were swollen and tortuous. For a distance of two or three disks diameters from the optic-nerve head, the nerve-fiber layer of the retina was edematous, while around the macula lutea was a delicate, star-shaped halo, made up of radiating white lines in the superficial retinal layers, such as are characteristic of Bright's disease. In the left eye a similar picture of neuro-retinitis, but of much greater intensity, was observed and the star-shaped halo of radiating white lines surrounded the macula lutea. There was, in short, a severe neuro-retinitis, with the lesions at the center of the eye-ground, that have been regarded as pathognomonic of Bright's disease. He also informs me that the ophthalmoscope failed to reveal any of the classical ocular symptoms of specific disease, and that it was the first case that had come under his observation in which the characteristic fundus picture of albuminary retinitis was simulated by the retinal lesions of syphilis.

With the above history, as described by the family physician and the ophthalmologist, the patient was referred to a distinguished diagnostician for diagnosis and for recommendations as to the treatment. In explanation of the diagnosis, it should be borne in mind that he was confronted with the following history: Scarlet fever at 3 years of age, followed by a severe attack of acute Bright's disease, from which he made a speedy recovery, and continued in good general health up to September of last year. He then had an attack of what was supposed to be malaria, in which he lost flesh and strength, was weak and nervous, had headache, and some cough, with considerable nasal and faucial catarrh.

The examination of the blood revealed, hemoglobin, 80 per cent.; red blood corpuscles, 4,800,000, and white blood corpuscles, 5600. The examination of the urine, mixed specimen, revealed a trace of albumin, some pus, hyaline and epithelial casts, and no red corpuscles. Examination of the chest failed to show any active thoracic disturbance.

The above symptoms, namely, anemia, emaciation, asthenia, albuminuria, tube-casts, and an early history of acute Bright's disease, grouped with the eye-ground conditions, as described, presented a fairly good clinical picture of interstitial nephritis. It will be remembered that the history of specific infection was, at this time, known only to the patient and his physician at school.

In February, of the present year, I was called in consultation, by long-distance telephone, to see the patient, who was then suffering with exacerbated throat symptoms. He was still losing flesh, weak and anemic; he had a cough with expectoration and had considerable pharyngeal catarrh with painful deglutition. The physician in charge now feared that he was dealing with a case of tubercular laryngitis. Before I arrived, however, the patient had grown anxious about himself and called the attention of his physician to a deep, sharply-defined ulcer in the glans penis, and made a confession of his previous infection, dating back about eighteen months.

With these new developments in the condition and history of the case, my own work was comparatively easy. A pharyngoscopic examination revealed a single ulceration confined entirely to the lingual tonsil and involving the major part of this gland. The character of the ulceration was typical of the tertiary form of syphilis, and this fact, together with the history as now revealed, made the diagnosis practically certain, and we immediately placed him on the usual mixed treatment, with most satisfactory results. The ulcerative processes at once lost their acute character and began rapidly to heal.

Beyond the usual protective and antiseptic dressings for the penis, and a cleansing gargle for the pharynx, no local treatment was used, and within a few days the patient was out of bed, his appetite increased enormously and he was able to swallow without any difficulty whatsoever. He gained in weight and his general physical condition almost immediately began to approximate the normal.

The following are some interesting features of the case and some conclusions that may be drawn from it:

1. It illustrates some of the difficulties of diagnosis in syphilis when the history of infection is withheld.

2. The case is interesting, because of the absence of the usual secondary manifestations.

3. This condition of the eye-ground is rare in syphilis, so much so that the disease was not suspected by the ophthalmologist consulted.

4. So far as I know, it is the first case to be reported of syphilitic ulceration confined to the lingual tonsil.

DISCUSSION.

Dr. W. E. Casselberry, Chicago—I would supplement the essayist's description of syphilitic ulceration of the lingual tonsil by mentioning a case in brief. Syphilis was acknowledged, but notwithstanding this, from a mistaken microscopic examination, the man had had performed a pharyngotomy and had a large mass removed under the supposition that it was carcinoma. Ulceration continued, until under my observation it healed completely with anti-syphilitic treatment. The ulceration was confined to the lingual tonsil and immediate surrounding parts of the base of the tongue. I think if we examine carefully we will find this lymphoid tissue at the base of the tongue is invaded not infrequently, although usually in combination with infiltration or ulceration of the other lymphoid structures. Ulcerating condyloma is one of the most characteristic manifestations of syphilis, often appearing within a period of six months to a year after the primary infection. It is easily confounded with true gumma, which rarely appears that early. It is capable of causing considerable destruction of lymphoid structures early in the history of syphilis, whether the lingual faucial or pharyngeal tonsil, but the ulceration is not as deep and extensive as that which results later from regular gumma.

Dr. George C. Stout, Philadelphia—The case of Dr. Makuen recalls to mind one referred to me about a year ago by one of our Philadelphia physicians. It was that of a woman 40 years of age, a trained nurse, which the physician had been treating in a desultory way for some months previous, but which failing to respond to "the usual remedies," was referred to me. The fact that she was a trained nurse may explain why her history had not been more carefully gone into.

The first glance showed mucous patches on her tongue, tonsils and buccal mucous membranes. She also had syphilitic eruptions on both elbows and on both legs. She was single and of undoubted good morals so far as one can tell. She gave the following history: A year previously she had nursed her sister-in-law through a confinement, after which she had relieved the milk of an "abscessed" breast by sucking out the milk, "there being no other means at hand." In a few weeks her mouth became "sore" and this was followed shortly by a general eruption over her body, which, however, disappeared in some months only to be followed by her present stubborn sore throat. Further inquiry showed that the sister-in-law was suffering from syphilis. This formed the complete chain of evidence with the resulting disappearance of symptoms after anti-syphilitic treatment of the nurse. Here, then, was a case of syphilis going from house to house nursing the sick while in the contagious stage and who thought she was rendering the best medical attention.

Dr. Makuen, in reply—The case was interesting to me for two reasons: 1, because the real disease, syphilis, and the manifestations of its infection had escaped entirely the observation of five skilled physicians; and 2, because with no apparent secondary symptoms whatever it appeared in the form of a tertiary ulceration confined strictly to the lingual tonsil. The report also emphasizes the importance of obtaining accurate histories in these cases and the serious consequences that may follow a failure to gain the confidence of our patients. If, as Dr. T. Duncan Bulkley suggests, we could remove from the popular mind the stigma attached to this condition by teaching the fact that it is an infectious rather than a venereal disease, we might be able to get, in many instances, a more accurate history.

SYMPTOMS OF TYPHOID FEVER IN INFANCY AND CHILDHOOD*.

J. P. CROZER GRIFFITH, M.D.
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A number of articles on typhoid fever in children have appeared within the last few years. Among these may be mentioned those of Sehavoir,[1] Adams,[2] Weill and Lesieur,[3] Haushalter,[4] Glenard,[5] Variot and Dévé,[6] Jacobi,[7] Roemheld,[8] Morse,[9] Stowell,[10] and others.

I have also gone into the matter with some care in a previous publication,[11] and I shall therefore on this occasion make no effort to give any statistical consideration to the symptoms of the disease as seen in children, but content myself with a brief expression of what seems to me to represent most generally accepted opinions, and more especially my own views on the subject.

The symptoms of typhoid fever as occurring in children often differ materially in many respects from those seen in adult life. To insist that the cardinal symptoms must always be present in early life would lead us into frequent failures to make a diagnosis. It was, indeed, this tendency to impose the symptoms of one period of life on another period which largely accounted for the former total failure to recognize typhoid fever in infancy; an error now rapidly disappearing with the employment of the test for the serum reaction of the disease. Equally important, too, in accounting for the present more frequent recognition of typhoid fever in infancy, is the fact that we are now more on the alert to detect it.

Anyone who gives the literature of the disease a careful, unprejudiced study can not fail to be convinced that the affection is far from rare in infancy; not that it is relatively as common as in adult life, or even as in childhood, but that it is an affection which anyone thrown much with disease in infancy is liable to run across repeatedly. This is certainly my own experience, and I have no reason to believe it is unusual.

Two methods of onset may be called characteristic of typhoid fever in early life. In the first the peculiarity is the indefiniteness. The great degree of malaise and fatigue which render the adult in most cases unable to be about is usually absent in childhood. The walking-typhoid of adult life is the rule in children, so far as onset is concerned. It is a common experience in dispensaries to have a child brought complaining only of loss of appetite and slight indisposition, probably with some headache. The physician is the first to discover that there is fever, the mother having noticed none. Visits are repeated on several days, the temperature keeps up, and finally, based principally on exclusion, the diagnosis of typhoid fever is made, although the child scarcely feels ill. At last, perhaps, the development of spots, or the presence of the serum reaction makes the diagnosis certain, and the child is sent to bed on general principles, and not because it wants to go.

The second form of onset is characterized by its suddenness. The child is in some cases taken with vomiting and has decided fever from the start. In other cases there are two or three days of fever and malaise, and then, perhaps, the roseola is discovered. In some of these latter cases the suddenness is only an apparent one, the onset having really lasted longer, but the earlier symptoms having been so mild that they were overlooked.

In infants the symptoms, both the earlier and the later ones, are most vague, especially as at this time of life elevation of temperature is so common from slight or undiscovered causes. Here the diagnosis is difficult, even after the disease is well under way, and very frequently only the presence of the serum reaction will distinguish the case from one of indigestion, enteritis, or influenza.

The course of the disease, as a whole, shows another peculiarity in children, in that the duration is, on the average, distinctly shortened. Fourteen to twenty days would be a general average length; perhaps, on the whole, about seventeen days. Abortive attacks lasting only a week, or a trifle more, are quite common in childhood. The whole course of the disease is, as a rule, much milder than in adult life. This is borne out, too, by mortality statistics, from which we can fairly place the mortality in children at from 3 to 5 per cent., probably nearer the former than the latter figure. Children under 5 years are less liable to die than those above it. This seems to be the generally accepted opinion. I note an exception in the recently expressed view of Glenard that the mortality in infancy is high.

We may with advantage take up the characteristics of the different symptoms, whether occurring early or later in the attack.

The typhoid roseola appears to be nearly or quite as frequently present as in adult life. It is but right to say that this is contrary to the experience of many observers, yet is in accord with many others. Many patients do not exhibit it, or at least it is not discovered in them. In others it is very abundant. I have seen it on the limbs, trunk and face. Weill and Lesieur describe a form which they denominate "exanthematic," on account of the great preponderance of rose spots

* This and the following three papers were read in a Symposium on Typhoid Fever at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children.

as a symptom. The division does not seem to me to be justified.

In a very few cases I have seen herpes labialis develop, but in so few that I can not state whether this is more likely to occur in childhood. At any age it is certainly very rare. Desquamation has been described by French observers as occurring frequently. Various accidental rashes have also been described, such as a rubeoloid and a scarlatinal eruption. They offer, however, no peculiarities in childhood.

Enlargement of the spleen is probably always present, although often, as in adult life, not discoverable. In the majority of cases this enlargement can be detected if sought for at the proper time and when the abdomen is not too much distended.

Respiration offers nothing peculiar, nor do affections of the respiratory apparatus. The statements of writers regarding the frequency of epistaxis in childhood vary very considerably. It is probably nearly as frequent as in adult life. The pulse is often unusually slow as compared with the rate which one would expect for the same elevation of temperature in other diseases. This is, as we know, also true of typhoid fever in adults.

The temperature in typhoid fever in children runs a course similar to that in the adult disease. It is, however, subject to still greater variations in early life. Not infrequently it rises rapidly without the usual step-like ascent. Often it remains high at the acme of the disease with little tendency to morning fall. Very often it falls toward the end of the attack with much greater rapidity than in adults. Indeed, the fall may be almost critical at times. The remittent character of the last part of an attack of adult typhoid is very liable to be absent in children. Quite certainly, as already pointed out, the temperature continues elevated for a decidedly shorter time than in adult life.

The tongue is not as liable to become dry as in adult life. In some instances, however, especially in later childhood, this symptom is not infrequently seen. Vomiting is a very common initial symptom, much more so than in adult life. Even later in the disease it is sometimes a most troublesome symptom. I have seen it the direct cause of death. Diarrhea is, in my experience, much more liable to be absent than present. This is the experience also of many others, especially in the cases occurring in early childhood. Certainly diarrhea is not more common than constipation at any period of childhood. Abdominal distension is not often a troublesome symptom, although often present to a considerable extent. This is in sharp contrast to the tympanites so common in adults. There are exceptions to this rule, and in these the distension may be excessive. Abdominal tenderness is seldom marked. Hemorrhage is of very rare occurrence. When it does take place it is nearly always in cases in later childhood, and especially in those over 9 or 10 years of age. I have seen it in one or two cases only, and then not severe. However, severe and even fatal hemorrhage has been reported. The infrequency of hemorrhage doubtless depends on the much less pronounced development of intestinal lesions, generally, but not always, characteristic of childhood. The same may be said of perforation, a very uncommon occurrence in typhoid fever in childhood, and almost never seen except toward the end of this period. I can recall perforation in only three or four cases in my experience; the youngest, I think, was 9, the oldest 12 years. Yet it would appear from medical literature that perforation may take place under the age of 2 years.

One of the characteristics of typhoid fever in children is the tendency for the nervous symptoms to predominate over the intestinal. This by no means implies that nervous symptoms are more common and more severe in the disease in childhood than in adult life. On the contrary, in the majority of cases in childhood they are trifling or absent. Extreme torpor and the tendency to coma, coma vigil and carphology occur much less often than in adult life. They are especially rare in young children. Headache is a common symptom, especially at the beginning, but no more so than in adults. Slight delirium is apt to occur, especially at night. A certain degree of apathy is very common and often one of the most characteristic symptoms, especially in young children.

A condition not infrequently seen at the beginning, and liable to cause confusion in diagnosis, is that of pseudomeningitis. Meningitic symptoms do, it is true, occur in adult typhoid also, but certainly less characteristically. As a rule, the diagnosis can be made easily, but I have seen typhoid fever begin in children with all appearances of acute leptomeningitis, and lead for a time to an entirely erroneous diagnosis. Aphasia is a nervous symptom rather to be considered as a complication. It is generally said to occur more frequently in childhood.

The discussion of the complications and sequels, as of the diagnosis, is beyond the province of this paper.

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THE DIAGNOSIS OF TYPHOID FEVER IN THE LABORATORY.

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Before taking up the subject which has been assigned to me, I wish to protest against the separation of laboratory and clinical methods in the diagnosis of this disease. They should not be thought of separately, but together. Both are fallible, and both should be used understandingly and with due recognition of their limitations. Otherwise they may well lead to erroneous conclusions.

The various laboratory tests which are used for the diagnosis of typhoid fever are, briefly, as follows: The Widal reaction; examination of the urine and feces for typhoid bacilli; examination of the blood for typhoid bacilli; examination of rose spots for typhoid bacilli; the diazo-reaction in the urine; the leucocyte count; tests which show the presence or absence of other diseases. The value of these tests is very unequal. Some are easy to carry out, some difficult. All have their limitations. As this, however, does not seem either the time or place to go into the details of the performance of these tests, I shall confine

myself entirely to a consideration of their value and limitations.

THE WIDAL REACTION.

The Widal reaction is present in at least 95 per cent. of all cases of typhoid fever. It seldom appears, however, before the second week of fever, and may be delayed even until convalescence. In a small number of cases it may never be present; in others it may be intermittent. As it seldom appears before the beginning of the second week, the test is of little value up to this time. As it often appears late in the disease, and as it may be present only intermittently, typhoid fever can not be excluded by a single or even by repeated negative tests. Repeated negative tests, however, are very strong evidence against the existence of typhoid. The reaction may persist in the blood as long as twenty-one years after recovery from typhoid. Hence, a positive reaction in the absence of other symptoms of disease is not diagnostic of typhoid. A positive reaction, if the patient has not previously had typhoid, is almost certain proof of typhoid. A positive reaction may occur, however, in other diseases than typhoid. This error does not exceed 2 per cent. A negative reaction followed by a positive reaction in a dilution of 1 to 50 is absolute proof of typhoid.

The Widal reaction occurs under the same conditions and with the same limitations in children as in adults. There is some evidence to show, however, that in them the reaction appears earlier, is feebler, and persists for a shorter time than in adults. Owing to the comparative mildness and to the large number of atypical cases of typhoid in children, the Widal test is exceptionally important in them as an aid to the diagnosis of this disease. It is of especial value in two ways: 1, in ruling out many cases of gastro-intestinal disorders which might otherwise be mistaken for typhoid, and 2, in making a positive diagnosis possible in many mild cases which might otherwise pass unrecognized.

The Widal reaction appears in infantile typhoid as in that of older children and adults. The presence of the Widal reaction in infancy, especially in early infancy, is of less diagnostic value, however, than in adult life, as the reaction may be transmitted from the mother through the placenta or through the milk. The agglutinating power may be transmitted to the infant through the placenta, not only during the course of or convalescence from typhoid, but even when pregnancy takes place years after recovery. It is probable that it may also be transmitted through the milk after many years. When transmitted through the milk, however, it does not persist more than a week after the cessation of nursing. In early infancy, therefore, a positive Widal reaction is of somewhat less diagnostic value than in older children and adults. If the mother has had typhoid, and especially if she is nursing the infant, it should be looked on with some suspicion unless associated with other characteristic signs of typhoid. Examination of the mother's blood and milk and the cessation of breast-feeding will then assist in estimating the true value of the reaction in the infant.

This test, requiring, as it does, the maintenance and preparation of a fresh bouillon culture of the typhoid bacillus every twenty-four hours, is not a practicable one for the general practitioner. The boards of health of many states and of most of the large cities now make this test for the practitioner. All that is required of him is to send them a few drops of dried blood. This certainly does not appear impracticable, or even difficult. The laboratory can report on the blood in less than an hour. That certainly seems rapid enough.

EXAMINATION OF THE FECES FOR TYPHOID BACILLI.

Typhoid bacilli have been found in the stools of typhoid fever patients by many observers. They have been found in some cases as early as the third or fourth day after taking to bed. They have not infrequently been found in the stools before the appearance of the Widal reaction in the blood. At least three days, and more often four or five days, are required to prove their presence, however. Although they are as a rule present in the stools before the Widal reaction appears in the blood, yet, so much more time is required for their demonstration that but little time is gained. The two tests, therefore, are of nearly equal value as regards early diagnosis. In cases in which the appearance of the Widal reaction is delayed, examination of the stools may render an earlier diagnosis possible. The examination of the feces for typhoid bacilli requires a complete laboratory, however, and much expert knowledge. It is entirely impracticable for the practicing physician and is not, so far as I know, carried on as a routine practice by any laboratory in this country.

EXAMINATION OF THE URINE FOR TYPHOID BACILLI.

Typhoid bacilli can be found in the urine in from 20 to 30 per cent. of all cases of typhoid at some time during their course. As a rule, they do not appear in the urine until late in the disease and after the appearance of the Widal reaction in the blood. In a few cases, however, they have been demonstrated in the urine before the appearance of the Widal reaction. The isolation of the bacilli is less difficult than from the stools, requiring as a rule but two days. The limitations to the use of this test are otherwise the same as in the case of the stools.

EXAMINATION OF THE BLOOD FOR TYPHOID BACILLI.

Typhoid bacilli have been cultivated from the splenic blood, obtained by puncture, by several observers. This test is deserving of no consideration, however, as puncture of the spleen is an entirely unjustifiable procedure.

Recent observers have cultivated the typhoid bacillus from blood taken from the veins of the arm in 80 per cent. of cases of typhoid. They used from 15 to 20 cubic centimeters of blood. The results of other observers have been much less satisfactory. There are no data as to the time at which the bacilli first appear in the blood, and hence no means of comparing the value of this method with that of the Widal reaction. This test requires a complete laboratory, technical knowledge, and at least two days. At best it is positive in only 80 per cent. of the cases, compared with 95 per cent. of positive reactions with the Widal test. Tapping a vein is a much more serious and delicate procedure than pricking the ear. The results, therefore, hardly justify the employment of this more complicated method in preference to the Widal reaction except in exceptional cases, even if it were not impracticable for the practitioner.

EXAMINATION OF THE ROSE SPOTS.

Several observers have recently succeeded in cultivating the typhoid bacilli from the rose spots. If five or six spots were excised positive cultures were obtained in almost every case. This method is not applicable before the appearance of the rose spots or in those rare cases in which there is no eruption. In a series of com-

parative tests the bacilli were almost invariably obtained from the rose spots before the appearance of the Widal reaction. They were found, on the average, six days before the Widal reaction. The bacteriologic examination of the rose spots seems, therefore, to be almost, if not quite, as accurate a method of diagnosis as the Widal test and, moreover, to afford a positive diagnosis earlier in the course of the disease. The excision of several rose spots under aseptic precautions is, however, a somewhat complicated procedure. Moreover, the cultures must be made at once and must be examined by an expert with a laboratory at his command. These facts render this method, accurate as it may be, of but little value to the practitioner.

THE DIAZO-REACTION.

This test is a simple one and can be easily performed by any one with but little expenditure of time. The diazo-reaction can be obtained in the urine of most cases of typhoid, often appearing early. As it is also often present in tuberculosis, septicemia and other febrile diseases, the very conditions with which typhoid is most easily confounded, it is of but comparatively little value.

THE LEUCOCYTE COUNT.

The number of white corpuscles in the peripheral circulation is subnormal throughout the course of typhoid. The average number per cubic millimeter is 5000 or even less. Any increase above the normal number means some complication, such as hemorrhage or inflammation, or some outside influence, such as cold bathing. Together with the dimunition in the number of white corpuscles there is a relative increase in the proportion of mononoculear cells.

The estimation of the number of white corpuscles is a simple procedure, requiring but little time or experience, and is a perfectly practicable method of diagnosis for every one. It affords information of but little less value than the Widal reaction. The differential count of the white corpuscles is hardly more difficult but is rarely necessary.

In using the leucocyte count in the diagnosis of typhoid fever from other conditions, it must be remembered that the general rule applies here as elsewhere, namely, that the white count is only of value when the diagnosis lies between two diseases, one of which has a leucocytosis and one of which has not. For example, the white count is of no value in the differential diagnosis between typhoid and malaria, neither of which has a leucocytosis. On the other hand it is of great value in the diagnosis between typhoid and septicemia, the latter having a leucocytosis while typhoid does not. The diagnosis of typhoid, in the absence of any inflammatory complication or hemorrhage, must be viewed with much suspicion if the white count is above 10,000. The diagnosis of typhoid, made in the face of an inexplicable leucocytosis, is almost invariably wrong. An increase in the number of white corpuscles, in a case known to be typhoid, shows the presence of some complication, usually inflammatory. The information thus afforded should never be disregarded. The white count promises to afford a means of early diagnosis of perforation or even of threatened perforation. If, in addition to the pain in the abdomen, there is a progressive increase in the number of white corpuscles an actual or threatened perforation is almost certainly present.

TESTS WHICH SHOW THE PRESENCE OR ABSENCE OF OTHER DISEASES.

Although subordinate to the tests which demonstrate the existence of typhoid fever, those which reveal the presence or absence of other diseases are of great value in differential diagnosis. The examination of the blood for the plasmodium malariæ when there is a question of malaria and lumbar puncture when there is a question of meningitis are among the most important. The value of the leucocyte count has been already mentioned. Other tests will suggest themselves in special cases.

CONCLUSIONS.

Laboratory and clinical methods of diagnosis should not be separated. Both are important and both fallible. Neither is complete without the other. Laboratory methods must be used with due recognition of their value and of their limitations. Otherwise they may lead to erroneous conclusions. The Widal reaction and the leucocyte count are the most useful of the laboratory tests for the diagnosis of typhoid fever. They are easily carried out and within the reach of all. Certain other methods are of equal or even greater value but are impracticable for everyday use.

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THE TREATMENT OF TEMPERATURE BY DRUGS.

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Collective statistics of typhoid fever in children have placed the mortality rate at or near 5 per cent. Regarding treatment, no especial records have ever been presented, except those that may be questioned by reason of their representing certain plans of treatment, concerning which the profession has but little knowledge. Hence, as now constituted, it is impossible to substantiate certain classic methods by unquestioned results, and to arrive at some accurate conclusion, the statistical records of this disease in the adult should be considered for comparison.

As a diagnostic implement in the hands of the physician, the thermometer retains the first place, and, by its constant use, much reliance has been placed on what it shows, and its value remains unquestioned. By its use alone, we are very often enabled to diagnose typhoid fever, when many of the specific signs are late, or are not marked so as to be easily recognized.

THE AVERAGE DURATION OF THE FEBRILE MOVEMENT IN CHILDREN.

When using drugs in typhoid fever it is always well to know for what purpose. Hence, when giving drugs for fever this is a pertinent question: Is it given for the disease pure and simple, or for a complication? In young children the fever often lasts only from 8 to 14 days, according to Morse. The average course under 10 years is 19.3 days, and from 10 to 15 years, 22.6

days. After the age of 10, this course is much like that of adults.

ITS SIGNIFICANCE AS A DIAGNOSTIC SIGN, AS WELL AS A PROGNOSTIC SIGN.

Typhoid fever is perhaps the only disease in which the temperature runs higher in older than in younger children. Subnormality obtains at the end of the course, and a rise is due to intestinal or other disturbances. It may range from 101 to 106, and give no extraordinary disturbances. If the fever be high and long continued it will do harm by its influence on the nervous system. If the thermometric record shows a regular course it signifies a normal fever. If, however, it should drop suddenly we have the very same significance as in an adult—a hemorrhage cause. If the fever continues longer than the average time it is significant of a complication. If after the complication is recognized and treated, the fever rises again it has the same meaning—another complication. If it continues and is always present, never reaching the normal, and not following the natural course of typhoid fever, it may be due to an entirely different state of affairs, such as tuberculosis or the like. Therefore, while the thermometer may be useful in denoting the general condition of the child as regards the fever, it also helps us to discover some other reason why our patient does not recover so quickly, or why it should die.

ITS CAUSE, DANGERS, AND RESULTS.

The causes of the febrile movement may be said to be, the fever and a complication that may arise. If the fever lasts for a time and suddenly increases, we may have pneumonia. Or if the fever process changes, and, instead of the highest point being reached at night, it is recorded in the morning, we may expect tuberculosis. It is thus seen that the fever process is not entirely devoid of special significance, and that it does not simply record the progress of the disease, but it will tell us what the results will be, if too long continued.

A thorough knowledge of the febrile movement, its cause, and dangers is as necessary as of the drugs to be used. In children, the peculiar behavior of the febrile movement is as significant as in adults, the sudden fall denoting a hemorrhage, etc.

THE TREATMENT BY DRUGS.

In choosing a remedy in typhoid, the following significant fact must always be conspicuous: The simple disease is a self-limited one. I take it, therefore, that as a disease has a limited course, it should as a rule not prove fatal if the patient has the strength to exist so long. To say that we can "abort it," or curtail its length, is a misnomer. It is misleading, a delusion, and should never exist in expressing results in true typhoid.

We can, by the judicious application of our remedial efforts, modify a symptom, and change a dangerous one into one devoid of danger. But to attempt to prove by statistics that we eured a certain number of cases and by this or that mode of treatment, and then, to describe such cases and show that each one ran its prescribed course, is an error, and should be corrected. It may be true that under a certain plan of treatment, more recoveries are recorded than under another plan, but it is most strange that always the best results are obtained by the originator, although the experience of others may also prove this to be so. Careful investigation proves that no special specific virtues can be designated. For this very reason, I know of no drug which has stood the test of time or an impartial judgment, and I have used many. Some drugs are superior to others, but to assert that any drug specifically controls the temperature in typhoid fever would be to make an assertion that is untrue, and one that has never been proven by any experiment that I have undertaken.

During the past year I have investigated the subject of the treatment of typhoid fever. I entered on my work with all the enthusiasm and energy which this symposium inspired. If there was, or is, any remedy that I could say is the one to be recommended here, I felt that this work would be amply repaid. With an ambition to succeed, and an earnest desire to discover, I left the beaten path of conservatism, and entered on the one, which for the want of a better name I will designate, Liberalism. Here was permitted every latitude, and it gave me the chance, when opportunity offered, to use any of the so-called remedies which were offered for the treatment of typhoid fever, or the fever as a symptom. I did not limit the work to my own practice, but asked the assistance of my friends, the most energetic of whom was Dr. Alexander Klein of Philadelphia, whose knowledge of pathology and bacteriology helped greatly. I endeavored to make the tests as numerous as possible, and our methods as dissimilar as possible, though the results, in all cases, were the same. Therefore, my conclusions may be termed the conclusions of all who took part in this work.

The drugs first used were the so-named antipyretics, the coal-tar derivatives. The names are familiar to you all, comprising, antipyrin, phenacetin, acetanilid, thermol, terpin-hydrate, etc. I have used all these drugs, and although I must conscientiously say that I have found that some influence the fever, that is, reduce its height, yet I can not claim any particular virtue for any one drug. One of the so-called specific compounds for the treatment of typhoid fever took my fancy. It is on the order of the Woodbridge treatment, with numbers 1, 2 and 3. I followed its use as ordered by the originator, and the result was a failure. Indeed, I might add, that no matter what the name of any drug, if it was claimed that it had specific virtues in the treatment of the fever, or particular influence on the febrile movement, I would use it with such care as I could devote to a clinical experiment, and the results were always the same. The fever could be lowered and it might be kept low, as long as I used the remedy, but if persisted in too long or in too large a dose, it might cause a collapse. The only conclusion I have reached from the use of these specifics is, that their originators were neither clinician nor therapeutists, and that, if the report of cases were typhoid, there must be a mistake in the diagnosis. In true typhoid these so-called specific remedies had little or no influence. I saw some surprising results in using these antipyretics. For instance, with antipyrin, I have never seen any alarming depression, probably my dosage was too small; but with acetanilid, supposed to be free from this evil, I saw the result twice.

In the choice of a remedy of this group, I noted that many were ruled rather by routine than any distinctive choice. Hence, I met several physicians who believed in phenacetin, while the newer remedy, thermol, has a surprising number of adherents. The old-time mixtures—the fever mixtures—are still in vogue, and I can not say that, in disregarding these, we advanced greatly. In the use of the tincture of aconite or the like, there was never any fear of sudden heart

failure, and for conservatism, it stands pre-eminent. I had several cases go through a typical typhoid with no other treatment for the fever than the well-known neutral mixture of the U. S. Pharmacopeia. In the Brand treatment, this mixture has its use, and as I have the greatest faith in diaphoresis as a remedy in typhoid fever, I mentioned it as a treatment. Quinin, either in mass or in divided doses, proved inert. I have never seen it influence the fever, and it does more harm than good. In children, it should never be used, and, for the purpose of treating the fever, it has never shown that influence which the coal-tar products always exhibit.

My method of applying drugs in the treatment of typhoid fever was as follows: If I found after three days' use of any drug that it ceased to influence, I immediately dropped it. If I found that for a particular type, a drug was useful, I might continue its use as long as the symptom lasted. If I found that the drug acted beneficially, as in controlling pain, but the fever continued, I would hold to this particular drug and treat the fever. How? I will mention further on. If I found that an antipyretic would lessen fever and pain, I would continue its use, even into convalescence.

Following this as my rule in practice, my experience with so-called specific methods is limited. For, as soon as I found that the influence promised was a fallacy, a dream, or as one may curtly say, a delusion and a snare, I immediately dropped it. Thus I might summarize my experience and conclusions: Having used the many methods of treatment, claimed as a specific for the treatment of typhoid fever, or the fever as a symptom, I would formulate the following as a good rule to follow: One must have a distinct understanding of the meaning of the fever in typhoid, and its treatment by drugs. The chief question is not "what drugs are to be used?" but "when is it necessary to interfere?"

What is the meaning of the fever; and, why is it that this disease always presents a fever record? That the fever is but a protective reaction of nature, in order to combat the effects of the typhoid bacillus and its toxins, by attenuating the former, and counteracting the latter in aiding the speedy development of the antitoxin, is the opinion of all.

We know that the typhoid bacillus thrives best, and is most virulent, at the normal temperature of the human body, and that higher temperatures interfere, not only with its development, but even with its virulence.

Should not we consider it therefore a grave mistake to attempt the reduction of temperature evidently so highly beneficial within certain limits?

Would it not seem a very serious undertaking to treat typhoid fever by antipyretics, as a routine, having regard for neither the effects of the temperature, nor of the physiologic effects of the drug? What then should be our rule of practice? If a temperature, not too high, is of benefit, a temperature, long continued, is harmful. A temperature too high demands prompt interference, for it is well known that hyperpyrexia will produce tissue degeneration. That it will do so sooner in adults than in children is a well-known fact, and that some constitutions will more ably withstand a temperature that is harmful to others, all of you will admit. It is, therefore, imperative to individualize, to interfere only as soon as we consider the temperature higher than is compatible with the safety of our patients; i. e., high enough to produce tissue degeneration.

The ideal way of interfering would certainly be by an antitoxic serum. Lacking this at the present time, I consider Brand's hydrotherapy the foremost, be this in the form of a "tub," or "pack," or "sponge," according to the individual case, and the only method to be used for the reduction of hyperpyrexia.

Other antipyretics I have mentioned, only in order to condemn them, for they possess no specific virtue either in controlling the course of the disease, or influencing a hyperpyrexia, and, most certainly in a normal course, the necessity of an interference should always be a question.

A CASE OF MULTIPLE GANGRENE.

ASSOCIATED WITH CHOLANGITIS AND ADENOMA OF THE LIVER COMPLICATING TYPHOID FEVER.

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It is the object of this paper to report a case of multiple gangrene during an attack of typhoid fever. In addition to the gangrene, it was found upon autopsy that the child had suffered from a catarrhal cholangitis. An adenoma of the liver was discovered; this was an accidental finding.

History.—A. B., aged 21 months, female, came under observation on the fourth day of its illness. She was admitted to the Children's Ward of the Michael Reese Hospital, Sept. 25, 1900. Four days before admission the patient became ill, with headache and fever; she refused food, was dull and listless, slept most of the time, and her bowels were constipated.

Family History.—It is of great interest to note that the father of the child was ill in the male ward of the hospital at the same time, with a well-marked case of typhoid fever. The mother was well. The little patient is the only child.

Examination.—The temperature on admission was 103 F., pulse 130, respirations 28. The tongue was coated with a white fur. The examination of the thoracic organs was negative. The abdomen was tympanitic, the liver somewhat enlarged and the spleen was palpable. The extremities were negative. The reflexes were normal. The Widal reaction was positive.

On September 29, four days after admission, it was noted that there was a swelling about the face, over the hands, the legs, and the ankles. There was no pitting on pressure. The legs were held rigid. Palpation of the joints caused no pain. The pulse during the day was weak.

On the following day it was noted that the abdomen was extremely tense, the extremities were swollen a trifle more. The patient took nourishment with difficulty; the bowel movements were frequent and offensive. The urine was examined and found to be absolutely negative, containing neither sugar albumin nor casts.

From this time on, the temperature diminished somewhat, the swelling of the extremities and the distention of the abdomen became less, and for a number of days the child seemed decidedly better, though the temperature remained constantly high.

On October 7 herpes labialis developed. The pulse at this time was irregular and weak; it varied from 128 to 168 per minute. A note on the history sheet calls attention to the following: "There is a peculiar eruption on the back, neck and extremities. The eruption begins as papules, very soon becomes pustular and shortly thereafter areas of gangrene remain."

On October 11 it was observed that bronchial râles and some exaggerated breathing were present. The child grew weaker, it was difficult to feed her, she refused food as well as medicine. On October 12 she died.

THE AUTOPSY.

Distributed over the anterior surface of the neck, the lower portion of the face, the lateral aspect of the thorax and the entire back, also over the inner surface of the thighs and the upper third of the legs, are a number of areas varying in size from a pin-point to a silver quarter, showing in the various stages, papule, pustule, and ulceration with gangrene. This process is most marked on the back. There occurs on the back an area the size of a quarter, which is circular in shape, shows a great loss of skin, and has a considerable depth.

Heart.—The pericardium contains a small quantity of clear fluid and is smooth and shining; the right heart is dilated, the myocardium is pale and flabby. The pleural cavity is empty, the pleura negative.

Lungs.—The posterior portion of the lungs is firmer than the anterior; on section, they seem to be of a dark-reddish color; on pressure, a considerable amount of frothy fluid escapes, indicating hypostasis and edema.

Spleen.—The spleen is enlarged, the capsule does not wrinkle. The parenchyma on section, is fairly firm. Macroscopically, it shows a number of firm, deep-reddish areas, easily distinguishable over the surrounding pulp. These areas are somewhat wedge-shaped.

Kidneys.—The kidneys are pale, the cortical markings not pronounced; otherwise negative.

Liver.—The liver is very firm, reddish in color, somewhat larger than normal. The entire surface of both lobes is studded





with a number of pin-point areas. Each has a yellowish center and a red periphery. In the inferior portion of the left lobe an area is seen which is about the size of a lemon; it is a new growth. It stands out quite sharply from the surrounding tissue, is irregularly circular in outline, and the central portion of the growth is of a white color and appears fibrous in character. The periphery is yellow and raised, giving the whole growth a nodular appearance. A section of the parenchyma of the liver shows it to be studded with yellowish areas like that described above.

Intestines.—The mucous membrane of the intestines is everywhere hyperemic; solitary follicles of the ileum and the Peyer's patches are swollen, but present no ulceration.

The stomach presents nothing of interest. The mesenteric glands are greatly enlarged, some of them being somewhat soft.

Bacteriological Examination.—Cultures made from the areas of gangrene showed the presence of staphylococcus pyogenes aureus. Cultures from the spleen showed a bacillus—probably that of typhoid.

Histological Examination.—The histologic examination of the gangrenous areas on the skin showed merely a loss of tissue, with micro-organisms at the base of the ulcer.

Dr. D. N. Eisendrath offers the histologic report on the liver sections:

The microscopical examination of the liver presents two points of interest: 1, the new growth—an adenoma in the left lobe; 2, the pin-head areas with a white center and a red periphery.

1. On section through the tumor in the left lobe of the liver, one observes that there are many columns of new liver cells not arranged in the form of acini. They are separated from each other by trabeculæ of connective tissue which seem continuous with that of Glisson's capsule. The most striking features are the large size of the cells and the drops of fat which they contain.

Whether to call this tumor an adenoma, or simply a nodular hyperplasia, is still an open question. Ziegler believes that they are true adenomata, although he thinks that there is no sharp line to be drawn between these and a nodular hyperplasia on the one hand, and an adenocarcinoma on the other. Orth states that there may be a true hyperplasia of the liver parenchyma, as where a large portion of a lobe has been destroyed by an abscess, syphilis, or echinococcus. He has observed a distinct hyperplasia resembling an adenoma, in granular atrophy and in a case of thrombosis of the hepatic vein. The same occurs in cirrhosis. The condition may be quite nodular, and may be single or multiple, varying from a pea to a cherry in size. He believes that if we call such a condition an adenoma, it would be better to call it a hyperplastic, to distinguish it from the tubular variety. In this latter form, there are columns of cells, many having a distinct lumen. Both of these varieties may easily change into a carcinoma.

2. The whitish areas, on section, were seen to be scattered uniformly through both lobes. In the left there was, in addition, the adenoma just described. Microscopically, these areas are seen to be due to a necrosis of the parenchyma adjacent to the interlobular vessels. The liver cells in these are swollen, do not take the stain, and show all signs of cell death. Around each bile duct near these necrotic areas, there is a very marked, round-celled infiltration. We have a typical inflammation of the bile passages (angio-cholitis) or biliary hepatitis, as Ziegler calls it, with the resulting necrosis of liver cells. The necrosis is most typically shown in specimens stained with methylene-blue or Bismarck-brown. Such stagnation may be due, either to stagnation of bile alone, or this combined with infection. If to the latter, the micro-organisms most frequently found as causal agents, both clinically and in experimental investigations, are the typhoid bacillus, the colon bacillus, the ordinary pus coccus and the distoma hepaticum.

Dermatological Report.—Dr. Lieberthal, who saw the case in consultation, offers a dermatological report, with the following conclusions:

"From my observations, I would conclude that in the course of a febrile disease there developed over the body of this patient a number of lesions consisting of red macules, papules, umbilicated vesicles, and ulcers with a dirty-gray, moist slough, or a dry, dark, bluish-black eschar. The ulcers have steep margins, are mostly oval, and vary in size from a split pea to that of a cent. Most of these lesions are surrounded by a red border, which in itself is quite interesting. The stage of de-

velopment of the lesions seems determinable by their appearance. The first lesions are apparently macules, on which basis there developed papules and vesicles, and out of these, ulcers, at which time the borders became broader and ill-defined. The whole eruption appears to be a multiple embolic process in the vascular system of the upper corium, leading to gangrene of the type called infectious, multiple gangrene."

Special attention has recently been given to the subject of gangrene complicating typhoid fever. The early, and first contributions to this subject were made by French authors, Boerglois[1] and Bourghet.[2] Gangrene occurring during or directly after typhoid must be extremely rare. Keen[3] observed that so rare is this complication that most practitioners, and even some men of vast experience in large hospitals, have never seen a case. Holscher,[4] in 2000 fatal cases of typhoid, does not report a single case. Beltke,[5] in 1420 cases, found only four cases of gangrene, all limited to the toes. Most of the cases of gangrene which have been reported have involved an extremity or a localized area. The cases of multiple gangrene occurring as it did in our case, are rarely reported complicating typhoid.

The form of gangrene cited in this paper has been described under a variety of names. Hutchinson believed that this rare skin disease was a complication and sequel of varicella, and hence he gave it the name, varicella gangrenosa. Stokes[6] termed the condition pemphigus gangrenosus. The disease has also been described under the names dermatitis gangrenosa, and infective, multiple, cachectic gangrene. H. Radcliffe Croker,[7] who made an excellent contribution to this subject, divides the cases which came under his observation, into three classes:

Class 1. No antecedent varicella. Of these, there were five cases.

Class 2. Antecedent varicella. Of these, there were three cases. An autopsy in one case showed, among other things, minute infarcts in upper lobe of right lung; liver was fatty.

Class 3. Ulcerating eruptions after vaccination. Of this class, Croker reports but one case.

This disease does not only occur after varicella and vaccination; its occurrence has been observed after measles, or it may occur in any case where cachexia follows some severe illness. Children suffering from intestinal diseases or tuberculosis, have been observed to fall ill with the disease. Croker thinks that syphilis and rickets predispose to the condition.

In recent literature, several cases of gangrene have been reported as occurring during or after typhoid fever and some of the other acute infections. These cases occurred mostly in adults and are not identical with the case which forms the subject of this paper, either in their distribution, the form and nature of the lesions, or in the course of the disease.

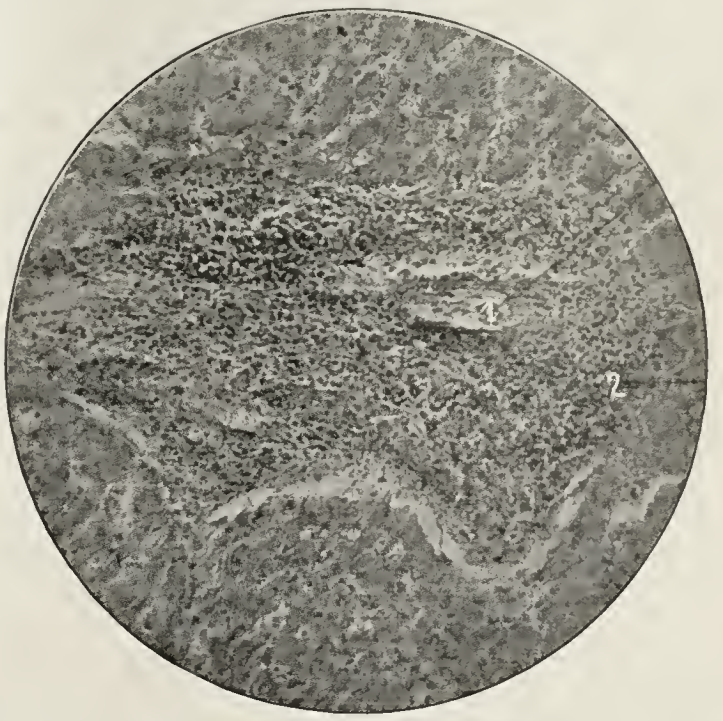
Hartzell[8] contributes a paper on infectious, multiple gangrene of the skin. This case occurred in an adult woman; it was marked by the occurrence of somewhat large, multiple, gangrenous areas, and was very chronic in its course. The case did not present the evolution of papule, vesicle, pustule and gangrene which characterizes the infantile variety.

Osler[9] reports a case of multiple gangrene complicating malarial fever. He observes that these cases occur in measles, typhoid fever, typhus fever, scarlet fever and diphtheria and malaria. In his case it was observed that there was gangrene, or a gangrenous condition on the palmar surface of the four fingers of the right hand, over the dorsum of the foot, the left buttock and the occiput.

Dr. Franklin Stahl[10] contributes a report of gangrenous dermatitis complicating typhoid fever. He reports ten cases. Most of these occurred in soldiers of the Spanish-American War, who had been sent home ill from southern camps. He found that the lesions were distributed mostly over the trunk, face, arms and thighs. In two cases he made autopsies. He found of particular interest, infarction of lungs and kidneys and ecchymotic areas in the stomach.

CHOLANGITIS.

More attention has recently been paid to the study of the liver and gall-bladder in typhoid fever, than hitherto. The catarrhal form of cholangitis which occurs in our case, has received but little mention. Curschmann,[11] writing on typhoid fever, says that the microscopic examination of the liver in typhoid fever shows more or less change in every case, depending upon the severity of the infection. The liver cells first show cloudy swelling and later on, granular degeneration and



1. Bile duct. 2. Extensive round-celled inflammatory infiltration around interlobular bile vessels.

fatty change. Eventually they may break down entirely. The gall-bladder may be the seat of ulcerative or a diptheric process on its mucous surface. Secondarily, the larger bile ducts may be involved with secondary changes in the liver leading to abscess. According to the researches of Chiari[12] and Birsch-Hirschfeld,[13] the typhoid bacilli are almost constantly present in the gall-bladder in cases of typhoid fever. Talma[14] has shown in an experimental way that by injecting typhoid bacilli into the gall-bladder, that a general, though mild angiocholitis developed, preceded by a cholecystitis. A careful review of the literature shows few cases of this variety of catarrhal cholangitis as a complication of typhoid fever. Cases of suppurative cholangitis secondary to cholecystitis have been more frequently reported.

THE ADENOMA.

The occurrence of adenomata in the livers of children must be regarded as extremely rare. Musser[15] has two cases. One occurred in a boy 12 years of age; another in a female infant twenty months old. Birsch-Hirschfeld[16] in 400 sections in new-born children, observed adenomatous nodules in two cases. These nodules

stood out prominently on account of their pale color; they were sharply circumscribed and a connective tissue capsule occurred on the periphery. Microscopically, the tumors were made up of liver cells, which were frequently granular and multinuclear. The arrangement of the liver cells was not so ragged as in the normal. The significance of these adenomata permits of considerable speculation. If we consider them in the light of Cohnheim's hypothesis, which holds that retained embryonal tissue is the cause of malignant neoplasms, the significance of these tumors becomes ominous. In addition, observation teaches that these nodules take on a progressive character, they grow larger in size, and the exact moment when benignancy ends and malignancy begins would be difficult to determine. The case which was examined by Birsch-Hirschfeld is of interest in this connection. A 12-year-old boy presented a tumor of the liver which had persisted for more than a year. Previously, he had been perfectly well. The first sign of illness was indicated by loss of appetite with vomiting and diarrhea. This was followed by ascites; after this, he lost rapidly in nutrition, and death occurred as a reult of extreme marasmus. During the whole period of the illness, there was but slight icterus. A microscopic examination of the tumor showed that in certain areas the liver cells retained their normal radial type and presented a normal appearance, while in other areas the cells were arranged irregularly radial, the interstitial connective tissue was increased, and very vascular. The cells invaded this interstitial connective tissue, which indicated a degree of malignancy.

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DISCUSSION ON PAPERS OF DRS. GRIFFITH, MORSE, ROSENTHAL AND ABT.

Dr. Victor C. Vaughan, Ann Arbor, Mich.—Typhoid fever in children is an interesting subject. In the first place this disease is not so common among children as among adults. I explain this fact by supposing that it is due to less exposure. The daily duties of children carry them over a less extensive range of territory than do the same duties of adults. I believe that this also explains why typhoid fever is more common among men than among women, that is, there are more chances of infection in men than in women. The same explanation probably applies to the comparative infrequency of typhoid fever among pregnant women. Some claim that woman while in this condition is immune to typhoid fever, but we know that this is not true. In the second place typhoid fever is usually less severe among children than among adults. I mean by this that the mortality is not so great. I am inclined to the belief that this is due to the more sensitive state of the intestinal tract of the child on account of which the bacilli are often largely discharged from the bowels in the early stages of the disease. I desire to state, however, that this is only a theory, and that it can not be considered an established fact. I have labored diligently to find out what the normal death-rate in typhoid fever, even in adults, is, but up to the present time I am not prepared to give any definite statements. In Hamburg, where every case of typhoid fever is reported and every death is accurately recorded, the death-rate in two great epidemics, embracing about thirteen thousand cases, has been found to be 7.5 per cent. It was practically the same in the Maidstone epidemic in England a few years ago. From hospitals in this country I have collected several thousand cases, and the death-rate from typhoid fever in these is between 8 and 9 per cent. I have collected and elsewhere published 20,000 cases of typhoid fever occurring in this country in private practice, and the death-rate among these is between 16 and 17 per cent. Officially the death-rate from typhoid fever in New York City during the years 1896 and 1897 was between 29 and 30 per cent. I mean by this that of the cases of reported typhoid fever from 29 to 30 per cent. died, while in Philadelphia the death-rate as officially recorded for the same years was between 13 and 14 per cent. The only possible explanation for this difference is that the New York physician does not recognize many cases of typhoid fever, or recognizing them, fails to report them. The death-rate from typhoid fever among children is less than it is among the adults, and possibly this may be partially due to the more rapid elimination of the toxins in the child.

I was much interested in Dr. Rosenthal's paper on the treatment of temperature in typhoid fever, and I think that it is high time that we stop experimenting with antipyretic drugs in this disease. The only safe way to reduce temperature in typhoid fever is by the cold bath. There can certainly now be no question about this, and while there may be exceptions, I think that as a general rule this is the only legitimate way of attempting to reduce the fever in this disease.

I was also much interested in Dr. Abt's paper. We can understand why cholangitis so frequently complicates typhoid fever because the former is always an infectious disease, and when it complicates typhoid fever it is due to infection with the typhoid bacillus. The gangrene noted by Dr. Abt is an exceedingly interesting point. Indeed, we are just beginning to appreciate the great variety of complications which may be due to bacteria and their toxins. Yesterday in the Section on Practice there was reported an interesting case of gangrene due to malarial poisoning. The fact that we are able to diagnose many diseases scientifically and positively by the detection and identification of the specific bacteria is giving us solid foundations upon which to build, and we are learning many things about the typhoid as well as about other bacilli. We now know that a man may have a fairly typical case of typhoid fever so far as the symptoms are concerned, without any of the so-called specific lesions in the intestines, and we also have learned that cystitis, cholangitis and terminal pneumonia may all be due to the typhoid bacillus.

Dr. Clifton Scott, of Des Moines—I should like to ask a question. A very competent physician said to me not very long ago that he had convinced himself that the cold bath contributed, by the production of internal congestion, to the occurrence of internal hemorrhages; he thought he had found a more satisfactory method of reducing temperature in the injection of ice water into the colon. I should like to hear the opinion of others on this point.

Dr. Charles Douglas, of Detroit—I have listened with pleasure to the papers, particularly to the one presented by Dr. Rosenthal. It was very pleasant to find that he arrived at the point where most of us have been compelled to go. The medicinal treatment of this disease is very unsatisfactory, and impressions received from the use of remedies on a few cases are very easily dissipated. I was very sorry that the dietetic treatment of this disease was not considered this morning. However, it has been touched upon in an indirect manner. I wish, if possible, to draw out some expression as to the effects of dietetics. The reduction of temperature by baths is, of course, the only reliable way, as Dr. Vaughan has said, but it is only a temporary one, and we can not depend upon it except for a short time. I see continually the temperature reduced by baths and reproduced by errors in diet. This occurs so much in the management of typhoid fever in both children and adults that I have been sorry that more weight is not laid upon the damage we are doing by unsuitable diet.

I have found in my practice that where the diet has been kept down to the point of securing perfect digestion—and that brings us to the diarrhea which Dr. Vaughan has referred to as being due to various bacilli—the temperature has been controlled. I think we are continually ascribing to the disease many disturbances in the alimentary canal which are at work for evil. This is not a new idea with me; I gradually came to this conclusion twenty years ago. The more I can produce a comfortable condition of the bowel, the less medicine and the fewer baths are required. Medicines are, of course, quite necessary to meet emergencies.

There is a very popular idea regarding the use of small doses of calomel. I use it perhaps in one case in ten. I have never seen any bad results from it, but whenever I have found the bowel irritated from any cause, whether medicinal or dietetic, it has made the fever worse. I do not say that there must be a return of the fever with recurrences of the disease, but with perfect digestion and stools devoid of bad odor, we secure the best results. I might mention a case in point where the temperature continually ran up to 104 to 105 F. Of course, a temperature of 104 is not much to be uneasy about, but when it persists in going above this it should be checked. I was compelled to starve this patient, keeping her on a little whisky and water for nine days. During this time the temperature went steadily down, although it was just at the stage when the fever should have been at its maximum. Whenever the diet was enlarged the temperature again rose. My rule is to so feed the typhoid fever patient as to make the stools non-liquid and free from odor, as well as free from undigested food. It is this rule which I insist upon and make my nurses observe, and instruct them to note those features carefully on the clinical chart. I feed the patient anything which is digested thoroughly. It is nearly always liquid—milk, broths or white of egg. Occasionally well-boiled starch water, after boiling for three hours, may be given, and occasionally I give a little custard, but the keynote is perfect digestion. I never give more than one pint daily for every fifty pounds of body weight, and often I give much less.

Dr. T. F. Wood, Angola, Ind.—When a student I was taught, and for many years (in the early part of my practice) I thought one essential point was to feed my patients about all they could hold, from start to finish, in any case—milk of course being the principal food. After a time I began to question the propriety of this course of treatment, and by a more careful study of each case began to change my views, until now, with an added experience of many years, what not to give, and how little of it, gives me more concern than what to give, and how much of it, particularly in the first week or two of illness. Very little food is required in many cases for one, two or three weeks. The system is not in a condition to digest and assimilate food; consequently, it is a fruitful source of pain, tympanites, vomiting, eructations of gas, diarrhea, restlessness, and various other disturbing elements which our hygienic and medicinal remedies seek to avoid. First we should look well to the surroundings of our patients, make them comfortable, and keep them quite free from disturbances of all kinds, mental or physical.

Ordinarily a mercurial laxative, followed by a saline to completely empty the bowels, will be indicated; subsequently from one to three evacuations per day will be beneficial; other medicinal remedies should consist of antiseptics, antipyretics, tonics, stimulants, etc. The use of water for bathing as an antipyretic is always useful; also it is one of the best internal antipyretics and antiseptics at our command; hence, quite large quantities are not only admissible, but should be taken as part of the treatment.

I wish to say a few words on the treatment of hemorrhage as a complication, and to criticise its treatment by injections or the application of ice. I believe all such treatment is injurious and harmful. The indications in this complication are absolute quiet, and sustaining the heart's action. The indications are best met with morphia and strychnia hypodermically, the former to put the bowels entirely at rest, the latter sufficient to sustain the heart's action.

Dr. J. P. Barber, Minneapolis—Why is typhoid fever so much more severe in some patients than in others, and why is it so much more severe, as a rule, in adults than in children? In my city we have had an experience which may throw some light on this question. In 1897 we had a very severe epidemic of typhoid fever from infection of the city water supply, as proved by bacteriologic research. In the early part of the epidemic the cases were severe. The river then was covered with ice, and the water was low, and was taken from below some of the points where sewage entered. A little later in the epidemic, after the ice had left the river and the latter had been replenished by rain, there were numerous very mild cases—almost all of the walking type. In many of these it was almost impossible to make the diagnosis except by the blood and urine examinations. Some of these cases lasted only from three to five days, with slight fever, yet they showed the Widal reaction. In this stage of the epidemic about 60 per cent. were of the walking type. This raises the question as to whether this mildness of the type in the later cases was the result of dilution of the city water, thereby greatly lessening the number of bacilli received, or was due to diminution in the virulence of the bacilli.

Dr. Collins H. Johnston, Grand Rapids, Mich.—I wish to oppose the statement that the treatment of typhoid by cool baths can not be carried out in small towns in the country. Ten years ago it was begun in Grand Rapids; we were the pioneers in the State of Michigan in this field. Now, many of our physicians regularly employ this treatment, and find it easy of application. Some of my friends have carried it out in the country by filling a hogshead with water and placing a chair in this improvised tank. I recall a case in which a mother gave her child 240 baths in one month, having only the assistance of a friend from next door. Rarely does a patient refuse this treatment. The proper initiation of this method in small towns is just as easy as in a hospital.

Dr. George D. Head, Minneapolis—There are two important phases of typhoid fever as they present themselves to the general practitioner, one is the diagnosis, and the other is the treatment. I think it is a well-established fact that typhoid cases exhibiting constipation, do best. The mortality is lowest in this class of cases as compared with those having diarrhea. I wish, therefore, to protest against the initial laxative in typhoid fever. I think the profession has made a mistake in irritating an intestinal canal already the seat of active inflammation. The sooner we do away with this initial laxative the better for our mortality statistics.

As to the diagnosis I would say that there is an aid not yet fully appreciated, namely, the use of the white-blood count. It has been generally considered that in children the leucocyte count in the diagnosis of disease is not a reliable method, but I wish to protest against this. If we take the pains to make the counts in children—the difficulties are greater—we shall find that in a large category of diseases the value of the leucocyte count is just as great as in diseases of adult life. Take, for example, a pneumonia. Pneumonia in adults is accompanied by leucocytosis. Typhoid is accompanied by no leucocytosis, and the same is true of la grippe. All septic infections have a leucocytosis. These facts apply equally well to children. The difficulties of diagnosis of typhoid fever in children are often very great, even with the Widal reaction to help us. This reaction appears in many cases too late to be of any practical value in the diagnosis, but the leucocyte count is a great aid in diagnosis from the beginning. Take, for instance, cases of meningitis simulating typhoid fever. Meningitis is followed by leucocytosis; typhoid fever is accompanied by no leucocytosis. We have in the leucocyte count an absolute means of differential diagnosis between these diseases. There are occasionally cases of appendicitis beginning like typhoid fever. Here, the white count means of differential diagnosis also would be absolute. I remember one case in my own experience, operated upon for appendicitis, but subsequently proved to be one of typhoid fever, although it had been diagnosed by two excellent surgeons as appendicitis. The leucocyte count in this case was absolutely diagnostic, and if the blood findings had been relied upon the mistake would not have occurred. I offer the leucocyte count as a very valuable diag-

nostic aid in the diagnosis and differential diagnosis of typhoid fever in children.

Dr. A. C. Ewing, Salt Lake City—I am never afraid when the temperature gets too high, but I watch the pulse. I never give antipyretics to reduce the fever, but administer an abundance of water externally and a superabundance internally. Beyond this I trust to the *vis medicatrix naturæ*.

Dr. Rosenthal, in reply—I have used water very frequently, and also saline infusions at intervals of two or three hours where there is much hyperpyrexia. I have seen cases of peritonitis complicating typhoid do excellently well on almost no food. I would only use calomel in the first eight or ten days, and I would give it in very small doses frequently repeated. I am in the habit of combining it with salol, probably because of my belief that its antiseptic action will be of value. If, after two weeks, constipation occurs, showing that the case is on the road to recovery, the administration of calomel is withheld, for it would certainly then do harm. The treatment of intestinal hemorrhage is certainly best carried out by securing rest, and by morphin if necessary. If these cases could be early and accurately diagnosed I should be in favor of having a good surgeon operate, but it must be remembered that we hear of successes but not of failures. It seems to me that appendicitis is apt to complicate typhoid fever, and that cases of the latter are apt to develop subsequent to a catarrhal appendicitis. In some of these cases operated upon, as long as the wound was kept open the temperature would be low, but would rise at once upon checking the discharge. Many of these cases may last for months. There seems to be a prevalent opinion that the use of the Brand bath treatment is simply for reducing the temperature. I said, on the contrary, that the treatment must be individualized. The idea of the Brand treatment is to get rid of the toxins. If the urine of the patient be examined before and after the bath it will be found that the toxicity of the urine is increased sevenfold after the bath, showing that the bath favors the elimination of these toxins. Where it is inconvenient to use the bath the child may be placed in a sheet, a gutter made, and the child kept wet constantly day and night.

TWO CASES OF SUPPURATION OF THE PAROTID GLAND WITH PUS IN THE EXTERNAL AUDITORY CANAL.

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PHILADELPHIA.

The two cases which I desire to report possess interest from the fact that in each case there was considerable difficulty in eliminating suppurative otitis media as the cause of pus in the auditory canal. Both cases were children, and the presence of the pus may be accounted for by infiltration through the incisuræ Santorini. Of course, this has often been known to occur, but I think the cause is frequently overlooked by the general practitioner, or those who have not made a special study of the subject, the pus being regarded as coming from the middle ear.

Case 1.—The patient was a boy, white, aged 9 months. The mother, who brought the boy to the dispensary of the Pennsylvania Hospital, said that the child's father had syphilis. Examination showed a large gummatous mass involving the parotid gland and tissues surrounding it and in front of the auricle. The external auditory meatus was quite filled with pus; upon removal, however, the drum was seen to be perfectly healthy. The anterior wall of the external auditory canal was boggy and pus exuded from its surface. An incision was made over the abscess in front of the auricle, and under specific treatment the child improved rapidly.

Case 2.—I saw this case in consultation with Dr. Henry M. Fisher, of Philadelphia, to whom I desire to express my thanks for his kindness in allowing me to report it, and in furnishing me with his notes on the case. The child was a little Italian boy, aged 2 years, who, on March 5, 1901, developed measles. On March 7, symptoms of marked tracheal obstruction appeared, with evidences of bronchial pneumonia. Four days later the pneumonia had involved both lungs and a condition of induration of the right parotid and left submaxillary glands was discovered. A few days later there was discharge of pus from the right ear, and the abscess of the left submaxillary gland pointed. On the 17th, I saw the child, and found the right parotid gland very much swollen, with no area of softness discernible. There was profuse purulent discharge from the right ear. On cleansing the pus from the canal a large portion of the drum could be seen, and was perfectly healthy. There was oozing of pus from the anterior wall of the external auditory meatus, reappearing almost as soon as the surface of the canal was cleansed. The child was almost moribund, its temperature very much elevated, and it died some hours afterward. Before death there was a discharge of pus into the mouth.

TROPICAL DISEASES.*

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I have great pleasure in being able to record for the last year a general and perhaps unparalleled advance in our knowledge regarding tropical diseases.

YELLOW FEVER.

The discovery of at least one mode of infection in yellow fever—a discovery of the highest importance to mankind—emanates from America. For some time past several of our American colleagues, stimulated by recent observations in connection with malaria, have sought an experimental verification of the hypothesis of Finlay and others, that yellow fever also is communicated by the bite of gnats. Insects fed on patients were subsequently induced to bite healthy persons who volunteered for the experiment. The results were negative until the gnats were kept for an interval of twelve or more days between the two operations. Success was now immediate. Drs. Reed, Carroll and Agramonte record in their last report that out of seven non-immune persons subjected by them to the bites of infected mosquitoes, six yielded undeniably positive reactions. At the same time, seven non-immunes whom they endeavored to infect by means of the fomites of patients under peculiarly favorable circumstances, remained in every case free from the disease.

The experiments were conducted under the most stringent scientific conditions. Although the mosquito theory of yellow fever does not possess the parasitological basis of the mosquito theory of malaria, yet the differential observations of Reed, Carroll and Agramonte are of a nature to leave no doubt concerning the soundness of their conclusions.

Some of the tests have involved great heroism on the part of those who were subjected to them. Since the death of Dr. Jesse W. Lazear we have to deplore that of Dr. Walter Myers, one of our most promising young pathologists, who lost his life from yellow fever when on a deputation from Liverpool to study that disease.

If the pathogenic organism of yellow fever, hitherto undiscovered, prove to be a vegetable organism, the fact will suggest that transference by suctorial insects and arachnids, with which we are already so familiar in the case of animal para-

* An Address delivered at the opening of the Section of Tropical Diseases, at the Annual Meeting of the British Medical Association, at Cheltenham, July 31, 1901, from advance proof furnished by the Editor of the British Medical Journal.

sites, may be no less common in the case of vegetable parasites. *A priori* there is nothing improbable in the view that suctorial insects may become generally infected by blood containing schizomycetes, which may next find their way by route of the insects' salivary glands or otherwise into a fresh host. There are certainly some epidemiological facts which suggest the possibility of infection by gnats in undulant fever and perhaps leprosy, and by other vermin, in relapsing fever, typhus, and perhaps several skin diseases.

ANKYLOSTOMA DUODENALE.

Another important advance is contained in the confirmation of Giles's life-history of the ankylostoma duodenale by Annett—details of which will shortly be published. These observations throw a vivid light on the route of infection adopted by these dangerous and widespread parasites.

UNDULANT FEVER.

Owing to observations made by Wright on the serum reaction in undulant (Malta) fever, this disease has been shown to exist in India, Hong Kong, the United States, the West Indies, and Brazil—a most important fact in connection with the great subject of tropical fevers.

MALARIA.

The recent advance in our knowledge of malaria has been well maintained by numerous observers. The practical side of the mosquito theory, which at once became predominant after the determination of the life-history of the parasites, has been energetically treated by Koch and his assistants, who have successfully dealt with malaria on a large scale by means of quinin. Similar work has been performed with success in the United States, and, according to reports, in Italy. In British possessions isolated efforts to deal with malaria according to the new principles have been made by Sir William MacGregor and Strachan at Lagos, and by Thomson and Young at Hong Kong; but the country generally has not adopted an intelligent attitude in this connection.

On the other hand, British workers have closely studied details of the malaria question in many parts of the world. We must refer especially to the good work done in Central and West Africa by the Malaria Commission of the Royal Society, and to an admirable sanitary survey of Nigeria made by the Liverpool expedition during the last year. Direct cultivations of the parasites have been reported by Daniels, Ziemann, van der Scheer and van Berkelom, and Woldert in various countries—all in *Anopheles;* while Manson has completed an interesting crucial experiment for the popular demonstration of the theory by infecting healthy persons (T. Manson and Warren) in London by mosquitoes brought from Italy, and by simultaneously preserving others (Sambon and Low) in health in the Campagna in a mosquito-proof house. Nuttall and Shipley, Christophers and Dutton have closely examined the anatomy of gnats. Nuttall, Cobbett, and Strangeways-Pigg have made interesting researches on *Anopheles* in England, in which, by the way, cultivation experiments have hitherto failed. Gosio, Giles, Reinhold Ruge, Fearnside, Neveu-Lemaire, and others have done useful work on the subject in many directions. It remains, however, a matter for regret that stronger efforts have not been made to determine the reason why individual gnats of an amenable species so often resist infection. Until this difficulty is cleared away negative experiments with *Culex* cannot be entirely convincing.

Since the last annual meeting of the Association the mosquito theory of malaria has received the highest scientific acceptance in the address of the President of the Royal Society, Lord Lister.

FILARIASIS.

In regard to filariasis the discovery of Low and James has been confirmed and amplified by several observers. Manson has suggested the possibility of reducing lymphatic varix by leading a lymphatic duct below the stricture into a neighboring vein.

PLAGUE.

The prompt suppression of plague in Glasgow has further demonstrated the value of energetic sanitary measures in this disease; and the large demand for plague vaccine gives encouraging evidence in favor of Haffkine's prophylaxis.

BERI-BERI.

The close clinical similarity of beri-beri and chronic arsenical poisoning seems to suggest that many cases attributed to the former disease may possibly be in reality due to arsenic.

WORK FOR THE FUTURE.

It seems to me that further researches are at the present moment most urgently required in connection, 1, with tropical fevers; 2, with the flora and fauna of the intestine in tropical bowel complaints; and 3, with the question whether European children in the tropics suffer as frequently from malaria as do the children of natives. The practical necessity of taking measures against the uncontrolled propagation of gnats in tropical cities is one which, in view of recent discoveries, can no longer be set aside by sanitary authorities without dereliction of duty.

The profession owes its sincere thanks to all those gentlemen who have done so much during the past year—often without remuneration and at considerable personal risk—for the cause of tropical medical science. It also owes its thanks to those British merchants who have generously subscribed large sums of money for the prosecution of many of the researches to which I have referred.

Reorganization of the American Medical Profession.

. . . . . The plan of the Committee for the federation and interdependence of the National, State and County societies is an excellent one. Membership in the county society becomes a prerequisite to membership in the other organizations. The county organization thus becomes an unit of the state association, and the state of the National body. Each is thereby strengthened and made more powerful, each becomes more cohesive and each develops into an effective, offensive or defensive organization which will command respect and consideration because it represents an organized power which is able to reward or punish, both its friends and its enemies. The medical profession in Ameriea is large in numbers but it lacks stability and cohesiveness when called upon to protect its interests against agencies that are detrimental to its welfare. In this it, in no small manner, is similar to that Asiatic nation, the so-called celestial kingdom, which is great in numbers but whose slight stability and cohesive power renders it an easy victim to its enemies.

Reorganization of the medical profession in America is a necessity. This must begin in the county society which is to form the basic part upon which the entire fabric of an organized profession must rest. Upon these is to be built the state organization, and from the state societies must come the chosen few who are to wear the senatorial togas in the parliamentary body of the American Medical Association, the body that is to formulate the policy of the profession on matters of vital interests, the body that is to aid destiny to shape our ends to a satisfactory conclusion, rough hewn though they may be, the recommended House of Delegates of the American Medical Association.

As recommended by the Committee, regional tri-state and district societies, save in a few instances, should be abolished. These, as at present constituted, serve but a slight purpose for good, while on the other hand they weaken and detract from the county and state societies that as federated units are essential to the integrity of the National Association. They are parasitic growths on the medical body politic which sap the life strength of the National organization, and as such should be lopped off and be allowed to perish. Let their friends and promotors devote their energies to the upbuilding of their respective state and county societies where their efforts will add to the strength of the profession as a body, and where they will hasten and not hinder the consummation of professional unity.

In the trinity of National, state and county organizations, a federated union, in which each is developed to its greatest possibilities, will the profession find a power, that, like faith, can move mountains.—*Courier of Medicine*, July.

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EXPERIMENTAL TUBERCULOSIS OF ADRENALS.

A vast amount of work, clinical, anatomical and experimental, has been done in order to clear away some of the mystery surrounding the adrenals, their physiology normal and pathological. The most important affection associated with the adrenals is Addison's disease. Numerous theories have been advanced in regard to this condition, but up to the present time no single theory has proved generally satisfactory. The recent brilliant discoveries in the chemistry of these glands have culminated in the isolation of certain substances with powerful actions, especially in raising the blood pressure, but their exact rôle in normal physiologic processes is not yet fully understood. It has been thought that the symptoms of Addison's disease in some way are explainable as dependent upon the suspension or perversion of the internal secretion of the adrenals owing to the fact that they are largely destroyed or replaced especially by tuberculous products in this disease. Experimental removal of the adrenals, however, has not given rise to any symptom complex at all comparable with that of the human disease. The conditions of the experiments are, of course, widely different from those of the spontaneous disease, in which the glands are slowly destroyed or replaced by pathologic products. In the case of tuberculosis of the adrenals the reactions between the bacilli and the cells of the glands might give rise to peculiar substances of great importance in the etiology of Addison's disease.

With these and other considerations in mind, de Vecchi undertook to study the general effects and local lesions of experimental tuberculosis of the adrenals, hoping in this way to reproduce a little more accurately than heretofore the actual conditions seen in Addison's disease. For this purpose he inserted tubercle bacilli into the adrenals of animals (rabbits), which were then carefully observed and eventually carefully examined after death, spontaneous or otherwise, and at varying intervals after the injections. There resulted a fibrocaseous process which beginning in the center of the adrenals ultimately led to their destruction. Constant changes were not observed in the sympathetic structures near by, but grave degenerative lesions were found in the nerve cells of the central nervous system, being most intense in the dorsal part of the cord. Degenerative changes were also present in the heart, the liver, and the kidneys. A distinct oligocythemia developed, which is ascribed to the presence of some toxic agent with hemolytic powers, because of the deposition in the liver and the spleen, as well as the bone marrow of hematogenous pigment. As indicated, spontaneous death occurred in some of the animals experimented on, and there seems to be little reason to doubt the author's conclusion that death under these circumstances is due to a progressive intoxication; we miss, however, definite statements to the effect that infections of a mixed character were excluded by careful bacteriologic examination. General tuberculosis was not observed. The symptoms during life seemed to be of a nervous type, as far as could be determined, namely, convulsions, paresis, feeble respiration and heart's action. Emaciation developed to a fairly well-marked degree. The pigmentation and other cutaneous changes of Addison's disease were not reproduced in the animals in this series of experiments.

Still the author believes, and correctly it seems, that he has succeeded better than others in the experimental reproduction of the lesions and symptoms of Addison's disease. The effects of gradual "adrenal insufficiency" and the tuberculous intoxication combined have not been emphasized sufficiently in the various theories of the etiology of Addison's disease. Much work remains to be done, of course, and the experiments of de Vecchi are especially valuable because they suggest new viewpoints for the discussion of the interesting problems connected with Addison's disease.

CONCERNING THE PRESENCE OF OXALIC ACID IN THE ORGANISM.

It seems not impossible that the presence of oxalic acid in the body in undue amounts may be attended with a more or less well-defined group of manifestations, but the subject is one that is surrounded with a good deal of uncertainty. As the result of an experimental and clinical investigation undertaken a few years ago, Dr. Helen Baldwin[1] arrived at the opinion that as varying amounts of calcium oxalate may be held in solution in the urine, conclusions based upon the presence or number of calcium-oxalate crystals found therein are of no real value as an indication of the quantity of oxalic acid present. Unless the utmost care is exercised, the results obtained by quantitative estimations of oxalic acid are subject to large percentages of error. An ordinary mixed diet regularly contains traces of oxalic acid or its salts. A portion of the oxalic acid ingested with the food may be absorbed and reappear unchanged in the urine. The normal daily excretion of oxalic acid in the urine fluctuates with the amount taken in the food and varies from a few milligrams to two or three centigrams, being usually below ten milligrams. In health no oxalic acid or only a trace is formed in the body, but that present in the

1. Journal of Experimental Medicine, vol. v, No. 1, p. 27.

urine has been ingested with the food. In certain clinical disturbances sometimes associated with an absence of free hydrochloric acid from the gastric juice, oxalic acid is formed in the organism as a result of fermentative activity in the alimentary canal. The prolonged feeding of dogs with excessive quantities of glucose, together with meat, leads eventually to a state of oxaluria. This experimental oxaluria is associated with a mucous gastritis and with an absence of free hydrochloric acid from the gastric contents.

More recently, Dr. Cipolliua[2], of Genoa, undertook, in the chemical laboratory of the Pathological Institute at Berlin, a study for the purpose of determining the share taken by the body and the food respectively in contributing to the presence of oxalic acid in the urine, the organs in which the acid is formed and if possible the intermediate substances from which it results. As the outcome of this investigation, it was shown that the viscera of human beings and animals contain small amounts of oxalic acid, the spleen in the largest amount—apart from the thymus gland, which in the case of adults need not be taken into consideration. The amount of oxalic acid contained in the viscera is small, but on the whole it is about ten times as large as the maximum amount eliminated with the urine in twenty-four hours. The spleen, possibly also the liver and the muscles, is capable of forming oxalic acid by oxidation from uric acid. The amount of oxalic acid in some articles of food is so large that it must be taken into consideration in the nutrition of individuals who suffer from disturbances due to oxalic acid.

2. Berliner Klin. Wochenschrift, 1901, No. 20, p. 544.

THE CONVEYANCE OF MOSQUITOES.

Since the transmission of malaria by mosquitoes is an established fact, and that of yellow fever hardly less so, the question of the transmission of the mosquitoes themselves rises into importance. It has been said—and this has been used as an evidence of the possibility of exterminating them—that they seldom fly far from home, but are essentially local in their habits. This may be true to a certain extent, and yet the locality may be more or less extensive; there may also be striking exceptions to the rule. The mosquito may be a home-loving body, but the *Wander-lust* may at times overcome her—it is the female mosquito that bites—or she may be transported against her will. There are localities where, according to the popular belief, mosquitoes were unknown until some railroad or canal was opened to traffic to the place, and then they became the usual nuisance. A personal experience of the writer is in point; when traveling on a western railroad through a dry sage bush region, the train stopped for a few minutes at a station alongside a sluggish alkaline stream. The cars were immediately invaded through doors and windows by swarms of the pestilent insects and it was only after many miles of further travel that we finally got rid of them.

It is more than merely possible that in this the transmission of malaria and yellow fever to points before exempt can sometimes be thus accounted for. They can also be transported otherwise; the recently reported case of the ship *America,* which became infested ten miles from land in the Gulf of Mexico, is an instance, and the other instance reported in the same issue of the Public Health Reports of the United States Marine-Hospital Service illustrates their possible persistence when once aboard a vessel. The crew of the Spanish bark *Maria Blanquer* were obliged to abandon the forecastle and sleep under close cover on account of the mosquitoes which appeared on board of the vessel when twenty-two days out of Rio de Janeiro. Such facts are not new, Howard in his recent book mentions their possibility; but these are striking instances.

It may be that health and quarantine officers will here have a new special problem to deal with and mosquitoes as well as rats have to be looked after in vessels coming from infected ports. Railroad trains, espeally freight trains with cars loaded at infested points, appear to be reasonably open to suspicion and to suggest special precautions. The hopefulness of eradicating the mosquito by local measures is also affected by such facts.

THE STUDY OF THE HISTORY OF MEDICINE.

The study of old medical writings is an attractive one from many points of view. It tends, for instance, to give one the proper perspective for a broad estimation of the present state of development of the medical sciences. The work done by our medical ancestors naturally ought to interest us as physicians quite so much as the work of our political and religious forefathers interests us as citizens. The history of medicine is a *terra incognita,* however, for the great majority of medical men and students. No place seems to have been set aside in the medical curriculum of the present time for even a cursory review of the historical development of medicine; its most important epochs and even the names of its early founders and of its heroes are unknown to the great mass of medical students. The establishment of elective courses in the history of medicine is certainly indicated in order to create some interest in this important study. The work of certain local societies and of individuals has already done much to revive among us a keener interest in past events and in the work and personality of the fathers. Packard's interesting work on the history of American medicine has been received with marked favor, and its reading certainly helps one to a more correct and broader understanding of medical matters in our country. The local medical history of our cities and of various districts of the country certainly offers attractive fields for investi-

gation to the cultured physician interested in historical matters.

In a recent address, Frederick P. Henry,[1] of Philadelphia, calls our attention to the works of the Portuguese physician, Valescus de Tarenta, who lived in the latter part of the 14th and the beginning of the 15th century and whose "Tractatus de Epidemia et Peste" is one of the first medical books ever printed. Henry gives a bibliographic description of the copies of the "Tractatus," and of the only other known work of Valescus de Tarenta, the "Philonium," in the library of the College of Physicians of Philadelphia. But little is known concerning the life of their author. He was physician-in-chief to Charles VI, King of France, and professor in the medical faculty of the University of Montpellier, where his portrait is still preserved in the *salle de conseil*. The name "Philonium" which he gave one of his works seems to be the name of a medicament, one of whose properties was to invite sleep. In this book are discussed a number of obscure questions, as for instance, the reason why the cleaners of cesspools are able to withstand foul odors. The "Tractatus de Epidemia et Peste" consists of twelve short chapters, in which the etiology, the treatment, etc., of epidemic disease are discussed. Henry notes that one of the recommendations in this work is eminently favorable to the diffusion of contagious diseases, namely this, that the patient should frequently change not only his bed, but also his room and his house. Among the prescriptions recommended is one that calls for gold filings, sapphires, emeralds and coral—a form of treatment certainly beyond the reach of the poor patients. For the bubo of pest there is recommended as a local application the fundament of a live cock, which was to be continued until the cock dies!

ALCOHOLIC NEURITIS.

Since the recent extensive epidemic of arsenical neuritis due to the use of contaminated beer the question has been raised whether so-called alcoholic neuritis is really of alcoholic and not of arsenical origin. It has been contended that this form of neuritis occurs only in beer-drinkers and not in spirit-drinkers, and there is evidence to show that it is the impurities present rather than the alcohol that is responsible for the intoxication resulting from the use of spirit. For the purpose of reaching a definite opinion in the matter, Dr. E. F. Buzzard[2] undertook a careful analysis of 120 cases of alcoholic neuritis observed during a period of twelve years at the National Hospital for the Paralyzed and Epileptic in London. Of this number spirit alone and in excess was taken in 29; beer alone and in excess in 1; spirit especially in 11; beer especially in 1; and beer and spirit in excess in 30; hence, the predominant influence in the development of the neuritis must be accorded to spirit rather than beer. In 57 of the cases no special reference is made to the condition of the skin or its appendages; in 23 no cutaneous changes were found; while in 40 various vasomotor, trophic or pigmentary changes were described. The last named, however, were in general characteristic of neuritis, while changes due to arsenical poisoning were conspicuously wanting. Further, in 24 cases arsenic was employed in treatment, alcohol, of course, being withheld, and the results in these, far from being worse, were at least as good as in those treated by other means, if not better. An additional interesting fact resides in the circumstance that of a large number of cases of all kinds treated with arsenic, at times for long periods, neuritis developed in but two, although a considerable number presented other symptoms of arsenical poisoning, as exhibited in pigmentation of the skin.

1. Maryland Medical Journal, June, 1901.
2. Lancet, June 8, 1901, p. 1593.

THE PATHOLOGY OF SUNSTROKE.

The severe functional disturbances of sunstroke are not adequately accounted for by the morbid anatomical changes so far described in this condition. Edema, hemorrhages of various kinds and extent, and venous hyperemia are the principal gross findings. Most of the histologic examinations have been made by means of the older technical methods. Obviously there is room here for experimental work, and Scagliosi,[1] of Palermo, exposed guinea-pigs to the immediate action of the sun's rays during the months of August and September, when the highest temperature varied from 29.6 C. to 31.3 C. Under these circumstances the animals, as a rule, succumb in from 1 to 3 or 4 hours after great rise in temperature, hurried respiration, rapid heart's action and convulsions. Animals in the state of prostration when brought into a cool atmosphere revive temporarily but die later with continued fall of the bodily temperature. Careful postmortems were now made and the principal internal organs carefully examined according to the most improved modern methods. Profound changes in the central nervous system were observed, consisting of vacuolization of the nuclei of the ganglion cells and general chromatolysis. Severe degenerative lesions also developed in the heart, the lungs, the kidneys, and the liver. The blood shows a transitory increase in concentration and in corpuscles; occasionally a distinct leucocytosis was present. Scagliosi refers the degenerative changes to the action of toxic substances in the blood, and the fall in the temperature of some of the animals to disturbances in the radiation of heat; it is also ascribed to the changes in the blood. The changes in the physical and chemical constitution of the blood plasma he attributes to direct overheating of the blood. This in turn causes physicochemical changes in the tissues, disturbing the normal regulation of heat, so that the animals which survive for a time show marked decrease in temperature. The pathology of sunstroke is exceedingly complex, and undoubtedly its solution can not be accomplished by morphologic methods because they do not make clear the exact nature of the physico-chemical alterations which there is good reason to believe are produced in the blood

1. Virchow's Archiv, 1901, clxv, 15-41.

and the tissues. The most that morphology can do is to point out the direction that investigation should take.

THE THERAPEUTIC EMPLOYMENT OF CACODYLIC ACID.

Of the therapeutic utility of arsenic there is no need to speak, but there has recently been put forth by French clinicians an arsenical preparation—namely, cacodylic acid—for which claims have been made with regard to its innocuousness and its greater efficiency. The first of these claims has not been sustained, as toxic effects have been noted as a result of the employment of cacodylic preparations, while if their usefulness is by any means as great as they are given credit for, we have, indeed, come into possession of a most valuable therapeutic agent. Thus, according to Armand Gautier,[1] cacodylic acid and the cacodylates render remarkable service in the most varied affections, and particularly tuberculous affections—pulmonary, osseous, visceral—diabetes, neurasthenia with general wasting and impairment of function, visual disturbances, malarial intoxication, influenza, profound anemia, asthma, chorea, protracted convalescence, wounds with loss of tissue, fractures, the effects of repeated pregnancy, incoercible vomiting, myxedema, diseases of the skin, etc. They have yielded variable or doubtful results in cases of paralysis agitans, the degenerations attending mental disorders and cases of carcinoma. They may be employed for a number of years consecutively without causing derangement of nutrition, congestion of the liver or kidneys, intestinal tract, nervous centers and the skin. They act by stimulating the reproduction of cells, increasing the number of red blood-corpuscles, rejuvenating the tissues and conferring upon the economy an extraordinary degree of resistance to morbid influences. While we are scarcely so sanguine as to hope for a realization of all that is promised in the foregoing, we feel that the remedy is deserving of judicial trial, and that its continued use should be decided for or against on its merits. Although the current price of the drug—about five dollars an ounce—seems extremely high, the cost of the individual dose or of sufficient for a course of treatment is really not so, as an ordinary dose is about one-sixth grain.

1. Bulletin de l'Académie de Médecine, 1901, Nos. 26 and 27.

ORGANIZATION OF THE ARMY MEDICAL DEPARTMENT IN ACTIVE HOSTILITIES.

Every war of the last century has been prolific in criticism of the work of the medical department. The strictures have not been limited to any one campaign nor to any nation. The defects have been conspicuous in the British-Boer hostilities in South Africa no less than in the Spanish-American operations in the West Indies and the South Sea Islands. The service of the sick to-day is subjected to criticisms of the press so similar to those inflicted upon the military medical situation forty years ago that the editorial comments of the two periods may be interchanged without detection. The conditions which led to the enforced resignation of a cabinet minister in 1899 have recurred wherever belligerent forces have taken the field, until at the present time the question of the suitable care of the sick and wounded assumes an importance almost equal to the *casus belli* itself. To the solution of the problem of promptly relieving the suffering and efficiently aiding the injured, the brightest medico-military minds have devoted their attention for a long time. Great advances have been made; and, notwithstanding the hostile attitude of deluded and more or less malicious critics, the medical service of to-day is far superior to that of any previous period. But the medical department has always been so hampered in its efforts to develop the highest efficiency, that results satisfactory to itself, as well as to its critics, have never been attained. The Proceedings of the Association of Military Surgeons of the United States, during its decade of existence, reveal numerous attempts to solve this problem, but the successful solution appears to be as far away as ever. It was a happy thought then that led the Association of Military Surgeons of the United States to inspire work along this line by doubling its Enno Sander prize for this year, and by confining the competing essays to the subject of the most practicable organization for the medical department of the United States Army in active service.[1] It is to be hoped that the outcome of this contest may be a satisfactory termination of the inquiry which has exhausted the most accomplished military surgeons of the age. While the medical and surgical history of our recent hostilities has yet to be written, many lessons have been learned by the participants in the sanitary work of the various expeditions, and upon these lessons may be built up a system which shall satisfy the requirements of prompt and effective administration. This fact should stimulate a large number of competitors to enter the lists, and result in an unprecedented addition to our knowledge of the subject.

1. The Journal A. M. A., July 20, p. 208.

Medical News.

CALIFORNIA.

Dr. George H. Aiken has been elected president of the Fresno Board of Health, and Dr. Philip N. Russell, city health officer.

Colonel Charles R. Greenleaf, assistant surgeon general, U. S. Army, has relieved Colonel William H. Forwood as chief medical officer of the Department of California.

Southern Pacific Hospital Changes.—It is announced that on the retirement of Dr. Amos Graves, chief surgeon of the Atlantic system of the Southern Pacific Railway Co., the authority of Dr. Matthew Gardner, San Francisco, is to be extended to include that territory.

The Board of Medical Examiners of the State of California held its meeting for organization, August 6. Up to the time the new medical law went into effect, 6725 applications for license had been received by the Board. About two-thirds of these were applications from outside the state.

Sue for Certificates.—Four graduates of the Pacific Coast Regular College of Medicine, to whom the State Board of Medical Examiners refused to issue certificates to practice, because the college was not in good standing, have brought suit to compel the Board to issue certificates to them.

ILLINOIS.

Dr. John A. Wheeler, Auburn, has been appointed assistant surgeon of the Fourth Infantry, I. N. G.

Dr. A. B. Middleton, Pontiac, returned from Europe, August 1, and commenced work in his new position as physician to the Reformatory.

Raise Fees.—The physicians of Bloomington and McLean County have decided to raise fees for day calls from $1.50 to $2, and for night calls from $3 to $4.

Assault on a Physician.—Because Dr. James B. Miller, South America, Saline County, had rendered a bill to Avan Lewis, a farmer of the neighborhood, he waylaid the doctor, and after attempting to shoot him beat him into insensibility with a club. Dr. Miller's condition is critical, and his assailant is held awaiting the outcome of the injuries.

Chicago.

Dr. Valborg Sogn sailed for Christiania, Norway, on the *Island*, July 18.

Dr. Eliza H. Root, whose appointment as acting dean was noticed in THE JOURNAL of May 4, has been appointed dean of the Northwestern University Woman's Medical School, Chicago.

Dr. Truman W. Brophy was elected president of the International Dental Federation, at its meeting held in Cambridge, England, August 9. The meeting next year will be held in Stockholm, Sweden.

Attending Staff Must Attend.—By order of the warden of Cook County Hospital, members of the attending staff are assigned to particular wards and are not allowed to make professional calls in other wards without first obtaining permission. The warden states that the failure of the members of the attending staff to come to the hospital or while there to attend any except certain cases in which they were interested, is the reason for this order requiring attendance.

Department of Health.—Of the total 468 deaths reported last week only 170 were of those under five years of age. This proportion is more than 30 per cent. lower than the midsummer average of infant and child mortality, and the decrease shows how promptly life and health at this age period respond to the influence of temperature. The reduction in the total mortality at all ages from that of the preceding week was confined to diseases unfavorably affected by hot weather—there being 66 fewer deaths from the acute intestinal diseases, convulsions, diseases of the nervous system and from sunstroke. The mortality rate fell from 15.6 in the previous week and 17.7 in the corresponding week of last year to 13.8 per 1000 of population.

Restriction on Internes.—On account of complaints of unnecessary and improper operating by internes at Cook County Hospital, the rule was posted August 1 that all major surgical cases must be operated on by one of the attending staff. In answer the internes, through a committee, make the following statements: "1. Whereas, it has been stated that we are but 'students,' learning our 'trade' at the expense of county patients, we emphatically deny this. Every one of us has graduated from a reputable school, has passed the state board examination, and is entitled thereby to practice medicine and surgery in this state and is selected under civil service rules, by passing successfully an examination in medicine and surgery given every year, competitive in character, and held under the most rigid and impartial rules that govern any examination whatsoever. Such qualifications are not picked up by the wayside, but gotten only by constant application, by the expenditure of a great deal of time and of money. Moreover, every interne in this hospital has had a college training before starting in the study of medicine. 2. Whereas, it has been alleged, too much and unnecessary operating has been done by internes. We point out the fact that no operation, at any time, has been had but after a complete examination by a member of the attending staff, under his direct control and supervision. There is no authentic case in the hospital in which a patient was narcotized without the presence of an attending physician or surgeon. 3. Considering the qualifications necessary to become an interne, and the fact that every senior interne has served twelve months in preparing for surgical work, it is justly evident that we should be regarded competent to participate adequately in the care of patients. Such privileges are enjoyed by internes of every other hospital in this country and abroad. 4. Whereas, * * * It appears as if there were friction between the hospital management and the internes. We assure you that there is nothing but good will between Warden Healy and the house surgeons. Signed, R. J. Friedman, M.D., J. F. Howard, M.D., A. Foerter, M.D., O. R. Goldsmith, M.D., J. F. Hultgen, M.D., Committee of Cook County Hospital Internes.

INDIANA.

Dr. J. Rilus Eastman, Indianapolis, sailed for Germany, August 3.

Dr. George W. H. Kemper, Muncie, has been reappointed a member of the Board of Pension Examining Surgeons for Delaware County.

The George W. Mears Memorial Library, Indianapolis, has received a gift of more than 4000 volumes from the founder, Dr. J. Ewing Mears, Philadelphia.

The State Board of Medical Registration and Examination passed 77 out of 90 applicants for license to practice medicine. The highest average attained on examination was 99.3 per cent.

Dr. D. D. Clark, city health officer of Decatur, who is said to have refused to quarantine in smallpox cases, and who was cited to appear before the State Board of Health to answer this charge, has resigned.

Dr. George W. Van Benschoten, South Bend, who is about to move to Providence, R. I., was tendered a banquet by the St. Joseph County Medical Society, July 25, in token of the high esteem which he is held by the local profession.

KENTUCKY.

Dr. Charles H. Voorhies, Jr., Lexington, has been reinstated as health officer of the city, vice Dr. Daniel J. Healy, resigned.

Dr. John L. Dismukes, Maysfield, has been appointed major and surgeon in the Kentucky State Guards and assigned to the Third Infantry.

Dr. William R. Heflin, Lakeland, has been commissioned as physician to the government prisoners confined in the Newport and Covington jails.

LOUISIANA.

Major J. H. C. Fisher, surgeon, U. S. Army, has reported for duty at Jackson Barracks after two years of service in the Philippines, relieving Major A. H. Appel.

Mortality of New Orleans.—This city congratulates itself on having a death-rate for a week in July equivalent to 14.18 per 1000 per annum. This is, however, for the white population only. The death-rate given is only racial, not by population, and is therefore lacking in one essential of correctness.

Lepers' Home.—The latest move in connection with the much discussed Lepers' Home question, which has been in statu quo for several weeks past, is an effort on the part of the Jefferson people to secure possession of the Elkhorn property by purchase from the state. This action followed an ultimatum by the governor.

Free from Mosquitoes.—It is said the only place in New Orleans free from mosquitoes is the United States barracks, Camp Jackson. This is in the lower end of the city, in one of the worst mosquito districts of Louisiana. Captain John T. Martin, who is in command, began the oil treatment long before the war department issued the order giving officers authority to use crude petroleum in the effort to rid the various posts of mosquitoes.

MASSACHUSETTS.

Dr. Alexis L. Draper, Dorchester, has been appointed post-office physician of Boston.

Lieutenant George C. Littlefield, assistant surgeon of the Second Corps Cadets, Salem, has resigned.

Dr. Henry Colt, Pittsfield, has been appointed medical examiner in the Second Berkshire District, vice Dr. Frank K. Paddock, deceased. Dr. Colt is succeeded as assistant examiner by Dr. Lawrence C. Swift.

The New Harvard Medical School.—The new buildings erected by the munificence of John Pierpont Morgan in memory of his father, make up three of the seven buildings required for the new school. They are to be the administration building; anatomy, histology and embryology building and physiology and physiological chemistry building, and will cost about one million dollars.

MICHIGAN.

Dr. Sheridan E. Gardiner, Mt. Pleasant, has been appointed pension examining surgeon.

Communicable Disease in Michigan.—Including reports by regular observers and others, cerebrospinal meningitis was

reported during July, in 12 places; whooping cough in 26 places; diphtheria in 53 places; measles in 58 places; typhoid fever in 92 places; scarlet fever in 108 places; smallpox in 114 places, and consumption in 195 places.

Dr. Louis Barth, Grand Rapids, has offered the city property on South Lafayette street for hospital purposes. It is arranged that the city shall accept the property, reserving to itself the privilege of disposing of it for a cash consideration. The eventual result of this new arrangement will be the establishment of the "Louis Barth Hospital" for communicable diseases in the southeast section of the city, remote from the residence district.

Health in Michigan in July.—In the Monthly Bulletin of Vital Statistics, the report of the secretary of the State Board of Health, based on the sickness statistics, shows that in July, as compared with the average in the ten years preceding, scarlet fever, smallpox and diphtheria were more prevalent, and consumption, intermittent fever, remittent fever, inflammation of bowels, erysipelas, whooping cough and cerebro-spinal meningitis were less prevalent.

Smallpox in the Michigan Asylum for the Insane.—Referring to the news item in THE JOURNAL of August 10, entitled "New Disease in Michigan," the medical superintendent of the asylum advises us that in the beginning the best local consultants agreed in calling this disease chicken-pox, but that later the State Board of Health called it smallpox, and such it has been called since and such in his judgment it is. At no time has he believed that there was anything new in the line of eruptive disease in the asylum. In a population of 1725 there have been 53 cases of which 46 have recovered and 7 are convalescent.

MARYLAND.

The health commissioner of Baltimore is waging war against all artificially colored sausage. The law gives him power to confiscate all food stuffs thus prepared.

Dr. Cephas L. Wingerd has instituted suit in Hagerstown against the Western Maryland Railroad Company for $5000 damages for injuries sustained last February, when he was thrown from his buggy by a train.

Baltimore Physicians' Vacations.—Dr. J. A. Claverie has gone to Donaldsonville, La.; Dr. E. C. Gibbs, to Rehoboth, Del.; Dr. Douglas Malcolm to the New England Coast; Dr. C. S. Woodruff to Lake Beaufort, Quebec; Dr. J. M. Hundley to Charmion, Pa.; Dr. A. B. Gaither to Atlantic City; Dr. H. H. Goodman to Asbury Park, N. J., and Drs. Hiram Woods, Geo. E. Houck and C. A. Davis to Boston.

MINNESOTA.

Diphtheria is reported to be increasing steadily in Minneapolis, where thirty new cases were reported during the first six days of August, with seven deaths.

Freak Medical College.—The Wisconsin physician who thrust notoriety on himself by his peculiarly filthy methods of showing his disbelief in the contagiousness of smallpox, now announces his intention of inflicting on St. Paul a school of anti-contagious medicine, where his peculiar views will be put forth.

Ohage Island Baths.—On August 1, Dr. Justus Ohage, health commissioner of St. Paul, formally transferred Harriet Island, with its park and baths, to the city of St. Paul. The island will henceforth be known as Ohage Island in recognition of the debt the people owe to Dr. Ohage for his labors in the direction of the cleanliness and health of the city.

Smallpox.—Since January 1, there have been 299 cases of smallpox in Minneapolis, with one death. Only one patient now remains in the isolation hospital. Smallpox in the state has decreased nearly one-third since the report of July 15. There were only 239 new cases reported in the last two weeks of July; in the first two weeks, 380 cases were reported. The greatest number of cases is in Stearns County.

Hennepin County Board of Health has been organized with County Physician Kistler as its medical member. Arrangements will be made with Minneapolis whereby smallpox patients may be cared for at the quarantine hospital at St. Louis Park and patients with other diseases at the City Hospital at $1 per day. This will obviate the necessity of keeping guards over quarantined houses and eliminate other expenses in caring for patients in their homes. Dr. Kistler will care for county cases for the rest of the year for $150.

NEW JERSEY.

Dr. Lewis C. Williams began his service as house-physician at St. Francis' Hospital, Trenton, August 1.

Joseph D. Kelley, Keyport, arraigned at Freehold, July 25, for practicing medicine without a state license, plead guilty, and on August 1 was fined $150.

A new ambulance has been donated to St. Francis' Hospital, Jersey City, by Joseph E. Bernstein, and will be maintained by a society of men, each of whom pays an annual subscription of five dollars.

Five Monmouth Physicians Arrested.—The State Medical Board, through Dr. John W. Bennett, Long Branch, caused the arrest of five physicians in that place, July 31, charged with practicing medicine without having first filed a certificate of license with the county clerk as required by law. Four of the five waived examination.

Notification of Tuberculosis.—Dr. John D. McGill, Jersey City, president of the Board of Health and president of the State Medical Society, on July 30, requested all physicians in the city to report cases of tuberculosis as they have heretofore reported smallpox, diphtheria or scarlet fever. Printed postal cards are being prepared and will be furnished to each physician. At present there is no ordinance classifying tuberculosis as a contagious disease, and no compulsion will be exerted to induce physicians to comply with the request of the Board of Health.

NEW YORK.

Convention of Health Officers.—The State Department of Health is arranging for a convention of health officers and registrars of vital statistics to be held in Albany, October 24 and 25. It is expected 2000 officials will attend. Addresses will be made by prominent authorities on sanitation, public health, etc.

Applicants for Medical Interneships.—The State Board of Regents filed with the state civil service commission, August 6, a list of thirty-one medical students who have successfully passed the examinations to practice medicine in this state and who in addition have filed applications for the position of medical interne in the state hospitals. Of this number, twenty-eight are graduates of the regular school.

Craig Colony for Epilepties.—The seventh annual report of the managers and the superintendent of the Craig Colony for Epilepties has been issued. It shows that there have been 854 admissions since 1896, of which 612 remain. The objects of the colony are to secure the humane curative, scientific and economical treatment and care of epilepties. From 75 to 80 per cent. of patients improve under the colony system and from 7 to 10 per cent. recover. The remainder go down into epileptic dementia.

Buffalo.

The German Hospital dispensary staff, at a recent meeting, passed resolutions expressing the great loss at the untimely death of Dr. Frank Bingham, an active member of the staff.

The International Council of Nurses will be held at Buffalo, September 16 to 20. A large attendance of nurses from all parts of the United States and Canada is expected. The societies to be represented are as follows: The Associated Alumnæ of Training Schools for Nurses of the United States, the American Society of Superintendents of Training Schools and the International Council of Nurses.

New York City.

Dr. Andrew H. Fridenberg, who was arrested July 31 on the charge of illegal practice of medicine at Long Branch, N. J., was acquitted August 3, and immediately instituted a suit for $10,000 damages against the physician who caused his arrest.

OHIO.

The estate of the late Dr. Milton T. Carey, Cincinnati, is valued at $85,000.

Dr. P. Maxwell Foshay, Cleveland, was elected president of the newly-organized board of trustees of the State Hospital for Epileptics, at its meeting, August 5.

Dr. William K. Coleman, West Union, was elected superintendent of the State Hospital for Epileptics, Gallipolis, August 5, vice Dr. H. C. Rutter, resigned.

Dr. Albert P. Ohlemacher, Gallipolis, was reinstated in his position as pathologist of the State Hospital for Epileptics, August 5. This was the first official act of Superintendent Coleman.

Dr. Louis L. Lyman, Springfield, has been appointed chief surgeon of the Southern Division of the Detroit Southern

Railway. He has appointed Dr. D. Walter Spence assistant surgeon in Springfield.

Smallpox in Ohio.—The annual report of the State Board of Health shows that during the year ended June 30, there were 3229 cases of smallpox with 44 deaths. Failure to stamp out the epidemic is ascribed to carelessness and lack of recognition of the disease on account of its mild form.

College Faculty Changes.—At Ohio Medical College, Dr. Benjamin K. Rachford becomes professor of diseases of children, and Dr. Allyn C. Poole, professor of materia medica and therapeutics. Dr. David I. Wolfstein will occupy the newly-established chair of nervous diseases at the Cincinnati College of Medicine, Dr. C. W. Fangeman will be professor of ophthalmology, Dr. Harry Freudenberger, of pathology, and Dr. Theodore W. Schmidt of chemistry.

PENNSYLVANIA.

Dr. Daniel P. Blose, McKeesport, will sail in a few days for Germany.

The Lancaster Board of Health met on August 3 for organization. Dr. Daniel R. McCormick formally declined reappointment. This leaves a vacancy to be filled.

Dr. J. Madison Taylor, Philadelphia, has resigned the professorship of diseases of children in the Polyclinic College for Graduates, which he has held for the past fifteen years.

Hospital Staff.—The McKeesport Hospital trustees, on August 1, elected Drs. J. C. Greenfield, Penn Line, A. A. Peterson, Allegheny, and W. I. Allison, Hopedale, Ohio, as resident physicians.

Dr. Stewart L. McCurdy, at present professor of anatomy and surgery in the Dental Department of the Western University, has been elected professor of orthopedic surgery in the Western Pennsylvania Medical College (Medical Department of the Western University of Pennsylvania), Pittsburg.

SOUTH CAROLINA.

Dr. John H. McCullough, Newberry, has been elected county physician to fill the unexpired term of Dr. George B. Caldwell, deceased.

Dr. Charles M. Rees is acting as health officer of Charleston until an election can be held to fill the place vacated by the death of Dr. Henry B. Horlbeck.

Medical College Scholarships.—Seven appointments to scholarships in Charleston Medical College have been announced by the governor. The appointee from the First District is a young woman.

SOUTH DAKOTA.

Dr. Henry Van Ostrand, a pioneer physician of Yankton, is dangerously ill.

Addition to Hospital.—The Benedictine Sisters are building a $20,000 three-story cut-stone addition to their hospital at Hot Springs, in the heart of the city, on ground donated by citizens.

Dr. Hiram E. McNutt, Aberdeen, has resigned as superintendent of the Brown County Board of Health, because of the failure of the county commissioners to give him adequate compensation for his services in smallpox cases.

WISCONSIN.

A "magnetic healer," of Ripon, was arrested, August 7, charged with violating the medical laws of the state, and was placed under bonds of $200.

Smallpox at Colby.—The secretary of the State Board of Health has notified the local health board of Appleton that seventeen cases of smallpox at Colby are directly traceable to an unidentified man who was recently examined by an Appleton physician and allowed to proceed on his journey to Colby.

The Wauwatosa site for the proposed new isolation hospital of Milwaukee County is favored by Health Commissioner Dr. Ferdinand M. Schulz, of Milwaukee, who believes that a suitable building could be erected 300 or 400 yards from the present county hospital so that there would not be the least danger from contagion and which would be convenient to all parts of the county.

GENERAL.

Royal Palace Converted into Hospital and Asylum.—The Italian palace near Milan, where King Humbert was staying when he was assassinated recently, will be converted, by his son and successor, into a hospital and asylum for children.

Island for Filipino Lepers.—A board of officers, convened in accordance with orders from the district commander, has recommended, for the segregation of lepers, the Island of Barri. It is north of Luzon, uninhabited and two miles long by one wide.

Honors to a Dentist.—The Berlin papers state that the University of Pennsylvania has conferred the title of Doctor of Science on Dr. Miller, professor of odontology at Berlin. This is the first time that this title has been conferred on a dentist; it was won in this case by Miller's scientific researches.

Mr. Henry Mervin Shrady, the young sculptor, who has been selected to make the equestrian statue of Washington to be presented to the borough of Brooklyn, is a son of Dr. George F. Shrady, editor of the *Medical Record*. Although quite young, Mr. Shrady has already a high reputation as a sculptor.

The Lane Medical Lectures, San Francisco.—Mr. Malcolm Morris, M.R.C.S. Eng., and editor of *The Practitioner*, London, will deliver the 6th course of these lectures, on skin diseases, in the Cooper Medical College, San Francisco, September 2 to 6, giving two lectures daily, at 11 a. m., and 8 p. m.

State Board of Dental Examiners Resign by Request.—On complaint of James H. Worman, consul to Munich, Bavaria, a charge of issuing licenses irregularly has been made against the Illinois Dental Board of Examiners. Governor Yates asked for the resignation of the members of the Board, and the secretary was arrested, but subsequently released on $3000 bail. Consul Worman says his chief evidence is that a certain Emil Gumpoldt left Munich in April, 1900, and returned in little more than four weeks provided with a diploma of a Chicago college and a license to practice in the State of Illinois,

CANADA.

Dr. Charles Doherty, superintendent of the Kootenay Lake Hospital, Nelson, B.C., is spending his vacation in Toronto.

A Medical Student Drowned.—Mr. John C. Carlaw, a third year medical student at Trinity Medical College, was drowned in Lake Ontario on the 9th inst.

Dr. W. T. McArthur, Los Angeles, Cal., is making a short stay in Toronto on his way home from England, where he has been successful in obtaining the degree of F.R.C.S.

The Pharmaceutical Association of Manitoba will hereafter refuse to recognize Ontario diplomas; this will mean that Ontario graduates can not practice in the Western Province. It is altogether likely that the Ontario druggists will retaliate.

Dr. P. H. Price has returned to Toronto after inspecting the Muskoka summer resorts. He reports an increasing sanitary vigilance on the part of the cottagers. Some years ago typhoid was very prevalent on account of the cottagers carelessly disposing of refuse in the lakes, but this has been largely overcome.

The Canada Lancet, which was founded thirty-five years ago by the late Dr. Fulton, has been purchased from Dr. G. P. Sylvester by the Ontario Publishing Company, of Toronto, the proprietors of the *Canadian Magazine*. It is understood that the journal will be enlarged and improved, but will retain the same editorial staff.

Death of an Old Physician.—Dr. John Barnhart, who formerly resided in Owen Sound, Ontario, passed away in Toronto on the afternoon of the 9th inst., having attained 88 years of age. He was one of Canada's pioneer medical men and was a student of the late Dr. Widmer, of Toronto. He received his medical education in New York.

Indians Must Register.—The Ontario Government has passed an order-in-council appointing registrars to record the births, deaths and marriages occurring on the Indian reservations. The Registration Act calls for registrars in every portion of the province, and since the reservations are not townships, the registrars of the adjacent townships have been assigned the duty.

Toronto Physician Suicides.—Dr. Overton F. Macdonald, of Toronto, a homeopathic practitioner, ended his life on the afternoon of the 8th inst. by shooting himself through the heart with a breech-loading shotgun. He is said to have unsuccessfully attempted to end his life a few days prior thereto by taking poison. He had not been in his usual good health for some time past, having suffered from mental trouble, induced through a recent attack of la grippe. He was thirty-nine years of age, and was graduated from the Cleveland Homeopathic Institution some years ago.

The Council of the Ontario College of Pharmacy, which has been in session in Toronto during the past week, has decided

to establish subsidiary associations in the thirteen districts into which the province is divided. The representatives on the Council from those districts will be at the head of these minor bodies and will be provided with funds to pay for the expenses of their organization. The special committee on behalf of the druggists, which was appointed to confer with the Ontario College of Physicians and Surgeons with regard to the recent trouble in connection with "counter prescribing," stated that on account of no conference having taken place between representatives of the two bodies, that the matter was still unsettled, but they hoped to come to some understanding soon.

Caring for Consumptives in Toronto.—The Executive Committee of the National Sanitarium Association met at the Sanitarium, Gravenhurst, Muskoka, on August 7. The Committee found the capacity of the institution severely taxed, a number of patients occupying tents on the lawns and a number more on the waiting list for admission. The physicians reported an increasing number of applicants in whom the disease was too far advanced for treatment. The committee visited the building site of the Gravenhurst Free Hospital for Consumptives; and it is expected from all appearances that the building will be ready for patients in November. This new building is to be supported by voluntary contributions, and is intended for consumptives in the early stage of the disease. The principal business of the meeting was to discuss the plans of the Toronto Home for Consumptives. At the present time the hospitals throughout the country do not make provision for the study of tuberculosis; and the proposed plans of the Toronto Home will obviate these difficulties.

FOREIGN.

Death of Von Widerhofer.—The Vienna Medical School has lost one of its most popular professors in H. von Widerhofer, the eminent pediatrist, who died July 28, in his 70th year.

A New Egyptian Medical Journal.—*L' Egypte Medical* is the title of a new periodical to be published at Alexandria in French by A. Ruffer, president of the Conseil Sanitaire of Egypt.

International Congress on Seasickness.—Ostende, in Belgium, is holding an international congress on seasickness, with an exposition of all measures that have been devised against it, to continue two months. The congress is under the auspices of the League against Seasickness, which has its headquarters at Paris, 82 Boulevard Port-Royal. (Ligue contre le Mal de Mer.)

Profs. Finsen and Pavloff Get Rich Prizes.—Professor Finsen of Denmark and Professor Pavloff, the Russian physiologist, have been awarded each 200,000 crowns ($50,000) as prize money from the $2,000,000 left by the late Alfred Nobel, a Swedish millionaire, for the advancement of science. Finsen is noted for his treatment of cutaneous affections by certain light and electric rays, and Pavloff is known by his researches in nutrition.

PARIS LETTER.

Death from Medullar Cocainization.

In the last Paris Letter mention was made of a case of death following rachi-cocainization. Another case has recently been reported to the Society of Surgery by Dr. Bousquet, of Clermont. The patient, a woman, was operated for a strangulated hernia, and only two centigrams were injected. Almost immediately after the injection most serious cardio-pulmonary symptoms were observed, there being extreme pallor, dyspnea and a very rapid pulse, against which injections of ether and caffein were made during three-quarters of an hour. Artificial respiration was also resorted to. Some improvement took place, followed, however, by extreme agitation, and death took place at 2 o'clock the following morning, the patient being in a comatose condition.

Tetanus.

The discussion on tetanus has been kept up, Dr. Bagy insisting upon the fact that Dr. Vaillant's researches have shown that tetanus is intimately associated with suppuration, and Professor Berger contradicting this statement, and stating that a long list of cases could be cited where there was no superficial wound, and in which tetanus took place. It must be admitted that a good deal of the enthusiasm which was shown for this treatment by antitetanic injections has died out.

Test for Purity of Water.

At a recent meeting of the Academy of Sciences, a most interesting method for recognizing the purity of water was described by Mr. Causse. This author has already described the effect produced on contaminated water by two other reagents, Schiff's solution and paradiazobenzene-sulfonate of sodium. A third reagent would be what is crystalline violet or hemamethyl triamidotriphenylcarbinol. A sulphurous solution of this reagent comes back to its original color when poured into pure water. Otherwise this phenomenon does not take place. The reagent can be readily prepared by dissolving 25 centigrams of crystallized violet in 250 cubic centimeters of a saturated solution of sulphurous acid in water.

Gelatin in Treatment of Aneurism.

A good deal of discussion was elicited three years ago by a novel method advocated by Dr. Lancereaux for the treatment of aneurism, and which consisted in the subcutaneous injection of a solution of gelatin. At one of the last meetings of the Academy of Medicine this subject was again brought forward, and Dr. Lancereaux remarked that the causes of failure were insufficiency in the technique employed, or else the use of this treatment in cases of fusiform aneurism. Dr. Lancereaux presented to the Society two patients, one having a subclavian aneurism, and the other an aneurism of the aortic arch, which had already attacked the sternum. Considerable amelioration was brought about by the use of the gelatin injections.

Post-Graduate Courses.

Post-graduate courses have been so far unheard of in France, but it would seem that at last there is a chance of some new institutions being established which will furnish the medical graduate with the means of completing his education. Dr. Jayle, assistant of Professor Pozzi, has just published an article on this subject in the *Presse Médicale*. The initiative of this new departure does not come from the Faculty of Medicine, which will remain closed as usual during the summer, but from the municipal counsel, which has already established two new professorships, one of pediatrics and the other of gynecology. One of the members of the counsel proposes the creation of a municipal institute of applied medicine, where instruction would be given to physicians having already graduated. The courses would only last two or three months, and would be made by some of the most noted physicians and surgeons of the hospitals. These courses would not be gratuitous, and the number of students would be limited thereby.

Mosquitoes and Leprosy.

At the meeting held by the Academy of Médecine on July 30, the subject of the influence of mosquitoes on the general health was discussed at length. Dr. Blanchard said he considered that leprosy could be transmitted by mosquitoes, and Dr. Chantemesse remarked that leprosy was caught generally at night. Dr. Hallopeau said that leprosy was a disease seen generally in very warm or very cold countries, where mosquitoes are found.

Poisoning from Dye.

Professor Landouzy made a report on a case of poisoning by the use of socks, in a child. According to Dr. Riche, the dye, which is composed of aniline, is dissolved in aniline oil.

Correspondence.

Oversupply of Medical Graduates.

Geneva, Pa., Aug. 12, 1901.

To the Editor:—Much has been written lately concerning the oversupply of physicians in the United States. Permit me to say a word on the negative side of the question.

All the writers noted so far taking as a basis the recent census—which shows a ratio of 1 physician to 600 population—reason *a priori* that this is largely in excess of the demand.

The facts, I believe, do not support this conclusion, particularly in the rural districts throughout the north and west, with which I am familiar.

In villages and towns varying in population from 500 to 2000, nine out of ten physicians will claim to be making from $2000 to $3000 per annum. More will be found who claim to be making in excess of $3000 than those who will admit that they are making less than $2000.

These statements are corroborated by the "Locations for Sale" column of The Journal. Compare these figures with the salaries received by ministers and school principals in

these towns. While I have no statistics at hand to prove my assertions, probably not 5 per cent. receive as much as $2000 a year while the major portion of them are receiving salaries of less than $1000.

Right here lies the real cause of the large number of medical students. The medical schools are largely recruited from the rural districts, and the cause is evident. While the country physician does not receive a large income according to city standards, it is large according to the standards of the community in which he lives. Living expenses in the smaller towns are low and the physician is enabled thereby to live well and in a comfortable home. Furthermore, he is an honored and respected citizen. Naturally the ambitious young man sees this, and emulating the example, studies medicine.

We, as a profession, disavow commercialism, and it is our proud boast that we stand hand in hand with the ministers and teachers in laboring for the welfare of humanity. This being true, an unbiased judge would surely decide that we have no just reason for claiming greater compensation for our services.

If we are honest in our protestations of non-commercialism we could not object to this. Whether we object or not as long as the present conditions prevail the proportion of physicians will undoubtedly increase. There are yet many hamlets throughout the country without physicians where a physician could earn a fair living, and these doubtless in the future will absorb a large number of the graduates.

Dr. Brower used to tell us at "Rush," never to locate in a town that had no physician, as there was nothing to be made in a place where there was no physician. I do not believe, however, that this is invariably true.

While I am not familiar with conditions in the city, I would suggest that possibly the cause of the poverty of the many is due to the large incomes received by the few who are especially proficient or popular, and the question is simply one of the "survival of the fittest" which prevails in all trades and professions.

A. W. CLOUSE, M.D.

Married.

T. EBEN REEKS, M.D., to Miss Katherine C. Garrison, both of Newburg, N. Y., August 7.

JOHN H. GROSHANS, M.D., to Miss Nellie L. Wheeler, both of Baltimore, Md., at Wilmington, April 29.

JAMES A. TAGGART, M.D., Salamanca, N. Y., to Miss Sarah H. Johnson, Buffalo, at the home of the bride, August 7.

AUGUSTUS WRIGHT IVES, M.D., Detroit, Mich., to Miss Julia Clare Chandler, Ogdensburg, N. Y., at the home of the bride, July 31.

MAJOR RALPH S. PORTER, Surgeon U. S. V., formerly of Chicago, to Miss Lydia Kilgour, Glen, Md., at Rockville, Md., August 7.

LIEUT. ALLIE WALTER WILLIAMS, Acting Assistant-Surgeon, U. S. Army, stationed at Governor's Island, to Miss Elizabeth Morris Semple, Washington, at Jersey City, N. J., August 3.

Deaths and Obituaries.

Jesse Hawes, M.D., University of Michigan, Ann Arbor, 1868, Long Island College Hospital, Brooklyn, 1871, died at his home in Greeley, Colo., from angina pectoris, August 4, aged 58. At the age of 18, he enlisted in the Ninth Illinois Infantry, serving until captured during an engagement in 1864, and until the close of the war was confined in Cahaba prison, Alabama. This imprisonment, together with a wound received in a battle in 1862, left his health permanently impaired. He has written a book entitled "Cahaba," which is of considerable historical value, and in which he described his prison life. He practiced for a time in Iowa, but in 1872 he went to the newly founded town of Greeley, where he made his permanent home. He was a member of the first Board of Medical Examiners of Colorado, and later was on the State Board of Health, doing much to elevate the character of the profession. He was an ex-president of the State Medical Society, a trustee of the State Normal School, and at one time was Lecturer on Obstetrics in the University of Denver. At the Detroit meeting, in 1892, he was elected fourth vice-president of the American Medical Association. He was a member of the National Association of Railway Surgeons, and the American Academy of Railway Surgeons.

William A. Newell, M.D., University of Pennsylvania, Philadelphia, 1839, died at his home in Allentown, N. J., August 8, aged 84. He was the originator of the United States life-saving service, and was appointed by President Lincoln superintendent of that work in this country. He was the first republican governor of New Jersey, serving from 1857 to 1860, was a member of congress, 1847-48, 1865-67, and was Governor of the Territory of Washington from 1876 to 1880.

Frank K. Paddock, A.M., M.D., Berkshire Medical College (now extinct), 1864, died at his home in Pittsfield, Mass., July 26, after a long illness, aged 60. He was at one time dean of the Berkshire Medical College, in which college he held a professorship until its dissolution in 1867, and has been chief surgeon to the Pittsfield House of Mercy from the time that it was founded, in 1875. He served two years as president of the Massachusetts Medical Society.

Charles Hampden Field, M.D., Medical College of Alabama, Mobile, 1878, died from inhalation of illuminating gas at Alameda, Cal., August 6. He was surgical dresser at King's College Hospital, London, 1874-5, and was later an acting assistant-surgeon, U. S. Army. As an examining surgeon of the Pension Bureau he served seven years. He was a practitioner at Price, Utah, and was formerly located at Rock Spring, Wyoming.

David Kennedy, M.D., College of Physicians and Surgeons, New York, 1860, died of apoplexy while addressing a public meeting, August 5, aged 65. He was at one time mayor of Kingston, N. Y., where he had long resided. During the civil war he was a surgeon and took part in several important engagements; later he was stationed at Fortress Monroe, and then at the Saterlee Hospital, Philadelphia, until the close of the war.

Abia H. Light, M.D., University of Pennsylvania, Philadelphia, 1862, died at his home in Lebanon, Pa., July 21, after a long illness, aged 62. During the civil war he was a surgeon in the Pennsylvania Volunteers, and in 1864-65 he was the chief executive officer of the general hospital at Washington. He was in McClellan's retreat from the Peninsula, and also was with Gen. Sherman in his famous march to the sea.

James V. Kendall, M.D., Geneva Medical College, Geneva, N. Y. (now extinct), 1844, died at his home at Baldwinsville, N. Y., August 5, aged 83. During the civil war he was surgeon of the 149th New York Volunteers, serving from 1862 to 1865. In 1869 he was a member of the Assembly from Onondaga county and was always active in politics, but without sacrificing his interest in medicine.

Hiram O. Bolles, M.D., Philadelphia College of Medicine and Surgery, 1865, died at his home in Springfield, Ill., August 8, aged 63. During the civil war he was a surgeon at the military hospital at Savannah, Ga., and served until the end of the war. He was president of the Board of Water Commissioners of Springfield for many years and a member of the City Council.

William W. Watkins, M.D., Washington University, St. Louis, 1872, was shot and killed by an insane man, while driving through the streets of Moscow, Idaho, where he lived. At one time he practiced in St. Louis, Mo., but went West on account of his health in 1884. He was a member of the American Medical Association, and was 55 years of age.

Frank P. Bingham, M.D., University of Buffalo, 1899, while riding a bicycle in Buffalo, was struck by a street car and killed almost instantly. He was 28 years of age and was recently appointed on the staff of the German Hospital Dis-

pensary, having formerly been house physician in the German Deaconess Hospital and the German Hospital.

Nathaniel M. Jones, M.D., University of Wooster, Cleveland, Ohio, 1866, who has been a practitioner of Cleveland for twenty-six years, died at his home there, August 1, aged 61. He served for three years during the civil war as an assistant-surgeon.

Newton Sedwig Read, M.D., Western Reserve University, Cleveland, 1844, died at Virginia, Ill., August 10, aged 81. He was a native of Ohio, but since 1852 he had practiced in Cass County, Illinois.

Lyman P. Stookey, M.D., Missouri Medical College, St. Louis, 1872, died at his home in Belleville, Ill., August 2, aged 57. He was at one time president of the St. Clair County Medical Society.

George A. Sweeney, M.D., University of Pennsylvania, Philadelphia, 1898, died at Chester, Pa., August 2, from smallpox contracted while acting as quarantine officer.

Frank R. Eversole, M.D., Missouri Medical College, St. Louis, 1876, died from carcinoma of the stomach, at his home in St. Louis, August 4, aged 46.

Albert S. Elliott, M.D., Western Reserve University, Cleveland, 1892, died at his home in Cleveland, August 2, from typhoid fever, aged 30.

Benjamin A. Oglesby, M.D., Hospital College of Medicine, Louisville, Ky., 1890, died at Louisville, August 4, after an illness of two years.

Edwin E. Whitcomb, M.D., University of Buffalo, 1875, died at his home in Rochester, N. Y., from paralysis, August 1, aged 50.

Miscellany.

Italian Congress of Pediatrics.—The principal subjects to be discussed at this congress which convenes at Florence, October 15, are "Primary Infantile Atrophy," "The Septic Condition of the Respiratory Apparatus in Early Infancy" and "Acute Gastro-Intestinal Affections in Infancy."

New Phase of Professional Responsibility.—A Paris court recently awarded damages to a patient who had been burned by sublimate used by mistake for cocain. The cocain bottle was empty and the operator sent one of the nurses in the hospital to have it filled. The court censured the operator and awarded damages because he had not gone, personally, to fill the bottle.

Contagiousness of Leprosy.—An instance of acquired leprosy is related in the *St. Petersb. Med. Woch.* A Russian soldier returned home with leprosy. Six years later his mother developed the same disease, with the same symptoms as her son, and both died of general marasmus. Three years later the soldier's sister developed the disease, and, after another three-year interval, her husband also.

Infant Hygiene in Paris.—The Paris prefect of police has had the walls placarded with a circular calling attention to measures of infant hygiene during the heated term, warning not to wean infants, nor feed them from bottles with tubes, to boil all the bottles, etc., and protect them from dust, and to refrain from giving fruit to children under 3 and over this age only in moderate amounts, and cooked, and finally, at the first symptom of disturbance on the part of the child to summon a physician.

Treatment of Elephantiasis with Injections of Calomel.—S. Schaginjan reports that a case of elephantiasis improved remarkably under subcutaneous injections of calomel in a 5 per cent. suspension in vaselin oil. In the course of two and one-half months .9 calomel was injected at intervals from three to eight days. The size of the limb diminished very much; the tissues gradually assumed their normal aspect. The edema vanished completely and the patient was able to move about, for the first time in years.

The Monument of the Internat.—A bas-relief in marble is to be erected in the inner court of the Paris Hotel-Dieu next spring, on the occasion of the centennial celebration of the founding of the "internat," or system of internes in hospitals. The bas-relief is to represent the operation of tracheotomy, as before the discovery of serum treatment of diphtheria, the efforts of the internes to save the lives of children suffocating in croup were the cause of many deaths among them. The names of these victims of their profession will be inscribed at the base of the tablet.

Radiotherapy in Ophthalmology.—E. A. Nesnamow describes in *Westnik Oft.*, 1901, 1, his experiments with radiotherapy of the eye, applied according to Finsen's principles. After convincing himself on rabbits of its efficacy, he tried it in seven clinical cases with surprisingly beneficial results. The portion of the human eye which contains no blood vessels is peculiarly adapted to be submitted to the action of the violet rays. Severe suppurative affections of the cornea were improved by this treatment so that operation was rendered unnecessary. Suppuration after a cataract operation was arrested and retrogressed under the influence of the rays. The light seemed to soothe the pain. No injurious effect on the retina was observed.

Abdominal Diagnosis.—In a communication to the *Ztft. f. Klin. Med.* xxxvi, A. Fuchs calls attention to the valuable information that can be derived in regard to condition of the intestines by injecting a fluid. Colic pains and contractions usually follow this procedure, but there is nothing of the kind if the intestines are first evacuated with glycerin, and then, after a time, .75 to 1 liter of 8 to 10 per cent. salt solution are cautiously injected. The entire large intestine becomes palpable. The clinging of the intestinal walls to fecal tumors is detected by this means. The flexures of the colon and cecum stand out distinctly, and all the abdominal organs are influenced by the change in the shape, size and position of the intestines and are thus more readily palpated.

Gelatin Tubes for Suture of Nerves and Tendons.—Tubes of decalcified bone and magnesium have been suggested for the suture of nerves and tendons, but these substances are absorbed too rapidly to answer the purpose in all circumstances. G. Lotheissen, of Innsbruck, finds that gelatin tubes, hardened in a 2 per cent. solution of formol, for forty-eight hours, fulfill all the desired conditions for the suture of tendons. The tubes are not absorbed for six weeks. In suturing nerves, he uses tubes that have been in the formol solution for sixty-two hours, which resist absorption for two months. In case of loss of nerve substance, requiring a long time for regeneration, he advises soaking the tubes for six or seven days in the formol. He has used these tubes to suture nerves or tendons in seven cases and found the results perfect in all except one case in which it proved impossible to obtain primary intention and consequently the tube dissolved in four days. Prevention of the formation of adhesions with adjacent tissues is one great advantage of tubulization.

Patent Medicine in Austria.—The United States consul general at Vienna, Austria, C. B. Hurst, has this to say regarding patent medicines in Austria:

"In consequence of many inquiries addressed to this Consulate General in the matter of the government regulations in Austria regarding the importation and sale of patented medicinal and chemical preparations, I would report that the sale of 'arcana,' or secret remedies, has always been strictly forbidden in this monarchy. Trade in such medicines and advertisements of the same are under strict surveillance of the law. Further, those medicinal preparations of which the prescriptions are not open to inspection by physicians, or in the prescription of which the substance of the medicinal ingredients can not be definitely recognized as to kind and quantity, may not be kept for sale in apothecaries. Only those manufactures may be considered as pharmaceutical specialties that contain drugs acknowledged to be medicinal remedies, as, for instance, balsam copaibæ, oleum santali, and the like. Every new medicinal preparation intended for use by the public must be reported to the authorities, and its sale may not be begun until said authorities have found no reason to prohibit the same. Prescriptions of foreign medicines must be accompanied by

precise directions for their preparation from the foreign manufacturer, and be provided with his signature and business stamp. Altogether excluded are cosmetics that by their labels, wrappers and advertisements are affirmed to be efficacious in the removal of personal blemishes—impure skin, freckles, liver spots, and baldness—and are, therefore, qualified as remedies. The regulations in Austria in regard to the advertisement of patent medicines are likewise strict. All laudatory notices in local publications of cures and remedies coming from abroad constitute a transgression of the trade laws, and, under certain circumstances, foundation for complaint of unlicensed medical practice."

Technique of Draining the Uterus.—Gauze drains sometimes fail to evacuate all the secretions, and tubes are liable to be expelled. F. Franke uses an ordinary rubber drain inserted in the uterus and fastened in place with one or two stitches. By this means the cervix is permanently dilated and drainage can be maintained as long as desired without inconvenience.

Direct Franklinization of the Rectum for Constipation.—Bordier reports the successful cure of several cases of habitual constipation from atony of the intestines, by direct Franklinization according to Herz, of the rectum itself. He inserts the electrode into the rectum, a brass tube with a spherical tip, insulated at the portion corresponding to the sphincter. The sensation is not painful, resembling a dull shock without heat. The action is more vigorous if the electrode is connected with the outer armature of the Leyden jar at the positive pole of the machine.

An Illegal Practitioner Prescribes Poisonous Doses.—The New York State Medical Association are searching for a man in New York city who is practicing medicine illegally. This man is considered to be a dangerous person to be at large, as he has seemingly no knowledge of drugs. He recently wrote a prescription for a mixture to be taken internally that would have caused instant death. It was this prescription that led to his discovery. The prescription was given to a druggist to be filled by the man who had gone to the bogus doctor for treatment. The druggist said he could not fill the prescription, as it called for enough poison to kill many persons.—*N. Y. Med. Journal*, August 10.

The Saltpetriere and its Head Nurse.—According to a decree of Mazarin, who was prime minister of France about 1656 when the old saltpeter works at Paris were transformed into a great hospital and lunatic asylum for women, still known as the Saltpetrière, nurses serving continuously for twenty years were entitled to free board and lodging thereafter. Mlle. Bottard, who retires this month, entered the service as nurse in 1840, and has thus served for sixty-one years. Her skill and devotion won for her the ribbon of the Legion of Honor, very rarely conferred on a woman. Charcot used to say that he owed much of his success to her assistance.

Cure of an Enormous Dissecting Aneurysm.—A remarkable case of dissecting aneurysm as large as an ostrich egg, in the rear wall of the aorta, is described by F. Harbitz in the *Norsk Mag. f. Laegev.* for March. The aneurysm had been diagnosed seven years before the death of the patient, a man of 54, who succumbed to pulmonary and generalized tuberculosis. The aneurysmal sac was multilocular, and was supplemented by a canal commencing in the sinus of Valsalve and continuing along the aorta to its bifurcation, and thence along the primary iliac artery to an opening 3 cm. in diameter. Some of the arteries, such as the right renal, opened directly into this supernumerary aorta and probably prevented its rupture. It was lined with endothelium.

Resolutions Adopted by the Latin-American Congress.—The Congress passed resolutions, among others, in favor of the compulsory declaration, etc., of infectious diseases, of isolation hospitals, sanitariums or colonies for lepers, of hospitals for incurable consumptives and sanitariums for the curable cases, with seaside sanitariums for tuberculous children. Another resolution urged research on buccal respiration among children in the Latin-American countries. The Congress also voted in favor of the education of the public in regard to the increasing and imminent danger of hydatid infection, and advised that prophylactic measures be taught in the primary schools. In regard to the prophylaxis of yellow fever, resolutions were adopted in favor of substituting sanitary observation for disinfection. Sanitary inspectors for ships should be appointed in sufficient numbers, the expenses to be borne indirectly by the navigation companies. Subjects appointed for discussion at the next congress are the "Protection of Infancy" and the "Prophylaxis of Syphilis."

Too Many Doctors.—THE JOURNAL of the American Medical Association is of the opinion that there is a surplus of doctors in the United States, and regrets that the surplus is increasing. There is now one doctor to every 600 of population. As this is not on the whole an unhealthy country, one physician ought to be able to look after the aches and pains of a thousand ordinary people. Wherever more men are employed to perform any kind of service than are actually needed, either the community has to pay too much for services rendered or some of the men employed must be unable to make more than a bare living, if they make that. According to THE JOURNAL 1600 doctors die yearly, in spite of their skill, but almost 6000 are born. The medical colleges, although the requirements are severer than formerly, are turning out 6000 graduates a year. If this keeps on, how long will it be before there is one doctor for every 100 of the population? Then societies will have to be organized for the relief of starving M.D.'s. It is odd that so many young men should wish to study medicine when there are so many doctors, and when the physician has to face the competition of faith-healers and prayer-healers, who say they can cure any disease, and of "christian scientists" who assert that there is no such thing as disease. Probably the often-quoted statement that "there is always room at the top" in an overcrowded profession is responsible for the existence of numbers of poor lawyers and doctors. Nearly every young man who is about to begin the study of medicine is convinced that he will reach the top and will get the big fees for surgical operations or medical treatment that he reads of. Perhaps he will, but the chances are about 2000 to 1 against him. This is a point which medical colleges, naturally enough, do not impress on students. They do not endeavor to discourage the young men who are willing to pay them money for an education. But it would be a kindness to many of these, and to the community generally, if the authorities of medical colleges would tell many of their students that while "there is always room at the top," they never will get there—nor half way there—but will remain near the bottom, where it is always overcrowded, and hence ought to drop medicine and turn to something else.—Editorial, *Chicago Tribune*, August 1.

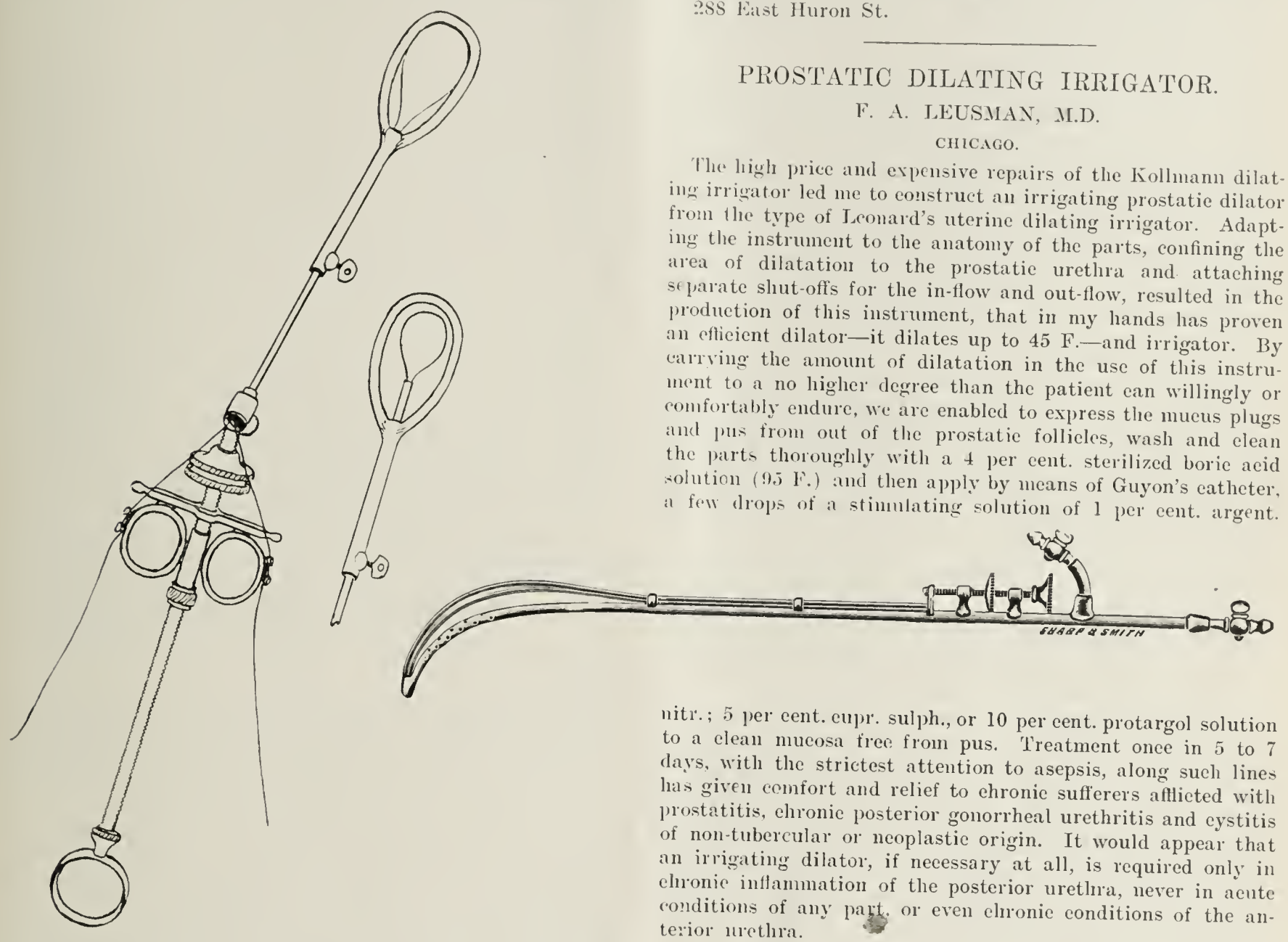
New Instruments.

A SNARE GUARD FOR INGALS' OPERATION OF ECRASEMENT OF THE TONSILS.

OTTO T. FREER, M.D.
CHICAGO.

The operation is described in detail in Ingals' "Diseases of the Chest, Throat and Nose," 4th Edition, page 435. It is done under anesthesia. the patient lying on his side with one arm behind his back and his face looking towards the operator and slightly downward. A gag is inserted, the tongue strongly depressed with a tongue depressor by an assistant, and the uvula seized with a slender forceps to hold it out of the way of harm. The tonsil is now grasped with an especially constructed forceps which includes in its blades the whole of the tonsillar substance, even to its deepest attachment between the pillars. If the latter are adherent to the tonsil they are separated by means of a palate hook as a preliminary. The loop of a strongly constructed snare is next passed over the forceps and beneath its beak around the attachment of the

tonsil, which is cut off by tightening the loop by means of a milled nut and screw thread. There are never more than a few drops of blood following the procedure. The operation will remove intramural or buried tonsils that will not come into the ring of the tonsillotome; it can be used to remove tonsils that offend by repeated inflammation, but are too small for tonsillotomy; it evulses the tonsil thoroughly from its bed, and on account of the practical absence of bleeding it can be employed as a preliminary to adenoid operations. The operation is therefore a very valuable one, but heretofore two factors have made it difficult and at times uncertain. The first of these was the tendency of Ingals' forceps to slip off from the tonsil seized. This occurs in small and soft tonsils and is annoying. To overcome this I have had the forceps constructed with three instead of two teeth to each blade, so that now these never loosen their grasp.



The second difficulty was more serious and compelled me to abandon the operation in one case. The wire loop instead of slipping over the forceps and under the tonsil became bent out of shape in the mouth by reason of muscular contractions of the tongue or lack of room. The wire would then encircle the forceps instead of the tonsil, necessitating the insertion of one or more new loops into the snare, and causing loss of time and embarrassment to the operator. For this reason I have constructed a steel snare guard which contains the wire loop in a groove. By means of this guard the loop can be slipped over the forceps and onto the tonsil rapidly and certainly, so that the operation can be performed without a halt. After the guard carrying the wire has been passed under the beak of the forceps the set screw which attaches it to the tube of the snare is loosened and the loop tightened over the tonsil. If this is not done the drawing in of the loop will thrust the snare guard back into the wall of the pharynx. While passing the guard over the forceps into the mouth the wire must be held in its groove by pressing it forward with the traveling carriage of the snare. An Ingals' snare is used with No. 5 steel piano wire. The instrument has proved very satisfactory to me and to others.

If the operation with the tonsillotome would accomplish in all instances what can be achieved by écrasement the latter method would be too complicated to compete with it, but tonsillotomy is not suited for the removal of intramural tonsils, and its use must necessarily be restricted to ablation of enlargements which project beyond the pillars, while the snare is eminently fitted to enucleate tonsils which are buried between them. The objection to the cautery operations devised for buried tonsils is the danger of secondary hemorrhage, and the fact that they are not well applicable to children.

288 East Huron St.

PROSTATIC DILATING IRRIGATOR.

F. A. LEUSMAN, M.D.

CHICAGO.

The high price and expensive repairs of the Kollmann dilating irrigator led me to construct an irrigating prostatic dilator from the type of Leonard's uterine dilating irrigator. Adapting the instrument to the anatomy of the parts, confining the area of dilatation to the prostatic urethra and attaching separate shut-offs for the in-flow and out-flow, resulted in the production of this instrument, that in my hands has proven an efficient dilator—it dilates up to 45 F.—and irrigator. By carrying the amount of dilatation in the use of this instrument to a no higher degree than the patient can willingly or comfortably endure, we are enabled to express the mucus plugs and pus from out of the prostatic follicles, wash and clean the parts thoroughly with a 4 per cent. sterilized boric acid solution (95 F.) and then apply by means of Guyon's catheter, a few drops of a stimulating solution of 1 per cent. argent. nitr.; 5 per cent. cupr. sulph., or 10 per cent. protargol solution to a clean mucosa free from pus. Treatment once in 5 to 7 days, with the strictest attention to asepsis, along such lines has given comfort and relief to chronic sufferers afflicted with prostatitis, chronic posterior gonorrheal urethritis and cystitis of non-tubercular or neoplastic origin. It would appear that an irrigating dilator, if necessary at all, is required only in chronic inflammation of the posterior urethra, never in acute conditions of any part, or even chronic conditions of the anterior urethra.

Societies.

COMING MEETINGS.

Rocky Mountain Inter-State Medical Association, Denver, Colo., Sept. 3-4, 1901.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 10, 1901.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.

Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.

Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Hartford County (Conn.) Health Officers' Society.—At the annual meeting of this Society, held at Hartford, August

1, Dr. Charles G. Rankin, Glastonbury, was elected president, and Dr. Wilber P. Bunnell, New Britain, secretary.

Southern Minnesota Medical Association.—The tenth annual meeting of this Association was held at Rochester, August 1, and the following officers were elected: President, Dr. Arthur S. Adams, Rochester; vice-presidents, Drs. Milan J. Hart, Le Roy, and Allan B. Stewart, Owatonna; secretary and treasurer, Dr. William T. Adams, Elgin. The next meeting will be held at Owatonna.

Central Wisconsin Medical Society.—At the annual meeting of this Society, held in Madison, July 30, the following officers were elected: President, Dr. James A. Jackson, Madison; vice-presidents, Dr. Ernest C. Helm, Beloit, Dr. Marshall T. Martin, Merrimack, Dr. Samuel R. Moyer, Monroe, and Dr. Ledyard V. Lewis, Sun Prairie; secretary and treasurer, Dr. Charles S. Sheldon, Madison.

Crow River Valley Medical Society.—At the nineteenth annual meeting of this Society, held at New Paynesville, Minn., August 6, the following were elected officers: Dr. Frank E. Bissell, Litchfield, president; Dr. Pierre C. Pilon, New Paynesville, vice-president; Dr. James W. Robertson, Litchfield, secretary, and Dr. Frank M. Archibald, Atwater, treasurer. The next meeting will be held at Atwater.

Northern Tri-State Medical Association.—The annual meeting of this Association was held at Angola, Ind., July 30, and the officers for the ensuing year were elected as follows: President, William H. Baldwin, Quincy, Mich.; vice-president, Dr. William J. Gillette, Toledo, Ohio; secretary, Dr. Hugh D. Wood, and treasurer, Dr. Theodore F. Wood, both of Angola, Ind. The next meeting will be held at Toledo, Ohio.

Lehigh Valley Medical Association.—The twenty-first annual meeting of this Association was held at Mauch Chunk, Pa., July 24, and the following officers were elected: President, Dr. Charles P. Knapp, Wyoming; vice-presidents, Dr. Joseph A. Horne, Mauch Chunk, Howard S. Reeser, Reading, William H. Hartzell, Allentown, and Edgar M. Greene, Easton; secretary, Dr. Charles McIntire, Easton; assistant secretary, Dr. William P. Walker; treasurer, Dr. Abraham Stout. The next meeting will be at Wilkesbarre.

Washoe County (Nev.) Medical Association.—The permanent organization of this Association was perfected at Reno, July 29, by the election of the following officers: President, Dr. H. H. Hogan; vice-president, Dr. George H. Thoma; secretary, Dr. S. E. D. Pinniger, and treasurer, Dr. George Fee, all of Reno. A standard scale of fees was adopted.

Multnomah County (Ore.) Medical Society.—This Society has just been organized and duly incorporated. The incorporators are the officers elected at the recent meeting in Portland, who are as follows: President, Dr. James T. Walls, Portland; vice-presidents, Drs. Thomas Darling, Mount Tabor, J. M. Short, Gresham, and Malcolm J. Jenny, Portland; secretary, Dr. Aaron Tilzer, Portland, and treasurer, Dr. Arthur J. Vail, Portland. The constitution has been signed by thirty-one physicians, and all of the regular practitioners express themselves as being heartily in favor of the movement. It is expected that as soon as the summer vacations are over almost all the regular physicians will be enrolled as members.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting Held at San Francisco, July 23.

Dr D. W. Montgomery in the Chair.

Gastro-enterostomy for Inoperable Carcinoma of Pylorus.

DR. J. HENRY BARBAT read a paper with the above title, reporting two cases.

The first case was one that he reported last year in THE JOURNAL (vol. xxxiv, p. 1405). Just prior to the operation the patient, a woman, weighed 83 pounds and was *in extremis*, having vomited almost incessantly for several months. At the time of operation the carcinoma involved the pylorus, and was adherent to the liver and the anterior abdominal wall, making it impracticable to attempt its removal, especially as the condition of the patient would not permit of any extended operative proeedure. He therefore did a gastro-enterostomy according to Roux, using Murphy buttons instead of sutures. The patient's condition was so bad at the end of the operation that the abdominal wall was sewed with through-and-through sutures in order to save time. Her condition was very precarious for the first three days, but she did not vomit once and was able to take a small amount of nourishment. Her appetite became enormous and she began to gain weight immediately, weighing 93 pounds three weeks from the day of operation. At present she weighs over 150 pounds and feels as well as she has ever felt. The tumor which at the time of operation was fully three inches in diameter has apparently completely disappeared, and the patient suffers no appreciable disturbance of digestion. There are two ways that we can account for the disappearance of the growth; one is that it was not malignant, and the other that the physiologic rest of the pylorus caused a spontaneous arrest of the cancerous process with absorption of the tumor. Jessett, in the *Lancet*, reports the disappearance of a large pyloric tumor after gastro-enterostomy, the patient living ten years after the operation and the postmortem showing complete disappearance of the growth, which at the time of operation appeared to be a scirrhus of the pylorus.

He operated on another case last May, which also illustrates the benefit of these operations. The patient had been vomiting within a short time after the ingestion of food for a period of over one year before she sought the services of a physician. A mass could be felt in the region of the pylorus which was tender on pressure and which moved about within a limited area. The examination of the stomach contents showed complete absence of hydrochloric acid, and a diagnosis of cancer of the pylorus was therefore made. On opening the abdomen it was seen that the case was inoperable as far as removing the growth was concerned, because adhesions existed to all the surrounding structures, and besides the entire peritoneum, parietal and visceral, was studded with patches which were probably malignant. It was therefore decided to do a gastro-enterostomy, which was accomplished by means of two Murphy buttons, one between the stomach and the cut end of the jejunum, and the other between the proximal cut end of the jejunum and the side of that viscus six inches from the stomach. The patient made a perfect recovery, having no vomiting and being able to take nourishment the day following. The buttons came away on the tenth and eleventh days, respectively, and the digestive apparatus is working perfectly at this writing. She has, however, symptoms of undoubted involvement of the lungs, and will probably succumb to the disease shortly.

These cases show the great relief which may be afforded these most unfortunate sufferers, and in the first case the possible cure of the disease by means of a comparatively harmless operation, which, if it should result fatally, has simply shortened the awful misery which these patients suffer after the stenosis of the pylorus becomes almost complete.

The author believes that the success in these operations, especially when the patients are much exhausted, depends to a great extent on the rapidity with which the operation is completed, as cancerous patients do not stand long operations well; therefore, no time must be lost after opening the abdomen, and the operator must determine rapidly whether the tumor can be removed safely or not, or whether it will be best to do a gastro-enterostomy. His judgment is that unless the tumor mass can be easily lifted out of the abdominal cavity it is better to do the simpler operation, because if adhesions exist it will probably be found that the disease has extended so far that its complete removal is impossible, and any endeavor to break up adhesions in malignant disease is fraught with great danger, from hemorrhage, and fails to accomplish the purpose of the operation.

He believes that the success of the two operations reported is due to the fact that he made use of Murphy buttons instead of sutures in making the anastomoses. The first case would undoubtedly have died on the table if suturing had been attempted, because even the most expert surgeon can not place sutures with the same rapidity that the Murphy button can be inserted, and this patient's condition was such that they had difficulty in keeping her alive until the end of the operation.

Furthermore, the most frequent cause of death subsequent to the operation is infection due to leaking at the point of suture; this is reduced to a minimum by the use of the Murphy button, because the apposition by the use of this device is more

perfect than can ever be attained by the most expert suturing. The anatomical result after the use of the Murphy button is more perfect than by any other method because the first closure of the two portions of the button causes a pushing aside of the mucosa and muscularis, leaving nothing but the peritoneum and submucosa between the jaws of the button. After a few days the peritoneum, being less resistant than the submucosa, is also forced out, leaving nothing but the latter to hold the button in place. After the button has become separated and passed away the mucosa grows across the cicatrix so that no solution of continuity is apparent, even under the microscope. The two submucous layers are in perfect apposition, as is also the peritoneum; the only layer which is not anatomically correct is the muscularis, and it has been shown that as yet no method has been found to cause unstriped muscular fiber to unite in such a manner that no scar tissue intervenes.

Therefore, in favor of the Murphy button there are the saving of time, the ease of application and the superior anatomical result; the only argument against its use which could be put forth is the possibility of the button not coming away, and time and experience have shown that when this does occur it is due to either faulty technic or a faulty button. Some writers have complained that the opening made by the Murphy button is more likely to contract than that made by the suture method; this is certainly unreasonable in view of the perfect anatomical result obtained by the use of the button as compared with that obtained by the use of any other method. It is well to remember that the opening left by the button can not be larger than the diameter of the button itself, and one mistake which is often made by operators is to use a button of small diameter; one must use the largest button which can be easily introduced into the lumen of the small intestine when operating on that viscus, and the same rule holds good in the case of the large intestine. The fear that the button will not pass the ileocecal valve is more imaginary than real; while a few cases have been reported of this accident, he believes that if they were carefully investigated that one would find some disease of that portion of the bowel present which caused stenosis, because if this were not so the accident would happen much more often than it does.

Dr. Philip King Brown said that he had seen the patient a few years ago and had made a diagnosis of carcinoma; at that time she had cachexia; vomited food and an examination of her stomach contents showed no free HCl, but large quantities of lactic acid. Immediate operation was advised; he thought that it must be admitted that the tumor was malignant. There were cases where tumors had disappeared before. He had seen a case in the Pennsylvania hospital where at the time of operation the growth was so large that it was thought best not to remove it, and the wall was closed up; three weeks later the tumor was much smaller. He thought that there could be no question that it was cancer; there were no symptoms of syphilis and the question of it being benign did not seem worth consideration. The history had been carefully recorded by Dr. Barbat, and if it could be proven in any way that it was malignant, the case would be an important one. When he saw her a year ago he told her that if she was not operated on immediately she would be dead in six months.

Dr. James McCone said that inflammatory masses in the abdomen were often mistaken for tumor formation. It seemed quite reasonable that one could find a tumor due to inflammation, if there was an ulcer, and one that was palpable, and he would certainly hesitate to make a diagnosis of cancer of the pylorus on the data given by Drs. Barbat and Brown.

Dr. D. W. Montgomery said that it seemed to him that if it was a scirrhus of the pylorus, then it must have been one of those slow, cicatrizing scirrhus tumors which created a much larger tumor than it would otherwise do, because of the irritation of the food rubbing up against it, and because of the stomach trying to force the food through the pylorus, which irritation being removed by the food passing in a different direction, the tumor growth alone continued. He thought that the view might be plausible. We know that some of these scirrhus carcinomas are exceedingly slow of growth, but the chances of their being slow are exceedingly rare. He had seen one case, however, of scirrhus cancer, which he removed postmortem from the posterior wall of the duodenum, about midway between the pylorus and the entrance of the bile duct. The man died of anemia simulating pernicious anemia. That was years ago. The tumor was quite small, about the size of a quarter of a dollar. The duodenum was evidently not stenosed, and the trouble in the stomach, which was enormously dilated, was probably a failure to shove the food along because the food irritated the surface of the cancer. Of course, the food did not digest, and the anemia increased. As the anemia deepened, the muscle fibers became slack because of poor nourishment, and the dilatation of the stomach increased. He was a long time ill, and the Doctor supposed the cancer to have commenced probably a considerable time before he showed signs of illness. A somewhat similar slowly growing cancer may be still growing at the pylorus of the patient under observation. In the operation, you simply switch the food, and relieve the irritation. He had no faith in the cure of the patient, if it was cancer. The inflammatory products are simply absorbed, and we do not find the tumor. He could not imagine that cancer of the pylorus could undergo spontaneous cure. Cancer of the breast is said to have done so by sloughing, but there was no sloughing here. If such a huge amount of necrosis had taken place, it would go into the peritoneal cavity. The fact that there is a tumor is not conclusive, there being no HCl is not conclusive, nor is the situation conclusive of cancer of the pylorus. But the fact that the patient got well is much more conclusive evidence that the patient never had cancer of the pylorus at all.

Dr. Barbat said in closing that the absence of HCl did not determine the presence of carcinoma, but was a confirmatory diagnostic point. The case had been gone over thoroughly, and all the classic symptoms of carcinoma of the pylorus had been found. On abdominal section he found that the tumor mass was part of the pylorus, circular in character, involving the entire thickness of stomach and pylorus; hard and firm, and presenting all the macroscopic appearances of cancer of the pylorus. Clinically the mass was carcinoma. In all malignant growths physiologic rest to the parts allows the inflammation to subside and possibly during the absorption of the inflammatory products absorption of the epithelial cells which formed the malignant growth could also have taken place.

Verrucae of Buccal Mucous Membrane.

Dr. H. Kugler reported the case of Miss N., 22 years, German, who had warts on her hands for many years. These disappeared three years ago; two years ago a small growth appeared on the inner surface of the lower lip; gradually more appeared until at the present time the inner surface of both upper and lower lips and the buccal cavity on either side, to the second molar teeth, are covered with small warty growths. Lately a few have made their appearance on the outside of the upper lip, near the margin of the skin. There is no pain, but they are frequently bitten, bleed freely and the main source of annoyance is their prominence and the consequent disfigurement the moment the mouth is opened.

Acute Lymphemia with Estival Malaria.

Dr. Philip King Brown exhibited a patient, A. R., Frenchman, aged 44, resident of Fresno, who came to the Doctor in September, 1896, with a history of an occasional chill, continued fever, weakness and malaise dating back five weeks. No previous illness; no syphilis; no trauma. Patient a stout, well-built man, with yellowish color to skin not unlike jaundice, but the sclera was white. The temperature was 102.2; pulse, 120. The spleen was easily felt, not tender; the liver was 10 cm. in the right mammillary line. Heart and lungs presented nothing abnormal. Urine was negative. The glands all over the body were enlarged slightly, but not tender. There was no eruption, no bone tenderness. There was neither scar nor sore on penis; the tonsils were not enlarged nor inflamed. Blood examination showed reds, 3,820,000; whites, 42,000; hemoglobin, 65. Of the white cells 82 per cent. were mononuclear lymphocytes and were nearly all large. A few crescent forms of the estival parasite were found, but no young forms were seen. The patient died six weeks later. No autopsy was made.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Gastric Fermentation.

H. L. Esner, of Syracuse, N. Y., in *Internat. Med. Mag.*, recommends the following, stating his preference for the bismuth salts in combination with benzonaphthol:

R.	Bismuthi subnit. .....gr. v		30
	Bismuthi salicylat. .....gr. v		30
	Pulv. ipecac. .. ..gr. 1/6		01
	Benzonaphthol .....gr. v		30

M. Ft. chart. No. i. Sig.: One such powder after meals.

With the above he gives small doses of belladonna and strychnia, or nux vomica:

R.	Tinct. belladonnæ .....m. lxxv	5	
	Tinct. capsici .....gr. xx	1	30
	Tinct. gent. comp. .....℥i	32	
	Aq. puræ, q. s. ad. .....℥iv	128	

M. Sig.: One teaspoonful before each meal.

As to diet, he recommends the withdrawal of starches, sweets and cereals. Equal parts of milk with lime water in small quantities given at intervals of two hours if stomach is irritable. Later a mixed diet, including beef once daily, also eggs, milk, coffee and fruit for breakfast. Where fermentation is excessive, belching of gas annoying, constipation depressing, with pressure symptoms, he advises the following:

R.	Strychninæ sulph. .....gr. i		06
	Ext. belladonnæ fld. .....m. x		60
	Aq. laurocerosi .....℥iss	48	
	Tinct. gelsemii 3iii	12	
	Aq. puræ q. s. ad .....℥iv	128	

M. Sig.: One teaspoonful before each meal.

Treatment of Ulcer of Stomach.

To relieve the pain, vomiting and acid eructations in gastric ulcer the following is recommended by Ewald:

R.	Magnesiæ ust.		
	Sodii carb.		
	Potassii carb., āā.....gr. lxxv	5	
	Pulv. rhei 3iiss	10	
	Sacch. lactis 3vii	28	

M. Sig.: As much as will rest upon the point of knife, dry on the tongue every hour.

Billings recommends the following to counteract the acidity:

R.	Mist. rhei et sodæ .....℥vi	24	

Sig.: Two to three teaspoonfuls after each meal.

Treatment of Simple Goiter in Adults.

Murray, in *Edin. Med. Jour.*, states that by administering thyroid extract in cases of simple parenchymatous form of goiter the prognosis is most favorable. When the extraordinary demand for thyroidal secretion is thus supplied, the hypertrophied gland is able to pass into resting state and thus undergoes partial atrophy, with consequent diminution in size. He compares this condition with the enlargement of the mammary gland during lactation, which as soon as the child is weaned and the demand for its secretion ceases, returns to a resting condition and decreases in size.

Treatment of Typhoid Fever in Children.

The following outline of treatment in typhoid fever is recommended by Legroux, as noted in *N. Y. Med. Jour.:* 1. Administer a purgative dose of mild chlorid of mercury, 5 to 10 grains in divided doses, as soon as the diagnosis can be made. 2. Administer naphthol according to the following indication:

R.	Beta naphthol .....gr. xxx	2	

M. Ft. chart., No. x. Sig.: One powder every hour. To be given in the diarrhea of lesser intensity.

R.	Beta-naphthol .....gr. xxx	2	
	Bismuthi salicylatis .....gr. xxx	2	

M. Ft. chart. No. x. Sig.: One powder every two hours when the diarrhea is abundant.

And when constipation is present the following:

R.	Beta-naphthol .....gr. xxx	2	
	Magnesii salicylatis .....gr. xxx	2	

M. Ft. chart. No. x. Sig.: One powder every two hours.

To Prevent Recurring Attacks of Hay Fever.

Wright, in *Charlotte Med Jour.*, recommends the employment of frictional massage in this trouble. He states that by this means the mucous membrane of the nose is hardened and thereby lessens its hypersensitiveness, and increases its power of resistance. This can be accomplished by using a piece of surgical cotton on an applicator. Friction must be made over as much of the mucous membrane as possible and applied twice a day. In this way the membranes become accustomed to the contact with foreign substances and will be enabled to withstand the irritation from any exciting agent. He states that there are no less than 20 square inches of mucous membrane in the nasal passages and consequently emphasizes the importance of rendering this area resistant. He states that the results show this method to be a positive preventive.

Treatment of Hemorrhoids.

R.	Chloretoni .....gr. xlviii	3	10
	Adipis benzoatis, q. s. ad.....℥i	32	

M. Sig.: Apply locally; or:

R.	Chloretoni .....gr. xlviii	3	10
	Olei olivæ 3iiss	10	
	Lanolini q. s. ad 3i	32	

M. Sig.: Apply locally night and morning after first cleansing the parts well; or:

R.	Chloretoni .....gr. xxiv	1	60
	Lanolini 3iiiss	14	
	Olei olivæ 3iii	12	
	Liq. ext. hamamelidis .....℥i	32	

M. Sig.: Apply Locally. —*Lyon.*

Eczema.

For the treatment of the ordinary eczemas of children the following is recommended by Leistikow as the best ointment:

R.	Hydrarg. oxidi flavi .....gr. iv-viii		25-5
	Adipis-lanæ		
	Zinci oxidi		
	Amyli, āā .....gr. lxxv	5	
	Vaselini 3iiss	10	

M. Ft. unguentum. Sig.: Apply locally once daily.

Treatment of Eczema.

W. R. Dalton, of New York, in *Phil. Med. Jour.*, still adheres to his theory as to the cause of eczema, that the chyme passing in a hyperacid condition from the stomach into the duodenum renders conditions such that the contents of the intestine can not be rendered sufficiently alkaline for proper metabolism. He believes that this condition leads to nearly all skin diseases. He, therefore, advises elimination of uric acid in conjunction with topical application. He advises strict diet, water in large quantities and at times a milk diet; an aseptic condition of the alimentary tract should be obtained as nearly as possible.

In cases of the strumous diathesis he recommends the following:

R.	Ammon. sulph.-ichthyol 3i	4	
	Acidi arsenosi .....gr. i		06
	Pulv. glycyrrhizæ q. s.		

M. Ft. pilulæ No. xl. Sig.: One or two after each meal.

Kromoyer and Grueneberg, in *Deut. Med. Woch.*, state that there are three indications for treatment of eczema; 1, rest of the skin against irritation by means of powders and salves as protectors; 2, in chronic cases the removal of chronic tissue change by using remedies such as tar, sulphur, green soap, chrysarobin, etc.; 3, indication is the cauterization of the acute inflammatory areas. They state that lenigallol is a

remedy which can be used by the practicing physician with safety. It is the triacetate of pyrogallic acid, and is a white insoluble powder, but when placed on the crusts and pustules breaks up and causes a slight cauterization. They use it as follows:

℞. Lenigallol .....3v 20|
Zinci oxidi .....3ii 8|
M. Sig.: To be used as a paste in mild cases, by spreading upon the skin and covering with absorbent cotton and a light bandage.

To Relieve Toothache.

The *Med. Standard* contains the following for relief of toothache when a physician is called upon to relieve the pain and the services of a dentist can not be secured:

℞. Orthoformi .....gr. xv 1|
Acidi carbol .....gr. xv 1|
Camphoræ .....gr. xl 2|66
Chloralis hydratis .....gr. xl 2|66
M. Sig.: Dry the cavity and apply on absorbent cotton; or:

℞. Cocainæ hyd. .....gr. iss |09
Menthol .....gr. xv 1|
Acidi carbol. .....gr. xv 1|
Olei caryophylli .....gtt. v |33
Alcoholis (camphorated) .....3ii 8|
M. Sig.: Apply locally on cotton.

The *Med. Bulletin* recommends the following as an internal remedy for toothache:

℞. Quininæ sulph. .....gr. ii |12
Acidi hydrobrom. .....gtt. xv 1|
Tinct. gelsemii .....gtt. xv 1|
Syrupi .....3iv 16|
Aq. destil. .....℥i 32|
M. Sig.: To be taken at one dose.

[The dilute hydrobromic acid should be used in the above prescription, which is only 10 per cent. strength of the pure hydrobromic acid; the latter should never be used internally.]

Treatment of Thrush Complicating Dentition.

The following combination has been used with good results in treatment of thrush in infants:

℞. Tinct. moschi (musk) .....gtt iv |25
Aq. calcis .....
Aq. lactucarii, āā .....3ii 8|
Syr. simplicis .....℥i 32|
M. Sig.: Two teaspoonfuls every three hours.

Medicolegal.

As to Liability of Married Women for Doctors' Bills.—The Supreme Court of Wisconsin says, in the case of Stack vs. Padden, that while the statutes of that state have partially removed the common-law disability of married women to bind themselves at law by contract, that extends only so far as necessary or convenient to the beneficial enjoyment of their separate property or the carrying on of their separate business or in relation to their personal services. They can not at law bind themselves and their separate property to pay doctors' bills. But, perhaps with some significance, the court says that it was not dealing in this case with the proposition of whether a married woman possessed of considerable property might bind her separate property in equity by a contract for medical services rendered in treating her and her son.

May Order Private Examination by Selected Physicians.—The Supreme Court of Kansas holds, in the case of the City of Ottawa vs. Gilliland, that in an action to recover damages for personal injuries, the trial court has the power to require the injured party to submit the unexposed portion of his person to a private examination by physicians or surgeons appointed by the court, when, in the exercise of a sound judgment, it appears to the court that the necessity of the case demands such an examination. In actions for personal injuries the exact location and extent of the injury is frequently, it says, the very question in dispute—the fact to be ascertained. While the court, in the exercise of its discretion, should protect the feelings and sensibilities of all litigants, the rights of the parties and the ascertainment of the truth is the chief object of a trial. The purpose of a trial is to mete out exact justice. This can not be accomplished when the truth is suppressed, and this may be done if the court has not the power to ascertain what the truth is. In an action for personal injuries the injured party may call physicians to whom he may expose his person, not for the purpose of affecting a cure, but for the purpose of using this expert evidence to assist him in the trial of his case. He may also expose the injured portion of his person to the jury, observing the rules of decency. Should the litigant be permitted to withhold the truth or the means of ascertaining what the truth is, simply because, in the ascertainment of the truth he may conceive the idea that an indignity is being offered? That is not an indignity which is not intended. May he be permitted to present so much of the truth as he desires, and as he thinks to his interest, and withhold the remainder? This would certainly be his privilege if the court does not possess the power to make an order that will develop the exact truth. But an examination will not be ordered needlessly, or where an improper shock to modesty or feelings of delicacy would be likely. What is decided is only that the court has the power, and in each case it is to be exercised or not according to the sound discretion of the presiding judge. In other words, the Supreme Court thinks it safer in the administration of justice to trust to the courts to protect the sensibilities of the parties in such examinations, so far as it is possible to do so, and beyond that to hold them subordinate in importance and sacredness to the interest of justice, than to hold that a party to a litigation has it within his power to develop so much of the facts as may appear to be to his interest, and then stop the investigation. It also thinks that the great weight of authority favors this view.

School Trustees Must Enforce Board of Health Orders.—The Supreme Court of Indiana takes a different view in the mandamus case of State ex rel. Horne vs. Beil and others from that of the lower court. These proceedings were instituted to compel the school trustees of a city to enforce a rule or order adopted by the county and city boards of health requiring all children to be vaccinated before being permitted to attend any of the schools of the county or city respectively. Upon just what ground the lower court held the complaint in the case insufficient is left to conjecture. Apparently, however, the contention in that court of the school trustees was that the complaint was insufficient, 1, for failure to set out in haec verba or its exact wording the rule adopted by the board of health, and 2, that the rule, as adopted, was ineffectual for failure to set forth the facts constituting the emergency therefor. But the Supreme Court holds that there was no merit in either of these objections. The rule was not the foundation of the action. The rule, when properly adopted and promulgated, as was fully shown by the complaint, had the force and effect of law, and persons called upon to obey it had no right to demand postponement until the wisdom and reasons for the rule were first disclosed to them. Local boards of health are created and authorized by the legislature, and duty bound to adopt and enforce rules and regulations for the arrest and prevention of contagious and infectious diseases in their respective jurisdictions, whenever the necessity therefor arises. The question of necessity must, from the very nature of the object to be attained, rest within the discretion and judgment of the board of health which seeks to adopt and enforce the rule. It is the duty of the board to determine when there has been an exposure to a contagious disease, what constitutes an exposure, when the health of the citizens under its jurisdiction is threatened by an epidemic, and when the preservation of the health of the people demands that the board take action to prevent the spread of such infectious disease. And when the board has acted it will be presumed that sufficient facts existed to warrant its action, until the contrary appears. Furthermore, the court holds that the school trustees, as officers charged with the public duty of

managing the schools of the city, were the proper persons to be called upon to enforce the rule in question in such schools. Wherefore, the primary duty of the school trustees to enforce the rule in controversy being clearly exhibited by each paragraph of the complaint, the court orders that the demurrer thereto be overruled.

Changes About Allowing for Mental Suffering Alone.—The Supreme Court of Indiana in Western Union Telegraph Company vs. Ferguson overrules the Reese case wherein it adopted, in 1890, the doctrine, first announced in Texas, that the negligent causing of mental anguish alone is an actionable wrong. Among the reasons which it gives for changing its attitude on this subject are that, though courts should and do extend the application of the rules of the common law to the new conditions of advancing civilization, they may not rightfully create a new principle unknown to the common law, nor abrogate a known one, and that the mental-anguish doctrine is not a native sprout, but a foreign graft. Then, it says, there is no open or practicable means by which the damages occasioned by a negligent act that causes only mental anguish can be assessed. The parties to a lawsuit should have an even chance. The damage for which the plaintiff seeks compensation should be shown by evidence that the defendant may test, impeach, refute. When the plaintiff asks to recover for physical injuries, open or hidden, the court may require him, as a condition of prosecuting his case, to submit his person to an examination by medical experts, who may be called as witnesses by the defendant. The determination of the nature and extent of the physical hurt is not dependent upon the eloquence of the plaintiff as a witness, but upon the eloquence of the facts established by the evidence on both sides, which may not have included the verbal testimony of the plaintiff at all. Now, the mental anguish for which damages are allowable is incident to and dependent upon the nature and extent of the physical injury. And, although there can be no absolute standard for measuring mental anguish in terms of money, nor for measuring physical injuries, yet it is apparent that the differences between the physical injuries in two cases, established by evidence open to both sides, furnish a means of testing in some degree the existence and extent of the mental anguish of the respective plaintiffs outside of their mere assertions. But the mental-anguish doctrine awards damages for a state of mind that is not at all dependent upon or measurable by a cause of action existing outside the mental contemplation of the plaintiff, and provable by evidence open to both parties. Again, to be a law of equal justice and no discrimination, the mental-anguish doctrine should assert, as a broad general principle, that damages are recoverable, for mental distress alone, from every person whose negligent act causes that condition, whereas the rule is not the rule against any one except telegraph companies, and not against them uniformly. The difficulties of navigation without chart or compass, the court continues, are understandable without experiment, but the experiences of the courts that uphold the mental-anguish doctrine probably outrun any mere a priori conjecture as to possibilities. So, to apply its own phrase, it does not propose any longer to tempt the seas of uncertainty, in this direction, but to travel the ancient highway.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, August 1.

1 *The Fight Against Tuberculosis in the Light of the Experience Gained in the Successful Combat of Other Infectious Diseases. Robert Koch.
2 *Scientific Research: The Indispensable Basis of All Medical and Material Progress. (To be concluded.) George B. Ferguson.
3 *Practical Blood Examination. Henry F. Hewes.
4 Rachitic Deformities of the Spine. J. S. Stone.
5 *Measurements of Girls In Private Schools and of University Students. Arthur MacDonald.

Medical Record (N. Y.), August 3.

6 *Hemolysis. S. J. Meltzer.
7 *The Principles of Diagnosis of Lesions of the Spinal Cord. John Punton.
8 Cerebral Abscess; Operation, Recovery. Fletcher Gardner.
9 *Limitations of Surgical Work for the Insane. William J. Mayo.
10 *The Primary Treatment of Infected Wounds with Tincture of Iodin. Carl Beck.

Philadelphia Medical Journal, August 3.

11 Human and Bovine Tuberculosis. Leonard Pearson.
12 *The Importance of a More General Study of Disease of the Nervous System. Wharton Sinkler.
13 *The Mosquito an Insignificant Factor in the Propagation of Yellow Fever. John H. Purnell.
14 Typhoid Fever with Perforation of the Colon and Gall-Bladder; Operation; Death; Autopsy. Herman B. Allyn.
15 A Post-typhoid Case in Which During Four Months the Following Operations Were Performed. Andrew J. Downes.
16 Typhoid Fever Occurring in a Tuberculous Patient, and the Influence of Tuberculin on this Condition. Erwin Fischer.

American Medicine (Philadelphia), August 3.

17 *Important Sequels Resulting from Delayed Operation in Appendicitis. A. Stewart Lobingier.
18 *Two Cases of Vicious Circle After Gastroenterostomy. (To be concluded.) Theodore A. McGraw.
19 *The Subarachnoid Injection of Cocain for Operations on all Parts of the Body. A. W. Morton.
20 Twenty Years' Experience as Surgeon to Cambria Iron Company. W. B. Lowman.
21 Report of a Case of Hystero-epilepsy, in Which the Climax of the Seizure Was Expressed by Discharge of Blood Through the Intact External Auditory Canal. K. K. Wheelock.
22 *Some New Therapeutic Applications of Europhen. W. E. Thomas.
23 *Scientific Research: The Indispensable Basis of all Medical and Material Progress. George B. Ferguson.

New York Medical Journal, August 3.

24 *"Inoperable" Recurrent Cancer of the Breast; Relief by Beatson's Method. Robert Abbe.
25 *Cancer, Particularly Cutaneous Cancer. Ellice M. Alger.
26 *A Year's Experience in the Treatment of the Eustachian Tube by Means of the Electro-Bougie. Thomas J. Harris.
27 *Native Medical Practice in the Philippines, with Introductory Observations. Philip F. Harvey.
28 *Flagellated Malarial Parasite: Observations upon Its Structure, Showing that the Flagella are Performed in the Body of the Organism. John T. Moore.
29 Speculum of Bone, from Shot Fracture of Skull, Which Rested Against the Brain for Forty-four Years. D. S. Lamb.

Cincinnati Lancet-Clinic, August 3.

30 *Some Clinical Uses of Digitalis. Robert Ingram.
31 Clinical Reports on the Use of Digitalis. Frank Scheerer.

Medical News (N. Y.), August 3.

32 *Injuries of the Head in the New-born. Andrew F. Currier.
33 *The State of the Gastric Secretions in Chronic Rheumatism and Rheumatoid Arthritis. Frank H. Murdoch.
34 *The Administration of Ethyl Chlorid as a General Anesthetic, with Description of a Mask for Its Use. Martin W. Ware.
35 *The Therapeutic Uses of Tri-chlor-tertiary-butyl-alcohol. E. M. Houghton.
36 Belladonna vs. Scopolia. Reynold Webb Wilcox.
37 *Ulcer of the Duodenum Considered from a Surgical Standpoint. D. S. Fairchild.

St. Louis Medical Review, August 3.

38 *The Treatment of Gastro-enteric Infection in Infants. John Zahorsky.

Pediatrics (N. Y.), July 15.

39 Tuberculosis of Bone. J. Garland Sherrill.
40 *Growing Pains: What Are They? Their Treatment. J. A. Hale.
41 Multiple Sclerosis in a Child 5 Years Old. Philip F. Barbour.

Medical Fortnightly (St. Louis), July.

42 Diseases of the Stomach. (Continued.) J. M. G. Carter.
43 Saturnine Nephritis. Dr. Lancereaux.
44 "Ergoapical" (Smith): Its Therapeutic Indications with Clinical Notes. C. W. Canan.

American Practitioner and News (Louisville, Ky.), June 1.

45 *The Necessity for Medical Organization. J. N. McCormack.
46 Report of Clinical Cases. M. F. Coomes.
47 *The Sterilization of Suture Material. August Schachner.
48 *Sterility in Women. Lewis S. McMurtry.

Medical Age (Detroit, Mich.), July 25.

49 Foreign Bodies in the Urethra and Bladder. H. E. W. Barnes.
50 Dementia Praecox. Gershom H. Hill.
51 Report of Surgical Cases (Appendicitis, Tubo-ovarian Abscess, Etc.) Wm. H. Wathen.

Pennsylvania Medical Journal (Pittsburg), July.

52 Tubercular Peritonitis in Women. F. F. Simpson.
53 Anatomy of Hanging. Edmund W. Holmes.
54 Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. W. T. English.
55 *How Should the Practice of Medicine be Legally Defined? Henry Beates, Jr.
56 An Address on Hydrophobia. A. Leteve.
57 Smallpox—Its Differential Diagnosis from Other Diseases. J. J. Coffman.
58 Chloretone as an Hypnotic and Local Anesthetic. E. M. Houghton.

The Clinical Review (Chicago), August.

59 Hepatic Cirrhosis; Congenital Idiocy; Sporadic Cretinism. Isaac A. Abt.
60 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Archives of Otology (N. Y.), June.

61 A Case of Cerebellar Abscess; Operation; Recovery. W. G. Richards.
62 *Functional Significance of the Round Window. A. Frutiger.
63 *Carcinoma of the Ear. Leopold Treitel.
64 *Adenoid Operation on the Pendant Head Under General Anesthesia. P. Rudloff.
65 *Tympanic Vertigo Due to Obstruction Within the Eustachian Tube. Wm. P. Brandegee.
66 A Correlation of One Hundred Successive Mastoid Operations. Edwin W. Pyle.
67 Empyema of the Right Maxillary, Ethmoidal, and Sphenoidal Sinuses with Sudden Blindness of the Left Eye. Operation; Recovery of Sight. T. H. Halsted.
68 A Case of Tuberculosis of the Ear, with Autopsy. Henry L. Swain.

Woman's Medical Journal (Toledo, Ohio), June.

69 Health Fads of To-day. Grace P. Murray.
70 A Case of Sporadic Cretinism. Emma Warner Demaree.

American Journal of the Medical Sciences (Philadelphia), August.

71 *Anesthetics in Heart Disease. John M. T. Finney.
72 *Cardiac Accidents After Anesthetization. Alfred Stengel.
73 *Pre-existing Heart Disease in Reference to Surgical Operations. William J. Mayo.
74 *The Safest Anesthetic to Use in Organic Diseases of the Heart and Vessels. H. A. Hare.
75 *Some Conditions Other than Aortic Aneurysm Which Determine the Occurrence of the Tracheal Tug. Henry Sewall.
76 *Primary Sarcoma of the Thyroid Gland. August J. Lartigau.
77 Splenic-Myelogenous Leukemia, with Pulmonary, Laryngeal and Fancial Tuberculosis. Arnold Sturmdorf.
78 A Case of Cervical and Bulbar Tabes, with Necropsy. Solomon Solls-Cohen and Wm. G. Spiller.
79 Some Observations on Typhoid Fever Complicated by Croupous Pneumonia, with Reports of Four Fatal Cases. Henry M. Fisher.

Medical and Surgical Monitor (Indianapolis, Ind.), July 15.

80 On Professional Practice and Morals in Relation to Life Insurance Work. W. M. Vinnedge.
81 Case Reports—An Operation for Closure of the Defect in Double Hare-lip, with Absence of the Inter-maxillary Bone. Duehrssen's Operation in Eclampsia Gravidarum. J. Rilus Eastman.
82 Fibroid Tumors of the Uterus. Frank C. Ferguson.
83 The Evolution of Surgery. Joseph Eastman.

Archives of Ophthalmology (New Rochelle, N. Y.), July.

84 A Case of Favus of the Upper Lid. Arthur Gloor.
85 *Experimental Investigations on the Pathogenesis of Choked Disc. A Merz.
86 A Choroidal Sarcoma Producing Rupture of the Cornea in an Unusual Manner. Frederick Herman Verhoeff and Fred Maurice Spalding.
87 Report of a Case of Pulsating Exophthalmos. E. Oliver Belt.
88 *The Sterilization and Care of Instruments. Walter B. Lancaster.
89 *On Optic Nerve Atrophy Associated with Cranial Deformity. Harry Friedenwald.
90 Clinical Contributions. Herpes Zoster Ophthalmicus Resulting in Loss of the Eye. Double Suppurative Irido-choroiditis in Association with Purpara Hemorrhagica. Robert L. Randolph.
91 On the Injection of Sterile Salt Solution into Collapsed Eyeballs. Report of Two Cases. Elmer G. Starr.

Vermont Medical Monthly (Burlington), July 25.

92 The Influence of the Bacillus in Pulmonary Tuberculosis. Hubbard W Mitchell.

Interstate Medical Journal (St. Louis), July.

93 An Experimental Study of Antiperistaisis. Richard Muehsam.
94 *Oral Indications of Physical Conditions. Carl Theodor Gramm.
95 Clinical Observations Regarding the Action of Quinin Eosolate in Malaria. A. G. Clopland.
96 Hydragogin in Dropsy. E. Tutschulte.

Iowa Medical Journal (Des Moines), July 15.

97 Infection Through Food. W. B. LaFrance.
98 Mastoid Disease, Double, Following Middle Ear Disease, Resulting from an Acute Infectious Disease; Operation; Complete Recovery; General Considerations. C. A. Boice.

New York State Journal of Medicine (N. Y.), August.

99 *Cocainism. T. D. Crothers.
100 *The Diagnosis of Leukemia from the Standpoint of the Blood Changes. C. Y. White.
101 *The Treatment of Pulmonary Tuberculosis, with an Additional Note on Climate. C. G. Campbell.
102 *The Present Status of Jonnesco's Operation. Marcell Hartwig.
103 *The Technique of Bloodless Work. Robert H. M. Dawbarn.
104 *The Pathology, Diagnosis, Special Prophylaxis and Treatment of Tuberculosis of the Middle Ear. Seymour Oppenheimer.
105 *Ophthalmia Neonatorum: Its Pathology, Prophylaxis and Treatment. John E. Weeks.

International Journal of Surgery (N. Y.), August.

106 Nose and Throat Work for the General Practitioner. (Continued.) G. L. Richards.
107 Some Surgical Emergencies. W. D. Williamson.
108 *Surgical Introspection. H. W. Chapman.
109 Remarks on Appendicitis with Especial Reference to the Technique of the Operation. J. J. McAdam.
110 *Some Views on Curettement of the Uterus from the Standpoint of a General Practitioner. E. D. Gardner.
111 Regional Minor Surgery. (Continued.) George G. Van Schaick.
112 Post-nasal Tumor of Enormous Size—Its Removal with the Galvano-cautery Snare. F. C. Drenning.
113 Recollections of the First Operation Performed Under Anesthesia. G. M. Angell.

The Laryngoscope (St. Louis), July.

114 *The Nose and Throat in the History of Medicine. Jonathan Wright.
115 *Serous Diseases of the Maxillary Antrum with a Report of Two Cases. W. E. Casselberry.
116 *Tonsillotomy Rash. Wyatt Wingrave.
117 Report of a Case of Malignant Disease of the Tonsil. Hal Foster.
118 A Case of Stenosis of the Larynx Following Fractures; Operation, Recovery. Arthur W. Watson.
119 *Early Treatment of Mastoiditis. Charles W. Richardson.
120 *The Production of Local Anesthesia in the Ear. Homer Dupuy.
121 Clinical Notes on Adrenalin. Norton L. Wilson.
122 A New Cutting Forceps for Operating in the Post-nasal Space. William F. Clevenger.

Southern Illinois Journal of Medicine and Surgery (Metropolis), July.

123 Some Therapeutic Indications for Salol. C. E. Tucker.
124 Our Successes and Our Failures. R. H. Jacobs.
125 Holocain Hydrochlorid. David T. Kyner.

Pacific Medical Journal (San Francisco), July.

126 When Fortune Smiles. Antrim Edgar Osborne.
127 *Prevention and Cure of Consumption. Louis Barkan.
128 Some General Observations as to the Origin of Tuberculosis. E. H. Smith.
129 Diphtheria and Its Treatment. G. W. Mallery.
130 *Circumcision. George I. Bluhm.
131 Varieties of Cholesteatoma. J. Holinger.

Southern Medical Journal (La Grange, N. C.), July.

132 The Conservative Treatment of the Uterus. John Thames.
133 Therapeutics of Small Doses. James H. Gray.

Southern California Practitioner (Los Angeles), July.

134 *Sub-conjunctival Salt Injections in Diseases of the Inner Eye. Adolf Kraemer.
135 *Pneumonia. D. R. Van Slyke.
136 Infant Feeding. George Deacon.
137 Steps in the Prevention of the Spread of Tuberculosis. F. M. Pottenger.

Therapeutic Gazette (Detroit, Mich.), July 15.

138 The Action of Antitoxin. Joseph McFarland.
139 The Treatment of Diphtheria Other than with Antitoxin. J. P. Crozer Griffith.
140 The Present Aspect of the Antitoxin Treatment of Diphtheria. J. Dutton Steele.
141 A Case of Tea-intoxication with Spinal Symptoms. Alfred Gordon.
142 *Hepatic Inadequacy and Its Relation to Irregular Gout with Special Reference to Treatment. I. Burney Yeo.

Texas Medical Journal (Austin), July.

143 On Axis-traction Forceps. William Keiller.

American Journal of Surgery and Gynecology (St. Louis), July.

144 A New Method of Performing Hysterectomy. Byron Robinson.
145 *The Present Status of the Bottini Operation in the Treatment of Prostatic Hypertrophy. Leonard Freeman.
146 Severe Hemorrhage and Sepsis Following Nasal Operation in a "Bleeder." William Cheatham.
147 Vaginal Drainage in Non-operative Cases. C. M. Fulton.
148 Maggots in the Nose. L. Brannon.
149 *Myomectomy of Nine Myomas During Pregnancy and Delivery at Term. John Duncan Emmet.
150 Wandering Kidney. (Concluded.) Emory Lanphear.
151 A Case of Abdominal Aneurysm Treated by Abdominal Section and Introduction of Wire. F. W. Parham.
152 Neurasthenia: Its Relation to Diseases of Women, and Its Treatment. L. H. Schwerin.

Toledo Medical and Surgical Reporter, August.

153 Practical Remarks on Diseases of the Ear. F. J. Dietz.
154 How to Find the Fissures of the Brain, Make Trap-door Operations, Etc. Allen DeVilbiss.

Charlotte Medical Journal, July.

155 Rheumatism. W. P. Whitington.
156 Acromegalia. T. L. Cornwell.
157 The "Knox Improved Monk's" Needle Holder. A. W. Knox.
158 Some Considerations on Specific Urethritis—Its Complications and Treatment in the Male. F. B. Cullens.
159 Ethical Side of the Medical Profession. D. W. Sherrod.

AMERICAN.

1.—See THE JOURNAL of July 27, p. 259.

3.—Ibid., p. 327.

3. **Blood Examination.**—The scope of practical blood examination for the determination of anemia; its severity and type; the existence of leucocytosis and its extent, including the diagnosis of the conditions of myelogenic and lymphatic leukemia, with determination of the presence or absence of blood parasites; the diagnosis of malaria, filariasis and relapsing fever; the determination of the existence of serum reactions such as the Widal test and the presence in the blood also of bacterial organisms, that is, of septicemia, are first stated briefly by Hewes. Next, the various methods of employing the test for these conditions are critically described. The paper will be found useful for reference.

5. **Measurements of Girls.**—The results obtained by MacDonald in measurements of girls seem to prove that children of the non-laboring class are superior in physique and have a greater acuteness of sensibility. Girls in private schools are less sensitive to locality on the skin and more sensitive to pain before than after puberty. Among the average women he finds the blondes inferior in all measurements and less sensitive to pain. The first-born in both men and women are more sensitive to pain than the second, and the second less sensitive than the later born. Investigation of larger numbers are, however, necessary. The dolichocephalic in both sexes are less sensitive to pain than the brachycephalic. University women are more sensitive than university men. It seems that in the female sex there is greater acuteness of sensibility than in the male.

6. **Hemolysis.**—Meltzer's article is largely a review of the literature and he also adds his own experiments. He has tested the agglutinating and hemolytic power of normal bullock serum and the effect of its stay in the peritoneal cavity. His chief conclusions are stated as follows: Normal and immunizing serums lose their hemolytic power during a prolonged stay in the peritoneal cavity. The loss is due to the disappearance of the toxic component, the complement of Ehrlich, or the alexin of Bordet and Buehner. The disappearance means absorption, and the disappearance of the complement in much greater proportion than the balance of the fluid means elective absorption. However, as this elective absorption takes place in the cadaver, it can not be a vital phenomenon, and he thinks more probably it has its explanation in some laws of osmosis or inhibition.

7. **Spinal Lesions.**—The diagnosis of spinal lesions is discussed by Puntou, who summarizes the various steps in the diagnosis as follows: 1. Determine whether the symptoms are due to spinal lesions by reference to your knowledge of function of its several parts, thus excluding those symptoms due to cerebral or peripheral lesions. 2. Next determine whether the symptoms are due to organic or functional disease, or are caused by malingering. This usually can be done by careful methodical examination of all parts involved, together with a study of the mode of onset of the symptoms, their duration, nature and character and all the other facts connected with the family, personal, and clinical history of the case. 3. Next determine the exact location of the lesion, whether extra-medullary, intra-medullary, systemic or non-systemic. This requires ability to interpret the nature and character of symptoms produced in conjunction with other causes, and the known liability of certain structures to such lesions. 4. When all these questions are correctly answered, we are then prepared to make our diagnoses and base on them the prognosis and treatment.

9. **Surgery in the Insane.**—Mayo gives his experience with surgical work in the St. Peter and Rochester hospitals, of Minnesota. He classes the indications into three general groups: 1. Those in which surgery relieves the physical ailment without reference to mental conditions. 2. Operations for the purpose of relieving mental symptoms. 3. Operations for the public welfare. As regards the first he thinks there is no question as to their value, and mentions a number of conditions in which he has found utility in operation; thus, hernia, which, owing to their habits, patients are often unable to have relieved by ordinary mechanical methods, has been treated by operation. Also within the last four years considerable has been done for the relief of prostatic hypertrophy, gall-stones, cataracts, etc. In the second group, surgery has but a limited sphere. In epileptics there is but little prospect of good after two years of disease, and few epileptics are admitted to hospitals for the insane who have not suffered from the disease longer than this. Nevertheless, amelioration has been produced in two cases and he thinks that in some cases it may not be only warranted, but advisable. The greatest claims have been made for gynecologic work. The insane woman should be relieved, not because of her mental condition, but on general principles, but there is little reason for hoping for more than the betterment of insanity. He has seen few, if any, cures brought about in this way, but much relief in suitable cases. Operations for the public welfare are of questionable propriety, and would not likely be sanctioned at the present time. Mayo, however, endorses Brower and Ochsner's suggestion of unsexing male patients by vasectomy, which is a safe, and may be made a painless operation. An analogous operation in women would be more dangerous and not permissible. Out of a total of 60 females and 40 males operated on for all causes, 16 per cent. of the women and 12 per cent. of the men were mentally improved about as we would expect from the physical relief afforded. As regards their physical condition nearly all were improved. Only one cure from insanity was reported. In conclusion, he says that the insane have from the surgical standpoint the same rights as the sane, no more, no less.

10. **Tincture of Iodin in Infected Wounds.**—After first noticing the experiments and studies of Schimmelbusch and others as regards the treatment of infected wounds, Beck gives his experience with the use of tincture of iodin, which he thinks possesses a permeating power to a certain extent antiseptic. The tincture was applied once over the carefully dried wound surface. Fifteen minutes afterward examination of the tissues showed evidence of permeation, and no cultures could be obtained from such areas. No general disturbance was observed, though in two cases iodin reaction was found in the urine three or four hours after the application. All the cases took a favorable course.

12. **Nervous Diseases.**—The address of Sinkler calls attention to the importance of greater familiarity of the physician with some of the leading nervous disorders, and to the advances that have been made in their diagnosis and treatment. He thinks a special course in neurology should be given and a chair of clinical neurology established in every medical school.

13. **Yellow Fever.**—The view of Reed, Carroll, and others as to the part the mosquito plays in the production of yellow

fever is combated by Purnell, who adduces numerous cases which he thinks tend to show the possibility of infection by other means, fomites, etc. He admits that his views will be criticized as not being exact enough, but his conviction is that the mosquito has been and will continue to be only a limited factor in the spread of yellow fever.

17. **Appendicitis.**—The danger of delaying operations for appendicitis is emphasized by Lobingier, who cites a number of cases where intestinal obstruction, peritonitis, septic embolism, gangrene, venous thrombosis, metastatic abscess, etc., followed delay in operation. He thinks the evidence on record appeals for early diagnosis and treatment, as opposed to procrastination and delay.

18. **Gastro-Enterostomy.**—The "vicious circle" here mentioned consists in the contents of the stomach passing in the afferent limb of the jejunum, that is to the duodenum instead of following their proper course through the efferent portion of the jejunum into the ilium, causing regurgitation into the stomach, distention, pain, hiccoughing and death by exhaustion. He practiced gastro-enterostomy over ten years without meeting a case of this kind, when two in quick succession aroused him to appreciate the danger.

19. **Spinal Cocainization.**—Morton has operated on a large number of cases by spinal cocainization and has collected reports of cases from other physicians. He thinks there can be little doubt as to the advantage of the method in cases where general anesthesia is contra-indicated on account of cardiac or renal disease. Since reporting the above cases he has made 61 more operations by this method, 15 of which were operations on the upper extremities or head with complete analgesia.

22. **Europhen.**—Thomas has employed europhen, which is produced by the action of iodin on isobutylorthocresol in a solution of potassium iodid. He finds it an antiseptic preparation which depends not alone on the freeing of nascent iodin, but also on the liberation of its cresol. He uses it in the dressing of wounds and internally in many cases where iodin is indicated, such as in syphilis, and as an intestinal antiseptic in typhoid fever, where he has found it efficient. He not only uses it where potassium iodid is not well borne, but also as an alternative with it in these cases. He had tried it also in tuberculosis with good results. From his experience he assumes that we have in this drug an iodin compound fully as efficacious as iodin in surgery and internally the most reliable and satisfactory means of giving iodin.

23.—See The Journal of August 3, p. 327.

24.—See editorial in The Journal of August 10, p. 390.

25. **Cutaneous Cancer.**—While internal cancer rarely originates from benign growths, this is very commonly found to be the case in cutaneous cancer, as is shown by the frequency of labial epithelioma. Alger calls attention to this fact. He does not seem to favor the parasitic theory and rather holds that it may be a special derangement of the reproductive activity of the higher cells. All cancers have certain clinical features in common; there is a hardness beyond that of the surrounding tissue and a tendency to ulceration, characterized by hard, waxy, distinct margins with dilated blood vessels. Error in diagnosis, which is often difficult, may be due to sarcoma, which is rare, develops more rapidly, has secondary deposits earlier, affects younger persons as a rule, and has a comparatively slight tendency to ulceration. Tuberculosis, besides its earlier occurrence, has none of the indurations of cancer. Syphilis, which causes the most errors, develops much faster; while indurated it has none of the characteristic hardness of epithelioma and ulcerates much sooner; has a more profuse discharge and a tendency to heal on one side while advancing on the other. In many cases of cutaneous cancer the disease might hardly be considered malignant were it not for the possibility of metastasis. Dissemination is governed by two factors: 1. Proximity of lymphatics and vessels. 2. Looseness of structure on the part of the cancer, leading to easy detachment of the fragments. Fortunately in cutaneous cancer dissemination is comparatively rare, at least in the superficial varieties. As regards treatment, Alger advises against any operation that is not thorough and cancers in old persons and superficial epithelioma are much less in need of active interference, because they are commonly indolent. Growths in the vicinity of the active lymphatics should be removed at once. Great care should be taken as regards instrumental interference. The danger from dissemination by instruments renders the use of infiltration anesthesia dangerous. Where lymphatic involvement has not yet taken place and is not to be considered, caustics and especially arsenic are suggested. In well-marked cancer where dissemination has taken place, amputation will often prove to be a conservative measure. The inoperable cases must be treated palliatively, according to their individual needs.

26. **The Electro-Bougie in the Eustachian Tube.**—The use of this instrument is discussed by Harris, who gives his results and feels he is warranted in offering the following conclusions: 1. The electro-bougie has a place in our aural-therapy, though a less important one than was at first supposed. 2. It should be used after, and not before, other methods of treatment. 3. It will be most liable to fail if any associated internal ear disease is present. 4. Its results are not always permanent—the stricture may re-form—we may hope rather for a diminution than a disappearance of the tinnitus. Two cases totally relieved out of 25. Two cases partially relieved. 5. Its use is not without danger, and a proper knowledge of the anatomy of the parts and of the technique is essential. 6. It is a question whether the process is a true electrolytic one, or if in many instances the obstruction is a true fibrous stricture.

27. **Native Medical Practice in the Philippines.**—Harvey's article is an interesting one on the medical practice of the natives of the Philippines, especially the Mindanaoan Moros, but it is too full of details to be abstracted.

28. **Flagellated Malarial Parasite.**—Moore from his study of the plasmodium in the human blood, believes that he has observed the flagella or microgametes detach themselves from the hyaline bodies. He has never yet been able to follow them to the granular or female body, though he has several times seen them detached. He believes that they are formed within the hyaline bodies and find their way outside.

30. **Digitalis.**—Ingram finds digitalis among the most valuable drugs for certain cardiac irregularities not due to indigestion, which is aggravated by the use of this drug. The functional difficulties met with in neurotic subjects may be, but are not always benefited, and overstrain from exertion without demonstrable lesion is often much relieved. The dilatation of the right heart accompanied by cardiac disease may be, but is usually not much improved by the drug. Mitral insufficiency is one of the diseases in which it is most useful, but the more it varies from the edematous type, the less good will digitalis do. Cases where there is much pain and depression and but little regurgitation are not so often benefited, though many are improved. Sometimes vomiting caused by digitalis prohibits its use. In mitral stenosis it is of great advantage to prolong the diastole and in this way digitalis helps; both stenosis and insufficiency of the tricuspid valves may be benefited in the same way as in the mitral valve, but in most cases it does less good in diseases of the right side of the heart. Aortic insufficiency is a condition in which digitalis is often harmful. It should be given only when the heart is very rapid or there is evidence that there is not much regurgitation or where there are other reasons, such as coincident presence of aortic obstruction, for wishing to strengthen and regulate the contraction. The dose should be small and the effects carefully watched. Sometimes in aortic stenosis it may be advisable to increase the force of the beat, but most cases do not require drugs, for the cardiac hypertrophy itself is sufficient.

32. **Cranial Injuries in the New-Born.**—The possibility of accident and secondary results from injury of the cranium during birth are reviewed by Currier, who holds that in every case where the labor has been severe and protracted, the

cranium should be carefully examined to detect a possible fissure, fracture or depression of the bone. Treatment should be instituted as soon as possible after birth. It should be much the same as would be the treatment at later periods of life, a similar regard being paid to details.

33. **Gastric Secretion in Rheumatism.**—Little has been written regarding the subject of gastric secretion in chronic rheumatism and rheumatoid arthritis, and Murdoch gives the results of examinations in 6 cases—5 of chronic rheumatism and 1 of rheumatoid arthritis. In these cases he tested for this secretion with the Günzburg and Töpfer methods in each case and found varying conditions. He thinks that the diet should be prescribed in view of the condition of the joint, but in each case as required to suit the existing state of the gastric secretions.

34. **Ethyl Chlorid.**—After alluding to an earlier article published in the *Medical Record* advocating the use of the drug, Ware gives his opinion as to the value of ethyl chlorid as an anesthetic. He finds it less expensive, more convenient, and less formidable in its effects than nitrous oxid. The agent, however, is of service only in minor operations and as a preliminary to cut short the agonies of the earlier stages of chloroform and ether anesthesia. The intelligent application of ethyl chlorid will demonstrate it a useful and valuable agent in minor surgery in the hands of the general practitioner, largely supplanting laughing gas.

35. **Tri-Chlor-Tertiary-Butyl-Alcohol.**—The use of this drug which was proposed by Aldrich and Houghton in THE JOURNAL in 1899, is again discussed by the latter. Its antiseptic and hypnotic effects are both noted. From what has been learned, he believes he is warranted in drawing the conclusion that owing to its moderate antiseptic, local anesthetic and hypnotic properties, its apparent harmlessness to animal tissue when brought into direct contact with it or when absorbed and distributed to various parts of the body by the circulation, it bids fair to have a wide field of usefulness. One of the most important points to be determined is its dosage, which needs yet to be worked out. A case is referred to by him where he has found it of benefit when employed as a local anesthetic. As a surgical dressing in the field, it is being tested by army surgeons. It has been given and recommended by various individuals, Donald, West, Baumeister, and others, and he has had reports from physicians who employ the drug in insane asylums. It would seem that it can not be employed with entire safety in motor exhaustion of general paresis, though other types of mental defect appear generally to be benefited.

37.—See abstract in THE JOURNAL, xxxvi, p. 1493.

38. **Gastro-Enteric Infection in Infants.**—The treatment of this condition varies somewhat according to the nature of the poison and idiosyncrasy of the individual and is stated briefly by Zaborsky as follows: "1. Take infant from a milk diet. 2. Administer a purgative. 3. Give some cereal decoction for one to three days. 4. Prescribe a mild antiseptic mixture which will do no harm to the patient. 5. Treat the dangerous symptoms. 6. Gradually restore a normal diet, by adding small quantities of meat broth, whey, or human milk to the cereal mixture. 7. Cow's milk should then be given in very small quantities added to the cereal decoction. 8. The amount of food should be apportioned to the power of the digestive apparatus. 9. The majority of cases get well rapidly, the persistent cases require careful dieting and nursing rather than medication."

40. **Growing Pains.**—Growing pains of children are considered by Hale as evidences of rheumatism under different conditions from its existence in adult life and attended with complications secondary to the disease. Salicylic acid can not be unreservedly employed in children, as its toxic effects are more marked with them, and he reports cases where he has used aspirin in its stead with good results.

45.—See abstract in THE JOURNAL, xxxvi, p. 1727.

47.—Ibid., p. 1726.

48. **Sterility in Women.**—McMurtry finds that sterility may result from disease involving any portion of the genital organs, from the pelvic peritoneum to the vulva; the most potent cause originating in changes following inflammation. Hence for the most part the prevention and treatment of sterility is synonymous with the treatment and the prevention of pelvic inflammation. He calls special attention to the evils of the practice of frequent vaginal douching in healthy women.

55. See THE JOURNAL, June 15, p. 1728.

62. **Functional Significance of the Round Window.**—The summary of Frntiger's paper is given as follows: "1. Whenever the oval window is greatly altered pathologically, and the lower-tone limit much reduced, hearing for bass tones can be improved by using tampons to the round window membrane. This membrane, therefore, seems also to conduct sound from the tympanum to the labyrinth; under normal conditions, however, only such higher tones, perhaps from the small octave (inclusive) upwards. 2. The round window membrane serves, normally, but chiefly in conjunction with the two aqueducts, to regulate the variations in tension of the labyrinthine fluids, namely: 1. In case of wave movements produced in the labyrinthine fluids by tones passing through the chain of ossicles. 2. In sudden shock produced against the chain of bones by direct or indirect force."

63. **Carcinoma of the Ear.**—The infrequency of aural carcinoma is offered as a justification of the report of the cases here given, and their discussion. Treitel considers that suppuration in the auditory canal leads to susceptibility to epithelioma just as the lips become susceptible in pipe smokers, and eczema also favors the condition. The predilection of malignant growths for parts where the skin and mucous membrane meet would further strengthen the belief that the lower end of the ear is specially vulnerable. The chance of benign tumors becoming malignant is supported by the occurrence of aural cancer, but the obscurity of the pathology of the condition is very great at present. He calls attention to the limits of the tumors by the dura in these cases. The early paralysis of the recurrent laryngeal nerve was probably due to enlarged glands. The condition of the blood vessels and almost complete obliteration of the sigmoid sinus and the abrupt termination of the carotid at the base of the skull must have developed very slowly, as there was no congestion to indicate rapid obstruction. The prognosis depends upon the early recognition of the condition and early radical operation.

64. **Adenoid Operation.**—Rudloff has followed Rose's suggestion in adenoid operation of having the head pendent to prevent blood flowing into the pharynx. He calls attention to an accident which occurred in one case, viz., wounding of the carotid artery. When the adenoma arises in the Rosenmüller's fossa injury to the lateral walls may result in wounding of the carotid, hence the importance of special care in the manipulation of instruments in this position.

65. **Tympanic Vertigo.**—For the relief of tympanic vertigo, due to Eustachian obstruction, Brandegee finds nothing so satisfactory as electrolysis—the introduction of the electric bougie into the tube. Its advantages as given by him are: 1. Ease in manipulation. 2. Minimum amount of pain to the patient. 3. Minimum amount of trauma to parts involved. 4. Thorough destruction of the stricture or occlusion. 5. The force necessary is only sufficient to insure good contact for the current. 6. The parts of the apparatus which come in contact with the tube can be readily rendered sterile. When the mouth of the tube is well anesthetized with cocain, which is easy generally, the operator can then slowly and almost painlessly pass through any stenosis. It should be understood, however, that, in this, electrolysis, not cauterization, is desired. To produce this effect only a mild current with comparatively low voltage should be used. Experience has shown that it is not well to use the electric bougie too frequently. No excessive force should be employed and inflation by catheterization should not be attempted for at least forty-eight hours after treatment on the account of the slight reaction and for fear of emphysema. It is often quite necessary to bougie several times before we have a perfectly simple and patent tube, and finally it is essential

that the catheter and bougie should be sterilized by boiling. After the patency of the tube has been established, air and vapor massage by the catheter is indicated, while attention should be given to the adjacent cavities, local surgical procedures being adopted when necessary. Six cases are reported of relief of obstructive tympanic vertigo from the Eustachian tube.

71. **Anesthetics in Heart Disease.**—After reviewing the possibility of accidents occurring during or after anesthesia from chloroform, ether, etc., Finney finds that as regards ether, the contraindications are rather respiratory than cardiac, while chloroform is more dangerous in all cases of weak heart. From a study of 142 cases, he thinks that in myocardial conditions only do anesthetics exert any markedly bad effects. In valvular disease their influence is very slight, though appreciable, and in functional diseases insignificant. He emphasizes the importance of the part taken by the anesthetizer, which is in some cases more important than that of the operator himself, and the need of a thoroughly competent corps of anesthetists in our hospitals.

72. **Cardiac Accidents After Anesthetization.**—Stengel offers tentatively the following conclusions: In all cases of cardiac disturbance after operation it is difficult to determine whether the result is due to the anesthetic or to the operation. In many cases of recognized cardiac disease ether has a temporary beneficial effect on the cardiac condition, but it is probable that its secondary effect may be unfavorable, the symptoms occurring after a lapse of several days. It is important to recognize that certain results following operations, such as basal pneumonia, gastro-duodenal disturbances, and especially embolism, are, in reality, the results of the weakened state of the heart, and may, therefore, owe their development to anesthetization or the shock of the operation. The bad effects of anesthetization, he believes, are due to disturbances of the nervous mechanism or the essential muscular automaticity, rather than to organic changes in the myocardium, endocardium or pericardium.

73. **Heart Disease and Surgery.**—Mayo finds that, between the ages of 10 and 40 valvular diseases are generally well compensated, and if the heart's action is easy and circulation well carried out, the operative risk is not great. If there is failing compensation and signs of marked dilatation, only operations of great urgency would be undertaken without preparatory treatment. After 40, valvular lesions are usually associated with some degree of myocardial change, a condition which the surgeon has to fear.

74. **Safest Anesthetics in Heart Disease.**—Hare finds ether the safest, if properly administered, excepting in vascular disease where in grave conditions it is generally contraindicated and also in atheromatous disease, and in the high arterial tension due to vascular changes. He does not think it strongly contraindicated in Bright's disease, if the anesthetist is impressed with the fact that the kidneys are affected and necessary precautions are used. The use of chloroform in the presence of myocardial change is very dangerous, and nitrous oxid is strongly contraindicated in vascular degeneration. Intraspinal injection, he thinks, will soon be regarded as a medical curiosity, as it has not the wide scope of usefulness with which it was heralded, and will be shortly neglected. The anesthesia is often blamed unjustly. He believes that more people die straining at stool or going up stairs when suffering from heart disease than from the effects of anesthesia.

75. **The Tracheal Tug.**—Sewall has investigated the subject of the tracheal tug as a sign of aortic aneurysm, and thinks it an untrustworthy indication. In the majority of cases it is associated with, and dependent on, adhesions of the left pleura. The diminished extensibility of the lungs tends to produce heart phenomena, and the tug is most pronounced when the conditions are combined. He also finds that in the normal individual the descent of the heart with inspiration movement of the diaphragm may so press the aortic arch upon the left bronchus as to impart to the trachea the aortic pulse, recognizable at the larynx, as a palpable tug of greater or less distinctness.

76. **Sarcoma of the Thyroid.**—Lartigau finds that primary sarcoma of the thyroid is rare, but probably more common than is shown by statistics. It is less frequent than primary carcinoma of the gland. It is most commonly associated with goiter, developing in persons between 40 and 60 years of age, which show a higher percentage of previous goiter than younger individuals. Goiter associated with sarcoma of the thyroid is more common in women than in men. Sarcoma of the thyroid occurs oftener in late than in early life, with greatest frequency between the ages of 40 and 60. Sex is probably unimportant. The primary tumor generally originates in the right lobe, though this seems to be more frequent in men than in women. The clinical course is usually very acute and involvement by pressure of the entire growth on trachea or larynx is common. Metastasis occurs through the blood or lymphatic channels or both. Round and spindle or mixed-cell sarcomas are most common. Angiosarcomata are not rare.

85. **Choked Disc.**—From his studies and experiments, Merz draws the following conclusions: 1. Increased intracranial tension alone is sufficient to produce choked disc, and it is only necessary that this tension should be maintained uninterruptedly for some time. Transient increased tension even when often repeated leads only to venous hyperemia and arterial anemia of the fundus. 2. In order to produce choked disc the tension needs to be increased but slightly, 8 to 15 mm. of mercury or less. 3. The eye of the dog and of the rabbit react differently to intracranial tension, while in the former the choked disc is rapidly produced it can rarely, in the latter, be brought about at all, on account of the deep physiologic cup and the relation of the vessels to the optic nerve. This, Merz holds, possibly accounts for the diverse results of different experimenters. 4. The first clinical sign of increased intracranial tension seems to be the change in retinal circulation, dilatation of the veins and contraction of the arteries. 5. The nearer to the eye the vessels perforate the sheath of the nerve, the earlier the changes in retinal circulation appear. 6. In the production of experimental choked disc several succeeding factors are probably important: First, the increased tension leads to compression of the venous sinuses of the brain, disturbing the venous circulation in the eye. Then is added the stasis of liquid in the subvaginal space and the compression of the vessels in their course from their passage through the nerve sheath to the papilla. Finally, the nerve itself is compressed by disturbed circulation in its own lymphatics, with the latter begins the edema of the nerve fibers, which in turn increases the compression of the vessels. Such disturbances in the blood and lymphatic circulation when continued for a certain time lead to inflammatory manifestations in the nerve, its sheaths and papilla. 7. In view of the similarity in anatomical construction between the eye of the dog and that of man, the results of his experiments can with considerable reason be supposed to hold good in man also.

88. **Sterilization and Care of Instruments.**—Lancaster finds from his experiments and tests that boiling in alkaline solution, if properly done, does not rust instruments, but that soaking with any solution of boracic acid, salt or even alcohol does hurt them, and, so far as he can judge, is entirely unnecessary. As regards the preservation of instruments, he believes that putting them away dry and clean is more important than the kind of case, and that the velvet case for the most delicate knives is less objectionable than one of metal or wood. Coating with oil, which is very easily removed by boiling soda, is a sure preventive of rust. Droppers should be supplied for every patient and not used more than once without sterilizing. Syringes and electric instruments, both cauteries and magnets, should be tested weekly.

89. **Optic Nerve Atrophy.**—Friedenwald reports cases associated with cranial deformities and reviews other cases which he has been able to find in the literature. He thinks that while the number of cases is small, the constancy of symptoms found associated with variously deformed skulls and especially with the steeple-shaped skulls is due to early neuritis followed by atrophy. He holds the opinion that optic neuritis in this case depends upon increased intracranial

pressure caused by premature synostosis and is therefore similar to that associated with tumors of the brain.

94. **The Mouth as an Index to Disease.**—Gramm calls attention to the symptoms afforded by the mouth as indicating the physical condition of the patient, and especially to three morbid conditions: 1. That form of chronic congestion of the free margins of the gingival followed by parallel white lines of decalcification of decaying teeth, which he thinks is a sign of underlying intestinal indigestion and especially of acid dyscrasia. 2. Persistent caries of the teeth, which he has often seen as a solitary witness to altered metabolism. It may occur in pregnancy; he has often seen it in young girls between the ages of 12 and 15, and it calls for general prophylactic treatment. Lastly, he refers to the neuro-atrophic condition called Rigg's disease, which usually calls for a general physical examination. Such examinations have led to the discovery of unsuspected cases of incipient diabetes. All nutritive diseases are prone to betray themselves in the irritation of the dental periosteum.

99.—See abstract in THE JOURNAL, XXXV, p. 1104.

100.—Ibid., p. 1105.

101.—Ibid., p. 1171.

102.—Ibid.

103.—This article appeared in THE JOURNAL, XXXVI, p. 357.

104.—See abstract in THE JOURNAL, XXXV, p. 1172.

105.—Ibid., p. 1104.

108.—This article has appeared elsewhere. See THE JOURNAL, XXXVI, title 72, p. 1586.

110.—Ibid., title 74, p. 1206.

114. **The Nose and Throat in Medicine.**—Wright's article, as stated editorially, is the beginning of a series of papers which will be published in succeeding numbers. This first installment is full of interest and shows a wide range of reading.

115. **Serous Disease of the Antrum.**—Casselberry calls attention to the less noticed condition of serous or mucoserous accumulation in the antrum and reports cases. It may be one of the sequelæ of chronic catarrhal sinusitis, and he reviews the literature to some extent. One of his cases was acute sinusitis with retained muco-serous secretion. The other was of chronic serous disease. The diagnosis of these cases can only be based upon aspiration, the transillumination test is indecisive. In both his cases the light transmission was impaired, not forming a distinct shadow. This, together with nasal polypus, degeneration of the middle turbinated body, ill-defined browache, or sense of fulness in the cheek should suggest an exploratory incision. To distinguish a free serous collection from a cyst may be quite impossible, without wide opening, and even then it has been found impossible. Treatment consists in relieving the obstruction to the ostium maxillare and by resection of the enlarged middle turbinate bodies. Removal of the polypi, if cystic, or if recovery does not follow suitable nasal treatment, an opening in the anterior wall of the sinus sufficiently large for palpation would seem to promise good results and forestall the appearance of empyema.

116. **Tonsillotomy Rash.**—Wingrave has found in seven years twenty-six cases of rash following tonsillotomy, usually of the roseolar and erythematous types, affecting the neck, chest and abdomen and sometimes extending to the face and limbs. The earliest appearance was on the day after the operation, the latest on the si day; duration from two to five days. It disappears without desquamation, but is sometimes attended with severe itching and may occur at any age. Examination of the blood during the week following the operation of tonsillotomy gives in most cases evidence of increase of mononuclear red corpuscles. He remarks that this leucocytosis, which rarely lasts beyond the tenth day, is hardly surprising after so great a disturbance of lymphoid structures. The removal of tonsils and adenoids affords a very large area for absorption of toxic matter, and the rash should be interpreted either as a toxic result or one of drug intolerance, since most of the patients were taking sodium salicylate and bromid of potash.

119. **Mastoiditis.**—The first and most important indication in the early treatment of mastoiditis, according to Richardson, is an early and free incision of the tympanic membrane, and he thinks too little importance is given to this matter. The second is care of the purulent discharge, and he advises frequent and gentle irrigation with sterile water, but the less meddlesome we are during the first forty-eight hours the better. The fourth important indication is the prevention of infection of the mastoid or arrest when it has occurred. For this he advises the continuous and persistent use of ice in all recent cases when infection of the antrum or cells has taken place. Where there is profuse purulent discharge and sinking of the posterior superior wall of the auditory canal with edema over the mastoid, the condition calls for operative interference at once.

120. **Aural Anesthesia.**—Dupuy gives his experience with the combination of cocain, absolute alcohol and anilin oil in the proportion of 50 parts of the two latter to 5 or 10 parts or more of the first, recommended by Albert Gray, of England, for the production of aural anesthesia. He thinks this solution has a remarkably penetrating power, but the fifty cases reported by him do not bear out the inference that there is an excessive danger of drug poisoning in its use. He calls attention to several points in the method of applying the solution: 1. The instillation of hydrogen dioxid in the meatus is very useful in softening and dislodging the loose epithelial tissue on an inflamed drumhead and affording a better chance for penetration. The second and all-essential point is to fill the external meatus with the solution. To make sure before incision that anesthesia is complete, he thinks it good practice to touch the drumhead at the selected point with the tip of the knife. The most satisfactory preparation in his experience is 20 parts of cocain in the mixture, for producing the anesthesia.

127. **Tuberculosis.**—Barkan recommends the use of permanganate of potassium and salicylic acid in the treatment of phthisis, and reports several cases where this combination appears to be of special value. He considers salicylic acid far superior to quinin in tubercuIosis, as not interfering with digestion when given at the proper time and in proper quantity.

130. **Circumcision.**—Bluhm considers circumcision unnecessary from the hygienic, and useless from the preventive standpoint. Physiologically it is the removal of a functionally useful part and mutilation of an organ. From the pathological standpoint it is unjustified; from the humanitarian point of view, it is cruel and ought to be prohibited by law.

134. **Sub-Conjunctival Salt Injections.**—This method, introduced into medical practice about seven years ago by Wellinger, is, according to Kraemer, absolutely safe and only slightly painful if one confines himself to the 2 per cent. solution. The injection should be made as far distant as possible from the cornea in the upper equatorial region. "It is sufficient to perform it by means of a needle of the syringe laid flat on the conjunctiva bulbi and shoved forward so as to make a slight fold with the point and then carefully thrust in, two or three inches [? ? ?] between the sclera and conjunctiva; then the salt solution is slowly injected under the conjunctiva." He has found that in opacity of the vitreous humor, or choroiditic diseases of the fundus resulting from myopia of a higher degree, the injections lead to speedy and good results. Also in cases of beginning detachment of the retina, in combination with confinement to bed, and in cases of retinitis pigmentosa it is of temporary value. He regards the method as an enrichment of the ophthalmic remedies and can recommend it for the above mentioned diseases of the eye.

135. **Pneumonia.**—The measures mentioned as beneficial in pneumonia by Van Slyke are first blood-letting, which he thinks is of decided value in certain cases; the disuse of all depressing agents, blisters, etc., expectorants; the judicious

use of alcohol and hydrotherapy, strychnin, digitalis and opium under proper hygienic precautions. He would begin treatment with a few small doses of calomel followed by a saline. Pain and temperature call for hydrotherapy, and the use of dry cold to the affected parts. As soon as the heart shows signs of weakening, he gives whiskey and strychnin in small doses, gradually increased, and substitutes digitalis for strychnia when there is delirium and cerebral congestion. He gives plenty of water with a liquid and nourishing diet.

142.—See abstract in The Journal of July 6, p. 70.

145. **Bottini's Operation.**—Freeman claims for this procedure a number of advantages: Great improvement in the vast majority of cases, low mortality, slight suffering on the part of the patient, rapidity of operation and less resistance and fear in the subject operated upon. Most failures occur in old cases with advanced pathologic changes and complications.

149.—This article has appeared elsewhere. See The Journal of July 13, paragraph 78, p. 146.

FOREIGN.

British Medical Journal, July 27.

Introductory Address Mainly on the Classification of Cases. I. Burney Yeo, M.D., F.R.C.P.—The author said the objects of treatment by climate in cases of pulmonary tuberculosis seemed to be the following: 1. To arrest catarrhal conditions of the air passages. 2. To improve nervous and circulatory tone. 3. To increase the activity of the digestive functions, and thus stimulate nutrition by promoting the desire and increasing the power to take exercise. 4. To raise the normal tone—by no means an unimportant matter—by affording a clear, bright, and cheerful environment. 5. To diminish by its asepticity bacterial activity. It is a question for consideration whether so-called "open-air treatment, without regard to suitable climatic conditions, will do all this. It should be our object when practicable to place the consumptive patient under conditions and in circumstances where, without risk or injury, he may obtain the most complete and perfect aeration of the lungs possible. If you place a feeble catarrhal patient in the open air in a damp and cold climate, you will risk an increase of the catarrh, and this will diminish pulmonary aeration by blocking up the air-passages. The modern open-air treatment is only "new" in its manner of carrying out this idea of hyperaeration of the diseased lungs, and we must be especially careful in applying it to avoid the risk of aggravating catarrhal conditions. This, I think, has now been fully admitted by some of the most strenuous advocates of open-air treatment *per se*. The recommendation of a long sea voyage as a cure for phthisis doubtless had its origin in the idea of pulmonary hyper-aeration. It was an early form of "open-air" treatment, but with grave drawbacks and risks. It may be interesting to mention that between two and three centuries ago Sydenham seems to have had in his mind also this same idea of hyperaeration of the lungs in the treatment of consumption. * * * Now climatic treatment is essentially open-air treatment; and the appropriate selection of a climate must depend on the suitability of that climate to open air life in the particular cases we may have to deal with.

"It is difficult to establish any precise and rigid classification of the cases best suited to particular places, because in many cases, with a limited idea of local disease, the patients will do well and obtain arrest of the disease in a variety of places with somewhat different climatic conditions. * * * Many chronic stationary cases with fair general health travel about to different winter resorts in successive seasons and appear to benefit more or less in all. Another difficulty in drawing reliable conclusions from statistics is the tendency on the part of certain observers to use somewhat vaguely the terms "incipient phthisis" and "pretuberculous phthisis." I find many practitioners are in the habit of using the term "incipient phthisis" in the sense of "suspected phthisis; in that case it expresses an opinion rather than a fact. If this practice is largely acted upon it must greatly detract from the value of the statistics obtained. It would be better, I venture to suggest, to discard the use of the term "incipient phthisis" and use the more precise term, "early phthisis," instead; and then in the preparation of statistics it should be stated on what observed symptoms and physical signs this diagnosis is founded. The term "pretuberculous" phthisis is, I think, still more objectionable. In estimating the results of any form of treatment these terms, I would suggest should not be used. We are, I suppose, all agreed that early cases with a very limited area of local disease, with little or no fever, with integrity of the digestive functions, and in young and otherwise healthy adults do well and are frequently cured in a variety of climates provided they live a perfectly hygienic, open-air life. They recover probably more speedily in altitude climates than elsewhere.

"*Advanced Chronic Cases.*—The idea that formerly prevailed that a warm, moist and equable climate, was the best for consumptives had a certain foundation in the suitability of such climates to the advanced catarrhal cases. There was little idea of cure associated with these climates, because consumption was then regarded as incurable, but it was thought that they prolonged life, and made the slow process of dying less painful. The quality of equability in a climate was at one time greatly overrated. Indeed, we nowadays avoid an equable climate when seeking a cure for early cases of pulmonary tuberculosis. We rather seek a climate with a very wide diurnal range of temperature, if it is a dry climate, as the Engadine or Egypt. While diurnal variations of temperature exert a bracing, invigorating, tonic effect, especially when they follow a certain regularity. What renders our own climate so very trying at times is that, although very variable, the variations of temperature follow no regularity. We get a week or ten days of very cold, dry weather, and then, just as the organism is adapting itself to the dry external cold, it changes, and we get a spell of moist, southwesterly winds, to be followed after a few days, by a return of the severely cold, dry weather; and so on. It is on this account that our climate can never be well suited to the out-of-door treatment of cases of catarrhal phthisis.

"*Early and Moderately Advanced Phthisis.*—There is no great difficulty, then, in deciding what to do with cases at the very onset; we must be greatly influenced by questions of age, sex, temperament, occupation, social conditions, and constitutional tendency. They will get well in a variety of places with careful management. Nor is there much room for hesitation as to what course is best to follow in decidedly advanced cases. The progressive febrile cases are best in bed with an abundant supply of fresh air. It is the moderately advanced case that calls for careful discrimination, and is the most difficult to decide about. It is now that the question of constitutional tendency comes into the foreground. Tuberculosis being an infective disease attended with greater or less dissemination of toxic substances throughout the organism, we find, as we do with the attacks of other infective microbes, varying degrees of reaction, of susceptibility, or infectibility, in different types of constitution.

"*Cases Unsuitable for Mountain Climates.*—It has been thought that the gouty constitution is antagonistic to tuberculous infection. My impression is that the rheumatic constitution is so also, and that the latter is especially prone to develop the slow, fibroid, pleurogenic form of phthisis. Now this form is not, in my opinion, well suited to altitude climates. These cases do best in dry and warm climate, such as the more protected resorts of the Riviera and the desert climate, as in Upper Egypt or Biskra. Setting aside this group, the high mountain resorts have doubtless the widest range of applicability to moderately advanced cases. There are, however, certain other cases that do not improve in these resorts. Early or moderately advanced cases, with manifest cachexia, gastric disturbance, and more or less fever, do not do well in these or, as far as I am aware, in other resorts. A mild marine climate perhaps suits these cachetic cases best. Cases with laryngeal or intestinal complications should not be sent to the mountains. Cases of much emphysema complicating tuberculous infiltration, or tubercle invading emphysematous lungs will perhaps express better what I mean, are unsuited to alti-

tude resorts. Cases of this latter group are prone to attacks of almost continuous and peculiarly uncontrollable hemorrhage, and are most unpromising. As might be expected, cases with renal complications do not do well in the mountains, and if albuminuria makes its appearance in such resorts the patient should be removed to a warmer climate. A peculiar sensitiveness to cold is a very decided drawback to wintering in the mountains; for, although the patient may be mending so far as the local disease is concerned, he or she is always depressed and unhappy. What the consumptive patient most needs for his cure is the combination of climate and sanatorium treatment. The patient, if left to his own devices, may make bad use of a good climate, while with skilful guidance in a sanatorium he may make good use of a bad one. Care without climate is better than climate without care.

"*Influence of Climate on Consumption.*—The question put to us in this discussion is: What influence has climate on the treatment of consumption, and how far can cases be grouped for treatment in certain climates? The answer to the first part of the question will be: 1. That a suitable climate relieves or removes catarrhal conditions accompanying that disease in a number of cases. 2. It raises nervous and vascular tone. 3. It increases muscular energy and the ability as well as the desire for exercise. 4. By rendering an open-air life possible, it increases the aeration of the lungs and diminishes the activity of bacterial agencies, one of the most essential conditions of arrest and cure of the disease. 5. It improves the tone and promotes the activity of the digestive functions, and so enables the patient to take the large amount of food which is needed to heighten his state of nutrition. 6. It improves the moral and mental state by surrounding the patient with a bright, cheerful and hopeful environment.

"*Grouping of Cases.*—Then, as to the answer of the second part of the question, we may say: 1. That cases seen at the very commencement of the disease, and who are otherwise in good health, may be permitted a certain amount of choice in the selection of a climate, provided it allows of many hours being spent daily in the open air, and that they are placed under admittedly hygienic conditions. A choice may be made from climates of altitude, the desert climate, the inland plateaux of South Africa, the sea voyage for those with a decided liking for the sea, and suitably placed sanatoria. 2. For progressive febrile cases, repose in a bed or on a couch at home, in the best conditions practicable for the access of air and sunshine to their apartments. 3. For advanced cases home is best if the conditions of home life are favorable, or the warm marine climates with cheerful surroundings if home life is unfavorable or change is urgently desired. 4. For catarrhal cases, warm soothing climates like Madeira or Teneriffe are best. 5. For rheumatic or gouty cases of the fibroid or pleurogenic type—dry, marine climates or the desert climate are suitable. 6. For the so-called "scrofulous cases," if free from catarrh, fairly bracing marine climates; if with catarrh, mild marine climates should be prescribed. 7. For most other moderately advanced cases, with the limitations already mentioned, the climate of the high mountains, above the cloud belt, is the most curative. I have not made a "hemorrhagic" group because I do not think it would be a natural one; every hemorrhagic case must be, in my opinion, considered apart, and dealt with on its own merits.'"

Measures Adopted by Different Nations for the Prevention of Consumption. Professor P. Brouardel, dean of the Faculty of Medicine of Paris.—The Right Honorable Henry Chaplin, M.P., president of the local government board, who presided, introduced him as the most distinguished authority on sanitary science in Europe. Professor Brouardel said that the mortality from tuberculosis varied in different countries. In some it was accountable for a sixth, in others a fifth, and in others a fourth of the total mortality. Long before the infectiousness of tuberculosis was discovered the struggle against it was commenced in England. The English, convinced by observation that tuberculosis thrived in damp dwellings, in 1836 passed a law providing for the construction of healthy houses. Since then more than ten acts of parliament to render salubrious the dwellings of the poor had been passed, and the mortality from tuberculosis had been reduced 40 per cent. The anti-tuberculous education of public opinion which was now progressing, was of great importance. In 1889, under the presidency of the Prince of Wales the National Association for the Prevention of Tuberculosis was formed. Its object was further prevention by educating the masses. Germany had founded societies for the construction of sanatoria, and then societies for the propagation of the idea, to popularize sanitary ideas. These societies are small and scattered in different localities, forming provincial groups. They, too, publish popular pamphlets. In Belgium there is a National League against tuberculosis, with its seat in Brussels; each province has an independent branch. In Norway, the Storthing voted 40,000 crowns for the purpose of printing and distributing a popular work on tuberculosis, by Dr. Klaus Haussen, and 2000 crowns to form a traveling fund for physicians wishing to gain information about the management of sanatoria. In France the Society for the Prevention of Tuberculosis by Popular Education had collected those who could teach with authority, such men as Lavisse, Matignon, Victorien Sardou, Landouzy, etc. They addressed meetings, and explained the rules of prophylaxis. Professor Brouardel, as president of the Polytechnic Association, had performed the same service in Paris. This year 38 lectures had been given to 12,000 pupils. Thus, gradually, in all countries, the public were beginning to realize that personal care and cleanliness were necessary, and that a consumptive was only dangerous when necessary precautions were neglected, that the danger lay in the sputum. England had the great merit of recognizing the evils of insalubrious dwellings, and passing laws ordering their destruction; and further of enacting laws for the erection of sanitary dwellings which had been supplemented by the beneficence of private individuals. In 1850 a law was passed in France dealing with unhealthy dwellings, and another in 1894. In the crowded parts of towns tuberculous foci were created which were a source of danger to the inhabitants. In Paris the mortality from tuberculosis varied in different districts from 10 to 100 per 10,000 inhabitants. Alcoholism he regarded as a most potent factor in propagating tuberculosis. It rendered the strongest man powerless to resist the disease. Hence the high mortality from tuberculosis in classes addicted to drink. Tatham's figures showed that taking the mean mortality from tuberculosis at 100, that of bartenders was 257; of brewers, 148; saloon-keepers, 140. The idea that tuberculosis could be cured dated back to Hippocrates, who said: "Phthisis, if treated early enough, gets well." In 1838 Carswell, one of England's most distinguished physicians, wrote: "Pathological anatomy has never, perhaps, given a more decided proof of the cure of disease than of phthisis." Laennec, Nat, Guillot, and Letulle had proved that in more than half the necropsies performed old healed tubercular lesions were found. Professor Brouardel had found at the morgue in Paris, where he frequently made necropsies in cases of accidental death, that in half the cases if the person had lived in Paris for ten years healed tubercular lesions, cretaceous or fibrous, were present. That treatment might be of service in the early stage, M. Calmette conceived the idea that instead of waiting for the workman to come, the doctor should seek him. He opened an anti-tuberculous dispensary at Lille, which had been eminently successful. Another had been established in Paris. The best way to ferret out the disease was to have an "agent-workman" who would notice when his comrades began to cough, and advise them to go to the dispensary; who, alive to the dangers of a badly kept workshop, would superintend its cleansing. Professor Brouardel said that in Germany there were 83 sanatoria open, or ready to be opened. Of those who left the sanatoria in a satisfactory condition it had been shown that in 1896 46 per cent. were able to work: in 1897, 47 per cent., in 1898, 58 per cent., and in 1899, 60 per cent. In France several sanatoria had been opened, and others were in process of erection. Since Chauveau showed that it was possible for tuberculous germs in food to produce tubercles in the intestinal tract, attention has been turned to precautions for preventing the consumption of meats and milk from tuberculous animals. Professor Brouardel concluded with an eloquent peroration, saying

that by a united effort the whole of the civilized world might succeed in exterminating the cruelest scourge that had ever fallen on it.

The Lancet, July 27.

The Administration of the Manchester Milk Clauses, 1899. JAMES NIVEN.—The working of the law in regard to the inspection of milk and the control of its sale in the city of Manchester is detailed by Niven, who calls attention to some special points. He thinks that in some ways the law has been practically inoperative; thus, the notification of a suspected condition of the udder by farmers has been neglected; the penalty is inadequate. He does not think the observance of the milk clause is adequate to the entire results expected. The points which he insists upon are: 1. That cows shown to suffer from tuberculosis of the udder should be compelled by law to be slaughtered in the presence of the veterinary surgeon employed under the milk clauses. 2. That all restrictions on the inspection of herds supplying the district with milk should be removed. 3. That a heavy penalty should be attached to failure to notify suspicious conditions of the udder.

Sterilization and Pasteurization vs. Tubercle-Free Herds, Etc. E. W. HOPE.—The comparative dependence upon sterilization or pasteurization and the insurance of absolute absence of tubercle in herds supplying milk are discussed by Hope, who thinks that while raw milk is specially liable to contamination, sterilization, valuable as it is, is after all only an expedient, and must not be put in such prominence that the importance of the other safeguards of absolute cleanliness of source and handling are neglected. Beyond any question, he says, the ultimate advantage lies in obtaining the milk from herds free from tuberculosis. A comparison is made with having water from a contaminated source and making it pure later by chemical processes or boiling and obtaining it in the first place from an uncontaminated source. He thinks it is quite possible to insure that the milk-supply shall come from cows free from tuberculosis.

Natural Immunity from Tuberculosis in Natal, South Africa. JAMES F. ALLEN.—The topography and climate of Natal, especially the upland region in which Pietermaritzburg is situated, are described by Allen, who claims that tuberculosis is there almost unknown, though it does exist to a very limited extent; cattle are absolutely free from it in that region, that is, the locally-bred cattle running wild on the veldt, and the human species is almost equally immune. There are no signs of the disease increasing as a local product. The conditions do not tend to produce it on account of the almost open-air mode of living. The man in the street is more in evidence there than anywhere else that he knows of, and the climate is so mild that sleeping in the open air at night without risk is perfectly possible at all seasons. The two races alien to the region, the European and East Indian, both thrive and physically improve in this particular section. The importation of consumptives, however, he thinks, should be regulated so that patients are not sent in a hopeless and destitute condition to become public charges. If this is not attended to he believes that the government will follow the example of New Zealand and refuse entry to persons suffering from tuberculosis.

Examination of Carcasses in Cases of Cattle Tuberculosis. WILLIAM BROWN.—Various symptoms of tuberculosis as found in the postmortems of cattle are described in detail. He has found at least eight cases of tuberculosis of the brain; in two of the animals an oblique carriage of the head was observed during life; in another vertigo, and in a fourth, paralysis. Ocular tuberculosis was not uncommon. This usually begins somewhere in the uveal tract, gradually pushing forward into the anterior cavity. He has never been able to find the bacilli in this situation. The pharyngeal glands are specially liable to be affected. He has been in the habit for years of condemning the herd in every case where contamination of the carcasses was determined upon. The tonsils are, in his opinion, well defined bodies in the ox and are sometimes tuberculous. Tubercular cervical glands of any prominence are generally removed by the butcher, so one sees comparatively few in which it existed. Tuberculosis of the epicardium and pericardium, though not of the cardiac muscles, and several cases of laryngeal tuberculosis in animals have been observed. The lungs and pleura, of course, are the most frequent seats of the disease, but it is found also in other viscera. It is not unusual to find it in the peritoneal covering, and sometimes in the substance of the organ. The liver is occasionally enormously enlarged. Tuberculosis of the peritoneum of the spleen is extremely common, but involvement of its substance is rarely or never seen. This, he thinks, may be due to the functional activity of the organ. The kidneys in adult animals are rarely tuberculous. The peritoneum may be affected and tuberculosis of the uterine muscle and its peritoneal covering is common, and occasionally there is a tubercular endometritis. The ovaries and Fallopian tubes are frequently tubercular, and tuberculosis of the bladder presents much the same character as that of the uterus. Tuberculosis of the udder shows itself in small yellowish deposits with or without calcification, nevertheless containing tubercular products, or there may be diffuse deposits of infiltration, resembling to the naked eye cirrhosis, but showing under the microscope tubercular follicles and bacilli. It is important for the veterinarian to remember the physical characteristics of this form, because the absence of nodulation might suggest a non-tubercular condition. In such cases the tuberculin test would aid in the diagnosis. Induration of the udder is common among dairy cattle, and we can hardly expect cattle-owners to exercise much care in the discrimination between tubercular indurations and non-tubercular ones, even had they knowledge on the subject. Bone tuberculosis is rarely seen, owing to the difficulties of observation. Brown has seen a few cases of tuberculosis of the sternum. The tubercle follicle may be regarded as a special arrangement, and modification of leucocytes and phagocytes for the purpose of resisting the infection by the tubercle bacillus. The giant cell forms a constant and conspicuous feature in the early stages of bovine tubercle growth as it does in the human subject. By many observations of bovine tubercle he thinks the origin of the giant cell may be more simply explained than by such terms as epitheliloid cells, karyokineses, and karymitosis. On examining the giant cell on section, a a central dirty-yellowish mass is seen with frequently numerous tubercle bacilli. Surrounding this we have a row of cells, which, so far as he can judge, differ in no way from surrounding leucocytes or phagocytes. In some cases the giant cell is composed entirely of leucocyte-looking cells, but usually there is a central granular mass surrounded by a row of cells. Probably the original cell is a solid sphere and what looks like giant cells may be due to segments taken near the periphery or poles of the sphere. The central portion may be regarded as debris of dead leucocytes from conflict with the tubercle bacilli in the interior. He thinks that as soon as the tubercle bacilli invade the tissue, leucocytes and phagocytes squeeze their bodies through the walls of the capillaries and "go for" the bacilli, which they isolate in groups and surround, forming a so-called giant cell.

Medical Press and Circular, July 3.

The "Monoma." HERBERT SNOW.—Lawson Tait distinguished two forms of myoma of the uterus: The ordinary form which is usually multiple when first encountered or soon becomes so, and the rarer, soft edematous myoma invariably solitary and thus remaining, but always increasing in bulk. The author holds, while the common myoma is unquestionably a benign new growth, the rarer, soft edematous myoma is truly a malignant one. Snow had the opportunity of examining a microscopic section from two of these tumors, one showing only non-striated muscle fiber, and the other the abundant nuclei and small spindle cells of a myo-sarcoma. In such matters, however, he insists that the clinical evidence of malignancy is far more trustworthy than the report of a microscopist, who has never seen the case. The malignant portion is commonly limited to certain areas, which may be neglected in thin sections made for the microscope or may escape notice, even if included. He reports a case in which a patient had a tumor removed by celiotomy and did well for

several days, and then suddenly died from intestinal obstruction and rupture without any mechanical source of obstruction. A very minute region of the tumor displayed the heaped-up leucocytes and abundant cell proliferation denoting cancerous degeneration. He calls attention especially to the following points: "1. The existence of this progressive and malignant growth, for which I venture to propose the new term 'monoma.' 2. The importance of differentiating it from the comparatively harmless myoma, by this or some other distinctive word. For, here, there can be no question of tentative measures or of delay. The disease is malignant, and once recognized should be immediately removed. 3. The important question of diagnosis hitherto neglected and as yet unsettled. The presence or absence of vaginal hemorrhage, as insisted on by Lawson Tait, is untrustworthy. With that event alcoholic habits have much to do; age also is an uncertain factor. If we encounter a solitary rounded, doughy, central uterine tumor which is growing rapidly, while the patient is losing weight; if we find an indistinct fluctuation, so that we doubt whether it is not an ovarian cyst we are dealing with, and if there has been much recent trouble and anxiety, then I hold we are justified in diagnosing a monoma and in advising prompt excision." The naked-eye appearances of tumor will resemble the ordinary myoma, but its solitary condition, the division of cut surfaces into lobules between which are connective-tissue trabeculæ infiltrated with serum; the presence of soft areas into which one can easily push one's finger, and the greatly hypertrophied uterine wall simulating pregnancy, differentiate it. Under the microscope the malignant portions should show numerous leucocytes with cancerous proliferation of the muscle nuclei, while the non-malignant display only the phenomena of well-organized muscle. The pathologist, however, must be supervised or the section will probably be taken from the tough well-organized area and the really important parts be neglected.

Annales de l'Institut Pasteur (Paris), June.

Role of Intestinal Parasites in Appendicitis. J. GIRARD. The appendix was resected as a prophylactic measure in a child of 8, during the evacuation of an abscess in the right iliac fossa. The appendix appeared normal on the outside, but it contained a male and female trichocephalus and the head of one was buried in the lining mucous membrane. A zone of inflammation extended around this spot and leucocytes, streptococci and other micro-organisms were numerous in the inflamed tissue.

Antirabic Vaccinations in 1900. E. VIALA.—Out of the 1420 persons who received antirabic vaccination at the Pasteur Institute during 1900 four died. Besides these, one died during treatment and six others in less than fifteen days afterward. Experiments on dogs have shown that when the nerve cells were already invaded before treatment was commenced, death follows in less than fifteen days. In 179 cases, including the 4 fatal ones, the rabies was proved by positive inoculation of other animals; in 866 it was established by veterinary examination, and in 375 it was merely suspected. The mortality in the first group was, therefore, 2.23 per cent., or 0.28 per cent. of the total number treated.

Archives de Neurologie (Paris), May.

Results of Operative Treatment of Jacksonian Epilepsy. RAYMOND.—In this article thirty-one cases are reviewed, all treated by excision of a portion of the cortical zone in the epileptogenic focus. Of these, nine were improved; 13 were cured (3 more than three years ago), and 9 were unaffected. Some writers attribute recurrence to cicatricial adhesions, but Raymond believes that it is due to pathologic substitution by sufficient epileptogenic centers. In some of the cases the region of Rolando appeared intact. The alterations may possibly be of a purely dynamic nature, and may extend over a considerable portion of the cerebral cortex.

Archives Generales de Med. (Paris), July.

Erysipelas. H. ROGER.—Salves, plasters and collodions in the treatment of erysipelas have been completely banished from Roger's service, which included 1568 cases last year. He finds that spraying the affected part with a solution of ether saturated with camphor relieves, and does no harm. Collodion cracks, and the sharp edges of the crack cut the inflamed tissues. He applies hot compresses as the best means of local treatment. In case of gangrene of the limbs, he orders a local bath of 1 to 10,000 potassium permanganate, dressing with gauze moistened with neutralized hydrogen dioxid. If the gangrene becomes threatening, he injects the dioxid diluted with an equal amount of a 4 to 1000 solution of sodium bicarbonate, injecting 5 or 6 c.c. at three or four points around the lesion. General treatment is the same as that for any infectious disease.

Revue Mensuelle des Maladies de l'Enfance (Paris), April.

Rheumatic Chorea. E. WEILL.—A child of 7 suffered from rheumatism localized in the muscles of legs and arms, with spasmodic contractions simulating tetany, chorea, plastic endocarditis, dyspnea, etc., but no arthropathy. The autopsy disclosed an acute interstitial myocarditis. The periosteum and tendon sheaths were the seat of numerous rheumatic lumps. Those in the tendon sheaths were of the usual type, but those in the periosteum were due to a process similar to that of an endocarditic granulation, an interstitial inflammation with fibrinous exudation. The rheumatic infection in this case seemed to avoid the serous tissues and localize by preference in the interstitial connective tissue.

May.

Pathogenesis of Nightmares and Night Terrors in Children. J. G. REY.—In Rey's large experience he has always found that nightmares and night terrors could be traced to some obstacle to respiration and hematosis, either direct or of reflex origin. Both are merely the result of a slow, prolonged intoxication with carbon dioxid, which explains all the concomitant symptoms.

June.

Manipulative Treatment of Congenital Luxation of the Hip-Joint. G. NOVÉ-JOSSERAND.—From an experience with 115 cases of congenital luxation of the hip-joint, this writer concludes that the Lorenz method of treatment applied before the patient is 5 years old, gives an anatomic and functional result which represents an actual, radical cure in 50 per cent., and a satisfactory functional result in 80 per cent. Nearly every case is improved. No other method gives results that can be compared with this. The younger the patient, the better the chances of success. Even 16 to 17 months is not too young, if the children are trained well enough to allow of a bandage being worn. After the fifth year, success is less frequent and the functional results are less perfect. The improvement in the limping and in the figure, the ability to bear fatigue and the fact that the troubles resulting from the luxation remain stationary at least, are sufficient grounds to recommend the method until the tenth year. After that age, the dangers of serious fractures and nervous troubles, contraindicate it except in especially favorable cases. Even between 5 and 10, a pure supra-cotyloid luxation with no tendency to become aggravated and with but slight limping, may spontaneously improve, while this method of treatment will probably cause little, if any, improvement.

July.

The Mechanism of Infectious Erythemata. P. NOBECOURT.—Study of ten young children with infectious erythemata has convinced Nobecourt that the mechanism of these infections is somewhat as follows: In the course of an infection from the streptococcus or some other germ, the liver fails to destroy all the toxins elaborated, and the kidney is unable to eliminate them all. The unneutralized toxins, thus retained in the body, affect the vasomotor centers for the skin, and induce an erythema or purpura.

Arsenic Iodid in Chronic Bronchitis in Children. R. SAINT-PHILIPPE.—In the bronchitic tendency noted in children after convalescence from infectious diseases, or in the emphysematous bronchitis observed in rachitic, scrofulous or lymphatic children, medication should aim to stimulate nutrition and change the secretions. Cod-liver oil answers these

conditions, but is seldom accepted by the spoiled children of our day. Potassium iodid, for the same reason, can not be kept up long enough to accomplish its purpose. Under these circumstances, arsenic iodid has proved extremely useful in several years of experience. Saint-Philippe orders it in the formula of 30 eg. in 30 gm. distilled water. Five drops are taken at each meal, increasing by a drop morning and evening to fifteen or twenty. This dose is kept up for a month, then decreased in the same proportion to five drops, suspended for eight or ten days and recommenced.

Revue Neurologique (Paris), April 30.

Hysteric Aphasia. G. Guillain.—The case described was diagnosed as a typical chronic, right hemiplegia with aphasia from embolism or thrombosis, and was long treated as such without relief. The diagnosis was then altered to a functional lesion of hysteric origin. The affection had commenced with a sudden onset after a violent emotion, the subject being a young man free from syphilis and arteriosclerosis. Among the suspicious signs were that the leg did not drag in walking, and that the patient could pick up a pin on the table with ease. The knee-jerk and all the reflexes on one side were exaggerated. Flexion of the elbow was equal on both sides.

Revue de Therapeutique (Paris), July 1 and 15.

The New Conception and Treatment of Gout. A. Morel-Lavallée.—The Journal has already mentioned—p. 289—Joulie's recommendation of phosphoric acid as a means of restoring missing acidity to the organism. He is not a physician, but in his chemical research he discovered that 12 out of every 13 arthritic subjects are hypoacid, and that only one is hyperacid. Instead of being saturated with uric acid, as generally assumed, by far the larger proportion of gouty and other arthritic subjects suffer from the lack of normal acidity. He remarks that almost any acid would answer the purpose and comply with the therapeutic indications, but for various reasons he recommends phosphoric acid as the best treatment for all forms of the arthritic diathesis in which the acidity of the urine is subnormal. Morel-Lavallée has recently had occasion to observe a case which has proved not only a brilliant confirmation of these views, but explains the mechanism, and hence, solves the therapeutic problem. He had in his charge for fourteen months a patient with an ordinary impetigo of the face and fingers, gradually assuming an ulcerative, seborrheic character. The thick, fatty matter that filled the ulcerations and the tunnels beneath the skin could be massaged along and squeezed out through the intact skin beyond the lesions. In the fourteenth month of this cutaneous affection, it suddenly changed completely. The soft edges of the ulcerations became hard and as if calcified; the substance eliminated grew more and more chalky until the particles were actually calcareous. The ulcerations became more symmetrical in their arrangement, coinciding exactly with that of the superficial lymphatic vessels of the face and terminal phalanges, and were located at the pouches above the valves, and at the points of anastomosis. From all of them were eliminated the chalky particles above mentioned. Gout was unknown in the patient's family, but he was a confirmed arthritic, and at various times an excess of uric acid had been noted in his urine. Analysis now showed no uric acid, nor excess of urates, but the chlorids were scanty and there was phosphaturia. The coefficient of the acidity of the urine was one-third less than normal, and at the same time, chemical analysis of the calcareous particles eliminated from the ulcerations disclosed that they were composed of calcium phosphate and sulphate. The essence of this peculiar case of ulcero-calcifying, phosphatic-calculous lymphangitis was thus revealed as the result of hypoacidity. The alkaline earthy phosphates, derived from resorption of the bones or from the food, were insoluble in the hypoacid fluids of the body, and consequently circulated undissolved and were precipitated at the points where the circulation was most sluggish from the anatomic structure or from a preceding lesion. Phosphates are thus precipitated in hypoacid subjects and urates in the hyperacid. These conditions may alternate or succeed each other. When the amount of carbon dioxid in the blood, saturated with ammonia from the disassimilation of nitrogenized matters, becomes diminished from any cause, the alkaline earthy phosphates in the blood become neutral and insoluble basic phosphates and are swept along in the circulation in the form of a mineral sand. This sand may obstruct the lymphatic or blood capillaries and induce inflammation and more or less pain in the organs affected—the viscera, articulations or skin. This precipitation of salts is probably the cause of gout and allied affections, and the loss of the phosphates debilitates the organism. These assumptions were established as facts by the results of treatment in the case described. Phosphoric acid was administered and the old accumulations of calcareous matters massaged out through the ulcers and the intact skin. In four days the scene had changed as if by magic; the calcareous matters became transformed into a transparent, gelatiniform substance, and the prominent, clogged lymphatic vessels subsided and became permeable for the first time in months. In arthritism the metabolism may be diminished and the oxidations reduced, uric acid and the urates in excess, the subjects hyperacid and the nutrition retarded. On the other hand, the metabolism may be increased, the oxidations excessive, the outgo exceeding the intake, the subjects hypoacid and the nutrition accelerated. The arthritic subject is a victim of either retarded or galloping nutritional processes, due respectively to hyperacidity and to hypoacidity. The latter condition prepares the soil and entails gouty cachexia or some wasting disease, rachitism, phosphatic or oxalic gravel, hyperchlorhydric dyspepsia, varices, hemorrhoids or eczema. The cause of these affections is the precipitation of the salts of the serum in the living subject, rendered insoluble by the lack of the acid needed to keep them dissolved. Lavallée concludes: "If, as Joulie asserts, in twelve-thirteenths of the cases the subjects are hypoacid, the alkalies with which they have been so systematically dosed, must have directly added to the deposits of phosphates in the capillaries, and thus piled up an imperishable monument to the glory of routine therapeutics." He explains the undoubted benefit derived from courses of mineral waters as due to the mechanical rinsing out of the capillaries, etc., by the large amounts of water ingested.

Beitraege z. Geburt. u. Gynaek. (Leipsic), iv, 1.

Intra-Uterine Bag for Delivery with Deformed Pelvis. F. Ahlfeld.—Looking over his maternity records for ten years, Ahlfeld discovered that whereas formerly, an average of 60.4 per cent. of the children of mothers with pelves so deformed that artificial delivery was necessary, left the hospital alive, the average has fallen to 44.8 per cent. since the introduction of the dilatable rubber bag as a routine means of inducing delivery in these cases. The bag interferes with delivery and he now uses it during the first stage only. He finds that better results are attained when the delivery is not postponed too long, and the infants are extracted and placed at once in the incubator. He makes every effort to secure head presentation.

Primary Carcinomatous Degeneration of Dermoid Cyst. E. Kehrer.—All of the eight cases on record have proved rapidly fatal, an epithelioma in seven and an adenoma in one. A personal case is described, the patient 46 years old. Death was due in this case to pulmonary embolism. The age ranged from 41 to 65 years in all but one case, in which the patient was 21 years old.

Bacterial Flora in Mouth of the Newborn. O. Kneise.—In 97.5 per cent. of a large number of infants examined, abundant bacterial flora was discovered in the mouth at the moment of birth. Staphylococci and streptococci were particularly numerous and virulent in many cases. The bacteria found were always identical with those discovered in the vaginal secretions at the same time, and are evidently due to the aspiration of these secretions in the infant's attempts to swallow, or they are forced into its mouth by pressure of the vaginal muscles. These germs in the infant's mouth are probably the source of mastitis in many cases, and in its treatment, the child must be kept from the affected breast if necessary. They also prove the fallacy of the assumption of the auto-sterilization of the vagina.

Deutsche Archiv f. Klin. Med. (Leipsic), lxx, 3 and 4,

Typical Signs of La Grippe. F. FRANKE.—In 1892 Franke noticed in la grippe a typical red stripe on the anterior pillars of the soft palate, and this sign he has never failed to find after the first few days of sudden onset. It is particularly marked and significant in chronic or recurring cases. The stripe varies from 1 to 2 mm. in width, the maximum 6 to 7 mm. at the top, and looks like a dark red rainbow arching with the palate, interrupted only in the center, as the uvula is never involved, nor the tonsils nor tongue. It is sometimes a bluish red and may cause subjective symptoms of constriction, relieved by swabbing with a 2 per cent. solution of nirvanin. He has also noted a typical swelling of the papillæ of the front of the tongue, sometimes confined to the lower surface. At every recurring attack they swell again, suggesting the scarlet fever tongue. The spleen is usually enlarged in la grippe, even in the chronic stages. These three signs will serve to differentiate the disease from the deceptive pseudo-neuralgias, pseudo-appendicitis, etc. Another sign is the tendency of the subjects to be chilly or catch cold on the slightest provocation. Cold hydrotherapy is injurious in such cases.

Muenchener Med. Wochenschrift, July 16.

A Crystalline Immunization Product. H. BUCHNER.—The serum of rabbits treated with preliminary injections of chemically pure peptone, produces a specific precipitation when mixed with a dilute solution of peptone, which assumes the form of round or oval crystals. Buchner calls these crystals globulites and states that they are amazingly resistant. They are insoluble and unchanged in concentrated, hot nitric and hydrochloric acid and cold sulphuric acid, in alcohol, etc., and are soluble only in hot, concentrated sulphuric acid, in which they slowly dissolve. They swell slightly in caustic potash. The substance of the crystals turns brown under protracted dry heat with an odor as of burnt horn, and an ash skeleton remains, insoluble in concentrated hydrochloric acid. He found that serum from rabbits treated with beef blood produced the same ring of crystals after the addition of the solution of peptone as from the control animals treated with peptone, and the reaction was even more rapid and pronounced in the former case. Rabbits injected with even as little as 3 c.c. of beef blood produced a serum that precipitated the crystals in two minutes after the addition of the peptone.

Milk Treated with Rennet in Infant Feeding. F. SIEGERT.—THE JOURNAL called attention at the time to von Dungern's announcement that the addition of a little rennet to milk rendered it infinitely more digestible, absolutely preventing the formation of large curds in the stomach. The Höchst works manufacture a chemically pure rennet especially for this method of infant feeding. Enough can be taken up on the point of a knife for 200 gm. of milk. It is added to the blood-warm milk in the bottle and shaken once, then placed in warm water for five or ten minutes until the milk clabbers. The bottle is then vigorously shaken until the clots are broken up into minute flakes, when it is ready for use. Siegert has been testing this method on a large scale and considers it a distinct advance. From his experience with more than fifty infants during the last six months he most strongly recommends it to all physicians. The results in his experience have been invariably satisfactory. Milk thus treated is equally adapted to older, dyspeptic or debilitated children or adults.

Scopolamin-Morphin Anesthesia. B. KORFF.—From an experience with eighty patients on whom serious operations were performed when under the influence of the scopolamin-morphin method of anesthesia recommended last year by Schneiderlin, Korff announces that it is a very valuable method of narcosis, free from danger or inconvenience and with many advantages over other methods. Vomiting does not occur; the patients come to the table quiet and drowsy and after they are put back to bed, they sleep quietly, without tossing, for nearly twelve hours, free from pain of any kind. These conditions are ideal for the adhesion and healing of the operative wounds. Nearly all wake up and ask when the operation is going to begin. When they wake they are ready to take soup, coffee, etc.; appetite and digestion proceed normally; the heart action, respiration and renal functions are undisturbed The pupils react normally after ten to twenty-four hours. In only one of the cases was any disturbance noted, and this was a pulse of 46 for twenty-four hours. The scopolamin and the morphin are antagonistic in their action. Morphin retards and scopolamin accelerates the respiration and heart action. Morphin paralyzes the sensory, and scopolamin the motor nerves. The method is yet in the tentative stage, and larger doses might be given. Korff limited his doses to .4 mg. scopolamin with 1 eg. morphin. After the patient is prepared for the operation, a liquid breakfast is taken at 7; at 8:30 the first dose is injected, 4 mg. scopolamin and 1 eg. morphin. At 10:30 the same dose is injected at another point. Certain patients may require a third injection at 12 of the same dose. The operation is commenced an hour after the last injection, and if necessary, two or three drops of chloroform may be administered to complete the anesthesia. From now on, Korff expects to use 1.2 mg. scopolamin at a dose, as he is convinced of its harmlessness under these conditions, and this will render the chloroform superfluous. All writers unite in lauding the sedative action and harmlessness of scopolamin.

July 23.

Thirty-four Abdominal Operations Without Narcosis. A. SCHMITT.—With a 1 per cent. solution of cocain or occasionally with Schleich's infiltraton anesthesia, Schmitt performed thirty-four major operations on patients whom he deemed too debilitated to bear general narcosis. He found that the pain was comparatively slight. Traction of any of the abdominal tissues causes the patient pain, but the parietal peritoneum, the stomach, intestines, omentum and bladder can be incised and grasped in forceps without pain. Strange to say, two of the ten patients on whom gastro-enterostomy was done, succumbed to post-operative pneumonia, although thorough precautions were taken in every case to avoid chilling the tissues. It suggests the possibility that cocain, or any anesthetic, is in itself liable to induce pneumonia. This assumption, however, is disproved by the assertion that pneumonia does not follow operations on goiter, etc., although as much of the anesthetic may be used as for an abdominal operation. The true explanation is probably the debilitated condition of the patient combined with some latent affection of the air passages.

Formalin for Inoperable Carcinoma. F. TORGGLER.—In order to clean, dry and keep under control an inoperable carcinoma of the uterus. Torggler swabs it with 4 per cent. solution of formalin, repeating the swabbing later with a 10 per cent. solution, leaving the swab in place for five or ten minutes each time. His experience with 150 cases during the last four years has been extremely satisfactory with formalin as a palliative measure.

Neurologisches Centralblatt (Leipsic), July 1.

Myasthenia Gravis. L. LAQUER.—An intelligent artisan, 30 years old, with no syphilitic nor alcoholic antecedents, noticed in 1896 sudden attacks of vertigo, sleep disturbed by violent nervous palpitations, oppression and distress, and occasional syncope after long walks. The symptoms gradually increased and included pallor and anemia, oppression in stomach and pains in head and back. In 1900 he began to find difficulty in raising his arm, followed by ptosis in both lids and the muscles of chewing and swallowing became easily fatigued. The patient succumbed to the course of this progressive myasthenia which had always been restricted to the motor sphere. The autopsy showed that all the organs were macroscopically sound except one. In the place of the thymus, a tumor had developed, 5 by 3 cm. in diameter, close to the pericardium and adherent to the lung at one point. The tumor contained numerous accumulations of blood with islands of tissue composed of lymphoid cells and macrophages characteristic of the normal thymus, also Hassal's corpuscles. The walls of the small veins and some of the smaller arteries had been destroyed, and the walls and lumen were crowded with

these same cells. They were also discovered scattered through the muscles, accompanied by the microscopic accumulations of blood. The small lymphoid cells predominated. The accumulations of cells were probably metastases in the muscles of the malignant thymus tumor. The deltoid and diaphragm were the only muscles examined. The same accumulations of cells were found also in the heart, especially in the pericardium, but were much less numerous. The portions of the nervous system examined seemed to be intact.

Inherited Associated Movements. M. LEVY.—A case is described of remarkable, symmetrical co-ordinated movements, pathologic only in their intensity and their involuntary character. The impulse to mirror-writing was a prominent feature in the case, which was especially striking on account of the fact that the entire syndrome had been perpetuated through three generations. The father wrote mirror-writing at will, but the son could not write any other way.

Virchow's Archiv (Berlin), 164, 3.

Air Lavage of Pleural Cavity after Paracentesis. KAWAHARA.—Immediately after evacuation of the effusion in case of pleuritis, the air is allowed to enter the pleural cavity through the same canula. After the pressure has been equalized, the remaining portion of the effusion is aspirated and air is allowed to enter again, repeating this irrigation of the cavity with air as long as any effusion can be aspirated. By this method all danger from negative pressure is avoided, and repeated tests, experiments and clinical research have shown that there is no danger of suppuration. Pyogenic microorganisms do not develop under these conditions and, consequently, it is unnecessary to filter the air. The effusion can be evacuated gradually at intervals of several hours in case of a hemorrhagic effusion and is especially valuable under these circumstances. It is also peculiarly adapted for cases in which paracentesis has to be interrupted for any cause, or when the evacuation of the effusion is hindered by pleuritic adhesions or by impaired elasticity of the lung. Kawahara reports 39 cases in detail, although he has had an experience of more than 70 in all since 1891. Death occurred in 5 per cent.; the termination of 10 per cent. is unknown; 85 per cent. recovered.

Zeitschrift f. Klin. Med. (Berlin), xxxiv, 1 and 2.

Etiology of Carcinoma. E. v. LEYDEN.—The intracellular parasites that have been discovered in carcinomata are probably protozoa—tender creatures which require protection such as is furnished by the albumin and fat on which carcinomata are nourished. The fat droplets in carcinomata are what render its study with the microscope and stains so difficult.

Experimental Inherited Tuberculosis. F. F. FRIEDMANN.—One or two drops of a diluted culture of the tubercle bacillus were injected into the vaginas of rabbits immediately after the animals had coupled. In every case it was found that one or more of the bacilli had penetrated into the fertilized ovum with the spermatozoa. None of the 500 sections was negative. In every case also, all the other bacilli had been harmlessly eliminated through the vagina. The embryo was thus infected without the intermediation of the mother, and the latter was unharmed by the paternally derived infection. None of the bacilli were found swallowed by leucocytes. The preliminary report of this research was mentioned in THE JOURNAL a few weeks ago.

Rivista Sperimentale di Freniatria (Reggio), xxvii, 1.

Acid Intoxication in Epilepsy. P. PINI.—The injection into rabbits of brain substance from the cadavers of epileptics did not cause symptoms of intoxication beyond a slight rise in temperature. Injection of 2 to 5 c.c. of blood, drawn from an epileptic in the intervals between seizures, had no effect on the animals, but the injection of 1 to 3 c.c. of blood drawn during an attack, produced paralysis of the hind legs in the rabbits, and all died in the course of forty days. Supplementing these facts with those noted at the autopsy of twenty epilepties who had died during an attack, Pini has become convinced that epilepsy is an acid intoxication. Gout is due to abnormal elimination of uric acid, and epilepsy to some abnormal process in the formation of uric acid. The epileptic seizure is a kind of safety valve that relieves the organism from the substances produced in the morbid metabolism.

Rivista di Patologia Nerv. e Ment. (Florence), May.

Multiple Cysticercosis of the Brain and Epilepsy. A. LUI.—The epilepsy in the case reported had been developing for ten years. The patient was a young man. At the autopsy cysticerci were found disseminated through the cortex and meninges, respecting the motor zone. The case is a striking confirmation of the assumption of the cortical nature of epilepsy.

Anales de Oftalmologia (Mexico), July.

To Improve the Results of Ocular Prothesis. O. WERNICKE.—Before proceeding to the enucleation of the eyeball, a portion of skin in the gluteal region is disinfected. After the eyeball has been removed, a thread of catgut is passed through the tendon of each of the rectus muscles. A disc of skin with considerable fatty tissue adhering is cut out of the gluteal region and sutured in place of the eyeball in the orbit. The rectus muscles are sutured to the edge of the derma and the conjunctiva drawn up over it with a purse-string suture. After four or five days the suture is removed, which allows the conjunctiva to retract to the edge of the implanted disc. The latter soon loses its cutaneous appearance. The conjunctiva is not sacrificed and has only to cover the space normally covered by it, while the sac retains its normal shape.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A MANUAL OF SURGICAL TREATMENT. By W. Watson Cheyne, C.B., M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London, and F. F. Burghard, M.D., and M.S. (Lond.), F.R.C.S., Teacher of Practical Surgery in King's College, London. In seven volumes. Volume V. The Treatment of the Surgical Affections of the Head, Face, Jaws, Lips, Larynx, and Trachea; and the Intrinsic Diseases of the Nose, Ear and Larynx. By H. Lambert Lack, M.D. (Lond.), F.R.C.S., Surgeon to the Hospital for Diseases of the Throat. Cloth. Pp. 470. Price, $5.00. Philadelphia and New York: Lea Brothers & Co. 1901.

THE RETROSPECT OF MEDICINE. A Half-Yearly Journal, Containing a Retrospective View of Every Discovery and Practical Improvement in the Medical Sciences. Edited by James Braithwaite, M.D., Lond., Consulting Obstetric Physician and Surgeon to the Leeds General Infirmary, and E. F. Trevelyan, M.D., Lond., B.Sc., F.R.C.P., Assistant Physician to the Leeds General Infirmary. Volume CXXIII. January-June, 1901. Issued July, 1901. Cloth. Pp. 469. Price, $1.50. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.

THE ILLINOIS STATE BOARD OF HEALTH. Report of the Sanitary Investigations of the Illinois River and Its Tributaries. With Special Reference to the Effect of the Sewage of Chicago on the Des Plaines and Illinois rivers prior to and after the opening of the Chicago Drainage Canal. Cloth. Pp. 219. Springfield, Ill.: Phillips Bros. 1901.

SURGICAL APPLIED ANATOMY. By Sir Frederick Treves, K.C.V.O., C.B., F.R.C.S., Sergeant Surgeon to H. M. the King. New Edition, Revised by the Author. With the Assistance of Arthur Keith, M.D., F.R.C.S., Lecturer on and Senior Demonstrator of Anatomy at the London Hospital. Illustrated with 80 Engravings. Cloth. Pp. 571. Price, $2.00. Philadelphia: Lea Brothers & Co.

FORTY-THIRD ANNUAL REPORT OF THE WASHINGTONIAN HOME, for the Year Ending April, 1901. Located at 41 Waltham Street, Boston. Paper. Pp. 19. Boston: T. W. Ripley.

ANNUAL REPORT OF THE BOARD OF HEALTH OF THE CITY OF LANCASTER, PA., for the Fiscal Year Ending Dec. 31, 1899. Paper. Pp. 149. Lancaster, Pa.: Halbach.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Volume XIII. Thirteenth Session, held at Atlanta, Ga., Nov. 13, 14 and 15, 1900. Cloth. Pp. 436. Published by the Association, 1901.

WESTERN RESERVE UNIVERSITY. Reports of the President and Faculties. 1900-1901. Paper. Pp. 181. Cleveland: Winn and Judson. 1901.

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY. Edited by the Secretary. Twenty-third Annual Meeting, held in New York City, June 28, 29 and 30, 1900. Volume XII. Paper. Pp. 228. Lincoln, Neb.: State Journal Co. 1901.

New Patents.

679,202. Producing pure saponin solutions. M. C. L. Althausse, Billwarder-an-der-Bille, Germany.

679,203. Obtaining hydrocellulose. M. C. L. Althausse, Billwarder-an-der-Bille, Germany.

679,204. Obtaining hydrocellulose. M. C. L. Althausse, Billwarder-an-der-Bille, Germany.

678,943. Compress. John C. Davis, Kansas City, Mo.
679,262. Antiseptic applying apparatus. Wilber M. Kelso, Chicago, Ill.
678,892. Apparatus for sterilizing liquids. John C. Miller, Canton, Ohio.
678,893. Apparatus for sterilizing and cooling liquids. John C. Miller, Canton, Ohio.
679,239. Cataphoric pad. John F. Mossberg, Minneapolis, Minn.
679,036. Ophthalmoscope. Elmer L. Ryer, New York City.
679,198. Hypodermic syringe. Charles Witkowski, Boston, Mass.
679,044. Ophthalmoscope. Henry L. de Zeng, Philadelphia.
679,524. Water-bag. Charles J. Bailey, Newton, Mass.
679,600. Culture of baeteria. Albert Caron, Haus Ellenbach, Germany.
679,667. Adjustable invalid's table. Samuel M. Davis, San Francisco, Cal.
679,671. Syringe nozzle. Charles T. Hannigan, Providence, R. I.
679,478. Menstrual receptable and uterine supporter. Jacob R. Lang, Rockport, Ind.
679,626. Sterilizing apparatus. Arthur E. Leach, Winthrop, Mass.
679,388. Chemieal apparatus. J. F. W. Meyer, Scheune, near Stettin, Germauy.
679,436. Atomizer. Emanuel J Sonn, New York City.
679,712. Speculum. Richard E. Venning, Charlestown, W. Va.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., July 25 to 31, 1901, inclusive:

Walter K. Beatty, contract surgeon, now at San Francisco, Cal., to report for assignment in the Department of California.

Arthur J. Boyer, contract surgeon, from Fort Columbus, N. Y., to Fort Lawton, Wash., for post duty.

Thomas S. Bratton, captain and asst.-surgeon, U. S. A., leave of absence granted.

James Carroll, contract surgeon, from Washington, D. C., to Havana, Cuba, not later than Aug. 5, 1901, for the purpose of continuing the investigation into the causation and treatment of yellow fever, and on the completion of this duty to return to his proper station not later than Oct. 1, 1901.

William H. Corbusier, major and surgeon, U. S. A., member of an examining board in New York City, relieving Major H. S. Kilbourne, surgeon, U. S. A.

G. Parker Dillon, contract surgeon, from Fort Sheridan, Ill., to post duty at Jefferson Barracks, Mo.

Guy L. Edie, major and surgeon, U. S. A., siek leave of absence granted.

Charles B. Ewing, major and surgeon, U. S. A., is relieved from duty in the Division of the Philippines to take effect Sept. 4, 1901, and will then proceed to the United States, reporting his arrival by telegraph to the Adjutant-General of the Army.

Bower E. Himes, contract surgeon, now at Mill Creek, Pa., will proceed to Fort Missoula, Mont., for post duty.

John S. Kulp, captain and asst.-surgeon, U. S. A., member of an examining board in New York City, relieving Major W. D. Crosby, surgeon, U. S. A.

William F. Lewis, captain and asst.-surgeou, U. S. A., member of a retiring board at Fort Leavenworth, Kan.

Charles J. Long, contract dental surgeon, from Rock Island, Ill., to San Francisco, Cal., en route for duty in the Division of the Philippines.

John S. Marshall, contract examining and supervising dental surgeon, relieved from duty in Washington, D. C., to proceed to Milwaukee, Wis., to represent the Medical Department of the Army at the meeting of the National Dental Association, to be held in that city Aug. 5 to 9, 1901, and thereafter to proceed to San Francisco, Cal., for assignment at the Presidio of San Francisco.

Robert W. Morgan, contract examining and supervising dental surgeon, relieved from duty in Washington, D. C., and assigned to Columbia Barracks, Havana, Cuba.

Robert T. Oliver, contract examining and supervising dental surgeon, relieved from duty in Washington, D. C., to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

George R. Plummer, captain and asst.-surgeon, Vols., leave of absence extended.

Henry I. Raymond, major and surgeon, U. S. A., member of a board in Chicago, Ill., for the examination of such persons as may be ordered before it to determine their fitness for appointment as lieutenants in the army.

Henry H. Rutherford, lieutenant and asst.-surgeon, U. S. A., is honorably discharged from service as a eaptain and asst.-surgeon of Vols.

Herbert G. Shaw, lieutenant and asst.-surgeon, U. S. A., recently appointed and now at the Presidio of San Fraucisco, Cal., is assigned to temporary duty at that post.

Charles Smart, colonel, asst.-surgeon-general, to proceed to New York City on official business pertaining to the Medical Department of the Army and upon the completion of this duty to return to his station in Washington, D. C.

Richard P. Strong, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

August von Clossman, contract surgeon, from Jefferson Barracks, Mo., to duty in St. Louis, Mo.

Joseph W. Walsh, contract surgeon, from duty at the General Hospital, Washington Barracks, D. C., to Fort Canby, Wash., for post duty.

Samuel T. Weirick, captain and asst.-surgeon, Vols., recently appointed, relieved from duty at Fort Gibbon, Alaska, to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

J. Samuel White, contract surgeon, from duty at the General Hospital, San Francisco, Cal., to Fort Gibbon, Alaska.

Timothy E. Wilcox, major and surgeon, U. S. A., member of a board at Chicago, Ill., for the examination of such persons as may be ordered before it, to determine their fitness for appointment as lieutenants in the Army.

Allie W. Williams, lieutenant and ass.-surgeon, U. S. A., member of an examining board in New York City, relieving Captain John S. Kulp, asst.-surgeon, U. S. A.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Aug. 3, 1901:

Asst.-Surgeon J. W. Backus, detached from the *Vermont* and ordered to the Asiatic station, August 16.

Asst.-Surgeon F. A. Asserson, detached from the Naval Hospital, New York, and ordered to the Asiatic station, August 16.

Surgeon S. H. Griffith, relieved as recruiting officer at Buffalo, N. Y., and ordered to continue other duties.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Aug. 1, 1901:

Surgeon Fairfax Irwin, granted leave of absence for twenty-one days, from August 7.

P. A. Surgeon J. O. Cobb, bureau letter of July 22, 1901, granting leave of absence for thirty days from July 24, amended so that said leave shall be effective July 25.

P. A. Surgeon C. P. Werteubaker, to proeeed to Camp Fontainebleau and adjacent eoast towns as inspector.

P. A. Surgeon J. B. Greene, relieved from temporary duty at Washington, D. C., and directed to proceed to New York (Stapleton) and report to medical officer in command, for duty and assignment to quarters, relieving Asst.-Surgeon Taliaferro Clark.

Asst.-Surgeon Taliaferro Clark, upon being relieved by P. A. Surgeon J. B. Greene, to proceed to Immigration Depot, New York City, and report to Surgeon G. W. Stoner, for duty, relieving Asst.-Surgeon J. D. Long.

Asst.-Surgeon W. A. Korn, granted leave of absence for one month from August 12.

Asst.-Surgeon J. D. Long, upon being relieved by Asst.-Surgeon Taliaferro Clark, to proceed to Manila, P. I., and report to Chief Quarantin Officer for duty, July 29, 1901. Granted leave of absence for two days.

A. A. Surgeon L. C. Bean, granted leave of absence for thirty days from August 2.

A. A. Surgeon B. Y. Harris, granted leave of absence for fifteen days from August 12.

A. A. Surgeon H. McD. Martin, granted leave of absence for thirty days from August 1.

Hospital Steward T. V. O'Gorman, granted leave of absence for sixty days on account of sickness, to take effect on date of departure from station.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 3, 1901:

PLAGUE—UNITED STATES AND INSULAR.

California: Los Angeles, July 13-20, 2 cases; San Francisco, July 14-21, 1 case.
Kentucky: Lexington, April 27-May 4, 11 cases.
Michigan: Grand Rapids, July 13-27, 2 cases.
Nebraska: Omaha, July 6-20, 5 cases.
New Hampshire: Nashua, July 20-27, 1 case.
New Jersey: Newark, July 20-27, 6 cases, 1 death.
New York: New York City, July 20-27, 46 cases, 9 deaths.
Ohio: Cincinnati, July 19-26, 1 case.
Pennsylvania: Philadelphia, July 20-27, 1 case, 1 death.
Tennessee: Memphis, July 20-27, 1 case.
Utah: Salt Lake City, July 20-27, 7 cases.
Washington: Tacoma, July 14-21, 6 cases.
West Virginia: Martinsburg, July 26, 13 cases.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, May 1-31, 247 deaths.
Austria: Prague, July 6-13, 1 case.
Belgium: Antwerp, July 6-13, 4 cases, 1 death.
France: Paris, July 12-19, 5 deaths.
Gibraltar: July 1-14, 2 cases.
Great Britain: Glasgow, 12-19, 3 cases, 1 death; Loudou, July 6-13, 12 cases.
India: Bombay, June 25-July 2, 4 deaths; Calcutta, June 22-29, 5 deaths; Karachi, June 8-30, 13 cases, 6 deaths.
Italy: Messina, July 6-13, 5 cases, 4 deaths.
Netherlands: Rotterdam, July 13-20, 1 case, 1 death.
Russia: Moscow, June 30-July 6, 9 cases, 3 deaths; Odessa, July 6-13, 1 case, 1 death; St. Petersburg, June 15-July 6, 7 cases, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, July 17, 1 death.

PLAGUE—FOREIGN.

India: Bombay, June 27-July 2, 65 deaths; Calcutta, June 22-29, 14 deaths; Karachi, June 8-30, 23 cases, 23 deaths.

YELLOW FEVER.

Costa Rica: Port Limon, July 4-21, 2 eases.
Cuba: Cienfuegos, July 15-18, 2 cases.
Mexico, Vera Cruz, July 13-27, 2 cases, 1 death.

CHOLERA.

India: Bombay, June 25-July 2, 3 deaths; Calcutta, June 22-29, 23 deaths.
Java: Batavia, June 8-22, 49 cases, 27 deaths.

The Journal of the American Medical Association

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VOL. XXXVII. CHICAGO, ILLINOIS, AUGUST 24, 1901. No. 8.

Original Articles.

PERNICIOUS ANEMIA.

REPORT OF THE PROGRESS OF CASES PRESENTED TO THE ASSOCIATION IN 1900, AND REPORT OF A CASE WITH DIFFUSE SPINAL CORD LESIONS AND POST-MORTEM FINDINGS.*

FRANK BILLINGS, M.D.

CHICAGO.

Of the twenty cases reported last year to the Association, ten were dead.[1] During the year, of the remaining ten, four have died; of the remainder, two have disappeared, and four are still under observation. No further observations were made of three of the four who died, because of their residence in remote localities, and no autopsies were held upon them. The fourth (No. 14 in the series) died in February of this year, and since the first report many examinations of the blood have been made. Last May, when her case was reported, she was on the decline. She remained in this low state until October, when an improvement wave began, which reached its height in December. At that time she had over 2,000,000 red cells and about 40 per cent. of hemoglobin; then a rapid decline occurred, with a fall to less than 20 per cent. of hemoglobin and 659,000 red cells per cubic millimeter. The white-cell count kept pace with the improvement in the red cells and hemoglobin, and fell with the decline of the other elements of the blood, just as was noted in the report of last year. During the decline there was a large increase in the number of nucleated red cells. The accompanying chart shows graphically the blood curve in this case. Unfortunately, no autopsy was allowed. (See Chart No. 4.)

Upon the cases still living, observations have been continued upon Cases No. 10, 12 and 13 of the series. When reported last year, No. 13 was upon a wave of improvement, and this wave has remained unbroken up to the present time. The number of red cells, the percentage of hemoglobin, and the number of white cells are about normal. There have been no nucleated cells found since January, 1900. The patient, however, does not look as well as the condition of the blood would indicate. There is a yellow tinge of the skin. He is not strong and has less endurance than before the illness began. Furthermore, the blood cells still show irregularities of form and size. It is not improbable that his improvement wave will be broken by a fall in the near future. The case is a remarkable one, because of the long wave of improvement. The chart shows graphically the condition of the blood during the two years he has been under observation, and it is to be noted that even in this stage of improvement the color index has remained high. (See Chart No. 1.)

No. 12 returned from Iowa to Chicago in September, 1900, and since that time has been under weekly observation. She has had various waves of slight improvement and decline with the constant presence of nucleated cells and a high color index. At this date she is in an improvement wave, as indicated by the accompanying chart. (See Chart No. 2.)

No. 13 of the series has been under constant observation since the report. She was upon a wave of improvement when last reported, which continued until September, 1900, since that time there has been a decline, with slight waves of improvement, but the chart shows a continuous decline. Nucleated red cells disappeared entirely from the blood during this long wave of improvement, but have been found during the last two months. When at the greatest height of the wave of improvement, the color index was low, but with the wave of decline came the usual high color index. (See Chart No. 3.)

The continued study of these cases has brought forth nothing new in the way of blood changes. The conclusions which were read in the paper of last year have been fully borne out by the continued examinations made.

*Dr. Joseph A. Capps, who is associated with me in my private work, has made some interesting experiments with the hematocrit during the last year.

It has long been recognized that the blood in pernicious anemia is characterized by the presence of large red cells, both nucleated and non-nucleated. This tendency to enlargement of the cells explains in part their increased capacity for taking up and carrying hemoglobin. To express accurately the actual hemoglobin content of the average cell, we use the convenient term "color index," which is the per cent. of hemoglobin divided by the per cent. of red cells.

The means of determining the size of the red corpuscles is quite as important as the estimation of the hemoglobin-content of the cells.

The old method of measuring the diameter of a large number of cells is unsatisfactory because no account is taken of the thickness of the cell and we know that in this respect great variations occur. A fairly accurate result may be obtained, however, by the use of the centrifuge in connection with a red-cell count. The percentage volume of the red cells as a whole, as obtained from the graduated capillary tube of the centrifuge, is divided by the percentage number of red corpuscles which gives the percentage volume of the individual corpuscle.

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* Read at the meeting of the Association of American Physicians, at Washington, D. C., April 29, 1901.

1. Transactions of the Association of American Physicians, 1900, p. 308.

* A Preliminary Report on Some Observations of Blood in Anemia. JOURNAL, Feb. 16, 1901.

For the quotient no term has been employed. The name of "volume index," therefore, is suggested corresponding to the familiar "color index."

Thus a reading of 45 on the tube equals 90 per cent. by the hematocrit and if in a given case the red cells number by the Thoma-Zeiss count 3,750,000 or 75 per cent. then 90/75 equals 1.20 the volume index, an increase of 20 per cent. above the normal in the volume of the average cell. In twelve of the series reported this test has been applied and all have shown a large volume index throughout the greater part of the disease. The lowest volume index was .93 and the highest 1.93—the others ranging from 1.05 to 1.59. In some instances the volume index was increased when the cell diameter average was not above the normal, thus indicating a probable enlargement of the cell in depth but not in circumference.

These observations also demonstrate that the hematocrit is of value in giving us the corpuscular mass but is unreliable for computing the number of cells.

During the year 9 new cases of pernicious anemia have come under my personal observation and have been examined frequently enough to make the diagnosis certain in each case. Of these cases, 7 were males, and 2 females. The ages ranged from 36 to 69 years. All were very well-to-do people, and in no one was there any specific cause to be found to which the disease could be attributed. The observation noted last year, that in most of the cases reported gastro-intestinal disturbance was a common accompaniment, has been found true also in the 9 new cases. Four of the 9 new cases sought consultation for gastro-intestinal disturbance. In but one of the cases was a bad condition of the teeth and mouth found, which could in any way be a cause of the trouble. A short account of each case will be of some value to those who desire to note the clinical course of pernicious anemia.

CASE 21.—Mrs. R. L. S., aged 51; married; mother of five children; came Nov. 13, 1900. Has enjoyed good health the greater part of her life. Has had falling of the womb the past twenty-nine years, but has not suffered much from pelvic disturbance. For ten years she has had gastro-intestinal fermentation; some nausea, usually in the afternoon, when overtired. There was often a sense of weight and gnawing in the epigastrium; the appetite was usually poor, the bowels constipated. During the last few months the bowels have been loose, with one or two painless, watery stools a day.

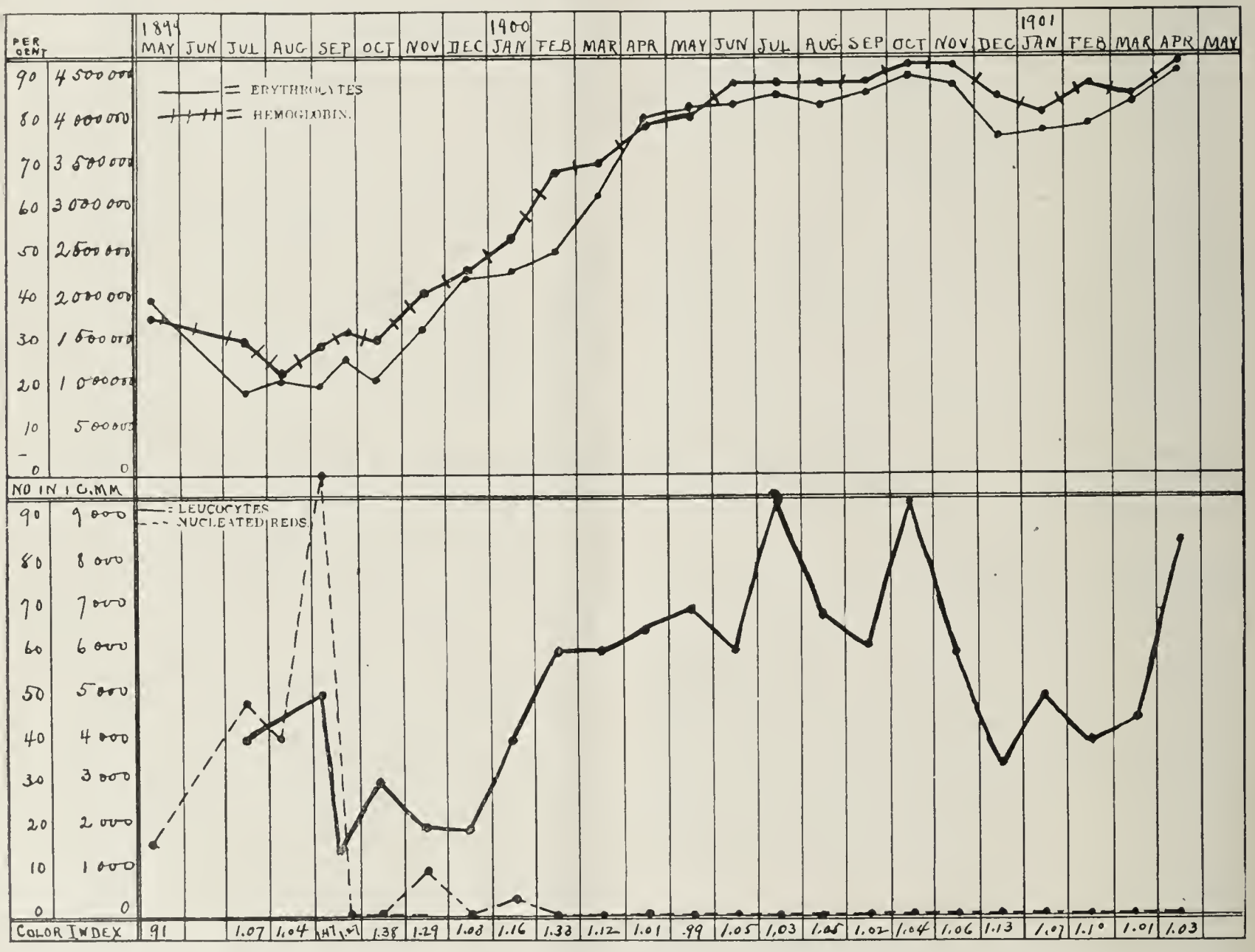


CHART 1.

One maternal aunt died of cancer; three maternal uncles died of tubercuiosis.

Examination revealed nothing of importance in the chest. The abdomen was somewhat protuberant, and there was slight diastasis of the recti muscles. There was enteroptosis, the stomach lying well down in the lower quadrant of the abdomen. The liver edge was palpable two fingers' breadth below the costal arch. The spleen was not palpable. The stomach contents, one hour after a meal of lean meat, bread and tea, gave no reaction for hydrochloric or organic acids. The urine, specific gravity, 1020; no albumin, no sugar, and no sediment with the centrifuge. Blood examination, hemoglobin, 40 per cent; specific gravity, 1044; red cells, 1,648,000, and 7500 white cells per cubic millimeter. Nucleated red cells, with megaloblasts predominating, were present. Poikilocytosis and chromatophilia were marked.

An examination, April 23, 1901, showed some improvement; hemoglobin, 42 per cent; specific gravity, 1045; red cells,

2,110,000, and white cells, 5500 per cubic millimeter; five megaloblasts, and three normoblasts were estimated to be present in one cubic millimeter. The patient was subjectively better without a gain in weight, but still complained of the gastro-intestinal fermentation and slight looseness of the bowels. The stool of this patient was not examined because her home was a distant point, and a visit of a day only was made to Chicago for each examination. There was no perceptible cause for the disease to be found.

CASE 22.—W. F. McC., dentist; aged 36; single; presented himself first May 31, 1897. He stated at that time that his illness began with tingling and numbness of the fingers, which posterior tibial nerves. The reflexes were not altered. Blood examination revealed hemoglobin, 40 per cent.; red cells, 2,300,000; white cells, not counted. No parasites were found in the blood.

On Nov. 20, 1897, patient again presented himself for examination. He had been in California for three months and was much improved in general health. He still complained of some pain along the course of the tibial nerves, and the tingling and numbness of the fingers and toes continued. Blood examination showed hemoglobin, 80 per cent; red corpuscles, 4,000,000 per cubic millimeter. The patient was not seen again until March 5, 1900, when he again presented himself. He

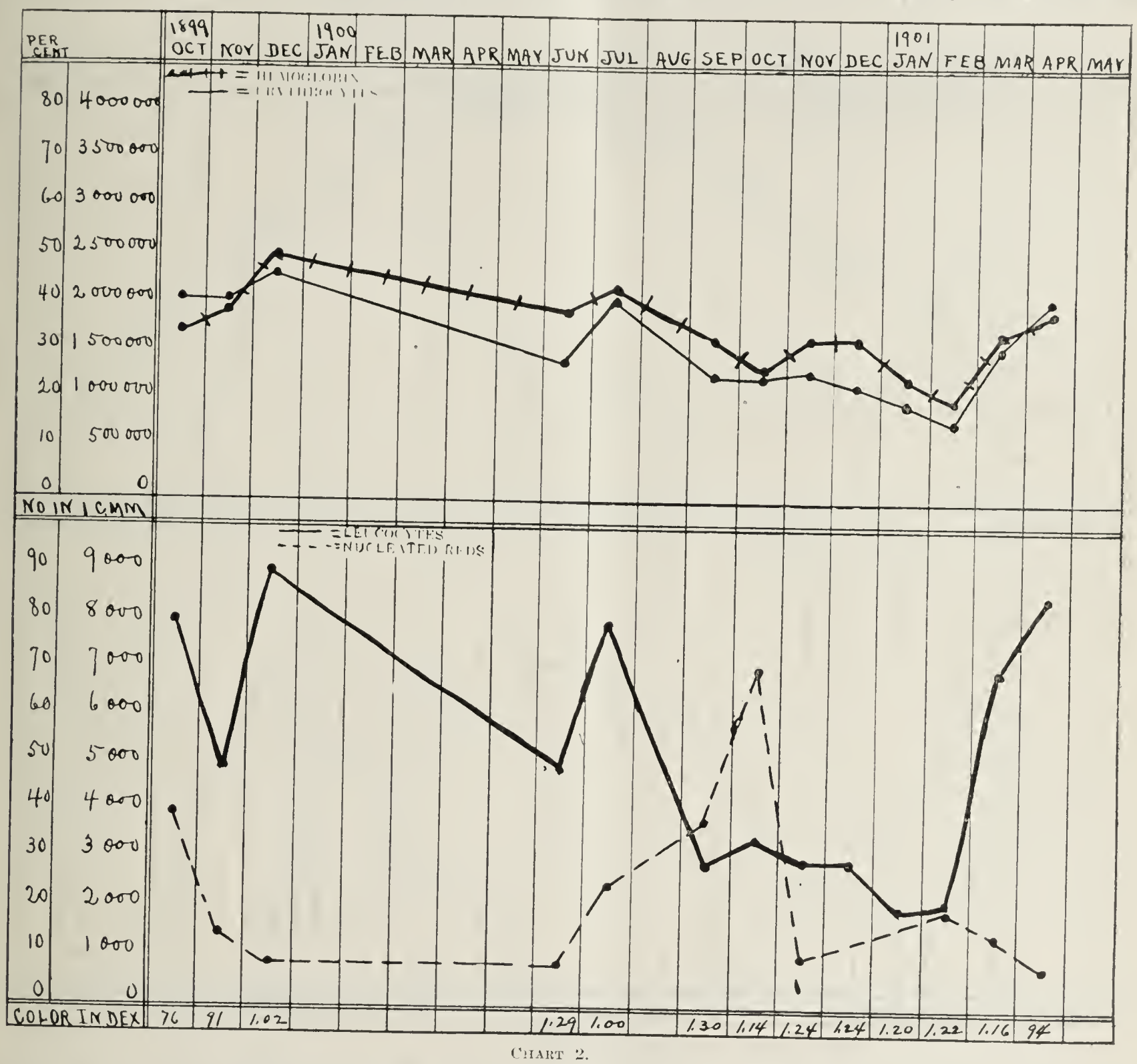


CHART 2.

later involved the feet and legs, with tenderness of the calves and the knee joints. No spontaneous pain. He had diarrhea for six weeks at the beginning of this illness; always had some gas and epigastric weight after eating. The urine was scant but normal, as he had himself examined it. In February, 1897, a competent hematologist had found the normal number of red cells, but hemoglobin much diminished. A diagnosis had been made in this case of multiple neuritis from intoxication due to digestive disturbance. An examination made at that time showed a man fairly well nourished; weight 136 pounds. The chest was negative. The liver area seemed normal. The spleen was not palpable. The urine, specific gravity, 1028; urea 1.9 per cent; alkaline reaction; phosphates in excess; no albumin; no sugar; no casts. There was tenderness along the complained of great weakness and of lessened endurance. He looked pale, and there was a yellowish tinge to the skin. The physical findings were negative, except as noted above. Blood examination, hemoglobin, 60 per cent.; 3,048,000 red cells, and 10,000 white cells. There were no nucleated cells found.

On April 2, 1900, hemoglobin was 55 per cent; red cells, 2,248,000, and white cells, 6,000 per cubic millimeter. Patient felt weaker than before, and complained of dyspnea upon exertion. Physical findings negative.

On April 28, there was a still further decline. Hemoglobin was 42½ per cent; red cells, 1,448,000, and white cells, 5000 per cubic millimeter. Nucleated red cells were found with megaloblasts predominating. The patient was continued upon

restorative tonics of arsenic and iron, and advised to go into the country.

On Dec. 28, 1900, the hemoglobin was 33 per cent; specific gravity, 1039; red cells, 1,264,000, and white cells, 4400 per cubic millimeter. Normoblasts, microblasts and megaloblasts were found. Poikilocytosis and polychromatophilia were present during these latter observations, and this condition of the corpuscles, with the continued high color index and the progressive character of the disease make the diagnosis practically certain. The patient is at present living in the country, and no observation has been made since that last noted above. There was no perceptible cause for the disease to be found.

CASE 23.—Mr. F. B. K., aged 53; merchant; married; American; presented himself June 29, 1900. Mother died of tuberculosis, with an associated anemia; father died of heart disease. Patient has not used tobacco or alcohol during his life, and has always been a healthy man. He has not overworked, but has lived much of the time indoors. A year ago he began to lose strength, and later lost somewhat in weight. Six months ago he and his friends noticed a pallor, and he had some dizziness and shortness of breath upon exertion. During the last two or three months there have been numbness and tingling of the extremities. His main complaint at present is weakness, with shortness of breath, and palpitation of the heart from exercise or excitement. He is restless, emotional, and faint at times. There has been swelling of the lower extremities for several weeks, especially in the latter part of the day. He has noticed some black and blue spots on the thighs recently. His appetite is variable; there is no indigestion; bowels usually constipated. There has been occasional diarrhea recently. His weight a year ago was 197 pounds; January, 1900, 165 pounds, and at present, 158 pounds. He has noticed no blood in the stool; has no epistaxis, or hemorrhage from the gums.

On examination a marked pallor, with a lemon-yellow tint, is very noticeable. The mucous membranes of the lips and mouth are yellowish pale. The teeth are good; the mouth, clean; there is some puffiness of the eyelids. The eyes are normal, including the retinæ. The pulse, small and rather rapid. There is a capillary pulse in the lips. The heart area, normal; the lungs, negative. There is a systolic bruit in the neck. The abdomen is negative; the rectum, negative. The reflexes, normal. Urine, specific gravity, 1013, acid reaction; 0.6 of 1 per

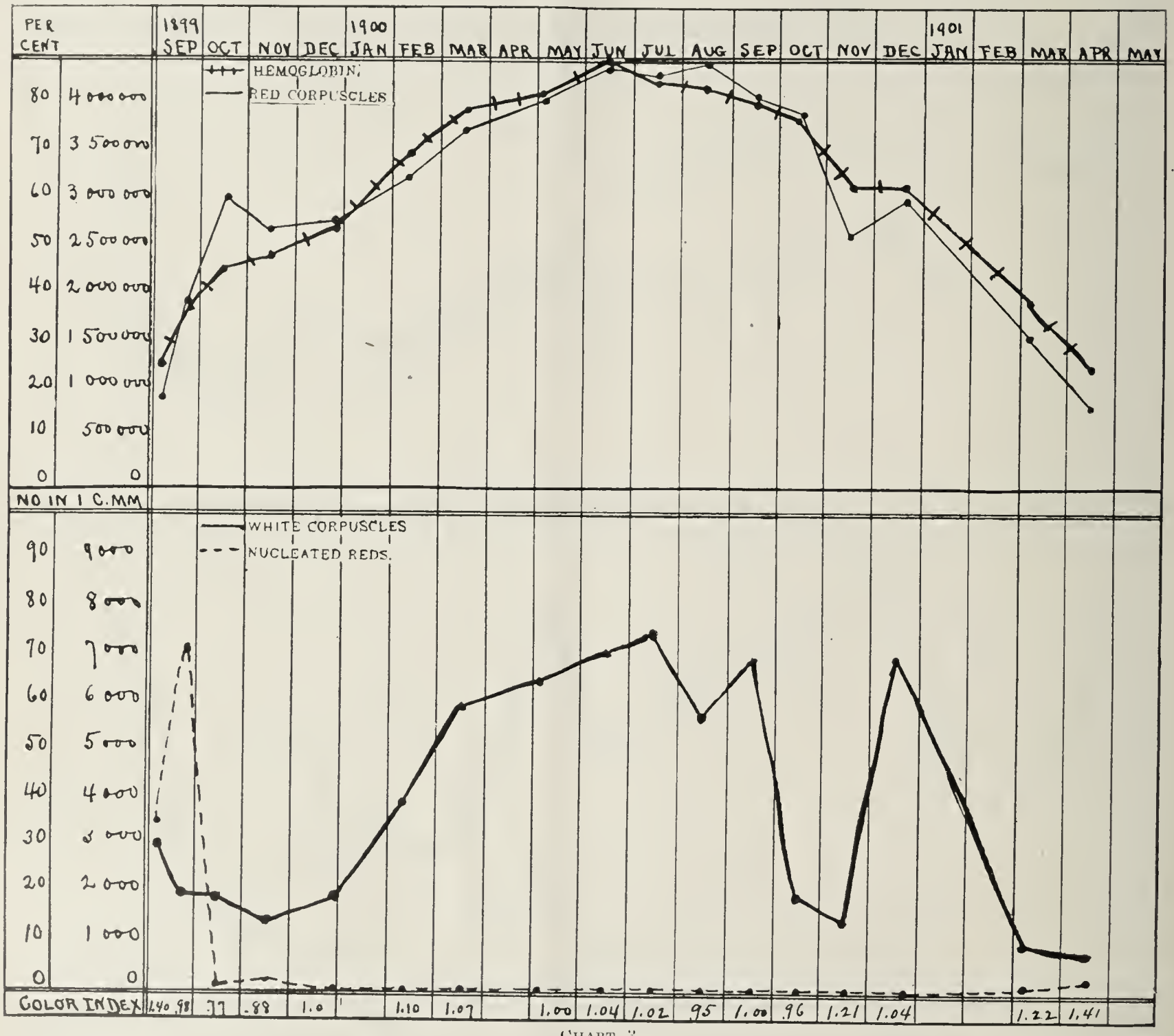


CHART 3.

cent. albumin, with a few finely granular and hyaline casts present. Blood examination, hemoglobin, 28 per cent; specific gravity, 1038; red cells, 1,006,000, and white cells, 1500 per cubic millimeter. Poikilocytosis, very marked. Many nucleated cells are found, with a preponderance of megaloblasts. Color index, very high—1.53.

A letter of recent date, from a physician, states that the patient improved for a few months, but is now becoming rapidly worse again. There was no perceptible cause for the disease to be found.

CASE 24.—W. J. F.; aged 40; male; merchant; presented himself Nov. 10, 1900, with a letter from his physician, Dr. Kanne, Peoria, Illinois. His father died of blood poisoning; mother living at the age of 72. Patient gives a history of good health, except for typhoid fever, when 18. He is an active

worker. Denies venereal disease. While at West Baden, Ind., September, 1898, he was taken with a severe diarrhea which lasted for about two weeks. This was accompanied by pain and slight fever. Succeeding this he was weak and debilitated, and has never been well since that time. A year ago it was noticed that his skin was pale and of a yellowish tint. There was some loss of weight at this time, with diminished strength and endurance, and noticeable dyspnea upon exertion. While skin pale, and of a lemon-yellow color. Mucous membranes of the mouth and pharynx very pale. There are some palpable glands in the superficial carotid triangles. The teeth are sound; the gums normal; the lungs negative; heart area normal; tones clear; the pulmonic second sound slightly accentuated. Liver and spleen negative. Knee jerks are active. There is an ankle clonus of slight degree present; a slight edema of the ankles. The rectum is normal; the eye grounds

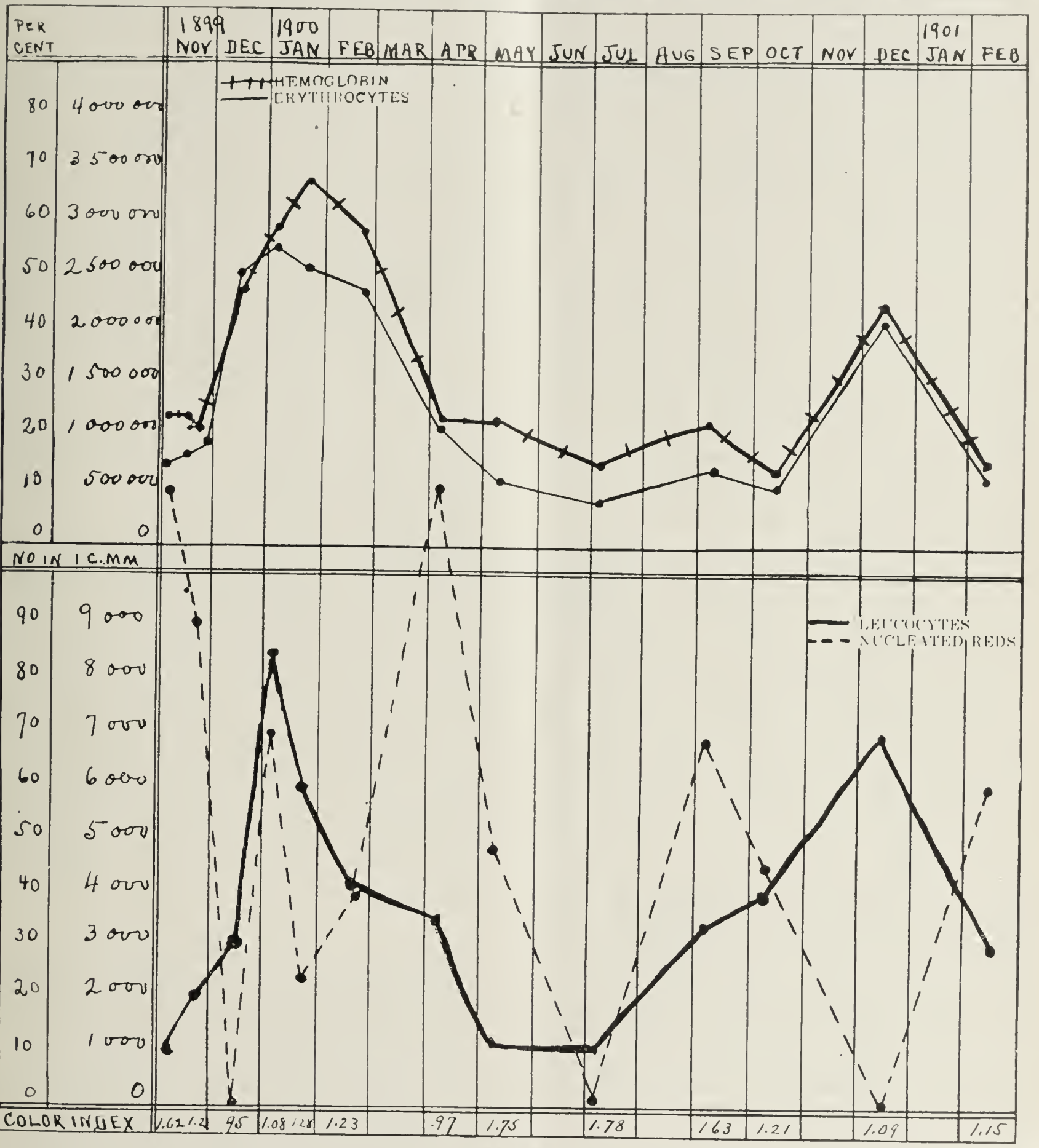


CHART 4.

at Eureka Springs, Ark., he gained fifteen pounds, and has since retained about the normal weight, 142 pounds. During the last two months he has noticed that the pallor has increased; he has lost strength; has attacks of dizziness, faintness and shortness of breath upon exertion. Slight swelling of the ankles has occurred in the latter part of the day. There has been slight headache occasionally, and there is some numbness of the toes and of the finger-tips.

Examination shows, man about normal weight for his height; normal; urine, specific gravity, 1015; no albumin, no sugar, no casts. Blood examination, hemoglobin, 43 per cent; red cells, 1,512,000, and white cells, 6400 per cubic millimeter. Many nucleated cells present, with a preponderance of megaloblasts.

Many examinations of the blood had been made by Dr. Kanne, which, in the relation of the hemoglobin to the red cells, agreed in the main with the examination noted above.

A letter of recent date from Dr. Kanne states that the pa-

tient was, at the time of examination, upon a wave of decline. There was no perceptible cause for the disease to be found.

CASE 25.—J. K.: aged 56; male; married; merchant; presented himself Nov. 24, 1900. Family history, negative; brothers and sisters are healthy. Patient has always been a healthy man in active business. Has used alcoholic drinks very moderately. A year ago he noticed a little numbness in the hands and feet which has since remained. Six months ago his wife noticed that he was pale, and since then there has been an increase of the pallor, with weakness, lessened endurance, shortness of breath upon exertion, and dizziness and faintness at times. The appetite has become poor, digestion disturbed by gas, with eructation, and a sense of weight and distention in the epigastrium. He has been drowsy, but at times very nervous. He has not lost in weight.

Examination shows, well nourished man, with a skin very pale and yellow; mucous membranes white. Teeth, good; lungs, negative; heart tones, normal, and heart area, not increased. The liver extends three inches below the costal arch in the mammary line. The spleen is palpable, extending two inches beyond the costal margin. The stomach and intestines are negative; the rectum, negative. There is slight edema of the ankles; the knee jerks, present and active. Urine, specific gravity, 1021; no albumin, no sugar, no casts. Examination of the blood, hemoglobin, 34 per cent.; specific gravity, 1038; red cells, 1,653,000, and white cells, 2200 per cubic millimeter. Nucleated cells were found with megaloblasts in preponderance.

Examination of the blood made Dec. 13, 1900, by Dr. Werner, of Quincy, Ill., hemoglobin, 33 per cent.; red cells, 1,626,000 and whites, 2100 per cubic millimeter, with nucleated red cells, including megaloblasts. Poikilocytosis was very marked in this case, and megaloblasts were noticeable because of marked fragmentation of the nuclei. There was no perceptible cause for the disease to be found.

CASE 26.—J. E. P., aged 69; married; manufacturer; came Jan. 7, 1901. Mother died of tuberculosis; no other history of transmissible disease in the family. Patient has practically abstained from alcohol and tobacco. Had typhoid when 28. He can recall no other serious illness. Four months ago he was troubled for several weeks with nausea and dizziness, burning sensation in the stomach, with eructations of gas, and hot sensations in the throat. Six weeks ago there were nausea and faintness, with waterbrash. With this there has been progressive weakness, with loss of flesh and pallor; shortness of breath, and increasing lack of endurance. There has been some numbness and tingling in the fingers and toes. He vomited once and ejected food which had been taken eight hours before. He has never noticed blood in the stools. Has had no noticeable loss in weight.

Examination shows, rather thin man, weight 140 pounds—maximum weight 158 pounds—skin very pale and of a yellowish tint. The tongue and mouth are clean; the molars gone, but the remaining teeth sound. There is a thickening of the palpable arteries; a capillary pulse in the lips. The lungs, negative; the heart dullness appears normal; there is a soft systolic blow over the aortic area. The liver edge is felt somewhat sharp on inspiration; spleen not palpable. There is a double inguinal hernia; the rectum, negative. Urine, specific gravity, 1015; reaction acid; no albumin, no blood, no casts. Blood examination, hemoglobin, 39 per cent; specific gravity, 1043; red cells, 1,538,000, and white cells, 2500 per cubic millimeter. Many nucleated cells found, including megaloblasts.

Patient was placed on a restorative tonic treatment. On Feb. 8, 1901, a month later, blood examination gave, hemoglobin, 56 per cent.; specific gravity, 1050; reds, 3,194,000, and whites, 5000 per cubic millimeter. Nucleated cells were present, and poikilocytosis marked. This noticeable improvement of the blood was accompanied with a corresponding subjective improvement.

On March 26, 1901, blood examination showed 78 per cent. hemoglobin; specific gravity, 1056; red cells, 3,768,000, and white cells, 6000 per cubic millimeter. Patient had gained in strength; his digestive power was good, and in every way he felt himself almost well. The restorative tonic treatment was continued.

A letter from the patient, written about the middle of April, states that he is not now so well; that he suffers from weakness, shortness of breath upon exertion, and that his color is not so good as it was when he was last examined.

The improvement wave in this case occurred coincidently with the restorative tonic treatment, and upon the face of it would look as though the treatment had something to do with the great improvement; but the observation made in the past with other cases has been so contradictory, that one can not but feel that improvement may take place in these cases without the aid of restorative tonics, and that, in some instances at least, remedies have received undeserved credit for good in pernicious anemia, when in all probability the improvement was due to the natural course of the disease. There was no perceptible cause for the disease to be found.

CASE 28.—Mr. W., aged 60; married; lawyer; presented himself Sept. 23, 1900. He states that his previous health has been good, but has lived a life of care and anxiety. The last few years he has been at work on a patent which he has felt was worth a fortune, and recently arrangements were made for its adoption by a syndicate which brought him increasing care and anxiety, so that he has not had much rest, day or night. Three months ago he noticed that he was not as strong as usual, and that his endurance was less. He had shortness of breath upon exertion, and there was considerable palpitation of the heart. The extremities became cold, especially when excited, and there was tingling of the finger-tips and toes. His digestion was poor, and there was much fermentation, with eructations of gas. The bowels were usually constipated. Had noticed but little loss of flesh. His friends noticed that he was pale.

Examination, well-nourished man, six feet in height, skin very pale, and of a lemon-yellow tint. Mucous membranes of the mouth, pale; teeth in fairly good condition; gums healthy; lungs negative; heart area normal. A murmur was heard in the neck when the patient was lying down, and a soft systolic murmur was heard at the base and apex of the heart. The liver was apparently normal in size; spleen not palpable; rectum negative; urine negative. Blood examination, hemoglobin, 22 per cent; red cells, 1,388,000; and white cells, 6000, per cubic millimeter. There were many nucleated red cells, megaloblasts predominating three to one over the normoblasts. There was marked poikiloeytosis. Several other blood examinations were made, which confirmed the primary examination.

Patient continued under observation for about two weeks, remaining practically in the same state, but with the addition of an edema of the lower extremities gradually increasing in severity. He was obliged to go East at this time, and died suddenly in Boston, on November 7. An autopsy was not performed. There was no perceptible cause for the disease to be found.

(To be continued.)

Infectious Diseases in South America.—This article was prepared at the request of the committee of organization of the recent Latin-American Congress by Dr. E. Coni. It shows what has been accomplished by sanitary measures in South America. The principal cities have materially reduced the mortality by their enforcement of compulsory declaration, isolation and disinfection of infectious diseases. Buenos Ayres and Montevideo have an abundance of good potable water, good drainage and a good sanitary organization and consequently their mortality has been very much reduced, the latter city enjoying the distinction of being the healthiest in South America, and Rio Janeiro that of being the unhealthiest, as the drinking water and drainage are still insufficient. Santiago de Chili, in spite of its mild, equable climate, has a frightful death-rate, only to be diminished by sanitation on an extensive scale. Coni urges that the magnificent results attained in Buenos Ayres by the compulsory declaration and disinfection of tuberculosis, should inspire Brazil, Chili and Peru to follow her example. Peru has no public service of disinfection nor modern isolation hospitals. San Paulo leads all other Brazilian cities in its sanitary institutions and low death-rate.—*Revista Med. d. Uruguay.*

THE VALUE OF CONSERVATIVE TREATMENT OF THE UTERINE APPENDAGES.

AS OBSERVED IN THE LATER RESULTS OF RESECTION OF OVARIES AND OPENING OF TUBES IN NINETY-SEVEN CASES.*

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CHICAGO.

This work was commenced by the lamented Carl Schroeder, who published, in 1884, five cases of resection of an ovary to preserve ovulation and menstruation, in cases of bilateral multiple cystic degeneration of Graafian follicles. He advocated this treatment only for patients who are neither near the menopause nor already mothers of a number of children, and limited it to cases where the parts retained are safely healthy and no papillomata or other suspicions of malignancy are anywhere found. Aug. Martin reported 10 cases in 1889, 11 in 1891 and 6 more in 1893. Of these cases, 24 were subsequently available for longer observation; 8 of them became pregnant and 2 had recurrent disease. Out of 40 cases of salpingostomy, 1 became pregnant.

In 1891, W. H. Polk reported 10 cases of salpingostomy and 9 of section of ovaries. Of the total number, 15 were afterward examined and found to be successful in from 75 to 100 per cent. In 1893, this treatment was advocated by v. Winckel, Hoffmeier, Schatz, Zweifel, and P. Mueller, who suggested the destruction of cystic follicles by the thermocautery; and it was opposed by Hegar, Leopold and Fritsch. At that time and in 1895 —by Donnett—Pozzi reported 23 cases of resection and ignipuncture of ovaries, of which 19 were successful, 4 of these becoming pregnant, and 3 required a second operation. He did not practice salpingostomy. In 6 cases of bilateral cystic ovarian neoplasms, 4 being dermoids, F. Matthaei, Berlin, in 1895, had performed resection of one ovary, and 5 of the patients subsequently bore children. In 1900, Burrage reported 60 subjective cures out of 85 total traced cases of salpingostomy and resection of ovaries, after an observation of at least a year. In 41 of these there had been pus somewhere in the adnexæ at the time of operation. An anatomical cure was achieved in 33 out of 57 cases actually examined. Fifteen pregnancies had occurred and in 5 cases a secondary operation was advised. A. P. Dudley, in 1898, had observed 14 cases of pregnancy in 88 cases of such conservative treatment and he says that in only one case among all those examined, and that was gonorrheal, was he able to find a return of inflammation in the parts that were bimanually palpable. C. Martin, Birmingham, and R. Gersuny, Vienna, favor this mode of treatment in follicle cysts and benign neoplasms of ovaries, after a more limited experience with it. A. Maximo, Russia, has demonstrated the fact that not merely the germinal epithelium on the surface of an ovary does multiply mitotically and cover a defect, but that the deeper ovarian tissues also regenerate themselves and increase. He operated on 40 rabbits and 2 guinea-pigs and made exact histologic studies of the tissues involved, obtained at the death of the animals in from 5 hours to 80 days.

Some unfavorable results have been recorded, as follows: H. C. Coe reports 8 cases in which it was not satisfactory, because either the disorder required a second operation, or because it continued or recurred, or the artificial menopause was not averted, but merely delayed a little. The case reported by L. Fischer, Vienna, and the 4 cases by Waldstein at the Schauta clinic, can not fairly be counted, owing to the fact that in these cases cysts subsequently developed from diseased parts of ovaries, involuntarily left behind in efforts at total extirpation of the parts for severe septic disorganization, only because the parts retained were beyond the reach and inspection, if not the knowledge, of the operators via the vaginal route, and were not designedly selected and reconstructed, as resection implies. This treatment is applicable mostly to ovaries that have undergone cystic degeneration of Graafian follicles and corpora lutea, which results in some cases as a sequel to earlier systemic infectious diseases—exanthemata, diphtheria, typhoid, etc. In other instances they partake of the nature of retention cysts, the follicles having been prevented from rupturing and from discharging their contents normally, owing to inflammatory thickening of their walls and of the tunica albuginea. But very often the condition is that of edema in which the ova die and is, therefore, called a hydrops of the follicles by some; this condition arises from an impeded venous circulation, i. e., a varicose condition in the ovarian circulation, such as most frequently results from descensus (prolapse) of the ovary, either alone, or more frequently, in conjunction with retroversion of the uterus.

The pathologic nature and gravity of these cystic follicles, varying in size from a pigeon's egg to a small hen's egg, has been well established by the findings of Virchow, Klob, Orth, Ziegler and others, and their capacity to cause suffering is well understood by unbiased, practical gynecologists of real experience, who have neutrally observed a larger number of such cases personally for a longer period of time and have exactly and repeatedly read their pelvic status bimanually, both before and after surgical or other mechanical relief of the condition was instituted. Ovaries with such cystic follicles cause much more local and also reflex neuralgic pain than arises from ovaries, the seat of actual neoplasms (cystomata), which are of larger size than the inflammatory or degenerate follicle cysts, but not yet large enough to mechanically encroach upon the neighboring organs. Such ovarian tumors frequently cause no symptoms at all in the beginning and are then only incidentally discovered. Among the ovarian neoplasms, dermoid and parovarian cysts have little or no tendency to malignancy and in their removal the retention of as much as possible of normal ovarian tissue, is both a safe procedure and a paramount requirement. More care is required in the selection of cases for the conservation of ovarian particles in cases of glandular ovarian cystomata—true ovarian cysts. A number of operators specify that they must be non-proliferating, must not bear any surface papillomata and that there must be no suspicion of malignant developments anywhere in the patient. A detailed report of several cases of this kind with others and their subsequent condition will be given elsewhere.

In view of the extreme value of this conservative treatment, if it be successful, and because there still are many who doubt its success, I have undertaken the considerable task of finding out the subjective and anatomic condition of all patients possible on whom I have performed such operations during the last three

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

and one-third years, and who have been observed an average period of nearly two years after operation. This I fortunately succeeded in doing in 97 out of 108 cases. Of the number, 80 were actually examined by myself or other physicians, and in 17 cases an accurate and complete written statement by the patient, in answer to specific questions, was accepted. Of the entire number, 9 were treated by anterior median vaginal celiotomy, 32 by median ventral celiotomy, and 56 by bilateral inguinal celiotomy via the dilated internal inguinal rings, in conjunction with a thorough Alexander operation. Naturally resection of ovaries and salpingostomy are practically always auxiliary procedures to other operations of equal, and usually, greater importance, like the removal of neoplasms or of parts of these organs that have been completely disorganized by inflammatory processes, or the rectification of complicated displacements and of parturient injuries. The nature of all these allied indications taken together and the question of future fecundity in each case, determine the choice of the route for operation. The vaginal route, in patients who are intended or expected to retain a capacity for conception, is best limited to cases that have no displacement of the uterus to be cured, likewise no large neoplasms and no considerable purulent accumulations or exudates in or about the organs, except parametritic abscesses, which should be drained into the vagina. This natural and severe limitation of vaginal celiotomy in such conservative cases is wise also, because however favorable this route is for extirpation of parts or all of the organs, it is not auspicious for conservative work or reconstruction of the adnexæ, for when they are normally located, too much violence is done to their more important lateral supports in dragging them downward and inward into the narrow median opening below, sufficiently to do them any good. Even then, delicate resection and accurate plastic coaptations—the most ideal surgery on ovaries—is usually out of the question and thermocauterization must be used. Moreover, when an ovary is already so much prolapsed as to be readily accessible, its displacement can not be remedied via the vagina, and resection or cauterization of it then does little and only temporary good.

Ventral celiotomy I choose in all cases of solid or cystic tumors of the internal generative organs that do not require removal of the uterus and are not small and uncomplicated by adhesions or septic appendages; likewise for cases in which inflammatory processes have caused extremely firm or extensive fixation of the uterus and appendages, or have left pus, or its equivalent, probably present in or about them.

The third class comprises that large class of patients who are not near their menopause and who have neither tumors nor septic accumulations, but who have retroversions or retroversioflexions of the uterus that are complicated either by adhesions or by degenerate conditions of the appendages—the result of inflammatory processes that have run their course and have died out, or of long-standing embarrassment of the venous circulation incident to the displacement. If patients with such comparatively minor lesions are operated on at all, it should be with a practical assurance that their displacement will be cured permanently and not merely up to the time of their next childbirth, and also that parturition will not be complicated by the results of the operation. This crucial requirement, by the writer named "the double test of pregnancy," has so far been quite uniformly achieved by the Alexander operation only. Furthermore, as the internal inguinal ring is fortunately directly in front of, and near to, the normal location of the ovary and ampulla of the tube on each side, fixations of the retroverted uterus and of the adnexæ can be relieved quite well by means of an index finger introduced through each Alexander wound, somewhat dilated; and these delicate organs can be led into these openings more easily and naturally than into any other opening that can be made in the abdomen or pelvis, and they can there be reconstructed and relieved of deleterious parts with the greatest facility. For these cogent reasons, this combination of intra-pelvic manipulation by touch alone, with the Alexander operation is the best procedure for the patient in the class of cases here considered.

The effect of the thermocautery is not precise and is not limited in its extent. Its destructive effect is too great in so small and delicate an organ as the ovary, and the cellular infiltration that occurs beyond the line of demarcation between the dead and living tissue, must induce more of a cicatricial condition than is occasioned by an aseptic plastic operation. In several cases I have observed a temporary, but distressing, amenorrhea after ignipuncture of an only ovary. But it is to be preferred when the organ is not sufficiently accessible for an exact resection, which is the rule via the vagina, and also, when a normal degree of asepsis is doubted in the ovary itself or its tube, or when pus has been encountered during the operation in such a way as is likely to contaminate the subsequent steps, or when fine, perfectly sterile and readily absorbable suture material is not at hand to use in resection.

Resection of ovaries, to be a thankful procedure and not to be followed frequently by a chronic tender or painful condition of the organs, must be done with the observance of the highest degree of surgical cleanliness. The use of sterile rubber gloves by all who come in contact with the wound, sponges, instruments and suture material, in addition to all the antiseptic treatment of the hands commonly in vogue without gloves, has materially enhanced the success of this more ideal gynecologic surgery in my experience.

As to the technic of resection of ovaries, single or isolated cysts bulging forth from its surface are removed by cutting away their projecting portion, peeling or scraping out the lining membrane from the remainder and closing the resulting wound by continuous sutures of fine catgut, after the edges have been trimmed, if necessary. Very hard and contracted, cicatricial parts are occasionally excised, forming a V-shaped wound which is closed in the same manner. Multiple cysts near each other, especially when more deeply seated, are best opened by a straight or curved incision on the free border of the ovary and extending usually not more than halfway through it. By this incision, or from its surfaces all follicle cysts of 1 cm. or more in size are opened, their lining is peeled or scraped out and then the entire wound is closed, after its surfaces have been coapted and some ragged edges have been trimmed, by means of two tiers of continuous sutures of fine catgut, as follows: in 1, the sutures go to or beneath the bottom of the wound, in order to control the bleeding: in 2, the edges are merely coapted and it terminates in a knot with the original end at the point of beginning. Thus a perfect plastic result is gained with the introduction of the least possible amount of foreign substance, i. e., suture material: and that

introduced is of a very absorbable nature. The catgut is simply hardened in formalin and sterilized by boiling, but never chromicized; the needles are fine, round, non-cutting and have a full curve.

A tube that contains pus, even if this be no longer virulent, should be removed, because its lining is too much disorganized to functionate. But in cases of some such, smaller, closed pus-tubes, the ovary corresponding to it or a part of it, can be saved.

When an ovary or a part of it is free or can be liberated and saved, with or without resection, and its tube is closed and but little distended, the latter should be walled off with gauze, opened and its contents, if any, milked out. If these are not purulent nor tubercular disease suspected, the opening in the free end of the tube can be enlarged by a longitudinal incision of about 1 cm. and its mucous lining turned out over the wound edges and stitched to the outer coats to secure a permanent opening. When the ampulla is too disorganized it may be amputated and a salpingostomy done on the tube stump.

The principles and methods here stated have been practiced by me, with gradually growing conservatism, for over five years and their merits may be partly judged from the following preliminary statement of results of cases, the details of which will be tabulated in a larger collection on another occasion. The first section comprises 9 cases of vaginal celiotomy for inflammatory changes of moderate grade, with no pus. Of these, 8 were married women and parous, each of whom had one ovary and tube removed and the remaining ovary treated with the thermocautery, in addition to the usual operations for prolapse or retroversion or laceration of the cervix and perineum. The one maiden had both ovaries resected, and she is one of the two decided failures. Two others are not disabled, but have pain of variable intensity and frequency. Only 5 of this vaginal class are wholly well in these parts.

The category of median ventral celiotomy comprises 32 cases that were examined after an average period of twenty-four months after operation; 23 were parous, and 24 were married. In 3 of them, restoration or reconstruction of one or both ovaries or of one tube was done with most happy results, in connection with removal of bilateral cystic ovarian neoplasms, varying in size from an orange to a child's head. Twenty-nine of them presented results of inflammatory processes of a severer grade than either of the other two classes; 15 of them showing pus during the operation. Among the total number in this category, the thermocautery was used upon the only remaining ovary in 8 pus cases. Salpingostomy was done 6 times. Suspension of the ovary and tube on one or both sides in 8 cases. Plastic resection of one ovary was made 20 times and of both ovaries in 2 cases. In 27 cases or about 84 per cent. a subjective cure, and, as far as examined, also an anatomical cure was effected. Four other cases, 12.50 per cent., can work regularly, but have pain frequently, which is probably due in part to the resected ovaries. In one instance only did cysts reform and require a second operation.

The third class of 56 cases treated by bilateral inguinal celiotomy, presented markedly pathologic retroversions, complicated in many instances by adhesions and in all cases by a degenerated or disorganized condition of the adnexæ, which required reconstruction of some parts in all and removal of other parts in most of them, in conjunction with a very thorough shortening of the round ligaments and usually also plastic operations upon the cervix or perineum, or both. Salpingostomy among these was done only once. Suspension of an ovary and ampulla of tube 9 times. In 40 cases one ovary—usually the only remaining one—was resected. In one case one ovary was resected and the other cauterized. In 15, both ovaries were resected. Average period of observation of all these cases was 23.20 months. Forty-eight of them were examined by myself or other physicians, and of 8 cases a complete and explicit statement in writing was accepted. In 49, or 87.50 per cent., of them the parts here considered were found entirely well, although in several of these it took from three to six months after operation for this recovery to develop. Five other cases are never wholly disabled, but have pains frequently which may be due to the resected ovaries. A subjective failure occurred in one hysteric and neurasthenic case and also one anatomical failure in another where larger follicle cysts recurred in an ovary.

During the average combined period of observation of a little less than two years, pregnancy supervened in 1 of the vaginal and in 1 of the ventral and in 8 of the inguinal cases; 7 of these matured and ended naturally. Two confessed to having abortion induced by "instruments in the womb," and one aborted without known cause.

The relative value of the routes for operation is shown in part by the observation that an entire cure of the former disorder was effected only 5 times out of 9 via the vagina—too small a number for conclusions in percentage. On the other hand, 84 per cent. of the ventral, and 87.50 per cent. of the inguinal cases became wholly well. The value of these conservative operations is better appreciated in view of the following facts:

1. It will be difficult for any operator, from his entire experience, to find 100 consecutive cases in which he has removed both ovaries, with or without the uterus, where approximately 85 per cent. will be found to be as free from pain and from distressing nervous and circulatory disorders, and to enjoy as good general health as that proportion of cases here mentioned.

2. In a majority of the cases of resection of an ovary herein reported, it was the single remaining ovary in each case, and, aside from resection, removal of that only ovary would have been the indispensable alternative. In that case these women would not merely have lost their sexual functions to a large extent, which contribute largely to the mental and physical equilibrium of most human beings, but they would also be denied the opportunity, if not the legal right, to contract marriage in the future, and to receive the care, protection and legal perquisites connected therewith.

3. Pregnancy occurred in 10 per cent. of the cases, and in the the absence of wilful pernicious interference its normal termination was substantially assured in all except one case.

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DISCUSSION.

DR. J. WESLEY BOVEE, Washington, D. C.—There is no question but what much can be done in conservative surgery of the ovary, less in conservative surgery of the tubes, if we mean by conservatism a retention of a portion of the organ. I do not believe, except in exceptional cases, that it is advisable to leave a portion of a tube when another portion must be removed. My understanding of the term conservatism is primarily the health of the individual, secondarily, that of function, and thirdly, mental impressions. It seems to me that an ovary bound down by adhesions from tubal disease is usually diseased throughout, and that these organs that we resect and suture again become adherent. When you set up traumatism along the wall of the ovary you find the omentum rushing there to protect it. I have often opened the abdomen and found adhesions where I had previously done nothing but simply punctured, with a thin narrow-bladed bistoury, simple follicular cysts in the ovary. When I find these ovaries I extirpate them. These patients have heat flushes and nervous storms for some time afterward, but I have not done this work long enough to say how long it will continue, although I have seen it last ten years and can not account for it in any other way. We can not always tell from the naked-eye appearance of an ovary what its condition is, and in many organs we find a lack of development, not a sclerocystic change, but one resembling a walled-off trouble which remains as long as the ovary remains. I believe in conserving as much as possible, and I believe in making the mind of the patient easy, but I do not believe in conserving structures that are likely to cause trouble in the future and that can be removed without danger to life, except in those cases where there is an expressed desire on the part of the woman as to the possibility of future pregnancy.

DR. JOSEPH EASTMAN, Indianapolis—Dr. Goldspohn speaks of anterior colpotomy as a means of reaching diseased ovaries and tubes, but that it leaves a weak spot in the vagina; I believe that is a valid objection to doing this conservative work. In cases where we are certain the woman is past the child-bearing period, or where the operation necessitates the production of sterility, I am in the habit of bringing the uterus into an anteverted position, using that as a splint to prevent a cystocele. It is a valuable substitute in cases of extreme prolapse. I was much pleased with the Doctor's idea of going through the inguinal canal in preference to doing an anterior colpotomy. His work is certainly in the right direction. I agree with him that we should use suture material that does not remain so long. It seems to be the trend now to get material that will be absorbed rapidly, within a week or ten days at most.

I was also pleased with the Doctor's remark in regard to asepsis. We talk about it, but it is only the few and not the many who are capable of procuring aseptic wounds. He suggests the use of rubber gloves to make sure of aseptic hands. I accept that, but at the same time it must not be understood that I do so to the exclusion of thorough sterilization of the hand before the gloves are put on.

I take issue with Dr. Bovée in regard to saving some of these ovaries. A stormy menstruation is better than no menstruation. The retention of a sufficient amount of ovarian tissue to maintain sexual impulse is of vital importance to the patient. I have seen hundreds of these physical wrecks where the ovaries and tubes have been removed. These are questions which we should take home to the heart. True conservatism is that which seeks to preserve as much of an organ as possible. It is better to make a second or even a third operation and even to have a stormy menstruation than to deprive the woman of her sexual impulse.

DR. BERNARD COHEN, Buffalo—It is now sixteen years since surgeons began removing ovaries and tubes promiscuously. About five years ago they became conservative. We must not only preserve the patient's life, but also make her useful to her family. When the surgeon has opened the abdomen he must do all he can so as not to jeopardize her life again by a secondary operation. Many women pass a miserable existence or die because they will not submit to a second operation.

The use of gloves is becoming quite common through the East and we seldom see pus where we have absolute asepsis. It can be carried on in a small town as well as in a large city. In most cases where a small amount of the ovary is left, a degenerative process starts in the remaining portion soon afterwards. In watching the cases since 1896, when gynecologists became conservative, I noticed that many patients were having secondary operations, in 35 per cent. of which pus was found. This could only come through degeneration. When the abdomen is opened we had better remove everything found necessary without regard to subsequent nervous phenomena, or to the fact that if we leave a part of a diseased ovary she may have a child, or what is more likely, a secondary operation.

Anterior fixation through the inguinal ring is new to me. Dr. Frederick of Buffalo pulls the round ligament up, pushes a hole through the belly muscles, freshening the edges and stitching the ligaments on the muscles. It is a simple operation and the patients recover very rapidly and have little pain. The operation is too new to give any definite results, and should only be used after the child-bearing period.

DR. W. O. HENRY, Omaha—I am sorry the Doctor did not define what he means by conservative surgery. As I understand it, it is the removal of all organs or parts hopelessly diseased, the saving of such as we have reason to believe will be restored to health or will not further menace health. If that be a correct definition, then I am in favor of conservative surgery. It is a mistake to remove both ovaries and tubes if only one of them is diseased. If we endeavor to save a diseased part it is but right and fair for us to explain to that patient that possibly another operation will be required later on. Although secondary operations are not usually required in these cases, I hold it is better to have to do a second or even a third operation occasionally than to do such complete work in every case.

A lady, childless, very anxious to bear children, a constant sufferer, came under my observation for treatment. We found large ovaries, adherent, dropping down into the cul-de-sac; the tubes were enlarged, and I informed her that one ovary and tube would have to be removed, and that possibly I could save the other; I explained the possibility of a second operation. She consented and I did the operation. I removed the tube, the end of which was sealed over by adhesions, and also one ovary. I split the top of the remaining tube, keeping it open by sewing mucous and peritoneal membranes together. The woman became well and a year afterward bore a child. I hold that even if I have to remove the other ovary the woman has profited immensely by conservative work. So, I say, let us do conservative work, but let us explain to our patients what that means. If they want you to take out everything that is diseased or likely to be, then go ahead and do a radical operation. If you fully explain to patients most of them will say: "Give me a chance; if you can save my menstrual and child-bearing functions, do so."

DR. GOLDSPOHN, in reply—The removal of these organs when not decidedly diseased reminds me of the attitude of the general surgeon of 40 years ago; then he would amputate every leg that had a diseased joint. When he found out that the joint could be resected, he saved the leg. The gynecologist who is simply a surgeon does about the same kind of work as the general surgeon of that day. It is not right and I have very much at heart the sentiment expressed by Dr. Eastman that we should state the case fairly to our patients, explain to them what may be the result on the one hand and the chances on the other, and they will always decide upon a conservative operation. It means so much socially to young women whether they menstruate or not; not so much whether they can conceive. That is a mere sec-

ondary matter. You stop the menstrual function of a young female and who is going to marry her, and what does that mean in the future welfare of the individual? Would not some of them just as soon give up life?

I failed to state that there were 10 cases of pregnancy in the 97 cases of resected ovaries. One in the 9 vaginal cases, one in the 32 cases of ventral median section, and 8 cases after the inguinal operation. All of them, except three of the inguinal, went to term. In two of the inguinal cases abortions were induced.

An instance of what can happen from a little piece of ovary that will turn the tide with the patient's opinion of herself and the doctor's services enormously, is illustrated by the following case: A young woman, 19 years old, had pyosalpinx on one side and a cirrhotic, indurated ovary on the other, with a normal tube. After putting her to bed for a month, and giving her most approved medical treatment to avoid operation, it became evident, however, that an operation was necessary. The organs on one side were removed and the most indurated part of the other ovary was exsected, leaving a little stump of ovary. The presence of pus in the case led me to choose the thermocautery in place of resection. In that case there followed amenorrhea for a year and a half and then a year in which she menstruated a few times, then she became pregnant and had a fine boy. As much as they blamed the doctor previously they are now glad that a radical operation had not been performed.

Ventral suspension of the uterus by means of the round ligaments was first done by Carl Beck of New York, then successively by Ferguson of Chicago and Gilliam of Columbus, Ohio. In cases where an Alexander can not be done, that is the next best operation for retroversion, but it is not an ideal procedure, because the round ligaments were never intended to hang the uterus upon. We must wait until pregnancy sets in to see whether the uterus will remain in normal position after pregnancy, as it does after Alexander operations.

PUERPERAL ECLAMPSIA.*

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In selecting this subject for a brief paper I do so because it is a condition that can not be discussed too often. It is only necessary to glance over the literature to satisfy one that the etiology of puerperal eclampsia is still a mooted question. Lever (from the reports of the Guy Hospital, in 1843) was the first to trace any connection between eclamptic attacks and the excretion of albuminous urine. After it became known that the urine of patients suffering from convulsions contained albumin, and they had some of the other symptoms of uremia, it was very generally considered that these patients were suffering from some form of Bright's disease. Frerichs' theory that uremia is caused from the decomposition of retained urea into carbonate of ammonia, and Traube's theory that uremia is produced in hydremic persons by a sudden increased tension of the aorta, and cerebral edema and anemia, were for a time sufficient to explain these attacks of eclampsia; but as more labor was bestowed in investigating the cause, these ideas were considered of very little value. The writings of Rosenstein, Litzman, and Rayer were valuable contributions. Many writers emphasized mechanical interference with the venous circulation in the abdomen; they claimed that the enlarged uterus, in the later months of pregnancy, occasionally caused pressure obstructing the venous circulation, favoring congestion of the kidneys and the abdominal organs, hence causing obstructive hyperemia of kidneys. Rosenstein was one of the believers in this theory. He says: "The pressure, which under conditions that are not known to us, the enlarged uterus in the later months of pregnancy occasionally exerts upon the vessels of the abdominal organs and especially upon the renal veins, obstructs the circulation of the venous blood; in this way obstructive congestion of the kidneys as well as from other abdominal glands is produced." It would seem strange if there was anything in this theory, that tumors, especially of the fibrous nature, would not cause eclampsia; but they do not.

It has been said that eclampsia was due to pressure exerted upon the ureters, if such were true one would expect to find hydronephrosis, but none has been found in cases where autopsy was held. Many of the clinical aspects of eclampsia are closely associated with the symptoms of uremia, and some investigators were of the opinion that they are identical. In an able article upon this subject, E. P. Davis, of Philadelphia, says: "An effort to positively identify eclampsia with uremia has failed, for many uremics die without eclampsia, and many of the eclamptics do not present the pathological signs of uremia."

Since so much has been done in bacteriology, many investigators naturally turned to some form of germ as a cause of eclampsia. Bacteria have been isolated, which were supposed to be the cause of the eclampsia. Doleris Pouey, and others worked carefully in this line, and were able to say[1] from their investigations: "In all cases in which albuminuric eclampsia was observed the urine contained micro-organisms rendered evident by culture." It has since been studied by pathologists, and the bacteria are not alone in eclampsia, but in pregnant women who are well. When the blood of the eclamptic patient is examined, micro-organisms are rarely found, and from observations one can find no positive proof that any one germ has been isolated which will cause eclampsia.

Frerichs was the first to call special attention to alterations of the blood produced by pregnancy as a cause of eclampsia. It is a known fact that the blood of pregnant women is usually more watery and richer in fibrin than normal. The albumin and red corpuscles are diminished and the white corpuscles more numerous. Frerichs ascribed this impoverishment of maternal blood to drain of nutritive material required for the nourishment and development of the fetus. Some writers claimed some deleterious substance was contained in the blood of pregnant women which was capable of causing disease of the kidneys and at the same time convulsions; these substances have not yet been found.

Chamberlant,[2] working under the direction of Tannier, in 1892, performed a series of experiments on the blood of eclamptic women, and says: "1. Pregnancy tends to the retention of poisons in the body, for the urine of pregnant women is less poisonous than normal. 2. The albumin of eclampsia is probably secondary, following the direct action of the poison on the renal epithelial cells in the effort of elimination.

I think at present it is the universal opinion among the more modern investigators that eclampsia is due to a profound toxemia, and the origin of this toxemia is still unknown. Some claim it originates from defective

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

1. American Journal of Medical Science, vol. xc, p. 597, 1885.
2. Northwestern Lancet, November, 1897.

eliminative action upon the part of the kidneys, liver, lungs and intestines, the exact agent of which as yet has not been isolated. E. P. Davis[3] says: "The diminution in the amount of urea excreted indicates that toxins are retained. Less than 1.5 per cent. demand attention on the part of the physician." The clinical aspect of these cases are sometimes extremely obscure, very little warning being given the physician of the approaching attack until the patient is in the midst of one of the most dangerous conditions that one can expect to find. We are prone to neglect the care of pregnant women.

Many of these cases present symptoms, which if they are carefully watched, will give some forewarning of a possibility of the occurrence of eclampsia. To emphasize this, I will mention a case I saw not long since. Early in September, in the absence of the attending physician, I was called to see a young woman who was in the seventh month of pregnancy. She is a young woman of robust build, full figure and splendid color; she had been feeling somewhat indisposed for several days, had some headache and muscular pains, and some distress about the abdomen. I noticed a great deal of puffiness, of not only the lower limbs, but arms, and she had an unnatural puffy condition generally. I gave some instructions of a temporary nature, and instructed her husband to see her attending physician as soon as he returned and have him examine her more in detail. I told him I thought he had better save the urine passed in twenty-four hours that her physician might analyze it.

Some ten days after my visit I was summoned hastily to her home to find her in the midst of an eclamptic attack. I am of the opinion that there were enough symptoms present in this case to forewarn one of the approaching danger, and had the physician watched the symptoms they might have been prevented. It is the duty of the physician to watch the progress of his cases of pregnancy.

The prophylactic treatment is of the greatest importance. It is the physician's duty in assuming charge of a case of pregnancy to keep himself informed of her general condition. Hygienic measures embracing moderate outdoor exercise, good food, frequent bathing, and to watch the action of the kidneys, liver, skin and bowels. Examinations of the urine should be made often enough to keep one informed of its specific gravity, whether there is a diminished elimination of urea.

It is a fact that in many cases we find albumin, but some writers claim that we may or may not have albumin. Gentle catharsis is important, and the hot baths frequently given will keep the skin active. Where prophylactic measures have been carefully carried out and the symptoms of impending eclampsia develop, active medical treatment is necessary. Chloroform should be administered during an attack, and chloral hydrate by stomach is recommended. If necessary, it may be given per rectum, by combining with milk one ounce the yelk of an egg, and 45 grains of chloral. Large doses of morphia sulphate have been recommended, and I think will be of great value. Bleeding, followed by subcutaneous injections or by transfusion of normal salt solution, has been recommended, especially in plethoric full-blooded patients. Veratrum viride is probably more used to-day and more highly recommended than any other drug, on account of its quieting effect on the nervous system and diminishing the heart's action. Parvin[4] says: "Veratrum viride notably diminishes the frequency of the pulse, and convulsions rarely occur where the pulse is kept at or below 60; of 100 patients treated by veratrum viride in the writer's practice, 92 were saved."

R. C. Newton[5] reports twenty-six cases treated by veratrum viride with no death. It is given in doses of 10 minims, hypodermically, or by mouth, repeated at frequent intervals, until effect is noticed upon the heart's action. It is a matter of extreme importance and imposes a great responsibility upon the obstetrician to say just when surgical interference should be resorted to and the uterus emptied. I think each case should be considered, and one's mind influenced by the patient's general condition.

DISCUSSION.

Dr. C. L. Bonifield, Cincinnati—I agree thoroughly with everything the Doctor has said in regard to making a uranalysis and examining patients before the time comes. I agree thoroughly with him that a vast majority of the cases can be recognized or anticipated by even the laity themselves. For a number of years the gentleman with whom I formerly was associated in practice has been trying to popularize the treatment of eclampsia by the use of veratrum viride. He has written on the subject more than any one else in this country, and he has talked about it on all occasions. Veratrum viride is undoubedly one of the best agents we have for the control of this condition in selected cases. In eclampsia we either have an anemic patient with a small, thready, wavy pulse or a patient with a full and bounding pulse. It is in the latter class of cases only that veratrum is of value. If properly given it is an absolute specific. I do not believe that there has ever been a case with a full bounding pulse that could not be controlled with veratrum. We must be governed by the physiologic action of the drug rather than by the amount of the drug given. The doses mentioned in the text-books are entirely too small. We must start with 45 to 60 minims of Norwood's tincture given hypodermically, and repeated every fifteen minutes, as often as necessary, until the pulse is below 60. It has been my observation, and that of every one who has used veratrum, that if the pulse be brought below 60 the patient will have no more convulsions. It should be kept at this point for two or three days. Where veratrum is not applicable, morphin and chloral are the two drugs to be recommended. My experience with chloroform in this condition has been rather disappointing. I have not seen very much benefit from it. Morphin and chloral, like veratrum, must be used in large doses. The Doctor speaks of giving chloral per rectum. That certainly is the proper way if the patient is not able to swallow the drug. The dose of chloral is anywhere from 40 to 45 grains. Morphin must also be given in full doses. Less than one-half grain hypodermically will be useless. I think that with these methods one can control most cases of puerperal eclampsia.

Dr. A. B. Cates, Minneapolis—I agree with the essayist and the last speaker. The essayist, in speaking of the prophylactic treatment, said that it was necessary to give good food. That is indefinite. It may mean a good, generous diet or a very limited diet. I think it should mean an extremely limited diet. Championière claims that no case of eclampsia occurred in his practice where he had an opportunity to keep the patient on a milk diet for at least one week. I think it is the duty of the practitioner when he recognizes this danger to also recognize the fact that it is a toxemia and that he should eliminate by means of the lungs, the skin, bowels, liver and kidneys.

As far as the treatment of eclampsia is concerned, I think we may agree with the last speaker. Veratrum viride is indicated in cases which formerly were bled. The chloral can be used with the veratrum, and the morphin should be used only in those cases where we are not able to control the

3. American Gyn. and Obstet. Journal, July, 1899.

4. Universal Medical Journal, October, 1896.

5. New York Medical Journal, December, 1895.

eclampsia by means of the chloral or the veratrum or both. The morphin is open to the well-known objection that it diminishes the secretions, but we often are obliged to resort to it when we are not able to control the convulsions by chloroform. Then, I believe that nothing less than one-half a grain should be given and frequently repeated if necessary.

The necessity of examining the urine beforehand can not be too strongly dwelt upon, but I believe that you can not absolutely rely upon albuminuria as a danger signal. I had a case recently in which the urine was examined every day without any albumin being found present. Immediately after the first few convulsions the urine was again examined and still no albumin. Dr. Davis, of Philadelphia, has emphasized the necessity of watching the urea. I think that is valuable in conjunction with other things. I have examined many specimens of urine of pregnant women which contained no albumin but had a very low percentage of urea a great part of the time before the confinement. Therefore, it seems to me that a small amount of urea is not necessarily dangerous. That it is only in cases where you have albumin and a small amount of urea, in conjunction with symptoms such as headache, indigestion, etc., that we are justified in inducing labor. In any case where the urea is persistently low, the urine diminished in amount, down to one pint or less, and with albumin or edema, that is the case where we should not hesitate to induce labor.

Dr. B. F. Crummer, Omaha, Neb.—I think it is the duty of physicians to dispel the illusion of the laity that the conditions of pregnancy and labor are always physiological, and may be trusted largely to nature. It is undoubtedly this belief that renders legislation governing obstetric practice so difficult to secure. The average legislator thinks of the easy, natural birth, and then makes a large concession to the ignorant midwife. The fact is that in no class of medical practice is the responsibility of the attendant greater. Even with the closest observation we may meet with a severe emergency, such as eclampsia, or antepartum hemorrhage. In threatened eclampsia the question of rapid delivery is extremely important, and medicinal measures occupy only a secondary place. I recently saw with two other physicians a young German woman at the beginning of the eighth month of pregnancy who was so waterlogged that a digital examination could scarcely be made, and the patient could hardly sit upright; yet one of the attendants had held out against interference. I strongly advised the induction of labor, which came on six hours after the introduction of a bougie into the uterus and she was safely delivered. Should eclampsia occur the attendant should have a definite plan of procedure outlined in his mind: Chloroform first, and then as rapid a delivery as is possible with safety to the patient. I distinctly remember a case in my early practice in which after a 12-mile drive I found a woman in her ninth convulsion. With no assistance at hand I first chloroformed her and then applied the high forceps, and not another spasm occurred, although the patient remained comatose for four days, and blind for a much longer period. The medicinal measures such as the exhibition of veratrum, chloral, etc., must vary with the case. Referring to etiology I believe that skin affections have a positive effect in the production of eclampsia. I have attended a lady of 28 who suffered from a rather extensive lichen planus during her pregnancy. Urinary insufficiency was marked, and the tendency in the last weeks was to secrete only 9 to 16 ounces of urine, with a marked reduction of urea. It was only by the persistent use of eliminants and diluents that I was able to deliver her without the threatened eclampsia.

Dr. M. Rosenthal, Fort Wayne, Ind.—I know of no more frightful condition than that of puerperal convulsions and none that gives the physician more trouble. I have a case in mind that I was called to see one night when she was about four months pregnant. When I reached the house she was unconscious. I was informed that she had had a spasm. I warned them of the danger of convulsions and asked them to measure the urine and send it to me regularly. She passed about 1500 c.c. daily from that time on until the seventh month. On the day on which she had passed 1500 c.c., with no albumin, I was suddenly called and on my arrival at the house the patient had already died from a convulsion. I made a postmortem and the cause of death was evidently an acute congestion of the kidneys. They were hemorrhagic. There were ecchymotic spots in the mesentery, in the liver and lung. The right auricle was distended. In this case a venous section would have been of great service if the patient had been seen in time. I think acute venous congestion plays a great rôle in the pathology of this condition. In this case the urine had been examined regularly, the skin kept active, large quantities of water were given and yet there was a sudden acute congestion of the kidney, the patient dying in a few minutes. I think that chronic eczema is frequently an indication of renal trouble and that which produces the eczema also produces the puerperal convulsions. I do not believe that the eczema itself is responsible for the eclampsia.

C. Lester Hall, Kansas City, Mo.—The lamentable thing in connection with this discussion is our lack of knowledge of the etiology of this condition. The literature on the subject gives us no definite or entirely satisfactory indication as to the cause of the trouble. Only one gentleman has alluded to the time-honored remedy, that of blood-letting. I think that blood-letting is of vital importance and this condition followed by saline transfusion, seems to accomplish a great deal of good. I have seen the most marvelous results follow blood-letting. If we get these cases early, which is rare, there is a remedy which can be used as a stimulant to the kidneys with the best of results. It is a remedy which is supposed to be purely a diaphoretic and is never recognized as a diuretic. I refer to pilocarpin. I have given it for years, not as a diaphoretic, but as a diuretic in one-twelfth to one-twentieth grain doses three times a day. My attention was called to this drug by accident. I had a case in which I had given the large doses of veratrum suggested by Dr. Bonifield, and yet my patient seemed doomed. I gave pilocarpin hypodermically and much to my surprise it produced a decided diuretic effect without affecting the skin. I then began to use the remedy in suspected cases, giving small doses with much water and the result justifies me in recommending the drug to you.

Dr. Beatrie, in reply—There is one important fact to be remembered and that is that each case is an individual one and must be treated according to the symptoms that have developed. Dr. Bonifield has mentioned that there are cases where veratrum should not be used; I agree with him. Dr. Hall uses pilocarpin and I agree with him. I had a case of eclampsia which Dr. Hall saw with me and we used pilocarpin with good results. The only case I ever lost was one where I did not keep myself posted on the condition of the urine and where I resorted to blood-letting. My experience was not as satisfactory in that case as I expected. I believe that each case must be treated in an individual way, and that no one remedy is a specific for them all.

CESAREAN SECTION AS A METHOD OF TREATMENT FOR PLACENTA PREVIA.*

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During the past ten or twelve years, the question of Cesarean section in the treatment of placenta previa has been from time to time brought to the attention of the profession. Those discussing it have strongly opposed or advocated it; but the probabilities are, like all new departures in medicine, it has not escaped the fate of being judged either too harshly or with too much favor. Lawson Tait[1] was one of its strong advocates, and a short time before his death, in an article on "The

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1. The Lancet, Feb. 11, 1899.

Treatment of Unavoidable Hemorrhage by Removal of the Uterus," he took the ground that the only safe treatment for placenta previa is the operation of Porro-Cesarean section. The profession has been slow in accepting this doctrine, and probably never will; for it is the experience of all, that where the placenta is laterally attached, and the cervix easily dilatable, delivery may be conducted with comparative safety; but on the other hand, given a central implantation and a rigid os from any cause whatever, then no more serious or fatal condition can confront the obstetrician; and there are those who believe cases of this character demand the Porro or the classical Cesarean section in the interests of both lives at stake.

The discussion of the subject began with an able article by Hutson Ford,[2] of St. Louis, recommending the operation on theoretical grounds, though the only instance in which it had been performed at that time terminated unfavorably. Drs. Dudley of New York and Boyd of Philadelphia have also written valuable papers advocating this operation from this same theoretical standpoint. Grandin and Jarmin, in their work on "Obstetrics" (edition of 1898), make the following statement: "The elective emptying of the uterus enables us to save nearly 90 per cent. of the children, instead of losing that number, as was the record of the past; and the chances of saving the woman's life may be placed at about 98 per cent.; but these statements apply strictly to cases where there is no temporizing with tampons, or worse than all, ergot." Now, if the conditions here enumerated were invariably present and a skilled attendant at hand when the abnormality first makes its presence apparent; if these cases were only met in well-conducted maternity institutions, and it were possible always to obtain the low death rate mentioned, then every argument in favor of Cesarean section would fall to the ground. I have been unable, however, to find any other authority that places the fetal death rate in placenta previa under any circumstances at this low figure. It must be the exception then, rather than the rule, when the conditions which make is possible are met. On the other hand, Reynolds says: "Even induced labor shows an immediate fetal death rate of 33 1-3 per cent., with an ultimate mortality of from 50 to 75 per cent.;" and the danger to the mother, all agree, is very great.

As is well known, the older statistics show placenta previa to have a very high mortality for both mother and child. Without regard to variety of implantation, in those of Muller the maternal mortality is 23 per cent., and the fetal 64 per cent.; while King's give a maternal mortality of 22.5 per cent., and a fetal of 57.5 per cent. This high maternal death rate has, during late years, most certainly been lowered; not so, however, with that of the child. Here statistics show but little improvement.

Lusk says: "Nearly two out of every three children are born dead, and more than half of those born living die within the first ten days." In a recent paper by Dr. Chas. P. Noble upon the subject of placenta previa, read before the Philadelphia County Medical Society, he placed the maternal mortality at 5 per cent. and the fetal at 50 per cent.; at the same meeting Dr. Barton Cook Hirst placed the maternal mortality as low as 1 per cent., and the fetal at 50 per cent. He does not, however, consider an operation that promises to save most of these fifty lives now lost, with but little, if any, increase of danger to the mother, as worthy of consideration.

The better results reported by these gentleman, at least as far as the mother is concerned, can not by any means be considered as the death rate in general. They can only apply to cases in the hands of experts under favorable surroundings.

As regards the most fatal form of implantation, placenta previa centralis, Dorland's late work yet places the maternal mortality at from 30 to 40 per cent., and the fetal at from 75 to 80 per cent. The ideas suggested by our statistics are of so conflicting a nature regarding this condition, that in order to arrive independently at some definite conclusions, I recently sent blanks to 1000 leading physicians and maternity institutions of this country, asking their experience with it. I have received replies from many of them, so enabling me to present statistics, which I have every confidence at least approximate the truth.

The total number of cases of obstetrics so reported were 105,935, with 216 cases of placenta previa, or an average of one in 481 births. Of these 216 cases, 34 mothers were lost, or a death rate of 15 1-3 per cent.; and 96 children, a death rate for them of 44 1-3 per cent. As to the variety of implantation, there were 88 cases of centralis, and 20 of the mothers were lost, or a death rate of 22 8-11 per cent.; while 66 of the children were lost, a death rate of 70.5 per cent. Of the two other forms of implantation (partialis and marginalis), 128 were reported with 14 deaths for the mothers, a death rate of 11 per cent., and 41 of the children, or a death rate of 31.5 per cent. It may not be without interest to say that none of the mothers died prior to the seventh month, which corresponds to the statistics of Muller, in which, of the 128 deaths noted by him, not one died before the seventh month, and one-third reached the end of gestation. Then, why recommend induction of labor before the child is viable?

While the foregoing statistics show the maternal death rate to be greatly reduced over that of former times, no doubt due to our better methods of treatment, viz., the Braxton-Hicks, version and forceps, bipolar version, etc., yet practically nothing has been done toward lowering the fearful fetal mortality; and surely no one will deny that the child has rights that should be respected. As is well known the Roman Catholic church places the life of the mother second to that of the child; but whether this doctrine be admitted as correct or not certainly the mother should rightfully be held responsible for its welfare, though her own danger be thereby in some measure increased.

In 1893, Dr. August C. Bernays of St. Louis, so far as I know, performed the first successful Cesarean section for placenta previa, saving the mother; the child died in ten hours after the operation from asphyxia. In a recent personal letter to me, he says this operation should be considered as terminating favorably, as the death of the child was in no wise due to it. In his report of the case he mentions two others as having been done prior to his, both of which, however, had proved fatal. Up to the present time there have been reported in this country, as far as I am aware, five cases of placenta previa treated by the classical Cesarean section, and one in Italy. In the latter, which was done by Dr. Matolli, both mother and child were saved. Of the five American cases, the only successful one, aside from that of Dr. Bernays above mentioned, was done by Dr. Frances P. Donnoghue of Boston, in December,

2. American Gynecol. Journal, September, 1892.

1900. In addition to these six reported, making seven in all, Dr. P. D. Covington, of Bellefontaine, Ohio, on April 17, 1901, performed Cesarean section for placenta previa centralis, complicated by contracted pelvis. No report of his case has as yet been published and I am indebted to him for the following short and incomplete account of it:

"In two previous pregnancies embryotomy had been done for the patient, and in the third a dead child had been instrumentally delivered. Following the first embryotomy there had been puerperal mania. It is said that these three children weighed, respectively, 15, 18 and 12 pounds. In the fourth pregnancy a severe hemorrhage occurred at the end of the seventh month. The second hemorrhage necessitated immediate action; and a Cesarean section was done. The patient was bleeding furiously at the time and continued to do so till after the placenta was removed. The hemorrhage was controlled after removing the placenta, by pressure around the cervix and on the broad ligaments, and by the introduction of a deep row of interrupted silk sutures including the muscular wall of the uterus, but not its peritoneal coat. The uterine peritoneum was closed with interrupted silk, and the parietal with continuous catgut. The abdominal wound was closed with silkworm gut and catgut. The mother made a good recovery; the child is well and healthy at date."

Lawson Tait, on December 21, 1898, saved a mother and child by the Porro operation; and in January of the present year, a case in the writer's hands by the same operation was equally successful, a report of which was presented at the last meeting of the Ohio State Medical Society. So far as I know, up to the present time, no other Porro operations have been done for placenta previa. In Lawson Tait's case, though an emergency one, the mother made an easy recovery; but the child unfortunately died a month later of a prevailing bronchitis. In the writer's case, recovery was uneventful, though at the time of operation the pulse was 130, and the woman almost bloodless from repeated hemorrhages. The child, though artificially nourished, is at date growing finely. Theoretically, Cesarean section should have no fetal death rate; and practically, even for placenta previa, it should be exceedingly low, in all probability not more than 10 per cent. There can be no reason for a higher rate than this, and it would likely be much lower than 10 per cent. if the cases were operated before hemorrhage had continued to such an extent that the child's life was endangered by it. Granting that this opinion is not far from correct, will not the saving of from forty to fifty human lives out of one hundred, which we now lose in spite of our best efforts, constitute a strong argument in favor of this new departure in obstetrics?

In the hands of skilful abdominal surgeons the maternal death rate for Cesarean section is far below the 22 8-11 per cent. which my statistics show to be the death rate in placenta previa centralis, and even below the 15 1-3 per cent., speaking without regard to variety of implantation; and if it can be shown that its present low mortality for other conditions is not increased when done for placenta previa, then argument in its favor, in the interests of the mother as well as the child, can hardly be controverted; and I am sure that this will prove to be the case.

It is well known that one of the grave dangers encountered where there has been great loss of blood in the parturient woman is the failure of the uterus to contract, as a result of her bloodless condition; and, consequently, further hemorrhage ensues. This failure likewise predisposes to sepsis, and in so great degree that in 273 of Mueller's recorded cases, 79 became septic and 54 of them died, or about 20 per cent. The reason for this is perfectly apparent; the uterus, not contracting properly, allows the retention of blood clots and debris, which constitute a most excellent field for the propagation of germs. The unknown quantity, shock, is also an important factor to be dealt with. Recognizing these principal dangers, we may deduce some useful conclusions as to operating.

We may divide cases of placenta previa into cases of emergency, and those which may be kept under careful observation for some length of time. Thus far, it is only in the field of placenta previa emergency cases that Cesarean section has found recognition. The cases of emergency are those in which, when first seen, a large quantity of blood has been lost; and, as a consequence, these are the ones most likely to have further hemorrhage, followed by sepsis and shock. These are the patients, if we are to save them at all, with whom the procedure must be adopted that reduces these factors of danger (hemorrhage, shock and sepsis) to a minimum; and I am sure you will agree with me that the Porro operation does this as no other course of treatment yet devised can. Inasmuch as it can be done with great rapidity, and does away absolutely with all danger of further hemorrhage, shock is thereby materially reduced; and if sepsis follows, it is the fault of the operator, and not the operation.

For these reasons, in cases of emergency, when the uterus fails to firmly contract, I have no doubt the Porro operation will in time prove the preferable method of treatment, and will be done, even though at the cost of the uterus.

In the writer's case the classical Cesarean section would most certainly have proved fatal; for the uterus would not contract after the removal of the placenta sufficiently to control hemorrhage from its site, though at least ten minutes were spent in vain attempts to induce it to do so. Every time the rubber cord, tied about the uterine neck, was loosened, blood would ooze from about the cervix, and it was necessary to tighten it at once. Finally, the uterus was amputated with the happiest results.

In the cases of emergency where there has been but little hemorrhage and the patient is yet in good condition, then the dangers above mentioned would only in a slight degree obtain and the Porro operation would be a needless mutilation; though it may be argued that a woman, once the subject of placenta previa, would live a life of greater safety if the uterus be removed. For it is a well-established fact that, once the subject of placenta previa, her future pregnancies are likely to be complicated by it.

The question as to whether Cesarean section should be used in the class of cases which may be kept under careful observation for a length of time, must be left for future discussion. In my opinion, however, the time will come when some of these at least will be treated by it.

In conclusion: The cases operated are as yet so few in number that no accurate deductions can be drawn from them, but I think it must be granted that Cesarean section, if generally adopted for placenta previa, will reduce the fearful fetal mortality which we now have, to at most 10 per cent.; and when 93 consecutive

Cesarean sections in the hands of three men (Reynolds, Leopold and Evarks), can be done without the loss of a mother or child, we certainly have reason for our faith that it can be done without any increased danger to the mother, over what she must incur by any of the older methods of treatment, and must therefore be considered a correct procedure. The classical section can be adopted where the uterus contracts firmly, where there is no probability of infection, and where the patient is in a condition to withstand the shock necessitated by prolonged operation; but on the other hand, where the uterus does not contract firmly, thus rendering further hemorrhage and sepsis probable, or the patient is unable to withstand additional shock, then the Porro-Cesarean section is, in my opinion, the only procedure warranted.

DISCUSSION.

Dr. Joseph Eastman, Indianapolis—I endorse every word of the paper. At the same time I will call attention to a few points of interest. When we compare the Porro operation with the removal of a large fibroid from the abdominal cavity, conditions are more favorable. Instead of the broad ligaments being large, we find them quite normal. The uterus is also in better shape than in operations for fibroma. Consequently we ought to have less mortality after the Porro operation than following operations for large fibromata. It is essential, as in many other operations, that we get these cases early. Many of them have lost the blood which will carry them through a successful Porro operation before the surgeon is called to see the case. Professor Lusk said that the resources of surgery are rarely successful when practiced on the dying. That is certainly true. The woman may have flowed to such an extent that interference is not indicated, but I believe that even in extreme cases the Porro operation is justifiable. It is, however, not an operation to be undertaken by everybody, nor under all circumstances. The Doctor speaks truly when he says that if the patient dies from sepsis, it is the fault of the operator and not the operation. Only the few are masters of aseptic surgery and not the many.

Dr. A. C. Bernays, St. Louis, Mo.—I will never forget the Sunday afternoon when I was called by Dr. Thomas O'Reilly. He was, until his death, doing the largest general practice in St. Louis. That day he had a case of placenta previa, the fortieth he had seen in 34 years. I had spoken with him and with others in St. Louis about doing a Cesarean section in these cases. In fact, Dr. Hudson Ford had written a paper strongly advocating, on theoretical grounds, the substitution of the Cesarean section or Porro operation in all cases of placenta previa. Dr. Ford was one of the many who had most unfortunate results with the school treatment of placenta previa.

The first and most important point is to determine the mortality following the treatment of placenta previa according to the school method, and Dr. Gillette has adopted the only means by which we can get at this fact. It seems that he sent out a question sheet to the medical directors of maternity hospitals and that he received replies giving him the record of 106,000 obstetric cases; 260 of them were cases of placenta previa with a mortality of 22.5 per cent. That seems to be a fair way of getting at the mortality in maternity hospitals. Unfortunately, we can not get the mortality in private practice, but I believe it is twice that. When I was in obstetrical practice with my father I know the worst results were those in cases of placenta previa. He had been a professor in a St. Louis medical college and was considered an expert obstetrician. I saw him lose case after case. Of course, this was in pre-antiseptic times. We know that the mortality of placenta previa is very much higher than the mortality of Cesarean section. We have the absolutely correct statistics from German maternity hospitals and also from hospitals in this country. We know that Leopold lost only 2 cases of Cesarean section out of 50 reported the first time, and 3 out of the second 50. Of course, he operates under the most perfect condition in a government hospital where antisepsis and asepsis are carried out to the fullest possible extent. I admit that it is impossible to perform Cesarean section in private houses with a mortality as low as that.

I think Dr. Eastman did not exactly understand the condition when he said he would advocate the Porro operation in placenta previa. I believe it is indicated when there is a narrow pelvis and in cases where it is desirable that the woman should not become pregnant again, but I can see no reason why a woman who has placenta previa should be deprived of her genital organs. She may not have a placenta previa at her next pregnancy. As a routine treatment in this condition, I believe we should always recommend a Cesarean section. It seems to me that the method described by Howard Kelly is so simple and easy that any gynecologist, fairly well skilled in abdominal work, would have a mortality of less than 10 per cent. In the case I saw, the woman had had two gushes of blood. I was extremely careful as to asepsis as I wished to establish the fact that we in America could do the operation successfully. I felt certain that it would become the school treatment for placenta previa. Feeling and sentiment should not enter into this question. It is a cool scientific proposition, to be answered on the basis of carefully collected statistics. If the mortality of Cesarean section in placenta previa is lower than that of the other methods of delivery it will be adopted no matter whether anyone shakes the flag of conservatism or not. Flag shaking and appeals to passion can have no recognition in a scientific body even if brought out by men who have at one time in their lives been looked up to as authorities. The days of authority in science are rapidly passing away. We will respect no authority but demand demonstration.

Dr. W. O. Henry, Omaha—It seems to me that we ought not to be too premature in the matter of the Porro operation. A woman should not be deprived of the maternal function too rashly and without good causes. It is not always necessary to perform a Cesarean operation in these cases. There is a class of cases in which it may be wise or necessary, but there is also a class in which it is not. Perhaps it is impossible at present to say just where the division line is. I saw a case about three years ago of a woman seven months pregnant. The physician in charge was a very competent man; we decided to tide the woman over until the eighth month. The hemorrhage became so severe that we did not dare delay any longer. We performed a premature labor and both the mother and child survived. The mother has since borne a living child and is in better health to-day than she ever was. This was a case of placenta previa centralis, but it was not necessary to do a Cesarean section. These cases usually give sufficient warning by the first hemorrhage, so that they can be taken to the hospital where they can be properly treated. I do not believe that the Porro operation is ever indicated merely because the woman has a placenta previa.

Dr. George J. Englemann, Boston—There is a fascination in the brilliant results of modern surgery which is liable to lead up too far in that direction. I think that the expressions made here this morning, going out to the profession at large, are dangerous. It has been said that this will be the school treatment for placenta previa. That is a dangerous statement to make. I know what some of these cases are. They are cases which were not emergency operations and which might have been delivered in another way. Women in the hospitals are carefully prepared and the operation is done under the best conditions. That is where you get these brilliant successes of Cesarean section. Not one of them is an emergency operation. What is the result of Cesarean section in placenta previa when the patient is exsanguinated and it is an emergency operation? Who are the men who do these successful sections? They are surgeons skilled in that particular work and they can do it with success in any case. Some men have gone so far as to say that women will prefer Cesarean section because they can be spared the pain of labor. That has been said jokingly, but it is the tendency of the present.

The men who handle most of these cases of placenta previa are the general practitioners in the city and country and they are called in because of a hemorrhage. Frequently the patient is in a desperate condition and they must act at once. What would be the result of Cesarean section? They have some simple methods at their command—the tampon, whether natural or artificial, whether it is put into the uterine cavity or vagina, or whether the leg of the child is pulled down by the Braxton-Hicks' method thus forming the tampon. I am sorry that Dr. Fry is not here. He reported 14 cases with no maternal death and 15 per cent. fetal mortality.

I have recently heard a method advocated in Chicago which is the Barnes' bag introduced into the cervix. I did that 15 years ago. I had no bag, but I used the condum. I had two tubes, one to poke it in and the other to hold it. In that way you get pressure on the placenta and pressure into the uterine cavity, thus holding the bag in place. A vaginal tampon is likely to fill, although that is a routine treatment which I have seen successfully used time and again in Berlin. If it is properly packed, the pains will come on slowly, until finally the tampon is expelled and the child will follow. These are the methods which we must teach and which must be used by the general practitioner and by most of us. Those who have skill can do a Cesarean section, but I do not believe it justifiable in every case. By no means should it be considered as the school treatment.

Dr. Dugan—I would like to ask the Doctor whether he would advise Cesarean section in a case of placenta previa when the hemorrhage comes on at the fourth or fifth month? I should consider the tampon more dangerous than Cesarean section, because with the tampon the bleeding goes on just the same and the patient is extremely liable to die.

Dr. P. H. Oyler, Mt. Pulaski, Ill.—I have a large rural obstetric practice, and I made up my mind long ago as to what I would do if I were to meet such a case. I have heard so many reports of tamponing, but the cases all died. Two months ago it was my privilege to be in one of the maternity hospitals of one of our large medical centers. They had a case of placenta previa, and the chief ordered tamponing where the attendants were quite positive that a Cesarean section would have been the proper thing for that case, because of the apparent difficulty in dilating the os. The section was recommended, but tamponing had to be done, and as a result the woman died from internal hemorrhage shortly afterward. That was in an institution where Cesarean section could have been safely performed. It has been my good fortune to meet only one case of this kind in my practice. After the first alarming hemorrhage I did not wait to tampon, but I anesthetized, and gradually bored up and delivered the child in about an hour and a half. The child died five hours later, but the mother made an uneventful recovery. I think the trouble, in a large percentage of cases, is in not taking proper action soon enough. If I could not do anything, I should certainly send for a well-known and recognized expert. I would not subject my patient to any risk whatever on the account of the sentimental ideas so often expressed in behalf of the offspring. Prompt decision to act or abandon the case is my motto.

Dr. C. L. Bonifield, Cincinnati—I thoroughly agree with Dr. Engelmann that this paper and this discussion should not go out before the world, advocating Cesarean section as the school treatment for placenta previa, without a protest. The statistics quoted are those of men who are experts in abdominal surgery. Those who have quoted statistics from the obstetric standpoint, have quoted statistics of men who are not expert in this work. One man reported 14 successful cases treated from the obstetric standpoint. Another man reported 25 cases. I do not remember the child mortality, but it is certainly an excellent record from the maternal standpoint. As some one has truly said, these are emergency cases and we certainly can not expect to have a low mortality. Before an expert can be gotten the patient will be exsanguinated and the patient's resistance to operation will be materially lowered.

Some one said that it is a well-known fact that a patient who has had placenta previa will usually have it again. If she had it once it indicates that something was wrong with the uterus. I am inclined to believe that it was an endometritis with a dilatation of the uterine cavity. If this condition is relieved and the patient put into perfect health, the probability is that she could give birth to healthy children afterward. Even if the fetal mortality is a little higher it would at least save the mother.

As to the tampon, the last speaker said that the chief of staff ordered the patient tamponed. That was not what he should have done. He should have tamponed her himself so as to make sure that it was properly done. One gentleman spoke of the difficulty in dilating the uterus, doing it promptly and rapidly. I believe that in these cases the patient should always be sent to the hospital and the treatment be done slowly. We are tending too much to gynecology, too much to surgery, and obstetrics is being neglected, and that is the reason why we should try and arrange our program so that a whole day or two would be devoted to obstetric papers. I think one of the greatest faults in teaching obstetrics is that we teach that few vaginal examinations should be made. That is wrong. No man can be a good obstetrician unless he learns to know the mechanism of labor. If he can clean his hands for surgical cases he can also clean them for obstetrical cases. We should teach our students to examine carefully, aseptically and often, to know what they are doing. In this way they will be competent to deal properly with obstetric cases.

Dr. F. D. Reese, Cortland, N. Y.—There are two things to take into consideration, the life of the mother and the life of the child. Which shall we save? If we wish to save the child I believe in doing a Cesarean section, but if we wish to save the mother I believe in doing something else. If we are called in these cases let us cleanse our hands thoroughly and introduce one hand directly into the uterus, grasp a leg, perform version and plug up the cervix at once. Then you can deliver at your ease.

Dr. H. P. Newman, Chicago—I can hardly recommend the last speaker's statements. The obstetrician should think of something more than the immediate welfare of the mother and child. Their future health should be considered in obstetrical work.

Dr. Gillette, in reply—Dr. Bernays thinks Dr. Eastman wrong regarding his ideas of the Porro operation in this class of cases; but as I understand them, they are entirely in accord with those which I tried to express in my paper. There is, I am sure, a distinct field for both the classical and the Porro-Cesarean section, if this operation is finally to be recognized as a legitimate procedure for placenta previa. The Porro will probably prove the safer, in cases of emergency where much blood has already been lost, and the classical, applicable to those yet in good condition. I took the trouble to write to all the gentlemen of whom I could learn, who had performed Cesarean section for placenta previa, and asked the cause of death of their patient, if the patient had died; those who replied, and nearly all did so, invariably said: "She died of shock."

I tried to show in my paper, that in patients operated on by the Porro method, shock was reduced to a minimum and sepsis would not be so likely to occur. We know that shock is due to hemorrhage and prolonged operative procedure. In those cases in which much blood has been lost, the uterus often will not contract firmly, and is on this account extremely likely to bleed again. The Porro does away with this danger entirely. Further, a classical Cesarean section requires more time for its performance than the Porro, which entails more shock. For these reasons the Porro is in my opinion a safer operation in emergency cases.

When facing a situation of this kind the question as to whether the patient can afterwards bear children or not, can not be considered the paramount one, but instead, the present saving of the two lives entrusted to our care; and we would certainly not be doing our full duty to both, if the course adopted were not the one most likely to accomplish this. I am sure no one would advocate Cesarean section for all cases of placenta previa. Where there is partial or marginal im-

plantation, the older methods are usually successful; but the cases of the central variety, where the cervix does not easily dilate, and in which the hemorrhage is profuse and uncontrollable then Cesarean section, in my opinion, is not only a justifiable procedure but is imperatively demanded.

THE CHEMICAL AND MICROSCOPIC EXAMINATION OF BLOOD.*

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Until recently little has been known of the blood as a factor in the cause of disease. The microscopic morphologic changes which take place in the blood, and their cell identity, have quite definitely been fixed or determined; however, there has not been much progress made from a chemical standpoint in blood examination. Recently, Schmidt, Hoppe-Seyler, Judell and others have contributed liberally to the chemistry of the blood, and among other things they have given us chemical blood analysis, and a working foundation whereby we are enabled to forward chemical analyses of the blood with more precision. The blood in the body is enclosed, so to speak, in a sealed tube, and is unable to gain exit, except by osmosis, or through solution of continuity in the blood-vessel. The depletion of the red blood normally takes place, principally, in the spleen, and it receives its supply from the lymphatics and red bone marrow.

The blood is composed of plasma, serum and blood-plates. Intermixed in the blood, gases are found—carbonic, oxid and oxygen. Salts are also found—magnesium, calcium, potassium and sodium. To these salts are accredited, by many writers, the alkalescence of the blood. In the blood are found red and white blood-corpuscles. The red corpuscles are composed of oxyhemoglobin and neucloproteids, lecithin and chloesterin.

In the leucocytes have been demonstrated fatty acids, lecithin, glycogen and salts, similar to those found in red cells. Blood-plates are regarded by Lilienfield as belonging to the neuclo-albumins, and are supposed by him to be the remnant of the leucocytic neuclei.

The blood serum, containing serum-albumin and serum-globulin, is subject to chemical change in puerperal septicemia, and in febrile disease; serum-globulin is less subject to change than serum-albumin.

The inorganic salts of the serum are phosphates, chlorids, carbonates and sulphates. The pathologic variations in the phosphates of the serum vary in slight degree and importance. The variations in the chlorids of the serum, investigated by Schmitt, Barnicke, and Limbeck, have not been found extreme nor of notable pathologic import, although this principle is chiefly responsible for the isotonic relations of cells in serum. A high percentage of chlorid is usual in anemia. The larger the proportion of plasma, the greater is the percentage of chlorids in the blood. The alkalies, sodium and potassium, are principally combined with chlorin in the blood. Large proportions of phosphates and carbonates of sodium and potassium are found. Sodium salts are principally found in the plasma, being usually increased in the watery blood. Potassium, found in red cells, is diminished in hydremic conditions.

Sodium carbonate in the plasma is responsible for the alkalinity and the power of plasma to produce CO_2. The iron in the blood is principally found in hemoglobin; traces are found in plasma and neuelein. Seegen, Chaureau, Cavazanni, von Mering, Limbeck, found in normal blood traces of glucose, which is increased by a diet of earbohydrates and diminished by muscular exertions. The diastase ferment of blood is found in the red cells and serum, and is found, by Castellino, Tiegel, Plosz, and Precka, to have the power of coagulating blood. It is inhibited by the neuclein and increased by sodium sulphate and chlorid.

After a heavy meal, fat has been demonstrated in the blood, by Gunprecht. The occurrence of free fat, palmatin, stearin and olein in the blood in health and disease has repeatedly been observed. It has been found very much increased in healthy individuals after a hearty meal. Acetone is found in fevers, Jkseh has demonstrated fatty acids in the blood of leukemia, acute atrophy of the liver and infectious diseases.

CHOLEMIA.

The poisonous symptoms developed in cholemia have been referred, by most authorities, to the presence of biliary acids. To the naked eye, icterie blood may appear yellowish-red in color in the serum or its foam. Small quantities of bile pigment have been readily detected by a peculiar yellowish tint. On rapid heating, the yellowish-red bilirubin changes to green biliverdin. Diminished isotonic tension and increased resistance of the red cells are peculiar characteristics of the red blood in jaundice. Limbeck found tension of the eells reduced .40, .38, and .32 per cent. sodium ehlorid. The well-attested fact that in intense jaundice red cells are frequently dissolved by biliary principles, can with some difficulty be reconciled with that markedly hyperisotonic quality of the serum. Bile acids affect the union of hemoglobin with the stroma of the red eells, rendering hemoglobin more easily soluble; this aecounts for the solution of red cells in jaundice, as well as in other conditions. Other characteristics of ieteric blood are increase of nitrogenous bodies, diminution of ehlorids of both blood and serum, which is displaced by biliary acids, and well-marked increase in the volume of red cells. Well-marked cholemia may be detected by inspection of serum or foam on heating to 50 C. Bilirubin may be changed to biliverdin by this process.

By the intravenous injection of glacial acetie acid in the rabbit, I have been able to get an acid reaction several hours afterward by the phenol-phthalein test. It simulates that found in diabetic cases. Singular to say, I have also found that a rabbit weighing 1550 kilos can, apparently without any inconvenience, tolerate as high as a 2-gram intravenous injection of glaeial acetic acid into the vein. Examination of the blood shows decrease in red cells and hemoglobin, also decreased leucocytes.

The specific gravity of the blood varies by the amount of water present and amount of salts contained. The conclusion reached by many authors has plaeed the specific gravity from 1.058 to 1.062 in man; 1.054 to 1.060 including both sexes. The specific gravity of the blood may be increased by sweating, lack of food, muscular exertion, and may be decreased by freely imbibing in water or fluids.

Osmosis is the force which leads to the interchange of blood through the animal membrane, until the salt in each is equal. When two fluids have equal content of salt, they are said to be isotonic. The isotonic tension of red cells is .46 per cent. sodium chlorid. Homberger finds that albumins, phosphates and chlorids behave differently after changing osmotic conditions. When a lit-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Frank Billings, George Dock and J. M. Anders.

tle acid is added to blood, albumin and phosphates pass from the red cells to the serum, while chlorids pass from the serum to the cells, but when an alkali is added the opposite transfer is induced.

Similar physical effects are produced by the passage of oxygen and carbonic acid through the blood. Homberger suggests that these factors take an important part in the metabolic exchanges in the capillaries.

It is an established physiologic principle that the absorbent power with relation to carbonic dioxid, entirely depends on its alkalescence; venous blood contains more carbonic dioxid than arterial.

Febrile processes are generally accompanied by diminution of CO_2 in the blood. Often in proportion to the height of the fever this condition, according to Gepherd, and Minkowski, is referable for the abnormal production of acid metabolic principles in the blood. In the cachexia of carcinoma, Limbeck and F. Klemperer found marked diminution of the CO^2 in the blood, but did not estimate the acid principles.

The blood is frequently very difficient in $CO._2$ There are certain unsaturated salts in the blood,—sodium (Na_8 CO_3; NaH_2-PO_4: Na_2 HPO_4)—which, although alkaline to litmus are acid to phenol-phthalein and are capable of uniting with bases. When fresh blood is alkaline serum reacts as acid phenol-phthalein. The capacity of the blood salts to neutralize bases has been called its basic capacity, by Krous. In normal venous blood Krous found the capacity to be .162 to .232 per cent. NaOH, which increase in febrile conditions to .209 to .272 per cent.; this is a demonstration of the marked increase of basic capacity in diabetes and has been regarded as strong evidence of acid intoxication in this disease.

By increasing doses of phenylhydrazin it is possible to reduce the red blood count to one million corpuscles, or even to a greater degree.

EXAMINATION OF THE BLOOD.

Five things are essential in order to make satisfactory examination of the blood: 1. The apparatus must be absolutely clean. 2. The various stages in the process must be performed rapidly, because the cell coagulation of the blood will interfere with any of the tests. 3. The work must be done accurately. 4. Making large quantities of stain and keeping some in glass-stoppered bottle will standardize the solution, so one will receive minimum variations in intensity of stain. 5. Fixing of specimen, by continuous heat, with as slight a degree of variations in distribution of heat as possible; taking of blood specimens with reference to time of day.

In the healthy individual, with the above-mentioned methods, I have noted increase and decrease of the leucocytic count, varying from 1000 to 7000 per cubic millimeter in the course of a day.

In order to more accurately fix the blood count, I have found that specimens taken in the morning, before any undue excitement is indulged in and previous to taking of fluids, or solids, will give a more uniform blood count than those taken at any other period of the day.

A subcutaneous injection of quinin in the forearm in a case under treatment for malarial fever at the hospital at Nantes, France, resulted in paralysis of the thumb and forefinger, incapacitating the patient for work for several months. He sued the hospital, the physician in charge and the interne who made the injection, claiming that the latter had failed to obey instructions to make the injection in the thigh. The courts exonerated the defendants and dismissed the case with costs.

LEUCOCYTE COUNTS IN HEMORRHAGE.*

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It has been conclusively demonstrated that the loss of blood in man and the higer animals is followed by an increase in the number of leucocytes in the circulating blood. This increase in white cells following hemorrhage has been called post-hemorrhagic leucocytosis and ranges all the way from 11,000 to 30,000 white cells per cubic millimeter.

How soon after the hemorrhage the leucocytosis appears does not seem to have been determined with absolute certainty. Cabot, in his "Clinical Examination of the Blood" (page 111), makes this statement: "Immediately after a loss of blood, we can usually find a decided leucocytosis, despite the dilution of the blood." On page 90 of the same work he writes: "Within an hour after a large hemorrhage we commonly find a considerable increase, 16,000 to 18,000 cells."

The size of the hemorrhage required to produce a leucocytosis and the length of time during which the increase of white cells continues after the hemorrhage has stopped are questions upon which meager information is offered. In two cases of cerebral hemorrhage recorded by Cabot (page 111), the loss of blood was not great enough to affect the red cells, but the white cells were much increased. In one a count of 25,000, in the other a count of 15,000 white cells was made.

On page 91 of Cabot's work appear these words: "In hemorrhage from the stomach, the leucocytosis disappears in a day or two, while in traumatic hemorrhage it persists longer."

The statements above quoted sum up in a general way all the definite knowledge we possess on the leucocyte count in hemorrhage. Much, if not all, of the data upon which these statements are founded has been gathered from counts upon clinical cases in human beings, where other factors beside the hemorrhage per se may have played an important part in the rise or fall of the white cells and where the leucocyte counts must of necessity have been made sometime after the occurrence of the hemorrhage.

I wish to place on record some experimental work on the leucocytes in hemorrhage, which excludes these disturbing factors and gives us what appears to be definite results somewhat at variance with generally accepted views. The experiments were performed on dogs, and I am indebted to Dr. R. O. Beard for his kindness in permitting me the use of material upon which he was experimenting.

The normal leucocyte count in dogs is about that of man, 6500 to 9000. The same laws seem to govern the increase or decrease of leucocytes of the circulating blood in dogs and in men, so far as the writer has been able to follow them. There is a leucocytosis of digestion and a leucocytosis following septic infections in dogs as well as in human beings. The varieties of leucocytes in the circulating blood of dogs are essentially the same as those in man. In all probability the conclusions arrived at from these experiments in dogs would apply equally well to human beings.

EFFECT OF HEMORRHAGE ON THE LEUCOCYTES.

The first series of experiments deals with the effect of hemorrhage on the number of leucocytes in the cir-

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Frank Billings, George Dock and J. M. Anders.

culating blood. Five healthy-looking dogs were selected for the experiment. The procedure in each was as follows:

From a freshly made puncture in the ear of the dog a white blood count was made with a Thoma-Zeiss hemocytometer, 1-3 of 1 per cent. glacial acetic acid being used for the dilution fluid. The left femoral was clamped with a small artery forceps, a small incision made in the side of the vessel, a canula introduced into this opening and tied in place. The artery forceps was then unclamped and the blood allowed to flow out of the canula into the measuring glass. As soon as from 200 to 500 grams of blood had escaped, the amount bled depending on the size of the dog, the artery was tied with a silk ligature and a second white-blood count immediately made. The wound was then sutured and surgically dressed. The following results were obtained:

In dog 1, the white count, two to five minutes before bleeding, was 9600 leucocytes. The dog was bled 394 grams of blood from the left femoral artery. The white count, two to five minutes after the artery was tied, showed 6300 leucocytes.

In dog 2, the white count, two to five minutes before bleeding, showed 6600 leucocytes. The dog was bled 493 grams of blood from the left femoral artery. The white count, two to five minutes after the artery was tied, showed 2600 leucocytes.

In dog 3, the white count, two to five minutes before bleeding, gave 9000 leucocytes. The dog was bled 660 grams of blood from the left femoral artery, and the white count, two to five minutes after the artery was tied, showed 8000 leucocytes.

Dog 4, was bled on August 7, 47 grams of blood. On August 9 the white count, three to five minutes preceding the second bleeding, showed 14,000 leucocytes. The dog was bled 354 grams of blood from the left femoral artery, and the white count, two to five minutes after the artery was tied, showed 10,300 leucocytes.

Dog 5 was bled on August 7, 47 grams of blood. On August 9 the white count, two to five minutes preceding the second bleeding showed 13,600 leucocytes. The dog was bled on August 9, 354 grams of blood, from the left femoral artery. The white count, two to 5 minutes after the artery was tied, showed 5000 leucocytes.

The results of this series of experiments clearly prove that, in dogs, immediately following a severe hemorrhage there is a fall in the number of leucocytes in the circulating blood. The counts show further that this fall in normal dogs ranges from 1000 to 4000 white cells per cubic millimeter.

That this leucopenia immediately follows profound hemorrhage in human beings, as well as in dogs, the writer has not the slightest doubt. The figures for white counts in hemorrhages in man have been collected from clinical cases, as after post-partum hemorrhage, after cerebral hemorrhage, after accidents in which important arteries were cut and large quantities of blood lost. In the majority of such cases it must in most cases have been some time after the hemorrhage before the white blood count could have been made. Therefore, observers making counts in such cases have failed to discover this initial fall in the leucocytes which has here been demonstrated. Moreover, this fall in leucocytes is just what should occur if our ideas concerning the change of fluids of the body following hemorrhage are true.

There is good experimental basis for the belief that following hemorrhage the blood becomes hydremic. That is, fluid passes over into the blood-vessels from the surrounding tissue spaces, which augments the diminished volume of blood and strives to restore it to its normal standard of quantity. This augmentation to the plasma of the blood serves to keep up the blood pressure; otherwise a very small hemorrhage might put an end to the organism. As a result of this dilution of the blood, we would expect a diminution in the number of white blood-cells. This we have proved does occur. Other observers making counts not immediately after the hemorrhage have found a leucocytosis which they were at a loss to explain, as will be seen by a statement of Cabot's. He says: "Immediately after a loss of blood we usually find a decided leucocytosis despite the dilution of the blood."

By white blood counts at a later period in these same dogs, I wish to now prove that this initial decrease in the number of leucocytes is followed by an increase in the white cells of the blood, and in all probability it was this leucocytosis which was found in most of the clinical cases of which we have record.

In Dog 1, the count before the hemorrhage was 9600; two to five minutes after the hemorrhage, 6300; twenty-four hours after the hemorrhage. 26,300; forty-eight hours after, 16,600.

In Dog 2, the count before the hemorrhage was 6600: two to five minutes after it, 2600; twenty-four hours after the hemorrhage, 15,600; forty-eight hours after the hemorrhage, 20,600 leucocytes.

In Dog 4, the count two days after the first hemorrhage and two to five minutes before the second was 14,000; two to five minutes after the second hemorrhage, 10,300; forty-eight hours after the second, 16,000 leucocytes.

In Dog 5, the count two days after the first hemorrhage and two to five minutes before the second was 13,600; two to five minutes after the second hemorrhage, 5000; forty-eight hours after the second hemorrhage, 10,000.

Dog 3 was used for intravenous injection of saline solution.

It will, therefore, be observed that the leucocytosis of hemorrhage in dogs is an increase in the number of leucocytes in the circulating blood, which is a secondary phenomenon, the primary initial change being a decrease in the number of white cells.

I regret that leucocyte counts could not have been made hourly for the first twelve hours, to determine at just what time following the hemorrhage the rise in leucocytes begins to take place.

DURATION OF LEUCOCYTOSIS.

Another question of considerable interest is: How long does the leucocytosis of hemorrhage continue? This is evidently a somewhat difficult question to settle, since we do not know what other factors besides the hemorrhage, such as the healing of the wound, the presence of infections not detectible by the naked eye, etc., play a part in the raising or lowering of the leucocyte count.

In one of the dogs (Dog 1) the count became normal (8300) on the seventh day following the hemorrhage. In another (Dog 2) the count was normal (7300) on the seventh day. In this dog the counts were as follows: August 9, after hemorrhage, 6000; August 10, twenty-four hours after hemorrhage, 26,300; August 11, forty-eight hours after hemorrhage, 16,600; August 12, seventy-two hours after hemorrhage, 13,000; August 16, the seventh day after hemorrhage, 7300. In one of the dogs, however, the count, while lower than on previous days, was not normal on the seventh day. For example, Dog 1 counted 11,300 on the seventh day following the hemorrhage, while in another dog the count was higher on the seventh than on previous days. In none of the

dogs was the count normal earlier than the seventh day following the hemorrhage.

Why the leucocytosis continues for so long a time after the hemorrhage does not seem apparent. Two hypotheses might be offered. We might suppose that the leucocytosis of hemorrhage was due to an increased production of white blood-corpuscles, and that this overproduction continued for many days following the hemorrhage. On the other hand, it may be that the leucocytosis of hemorrhage is caused by a migration of ameboid leucocytes from lymph spaces into the circulating blood in search of a more congenial environment, and that the leucocytes once in the circulating blood there abide until the organism has created a suitable habitat for their existence outside the blood-vessels. The latter hypothesis seems to me the more plausible of the two, although both may play a part in the continuance of the leucocytosis.

CONCLUSIONS.

1. In dogs a diminution in the number of white blood-cells in the circulating blood immediately follows a profound hemorrhage.

2. This initial leucopenia is followed sooner or later by an increase in the number of leucocytes in the circulating blood. This is the so-called post-hemorrhagic leucocytosis of all writers.

3. This leucocytosis of hemorrhage continues for at least seven days, and in some cases much longer.

The writer believes that what he has demonstrated in dogs is equally true for human beings, viz., that in human beings, immediately following hemorrhage, there is a decrease in the number of leucocytes in the circulating blood, which has heretofore been overlooked and assumed not to exist, because hematologists have failed to make their counts early enough after the hemorrhage took place.

DISCUSSION ON PAPERS OF DRS. KELLY AND HEAD.

Dr. DeLancey Rochester, Buffalo—I simply rise to ask a question of the last writer, whether, in the differential count of the leucocytes, he noted any change in the relation of the various forms of the leucocytes occurring in the leucocytosis following the leukemia?

Dr. W. B. La Force, Ottumwa, Iowa—I should like to ask the reader of the last paper whether, in operations upon septic cases with pronounced leucocytosis, the leucocytes were still further increased in the occurrence of severe hemorrhage, as in non-septic cases with no leucocytosis?

Dr. Thomas McCrae, Baltimore—I think the findings of leucocytosis following hemorrhages are of great interest, especially when preceded by a leucopenia. In regard to the counts taken in cases of hemorrhage in the human individual we probably can observe this best in those counts taken in typhoid fever where hemorrhage has occurred. I can recall one case in which frequent counts of the leucocytes were taken, in which hemorrhage occurred, and there was a dropping off in the count of the leucocytes, which was very marked for two hours. I think this is a very important point in the recognition of abdominal conditions in typhoid fever, especially in regard to the diagnosis between hemorrhage and perforation.

Dr. George Douglas Head, Minneapolis—Cabot, in his book, states that in all cases of pernicious anemia the megaloblasts exceed the normoblasts and he makes that one of the main points in the differential diagnosis. Dr. McCrae, I believe, found a predominance of the normoblasts over the megaloblasts in many of his cases of pernicious anemia. In the few cases that I have seen, some twelve or fourteen, I have not been able to satisfy myself that the megaloblasts exceeded the normoblasts except at the close of the disease. In the early stages of the disease, when it is important to make a diagnosis, and when the differential diagnosis is the chief point of interest, I have not been able to find that the megaloblasts always exceeded the normoblasts.

Dr. Frank W. Higgins, Cortland, N. Y.—One essayist seems to doubt Hunter's theory of the importance of the mouth conditions in pernicious anemia. The point that I wish to raise is in regard to the results of treatment. Hunter is enthusiastic in supporting the idea and his success in treatment seems to promise something in favor of that theory. I have had occasion to treat but one case since reading his articles and certainly the results obtained in that case were very marked, and the recovery was complete; the treatment was based entirely upon his theory. I was impressed with the importance of securing asepsis of the mouth and upper air-passages, as well as the teeth, and it is this point in the treatment of pernicious anemia which deserves more attention than has been given it in the past.

Dr. Thomas McCrae, Baltimore—In answer to Dr. Higgins' question regarding the importance of treating cases according to the suggestions of Hunter, I wish to state that I agree with him; it is important that we should attend to the condition of the mouth, the intestinal tract, etc., but I also believe that it is also important in other diseases as well as pernicious anemia. In regard to the therapeutic treatment of these cases of pernicious anemia, brilliant results have followed the use of arsenic. A case treated in 1880 and reported by Hale White in 1890 was alive in 1900. One of our cases returned six years after treatment with cancer of the stomach. I have now under observation one case treated six years ago and the patient is reasonably well to-day. I have seen cases get well under rest, fresh air, good food and arsenic; the most brilliant results have been obtained by this treatment. I certainly agree with the statements made regarding the importance of oral asepsis.

Dr. W. D. Kelly, in reply—I hoped to create a discussion, by reading my paper, upon a possible way of medication of these pathologic conditions. We have all used normal saline solution, intravenous injections when there has been a decrease in the amount of the blood and, as I stated in my paper, I was able to use one of the strongest alkalies to increase the alkalinity of the blood without loss of life, experiments being made on the rabbit. In the rabbit it is easy to demonstrate that the injection of air into the veins will kill a rabbit in a few seconds; this shows the importance of excluding air when making these intravenous injections. I had hoped to create some discussion in order that I might gain some information, or suggestions, from some of the gentlemen present, that might further my investigations in this respect.

Dr. Head, in reply—I regret to say that the differential counts have not been made as yet, but I promise further reports when the differential counts shall have been completed. In answer to Dr. La Force's question, I will state that it has been my experience that where a septic infection with a high leucocyte count exists, an operation is performed and pus evacuated, the leucocytosis falls. I do not know what effect hemorrhage at operation may have upon the fall in the leucocytosis.

THE ANTENATAL TREATMENT OF HEMOPHILIA.*

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In the absence of accurate antenatal diagnosis, cases in which the effects of antenatal treatment can be tested are few and far between. The well-known tendency of morbid fetal states to repeat themselves more than once in the reproductive history of the same mother gives, however, a possible opportunity of trying to

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influence beneficially the health of the unborn infant; further, the hereditary character of some of the maladies which thus tend to repeat themselves increases the probability of the antenatal diagnosis, although it must be confessed that it diminishes or appears to diminish the chances of successful therapeutics. Hemophilia is a malady which fulfills the conditions which have been stated above. It is very clearly and persistently hereditary, and it also shows family prevalence. As a test case, then, it has its advantages. Given a woman who comes of hemophilic stock, who has a hemophilic father or brothers, there is a probability that her male offspring will be hemophilic; and the probability is greatly increased if she has already given birth to one or more hemophilic male children. There is a presumptive diagnosis, then, of antenatal hemophilia when such a woman is pregnant of a male infant. But as a test case it has also disadvantages. Hemophilia is a very intractable disease, and it may be urged that if it can not be cured after birth there can be little hope of curing it before birth. The latter statement, however, is merely an opinion; it may also be urged that it may be easier to affect beneficially a morbid state before birth, i. e., in the fetus, than after birth, but of this more anon. Let me now narrate the history of the case on which this communication is based.

On June 25, 1900, I received, from Dr. W. H. B. Brook, of Lincoln, England, a letter, in which, after a reference to an article on "Antenatal Diagnosis," by myself, which he had read in the *British Medical Journal,* he proceeded to state the facts of a case of hemophilia complicating pregnancy and labor, which he had in his practice; and he closed his letter with the inquiry whether, in my opinion, the administration of chlorid of calcium to the mother in pregnancy would prevent the child from being the subject of hemophilia. The case was as follows:

Mrs. C., 34 years of age, pregnant for the third time, a tall, well-built woman, rather spare, with black hair and a sallow complexion, had always lost much blood at her menstrual periods and had postpartum hemorrhage after both confinements. She last menstruated on Dec. 25, 1899, and expected her confinement in October, 1900. Her family history was interesting; her mother was healthy, but her uncle—mother's brother—died at the age of 11, from bleeding; she, herself, has had four brothers and four sisters, and one of the brothers died at the age of 12, from bleeding; the other brothers are alive and healthy; four sisters are healthy and their male children are also. Her first pregnancy ended, in 1891, in the birth of a male child; there was a considerable amount of hemorrhage, which left the mother weak; the child at birth was white and anemic; it is still alive, but is a marked "bleeder," bruises easily and has suffered from hemorrhages into the joints and from the gums during the shedding of the first teeth. In fact he nearly succumbed several times during the casting of the milk teeth, from great bleeding. The second pregnancy likewise ended in the birth of a male infant, in 1894; there was again postpartum hemorrhage; the infant showed hemorrhage from the umbilical cord at birth, bruised easily, and died at the age of 12 months, during dentition, the cause of death being returned as cerebral hemorrhage. The mother was now—1901—pregnant for the third time and had reached the sixth month.

Such were the facts on which I was asked to form an opinion of successful antenatal treatment. I replied to Dr. Brook without much enthusiasm, pointing out the difficulty of being sure that the fetus was hemophilic, the uncertainty of the sex of that infant even, and the hereditary nature of hemophilia. Hemophilia, I remarked, was not in the same category as such diseases as syphilis, smallpox, and typhoid fever, which the mother transmits to the fetus in utero; being so distinctly and persistently hereditary it was hardly to be expected that antenatal medication begun at the sixth month of pregnancy would greatly affect it. At the same time I gave it as my opinion that chlorid of calcium might safely be given to the mother, and that it would pass through the placenta and reach the fetal tissues. I advised that the treatment with the chlorid be commenced, although theoretically the hopes of success were small; and I also suggested that iron, arsenic and strychnia be also administered, in order to improve the general health and possibly to increase the tone of the uterine musculature and so lessen the risk of postpartum hemorrhage.

Dr. Brook immediately accepted my suggestions and put the patient on a mixture containing 10 grains of chlorid of calcium thrice daily; this was continued till her confinement on Oct. 3, 1900. He also gave her a pill of arseniate of iron with strychnia thrice daily till September 17, when it was replaced by the syrup of the phosphate of iron. I had also referred to the possible benefit that might follow the administration of thyroid extract, especially if the mother did not show the normal thyroid hypertrophy of pregnancy; but as a matter of fact thyroid extract was not given, as it was difficult to say whether the thyroid gland was normal in size or not, and it was thought best not to complicate the treatment. During the three months, therefore, this woman received the above-mentioned drugs.

On Oct. 3, 1900, the confinement took place, and again the child was a male. On this occasion, however, the infant, instead of being white and anemic in appearance, was red and mottled and was, indeed, in all respects a normal new-born. There was no hemorrhage from the umbilical cord, as there had been in the previous case. Further, there was no postpartum hemorrhage, for the first time in the mother's obstetric history. The patient was able to nurse her infant, but Dr. Brook advised that this should not be attempted. The labor was easy, the vertex presented, and the whole process did not occupy more than six hours. It should be added that the cord was not tied for five minutes after the infant was born.

Since October, Dr. Brook has kept me acquainted with the progress of the case, which has been satisfactory all the time. The infant never had any bleeding and did not bruise like his brothers; during the last few weeks he has cut a tooth without hemorrhage. It may be noted as of some interest that his eldest brother still shows the bleeding tendency very markedly; during February he had severe hematuria which was uninfluenced by turpentine, but rapidly stopped under chlorid of calcium and thyroid extract.

What are we to say about this case? Here is a woman with a distinct hereditary history of hemophilia, handed down to her apparently through her mother, and showing itself in the form of postpartum hemorrhage and profuse menstruation and in the procreation of hemophilic male infants; under chlorid of calcium, and iron, arsenic, and strychnia, she passes through her third pregnancy, is confined without postpartum hemorrhage, and delivered of a male infant without hemophilia! The treatment, let it be noted, is only at the sixth month of pregnancy, but still a coincidence and nothing more. At first thought we are inclined, knowing what we know and have been taught to believe regarding the intractable nature of heredi-

tary maladies, to accept the conclusion that it was a coincidence. If we accept the other view, that the healthy, non-hemophilic state of this woman's third son was due to chlorid of calcium administered during the third trimester of pregnancy, we are face to face with the conclusion that it is possible by medicinal substances given to the mother in the last three months of gestation to cure the unborn infant of a malady which no medicines in after-life are capable of curing. Here I am tempted to leave the question. Certainly it is far easier to take it that just as this woman had four brothers, only one of whom was a bleeder, so of her three sons two were bleeders and the third was not; even with the most hereditary complaints some members of a family escape. It was a coincidence and nothing more that antenatal treatment was instituted in the case in which the hereditary influence was going to fail! But, there are some circumstances which encourage me to express the opinion that after all there is a chance that the treatment in this case may have something more than a coincidental relation to the healthy state of the third infant.

In the first place it may be taken, from what is known of the physiology of the fetus and more particularly of placental transmission, that the chlorid of calcium given to the mother reached the fetal tissues; there is no reason to doubt that the iron, arsenic, and strychnia did also. In the second place there is evidence that chlorid of calcium is beneficial in hemophilia after birth, and there is also evidence that hemophilia, if persistently treated in postnatal life, shows a certain amelioration. In the third place there is in the extraordinary power of recovery possessed by the fetus, a factor which must not be left out of account in dealing with all questions of antenatal treatment. When we remember the marvellous power of growth and tissue-building which the fetus displays, a power so great that in one month of intra-uterine life the body weight is quadrupled, we are led to ask ourselves whether this wonder of construction may not be accompanied by an equally great wonder of reparative energy? If there be a greatly exaggerated *vis medicatrix naturæ* in the fetus, is it not possible that even the hereditary maladies may, if properly influenced, show a tendency to cure during antenatal life. May it not be that medicines acting upon the organs and tissues, while these are still in the stage of construction, may be more efficacious than when they act upon structures which are, as it were, set either for health or disease. In the meantime the case and these comments on it are placed before the profession. *In judicando criminosa est celeritas.*

24 Melville Street.

THE PREVENTION OF PULMONARY TUBERCULOSIS IN PREDISPOSED CHILDREN.*

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Before the discovery of the bacillus tuberculosis heredity was supposed to be of great importance as a causal factor of tuberculosis, but its importance is rapidly fading into the distance in the opinion of bacteriologists and phthisiologists, who believe more in the direct contagion theory. Norbury states that "in the light of modern scientific inquiry infection has supplanted direct heredity as the etiological factor *par excellence* in tuberculosis." Direct transmission of the bacillus is claimed to be extremely rare, although authorities agree that this rarity will be less when the observations have been more extensive.

It is claimed that cases of tuberculosis occurring during childhood are due to direct or indirect infection in nearly all cases, statisticians claiming the infection occurs in an increasing ratio during the first and second years of life from 9 to 38 per cent.

The pendulum has been swinging toward the bacillary origin of the disease so long that there is danger of losing sight of the other important causal factor of infectious disease, the condition of the tissues which permit and favor the growth of infectious diseases. It is to protest against neglecting this phase of the subject that urges me to discuss the question in this paper. As physicians whose aim is not only to cure, but prevent disease, we must not neglect to consider the predisposing factors. I stoutly maintain that we must give equal consideration to the two factors—heredity and the bacillus.

Authorities differ as to the percentage of predisposition, but average is about 38 per cent. When we consider that 38 per cent. of the consumptives give an hereditary history of the disease, there need be no apology for presenting the subject for your consideration.

As that master of the subject of the pedigree of disease, Jonathan Hutchinson, says: "We must take cognizance not only of the bacillus itself but also upon the state of the tissues upon which it is implanted. The possibilities of inheritance are twofold. It may be that the bacillus itself may pass bodily or potentially with the sperm or germ from parent to child, or it may be that a condition of tissues liable to its attacks, but for the time free from its presence, may be the result of transmission. If we are permitted to name the tissue condition, which is prone to favor the development of the tubercle bacillus, the name 'scrofula' will perhaps be convenient for the present. A child may then inherit 'scrofula' without the bacillus, or the bacillus without 'scrofula,' or, what probably is most common, both may be present together."

If this view of the heredity of disease is correct, we may take it for granted that the following propositions are admitted: 1. Healthy individuals possess certain degrees of immunity to tuberculosis, as well as other infectious diseases, and this immunity is transmitted to the offspring. 2. If one parent is tuberculous the immunity is weakened; if both parents are tuberculous, the immunity is lessened to a greater degree, and there is engrafted on the progeny a cellular nutritional weakness which permits the invasion of the infective germs. Perhaps it would be more nearly correct if we were to say that such individuals have an "infective predisposition," for they are especially liable to other forms of infection, such as influenza, etc., and their children inherit the same susceptibility. The reason they become tuberculous is because the tubercle bacillus is so omnipresent. 3. Children of tuberculous parents are easily infected, directly or indirectly.

Granted, therefore, that these statements are true, what can be done to prevent the subsequent development of tuberculosis? As Holmes has remarked, the preventive treatment should commence with the ancestors. Stirpiculture, or the improvement of the race,

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is the most potent means to be used to eventually eradicate tuberculosis. The education of the people in stirpiculture would mean the improvement of the coming generations, but of course has nothing to do with the generation already born. But the knowledge that children born of invalid parents are susceptible of improvement is of great value to the present generation. It is our duty to educate parents how to rear children who are predisposed to tubercular disease.

The period of development must be divided into subdivisions: infancy, childhood, youth and maturity. The great aim must be to promote nutrition, to develop the body symmetrically, to educate the mind judiciously, and to inculcate correct habits, physical and moral.

Infancy.—A babe should never be suckled by a tuberculous mother, but by a healthy wet-nurse, or it should be fed with food which is absolutely free from suspicion of being contaminated by the tubercle bacillus. As the babe grows the dietary should contain more fat, and as the salivary glands develop a very slight amount of starchy food should be added. Early a taste for hydrocarbons should be cultivated, so that the patient will not have a repugnance for fatty food as is commonly the case in persons who are inclined to tuberculosis. In a large experience it has been found that consumptives consume an insufficient amount of fat.

As the period of childhood approaches, the diet should contain more carbohydrates, and the inordinate cravings of children for sweets should not be curbed too strictly. In my opinion, pure candy in moderation is beneficial to growing children, if given after and not between meals. A point of not minor importance is the giving of water freely to children. As a rule, children do not drink enough water, as it is a great aid to nutrition, dissolving the food so that it can be more easily digested and assimilated, and acts as a solvent for effete material in the body so that it can be better eliminated.

During the period of childhood the diet should contain a greater proportion of nitrogenous food. Nitrogen supplies muscular force, and the demands upon the muscular system increases with the increasing age of the patient and the entering an occupation of some kind.

The period of puberty is a critical one. The physician should supervise the proper development of the physico-moral nature during this period. Enforced ignorance of the sexual laws prevents youth from seeing through the vista of years and perceiving the woes which follow the abuse of the body at a period when nature is attempting to reinforce it in every way and strengthen it against the future invasion of disease germs. Educate the youth in such necessary physiological laws as will tend to preserve the integrity of all the tissues, and maintain nutrition at its highest point.

Now is the time for education, and it is the time when the mind is apt to receive more training than the body. *Mens sana in corpore sano* is a motto which is forgotten not only by educators but by parents as well. We boast of our public school system, yet there is no method whereby so many budding into maturity can be physically wrecked so readily as by the class method of teaching. The strong and weak are given the same tasks, and the hours are unbroken by physical training, to say nothing of the lack of supervision of the attitude of the scholars in the school room, the want of proper ventilation, and the housing together of children whose vital forces are already lowered by lack of proper food and hygienic home surroundings. It is encouraging to note the tendency of modern school boards to install gymnasia, and employ competent teachers of physical development. Two-thirds of the period of youth is spent in education, and physicians should see that the parents and teachers give each child who has a predisposition to tuberculosis such thought and care in its mental and physical training as will insure health instead of disease. A harmonious and dual development of the mind and body must be secured. Our schoolteachers, as a rule, care more to send the parents reports of the rapid mental development of the children than to supervise the equal mental and physical development.

After the period of education comes the choosing of a vocation. The tuberculous inclined should be advised to choose occupations which would necessitate them to be out of doors the greater part of the time. The open-air occupation, if such that it requires the individual to be active, is the best form of work. Avoid dusty work, and factories, crowded assemblies and violent physical exercises. Newsholme, in his work on vital statistics, states the lowest mortality is in clergymen, railway engine stokers and engineers, farmers, brick-burners, coal merchants, and coal miners. Contrary to what would be believed, coal miners seem to be quite exempt from tuberculosis.

During the time the physician and parent have been guiding the development of the predisposed patient into more perfect maturity, it is necessary to keep in mind that the clothing is a question of importance, especially if the patient be a girl. The whole subject may be compressed in two words: the patient should be *warmly* and *loosely* clad. By warmly clad is meant sufficient clothing to prevent chilling, and meeting the weather changes by different weights of outer clothing. The clothing should be loose enough to permit free exercise and unembarrassed respiration. A child with a predisposition to tuberculosis should not wear a corset, and the mother who attempts to control the outline of her child's figure by the use of the corset is laying the foundation of tubercular infection by interfering with the processes of nutrition and the development of the respiratory functions of the lungs. Thin shoes, insufficient head covering, or deficient underclothing are the stepping-stones to tuberculosis. But on the other hand excessive swaddling of the body, or the neck and chest should be avoided, as it tends to a susceptibility to cold catching, and sudden changes of temperature can not be so well withstood.

Cleanliness is the great preventer of germ infection. A clean consumptive will not spread the infection, and a clean body does not afford so good a lodging-place for the germs. Therefore, the predisposed must avoid contact so far as possible with persons who are consumptive or should not use any articles used by such.

Hydrotherapy is of great value. It stimulates the nutritive processes, steadies the vasomotor nerves so that they are not so susceptible to sudden changes of temperature, and hardens the individual. It is impossible to enter into this subject in detail, but its benefit is so great to the consumptively inclined, that it is the duty of the physician to give his clients the necessary instruction.

It goes without saying that the hygienic surroundings of the patients must be as good as possible. Clean, well-ventilated, comfortable houses, built upon proper soil, and so arranged as to receive the maximum of fresh air and sunshine, afford the best chances for the predisposed.

And here the value of the open-air treatment is made manifest. The fresh-air sanatoria of our larger cities, and the country vacation clubs are doing a great deal of good in lessening the susceptibility of the poor in our midst. The sad part of it is that these provisions are necessarily of short duration. There should be established throughout the land fresh-air sanatoria for the children of tuberculous parents, and for the orphans of tuberculous origin. At the children's hospital at Ormesson, under the auspices of the French society for the care of tuberculous children, 34 per cent. of the cases were cured, and at Villiers the per cent. was 34.4 cured, or nearly cured. France beats the world in caring for children who have consumption, or have the tendency, having over twenty seaside and mountain resorts. But if we have not the sanatoria we can instruct our patients in sanatorial methods. These instructions should include dietetic, hygienic, balneological, physical and therapeutic methods of the well-known sanatoria.

Finally, it is the province of the physician to warn parents of the danger of neglecting the so-called benign children's diseases, such as measles, whooping-cough, influenza, tonsillitis, adenoids, etc. The feeble-minded are especially liable to tubercular disease. The acute diseases may be the preparers of the soil for tubercular infection, and they should not be neglected. *Nutrition* is the foundation stone on which to rear the preventive treatment.

It is impossible in the time allotted to me to crystallize all the thoughts on this subject, but if my theme shall be discussed and its importance magnified, and some practical method of instituting preventive measures throughout the United States whereby the increasing army of consumptives may be lessened, no apology need be offered for the mediocrity of this communication.

DISCUSSION.

Dr. T. F. Wood, Angola, Ind.—The subject has been handled in a way to be commended. I wish, however, the essayist had said something about the prevention of the marriage of individuals who are not only predisposed, but are really consumptives. I believe this is one of the great sources of tuberculous disease, and yet our hands are tied, as it were, regarding that phase of the subject. Many physicians dare not discuss this subject, lest they become unpopular and lose business; nevertheless, it is an important matter, and we should speak without fear or favor on this vital point. To-day the statutes of almost every state allow any person, even in the last stages of consumption, to marry and rear children, and in this way transmit the disease to those yet unborn.

Dr. Wadsworth Warren, Detroit—One point in the latter part of the paper appealed to me especially, and I desire to give it additional emphasis. I refer to the necessity of warning the parents of these children regarding the care of these little ones during an acute infectious disease, or even when they are inflicted only with a mild laryngitis or pharyngitis. Very often these apparently innocent disorders lower the child's powers of resistance so much as to afford a suitable culture medium for the tubercle bacilli; attention to the mouth, throat and pharynx, and to the removal of adenoids and enlarged and patulous tonsils is of great importance.

Dr. James A. Work, Elkhart, Ind.—With reference to clothing, I would say that I believe we should instruct parents more with reference to the changing of the clothing in accordance with the changes in the weather. We know how great and sudden are the changes of the weather in this country, and I think the clothing should be adapted to meet these changes.

Dr. Clifton Scott, Des Moines—The author emphasized the importance of teaching young children in the public schools certain things in regard to abuses which do them harm about the age of puberty. It seems to me that children thus instructed in school would be taught how to prevent the diseases in their own children when they become parents. This can be done by teaching them in the public schools that such persons should not marry. This would be better, in my opinion, than legislation, which will surely increase illegitimacy.

Dr. Columbus G. Slagle, Minneapolis—I desire to lay stress on malnutrition. I have been in the habit of telling my patrons and friends that consumption does not begin in the lungs but in the stomach. This may not sound very scientific, but it appeals to the popular mind, and I think does good by impressing upon them the importance of a proper dietary. Another point is in regard to fats. One of the most practical lessons I ever learned was in the University of Louisville when I was a student. Professor J. B. Flint always asked any one suspected to be tuberculous if he liked fat, and such persons usually replied in the negative. At one time he was examining a patient far advanced in tuberculosis, and this question about fats was, to the surprise of the professor, answered in the affirmative. So surprised was he that the question was repeated and was answered again in the affirmative. The professor then turned to the students, and expressed his belief that the patient had lied. He then went on to impress upon them the importance of tuberculous individuals eating fats, and particularly those persons who had an aversion to fats because ordinarily they were the very ones most likely to fall victims to tuberculosis.

Dr. Collins H. Johnston, Grand Rapids, Mich.—In this connection I desire to speak of a paper published in Virchow's Archiv, in May, 1900, in which it is maintained, on the basis of 500 autopsies performed at Zurich, that 99 per cent. of the human race who attain the age of 30 show, on postmortem, lesions of tuberculosis. From this it would seem that almost every one is infected with tuberculosis at some time or other. I wish to insist that one can not have tuberculosis without the tubercle bacilli. Osler maintains that there are only 20 cases on record of persons who have been born with the disease. Undoubtedly there is a predisposition in certain families to tuberculosis, the same as there is to scarlatina, diphtheria, and other infectious diseases. The one most certain method for the prevention of tuberculosis not only in children but in the community at large is to prevent the dissemination of the tubercle bacillus. This is a matter which rests largely in the hands of the medical profession and state boards of health. The State Board of Health of Michigan in 1891 began a campaign against tuberculosis by disseminating throughout the state literature dealing with this subject. Whenever a case of tuberculosis is reported to the local board of health, it is immediately sent to the secretary of the State Board of Health, and this officer sends literature to the family, explaining in detail the proper methods of caring for sputum. In this way, in the last ten years, the death-rate from pulmonary tuberculosis has been very materially reduced.

Dr. C. A. Kelsey, Minneapolis—I have been exceedingly interested in this paper, and was very glad to see the position taken by the author regarding the necessity for fats. It is a point which we should bear in mind, for I think the majority of persons having children with a tendency to tubercular troubles seem to have the erroneous impression that these children must not have fat. In regard to the valuable remarks of the last speaker, I would say that, if I understand the germ theory, none of us can hope to escape these ubiquitous germs. I do not mean to say that I would discourage taking proper care of the sputa, but does it follow that the diminution in the mortality in the State of Michigan is due wholly to the care of the sputa? Can we not claim something for improved hygiene in fortifying the system against the attack of the germ. In tubercular wards, nurses of good constitution can remain constantly without becoming infected with tuberculosis. Let us not, however, lose sight of the importance of building up and fortifying the system against the attacks of these germs, developing a physical system in the rising generation which can withstand these noxious organisms.

Dr. I. J. K. Golden, Chicago—The main thing in the prevention of tuberculosis among children is to educate them not to be afraid of water. The parents of such children are usually afraid to have their children bathe lest they may catch cold. For the same reason these children are very warmly clad. I am of the opinion that this practice tends rather to favor than to prevent tuberculosis. Tuberculous children should be made to bathe daily, and if not too warmly clad they may not be so susceptible to tuberculosis. I am opposed to the present craze for woolen clothing. If they catch cold, no matter; let them develop a little antitoxin in the system. If laws were passed to prevent the marriage of tuberculous individuals or of those predisposed to this disease, I am afraid there would be nothing but bachelors, and the population of the world would soon vanish.

Dr. Robison, in reply—I am glad that this subject has brought out such a full discussion, and that the paper has received your sanction on most of the points presented. Some of the states have already framed laws regarding the prevention of marriage of the unfit. Most of these laws have been directed towards preventing the marriage of those infected with venereal disease. In time, by the process of education, the people will learn to dread this disease. Within the last five years the newspapers have helped us to educate the public; yet even lawyers and judges and public men know almost nothing about tuberculosis. I think the subject of infectious diseases should be taught in the public schools just as much as botany is taught. Malnutrition is certainly the starting point of tuberculosis. The case of the woman who liked fats, mentioned by Dr. Scott, seems to me to be the exception which proves the rule. The giving of fat by aiding nutrition prevents the disease. Osler's statistics regarding the transmission of tuberculosis should not be taken as authoritative; for, in the first place, the observations have not extended over a sufficient length of time, and the opportunities for carrying on such investigations are very limited. If you will consult the records of the veterinary surgeons, you will find that the percentage of cases of direct transmission in animals is much larger than 2 per cent., and it is probably true also of the human. The Brompton Hospital for Consumptives has been in existence for two centuries and a half, yet it has been found that the disease is rarely taken by the nurses. In our general hospitals in this country I am sorry to say the internes and nurses do frequently develop tuberculosis. In a hospital in Chicago we have had three internes who have died of tuberculosis in one form or another, although it is quite possible that they may have had the disease before entering the hospital. I will say, however, that the methods of prevention in a general hospital are not so strict as in special hospitals. It is the custom, though obviously wrong, to use a broom in cleaning out the wards of our general hospitals.

TUBERCULOSIS OF ANIMALS IN SOME OF ITS RELATIONS TO HUMAN TUBERCULOSIS.*

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It is not necessary to consume time in demonstrating the importance of a thorough consideration, from every point of view, of the subject of tuberculosis. The importance of such a study is now generally recognized. As smallpox was the great medical problem at the close of the 18th century, so tuberculosis was the most urgent problem at the end of the 19th century. According to Newsholme,[1] smallpox reached its highest point in England in 1796, when 18.5 deaths out of every 100 total deaths were caused by that disease. Tuberculosis was apparently at its maximum in England and Wales in 1838, when 17 deaths out of every 100 total deaths were caused by phthisis,[2] and if the deaths from other forms of tuberculosis could be added the maximum smallpox death-rate of 1796 would be surpassed. The death-rate from tuberculosis, and particularly from phthisis, has been greatly decreased in England and Wales since the date mentioned, but in 1896 the deaths from all forms of tuberculosis still equaled 10.5 out of every 100 total deaths.

At the beginning of the 20th century we find the mortality from smallpox insignificant compared with what it was at the beginning of the 19th century. In England and Wales in 1896 it was as low as 1.8 per million living. That is, there were only as many deaths from smallpox in 1896 among 2,000,000 people as there were among 1000 people in 1796. In other words, there was but one death in 1896 from smallpox where there were 2000 in 1796.

I have dwelt upon these facts with some detail because this tremendous reduction of the death-rate from one of the most serious diseases of mankind was accomplished by a study of one of the diseases of animals and the application of the knowledge thus obtained to human sanitation. This great advance in medical science and in the ability to prevent disease demonstrates the practical value of a knowledge of comparative pathology, and of a sincere effort to apply this knowledge in the formulation of measures for the control of the diseases of man.

Taking up the problem of tuberculosis, we find that the disease is caused by a bacillus so exacting in its conditions of growth that it can hardly be expected, in its virulent form, to multiply elsewhere than in the animal body or under the artificial environment supplied by the laboratory. The source of virulent tubercle bacilli is, therefore, either a person affected with tuberculosis, or one of the lower animals affected with that disease. When we consider the facts which have been demonstrated by the studies of comparative pathology, we can not but be impressed by the conclusion that there is a great culture ground and reservoir for tubercle bacilli outside of the human body, and existing principally in the bodies of the domesticated animals which supply some of the principal articles of human food. This well-known condition of affairs is, it seems to me, sufficient justification for a review of our knowledge of animal tuberculosis and the relation which it bears to the human form of the disease.

We must go abroad for most of the statistics of tuberculosis in animals, and while it is more frequent in European countries than here, we can learn from them as to the conditions which are likely to develop here as the animal population becomes more dense, and providing the spread of the infection remains practically unrestricted. The slaughter-house statistics of Prussia show 14.6 per cent. of the cattle and 2.14 per cent. of the swine to be tuberculous; in Saxony the percentage is 29.13 with cattle and 3.10 with swine; in the city of Leipsic the figures are 36.4 per cent. with cattle and 2.17 per cent. with swine (Siedamgrotzky). Of 20,850 animals in Belgium tested with tuberculin in 1896, 48.88 per cent. reacted (Stubbe). Of 25,439 tested in Denmark from 1893 to 1895, 49.3 per cent. reacted, and of 67,263 tested from 1896 to 1898, 32.8 per cent. reacted (Bang).

The British "Royal Commission appointed to inquire into the effect of food derived from tuberculous ani-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Hygiene and Sanitary Science, and approved for publication by the Executive Committee of the Section.

1. Vital Statistics, 3d Ed., p. 211.

2. Dr. Ransome, Lancet, July 11, 1896.

mals on human health," which reported in 1895, after giving the statistics of the Copenhagen slaughter-houses, where 17.7 per cent. of the oxen and cows were found tuberculous, and of the Berlin slaughter-houses, where 15.1 per cent. of such animals were tuberculous, continued as follows:

"There do not exist for the United Kingdom any records with which these can be compared. At Copenhagen and Berlin all the meat furnished to the towns is submitted to the inspection of experts. But we have reason to think that the facts about tuberculous animals would exhibit a broad resemblance to the foregoing, if such records could be obtained; not more different in degree, that is, than the difference between the Copenhagen and Berlin records, or than would be explained by variations in the practice of dealing with food animals in one and another country. Such few data as are to be had for the United Kingdom confirm this view." (Report 1, p. 11.)

An examination of 20,930 cattle in Great Britain, either slaughtered and examined postmortem or tested with tuberculin, showed 5441, or 26 per cent., affected with tuberculosis.

It is said that breeding cattle in Great Britain, carried tuberculosis to Denmark in the first half of the 19th century, and that it is now being carried in the same manner to Sweden and Norway (Bang). British cattle are also accused of carrying the disease to Argentine and spreading it among the cattle of that country (Sivori). There has also been discovered a large percentage of tuberculosis among the cattle of Victoria, Australia, where it was probably introduced in the same manner. Some of the largest breeding herds of Canada, also of British origin, have been found badly diseased, and 20 per cent. of the cattle offered for importation into the United States from Canada were found tuberculous.

In the United States our statistics are fragmentary, but sufficient to show that while the disease does not affect as large a proportion of our cattle as have been found affected in European countries, it is nevertheless widely distributed.

From a recent review by Drs. Russell and Hastings, of the Wisconsin Agricultural Experiment Station, of the tests of cattle for tuberculosis made in the United States, the following summary is presented:

	Number Tested.	No. Tuberculous.	Percent. Tuberculous.
Vermont	60,000	2,390	3.9
Massachusetts	24,685	12,443	50.0
Massachusetts, entire herds	4,093	1,080	26.4
Connecticut	6,300	.....	14.2
New York, 1894	947	66	6.9
New York, 1897-98	1,200	163	18.4
Pennsylvania	34,000	4,800	14.1
New Jersey	2,500	.....	21.4
Illinois, 1897-98	929	.....	12.0
Illinois, 1899	3,655	560	15.32
Michigan	.....	.....	13.0
Minnesota	3,430	.....	11.1
Iowa	873	122	13.8
Wisconsin—			
Experiment Station tests:			
Suspected herds	323	115	35.6
Non-suspected herds	935	84	9.0
State Veterinarian's tests:			
Suspected herds	588	191	32.5
Tests of local veterinarians under State Veterinarian on cattle intended for shipment to States requiring tuberculin certificate	3,421	76	2.2

(Bulletin No. 84, Wisconsin Agricultural Experiment Station, March, 1901.)

The State Veterinarian of Pennsylvania, Dr. Pearson, thinks that not over 2 per cent. of the cattle of that state are tuberculous, and probably if a general test of all the cattle of the other states mentioned were made we should find a very much smaller proportion tuberculous than is indicated by this tabular statement. The explanation of the high percentages that have been given is found in the fact that it has been, for the most part, suspected herds which have been tested. Admitting that the greater part of these percentages are too high, we still have revealed a condition which is worthy of our serious consideration.

The classes of cattle most affected are breeding animals and dairy stock. The beef cattle coming to our markets are still singularly free from tuberculosis. Of 4,841,166 cattle slaughtered in the year 1900 under federal inspection, but 5279, or 0.11 per cent. were sufficiently affected to cause the condemnation of any part of the carcass. Of 23,336,884 hogs similarly inspected, 5440 were sufficiently affected to cause condemnation of some part of the carcass. This is equal to .023 per cent., or slightly more than one-fifth the proportion found in beef cattle. It is scarcely necessary to add that there are certain lots of cattle and hogs encountered which are affected in much greater proportion than the general average just given.

With swine, tuberculosis is a disease generally contracted from the ingestion of infected food, and hence as the disease is allowed to spread among cattle it will become more frequent with the swine that eat the skimmilk, buttermilk and other waste products of the dairies. In these animals the disease is more acute and has a much greater tendency to generalization than with cattle, and consequently there is more danger of the meat becoming infected.

Tuberculosis is not pre-eminently a disease of poor, neglected, underfed scrub cattle, for the better class of cattle have suffered perhaps to a greater degree. Being constantly imported with pure-bred stock, it has been introduced into the best herds and has extended from them to the dairy herds and common cattle. It was said in an official investigation of one of the most noted Canadian herds, that wherever animals from that herd had been taken to improve the native stock, there tuberculosis was found among the farmers' cattle.

A brief list of infected herds which have been carefully studied may be useful in showing the extent to which the disease develops and the difficulty of building up a herd of good cattle under the best conditions and keeping it free from this disease:

	Number in herd.	Number. tuberc.	Percent. tuberc.
Soldiers' Home, Washington, D.C.	63	53	84
Mass. Agricultural College (See 1)	32	25	78
New Jersey Agr'l Exp't Station	42	25	60
Vermont " " "	33	21	64
Ohio " " "	30	14	46
Texas " " "	21	10	48
Wisconsin " " " (See 2)	30	26	86
Kansas Agricultural College	56	15	27
Government Hospital for Insane, Washington, D. C. (See 3)	102	79	77

Maine Agricultural Experiment Station: So badly diseased that entire herd was slaughtered in 1886.

1. This test was made in 1894; 18 animals had previously been killed in 1891-92, and 9 in 1893, to check the progress of the disease.

2. At the time of the test two animals had been isolated, one for chronic nasal discharge and one for indurated udder. Aside from these two there was no reason to suspect but that the herd was in good condition and as free from disease as the average.

3. Thirteen of the animals in this herd had recently been purchased and were all free from the disease. Excluding these, 90 per cent. of the herd was tuberculous.

There is little doubt but that tuberculosis in cattle and swine has been increasing in this country as well as in most other countries during recent years. This is shown by slaughter-house statistics and official inquiries. There appears to be no climate and no method of handling cattle which entirely arrests the spread of the disease. In the Argentine Republic it is held that the native cattle were free from it until it was introduced by the British breeds of beef cattle, and that it has spread among the native animals in proportion to the improved breeding stock which has been used (Sivori). In Australia and New Zealand the slaughter-house statistics, according to official reports, show as high as 3.5 to 4.5 per cent. of the adult cattle tuberculous. Considering that in these countries the cattle live in the open air and that the climate of Australia has been considered a remarkably favorable one for tuberculous people, we can not avoid the conclusion that our beef cattle, even on the western plains, are liable to have the disease propagated among them by the use of tuberculous breeding stock. At present the statistics of Buenos Ayres show almost three times the percentage of tuberculosis which is found in the average of our Federal meat inspection, while in Australia and New Zealand thirty to forty times our percentage has been reported.

These facts indicate the insidious and constant progress of this fatal disease among meat-producing animals in the most varied climates and under all conditions. The tuberculin tests made in Minnesota, Iowa, Nebraska, Kansas and California, and information received from Montana, Utah and some other states of the Rocky Mountain region, indicate that we have no climate in the United States so favorable that it may be relied upon to save our cattle from tuberculosis if the contagion is introduced among them.

The importance of maintaining the source of our food supply free from the contamination of any disease is no doubt appreciated by every physician; but when the disease which threatens it is communicable, fatal to man, and surpasses all other diseases in the mortality which it causes in the human race, are we likely to exaggerate its seriousness or to urge with too great insistence its effectual control?

This brings us to the question of the transmission of tuberculosis from animals to man, and here we find the most divergent opinions even among those who have given considerable attention to the subject. In the most superficial examination of the question, we must be impressed with the fact that in the domesticated animals we have a great breeding ground and reservoir for the bacilli of tuberculosis, which is at this time practically beyond the reach of the physician and health officer. Is this accumulation of tubercle bacilli dangerous to man when he works in the germ-laden air of the infected buildings, caring for the cattle, milking the cows, and cleaning the stables; or, above all, when he handles the infected products and takes them into his stomach as food?

It has been pointed out by investigators that there are slight differences in the morphologic and physiologic characters of the human and bovine tubercle bacillus, that the bovine bacillus is more virulent for experimental animals, and that the human bacillus is inoculated with difficulty upon cattle and usually produces a circumscribed and mild disease. From this there has been a tendency to conclude that human and bovine tuberculosis are distinct diseases and that animal tuberculosis may be neglected as a source of the human disease. This reasoning it appears to me is most unsafe and illogical.

There is probably no pathogenic microbe which undergoes greater modifications in the laboratory under various conditions of environment than the tubercle bacillus, and this is illustrated by the difficulty with which the first cultures from the diseased subject are obtained, and the ease with which it is grown upon a variety of media after it has been gradually accustomed to the changed conditions of existence. If it so readily varies its requirements in the laboratory, is it not reasonable to suppose that it may in an equally short period be modified to as great or to a greater extent in the bodies of different animals? And, if the bovine bacillus is more virulent for cattle, sheep, goats, swine, guinea-pigs and rabbits than is the human bacillus, may it not also be more virulent for man?

The frequent exposure of man to the bovine bacillus is demonstrated beyond doubt. That the air of infected cow stables is a bearer of the bacillus is abundantly proved by the spread of the disease among the cattle in such stables, since postmortem examination proves the majority of infections among cows are through the respiratory organs. The muscular tissues of animals probably do not contain the bacilli in sufficient numbers to be infective except in the case of generalized tuberculosis. The cases of generalized tuberculosis are not rare. In Germany, out of 482,501 tuberculous cattle, 12,017, or 2.8 per cent., were condemned for generalized tuberculosis (Siedamgrotzky); and Nocard states that of 43,000 cases 10.7 were generalized. In addition to the distribution of the bacilli through the blood in generalized tuberculosis, it has been shown that there is considerable danger of the flesh of other advanced cases being infected by contact with the diseased organs and by smearing with tuberculous material from the knives of butchers (Report Royal Commission, Great Britain, 1895, p. 14).

The infectiousness of milk from tuberculous cows has been frequently proved by microscopic examination, by inoculation and by feeding experiments. The one point about which there has been some difference of opinion is as to whether a cow with a clinically healthy udder can give infectious milk. It is generally admitted from slaughter-house statistics that from 1 to 2 per cent. of tuberculous cows have tubercular deposits in the udder. These statistics are not absolutely accurate because they are not usually made with that thoroughness which is required to discover all of the minute lesions, and also because in many cases while the number of tuberculous udders is given the total number of tuberculous animals includes calves, and sometimes bulls and steers. The percentage of cases in which the udder is affected must therefore actually be greater than the figures just given.

If we could be certain that not more than one or two animals among 100 tuberculous cows would give infectious milk, that fact would be somewhat reassuring; although, as Virchow said in his address before the International Tuberculosis Congress of Berlin in 1899, the tubercular lesions may directly involve the milk ducts, in which case thousands of bacilli may be carried in the milk, and a single cow in such condition may be suf-

ficient to infect the people of a whole village, or even more (Report, p. 349).

Careful researches of competent investigators indicate, however, that a much larger proportion of tuberculous cows yield infectious milk than is admitted to have diseased udders. Bollinger, Stein, Bang, Hirschberger, Ernst, Smith and Schroeder, Rabinowitsch and Kempner, Ravenel, Gehrmann and Nörgaard have all found the milk infectious when no lesions could be discovered in the udder. These investigations cover a considerable number of cows, and as infectious milk was obtained in from 6.5 per cent. to 66.6 per cent. of the animals, they prove either that the udder is affected in a much larger proportion of cases than has been admitted or that many cows with sound udders excrete tubercle bacilli in the milk.

It is not probable that so many investigators would overlook tuberculosis of the udder if it existed, and reach a faulty conclusion, but if we admit that this did occur, we must also admit that such an error is much more likely to happen in the ordinary slaughter-house examinations, and that consequently the frequency of tuberculosis of the mammary glands should be placed at 10, 15 or 20 per cent. of the diseased animals, instead of 1 or 2 per cent. as at present. Dismissing the question as to whether the udder was affected in all of these cases, the practical conclusion of the sanitarian is not changed, and that is that the milk is infectious with a large proportion of tuberculous cows and that with many of these no disease of the udder can be found in the living animal.

The milk of such animals produces tuberculosis in guinea-pigs, swine and calves when fed to them; will it have the same effect when taken into the digestive apparatus of man? In other words, is bovine tuberculosis communicable to man? There are many cases on record indicating this communicability, but I have space to refer briefly to but a very few.

Two veterinarians of Pennsylvania have been reported to me as infected by making postmortem examinations on tuberculous cows. In both, local tuberculosis developed and the tubercle bacilli were demonstrated in the excised tissue. In another similar case in the same state, the character of the lesion was demonstrated by the inoculation of guinea-pigs.[3] L. Pfeiffer cites the case of Veterinarian Moses, 34 years old, of healthy family, and personally in good health, who pricked his left thumb in making an autopsy on a tuberculous cow. The point of the knife probably penetrated into the articulation of the first and second phalanges. The puncture healed without suppuration, but at the end of six months there formed at the seat of the cicatrix a cutaneous tubercle, and the joint was removed. Soon afterward the patient began to cough and died of phthisis eighteen months after the accident. On opening the articulation of the thumb it was found filled with caseous masses, extraordinarily rich in bacilli. A similar case in the United States was brought to my attention by Dr. M. P. Ravenel. The case occurred in the practice of Dr. M. B. Hartzell and was partially reported to this Association in June, 1897. The patient, a man in excellent health and weighing 175 pounds, was employed by a railroad company to work upon cars used for the transportation of cattle. He was wounded upon the back of the hand by a piece of broken woodwork of a car, and typical verrucous tuberculosis developed locally. This was apparently successfully treated by Dr. Hartzell. Within a year the patient's general health changed greatly; he was emaciated, had a persistent and frequent cough with abundant expectoration, and there was decided dulness at the left apex with numerous râles. Death soon resulted from general tuberculosis. A very interesting case of "primary subcutaneous tuberculosis," caused by the topical application of cream, was reported by Dr. A. Grothan.[4] The family was using the milk of one cow only, and inoculations of two rabbits with milk and cream from this cow caused tuberculosis in each.

These are very clear cases and sufficient to demonstrate the communicability of bovine tuberculosis to man, and they indicate that bacilli from a bovine source are at least as virulent for man as are bacilli from a human subject.

Now, we are asked, if bovine tuberculosis is dangerous to man, and is increasing, how is it that consumption or phthisis is decreasing? It appears to me quite conceivable that the conditions of life, and above all of sanitation, may be so improved that their influence will more than counteract the increasing danger from the extension of bovine tuberculosis. But quite aside from this, it must be admitted that phthisis, or tuberculosis of the lungs, is usually contracted by inhaling the infection, while if the disease is communicated through the food it would probably take some other form (tabes mesenterica, tubercular meningitis, etc.). It is clear, then, that in estimating the effect of increasing bovine tuberculosis we must make a distinction between phthisis and other forms of tubercular disease.

Sir Richard Thorne-Thorne, in the Harben Lectures for 1898, has made this very clear. He shows from the statistics of England and Wales that between the periods 1851-1860 and 1891-1895 there has been a reduction of the mortality at all ages from phthisis of 45.4 per cent.; while from all forms of tuberculosis the reduction has been distinctly less, viz., 39.1 per cent. Taking that form of disease registered under the name of "tabes mesenterica," the reduction at all ages has been but 8.5 per cent.; under five years of age the reduction has been but 3 per cent., while under one year of age there has been an actual increase of 27.7 per cent. This is the milk-drinking age, and the increase of the mortality is very significant at a time when phthisis has been so remarkably reduced. Making all proper allowances for errors in diagnosis among the returns for tabes mesenterica, it is still apparent that there are altogether different influences at work in the causation of this disease from what are usual with phthisis.

The conclusions which naturally follow from these statistics are so different from what has been generally held, that numerous attempts have been made to counteract them. Dr. George F. Still[5] recorded "Observations on the Morbid Anatomy of Tuberculosis in Childhood," in which he gave a résumé of the results of 769 consecutive autopsies on children. Of these 269 presented lesions of tuberculosis, but death was due in 43 of these to some other cause. The channels of infection in the 269 cases were as follows: Lung 105, intestine 53, ear 9, bones or joints 5, while the remainder were more or less uncertain. That is, the intestinal infections were to the others as 1 to 2.1. With the class of cases where death was caused by some other disease and where the tuberculosis was either arrested in an early stage or had not progressed beyond the initial

3. Ravenel: Phila. Med. Jour., July 21, 1900.

4. Omaha Clinic, February, 1896.

5. Brit. Med. Jour., Aug. 19, 1899, p. 455.

stage, affording almost indisputable evidence of the method of infection, the infections were by the lung 26, by the intestine 16, by the ear 1. Here the intestinal infections were to the others as 1 to 1.7. In the English statistics the cases of tabes mesenterica in children five years and under are to the other forms of tuberculosis as 1 to 1.6. Dr. Still's observations are, therefore, a singular endorsement of the accuracy of the returns under the name of tabes mesenterica, and as the ages of the children covered by his autopsies were twelve years and under, he has really found a larger percentage of intestinal infection than is indicated by the statistics.

Dr. J. Walter Carr also referred to statistics of necropsies on tuberculous children at the Victoria Hospital.[6] He found 79 in which the disease most probably started in the chest, and 20 in which it seemed to have begun in the abdomen. Here the relation between the two forms of infection is as 1 to 4. In 26 children of early or limited tuberculosis, the thorax was alone affected in 12 cases, the abdomen in 7, being in the proportion of 1 to 1.7. Of 53 tuberculous children under two years of age the disease most probably began in the chest in 43 and in only 5 certainly in the abdomen, the proportion in this case being as 1 to 8.4. Out of 27 children over five years of age, the disease began in the chest in 12, in the abdomen in 6, the relation being as 1 to 2.

These statistics being all from English sources, are fairly comparable, and it appears to me they sustain Dr. Thorne's contention that the returns in England of tabes mesenterica represent with fair accuracy the abdominal tuberculosis of children.

Bollinger, in his address at the International Tuberculosis Congress of Berlin, in 1899, quoted with approval the record of autopsies by Heller (Kiel) of 248 tuberculous children which showed in 45.5 per cent. of the cases tuberculosis of the mesenteric glands. From these it was concluded that milk played a leading rôle in the so-called transmitted tuberculosis of children.

It is plain from what has been said, without quoting further statistics, that in some countries where bovine tuberculosis is very frequent, there is also great frequency of tuberculosis in children. Bollinger concludes that "although the tuberculosis of cattle and swine do not stand in the first line as source and starting-point of human tuberculosis, nevertheless—considering their enormous distribution and progressive additions, and the great danger from the ingestion of the milk of tuberculous cows—they are certainly for humanity the most important and most dangerous of all animal plagues and deserve the most earnest attention from the sanitarian and the state."

Admitting the subordinate rôle played by digestive infection in human tuberculosis, admitting that in England there is but one such case to nine cases of all forms of tuberculosis, still the matter is one deserving the most careful consideration of the sanitarian. But the harm does not stop with the cases directly infected by food, since these may in turn cause secondary infections and thus give rise to a series of unlimited extent.

It is not my purpose to exaggerate in the least the danger from animal tuberculosis, but there has unfortunately been a tendency in recent years to make light of this danger. Let us take facts as our guide and not be unduly influenced by personal opinions. If it can be shown, as I believe it has been, that animal tuberculosis may be communicated to man, then the presence of vast numbers of tuberculous animals in a country must be looked upon as a source of danger and one which it is our duty, as sanitarians and as citizens, to do our utmost to abolish.

6. Brit. Med. Jour., Sept. 2, 1899, p. 626.

RELATIONS OF HYPERCHLORHYDRIA TO "BILIOUS ATTACKS," SOME FORMS OF ECZEMA, GOUT, AND MUSCULAR RHEUMATISM. — PRELIMINARY REPORT.*

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Hyperacidity of the stomach is a common disturbance of secretion. The frequency of its occurrence is very difficult to determine, as there is no doubt that a moderate excessive secretion of hydrochloric acid may take place without producing subjective symptoms. I have on several occasions examined the gastric contents of patients with apparently normal digestion and found excess of hydrochloric acid, although in some of them there was a history of "bilious attacks," which were probably attacks of acute hyperacidity. It seems to me, therefore, that the gastric distress which is present in cases of hyperacidity is more or less due to the hyperesthesia of the mucous membrane of the stomach as well as to the excessive acid contents. This opinion is supported by the fact that in many cases of hyperchlorhydria pain comes on in a few minutes after the ingestion of food of any form. The commingling of these two neuroses—hyperchlorhydria and hyperesthesia gastrica—makes an investigation into the relations of the former to "bilious attacks," eczema, muscular rheumatism and gout a very difficult one, as I can not help but think that a general irritable condition of the gastric nerves must produce some changes in the sympathetic and cerebrospinal centers, which would no doubt lead or tend to lead to diseases in other organs. The investigation is also difficult because even if we find hyperchlorhydria associated with diseases of some other organ we have still to determine which was diseased primarily, or whether both pathologic conditions were not secondary to a disease in some other organ of the body, such as uremia, uratemia, nicotin poisoning, neurasthenia, etc.

My attention was first called to the subject about two years ago. I observed the internal treatment, both dietetic and medicinal, which I was accustomed to use in cases of hyperchlorhydria, was approximately the same as that which I was using in some forms of acute eczema and in both cases it gave very satisfactory results. I then determined to investigate the relations of these two diseases and latterly I have extended the research to the whole subject-matter of my paper.

Before I give results of my observations, I wish to discuss and offer some suggestions as to how hyperchlorhydria may cause disease in other organs of the body. We know that the amount of blood in the portal system increases during the process of digestion. I think I am safe in stating that the more active the secretion of the stomach and intestines the greater the inflow of blood to the gastro-intestinal area. All the

* Read before Ontario Medical Society, June, 1901.

blood which enters the portal system must pass through the liver and hence the hyperemia of the stomach which occurs in hyperchlorhydria would tend to produce active congestion of the liver. The same pathologic condition might also be produced by the absorption of the toxic substances, the products of the disturbed digestion, produced by the hyperchlorhydria. Thus we know that an excessive acid secretion interferes with the digestion of starch and does not interfere with at least some forms of fermentation. I have frequently observed considerable quantity of yeasts in gastric contents with normal hydrochloric acidity or even hyperacidity. I do not think that the secretion of hydrochlorie acid bore any causal relation to the presence of yeast, as the growth of the latter no doubt resulted from the retention of food. If yeast can grow in the presence of HCl, then it is probable that the latter will not have any deterrent action affecting the growth of some other forms of germs in presence of a suitable pabulum, and in all cases substances with variable degrees of toxicity would be produced and gain admittance to the portal circulation. Fermentation and putrefaction in the intestines are of frequent occurrence in cases of hyperchlorhydria and probably result from the inflowing of the highly acid chyme containing large quantities of unchanged starch. The toxic substance thus produced would also be carried to the liver. We should also remember that these poisonous chemical bodies may not only cause active congestion of the liver but, changed or unchanged in constitution, pass on into the general circulation to produce disease in other organs. If active congestion of the liver results from the absorption of toxic substance from the stomach and intestines as well as from an excessive inflow of blood to the portal circulation, we have still to discuss the effects of pathologic hyperemia of the liver on the system in general. We know that the liver has varied and complex functions. It is at the same time a digestive, an excretory and assimilative organ, and it would be quite natural for these functions to be disturbed by an excessive inflow of blood laden with toxic substances or even with an excess of food products. Defective metabolism might lead to an excess of urates in the blood and I believe that this is the case in hyperchlorhydria.

HYPERCHLORHYDRIA AND "BILIOUS ATTACKS."

When a patient complains of such subjective symptoms as headache, nausea, pain and discomfort in the region of the stomach, acid eructations, bitter taste in the mouth, disinclination to work, the diagnosis of bilious attacks is frequently made, particularly if the symptoms follow excessive eating or drinking. According to my experience, these attacks are very frequent in cases of chronic hyperchlorhydria, although they are not infrequent in patients who do not give a history of chronic indigestion. With the object of determining the activity of the secretion of HCl in this condition I produced emesis in a patient with the above symptoms one hour and a half after partaking of a breakfast of three pieces of toast and a cup of coffee and examined the vomit. The total acidity and free HCl were 72 and 32 respectively, showing the presence of hyperchlorhydria. The patient had suffered from severe similar attacks previously, but they were of short duration, and in the intervals he had fairly good digestion. I think, therefore, that this was a case of acute hyperchlorhydria due to irritation of food which he had eaten a day or two previously, or an exacerbation of a mild form of hyperchlorhydria.

RELATIONS OF HYPERCHLORHYDRIA AND SOME FORMS OF ECZEMA.

That hyperacidity of the stomach bears some casual relation to some types of eczema I have no doubt. I am equally confident that there are cases of eczema occurring in persons with normal digestions. According to my experience symptoms of indigestion are of frequent occurrence in eczema, and are usually of the character that indicates hyperchlorhydria. In addition, I have examined the gastric contents of six cases of eczema with symptoms of dyspepsia; in five of these there was an excess of HCl in the gastric contents, the remaining case having normal acidity. Moreover, the internal treatment of acute irritable eczema which usually gives me the best results is about the same as that which I find most successful in cases of hyperchlorhydria.

I am unable to say in what manner the eczema is produced by the hyperchlorhydria, but I have some data which point to an excess of uric acid in with blood as the direct causative agent, and I have suggested in a previous part of my paper that the hyperchlorhydria may be the cause of the uratemia. However, I shall content myself for the present by reporting short clinical histories of some cases in practice which appear to indicate a relationship between these diseases.

Case 1.—H. M., aged 42, market gardener, consulted me in the spring of 1900 on account of an eruption on his face, forearms, backs of hands, and fingers. His previous health had been fairly good, although he had suffered considerably from indigestion for two years before he came to me. He complained of heartburn, heaviness and slight pain after eating. His tongue was heavily coated and his bowels were constipated. The appetite was fairly good. The eruption on account of which he sought advice began two weeks previously on the backs of the hands; it then extended to the fingers and forearms, and lastly to the face. The rash had all the characters of acute vesicular eczema. I gave the patient a test breakfast and an analysis of the gastric contents revealed the presence of hyperchlorhydria. The patient was treated as follows: a mixture of black wash and calamin lotion was applied to the eczematous patches and the diet and internal medicine were the same as those indicated in hyperchlorhydria. Under this treatment he made a rapid and complete recovery from both the eczema and indigestion.

Case 2.—A. B., physician, for twenty years has had eczema and for as long as he can remember has suffered at times from indigestion. The eczema began on scalp and those parts of the face covered with beard. The first attack extended to nearly every part of the surface of body. The eczematous patches of the surface were red and scaling, and occasionally moist. When he was a boy if he ate pickles, lemons, or other acid substances he suffered from heartburn, but of late years the indigestion has been at times much more severe in character. When I examined the patient last autumn, I found that the scalp, neck, trunk, and popliteal spaces were the seats of the eczematous patches. A few of the diseased areas were moist, but most of them were dry and scaly. The patches on the trunk were of various sizes with well-defined borders and had all the objective signs of seborrheic eczema or seborrhea corporis, but the subjective symptoms were somewhat more severe than those which are generally present in cases of seborrheic eczema.

As the patient was suffering considerably from indigestion I gave him a test breakfast and analyzed the gastric contents. The total acidity and free HCl were 120 and 73 respectively; mucus slightly increased; digestion of starch very poor. The patient was therefore given an internal treatment suitable for hyperchlorhydria and an external treatment suitable for seborrheic eczema. We found that the lesions were very irrit-

able. A mild resorcin and sulphur ointment, usually so effective in seborrheic eczema, was not tolerated; but an ointment containing 8 grains of ammoniated mercury and 1 ounce of zinc oxid to an ounce of cold cream appeared to be soothing to the affected parts. Under this treatment a rapid improvement in the condition of the patient took place and two months later the rash had completely disappeared. I am of the opinion, therefore, that this was a case of seborrheic eczema aggravated by the irritable condition of the stomach.

CASE 3.—S. W., male, aged 27, came to see me on June 10, 1901. He told me that he had suffered from eczema of the face for over two years. On inquiring I also ascertained that he frequently suffered from heartburn, pain after eating, belching and other symptoms of indigestion. His face and ears were nearly covered with red scaly patches and his left cheek was considerably swollen. He also suffered from seborrhea of the scalp and alopecia furfuracea. I considered this a case of seborrheic eczema aggravated by hyperchlorhydria and prescribed accordingly. The rapid disappearance of the edema and the marked improvement in the scaly patches appear to support my diagnosis.

CASE 4.—A woman, aged 50, came to see me in December, 1900, complaining of an eruption on the backs of her hands. She was full-blooded and had had her menopause about three years previously. She said that she had had indigestion for years, but the symptoms, discomfort after eating, belching, acid eructations, did not worry her very much as her appetite was fair and her general health was good. An examination of the lesions convinced me that it was a case of acute weeping eczema, and analysis of the gastric contents revealed the presence of hyperchlorhydria. The stomach was not displaced. I estimated the quantity of uric acid passed in a day to be 12.5 grains. I tried Garrod's test for uric acid in the blood and obtained a positive result.

The treatment of this patient was very similar to Case 1. A mixture of black wash and calamin lotion was at first applied to hands. When the parts became dry I used Lassar's paste. Internally I gave an alkalin mixture and a light non-irritating diet.

CASE 5.—A. T., female, aged 40, came to my skin clinic at St. Michael's Hospital, June 5. She complained of an eruption on her thighs and face. She stated that the rash began on her thighs two years previously and about the same time she also began to suffer from indigestion—pain after eating, acid eructations, etc. Her digestion had improved of late, but the eruption was still on her thighs and had recently extended to her face.

An examination of the patient revealed the presence of scaly, eczematous patches on the thighs and an edematous erythematous eczema on the face. The blood was tested for uric acid by means of the thread-test and a marked deposit of uric acid crystals was obtained. The patient was given a mixture of potassium bicarbonate, sodium salicylate, tincture of nux vomica and fluid extract of cascara sagrada aromatica before meals and a diet of bread, butter, milk and rice. In five days the eczema had completely disappeared from her face and in two weeks had nearly disappeared from her thighs. I then ordered a weak tar ointment, which in a few days effected a cure.

RELATIONS OF HYPERCHLORHYDRIA AND GOUT.

Disorders of the digestive system are of frequent occurrence in gout. All writers on the subject agree that excessive eating and drinking are important etiologic factors. They also agree that gout frequently gives rise to indigestion. "Acidity" is a common symptom in gouty subjects, and it has hitherto been held that the acid in the gastric contents was usually due to organic acids and not to hydrochloric acid. I believe that a thorough investigation of the subject would prove that this opinion is incorrect. We know that a similar erroneous idea was until recently held with regard to all cases of gastric indigestion. Deficiency and not excess of gastric secretion was said to be usually present in cases of dyspepsia. Even so distinguished a writer as Lauder Brunton, in his article in Clifford Allbutt's "System of Medicine," holds the same view. I know that this opinion is incorrect with regard to the dyspeptics in Toronto. During the last three years I must have examined the gastric contents of at least 300 patients and hyperchlorhydria was much more frequently present than hypochlorhydria.

The investigation of the relations of hyperchlorhydria to gout is somewhat difficult in this country, as according to my experience podagra is uncommon, while irregular gout is very common, but difficult to diagnose, particularly when not preceded by a history of gout in the foot. I have only examined the gastric contents of one patient with a history of regular gout, and he had marked hyperchlorhydria; but the subjective symptoms, referred to the stomach, which have been described to me by gouty patients, and which are generally held to be characteristic of the disease, are very similar to those of hyperchlorhydria. Again the etiologies resemble each other in some particulars. We know that excessive eating and daily use of alcoholic liquors in those who lead sedentary lives dispose to gout, and these are the same habits which are active agents in the production of hyperchlorhydria and hyperesthenic gastritis. It seems to me, therefore, that the relation between the two diseases is a subject worthy of investigation. If uratemia is shown to be present in cases of hyperchlorhydria then at least one important factor in the etiology of gout will have been determined.

RELATION OF HYPERCHLORHYDRIA AND MUSCULAR RHEUMATISM.

We know very little about the etiology of muscular rheumatism. Exposure to cold is no doubt a contributing factor. Clinical experience teaches us that muscular rheumatism and gout are in some way related. It is probable, therefore, that patients with muscular rheumatism may suffer from a mild degree of uratemia.

In regard to relations of hyperchlorhydria and muscular rheumatism, I have observed that they are frequently associated, but whether the muscular rheumatism is the result of the hyperchlorhydria, I am at the present unable to say.

URIC ACID INFLAMMATION OF THE MIDDLE EAR, MEMBRANA TYMPANI AND MASTOID.

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ST. PAUL, MINN.

I maintain that nine-tenths of all the inflammations of the ear and mastoid, as observed in the Northwest, are due to uric acid poisoning. In using this term, "uric acid poisoning," I mean to include its various compounds, and purely for convenience sake the several products of insufficient digestion as well as some results of faulty tissue metabolism.

Uric acid inflammation of the ear occurs in summer and winter, but most frequently in late winter and early spring, and affects persons of all ages—babies in arms and the old as well. Those affected, according to my observation, have always been persons who ate nitrogenous food in excess of their requirements. The adults were meat-eaters, often almost to the exclusion of vegetables, and the babies were bottle-fed. Further, there is generally a distinct history of gout or rheumatism, but more especially intestinal disorder due

to fermentation or putrefaction. The following may serve as a type of this class of disease: The patient has not felt very well for a day or so; there is apt to have been some alimentary disturbance; he has had chilly sensations, or even a distinct chill; there is always elevation of the temperature, sometimes 103 or more and sometimes the fever is very slight; the urine is scant and high-colored; the patient is apt to be awakened in the night by a pain in the ear, more or less considerable. If the patient is seen early, the surgeon finds, always at the junction of the membrane with the external auditory canal, one or more blisters; these may be in number from one to seven or eight, nearly transparent or blood-colored. The site of election is the posterior and superior junction of the membrana tympani and external auditory canal. In mild cases the membrane is reddened only, in the immediate vicinity of the blisters; usually when seen the sharp pain will have ceased, leaving only the sensation of discomfort, if the crop of vesicles has fully formed; though several successive crops may appear. If the constitutional derangement has been very considerable, the blisters involve more of the tissue of the membrana tympani, and there is usually a livid red coloration, with some general swelling of the attic membrane, with more constant aching. If the disease is what I call of the third degree, not only is there great swelling of the attic membrane and cells, but there is extravasation and swelling of the skin of the external canal, reaching in many instances even to the external meatus. The pain is excruciating; the tongue is coated; there is apt to be high fever and the whole side of the head is painful. The uranalysis discloses a condition identical with that found in acute rheumatic inflammations of other parts of the body. In this form of the disease, even in the very beginning, there is apt to be tenderness over the mastoid, at first confined to the tip and later involving the whole bone; this tenderness may remain, or it may, under appropriate treatment, disappear with a subsidence of the other inflammatory conditions. In a certain percentage of cases, however, the tenderness increases, to be followed later by a well-marked edema and other accompaniments of mastoiditis, if it has not been operated on before. I have, upon operating in very recent cases, in which tenderness of the mastoid had been prominent for a few days only, found pus in the mastoid cells and none in the antrum. I am of the opinion that the invasion occurred from without inward, and in time there would have been an occupation of the entire bone. The inflammation may go on to rapid involvement of the entire petrous portion of the temporal bone, with very little or no discharge from the ear. There is no sore throat or acute infection of the nasopharyngeal space. There is, however, not infrequently pain of a rheumatic nature in other parts of the body, and there may be very serious involvement of other organs; here is such a case:

Baby X. had an acute inflammation of both membranes (with an acute affection of the hip joint); there was very great swelling, so that the external auditory canal was closed on both sides; there was no discharge of pus, but a constant oozing of blood and bloody serum. In a day or so the gums became much inflamed and bled freely, simulating mercurial gingivitis. My confrère, Dr. Gillette, although he later made a diagnosis of inherited syphilis, had not at that time given any mercury. This child entirely recovered; having among other things, received iodid of potassium, but there is no evidence of inherited syphilis apparent. It is now ten years or more since the illness described.

There is a form of the disease, a subacute inflammation of the attic; not much pain, some redness and a little swelling, a sensation of fulness and discomfort, especially if the patient lie on that side.

The treatment should consist in the very free exhibition of salicylic acid in some form, alone or in combination, opium in full and sufficient doses; free incision of the attic membrane and of all blebs, if the disease is progressing. The blebs or the attic would, however, better be left alone if the pain is less than it had been and the local manifestations apparently at a standstill; there being comparatively little pain, or no very great tension.

If, however, the inflammation seems to be increasing and the pain very intense, and especially if it is continuous, patient should be anesthetized and all blisters, together with the attic, opened freely. Mere tenderness of the tip of the mastoid, I hold to be insufficient to warrant operation on the mastoid, but the moment there is marked tenderness over the upper part of the process, even before there is bulging of the posterior superior wall of the canal, I deem it most prudent to operate, and regardless of the fact that the active inflammation may have existed for a short time only.

Generally it is better to enter the antrum, though in many cases pus is found only in the external cells, and a majority of cases do well if only these are cleared out. The middle ear should not be entered during the operation. Even when the antrum itself is not opened, the discharge, as a rule, very soon ceases; the swelling of the tympanic membrane subsides and the patient rapidly recovers, with hearing but little impaired. I think that the dental engine and a set of appropriate burrs are by all means the proper instruments for operations on the mastoid. Except for the beginning, the burrs should not be very sharp, for then there is no danger of wounding the dura or the membranous wall of a sinus. The patient may be up and about at the end of a week, and in a month, if things go well, the wound of the operation is closed.

To recapitulate, I believe in the gouty or rheumatic nature of the greater number of acute and even chronic inflammations of the ear, and that they should all receive appropriate constitutional treatment. Though I use ice and other local measures freely, I think that no case will do so well without as with the salicylates. I rather prefer the powdered opium, and insist on its exhibition in doses sufficient to relieve the pain, which in itself goes far toward curing the disease. If, however, in spite of this treatment, the mastoid should become involved, I believe that it should be opened at once.

Finally, while I know that the statement will provoke a smile, I believe that chronic catarrhal otitis media is of uric acid origin and should be so treated.

Extreme Obesity.—Erastus H. Lewis, of Jersey City, N. J., died August 17, aged 57. He weighed 440 pounds when he died, and often prided himself on once tipping the scales at 520 pounds. His occupation was at first that of a train dispatcher for the Erie Railroad, but this he was obliged to resign on account of his unwieldiness and ignorance of telegraphy. When first elected president of the Fat Men's Club the combined weight of forty of its members reached nearly five tons. A diseased liver is given as the cause of his death.

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ANTITOXIC AND BACTERICIDAL IMMUNITY.

The modern teachings in immunity distinguish clearly between antitoxic and bactericidal actions. Antitoxins render the toxins harmless by continuing with them, but have no influence upon the corresponding bacteria, whereas bactericidal substances destroy living bacteria without affecting the toxins of the latter. By combining with the toxin the antitoxin prevents the toxin from uniting with those cells in the body for which it is poisonous. By experiment Ehrlich and his pupils have shown that toxins have at least two groups or chains of molecules, one toxophorous which carries the active toxin, and one haptophorous which has a high degree of affinity for the antitoxin and also for certain animal cells. According to Ehrlich's lateral chain theory of antitoxic immunity and healing, the antitoxins of the serum of immune organisms are simply molecular groups, loosened from the cells, and endowed with affinity for the haptophorous group of the corresponding toxin. Hence, antitoxic therapy simply resolves itself into a struggle of affinity between the haptophorous chain of the toxin and the cells on one hand and the antitoxin on the other. The toxin may have greater affinity for the cells; here, antitoxin is useless. Or the affinity for cell and antitoxin may be equal, and now the toxin is bound by the antitoxin in the blood serum. Finally, the toxin may have greater affinity for the antitoxin, and in this case the curative power of the latter will be greatest. In these hypothetic considerations lie the reasons for the search for animals whose antitoxin has the greatest affinity for a given toxin.

In the case of bactericidal immunity the conditions are entirely different. Normal extravascular serum has bactericidal powers, and the serum of animals immunized against certain bacteria, for example, the comma bacillus, the typhoid bacillus, etc., acquire specific bactericidal powers, which at first seem to be active only within the organism, but which it was soon found could destroy the corresponding bacteria outside the body as well. The bacteriolytic action of immune serum is currently known as Pfeiffer's phenomenon. The study of hemolytic serums has furthered greatly our knowledge of this form of action, thanks to the investigations of Bordet, Ehrlich and others. As has been pointed out frequently in these columns, the serum of an animal treated by the injection of the blood of an animal of another species acquires specific solvent powers with respect to the red corpuscles of the blood injected. It has been learned that this power depends on two substances, one of which is present normally and whose activity is destroyed by heating to 55 C. for 15 or 30 minutes, while the second is not affected by heat. These two substances have received various names. The first, which is destroyed by heat, is known as alexin and as complement, the second as immune body, *substance sensibilatrice*. The immune body, which represents the specificness of the process, links the complement to the corpuscle or bacterium, as the case may be, which is then dissolved by a fermentative process. Without this immune body, whatever it is, the complement can not act. These general facts are applicable to bacteriolysis and cytolysis alike. Baumgarten, Fischer and others have endeavored to show that the bactericidal action of serums does not depend upon any special substances like these, but upon osmotic disturbances and other purely physical factors. In the following is given a brief recapitulation of recent work by Wassermann[1] in an attempt to lay bare more of the secrets of serum actions. If hemolytic action depend on the two bodies referred to, the exclusion or neutralization of either should suspend hemolysis. In his experiments to prove the truth of this statement, Wassermann injected rabbits repeatedly under the skin with fresh guinea-pig's serum, which normally dissolves the red cells of the rabbit. In the serum of the rabbits so treated there forms an anti-complement that arrests the action of this substance in the guinea-pig's serum and thus prevents hemolysis in suitable mixtures. Injections of suspensions of typhoid bacilli mixed with 3 c.cm. anti-complement serum caused the prompt death of guinea-pigs, whereas similar injections alone, or mixed with normal rabbit's serum heated to 55 C. did not cause death, showing that the complements have a direct effect upon typhoid infections of guinea-pigs. Anti-complement reduces greatly their natural resistance. Similar results were noted in like experiments with the staphyloeoccus aureus. But not all kinds of natural immunity is dependent upon complement, because in similar experiments with anti-complement and microbes that are non-pathogenic for guinea-pigs and other animals Wassermann found that the anti-complement had no noticeable effect.

It is generally taught that complements (alexins) are derived from leucocytes, based almost wholly upon experiments with leucocytes outside the body. Wassermann reasoned that this problem would be solved easily if it were possible to produce anti-complements by the injection leucocytes thoroughly freed from every trace of serum. Guinea-pigs injected with leucocytes from rabbits developed distinct anti-complements with respect to the complements of the rabbit. Hence, leucocytes must be a source of complements, because they give rise to anti-complements in the living body, but they are

1. Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxviii, 173-204.

apparently not the only source. There is room for much further investigation in regard to this point.

In the case of artificial immunity, Wassermann very clearly shows that anti-complement arrests promptly the curative and preventive actions of immune typhoid serum—complement is necessary for its activity unless it be given in enormous doses. He further shows that complements have no influence on antitoxic serum. By similarly planned experiments it could be shown that animals actively immunized against typhoid lose their immunity under the influence of anti-complement. Furthermore, that artificial resistance against certain infections produced by the injection of numerous non-specific substances, such as salt solution, urine, bouillon, blood serum, nuclein solution, etc., depends upon the active flow of complements towards the point of injection. Wassermann also shows that serum may contain different complements with distinct affinities, although certain kinds are common to most of the mammals so far examined.

The various forms of action here discussed are hardly explainable on the score of osmotic and nutritive disturbance as urged by Baumgarten and in others in the case of the bacterieidal action of serum outside the body. The forms of activity seem to be more purely chemical or fermentative. Indeed, the general opinion is that complement or alexin is capable of digesting albumins in general.

THE PRESENCE OF TYPHOID BACILLI IN THE BLOOD.

Paradoxical though it may seem it is nevertheless a fact that the exact diagnosis of a disease becomes the more difficult as the knowledge concerning it becomes the more complete and the more refined. This is owing to the circumstance that the evidence upon which a diagnosis is based is more critically scrutinized, and must therefore be most convincing, both quantitatively and qualitatively. It is not so long ago that a complex of symptoms comprising malaise, nose-bleed, headache, diarrhea, continued fever and rose-spots was sufficient upon which to venture a diagnosis of typhoid fever, and mistake, while not common, was not rare, both by inclusion and by exclusion; but an increasing experience has taught that the symptoms named may be present in the absence of typhoid fever and absent in the presence of typhoid fever.

With the discovery of the typhoid bacillus, and the recognition of its pathogenic activity, it was believed that examination of the intestinal discharges would yield conclusive diagnostic information, but the isolation of the organism proved to be a matter of no small difficulty. Then, when the Gruber-Widal test was proposed, it was hoped that exactitude in diagnosis was reached, but this has proved to be measurably so only; and the reaction does not appear until the end of the first week, or even later, while in some cases of typhoid fever it escapes detection altogether, and in others it may be present when the existing disease is not typhoid fever. Typhoid bacilli have been found also in the urine and in the blood, in the former of which they may appear in from 20 to 30 per cent. of the cases, in large numbers from the second or third week, and for a long time even in the absence of symptoms referable to the genito-urinary tract.

According to some recent observations made with improved technique, as recorded by Dr. Rufus I. Cole,[1] the bacilli may be found in the blood in 75 per cent. of cases in the course of the second week of the disease. To be successful in their detection it is necessary to employ considerable amounts of blood, and to dilute them considerably. From 8 to 10 c.c. of blood are obtained directly from a vein of the arm under aseptic precautions, and this amount is divided among from one to six flasks containing each 150 c.c. of bouillon, so that dilutions of from 1 to 75 to 1 to 150 result. From this it would seem that it has become possible to make a diagnosis of typhoid fever with a high degree of precision, although what results will develop from the practical application of the theory is yet to be seen. In any event the frequency with which diagnosis is made by this method will depend upon the thoroughness with which the clinical examination is made.

A UNITED PROFESSION.

Were one a dreamer, one might expatiate on the possibility of having a united profession, but not otherwise—provided by this is meant a union of all physicians into one body. It would be impossible, outside of Utopia, to create a society whose principles and plan of organization in every detail would be acceptable to every individual.

It would not have been strange if some should have criticised the reorganization plan adopted at the last meeting of the American Medical Association, which it asks all its affiliated state societies to adopt and concur in. But thus far no criticism of the general plan has been noticed. All the medical journals which have expressed themselves have done so with approval, and while nearly all the state societies had held their annual meetings before the St. Paul session, and consequently before the adoption of the report of the reorganization committee, those that have considered it have done so favorably. While this does not prove that a few may not have some objections to some of the changes recommended, it shows that the many endorse the changes adopted.

While the American Medical Association has taken the initiative in adopting this new plan to unite the medical profession of our country into one compact body —a plan founded on practical and business principles— its satisfactory accomplishment can only be secured by the hearty co-operation and active assistance of the state and local societies, as well as by the aid of the individual

1. Bull. Johns Hopkins Hosp., July, 1901, p. 203.

members of the profession. With this assistance, within three years we will have an organization of the physicians of this country that will compel that respect which is their due, whose power through its far-reaching influence will force politicians to grant its just demands, and which will force the recognition of the services which physicians have rendered mankind.

On the state societies now rests the responsibility and on them the National Association depends to push forward the work of organization; and we need not expect to see the profession organized in those states or territories in which these societies fail to recognize this responsibility. As most of these bodies met this year before the reorganization plan was adopted by the National body, the plan in its completeness has not been brought before them and can not be till next spring.

But there is no reason why the work of organization should wait for the official action of the state society. There is no reason why county or district societies should not be organized now, nor why the existing ones should not take up in an active manner the work of increasing their membership and of performing in an effective manner the functions for which societies are supposed to exist.

This will require individual effort—a factor which counts in every walk of life and which is especially necessary in this work. One individual in a medical society can change it from a dormant to an active, living, working society with an influence that will be measured only by its size. One individual in a county, even though there are but a half dozen physicians in it, can organize a local society that will become a feeder for the state society and a unit in a great whole which will make an organized profession. Individual effort is necessary in building up any organization; outside the medical profession this effort is paid for. But with us the interest one has in his profession must be the stimulus to this individual effort, at least until the state society recognizes the necessity of adopting business principles and pays for the work.

Soon autumn will be with us—a splendid time to put forward this individual effort and to commence the active campaign.

BALANTIDIUM COLI THE CAUSE OF CHRONIC DIARRHEA.

Solowjew[1] describes a carefully studied instance of chronic diarrhea in a man of 54, in whose fecal discharges were found numerous balantidia coli. Enemas of tannin and the internal administration of tannoform had no effect. The diarrhea continued with living parasites in the discharges, and death resulted. At the postmortem nothing remarkable was found in any other organ except the large intestine, which was the seat of large ulcerations throughout. The ulcers were rounded or oval as well as irregular, up to 1 cm. and more in diameter, their long diameter running transversely, the margins usually more or less thickened and nodular. The nodules were somewhat reddish and yielded on incision a juice which contained balantidia filled with red corpuscles. The floor of the ulcers often reached to the muscular coat and in some of the larger to the serous. Between the ulcers the mucous membrane was reddened and swollen. Similar changes have been observed in nearly all previous postmortems in cases of this kind, of which Solowjew mentions sixteen. In some cases the margins of the ulcers were undermined. From the microscopic examination of the ulcers, which is described with great minuteness of detail, the author reaches the conclusion that balantidia coli, by virtue of their active, independent movement, may penetrate the mucosa; passing between the glands, they reach the submucosa and give rise to necrosis and ulceration. Later, they even pass between the layers of the muscular coat. Solowjew found the parasites in all parts of the intestinal wall and also in the lumen of the vessels. The wandering cells in the vicinity of the ulcers were filled with hematogenous pigment, suggesting that considerable destruction of red corpuscles had taken place.

In view of these interesting findings it behooves physicians to carefully study cases of chronic diarrhea for balantidium coli, in the hope that as observations multiply the occurrence of a definite form due to this parasite may be definitely demonstrated or disproved. The chapter of chronic diarrhea and dysentery is still a very unsatisfactory one, because it undoubtedly includes a number of various distinct processes of different etiology and consequently to a large extent susceptible only of symptomatic treatment.

1. Centralbl. f. Bakt., Abt. 1, 1901, xxix, 821-831 and 849-860.

THE WAR ON MOSQUITOES.

The health officer of the port of New York, Dr. Alvah H. Doty, has been experimenting with insecticides to do away with the mosquito pest in malarial districts within his jurisdiction. In one particularly insanitary section of limited extent, a noticeable change for the better followed oiling the numerous stagnant pools, cisterns, etc., with petroleum. The mosquitoes, while not exterminated, were greatly reduced in number, to the corresponding comfort of the residents. If it were not that numerous other breeding places existed just over the borders of this square mile or less of territory the results would have undoubtedly been much better. While the experiment goes far to prove the local character of the mosquito fauna and indeed it is hardly to be expected that they would be so restricted in their movements as this experiment would seem to show, a complete success would require a much more general attack on the pests than was here made. Still the result is most encouraging, and taken together with a similar, even better, result reported from Atlanta, Ga., there appears to be some hope of exterminating malaria and its source. If this can be done so near the New Jersey marshes and in the South the outlook for the

still more deadly regions where a worse type of malarial disease or yellow fever exists, is materially brightened. Of course, there are serious questions, of expense, etc., involved, but they are not the first matters to be considered, and each genuine progress will make their solution easier. The proposition to encourage the propagation of birds, dragon flies, etc., as mosquito destroyers is not seriously considered by Dr. Doty, who compares the notion to the tropical method of using buzzards as a substitute for scavengering and sewage and prophesics its like inefficiency. The presence of fish in mosquito-infected waters, however, seems to be a rational and it may be an efficient and inexpensive agency, though there are doubtless many conditions in which it would fail to be very effective. Whatever helps in the good work nevertheless should be employed and we may be thankful for dragon flies and whatever else is on our side in this war against the pesky little disease-spreading insects. They were bad enough as a simple nuisance and infinitely worse now that these other possibilities of evil are known.

THE EFFECT OF THE DANYZ VIRUS ON RATS.

Apropos to the above the recent experiments by Rosenau on the Danyz virus for the destruction of rats, in the hygienic laboratory of the Marine Hospital Bureau, are less encouraging. The rat, as we now well know, is a special plague victim, unfortunately for us as well as for himself, and he has the peculiar habit of developing the disease and introducing it to mankind. Anything, therefore, that can lessen this possibility is to our advantage; one of the most obvious ways, if practicable, would be to find some disorder that could decimate or extirpate these parasites and would be harmless to man. Such a one appeared to possibly exist in the Danyz culture of what seems, from Rosenau's study, to be the bacillus typhi murium of Loeffler, a microbe frankly pathogenic for certain smaller species of the Muridæ, the common house mouse and others. It was naturally inferred, therefore, that it might also have similar effects on the larger species, and Danyz, by a patient cultivation of the organism, claimed he had produced the desideratum. Rosenau's experiments, however, made on caged animals under specially favorable conditions for infection, do not justify those claims. He finds that only the ingestion of large amounts of virus by the rodents is fatal, and smaller quantities are uncertain and often produce an immunity to even extreme doses. The infection has but feeble power of propagating itself from rat to rat, and this being true its efficiency is in a great measure lost. In many respects it acts like a chemical poison, with the advantage that it is harmless in men and domestic animals, so far as known, and with the disadvantage that it produces an immunity. It is evident, however, that we will have to look farther for an efficient ally in our crusade against that objectionable rodent, the rat.

THE CLINICAL DIAGNOSIS OF INFLUENZA.

The symptoms of influenza are in general not so distinctive as to permit always of ready and infallible diagnosis from clinical observation, and bacteriologic investigation is not so simple of application as to be often resorted to, so that it is not unlikely that on the one hand a good deal of what goes by the name of influenza is really not that disease, while on the other hand a not inconsiderable number of cases of this affection may escape recognition, or be mistaken for other affections. Accordingly, it would be a source of great comfort to the careful clinician to know that certain manifestations are distinctive of influenza, and at the same time sufficiently common to make their presence valuable from the diagnostic point of view. To such a symptom renewed attention is called by Dr. F. Franks,[1] who has found it in almost every case of influenza observed in the past nine years, but under no other conditions. It consists in a band of redness upon the anterior palatine arch, and it may persist for a long time after the attack has terminated; the uvula and the tonsils are not involved. In many cases the discoloration is attended with no subjective manifestation, but not rarely symptoms of angina are present, among which a sense of constriction of the throat is characteristic. Another typical symptom, almost as common as that just described, is enlargement of the papillæ of the anterior portion of the tongue. This is only less marked than in cases of scarlet fever. It is usually unattended with subjective symptoms, but at times there is a sense of soreness or pain at the tip of the tongue. A further sign, that was observed rather frequently in protracted or recurrent cases, is enlargement of the spleen; this is usually demonstrable only by percussion and not by palpation, and its persistence is of unfavorable prognostic significance.

DANGER OF BOVINE TUBERCULOSIS.

The medical public will not rapidly give up its convictions as to the danger to human beings of bovine tuberculosis, in spite of the opinion of Dr. Koch. In the present issue we present a paper on the subject by Dr. Salmon, the veterinarian of the Agricultural Department at Washington, which voices the evidences of the transmission theory. It would be clearly unsafe at the present stage of our knowledge to neglect precautions against possible infection from animals. It must be remembered, however, that the facts that seem to point to the existence of this danger are not absolutely conclusive—they have not the value of scientific demonstration—and that our reasonable caution is based on inference, not on proof. An apparent bovine infection, as in the cases related by Salmon and Ravenel, is not an absolutely assured one, and local disease by inoculation is not exactly the same thing as pulmonary or other infection by ingested meat or milk. There is a certain *propter hoc* quality in the reasoning from the facts so far adduced, and they do not definitely prove that Koch, Moore, Billings and others are wrong. Human tuberculosis may produce local irritation when inoculated into cattle; it is very likely that the converse is true; possibly to a much greater extent. Dr. Salmon's opinion that the cases he cites are "sufficient to demonstrate the communicability of bovine tuberculosis to man," may not be shared by everyone; they hardly fulfill all the conditions of a pure scientific experiment. It is un-

1. Deutsches Archiv f. klin. Medicin, 70 Bd., 3. und 4. H. p. 280.

fortunate that they do not, but it is difficult to see how they can; the possibilities of pre-existing disease or even of mere coincidence can not be excluded. We seem to be practically limited to clinical observations in the decision of this question, and it looks as if it might be a long time before it is settled.

THE PATHOGENESIS OF PARALYSIS AGITANS.

Although the symptomatology of paralysis agitans has been very thoroughly described, the pathogenesis of the disease is still involved in considerable obscurity. The affection occurs especially in advanced life, and such lesions as have been discovered after death correspond essentially with those of senility. It is true, cases are sometimes observed in comparatively young individuals, and in these the disorder is attributed to the premature development of the senile changes. The cardinal symptoms are rhythmic tremor, and muscular weakness and rigidity. The etiology of the disorder is not definitely known, although the symptoms have at times been observed to appear in a part of the body that has been subject to traumatism or to strain. They have also been seen to follow exposure to cold, or in the train of acute infectious diseases. Of late it has been suggested by some observers that paralysis agitans is dependent upon disease of the muscles themselves, and a case that goes far to support this view has been recently reported by P. F. Schwenn.[1] The patient was a man, who, at the age of 32 years, exhibited symptoms of writer's palsy, followed by a gradual development of rhythmic tremor in the right hand, then in the right lower extremity, and eventually also in the left upper and lower extremities and the head, together with other characteristic symptoms of paralysis agitans, and terminating fatally at the age of 43 years. Among manifestations of special note was difficulty in speech, which was toneless, almost unintelligible and faint, but became gradually louder and louder. Cough was also at first feeble and short, although gradually becoming stronger. Swallowing was difficult, and food had eventually to be administered through a tube. For a time, in the act of respiration, a series of inspiratory movements was followed by a long and not particularly deep expiration. Postmortem examination failed to disclose macroscopic or microscopic lesion in the central nervous system, but on histologic study of muscular tissue from various parts of the body a distinct increase in the longitudinal connective-tissue nuclei in the interstices of the individual muscular fibers was found, and the opinion is expressed that it is this change that is responsible for the symptoms of the disease. The muscles have not, as a rule, been made the object of study after death in cases of paralysis agitans, but such reports as have been recorded of examinations of this tissue are in accord with that in the present instance, and the lesions described would seem to be sufficient to account for the symptoms.

1. Deutsches Archiv f. klin. Medicin, lxx. Bd, 3. und 4. H. p. 19.

Prophylaxis of Tuberculosis in Factories.—By his personal efforts Tornu, of Buenos Ayres, has had the walls of the match factories placarded with instructions how to avoid tuberculosis, and has succeeded in having similar brief notices pasted on match boxes, cigar boxes and other objects of daily use.—*Revista Med. d. Uruguay.*

Medical News.

CALIFORNIA.

The California Hospital, Los Angeles, is to have a three-story brick addition to cost $25,000.

Smallpox has appeared in Napa, and has apparently been eradicated from San Jose, where the last placard has just been removed.

Major William L. Kneedler, surgeon, U. S. army, has returned from China and is sojourning at Coronado Beach, pending his departure for West Point, where he has been assigned to duty.

Prizes for Hospital Plans.—The building committee of the German Benevolent Society, San Francisco, has offered prizes of $2000, $1000, $750 and $500 for the four designs best meeting its requirements for a new hospital to cost $250,000.

Personal.—Dr. Herman E. Muller, Oakland, is spending his vacation at Bartlett Springs.——Dr. and Mrs. George B. N. Clow have returned from a European trip; Dr. Clow will resume practice in San Francisco.——Dr. J. T. Royles, Woodland, has returned from a trip to the Yukon country.

COLORADO.

Dr. John W. O'Connor, Denver, succeeded Dr. Frederick J. Bancroft as chief surgeon of the Rio Grande Western Railroad.

Morbidity and Mortality of Denver.—The report of the Bureau of Health for July shows 25 cases of diphtheria; 52 of scarlet fever and 10 each of measles and smallpox, a reduction of more than one-half as compared with June. The mortality for the month was 254, equivalent to an annual death-rate of 20.30 per 1000. Tuberculosis caused 62 deaths.

Rio Grande Western Hospital Association.—A hospital association for employees of the Rio Grande Western Railroad is to be organized on the same lines as that now in operation for the Denver & Rio Grande Railroad. It is intended to combine the hospital service of the two roads so that patients on the Rio Grande Western, who now have to be taken to Salt Lake City, Utah, may be received at the D. & R. G. hospital at Salida.

To Test Koch's Theory.—The question of whether or not animal tuberculosis can be communicated to human beings has led T. L. Monson, state dairy commissioner of Colorado, to agree to submit to a thorough test of the matter, provided a suitable annuity for his family is guaranteed in case the experiment should prove fatal to him. Mr. Monson has given a great deal of study to tuberculosis and the peculiarities of the disease in cattle and human beings and is a firm believer in the theory recently promulgated by Professor Koch, that animal tuberculosis is not transmissible to man.

CONNECTICUT.

The State Board of Medical Examiners, at its July session, examined 41 applicants, 35 of whom were successful and have been granted licenses to practice medicine in the state.

Mortality of Connecticut.—The Monthly Bulletin of the State Board of Health for July shows 1297 deaths during the month, with an annual death-rate for the larger towns of 18.1; for the small towns, 14.4, and for the entire state, 17.1 per 1000. Of the deaths reported, 315, or 24.3 per cent., were from infectious diseases.

New Haven Personals.—Dr. Robert S. Ives will leave shortly for Gloucester, Mass., where he will remain during the summer. He has been in ill-health for several months.——Dr. Francis Bacon has gone up to Peterborough for the summer. ——Dr. G. Totten McMaster has gone to his cottage at York, Maine.——Dr. William W. Hawkes will leave town shortly for a hunting trip in Maine.

Revision of State Health Laws.—The State Board of Health recently held a meeting at the Surf House, Savin Rock, to give hearings to health officers from all over the state, concerning proposed revision of the health laws in towns. About 100 officials were present. The result of the meeting will be that health officers or selectmen of the towns will submit to the State Board of Health copies of their health regulations, which are to be considered by that board.

ILLINOIS.

Dr. George E. Wilkinson, Alton, has been appointed surgeon in the Illinois Naval Militia and assigned to the second ship's crew.

Dr. Charles E. Crawford, Rockford, was re-elected supreme medical examiner of the Sons of St. George, at its annual convention held in Racine, Wis., August 13.

The Morgan County Medical Society has been presented by Dr. H. W. Milligan with 150 volumes from his library. It is understood that the late Dr. N. S. Read, who presented the library with 150 volumes several years ago, has bequeathed the balance of his library to the Society.

New Dental Board.—The governor has appointed the following Board of Dental Examiners: G. H. Dameron, Arcola, to succeed H. W. Pitner, Fairfield; J. G. Reid, Chicago, to succeed himself; Clark R. Rowley, Chicago, to succeed J. H. Smyser, Chicago; T. W. Pritchett, Whitehall, to succeed W. C. Jocelyn, Cairo, and Donald K. Gallie, Chicago, to succeed Clarence Corbett, Edwardsville.

Chicago.

Dr. J. P. Smyth was elected High Physician of the Catholic Order of Foresters, at its annual meeting in Detroit, August 14.

Addition to Passavant Hospital.—Contracts have been let for a five-story brick and stone addition to the Passavant Memorial Hospital, to cost $15,000.

Personal.—Dr. and Mrs. George Paull Marquis sailed for Mackinac, August 15.——Dr. Frank Billings is spending the summer in Mackinac.——Dr. Albert H. Roler left for Mackinac, August 17.

Typhoid Fever is reported to be epidemic in the Nineteenth Ward. The Ward Improvement Association attributes the disease to infection from the filthiness of streets and alleys, but does not consider the possibility of water, milk or other foods as causative agents.

Stealing at the County Hospital.—Since Warden Healy assumed charge of affairs at Cook County Hospital, he has noticed mysterious disappearances of barrels of flour, medicines, clothing and the like. He instituted an investigation, as a result of which warrants have been sworn out against the suspected employees.

Impure water and not impure ice is the cause of the typhoid fever now prevalent in Chicago, says Acting Health Commissioner Dr. Frank W. Reilly. The heavy rainfalls of later June and early July washed into the lake enough pollution to impregnate the drinking water with disease germs. Intensely hot weather following caused an increase in the consumption of drinking water, with the result that there was a marked and sudden increase of all acute intestinal disease, particularly in the poor wards, where the precautions of filtering or boiling are not generally observed.

Increase in Contagious Diseases.—The Health Department Bulletin announces that after a period of unusual freedom from the contagious diseases, especially those of childhood, a marked increase has been noted during the past week in certain districts of the city, to-wit, scarlet fever in Rogers Park and scarlet fever and diphtheria in the Sixteenth and Twenty-eighth wards and in South Chicago north of Ninety-first street. An investigation, not yet completed, seems to show that the spread of scarlet fever in Rogers Park has been due to violation of the rule of the Health Department concerning the supply of milk to families in infected houses. On receipt of notification of a case of diphtheria, scarlet fever, etc., a warning card is affixed to the kitchen door, or other place where milk is left, reading: "Notice to Milkman. There is [name of disease, diphtheria, scarlet fever, etc.] here. The milkman must not enter the house. The family will set vessels outside, into which the milk and cream must be poured by the milkman, who must not handle the vessels. Milk or cream must not be delivered in bottles until this card is removed." There is reason to believe that this rule was not obeyed in the first cases of scarlet fever in Rogers Park and that infected bottles from the premises of these first cases were the medium of the subsequent spread of the disease. Housewives should assist the department in the enforcement of this rule and parents should be especially careful at the present time to prevent exposure of their children to families in which these diseases exist.

MARYLAND.

Merrill Hopkinson, who is at Checkley, Prout's Neck, Maine, has sent to the *Baltimore Sun* a check for $50, being one-half the proceeds of a concert which he gave there. He desires the amount to go to the Fresh-Air Fund of Baltimore.

Increased Water Supply for Baltimore.—The capacity of Lake Roland, from which Baltimore gets its chief water supply, has been increased by dredging 500,000 cubic yards. Several cases of typhoid fever are reported at Towson, which forms part of the watershed of the lake.

Dr. John S. Fulton, secretary of the State Board of Health, has been appointed a delegate to the National Health Association, to meet in Buffalo, September 16, and Dr. William Royal Stokes, a delegate to the Bacteriological Convention to meet at the same time and place, both as representatives of the Maryland State Board of Health.

Personal.—Dr. Alfred Whitehead is visiting Asbury Park, Buffalo and Canada.——Dr. Edwin Geer is at Ocean City, Md.—Dr. H. H. McArthur is at Brigantine Beach, N. J.—Dr. J. C. Hemmeter is at the Thousand Islands.——Drs. H. J. Hoye, H. T. Marshall, and B. R. Schenck sailed from Baltimore for Bremen on August 14.——Dr. J. A. Evans has gone to the Pan-American Exposition.——Drs. J. A. Carnes and E. G. Welch are at Atlantic City.

MICHIGAN.

Tekonsha is now having the proverbial doctors' disagreement about a disease resembling smallpox. After the usual lapse of time and failure to take preventive measures, the disease will probably be determined to be smallpox.

Mortality of Michigan.—During July 2470 deaths occurred in the state, a death-rate per 1000 of 12.2 per annum. Consumption caused 176 deaths; typhoid fever, 27; diarrheal diseases of infants, 252; cancer, 126; violence, 234; diphtheria, 16; scarlet fever, 7, and smallpox, 2.

MINNESOTA.

Dr. Fred P. Strathern, St. Peter, has gone to New York for a course of post-graduate study at Roosevelt Hospital.

Diphtheria is unusually widespread for this season of the year, says the secretary of the State Board of Health, and unless stringent methods of quarantine are adopted over the entire state, there will be, in all probability, a general epidemic as winter approaches—an epidemic which will be far more demoralizing and fatal than has been that of smallpox during the past two and a half years.

Advisory Vaccination.—Dr. Henry M. Bracken, Minneapolis, secretary of the State Board of Health, has issued a sweeping advisory circular, in which it is recommended that all employees of railroads, lumber camps or mines be vaccinated or present proof that they are immune to smallpox. The lumbermen will co-operate with the Board this year and require vaccination as a condition of employment. The order also recommends to school boards that vaccination be required of teachers and school children not already immune.

MISSOURI.

Dr. John Punton, Kansas City, is taking a two-months' vacation in Europe. He expects to return about the middle of September.

Baby Farms and Lying-In Hospitals.—Mayor Reed, of Kansas City, has signed the ordinance governing baby farms and lying-in hospitals and proposes to have the law vigorously enforced.

Drainage Canal the Scapegoat.—The health commissioner of St. Louis, in his annual report, gives the statistics of typhoid fever for the past five years. In 1895 there were 392 cases reported; in 1896, 281; in 1897, 464; in 1898, 408; in 1899, 1114, and in 1900, 1160. He attributes this increase to the sewage of Chicago. Dr. Starkloff apparently does not believe in the self-purification of running streams, nor does he seem to take into account the possibility of an increase in reports being responsible for the increase in aggregate cases.

Tuberculosis in St. Louis.—Dr. Max C. Starkloff, health commissioner of St. Louis, in his annual report, asserts that 90,000 of the population of 600,000 in St. Louis will die of tuberculosis. He recommends and urges on the municipal assembly the passage of a bill declaring pulmonary tuberculosis an infectious disease, dangerous to the public health, and that it be classed as contagious. The "white plague" caused 1353 deaths in St. Louis in the year ending April 1 last. There are 10,824 cases of tuberculosis in St. Louis today. The disease annually costs St. Louis more than $1,500,000. Tuberculosis germs are the only cause of the disease. It is not hereditary. Incipient tuberculosis tends to recovery, but advanced tuberculosis tends to a fatal issue. The disease is communicable and preventable.

NEW JERSEY.

Dr. Alexander T. Steele has been appointed assistant house-physician at St. Joseph's Hospital, Paterson.

North Hudson Hospital medical staff has been augmented by the appointment of Dr. John T. Luck, Union, and Dr. Benson, West New York.

Consumption Officially Declared Contagious.—The Jersey City Health Board has notified all physicians to report all cases of tuberculosis under head of contagious diseases. Bnt the opinion is rife that more legislation is requisite to make the ordinance effective.

Diploma Mill Closed.—The "Central University of Medicine and Science," Jersey City, presided over by J. W. Norton-Smith, M.A., Ph.D., S.D., LL.D., which offered a degree in medicine for $10, or a diploma in medicine and philosophy for $15, has been closed by the governor.

Smallpox Not Yet Abated.—On August 13 three more cases were reported, one in East Newark and two in Harrison. In Newark proper three quarantined inmates of a house escaped during the night, and a day later were still at large. Two inmates of another dwelling made an attempt to escape at noon, but were returned to their quarters by the police. Two other captives on refusal to go back into their house were placed under arrest.

NEW YORK.

Dr. James C. Kennedy. Brooklyn, was seriously injured August 17, while trying to save the life of his carriage boy in a runaway. He was thrown against a telegraph pole, trampled on by the horse and run over by the carriage.

The first public playground and out-door gymnasium in Buffalo was opened to the public August 17, with appropriate ceremonies, in which the mayor, Dr. Diehl, and the Park Commissioners, represented by Drs. C. C. Wyckoff and M. D. Mann, took part.

Work on the new Batavia Emergency Hospital is progressing rapidly and the hospital will probably be ready for occupancy before winter. The members of the Genesee County Medical Association have agreed to furnish the money for fitting up the operating room.

Physicians' Protective League.—The physicians of Cortland and vicinity have organized to protect themselves against "dead-beats." After sixty days each physician is to prepare a list of his delinquent patients and hand it to the secretary. A copy of the names of the delinquents will be in the hands of every physician, and a physician who attends one of these delinquents, except in cases of emergency, shall be liable to a fine of $10. This agreement does not prevent physicians from giving medical aid to patients who are unable to pay, but is designed to protect members of the league against "dead beats."

Inspection of State Institutions.—As a result of Governor Odell's recent tour of inspection through the institutions for the care of the insane in the state, it is admitted by the governor himself that his annual message will contain a number of recommendations. The fact that the total cost of these institutions for the year 1900 was $5,544,891 as against $1,346,019 in the year 1893, will, it is said, be the ground on which the governor will ask the legislature to practice greater economy in this direction.

OHIO.

The deaths in Cincinnati for July exceeded the births reported by 342.

The People's Hospital, built by the colored people of Cincinnati, will be ready to receive patients early in November.

Dr. Claude B. Parker has resigned his position on the staff of the State Hospital for the Insane, Athens, and has returned to Gallipolis, where he will practice medicine with his father.

Dr. Thomas Grant Youmans, surgeon to the police and fire departments of Columbus, has been granted a vacation of a month. Dr. Ira B. Hamblin will attend to Dr. Youmans' duties in his absence.

Dr. Robert C. Tarbell, on leaving the State Hospital for the Insane, Columbus, to take up a special course of study in New York, had a reception given in his honor, August 2, at which he was presented with a diamond ring by his associates in the hospital.

PENNSYLVANIA.

For criminal practice, Joseph Heppenstall, alias Dr. Wills, of Philadelphia, was sentenced to four years in the Eastern Penitentiary on August 12.

Dr. J. Purd Kerr was elected a member of the board of directors of the Southside Hospital, Pittsburg, August 13, vice Dr. Michael A. Arnholt, deceased.

Dr. Robert J. Black, the mayor of McKeesport, who has been receiving considerable newspaper notoriety recently in connection with the strike, is a practicing physician, and a graduate of the Baltimore College of Physicians and Surgeons.

Troubles of Examining Boards.—The following extracts from letters of an applicant to practice medicine in Pennsylvania, demonstrates what the Board occasionally encounters. On July 2 he writes: "I have two licenses or certificats from two different States. * * * I know of lots of doctors now in Pennsylvania who are practicing medicine, even in this county. Now, if you will be of help to me in obtaining a certificat I will give you some of their names, but if you can not be of any benefit to me I will not give their names away, and will go away to my licensed States." He adds as a postscript: "If you will help me to obtain a certificat, there is $50 in it for you, and if not I will leave at once." Two days later he wrote to the medical inspector that he did not care about "doctoring eny longer"; that he had practiced twenty-two years at different places; is now 43 years old, and has a good farm, where he can "enjoy life without practicing medicine under the Manopely laws of Pennsylvania." After declaring that he had studied under various physicians; that he was in "Buffalo University for three terms of lectures," and "then went to Chicago and graduated," and has his diploma, he adds: "I do not belong to the Manopely gang of allopaths, homeopaths nor eleeties, so will never go before the death dealing gang of robers for to be examined. There is no need of our writing eny more on this subject, so good day."

GENERAL.

Hawaiian Insane Asylum.—Dr. R. M. McMaster has been elected superintendent of the Insane Asylum at Honolulu. Dr. McMaster is a graduate of Rush Medical College, 1894; he afterwards practiced at Omaha.

Germans Criticise American Students.—The *Rhein. Westphal. Zeitung* states that American students who study at German universities are generally less educated than the students in the tertia (third year) of their gymnasiums (high schools). It says: "Here they study superficially and then pose as German physicians in the United States. The result is that German physicians no longer enjoy the reputation in the United States they once did. There is all the difference in the world between a German physician and a physician superficially educated in Germany, because he lacks preliminary education." German newspapers urge that unless the students from the United States acquire sufficient knowledge to fit them for a university course they should be excluded from German universities.

Yellow Fever Tests Prove Fatal.—Experiments are being conducted at Havana to test the immunizing and curative efficacy in yellow fever of the serum furnished by Dr. Caldas, a Brazilian physician. Dr. W. C. Gorgas provided eight mosquitoes from Santiago de Las Vegas which had bitten a well-marked case of yellow fever. Two of these anopheles were allowed to bite two people whom Dr. Caldas had previously inoculated with his serum to render them immune; two more bit non-immunes. On August 18, a Spaniard died who had been bitten by one of these germ-laden mosquitoes. He was healthy before the test, but developed yellow fever four days afterward. On August 19, a second man died who had been infected by a mosquito. Dr. Harvard, chief surgeon in Cuba, now refuses to permit more experiments of the kind to be tried.

CANADA.

Dr. Francis C. Mewburn, Toronto, celebrated the sixtieth anniversary of his wedding on July 25. He obtained his license to practice in 1838.

Dr. F. C. Macdonald, Scarboro, Ont., who was appointed to the staff of Civil Surgeons of the South African Field Force in December, has returned to Canada and will commence the practice of his profession.

Dr. P. A. Gillespie, formerly of Toronto Junction, but now of Winburg, South Africa, was recently presented with a medal and clasp, and was also granted a bounty for his loyal services to the British Crown during the war.

The Local Board of Health of Brantford, Ontario, has declared that city, as well as the county adjoining, free from smallpox. This includes the outbreak on the Indian Reserve and that among a number of berrypickers in the same county.

Dr. H. R. Woolbert, major in the Indian Medical Service, visited Toronto in July, and was the guest of Dr. O'Reilly, superintendent of the Toronto General Hospital. Dr. Woolbert has charge of a large district in India which contains twenty-two dispensaries.

Sewage Disposal at Stratford, Ontario.—Dr. Bryce, of the Provincial Board of Health, has returned to Toronto after inspecting the septic tank system of disposal of sewage at Stratford. This is the only system of its kind in Ontario and probably in Canada.

Medical Profession at the Canadian "Soo."—The profession at the Canadian "Soo," through Dr. McCaig, has very kindly offered to entertain the members of the profession from the East who pass through their town on their way to the Winnipeg meeting of the Canadian Medical.

An Outbreak of Hydrophobia.—The Department of Agriculture at Ottawa has received reports of an outbreak of rabies in the township of Pelham, Ontario, a short distance from Niagara Falls. Several fresh cases have recently appeared, and the Department has ordered Professor Baker, acting chief veterinary of the Dominion, to go and investigate.

Western Hospital, Montreal.—The governors of the Western Hospital, Montreal, are now discussing the plans for a new hospital at Westmount, the erection of which will cost $100,000. For several years now the institution has been running on a good financial basis, and the majority of those interested in the future welfare of this hospital think that the time is opportune for the erection of a modern building. The subject will be left to the medical board for a report.

British Columbia Medical Association.—This Association will hold its second annual meeting on September 5 and 6, the original date having been changed from August in order that the latter might coincide with the arrival on the coast of the excursion of medical men from the East after the meeting of the Canadian Medical Association at Winnipeg. The profession on the coast extend a cordial invitation to all eastern brethren to attend and join in their discussions and also to partake of their hospitality.

Montreal's Water.—The following is the way a local paper describes the present condition of Montreal's water: The report of the city analyst that the Montreal water is not dangerous will be very reassuring. It is gratifying to learn that the thickness which now helps to make the water solid is not the same kind of thickness in the spring, when the decayed vegetable matter from the streams helps to make the liquid soup-like and slimy. It is only minerals in solution, with sewage in finely distributed particles, which we now have with us and the Montreal water is not considered any worse than other American river waters. While this is reliable evidence that the article is not dangerous, it might still be just as well to keep a baseball mask, or some other appliance, hung across the exit of the faucet to keep the menagerie from escaping into the house and biting somebody.

Afflicted with Trachoma.—The question of admitting immigrants via Montreal to the United States has now become a very important one, when on Wednesday afternoon of last week eight Assyrians were brought before Inspector Francis for examination. Dr. Heiser, the United States immigration officer for the Province of Quebec, was present, and at once pronounced five of them to be suffering from trachoma. They were therefore refused the passport necessary for admission into the States. However, they were got on the train and taken as far as Rouse's Point, where they were arrested by United States officials and lodged in gaol awaiting instructions from the government at Washington. The five afflicted were by authority sent back to Montreal and there remain awaiting further developments. Contagious diseases are equally an embargo for admission to Canada as to the United States, and all immigrants undergo a thorough examination at Grosse Isle, but trachoma, favus and hernia, whilst debarred from the United States, are passed for Canada. The immigrants are still living in Montreal.

Canned Goods as a Cause of Disease.—A little over a year ago, the Department of Inland Revenue at Ottawa, sent out a circular letter to 4348 medical men in the Dominion, asking whether any cases of illness, apparently attributable to the use of tinned goods, had come under their notice within recent years; 1312 replied, and of these 1059 answered in the negative, while 254 answered in the affirmative. From Ontario came 112 affirmatives and 466 negatives, and from Quebec 66 affirmatives and 22 negatives were received. In view of these answers, the Department will at once adopt precautions in the interests of the public health. Judging from the replies received from physicians, the number of cases of disease apparently attributable to tinned goods would average about 138 per annum in Canada in an average period of about seven years. A total of fifteen cases terminated fatally. From a close analysis, the Department finds that there is nothing in the canned salmon trade to justify newspaper strictures which were brought to its notice.

FOREIGN.

. Baccelli Minister of Agriculture.—Professor Guido Baccelli was a member of the Italian cabinet for a time as minister of public instruction. He has recently been appointed minister of agriculture.

German Orthopedic Society.—The orthopedists of Germany are organizing a national association to meet for the first time at Hamburg, September 23. Hoeftman, of Königsberg, Prussia, issues the appeal, which is signed by eighteen well-known names.

Deaths Abroad.—Dr. Bosse, of Berlin, died July 31, 69 years of age. He served at one time as "Kultusminister," and has always taken a prominent part in affairs connected with the public health.—The death of Dr. J. Schramm, a prominent surgeon of Dresden, is also announced.—The death of Professor Moncorvo is reported from Rio de Janeiro.

Government Investigation of Tuberculosis.—The German imperial board of health has summoned a conference of the leading authorities on tuberculosis in the country, to discuss the subject and institute research on the lines suggested by Koch. The specimens from the veterinary school on which his statements were based, are to be placed on public exhibition.

Death of the Empress Frederick.—Our German exchanges deplore the death of the Empress Frederic, to whose initiative and material and moral support the profession, the interests of the sick and the public health in general, owe so much. They comment on the coincidence that both she and her husband succumbed to malignant disease, and that the possibility was denied them of being saved by timely surgical intervention.

Female Students in European Universities.—According to the *Deutsche Med. Wochens.*, there are, excluding Munich, 95 female medical students in Germany, of whom 56 are foreign. They are distributed as follows: Berlin 25 (21 foreigners), Leipsic 24 (22 foreigners), Freiburg 18 (14 foreigners), Halle 12 (9 foreigners), Heidelberg 6, Bonn 5, Strasburg 2, Breslau 2, and Königsberg 1. In Switzerland, Berne University has 188 females (180 Russians), Zürich 85, and Lausanne 61.

LONDON LETTER.

Place of Meeting of the British Medical Association.

The selection of Cheltenham as a place of meeting for the Association, July 29-August 3, caused some surprise when it was first announced. Cheltenham, a name familiar in every text-work of therapeutics for the past 70 years, both for its mineral springs and having been the home of Edward Jenner, has in fact been neglected, and as a place of resort for invalids has been cold-shouldered, and the invitation issued to the medical men of the country to assemble there was rather coldly received. How different the reality has been every member of the Association is heartily agreed upon, for never had the members a more pleasant meeting-place than that afforded by Cheltenham. The synonym by which the city is known is the "Garden City" and thoroughly well bestowed is the name. So well is it favored with garden and foliage, that the city, with a population of some 50,000 persons, occupies an area out of all proportion to the actual numbers.

The Reorganization of the British Medical Association.

One of the most important events of the meeting was the consideration of the report of the Committee on Organization, which was appointed at the last meeting. While it was expected that much opposition would develop when the report was finally presented to the Association, the result was just the opposite, and practically the full report was accepted and adopted with a few minor changes. The report was introduced in a masterly, eloquent, diplomatic and witty speech by Mr. Edmund Owens, and this happy introduction of the report had as much to do with its adoption as anything, except the realization on the part of the members present that the Committee had spent much time on it, and, therefore, probably thought it could not be amended with any satisfaction. The Association under its past plan has been anything but satisfactory and a great desire has been evident on the part of all the

members to make some change and as a rule a radical change was expected and hoped for. As someone afterwards said, the Association, as heretofore conducted, has been a pyramid standing on its point, base upward, and the point being the Council, which has practically managed affairs. The pyramid is now turned right-side up. Hereafter the affairs of the Association will be conducted by a delegate body, elected by the subordinate branches of the Association. There is a little anxiety expressed on the part of some as to the result of the radical change, although the large majority seem to think that only good can be the outcome. Hereafter the constituencies, in other words the small branches, will be responsible themselves for what the Association may do, for the Association, as a legislative and business body, will be their creation.

The Sections.

The scientific work of the meeting has been unusually successful and all the sections were well attended. The sections on surgery, obstetrics and gynecology were, as a rule, more largely attended than the others. Nothing of striking interest in the way of theories or discoveries or any remarkably brilliant contribution has to be recorded, although there was good all-around work in practically all the sections.

President's Address.

Dr. G. Bagot Ferguson, president of the Association, delivered his address on "Scientific Research; the Indispensable Basis of All Medical and Material Progress," before an audience of about 2000 members. For abstract of this see THE JOURNAL of August 3, page 327.

Dr. Patrick Manson Honored.

Dr. Patrick Manson was presented with the Stewart prize at one of the general meetings. It was established for the encouragement of the study of epidemic diseases. The prize was presented by the president, who congratulated the recipient on the importance of his past work and hoped for his future, both as to health and scientific research.

Annual Dinner.

The Association's annual dinner was held on August 1, at Cheltenham College, and was attended by about 400. It was presided over by the president. Among the speakers were Surgeon-General J. B. Hamilton, Inspector-General A. Turnbull, Sir William Broadbent, Dr. Sabouraad (Paris), Sir William MacCormac, Sir William Church, Professor Onondi (Budapest) and Professor George Dock (Ann Arbor). The latter replied in a humorous vein to the toast proposing the health of the guests, his name having been coupled therewith.

Excursions.

Although there was no equivalent to the Yellowstone National Park of the American Medical Association, the excursions into the famous Malvern Hills and neighboring valleys were interesting and well attended. Tewkesbury Abbey, with its neighboring Roman villa, and Gloucester and Cirencester were also visited by large parties. The scientific work of the meeting was often pleasantly broken into by agreeable garden parties and receptions.

Correspondence.

Collective Investigation of the Influence of the Silver Nitrate Injections on Phthisis.

PHILADELPHIA, Aug. 15, 1901.

To the Editor:—In 1892 the undersigned began a collective investigation of the action of cold in the treatment of acute pneumonia and there is reason for believing that this procedure, which resulted in gathering four hundred cases of this disease thus treated, with a death-rate not quite five per cent., was an important factor in calling attention to the utility of that treatment, and in introducing it to the profession of this country. The research was based on the conviction that no remedy can be called truly successful until it has passed the exacting crucible of clinical experience.

It is now proposed to apply the same ordeal to the silver-injection treatment of phthisis, which, in a large hospital, dispensary and private practice, reaching over a period of three years, and during which many thousand injections were administered, has given me greater satisfaction than any other method that I have ever employed. In keeping with the above expressed feeling a cordial invitation is herewith extended to those members of the profession who have the inclination and opportunity to investigate this method of treating phthisis and to whom a reprint on the subject with full information and blanks to report cases, will be cheerfully sent on application.

THOMAS J. MAYS, M.D.

1829 Spruce Street.

The Smallpox Epidemic.

CLARKSVILLE, Tenn., Aug. 14, 1901.

To the Editor:—There is a point or two in your issue of August 3, to which I wish to call attention. Dr. Happel, in his paper, quotes from F. J. Runyon's paper entitled "Our Recent Epidemic of Smallpox and the Failure of Glycerinated Lymph," read before the Tennessee State Society, April, 1901, and published in the *Memphis Medical Monthly*, August, and attempts to support his own view that vaccination does not prevent the eruptive disease so widely prevalent, and generally recognized as "smallpox."

Runyon's statistics clearly show that proper vaccination did give general immunity to the disease in question, but that glycerinated lymph was not favorable and did not prevent smallpox. I saw many cases with Dr. Runyon, and his observations and experience with glycerinated lymph coincide with my own.

Dr. Le Roy (in his discussion) confounds Clarksville with Montgomery County. Dr. Runyon and I saw the first case of smallpox in Clarksville, and immediately recognized the disease as smallpox. So far as I know, our diagnosis of this and other cases which followed, was never questioned by any regular practitioner in Clarksville.

The case Dr. Le Roy referred to was outside the corporate limits where we had no jurisdiction, and which he diagnosed as "modified smallpox," and which was questioned by a homeopathic physician.

The Doctor is further mistaken as to the source of the Guthrie epidemic. This epidemic was the result of a case from Evansville, Ind., and not from Clarksville.

We take good care of our cases and if the state would exercise measures as rigid, the disease would be much more readily controlled. The three "—ates" with us put a speedy end to the disease, for we vaccinate, isolate and fumigate.

Respectfully,

M. L. HUGHES,
City Health Officer.

Miscellany.

Death Rates in South American Cities.—According to E. Coni, in *Rev. Med. d. Uruguay*, the annual mortality per 1000 has averaged 14.11 in the last seven years at Montevideo; 17 at Buenos Ayres; from 35.5 to 59 at Santiago de Chili, and from 22.9 to 45.4 at Rio. At Lima the average for five years is 42.8. Pulmonary tuberculosis is responsible for 25 per cent. of the mortality in Peru.

Another Schlatter.—Our esteemed contemporary, the *Iowa Medical Journal*, has the following in its August issue: "The poor old Divine-Healer Schlatter, who created such a furor in Denver a few years ago, was arrested as a vag in Washington last month. He had been on a drunk for three weeks when run in. It seems that the divine-healing business is not profitable with some. It is an indication of the public pulse when lay journals and newspapers take up the subject of "christian science" and Dowieism and handle them as roughly as they do. The narrow-minded and closely contracted followers of these fadisms are getting fewer every day and it will be but a short time until such absurd theories as are now promulgated by these sects will be a thing of history." The Schlatter who a few years ago drew to Denver such crowds of dupes, was an entirely different individual from this Washington crank. The former was probably an honest religious paranoiac, who was reported to have starved to death while fasting forty days.

Anal Dermoid Cyst Fistulae.—Serenin mentions in a communication to the *Med. Obosrenje* for January that he has had occasion to treat three cases of anal fistula which resulted from a suppurating dermoid cyst between the rectum and the sacrum. The wall of the cyst can be seen by opening wide the incised fistula, and unless it is excised, the fistula will not heal.

Idiosyncrasy to Morphin in the Aged.—Tauszk states in the *Ungarische Med. Presse* that he has frequently noticed that elderly men and women who have never taken opium or morphin, exhibit symptoms of intoxication after its administration, showing an idiosyncrasy. The repetition of very small doses, however, seems to induce tolerance and the drugs can then be given as indicated.

Prizes Offered in Mexico.—The National Academia de Medicina offers two prizes of 500 pesos each, for the best article on the subjects: "Means that should be adopted, 1, to prevent abortions and still-births, and 2, to diminish the number of deaths in the first five years of life." The communications must be in Spanish, sealed, and sent to the secretary of the Academia, J. G. Uruena, before October, 1902.

Deficiency in Preliminary Qualifications Among Graduates in Medicine.—Dr. Henry Beates, president of the Pennsylvania State Board of Medical Examiners, claims that of the 407 candidates before that board for examination last month 89, or less than 25 per cent., failed. The Board completed its sessions at Atlantic City, N. J., recently. "It is the commercialism of the medical schools that is the cause of so many rejections," said Dr. Beates. "The papers of this examination prove clearly that the medical colleges continue to admit students who are utterly illiterate. These students can not pass even the simplest rudimentary examination, and to them medicine is a study entirely beyond comprehension. Just so long as these colleges admit men of little or no preliminary education there must be a large percentage of rejections when they take the board examinations. I wish to say emphatically that the granting by a college of diplomas to such men is a fraud." —*N. Y. Med. Journal.*

Early Diagnosis of Tuberculosis by the Average Temperature.—A French physician, J. Tétau, publishes in the *Archives Méd. d'Angers*, the results of long and extensive research to the effect that with temperature as a basis all mankind can be grouped into three classes: Those with an average temperature of 37 to 37.5 C., showing normal organic processes going on in the organism; those with an average temperature below 37, showing diminished rates of organic processes, and revealing that the subject has an arthritic or herpetic tendency. Lastly, those with an average temperature above 37.5, showing an exaggeration of the organic processes, the soil on which tuberculosis develops. Tétau takes the temperature in the axilla, under the same conditions, for ten to fifteen days and then determines the average. If this average is below 37, the diagnosis of tuberculosis can be excluded, even although other signs point that way. If above 37.5, the subject is already phthisic, whether the tubercle germ has arrived or not, unless it is possible to promptly restore normal conditions.

Boy Shot Through the Brain—Recovery.—A case now under the care of Dr. John W. Chambers at the City Hospital, Baltimore, Md., has attracted considerable interest. Miss Ambler Hollyday, a daughter of Dr. J. Guy Hollyday, in the western suburbs, with two guests, was engaged in target practice in her father's lawn. They were using a 22-caliber Winchester repeating rifle, and while shooting at a bottle on the stump of a tree, shot a boy 8 years old, who was standing in his father's orchard some 230 yards away, beside his father and brother. The bullet entered the left side of the skull about midway between vertex and base and behind the motor area, went inward and forward and lodged under the skull somewhat higher up in the right side and in front of the motor area. He was immediately taken to the City Hospital, Dr. Chambers found on the right side an elevation, evidently due to the bullet having partly penetrated the skull on that side. He cut down, and lifting up some fragments of bone, found the bullet. The patient was at that time but semi-conscious. There was some oozing of brain tissue through the opening which was found to be free from disease germs. The temperature was as high as 101, but all that has now passed away, the boy is perfectly conscious, with senses perfect and practically well. The result is somewhat unusual, and is to be ascribed to the small size of the ball and the escape of vessels and important nerves and nerve-centers.

Newspapers and the Medical Profession.—The majority of newspapers seem to think they are pleasing their readers by villifying physicians on every occasion, but on the other hand there are as many which recognize the worth of the profession and acknowledge its value as it deserves. The motive for most of this animus of newspapers is the fact that the ethics of the profession is against advertising, and selfishness finds its vent in slander. In its issue for August 17 *American Medicine* prints two comments which go well together. It says:

"The Chicago *Tribune* editorially villifies the profession because it does not advertise, and ends a silly tirade of abuse of medical ethics, and of defense of medical men who print their papers in newspapers before they read them to the medical societies in the following words:

To the outsider this standard of conduct [condemnation of the medical advertiser] smacks strongly of insanity, and that it is not unreservedly subscribed to by doctors themselves is shown in the fact that the most 'ethical' of them all, while they would shrink in horror and dismay from paying regular advertising rates, are always accessible and even effusive when the interviewer comes around. It is ethical, in other words, to blow one's own horn free in the news columns, but heterodox and unprofessional to advertise and pay for it. That seems to be the sum and substance of medical ethics.

"The Cincinnati *Post* the same week says:

When there is light, pure water, pure air and sanitary sewers in or connected with every school house in Cincinnati, there will be less sickness—and less business for the doctors. The men who have indorsed the *Post's* investigation are working earnestly and honestly against their own financial welfare. Why? Because there isn't one doctor in a thousand who isn't laboring to a large extent for the good of humanity. They have ambition to be successful as a spur and also a desire to be of use to the community. They do not work for money alone. The cry for universal cleanliness comes from the doctors. They are in favor of every idea, invention, thought or act that will prevent disease and suffering and add to the physical comfort of the people. There isn't a practical move for the physical betterment of mankind that does not find them ready to co-operate and lead when able and strong leaders are needed. Above and beyond all that lies the fact that there is little selfishness in the profession. The physicians of Cincinnati, as a body and individually, are working for the health of the people, and it is in many instances a labor of love.

"We hope every physician in or near Cincinnati is a subscriber to the *Post*, and we also hope that in Chicago ———."

To the above might be added another newspaper expression, this time from the Rochester *Democrat and Chronicle*. After giving an account of the death of the Emperor Frederick, and the unhappy relation thereto of Sir Morel Mackenzie, that newspaper says:

"After Prince Frederick became emperor he lived about three months—the event of his death satisfying the physicians throughout Europe that the great throat specialist of London had made a diagnosis in the interest of political aspirations of a princely family rather than in accordance with the rigid rules of practice adhered to by the medical profession. It is stated in this connection that Dr. Mackenzie lost a good part of his practice, and died of a broken heart. The medical profession did not countenance his action, and left him to his own devices. If this relation is true, the experience of the distinguished physician is a striking example of the integrity of the great mass of medical practitioners and their devotion to the truths of science."

Virchow on the Bovine Tuberculosis Question.—Virchow calls attention to his statements published as long ago as 1863, in regard to the distinction between human and bovine tuberculosis. He observes that he has never been able to understand how any one could maintain their identity. At the same time, he has occasionally encountered a case of peritoneal tubercu-

losis in which the proliferations were so extraordinarily numerous and extensive, to an extent far beyond that otherwise observed in man, that he has always suspected the cases to be instances of bovine tuberculosis—"perlsucht" or pearl disease—transmitted to man in his food. He believes that Koch is too extreme in excluding this possibility. Virchow also emphasizes the necessity of restricting the term tuberculosis to actual tubercle formation. The constituent elements of the tubercle are, not the bacilli, but the cells proceeding from the living body, whether due to irritation from the tubercle bacillus or not. The mere presence of the tubercle bacillus does not necessarily make a tubercle. We must distinguish between the actual, pathologic tubercle and the merely bacteriologic condition. Hitherto any formation in which tubercle bacilli have been discovered has been dubbed forthwith a tubercle. Both bovine "pearl disease" and lupus in man have been regarded from this point of view, and even anatomic parts in which a tubercle bacillus is encountered now and then. Henceforth, we must be more discriminating and recognize that there are not only bacillary tubercles and bacillary hepatization, but also non-bacillary, and that every formation containing a tubercle bacillus is not necessarily a tubercle. Another point emphasized in his communication, which is published in the *Berlin. Klin. Woch.*, of August 5, is that bacteriologists have hitherto failed to pay attention to the quantity of the bacilli. They always act as if a single typhoid or cholera bacillus were inevitably the progenitor of countless millions, while Virchow believes that this does not invariably follow. He is convinced that the danger of infection is slight if the quantity of the bacilli introduced into the organism does not surpass a certain number.

Book Notices.

CRAZES, CREDULITIES AND CHRISTIAN SCIENCE. By Charles M. Oughton, M.D. Cloth. Pp. 121. Price, $1.00. Chicago: E. H. Colgrove. 1901.

Dr. Oughton has done what others have done before him—showed up the absurdities, the follies, and the absolute senselessness of "christian science." But what is the use? Any one who uses argument against the vaporous verbiage that emanates from the pen of the founder of this sect will have his pains for nothing. All the logic and reason and argument in the world will have no effect on those who once allow themselves to become controlled by such beliefs as influence the followers of Mrs. Eddy. Logic has no influence when sophistry is in the field. However, as an argument against the teachings of "christian science" to put into the hands of those who are thinking about the matter this book is to be commended.

ESSENTIALS OF SURGERY. Together with a Full Description of the Handkerchief and Roller Bandage. Arranged in the Form of Questions and Answers Prepared Especially for Students of Medicine. By Edward Martin, A.M., M.D., Clinical Professor of Genito-urinary Diseases in the University of Pennsylvania. Illustrated. Seventh Edition, Revised and Enlarged. With an Appendix containing Full Directions and Prescriptions for the Preparation of the Various Materials Used in Antiseptic Surgery. Also Several Hundred Receipts Covering the Medical Treatment of Surgical Affections. Pp. 342. Price, $1.00 net. Philadelphia: W. B. Saunders. 1900.

In this edition the author has revised the whole work and added a section on the treatment of appendicitis. The contents and arrangement form a good groundwork in surgery for the student.

A MANUAL OF OTOLOGY. By Gorham Bacon, A.B., M.D., Professor of Otology in Cornell University Medical College, New York. With an Introductory Chapter by Clarence John Blake, M.D., Professor of Otology in Harvard University. Second edition. Revised and Enlarged. With 114 Illustrations and 3 Plates. Cloth. Pp. 422. Price, $2.25. New York and Philadelphia: Lea Brothers & Co. 1900.

The fact that a new edition of this work has followed closely upon the publication of the first, shows the demand existing for a handy manual on the diseases of the ear. The general practitioner is nowadays desirous of being able to recognize and treat the otitis media consequent upon scarlet fever, diphtheria and other throat affections. The series of illustrations has been enlarged and improved, and the operative treatment of mastoiditis has been more fully considered than in the previous edition.

ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. By Charles E. de M. Sajous, M.D., and one hundred Associated Editors. Assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromolithographs, Engravings and Maps. Volume VI. Cloth. Pp. 1043. Price, $5.00 per volume. Philadelphia, New York, Chicago: F. A. Davis Co. 1901.

This is the last volume of an excellent work, and the largest of the series. It contains an index to the six volumes, which gives one an idea of the mass of information the complete series contains. The amount of work necessary to condense, systematize and co-ordinate all the vast amount of medical literature that these volumes represent has been enormous and can be appreciated only by those who have attempted such a task, though in a less pretentious manner. The work covers every branch of medical knowledge, and brings the literature of each up to recent times in such a manner that it can be referred to easily and with satisfaction. The work is not a text-book, or a substitute for text-books, but rather a supplement to them, as it were. This last volume contains many complete articles that are deserving of mention, among them being Surgery of the Stomach and Intestines, by W. W. Keen and M. B. Tinker; Syphilis, by G. Frank Lydston; Surgery of the Urinary System, by J. W. White and A. C. Wood; Diseases of the Uterus, by H. T. Byford; Diseases of the Adnexa, by E. E. Montgomery; Tumors of the Brain, by J. T. Eskridge; Typhoid Fever, by J. E. Graham, and other equally noticeable contributions. The index is full and complete, but it seems to us that it would have been much more satisfactory to have references made to volumes and pages rather than to subjects, as has been done. The illustrations while not numerous are excellent, and the complete series is a splendid monument to the indefatigable author and his corps of assistants.

RHINOLOGY, LARYNGOLOGY AND OTOLOGY AND THEIR SIGNIFICANCE IN GENERAL MEDICINE. By E. P. Friedrich, M.D., Privatdocent at the University of Leipzig. Authorized Translation from the German. Edited by H. Holbrook Curtis, M.D., Consulting Surgeon to the New York Nose and Throat Hospital. Cloth. Pp. 348. Price, $2.50. Philadelphia and London: W. B. Saunders & Co. 1900.

The contributions of the author and translator to current literature in the range of this special work, would lead one to expect much from this, and an examination of the volume is not disappointing. The work of the translator is to be commended. This volume makes clear many subjects that in other text-books have only vexed the minds of many practitioners. The subjects are discussed in a clear and scientific manner, with plain, but elegant diction, and numerous cases are cited which serve to add interest and to elucidate points under consideration.

This volume treats of the relation to diseases of the ear, nose, and throat of diseases of the respiratory, circulatory, and digestive organs; of diseases of the blood and chronic constitutional diseases; of diseases of the kidneys, skin and sexual organs; of the eye, the nervous system, and of various intoxications. The chapter devoted to the nervous system and its relation to diseases of the ear, nose, and throat will be found comprehensive, instructive and valuable. Nothing of importance seems to have been overlooked by the author.

In view of the important position that has recently been accorded to diseases of the blood, the appearance of a chapter in this work on changes produced in the ear, nose, and throat by blood diseases, should be a subject of professional congratulation. It is a thoroughly practical volume, which will be especially appreciated by general practitioners who are most anxious about the diagnosis of these diseases and desire specific information along this line.

Married.

M. H. BELL, M.D., to Miss Ada Robinson, both of Memphis, Tenn., August 1.

IRA D. ISHAM, M.D., to Mrs. Buna Padgitt Fort, both of Chicago, August 17.

A. G. EVERETT, M. D., to Miss Annie Semmes, both of Memphis, Tenn., August 6.

DANIEL G. SIMPSON, M.D., to Miss Luella Conzett, both of Warren, Ohio, August 8.

JOHN W. FUQUA, M.D., Urbana, Ill., to Miss M. Ruth Mason, Macomb, August 14, at Ottawa.

CHARLES KAHN, M.D., to Miss Florence Dyer, both of Joliet, Ill., at Bay View, Mich., August 17.

HENRY P. ANDERSON, M.D., to Miss Florence Northway, both of Toronto, Ont., August 14, at the home of the bride.

FRANK EUDORAS WAXHAM, M.D., Denver, Colo., to Miss Alice Elizabeth Welles, Detroit, Mich., August 12, at the home of the bride.

Deaths and Obituaries.

James Alexander Williams, M.D., Rush Medical College, Chicago, 1863, Bellevue Hospital Medical College, 1866, died from apoplexy at Armonk, N. Y., August 15, aged 61. After the civil war, in which he served as assistant surgeon of the 135th Illinois Infantry and subsequently as surgeon of the 50th Illinois Infantry, he practiced for a time in Mattoon, Ill., but soon went to New York City and there remained until a few months before his death.

Thomas Sappington, M.D., University of Pennsylvania, Philadelphia, 1839, a grandson of one of the incorporators of the University of Maryland, died at his home in Baltimore, August 11, aged 85. He practiced in Frederick County for twelve years, and then moved to Baltimore, where he practiced until the time of his retirement, ten years ago.

Robert L. Crooks, M.D., Fort Wayne College of Medicine, 1880, while driving across the track five miles west of Van Wert, O., was struck by a train and killed, August 12. He was formerly mayor of Convoy, O., at which place he practiced, and was coroner of Van Wert County. He was a member of the American Medical Association.

John A. Duncan, M.D., McGill University, Montreal, 1884, was a passenger on the steamer *Islander*, and was drowned when that vessel sank off the Alaskan coast, August 15. He was treasurer of the Council of the College of Physicians and Surgeons of British Columbia, and was a practitioner at Victoria.

John Barnhardt, M.D., a pioneer physician of Canada, died at Toronto, where he has made his home for the past two years, August 9, aged 88. He first practiced in York and later at Streetsville. He afterward moved to Owen Sound, where he lived and practiced many years until his retirement.

Henry M. Downs, M.D., University of Michigan, Ann Arbor, 1880, died from cirrhosis of the liver, at his home in Kansas City, Kas., August 13, aged 41. He was for two years on the staff of the Osawatomie Insane Asylum. He was a member of the Kansas City (Mo.) Academy of Medicine.

Robert Barnwell Rhett, M.D., Medical College of the State of South Carolina, Charleston, 1879, died at St. Francis Xavier Hospital, Charleston, August 7, from typhoid fever, aged 47. He was Dean of the Charleston Medical School, and a member of the American Medical Association.

R. L. Boynton, M.D., Southern Medical College, Atlanta, 1889, until recently a practitioner at Geneva, Ga., died at his home in Columbus, Ga., August 9, from pulmonary tuberculosis, aged 38. His death was hastened by the death of his wife and an infant child on July 21 last.

Wiley Fussell, M.D., Atlanta Medical College, 1893, was waylaid and instantly killed about ten miles east of Fitzgerald, Ga., August 12, by a man with whom he had previously quarreled. He was a practitioner of Whitley, Ga.

Asa T. Fricks, M.D., Washington University School of Medicine, Baltimore, 1869, of Rising Fawn, Ga., was shot and killed, August 10, while horseback riding, as the result of a quarrel of long standing.

Edward G. Beeson, M.D., formerly assistant surgeon of the 39th Infantry, died at Marshalltown, Ia., August 15, from illness contracted while serving in the Philippines, aged 32.

Arthur L. Emerson, M.D., Medical School of Maine, Brunswick, 1878, died suddenly at his home in Chester, N. H., August 16, aged 52. He formerly practiced in Manchester.

George H. Long, M.D., Missouri Medical College, St. Louis, 1854, died from a stroke of paralysis, at his home in Barry, Ill., July 29, aged 71.

Edwin H. Cooper, M.D., Bellevue Hospital Medical College, New York, 1873, died at his home in Henderson, Ill., after a long illness, August 15.

Joseph H. Osterstock, M.D., University of Pennsylvania, Philadelphia, 1872, died at his home in Easton, Pa., after a short illness, June 30, aged 65.

Burns H. Dever, M.D., Kentucky School of Medicine, Louisville, 1882, died from appendicitis, at his home in Hume, Ill., August 14, aged 42.

Timothy S. Fish, M.D., Detroit Medical College, 1873, died at his home in Wolcott, N. Y., from heart failure, August 10, aged 55.

Mark M. Warren, M.D., Southern Medical College, Atlanta, 1889, died suddenly at his home in Macon, Miss., August 13.

George B. Caldwell, M.D., College of Physicians and Surgeons, Baltimore, 1886, died at his home in Newberry, S. C., July 5.

Edward P. Hay, M.D., University of Buffalo, 1899, died in the German Hospital, August 10. He practiced in Buffalo.

Fred J. Tompkins, M.D., Albany Medical College, 1885, died at his home in Lansingburg, N. Y., August 12.

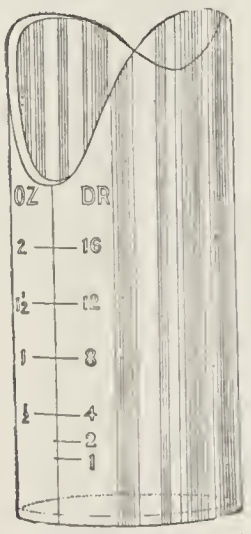
Augustus V. Park, M.D., Rush Medical College, 1883, died at his home in Chicago, August 14, aged 50.

New Instrument.

NASAL DOUCHE CUP.

W. J. EVANS.
NEW YORK CITY.

This cup has been designed to meet the demand for an instrument for washing out the nasal cavity, which could be used without fear of injury to the breathing passages, or forcing of fluid into the Eustachian tubes. It admits of the natural method of cleansing the nose. The fluid is placed in the cup, the higher curve of the rim being adjusted beneath the nostrils. The cup is tilted until the liquid enters the nostrils, then, closing the mouth, a slight drawing in of the breath causes the solution to enter the nose and naso-pharynx, thus bringing it in contact with all parts of the nasal mucous membrane. The solution may be allowed to pass to the back of the throat, and be expelled through the mouth. If it is desired to douche one nostril at a time, this may be easily accomplished by alternately pressing the elevated rim of the cup against the wing of the nostril, thus completely closing it.



One-quarter actual size.

Societies.

COMING MEETINGS.

Rocky Mountain Inter-State Medical Association, Denver, Colo., Sept. 3-4, 1901.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 17-19, 1901.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.

Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.

Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.

Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.

Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.

Vermont State Medical Society, Bellows Falls, Oct. 10-11, 1901.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Muldraugh Hill (Ky.) Medieal Soeiety.—At the meeting of this Society held at Elizabethtown, August 8, the following officers were elected: Dr. Aloysius G. Blincoe, Bardstown, president, and Dr. Argus D. Willmoth, Rineyville, secretary.

Couneil Bluffs (Ia.) Medieal Society.—The thirty-fifth annual meeting of this Society was held August 8, and the following officers were elected: Dr. Donald Macrae, president; Dr. J. H. Cole, vice-president, Dr. Frank Dean, secretary, and Dr. Henry B. Jennings, treasurer.

Texas State Association of Health Offieers.—At the meeting of this Association held in Dallas, August 6, officers were elected for the coming year, as follows: President, Dr. Isaae J. Jones, Austin; vice-president, Dr. William H. Blythe, Mt. Pleasant, and secretary and treasurer, Dr. James E. Wilson, Dallas. The next meeting will be held in Austin.

Erie County (N. Y.) Hospital Alumni Assoeiation.—The former internes of the hospital met at Buffalo recently and organized this Association, electing the following officers: Dr. George Ward, Staten Island, president; Dr. Milton P. Messinger, Swormville, vice-president; Dr. Frederick W. Filsinger, Buffalo, secretary; Dr. Frederick H. Mills, Buffalo, treasurer, and Dr. Louis H. Beyer, Buffalo, librarian.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Inebriety Outside of Hospitals.

The following outline of treatment is the plan of Charles L. Dana, of New York, as published by the *Med. Rec.*: The patient, according to Dr. Dana, should stop drinking and usually smoking, and take for three weeks a mixture of nux vomica, capsicum and cinchona as follows:

R.	Tinct. nucis vom.	℥i	32
	Tinct. capsici	ʒi	4
	Tinct. cinchon. rubræ	℥v	160

M. Sig.: One teaspoonful three times a day, increased by twenty drops daily to half an ounce three times a day.

He states that the maximum dose should be continued for a week, and then reduced as it was increased. At the same time he is in the habit of giving two teaspoonfuls of sodium bromid daily when the patient is nervous, irritable or troubled with insomnia. The patient should be fed well and very often, and avoid getting tired or hungry. When the desire for drink comes on the patient should be told to take two teaspoonfuls of the above mixture of nux vomica and cinchona, to which is added 1/120 grain of atropin sulphate, and he should take hot milk or beef tea to relieve the fatigue. After two weeks' rest from medicine, the course should be repeated under the supervision of the physician. After a second course, a month's interval may be allowed and then the treatment repeated, and so on.

For Chordee.

The following is recommended for the relief of chordee, by Dalton, in *Edin. Med. Jour.*:

R.	Liq. morph. hydrochlor.	m. xv	1 |
	Cocainæ hydrochlor.	gr. ss	|03
	Aq. destil q. s. ad	ʒii	8 |

M. Sig.: Inject into the urethra and hold five minutes, just before retiring.

He states that the bowels must be kept freely open by giving a cathartic pill every third day during the acute stage and avoid saline purgatives. The urine should be kept alkaline by potassium bicarbonate and acetate combined with the tincture of hyoscyamus.

Treatment of the Cough in Tubereulosis.

Dr. L. Weber, in *New York Med. Jour.*, recommends the following in the treatment of cough and general irritability:

R.	Sodii bicarb.	ʒi	4 |
	Morph. sulphates	gr. i	|06
	Aq. Laurocerosi	ʒi	4 |
	Aq. chloroformi	℥vi	192 |

M. Sig.: One to two teaspoonfuls in two tablespoonfuls of water every three hours.

To combat the disease, instead of prescribing creosote in capsules mixed with oil, he recommends the following:

R.	Creosoti Alcoholis āā	ʒi	32 |

M. Sig.: Ten drops in half glass of milk after meals.

Treatment of Speeific Uleeration of Pharynx.

C. A. Parker, in the *Month. Encyl. of Med.*, states that in all forms of tertiary syphilis of the pharynx the combination of potassium iodid internally and mercurial inunction is especially useful and should be employed early. In tertiary ulceration, the ulcer should be thoroughly cleansed and insufflated with iodoform or in some cases with heated calomel. If pain is present it will be relieved by applying orthoform locally: one insufflation of this will usually relieve the pain for twenty-four hours. The gargle for the patient to use at home should be composed of the following:

R.	Potassii chloratis	gr. x	|66
	Lotionis nigræ	ʒss	16 |
	Aquæ q. s. ad	ʒi	32 |

M. Sig.: Use as gargle twice a day to relieve pain and cleanse the throat.

Medieal Treatment of Appendieitis.

Rosewater, in *Med. Record*, states the bowels should be evacuated by administering mild chlorid of mercury followed by a saline laxative. Give a high enema of the normal saline solution if an abscess can not be made out. The patient should be constantly kept on his back. Milk should constitute the diet, which serves the purpose better when predigested. Opiates should be prohibited, but ice applications used instead. For nausea small doses of calomel and cracked ice are good, and for the nervous symptoms a combination of salol, phenacetin and caffein citrate is of greatest value. Use stimulants when necessary. Give potassium iodid in three-grain doses every 4 hours. This will hasten absorption of the exudates.

Treatment of Bubo.

Frederic Griffith, in *New York Med. Jour.*, states that a bubo is, until pus-formation takes place, a local affection, and the aim should be, in the early treatment, toward the prevention of this change by the employment of abortive measures.

The application at bedtimes of an ice bag, a towel wrung out in boiling water, or a flaxseed poultice, will, if carefully carried out with energetic treatment of the origin of the infection, allay the trouble in at least one-third of the cases. He also recommends the following to be applied daily:

℞ Ung. hydrargyri
Ung. belladonnæ
Ung. ichthyolis āā 3ii 8

M. Sig.: Apply locally once a day.

In cases where puncture is made early for the relief of pain, and the infected gland will not discharge, 5 or 10 drops of pure carbolic acid are to be injected through a hypodermic syringe into the center of the mass of hardened cellular tissue. Should the action be too great, alcohol 95 per cent. will neutralize the effect if injected soon after the introduction of the acid.

The Best Way of Prescribing Calomel as a Purgative.

In some very interesting essays upon this subject in the *New York Med. Jour.*, a study as to the best time of administration as well as the best method of administering is presented by the different writers. According to Dr. E. M. Merrins, in patients particularly difficult to purge, as in plethoric and sthenic individuals requiring a thorough cleansing of the liver, calomel should be prescribed in two medium doses combined with other drugs to increase glandular secretion, as follows:

℞ Hydrarg. chloridi mitis.
Sodii bicarb. āā .....gr. vi |36
Pulv. jalapæ .....gr. v |30
Resinæ podophylli .....gr. 1/4 |015

M. Ft. chart. No. ii. Sig.: One powder to be taken at eight and the other at ten o'clock, to be followed by a dose of magnesium sulphate in the morning.

Dr. J. B. Corsiglia states that the best way of prescribing calomel for its purgative action is in small doses, one-sixth of a grain for an adult, repeated every hour till twelve doses have been given, always associated with small doses of sodium bicarbonate and sugar of milk. A seidlitz powder should follow. His reasons are as follows: The sodium bicarbonate prevents the griping, the sugar of milk helps its eliminating power. A slow but steady action of the calomel upon the intestinal glands is desired so as to allow a gradual escape of the bile. On the other hand, with a single dose the glands are overstimulated, giving them more work to perform than nature has designed and as the result they are left sluggish and weak.

Dr. B. E. Henrahan states that by the action of nitric or nitro-hydrochloric acid, calomel is slowly converted into corrosive sublimate; the chlorids also produce corrosive sublimate; it should therefore not be prescribed at the same time with ammonium chlorid or nitro-hydrochloric acid. The power of calomel to salivate is increased by long trituration with sugar of milk, perhaps on account of the extremely fine division to which it is brought. When used as a purge calomel should be used in doses of one-sixth to one-half grain every fifteen minutes until one or two grains are given. The reason that small doses are as efficient is that only the calomel which is changed into the gray oxid is active and as there is only a small amount of alkaline juice in the intestine, if calomel is taken in large doses, the greater portion escapes unchanged. In diarrhea of children or infants who have flatulence, a fetid breath, and ill-smelling green stools, he recommends the following:

℞ Hydrarg. chloridi mitis |
Pulv. ipecac. āā .....gr. i |06
Sacch. lactis .....gr. xx 1|33

M. Ft. chart. No. x. Sig.: One powder to be taken three times a day.

Treatment of Neurasthenia.

M. Allen Starr, in *New York Med. Rec.*, states that in neurasthenia, which often precedes melancholia, and which has for its symptoms headache, dull pressure in the head and back of the neck, sensations of fulness in the head with disorders of circulation, digestion and elimination, the treatment should be as follows: The diet should consist of meat, fish, oysters, rice, macaroni and hominy; but he states that milk and eggs, potatoes, turnips, beets and tomatoes do not as a rule agree. All stimulants should be avoided. For the digestive tract he recommends the following:

℞ Sodii salicylatis .....gr. x |66
Sodii phosphatis .....3i 4|
Sodii chloridi .....3ss 2|

M. Sig.: This powder to be taken first thing in the morning.

To counteract the toxic agent in the intestinal tract he recommends the following:

℞ Sodii sulphocarbol. .....gr. v |30
Potassii permangan. .....gr. i |06

M. Fiat capsula (shellac) No. i. Sig.: One such capsule three times a day on an empty stomach. [The foregoing is put up in shellac as it will then be insoluble in the stomach, but will dissolve in the alkaline media of the intestine.]

As a substitute for the above intestinal antiseptic he recommends the following:

℞ Salol .....gr. v |33
Olei ricini .....m. x |66

M. Fiat capsula No. i. Sig.: One such three times a day. before each meal; or:

℞ Sodii benzoatis .....gr. ii |12
Zinci sulphocarbol .....gr. i |06
Beta-naphthol. .....gr. i |06

M. Fiat capsula No. i. Sig.: One such three times a day.

Treatment of Tapeworm.

Margossian, as noted in *Phil. Med. Jour.*, states that he was unsuccessful in removing the head of a tapeworm from a patient, who had been suffering for ten years, by administering ten-drop doses of the oleoresin of male fern. So he determined to find out the merits of the drug by administering it in one-half ounce dose at one time. Within two hours' time the expulsion of the tapeworm, including the head, took place. Since then he has treated five other cases after the same plan with as good success. No complications or symptoms of poisoning were present.

Medicolegal.

Condition of Brain may be Shown by Photograph.—The testimony of the experts, in the homicide case of Monson vs. State of Texas, showed that there was a blow on the left side of the head of the deceased which fractured the skull for an inch or so, and that on the opposite side of the head and on the brain was clotted blood. In connection with the expert testimony, the state was permitted to introduce before the jury a photograph of the head of the deceased, showing the condition of the brain after the removal of the skull at the autopsy, which photograph, the expert witnesses stated, correctly represented the conditions which they purported to show. This was objected to. But the Court of Criminal Appeals of Texas does not consider that it was error. It says that it does not believe that it was calculated to unjustly prejudice the rights of the accused before the jury, while, under the authorities, it believes this character of evidence is admissible.

Fifteen Thousand Dollars for Loss of Legs.—While it thinks the amount large—much larger than it would have awarded if the case had been submitted to it to assess the damages—nevertheless, the Court of Appeals of Kentucky affirms, in Illinois Central Railroad Co. vs. Stewart, a judgment for $15,000, rendered on the third trial, for the loss of both legs by a switchman, his legs having been so left that artificial limbs could not be used, besides which it was evident that he must have suffered long and a great deal, and had his vitality greatly weakened by the injuries upon his body, his death finally occurring. What is a fair compensation to a man for such injuries it declares is hard to estimate; for not only is his capacity to labor destroyed, as in case of death, but the capacity to suffer remains; and not the least of this is mental suffering in such a situation. And, the law having

provided another form for the assessment of damages in cases of this character, the Court of Appeals says that, where punitive damages may be allowed by the jury, it is only in extreme cases, where the damages are so excessive as to strike the mind at first blush as unreasonable, that it can interfere. It also holds that evidence as to a bruise on the switchman's back which sloughed out, and other proof as to his treatment, were competent to show the character and extent of his suffering.

The Requirements of a Malpractice Case.—In the case of Wheeler vs. Bowles, where there was a charge of malpractice in the treatment of a dislocated shoulder, and it was contended, in defense, that the treatment rendered was proper and that all the trouble was owing to a negligent second dislocation after the case had been dismissed, the Supreme Court of Missouri, Division No. 2, has affirmed a judgment for the plaintiff for $4000 damages. It holds that the instructions given the jury were remarkably fair and contained every element necessary, requiring the jury to find that the defendant was employed by the plaintiff to set and heal her dislocated shoulder, and that he negligently treated and managed it, and, through his negligence, the dislocation was not reduced, and the plaintiff's shoulder had become permanently injured, lamed, and disfigured, and then leaving the jury to find the amount that the plaintiff should recover for such injury. It thinks this sufficient, especially as one of the instructions deprived the plaintiff of the right to recover her loss of time and services, because she was a married woman, and the services of a wife belong wholly to her husband. If it was desired to have the jury restricted to certain elements of damages, an appropriate instruction on that subject, it holds, should have been offered. By the fourth instruction given the jury were told that in determining this case they were to consider that the defendant did not warrant a cure, but his contract, as implied in law, was that he possessed that reasonable degree of learning, skill, and experience which was ordinarily possessed by others of his profession; that he would use reasonable and ordinary care and diligence in the treatment of the case; and that he would use his best judgment, in all matters of doubt, as to the proper course of treatment. The defendant was not responsible in damages for want of success, unless it was shown from the evidence to result from the want of ordinary skill and learning, and such as was ordinarily possessed by others of his profession, acting under like circumstances, or from want of ordinary care and attention.

Proof of Insanity—Records—Rule as to Continuing.—Insanity, the Supreme Court of Wisconsin says, in Hempton vs. State, is provable by circumstantial evidence mainly, all the acts and mental characteristics of the person whose sanity is in question, covering a considerable period of time prior to the particular time in question and thereafter as well, being material. On the trial of the issue of insanity in a prosecution for a criminal homicide, it is proper to show on the part of the accused that he was adjudged insane and committed to the State Hospital at a time previous to the homicide, and the facts on which the adjudication took place, and to that end introduce in evidence the reports of the examining physicians. The daily record of a patient at the Hospital for the Insane, kept in accordance with a statute requiring such a record to be kept, is admissible in evidence to show the mental characteristics of the patient while at the hospital in any judicial proceedings where the facts in that regard are material, under the general rule that a public record required to be kept for public purposes is admissible in a judicial proceeding where such matters are material. The doctrine, once insane always insane till the contrary is established by evidence, is not and never was an absolute rule. It never applied to occasional or intermittent insanity. It is only where the insanity is once proven to exist and to have been of the character likely to become permanent it properly applies. Moreover, the rule that a person adjudged insane continues so till the contrary is shown, applied to insanity of a nature liable to be permanent, is a rule of evidence subject to reasonable change by legislative will. And, under the statutes of Wisconsin, after a person has been on parole continuously from the hospital for the period of two years or more, the adjudication upon which he was committed to the hospital is no longer prima facie proof of insanity. The verdict of the jury, on the special issue as to the sanity of a person charged with a criminal offense at the time of the alleged commission thereof, that he was sane, precludes further inquiry as to mental impairment at such time, entirely excusing the accused from legal responsibility; but on the plea of not guilty, evidence is permissible tending to show a condition of mind—whether produced by the use of intoxicating liquor or any other cause—rendering the accused incapable of forming a specific intent to commit the crime of murder at the time of the alleged offense, and bearing on the character of the offense if he is guilty at all. On the question of whether, because of an abnormal mental condition, the accused, in a prosecution for criminal homicide, was capable of forming a design to kill, a material issuable question arises involving mental condition, which may be evidenced by proof of the use of intoxicating liquors or by any other adequate disturbing cause.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical News (N. Y.), August 10.

1 *The Condition of the Kidneys with Reference to the Employment of Diuretics. Arthur R. Elliott.
2 *The Therapeutics of Subacute and Chronic Heart Diseases. Thomas Satterthwaite.
3 Gouty Affections of the Kidneys. Richard K. Macalester.
4 Uremia and Its Differential Diagnosis. S. D. Hopkins.
5 The Cardio-vascular Changes of Renal Disease. J. N. Hall.
6 *Renal Functions and Life Insurance. Clinton G. Hickey.

Medical Record (N. Y.), August 10.

7 *The Propagation of Yellow Fever; Observations Based on Recent Researches. Walter Reed.
8 *Empyema of the Antrum of Highmore in Young Infants. Emil Mayer.
9 *The Selection and Sterilization of Muriate of Cocain for Spinal Anesthesia. William C. Riley.
10 A Case of Primary Epithelioma of the Uvula. Seymour Oppenheimer.
11 Multilocular Cyst of the Inferior Maxilla; Operation; Recovery. J. A. Otte.

Philadelphia Medical Journal, August 10.

12 Some Contrivances for Applying Carbonic Acid Douches for Therapeutic Purposes. A Rose.
13 *The Bucco-antral Route in Neurectomy for the Relief of Tic Douloureux. Gordon King.
14 A Case of Tic Douloureux, with Successful Removal of the Gasserian Ganglion; with Photograph of the Patient. Henry T. Williams.
15 *Diagnosis and Prognosis of Heart Disease. M. H. Fussell.
16 *General Remarks on Painful Affections of the Feet. Frank E. Peckham.
17 *Report of a Case of Raynaud's Disease. Benjamin F. Lyle and John E. Greiwe.

American Medicine (Philadelphia). August 10.

18 Expectant Treatment. A. Jacobi.
19 *Fusel-oil Poisoning with Special Reference to the Copper Reducing Substances Eliminated in the Urine. Thomas B. Futcher.
20 *Acute Dilatation of the Stomach. Julius Friedenwald.
21 *Two Cases of Vicious Circle, After Gastroenterostomy. (Concluded.) Theodore A. McGraw.

Boston Medical and Surgical Journal, August 8.

22 *Scientific Research: The Indispensable Basis of All Medical and Material Progress. (Concluded.) George B. Ferguson.
23 *A Critical Note upon Clinical Methods of Measuring Blood Pressure. William H. Howell and C. E. Brush, Jr.
24 *The Relation of Bodily Mutilations to Longevity. John Homans.
25 *The General Character of the Problems of Public Health Bacteriology. Hibbert W. Hill.
26 *Intracranial Pressure After Head Injuries. Walter B. Cannon.

New York Medical Journal, August 10.

27 *Cleft Palate and Its Association with Hare-lip. John H. Branth.
28 *Acute Lobar Pneumonia: a Pathological and Clinical Study of 120 Consecutive Cases Subjected to Postmortem Examination. John Lindsay Steven.

29 *Suggestions for a Study of Fats in Their Relation to Physiological Chemistry, Therapeutics and Toxicology. John Reid.
30 *The Home Treatment of Tuberculosis. Irwin H. Hance.
31 *A New Method of Testing for Lactic Acid. Mark I. Knapp.

St. Louis Medical Review, August 10.

32 Obstruction of Bowels. H. C. Dalton.
33 Remarks About Hemolysis. C. Fisch.

Cincinnati Lancet-Clinic, August 10.

34 *The Early Operation for Appendicitis from a Pathological Standpoint. J. G. Carpenter.
35 Some of the Evils of Married Life. Brose S. Horne.

Northwestern Lancet (Minneapolis), August 1.

37 A Brief Review of the Treatment of Diphtheria. J. C. Litzenberg.
38 Cure of a Case of Popliteal Aneurism by Pressure. Geo. Douglas Head.

Illinois Medical Journal (Springfield), August.

39 *The So-called Traumatic Neurosis. Harold N. Moyer.
40 *The Home Treatment of Tuberculosis. Robert H. Babcock.
41 The Inoculation Theory of Malarial Fever Through the Agency of Mosquitoes. S. E. Munson.
42 Diagnosis of Malaria in Children. Everett J. Brown.
43 That Ounce of Prevention. Charles B. Johnson.

Cleveland Medical Gazette, August.

44 A Case of Dermatitis Exfoliativa Neonatorum (Ritter). A. Ravogli.
45 Laboratory Feeding, with Especial Reference to the Modified Milk Fund. J. J. Thomas.
46 Substitute Feeding of Children. E. H. Lueke.
47 The Feeding of Children After the First Year. Miriam G. Kerruish.
48 Dosimetric Medication in Pediatric Practice. M. Borts.

Medical Dial (Minneapolis), August 1.

49 Events in the History of American Surgery—A Brief Review. Franklin Staples.

Buffalo Medical Journal, August.

50 *The Fan System of Heating, Ventilating and Air-Supply of Certain Buffalo Schools. Henry Reed Hopkins.
51 *Prostatic Hypertrophy. Marshall Clinton.
52 *Some Thoughts, in Lighter Vein, on the Practice of Medicine from a Business Standpoint. Devillo W. Harrington.
53 Charity by Proxy or Semi-Charity, and Its Disastrous Effect upon the Physician. Marcell Hartwig.
54 Gross Anatomy—A Brief Résumé of the Anatomy of the Kidneys. Byron H. Daggett.

Medicine (Detroit, Mich.), August.

55 Recent Progress in Bacteriology. D. H. Bergey.
56 Notes from the Children's Ward. Abraham Jacobi.
57 Fractures of the Clavicle. Carter S. Cole.
58 Removing the Eyeball: A Discussion of Some Methods. Frank Allport.

Louisville Monthly Journal of Medicine and Surgery, August.

59 *Miscarriage and Its Treatment. Walker B. Gossett.
60 *The Conduct of the Second Stage of Labor, in Private Practice. Edward Speidel.
61 *The Puerperium. John G. Cecil.
62 *Instrumental and Operative Obstetrics. Arthur T. McCormack.
63 *Some Interesting Experiences in Obstetrics. W. E. Sleet.

Brooklyn Medical Journal, August.

64 The Brooklyn Water Supply. Arthur S. Tuttle.
65 Tuberculosis of the Bladder. Homer E. Fraser.
66 Serum Therapy in Streptococcal Injection. Earl H. Mayne.

Oklahoma Medical Journal (Guthrie), July.

67 Obstetrics. S. E. Knight.
68 Has Medicine a Scientific Basis? U. L. Russell.

Albany Medical Annals, August.

69 Biographical Sketch of the Late Professor Maurice Perkins, M.D., of Schenectady, N. Y. Willis G. Tucker.
70 *The Bacteriology of Lobular Pneumonia, Especially in Adults. George Blumer.
71 *A Single Experience with Von Ruck's "Tuberculinum Purificatum. Wilfred S. Hale.
72 Some Observations on the Treatment of Cough. G. Franklin Smith.
73 A Case of Purpura Hemorrhagica. E. E. Hinman.

Canadian Journal of Medicine and Surgery (Toronto), August.

74 Ectopic Gestation. R. W. Garrett.
75 The Early Recognition and Treatment of Pulmonary Tuberculosis. Alexander McPhedran.
76 Remarks on Modern Views of the Sources of Typhoid Fever. J. J. Cassidy.

St. Louis Medical and Surgical Journal, August.

77 A Case of Keratosis Palmaris et Plantaris. A. H. Ohmann-Dumesnil.
78 Some of the Difficulties of Getting Europe to Adopt International Leper Law. Albert S. Ashmead.
79 An Ointment for Diseased Mucous Surfaces. A. S. MacDonell.
80 *Home Treatment of Tuberculosis. Lawrence F. Flick.

Virginia Medical Semi-Monthly (Richmond), July 26.

81 *Tonsillitis from the Standpoint of the General Practitioner. A. L. Gray.
82 Penetrating Gunshot Wound of the Abdomen. Thomas D. Burgess.
83 Clinical Value of Some of the Newer Hypnotics: Dormiol; Chloretone; Hedonal. Albert E. Brownrigg.
84 *A New and Original Method of Operating upon the Inguinal Canal. Jacob Michaux.
85 Autopsies, How Made, and Their Interpretation. C. W. Canan.

Medical Summary (Philadelphia), August.

86 Prolapsus of the Anus and Rectum. George J. Monroe.
87 Advertising vs. Ethics. Floyd Clendenen.
88 Typhoid Fever. S. A. Buchanan.
89 Disease and Old Age. J. L. Wolfe.
90 Natural Laws. W. F. Ball.
91 Methylene-Blue. Ira A. Marshall.
92 The Treatment of Typhoid Fever. Charles W. McIntyre.

Pediatrics (N. Y.), August 1.

93 Clinical Demonstrations at the New York Post-Graduate Medical School and Hospital. Augustus Caille.
94 *High Temperatures in Scarlatina and Measles, as Related to Gastrointestinal Toxins and Fermentation. Arthur DeVoe.
95 *Suppression of Urine. M. H. Fussell.
96 A Case of Taenia Saginata in a Child of Twenty-four Months from the Use of Raw Scraped Beef for the Relief of Chronic Intestinal Disturbance. D. J. Milton Miller.
97 A Case Resembling Morbus Caeruleus, Probably Due to a Dusting Powder Containing Acetanilid. Samuel W. Earp.

Medical Times (N. Y.), August.

98 Case of Brain Tumor. Samuel G. Dabney.
99 Two Cases of Secondary Hemorrhage. Ewing Marshall.
100 Genu-Valgum; Nephrectomy. J. R. Wathen.
101 Anemonin. Wm. F. Waugh.

Southern Practitioner (Nashville, Tenn.), August.

102 Annual Address before the Nashville Academy of Medicine. A. B. Cooke.
103 Ergoapiol (Smith) as an Emmenagogue and Oxytocic. M. A. Auerbach.

Maryland Medical Journal (Baltimore), August.

104 *The Prevention of Tuberculous Disease in Infancy and Childhood. S. A. Knopf.
105 *Registration of Tuberculosis. Lawrence Flick.
106 *Distribution of Tuberculosis in the City of Baltimore. C. Hampson Jones.
107 Care of the Indigent Tuberculous. H. Warren Buckler.

Carolina Medical Journal (Charlotte), July.

108 Exhibition of Three Cases. (Necrosis of ileum, etc.) H. A. Royster.
109 The Importance of Early Diagnosis and Treatment of Tuberculosis. J. P. Munroe.
110 The Conservative Treatment of Diseases of the Uterus. John Thames.
111 The Problem of Typhoid Fever in the Rural Districts of North Carolina. H. W. Lewis.

Dominion Medical Monthly (Toronto), July.

112 President's Address, Ontario Medical Association. Angus MacKinnon.
113 *Results of Experiments with Diphtheria Antitoxin at the Isolation Hospital, Toronto. E. B. Shuttleworth.

Atlanta Journal-Record of Medicine, August.

114 A Case of Splenectomy, with Remarks. J. P. Bryson.
115 Vaccination. Joseph Grindon.
116 The Physiological Therapeutics of Religious Mania. C. A. F. Lindorme.
117 Tonsillitis from the Standpoint of the General Practitioner. A. L. Gray.
118 A New Non-Surgical Treatment for Inflammatory Exudates and their Residua in the Female Pelvis. Hugo Ehrenfest.
119 An Unusual and Probably Unique Complication (General Emphysema) of Tracheotomy. E. C. Ellett.

Journal of Tuberculosis (Asheville, N. C.), July.

120 *Tuberculosis of the Upper Air Passages. Albert Rosenberg.
121 *Steps in the Prevention of the Spread of Tuberculosis. F. M. Pottenger.
122 *Tuberculosis Due to Toxemic States. T. D. Crothers.

123 *A Single Experience with Von Ruck's Tuberculinum Purificatum. Wilfred S. Hale.
124 A Contribution to the Question of People's Sanitaria. Hans Welcker.

Mississippi Medical Record (Vicksburg), August.

125 Report of Four Cases of Puerperal Eclampsia Treated with Norwood's Tr. Veratrum Viride. W. A. Johns.
126 Treatment of Typhoid Fever in the Tom Franklin Hospital, Columbus, Miss. May F. Jones.
127 Ergot in Obstetrics. E. P. Jones.
128 Treatment of Whooping Cough. H. H. Haralson.

Fort Wayne Medical Journal-Magazine, July.

129 *Puerperal Sepsis—A Plea for Greater Accuracy in Diagnosis, to the End that the Treatment May be More Rational and Effective. Miles F. Porter.
130 The Rationale of Subjective Healing. Smith Baker.

Kansas City Medical Index-Lancet, August.

131 Suggestive Therapeutics. Oliver McEuen.
132 Pharyngeal Adenoids and Their Treatment Viewed from the Standpoint of a Country Doctor. J. F. Welch.
133 *The Treatment of Acute Insanities. John Punton.
134 An Unusually Large Dermoid Cyst. W. J. Frick.
135 Some Remarks on the Treatment of Toothache and Other Forms of Neuralgia. A. Toepfer.

AMERICAN.

1. **Diuretics and Kidney Disease.**—Elliott classifies the diuretics and discusses their action. 1. Except in cases of irritant-epithelial diuretics (turpentine, cantharides, etc.), the entire class of diuretics may be said to exert its effect on the urine by acting indirectly through the circulation. 2. Owing to the necessity of sparing the kidneys all irritation, drugs given for diuretic purposes should act indirectly rather than directly, consequently the secretory diuretics are contraindicated in irritative and inflammatory renal conditions. 3. In functional urinary disorders, diuretics are mainly useful to overcome concentration and hyperacidity of the urine, and simple diluents and salines are the best. 4. In acute nephritis salines are permissible throughout and are beneficial by increasing elimination and clearing the tubules of inflammatory débris. Subcutaneous saline infusions are the best eliminants in desperate cases. 5. In chronic nephritis the cardio-vascular diuretics are most useful, owing to the fact that oliguria and dropsy are usually the results of circulatory failure. Dropsy under such circumstances, being of cardiac origin, may be benefited by cardio-vascular stimulants in case the kidneys are not too much damaged. 6. Dropsy of purely renal origin is not amenable to favorable influence by diuretics. 7. Although the morbid processes in the kidneys may give the primary suggestion, the condition of the heart and the circulatory apparatus in most cases determine the choice of an agent.

2. **Subacute and Chronic Heart Disease.**—The newer methods of treatment, according to Satterthwaite, consist in rest alternated with bodily activity, determination of blood to the periphery rather than venesection, and a careful rigid diet with stomachics if necessary. He holds that systemic invigorants or alteratives with or without mild cardiac sedatives should supplant the so-called heart stimulants now employed, reserving the latter for emergencies arising from complications such as pneumonia, advanced Bright's disease, diabetes, abdominal dropsy, and where the aim is merely to sustain life during the period of cardiac strain. He insists on the importance of exercise, but does not disparage rest, though too much of the latter tends to cause degeneration. Complete rest has been supplanted by rest alternated with bodily activity; venesection by the determination of the blood to the surface, with resistant exercise and carbonated baths; and hydragogue cathartics have been replaced by mild stomachics, laxatives and diuretics; and heart stimulants by general nerve stimulants or sedatives and nutrients. While drugs of the digitalis group are utilized chiefly for their diuretic action in renal complications, viz., parenchymatous nephritis or abdominal dropsy, drugs of this digitalis group, which includes strophanthus, convallaria and adonis, are always uncertain, and therefore always dangerous and should be employed either only when other remedies are inadvisable or when we are endeavoring merely to prolong life.

6. **Renal Function in Life Insurance.**—The urinary abnormalities, especially albuminuria, and their relation to life insurance are discussed by Hickey, who thinks that the medical examiner is justified in recommending for insurance any applicant (below middle life) whose urine may have shown albumin or casts or both, only after continued observation for a long time, and even then, only as a sub-standard risk. The only exception to this rule may be made in the case where, with other evidences of perfect health, the use of the centrifuge revealed only a few stray hyaline casts. After middle life the rule should be practically absolute against recommendation in this class of cases. In many cases near or past middle life the condition of the heart and blood vessels is important. The apex beat beyond the nipple line, an accentuated aortic second sound, with a moderate atheroma, with increased pulse tension should be suspiciously suggestive of a contracted kidney. In this condition of low specific gravity of the urine the albumin is often absent for days together, and special tests and delicate examinations are required.

7. **Yellow Fever.**—Reed gives a review of his experiments and the conclusions to which he has been led. He criticizes the evidence which is advanced against them, and says he has not found in the literature a case of infection by fomites reported that will bear intelligent criticism. His paper is a rather elaborate statement and a very strong argument in favor of his point of view.

8. **Empyema of the Antrum in Children.**—Mayer reports a case in addition to the dozen or so in the literature and discusses the condition generally. He is inclined to believe that infection of the antrum of Highmore is quite common in fatal cases of diphtheria and scarlet fever and probably may occur in some cases which end in recovery. In all reported cases the symptoms are the same: Fistula under the eye usually discharging pus, ectropion, one-sided purulent discharge from the nose with foul odor and eroded bone. Careful observation, especially in nasal diphtheria, may enable us to discover these cases. Incision, curettage and thorough drainage will be followed by complete cure in the vast majority of cases.

9. **Cocain.**—The sterilization of cocain for spinal anesthesia is apparently not always duly observed and Riley offers a method of dry sterilization which he thinks fills all requirements and which he gives as follows: Carefully selected muriate of cocain is broken in a mortar into moderately fine fragments and heated in a dry sterilizer to 110 C. for about twenty minutes and then bottled in a clean, dry bottle with a tightly-fitting rubber stopper. This insures a dry salt to begin with, which is quite essential for the after-process. Small graduated vials or glass tubes are taken and carefully cleansed, dried and flamed, and when cool such an amount of the cocain is weighed off into each as will make, when the vials are filled to this mark with sterilized water, a 2 per cent. solution. The mouth of the tube is then closely stoppered with a plug of freshly dry-sterilized absorbent cotton (150-160 C. for one hour). It is then placed in a dry sterilizer and the temperature gradually raised to from 145 to 150 C. and maintained at that temperature for from ten to sixty minutes. Ten minutes is usually sufficient time to fulfill all bacteriological requirements, but there might be a possibility of contamination with certain spores which would require the longer period. One hour's heating of this dried cocain at this temperature does not impair its efficiency, notwithstanding many statements in the books to the contrary. The advantages offered in this method are stated by him as follows: 1. Perfect sterility. 2. The product being dry it lasts an indefinite time, the only thing being necessary when required for use is to sterilize the outside of the container in any convenient manner except boiling—as, for instance, simply flame the cork and neck of the vial, allowing it to become cool before adding water. 3. No necessity to weigh or measure the cocain or water at the time of the operation. 4. Absolute efficiency.

13. **Bucco-Antral Route in Neurectomy.**—King has adopted the plan recommended by Fraenkel for neurectomy of

the trigeminus in obstinate neuralgia and reports two cases. He has modified the Fraenkel method somewhat in such a way as to simplify the procedure and resect a greater length of the nerve and at the same time to assure complete closure of the buccal wound by dispensing with the gauze drain. After incising the mucous membrane and periosteum covering the anterior wall of the antrum, he elevates the periosteum as far up as the infra-orbital foramen, divides the nerve at this point, and opens the entire canal into the antrum. This dispenses, in a measure, with the necessity for a strong light to illuminate the cavity in order to find the nerve in the deeper parts. He also finds no special advantage in a bony flap provided the periosteum is well sutured over the opening made in the anterior wall, as no depression of the cheek results from deficiency of the bone. He found it expedient to remove the nerve by twisting and evulsion instead of cutting through it. In conclusion he pleads for extracranial resection of the nerve trunks in cases of obstinate trifacial neuralgia before resorting to such dangerous operations as are required for resection of the Gasserian ganglion.

15. **Heart Disease.**—The methods of diagnosis of heart disease are reviewed by Fussell, who insists on the diagnosis of cardiac lesion being based on the size of the heart, on its rhythm, on the character of the first sound, and in some cases on the presence or absence of murmur. A heart may be much damaged and give no murmur. An extremely loud murmur may be present and yet the heart be fully competent.

16. **Painful Affections of the Feet.**—While we have apparatus for flat foot and other pedal derangements nowadays, some cases are still resistant, and Peckham speaks of the advantages of massage for such, and also the use of hot-air treatment. He found it of very much benefit in almost every painful case. To save expense he substituted a pail of hot water for the dry heat with very good results and he has been able to have massage given by members of the household instead of a trained operator in all cases. The exercises for the gymnastic work that have been most beneficial are those recommended by Whitman and are best done by the patient sitting, letting the legs rest across a chair or stool. Several cases are reported.

17. **Raynaud's Disease.**—Lyle and Greiwe report a case of Raynaud's disease passing into gangrene and ending in death with pathologic findings in the cord. They consider that we can not long look on Raynaud's disease as simply one of the disorder of the extremities, but rather as a disease of the extremities of the arteries, and we may have a consequent degeneration of not only the extremities, but in the internal organs as well. He thinks we have probably two classes of cases: 1. Those in which the exciting cause acts temporarily and, on cessation, its symptoms disappear. 2. Those in which the cause is yet unknown, acts on the peripheral vessels and causes changes in the caliber by proliferation of the endothelium.

19. **Fusel-Oil Poisoning.**—The literature contains but a few cases of poisoning by fusel oil, and Futcher here reproduces the few which have been reported and reports a couple of his own observation. He also notices Thierfelder and Mering's experiments and reports his own on dogs. His conclusions are as follows: 1. Fusel oil, when administered to animals, causes the elimination in the urine of combined glycuronic acid which reduces alkaline, copper and bismuth solutions and acts as a levorotation to polarized rays. 2. When taken by men it acts as a profound intoxicant, causing unconsciousness of several hours' duration. 3. In one of the cases it was followed by symptoms of hemiplegia. 4. In certain cases, fusel oil is a profound blood destroyer and causes methemoglobinuria. 5. In both cases it caused transitory nephritis. 6. In both patients a glycosuria lasting two or three days was produced. 7. In the two cases there was fairly conclusive evidence that combined glycuronic acid (gepaarte Glukuronsäure) was present in addition to glucose.

20. **Acute Dilatation of the Stomach.**—Little has been said about the acute form of gastric dilatation, though it has been noticed and reported by certain authors. The literature is reviewed by Friedenwald, who reports a couple of cases under his own observation, both due to sudden overloading of the stomach or some gross error in diet. There are certain characteristic symptoms which he notices. These are sudden and rapid distention of the stomach, pain and absence of peristaltic movements, absence of vomiting and diarrhea in the beginning but followed by intense and constant vomiting of greenish fluid, accompanied by great exhaustion. It is probable, as Friedenwald points out, that acute dilatation of the stomach does not occur more often because the stomach in most cases of acute indigestion relieves itself quickly by vomiting and diarrhea. It is, therefore, well to remember in all cases of dyspepsia the possibility of acute dilatation and to empty the stomach quickly and avoid the accumulation of fermented material, which may set up a permanent trouble.

21. **Vicious Circle After Gastro-Enterostomy.**—McGraw ends his paper in this issue with the following practical conclusions: 1. The "vicious circle" may occur whenever the duodenum becomes permanently distended, even though the efferent limb of the jejunum offers an open passage to the ingesta. In all operations of this kind, therefore, an entero-enterostomy should be added to the gastro-enterostomy in order that the duodenum may discharge its contents into the efferent portion of the jejunum. 2. It may also occur from obstruction due to spurs, twists, bends or other entanglements of the intestines. As such accidents may arise from a too short afferent limb of the jejunum, the anastomosis should always be made at such a distance from the duodenum as would make trouble from this cause impossible. The practice of turning the bowel around in order to make its peristaltic movements correspond with those of the stomach has no practical advantage whatever in cases of pyloric stenosis; but, on the contrary, complicates the operation and tends to form a trap in which the intestine may become entangled. It may besides drag the wall of the stomach into a fold which may obstruct the opening into the bowel. This method of joining the viscera should be discarded. 3. As the orifices of communication may, if made too small, contract and become obliterated, the opening should be made at least 5 cm. in length. The effects of any resulting spur-formation will be obviated by the entero-enterostomy. 4. The safest and best method of operating is that by the elastic ligature.

22.—See THE JOURNAL of August 3, p. 327.

23. **Blood Pressure.**—Howell and Brush have experimented with the methods of von Basch and Mosso, and give an analysis of their principles and utility. A number of experiments have been made in dogs on the diastolic and systolic pressure under varying conditions. The results are presented in a tabulated form. An examination of the table seems to justify the following: 1. The mean blood pressure as usually determined by means of the mercury manometer corresponds with a fair degree of accuracy with the arithmetrical mean of the maximum and minimum pressure. 2. Rise of blood pressure caused by an increased heart beat (section of both vagi) affects the diastolic pressure to a greater extent than the systolic pressure. 3. A fall of blood pressure occasioned by bacterial dilatation (section of both splanchnics affects systolic and diastolic pressures equally. In the section of one splanchnic, the fall affected the systolic more than the diastolic pressure, but the heart here was also affected, while section of the second splanchnic did not affect the heart at all and the physical effects of a purely vascular change would seem to be best shown under the latter conditions. 4. It possible for the systolic and diastolic pressure to be affected in opposite directions, as in one experiment in which section of both vagi was intentionally accompanied by a profuse hemorrhage. In this case the mean pressure remained unchanged, the diastolic pressure rising 16 mm. and the systolic pressure falling 15 mm. These experiments, as far as they go, indicate that the general trend of arterial pressure when unaccompanied by hemorrhage is given by instruments measuring either the systolic or diastolic pressure. When possible it is most desirable that the results of one method should be checked by the other. He points out the precautions advis-

able in the use of Mosso's apparatus, where the connections should be rigid and extensible to prevent loss of pulsation. The fingers should be warmed before placing them in the apparatus and a spring recorder of some kind used if the heart-beats are so rapid as to give an uncertain maximum and account of the results should be taken only when the subject has become accustomed to the procedure and is in a relaxed condition. In comparative observations the hands should always be at the same height to equalize the hydrostatic factor. Some precautions are necessary with the Gaertner tonometer, especially regarding the pressure ring: the subject should become accustomed to the proceedings, and also to equalizing the hydrostatic factors. It is necessary to bear in mind also that in men and women there are periodic oscillations of arterial pressure.

24. **Bodily Mutilations and Longevity.**—The relations of bodily mutilation to longevity and life insurance problems are noticed by Homans, who thinks it generally may be said that deprivation of any important part of the body reduces the chances for long life, and he goes over them theoretically. Applicants with skull injuries and loss of substance would be below average as risks; but without loss of substance and symptoms, they would be unaffected from the insurance standpoint. Loss of sight from injury is not necessarily bad for longevity, but where the eye has been removed for malignant growth the case is different. The blind in comparatively comfortable circumstances are as long lived as anyone so far as his experience goes. Losses of the upper extremities are more important the nearer the amputations have been made to the thorax. He finds, however, that the moral effects of such mutilations have to be considered. A well-insured income in such cases would be a safeguard. Amputations of the lower limb average much the same as those of the upper limbs as regards longevity. As a class, persons who have suffered amputations are not so long lived as those unmutilated, but each case must be judged by itself. Injuries to the thorax such as removal of a small portion of one or two ribs for acute empyema, if successful, will not make a person uninsurable provided the lung functions are normal. Injuries to the heart when recovered from would cause declination. Abdominal mutilations as a rule increase the risk, excepting in cases of appendicitis. Persons who have had the appendix removed seem to have as good a chance for long life as any, and excision of small portions of the bowel, if successful, will likewise have little effect. It can not be told with accuracy what is the effect of oxarian operations, but he thinks that those who recover after hysterectomy for myomas have generally a greater probability of longevity than those who recover after ovariotomy, because myomata are seldom malignant. The possibility of ventral hernia is to be considered after abdominal operations. In conclusion, he thinks that people who have suffered amputation or other mutilations are likely to have their chances for long life lessened, but by careful selection many might be picked out who would be good subjects for life insurance.

25. **The Problems of Bacteriology.**—Hill points out the uncertainties, with increasing knowledge, of many of the decisions of bacterial problems in public health, noticing especially the changed views which have been occasioned by the greater knowledge of the allied types of pathogenic germs such as those of diphtheria, typhoid, etc. He tries to point out that the problems of the public-health laboratory in relation to disease are more especially epidemiologic and preventive and involve the study of the science of bacteriology itself as well as of the art.

26. **Intracranial Pressure.**—The conditions causing changes of intracranial pressure from injuries and their results are reviewed by Cannon, who describes the anatomy of the circulation of the cranium, especially of the cortex, the development of thrombosis, extravasations, etc. He finds mischief arises because the brain is surrounded by a rigid case; swelling of any part consequently compresses the only compressible part of the cranial contents, the blood vessels. Injuries to the brain interfere with its proper blood supply. This interference causes an increased osmotic pressure within the tissues, and a consequent taking-up of water from the surrounding plasma. The swelling and edema of the brain after head injuries is not due to passive transudation, as Bergmann and others have maintained, but is a result of active processes in the tissues themselves, a force many times greater than blood pressure, and amply sufficient to produce all the pressure and account for all the signs of intracranial tension which the symptoms of cerebral trauma often manifest.

27. **Cleft Palate.**—Branth gives the developmental mechanism of cleft palate and discusses its pathology. He holds that the same causes that produce rickets in children act in producing cleft palate. Heredity is also mentioned, though he thinks that the disease can usually be explained by the manner of living, feeding or drinking, and intermarriage may also be an element. In the majority of cases where he has been able to get a frank statement from the mother, he has learned that alcoholic intoxication existed in one or both parents at the time of sexual intercourse before conception. He classifies hare-lip and cleft palate into six types: The median, ordinary hare-lip, facial cleft, buccal cleft, mandibular cleft, and lastly the cleft palate proper. Only operative measures are available for relief, and in this regard he thinks the operation is so severe that it is wise to select a time when there is sufficient vital resistance. When the intermaxilla is projected forward he prefers to wait until the central incisors are cut, as they afford a secure anchorage for the stitches which are to unite the intermaxilla with the lateral portions of the maxilla, but the operation should not be deferred, except for special causes, later than two years of age. The various methods of performing the operation are described and the writer gives his own methods. He advises the palate operation as the first step, contrary to what is usually recommended, and the lip operation later. As regards hare-lip operation the simple notch is remedied by the inverted V incision above the vermilion border. The inner V is pulled down and the lateral angles brought together by stitches. The now lower portion must be pendent to allow for cicatricial contraction, or the result will be a small notch. Where the labial fissures extend into the nostril, the problem is to build a floor for the anterior nostril. The cuts are so made as to join the fibers of the orbicularis oris muscle firmly, and by the writer's modification, without angles, the incisions will fall in the line of the infranasal columns., which are in fetal life the lines of union. Cicatrices here will look like normal facial lines, and in later life can not be defined as surgical scars. Hare-lip pins should be relegated to the past. Where the writer has to deal with a projected intermaxilla, and in all hare-lip operations, an aluminum splint of his own device is used for the dressing. For a binder he uses the new zinc oxid adhesive plaster. In all these operations the results depend largely upon good eye-measurements, clean, accurate incisions, carefully fitted flaps and closely fitting sutures; the surgeon should be ambidextrous. A few days after operation the patient should be taken out into the open air. Liquid food should be administered. The hands should be secured to keep them from meddling with the wound. Afterwards special attention should be given to speech education.

28. **Pneumonia.**—This article is an elaborate study of 120 cases of acute lobar or croupous pneumonia, with postmortem examinations. While many of the details of the paper can not be given here, a few prominent facts may be noted. The disease seems to be most prevalent in the male sex and occurs with greatest frequency in early adult life between the ages of 36 and 40, and in middle life between 51 and 55. In females the age incidence was a little earlier, but the number of cases for estimation was smaller. While the studies show that acute pneumonia is not exactly an occupation disease, it is certainly more prone to attack those whose work exposes them to the vicissitudes of the weather. Of the male cases 19 were outdoor laborers, a larger number than of any other class. Season is an important factor; the greater number of cases occur during the months of January, March, and December, and next, May and June; while it occurs at all periods of the year, it is certainly most common in the colder months.

The right lung was affected in the majority of cases; both lungs in 16 out of the 120. Death occurred in most cases during the stage of gray hepatization; the largest number occurred on the seventh day, and a few days following the seventh were also more fatal than the others. Other lesions in the lungs occurred in quite a number of cases, acute pleurisy being the most common. The postmortem showed that in no less than 43 cases the condition of the heart at the postmortem could be described as normal. The most frequent abnormality was dilatation of the right heart. Aortic valve and mitral valve disease occurred 16 times, general hepatization and dilatation 15 times, and pericarditis 13 times in the series. Other organs were affected in different proportions. The spleen was swollen and soft in nearly 50 per cent. The kidneys, which were examined in 62 cases, were found healthy in 16, while in 24 there was cloudy swelling, and in 21 nephritis in one form or another. The brain was examined only 12 times, in 5 of which it was found normal. In 2 cases there was cerebral softening, 1 fracture of the skull, and in 4 cases acute meningitis, which is known to be a common complication of acute lobar pneumonia. The distinction between acute primary and acute secondary pneumonia is made. By the former we mean a disease which begins acutely in ordinary health and runs the usual course. The secondary includes cases where it is the direct effect of some old-standing lesion, the result of septic absorption or insufflation. There were only 18 cases in all, out of the 120, that could be affirmed were truly examples of acute septic lobar pneumonia. As regards the 102 cases of primary disease, he thinks the analysis points to its being a general febrile disease with local lesions, but perhaps invariably in the lung.

29. **Fats.**—Reid sums up his article by stating first that in urinary analysis oleic acid is useful and speedy in dissolving various principles. 2. In analyzing organs—they may be partly analyzed by acidulating and extracting with supernatant oleic acid or the fat should be skimmed off and treated with benzene so as to make a complete analysis. 3. Fat may be used to eliminate poisons from the body. 4. The elective affinity of drugs may be partly due to their fat affinity. 5. The whole subject of fat in its relation to the economy is worthy of careful study.

30. **Home Treatment of Tuberculosis.**—The fundamental needs of patients suffering from tuberculosis are fresh air, good food and rest, and Hance points out how these may be obtained at the patient's home. A south and west room with windows on two sides and an open fire place for winter; in summer an east room with windows on the south will meet the indications. For the summer, tent life, day and night, is the ideal one. The physician should instruct and order the temperature of the sleeping room, especially at night, and how much time the patient should be out of doors. Food should be forced on the patient if necessary. If the patient is capable of eating three good meals a day, give some easily digested food between each two meals and at bedtime. Rest should be absolute in febrile cases, and those at the commencement of treatment for a period of one to four weeks. Exercise should be under the control of the physician. The skin should be looked after. The best plan is to dress warmly enough for indoors and to have very heavy and warm outside wraps. Sweating should be avoided when the patient is quiet. Bathing is important, and a proper hydriatic course, gradually accustoming the patient to cold applications, is advisable. A good cold rub before bedtime is often excellent. He has had patients under treatment along these lines with remarkably good results. He suggests the question whether the idea that climatic changes of the patient are advisable in the treatment of tuberculosis has not retarded progress in the treatment of the disease. His experience seems to point to the fact that under good management, home treatment may be equally successful with that in climate resorts.

31. **Lactic Acid.**—For testing lactic acid in gastric juice Knapp recommends the following modifications of Straus' method: To make this test a very weak solution of ferric chlorid and ether is needed. The strength of the iron solution is 1 to 2000, freshly prepared. The test is performed as follows: One cubic centimeter of the filtered gastric juice is put into a cylindrical separatory funnel and to it is added ether up to five centimeters. The gastric juice, with the ether, is then well shaken, by which procedure the lactic acid, if present, is extracted by the ether. This is allowed to remain quiet for a little while to permit of the separation of the two liquids. About two centimeters of the iron solution are put into a test tube of about half an inch in diameter, the iron solution appearing then practically colorless. The test tube is now held inclined and the ether extract is allowed slowly to run from the separatory funnel on the wall of the test tube, which is now turned to a vertical position. At the line of contact of the two liquids appears the canary-yellow ring, which is in very marked contrast with both the subnatant and supernatant fluids. If this canary-yellow ring is not so well distinguished immediately, then the test tube may be looked at again after a few minutes. To see this yellow ring better a white paper is held behind the test tube, our back being turned toward the source of light.

34. **Appendicitis.**—The point made by Carpenter is that appendicitis is a surgical disease and should be treated as such. He also insists on the importance of the general practitioner recognizing the disease in time and calling in proper surgical aid.

39. **Traumatic Neurosis.**—The main point of Moyer's article is that while there are actual functional disturbances due to traumatism, he does not recognize any special form as the result of such cause. There is no difference between neurasthenia caused by traumatism and that due to autointoxication. The special points of diagnosis between hysteria and hypochondria are mentioned and the over-importance attributed to spinal pain.

40. **Home Treatment of Tuberculosis.**—The hygiene of the patient's daily life is of first importance in the management of consumption, building up of tissue-resistance by superalimentation, open-air life governed by the patient's temperature, hydrotherapy and general care as to metabolism and regulations of daily life. While these are best obtained at a sanatorium they can also be had at home. Babcock advises his patients to take nourishment five to seven times a day and insists on the value of raw eggs and milk and meat diet. We must not listen to patient's assertions that they can not eat so much. He speaks of a young man who had taken fifteen raw eggs and three quarts of milk daily, gained twenty-eight pounds and lost all symptoms of incipient tuberculosis between November and February. Hydrotherapy is also insisted on and the methods described.

50. **School Ventilation.**—Hopkins criticizes the fan method of ventilation in Buffalo schools, considering it a clumsy heating system, inadequate and wasteful. It is a failure in inlet work and a more pronounced failure at outlet work and a determined failure as an air supply, lacking in uniformity, quantity and diffusion. The ideal school ventilation and air supply is a scientific problem of absorbing interest, in view of the fact that delicate and susceptible children and their future are influenced in this way. He makes a comparison between the schools of Buffalo ventilated by the fan system and certain schools of Evanston, Ill., ventilated by the Dickson system, which appears to be more than twice as efficient, though he still thinks it may possibly be open to criticism.

51. **Prostatic Hypertrophy.**—According to Clinton, prostatic hypertrophy is only to be treated surgically; but where catheterization is easy, the amount of residual urine small and no cystitis exists, and absorption is moderate, operation should not be thought of. When it is needed prostatectomy is the ideal method. He prefers the Alexander method of enucleation, with suprapubic incision of the bladder and perineal incision.

52. **Medicine from a Business Standpoint.**—Harrington's address lays down a few general rules for the beginning prac-

titioner. The hard and fast fee tables should not be followed; charges should be made according to the means of the patient. He should take just as good care of those who can pay little as of those who can pay much. He should not allow his office to become a lounging place, nor should he become too familiar with druggists. He should recommend cases to specialists whenever necessary and consent to consultation whenever desired. He should make no contracts with lodges or fraternal associations. He should be honest with patients and cheerful in the sickroom without levity. He should always speak well of fellow practitioners, and it is just as well not to criticise irregulars. He should dress properly, should not smoke during working hours, should do some general reading, be considerate to other beginners, and bear in mind there is no limit to human stupidity. The doctor is expected to elevate and educate the masses to the proper understanding of rules and regulations of health and hygiene, and to teach, both by precept and example, temperance, honesty, charity and mortality.

59.—See abstract in The Journal, xxxvi, p. 1725.

60.—Ibid.

61.—Ibid.

62.—Ibid.

63.—Ibid.

70. **Bacteriology of Lobar Pneumonia.**—The technique employed in a series of 71 cases and autopsies of pneumonia is described by Blumer. The cultures were taken from the surface of the lung by burning it with a red-hot knife, a puncture being also made through the burned area and cultures being taken from the puncture. Cultures were made on agar and on blood serum slants, preferably the latter, and the organisms isolated were studied on different media. The tubes made at autopsy were usually plated subsequently and, if there was any doubt, animal inoculations were resorted to. Cover slides were made in some cases, but unfortunately not in all. The diagnosis of lobar pneumonia was in every case confirmed by the microscope. Fifty-three cases were of adults, 23 of them being single infections. The bacterial incidence was as follows: streptococcus, 9; colon, 8; staphylococcus aureus, 7; proteus vulgaris, 3; pyocyaneus and paracolon, each 2; pneumococcus and staphylococcus albus each, 1. In 20 cases of mixed infection the incidence was as follows: colon and aureus, 4; colon and streptococcus, 3; aureus and streptococcus, 3; colon and pneumococcus, 2; colon and citreus, 2; typhoid and streptococcus, 2; colon and pyocyaneus, pneumococcus and pyocyaneus, colon and albus, lactis aerogenes and streptococcus, each, 1. Eighteen cases were in children; 12 were single infections, 5 were streptococcus, 2 aureus, 2 colon, 1 pyocyaneus, 1 an unidentified bacillus and 1 sterile. Of the 6 mixed infections, 3 were due to aureus and streptococcus, 2 to colon and streptococcus, and 1 to aureus albus and streptococcus. It will be seen here that the pneumococcus is rarely prominent in these cases. This rarity is explainable on several grounds. It occasionally fails to grow on media even at incubation temperature and might be missed without cover slip control. It is easily outgrown by other organisms, especially the colon bacillus, which was present in quite a large percentage of the cases. The rarity of Friedlaender's bacillus is not so explainable, and Blumer suggests that there may be a possibility that organisms which are common in one geographic locality are rare in another. The frequency of the colon bacillus, he thinks, is largely due to agonal or postmortem invasions, and he has studied the incidence of the bacilli in other conditions, bearing in mind the fact that it is urged that while normal lungs may be sterile, they frequently contain pathogenic bacteria. He studied the lungs in the acute and chronic passive congestions, in edema, and in combination of these conditions. Of 20 lungs acutely congested, 6 were sterile, and the other 14 contained varieties of bacteria: colon, aureus, albus and Friedlander's. The streptococcus alone was found twice. In all but 6 cases there was a general infection other than the pulmonary one. Of 6 cases of chronic passive congestion all were sterile. In 4 cases of edema all contained bacteria, 1 pneumococcus, 2 proteus vulgaris, 1 each aureus and colon. Seventeen lungs which were edematous and congested were examined and only 2 were sterile. Four normal lungs were examined, all containing bacteria; 1 showed the colon, 2 colon and albus, and 1 streptococcus. In all the cases where the colon was found there was a general invasion. In 1 albus case there was a general albus infection. Results showed that both in the acutely inflamed and congested edematous lungs in patients dying of the disease, the bacilli in the lungs are often present in the general circulation also, the germs being carried in the circulation. The cases which he has examined, including numbers of cases of broncho and lobar pneumonia, seem to show that in merely congested and edematous lungs, as with broncho-pneumonia, a general infection is frequently present. As in many of these cases no bacterial lesion can be found aside from the pulmonary one, it seems likely that the lungs are much more frequently the portal of entry in general infection than is usually supposed, and this often without marked pulmonary lesions.

71. **Tuberculinum Purificatum.**—Hale reports a case of nasal tuberculosis treated with Von Ruck's tuberculinum purificatum by injection, beginning with 20 minims of the solution containing about one-fifth of tuberculin and rapidly increasing the amount, soon giving it almost pure. In spite of excessive ulceration and bone necrosis the result was excellent. There was complete absence of objectionable symptoms in spite of the rapid increase of dosage.

80.—This article has appeared elsewhere. See The Journal, xxxvi, title 95, p. 1587.

81. **Tonsillitis.**—Gray holds that follicular tonsillitis is due to specific bacteria and that in time its infectious nature will be firmly established. We make a mistake when we allow our patients to be associated for any length of time with other members of the family. While not usually a fatal disease, he knows of no febrile disorder that renders its victims more miserable for the time being than tonsillitis.

84. **Operation upon the Inguinal Canal.**—Michaux calls attention to a method he has used in performing the Alexander operation, that is, separating the fibers of the aponeurosis of the external oblique muscle, and drawing them widely apart with retractors along the line of incision. In closing the incision he has also included the fibers of the aponeurosis of the external oblique along the margin of the opening made by the separation in stitches in order to secure firm union. This method was reported some time since, but has been redevised by a gentleman in Canada, and Michaux claims priority.

94. **High Temperatures in Scarlatina.**—DeVoe calls attention to the connection of high temperatures in scarlet fever and measles with gastro-intestinal disturbance. The treatment he specially suggests is attention to the condition of the digestive tract from the mouth down. He would employ enemas or frequent flushing of the bowel as a part of the treatment, not, of course, interfering with intestinal antiseptics or the use of laxatives.

95. **Suppression of Urine.**—Fussell calls attention to suppression of the urine in a case observed by him, in which the child died of tubercular meningitis. The symptom is rare in this disorder, and the books which he has consulted make no mention of it. He thinks the symptom was of reflex origin.

104. **Tuberculosis of Infants.**—The importance of direct heredity is considered slight by Knopf, and he thinks children are rarely born tuberculous. According to Küss the maximum death-rate of tuberculosis of childhood is at between two and four years. We have no statistics as regards the mode of infection: it would be unscientific to attribute it generally to the ingestion of milk, and intestinal tuberculosis may be secondary as children do not expectorate. A careless consumptive in the family is a special danger to children, and he given instances which support this view. Inoculation is rare unless it be from ritual circumcision, but when the child begins to get around over the floor it is exposed to

special dangers, as it will touch everything on or near the floor and then put its fingers into the mouth, and otherwise infect itself. To counteract these dangers he would have leaflets issued by the board of health and distributed to give to the future mother, nurse, and members of the family, containing everything in regard to prophylaxis, general cleanliness, ventilation, nutrition, etc. Nursing by a tuberculous mother is, of course, prohibited. In fact he thinks that if the child should be removed from the parents' home to board elsewhere, one should be sure that there is no consumption in the new home. Wherever possible cow's milk should be replaced by goat's milk. Kissing should be prohibited, and caressing and kissing of domestic pets. The floors should be kept clean and not carpeted. Visits to menageries should be with due precautions; school hygiene should be improved and the fundamental principles of hygiene, especially as regards tuberculosis and its prevention, should be part of the teaching in every school. Kissing should be discouraged in girls' schools as unhygienic. The proper bringing-up of children will have a tendency to lessen the risks, and he considers air baths and sun baths of the greatest importance. Hydrotherapy for the development of the vasomotor system to more vigorous action should be instituted at an early age. The employment of children under 14 years of age in industries is especially condemnable and he suggests as a philanthropic enterprise to furnish a good lunch to the underfed school children of our poorer districts. The recent exclusion of tuberculous children from schools in the State of Colorado is mentioned; there should be special schools for such children; without this, it could not be commended.

105. **Registration of Tuberculosis.**—Flick pleads for the registration of tuberculosis; that it is necessary and a potent factor in the scheme for its prevention. He sums up: "Tuberculosis is a contagious disease; it is a preventable disease; the center from which contagion spreads is the host; this center is limited and circumscribed; prevention of the disease is not only practicable, but easy; the keynote to prevention is control of the host; the whereabouts of the host can only be known through registration; opposition to registration is based upon false notions, fancy and sentiment; for a comprehensive scheme of prevention, governmental interference is necessary; under existing circumstances governmental interference can only take place through boards of health."

106. **Distribution of Tuberculosis in the City of Baltimore.**—Jones analyzes the death reports from tuberculosis in Baltimore and calls attention to the occupation, especially the number of cases of clerks, servants, housewives, school teachers and school children, and also to the large number of deaths which occurred in those parts of the city where narrow streets and alleys exist and where the houses are overcrowded. The milk supply of Baltimore is being investigated to show how far it is responsible for the distribution of tuberculosis.

113. **Antitoxin.**—Shuttleworth gives the results of a series of experiments with antitoxin in the Isolation Hospital at Toronto, which disagree with the average statistics on this subject. He finds an unfavorable showing for antitoxin in cases treated, though his statistics are possibly subject to some criticism. The average dose of antitoxin in 100 cases was 1122 units, which is not up to the amount now advised.

120. **Tuberculosis of the Upper Air-Passages.**—Rosenberg's article reviews the various tuberculous lesions that may exist in the upper air-passages and their methods of transmission, such as tuberculosis of the nasal mucosa, in the form of granulations, infiltrations, ulcerations or tumors; that of the nasopharynx, which is rare and occurs also in the form of ulceration; and tumor and tuberculosis of the pharyngeal tonsil. Tuberculosis of the pharynx is also comparatively rare, occurring mostly in the male sex and generally in youth. It occurs relatively often among young country people and he suggests the use of milk from infected cattle; mouth-breathing may also be a cause. Lupus in this situation occurs more often in the female and is a consequence of lupus of the skin and of the nasal mucosa and its appearance is decidedly different from that of tuberculosis. The mucous membrane is of a pale or more often of a bright red color, somewhat swollen, drier, and appears as if filled with granulations. The nodules are round, smooth and pale red and the occurrence of interstitial atrophy with scar formation makes the picture more characteristic. Tuberculosis of the larynx is most common and is treated at considerable length. It may appear in the form of infiltrations, ulcerations, perichondritis or tumor. The prognosis depends upon the state of the lungs, the general condition of the patient, and the extent and seat of the disease in the larynx. Rosenberg thinks that there has been a wrong idea as to the importance of climate for these cases. Too high an altitude is not suitable. The best place for such cases is in a sanatorium in a favorable climate where a resident physician is conversant with all the methods of local treatment of such cases.

121. **Prevention of Tuberculosis.**—The battle against the spread of tuberculosis, Pottenger thinks, must be fought by the general practitioner. The time is not far distant when a physician who passes over a case of incipient consumption will be held culpable. There is no reason why, if a physician is on the alert, that he can not discover it in many cases in the earliest stages. He is also an advocate of the tuberculin test, which he thinks if used in time would reveal many cases and enable them to be treated with success.

122. **Tuberculosis from Toxemic States.**—The conclusions of Crothers' paper are that tuberculosis in this climate follows autointoxication and poisoned states of the body. After it is once established, numerous and complex toxemias follow which intensify and increase the disease. Toxemias following overwork, bad nutrition, etc., are very common, and can be prevented by a larger knowledge with common hygiene. Alcohol in all forms is a very potent cause of toxemia. Inebriety is very closely allied as a disease to tuberculosis; it not only precedes the growth but increases it by intensifying the degeneration and by lessening vigor. Both these diseases depend upon toxemias formed in the body and poisons introduced from without. Both are associated with defective nutrition and elimination and faulty metabolism. In the treatment of tuberculosis the most important danger to be avoided is that of poisons generated within the body, and the elimination of these toxins and avoidance of all that cause them is essential. Reinfection from the tuberculous germ in the air, in the clothing and from other sources can be largely prevented by isolation and correction of the source. The restoration of vigor and the lost resisting power is best obtained by a study of nutrition and the utilization of foods that can be digested without damage from the waste of overfeeding. The scientific treatment of tuberculosis and its effectual stamping out and prevention must depend largely upon studies of nutrition and surroundings, and the breaking up of sources of poisons which perpetuate the disease.

123. This article has appeared elsewhere. See also paragraph 71.

129. **Puerperal Sepsis.**—The terms puerperal sepsis and puerperal infection are criticised by Porter, who considers that such a diagnosis is inadequate, the terms here defined being applied to cases differing widely in pathology and requiring radically different treatment. This looseness and inaccuracy of nomenclature has led and will continue to lead to improper and harmful methods in the management of these cases. While practical accuracy in the diagnosis is easy in these conditions, it is also essential to correct treatment.

133. **Insanity.**—Punton's article is a plea for the treatment of cases of insanity in small private hospitals and outside of public institutions. He claims that the associations are not the best in these large institutions for the mild and acute forms. What is best suited for these are sane surroundings with cheerful companions, homelike comforts, and peaceful quiet, which only a small hospital or sanatorium can furnish. The association with a large number of chronic cases he also thinks is damaging.

FOREIGN.

British Medical Journal, August 3.

Address in Medicine at Annual Meeting of the British Medical Association. JAMES F. GOODHART.—This address reviews the questions of the difficulties of medicine and the inscrutable problems which it involves. He finds while the average duration of life is longer, medicine is not less in demand, or ailing people less frequently in evidence; that the public has the little knowledge which is a dangerous thing and it makes difficulties for the physician by demanding to know too much. Every patient has his own ideas as to his case and demands to have his disease ticketed and identified which no man can always do. He says a woman with migraine has usually gone the rounds of every coal-tar product that was ever invented before she thinks of applying to a physician. Most people know all about lithia, piperazine, etc., and have their favorite drugs. Men and women of the present day rush immediately into the not sufficiently repellant arms of surgery. Doctors also are not free from fads. We do not appreciate sufficiently the wide range of health and how commonly slight and even considerable depressions from the normal are passed without danger. One would think from the teaching of the present day that the heart is so fragile an organ that it needs to be coddled from the cradle to the grave. The stomach also is a fad. It is really a good, strong, healthy servant with possibly a prejudice or two and if treated fairly is most obliging and thorough. The people will not have it, however, that all its little ailments are not serious ones. Throats, noses and ears are being swept into the panic for operative surgery. We should dispense with giving drugs by rule of thumb. Fashionable drugs become the favorites of society, to have their boom and pass away and are dropped for later booms, such as the animal extract and antitoxin; and many of these will be dropped in time. The open-air treatment of consumption even is becoming a fad; medical antisepsis is another; routine methods used in this way, and others, such as the use of bromid in epilepsy, are dangers of the present time. The difficulties of diagnosis are also mentioned. He says when he first entered Guy's Hospital it was a common saying about one of the staff, who was one of the best physicians of that day, that he knew so much that he could seldom be prevailed upon to give a positive diagnosis. Knowledge brings doubts and limitations. He thinks the value of medical advice is not appreciated; we have made it too common. Sir Andrew Clark was wise when asked to give a gratuitous advice and he said "No," but that he would give the money for which it could be purchased. Everybody flocks to the doctor's room and hospitals asking alms in the shape of advice and having given it we are insulted by being called trade-unionists. We must not forget the importance to the well-being of medicine of the just rewards that it deserves.

Address in Surgery. WILLIAM THOMSON.—The results of the South African war in military surgery are discussed by Thomson, who calls attention to the different methods of warfare at the present time as compared with those of the past, and the slight experience we had up to the Boer war with modern weapons. War is now a war of small arms and the vast majority of the wounds received in South Africa were caused by a bullet from modern military rifles. The notion that the elongated bullet enters at right angles is subject to many exceptions. Many things may happen after it leaves the gun. It is often deflected and makes its impact at all sorts of angles, the ricocheted bullet often closely resembling a bursting charge; he mentions a case illustrating this. In wounds of the soft parts the majority were but slight and recovery quick. The bullet undoubtedly became disinfected in its passage through the barrel of the gun, and the wound resembled that of a piece of small, clean, hard metal. The second cause for good results was the early application of the first dressing in the field. The third cause was the climate, which was specially favorable to antisepsis; there would have been much more suppuration in a moister climate. Wounds of the bones were more severe and fractures are frequent. In the cancellous structure direct perforation was more common. He can not give exact figures from the campaign in South Africa, but he thinks in no war was there so small a number of amputations, the number of limbs saved so many, or the mortality from such operations so small. Wounds of the joints do more satisfactorily than over before. Excisions were rare and amputations were only performed on the field when the vital parts were involved, or there was terrible destruction by shell, which was rare. As regards abdominal wounds, experience has taught that in the majority of cases operation is dangerous and this agrees with American experience. It is impossible to operate immediately on the spot and the mischief can be done before the patient can be carried to a central hospital. Many cases, however, of undoubted injury to the intestine recover; considering the difficulty of diagnosis in many instances at the outset, the fact that intestines may be found unwounded and if wounded may be occluded by natural processes if not interfered with, it seems to Thomson that, as we stand at present, the man whose abdomen is perforated by a small-bore bullet stands a better chance of life without operation than with it, bearing in mind the circumstances under which laparotomy must be performed. The number of lodged bullets was naturally lower than was formerly the case with the older weapons, and probing and searching for them is not in most cases justifiable. The only thing is to occlude the wound and secure it from contamination. In conclusion he speaks of the progress made by military surgery and the greater safety in war under present conditions. War is less terrible than it used to be.

The Lancet, August 3.

What Administrative Measures are Necessary for Preventing the Sale to the Public of Tuberculous Meat? SHIRLEY F. MURPHY.—The methods for prevention of the sale to the public of diseased meat are reviewed by the author, who finds the best resource in the establishment of public slaughtering houses and the doing away of private ones. He reviews the objections to this measure. He says the time has come when we should follow the excellent example that has been set by other countries and require all the animals that are killed in urban districts for public food to be slaughtered in public slaughter-houses, and be inspected before, at the time of, and after slaughtering; that the meat should be stamped and that the public should be taught to look for this stamp as the stamp of health rather than to rely upon the pathologic knowledge of the butcher or housewife. Further, all meats that have been killed outside a district, other than that which may have been killed in some public slaughter-house and duly inspected and stamped, should be taken to meat inspection stations for examination. There will no doubt be greater difficulty in the rural districts and small communities, but he thinks even here much can be done.

The Relation of Alcoholism to Tuberculosis. T. N. KELYNACK.—There are three views in regard to the relation of alcoholism to tuberculosis, according to Kelynack. 1. The view that alcoholism is antagonistic to disease, which was held by a number of authorities in times past, but for which the evidence is weak, and the abolition of alcohol in many modern sanatoriums seems to indicate that experience is against it. 2. Many people hold that alcoholism bears no special relationship to tuberculosis, except as it lowers general nutrition and places individuals under conditions practically favorable to the disorder. There is no doubt that the consequences of alcoholism, such insanitary environment, insufficiency of food, depressing emotions and occupations inimical to health may have their damaging influences. 3. The view that alcoholism definitely predisposes to tuberculosis, which has of late years received much support, and he quotes from Dr. H. Mackenzie, Professor Thomas Oliver, Dr. Rolleston and others, who have pointed out an apparent direct connection between the two conditions. Alcoholism, as has been pointed out, predisposes the organism to germ infection and also by its influence on the nervous structures is liable to weaken the organs. The author has analyzed a number of fatal cases of peripheral neuritis occurring in chronic alcoholism; 8 cases were subject to pathologic examination, and primary tuberculosis was met

in 7 of the 8. In 2 other cases of alcoholic multiple neuritis, 1 was decidedly tuberculous and the other edematous with patches of broncho-pneumonia. Thus, out of 10 fatal cases of alcoholic neuritis, 9 females and 1 male, 8 or 80 per cent. were consumptive. He also finds that tuberculosis is of frequent occurrence in subjects of alcoholic cirrhosis. In 121 cases, omitting all the doubtful and complicated ones, 28 showed tuberculosis, and active phthisis was present in 14. This made 25 per cent. with alcoholism and tuberculosis combined, and 10 per cent. dying directly from tuberculosis.

Legislation Suggested for Controlling and Eradicating Tuberculosis in Animals. DUNCAN MCEACHRAN.—The author gives the record of Canada as regards the diagnosis and prevention of tuberculosis in animals and reviews the laws in the various parts of the United States. He suggests the following legislation: "1. Tuberculosis should be included in the list of contagious diseases. Tuberculous animals should consequently come under the provisions of the Animal Contagious Disease Act; but the local authorities should have power to allow the sale and movement of such parts of the carcasses as are known not to carry contagion, such as hides, hoofs, horns, and hair, thus preventing unnecessary loss. 2. All foreign animals admitted for breeding or dairy purposes should be tested by the tuberculin test. Tuberculous animals should be prohibited from entering. 3. Tuberculin should be controlled and none but qualified veterinarians should be allowed to use it, and all reacting animals should be reported, marked and quarantined. 4. All animals showing clinical symptoms of tuberculosis, especially diseases of the udder, lungs, uterus or bowels, should be killed at once, and all scrub and grade animals reacting should be killed within six months. Pure-bred cattle may be bred from under Professor Bang's system in quarantine for life. 5. All testing, other than imported animals, should be by voluntary application for a test of the entire herd, and the expense should be borne by the state. A reaction of 2 to be understood to indicate tuberculosis, 1.5 as suspicious. Suspicious animals to be quarantined and retested in three months, unless clinical symptoms develop, when they should be at once condemned. The government to have a right to order a re-test when considered necessary. 6. Disinfection of premises should be ordered by special regulations the carrying out of which should be superintended by government officials."

Tuberculosis Among Australian Stock. G. PENTLAND.—According to Pentland, tuberculosis is steadily decreasing in Australian animals since 1885, according to the statistics of the city abattoirs.

Mortality Among Rats at the Capetown Docks Which Preceded the Present Epidemic of Plague. ALEXANDER EDINGTON.—After investigating the disease amongst rats in the docks of Capetown, Edington found evidence of a microbe, similar in many respects to that occurring in bubonic plague, but varying in others, especially in the lack of bipolar stain. He has had numerous opportunities of observing rats affected by bubonic plague at Port Elizabeth. This was not of the true bubonic type, but undoubtedly a variety of the microbe of hemorrhagic septicemia.

Archives de Med. des Enfants (Paris), iii, 10.

The Tuberculin Test in Infants. METTETA.—The results of the tuberculin test on 74 infants between two and twenty months old, are tabulated in three groups. The first contains the record of 18 with autopsies. In 12, the test had been positive, and tubercular lesions were found in each. In 6, the test had been negative, and no tubercular lesions were discovered. The second group contains 32 observations. The test resulted negatively in all and no clinical evidence of tuberculosis could be discovered in any instance. The third group contains 24 cases without autopsy. All in this series reacted to the tuberculin, and tuberculosis was clinically evident in a certain number, but in the rest, no symptoms of tuberculosis could be detected, merely whooping cough with pneumonia, rachitis, gastro-enteritis or syphilids—the affection for which they were under treatment. This last series indicates that tuberculosis existed in a latent form, or else, that certain other affections may exceptionally cause a reaction to the tuberculin test.

Bulletin de l'Academie de Medecine (Paris), July 9.

Cacodylic Medication. A. GAUTIER.—THE JOURNAL mentioned at the time Gautier's announcement that he had discovered arsenic in normal tissues as a physiologic element in the thyroid gland, skin, etc. He drew from this discovery the therapeutic conclusion that arsenic was indicated in certain morbid conditions, requiring small amounts of arsenic continuously for months and years. He found the cacodylic preparations best adapted for the purpose, and in this long communication describes his extensive experience with them. They have proved remarkably effective in wasting diseases, in pulmonary tuberculosis in the first and second stages, tuberculosis of the bones and viscera, diabetes, neurasthenia with general depression and diminished vitality, malarial cachexia, severe anemia, asthma, chorea, protracted convalescence, wounds with loss of surface, fractures, the consequences of repeated pregnancies, uncontrollable vomiting, myxedema, rebellious cutaneous affections, etc. They can be administered for years without disturbing the nutrition or inducing congestion in the liver, kidneys, intestines, nervous centers or skin. Their action is due to their influence on the reproduction of normal cells and of red corpuscles, rejuvenating the tissues and conferring on the entire organism an extraordinary resistance to the action of morbid causes. He describes a number of instances of each of the above affections, showing the remarkable effects attained by the cacodylates. The results were variable or doubtful in Parkinson's disease, in the degeneration accompanying mental disturbances and in cancer. The only safe way to give the cacodylates—sodium cacodylate is usually preferred—is by hypodermic injection, in doses of 5 to 20 cg. a day or even more, each series of seven to ten injections being followed by suspension for the same number of days. The individual dose must be determined for each patient, commencing with 25 mg., then 50 mg. for a week, recommencing with 50 to 100 mg. If improvement is marked, this dose is sufficient. If not, he increases it until signs of intolerance appear. The quantity needed varies in a wide range. Signs of intolerance are, first, congestive symptoms in the face; they are insignificant unless they persist and increase, or are accompanied by a condition of excitement preventing sleep, following the immoderate use of the drug. It should not be administered for four or five days before the menses, as it hastens them and increases the flow. One of the principal signs that the proper dose has been exceeded, is a buzzing or whistling sound in the ears. If the same dose is continued in spite of this warning, deafness or slight vertigo may follow. When the medication is continued without the necessary pauses, disturbances may be noted similar to those of excessive thyroid treatment. Fever, diarrhea and vomiting do not contra-indicate this "latent arsenic treatment," but hepatic insufficiency is an absolute contra-indication, and cancer, congestion and hypertrophy of the liver, icterus and cirrhosis demand extreme reserve in this cacodylic medication. Iodin is completely absent from the bodies of microbes and contributes powerfully toward the defense of the organism against infectious agents. It is also normally associated with arsenic in the thyroid gland. Consequently he considers iodin and food rich in easily assimilated mineral elements or a medicinal compound of them, effective adjuvants of cacodylic medication. His tuberculous patients take an hour before meals a dessertspoonful of a mixture of 5 gm. of sea-salt and 1 gm. each of potassium iodid and bromid, in water to make 100 c.c. During each meal they take 15 c.c. of a mixture of sea-salt 15 gm.; precipitated calcium phosphate 30 gm.; ammoniaco-magnesium phosphate 10 gm.; hydrochloric acid 30 gm.; crystallized citric acid 12 gm.; ammonium fluorid .15 gm.; sugar 100 gm. and water to make 300 c.c. He recommends the yolk of egg, taken raw and unbroken, with a little lemon juice or vinegar, as the best form in which these mineral elements in combination with organic iron, can be taken. He also recommends raw meat—mutton, not beef—scraped and rolled into pellets the size of a nut, swallowed at the close of the meal, without chewing. The juice can be taken instead of

the meat. Creosote and guaiacol stimulate the organism at first and then depress it, inhibiting its assimilating power, exactly the reverse of the action of the cacodylates, which regulate the oxidations and arrest abnormal waste, stimulating nutrition and assimilation and regulating all the vital processes. [See Editorial in The Journal last week.—Ed.]

Hematogenic Pyramidal Nephritis. Babes.—Three additional cases are reported, distinguished by the hemorrhagic character of the acute infection and the renal lesions discovered at the autopsy. The pyramids were tumefied, whitish or yellowish, disseminated with hemorrhagic foci. The cortical substance was a reddish gray. The papillary and pyramidal nephritis resembled the alterations noted in animals after intoxication with vinylamin.

Treatment of Aneurysms by Subcutaneous Injection of Gelatin. Lancereaux.—Three new cases are described showing undoubted benefit and practically the cure, of two aneurysms of the arch of the aorta and one of the subclavian artery, after injection of 5 gm. of gelatin dissolved in 200 to 250 c.c. of a 7 per 1000 solution of sodium chlorid, repeated as often as necessary, always in the buttocks. The first injection causes the coagulation of the blood to a certain extent, but in time this clot retracts, allowing renewed passage of the blood. A second injection fills up the sac with an additional clot, but this, in time, also retracts, and hence the necessity of repeating the injections until the coagulation has obliterated the aneurysm permanently. Variations from this technique are responsible for the failures reported by others, although fusiform aneurysms are not amenable to this gelatin treatment, as Lancereaux announced at his first communication.

Bulletin de la Soc. Med. des Hop. de Paris, July 18.

Stenosis of the Pylorus Without Retention of Food. M. Soupalt.—The incipient stage of pyloric stenosis causes no trouble except vague, irregular dyspepsia from time to time. In the course of a few weeks or months, pain, vomiting, acid regurgitations and eructations are noted. The pain is the most constant symptom, and is felt in the lumbar region almost as intensely as in the epigastrium. The intensity of the symptoms varies with the nervous condition of the subject. The symptoms appear or are most marked a few hours after eating. This tardy appearance of the pain and other gastric symptoms is characteristic and even pathognomonic of stenosis of the pylorus. Another characteristic is that the affection develops with intermissions, which, however, grow shorter and shorter until the symptoms are almost constant. The stomach is found empty between meals, but after the failure of medical measures, an operation becomes necessary, and in nine cases, related in detail, the lesions in and around the pylorus were discovered at the time of operation, as anticipated. The cardinal symptom—retention—had always been absent or only appeared at rare, brief intervals. Soupalt's experience has included a large number of such cases, and they indicate the necessity of operating promptly in dubious cases, especially at the slightest suspicion of carcinoma, even when there is no retention.

Bulletin de la Soc. Franc. d'Electrotherapie (Paris), June.

Cause of X-Ray Burns. Oudin.—Kienbock, Schraeter and Oudin, from their individual research, believe that x-ray burns are not due to the electricity, but to the x-rays alone. Under interposed screens—part lead, part aluminum—the tissues were liable to become inflamed under the aluminum, while the lead-screened portions were never affected, irrespective of the intensity of the electricity employed and the closeness of the tube. This fact has recently been corroborated by Walkoff, Giesel, Becquerel and the Curies, who have been studying the mysterious rays emitted by radium, polonium and uranium. It has been found that these rays possess the same property of inducing x-ray burns as the Crookes' tubes. Some of these scientists caused serious dermatitis on themselves with these rays. The most conclusive proof of all was the fact that Becquerel—in whose honor the rays have been named—produced a severe x-ray burn on himself by carrying a bottle containing a few centigrams of radium in his vest pocket. The accidents of radiography are therefore proportional to the number and penetration of the x-rays. This article is the report of a committee. It confirms Schraeter's assertion that there are four periods in the life of a tube. During the first, it is very soft, the x-rays scanty; the soft parts cast a deep black shadow on the screen. During the second period the soft parts are still visible on the screen, the shadow of the bones is very black, scarcely lighter in the middle of the phalanges. The tube is rich in x-rays, but they have a comparatively weak penetrating power. They produce the superficial lesions on the skin. In the third period, the tube is rich in very penetrating x-rays, and induces deep lesions. The shadow of the soft parts is scarcely visible on the screen and even that of the bones is very light. When the last period is reached, the tube has become extremely resistant; almost all the electricity passes around it, the bones cast scarcely any shadow. It lights up only at intervals and generates very few x-rays, but they possess intense penetrating power and do not induce any lesions. This of course refers to an average exposure. If the exposure during the first or last period was exceptionally long, it would in time induce accidents as during the other periods.

Presse Medicale (Paris), July 13.

Elimination of the Pigment in Bronzed Diabetes. Rabé.—A case is described in which Addison's disease coincided with bronzed diabetes. The epithelium of the liver, pancreas and salivary glands and also of the capillary network of the lungs, was crowded with particles of pigment and the sputum was rusty with them. Rabé concludes, from the facts observed, that the cells of the glandular parenchyma expel the excess of pigment at both their inner, or vascular, and their outer, or canalicular, pole. This imparts two currents to the hemosiderin, one, the canalicular, follows the excretory passages of the gland: the other, the vascular, passes into the lymph and blood which sweep them into the pulmonary capillaries, whence they are expelled in the sputum. The finer granules of hemosiderin which escape this sifting process are carried by the circulation to the kidney and are eliminated in the urine.

July 17.

Iodo-Hydrargyrum Cacodylate in Syphilis. L. Brocq.—Forty-nine syphilitics were treated with subcutaneous injections of a combination of sodium cacodylate, sodium iodid and mercury biniodid. The results show that this is an excellent combination for syphilis with marked disturbance in nutrition, emaciation, or neurasthenia, with rebellious, secondary cutaneous and mucous membrane manifestations, when there are seborrhoid complications, and during tertiary accidents when an energetic action is desired without disturbing the alimentary canal. The solution can be sterilized at 120 C. and mixes with the blood serum without a precipitate. The injections are very slightly, if at all, painful and no abscesses followed its use. Only seven of the thirty-one cases followed to date were uninfluenced by the treatment.

Progres Medical (Paris), July 13.

Arrest of Poisons by the Leucocytes. A. Lombard.—Guinea-pigs were injected with an almost fatal dose of strychnin or atropin. The leucocytes were increased in numbers in every case. Other animals, rabbits, cats, were injected with red corpuscles from the guinea-pigs with no effect. Others were injected with an emulsion of the liver and spleen, and showed symptoms of slight intoxication, as also still others injected with the serum. But a fourth group, injected with even a very small amount of centrifugalized leucocytes from the guinea-pigs, exhibited all the symptoms of pronounced intoxication specific for strychnin or atropin. Lombard believes that the leucocytes seize the injected poison, and then, their vitality lowered by it, hasten to the liver and deposit the toxin, drawing on this reserve from time to time for such amounts as are compatible with the survival of the animal, to eliminate them by the different emunctories.

Revue Gen. d'Ophthalmologie (Paris), June.

Pathogenesis and Abortive Treatment of Panophthalmitis. L. Dor.—If the vitreous humor of animals is squeezed

out on a piece of fine linen, the phenolphthalein test shows that it is decidedly acid in normal conditions, although it is generally assumed to be alkaline. The eye of the horse is best adapted to this research on account of its size and the fluidity of the vitreous. In examining a large number of fresh horse eyes, Dor noticed that one was much less acid than the rest, and on investigation, discovered a lesion in it. This discovery was confirmed in numerous experiences and tests, all showing subnormal acidity in an injured eye. He conceived the idea that this subnormal acidity, or rather, alkalinization of the humors of the eye, constituted a defensive process on the part of the organism. Consequently, he reasoned, therapeutic measures to assist this alkalinization might re-enforce the organism in its struggle. He administered 100 gm. sodium carbonate to horses a few hours before they were killed, and found in every case that the vitreous humor had become much less acid than usual, when the eyes were examined after death. He then experimented on rabbits, and found that a rectal injection of 2 gm. of potassium iodid in 30 gm. of water, the day before the rabbit was inoculated with a culture of staphylococcus aureus in the vitreous, prevented the appearance of any inflammatory process in the eye, if the amount of the culture injected were not much larger than that required to induce a panophthalmitis in the control animal. The iodid also attenuated to a remarkable degree the course of the panophthalmitis induced by a large amount of culture injected. When a small amount of the culture was injected, the administration of the iodid—even several hours after the inoculation—was able to arrest the resulting panophthalmitis. The iodid or any other alkali, in subconjunctival injections, produced invariably negative or unfavorable results. As infection in man seldom or never occurs from a pure culture, and as the amount of the culture introduced seemed to influence to such an extent the appearance and course of experimental panophthalmitis, he concludes that the preliminary administration by the mouth or rectum of a sufficient dose of some alkali—preferably potassium iodid—would prevent the development of inflammation after operations on the eye, or at least attenuate its course. If it failed, no harm would have been done. Those who have the courage to administer the iodid by subcutaneous injection, might possibly abort even an established panophthalmitis. Horses thus injected with a 1 per cent. solution did not seem to suffer any inconvenience from it.

Revue Internationale de Therapie Physique (Rome), ii, 3.

Phospho-Creosote Medication in Tuberculosis. S. BERNHEIM.—As the conclusion of long study of creosote in the clinic and on animals, Bernheim asserts that the polyethers of creosote are far superior to creosote itself for therapeutic purposes. Among the creosote polyethers, those containing a phosphorous element are the most effective in the treatment of tuberculosis, as the latter requires essentially the same treatment as hypoacidity. Phosphoric acid seems the best adapted for the purpose, as this acid enters so largely into the composition of the tissues. The phosphate of iron dominates in the blood corpuscles; the phosphate of potassium in the nervous system; the phosphate of magnesium in muscular tissue, and the phosphate of calcium in bones. In tuberculosis, more than in any other disease, the hypoacidity is accompanied by phosphaturia, and phosphoric acid possesses also the advantage of combating the nervous troubles which result from this exaggerated elimination of the phosphates. Creosote stimulates the activity of the cells and phagocytosis, and is thus an indirect specific for tuberculosis.

Archiv f. Kinderheilkunde (Stuttgart), xxxi, 3 to 6.

Otitis in Infants. SCHENGELIDZE.—Indications of purulent inflammation of the middle ear were found in 70.5 per cent. of the cadavers of ninety infants less than one year old. It is usually bilateral and accompanies pneumonia or catarrh of the upper air passages. The central cavity of the middle ear was never found sterile, but the virulence of the microbes seemed to be somewhat attenuated. Coughing and vomiting are evidently factors.

Three Cases of Surgery of the Lung in Children. JABLOKOW.—Three weeks after the commencement of the illness with fever, cough and pains in chest, the patient, a boy of 10, presented symptoms of a gangrenous cavity in the lung. After resection of the seventh rib and evacuation of the cavity, temporary improvement was observed. The extension of the process required a second intervention, but the cachexia progressed to a fatal termination. The two other cases were cured. One, a girl of 10, recovered after evacuation of an acute abscess in the lung consecutive to grippal pneumonia. Half a cupful of bloody pus was removed through a wide incision in the fifth interspace, and a cavity in the lung tissue of corresponding size was palpated. The fistula persisted a long time, but no tubercle bacilli nor elastic fibers were found in it. In a third case, reported by Alexejew, a boy of 8 contracted a febrile cold. Eight days later an exploratory puncture in the area of dulness revealed thick pus containing diplococci. The seventh rib was resected. Pleural adhesion had occurred, and a cavity 3 cm. deep, was found in the lung. It had perforated into the space between the diaphragm and the lung. When the cavity was being rinsed out, blood-stained fluid poured out of the mouth, inducing violent coughing. Complete recovery occurred in eight weeks.

Indications for Venesection in Children. A. BAGINSKY.—Danger of suffocation from the unduly distended right heart, and overloading of the blood with the chemical waste products of the organism, are the only indications for venesection in children. The age is no criterion, although the blood is regenerated less readily in very young children. Gregor has reported the case of a six-months' infant saved by venesection in bilateral pneumonia. If the blood flows normally and uninterruptedly, the twentieth to the fifteenth part of the total amount of blood can be withdrawn.

Centralblatt f. d. Grenzgeb. d. Med. u. Chir. (Jena), July 10 and 17.

Latest Research on Herpes Zoster. L. SPITZER.—Reviewing recent literature, it is evident that the intervertebral ganglia may show all kinds of conditions in herpes zoster, from normal to the most severe, irreparable injury, that is, transformation into sclerous connective tissue. In some cases, consequently, there must be complete restitution, and in others the resulting lesions are permanent. In 28 out of 32 cases in which an autopsy was possible, no other affection existed. It does not often recur, and Kaposi's case, with its nine recurring attacks, is unique. Epidemics of facial and nasal herpes have been observed; the dividing line between such cases and "genuine" zoster is becoming fainter and fainter. Various infections are liable to induce zoster on occasion. Epstein suggests that the vessels, dilated under the influence of the fever, cause the lesion in the ganglia by mechanical compression. Head and Campbell, in the most important work on the subject of late years, assert as the result of extensive anatomic research, that they consider herpes zoster an acute, specific disease, similar to acute anterior poliomyelitis, but affecting the posterior root ganglia instead of the anterior cornua, and the posterior ganglia cells instead of the motor cells. They consequently suggest the term acute posterior poliomyelitis for the nervous affection which is the base of herpes zoster. The essence is an acute interstitial inflammation of the ganglion with necrosis of the ganglion cells. The agent is unknown, but it seems to have an attraction for the posterior root ganglia and generally affects one ganglion alone. The ganglia connected with the intestines by sympathetic fibers are most frequently involved. The extent of anterior poliomyelitis and the fact that the posterior is restricted to one or two ganglia, is due to the fact that the anterior cornua form an anatomically continuous column. In their numerous autopsies, they never found more than one ganglion affected in herpes zoster. They are now engaged in research to determine whether there is any connection between the sympathetic nerve and the herpes eruption. Spitzer considers their theory extremely plausible.

Dermatologisches Centralblatt (Berlin), July.

Psoriasis. E. GERSTLE.—This writer is inclined to attribute psoriasis to a neuropathic origin. He has observed several cases of the coincidence of psoriasis with gout or diabetes.

He also noted that 151 out of 975 patients with psoriasis treated at Joseph's clinic, were cabinet-makers. Chrysarobin has proved most effective in his experience. The patients take a bath the day before and rub off as many of the flakes as possible, scraping afterward if necessary, so that the chrysarobin can reach the morbid tissues. It is applied twice a week, with a stiff brush, to the parts, in a 10 per cent. solution in traumaticin. In some cases a dermatitis followed its application, but this was easily cured by boricized vaselin, and it was noted that the cases in which this irritation occurred, healed most rapidly. A milder salve is used on head and face on account of the stain and danger of conjunctivitis.

Kinderarzt (Leipsic), July.

Causes of Infant Mortality in Summer. W. HAUSER.—The weeds eaten by the cows in their summer pastures are responsible for many cases of gastro-intestinal disease. Many of these weeds are poisonous and their juices pass into the milk. In support of this theory, Hauser gives the statistics of mortality in a number of districts in his experience, classifying them by the soil and the weeds that grow by preference on certain soils. His tables indicate a lower death-rate on the granite and sandstone foundation than on the jurassic. He contends that systematic eradication of weeds from pastures would banish certain gastro-intestinal affections in infants.

Therapie der Gegenwart (Berlin), July.

Uselessness of Isolation in Diphtheria. E. VON BEHRING.—The finding of diphtheria bacilli in the throat without marked clinical indications of diphtheria, has no significance, according to Behring. He asserts that about 10 per cent. of the entire population carry diphtheria bacilli in their throat without resulting infection. The bacilli have lost their virulence, or else the individuals possess a natural immunity. He considers all bacteria with the morphological characteristics of Loeffler's bacillus, true diphtheria bacilli, but he would differentiate a simple angina, rhinitis or conjunctivitis from diphtheria, even with diphtheria bacilli numerous in the organ involved, if there were no general symptoms of diphtheria. He affirms that it is useless and even nonsensical to isolate persons who have been exposed to diphtheria. It is impossible to free people from the bacilli or to keep them permanently free. Infection results from a predisposition, which is in turn due to the lack of an antitoxic serum in the blood. The antibodies which undoubtedly exist in the blood of numerous individuals, are probably produced by the vital activity of avirulent diphtheria bacilli in their throats. He consequently suggests that it might be possible to induce auto-immunization by transplanting avirulent diphtheria bacilli into the throats of other human beings. The comparative immunity of physicians to diphtheria may be due to the repeated, unconscious inoculation with small doses of the virus. Extensive, systematic preventive inoculation with antitoxin would induce a natural immunity to the disease and entail the final disappearance of diphtheria. These views are presented at length in his book just published at Berlin.

Wiener Klinische Wochenschrift, July 18.

Influence of Food on Uremia. A. STRUBELL.—Uremia induced experimentally in dogs fed on albuminoids and fat, or in starving dogs, proved fatal, on an average, in fifty-three hours. Dogs fed on carbohydrates survived eighty-nine hours, or thirty-six hours longer than the others. Strubell states that there is no essential clinical difference between experimental uremia and uremia in man. He therefore concludes that in case of threatened uremia or in any acute or chronic nephritis, the food should be restricted to carbohydrates from time to time, or at least to a vegetable diet, once or twice during the year, for instance. The diet should be the reverse of that recommended in diabetes, allowing all that is forbidden in diabetes, and forbidding what is allowed, with the exception of alcohol.

Clinica Medica Italiana (Milan), June.

The Nerves in Intoxication with Sublimate. U. ALESSI.—The autopsy of a woman who died a few days after ingestion of two grams of mercury bichlorid, showed that the nerve cells had been profoundly affected by the poison. Experimental research on animals treated with mercury bichlorid and albuminate demonstrated that the lesions were the same in all cases, and more marked in the cerebral cortex than in the cerebellum, but equally developed in the acute and in chronic intoxications. These lesions are responsible for the death of the animal. They range from simple chromatolysis to necrosis of the elements, but have no characteristic type useful in the diagnosis.

Action of Currents of High Frequency on Tubercular Toxins. E. MARGAZALLI AND V. MARAGLIANO.—Tubercular toxins exposed to the action of electric currents of high frequency lose a large proportion of their toxicity, but do not acquire any antitoxic power. Therapeutic antituberculosis serum does not lose its antitoxic power when exposed to the same currents. These assertions are the results of extensive research conducted for four years.

Gazzetta Degli Ospedali (Milan), July 7.

Technique of Subcutaneous Injections of Iron. A. PIESSI.—The contradictory experiences of various clinicians with the subcutaneous injection of preparations of iron is probably due to the choice of the point where the injection is made. The citrate of iron and ammonium is preferred at Galvagni's clinic, where the results of this method of administering iron have always been brilliantly satisfactory. A series of 359 injections are tabulated, showing that only 3 out of 54 injections in the back were free from some after-disturbance, while nothing of the kind was observed with 288 out of 305 gluteal injections.

Process of Repair in Experimental Lateral Ligature of Veins. D. TADDEI.—In the experimental research on rabbits, silk was found superior to catgut for lateral ligature of the superficial jugular vein. The substitution of connective tissue commences on the second and is complete on the sixth day, but the process of true repair does not commence until after a month, and is complete in the course of two and one-half months.

July 14.

Necessity of Antisepsis in Injecting Gelatin. E. GIORDANO.—The gelatinized serum used for hemostatic purposes, is an exceptionally fine culture-medium for pyogenic micro-organisms, as Giordano has established by a number of tests. He experimented to find the best means of rendering it unfavorable for cultures, and recommends sublimate, in the proportion of 1 to 3,000, especially for application on infected surfaces.

Harmlessness of Intramuscular Injections of Quinin. G. SETTI.—Several cases are described out of Setti's large experience, to demonstrate the absolute harmlessness of intramuscular, gluteal injections of freshly prepared quinin bichlorid, and their extreme efficacy. He considers the intramuscular route the best, if not the only method of administering quinin in ordinary cases of malarial fever. In urgent cases the endovenous route is perhaps preferable.

Giornale della R. Accademie di Med. (Turin), lxiv, 6, 1901.

The Blood in Case of Malignant Tumors. M. DONATI.—Nearly a hundred pages are devoted to this research, with 172 bibliographic references. Thirty-one cases are described in detail with the tabulated results of the examination of the blood. In cases of malignant tumors the alterations in the blood are merely those caused by any debilitating factor, and Donati was unable to establish any special type of the composition of the blood in these cases. However, the site of the tumor has a certain influence. He observed that in case of carcinoma of the stomach, for instance, the hemoglobin and the number of erythrocytes and of the total corpuscles were diminished. Polychromatophile, granulated red corpuscles appeared in the blood, with poikilocytes, macrocytes and microcytes. Normoblasts and megaloblasts were also found in these cases and a small number of erythrophile reds. Hyperleucocytosis was noted in 50 per cent.; there was no leucocytosis of digestion in 80 per cent. The neutrophile polynuclears may dimin-

ish in favor of some other variety of leucocytes and large lymphocytes may appear. Lymphosarcomata induce a high degree of hyperleucocytosis.

St. Petersburg Med. Wochenschrift, May 18.

Affections of the Conus Medullaris and Cauda Equina. T. SCHWARTZ.—One of the two cases described improved so much under potassium iodid that the syphilitic nature of the lesion seems to be established, although there were no other indications of lues. Intense, long continued pains indicate that the lesion is in the cauda. They are accompanied by relaxed motor paralysis of the type known as paraplegia dolorosa. An irregular bilateral appearance is characteristic. The motor paralysis extends very slowly. An affection of the cone is indicated by a sudden onset and the symmetrical appearance of the manifestations. The atrophy develops more rapidly. Fibrillary twitchings of the muscles speak also for the cone in general, although there are exceptions to this rule. Anesthesia without preceding pain is evidence in favor of the cone. Dissociation is often noted in the impressions perceived. Müller suggests that in inoperable cases the posterior roots of the cauda might be severed to relieve the terrible pain.

Pseudo-Myxomatous Peritonitis. F. WEBER.—The clinical picture of this affection resembles that of a rapidly-growing tumor in the abdominal cavity. The subjects are almost all in the climacteric age. Only 17 recovered out of 40 cases collected by Günnsburger—the lighter cases are probably not published. It is possible that the colloid substance, finding its way into the blood, may affect the action of the heart, as nearly all the deaths occurred from heart failure. Suppurative peritonitis is more frequent after laparotomy in these cases as the peritoneum is in a chronically inflamed state and the lymphatics are clogged with the colloid substance, preventing resorption. The prolonged compression of the intestines and stomach interferes with the nourishment and debilitates the patient. Three new cases are related, two of long standing, both fatal, and one recent case, terminating in recovery.

Cronica Medica (Lima), May 15.

Benefit of Intrasplenic Injections in Chronic Malaria. J. L. CASTRO GUTIERREZ.—The writer relates several cases of chronic malaria with hypertrophied spleen, absolutely rebellious to quinin or any medicinal treatment. He injected directly into the spleen a Pravaz syringeful of a mixture of 20 cg. of malate of iron and six drops Fowler's solution, in water. The evening of the same day an acute malarial attack occurred, with fever at 40 C. Subcutaneous injections of quinin were made repeatedly. The third day the intrasplenic injection was repeated, but was not followed by any reaction, and the patient's further recovery was rapid. This experience was repeated in every case. The malarial parasites had probably ensconced themselves in the spleen, and quinin did not reach them. The intrasplenic injection roused them up and forced them into the general circulation where the quinin administered immediately afterward soon destroyed them. The author asserts, therefore, that the technique should be first the intrasplenic injection, and then large subcutaneous doses of quinin, as soon as the acute attack appears.

Cronica Medica Mexicana (Mexico), August 1.

Picric Acid in Smallpox. J. F. ROMERO.—In 162 cases of smallpox, 46 recovered without noticeable scars and 101 without a single trace of pitting. All had been treated with picric acid applied as a lotion or in a salve, and pitting occurred in only 15 cases. The picric acid probably acts by destroying the pyogenic germs that may find their way into the pustules. In a number of cases the confluent pustules covered the exposed parts of the body and the legs, but under the picric acid they subsided without a trace. In many instances he noted the coincidence that other members of the family failed to contract the smallpox from patients duly treated with picric acid. Its use was suggested by accident in a community where there was no drug store and where nothing else was available. His formula for the lotion is 2 gm. of picric acid in 15 gm. of alcohol and 185 gm. of water, to apply three times a day. When the pustules are already suppurating, he substitutes a salve of 1 to 50 gm. picric acid in 100 gm. lanolin or fluid vaselin, and 6 gm. alcohol, applying it four times a day.

Gaceta Medica (Mexico), July 1.

Rapid Examination of Sputa. J. P. GAYON.—In order to facilitate and hasten the examination of thick, scanty sputa in incipient tuberculosis, Gayon adds 20 c.c. of salt solution and 1 gm. of borax to each c.c. of sputum and centrifugalizes the mixture. The fluid is then decanted and the sediment is ready to examine at once.

Semana Medica (Buenos Ayres), June 6.

Remarkable Teratologic Case.—The case was seen by Professor Figueira of Lisbon. The supplementary leg emerging from the perineum is in reality two legs grown together, and has ten toes. Hard bodies of indeterminate shape can be palpated in the abdomen, which Figueira and others assume to be the remainder of the body of the fetus included in the



abdomen of the surviving twin. There is evidently a single bladder, as the young man urinates simultaneously with both urethræ. All the organs seem to be sound.

Books Received.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, with the Collaboration of John B. Murphy, M.D., Chicago; Alexander D. Blackader, M.D., Montreal; H. C. Wood, M.D., Philadelphia; T. M. Rotch, M.D., Boston; E. Landolt, M.D., Paris; Thomas G. Morton, Philadelphia; Chas. H. Reed, M.D., Philadelphia; J. W. Ballantyne, M.D., Edinburgh, and John Harold, M.D., London. With Regular Correspondents in Montreal, London, Paris, Leipsic and Vienna. Volume II. Eleventh Series, 1901. Cloth. Pp. 304. Price, $2.00 per volume. Philadelphia: J. B. Lippincott Co. 1901.

THE DIAGNOSTICS OF INTERNAL MEDICINE. A Clinical Treatise on the Recognized Principles of Medical Diagnosis. Prepared for the Use of Students and Practitioners of Medicine. By Glentworth Reeve Butler, A.M., M.D., Chief of the Second Medical Division, Methodist Episcopal Hospital. With 5 Colored Plates and 246 Illustrations and Charts in the Text. Cloth. Pp. 1059. Price, $6.00. New York: D. Appleton & Co. 1901.

PRACTICE OF MEDICINE. By Eminent Medical Specialists and Authorities. Edited by George Alexander Gibson, M.D., D.Sc., F.R.C.P. Ed., Physician to the Royal Infirmary, Edinburgh. Vols. I and II. Cloth. Pp. 1770. Price, $8.00. Philadelphia: J. B. Lippincott Co. 1901.

SYPHILIS: ITS DIAGNOSIS AND TREATMENT. By William S. Gottheil, M.D., Professor of Dermatology and Syphilology, New York School of Clinical Medicine. Profusely Illustrated. Cloth. Pp. 216. Price, $1.00 net. Chicago: G. P. Engelhard & Co. 1901.

THE DISEASES OF THE RESPIRATORY ORGANS, ACUTE AND CHRONIC. By William F. Waugh, A.M., M.D., Professor of Practice and Clinical Medicine, Illinois Medical College. Cloth. Pp. 221. Price, $1.00 net. Chicago: G. P. Engelhard & Co. 1901.

AN INVESTIGATION OF A PATHOGENIC MICROBE Applied to the Destruction of Rats. M. J. Rosenau, Past Assistant Surgeon, Director Hygienic Laboratory, U. S. Marine-Hospital Service, Washington, D. C. Paper. Pp. 10. Washington: Government Printing Office. 1901.

PHOTOGRAPHIC ATLAS OF THE DISEASES OF THE SKIN. By George Henry Fox, A.M., M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, New York. Parts II and III. Philadelphia and London: J. B. Lippincott Co. 1901.

SEXUAL HYGIENE. Compiled from Books, Articles and Documents, Many Not Heretofore Published. By the Editorial Staff of the Alkaloidal Clinic. Cloth. Pp. 269. Price, $1.00. Chicago: The Clinical Publishing Co. 1901.

Queries and Minor Notes.

CHAPARRO ARMAGOSO.

MAGORDA, TEXAS, July 30, 1901.

To the Editor:—Will you please give me some information anent the physiologic action and therapeutic uses of chaparro armagoso? Also, I would like to know something of the chemistry of this drug.

S. A. F.

ANS.—Chaparro is Spanish for the evergreen oak, answering to the botanical Quercus ilex. The variety "chaparro armagoso," however, we are unable to find in any medical or botanical work. We think it is merely a local term, and not scientific. It is possible, however, that the first word of your term is "Chaparra," which is Southern and Western American for "bramble," as well as Spanish for a "plantation of evergreen oaks."

NAME OF SECRETARY WANTED.

MANKATO, MINN., Aug. 12, 1901.

To the Editor:—Please state in THE JOURNAL who is the Secretary of the State Board of Medical Examiners of Minnesota.

L. M. L.

ANS.—Dr. C. J. Ringnell, Minneapolis.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 1 to 7, 1901, inclusive:

James T. Arwine, contract-surgeon, leave of absence from Fort Liscum, Alaska, extended.

Robert Burns, major and surgeon, Vols., leave of absence extended.

William H. Corbusier, major and surgeon, U. S. A., member of a board at New York City for the examination of officers for transfer to the Corps of Engineers.

William C. Fisher, contract dental surgeon, from Washington, D. C., to Fort Sheridan, Ill., for duty at that post.

Robert J. Gibson, major and surgeon, U. S. A., member of a board at San Francisco, Cal., for the examination of officers for transfer to the Corps of Engineers.

William P. Kendall, major and surgeon, U. S. A., from Fort Slocum, N. Y., to duty at Fort Porter, N. Y.

William L. Kneedler, major and surgeon, U. S. A., sick leave from the Division of the Philippines extended.

Conrad E. Koerper, lieutenant and asst.-surgeon, U. S. A., from duty at Washington Barracks, D. C., to temporary duty at the U. S. General Hospital, at that post.

John S. Kulp, captain and asst.-surgeon, U. S. A., member of a board at New York City, N. Y., for the examination of officers for transfer to the Corps of Engineers.

William F. Lewis, captain and asst.-surgeon, U. S. A., member of an examining board at Omaha, Neb.

Arthur W. Morse, lieutenant and asst.-surgeon, U. S. A., member of a board at San Francisco, Cal., for the examination of officers for transfer to the Corps of Engineers.

John A. Murtagh, lieutenant and asst.-surgeon, U. S. A., member of an examining board at San Francisco, Cal., vice Lieutenant C. C. Collins, asst.-surgeon, U. S. A., relieved.

Michael A. Rebert, captain and asst.-surgeon, Vols., recently appointed, and now at York, Pa., to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Edward R. Schreiner, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Ord M. Sorber, contract dental surgeon, from Pittsburg, Pa., to Fort Sam Houston, Tex., for duty at that station.

Ralph L. Taylor, contract surgeon, to proceed via Seattle, Wash., to Fort Gibbon, Alaska, for duty at that post.

J. Samuel White, contract surgeon, previous orders directing him to proceed to Fort Gibbon, Alaska, revoked.

Charles K. Winne, lieutenant-colonel, deputy surgeon-general, from Fort Porter, N. Y., to Omaha, Neb., for duty as chief surgeon, Department of the Missouri.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending Aug. 10, 1901:

Surgeon F. J. B. Cordeiro, ordered to the Pensacola Navy Yard.

P. A. Surgeon D. H. Morgan, detached from the Pensacola Navy Yard, and ordered to the Naval Hospital, Norfolk, Va.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Aug. 8, 1901:

Surgeon J. M. Gassaway, relieved from duty at San Francisco, Cal., and directed to proceed to St. Louis, Mo., and assume command of the service, relieving P. A. Surgeon W. G. Stimpson.

Surgeon W. P. McIntosh, to proceed to Jasper, Ga., for special temporary duty. Granted leave of absence for thirty days from August 24.

P. A. Surgeon W. G. Stimpson, upon being relieved by Surgeon J. M. Gassaway, to proceed to San Francisco, Cal., and assume command of the service.

P. A. Surgeon J. A. Nydegger, granted extension of leave of absence, on account of sickness, for thirty days from August 10.

Asst.-Surgeon J. M. Holt, granted leave of absence for one month from August 15.

A. A. Surgeon E. B. Hallett, granted leave of absence for seven days from August 10.

Hospital Steward E. B. Scott, granted leave of absence for six days from August 5.

Hospital Steward Charles Slough, granted leave of absence for fourteen days from August 6.

Hospital Steward G. A. Morris, relieved from duty at New York City, and directed to proceed to Havana, Cuba, and report to the chief quarantine officer for duty.

Hospital Steward W. C. Phillips, relieved from duty at Chicago, Ill., and directed to proceed to the Mullet Key, Fla., quarantine station, and report to the medical officer in command for duty and assignment to quarters.

PROMOTION.

Hospital Steward E. P. Olsen, promoted and appointed clerk of Class 2, in the office of the Surgeon-General, U. S. Marine-Hospital Service, July 16, 1901.

RESIGNATION.

A. A. Surgeon E. A. Smith, resigned to take effect from and after July 31, 1901.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 10, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

Alaska: Klukwan, July 26, present.
California: San Francisco, July 21-28, 2 cases.
New Jersey: Newark, July 27-Aug. 3, 1 case, 1 death.
New York: Buffalo, July 22-29, 1 case; Elmira, July 27-Aug. 3, 2 cases; Gowanda, July 28, 7 cases; New York, July 27-Aug. 3, 41 cases, 14 deaths.
North Dakota: Bismarck, July 13-20, 1 case; Fargo, July 6-13, 1 case; Fisher, July 6-13, 1 case; Kensal, July 6-13, 1 case; Mayville, July 13-20, 1 case.
Ohio: Cincinnati, July 26-Aug. 2, 2 cases.
Pennsylvania: Philadelphia, July 27-Aug. 3, 4 cases.
Tennessee: Memphis, July 27-Aug. 3, 2 cases.
Washington: Tacoma, July 21-28, 1 case.
Philippines: Manila, June 15-22, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, July 13-20, 1 case.
Belgium: Antwerp, July 13-20, 4 cases, 2 deaths.
Brazil: Rio de Janeiro, June 30-July 14, 88 cases, 52 deaths.
Colombia: Panama, July 19-26, 6 cases, 1 death.
France: Paris, July 13-20, 5 deaths.
Great Britain: Dundee, July 13-20, 5 cases; Glasgow, July 19-26, 3 cases; Liverpool, July 6-13, 1 death; London, July 6-20, 26 cases.
India: Bombay, July 2-9, 5 deaths; Calcutta, June 29-July 6, 8 deaths; Madras, June 22-July 5, 13 deaths.
Italy: Messina, July 13-20, 9 cases, 3 deaths.
Netherlands: Rotterdam, July 20-27, 2 cases.
Russia: Moscow, July 6-13, 3 cases, 3 deaths; Odessa, July 13-20, 1 case; St. Petersburg, July 6-13, 3 cases, 1 death; Warsaw, July 6-13, 1 death.
Uruguay: Montevideo, June 8-15, 35 cases, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, June 30-July 14, 6 deaths.
Cuba: Havana, July 20-27, 3 cases.
Mexico: Vera Cruz, July 28-Aug. 3, 1 death.

CHOLERA.

India: Bombay, July 2-9, 2 deaths; Calcutta, June 30-July 6, 17 deaths; Madras, June 22-July 6, 4 deaths.
Java: Batavia, June 22-29, 30 cases, 20 deaths.

PLAGUE—INSULAR.

Philippines: Manila, June 15-22, 9 cases, 13 deaths.

PLAGUE—FOREIGN.

India: Bombay, July 2-9, 68 deaths; Calcutta, June 30-July 6, 15 deaths; Karachi, June 30-July 7, 1 case, 1 death.

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Address.

ANCIENT AND MODERN CONCEPTION OF SYPHILIS.

CHAIRMAN'S ADDRESS, DELIVERED BEFORE THE SECTION ON CUTANEOUS MEDICINE AND SURGERY, AT THE FIFTY-SECOND ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

WILLIAM L. BAUM, M.D.

CHICAGO.

During the centuries that have elapsed since syphilis was demarcated as a definite disorder nosologically, views have appeared, disappeared, and reappeared as to its origin and relation to other disorders. Dominance of judicial astrology, at the time of the Naples epidemic, led Steber, of Vienna, in 1494, to claim syphilis as a new disease, due to the conjunction of planets. Grünbeck, of Burkhausen, in 1496, charged the disease to the work of Saturn and Mars causing corruption of the blood and bile. Leoniceno, of Lombardy, about the same period, was skeptical as to the occult factors of the origin of the disease. He disbelieved in the origin in divine wrath against blasphemy, which led the emperor Maximilian to issue an edict. He also disbelieved in judicial astrology, and charged the epidemic to a certain unseasonableness of the air. He pointed out that in 1494 inundations occurred all over Europe, and that it was not surprising that in the wake of such phenomena the summer atmosphere acquired those hot and moist qualities which physicians and philosophers regard as the generating cause of all putrid germs. Inundations rapidly develop a general putrefaction of the air and soil. They may not only determine pestilential affections —*pestilentia*—like those in the 15th century, but also prepare for other diseases in the future.

Here, Leoniceno forms a conception of the relations of syphilis to general nosology, which has since maintained its own. While syphilis has since been endemic, it rarely assumes a type which could be denominated epidemic. About the time of Leoniceno, the view was entertained that syphilis was leprosy modified by coincident nosologic factors. Many 15th and 16th century physicians believed that syphilis arose from the stings of venomous insects. Indeed, Americus Vespucci claimed that the Indian women used venomous insects to stimulate the genitals of their lovers. In all probability, the peculiarly marked adenopathic character of the epidemic of the 15th century played a large part in lending credence to this venomous insect hypothesis. The adenopathic character of syphilis sometimes appears to-day to an extent that at once puzzles and interests the syphilographer.

No great epidemic has appeared since that of the 15th and 16th centuries. Epidemics of every disease, in the 15th, 16th and 17th centuries, exhibited a decided adenopathic tendency. Constitutional peculiarities at that time doubtless played a large part as predisposing causes, just as the neuropathic tendency of the present day plays a large part in the production of the luetic neuroses.

About 1540, the furibund character of syphilis began to disappear. Probably inherited immunity played a part in this, as well as the fact that the Galenic physicians, stirred by the assaults of Paracelsus, took a more active part in treatment. Antoine Lecocq, in 1540, noticed that syphilis begnn to lose its furibund, galloping character. Fracastor, at the same time, remarked that the disease had been markedly modified. Patients had but few pustules and slight shin pains; but more gummata were observed. The hair exhibited a greater tendency to fall out; sometimes the teeth became loose and fell out. The attention of Rabelais was early attracted to syphilis, because his generous disposition drew him toward this neglected class of patients. In 1538 he made great efforts to reform the treatment of these patients at Paris. Rabelais had "often seen syphilities when greased with mercurial ointment; their faces on edge like a knife and their teeth clacking like the keyboard of a broken-down organ."

ETIOLOGY.

The germ, or animalcular theory of disease, began to assume prominence early in the 17th century. Blankard, a Hollander, had stated: "In the seed of men, and in that moist matter which women carry in their wombs and in their sheaths, are found small animals, which, being venomous, corrupt not only the genital parts, but even, growing in time to large quantities, thrust themselves everywhere in the blood." By the middle of the century even the clergymen were acquainted with this theory. Thus, commingled with the fetichism of Cotton Mather, is found a chapter on the animalcular origin of disease, at the end of which, in describing remedies for this supposed source of distempers, he remarks: "Mercury, we know thee! But we are afraid that thou, too, will kill us if we employ thee to kill them that kill us! And yet, for the cleansing of small blood vessels and making way for the free circulation of the blood and lymph there is nothing like mercurial deobstruents."

Ballay, in the 18th century, claimed that the iguana to which Mark Lister charged syphilis, contained a "small species of animal" which he called venereal virus. He states, much less logically than Mather but in accordance with a view now strongly dominant, that mercury would not have the virtue of curing lues, were it not kept up by small insects, visible only under the microscope. Thirty years before, Ballay, Diedier and Desault had claimed that the venereal leven consisted of "imperceptible worms." Boerhaave strongly opposed,

and, in the opinion of his admirers, completely battered down the hypothesis of the imperceptible worm or animalcula.

The doctrine of disguised venereal diseases flourished. All unusual morbidities which could not be explained were attributed to concealed venereal disease without distinct symptoms. Furstenau charged hysterical phenomena to the driving in of a venereal virus by badly-directed treatment. Rosen, in 1764, made himself the apostle of this doctrine and accepted as hereditary some symptoms of recent syphilis in two 30-year-old patients. Van Swieten, in refusing to admit the heredity of syphilis, momentarily checked this theory. Stoll restored it to its dominance and Fabre was one of its warmest partisans. To a certain extent, this belief was an outgrowth of the tendency to demarcate diathesis which marked the time. Hahnemann, under the influence of this tendency, with that curious distortion of logic which so often suggests in him, paranoiac twist, ignoring the demonstration of the parasitic origin of the itch, charged psora or scabies with being a diathetic state having much more dangerous consequences than syphilis. "This thousand-headed monster of disease does," he remarks,[1] "cause internal affections (after eruptions sometimes containing only a few vesicles), accompanied by intolerable, voluptuous itching, and a peculiar odor. The psora—itch—is the only real, fundamental cause and producer of all the other numerous, I might say innumerable causes of disease—hysteria, mania, epilepsy, convulsions of all sorts, softening of the bones, cancer, gout, jaundice, cyanosis, dropsy, amenorrhea, hemorrhage from the stomach, lungs, nose, bladder and womb, paralysis, and pains of a thousand kinds, etc.—that figure in systematic works on pathology, as peculiar and independent diseases." Despite the demonstration in his time of the itch insect, Hahnemann permanently stamped this etiologic theory into modern homeopathic nosology and therapeusis.

To a certain extent, as to-day, teleologic notions anent the duty of the physician to preach sermons on debauchery in lieu of studying disease, increased this belief in disguised syphilis. Clinical recognition of the anomalies of syphilis, moreover, leads to a bias in favor of syphilitic etiology. Ricord, Dr. Oliver Wendell Holmes remarks, was the "Voltaire of pelvic literature, a skeptic as to the morality of the race in general, who would have submitted Diana to treatment with his specifics and ordered a dose of blue pill for the vestal virgins." While Buret and others have taken up the cudgels strongly for the purely specific nature of syphilis, still the modern trend of opinion strongly favors this 18th century notion, cleared of obscurity by 19th century biochemistry. The toxin of syphilis is now recognized as producing effects non-specific in character and resistant to antiluetic treatment. Lues, like all the great contagions, is now known to produce arrests of development resultant in defective constitutions.

During the 19th century a singular swerving occurred in views held as to lues. While, at the outset of the century, lues was considered as a disease modified by the constitution which it attacked, and the condition of that constitution at the time at which it occurred, by the middle of the century it was looked upon as a disease *per se*, which had little or no relation to constitution or to the patient's condition when attacked. In this particular, opinion concerning it followed the same evolution as views of other contagious diseases. The doctrine of specifics in therapy played no small part in determining this. Lues was likewise separated by nosologists from other diseases, on the teleologic ground that, not occurring in the lower animals, it was a product merely of human debauchery. This view of the disease appeared soon after the great epidemic of the 15th century. Many Galenic physicians, like too many English medical men of to-day, regarded it beneath their dignity to treat a disease of this kind. In England, despite the example of the great biologist, John Hunter, medical men still use venereal diseases merely as a starting point in practice. At the middle of the 18th century it was a common thing for beginners to establish dispensaries for this purpose. Smollett remarks, anent Fathom's attempt to secure practice: "The other means used to force trade, such as ordering himself to be called from church, alarming the neighborhood with knocking at his door at night, receiving sudden messages in places of resort and inserting his cures by way of news in daily papers had been so injudiciously hackneyed by every desperate sculler in physic, that they had lost their effect upon the public and therefore were excluded from the plan of our adventurer, whose scheme for the present was to exert himself in winning the favor of those sage sibyls who keep, as it were, the temple of medicine and admit the young priest to the service of the altar; but this he considered as a temporary project only, until he should have acquired interest enough to erect a hospital, lock, or infirmary, by the voluntary subscription of his friends—a scheme which had succeeded to a miracle with many of the profession who had raised themselves into notice upon the carcasses of the poor.

"Yet even this branch was already overstocked, insomuch that almost every street was furnished with one of these charitable receptacles, which, instead of diminishing the taxes for the maintenance of the poor, encouraged the vulgar to be idle and dissolute by opening an asylum to them and their families from the diseases of poverty and intemperance; for it remains to be proved that the parish rates are decreased, the bills of mortality lessened, the people more numerous, or the streets less infested with beggars, notwithstanding the immense sums yearly granted by individuals for the relief of the indigent."

The "lock" was then, as now, in England, the appellation of a hospital for venereal diseases.

Among the factors charged with the creation of the epidemic in Naples, was bestiality. This opinion was based on a theory that morphology of the contagion is affected by a culture medium. This opinion, experiments of Dr. G. F. Lydston have shown, there is reason to believe, since morphology of both the streptococcus and the gonococcus may be affected by the culture medium. The changeable nature of the vaginal secretions and the difference between human and animal vaginal secretions, were believed to have originated by fermentation—the peculiar qualities of the epidemic lues of the 15th century. While it was long thought that venereal diseases were unknown and incommunicable to animals, investigations during the last half of the 19th century demonstrated the existence of an adenopathic epidemic disorder among horses, known as dourine, and also as *maladie du coit*. This disorder, as Dr. R. J. Withers demonstrated a decade ago, before the Chicago Academy of Medicine, is in many particulars akin to furibund, adenopathic syphilis. It seems to bear the same relation to human syphilis that acute tuberculosis

1. Organon, p. 113.

of cattle does to human tuberculosis. Some medical reports of the epidemic of the 15th century refer to syphilis among horses and cattle. Probably much of this was dourine, since horses were then brought in great numbers from Arabia and from North Africa, where dourine is comparatively common.

The 18th century was marked by clinical demarcations of the different diseases charged to venery. In the early part of the century the distinction between gonorrhea and the other diseases had been pointed out, and had even been used by Swift in his "Tale of a Tub"; still, the disorder remained unnamed until the close of the century, when Swediaur revived the term gonorrhea, under which title—as etymology shows—the Greeks had placed indifferently, blenorrhagia, prostatic discharges and spermatorrhea. Two years after Swediaur, however, Hunter attempted to demonstrate that gonorrhea and lues were the same disease, and, through an undiagnosed lues in a gonorrheic, seemingly proved it. Tode, just before Hunter, had denied the possibility of luetic infection from gonorrhea. Hunter's experiment demolished the position of Tode and pointed out once more that error always lies in absolute assertions. Bell, in 1793, demonstrated that while gonorrhea and lues occasionally complicated each other, they were distinct disorders. The demarcation between hard and soft chancre was not established until 1852, by Bassereau, a pupil of Ricod. This distinction, even yet, is not totally accepted in therapeusis.

The problems of syphilography for the 20th century, as outlined by syphilographers in the 19th century and remote past are:

1. The early diagnosis of the disease where primary sore is either not recognized, as in extra, genital syphilis, or where it is abnormal.

2. The determination as to what predisposition produces the serious nervous and other consequences of tertiary lues.

Arising from this problem comes a secondary one: To determine the predispositions leading to the parasyphiloses. The next thing is to determine the influence of other diseases, whether malign or benign, upon syphilis. The bacteriology and bacterio-morphology of lues and other venereal diseases remain to be worked out. Practically, here, in regard to lues, there is not much advance beyond the guesses of the 17th century. In dealing with bacterio-morphology, the culture medium furnished by various lymphatic systems of man and animals needs determination. Since dourine in epidemic type has frequently to be dealt with by state veterinarians, material can be procured which would throw the same light on lues that lung plague in cattle has thrown upon pneumonia, and that cattle tuberculosis has thrown upon phthisis. In therapy, the problem is to avoid excesses of mercurialization and iodization, to treat secondary mixed infections and toxemias, and to treat the general systemic nervous exhaustion as well as the mental state of the luetic patient. Syphilographers practically must recognize that co-existent syphilophobia is almost as much of a physical depressant as syphilis itself.

Culices Make War on Anopheles.—Sir William MacGregor, governor of Lagos, British West Africa, in a paper read at the British Medical Association, stated that he had placed twenty each of the larvæ of the culex and the anopheles together in water. The anopheles were soon destroyed by the culices, showing that the latter might be made use of as an exterminator of the malaria-propagating anopheles.

Original Articles.

INTRA-UTERINE AMPUTATIONS.

PROBABLY CAUSED BY FIBRIN ABNORMALLY PRESENT IN THE LIQUOR AMNII.*

J. MAHER, M.D.,
OAKLAND, CAL.

Intra-uterine amputations are of sufficiently frequent occurrence to excite professional curiosity as to the causes which produce them. I wish briefly to call your attention to a case which occurred in my practice, and I do so perhaps more for the purpose of seeking light than of exploiting a theory.

Two and a half years ago, while officiating as obstetrician, I found a baby which had just been born minus some fingers and toes. I did not know of the abnormality until my attention was called to it by the nurse on the occasion of my next visit, some fifteen hours after the birth. I then found constricting bands of what appeared to be dried fibrin encircling several of the fingers and toes, which were evidently doing the amputating.

After the constrictions had been removed some of the members in the course of time fell off, having been strangulated to such an extent that they could not recover. Others remained and still show very distinctly, as you see by the photographs, the marks of the constricting bands. Fingers which had already been amputated were undergoing re-amputation at points nearer their origin. In other cases two members were cut off by one constriction and at the same time united to each other at the point of amputation. This happened to the two fingers involved on the right hand, which were afterwards separated by the knife.

The baby which was the first one was normal in all other respects and is to-day strong and vigorous. The parents are healthy. Family history is good. The second baby, now a month old, was born in normal condition.

It is not my intention to theorize, but I am inclined to the opinion that the trouble in this case arose from the abnormal presence of fibrin in the liquor amnii.

The causes of intra-uterine amputations, as given by the text-books, are: amniotic bands, inflammations, intra-uterine fractures, and constrictions by the cord. It would seem reasonable also that the amniotic bands so called might be due to fibrin deposited upon a part from the liquor amnii in the same way that it is deposited by whipping fresh blood, constricting the part, causing arrest of development beyond the point of constriction, and subsequent amputation.

The liquor amnii during the first half of pregnancy being almost pure blood serum, this phenomenon might be caused in the same manner as thrombus, embolus, or heart-clot. The liquor amnii may be open to unknown sources of contamination or the accidental introduction of the so-called fibrin ferment and the membranes could offer but poor protection to a fluid so easily infected.

The exact origin of the amniotic bands is not stated in the books, but the majority of writers leave us to infer that they are *all* out-growths from the inner sur-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

face of the amnion, and here is where I wish to respectfully take issue with them.

Lusk says: "An abnormally small quantity of liquor amnii is, however, only of importance in the earlier stages of fetal development. If the amnion be not then separated from the fetus by an adequate amount of fluid, abnormal amniotic foldings and adhesions between the amnion and the surface of the fetus may take place. The so-called feto-amniotic bands thus formed may, by mechanical compression, result in various fetal deformities or in spontaneous intra-uterine amputation."

Muller says: "Adhesion between parts of the fetus and the amnion are favored by a deficiency in the amount of amniotic fluid. If these points of adhesion become firmer or vascular they may persist, and if the process develops at an early term of fetal life, the regular development at that point will be arrested, giving rise to morphological anomalies which consist in the failure of union between two parts, such as hare-lip, exstrophy of the bladder, etc. If these amniotic bands are attached to the edge of fetal cleavage the cavities are particularly likely to remain open, giving rise to ectopia."

Again, I quote from the "American Text-Book of Obstetrics": "Amniotic bands disturb the development of the extremities, chiefly by producing constrictions causing at the peripheral end edema or atrophy. If this strangulation takes place at a very early date of fetal life then the growth of that part will be greatly arrested, so that the peripheral end beyond the constriction is proportionately small; in other cases it produces death of the part and so-called spontaneous amputation." The same authority says: "It is now generally admitted that the existence of amniotic bands is one of the causes for intra-uterine amputation. This amputation usually takes place early in fetal life. Sometimes there are a number of these bands and they persist to the time of birth."

These writers describe exactly what happens. But I wish to suggest that adhesions between the amnion and the fetus are more apt to cause distortions, producing so-called monstrosities, than clean-cut amputations. In the case here presented, we have no good reason for believing that what occurred was the result of contact with the amniotic surface or of a lack of fluid. When we stop to consider the position of the fetus in utero with legs drawn in, and the arms flexed and folded, it appears to me quite improbable that these members ever come in such constant and intimate contact with the amnion as to become adherent, but that, being the parts which are free and in almost continuous motion, they pick up the fibrin from the liquor amnii when it is abnormally present.

The question arises, would such a deposit of fibrin with the consequent constriction and atrophy taken in connection with the movements of a vigorous baby amputate *any* limb? I have seen a case where both arms and both thighs were taken off at or about the junction of the middle and upper thirds. The subject of this mishap was until quite recently a member of the British Parliament.

Trailing Skirts.—Notices are posted in some places in Switzerland informing wearers of trailing skirts that they will be fined. At Ems, Prussia, trailers are not allowed in the public gardens.

ECTOPIC PREGNANCY, WITH REPORT OF A CASE OF OVARIAN PREGNANCY.*

WILLIAM H. WATHEN, A.M., M.D., LL.D.

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I do not believe that it is possible for an ectopic pregnancy to develop primarily in the peritoneal cavity, for the ovum can not be lodged securely in any one place sufficiently long to form chorionic attachments, and the peritoneal secretion would very soon destroy its vitality; the one or more cases of reported abdominal pregnancy, after removal of the uterus, were primarily tubal or ovarian, these organs not having been removed with the uterus.

Ectopic pregnancy must be primarily tubal, tubo-ovarian, or ovarian, but as it can not develop to term in any of these structures, it ruptures either into the folds of the broad ligament or into the peritoneal cavity; and if the chorionic attachments are not then destroyed, there is no reason why the pregnancy may not continue to term.

I believe that most cases reported as intra-peritoneal pregnancy are extra-peritoneal, having developed in the folds of the broad ligament, or having then separated the peritoneum from its attachment, either extending upward posteriorly, or anteriorly between the peritoneum and the abdominal wall.

A case recently reported, in *American Medicine*, by Drs. Cullen and Goldsborough as probably abdominal pregnancy resulting from rupture of the uterus, is evidently a case of extra-uterine pregnancy, being primarily tubal, which ruptured into the layers of the broad ligament, and then separated the peritoneum from the anterior abdominal wall; and when they entered the cavity containing the fetus and membranes they did not open the peritoneal cavity. I make this positive assertion, because I am sure that if they will carefully examine the uterus of the woman they will find it in a normal condition. I refer to this case because of the prominence of the parties, thereby emphasizing the fact that there is generally an error in the diagnosis of what is styled intra-peritoneal or abdominal pregnancy. While the pregnancy is primarily nearly invariably tubal, or tubo-ovarian, there are two cases recently reported where it is claimed to have been shown to be primarily ovarian; namely, the case of Dr. G. P. Anning and Mr. Harry Littlewood, and the case of Dr. Catherine van Tussenbroek, as will be seen in the following extract,[1] and in a letter from Dr. Bland-Sutton.

DR. G. P. ANNING and MR. HARRY LITTLEWOOD read a paper on a case of primary ovarian pregnancy with rupture fourteen days after last menstruation.

The patient was aged 28 years, married five months, with no previous pregnancy. Menstruation was usually normal. She was operated upon on August 27, 1900, for a ruptured ectopic gestation, about thirty-six hours after the rupture. About two pints of blood and clots were removed, and a small ovum about the size of a Barcelona nut was found. This fitted into a firm envelope composed of laminated clot. There was a rent in the right ovary leading to a cavity, which contained some blood; into this the ovum and its sac exactly fitted, clearly indicating the primary ovarian origin of the pregnancy. The right tube was removed, and showed no evidence of rupture. The left

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1. British Med. Jour., Jan. 12, 1901.

tube was examined and found normal. The cystic portion of the left ovary was removed. The patient made a good recovery. The specimens were shown, with microscopical sections of the ovum, the sac, and a portion of the ovarian wall.

Mr. Bland-Sutton remarked that belief in ovarian pregnancy could be traced back more than two centuries, but a critical examination of recorded cases, showed that in some instances the supposed ovarian fetus was in reality a dermoid, and in others a sequestered fetus (lithopedion) in the broad ligament. In a few instances the account of the dissection was so careful and circumstantial as to leave the impression that the formation of the embryo in the ovary could not be denied. It must also be borne in mind that the modern cases prior to 1899 rested upon no safer evidence than the non-detection of the ovary during an operation or upon the postmortem examination of a person with an advanced extra-uterine gestation. Even so careful and judicious a writer as Dr. Farre did not deny the possibility of a spermatozoon entering an ovarian follicle, but he denied that any case of ovarian gestation had been satisfactorily proved. Mr. Bland-Sutton came to the same conclusion after a study of a much larger number of specimens than were available to Dr. Farre, and with the advantage of modern methods of histological research. His (Bland-Sutton's) investigations had been particularly directed to the very early stages, for he urged as a postulate that, if the ovum was really capable of being fertilized in its follicle, "an early embryo in its membranes contained in a sac in the ovary" should be forthcoming. He was convinced that the specimen now before the Society was an example of early ovarian pregnancy. The only possible objection that could be raised to this view depended on the fact that the authors had not taken any steps to prove that the "mole" had not been ejected through the celomic ostium of the tube (tubal abortion). He would not press this objection because he had sections of a more complete specimen which quite satisfied him that an ovum could be fertilized while in its follicle. Since the last meeting Mr. Bland-Sutton had visited Amsterdam, and through the courtesy of Dr. Catherine van Tussenbroek, had been able to see the early example of ovarian pregnancy described by her, and had brought back sections which would be available for inspection by any Fellow of the Society. The condition of the parts was exactly analogous to that of a tubal mole, so that for convenience of reference it would be spoken of as an "ovarian mole"; the blood corpuscles in the vessels of the villi were nucleated; there was no trace of a decidua in the ovarian follicle, and it was an interesting fact that in the clinical report of the case it was stated that a decidua had formed in the uterus, and a few days after the operation was discharged with the *douleurs d'accouchement.* The "mole," with its chorionic villi which had become the criterion for many cases of early tubal pregnancy, seemed likely, from this specimen, to become the criterion of early ovarian pregnancy also, and a large field of inquiry had thus been opened, for the condition known as blood cysts of the ovary would now require very careful investigation in the new light afforded by this specimen.

"London, May 7, 1901.

"Dear Doctor Wathen:—The sac in the van Tussenbroek specimen contained an embryo. I satisfied myself on this point when examining the sections. That case is complete in every particular. Yours very truly, J. Bland Sutton."

"P. S.—No embryo was found in Anning's case. The van Tussenbroeck case was reported in extenso in the *Ann. de Gyn. et de Obstet.,* under the title "Un Cas de Grossesse Ovarienne."

By studying this extract carefully, and Dr. Sutton's letter, it will be clearly seen that in no case has an embryo ever been seen, and the assertion that there has been an embryo rests solely upon macroscopic and microscopic examination of the membranes. I contend that the opportunities for error in such examinations are so abundant that it is doubtful if we are justified in accepting such cases as genuine unless the embryo can be seen, as in the specimen I now exhibit, which must be accepted as positively ovarian, unless we deny that any case can be such with the tube not patulous in its entirety, with no closure of the outer extremity. By examining this specimen, you will see that the tube has not been ruptured in any place, but that the fimbriated extremity has become adherent to the sac cavity, which I claim is the result of an irritation caused at the time of rupture, and hemorrhage.

It is a well-known fact that, in all structures in the peritoneal cavity nature tries to protect the life of the individual by a rapid formation of adhesions to prevent further extension of injury, and why should there be an exception in this case?

As microscopic examinations show that sections taken from all parts of the sac from which the laminated clot containing the embryo was removed are positively ovarian tissue, there can be no doubt as to the impregnation having occurred in the Graafian follicle, and that the ovum never escaped from this cavity. Within the center of the laminated clot, there was an unbroken amnion containing an ounce of liquid, and an embryo of about six weeks' development in a state of perfect preservation, which can be seen by examining the specimen.

If ectopic pregnancy be diagnosticated before rupture, there is no operation in which the peritoneal cavity is opened that is more easily performed, or more successful. This may be accomplished by either the vaginal or the abdominal route. After the rupture has occurred, the selection of the method depends upon the condition existing. If the rupture is in the folds of the broad ligament, with few exceptions the operation can be completed successfully by the vaginal method; and I have within the last five years performed nine-tenths of my operations for ectopic pregnancy by this method, and have had but one death, which was the result of long delay and general sepsis before the operation. So demonstrated facts outweigh theory of those who oppose the vaginal route.

If the rupture is intra-peritoneal, the operation may often be performed by the vaginal method, and if conditions are encountered that can not be overcome, we may speedily open the abdomen and have the advantage of excellent drainage from below; this greatly aids convalescence, where the pelvic and abdominal structures have been extensively soiled with blood, which may have become infected by passage of germs from the bowel.

In cases of great shock, where the patient would probably die if an abdominal section were performed, we may control hemorrhage and establish drainage through an incision into Douglas' pouch, by bringing down the ruptured tube and applying a clamp over the bleeding point; this may be left in position, giving positive assurance that there will be no hemorrhage until the woman can be stimulated and gotten into a condition favorable for an abdominal section; it may be done without the administration of an anesthetic or greatly disturbing the woman. In fact, all operations for extra-uterine pregnancy before the end of the third month, where there is not great shock, may be performed so easily and so successfully that a description of methods is hardly necessary. This, however, is not true in cases that have continued to develop for several months or to term after rupture from the tube. In these cases, we would have no trouble were we able to remove the placenta and control hemorrhage. The dangers of sepsis and secondary hemorrhage are so great if the placenta

be left, that we are justified in encountering the dangers of hemorrhage in efforts at its removal. If we attempt to separate the placental attachment without facilities to control the blood-vessels speedily, our patient may die of hemorrhage before we can reach the bleeding points; therefore it is best to have a large assortment of long and varied-shaped forceps, which may be applied at many points before the separation of the placenta is attempted.

If we wait to apply the forceps to all points after the separation the hemorrhage may so obscure the surface that we can not succeed. It is nearly impossible in these cases to use ligatures to an advantage before the placenta is separated, but they may be applied afterward when we have controlled hemorrhage by forceps, just as we do when we control hemorrhage by forceps in the removal of uterine myomata; for the large vessels will then have become greatly contracted. Firm gauze pressure may aid in controlling hemorrhage.

Of course, there can be no well-established technique that will apply to every case, because in one ectopic pregnancy that goes to term we may open directly into the sac cavity and not expose any intra-peritoneal structures; while in another the peritoneal cavity will have been opened and the placenta found attached so widely that it seems nearly impossible to separate it without fatal hemorrhage. Again, the attachment may be such that the placenta and membrane may be separated without causing profuse hemorrhage. If in any case the placenta can not be or is not removed, a large opening should be made into the pouch of Douglas so as to establish free drainage, and if possible the fetal sac should be sutured into the lowest part of the abdominal incision, thereby protecting the peritoneal cavity.

DISCUSSION.

Dr. A. Goldspohn, Chicago—Every case that can be actually counted as a case of ovarian pregnancy is an object of much interest inasmuch as that question does not seem to be definitely decided. We know that Dr. Wathen is one of the advocates of the vaginal route. The difficulty about forceps, which he speaks of, to control hemorrhage and about not being able to ligate the arteries through the vagina is considerable and unnecessary. We know that extrauterine pregnancy is a sterile condition. Drainage and ventral hernia as objections to the ventral incision can be avoided. If the rupture has occurred some time back, so that the source of bleeding has certainly been occluded, that the hemorrhage is not continuing and has not been progressing, we then have an hematocele to deal with. To clean that out, the vagina is a good route, but when we are not certain that hemorrhage has been definitely stopped and that natural hemostasis has occurred, we have to operate, not simply to empty an hematocele, but also to stop hemorrhage. Then the route by abdominal section is to be preferred. Also, because many of these cases have some true gynecologic reconstruction work to be done, it can be done intelligently and to best advantage to the patient by means of an abdominal section.

Dr. Wathen, in reply—Dr. Goldspohn misunderstood me in relation to drainage. When I operate from below in a case of large hematocele, I drain because it is necessary, no matter whether the hemorrhage has stopped or not. We can not always tell that, but we generally can control it from below by opening and taking out the hematocele, bringing down the ruptured tube, and removing it. What I spoke of, in drainage, was that if we succeeded in operating from above and failed to take out the placenta, it would be well to drain. Where there is simply a freshly ruptured ectopic gestation, or no rupture at all, there would be no necessity for drainage unless you soiled the cavity yourself. I do not believe in drainage by the abdominal route. I have not drained for three years. I packed with gauze, but that is simply isolating infected areas. Per vaginam, where I remove infected or non-infected material, I always drain, using the drainage tube with gauze, and I get good results. I have not found the case yet of rupture into the broad ligament that I could not control from below. They all recovered, but one. They will always recover if you get them in time. If there is a little hemorrhage, gauze packing will readily control it.

GYNECOLOGY, ITS CONTRIBUTION TO GENERAL SURGERY.*

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As we stand upon the threshold of a new century, it is wise that we review the history of the past and garner its lessons for the future.

Until within the latter half of the Nineteenth Century, the practice of medicine had continued in quite the same general way as for the indefinite past. Even surgery, as a specialty, was so exceptional that, after my return from the army service as surgeon, in 1865, my revered master, Dr. Henry I. Bowditch, urged that I abandon my purpose of making surgery my life-work, with the statement that there was but one man in New England who, as a surgeon, obtained more than a competency.

The introduction of ether into general use, followed by the wide experience gained by a large proportion of our younger graduates in the civil war, gave to surgery in America a new impetus, and this, with a very general advance in anatomic, pathologic and clinical knowledge, caused many to fit themselves very carefully, by a long period of study at the various centers of European learning. This enthusiasm has in no way abated, until now, by general consensus of opinion, American surgery is not surpassed, if equaled.

Gynecology is very naturally in origin a subdivision of obstetrics rather than surgery. The older works were usually styled, "Obstetrics and Diseases of Women," oftentimes adding, as did also the professorships, "and Children." This tended to the study of uterine and pelvic pathology rather from the medical than the surgical aspect, and hence arose the very general and now justly criticised methods of intra-uterine and vaginal medication.

The younger members of the profession can never understand the difficulties which hedged about the study of the pelvic pathologic conditions of women at a not very remote date. This was due quite as much to the prudish reserve of the profession as to that of the laity. Dr. Bennett in the preface to the first edition of his work entitled "The Inflammation of the Uterus," published in London, 1845, states, "that in England no examination, even of a married woman, is attempted by the most experienced practitioner unless there be very serious reason for such a step, and very frequently not even then. That this laudable sense of propriety is, however, often carried much too far by the members of the medical profession with us is well known to all who specially study uterine pathology. I might cite numerous illustrations of this fact. One alone will suffice to show how frequently examination is neglected by well-informed practitioners from false delicacy on their part and not that of their patients. A few

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months ago I was consulted by an unmarried female who had presented for eight years, not a few only, but all the symptoms of uterine polypus. During this peperiod she had been attended for weeks and months at a time by five or six medical gentlemen of undoubted talent and ability, not one of whom ever proposed an examination. They must have suspected the disease. That person has repeatedly told me that she would at any time have submitted to an examination, had she been requested, so great was the intensity of her suffering. Delicacy carried to such an extent becomes absolutely criminal."

In my own student days I was carefully instructed to make a small hole in a sheet placed over the patient and through this to examine, and, if thought necessay, to thrust in the long cylindrical speculum, in the almost futile hope of adding to my knowledge. Even as late as 1869 I was obliged to seek in Germany opportunities for physical examination nowhere permitted in America.

Mr. I. Baker Brown was one of the most popular and prosperous of the younger surgeons of London, until after the publication of his very thoughtful and original work entitled, "The Diseases of Women," in 1864. In the surgical reparation of the injuries incident to childbirth he will ever be looked upon as a wise pioneer, but in the attempt to popularize his work he went a step too far for the conservative opinion of the time, and the active opposition of the profession forced him into obscurity and want.

Drs. Burnham and Kimball of Lowell, Mass., were illustrations of professional ostracism by men incapable of judging of their vastly superior merit. To the latter I am indebted for very much of value, and I esteemed his friendship as an especial honor; yet I was advised confidentially by one who was then a leading practitioner in Boston, that if I would succeed in Boston I must ignore him. Yet he performed 225 operations for ovariotomy with 69 per cent. of recoveries. He removed the uterus 12 times with 5 recoveries.

This was in a greater degree true of Dr. Horatio R. Storer of Boston. Educated in a most careful way, four years an inmate of the family of the immortal Simpson, and the editor of his works, he tried in vain to stem the tide of adverse popular medical opinion, and broken in health as a consequence, abandoned his profession. Yet these men made contributions to surgery which have rendered their names immortal. They placed upon a sure foundation the surgical removal of large uterine myomata, and Dr. Storer was the first deliberately to plan and execute the safe surgical cure of umbilical hernia. When this operation, now considered of so little danger, was first made known, the criticism and condemnation here was bitter and almost universal.

The peritoneal cavity and the knee-joint were then thought beyond the deliberate invasion of any surgeon who would maintain the respect and confidence of the medical profession. From a source least expected there arose a new teacher who became famous by dint of industry and a genius rarely surpassed in any field of labor —J. Marion Sims. Unlike McDowell, also from the South, Dr. Sims had had no foreign training. Educated in Charleston, S. C., he practiced in Montgomery, Ala., until on account of illness he removed to New York in 1853. He had worked out with remarkable perseverance, amid discouragements sufficient to have overcome most men, and had established the cure of vesico-vaginal fistula by the use of the silver wire suture, and won thereby a national reputation. Certain instruments were necessary in order to bring the parts within easy manipulation, and I shall never forget his telling me of the happy discovery which almost at once brought into general use the retracting speculum still called by his name. He had noticed that by placing his patient in the semi-prone position and retracting the perineum with his fingers, that the air pressure caused vaginal distention, which he called *ballooning* the vagina. One day, when desiring to examine a multiparous negress in her own cabin, he found himself without instruments. Chancing to see a large iron spoon, he bent back the handle and upon retracting with the spoon-bowl he at once saw the value of such an instrument, placing the entire vaginal vault under easy inspection and control.

When we contrast the difference between the use of the almost universal cylindrical tube, used since the days of the Romans until then, we may well understand the enthusiastic welcome of the new instrument. Dr. Sims is wisely considered the founder of a new department in surgery, since gynecology was almost at once raised from the level of empiricism to the dignity of a science.

The neglected work of Baker Brown was taken up and improved upon. It was not, however, until a number of his enthusiastic female friends organized for the founding of the Woman's Hospital of New York that the work under his hand received medical support. Conservatism hedged him about as with a high wall, while professional jealousy and criticism well-nigh crushed his sensitive spirit.

Ardent in his support of the cause of the rebellion, he would not remain under the flag of the United States, and owing to this he took up his residence in Paris. Here his genius found a new favoring field, and he was received with éclat in all the great centers of Europe. In 1865 he published his remarkable book under the modest title of "Notes on Uterine Surgery."

I first met him in Paris and the charm of his personality is as distinct in memory as yesterday. Upon his return to New York he associated with himself Drs. Emmet and Thomas and for some years it is probable that no one center of clinical teaching did so much to mold medical thought as the modest clinics held at the Woman's Hospital. So popular did his teaching become that the Board of Managers, out of a supposed respect for the modesty of the patients, voted to restrict the number of medical visitors to fifteen. This touched the dignity of Dr. Sims as personally offensive, and he tendered his resignation which in a somewhat similar feeling was accepted. He told me years after that he had always regretted this step as hasty and inconsiderate. The work in the Woman's Hospital continued under the masterful supervision of Drs. Emmet and Thomas, who made many contributions to gynecology of the highest value.

Although to Dr. Bobbs of Indiana is justly given the credit of having successfully performed cholecystotomy, it was undertaken, prompted by a mistaken diagnosis, he believing the enormously distended gall-bladder to be an ovarian cystoma. To Dr. Sims is justly awarded the honor of having, after a careful study of the pathology of biliary calculi, formulated and carried into successful execution the modern surgical intervention for the removal of the gallstones. He is entitled to be called the father of gall-bladder surgery.

In 1847, Prof. Charles D. Meigs, of Philadelphia, published a large volume upon, "Woman, Her Diseases

and Remedies." This continued a text-book of recognized reference until after my graduation. His teaching is given (in the form of letters) to his class, and he discusses colloquially with his genial "Helen," in a very free way, of her supposed diseases and manifold sufferings. Very little of profit came to the student from its study, and it is now chiefly valuable as a standard by which to gauge the ignorance rather than the knowledge of woman's diseases half a century ago. It is said the good Doctor made simplicity of living a virtue and showed its benefit in a well-preserved physique. He commended walking as the exercise for all, even of the profession. One of his famous sayings reported is the following: "The doctor who drives one horse has weak legs, he who drives two has a weak head."

Surgery can never repay the indebtedness which it owes to Drs. John L. and Washington L. Atlee of Pennsylvania. They revived the operation for ovariotomy in 1843 and were the first in the history of medicine to remove successfully both ovaries at one operation. The first successful ovariotomy ever performed, as is well known, was by Dr. McDowell in 1809. Dr. McDowell operated thirteen times with eight recoveries. The next ovariotomist in America was Dr. Nathan Smith, then professor of surgery at Yale College. His operation was performed July 5, 1821. The third was Dr. A. G. Smith of Danville, Ky., who assisted Dr. McDowell in some of his operations. This was performed in May, 1823. The fourth was Dr. D. L. Rogers of New York, who operated in 1829.

In 1830, Dr. J. C. Warren of Boston reported the thirty-third case on record. He first tapped and two weeks after removed the ovarian tumor. The ligature slipped. "Owing to the shortness of the pedicle, the ligature partially slipped off as soon as the scirrhus was taken away, and though the vessels were secured as fast as possible, they were so numerous and large that the patient in a short time sank from loss of blood." Dr. Warren concludes his remarks on the case and the result of the operation in these words: "The event of this case has led me to decline repeating the operation, and I should advise others to decline it unless there was some peculiar insulation of the tumor, as when it forms a hernia, or when it has a very long and narrow pedicle."

Dr. J. Bellinger of Charleston, S. C., who attempted an ovariotomy in 1828, operated successfully in 1835. No other successful ovariotomy was performed until that of the Atlees above referred to. Dr. Bellinger reports his operation as follows: "Incision extended to the ensiform cartilage; the tumor was removed by cutting the round and broad ligaments. Two arteries of considerable size were tied with animal ligatures, both ends of which were cut off close to the knot; a tumor in the pelvis was formed by the uterus distended with a large quantity of dark watery fluid which escaped by a rent made by the finger through the posterior wall. The patient was still living and in good health, May, 1847; menstruation never returned."

Dr. Vangirard reported in 1847 a case which had been tapped fifty times in three and one-half years. *Ether inhaled;* recovery. Dr. Atlee in 1849, reported two cases; chloroform mixture given. In 1850 he reported a case very troublesome because of a forcing out of the intestines, owing to a state of catalepsy produced by the chloroform mixture. Dr. J. H. Bigelow in 1849 removed a cyst weighing eight pounds; recovery—the first case which I find of recovery in Boston.

Dr. Bellinger's case is especially worthy of note, because of the use of the animal ligature, cut short, and the pedicle dropped back into the abdomen. Others had used animal ligatures prior to this date, but the ligatures were usually left long and brought out through the abdominal wound, that they might be removed later.

It was thought at this time by the profession in general that the previous surgical experience did not warrant surgical intervention. On this account, it made it even more difficult to stem adverse criticism than that which befell Dr. McDowell. In the publication of his experience[1] Dr. Atlee wrote: "I pledge myself to the profession to treat this subject in all truth and candor; to falsify, omit, or withhold nothing; and to write down errors, if such there be, in honesty and without fear, taking censure when deserved. In the decision of a matter of such weight to humanity, personal sacrifices ought to be utterly disregarded. If this operation is to be established, it must be on correct statements; if it fails on such testimony, it fails justly and forever. . . . Let the question therefore be met as it should be and its history be a record of truth." Dr. Atlee moved to Philadelphia, where he soon after performed his third operation, the first in the city, in March, 1849. The operation was denounced by the general profession, in the medical societies, and in the medical colleges. He was pointed out as a dangerous man. A celebrated professor, even in a published lecture, invoked the law to arrest him in the performance of the operation.

"The day before I operated upon my patient in Philadelphia, an eminent surgeon called upon her to assure her that she would certainly be dead in twenty-four hours after the operation. Twenty-four hours after the operation I requested him to visit her, and her condition was such that he could not believe she had been meddled with until I exposed the wound."

In 1852, the Northern Medical Association passed the following resolution: "That this Association, viewing the numerous fatal results ensuing upon ovariotomy and the many disasters arising from errors in diagnosis, unreservedly deprecates the frequent performance of this operation as detrimental to the best interests of science, and fraught with the most imminent hazard to life."

The following autumn, the same society reviewed the subject carefully and passed a resolution no less condemnatory.

Dr. Atlee was indefatigable in his researches upon the history of ovariotomy in every country and gathered a statistical table of 101 operations, which he published in April, 1845. In 1851, he published a new edition of his table, then containing 222 cases.[2]

There were in America 27 cases only. So slowly did ovariotomy find favor with the profession, because of the excessive mortality, that the total number of reported cases in the United States up to 1864 was only 117, of which nearly 60 per cent. recovered. Even as late as 1863, there are only three cases reported in that year, with two recoveries. From January, 1864, to October 10, 1871, the number rapidly increased to 622. Of this number, 246 cases, with 70 per cent. of recoveries, were operated upon by Dr. Atlee alone; 121 by Dr. Gilman Kimball, of Lowell, with 70+ per cent. of recoveries; 60 by Dr. A. Dunlap, of Ohio, with 80 per cent. recoveries; 28 by Dr. E. R. Peaslee, with 67+ per cent. of recoveries. Dunlap's cases show the highest

1. American Journal of Science, April, 1845.
2. Transactions of American Med. Assn., 1851.

percentage of recoveries. The total of the four operators give 455 cases, with an average of about 70 per cent. of recoveries. Total number of cases in the United States, 739.

The total number in Great Britain at the same date was 1006, the list being headed by Sir Spencer Wells with 440 cases, recoveries 74.54 per cent.; Charles Clay with 250 cases, recoveries 72+ per cent.; Thomas Keith 136 cases, recoveries 81+ per cent.; T. Baker Brown 120 cases, recoveries 70+ per cent.

In France up to 1867, there had been only 116 cases reported, with only 40.51 per cent. of recoveries. In Germany up to 1870, there were 180 cases, with 41.66 per cent. of recoveries.

The gravity of all these cases was greatly increased owing to the pathologic changes incurred by delay, as the rule then was not to attempt operation, because of the great fatality resulting from peritoneal injuries, until after twice tapping. Thus, extensive adhesions, reduction of vitality, etc., were the rule rather than the exception.

It is not my present purpose to follow the history of abdominal surgery beyond the advent of antiseptic teaching and practice. Owing to the indomitable heroism of the few already referred to, whose memory will be cherished, the battle over ovariotomy had been fought and won before our knowledge of wound infection had been placed upon a scientific basis. To a considerable degree this was also true, in favorable cases, of uterine tumors.

To Drs. Burnham and Kimball, of Lowell, belongs the undisputed honor of being the first deliberately to plan and successfully carry into execution that which is now justly considered one of the greatest triumphs of modern surgery—the comparatively safe removal of uterine myoma.

All along the lines, however, the details of operative measures were actively contested; the treatment of the pedicle, the closure of the wound, the use of drainage, the character of sutures, dressings, etc. It is true that the mortality was still large, which has been so extraordinarily lessened by modern aseptic methods, the chief of which has been the making and maintaining of a wound free from septic infection.

Our profession has been and is justly a very conservative one, and, as a rule, new teaching, no matter how scientific the demonstration, has ever encountered adverse criticism. When I was a pupil of Mr. Lister, in Edinburgh, in 1870, he had a following of scarcely a half dozen pupils, and not a single professor but looked upon his methods with distrust and criticism. My own was the first case of ovariotomy with successful issue in Cambridge, and this as late as 1872, and even this did not meet the approval of my seniors, who declared it unfortunate, lest a number of fatal cases should result from the overweening enthusiasm of a young devotee to a new faith. About this date I found it difficult to obtain the presence even of a physician at my first operation, deliberately planned for the cure of hernia, lest it might be construed into a quasi-approval of that which was necessarily looked upon as a most dangerous operation.

In 1880, when I exhibited to a medical society the specimen of my first resection of the pylorus for cancer, it was met with universal criticism, as beyond the pale of legitimate surgery. My first intercurrent operation for appendicitis was in December, 1886. This was upon Dr. S. N———, to whom was due, quite as much as to myself, the credit of working out the problem, with the deduction that the danger to life would be sufficiently less by operating between the attacks to warrant the operation upon an individual when in a fair state of health. The problem was then a new one and chanced to be the first operation of the kind reported. The danger was generally considered too great to warrant the approval of surgical intervention.

The removal of a biliary calculus from the common duct with immediate suture, followed by easy recovery, October 26, 1889, the first case of this character on record, was criticised as a surgical improbability, although attested by several reputable surgeons who assisted me in the operation. These instances are cited to show the difficulties encountered by pioneers in that which is now considered the every-day work of hundreds of surgeons. It is said that the adventurous innovator of to-day in new fields of research becomes the conservative of to-morrow. Different periods of life have doubtless much to do in bringing about such changes of opinion. However, it is wise to consider, in some directions at least, if the pendulum of surgical opinion may not have swung already too far away from the central truth. It may be well to inquire, if we have not too many surgeons, unless indeed they are better ones, and if the training and preparation for this special work should not be more thorough and critical, since the surgeon should be the good physician and something more. A special training in pathology, bacteriology, a familiarity with anatomy that must ever be an unfaltering guide, and in addition to all, should not the surgeon be the mechanic, artisan, and artist—rare gifts, especially molded to fitness by long years of training!

In conclusion, we may summarize the contribution of gynecology to surgery as primarily the entire domain of pelvic, abdominal, and intestinal surgery. Gynecology, which only a quarter of a century ago was looked upon with disfavor and criticism by surgeons who stigmatized it as the "art of puttering," has become the chief cornerstone in the new edifice dedicated to surgery. Its contributions indirectly benefit every unfortunate sufferer from accident or injury, until indeed it is itself lost in the common weal to humanity and bids fair in the future to be relegated to the past simply as a name, a sort of structural hypothesis, upon the scaffolding of which, one series of earnest workers labored, until they met and joined hands with other zealous rivals, in giving to the twentieth century the surgery of to-day, a sure Art, well builded upon a well-established science.

A CASE OF LEPROSY—A CASE OF MULTIPLE NEVUS PIGMENTOSUS.*

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ST. PAUL, MINN.

The following case was seen in consultation with Dr. E. Boeckmann, March 13, 1901. The patient, J. J., 20 years of age, was born in Minnesota and has never been out of the state. His father, mother, two sisters and one brother are living and well. The other brother, older than this patient, died in May, 1898, of leprosy, from which he had suffered for about eight years. In infancy this brother had been nursed by a

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Cutaneous Medicine and Surgery, and approved for publication by the Executive Committee of the Section: W. T. Corlett, L. Duncan Bulkley and W. L. Baum.

woman who had two brothers, both of whom were lepers and were known to be such in that community. It should be stated that the father of my patient came from a leprous district in Norway forty years ago, but that there is no leprosy in the family history. The mother was born in Minnesota.

The patient presented the ordinary type of anesthetic leprosy, there being eruptions scattered about on different parts of the body. There was, however, a distinct tuber on the right wrist; there was marked thickening of the ulnar nerve on both sides, and numerous areas of marked anesthesia on different parts of the body. The patient had lost a great deal of hair and his eyebrows had nearly disappeared. He suffered from occasional attacks of fever and acute eruptions. A section cut from a nodule in the skin, which I have here for your inspection, shows numerous leprous bacilli. This case is probably an instance of the anesthetic form of leprosy, which, as is so commonly the case among the lepers in this part of the world at least, is becoming tuberous. I regret very much that I have not been able to present the patient.

My chief reason for reporting this case is that I desire to put it on record as the only case of leprosy known to have been born in the State of Minnesota, or indeed in this part of the country. You are all familiar with the statement, so frequently made, that all the cases of leprosy in the Northwest have had their origin in some leprous district of some other country, and that for some unexplained reason, the disease was never communicated to others here, although there has been abundant opportunity for such communication. This case puts the matter in a new light.

MULTIPLE NEVUS PIGMENTOSUS.

The history of this remarkable case may be told in a few words. N. G., aged 21, was born in Sweden; his family history is negative. He is a strong, well-developed young man, apparently healthy in all respects. The condition here presented existed at birth, and has not altered since, except that the large growth on the back has spread slowly during the last few years. There is a slight secretion from the deeper fissures of this growth and it has an offensive odor. With the exception of the large growth the moles are nearly all smooth and flat, with here and there a growth of hair, notably on the shoulders and right buttock. The question of malignancy must be answered by the future clinical history. The accompanying photograph portrays the appearance better than any description; hence, I shall attempt nothing further in that respect.

The microscopic report was made by Dr. J. C. Johnston,[1] from sections submitted taken from the large growth between the shoulders. Hematoxylin alone was used in staining.

Unna[2] has made a thorough investigation of these growths; so thorough, in fact, that it only remains for later investigators to confirm or disprove his findings on minor points. The tumor in question belongs to his class of "soft moles," which are carcinomata, and not endotheliomata, as claimed by Von Recklinghausen; these are developed, according to Cohnheim's theory, from epithelial cell nests, detached from the epidermis in fetal or early life. In many places in these sections connections can be traced between the cell masses and the covering epidermis, there being, apparently, no basement membrane.

1. Jour. Cutaneous and G.-U. Dis., March, 1899.
2. Histopathology, p. 1129.

The epithelium is not, as a rule, greatly thickened, although there is some increase in all its layers, but the rete pegs are enormously prolonged and form an anastomosing network. The basal layer is deeply pigmented in certain areas, however, not uniformly. In the meshes of the network and in the papillary body generally, are seen the rounded, snared-off masses of cells. Their borders are clearly demarcated, generally by connective tissue. The cells show oval, vesicular, deeply staining nuclei, their contours being made out with great difficulty. Further down in the cutis are seen columns of epithelial cells, oftenest horizontal, between the connective tissue bundles. The cells are closely packed; their nuclei are smaller, more elongated and less vesicular. More deeply, but still in the cutis, the cells are arranged in loose masses, more widely separated from each other, their outlines more clear and the nuclei larger than in any other situation. The appearances here strongly suggest a malignant carcinoma, except that there is no mitosis. Pigment is irregularly scattered through the cell masses and cords lying within and without the tumor elements. The appearance in the former case is often that of a nucleated clump of pigment granules. Vacuolation of the nucleus is frequently apparent, both in the new growth and in the epidermis.



In the cutis the lymph spaces are enormously dilated, but there is no proliferation of the lining endothelium. There is considerable proliferation of connective tissue cells. Careful search failed to show any trace of coil-glands or ducts; here and there, however, attached by solid cords to the surface, were groups having the structure of sebaceous glands, evidently tumor cells pursuing their physiologic course. In this tumor there is both epithelioma and acanthosis, i. e., epithelial proliferation with and without fibrillation, the latter, of course, occurring in the epidermic meshwork.

LUPUS VULGARIS?

I will ask you to help me make a diagnosis in the following case. The patient is 27 years of age, apparently perfectly sound, but for the cutaneous trouble, in physique is almost a giant; he is an operator with a publishing company here. At the age of 3 he began to have ulcers and sores on his body, which have never healed. They have pursued a varying course, sometimes the ulceration has been quite deep. When I first saw him it was for an ulceration on the wrist. There was not very much discharge, but there were two or three jelly-like nodules, which resembled lupus vulgaris. Some nine years ago this young man was treated with tuberculin and the eruption entirely disappeared, but it returned in about six weeks. My first thought, toward which I am still inclined, was, that this is a case of lupus vulgaris and lupus erythematous combined. I want you to note particularly the character of the scar on the wrist which, as you observe, is very soft and pliable. This was the result of treatment by superheated air after the Hollander method.

DISCUSSION.

Dr. William Allen Pusey, Chicago—It seems to me this is a case of lupus vulgaris. Dr. Foster is in a better position to offer an opinion about the erythematous element than we are.

In connection with the leper case, I know of one interesting case of leprosy, in regard to development. It was a gentleman in good position who had lived in Chicago most of his life. He lived in New Orleans for two years, under good hygienic conditions. I saw the case several years ago with a typical tubercle of leprosy on his face. After that he went to Dr. Zeisler. He had lived in Illinois all his life except the two years he spent in Louisiana ten years ago.

Dr. Joseph Zeisler, Chicago—I believe with Dr. Foster that this is a very remarkable case. In my recollection of lupus I fail to remember a case where the disease was so remarkably free. It is unique to see a primary affection of the arm. Like Dr. Pusey I am not in a condition to see the erythematous element at present; the lesions are typical lupus.

Dr. Foster—How about the scar?

Dr. Zeisler—I should say it was an unusually excellent scar for lupus.

Dr. Foster—My diagnosis of erythema was from the scar.

Dr. Zeisler—As to treatment, I should use surgical means—cauterize each individual lesion.

Dr. Douglass W. Montgomery, San Francisco—This I believe to be a case of lupus vulgaris. In regard to the nevus I should think that a pigmented sarcoma had developed from the nevus.

The case of leprosy is to me the most interesting of the three. The development of leprosy in this country is quite an important question, for it seems to be capable of developing over quite a large section of the country. We have always with us in California, and in San Francisco particularly, a great number of lepers, who are almost all immigrants, however, and it is very rare to find an instance of leprosy that has developed on the Pacific Coast. I have had two cases that could be said to have developed on what is called the Pacific Coast. A third case that I thought at first had developed there shows the difficulty of obtaining accurate histories. The patient was a physician, a woman, who had typical leprosy. She steadily denied ever having lived in what is called a leprous country and said she had lived in California only, and California can not be called a leper country. That remained as a fixture in my history of the case until some years later I found that her father had lived in Mexico and that she had been brought up there. Here was a patient, who was a physician, who knew about leprosy, who had studied her own case and knew the importance of the history, and yet told me that she had always lived in California and never admitted having lived in a leper country.

Of the two instances where I found leprosy to develop on the Pacific Coast, one was a man from Vermont or Massachusetts who had never been out of the United States except once for a few hours on the Canada Southern railway going West, the only part of that country he had ever visited. It was a long time after first getting his history that I found he had lived in a Chinese railroad camp, and I have no doubt that he then contracted the disease. Another instance was a woman born in Ireland. She came to New York and afterwards to San Francisco. Her husband was born in Ireland, had lived in Ireland, Boston and San Francisco and nowhere else. Their children were all born in San Francisco. The woman developed eruptions and when I saw her she was in the full bloom of tubercular leprosy. She denied any intercourse with lepers and denied knowing anything about leprosy, and denied association with Chinese. I found out afterwards that she had had for years in her house, as a boarder, a well-known leper, an American who had acquired leprosy in Hawaii. These instances show the difficulty of getting at the source of contagion. These are the only instances I have ever found of leprosy developing on the Pacific Coast, but that it does develop there is a very important finding.

Dr. W. T. Corlett, Cleveland—In regard to the first case, I agree with those who consider it a peculiar case of lupus vulgaris. I do not, however, see any erythematous element in it. The scar is very peculiar. I have in mind a case of symmetrically distributed eruption leaving a scar similar to this, which was the result of syphilis.

In regard to the nevus, it is a very striking case and I quite agree with Dr. Foster that it is at the present time a case of very marked nevus which will probably result in sarcomatous changes later on.

In regard to the case of leprosy reported by Dr. Foster, about three or four years ago there was reported before this Association two cases of leprosy occurring in the vicinity of Columbus, Ohio. I think in Dr. Morrow's article in the "Twentieth Century" these cases are regarded as leprosy. I have seen the cases and after careful consideration must differ from his diagnosis. If they be cases of leprosy they are ones which have developed in the State of Ohio, the patients never having left the state. The father had some mysterious eruption, which seems to give more direct history of syphilis than anything else. The only time he left the State of Ohio was during the war of the rebellion, when he was in the Southern states. I do not report these as cases of leprosy, for I think they are a peculiar form of syringomyelia, closely simulating the lesions of lepra.

Dr. L. Duncan Bulkley, New York City—I dislike to connect lupus vulgaris and lupus erythematosis in any way; for, while the nodules of lupus vulgaris have sometimes developed in the lesions of lupus erythematosis, there is in reality no connection or relation between the two diseases. In the present instance I should regard the whole process as that of lupus vulgaris, and think the searring is quite compatible with this diagnosis; there are certainly some quite characteristic nodules of lupus vulgaris here and there.

In regard to the nevus, I quite agree that there is danger of the development of sarcoma. I believe that this will occur if he lives long enough.

As to the question of leprosy developing outside of leprous countries, there are enough cases now known to have originated in the United States to make it certain that this may

happen. The subject was pretty well thrashed out last year at Atlantic City. I have seen at least two such sporadic cases in New York City, and others have seen similar cases, where the patient had not been in a leprous country and no source of infection could be traced; these cases are, of course, very rare.

DR. SCHULER, Pittsburg—I only wish to speak of the migration of patients with leprosy. A case came under my care some years ago, of which I was perfectly ignorant at the time, but after looking it over I made up my mind that it was a case of tubercular leprosy. As soon as I intimated to the lady what was the matter with her she immediately left me and put herself in the hands of some other person, and continued passing from one to another until she landed in Johns Hopkins Hospital, where she died about two years ago. When I was trying to elucidate where she had lived and how she came by the leprosy, she denied ever having been out of the states of Pennsylvania and Ohio, but when she came near to death she told the rest of her history; that she had spent several years in the West Indies, and no doubt from that source she contracted her leprosy. I wanted to speak of the difficulty of getting a truthful history that you can trace back to a possible origin.

DR. WILLIAM ERICK, Kansas City—All seem to agree that this is a case of lupus vulgaris, and I did hope that the gentlemen would speak of the treatment by *x*-rays. I have had a case which was treated that way and with marked benefit.

I believe I have at present a case of leprosy in Kansas City and it has developed in the United States. The woman was born in Ireland, came very early to the United States, went around from one place to another, including Vicksburg, and for several years has been in Kansas City. She has had the disease for five years. It is principally in the face, with some nodules on the back. I have not been able to corroborate the diagnosis, but the clinical appearance seems to be that of tubercular leprosy.

DR. BURNSIDE FOSTER, in reply—I have been well aware of the fact that this was a case of lupus vulgaris, but not a typical one; and I had thought, on account of the appearance presented by the scars, that this might possibly be one of those cases which we sometimes see where lupus vulgaris and lupus erythematosus co-existed.

REPORT OF A CASE OF EPIDERMOLYSIS BULLOSA HEREDITARIA.*

L. E. SCHMIDT, M.S., M.D.
CHICAGO.

On account of the comparative infrequency of these cases, but not for any unusual circumstances in connection with it, the case is reported. W. Beatty, in 1897, gave a most complete review of the cases and literature up to that time. Rona, in 1899, was able to collect but 18 cases in the literature.

As in one case of Dr. Elliot, we find from the history that apparently this affection originated in the patient and was not inherited. In regard to this we know that there must be a starting point, and should there not be any hereditary influence in this case we can not point out why the boy is affected, as the clinical history does not differ from any one of those where we know an hereditary influence is present. Nevertheless, some authorities persist in calling it an hereditary disease.

In my case from its inception the second week after birth the parents believed that traumatism played a rôle in the causation of the bullæ. Nevertheless, after the greatest of care, but especially after the boy commenced to walk, the efflorescences continued to appear. The course in all these years has been about the same, neither does it vary as to the time of year.

As has been noticed by Elliot and others, the lesions do not leave any pigmentation, as we find so commonly among bullous eruptions. In these cases epidermal cysts, especially noted by Rona, are frequently seen after a bulla has healed, and these in turn quickly disappear and leave but a smooth, glossy, bright-red surface with the creases of the skin absent.

Edwin B.: age 9 years; presented himself for examination April 15, 1899.

Anamnesis.—Both the father and mother denied any hereditary nervous or blood diseases. All that could be ascertained was that their relatives had never been affected by any other than the ordinary diseases. The father is the third in a family of five, and was married at the age of 24 years. The mother is the fourth in a family of seven, and was married at the age of 23 years.

At present (June 1, 1901), they have been married thirteen years, and previously and since then have never been treated for any disease. Both parents regard themselves as perfectly well, although the mother for some years past has irregularities with her menstruations. Beyond this, nothing further can be elicited.

Two healthy boys, the second twenty-three months previous to the one in view, were born. This one was in all respects a normal labor, no forceps or other instrumentation required. Two years later, without any apparent cause, a miscarriage in the beginning of the fourth month occurred. The fourth and last boy was born four years ago. The three other boys seem to be perfectly well. They have had the ordinary diseases of childhood.

The boy under consideration was under 9 years of age; he was never seriously sick, although had measles and whooping-cough some years ago. At time of birth the patient was regarded as normal. No eruption on skin was noticed. Not until about the end of the second week, then commencing in the soles of the feet, just around the heels especially of both feet "water blisters," about the size of a split-pea, made their appearance. These were opened and treated with dusting powder. About the third month, small, regular, from pinhead to size of Lima bean, blisters appeared at irregular intervals on the dorsal surface of the hands and fingers. When he became old enough to walk, which was the usual time, bullæ up to the size of a large thumb-nail began to show themselves around the anterior surface of the knee, around the ankles, apparently especially over tendo Achilles. Beginning at the time, hemp-sized and small vesicles appeared on the dorsal surface of toes and both feet. Likewise bullæ about the elbow, especially over extensor surfaces, commenced to appear.

Apparently all these became more exaggerated since patient is able to walk and since he is open to traumatism; that is, these blisters came with more frequency, and usually became of quite large size. His mother states that the larger number of these blisters broke usually shortly after their appearance, and remaining contents would dry and in several days only the outer border of a blister would remain. The contents were usually clear, light yellow in color and slightly tenacious. But rarely would the contents become turbid or milky in appearance. If so, the parts became painful and swollen. It is only during the past four years that the contents of some bullæ occasionally become dark, bluish-purple in color. Both the nails of fingers and toes are affected

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and have been so as long as the mother can recall. Occasionally small blisters appeared in the external ears.

I have had the boy under observation for over two years. During this time repeated acute attacks of inguinal and axillary adenitis occurred. After a bulla became infected the corresponding glands would often become painful and greatly swollen almost within twenty-four hours. On physical examination of heart I have occasionally heard a hemic murmur. During this time he has had a bronchitis.

One year ago he complained of severe earache. Dr. Holinger examined him and found a small vesicle at border of membrane. As soon as this disappeared the pain ceased.

During this time he occasionally had some unusual appearances in his case. Several times areas the size of silver 50-cent pieces would become red and itchy,



May 10, 1901.

and in a few days scaly. These would be over the lower dorsal vertebræ, exactly in the median line. Besides small vesicles, which would become hemorrhagic, appeared in mucous membrane of tongue and buccal surfaces. Patient would not notice them until he was made aware of their presence.

He can play baseball when hands are in fair condition without causing new blisters to arise. Whenever a new blister does appear he always claims it follows a blow or fall.

His mother states that he has always been peculiar in regard to his diet. He refuses to take almost all vegetables and fruit.

During this entire time I have given patient tonics of all kinds, especially for long periods some form of iron; now for some time cod-liver oil. The blebs, as a rule, have been treated by allowing them to remain closed, or, if very large, by opening and dressing with some inert antiseptic powder or salves according to the needs. The infected and hemorrhagic bullæ were treated antiseptically. The former often required moist dressing in order to give relief.

For four weeks I have had the patient in the Alexian Brothers' Hospital under close observation. During this time the hands and feet were wrapped in inert powder and absorbent cotton. Patient was not allowed out of bed and the hands could not be used; was dressed daily. With every precaution so that the affected parts were well protected and so they could not be used, the bullæ appeared with apparently the same regularity as if this care had not been taken. The acute swelling of the glands was treated with unguentum. Credé, and in no case did suppuration occur.

April 25, 1899: Blood examination showed hemoglobin, 74 per cent.; leucocyte count gave polymorphonuclear, 73 per cent.; large mononuclear, 6 per cent.; small mononuclear, 18.5 per cent.; eosinophile, 2.5 per cent.



May 15, 1901.

Nov. 10, 1899: A bleb, irregular in shape, about size of a 25-cent piece, completely full, surrounded by a red zone, located on palm of hand. Cleansed and surface made aseptic and sterilized needle attached to Luer syringe was used to aspirate. This turbid thick and grayish colored fluid was transplanted on the ordinary media. Typical growths of the staphylococcus pyogenes albus appeared.

March 6, 1901: Patient returned with a large hemorrhagic bleb at the base of the right thumb and palm of the hand, said to have followed a fall upon his hand. The bleb was opened under aseptic precautions and 9 c.c. of hemorrhagic fluid withdrawn. It was centrifugalized and slides made from the sediment stained with methylene blue and Ehrlich's triple-stain. Cultures were made from the freshly withdrawn fluid and also from the aseptically centrifugalized.

Just below the right patella was another large bulla which was treated in an exactly similar way. The contents were not hemorrhagic, but were perfectly clear.

Four cover-glass stained specimens from sediment of the hemorrhagic fluid showed numerous red blood corpuscles, a few

leucocytes, two of which were of the eosinophile variety. No growths on any of the media after 72 hours.

March 27, 1901: Since the preceding visit he has had numerous bullæ on the elbows, forearms and hands, and also on toes and about the ankles and knees. Some of those present are hemorrhagic and others filled with clear fluid. One bulla over the right knee was filled with a turbid fluid. This was aseptically treated and transplantations on ordinary media were made. The staphylococcus pyogenes albus was present in all tubes.

Blood taken from ear showed 71 per cent. of hemoglobin. The leucocyte count showed: Polymorphonuclear, 74 per cent.; large mononuclear, 7 per cent.; small mononuclear, 16 per cent.; eosinophiles, 3 per cent.

April 5, 1901: The condition of patient about the same. Bullæ have come and gone. The contents of several were again examined microscopically. Numerous leucocytes were present and the large number showed no abnormal conditions, but they varied from this to an advanced stage of degeneration. Some were vacuolated and had fragmented nuclei. The red cells appeared smaller than those from the general circulation. Besides, transplantations were made, all without showing any growth.

Analysis showed the urine clear, acid, with sp. gr. 1021; no albumin; no sugar; trace of indican; Diazo-reaction negative; urea, 1.7 per cent.; microscopic examination was negative.

During the entire time that I have had the patient under observation I have made repeated examinations of blood and contents of the various kinds of blebs, and all with the same findings. I could see no change in the course, that is, no decrease or increase in the number of blebs during the different seasons of the year. All the functions of the body seemed to be normal. The skin appeared to act freely at all times, and at no time did he complain of excessive sweating of any particular part. Bulla filled with clear fluid, size of a split pea, located about left elbow, involving an area that had never been previously affected, was removed with ethyl chlorid, incising one-eighth of an inch from the efflorescence. Another, considerably larger, filled with hemorrhagic fluid from about the wrist removed under cocain infiltrations. Besides this other parts, including the epidermal cysts, were removed without any anesthesia. All these specimens were treated alike, hardened in weak, then absolute alcohol, mostly all prepared by the celloidin method, but some were mounted in paraffin. The ordinary staining methods were used and Zeiss microscope and lens used for their examination.

Repeated blood examination showed a variation of hemoglobin from 71 to 83 per cent., going up and down in percentage strength. In the leucocyte count we also see variations: Polymorphonuclear, 73 to 75 per cent.; large mononuclear, 5 to 6.5 per cent.; small monuclear, 16 to 18.5 per cent.; eosinophile, 2 to 3 per cent. Continued bacteriological examination of the contents of the clear and also of the hemorrhagic bullæ showed absence of all bacteria. In those that were infected I have found the staphylococcus pyogenes albus.

Centrifugalizing the contents of hemorrhagic bullæ, all elements of the blood have been found. The larger number of leucocytes showed degenerative processes. Some were vacuolated and also had fragmented nuclei. The red cells appeared smaller than those of the general circulation.

Urinary examinations were negative to all pathological conditions.

For histological study excisions from healthy to frequently affected parts were examined.



May 23, 1901.



May 23, 1901.

HISTOPATHOLOGY.

In the strata spinosum and strata basale in all the specimens examined we find marked changes. Practically the adjacent cells of these layers show varying cellular destruction. Cells adjoining each other often show great contrast; one may be scarcely involved and the other may be the seat of greatest degeneration. This change involved the cell and its contents, yet no definite relation from below upward could be noticed, nevertheless we see that in the interpapillary changes we find the greatest destruction. In examining a bulla we can see how these affected cells, for the greater part, form the outer wall of the bulla, but few cells remain attached to the papillæ, and these, for the most part, show but little degenerative changes.

At a point where the layers of the bullæ again come together these changes were noticed. In some sections the process apparently stopped suddenly and in others the changes in the cells gradually changed to the normal condition.

The contents of the bullæ showed differences. In some, fibrinization had occurred—in those of several days' standing, also in those that were sanguinous. For the greater part the leucocytes that were present had undergone degenerative changes.

The greater number of blood-vessels showed dilatation, and in addition an infiltration about the same. The character of the latter were such that they were most markedly present in the older lesions and scarcely, or not at all to be noticed in lesions that were excised from areas that had never been previously affected.

In all we find a more or less serous transudate about the immediately affected parts. Whenever this fluid reaches these weakened areas of epithelial cells we get a separation of the same, and is the beginning of a bulla. It would seem as if this disease is non-inflammatory, only becoming so when it has reached the chronic state.

What the primary cause for the degenerative changes in the basal layer and the consecutive flow of serum is we can not explain. It must be some peculiar condition of the skin inherent in these unfortunate individuals.

Status Præsens.—Patient is of average size, although muscular development apparently below average. His general health appears to be good. Skin is somewhat flabby and general color seems to be slightly pale. He exercises the same as his playmates, but he is easily hurt, i. e., blebs arise and give cause for pain, especially if they become infected. In his school work he is as far advanced as those of his age. His skin is active, perspires freely, and apparently not unusually from any special area.

Irregularly distributed over the surface of tongue, more towards the median line and extending posteriorly to the circumvallate papillæ, from pinhead to one-half hemp-seed sized vesicles, some filled with a clear and others with hemorrhagic fluid. A few of them are so situated that the teeth could not have caused any traumatism. On the buccal mucous membrane on a level where the teeth touch, and opposite decayed teeth, are elongated vesicles filled with hemorrhagic fluid. About these parts a light leukoplakia exists, showing that possibly similar eruptions have preceded it.

On the lower lip, just to the right of the median line, the signs of an old 5-cent piece sized bulla partly extending over the skin.

On the tips of both ears irregular in outline, the border raised and represented by an epithelial layer passing into the normal *niveau*. Within this outline the skin is of a slightly redder hue. Within can be seen some parts that have apparently not been affected. These parts as well as all the others are normal to the different sensations.

Exactly over the tenth dorsal spinous process a perfectly round flushed area, silver-dollar in size. It has given him a slight sensation of warmth and itchiness. Over the upper lumbar vertebræ and in the median line an area somewhat smaller in size, color not quite so bright and the surface covered with very minute scales. This has been present some ten days. These have never reached the stage of bullæ, nor have any bullæ ever been noticed on the back.

Thumb-nail of right hand is about to become detached. It is raised, especially at base, and here, too, are transverse striations. The whole is very opaque and slightly movable. On raising a very distorted nail, with rough surface and with no free edge, is to be made out. On the flexor surface over the second phalanx a 10-cent piece sized bulla filled with clear fluid. About the nail and extending over the greater part of the dorsal surface of thumb, is scaly and of a dark-red color.

Now, over the metacarpal-phalangeal joints a few small vesicles. Interspersed we find pinhead sized white-capped elevations or epidermal cysts, arranged apparently usually in circles, which probably correspond to the outline of some previous existing bullæ.

The entire palm of hand covered with bullous eruptions, several bulla having come together. Contents is dark-purplish in color. About the wrist and extending partly up the extensor surface of forearm a similar appearance to that over the dorsal surface of the hand. Over the extensor surface of the elbow is a bulla one and one-half inches in diameter, comparatively well filled, slightly flabby with clear, semi-fluid liquid.

The nails of the thumb, middle and small finger are similarly affected as on the right side, except that a whitlow exists about the index finger-nail, it having followed a bulla. The palm of hand and dorsum as well as wrists and elbow showed a few bullæ, epidermal cysts and also red and scaly patches.

Nails of toes of right foot are all irregular, small, surface rough and apparently poorly nourished. Over dorsal surfaces of all the toes a reddish scaly condition and a few small vesicles present; similarly on the toes of left side. Never any bullæ on soles of feet, only occasionally on the dorsal surfaces, consequently only normal skin. About the malleoli and over the lower part of the tendo Achilles we find a few blebs and remains of old ones. No signs over tibiæ of any previous affections, but at present over both knee caps, palm-sized, flabby bullæ. About these scaly and discolored skin.

The hands show no signs of any cyanosis or edema. The shape appears to be normal, except when bullæ are present. The palms and dorsal creases are present when not temporarily affected by bullæ. Especially on the extensor surfaces of the extremities where bullous eruptions have frequently existed we find the skin glossy, tense, and the normal striæ of the skin lost or all the appearances of atrophy present. In these areas we find these epidermic cysts. These apparently go and come without leaving any permanent macroscopic changes.

I have attempted with heat, chemicals, and mechanical means to cause bullæ, but without avail. A slight redness would appear, but only of passing moment.

Of late there seems to be a tendency among some authorities, among whom we find Hallopeau, to bring all these cases under one class, yet to recognize different varieties. All varieties have some things in common. We find, 1, that shortly after birth or usually at latest in early youth, there is a tendency for traumatic bullous eruptions; 2, that similar areas are affected; 3, that it is hereditary; 4, that the general health is intact; 5, that the course is chronic and remains uninfluenced by therapy.

Now, the dystrophic form of Hallopeau includes the case which I report. Because, in addition, it has consecutive atrophy of the skin, epidermal cysts and distortion of the nails. Those cases that belong to the simple variety can not have any one of these changes present.

That these types exist we must admit. Certainly the clinical appearances are very marked. Without doubt

these differences are so great that we must admit of the possibility of varieties. But it is asked: Why make such classifications? Have we not various diseases in which one or more clinical symptoms are absent and yet call one and all the same? No two cases of different types in the same family have yet been reported. This would almost certainly be a connecting link between the two and to some extent clear the question.

I think that we are still in doubt, and that for the present it will be best not to classify all under one and the same disease.

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DISCUSSION.

Dr. F. H. Montgomery, Chicago—I am only sorry Dr. Schmidt can not show the case here. Those of us who have been fortunate enough to see this case have no doubt regarding the correctness of Dr. Schmidt's diagnosis.

Dr. M. L. Heidingsfeld, Cincinnati—The feature which has impressed me most strongly in Dr. Schmidt's interesting paper, is the low percentage of eosinophilia, less than 2 per cent., if I remember rightly. This corresponds to the recent investigations of Bettmann of Heidelberg, who has found an exceedingly low percentage of eosinophilia in epidermolysis bullosa, which is in direct contrast with nearly all other forms of bullous eruption, and what is most interesting, is also in direct contrast with the investigations of nearly all other writers on epidermolysis bullosa, notably with Columbini, who claims an eosinophilia of 14 per cent.

The nature of the bullæ in this disease is also a matter of peculiar interest. It has been noted that sinapisms, in the form of mustard plasters, Spanish-fly, etc., when applied over the predisposed pathological areas, are unattended by vesiceation or even redness, while on the other hand, these symptoms are promptly induced over normal tissues elsewhere, which from the very nature of the disease, is the converse of the anticipated. Subcutaneous injection of normal salt solution, over the pathological areas, has been followed by the formation of bullæ which have the same appearance and pursue the same course, as those of spontaneous nature. From this, the deduction has been drawn, that the essential factor underlying this peculiar condition, is an undue relaxation of the areolar connective tissue, which readily permits and favorably prolongs an exudation.

Dr. Louis E. Schmidt, in reply—This case has been different from the cases reported in the literature. I know in regard to some of the findings, especially as far as being able to raise bullæ by artificial means and in blood examinations, they differ very markedly from some of the authorities. The microscopic findings are practically the same as those of Elliot.

New York State Insane.—Inequalities in county statistics of the insane are pointed out by the lay press without assigning any causes for the discrepancies. Thus Ontario county, with 49,000 inhabitants, has 185 insane, while Clinton, with 47,000, has but 88. Rensselaer, with 121,000, has 527 insane, while Oneida, with 133,000, has but 438. Ulster, with 88,000, has 265 insane, while Duchess, with 81,000, has but 360, and St. Lawrence, with 89,000, has 269. Orange county, with 103,000, has 357 insane, while Westchester, with practically the same population as Orange, has 500 insane.

PROTRACTED INFLUENZAL PNEUMONIA IN INFANCY.*

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While no period of life is exempt from influenza, it has been observed, during the pandemics of grip that have encircled the world, that infants are in a high degree immune from this scourge. During the recent epidemic of December and January, 1900 and 1901, I had under my observation, at the one time and in the same institution, four infants suffering from protracted pneumonia of influenzal origin, which, I trust, are of sufficient interest to present their histories and exhibit some pathologic specimens.

It is not my wish to convey the impression that grip in infants usually runs such a protracted course as the cases I present. During this period of life, grip is as protean in all its characteristics as in other life epochs. None the less the simultaneous occurrence of four cases in an institution that shelters sixty to seventy-five babies argues for the great frequency of severe and protracted forms, if infants be afflicted with influenza.

Etiology.—These four infants were fed exclusively on artificial food at the time they contracted the grip, and two of them had been nourished in this manner since birth. This is in accord with the observation that nursing children are almost absolutely immune, even though their mothers be seriously stricken with the grip. This immunity is explained by assuming that a potent antitoxin is eliminated in the maternal milk. Infants artificially fed are more susceptible than babies at their mother's breast, but are less susceptible than adults. Comby estimated that the morbidity among children in Paris during the pandemic of 1889 and 1890, was 40 per cent., and among adults was 60 per cent. We may state that the influenzal sick-rate, which is nil in young infants, progresses and regularly increases up to adult life. The youngest child that Comby reports with the grip was 17 days old, and he saw three nurslings contract the grip while nursing their sick mothers. This latter observation is quite exceptional. Relapses among children are not rare, but second attacks, during the same epidemic, are exceptional. The contagiousness of influenza is very great, and, particularly in institutions caring for a number of children, the afflicted infants should be isolated.

Symptomatology.—The onset, in these cases of protracted grip-pneumonia, was rather precipitate, and presented the clinic picture of a more or less severe gastro-intestinal infection, to which, in a few days, symptoms of involvement of the respiratory tract were added. Convulsions were not present, neither were there any pronounced nervous symptoms, such as stupor, chill, etc., though some irritability or restlessness was early present.

Usually the first symptoms observed would be that the child refused its food, or, if it had taken some, would vomit. It would be cross and fretful, would have a high fever, the breathing would become fast, then hurried and jerky. Cough, at first short and occupying a single expiration, would increase in intensity until it might be paroxysmal and continuous as in pertussis. The bowels were usually constipated and a considerable

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accumulation of gas in the stomach and intestines was frequent. The tongue usually was red and dry or coated with a moist whitish fur, and the pharynx mildly injected.

The temperature was elevated to a high degree, even early in the disease, and was distinctly irregular and intermittent, pursuing no definite cycle. One of the curves in particular resembles that of a pus infection. This irregularity and intermittency is intensely characteristic of influenzal infection and is in marked contrast to the pulmonary infection with the pneumococcus. The remissions of temperature may resemble the irregular and inverse type, as observed in tuberculosis, or may exhibit such a periodicity as is observed in malaria, and these resemblances are still further approximated by the frequent concomitants of drenching perspiration. The daily difference between maximum and minimum temperature, as exhibited in these charts, is very great, and differs very much from that observed in the vulgar gastro-intestinal infections. It appears to me that these characteristics of the temperature curve, sudden onset, great height, irregularity, and great daily difference are rarely exhibited in other infections in infancy. Hyperpyrexia was several times observed, but was well borne by these infants.

The earliest symptom of respiratory involvement was an acceleration of breathing. The breathing was continuously short, shallow and fast approximating 30 to 40 respirations a minute, with paroxysms when the rapidity would excel 60 to 80 a minute. These paroxysms would continue from a few minutes to an hour, and would be accompanied by a severe degree of cyanosis. More or less coryza was present in all of the cases, while in two cases the nares became intensely inflamed; in these two there was an extension of the inflammation to the middle ear, with rupture of the drum membrane and discharge of muco-pus from the external ear.

Cough was present, but not early. It was sometimes paroxysmal and explosive, suggesting the cough of pertussis. As is the rule in infancy, there was little sputum raised with it and we were content to examine what could be obtained, during a paroxysm of coughing, by placing the infant's face downward and gently slapping it on the back, or removing the mucus from the mouth with the finger. In one case we obtained some sputum by means of the stomach tube that was introduced because of an accompanying gastric disorder. At no time was the sputum rusty or even blood-tinged, but usually consisted of a thick, tenacious, glairy, transparent mucus. The sputum was obtained from all four cases and was examined particularly for the influenza and tubercle bacillus. Smears were made on glass slides and the stains usually employed for tuberculosis were used, but in none of the cases were tubercle bacilli found. For influenza, a weak carbol-fuchsin, or hot, methyl-blue solutions were used and cultures were made on hemoglobin blood serum. Influenza bacilli were present in all cases, a few times, in what seemed to be pure cultures, but usually associated with other bacteria.

The pneumonia was clinically lobar. A large part of one lung was consolidated without intervening aërated portions in the same patch and the remainder of the lung showed evidences of only a diffuse bronchitis. The consolidation was very slow in its development, not being observed until several days, a week or even longer, after the initial symptoms; and when the consolidation was pronounced it gave the characteristic physical signs observed in adults, viz., dulness, bronchial breathing, and bronchophony. Distinct crepitant râles were wanting over the consolidated area, but crepitating, cracking, and mucous râles were very abundant. Small and large mucous râles were diffused over both lungs. Consolidation persisted during the entire course of the pneumonia, and, in the cases that recovered, slowly cleared up, and, within a few weeks after the temperature became normal, the lungs were clear.

The pulse was fast, rather weak, but not distinctive, and corresponded to the intensity of the infection, as measured by the pyrexia, lung-involvement, etc. The pulse-rate varied from 140 to 180. The examination of the heart did not reveal any symptoms of peri-, myo- or endocarditis, but complications on the part of the heart are very frequent during the course of the grip in infants; more particularly are found weakness, dilatation and failure of the right heart. Fluid or fibrinous exudate in the pericardium has been observed in older children and postmortem changes in the myocardium of a degenerate nature are not rare.

The nervous system was signally exempt from any complication in these cases, if we except the early restlessness and irritability, and in one case the slight rigidity of the lower limbs, though many observers have noted convulsions and paralysis from involvement of the central nervous system, and meningitis from influenza is not unknown. Hemorrhage and abscess in the brain, disseminated myelitis, hemorrhagic pachymeningitis and peripheral neuritis have been encountered during the grip.

The urine presented the usual febrile characteristics. It was strongly acid in reaction, of a high specific gravity and contained abundant urates. In only one case was albumin present, and this was two weeks before the fatal termination, when a nephritis developed which became very intense and was in a great measure responsible for the unfavorable termination.

The abdomen was usually distended with gas, at times even considerably, but offered no other abnormal conditions. There was neither rigidity nor tenderness, and the liver and spleen were not palpable. Herpes was observed in one case, but no other skin eruption was noted in these cases. Mention should be made of the profuse perspiration which was present in all of the cases and which is said to be dependent upon an angio-neurosis—a vasomotor paralysis—due to the grip-toxin.

The literature records, as occurring in grip in children an exanthema simulating closely either the diffuse punctate erythema of scarlatina, or mayhap the mottled reddish eruption of measles. Sudamina, urticaria, erythema, nodosum, erysipelas, pemphigus and hemorrhages into the skin have been observed, although, as was stated, these eruptions were not present in the cases under consideration. Otitis media appeared in two cases, which is in accord with the known frequency of this disorder complicating inflammations of the upper respiratory tract, particularly during early life. Slight hyperemia alone was observed as regards the ocular complications, though severer disturbances have many times been recorded.

Pathology.—Concerning the pathology of protracted influenzal pneumonia, because of the necessary limits of this paper, only some of the important data will be considered. The anatomical form of protracted grip pneumonia is essentially catarrhal. The pneumonia may occur acutely, suddenly involving a great extent of

lung, just as in croupous pneumonia, but in my cases the pulmonary consolidation was slower in its involvement of the lung. but resembled the croupous pneumonia in its lobar distribution. The pneumonias were characteristieally desquamative or catarrhal and were accompanied by diffuse inflammation of the fine and larger bronehi. The entire respiratory tract was congested. This was partieularly true in the small bronchi, and the mucous membranes were covered with a tenacious mucus. In some of the smaller tubes the entire lumen was choked with muco-pus.

Within the lobules, the alveoli were filled with a eellular exudate made up of pus, desquamated epithelium and a granular debris. Fibrin was conspicuously absent. The alveolar walls were densely infiltrated with round cells, the blood-vessels in the bronchi and interalveolar tissue were engorged, and in one of the specimens they were filled with firm thrombi. This vascular thrombosis, in one of the specimens, had occasioned a small area of necrosis with softening, and. from a more extensive thrombosis, a larger area of pulmonary gangrene or abscess might result. The pleural surfaces were smooth and presented no signs of inflammation, though purulent pleurisies are frequently encountered secondary to grip pneumonias.

Pericarditis has been observed and, as a rule, there is a catarrhal inflammation of the mucous membranes of the stomach and bowels. In some cases the lymphoid nodules in the small intestine are swollen, and may even be necrotic and ulcerate. Peritonitis is a rare metastatic complication. The liver may be the seat of abscess formation, though usually the only pathologic alteration in the liver is an albuminous degeneration. The kidneys, in one of the fatal cases, were the seat of an advanced diffuse nephritis with microscopic foci of suppuration. Usually a cloudy degeneration of the tubular epithelium and a slight exudate in the glomeruli, with hyperemia of the tufts, represent the extent of the renal lesions in grip, rather than the severer lesions of necrosis or suppuration. Metastatic processes of a suppurative nature, in the glands, bones or joints, are occasional complications of grip pneumonia, and in the same category might be included thrombo-phlebitis, with phlegmasia alba dolens.

The duration of influenzal pneumonia varies within wide limits. One extreme may be represented by this series of cases, other cases being almost evanescent or diurnal in their duration. The greater number of cases of grip pneumonia probably continue over a space of time that would represent the mean of these extremes. Two of the four cases perfectly recovered, one after twenty-five, the second after forty-one days; two died, one with the lungs in a condition of purulent pneumonia, localized pulmonary abscess and metastatic nephritis; the other, as the immediate result of a complicating infectious disease, with the lung in a state of splenization.

Pulmonary abscess and gangrene are particularly to be feared in these pneumonias, and the probability of their occurrence is enhanced because of the extensive thrombosis of the pulmonary blood-vessels. Complications with abscess or gangrene are almost always fatal. Even after months of protracted pneumonia, a complete restoration to normal pulmonary tissue may occur; or, connective tissue destruction of large areas of lung may result, with perhaps the formation of bronchiectatic cavities that invite secondary infection with pus microbes, leading to suppurative necrosis or ulcerative processes. Tuberculosis is a very common sequel to protracted influenzal pneumonia.

Diagnosis.—In the presence of an influenzal epidemic, with evident grip infection in other members of the household, the probability that a serious illness in an infant was influenza would suggest itself. The following diagnostic features of grip pneumonia would be included: the sudden onset of a sickness, with mild intestinal symptoms and evidences of inflammation of the upper respiratory tract; sharp elevation of temperature and highly irregular course of fever, with the physical signs of a lobar pneumonia, and the demonstration of Pfeiffer's bacillus would render the diagnosis positive.

The differential diagnosis would include partieularly gastro-intestinal infections (dietetie or specifie, sueh as typhoid), pneumococcus pneumonia or ordinary broncho-pneumonia, malaria, sepsis and miliary or diffused tuberculosis. In typhoid the onset is more gradual, the temperature-curve more regular and the respiratory symptoms are not so pronounced. The Widal blood test and the Ehrlich urine reaction, the roseola and splenic tumor are wanting in influenza, and the infrequent occurrence of typhoid in infants would weigh against the diagnosis of typhoid.

Gastro-intestinal infections might present considerable difficulty for a few days, but the greater severity of the pulmonary symptoms, the irregular temperature, and the negative result of dietetic treatment, would weigh against it. Grip pneumonia may offer many of the symptoms that occur in malaria. Irregular course of the temperature, that may even be periodic, and the profuse sweats might be accepted as malaria, if a thorough examination were neglected. From malaria the diagnosis would be turned, by the absence of plasmodia in the blood, the absence of splenic tumor and the failure of relief through quinin.

So many of the signs and symptoms of influenza are common to tuberculosis that the greatest difficulty may arise in a differential diagnosis of these conditions. The pulmonary signs, which are of slow evolution and persist longer than lobar pneumonia, with the irregular temperature, the fast pulse, the accelerated respirations with cyanosis, and the profuse sweating, may constitute a clinical picture of tuberculosis. Tubereulosis is difficult to differentiate in these cases and it is only after repeatedly failing to detect the tubercle baeillus and the finding of the Pfeiffer organism that one feels content in excluding tuberculosis. The tuberculin test is rarely employed. In miliary tuberculosis, it is true that tubercle bacilli are rarely found in the sputa, but here the finding of the influenza bacillus, mayhap in pure cultures, would weigh against tuberculosis. The history of an inherited tubercular tendency or possible contact with phthisical individuals would favor a leaning toward tuberculosis, and the absence of sueh a history would have a negative value.

Prognosis.—In venturing a prognosis we must be extremely guarded. Severe cases might entirely recover under favorable circumstances, but the possibility of imperfect recovery, with lasting pulmonary disease, should be kept in mind. Death, during the height of the disease, may occur from the severity of the intoxication, with extensive pulmonary disease and failure of the right heart. It may occur from influenzal complications in other organs, i. e., kidney, brain, etc., or the lessened resistance consequent upon the grip may permit usually mild infections, such as varicella, to

kill, and too, the frequent occurrence of tuberculosis as a sequel to grip must be ever kept in mind.

Treatment.—There is no specific remedy for influenza, and these cases must be treated individually on general principles. Grip cases should be isolated, so far as possible, and this particularly in hospitals and infant asylums. We should select for the little patients a large well-ventilated room, free from noise, and one that is kept moderately warm—80 to 85 degrees F. This is much warmer than advised in ordinary pneumonia. Infants do better if carried about a few hours each day than if permitted to lie all of the time in bed.

Diet is most important and should be nutritious and conform to the digestive capabilities of the infant. Certified milk, meat juice, cereal decoctions, fruit juices and plain water, when properly administered, are usually sufficient. A tepid bath should be given every day. The mouth and nostrils should be given the greatest care, using a gentle alkaline and antiseptic wash several times a day. It is customary and advantageous to relieve the gastro-intestinal tract by a laxative or enema at the onset of the illness. We should avoid the nasty, sweet stuffs commonly given as cough mixtures, for these cause a degree of gastric distress greater than any sedative effect they may have.

Belladonna and nux vomica, given in physiologic doses, probably act better than do other medicines in the average case of infantile pneumonia. They act as general and especially as respiratory stimulants, promote deeper breathing and free the bronchial tubes of considerable mucus; what is of especial value, they keep up the heart strength, which, in infants, is likely to fail, because of the added mechanical work to a heart receiving impoverished and toxic blood. Heart failure, of the right heart particularly, should be guarded against from the beginning, rather than to await the onset of cardiac failure. In the event of impending cardiac failure, in addition to strychnia, we may employ camphor, nitroglycerin, ammonia or its salts, whisky, and the careful administration of digitalis.

The peripheral circulation can be favored by stimulating baths, such as hot mustard baths. Inhalations of hot moist air, plain or medicated, as administered under a tent, may relieve the symptoms of suffocation that supervene so often in infant pneumonias. An infant may be placed in the tent for fifteen to thirty minutes several times a day. Cold applications to the skin frequently act in a very happy manner in cases of threatened suffocation. Dipping the child into a cold and then into a warm bath, followed by brisk friction, acts as a great respiratory and cardiac stimulant.

A cotton jacket around the chest is often grateful to the patient, and I have thought that a calomel plaster —5 per cent. calomel in lanolin—placed over the consolidated lung, favorably influenced the pathologic condition. The temperature should be combated, if the necessity be present, by water, rather than by antipyretic medicines. In some cases these remedies may act in a pleasing fashion, but it is safer to have recourse to hydrotherapy, cold sponging, spraying, baths, friction, or enemata of cold water, not only to reduce the temperature, but to act as general tonics. In protracted cases the bitter tonics and tonic wines, iron, arsenic and cod-liver oil, find their place, and if convalescence be prolonged, a change of residence to a dry, warm, equable climate might be of inestimable benefit.

CASE 1.—Anthony F., aged 1 year; weight, 21 pounds 9 ounces.

Dec. 20, 1900: Admitted to asylum; history of having been sick one week. Had poor appetite, with greenish mucous stools three times daily; severe cough and irregular temperature. Examination: Skin pale, sallow and hot; mouth, normal appearance, six incisor teeth; the lymph glands are enlarged universally to a slight degree; over the back of the right lung below the scapula there is an area about two inches in diameter, where signs of pulmonary consolidation were found; left lung presented negative findings, heart normal, abdomen somewhat distended.

December 24: Child has been fretful; poor appetite, stools contained some mucus, severe coughing spells with thick tenacious sputum. Over the right lung, posteriorly from the middle of the scapula to the base of the lung, and extending from the spine into the axilla, resonance is dull, with many râles on auscultation; in the center of this area, bronchial breathing and bronchophony are present. The sputum, examined for tubercle bacilli, was negative, but showed the influenza organism in great numbers. Other bacteria being sparsely met with.

December 29: Pale and much emaciated. The bowel movements have been frequently offensive, with undigested particles. Urine, specific gravity 1010, contained neither albumin nor



Fig. 1.—Purulent influenzal pneumonia with foci of softening.

casts. Cough not so severe. Physical examination of the lungs, same as December 24.

Jan. 17, 1901: The appetite has been variable; no vomiting; bowel movements at times contain mucus and undigested masses. Cough, sometimes very severe with little expectoration. Respirations, 50 to 60 a minute, regular and free. Has lost considerable strength and flesh. Physical examination of chest revealed the same physical signs with each examination, that is, evidences of the consolidation of the right lower lobe, a few mucous râles heard here and there over other parts of the chest.

January 31: General condition somewhat improved. Cough not so severe nor frequent; resonance over right lung has cleared up materially since January 21. Respiration is subdued on the right side, with very few râles.

February 15: Varicella. Resonance over the right lung posteriorly is slightly impaired, no râles, respiratory tones are normal.

March 1: General nutrition very much improved, digestion almost normal, no evidence of pulmonary disease, temperature normal, general condition satisfactory.

CASE 2.—Annie Sweeney. Aged 1 year, only child of healthy parents, moderately well nourished, reared on mixed feeding, weight 18 pounds.

Jan. 6, 1901. She was observed to be ill, fretful, and crying, refused the breast and bottle altogether, or took but little. Sleep was restless and disturbed; temperature elevated; breathing rapid and interrupted by short cough. Bowels moved four times daily, were dark green with much mucus and offensive odor. Examination: The mouth, tongue and throat were red and dry; there were some small moist râles over the back part of both lungs; abdomen somewhat distended.

January 10: General condition about as above, and on examining the chest, the râles were more numerous and abundant over the back part of both lungs.

January 12: Appetite has not been keen, bowel movements are rather free, but of normal appearance; at times there was considerable distention of abdomen and retching, was relieved by lavage. The attacks of coughing not very severe, but persistent. On examining the chest there was an area over the posterior surface of the left lung, extending from the spine of the scapula to the eleventh rib and from the spine to the posterior axillary region, where there was dulness, bronchial breathing and crepitant râles. Small mucous râles occasionally were heard over the remainder of both lungs. Heart was negative; Traube's space of normal size.



Fig. 2.—Splenization following protracted influenzal pneumonia.

January 22: The symptoms have persisted in much the same manner. The resonance over the entire left lung is impaired and posteriorly, below the spine of the scapula to the base of the lung, the note is almost flat; on auscultation there was bronchial breathing with crepitant râles. Although there was no dislocation of the heart, and Traube's space extended from the sixth to the costal arch, yet because of the irregular temperature and protracted course, a thoracentesis was done but with negative result.

January 25: Same physical signs as January 2, except that the periphery of the area seemed to be clearer.

January 29: Resonance over the left lung is almost normal. Respiratory movements free, and normal in quality, though more frequent than normal. On the left side the respiratory murmur is shallower than on the right and on deep inspiration is accompanied by a few râles. General condition much improved.

January 31: General condition satisfactory, no abnormal thoracic nor abdominal signs.

CASE 3.—Mary T., aged 13 months, was fed on human and cow's milk until she was 8 months old. Since then has been nourished on modified cow's milk alone. During her infancy she had several attacks of acute gastro-enteritis, and when six months old she had the measles with broncho-pneumonia.

Jan. 7, 1901: For the past few days she has been out of sorts, with little appetite for food and a considerable elevation of temperature. She had a slight cough and several times, during the day, she had periods of very rapid and shallow respiration, with considerable cyanosis of the face and extremities. Examination showed the child to be fairly well nourished, the skin dry and hot, with no exanthem on the body. The tongue was red and dry, slightly coated; the gums not inflamed, had 8 incisor teeth. Pharynx was moderately injected. Respirations were accelerated, but free; no signs of consolidation of the lungs elicited, but numerous small, moist râles were heard over front and back of both lungs. Heart was rapid, otherwise was negative. Abdomen was slightly distended, no tenderness nor rigidity; liver and spleen were not palpable.

January 12: Respirations frequent and catchy, often interrupted by a short cough; very restless at night. Lower limbs rigid; appetite poor. Over the right side of the chest, from the clavicle to the third rib, were dulness, distant bronchial breathing, bronchophony and crepitant râles. Coarse mucous râles over the rest of lungs.

January 14: Mucous membrane of nose congested with slight muco-purulent discharge. Ears negative; physical signs over the chest same as January 12.

January 18: Symptoms and physical signs remain as above noted. There was also a purulent discharge from both ears. Urine was high-colored, and contained traces of albumin and a few granular casts. Herpes on angle of mouth and alæ nasi.

January 22: Upper lip swollen and excoriated from purulent discharge of nostrils. Urine became gradually less in amount, contained large amount of albumin, and numerous coarse granular casts. From the apex of the right lung anteriorly, to the fourth intercostal space, the signs of pulmonary consolidation persisted, with evidences of a profuse bronchitis. The sputum and nasal secretions were repeatedly examined for tubercle and influenza bacilli with positive results as to the latter. Vomiting, with great restlessness and twitchings and gradual failure of strength, preceded the fatal termination.

Postmortem: The right upper lobe was entirely consolidated and of a uniform, yellowish-gray color. About the middle of the lobe was a focus of softening about the size of a hazelnut, projecting like a blister beyond the level of the lung and containing about a half dram of thick pus. Below this small abscess is an area of caseous necrosis, a half inch in diameter. The color of the cut section of lung was grayish-yellow, almost homogeneous, slightly granular, dry and airless. Irregular areas of emphysema and atelectasis were scattered throughout the remainder of both lungs. Mucous membrane of bronchi was congested, and from the bronchioles could be expressed fine droplets of muco-pus. Scattered through both lungs, particularly at the base, were some small peribronchial nodules of consolidated tissue of a deep-reddish color. Smear and cultures from the cut surface showed the influenza bacillus with the pneumococcus and streptococcus. Liver and spleen were practically normal. Kidneys were much enlarged; the left 2¼ by 1¾ by 1 inch; the right 2½ by 1¾ by 1. They were quite soft. Pale-yellowish color, the cut surface oily and yellowish-white casts. Relation of the cortex to the medulla is about the same. No cortical markings, medulla is pale with irregular areas of congestion. Microscopic examination of the kidneys showed the glomerular tufts swollen, nuclei more numerous and in some capillary tufts were separated from capsule by a finely granular material. The epithelium, lining the convoluted tubules, was swollen, coarsely granular and the nuclei in many cells not staining with hematoxylin. Some desquamation of renal epithelium. Sprinkled to the cortex are many small areas where the intertubular connective tissue is thickly beset with a mass of round cells forming a minute, yet veritable abscess. Stain for bacteria negative. Section through the consolidated area of lung showed alveoli filled with a cellular mass made up in great part of round cells, with a few fatty epithelial cells and granular debris. There was no fibrin and only rarely any red blood cells in the alveoli. The alveolar connective tissue was densely infiltrated with round cells. In some fields, the alveolar septa cannot be differentiated from the alveolar contents, the whole field consisting of a mass of round cells with

some larger epithelial cells, resembling a purulent focus. Some of the pulmonary blood vessels are filled with an organized clot that has become adherent to the vessel wall. The smaller bronchi are filled with masses similar to those in the alveoli (Fig. 1).

Case 4.—Mathew, aged 10 months, weighs 18 pounds; family history unknown; brought up on sterilized milk. Evidences of congenital syphilis were observed when two months of age; papulo-erythematous rash over chest, abdomen and plantar aspect of feet; when six months old had a gumma an inch in diameter on the scalp, over the center of the left parietal bone, and a smaller gumma on the right tibia, both of which quickly resolved under specific treatment. At 8 months had a severe attack of bronchitis lasting two and a half weeks. Good recovery.

Jan. 14, 1901: Refused the greater part of his food and vomited; bowel movements, sour odor and contained considerable mucus, with particles of undigested and greenish material. Severe distention of abdomen. Examination: Moderate nourishment; skin burning hot, dry, no exanthema; tongue slightly coated, two lower incisors; pharynx injected; no pulmonary signs or symptoms, save that the respirations were 40; abdomen distended and tympanitic. Put on appropriate treatment and noted apparently gradual improvement until January 21, when temperature became high, respirations more rapid, and irregular with a soft, small and frequent pulse. Examination: Left lung posteriorly from the left scapula to the base and extending from the spine to the mid-axilla, dulness; bronchial breathing; bronchophony, and consonating râles. Over remainder of chest, lungs are hyper-resonant with many medium-sized râles. Heart rapid, area a trifle reduced—pulmonary distention—abdomen greatly distended; spleen or liver not palpable.

January 25: During the past ten days, child has had little appetite, been very apathetic, content to lie quiet most of the day, but often disturbed by periods of rapid, superficial breathing, attended by great cyanosis. These spells occur at irregular periods from two to five times in twenty-four hours, perhaps more often during the night. Sometimes lasting for an hour and seemed to be relieved by alternating hot and cold baths. Sometimes the child would become very restless, with the abdomen extremely tympanitic, and after the passage of some gases by mouth or rectum, occurring spontaneously or assisted by rectal or gastric tube, would grow quiet again. There has been more or less cough every day; it was dry, short and in paroxysms like a mild pertussis. Sputum was twice obtained; was of a thick, cream-yellow color, and smear and culture showed presence of Pfeiffer's bacillus. Physical examination same as January 22. Slight muco-purulent discharge from both ears.

January 29: Respirations, short and catchy, resonance over the left lung posteriorly is from semi-tympanitic to nearly normal, but over this area can be heard distinctly bronchial breathing and crepitant râles, with fine mucous râles over both lungs.

January 31: Resonance over left lung posteriorly clearer, but breathing has yet a bronchial character. A few crepitant râles over the base.

February 5: Resonance over the area of left lung described, is semi-tympanitic with crepitant and crackling râles, and broncho-vesicular breathing. Ears are getting better, discharge almost ceased and appearance of the drumheads normal. Abdomen distended. General micropolyadenopathy. Child has lost since sick, over three pounds, but for the past few days seems to be becoming stronger and brighter, with keener appetite, though respirations remained hurried and pulse small and frequent.

February 14: Condition of lung much improved, but crepitant and consonating râles remain over left lung posteriorly.

February 18: Yesterday developed varicella. During the past few days has failed very much, has become much emaciated and exhausted.

February 20: Very thin, extremely weak, pulse fast and feeble, respirations frequent, cyanosis and death.

Postmortem.—Body emaciated, the evidences of varicella remain on skin. The lungs show marginal emphysema with irregular areas of congestion. The left lower lobe is of a dark purplish-red color uniformly solid, consistency of the spleen. Section dark-red, granular, with muco-pus exuding from the small bronchi. The tracheal and bronchial mucous membranes congested. Smear from lung shows influenza organisms predominating. The heart, lungs and kidney were normal and spleen slightly enlarged. The stomach greatly distended and contains 16 fluid ounces. The wall is pale and atrophic. The glands in the mesentery are swollen, many to the size of a filbert and are of a deep-red color (Fig. 2).

DISCUSSION.

Dr. I. A. Abt, Chicago—I think we are deeply indebted to the author for this very excellent résumé on protracted and grip pneumonias. It has been my misfortune to have seen quite a number of cases of protracted pneumonia. In my opinion, not all protracted pneumonias are of the grip variety. We know very well that pneumonias, whether broncho or lobar pneumonias, may be due to a streptococcus or a staphylococcus or to the tubercle bacillus, to the influenza bacillus, or perhaps to other micro-organisms. I have seen protracted pneumonias at times when there was no grip epidemic. I have always experienced difficulty in differentiating a possible tubercular consolidation or a diplococcus or an influenza consolidation, and from an empyema. In the cases reported by Dr. Walls there was bronchial breathing without râles over the base of the lung. These cases continue for weeks with sweats and fluctuating temperature, and we are led to suspect empyema. Every clinician of experience knows that a localized accumulation of pus in the thoracic cavity may give rise to bronchial breathing just as in pneumonia. An experience which I have had in more than one case shows the difficulties which may be encountered. Two winters ago, during the time when grip was epidemic, such a case of protracted pneumonia occurred. There was dulness and bronchial breathing over the base of the right lung. I introduced a needle into the lower portion of the thorax and obtained a turbid serum. A culture from this serum showed the presence of diplococci. On the following day another aspiration was made, but no fluid was obtained, probably because all of the fluid present had been evacuated at the first attempt. There was a lobar pneumonia which ran a chronic course for months.

Dr. B. R. Shurly, Detroit—I wish to call attention to observations made on some 16 cases presented; there seemed to be a pseudo-crisis on the fifth day.

Dr. Campbell, of Kansas—I would like to ask if the author has had any experience with oxygen gas.

Dr. Walls, in reply—The question of differential diagnosis has been brought up by Dr. Abt. I omitted this part in reading the paper because of the extent of the subject. The differential diagnosis between a consolidation and a collection of fluid at times is certainly hard to make. In one of the cases reported, thoracentesis was performed. Even though in that case the common signs of accumulation of fluid—dulness, dislocation of the heart, and diminution of Traube's space—were not present, it was thought that possibly there was a small collection of fluid in between the fissures of the lung. I did not say that there were no râles heard over the areas of bronchial breathing, but that there were no distinctly fine crepitant râles as heard in the early stages of pneumonia. Crepitating and mucous râles were heard over these areas. They might be heard over fluid, the sounds being conducted from the adjoining lung. The ages of the children varied from ten to fourteen months. I have had no experience with oxygen gas in these cases.

The Paris Students' Co-Operative Restaurant.—Shares to the number of 862 have already been disposed of, so the success of this undertaking is assured. No alcohol will be allowed on the premises, but the fare is to be of the best, at prices constantly lowered by the application of the profits. Professors Gide and Lavisse have been the moving spirits, both men with extensive experience in co-operative enterprises. The doors will open October 15.

MEMBRANOUS COLITIS.*

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Membranous colitis occurs most frequently in infants over six months old and less than two years, and may appear in those previously in good health. It is usually a very severe irritation, greatly endangering the health and life of the child. While it may follow a catarrhal disturbance, it commonly appears suddenly accompanied by vomiting, high fever, loss of appetite, severe pain and frequent large green stools of a mucous character. The vomiting usually disappears early and the temperature falls within safe limits. Should this not occur the prostration is very great and the child melts away so rapidly that its life is quickly endangered. Usually the abdomen is tender and somewhat swollen. The pain is severe and frequent, especially for a time before stool. Where the irritation is low in the colon, there is marked and severe tenesmus at stool causing an inch or two of the mucous membrane of the bowel to protrude. This is intensely congested and often shows patches of pseudo-membrane on its surface, which fact establishes the diagnosis.

The stools resemble those in catarrhal enteritis, except in the amount of blood, which is generally greater and more constantly present; but the only feature which establishes the diagnosis is the appearance of the pseudo-membrane. This shows as grayish-yellow opaque masses after the stool is washed away. It is then easily distinguished from the accompanying mucus, which is commonly large in quantity. The pseudo-membrane seldom appears in large amounts, and usually disappears from the stools, while the mucus and blood may continue for considerable time afterwards. Usually improvement is indicated by the absence of the blood and the lessening of the mucus, with the return of healthy yellow stool mixed with the mucus. Where this does not occur, and the mucus continues for more than a week as the predominating feature in the stool, the emaciation is marked and the case rapidly becomes grave indeed. The severity of the attack and the gravity of the prognosis are in proportion to the amount of mucus passed daily and the length of time it continues to come. These cases generally recover in ten days or two weeks; where they continue longer the prospect of recovery is not good.

This disease is very rare in young infants under six months of age and is mostly confined to those that are hand-fed, and also improperly fed. Rarely do we find a case appear in a nursing infant, particularly during the first months of its life. In hand-fed infants also, where intelligence demands yellow stools, and industry secures their continuance, it is indeed a very rare thing to see cases of "membranous colitis."

It has been the fortune of the writer to meet with three cases of this disease this year in very young infants. One was in a nursing infant ten days old; one in a hand-fed infant eighteen days old; and the last in an infant partly nursed and partly hand-fed, nine weeks old.

The first or nursed one was an infant, strong and well nourished, weighing nearly nine pounds when born. The mother was a large, active, rosy-colored woman, but one who suffered greatly from acidity and consequent heartburn during her pregnancy. So great was this that she was compelled to live almost entirely during the last two months of her pregnancy on meat, milk and eggs. She had a feeble labor, necessitating forceps delivery, with laceration of the perineum, which was repaired; she made an uneventful recovery, save that she persisted in having a temperature of 102 for several days, and also about 100 for a month or more after her labor. This was accompanied by a coated tongue. The mother was very carefully dieted from the day of labor, and her milk came on the fourth day. The child's bowels were green continually from birth and no food except a little sugar water and a small dilution of cream was fed until the mother nursed it. The stools continued green and slimy, showing only small traces of yellow, till the ninth day, when the child became violently disturbed with high fever, great pain, frequent green mucous stools, straining and tenesmus. It lost flesh rapidly and in the third day of its sickness passed some patches of opaque yellowish membrane looking much like those cast from the throat in diphtheria. The infant was removed from the breast entirely and fed with a cream mixture, on which it convalesced rapidly; the stools became yellow and well formed and all mucus disappeared in ten days. A microscopic examination of this membrane, made by Dr. Perkins, showed the membrane was structureless, like a mass of fibrin with no mucus or epithelial cells.

Culture from this pseudo-membrane showed a bacillus belonging to the colon group, but not the true colon bacillus described in text-books, as it did not coagulate milk, nor give the indol test. The structureless character of this pseudo-membrane showed it to be an exudate due to intoxication from the toxins of these bacilli. Injections of these toxins and the germs into guinea-pigs' abdomens showed an exudate formed over the intestines and the liver, having the same structureless character as the sample.

The second infant was eighteen days old when the writer was called in attendance. This was the fourth child of a mother unable to nurse her children. It had been fed at first on diluted cow's milk, then on diluted cream, next on almost raw oatmeal water and cream, with the result of loss of flesh, constant colic, constipation and stools, when voided, of yellow hard balls, coated with slime and having very foul odors. The symptoms and the recurring colic pointed to a sore spot in the bowel somewhere in the colon, as the pain always returned with great violence about fifteen minutes before stool. Six days after my first visit the stool contained a mass of tough yellowish-white membrane, also looking like that seen in the throat in diphtheria. With a careful adjustment of a cream mixture and the voiding of this membrane, this infant made a rapid recovery, having healthy stools.

A microscopic examination, also by Dr. Perkins, showed this membrane contained fibers of oatmeal husks, pus cells, and small masses of mucous tissue, and imbedded in the tissue were the bacilli of the streptococcus. Cultures made from this membrane showed the proteus vulgaris and streptococcus. Injections of this culture in very small quantities killed guinea-pigs and rabbits, and on the intestines and liver a similar membrane was developed. Experiments show that the growth of the streptococcus in the presence of this very fatal proteus vulgaris, increases the toxic property of the former.

Feeding the nearly raw oatmeal fibers to this infant caused abrasion of the mucous membrane, thus forming

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

a favorable nidus for the entrance of these germs and the consequent formation of this membrane. This child now continues healthy and grows rapidly.

The third child, 9 weeks old, had been nursed by its mother, a delicate neurotic, suffering from middle ear disease. She had rose asthma disturbance every year so that she was compelled to leave her home in May and spend her summers in Lake Superior ports. She nursed her baby for a few weeks and it grew to ten pounds in weight. Sickness compelled her to wean it at five weeks old. Improper adjustment of food to the child's digestive power soon set up a disturbance, causing vomiting and colic with great fermentive accumulations of gas in the stomach and bowels. Changes in the food failed to reach the correct digestive results and the little one continued in distress, losing sleep and weight, till at 9 weeks old, when the writer first saw the infant, it weighed only eight pounds. Examination showed it much emaciated with a distended abdomen and the skin hanging loosely on its body and limbs. Vomiting followed every meal and constipation was the rule, with great pain before stools. The stools were yellow, dry, and covered with thick mucus. The pain at stool and the mucus over the discharges showed a sore spot low in the colon as in the second child. This infant had been fed too much at each meal and also had too much proteid in its food, thus causing indigestion, constipation and irritation of the colon. The nurse said it had passed some patches of membrane before my attendance, but I failed to find any. A careful adjustment of the food failed to make it grow and a wet nurse was necessary to save its life. With the latter it succeeded satisfactorily. The history of this case was so similar to that of No. 2, that the writer regrets his inability to secure a portion of the membrane for pathologic investigation.

While these cases do not conform to the usual symptoms seen in cases of membranous colitis, the writer feels that they belong to it, even though the pathologic evidences differ from each other. The very early age at which this irritation began and the varying character of the stools, make these cases interesting and is the writer's reason for presenting this subject. While only the first case showed the usual symptoms of loose bowels, recognized as accompanying "membranous colitis," the presence of membrane and mucus with pain at the stool even when with a constipated condition, establishes the fact that the irritation and distress are in the colon, and are of a membranous character. While the etiology is similar in these three cases, they show that the bacteriologic factors may differ greatly.

While the cultures from these two samples of membrane do not agree in character, one showing a colon bacillus and the other showing a mixed infection, the proteus vulgaris with the streptococcus, the irritation, pain and distress were similar, and the infants showed the same emaciation, fermentive disturbance and pain prior to stool.

The importance of recognizing the food as the cause of the sickness in both nursed and hand-fed infants, can not be overestimated. The difference in the character of the food will no doubt account for the different germs in these two cases, the nursed infant showing only a colon bacillus, while the hand-fed one showed two foreign ones.

Writers on this disease describe the loose slimy or mucous character of the stools and their great frequency; but here were two cases, Nos. 2 and 3, which showed a constipated stool of yellow color and yet membrane was present in both.

These cases illustrate the absolute necessity there is always for the physician to examine the stools himself in gastro-enteric disturbances. Few parents or nurses are skilful and watchful enough to read carefully the digestive process as it is illustrated in this stool product. Only the experienced eye, nose and finger of the physician is capable of doing this work correctly. Only by the knowledge obtained in this way can a correct conception of the digestive errors be obtained, and consequently the right changes be made to meet this difficulty in each and every case of gastro-intestinal disturbance. Without such personal examination by the physician, his ideas of the situation are necessarily second-hand ones and the treatment liable to be wrong.

These cases also show that different bacilli have the power, by their irritative qualities, to form a false membrane on the mucous membrane of the bowels.

URETERAL CALCULUS ACCURATELY LOCATED BY THE X-RAYS AND REMOVED BY AN EXTRAPERITONEAL OPERATION.*

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PHILADELPHIA.

Henry E. S., aged 10, of New Bloomfield, Pa., was admitted to the Jefferson Medical College Hospital Oct. 25, 1900, at the request of Dr. E. E. Moore.

Neither his family nor personal history, other than as related below, have any bearing on the case. When he was 2 years old he had an attack of pain in which he passed bloody urine. Five years ago—at the age of 5—he had another attack of severe pain in the region of the left kidney. The pain extended downward into the scrotum and to the head of the penis. It was finally relieved by the application of heat and the use of morphin. Similar attacks have recurred at varying intervals, sometimes every three or four days, sometimes not for two months. During the winter of 1897-98, in several attacks he passed bloody urine and uric acid crystals. What he thinks was a small stone escaped in September, 1900, but neither he nor any one else examined it carefully. In February, 1900, he had scarlet fever and since then his attacks have been much more frequent and severe. He has never had any pain on the right side.

On admission the entire left side of the abdomen was so painful that it was impossible to make any diagnosis as to the location of a stone, though the diagnosis of calculus was perfectly clear and had already been made by his physician. The urine which he passed on admission was clear, amber-colored, sp. gr. 1013, reaction acid, no albumin, sugar, blood, pus or casts present, urea 1.1 per cent.

Dr. Charles L. Leonard took a skiagraph (see Fig.) which showed a ureteral calculus about one-half the size of the last joint of the little finger, in the left ureter, which was thought to be at the pelvic brim, but at the operation was found a little below this level somewhat nearer the bladder.

At the operation, Oct. 31, 1900, I made an oblique incision from above the crest of the ilium and parallel

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

to it, extending to a point above the middle of Poupart's ligament, and pushed back the peritoneum. I had considerable difficulty in finding the ureter. It was raised with the peritoneum, but was so small, flattened and indistinct that it was some time before I could recognize it. Tracing it downward, just below the pelvic brim, I found a hard mass in which the ureter was apparently lost. No stone could be felt at first, but on cautiously cutting and tearing through the mass, I discovered a ureteral calculus measuring 1.5 cm. in length, 1 cm. in breadth and 8 mm. in thickness. The exterior was rough from the points of many spicules due to crystals, which by their fusion constituted the solid mass. The sharp spicula were especially marked at the two ends. Professor Coplin examined it and reported that the stone was quite dense; the nucleus was dark in color and gave the reaction for mucin. The shell was of calcium phosphate with a trace of organic matter.

Evidently the calculus had ulcerated its way through



the posterior wall of the ureter, had matted together the rectum and ureter and lay in a pouch which was partly intra-ureteral and partly extra-ureteral. The caliber of the ureter was not entirely blocked up by the calculus. The moment that I opened the ureter a very considerable amount of urine, which I estimated at about one-quarter of an ounce, escaped through the ureter from the somewhat hydronephrotic kidney. Though the kidney was somewhat distended. I judged that on removal of the obstruction it would recover itself, especially in view of the recuperative powers of childhood. The edges of the opening in the ureter were then closed by a continuous catgut suture. In view, however, of the inflammatory conditions present, as there would almost certainly be some leakage of urine, I packed a small amount of iodoform gauze against the sutured opening and led the end out through the wound. The muscular wall of the abdomen was then closed with a continuous silk suture, and the skin with interrupted silkworm gut sutures. The gauze packing was removed on the second day after the operation, as I found no leakage took place. He made a perfectly smooth recovery, the highest temperature having only once been 100 degrees. He was kept in bed for between three and four weeks, so as to allow firm union to occur, with a view to preventing a hernia.

March 22, 1901, a letter from Dr. Moore stated that when he reached home, November 28, he was suffering considerably from pain in the region of the left kidney. Examination of the urine showed the phosphates to be greatly in excess. A purge of calomel relieved him from pain and he has never had any since. There is also no sign of hernia at the site of the wound.

No remarks are needed save to call attention to the accuracy and value of the *x*-ray picture, both as an absolute verification of the diagnosis and as a guide at the time of operation. Instead of having to open the kidney with the idea that the stone might be there, or to examine the entire length of the ureter to find it, the skiagraph guided me at once to the exact location of the stone.

DISCUSSION.

DR. EDWIN ROSENTHAL, Philadelphia—I have at home a small calculus that was passed by a Russian boy per urethram. The stone had caused considerable pain and hemorrhage. Microscopic examination showed no diseased condition of the urethra, bladder, ureter or kidneys. The case was seen before the discovery of the *x*-rays and treatment was purely expectant.

I have in mind two cases ending fatally, which I watched carefully almost from their inception. The first diagnosis was calculus. This was followed by hydronephrosis, and still later by pyonephrosis. There was a large tumor on the affected side, which was aspirated once or twice before death. The postmortem revealed the presence of the calculus. If we had only known it I am certain that the life of both these persons could have been saved. Dr. Willy Meyer had examined these cases, and had stated that the pus was from the right side.

DR. C. L. LEONARD, Philadelphia—I have examined and found 47 cases of calculus in the kidney and ureter. In over 50 per cent. of the cases the stone was in the ureter. Of this number, in 4 cases, the expectant line of treatment has been followed, and the patients have passed the calculi. The exact localization of the calculi makes it rational in the case of minute calculi, to adopt this line of treatment. If the symptoms become more severe, the skiagraph enables us to locate and remove the calculus. Where the latter is lodged in the lower part of the ureter, and there has been much inflammation, it is very difficult in the male to reach the stone. In the female it is somewhat more easy. I have had four other cases in which small calculi have been passed while the patient has been waiting for operation. In cases like the case reported, the size of the stone makes it evident that operation is the only course of treatment. The skiagraph, however, localizes the area of operative intervention, simplifies it, and makes it complete.

DR. S. W. KELLEY, Cleveland—I feel gratified that Dr. Keen has reported this case. In my address on the first day, I emphasized the importance of surgery in children, and commented upon the general neglect of this department of pediatrics. A report of this kind is most appropriate for presentation to this Section, and we hope to have more of them.

DR. CLIFTON SCOTT, Des Moines—I am very sure that the value of the *x*-ray method here is of negative as well as of positive value. I had under observation an adult whose illness I diagnosed at first as nephritic colic. If an *x*-ray examination had failed to show the presence of a renal or a ureteral calculus, my error would have been shown. As the hemorrhage continued, and small clots were discharged, the case passed into other hands. An operation was undertaken in the region of the kidney. A tumor of endothelial origin was revealed which had invaded the pelvis of the kidney, and had given rise to the hemorrhage. There was no calculus present.

DR. W. W. KEEN, in reply—I have on at least four occasions cut down upon the kidney in adults under the impression that I had to deal with a stone, and in each instance no stone was found. I think that with the use of the *x*-rays the negative value is quite as great as its positive value by enabling us to avoid such mistakes in operation.

REMARKS ON SPINAL SURGERY, WITH ILLUSTRATIVE CASES.*

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The spinal canal has for many centuries been considered legitimate ground for operative procedures. As early as the 7th century the advisability of operation for fractured spine was urged by Paul d'Egine[1] and others. In the 16th century and since that time, various surgeons have advised operative interference for the relief of this condition, but it was probably not until the beginning of the 19th century that a definite operation was performed for a fractured spine. Since then the subject has constantly thrust itself into prominence and has been much debated and often with considerable heat and vigor. This was especially true of a discussion which took place in the Royal Society of Surgery of London in 1820.

About the same time (1823), A. Cooper wrote: "If you could save one life in ten, aye, one in a hundred, by such an operation, it is your duty to attempt it, notwithstanding any objections which some foolish persons may have urged against it. Though I may not live long enough to see the operation frequently performed, I have no doubt that it will be occasionally performed with success. There is no reason why it should not, and he who says it should not be attempted, is a blockhead." This opinion of the great English surgeon will be accepted by most of us, and it is not very flattering for our self-conceit to feel that at the present day we can not honestly offer a much more favorable prognosis than was given in this statement written nearly a century ago.

Even at the present day there is some difference of opinion on this subject. I remember only last year in an editorial in one of our own leading journals operation on this class of cases was almost condemned or at least no encouragement was given for operative interference. It is true that the majority of cases of severe injury to the spinal column must perish but undoubtedly many a life has been saved by timely interference. I say "timely," for unfortunately delay of a few days before the operation has been performed has in more than one case been responsible for its failure. The tendency in the past has been much more toward the "waiting and watching policy" than has been the case when the brain is compressed by bony fragments. There are quite as urgent reasons for rapid relief in cases of pressure on the cord as there are in cases of depressed fractures of the skull, though perhaps it must be said the results of operation for the relief of fractured vertebræ are less satisfactory than are those for fractured skull, at least such has been the case in the past. The reverse may be said to be true in regard to tumors. Early operation in cases of injury of the vertebræ is of the utmost importance. Of course at times there may be good reasons for delay. The patient may be in a condition of great shock due very possibly to severe injuries of other organs. In such an event it is wiser to wait until it at least can be determined that the case is not one which under any circumstances must end fatally. If it be such, no benefit can be derived from operation. Again, it is sometimes difficult to determine that the symptoms are not due to mere contusion of the cord, or to more pronounced hemorrhage within the substance of the cord—hematomyelia. A certain time must often elapse before this point can be determined.

In this class of cases where surgical interference is not indicated, the symptoms are apt to be of an irregular type. The muscular paralyses are not complete and often the muscles of the same group may not be equally affected; the anesthesia is only partial and paresthesia with patches of hyperesthesia is common. The symptoms of irritation are apt to be less pronounced, though there may be mild twitching at first of certain muscles. The reflexes are not apt to be abolished, though they may be altered. The following cases are in many respects typical:

CASE 1.—Concussion upper Dorsal Cord: Slight Disturbances, sensation and motion; Recovery: D. O. C., male, aged 20. On April 5, 1891, when intoxicated, fell two stories, lighting on his back. He was helpless when found. He complained of pain in the back of the neck. There was no deformity. On April 6, there was evidence of some weakness of the left arm, especially in the flexor muscles. Both patellar reflexes were very feeble. Several areas of paresthesia were present in the lower extremities and trunk. On April 7 and 8, the weakness of the right arm manifested itself. There was more or less persistent priapism. On April 12, the symptoms began to improve and continued so until he was discharged on May 25, when with the exception of slight weakness of the left arm he was practically well.

CASE 2.—Injury of Lumbar Cord; Probably due to hemorrhage; Disturbances of Motion and Sensation; Pain; Ultimate Recovery without Operation: J. O. B., male, aged 34, on July 23, 1889, fell down the shaft of an elevator a distance of 30 feet. He lighted on his feet but fell down and was unable to rise. He had lost almost all power over his lower extremities. He was taken to a hospital in an ambulance. He suffered from considerable neuralgic pains in his legs and feet, and his legs and thighs felt numb and were partially paralyzed.

He was brought to the Presbyterian Hospital on July 27 with a diagnosis of fracture of the second and third lumbar vertebræ. On examination it was found that the peroneal and anterior tibial groups of muscles were partially paralyzed, especially on the left side. There was an anesthetic band extending from the outer side of the foot upwards along the outer and posterior side of legs as far as the middle of the thighs. A few days later it was found that a. c. c. was greater than c. c. c.

It was considered wise to defer the operation as there seemed to be some improvement in the paralyzed muscles. The pain was disappearing, there were no spasmodic movements of the muscles and no contracture developed. Through August and September gradual though slow improvement both as regards motion and sensation took place. He was discharged from the hospital on October 1, at which time he could walk about the ward though he still suffered from foot-drop. After his discharge he continued slowly to improve and at the end of a year he was practically well.

CASE 3.—Concussion of Lower Dorsal Cord; Slight Disturbances of Sensation and Motion; Recovery without Operation: J. D., male, aged 25, on June 1, 1901, while in the act of boarding a car, was struck on the back by a car coming in the opposite direction. He was knocked down and when found by the ambulance surgeon was in a state of considerable shock. He was slightly alcoholic, and complained of extreme pain in the lower dorsal region.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

1. Trans. by Réné Briau, p. 409.

On admission his temp. was 99 1/3, pulse 102. There was a large effusion of blood in the lower dorsal region and apparently some deformity of the tenth, eleventh, and twelfth dorsal spines. He complained of shooting pains in the lower extremities and there was some loss of power in the muscles on the outer side of the legs and feet. There was some paraparesis in irregular patches on the back of his thighs and buttocks. The patella reflexes were diminished. There was no complete anesthesia.

The diagnosis was made of hematomyelia in the lower dorsal and upper lumbar cord. On the day following his admission to the hospital his symptoms began to improve. At the end of two weeks the muscular paresis had almost disappeared, though there were still some irregular areas of diminished sensation. The patella reflexes at this time were somewhat exaggerated. On August 1 he was able with support to move about the ward, and when he was discharged on August 8 his paralyses had practically disappeared. By November 1 he was able to resume work, having entirely recovered except for some slight stiffness and an occasional pain in the back.

Case 4.—Concussion of lower Dorsal Cord; Disturbances of Sensation and Motion; Recovery: H. L., male, aged 44, on March 20, 1895, fell backward over a pile of stones. In ten minutes there was complete loss of power in both lower extremities. This persisted for a few hours. There was also complete anesthesia below a line drawn through the umbilicus. For the first few hours the patella reflexes were lost. At the end of 24 hours slight improvement in the motor paralysis began. But little change occurred in the area of anesthesia, until after a week had elapsed. At this time also the reflexes began to reappear. At the end of three weeks he had gained almost complete control of his lower extremities and the anesthesia was rapidly disappearing. At the end of six weeks all symptoms had practically disappeared.

On the other hand where there is definite pressure of bone on some portion of the cord the parts supplied from this center are apt to be more distinctly and more decidedly affected. The paralyses are generally complete and more regular as to grouping; the anesthesia also is apt to be complete with or without a band of hyperesthesia. The reflexes are apt to be abolished. Generally within a few hours a differential diagnosis between these two conditions can be made, but if at the end of 12 or 24 hours there still be question as to the cause of the paralyses it seems to me wiser to at least do an exploratory operation. The danger of this is slight. If a fracture be found there can be no question as to the propriety of the operation. If none be found but little harm has been done to the patient. In similar cases of injuries to the head it is almost routine proceedure to cut down upon the skull in order to ascertain if a fracture be present. In the spine the operation is, of course, somewhat more severe, but not sufficiently so to contra-indicate its performance in cases of doubt.

The differences between these two classes of cases are sometimes, however, less marked, and as already said in certain cases in the first 12 or 24 hours it is sometimes exceedingly difficult to determine whether or not the lesion is one which can be relieved by operation. Where the symptoms are severe there can be but little question between concussion on the one hand and compression or crush on the other, but it is in the milder cases where the surgeon must sometimes be in doubt; and here a delay of 12, 24 or even 48 hours can do but little harm, and if the diagnosis be uncertain it is wiser to delay. In the severer cases, there can seldom be question between mere concussion and compression by bony fragments. The question, however, will be whether the cord be completely crushed or whether it be merely contused and pressed upon by broken bone. In many cases it is impossible within the first few hours to determine which of these conditions is present. A day or two's delay will probably settle this point. But it is exactly such delay which makes the recovery hopeless.

As yet, we have not sufficient experience or knowledge to make any definite statement concerning the early symptoms which indicate complete destruction of the cord. We do know, however, that if certain symptoms be allowed to persist for days or weeks that the case will be hopeless. It is our duty to make an attempt to relieve these symptoms and their cause before it is too late. It has been stated more than once that where there is complete loss of sensation, motion and patellar reflexes in both lower extremities that the symptoms indicate a complete crush of the cord and that the case is absolutely hopeless. This view, however, is not correct, as has been shown by more than one case where all these symptoms have been present, and yet where after removal of fragments of bone recovery has resulted. The following case is to be added to this list. In this case both deep and superficial reflexes were lost. Had operation been delayed, however, they might have returned.

Case 5.—Fracture of seventh Dorsal Vertebra; Pressure on Cord producing loss of Sensation and Motion and patellar reflexes; Operation; Recovery: J. L., male, aged 27, was thrown from a railroad train on July 3, 1891, striking on his back. For a few minutes consciousness was lost. When brought to the hospital three hours later, there was found to be complete muscular paralysis of both lower extremities, retention of urine and loss of power over rectum. He was in condition of slight shock; temperature 100, pulse 110. There was complete loss of sensation below a line just beneath the tip of the ensiform cartilage. Tendon reflexes in both knees, as also the cremasteric and abdominal, were completely lost. At the end of 8 hours after the accident his temperature had risen to 103.5; loss of motion and sensation, and patella reflexes remained as before. On examination of his back there was found to be a depression below the seventh dorsal spine, at which point there was marked local tenderness.

The diagnosis of fracture of the seventh dorsal vertebra was made and operation advised. One hour later, that is to say, nine hours after the injury, ether was administered. An incision was made from the fifth to the eighth dorsal spines. The spinous process and the laminæ of the seventh dorsal vertebra were found shattered into several fragments. A line of fracture extended forwards on the right side into the transverse process. Four or five bony fragments were removed. The dura was lacerated and the cord was contused, markedly congested and studded here and there with small hemorrhages. A probe passed upwards and downwards met with no further obstruction. The wound was left partially open, as was also the dura.

The shock of the operation was very slight, the patient making an excellent recovery. For five days no special change in symptoms was noted. He then began to feel some tingling and pricking on the outer side of his thighs and legs. On the 14th day he was able to slightly move his toes and at this time sensation began to return in his lower extremities. Improvement continued; he began to gain control over his bladder and rectum. On the 30th day he could draw his legs up and down in bed, flexing his knees. His patella reflexes had returned to a slight degree in each knee. On the 60th day he was able to sit up in a chair and sensation was rapidly returning. He left the hospital on the 76th day after his accident and at that time could walk when

supported on each side. He came to see me three months later and reported that he was about to resume his work. He still felt some slight weakness in his lower extremities but sensation and his patella reflexes seemed normal. Some five years later he met me on the street and reported that he had been perfectly well ever since, that his back was as strong and as limber as ever.

There is a certain class of cases where following injury of the cord, and immediate development of severe symptoms, improvement has set in at an early period and has been up to a certain point and for a certain time progressive. Then, after the expiration of weeks, perhaps of months, it ceases, degenerate changes begin, and if unrelieved in a year or two, bedsores, cystitis or some other complication will end the patient's very miserable existence. In such patients the symptoms may be due to lesions of different character, to blood and inflammatory extravasations as well as to pressure by fragments of bone. The former disappear gradually as time advances, the latter can only be removed by operation. It is difficult to determine which one of these causes is responsible for the symptoms but as long as improvement continues it is wiser to wait unless there be proof positive that a fragment of bone presses on the cord; but as soon as it can be ascertained that progress has ceased and degenerative changes have begun then operation should at once be resorted to. It may not be a success, for the degeneration already begun in certain tracts may be beyond recovery, but at least it should be attempted as it can do no harm and all hope of recovery is otherwise rejected.

It should always be borne in mind that spinal centers will, in spite of severe injury or long continued irritation, still preserve their vitality and that after the removal of the irritation or destroying cause they have remarkable recuperating power which enables them to rapidly gain control over their lost functions. A case where such an operation was remarkably successful is as follows:

CASE 6.—Old Fracture Fourth Cervical Vertebra; Extensive Paralysis resulting; Laminectomy eight months later; Cure: E. G., aged 33, a sailor, in October, 1889, during a storm at sea, was struck in the right side of the head by an iron tackle fastened to the end of a loose sail. He was thrown violently to the deck, striking against the anchor. When found he was doubled up, arms and thighs rigidly flexed; head inclined forward, resting on his chest. For a time he was unconscious; on recovering consciousness in an hour or so there was found to be paralysis of the trunk and extremity below the clavicles. It was complete except in the right leg, where it was partial. The head remained flexed on the chest, the patient not being able to hold it erect or move it laterally. For a day or two following the accident he was delirious and restless. For two weeks deglutition was difficult. There was retention of urine for several days; incontinence for one month. For some days there was priapism. Obstinate constipation persisted for some weeks. At first he complained of severe pain in the back of the neck, at first sharp, later dull and aching. Sensation was moderately disturbed. In addition to areas of anesthesia there was for some weeks sensations of pricking and formication.

The rigidity of the arms and legs with more or less muscular paralysis persisted until December. During this time contractures of various muscles developed, as well as wasting of groups of muscles. The paralysis of the right leg slowly improved. After Christmas the right arm began to improve slowly and soon after some return of power in the left arm was noticed. During January he was able to move slightly his arms and legs, and at the end of the month could stand when well supported but could not walk. The improvement, however, did not continue, and during February there was some deterioration in muscular power. Since that time there had been no progress in spite of the use of electricity and massage. Marked rigidity of the muscles with contractures of the left upper extremity developed. Some slight motion of the head from right to left returned but he was unable to either raise it from his chest or to hold it erect. Any motion of his extremities or head produced pain on the left side of the neck near the fifth spine where tenderness was the greatest.

He was admitted to the Presbyterian Hospital, May 26, 1890. He was a fairly nourished man with normal temperature. On examination it was found that there was marked loss of power in the left forearm and hand and practically complete paralysis of the arm and shoulder. There was considerable paralysis of both lower extremities to such an extent that it was impossible for him to stand upright without a support on each side. There was also considerable rigidity of the muscles of the left upper extremity. There was considerable atrophy of all the muscles of both extremities, being especially marked in the left arm and trapezius. There was decided paralysis of the muscles of the back of the neck, so much so that the head rested forward with the chin on the chest. He could not raise it and lateral motion was very limited. The areas of anesthesia were somewhat irregular. Sensation below the third rib was very considerably diminished, being most marked in the lower and upper extremities and in the left side of the trunk. The patella reflex of the left leg was markedly exaggerated, and the right slightly increased. There was slight clonus on each side. There were evidences of vasomotor disturbances, the skin being moist and glossy. When in bed resting quietly the patient was free from pain, but movement caused considerable pain, especially in the back of the neck and left shoulder. The patient wore a jury-mast to support his head. Tenderness was elicited by pressure on the back of the neck between the fourth and fifth cervical spines where, on rotation of the head, there was an indistinct crepitus. It was decided that the cord was compressed by either bone or inflammatory exudate in the neighborhood of the fourth or fifth cervical vertebra.

Operation June 4; ether. An incision was made along the spines from the base of the skull to the sixth or seventh cervical spine. When the spines were disclosed it was seen that there was some displacement of the fourth with its lamina. The spine and lamina of the fourth and fifth cervical vertebra were removed. The fourth lamina had evidently been fractured and exerted, posteriorly, considerable pressure on the cord. Under it was found a new layer of connective tissue with a much thickened dura, the combined thickness of which was about a quarter of an inch. No adipose tissue was present and the thickening extended from the middle of the third to the lower border of the fifth vertebra. It was evidently due to a hemorrhage which had become organized. The dura was found adherent to the cord, it was opened and the cord was seen to be more or less congested, the layer of connective tissue was removed and the dura loosely sutured. The wound was irrigated and partially closed by suture. Moderate shock and considerable pain followed. Elevation of temperature was very slight, and the wound healing was uneventful. On June 10, the patient noticed some improvement of the right hand, as he was able to clinch his fingers tightly and more motion could be made at the elbow. On June 26, improvement was very noticeable; even with his left hand he could pick up a handkerchief from the bed. Improvement of all the muscles was rapid and progressing so that on July 1 he was able to walk with slight support. On July 10, with the aid of a cane he was able to walk up and down the ward and could raise both arms to the top of his head. His pains have entirely disappeared as had also the muscular contractions. By the dynamometer his grip increased at the rate of three pounds a week. On August 8 he walked a mile and a half and could move arms and head freely. His head when raised could be held erect for a few minutes, but he still wore a jury-mast. On August 10 he went to a dime museum where he exhibited himself. In the following January he was able to cast aside his jury-mast. He could walk many miles a day without fa-

tigue, and had almost perfect use of his hands and arms. In 1898, he in the meantime having gone back to England, wrote me a letter stating he was perfectly well.

Other cases of laminectomy performed by me are as follows:

CASE 7.—Fracture of Tenth Dorsal Vertebra; Operation; Death in 2 months from Sepsis due to Bed-sores and Cystitis: J. H., male, aged 42, on the afternoon of June 20, 1891, fell from a height of 30 feet, struck on his back and became at once paralyzed below the waist line. On admission to the hospital two hours later, he was suffering from considerable shock, temperature 100.5, respiration 36, pulse 120. There was complete muscular paralysis below a line around the umbilicus. There was complete anesthesia below a line drawn around the crests of the ilium and above this a band three inches deep of diminished sensation. His reflexes, both deep and superficial, were abolished. Ankle clonus was present. Respiration was mainly thoracic and somewhat labored. The eleventh dorsal spine was prominent and seemed to deviate towards the left. At this point there was marked local tenderness. The bladder and rectum were paralyzed.

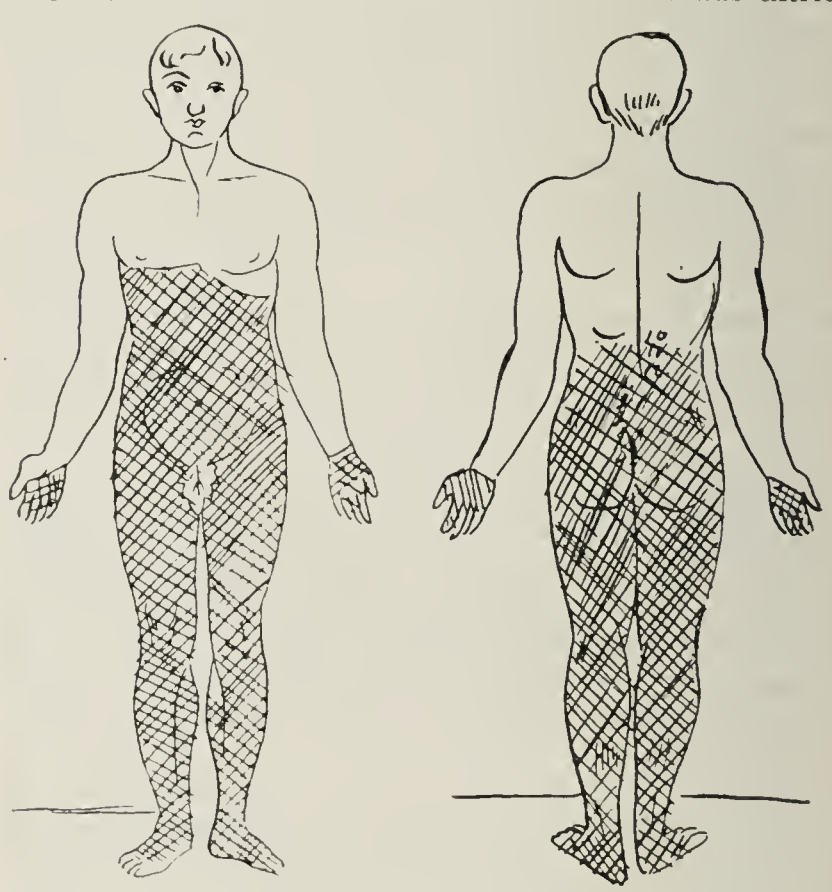
The diagnosis was made of fracture of the tenth or eleventh dorsal vertebra with a crush of the cord at this point. Immediate operation was advised but the patient refused to consent until June 27. During this seven days' delay the patient lost considerable strength, his temperature was elevated two or three degrees and a cystitis developed. On the 27, ether was administered. An incision was made from the tenth dorsal to the first lumbar spine. A fracture was found of the tenth dorsal spine running along the left lamina of the same vertebra. The lamina of the eleventh was also fractured. Several bony fragments, which had pressed upon the cord and lacerated the dura, were removed. The cord was contused and deeply congested but was not completely crushed. There was considerable inflammatory exudate between the dura and the cord. The wound was irrigated and partially sutured. Some shock followed but three days later the patient's condition seemed somewhat improved. The cystitis, however, continued and a sloughing bed-sore developed over the sacrum. Through the month of July there was gradual increase of the bed-sores, and a nephritis developed. He was free from pain and the wound healed by August 1. Soon after this he began to fail, and on August 22 he died from sepsis due to bed-sores and from uremia.

CASE 8.—Fracture of Seventh Cervical Vertebra; Operation; Death: T. C., male, aged 41, fell while intoxicated on June 1, 1892, from a height of 8 feet and struck on his head and neck. He was unconscious for a few moments; paralysis of his lower extremities with anesthesia immediately developed. When admitted to the hospital his general condition was good; temperature 98, respiration 16, pulse 72. On examination there was complete motor and sensory paralysis from a line in front two inches above the nipples and extending laterally at about the level of the axillary artery. The patella reflexes were completely lost; no ankle clonus; no paralysis or anesthesia of the arms; priapism.

Operation six hours later. An incision with its center over the seventh cervical spine was made. The spine and arch of the seventh cervical vertebra were found fractured extensively. Several bony fragments were removed. The dura was torn. The cord was contused and congested but seemed intact. The probe passed three inches upward and downward felt no irregularity of bone. The wound was irrigated and partially sutured. Very little shock followed the operation, but the temperature gradually rose; the respiration became more embarrassed and he died at 6 a. m. on June 2.

CASE 9.—Fracture of Third Cervical Vertebra; Laminectomy; Death: G. A., 65 years, on the afternoon of July 12, 1890, fell three stories, striking on his head and side. Shock was profound and breathing very much embarrassed, the extraordinary muscles of respiration being extensively used. On admission to the hospital at 2:30 p. m., his temperature was 97.5. For some hours there was no distinct evidence of paralysis. At about 6 p. m. it was noticed first in the muscles of the right leg and spread rapidly to the muscles of the entire body and extremities. At 9:30 p. m. the temperature was 103.5; there was complete anesthesia below a line drawn through the nipples and also a band running down both arms. All reflexes were entirely abolished. During the night, stupor developed and the temperature rose to 106. Operation was made at 1:30 p. m. on July 13. No anesthetic was employed. An incision was made from the base of the skull to the seventh cervical spine. A comminuted fracture of the second spine and lamina of the third was found. Several bony fragments were removed. The right transverse process of the third vertebra was loose but was not disturbed. The dura was not opened. The operation had little effect on the patient. The stupor increased, the temperature rose to 109, the breathing became shallower and he died in twelve hours from respiratory failure.

CASE 10.—Fracture of Cervical Vertebra; Laminectomy; Failure to find seat of crushed Cord because of irregular Distribution of Paralysis: M. M., female, aged 35, was, on September 27, when in the act of getting into a folding bed, struck by the upper erect portion falling against her back across the shoulders and pinning her down in a doubled-up position, where she remained for fifteen minutes before she was extricated. When found she was unable to move her trunk and her upper and lower extremities felt numb and powerless. Shortly afterwards there was complete paralysis of the lower extremities and she was unable to close her fists. Retention of urine and obstinate constipation followed. She suffered some pain in the back of her neck and shoulders but it was not severe She felt numbness in the upper and lower extremities and trunk. She was unable to move her arms and to flex, extend, and rotate the forearms. The bladder and rectum remained paralyzed.



CASE 10.

Patient has sensation of touch all over, but in shaded lines on trunk the sensations of pain, heat and cold are absent. Note the difference in hands.

Patient has sensation of touch all over, but in shaded lines on trunk the sensations of pain, heat and cold are absent. Note the difference in hands.

She was admitted to the hospital three days later. She was a large fleshy woman in a fair general condition; mind clear. She complained of slight pain in the back of neck, of numbness and sensation of pins and needles all over the body. Motor paralysis was complete below the diaphragm. The diaphragm and intercostal muscles acted normally. There was partial paralysis of arms and shoulders, but she could move them slowly both in flexion and extension, which movements, however, were diminished at the elbow and absolutely lost at the wrist. All reflexes below the waist line were abolished. The eyes were normal. There was some pain and tenderness at the lower part of the back of the neck, but no irregularity of the

bony outline could be felt either in the throat or in the neck. There was no stiffness of the muscles of the neck.

The diagnosis of fracture dislocation in the neighborhood of the sixth or seventh cervical vertebra was made. The symptoms, both motor and sensory, seemed to point to the location of the injury, probably to a crush of the cord at a point between the sixth cervical and second dorsal vertebra.

As will be seen in the diagram there was an area of anesthesia on the hands but none on the arms.

Consent, however, could not be obtained to operation until October 5, when, with the aid of Schleich's infiltration method, with a few whiffs of chloroform, an incision six and a half inches long was made from the fourth cervical to the first dorsal spines. The spines and laminæ of the sixth and seventh cervical were removed. There were no evidences of hemorrhage or fractured bone. A probe passed four inches downward inside the spinal canal and one and a half inches upward met with no obstruction. The dura looked normal. It was opened but there was no evidence of injury to the cord; where it was exposed for three or four inches the dura was sutured and the external wound closed by suture with the exception of a narrow space for a gauze drain. Time of operation was 45 minutes.

No shock followed, but also no improvement. The temperature which before the operation had ranged between 98.5 and 101 now steadily rose, till on October 11 it reached 106. Extensive bed-sores with rapidly spreading sloughs developed on each buttock. The temperature continued to rise till on the 19th it reached 110, on which day she died.

At autopsy there was found to have been a complete separation between the fourth and fifth cervical vertebra where there evidently had been a dislocation which had immediately sprung back after crushing the cord opposite the interspace between the fourth and fifth cervical vertebra. For half an inch or so the cord at this point was disintegrated and running upward and downward from this point were degenerated nerve tracts. The distribution of nerves in this case was most peculiar. A more careful study of sections of the cord, etc., will be found in "Med. and Surg. Report of Presbyterian Hospital," New York. Vol. V.

In 159 cases collected by Lloyd there were 59 deaths following immediately after operation and 32 at a later period. The so-called operative mortality was 49.18 per cent. Of my own laminectomies in fractures of the spine, 6 in number, 2 have recovered and 4 have died.

(To be continued.)

THE GYNECOLOGIST AS CONSULTANT.*

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Since my audience to-day consists mainly of men in general practice, who have to deal with more common, though possibly sometimes fully as difficult, conditions, as those encountered by the specialists, I thought it would be well to touch briefly upon a subject which must interest all of us, and to suggest a few ideas upon which may be based a discussion which may serve to elucidate more freely certain points dealing with the relations of the gynecologist to the general practitioner, and show how one can help the other to their mutual advantage as well as to the best interests of the patient. I shall, therefore, deal briefly with the following questions: 1. What are the qualifications necessary to render a man fit to take up gynecology as a specialty? 2. When should his aid be sought by the general practitioner? 3. How can this aid be sought for and given without detriment to the general practitioner?

In the first place the gynecologist, no less than any other specialist, must have had a thorough, broad training and experience in general medicine and surgery before taking up his specialty. But just here—quoting from a paper written by me some time ago—I would say that the argument so often heard, that gynecology is only a branch of surgery, and that the general surgeon is therefore better equipped to operate upon diseased conditions of the reproductive organs than is the gynecologist, would not seem to be wholly logical. Although only a branch of general surgery, under the circumstances existing at the present day, gynecology presents such a wide and important field that it requires the entire attention of the man who intends to obtain the best possible results. It is true that no one should practice gynecology unless he has a thorough understanding of the principles of general surgery, and every surgeon should also have had a good laboratory training in bacteriology and pathology. As a consequence of such a deficiency in their training we too often find surgeons who have little or no appreciation of surgery except from a mechanical standpoint. Much still remains to be developed in gynecology, from the operative point of view as well as from the pathologic and bacteriologic sides of the question, and it will hardly be disputed that the gynecologist, all other things being equal, is better qualified to scientifically investigate the problems connected with his special branch than those who are able to devote only a part of their time to the subject. It is owing to the investigations of the gynecologist that pelvic surgery has reached the high plane that it holds to-day. To anyone familiar with the development of the various operative procedures that are carried out for pathologic lesions of the pelvis, it is readily apparent that the necessary technique has been evolved by the gynecologist and not by the general surgeon. In order to appreciate the present condition of affairs one has only to compare the results obtained by any well-known general surgeon with those of the gynecologist in the first rank in a similar line of work, both as to morbidity and mortality. Taken as a whole the evidence will be found to be strongly in favor of the gynecologist. That there really exists a wide difference between pelvic operations and those belonging to other parts of the body can be well seen by observing the methods of procedure of a general surgeon and those of a trained gynecologist when operating for pelvic inflammatory diseases.

Of course it is evident that the specialist should be as broad in his views as the general surgeon; and to be a good gynecologist nowadays demands the preliminary training of the general surgeon supplemented later by an especial study of the morbid conditions existing in certain parts of the body.

2. When should the aid of the gynecologist be sought by the general practitioner? Patients frequently come to the specialist who have been under the care of the general practitioner or general surgeon for varying periods of time, without having received any relief from the more or less expensive and more or less tedious treatment that has been carried out. Nor should these failures be a matter of surprise when we consider that the exact pathologic condition in not a few cases has been unrecognized, and that unless we start with the right diagnosis our treatment must always be vague and usually ineffectual. For the best interest, then,

* Read before the North Central Ohio Medical Society, at Mansfield, March 29, 1901.

of all parties concerned, the family physician no less than the patient, it would seem advisable, whenever a patient presents symptoms that suggest some pelvic inflammatory disease, and no improvement has taken place after a reasonable length of time from the course of treatment that is being pursued, a pelvic examination should be carried out by one who devotes his whole time to dealing with pathologic conditions of the pelvic organs. If such a procedure were carried out more frequently I have no doubt that many patients would be relieved before the local condition has had time to become more or less chronic. Again, there is no doubt that as a consequence of such an examination made at an early date many a patient would be spared an unnecessary routine of local treatment. It is no rare experience to meet with a patient who has undergone a long course of treatment for a supposed displacement of the uterus, and in whom careful examination (under anesthesia if necessary) shows that the organ is in a normal position. It may be argued that such a finding does not necessarily cast doubt upon the correctness of the original diagnosis, but even the most experienced among us will not hesitate to confess, that it is often difficult to recognize the true position of the uterus in certain cases, and that it is still harder to put the organ in its normal position. Under these circumstances one can hardly avoid the conclusion that a considerable number of women are treated for imaginary malpositions of the uterus. Perhaps a brief report of a few cases will serve to demonstrate the importance of the early recognition of diseased pelvic conditions.

CASE 1.—Chronic adherent Salpingitis and Ovaritis: Mrs. K. K., aged 25, married six years; occupation, seamstress, nullipara; one miscarriage five years ago at three months. Her menses first appeared when she was 13 years of age; they have always been regular and painless, but scanty. She has had a profuse leucorrheal discharge. She has been complaining for the past five years of a sharp pain with soreness in the right lower abdomen, which is increased on exertion. Five years ago she was in bed for two weeks on this account; the pain has been much worse during the past year. She has also had a great deal of backache. The family history has no special bearing on the case.

On examination of the pelvic organs the following notes were recorded: The vaginal outlet is relaxed, the cervix is in the axis of the vagina. The uterus is forwards, enlarged, sensitive but movable. On the right side an adherent tubo-ovarian mass can be made out. The left tube and ovary also seem to be adherent. After a careful examination under anesthesia the adherent tubes and ovaries and the vermiform appendix were removed. This patient had been under the care of a general practitioner for over a year. Twice weekly, she had received local treatment and medicine for which she paid three dollars a visit. Her income was five dollars a week. Finally, she lost all confidence in her medical adviser and came to our clinic. By the surgical procedures that were carried out she was entirely relieved, although her condition at the time of the operation was far from satisfactory, as in addition to the local condition she had developed markedly hysterical symptoms. When she came to us her resources were so reduced that she was willing to have the operation postponed until she could make money enough to pay her hospital expenses. One can not but believe that this patient's prolonged suffering and reduced financial condition were undoubtedly largely due to the fact that the local condition had not been recognized.

CASE 2.—Cancer of the Cervix: A. G., aged 58, IV-para; oldest child 33, youngest 19. Menopause at 43 years of age. Two years ago a large amount of blood came from the vagina. The flow ceased, however, within a few hours and no vaginal examination was made. In August, 1900, she began to have attacks of slight bleeding from the vagina, and during the past month she has been passing small quantities of blood at intervals of every few days. The symptoms that she presented when she came under our notice were the bloody discharge from the vagina, with general asthenia. On examination the outlet was found somewhat contracted; the cervix was flush with the vagina, particularly on the right side; the tissue of the cervix was friable, and even gentle manipulation caused a profuse hemorrhage. The uterus was enlarged. After an anesthetic had been administered, on pelvic examination the uterus was found to be of about the size of that of a two months' pregnancy. The cervical canal was dilated, and several ounces of a muco-purulent fluid escaped. The cervix was then thoroughly curetted and cauterized, and the cervical lips were brought together with ligatures after packing the uterus with gauze. Vaginal hysterectomy was then performed. On the right side of the vaginal wall it was necessary to incise the wall well up into the lateral fornix in order to get beyond the infiltrated tissue. In doing this the ureter was tied on this side. The patient, however, made a practically uninterrupted convalescence. On the day after the operation she began to have considerable distress in the right iliac region, and at this time we could detect a resistant globular mass in this region. No urinary discharge occurred from the vagina at this time, and she was secreting from 36 to 56 ounces of urine daily. On the sixth day after the operation the urine began to come from the vagina; the tenderness in the right side disappeared, and the amount of urine passed from the bladder now materially decreased. We believe that we had to deal with a transient hydronephrosis as a result of the ligation of the ureter, but that an uretero-vaginal fistula occurred.[1] With this exception the convalescence has been normal and so far as we can ascertain at the present time there has been no recurrence of the disease. On examination of the mass which was removed, it was found to consist of the dilated uterine body—which was practically a pus sac—and the cervix uteri which was involved in the cancerous growth. Microscopic examination showed a squamous-celled carcinoma of the cervix.

If this case had been examined at the time when she had the first hemorrhage some two years ago, the condition would in all probability have been suspected. No examination, however, was made until a few weeks before she came under our care although there had been two or three evidences of a bloody discharge in a woman who had reached the menopause some fifteen years before. This is one of the many instances of this condition that are overlooked until it is too late to do much beyond giving the patient a lease of life and relieve her of some discomforts. Such cases should be a warning to all of us, to take nothing for granted when a patient is bleeding from the vagina, be it ever so slight in amount.

CASE 3.—Extra-uterine Pregnancy: Mrs. M. S., aged 35, married, III-para; oldest child 10, youngest 6. One miscarriage, eleven years ago at three months. The patient had been well until she was suddenly seized with a severe pain in the left lower abdomen, which was accompanied with a feeling of faintness, cold sweats and a bloody discharge from the vagina. When I saw her some three hours after the beginning of the attack the abdomen was somewhat distended. On vaginal examination a fluctuating mass could be palpated in the left side of the pelvis. The expression was anxious, the pulse was 120. We concluded that she was suffering from a tubal pregnancy which had ruptured into the broad ligament. We watched the patient for the next few hours, and as she gradually improved, we determined not to carry out any operative procedures at the moment, preferring to wait until she became stronger. After a week had elapsed she entered the hospital, and an abdominal section was performed. A considerable amount of free and clotted blood was found in the abdominal cavity; there was also a tubo-ovarian mass on the left side as large as the closed fist, which was undoubtedly the gestation sac. This was removed. The tube and ovary on the right side were adherent, and after enucleation they also were removed.

1. Careful examination failed to show any injury to the bladder. Three months following the operation the fistula closed.

The debris in the pelvis was wiped out and the abdomen was flushed with salt solution. We closed the abdomen without drainage after pouring into it 500 c.c. of a sterile salt solution. The patient made an uninterrupted convalescence. The microscopic examination confirmed the clinical diagnosis. This patient's condition had been early recognized by her attending physician, and he had at once sought additional help.

Such cases undoubtedly are frequently being met with by the general practitioner, in which the history is suggestive of an abortion or where the patient has missed several menstrual periods, and then suddenly has an attack similar to the one that we have just described. If such cases are examined at once and seen in consultation by a competent gynecologist, many lives would undoubtedly be saved by the immediate institution of the necessary operative procedures.

CASE 4.—Double inflammatory disease of the Tubes and Ovaries with a sub-peritoneal Myoma of the Uterus: S. T., widow, aged 37, nullipara. For twenty years she has complained of a pain in the back, and for the past seventeen years, off and on, she has had a "neuralgic" pain in the left ovarian region. For five years she has had sharp pains at frequent intervals in the lower abdomen. During the past ten years she has had thirty attacks of pelvic peritonitis, which necessitated her staying in bed for from three days to two weeks at each attack. These attacks have become more severe during the last two years; the last one occurring in December, 1898. Three days prior to this attack I examined her and found a sub-peritoneal myoma as large as a fetal head. The small uterus could be made out beneath and attached to the myoma. The lateral structures were also adherent on either side. We advised that an examination be made under an anesthetic and the necessary operative procedures be carried out. The patient, however, would not give her consent. Three days later she had another attack of pelvic peritonitis. I attended her during this illness and after a two weeks' siege she recovered. She now concluded to submit to operative measures. On January 13, 1899, an operation was performed consisting of a myomectomy and a double salpingo-oöphorectomy, with removal of the vermiform appendix—which was slightly adherent—and the separation of many velamentous adhesions between the small and large intestines. The omentum was also adherent to the myomatous tumor and to the broad ligament. On the left side we had to deal with a hydrosalpinx and on the right a hematosalpinx. The lateral structures were released and removed after separating many strong adhesions. The patient made an uninterrupted convalescence and she is now well.

In all the years during which she had been suffering she had only been examined once or twice per vaginam prior to coming to us, and the physician had mistaken the myomatous tumor for the uterus. The only treatment that she had received was general massage, and a few applications of cotton tampons to the cul-de-sac. It seems hardly conceivable that such a condition of affairs could exist, and yet pass unnoticed, particularly as this woman had had so many attacks of pelvic peritonitis. Shortly before coming to us she had taken out a life insurance policy for $100,000, and I feel quite sure that no company would have been willing to have assumed this risk, if they could have known of the condition of the pelvic organs.

I could readily multiply these instances at great length, but I will not take up any more of your time by doing so. I am free to confess that the specialist makes mistakes, some of them grave, but one can not help but feel that in the very nature of things they must be rarer than those of the general practitioner whose attention from the study of special organs is so perpetually being distracted by his multifarious duties.

3. How can the general practitioner call in the aid of a specialist without detriment to his own interests and reputation? In the first place he can be assured that as a rule the patient will appreciate his efforts to do the best for her, whereas his mistakes and delays in calling in the aid of a specialist will be spread abroad by the patient, as soon as she discovers that other treatment might have proved beneficial long before. Loss of confidence in the family physician has far-reaching results and its effects can not be reckoned merely in dollars and cents. Secondly, it is easy for the general practitioner to guard his own interests by applying to a specialist, who is not only competent but who is a gentleman in the truest sense of the word. Again, often it will be found that no operative measures are necessary and in these cases the specialist will leave the patient in the care of her physician, and the latter can go on treating her with the full assurance that everything that is necessary is being done. As a specialist I can assure you that it is distasteful to me above all things to meet with patients who have lost all confidence in their family physician, especially when I see that the latter could have readily relieved himself of the responsibility without losing either in money or in professional reputation. One cannot but feel that the existence of full confidence between patient, family physician and specialist, is undoubtedly productive of the best results for all parties concerned.

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THE RATIONALE AND TECHNIC OF PNEUMATIC AURAL MASSAGE.

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The estimate of von Troeltsch that one-third of all adults are deaf in one or both ears has never been authoritatively questioned, and the extensive studies of school-children by Bezold and others have shown even in early life a serious loss in from 5 to 10 per cent. of all examined. As our clinical statistics prove that the great majority of these defects are due to impaired conducting apparatus and but a tithe to nerve-lesion, we are constantly facing the problem of how best to improve this conducting apparatus, both to check any progress of the defect and to regain, if possible, what has been lost. To this end the restoration of impaired mobility has long seemed a cardinal measure and hundreds of devices have been brought forward with more or less ardent claims as to their efficacy. The last word will not soon be said as to many of these, nor can any one man fully test them all; yet some twenty years of constant employment of various forms of massage has enabled me to form a fair opinion of the principles on which they must proceed and to recognize the fallacies which are too often presented in the advocacy of new candidates for acceptance.

Dealing with an apparatus essentially pneumatic, as is the middle ear, we naturally make most use of pneumatic massage for the desired mobilization; yet, just as the best efforts of the masseur upon stiffened joints elsewhere in the body are of slight avail in some cases until more radical surgical measures have broken up real or pseudo-anchylosis, so in the minuter field of the tympanum ruder means must at times have first employment. Cutting procedures should be resorted to only when the blunt force of probe and hook have failed; for the divided bands too often reunite into a worse hindrance than before. But the cotton-tipped probe can often do much to mobilize stiffened parts and rub

in alterative ointments or solutions; and cases of long-standing post-suppurative deafness which had been abandoned by capable men as hopeless have years later been restored to a useful degrce of hearing by gently vigorous massage of this sort. Lucae has obtained very good results with his spring-probe; but it is questionable how far its spring increases the efficiency in gentle hands or mitigates the rudeness of the clumsy. Usually painful, even after anesthesia has been attempted by ice or cocain, it can yet be borne by many patients, and will at times initiate an improvement which is unexpectedly marked as well as gratifying to the patient.

The various measures of pneumatic massage are likely to have the greatest vogue, however, both because of their gentleness, their wide range of applicability and their diagnostic value. Siegle's otoscope is the best, as it was also one of the first of these; although the dramatic value of electric or compressed-air manipulation will always appeal to some classes of patients and tempt thc aurist who "must be up to date." Few modifications of the original apparatus have been for the better, except the substitution of a rubber bulb for the mouth-piece and lung power. Not only does this subserve convenience if the instrument is to be used by more than one pcrson or in suppurative cases, but it materially increases its power, as is not infrequently desirable. A normal drumhead can bear a pressure of some fifteen pounds per square inch on either of its surfaces, and while this should rarely, if ever, be approximated in the practice of pneumatic massage, which has pathologic membranes to deal with, we may often need and use to advantage double the three or four pounds of negative or positive pressure which is the uttermost that the mouth can furnish. Siegle's fundamental principle, in which he advanced beyond his predecessors, must be adhered to—the variations of pressure should in almost all cases be made only in plain view; the massage must be made through an "otoscope"—and harm can then result from vigorous measures only in the most careless hands.

Injection of the manubrial plexus and other vascular areas must generally be induced by massage which is energetic enough to have any real efficacy; but this will usually be lost as quickly as it was evoked. The fear that is sometimes expressed that such injection will prove harmful by reason of exudation of leucocytes and increased sclerotic changes, is largely fanciful; such exudation need no more occur than extravasation. Either may readily absorb should it be produced, not only leaving behind no injurious trace, but really proving beneficial, by securing simultaneous absorption of previous exudates. All massage would fall under the same ban; but the oculist sees daily that corneal opacities can be best absorbed by massage with a stimulating ointment which shall cause not only marked injection, but actual new formation of vessels, thanks to which he secures absorption and replacing with better materials of the hasty repair-work which Nature had perpetrated. This is not so visible in other fields, but wc know that it does take place; and the blood-count made after the general massage seance tells of a systemic plethora promptly induced, which is a large element of its usefulness.

It must be remembered, however, that in our aural massage the visible movements and injection of the drumhead are wholly secondary in importance to those induced upon the inner side of the tympanum. Much of the value of the procedure is in its mobilization of the stapes and to a less extent of the round-window membrane. Sometimes good motion of the malleus is obtained without improvement as to hearing or tinnitus, possibly because of laxity of the malleo-incudal or incudo-stapedial ligaments beyond the degree which Helmholtz pointed out as normal; but more often it is on account of anchylotic bands about the niches of the fenestra. At times such non-success is due to lack of air within the tympanum; for we must not forget that while we may speak of "sucking out the drumhead," in fact we merely permit the expansion of the air within by reducing the outside pressure. Tympanic inflation *per tubam* is therefore an absolute prerequisite in some cases, cven some of those in which the slightest overdoing of inflation may be deleterious by concussion of a nervous apparatus already damaged by disease.

Besides the mechanical effect, then, of inflation and massage in mobilization, both measures can do good service through that very congestion which has been deprecated. The sclerotic tissues can at times be softened and stretched only after slight congestive exudation; and the cupping effect of the massage is no unmixed evil. It is a sharp-edged tool, not to be trifled with; but most surgeons ought to be able to trust themselves with keen instruments, if, indeed, such known potency for evil is not one of the surest incentives to safe and successful use. Measures supposedly harmless are usually but half-understood and perfunctorily used, and "didn't know it was loaded" applies to many things besides fire-arms. The blunt curette in removing cerumen and the forceps groping after foreign bodies are responsible for more injuries to the canal and deeper parts, with occasionally fatal results, than we ever like to believe. So we should study well during the massage, after it is finished, and at the next examination, with close inquiry as to the symptoms in the interval, if we are to know what we are doing for good or evil, and rightly to employ the massage for the benefit of the patient and the credit of ourselves and the profession.

As to the instrument, the original Siegle's otoscope has been little improved upon. It can be made of metal, with reduction of bulk and weight, and the speculum can advantageously be given the oval lumen, which best accords with the form of the canal—points which are well exemplified in Burnett's form of the instrument. The glass which closes the speculum externally may be plane or convex—the latter giving a valuably magnified image, but a proportionately reduced illumination. This matter of reduced light is cardinal and constitutes the great difficulty for beginners in using the instrument, especially if they are not accustomed to looking through the sight-hole of the brow-mirror. Much light is necessarily reflected from the glass, which is obliquely set so that this may not return to the observer's eye. Yet, many persist in staring at the reflection of the brow-mirror and so, not looking in the axis of the speculum, can see nothing else but its wall, instead of through into the ear. Of the light which docs penetrate, only a fraction is reflected back from the fundus, and of this a further considerable portion is reflected internally, allowing but a small fraction to reach the eye. If the glass is convex, all of these losses are exaggeratcd and thc resultant image, if enlarged two diameters, has but one-fourth the strength of illumination of the unmagnified view. Hence, there is need of precise adjustment of the light to secure the best possible illumination of the fundus before the

speculum is introduced and of so holding the ear that one hand shall suffice for straightening and opening the canal and holding the speculum air-tight in place, while the other hand is free, first to manipulate the the brow-mirror and make sure of the fullest lighting, and then to exercise through the bulb the precise suction and pressure desired. As with all other specula, the otoscope should be placed in the straightened canal and the ear drawn out over it as the speculum is pressed in.

Thus employed, the otoscope enables the physician to see exactly what he is doing, noting the response of the malleus-handle as well as of each part of the drum-head, flaccid or tense, to the variations of pressure. These can be made of any desired character by means of a good bulb, their frequency changing from twenty or thirty to three hundred to the minute, their amplitude equally diverse, while the pressure can be all positive or all negative, or alternations of each, with a maximum of nearly fifteen pounds in either direction, were such ever desired. No syringe or other form of "rarefactcur" can give more vigorous action nor allow such perfect control. The claim made for certain forms of massage-instrument that they *alone* can give some definite suction or pressure is wholly specious—any passable form of the apparatus can give a fair degree of either. It is urged as to some electric or other appliances that they give a definite rhythm not obtainable by hand-power; this is in a measure true and constitutes one of the advantages of the simpler apparatus, since such regularity of vibration is an element of decided danger, as is recognized in a hundred directions. Numerous devices embodying this rhythmic vibration have been proved seriously destructive of the vitality of nerves and other tissues—the electrically-moved tuning-fork will render cataractous the lenses of small animals kept near it—the electric plugger has been abandoned because it killed the dental pulp—and almost every form of "phono-massage" has proved damaging to the cases which at first seemed benefited by its employment. The faulty rhythm of the hand-masseur is therefore decidedly in its favor, and no mechanical device can compare in efficient control with the skilled hand guided by the intelligent eye. It has been shrewdly asked, whether this or that exploited apparatus was "as efficient under the table as on top"; certainly, the mental impression on the patient (surely not on the physician also) is no small part of the supposed potency of some of the "latest patterns."

Massage without ocular control is permissible only when the effect of the procedure has been well studied through the otoscope, and it has been proved harmless for the ear in question. Then, it may be given into the hands of the patient for frequent home-use as a valuable adjuvant to the more potent measures. For such employment there is some risk, however, in most of the "masseurs," such as that of Delstanche, as their cupping effect may be much over-done. "Finger-tip massage" can be used with hardly a possibility of mischief, the means is always at hand without cost, and it can be used inconspicuously anywhere at just the time when the need for it is felt. Hommel's "tragus-presse" can afford but little of the suction which is most useful to the depressed conducting apparatus; whereas the deeply-inserted finger can be withdrawn enough to notably rarefy the air and give the same alternations of suction and pressure which are most efficient under the otoscope. The hollowed palm placed over the auricle can in like manner exercise vigorous pneumatic massage. Other massage about the ear has been employed, most valuably that behind the ramus, which can slightly affect the deep-lying Eustachian tube; but it seems for this purpose inferior in value to vigorous gargling.

1717 Locust Street.

PERNICIOUS ANEMIA.

REPORT OF THE PROGRESS OF CASES PRESENTED TO THE ASSOCIATION IN 1900, AND REPORT OF A CASE WITH DIFFUSE SPINAL CORD LESIONS AND POST-MORTEM FINDINGS.*

FRANK BILLINGS, M.D.

CHICAGO.

(*Concluded from page 488.*)

Case 29.—This is an important and most instructive case, and is reported in detail with the postmortem findings, including a microscopic examination of the different tissues of the body.

Mrs. V. J.; aged 39; married; mother of four children; came to the Presbyterian Hospital, Chicago, on July 26, 1900. Her father is living, and has had stomach trouble a good deal of his life. Her mother died of paralysis. A maternal aunt died of cancer. There is one brother and seven sisters, all living and in good health. The patient has been obliged to work hard all her life, and has not been in good health since the birth of her last child. Two of her children are living and two are dead. One was still-born. The patient had typhoid fever when she was young, and suffered from malarial fever, as it was told her, two years ago. Her present illness began after the birth of her last child, seven years ago. There was indigestion, with gaseous eructations, acidity, fullness, and weight in the epigastrium after eating. Occasionally there was vomiting, but the vomiting had no relation to the meals. She never vomited blood. On several occasions she vomited bile after repeated attacks of vomiting. The appetite has been variable on the whole, but has been often good. There was diarrhea with watery stools containing undigested food for the first six years of her illness.

A years ago she commenced "christian science" treatment, and after six months the diarrhea ceased and she became much better. Recently there has been much irritation of the bladder, with a desire to urinate frequently. There has been a sense of pressure about the rectum, and at times some pain, especially if the bowels were constipated. There has been some difficulty in getting the bowels to move because of a sense of numbness in the rectum in the last few weeks. Menstruation ceased four months ago; the flow was scant for a month or two preceding the cessation. Her strength and endurance have been gradually lost. She was overworked during most of the illness, but her legs became finally so weak that she was obliged to remain in bed on and after December, 1899. She and her friends noticed that she was paler than usual, and that the skin had a yellowish tinge. This has increased since she has been in bed. She has noticed that her legs have become much weaker since she went to bed, and that she has not complete control of the bladder. The bowels have usually been constipated and required a laxative or the injection of water into the bowel to move them.

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* Read at the meeting of the Association of American Physicians, at Washington, D. C., April 29, 1901.

An examination showed a woman fairly well nourished; the skin was very pale and of a distinct yellowish tint. The mucous membranes of the lips and mouth were pale. The tongue was indented and furred. There were no carious teeth; the lungs were negative. The heart area was normal. There was a soft systolic blow in the mitral and pulmonic areas. The radial pulse was about 100 per minute, and was small and soft. There was diastasis of the recti abdominalis muscles. The belly was "pot-form." There was very palpable visceroptosis, including the liver, kidneys, spleen, intestines and stomach. The uterus was retroverted and moderately fixed. Some pain was caused by an attempt to restore it to the normal position. The body of the uterus was small, and a small nodule was felt in its posterior surface. The rectum was normal; the eye grounds were normal. The patient had abrasions of the skin over the sacrum, and lay partly upon the side with the thighs and legs flexed. There was some atrophy of the muscles of the lower extremities, chiefly of the extensor groups. The knee-jerk was increased. There was a slight ankle clonus, more marked in the left than in the right foot. Babinsky's sign was present in the right, but not in the left. Sensation was diminished in the lower extremities, most marked in the feet and legs, and almost normal in the thighs. The muscular sense was noticeably absent. The patient could perceive pain, and in certain areas of the leg could distinguish heat from cold, but in others heat was felt as pain and cold was felt as touch only. There was a small area in the left inguinal region and upon the outer surface of the right thigh, where tactile sense was diminished and heat was felt as pain. There was noticeable loss of power in the legs and thighs, which was more marked in the right than in the left. There was loss of power in the rectum and bladder. The muscular power and the sensation of the skin in the upper extremities seemed normal. She complained of a sense of constriction about the abdomen, beginning at the waist-line. The urine, with a specific gravity of 1012, was acid in reaction; no albumin nor sugar present, and was microscopically negative. The blood examination showed hemoglobin , 20 per cent., red cells, 610,000, and white cells, 3200 per cubic millimeter. Poikilocytosis was very marked, and nucleated red cells, with megaloblasts predominating, were found. (See Chart No 5.)

The patient remained in the hospital from that time until the date of her death on Feb. 27, 1901. During that time many blood examinations were made, as indicated in the accompanying chart, which showed two waves of improvement while under observation, and the death of the patient occurred during the last wave of improvement. The blood findings were all characteristic in every way of pernicious anemia. The interesting point in the case is the spinal cord involvement, which consisted of a paraparesis, noted at the time of admission, and which gradually increased up to the time of her death. There was finally complete paralysis of the bladder, and in consequence, an infection which extended to the kidney, and the patient died of septicemia dependent upon a pyelonephrosis. This was possibly aggravated by extensive bed-sores, which increased in extent and depth in spite of the greatest care.

The stomach contents were examined after test meals on several occasions, and hydrochloric acid was found absent in every instance. The stools were examined and found negative as to parasites. The urine, after the infection of the bladder, became alkaline, and contained considerable pus and many bacteria. The character of the bacterial infection was not discovered. During the greater part of the illness the temperature of the patient ran an irregular course of either a remittent or intermittent type, but it was never severe in degree. The pulse was usually rapid and small, and there was always a complaint of great weakness and of breathlessness upon exertion. The nourishment of the patient remained good throughout the whole illness. Her appetite was usually good, and although digestion

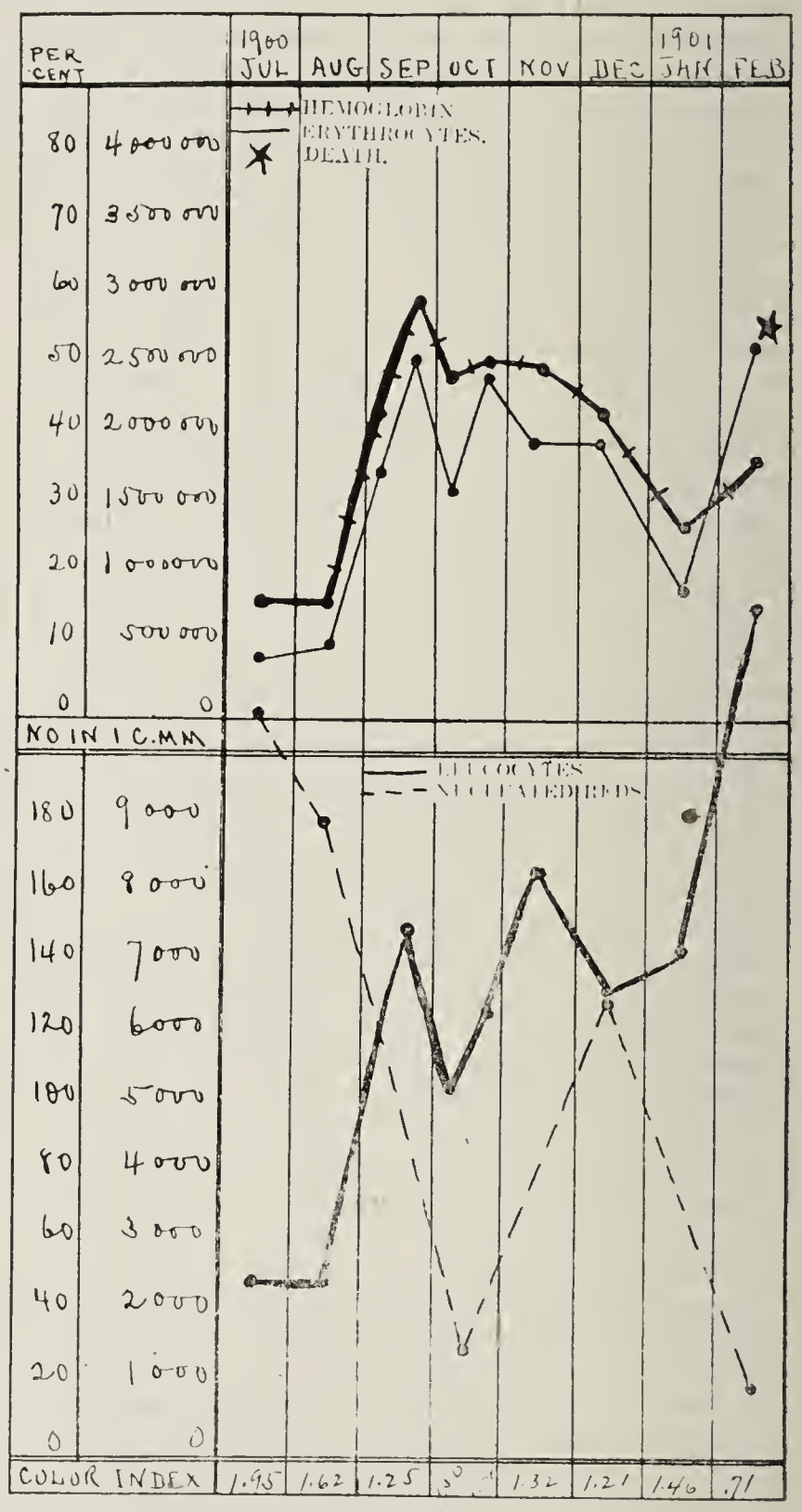


CHART 5.

was not perfect, assimilation of her food occurred. About the middle of January, 1901, the infection of the bladder and of the kidneys occurred, and from that time the patient suffered from an intermittent and remittent type of fever of severe degree, and at times was delirious, apparently from the fever. Five days before death the temperature fell below normal and remained so until death, and for two days preceding that occurrence it registered from 93 to 94 F. in the rectum. The pulse and respiration fell with the temperature, and the patient died with a very low tempera-

ture, slow pulse and slow respiration. At the time of death the blood findings indicated a wave of improvement, and just at death there was a terminal leucocytosis.

The postmortem examination was made by Professor Hektoen, at the Presbyterian Hospital, on Feb. 27, 1901, when the following diagnosis was made: General anemia; red marrow in femur; splenic hyperplasia; degeneration of posterior columns of spinal cord; ascending cysto-uretero-pyelonephritis, with necrosis of the medullary papillæ; broncho-pneumonia; fatty liver; thrombosis, with softening of the inferior vena cava and continuation to the left in the renal vein; sclerosis of aorta; chronic pelvic peritonitis; with tubo-ovarian adhesions; extensive sacral decubitus, and edema of feet.

The body, which is still warm, is that of a rather middle-aged, poorly-nourished woman. There is no rigor mortis, and no posterior lividity. There are huge bed-sores with great undermining of the skin over the sacrum, exposing the coccyx and lower part of the sacrum and the left trochanter. The limbs are fixed, the knees somewhat flexed and the feet, especially the left one, slightly edematous. The sclerotic coats, especially that of the left eye, show traces of recent hemorrhage.

The abdominal cavity is empty, and peritoneum smooth. The pleural cavities are empty and smooth. The mucous membrane of the gums is intact. The tongue, in its anterior roof, shows branching fissures; its mucous membrane, as well as that of the pharynx, esophagus, larynx and trachea, is normal. Peribronchial glands are normal. The lungs are pinkish externally and but little pigmented; they are soft, spongy and crepitant. The cut surface is pinkish and bloodless. In the lower lobe of the right lung there are several areas of recent lobular consolidation, from which a thin, purulent fluid can be expressed. In this lobe the bronchi also contain muco-pus. In the upper lobe there are one or two small black, subpleural concrements. The heart weighs 250 grams. There is considerable amount of subepicardial fat. The cavities are somewhat dilated and contain a small amount of fluid blood; their walls are thin and flabby; the myocardium is normal. In the left ventricle there is an aberrant tendinous cord, which crosses the cavity in the lower half. There is no evidence of fatty degeneration in the myocardium. The beginning of the pulmonary artery is smooth. The right shows several yellowish areas, the largest one being in its descending portion. There is an obliterating thrombus of the inferior vena cava, beginning opposite the fourth lumbar vertebra and extending downward to the iliac veins and the right side into the femoral vein and its branches almost to the knee. The thrombus in the left iliac vein is red, in places grayish, with extensive puruloid softening.

The spleen weighs 350 grams; its external surface is smooth and of a slaty color; the capsule does not wrinkle. The cut surface is of true reddish-gray color; its consistence is quite firm; its connective tissue being visibly increased. The Malpighian bodies are not visible except in a few places.

The liver weighs 1800 grams. There are a few perihepatic adhesions binding it to the diaphragm. It is yellowish in color both externally and on the cut surface. On section the peripheral parts of the lobules appear much yellower than the central portions. The bile passages are patent. The gall-bladder contains a quantity of very thick, viscid, tarry bile, and a number of small faceted calculi.

The pancreas is normal in size and appears normal on its cut surface.

The stomach is small and contracted; its mucous membrane was not examined. The stomach was filled with formalin for histologic purposes. The mucous membrane of the small intestine is intact, and apparently not greatly atrophic; that of the large intestine and rectum is normal. The vermiform appendix is also normal.

The kidneys are enlarged, weighing together 520 grams. Their external surfaces, particularly that of the right, show roughening of the capsule, with yellowish spots, some of them purulent. The pelvis of each is filled with turbid, thick pus, in which there are many necrotic masses. The mucous membrane of the pelvis is thick and in places ulcerated and irregular. The apices of some of the medullary pyramids are distinctly necrotic, being capped by a yellowish, rather firmly adherent eschar. In some places this has fallen off, leaving ulcers. The calices appear dilated and lines of suppuration extend upward into the medullary pyramids and into the cortex. In the pelvis of the left kidney there is a firm, yellowish, adherent thrombus in the branches of the renal vein. The ureters are thickened and somewhat dilated; their mucous membrane is roughened and covered with pus. The urinary bladder is contracted and its walls thicker than normal. Its cavity contains a small quantity of turbid fluid. The mucosa is roughened and in places is diffusely red and hemorrhagic.

The right ovary and tube are small and shrunken and embedded in adhesions. There are adhesions about the left ovary and tube, among which there is quite a large collection of serous fluid. The uterus is about normal in size. Its mucous membrane is smooth. There is a bilateral, old cervical tear. The vagina is normal.

The skull and membranes of the brain are normal. There is an excess of cerebrospinal fluid; in the lower part of the spinal cord there are numerous minute, bony, white scales in the meshes of the pia arachnoid. The cord is about uniform in consistency throughout. On cut section there is distinct degeneration in the posterior internal columns. In the lower part of the cord this degenerated area becomes wider and more irregular.

The marrow of the left femur is deeply red throughout and quite cellular. Smears contain megaloblasts, normoblasts, etc.

Histologic examination was made by Mr. Robinson, in the laboratory of Prof. Ludvig Hektoen, and by Dr. J. F. Smith, of the House Staff of the Presbyterian Hospital.

Lungs.—Sections from the more solid portions of the lungs show marked degeneration; quite extensive destruction of the alveolar walls, with the alveolar spaces of the large portion of them completely filled by disintegrating leucocytes and a serous transudation. In the remaining part the consolidation is much less complete. The alveoli are occupied and the character of the material within them somewhat different, the serous portion being much more abundant and the leucocytes fewer in number. A considerable amount of blood can be seen along the lines of the broken alveolar walls in the denser portions of the sections. The smaller capillary vessels are also highly congested, and the larger vessels, whose walls show evidence of degenera-

tion in their granular and fragmentary appearance, are distended with serous material.

Heart.—The muscular fibers under high power of the microscope present a peculiar appearance. Along the margins the protoplasm appears normal, with its transverse striations distinctly visible, while the central portion in many places is pale and degenerated and shows no transverse striations. This gives to the fibers somewhat the appearance of a separation into two longitudinal divisions. Many of the fibers show a longitudinal splitting into fine threads. The nuclei stain well, but the protoplasm throughout shows some irregularity on staining. Bands of light color cross the fibers transversely. Many of the nuclei are large and irregular.

Femoral Vein.—Sections of this vessel show the wall varying considerably in thickness in different portions, containing but a scant amount of muscular tissue. The lumen is occupied by a large mass of fibrin and disintegrated blood, the central part of which is less dense and more granular, being composed largely of degenerated cellular elements. Around the margins of the mass some evidence of proliferation of the fixed tissue cells is seen, and in a few places there are growths starting inward from the vessel wall. No bacteria can be found in sections stained by Gram's method.

Spleen.—The Malpighian bodies are very indistinct throughout the greater portion of the section, and in some places entirely invisible. The splenic tissue in all parts of the section obscured by the presence of an enormous amount of blood. The nuclei of the cells are visible, stained quite deeply, but their protoplasm is pale. The capsule of the organ is thickened and the connective tissue within is notably increased in amount, but it has a peculiar granular, disintegrated appearance, which is seen also in the walls of the vessels included within the larger trabeculæ. The blood vessels show some increase in thickness of their walls and lumens, in most instances engorged with blood. The elastic tissue fibers are much increased, as shown by Weigert's special stain.

Liver.—Sections of the liver show extensive fatty degeneration, particularly in the peripheral portion of the lobules, where the liver cells are almost entirely replaced by fat vacuoles. Only a very scanty amount of protoplasm and a few poorly stained nuclei remain. Immediately surrounding the central vein of the lobule there is, in most cases, a small area of liver tissue, almost free from fat, showing, however, evidences of degeneration by the dull color and granular character of its protoplasm and by the pale staining of the nuclei and the presence of some granular detritus in the spaces between the cell columns. The capsule of the organ is not thickened, nor is the interlobular connective tissue apparently increased in amount. The bile ducts are not proliferated. Some of them are large and have wide-open lumens. The blood-vessel walls show no particular changes; the lumens are occupied by varied amounts of true blood. Staining with ferrocyanid show small amounts of granular iron here and there in the interstitial tissues. Staining by Adami's carbol-thionin method show many diplococcus-like bodies located within and between the liver cells.

Pancreas.—Sections of this organ stain well and show no apparent abnormality more than a congestion of some of the smaller blood vessels and perhaps a slight increase in the thickness of their walls. The lobules are distinctly marked off. Numerous bodies of Langerhans of various size are present throughout the section.

Stomach.—Sections of the fundal portion of the stomach show marked thinning of its wall, particularly of its mucous and muscular layers. The glands of the mucosa are few, shallow, and atypical and the epithelial cells of their lining are very indistinctly marked off and poorly stained. Round-cell infiltration is present. The submucous layer is comparatively thick. Most of its vessels are congested. The muscular layers are thin and pale. Practically the same may be said of sections very near the middle of the lesser curvature of the organ. Muscular tissue, however, is more abundant and the thickened vessel walls in the submucosa are more evident. In sections from near the pylorus atrophic changes are not seen. Mucosa is normal in thickness and appearance, and the muscular layers, white, dense and well stained. On the inner surface and in the lumens of the more superficial glands are seen bacterial colonies.

Intestines.—The intestinal tract in its upper portion, that is, the duodenum and jejuno-ileum, shows no marked pathological change. Walls of the ileum, particularly in the region of the cecum, are rather atrophic, especially its mucous layer, which in places is reduced to a narrow band, with but slight resemblance to mucosa. There is diffuse, round-celled infiltration of the mucosa. The submucosa, in places, is congested and edematous. Numerous mast-cells are seen in the submucous layer.

Kidneys.—Sections of the kidney show marked destructive changes toward the apices of the pyramids. The surface bordering on the pelvis is composed of typical granulation tissue infiltrated by large numbers of polymorphonuclear leucocytes. There is diffuse, almost universal, edema and leucocytic infiltration of the somewhat increased interstitial tissue and congestion of the capillary and larger vessels. Throughout the section are granular necrotic areas of variable size and minute abscesses. A large proportion of the tubules in both pyramidal and cortical portions are dilated and packed with masses of polymorphonuclear leucocytes embedded in a granular debris. In many places the cells have undergone complete necrosis, involving also the lining epithelium and peritubular connective tissue. The straight tubules, even where densely packed, often have an intact epithelium with clear nuclei. In others it is flattened, degenerate, or necrotic. The glomeruli have somewhat thickened capsules and are much congested. Others yet show carious degenerative changes, not a few being entirely necrotic and granular. In some places glomeruli and tubular contents have dropped away during the handling of the sections, leaving only the thickened connective tissue framework.

Spinal cord.—Sections of the cord, stained by the Weigert-Pal method, show degenerative changes, with absence of myelin sheaths from many of the tracts; at some levels comparatively few sheaths are present in any part of the transverse section, and their absence from the postero-median and crossed pyramidal tracts is more or less complete at all of the levels examined.

It was intended to give illustrations of sections of the spinal cord at different heights, to show the site of the degenerative changes in the cord. Sections made of the medulla and pons show degeneration of certain tracts here, as well as in the cord, and it therefore seems wiser to postpone the report upon the histology of the cord until a more extended examination may be made including the entire cerebrospinal system. This will be the subject of a future report to the Association.

The changes in the spinal cord in this case are the same, apparently, as those reported by others, and consist of degeneration in the postero-median, the pyramidal, the direct cerebellar and Gower's tracts. Diffuse degeneration appears in this case in the cervical and upper dorsal cord. It seems, therefore, in this case, that while the degenerative changes are limited to certain columns in some parts of the cord, especially in the lumbar, dorsal and upper cervical, it become more diffuse, as noted above, in other portions of the cord. One of the peculiar conditions noted is the absence of shrinkage in the degenerated tracts. Possibly this may be due to the shorter course of the disease as compared with the more chronic cord lesions of locomotor ataxia, lateral sclerosis, etc.

Bacteriological examination.—Media inoculated from the heart's blood showed no gross changes, either by aerobic or anerobic methods of cultivation. No cultures were obtained from the lungs. Upon an agar slant, inoculated at the autopsy from the thrombosed femoral vein, there developed a pure culture of the bacillus coli communis. Upon agar-agar plates from the liver there appeared a number of small, white colonies, composed of small cocci which, stained by Gram's method, produced a moist, whitish growth on glycerin agar, a dirty brownish-white growth, with discoloration, on potato, no apparent change in litmus milk, no gas in glucose agar, and no liquefaction of gelatin. From the kidney were obtained cultures of small cocci which, stained by Gram's method, and in subcultures, produced growths characteristic of staphylococcus albus; also small, bluish-white colonies of small oval bacilli, which were almost completely decolorized by Gram's method of staining, produced a scanty moist growth upon the surface of glycerin agar, a brownish growth with discoloration on potato, gas in glucose agar, apparently no alkalinity on litmus milk, and a funnel-shaped liquefaction of gelatin.

100 State Street.

NOTES ON ANESTHETICS.

D. H. GALLOWAY, M.D.
CHICAGO.

A man can not do two things at once so skilfully as he can do either one of them by itself. A surgeon can not do his most skilful operating while devoting half his attention to the anesthetic.

A surgeon is frequently more concerned about the result of the anesthetizer's work than he is about the results of his own work.

Constant anxiety about the anesthetic divides the attention of the surgeon between what he is doing and what some one else is doing and must hinder the progress of the operation.

In many cases more skill is required to administer the anesthetic than is required to do the operation.

An operation may be practically devoid of danger; an anesthetic is never administered without jeopardizing the life of the patient.

In more than half of the cases the patient is in greater danger from the anesthetic than he is from the operation.

A good anesthetizer need not necessarily be a good surgeon; neither are all surgeons good anesthetizers.

Death from an anesthetic may occur in the hands of the most skilful anesthetizer, but in the great majority of cases in which deaths have occurred the anesthetic has been in the hands of the unskilled.

The patient should not be brought profoundly under the influence of chloroform in less than five minutes; more than ten minutes is almost never required.

In administering chloroform there is seldom a stage of excitement except the patient is addicted to the use of alcohol, tobacco or some other drug.

The skilled anesthetizer seldom, if ever, touches the globe of the patient's eye with his fingers; it is unnecessary and may do much damage.

The anesthetizer should be considered a consultant to the surgeon, rather than his assistant; it is as important that he be an expert in the giving of anesthetics as that the surgeon be an expert in operating.

The surgeon can not do any operation of consequence and administer the anesthetic too; therefore, the patient should be made to understand that at least two men are required and that they are equally entitled to pay for their services.

The anesthetizer's fee should not be contingent on the surgeon's fee any more than the consultant's is, and, like the consultant, he should send a separate bill for his services.

The anesthetizer must not forget that the anesthetic is to be given on account of the necessity for surgical operation and that the reverse is never the case; hence, the anesthetizer's position is of necessity subordinate to that of the surgeon. As a rule the anesthetizer must use the anesthetic selected by the surgeon, though when anesthetics are administered only by skilled men it is probable that a selection of the anesthetic will be left to the anesthetizer.

No man can safely administer an anesthetic and watch the operation at the same time; if a death occurs while he is so engaged he should be held guilty of criminal carelessness.

During anesthesia the patient's life is in continual and imminent danger and his safety depends not only on the skill of the anesthetizer but also on that person's constant and undivided attention. The indifferent or inattentive person has no business with anesthetics.

Clinical Report.

CASE OF TUBAL PREGNANCY.

H. W. HENDRICKSON, M.D.
MONTEVIDEO, MINN.

On April 18, 1901, at 8:45 p. m., I was summoned to attend Mrs. E. P. H., whom I found in collapse, practically pulseless and suffering agonizing pain in the abdomen, especially in the right epigastric region where a large and hard swelling could be outlined.

A diagnosis was made of tubal pregnancy, with rupture and escape of the ovum, and hemorrhage into the peritoneal cavity. The gravity of the situation was at once explained to the family, and preparations made for immediate laparotomy.

At least a gallon of clotted blood was evacuated; a 12 weeks fetus with membranes was removed, the tube ligated and its distal portion with the ovary included detached and removed. The abdominal cavity was irrigated with a normal saline solution, and the wound closed without drainage, rigid asepsis having been observed throughout. Before the operation a hypodermoclysis of 3 pints of normal salt solution was administered, and a like amount was given after the operation was completed; the sites chosen were the cellular tissue under the breasts on both sides. The pulse just before the operation and after the first dose of saline solution had been given was 150 and very feeble. At 4 a. m. next day it was 140 and stronger, and at 10 a. m. 120 and fairly good. The woman made an uninterrupted recovery, and her temperature did not at any time show a rise of more than two degrees above the normal. The effect of the saline injection was very striking, and I am quite certain that but for its timely administration this patient would not have rallied from her double shock, namely, from the hemorrhage and subsequent operation.

Dr. Cabanes, of Paris, has offered to install and maintain a museum of retrospective medicine at the Paris Faculté de Médecine.

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TUBERCULOSIS AND HOUSE INFECTION.

The question of house infection by tuberculosis is a rather important subject, but one that heretofore has not been extensively studied in a statistical way. There has been an abundance of proof that invalids with the disease can temporarily infect their surroundings, and that dark and ill-ventilated tenements in the slums can retain the infection to all appearances. There have, however, so far as we are aware, been but very few exhaustive comparative studies of house infection under varying conditions as to sanitation; this alone can be considered a satisfactory method of investigation of this subject. What we want to know is not merely how far and how long tuberculosis germs can retain their vitality and virulence under specially favoring conditions, but how they exist and behave under ordinary and average ones, and also in those of better than average as regards general hygienic surroundings. A paper read at the late tuberculosis congress Dr. Harold Coates[1] deals with this subject somewhat in the desirable way, though the inquiry was limited in its scope. He divided the dwellings investigated into three classes: 1, those in a dirty condition, where careless consumptives lived, who took no precautions to prevent infection; 2, very clean houses occupied by rather careless consumptives using insufficient precautions as regards sputa, etc.; and 3, dirty houses where there had been no case of tuberculosis for years. In every case the condition was noted as to air space, light, ventilation, construction of walls and freedom from dust and dampness, presence or absence of carpets, curtains, etc., and length of residence of patient and duration of illness.

Twenty-one houses of the first class were examined. In 13 of these at leastone animal was found tuberculous, and, in another, tubercle bacilli were found in the dust, making 14 out of 21, or 66 per cent., giving positive evidence of infection. In 7 houses there was no evidence that the dust was infective. In 8 of the 14 infected houses the lighting and ventilation were bad, in 1 fair, and in 5 good. In none of the 7 giving negative results was it poor or bad. Fifty-two guinea-pigs were inoculated with dust from these houses; 20 of these died shortly after being inoculated, 32 were killed four or five weeks after and 17 found to be tuberculous and 15 healthy.

1. Med. Press and Circular, Aug. 7.

Ten clean but infected houses were examined and infectious dust was found in 5. The average cubic air space in these, per individual, was 336 feet; in the other 5 it was 506 cubic feet. Of the infected houses only one had good light and ventilation, while these were good in all the non-infected houses. Ten dirty tenements without consumptive inmates were tested and in none was tuberculous dust obtained. Dust taken from the waiting-room of the out-patient department of the Manchester Hospital for Consumption, a lofty, well-lighted and ventilated hall used daily by 180 patients, was also tested, with negative result.

These results agree pretty closely with those of Cornet in Berlin, but are slightly more favorable. They point very strongly to the conclusion that the prime disinfectants for tuberculous germs are light and air, and that with free admission of these and proper care there is little danger of permanent infection of dwellings. They also demonstrate that without these, thorough cleanliness will not protect from infection from a careless expectorating consumptive. The particular danger of tuberculous houses is in the crowded districts of the cities, where light and ventilation are often apparently the last thing thought of in the construction of tenements, not only of the poor, but also those of the flat-dwelling middle class.

FUNCK'S SPORIDIUM VACCINALE.

The cause of smallpox and vaccinia has not been satisfactorily demonstrated as yet. The most recent investigations in this field are those of Funck, of Brussels, whose results have attracted considerable notice, the organisms described having been used by Gaylord, for instance, as prototypes of the protozoon of cancer that he claims to have discovered. Funck,[1] in his last article, attempts to show that he has fulfilled all the requirements necessary to prove that variola and vaccinia are caused by the same parasitic protozoon. In the first place he develops the fact that vaccine, at first usually rich in bacteria, eventually undergoes a process of self-sterilization, retaining, however, its power to produce typical vaccine pustules. Hence, he concludes that the active agent in vaccine lymph is probably not a bacterium.

This conclusion remains open to the criticism, however, that the active properties may be of bacterial origin. When lymph is examined microscopically in hanging-drop preparations mixed in bouillon certain cysts filled with spores as well as free spores are easily recognized at the bottom of the drop, whereas epithelial cells and cellular debris rise to the upper surface parts of the drop. The cysts are round or egg-shaped, 25 microns in average diameter, and the spores are from 1 to 3 microns in diameter and have ameboid movement. The cysts stain with sudan. Epithelial cells with parasitic inclusions are also seen. On account of the

1. Centralbl. f. Bakt., Abt. i, 1901, xxix, 921-940.

case of observation and characteristic form, Funck finds it quite remarkable that these elements have not been recognized earlier and more generally. They were undoubtedly described by L. Pfeiffer in 1887 and by him referred to the sporozoa; for this reason Funck proposes the name sporidium vaccinale. In order to secure pure growths of the organisms, Funck spread sterile lymph in bouillon upon the surface of agar plates and after a time removed the cells which had risen to the surface of the drops; whereupon the cysts were fished out by means of a flattened platinum wire and mixed in broth. Inoculation of calves with this broth gave characteristic pustules and produced full immunity against ordinary vaccination. Funck claims that he thus secures the cause of vaccinia in pure form, but it is evident that he has not excluded, 1, organisms too small to be recognized, and 2, ferments and other substances that may be dissolved in the lymph and still carry the active properties. The bouillon emulsions of so-called cysts can not be regarded as the equivalent of pure cultures in the bacteriologic sense and capable of giving rise to innumerable subcultures by inoculation and multiplication. Funck found the same bodies in the pustules of variola and concludes that variola and vaccinia are both caused by sporidium vaccinale. Even from the purely morphologic standpoint it is probably rather doubtful if the bodies described by Funck are sufficiently characteristic to be regarded as other than the product of cellular degenerations and other lesions.

GLOBULICIDAL ACTION OF URINE.

Laking of red corpuscles may occur from different causes. It takes place in solutions of less concentration —hypotonic—than the blood serum, and also under the influence of certain toxic substances no matter if the concentration of the fluid medium is quite the same as the blood serum—isotonic. It has been found that under certain conditions the urine may cause the laking of blood. This may be because the urine is hypotonic, but it may also depend upon other factors.

Indeed, there may be hemolytic substances in the urine which seem to be prevented from causing hemolysis because of the hypertonicity of the urine, as Hamburger and, following him, Camus and Pagnicz,[1] showed by adding a few drops of urine to non-hemolytic solutions of sodium chlorid (0.66 to 0.70 per cent.) and mixing in a few drops of blood. After an hour or two in the incubator more or less laking may take place. Camus and Pagniez show that under these circumstances normal urine is hemolytic for the corpuscles of the rabbit, the hemolytic property disappearing, however, on alkalinization.

From their experiments it would seem that hippuric acid plays an important rôle in the laking of rabbit's blood by human urine. Under pathologic conditions neutral or alkaline urine may be globulicidal, and as this power generally diminishes on heating to 55 C. for some minutes it may be dependent on the passage into the urine of certain ferments or alexins from the serum of the blood. Generally human urine, although markedly globulicidal for rabbit's blood, is without effect upon human corpuscles. Occasionally, however, human urine lakes human blood. Ascoli,[1] and Camus and Pagniez have observed such instances, and at least in some cases the laking has been due to other causes than hypotonicity. This may explain certain cases of hemoglobinuria occurring without hemoglobinemia and of urinary origin. Camus and Pagniez cite the case of a chronic nephritic whose urine had a freezing point of 0.79 C. and which showed the spectoscopic bands of oxy-hemoglobin. The blood serum did not contain hemoglobin in solution, but the urine quickly laked corpuscles from the patient's blood. In this case the urine was distinctly hemolytic and thus caused laking of the blood which entered the urine at some point or other of the urinary tract.

1. Jour. de Phys. et de Path. Gen., 1901, iii, 592-598.

GENERAL INFECTION WITH GONOCOCCUS.

Recent investigations with the aid of modern methods have shown conclusively that the gonococcus may invade the general circulation and cause an acute endocarditis, which usually assumes a malignant, destructive character. This demonstration, among many others one might cite, is an excellent illustration of the advantages that result from efforts to determine the exact nature of inflammatory and infectious processes by placing the diagnosis upon an etiologic basis. Our respect for the gonococcus and for vulgar gonorrhea has increased greatly since the pathogenic possibilities of micrococcus gonorrheæ have been shown to equal those of the most virulent of microbes. Recently, Prochaska has described additional cases of general gonococcal infection from Professor Eichhorst's clinic in Zurich.[2] In one case gonococci were demonstrated by microscopic and cultural methods in the endocardial vegetations of a young man in whom polyarthritis and acute aortic endocarditis developed soon after onset of an ordinary gonorrhea. In this case bacteriologic examination of the blood during life gave a negative result, but in two other instances of arthritis in the course of gonorrheal urethritis, both of which left the hospital greatly improved, cultures from the blood in ascites bouillon and ascites agar gave typical growths of gonococci. The use of several cubic centimeters of blood, drawn directly from the veins at the elbow and inoculated into large quantities of ascites bouillon is recommended as the surest method for obtaining positive results.

Wassermann[3] also demonstrated gonococci both morphologically and culturally in the endocardial vegetations of a fatal case of gonorrheal cystitis, prostatitis,

1. Clinica Medica, 1901, Jan. 9.
2. Virchow's Archiv, 1901, clxiv, 492-506.
3. Münch. Med. Wochenschr., 1901, No. 5.

nephritis and endocarditis. In the interests of a definite differential diagnosis upon an etiologic basis cultures from the blood should be made as indicated in all cases of gonorrhea complicated with joint inflammations and other clinical evidences of general infection. If practiced in the early stages this method will undoubtedly settle definitely the gonorrheal nature of many of the joint infections now regarded as gonococcal upon ordinary clinical evidence only.

JOURNAL OF MEDICAL RESEARCH.

The old *Journal of the Boston Society of Medical Sciences,* a high-class publication known to and duly appreciated by only a limited circle of the profession. has ceased to appear under its former too modest form, and comes out with a new title and a new dress. *The Journal of Medical Research* is a handsome octavo, well fitting the quality of the matter contained, and it will soon rank among the leading scientific medical publications of the world.

PECUNIARY VALUE OF A WOMAN'S LIFE.

Coming down to the question of a woman's relative worth in dollars and cents as compared to that of man's, the courts seem to give man the best of it. In our Medicolegal Department this week is recorded the decision of two state Supreme Courts which put a woman down as being worth but one-half as much as a man, by inference at least. It is generally accepted in all courts that a man's life is worth $5,000 at least, and this amount is usually given in a verdict for damages in case of death. But a court in Maine rendered a verdict of $3,500 in a case in which a woman's life was sacrificed, and the Supreme Court cut it down to $2,500. Likewise in New Jersey, the Supreme Court reduced a $5,000 verdict to $2,500. Hence, we presume a woman is hereafter to be considered worth $2,500, while her husband will bring twice that sum. If Mrs. Catt and her followers do not rise and indignantly protest, they certainly ought to do so.

DEATH CERTIFICATES AFTER QUACK TREATMENT.

If every death occurring under treatment by mental healers, "christian scientists," and other delusions and forms of quackery, was made a matter for a coroner's inquest and properly investigated, there would be fewer patrons of these humbugs. Too many physicians are sometimes good-natured and careless enough to give a postmortem diagnosis and death certificate in such cases, thereby directly aiding humbugs and frauds. A physician can not well refuse a call for help while life lasts, but this writing of death certificates upon the work of quacks is another matter. While such is sometimes unavoidable, there is no reason why any physician should step in and deliberately help out of his difficulties one who is not only hostile to rational medicine, but who is also in this regard a public enemy. An inquest is an unpleasant thing and trying to the feelings of an afflicted family, but if it would prevent their giving cause for it in future cases by employing Eddyites, Dowieites or quacks, it might be the greatest boon that could be conferred upon them. The matter is one in which the physician, called too late to aid the living, should consider his responsibility.

DIPLOMA MILLS.

The medical diploma green-goods men are still at work, though the notorious Armstrong and one or two others are out of the business, it is to be hoped permanently. The latest developments are the exposure of the Norton-Smith diploma mill in Jersey City and another similar one in Chicago, which dealt, however, more particularly in Divinity Doctorates, and the profitable existence of which is a scandal on the clergy, or those few of that profession who were morally and mentally weak enough to patronize it. Perhaps we might also note here some recent charges as to the dental diploma frauds, but that matter is not at present at a stage where one can speak positively as to the truth or otherwise of the allegations. As regards the New Jersey case there is little opportunity to doubt the fraudulent intent, the wording of the circulars and imitation-typewritten letters permits of no doubt. Through various correspondents and readers THE JOURNAL has been favored with samples of these, and some six weeks ago the editor called the attention of the postmaster-general to their character, which fact may have had its part in bringing about the present exposure. It is the easiest thing in the world to incorporate in some states a high-sounding, degree-giving, fraudulent concern, and these recent and earlier developments indicate that such foundations meet a felt want of a certain sort. There is scarcely any more evident fact than that quite a large proportion of mankind have an everlasting urgent hankering after handles or tail-pieces to their names, which shows itself all the way from the illicit adoption of the honorable title of Doctor down to the marriage of silly heiresses with impecunious fortune-hunting dukes, etc. Dr. Pangloss, LL. D., A. S. S., is very much to the fore, and his last degree is the fitting honorary one which should be given the patrons of these policy shops. It is a fortunate thing for the country at large that where state laws fail we have, in the postal statutes free from all constitutional limitations, a means of dealing justice in Federal courts to these impostors.

THE PHYSICAL EXAMINATION OF SCHOOL-TEACHERS.

A year ago the Chicago Board of Education, on the instigation of Dr. W. S. Christopher, a member of the Board at the time, adopted the plan of requiring all candidates for entrance to the Chicago Normal School, maintained by that Board, to pass a physical examination at the hands of a board of medical examiners, appointed and paid by the Board. As a result of one year's trial it is asserted by those who are in a position to know, that the physical improvement among the candidates is noticeable and fully bears out the claims made by those who proposed the innovation. As one of the examining physicians puts it: "It shows that in one short year the effect of the plan has been to arouse the young women to the necessity of care for their health. Knowing that this examination was coming, these girls have taken care of themselves. They have

had soup for lunch instead of a few cookies. They have not dieted. as they used to, on slate pencils and pickles." The advisability of employing as teachers only those who are in good physical condition is certainly recognized by all physicians. And this year the Board has extended the examination to graduates of the Normal School, and all others applying for certificates to teach in the Chicago schools. The teacher who is suffering, weak or afflicted with any bodily ailment that lowers the tone of the system will become nervous, peevish, irritable and impatient, in spite of all efforts to avoid it, which is the very opposite to the condition one should be in who has under her control the young and impressionable. In providing for the qualifications of women who have to assume the important work of molding the plastic minds of children, small attention has been given to the physical condition, and yet it is much more important than many of the literary qualifications that are required, especially when we consider that patience, forbearance, leniency and a cheerful disposition are so essential in a schoolroom. But the application of a physical test to all young women who desire to teach, granting certificates only to those who can pass such a test, would be a blessing to them also. Many a woman has been made a permanent physical wreck in the schoolroom, usually because physical defects existed when she entered. For the sake of the future of both the teacher and of the children let the first qualification required of the former be a healthy body.

EXAMINATION IN MEDICINE IN NEW YORK.

A few weeks ago the Regents of the University of the State of New York, who have the supervision and control of medical qualifications in that State, adopted a rule that students who had passed the entrance examinations and completed two courses of not less than nine months, each could pass their final examination in chemistry, anatomy, physiology and hygiene. Having passed this they would be given a certificate to apply on their final examination as regards these branches. This would enable them to devote themselves more fully to the other branches of their medical course for their last two years and thus better fit themselves for their final examination. This was considered to afford a decided advantage to the New York medical schools, and while one or two details were criticised, it was welcomed as a very acceptable change. The Regents, however, appear to have a doubt whether in this preliminary pass examination there might not be a possibility of lowering the grade of medical education, and, according to the press reports, they have, by a recent ruling, made it impossible for anyone under 21 to be admitted to the preliminary examination. This, it is said, will rule out one-half of the students otherwise eligible, and, according to the reports, the medical colleges in the State are about to use all their influence for the abrogation of the rule. We were not before aware of this large proportion of immaturity in the New York undergraduates, and the rule seems on the whole a very judicious one. While there are exceptions, the very youthful medical student has had too little time to acquire the preliminary education or the mental maturity to fit him for serious professional studies, and it would be well for the profession if such a rule or one closely corresponding to that made by the Regents were generally adopted. As we understand it, they have only made 21 the limit for students finishing their second year, which ought not to be a very serious hardship. Medical students in their "teens" are too often, if not as a rule, too precocious for their own good and that of others, and we trust, therefore, that the ruling will not be changed. If New York students are so largely still under age, it will do them little harm to wait.

Medical News.

ALABAMA.

Dr. John W. Barclay, Birmingham, was seriously injured in a runaway a short time ago. His arm was broken and he sustained severe contusions.

The Alabama Brice Insane Hospital, Tuscaloosa, now contains 1670 patients, 1209 of whom are white, and 461 colored. The colored patients are to be removed in a short time to the new hospital at Mount Vernon.

Want Their Own Physician.—There is prospect of trouble at the Warner coal mines of the Republic Iron and Steel Company because the men desire a physician agreeable to them, and the company is so far non-committal in this particular.

The New Hillman Hospital, Birmingham, is to be located at 20th street and Avenue F. The contract for the erection of the building was let on August 26. It is to be four stories in height, and the contract calls for its completion within four months.

CALIFORNIA.

Dr. H. Isaac Jones, San Francisco, will be absent in Europe for one year.

Dr. John G. Berneike has been elected health officer of Santa Ana, vice George W. Minter, resigned.

Dr. Curtis H. Castle, Merced, has sold his practice and will take a tour in Central America, after which he expects to practice in San Francisco.

Apply for Licenses.—Since the new law went into effect, 6725 applications to practice have been received by the State Board of Medical Examiners, only about one-third of which were made by residents of the state.

The Berkley Hospital Association has secured plans and a site, and is now ready to begin construction. The building is to cost $15,000, and will have an initial capacity of 20 beds. It is planned eventually to enlarge the building so that it will accommodate 100 patients.

DISTRICT OF COLUMBIA.

Dr. Austin M. Curtis, surgeon-in-chief of the Freedmen's Hospital, Washington, has tendered his resignation.

New Licenses.—Of the 27 applicants for license who were examined in July, all but three passed the examination of the Board of Medical Supervisors.

Casualty Hospital Report.—The annual report of this hospital shows that 173 cases were treated in its wards, 933 operations performed, and 1276 emergency cases cared for. The directors decided to equip a new room for the reception of emergency cases.

Natural Healer Fined.—A 30-year-old banana dealer was fined $50 in Washington, August 17, for practicing medicine without a license. He admitted that he was not a graduate, but claimed immunity because he charged no fee for diagnosis, and only took pay for the medicines furnished.

GEORGIA.

Dr. Olin H. Weaver, Macon, has been appointed major and surgeon in the National Guard, and assigned to the Second Georgia Infantry.

The Atlanta Society of Medicine, through its attorneys, has filed an answer to the $10,000 damage suit brought against it by Dr. Bryan. The answer sets forth that the committee of the Society "did undertake in good faith and without malice to ascertain who were illegal practitioners, and to that end

instituted a diligent search through the recognized city directories of Atlanta, through investigating signs and names upon office doors, advertisements and the like, to ascertain who were holding themselves out as practicing medicine, and when a list of the persons so holding themselves out had been obtained, the committee then, in good faith and without malice, compared these names with the names of those physicians who were registered according to law."

ILLINOIS.

Fire Loss.—Dr. E. P. Sloan, Danvers, lost his house by fire, August 20. The loss was $600, fully covered by insurance.

Evanston Hospital.—The new addition to this hospital will be completed in October. It includes a ward each for men, women and children, nurses' quarters, servants' rooms and a ward for special cases.

Lightning Interferes with Operation.—During an operation for an abdominal tumor at the Sherman Hospital, Elgin, the operator, assistants and nurses were surrounded by falling glass. Lightning struck the cupola of the building and shattered the skylight over the operating-room.

Hospital Employes' Pay Raised.—The directors of the Illinois Eastern Hospital for the Insane have adopted a scale of wages which will affect 500 employes. The initial salary for male attendants will be $25 instead of $18; for female attendants, $18 instead of $14; and attendants in charge of wards, $42 instead of $35.

Sherman Hospital Advisory Board Resigns.—The Advisory Committee of Physicans to Sherman Hospital, Elgin, composed of Drs. James A. Rutledge, William C. Bridge and Leonard S. Taylor, has resigned. This is another step in the conflict which has been precipitated by the efforts of the Elgin Woman's Club to dominate the medical staff and conduct the hospital after methods of its own devising.

Personal.—Dr. George E. Clement, Springfield, formerly assistant to Dr. George N. Kreider, has gone to Peru, Ind., as surgeon of the Wabash Hospital in that city.——Dr. P. H. McRaven has resigned as superintendent of the Cobden Hospital. ——Dr. Leonard A. Robison and family, Canton, have returned from an extended eastern trip.——Dr. Frank Anthony, Sterling, is now securely convalescent and expects to resume practice this week.——Drs. J. H. Finch and Jess A. Fullenwider, Champaign, returned from an eastern trip, August 20.——Dr. Roy B. Roberts, Brooklyn, has moved to Augusta.——Dr. Henry W. Vanderhoof, Wheaton, has been appointed physician to the Du Page County Farm.——Dr. Thomas W. Keys, Leroy, returned from a trip to England, August 19.

Chicago.

The Graduate Nurses' Association of the State of Illinois, Chicago, was incorporated, August 22, by Harriett A. Fulmer, Emilie Lutz and Marie L. Cuthbertson.

Unlicensed Practitioner Indicted.—The State Board of Health has brought action against a chiropodist and magnetic healer of West Madison street, charging her with practicing medicine without a license.

Chicago Death Rate.—For the week ended August 24, the annual death rate was 15.57 per 1000. Of the 526 deaths reported 146 were from acute intestinal disease; 43 from tuberculosis, and 32 each from pneumonia and violence.

"Christian Science" vs. Typhoid.—On August 26 a young girl died from typhoid fever. She had been under the care of a regular practitioner and had improved. The doctor was accordingly dismissed and a "christian scientist" called in. The child grew worse and died while the "scientist" was reading to her. The physician who had been dismissed very properly refused to issue a death certificate and the case is now in the coroner's hands.

No New Smallpox Cases.—For the first time since January 1 no new case of smallpox was discovered last week and there are but two cases remaining in the Isolation Hospital, four having been discharged during the week. Notwithstanding the alarm concerning scarlet fever and diphtheria in certain quarters there are no new infected areas and the preventive measures being enforced are relied on to restrict further spread in the localities heretofore reported.

Personal.—Dr. and Mrs. C. St. Clair Drake left for a trip to eastern resorts, August 20.——Dr. W. X. Sudduth has returned from his summer vacation.——Health Commissioner Dr. Arthur R. Reynolds reached Chicago, from Europe, August 27.——Dr. Hugh Upton had several ribs fractured and was injured internally in a runaway accident at San Bernardino, Cal., August 25.——Dr. George Morgenthau is spending his vacation in Colorado and will return September 9.

Food Values.—It is announced that professors of Rush Medical College are planning a series of experiments to determine the effects of different foods upon the mental power of individuals. They will experiment for the most part upon students of the Chicago Hospital School, 5401 Drexel avenue, which has been recently affiliated with Rush. The students of this school, which has a large number of defective children, will be divided into classes and restricted to a particular diet for a certain length of time, until the effects can be noted.

Typhoid Investigation.—At the close of last week the investigation of 67 out of the 123 fatal cases of typhoid fever reported to the Bureau of Vital Statistics between July 1 and August 24 had been completed by the volunteer medical inspectors under the direction of Dr. John C. Neely, assistant chief medical inspector. Of these 67 cases 11 were found to have been undoubtedly contracted outside of the city, and 2 others were doubtful. This proportion agrees very closely with the results of previous investigations, to-wit, that about 18 per cent. of the fatal cases of typhoid in Chicago are contracted elsewhere and are not due to local causes. Among the remaining 54 deaths referred to typhoid fever 9 were clearly caused by other diseases and, in the opinion of the investigators, 6 others were doubtful. Including these 6, however, as among the typhoid deaths the investigators attribute the following as causes of the disease: "bathing in the lake," 2; "eating raw vegetables," 2; "drinking untreated hydrant water," 37; and for the remaining four out of the total 45 cases no cause is assigned. Dr. Neely says: "In this investigation particular attention was paid to the milk and ice supply. Three different milk dealers each furnished milk to two of the homes where deaths occurred, and one other to three of the homes. Ice was furnished to three families by two firms and to two families by another firm. So far as can be learned no connection can be established between the homes supplied with milk and ice by these firms."

Menace From Smallpox.—The July issue of the Bulletin of the Department of Health reproduces Dr. Spalding's article on smallpox which appeared in THE JOURNAL of August 3, and urges preventive measures. An increase of more than 87 per cent. in the number of smallpox cases—from 2566 to 4816—was reported to the surgeon general of the United States Marine Hospital Service, between June 28, 1901, and July 26, 1901, over the number reported during the corresponding period of 1900. Since the first of the year and up to the end of July there have been a total of 35,526 cases reported, as against a total of 15,132 cases during the corresponding period last year—an increase of 134 per cent. in this, the fourth year of an actual smallpox epidemic. Dr. Spalding's paper should set at rest any doubt as to the nature of the disease. As he points out, mild and irregular as the majority of the cases are, they still are capable of conveying to the unvaccinated typical, confluent and hemorrhagic forms of smallpox. That the disease thus far has been mild in character and the death-rate phenomenally low is no guarantee that it will so continue. In 1898 scarlet fever was endemic throughout all parts of Chicago, but the type of the disease was so mild that the scarlatina mortality of that year formed but 0.29 per cent. of the total mortality, while, for the forty-eight years, 1851-1898, inclusive, the proportion was 3.11 per cent. Towards the close of the year the type of the disease suddenly changed to one of great malignity, and during the following year, 1899, there were 533 deaths from scarlet fever, or 2.08 per cent. of the total mortality as against the 67 deaths and 0.29 per cent. of the total mortality of 1898. Epidemiology does not yet explain the causes of these changes in type; it only recognizes the fact of their occurrence. Such a change seems now impending as to smallpox. The death-rate in July, 1900, was 1.6 per cent.; during July, 1901, it has been 2.7 per cent.—an increase of nearly 69 per cent. The very mildness of the cases and the low mortality rate constitute a serious menace which should not be overlooked by the sanitarian and health authority. This menace lies in the fact that thousands of undetected cases have spread the contagion in unsuspected ways and places; that, in consequence, no disinfection or other restrictive measures have been employed; and that, therefore, there is every probability of outbreaks from undiscoverable sources in the future. The only and sufficient safeguard against this hidden danger is general vaccination. As has been before said in the Department Bulletins: "No degree of personal cleanliness or of municipal sanitation will protect the susceptible

against contracting smallpox if exposed to its contagion. The one certain and only safeguard, tested and proven by the experience of a century, is effective vaccination."

INDIANA.

Dr. William Metz, physician to the Wabash Railway Employes' Hospital, Peru, has been transferred to the hospital at Ashley, Ill.

Elkhart has another case of smallpox with eleven known to have been exposed to the disease at that place, and an unknown number at New Carlisle, at Three Rivers, Mich., and on trains.

The Work House Hospital.—The new hospital at the Marion County Work House, which has been erected at a cost of about $25,000, was opened August 12. The male department will accommodate 8, and the female department, 5 patients.

Mortality in Indiana.—The monthly reports to the State Board of Health show that there were 3162 deaths in the state in July, equivalent to an annual death-rate of 14.8 per 1000. For the corresponding month of 1900 the number of deaths was 2255, a rate of 10.4 per 1000. The number of deaths under one year of age was 698, or 22.9 per cent. of the total number. From one to five inclusive, there were 307 deaths, which is 10.1 per cent. of the total, and of those who were 65 and over, there were 680 deaths, or 22.3 per cent. of the total. The urban deaths numbered 1259—an annual rate of 17.5 per 1000. The rural deaths numbered 1903, a rate of 13.4. Important causes of death were—tubercuIosis, 382; typhoid fever, 77; diphtheria, 14; scarlet fever, 5; pneumonia, 53; diarrheal diseases under five years of age, 454; measles, 11; whooping cough, 15. Of the diarrheal diseases 105 were from dysentery.

IOWA.

Dr. James C. Davies, Emmetsburg, has sold his residence and practice to Dr. Horace W. Burnard of Chicago.

New Practitioners.—The State Board of Medical Examiners granted certificates, on August 16, to 64 of the applicants recently examined.

Neglect to Report Smallpox.—City Physician Nicholas J. Schlitz of Des Moines has filed charges with the State Board of Health that Dr. Frank O. Broady had neglected to report to the city board of health two or three cases of smallpox, and has asked that his certificate to practice be revoked. Dr. Broady insists that the symptoms of smallpox were wanting in these cases.

Osteopathic Litigation.—The S. S. Still college of osteopathy of Des Moines has filed in the federal court for the eastern district of Missouri a suit against an organization known as the Associated Colleges of Osteopathy, composed of the American School of Osteopathy at Kirksville, Mo., Bolle's Institute of Osteopathy of Colorado, Boston Institute of Osteopathy of Massachusetts, Northern Institute of Osteopathy of Minnesota, the Philadelphia School of Osteopathy of Pennsylvania and the Southern School of Osteopathy of Kentucky, demanding reinstatement in the association and $5,000 from each of the defendants, who, it claims, at the annual meeting at Kirksville, on July 5, illegally ousted it from membership.

KANSAS.

Registration.—Up to the first of August about 2000 of the estimated 3000 physicians of Kansas had registered. The time for registration of physicians with diplomas expires September 1.

From the Far East.—A Chinese physician of Leavenworth has presented for the inspection of the State Board of Medical Examiners a Chinese diploma, and demands a certificate to practice. Atchison is to have a Japanese physician, a graduate of Illinois Medical College.

The Department of Medicine of the University of Kansas, at Lawrence, has been admitted to membership in the Association of American Medical Colleges, and its course has been approved by the Illinois State Board of Health. The curriculum includes the studies of the first two years at medical colleges and the certificate of the university will admit the student to the third year in any medical college in the Association.

MARYLAND.

Change in Computing Death Rate.—The Health Department has recently made an important change in the method of computing the death-rate. Hereafter the calculations will be based on an estimated population of 518,000, viz., 439,000 white, and 79,000 colored, instead of 541,000. The annual death-rate on this basis for the week ended August 17, was 21.88, and for the following week, 20.38.

Personal.—Dr. W. H. Smith of the University of Maryland staff is at Queenstown.—Dr. Edward A. Schultz has returned from a trip to the Holy Land and Germany.—Dr. John Turner has returned from Nova Scotia.—Assistant Health Commissioner Jones has returned from New York.—Dr. William Lee Howard is cruising in his new yacht along the shores of the Azores.—Dr. Robert P. Winterode, pathologist at the Maryland Hospital for the Insane, Spring Grove, is ill at the Johns Hopkins Hospital with typhoid fever.—Dr. Joseph C. A. Wunder is at St. Joseph's Hospital with appendicitis.—Dr. T. J. Ward has returned from the Pacific Coast.—Dr. Ferdinand Groshans has gone to Buffalo.—Dr. A. Douglas McConachie left for Buffalo and Canada.—Dr. T. L. Richardson has gone to Buffalo and Canada.—Dr. James Bosley, health commissioner, is at Cape May.—Dr. J. W. C. Cuddy is at Atlantic City and will go to the Buffalo Exposition before returning.

Typhoid in Baltimore.—Of the 36 cities of the United States with 100,000 or more population Baltimore ranks thirty-first in point of health, according to census figures. The health officials attribute much of the typhoid fever to the unfiltered water and call for a filtration plant as an essential to health. The water board on the other hand says that it is unnecessary; that every case of typhoid is closely watched by the inspectors, the drainage of the house changed if necessary and every precaution taken to prevent the drainage from going into the lake. To show that the water is not polluted the following analysis by the chemists is published: Color, yellowish, turbid; odor, none; reaction, neutral; total residue at 230 F., 98; volatile residue, 28; ignited residue, 70; amount of chlorin, 2.74; amount of nitrogen as free ammonia, .024; amount of nitrogen as albumin and ammonia, .128; amount of nitrogen as nitrates, .96; character of water, good; nitrates, none. The Health Department will have elaborate examinations of the water made.

MINNESOTA.

Dr. Frank E. Bissell, Litchfield, succeeds Dr. O. S. Pine as surgeon at the Soldiers' Home, September 1.

St. Paul Hospitals.—St. Paul now has four well-equipped hospitals. A fifth, the Norwegian Hospital, will be opened October 1, and within a year a German Lutheran Hospital and a hospital built and operated by prominent physicians for private patients only, will be ready to receive patients.

Less Smallpox.—Smallpox in the state has decreased about 40 per cent. The number of new cases reported since August 1 is 126, against 239 for the two previous weeks. But one death occurred. The largest number of cases reported was in Washington County. Oneka township, where the State Board of Health has intervened to enforce quarantine, has 24 out of a total of 26 cases; Stillwater has the other two.

NEW JERSEY.

Newark School Inspection.—The Newark Board of Health and Board of Education, at a joint meeting, have decided to employ 12 physicians as public school inspectors at a salary of about $250, to make daily inspections of the schools and school children of the city.

Trenton Hospital Scandal.—An investigation into the charge of murder of a patient at the State Hospital for the Insane by attendants, and of inhuman and brutal treatment of other patients by attendants, is being conducted under the personal supervision of Governor Voorhees.

Medical Library in Trenton.—In the interests of the medical department which the physicians of Trenton desire to add to the public library, Dr. Charles Perry Fisher, librarian of the College of Physicians, Philadelphia, delivered a lecture to the medical profession of Trenton, August 22.

Doctor's Bill a Preferred Claim.—Whether a physician's bill should be a preferred claim against an estate has been decided in Camden by Judge Armstrong when he made an order entering Dr. E. L. B. Godfrey's bill of $349 against the estate of Caroline Cooper as one to be preferred above others in the settlement of the estate.

NEW YORK.

The remains of Dr. James Stoughton, U. S. Navy, who was drowned in Chinese waters last year, were interred, August 20, at the Albany Rural Cemetery.

The new hospital at Fort Ontario, Oswego, was accepted by Major Martin, of the army, August 15, and the keys turned

over to the hospital steward, who occupies the second floor as his residence.

Smallpox on Excursion Boat.—The discovery of a case of smallpox on an excursion boat between Oswego and Alexandria Bay, August 25, created a panic on board. The patient on his return to Oswego was isolated at the Oswego Hospital.

Two State Soeieties to Meet.—The New York State Medical Association will meet at the Academy of Medicine, New York City, under the presidency of Dr. John A. Wyeth, October 21 to 24, inclusive. The Medical Society of the State of New York will convene in New York City, the week previous.

Buffalo.

The medieal department of the University of Buffalo will begin the session of 1901-02, Monday, September 30.

Epidemie Typhoid.—The Niagara Falls *Gazette* makes the statement that typhoid fever is epidemic in that city. It is attributed to contamination of water from Buffalo sewage.

The Emergeney Hospital at Eagle and Pine streets is rapidly nearing completion and will be ready for occupancy October 1. The new building will contain accommodation for 100 patients.

The Fresh Air Mission has already sent 715 children to Cradle Beach this summer for a fortnight, and another party of 70 or 80 has again been sent. The season will close one week earlier than usual because of lack of funds.

Col. Charles R. Greenleaf, assistant surgeon-general, will represent the Superior Board of Health of the Philippine Islands at the annual meeting of the American Public Health Association to be held in Buffalo, September 16 to 20.

Chloroform Death.—A case of death from chloroform anesthesia has occurred at the Buffalo General Hospital. The patient, a man 34 years old, went to the hospital for the purpose of having a slight growth removed from his arm, and died under narcosis.

Gowanda Quarantine Raised.—Health Commissioner Wende has returned from Gowanda after raising the quarantine against smallpox with which some of the Polish factory workers were afflicted. There were seven cases, but every one was vaccinated and the danger is now past.

New York City.

Gift to Freneh Hospital.—Robert Lebaudy, of France, has subscribed $10,000 to the building fund for the hospital the French Benevolent Association is to build in West Thirty-fourth street.

Abatement of Nuisance.—The health authorities of New York City have informed the New York Central Railway that the nuisance found to exist in the tunnel running out from the Grand Central Station must be abated or drastic action would be taken. The principal sources of complaint are insufficient lighting and ventilating facilities in portions of the tunnel.

Sick Children's Mission.—Sick children from the tenements of New York to the number of 2500 have already received medical service from the Sick Children's Mission of the Children's Aid Society since the opening of the season, June 15. This compares favorably with 1157 such patients attended by the same organization during the entire season last year. To fully 20 per cent. of the 2500 cases aided by the mission nourishing foods as well as medicines have been supplied.

Oil Treatment of Mosquitoes.—Dr. Doty has completed the work of treating the chain of stagnant ponds near the quarantine station on Staten Island with oil for mosquitoes, and is highly pleased with the result so far achieved. Millions of dead mosquitoes were found in the pond treated with oil. Many other millions which were just in a state of becoming mosquitoes were also found dead. The work has been successful past expectations.

OHIO.

Card Index of Deaths.—The sanitary policeman of Youngstown is making a card index of all deaths in the city for the last ten years—about 7000 in all.

Dr. Miehael A. Albi, Cleveland, who was compelled to sue the parents of a patient, who died after an operation for appendicitis for the amount of his bill, has been awarded a judgment of $75.

Spitting Ordinance to be Enforeed.—Dr. Clark W. Davis, Health Officer of Cincinnati, announces that he is about to start a campaign against the violators of the ordinance prohibiting spitting in street cars and public conveyances.

Charity Physicians of Columbus.—The director and superintendent of the Health Department of Columbus have awarded the contracts for poor physicians in the various wards of the city to the nineteen lowest bidders, whose bids vary from $48 to $440.

Typhoid at Hiram.—Secretary Probst, of the State Board of Health, has returned to Columbus, from Hiram, where he investigated an epidemic of typhoid fever. There were 40 cases. The epidemic is attributed to the water from the well on the Hiram college campus.

Personal.—Dr. H. C. Rutter, Gallipolis, has gone to Columbus, where he will resume practice.——Dr. William Pritchard, Cincinnati, has been appointed second assistant physician at the Columbus State Hospital.——Dr. Ernest Scott, Columbus, is going abroad for study.——Dr. Allan Brankamp, Cincinnati, is expected to return from Europe, September 15.——Dr. George A. Gorsuch, and Dr. and Mrs. C. Melvin Harpster, Toledo, sailed for Europe, August 24, on the *Maasdam*.——Dr. George W. Moorehouse succeeded James S. Knowles as superintendent of the Lakeside Hospital, Cleveland, August 17.

TENNESSEE.

Dr. James A. Albright, Nashville, secretary of the State Board of Health, has gone to his old home in North Carolina on a visit and will go to Washington before his return.

No Spitting in Nashville.—The inspectors of the Nashville Board of Health have been instructed by Dr. Larkin Smith, City Health Officer, to strictly enforce the law against expectoration in public conveyances and public buildings, and to arrest offenders.

Personal.—Dr. James F. Roper, Harris, has sold his practice to Dr. R. V. Dukes, of Laurel, Miss., and will move to Union City.——The office of city health officer of Chattanooga expired by limitation, August 19.——Dr. William H. Poindexter, Bells, has been elected a member of the local board of health.

Sehool Children Must Be Vaecinated.—The Board of Health of Memphis, on August 15, adopted a resolution declaring compulsory vaccination of all children in the city a prerequisite to their attending the various schools, public and private. Dr. Hasse, secretary of the board, stated in explanation that certificates previously given will be satisfactory and that no certificate will be demanded where a satisfactory vaccination scar can be shown.

WASHINGTON.

Searlet fever, in mild form, is increasing at Walla Walla. In the last five days of July, 11 new cases were reported.

Dr. George W. Libby, Spokane, a member of the Board of Plumbing Examiners, has resigned in favor of a representative of the journeymen plumbers.

Changes of Location.—Dr. Francis J. Ledbrook, of Lakefield, Minn., has located in Moscow.——Dr. Alexander Smith, Oakesdale, has moved to Vineland.

Walla Walla Hospital.—During the eighteen months sinee the opening of this institution, 371 cases have been treated, 201 of which were surgical and 170 medical. There have been 84 gynecological cases and 33 case of typhoid fever.

WISCONSIN.

Typhoid in Baraboo.—It is reported that more than 2 per cent. of the population of this town are ill with typhoid fever.

New Lieensees.—Of the applicants who took the recent examination by the State Board of Medical Examiners, 28 passed and have received licenses to practice in Wisconsin.

Unregistered.—It is reported that 125 of the 400 physicians of Milwaukee have failed to comply with the law requiring them to file their certificates with the county clerk before March 30, 1900.

Personal.—Dr. Edgar J. Orvis, Oakfield, who disappeared August 3, has been heard from. He writes Dr. J. W. Burns from New York intimating that he would never return.——Dr. Anton B. Opicka, Wonewoc, has been arrested, charged with practicing medicine without a license.——Dr. Frederick Deutschberger, Milwaukee, possessor of many certificates, but no diploma, plead guilty of practicing without a license and was fined $50 and costs.——Dr. Oscar E. Lademann, Milwaukee, has returned from a 3-years' course of study in Berlin and Vienna.

Smallpox Epidemic Threatened,—Dr. Uranus O. B. Wingate, Milwaukee, secretary of the State Board of Health, declared on August 20 that Wisconsin and all states of the middle West would be swept by a scourge of malignant smallpox unless prompt and early action were taken against the disease. He proposes to locate the disease by getting a list of the infected camps. He will then ask all lumber contractors to make vaccination a condition to employment among the men. Detention hospitals will be erected and instead of allowing those who have the disease to go at will among the settlers, they will be confined until cured. As the matter now stands, as soon as a man is known to have smallpox he is discharged, and immediately goes out of the woods into the settlements. Then, in order to get to the very hiding places of the disease, the infected camps must be destroyed, and further damage from that quarter prevented.

GENERAL.

Honolulu News.—Queen's Hospital is to receive an appropriation from the legislature of $1666 monthly.——The leper examining board, as reconstituted, consists of Drs. Sloggett, Cooper, Moore, Meyers, Sinclair and McDonald.

Mosquito-Infected Nurse Dies.—Miss Clara Maas, a nurse at Havana, formerly of New Jersey, allowed herself to be bitten by two infected mosquitoes and died, August 24, seven days afterwards of yellow fever. She desired to become immune. This gives three deaths out of six experimental cases during this month at Havana.

Mental Healers Give Bonds.—Helen Wilmans, 70 years old, founder of a "Mental Science Association," with her husband and son-in-law, were arraigned in the United States Court at Jacksonville, Fla., and gave bonds in the sum of $5000 each. The postoffice authorities state that they have sufficient evidence to convict them.

Medico-Military Journal.—The Association of Military Surgeons of the United States is about to publish a journal instead of issuing an annual volume of transactions. The contracts for its publication have already been made, and the first number of the journal will appear shortly. The editor-in-charge is Captain James E. Pilcher, assistant surgeon, U. S. Army, retired, under the supervision of a governing board.

Dr. A. P. Ohlmacher has been appointed professor of pathology in the Northwestern University Medical School (Chicago Medical College). Dr. Ohlmacher is director of the pathological laboratory of the Ohio Hospital for Epileptics at Gallipolis, where he has done excellent practical work, particularly on the morbid anatomy of epilepsy. Previous to going to Gallipolis he was professor of comparative anatomy and embryology at the College of Physicians and Surgeons, Chicago; later professor of pathology in the Chicago Polielinic, and from 1894 to 1898 professor of pathology in the Cleveland College of Physicians and Surgeons. He will retain his position at Gallipolis for the present.

Braithwaite's Retrospect Discontinued.—The 73d volume of *Braithwaite's Retrospect*, just received, contains the announcement that this historic semi-annual journal is to be discontinued, that the last volume has been issued. For over sixty years *Braithwaite's Retrospect* has been a mirror of all that was new, of value in medicine, and was the precursor of the modern year-book. As the editor says in the announcement of the discontinuance, medical journals now provide regularly, abstracts and summaries of medical literature from all parts, with the consequence that they each contain a retrospect of that which is new in medicine which was formerly only to be had in more special publications. While the *Retrospect* has, in some respects, outlived its usefulness, its career has been one in which its founder was justly proud, and there will be a pang of regret among many of the older members of the profession, both in this country and in England, at the thought that it will appear no more.

CANADA.

Many cases of smallpox are reported from a small village near the capital, Ottawa. In an area of five miles, there are some 35 cases. Ten families are suffering from the infection up to the present date.

The McGill medical faculty has postponed the sessional opening this year until October 1, instead of September 13, as formerly. This is on account of the many alterations now proceeding. Every effort is being put forth to have the library, the faculty rooms and the new laboratories completed before the expected visit of the Duke of York.

Dr. Thomas Page, Brockville, Ont., was killed at Cornwall on the night of the 21st inst., by being run over by a train. While stepping on the train he missed his footing and fell under the wheels. One leg was cut off, while the other was badly crushed. He was removed to the Cornwall General Hospital, where he died the following morning.

Personals.—Dr. Joseph Prendergast, Chicago, is visiting friends in Toronto.——Dr. Aristide Blais, Berthier, who returned a few weeks ago from two years' study in Paris, has been spending a few days in Montreal, on his way to Alberta, N. W. T., where he intends to take up practice.——Dr. Aldege Ethier, formerly house physician at the Notre Dame Hospital, Montreal, has returned from Glasgow, where he went some months ago. He will spend some days in Montreal, and then go to Paris, Ont., to take a position in St. Michael's Hospital.

Montreal General Hospital.—At the quarterly meeting of the Board of Governors held during the week, Dr. F. J. Shepherd opposed the scheme for charging 5 to 10 cents for medicine to outdoor patients. Since the charge was instituted, there has been a great falling off in the outdoor patients. At the next meeting Dr. Shepherd will move to have the charge removed. During the past quarter 783 patients were treated to a conclusion. Of these 56 died, 25 of them within three days of admission. The charge for medicine made during June and July produced $186.20. The number of patients at the outdoor department during these two months was 4220, as against 6081 in 1900.

The Health of Ontario.—The nineteenth annual report of the provincial Board of Health of Ontario for the year 1900 has just been issued. In addition to the regular report of the secretary, it contains special reports on the outbreaks of disease, etc. The laboratory work during the year shows that 1669 specimens were examined as follows: Sputum, in cases suspected of tuberculosis, 703; exudate, in cases suspected of diphtheria, 526; blood, in cases suspected of typhoid fever, 221; water for bacteriologic examination, 194, and water for chemical examination, 33. Of 480 tuberculosis specimens sent, 170 showed the bacilli of tuberculosis, 79 being from males and 91 from females, the great preponderance of positive cases being between the ages of 20 and 30 years. Of 526 cases suspected of diphtheria, 247 showed the bacilli. In 221 specimens examined for typhoid, 54 gave a positive result.

"Christian Scientist" Arrested.—The father of a boy who recently died in Toronto from diphtheria while under "silent treatment" has been placed under arrest pending an investigation. As an evidence of a strong growing sentiment against this cult, the verdict returned by the coroner's jury is interesting: "That the said boy came to his death on Tuesday, August 13, at the home of his parents, from diphtheria, and we find the father of the deceased showed culpable criminal negligence in not providing medical assistance, nursing and comforts, and that ——, the 'christian science' demonstrator, was an accessory after the fact, inasmuch as he undertook to advise and treat a dangerous and contagious disease, which he admitted he was totally ignorant of. The teaching of the sect known as the 'christian scientists,' as brought out in the evidence, is a danger to the community, and the jury would recommend that the law should make it a criminal offense for a demonstrator of this peculiar sect to attend or treat a case which is not being attended by a duly qualified practitioner."

FOREIGN.

Staff Surgeon-General Coler, of the German army, died recently at Berlin.

Tribute to Hansen.—A bust of Dr. G. H. A. Hansen, the discoverer of the leprosy bacillus, was unveiled on August 10, at Bergen, Norway.

French Congress of Urology.—The fifth reunion of the urologists of France and other countries will be held at Paris, October 24 to 26, with Guyon in the chair. Movable kidney is the chief subject appointed for discussion. The general secretary is E. Desnos, 31 rue de Rome, Paris.

Egyptian Medical Congress.—The profession in Egypt is organizing a medical congress to convene at Cairo, December 10 to 14, 1902. It will be under the patronage of the Khedive, and the first great gathering of scientific men in an Oriental country. Cholera, bubonic plague and dysentery will, it is expected, receive due consideration. Dr. Voronoff is secretary-general in charge of the arrangements.

LONDON LETTER.

Complimentary Dinner to Surgeon-General Jameson.

A complimentary dinner has been given to the Director-General, at which Sir William Church, president of the Royal College of Physicians, presided, and which was attended by a large number of the most eminent medical men in London, in-

cluding Sir William MacCormac, president of the College of Surgeons, Sir Lander Brunton, Dr. Conan Doyle (the well-known novelist), and Sir Frederic Treves. The chairman said they had met to do honor to one who deserved well of his country and of his profession. He was placed somewhat in the position of having to make bricks without straw. The present war was unique in its difficulties. Never before had so many men left our shores for so great a distance. But he met all the requirements which were placed upon him. Surgeon-General Jameson said in reply that when the army in South Africa was first doubled and then trebled a great strain was placed on his department. Soon invalids began to be received from Africa in thousands. Up to the present 50,000 had been received. Not one of these was transferred to a civil hospital. The reserve of the Corps was first called out; then, they enlisted and trained men as fast as they could. Every man that could be spared was recalled from the Colonies. Then, they tapped the militia and volunteer medical staffs. For a considerable time before the war broke out the Director-General and his staff urged upon the government the necessity of increasing the Medical Corps, but for the most part without avail. The department had sent to Africa 4000 tons of medicine and material, and had mobilized 151 staff and regimental units, 19 bearer companies, 28 field hospitals, 5 stationary hospitals, and 16 general hospitals. They had fitted out in this country 2 hospital ships and 3 hospital trains. At the present time there were 21,000 beds in South Africa, not counting field hospitals. Fault had been found with his department for not having made sufficient sanitary arrangements in the field, and this in face of the fact that the post of sanitary officer had been abolished against the advice of the Department. The officers of the Medical Corps, after superhuman efforts, were exposed to criticism and an inquiry such as had not been applied to any other branch of the army and exposed to blame which others should have borne. The sympathy which had been denied to them by others and which found expression in the presence of those at the dinner would be all the more esteemed and valued. Sir William MacCormac said that it was impossible to say too much in admiration of how Surgeon-General Jameson had met every requirement, and it seemed to him passing strange that the government had allowed him to leave the army without the customary recognition given to all his predecessors and without one word of thanks.

Koch's Paper on the Prevention of Tuberculosis.

Koch's recent view that human and bovine tuberculosis are distinct diseases and that the latter is not a source of danger to man, has been widely criticised in the lay as well as the medical press, and has received no support whatever. At the last council meeting of the Royal Agricultural Society, Lord Spencer, speaking on the report of the veterinary committee to carry out experiments on the subject, expressed the hope that the provisions in force for the prevention of the conveyance of tuberculosis from animals to man would not be relaxed while the matter was still in doubt. The most important criticism of Dr. Koch's arguments which has appeared since the Congress is a letter addressed to the *Lancet*, by Dr. Copeman, of the Local Government Board, who is well known for his experiments on variola and vaccinia. He points out that while Koch says that the animals which "had eaten bacilli of bovine tuberculosis had without exception tuberculous infiltration of the greatly enlarged lymphatic glands of the neck and mesenteric glands and extensive tuberculosis of the lungs and spleen," yet no mention is made of tuberculous lesions of the intestine. This omission is all the more remarkable as Koch, in giving reasons for his conclusion that bovine tuberculosis can not be conveyed to man by ingestion of milk or butter containing "living and virulent bacilli," says that it is only "when the intestine suffers" that a case of tuberculosis can be assumed with certainty to have been "caused by alimenta." It will be remembered that the great rarity with which tuberculosis of the intestine is found in necropsies at children's hospitals in cases of tuberculosis was one of Koch's arguments against the origin of the disease from ingesta. Lord Lister, in replying to Koch at the Congress, pointed out that if primary intestinal tuberculosis were rare in children mesenteric tuberculosis was common, and said that the interpretation seemed to him to be that the bacilli passed through the intestinal mucous membrane without causing any obvious lesion and were arrested in the glands. Unless Koch made an important omission in his paper this is exactly what he claims to have taken place when he fed cattle with bacilli from bovine tuberculosis; yet without any reason he implicitly denies its possibility in man.

Correspondence.

Impressions of the London Tuberculosis Congress and the Black Forest Sanatoria for Consumptives.

WATCH HILL, R. I., Aug. 23, 1901.

To the Editor:—This gathering of medical men was the largest and most complete ever assembled for a special purpose. As I sat on the platform during the opening meeting, when the different nations, through their designated delegates, were introduced, I knew that it had never been my good fortune, in all the medical conventions I have attended, to look upon such a distinguished body of men. When the 2000 members were present they filled completely the body of Queen's Hall, where the general sessions were held. Of this assemblage of men I should judge nearly one-half were from outside of England. America, France and Germany especially had good representations. It was indeed an honor to be a member of it, and to take part in such a Congress.

It would seem that the Londoners purposed to outdo all previous medical gatherings in social features, and I congratulate them on their success. The Englishman is at home and the prince of hosts when dining is the order of the day.

A dinner was given by Sir James Blyth, on Monday, to the Duke of Cambridge, who presided at the opening meeting of the Congress. There were present the Earl of Derby, the Lord Mayor of London, and distinguished members of the nobility, of the foreign and local medical profession, to the number of sixty. There was the "At Home at Apsley House" Tuesday afternoon on the invitation of the Duchess of Wellington, who, with her husband, gracefully received us in that stately mansion filled with the costly rewards and war relics of their ancester, "the Duke." The pleasure of attending the Baron de Rothschild's reception in their princely house, I feel, was also, with the two functions previously named, afforded me through the kind attention of my good friend and host, Dr. C. Theodore Williams. Then there was the general reception of the members and delegates on the opening night in Queen's Hall, Langham Place, by the Presidents of the Council of the Congress and the executive officers, a magnificent affair; on Tuesday evening, the reception at the Mansion House, by the Lord Mayor and Lady Mayoress in all their gorgeous official robes, and on Friday night the grand banquet given to the officers and foreign delegates of the Congress. This was not all, but enough has been mentioned to show how well socially the visitors from abroad were looked after.

THE MUSEUM.

A very important feature of the Congress on Tuberculosis was the Museum designed to illustrate the bacteriology and pathology of tuberculosis. It was a wonderful exposition of the subject and the student was aided by a most admirable catalogue. It was gotten up without regard to expense, and was the finest collection it has been my good fortune to see.

The latest methods of preparation of pathological specimens gave fine illustrations of all the possible manifestations of tuberculosis. Especially attractive were the beautiful series illustrating the localization of tuberculosis in the bronchial and mediastinal glands, in some cases of enormous size. These and other like specimens seemed to show in a striking way the important agency of the glandular system in this disease.

In the bacteriological department were remarkable illustrations, through the cultures on exhibition, of all kinds of tuberculosis. There was the 435th culture (in five tubes) of Koch's original discovery of the bacillus tuberculosis, first isolated by him on Aug. 15, 1881. These cultures had been carried down through these twenty years and kept continually growing from the original seed. There were three very interesting test-tube cultures, first showing the normal state of the germ for comparison, second a sub-culture made after exposure to liquid air for 42 days without contact, third a sub-culture after similar exposure with contact—all showing that the bacillus grows as vigorously as ever after exposure for 42 days to 186 degrees F. below zero.

THE CONGRESS A SUCCESS, YET DISAPPOINTING.

As a means of the education of medical men, as an effort preliminary to definite conclusions which must be reached at another time, and as an opportunity for earnest workers, in this special field, to get together from nearly all over the world to compare notes and personally learn from each other their different views, the Congress was a marked success. But as to any definite conclusions reached, it was disappointing. The cut-and-dried resolutions proposed and voted on, without any open discussion, at the last general meeting were commonplace compromises, which probably fairly represented the collective knowledge of tuberculosis possessed by the Council proposing them.

EXAGGERATED IMPORTANCE GIVEN TO MINOR THINGS.

Exaggerated importance and much time was given to the "spitting nuisance," the agency of ladies' long dresses in carrying and disseminating the germs, and to the theory of infection generally in preference to any other hygienic means of prevention, which, to my way of thinking, offer more hope for the extermination of tuberculosis than any agency simply preventing infection.

KOCH'S ADDRESS.

To Professor Koch, more than to any other man must be given the credit of capturing the interest of the Congress by the remarkable stand he took as to the non-infectibility of man by bovine tuberculosis. At Sir James Blyth's dinner, on Monday evening, Dr. Williams came to me and said: "Do you know there is a devil of a rumpus brewing about what Koch is going to say in his address to-morrow? They are getting awfully worked up about it and they won't stand it, and he will be called down." It was a memorable meeting at which Koch read his paper. The interest was intense. To look upon that sea of intelligent faces and to note the excitement and the restrained applause, was an experience one has but once in a lifetime. They cheered the presentation of his views, though the great majority doubted his conclusions. But when Lord Lister, who was that day in the chair, called in question the positive statement Koch had made and said, "It is a serious matter if the conclusions be wrong," the applause was the heartiest of any time that day. And when he asked if it was indeed "established beyond a doubt that tuberculosis is always air-borne." I for one, thought he was getting nearer the kernel of the question than had anyone else. Professor Nocard followed and cited instances where veterinary surgeons had become inoculated by accident with animal tuberculosis. Professor Bang of Copenhagen followed and said, "Koch went too far in saying that there was no necessity for taking measures against bovine tuberculosis." And finally, Professor Sims Woodhead, while complimenting Professor Koch, referred to a specimen in the Museum of the Congress which proved that it was possible for human beings to be infected with tuberculous disease from animals.

One is inclined to ask, is this obstinate conservatism a possible cloak for ignorance of the real cause of tuberculosis? It is as difficult for a typical English doctor to change his settled opinion on a medical subject as it would be for the English tradesman to deal in decimal money instead of their more troublesome and inconvenient six-pences, shillings and crowns. Just think of the dilemma into which they are being driven! Here we have Koch fastening upon his tubercle bacillus limitations which will be in opposition to the idea that the germ sufficiently explains the disease. Avian tuberculosis is supposedly different from the bovine variety, and the latter not transmissible to human beings, and human tuberculosis not infective in animals(?). Here we have Brouardel, of Paris, in a splendid all-round address, "knocking out" the idea of heredity (except of a possible susceptibility to tuberculosis), and Knopf and many others showing that a healthy human being is non-infective to the germ; and Williams showing the splendid results of climatic treatment in proportion as the advantages of practical outdoor living are afforded; and James F. Allen, of Natal, South Africa, explaining the immunity from tuberculosis in his section 3000 to 6000 feet above sea level of three different classes of people, namely the Indians, the English and the Zulu tribes, on the ground that their life is essentially, and in fact, a life out of doors. Then, again, comes Harold Coates, of Manchester, and A. Ransome, of Bournemouth, and others also, showing how bad housing, aggregation and deficient lighting and deficient ventilation foster and produce the disease. Where, then, does the germ come in? Does it not all show (Koch's contention especially included), that to get at the prime cause of tuberculosis we must, as I stated in my own address, go back of the germ to some common predisposing cause which will explain the frequent occurrence of this disease in birds and animals as well as in man? My belief is, that that common cause is deficient ventilation; that the air once used is thereafter not only unsuited to sustain life healthfully, but positively injurious until it has been revitalized by practically outdoor conditions: And that the penalty of the air's devitalization is finally tuberculosis. There is an electrical condition of the air, which is not yet fully understood, but upon which its power of vitalizing and sustaining living plants and beings depends. When our education comprehends this fact we will come nearer the prevention of tuberculosis than we have ever been before.

Sanatoria in the Black Forest.

A very interesting part of my sojourn abroad was the visit to the Black Forest in Germany and the inspection of the Sanatoria for consumptives there, after the adjournment of the Congress on Tuberculosis. Hohenhonnef Sanatorium on the right bank of the River Rhine is a beautiful place situated on rising ground say 100 or 200 feet above the river and flanked on three sides with woods through which wind several miles of graded walks. Here the patients lead a lazy life, most of the time reclining in open-air sheds. They live well. Wine at meals is the rule with many, and five meals a day the custom of most. The place seemed rather damp to one used to Colorado dryness and sunshine, but the 90 or more inmates of this Sanatorium seemed to be contented and doing well. Dr. Feige, the assistant physician, was very kind to me. Together we drove to the top of a mountain near by, where, from the ruins of Drachenfels, is obtained a fine view of the Rhine from Cologne to Coblenz.

Wiesbaden, the great watering place of this part of Germany, reached after a pleasant day's steaming up the Rhine, is a lovely spot. This town illustrates what can be made out of such a simple, natural advantage as an ordinary hot saline spring, of which there are many not yet half appreciated in our own country.

Another day's ride to Frankfort and thence to Colberg brings one to the Falkenstein Sanatorium. This Sanatorium differed not much from that at Hohenhonnef, either in its capacity for receiving patients or the prevalent wooded and damp surroundings, and likewise seemed to offer no unique or original form of treatment.

On my return at Colberg, I fell in with Rev. Mr. Oakes, of the Consumptive Home at Denver, who was on a similar investigating mission, and we had a delightful trip together up through the Black Forest. The railway opened out into frequent stretches of fine farm country, extending up the sides of the hills sometimes to the very summit. We arrived at Cologne late at night, and took train again in the early morning for Offenburg, and transferred thence to Beberack Zell. That morning's ride up the valley to Beberack Zell was very delightful, as every turn of the railroad gave a new and pleasant view, among them the castle of Baroness Hirsh (noted for her philanthropy among the Jews), beautifully covering the whole summit of a small, round hill. From Beberack Zell, where our carriage met us, we followed up an 8-foot wide brook some ten miles, until it became about a foot wide, and there found Dr. Walther's (Detweiller's) Sanatorium. The ride up the valley was delightful. We passed thatched Swiss cottages, where the cows occupy the ground floor, the family the second, and the hayloft the roof space. Here little hamlets crowd close upon the narrow roadway, along which every half mile or so is a shrine, perhaps lately contributed to by some devout worshiper with a sprig of oats or a bunch of flowers. Dr. Walther's main house has windows, but they are all taken out this time of year. The transoms are

large and the outlook in the right directions to catch the best summer exposure. There is individualization, as there should be, for each patient, but no special crowding of food as there is at some institutions, simply three good meals a day, and graduated exercise by walking according to each one's ability and condition. He scouted at the use of antiseptics, saying soap and water were good enough to clean up a room with after a patient had died in it. We could not help reasoning that if he had the dryness, sunshine and altitude which we get east of the Rocky Mountains, he would have the best place in the world in which to treat consumption. But then, if he had these, he would not have his heavy foliage and grassy hillsides and the nearness to the people he would serve. Of course, devoting his attention to only 45 patients, all he can accommodate at one time, he is very successful.

The next institution we visited was Dr. Hettinger's, farther down in the same valley. It is a compromise between Dr. Walther's and the first two mentioned. But it is a clean, airy, well-lighted and well-cuisined sanatorium, which, because of its similarity in many respects to his own "Home," in Denver, much delighted the esthetic mind of Mr. Oakes. We could not help noticing the double windows, and I learned that sometimes in winter the storms are so severe that these are deemed necessary. I had heard of the double windows generally used by the Swiss, to which Dr. Tucker Wise attributes the frequent occurrence of tuberculosis in that otherwise healthy country.

Well, they are all coming around to the same belief that we physicians in Colorado have been preaching these many years, namely, pure air and an active outdoor life in that climate where it can be had the easiest and most comfortably.

Yours respectfully, CHARLES DENISON, M.D.

Vivisection—A Reply to Dr. Keen.

TOLEDO, OHIO, Aug. 21, 1901.

To the Editor:—I have read the communication of Dr. Keen, published in your issue of August 10, and already applications have been made by members of the medical profession for literature concerning the subject of the controversy—human vivisection.

As the American Humane Association considers this matter one of vital importance, its executive committee has, after amendment and revision, just printed that Review of Dr. Keen's letter upon which he, in his last communication, comments; and in order to do him justice, the Association has added his first letter, which he has called "The Misstatements of Antivivisectionists." These two documents in one pamphlet can be secured gratis by any physician in the United States who will send his professional card to "The Special Committee," Postoffice Box 215, Providence, R. I. For those medical men who carefully read this pamphlet, it would seem to me that Dr. Keen's latest letter will need no reply.

If your space would permit, there could be pointed out in this document some very serious misquotations, leading him to misstatements and comments which ordinarily would be without excuse. I prefer, however, to join with his many friends in speeding Dr. Keen in his journey around the world, and wishing him a pleasant voyage and a safe return; to leave his misconceptions and mistakes to his own sober judgment, and the rectification that time will surely bring.

This Association can have no quarrel with the medical profession. It believes, rather, that in condemning and opposing the use of human beings, chiefly women and children, for experiments dangerous to life and health, it has the sympathy of the great majority of the physicians of the United States.

Nothing can so surely and utterly destroy all confidence in the personnel of the medical profession, and in the security of our hospitals and asylums, as a well-founded impression that every patient, young or old, strong or feeble, high or low, rich or poor, is not absolutely secure in all of his personal rights.

He who, in the pretended interests of science, consciously aids in the destruction of this confidence or security is, in my judgment, little less than an enemy of his race.

Yours most truly, JAMES M. BROWN,
President American Humane Association.

[We shall be glad to see the publication of Dr. Keen's letters in full with the Humane Association's pamphlets. We have no fear of the judgment of any unbiased individual who is fully informed on the subject, and think that any such one who reads Dr. Keen's replies, as well as the publications referred to by our correspondent, will be able to form his own opinion. Knowing as we do the erroneous character of some of the statements in the Humane Association's pamphlet, some of them based on misapprehensions patent to any well-read physician, it seems to us that Dr. Keen's letter can have no reply. If there is an impression abroad that the rights of the hospital and asylum patients are not regarded by the medical profession in this country, it is due to sensation-mongering newspapers and to misstatements, whether wilful or not we do not care to say, of such publications as those that called out Dr. Keen's replies.—EDITOR.]

Book Notices.

LECTURES ON NASAL OBSTRUCTION. By A. Marmaduke Sheild, M.B. (Camb.), F.R.C.S. (Eng.), Surgeon to St. George's Hospital, London. With 1 Colored Plate and 27 Illustrations in the Text. Cloth. Pp. 106. Price, $1.50. Philadelphia: P. Blakiston's Son & Co. 1901.

This little work is intended primarily for the student and general practitioner. The author is conservative in operative treatment, particularly with regard to septal spurs; he prefers, however, the galvanocautery in hypertrophic rhinitis and seldom uses an acid. The origin of nasal polypi is attributed in most instances to irritation of the mucous membrane by a concomitant bone necrosis.

A PRACTICAL TREATISE ON GENITO-URINARY AND VENEREAL DISEASES AND SYPHILIS. By Robert W. Taylor, A.M., M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons, New York. Second Edition, thoroughly Revised. With 138 Illustrations and 27 Plates in Colors and Monotones. Cloth. Pp. 722. Price, $5.00. New York and Philadelphia: Lea Brothers & Co. 1900.

This is not a mere aggregation, but a discriminating digest of the latest knowledge of the subject and there is no chapter in the work from which the reader may not learn something new. It is a most satisfactory text-book, and is modern in every particular. It is most comprehensive in its scope, sound and practical in its teachings, and we predict for it a wider circulation than the first edition enjoyed, and in time an urgent demand for a third edition.

THE TREATMENT OF FRACTURES. By W. L. Estes, A.M., M.D., Director and Physician and Surgeon-in-Chief of St. Luke's Hospital, South Bethlehem, Pa. Cloth. Pp. 216. Price, $2.00. New York: International Journal of Surgery Co.

This work of 216 pages is a publication in book form of a series of papers by the author which appeared in the *International Journal of Surgery*. No attempt is made to discuss in a complete manner the entire subject of fractures, and much, therefore, which pertains to the pathologic side of the subject has been omitted. The work is essentially one on treatment, and this phase of the question is handled in an eminently practical manner by one who has had a considerable experience in the management of these acute accidents.

The aim of the author has evidently been to the practical rather than to the scientific, and he has limited himself almost entirely to a description of his own methods.

DISEASES OF THE ANUS AND RECTUM. By D. H. Goodsall, F.R.C.S. (Eng.), Senior Surgeon (late house surgeon) to St. Mark's Hospital for Fistula and Other Diseases of the Rectum, and W. Ernest Miles, F.R.C.S. (Eng.), Surgeon (outpatients) to the Gordon Hospital for Diseases of the Rectum. In Two Parts (Illustrated). Part 1. Cloth. Pp. 311. Price, $2.50. London, New York and Bombay: Longmans, Green & Co. 1900.

Part I deals with the anatomy, general diagnosis, abscess, fistula, fissure and hemorrhoids. The subjects are, in general, very well handled. In the treatment of hemorrhoids preference is given to the operation by ligature to the exclusion of

all other methods. While this is the best method in the majority of cases, there are other methods which certainly are of use in special cases, and in a work of this character these methods deserve more attention than to be dismissed as useless by a three-line notice. The illustrations, which are quite numerous, are very good, most of them being reproductions of photographs.

With Part II, which is in preparation, the work will be quite complete and worthy of careful reading.

Surgical Applied Anatomy. By Sir Frederick Treves, K.C.V.O., C.B., F.R.C.S., Sergeant Surgeon to H. M. the King. New Edition, Revised by the Author. With the Assistance of Arthur Keith, M.D., F.R.C.S., Lecturer on and Senior Demonstrator of Anatomy at the London Hospital. Illustrated with 80 Engravings. Cloth. Pp. 571. Price, $2.00. Philadelphia: Lea Brothers & Co.

This edition has been revised throughout, certain sections have been rewritten and much new matter added; it is well up to date. The usefulness of the work can be questioned by no one; it is a more attractive presentation of the most important facts of anatomy, especially in their practical bearings. It is, therefore, a convenient reference book and a valuable suggester of much information that is not always easily brought out, so to speak, from the dusty pigeon-holes of the memory. Sir Frederick Treves, as one of the first of British surgeons, is especially competent to furnish such a work, and this latest revision will be of value to practitioners as well as students preparing for their examinations. The illustrations, while not very numerous, have been considerably increased in this edition, and are specially serviceable and well selected.

The Diagnostics of Internal Medicine. A Clinical Treatise on the Recognized Principles of Medical Diagnosis, Prepared for the Use of Students and Practitioners of Medicine. By Glentworth Reeve Butler, A.M., M.D., Chief of the Second Medical Division, Methodist Episcopal Hospital. With 5 Colored Plates and 246 Illustrations and Charts in the Text. Cloth. Pp. 1059. Price, $6.00. New York: D. Appleton & Co. 1901.

Works on diagnosis are comparatively numerous at the present time, but each new one has its special features of interest and value. The present volume, while less complete in its scope than some, covers the greater portion of the field of internal medicine in a very satisfactory way and undoubtedly will be found by many more acceptable than other works. It is particularly strong in its illustrations; these are generally very well selected to illustrate the text, which itself is clear and readable. The arrangement of the work is also one that will possibly find favor with many readers, especially students and general practitioners, much the larger part being given to the "Evidences of Disease" or general symptomatology and this is followed by a shorter section on special diagnosis, differential and direct. The treatment of the special subjects in this department is less elaborate than in some other works, but the main points appear to be generally well stated. There seems to be an omission in the absence of descriptions of the usual urinary and other tests. While mental disorders are left out, it would not have been amiss to have included some notice of a condition like paresis, which has a more or less definite pathology and is often confused in its early stages with certain other nervous disorders. Syphilis of the nervous system might have also received fuller treatment.

Taking the work as a whole it may be said to meet most of the requirements of a work on the diagnosis of non-surgical diseases and to possess special merits in some particulars, more especially in its first section. It is well worth a place in the physician's library.

Uterine Tumors: Their Pathology and Treatment. By W. Roger Williams, Fellow of the Royal College of Surgeons. Cloth. Pp. 359. Price, $3.00 net. New York: William Wood & Co. 1901.

This monograph opens up with a brief description of the development of the uterus and its anatomic relations. Uterine myomata are then considered in an exhaustive manner. The histology of the uterus in relation to its neoplastic pathogeny, the influence of aberrant elements, "rests," developmental irregularities, gross malformations, and the microbic theory are all considered under the etiology of these new growths. The author thinks that suppressed maternity and sterility "are among the most important factors in the genesis of these tumors."

Is it not more probable that the diminished fertility of these patients is due rather to the pathologic state of the uterus superinduced by the presence of the new growths? Nor does his point find support when he attempts to show the hereditary nature of these growths, for he states "myomatous patients come of large families, for those in my list averaged 8.1 members each." Concerning the etiology of carcinoma he disregards entirely the modern tendency to ascribe this to extrinsic or microbic influences, and says the "great relative proneness of the epithelium of the uterine mucosa to take on proliferative cancerous changes is due to the awakening in its constituent cells of potentialities" derived from their parent cells in the genital ridge which are akin to those which furnish the ovigerms. But such an explanation explains nothing, and will not restrain in the least the earnest search for the cause of cancer which must some day be revealed.

In the operative removal of the cancerous uterus, stress is well laid on the necessity of extending the operation to the removal of the para-uterine tissues and the lymph glands, if better permanent results are to be hoped for.

In the production of this volume the author has labored well and earnestly and given to the profession a work of value.

Miscellany.

The Consumptives Pienic Grounds.—The success of the day-resort for consumptives at Berlin has proved so encouraging that three more have been founded, two for men and two for women. They are all in easily accessible groves on the outskirts of the city and are provided with a kitchen, etc., to supply a nourishing lunch at a minimum price. They were organized by the Red Cross Society.

Sueeess of Organized Effort in Lille.—The local medical society of Lille, France, includes the pharmacists and is called the Union Medico-Pharmaceutique. It has been victorious in a recent conflict with the local Pasteur Institute, in charge of Calmette, which had opened a dispensary where persons with tuberculosis could be diagnosed and treated. The Union claimed that the Institute had been organized for scientific research, and that it had no right to undertake practical clinical work besides.

Pensioned Patients.—The enterprise of the Sociedad de Med. e Cir. of Sao Paulo in Brazil, is evidenced by the unanimous adoption of a resolution to pension a patient whose stomach was removed fifteen months ago, in order to keep her in sight and ensure her appearance at the sessions when desired. She now eats the family diet and has increased 12 kilograms in weight. A fund was established at the same time to pension other patients with unusual affections to keep them in town.

Pregnaney and Tubereulosis.—Several obstetricians have recently published statistics in regard to the effect of pregnancy on tubereulosis, but Maragliano remarks that an obstetrician is not qualified to judge. He reiterates his well-known views on the perils of pregnancy for tuberculous women. If the disease is stationary, there is danger of arousing it, or if it is evidently progressing, even in the incipient stages of the disease, the girl must not marry, the pregnant women should be aborted, the parturient should never suckle her child. But, after several years of improvement, the question as to whether a tubereulous woman can undertake the function of maternity, is open to discussion. The physician—not the obstetrician—is the only qualified judge of the advisability of allowing a pregnancy to continue under these circumstances.

Freneh Congress of Hypnology and Psyehology.—The tenth annual congress was held at Paris in July. P. Farez described the cure of uncontrollable vomiting in a virgin of 20 and in a ii-para, 35 years of age. Both were cured by painting

the region over the stomach and esophagus with collodion colored with methylene blue. This blue collodion he considers a very important aid in psychic treatment. The intense color attracts the attention and the slight discomfort caused by the retraction of the collodion assists in the impression produced. The therapeutic suggestion is thus sustained, amplified and reinforced. Lépinay described various hysteric accidents caused in animals by emotions, scolding, electricity, castration, etc. Many animals are killed on suspicion of rabies when they are merely exhibiting transient hysteric convulsions. Manfroni related an instance of analgesia suggested to a patient while he was in a normal sleep. When he awoke he was much astonished to find that he experienced no pain from a lesion extremely painful hitherto. Bianchi delivered an address on "Cerebral Phonendoscopy," Regnault on the "Doubling of the Personality," and others described a number of cases of kleptomania, puerperal eclampsia, spasmodic contracture, etc., cured by suggestion.

Formaldehyd in Milk.

The adulteration of milk by the use of formaldehyd is probably becoming much more common than is generally suspected. For a time its use was a "trade secret," but it has been so thoroughly advertised that every obscure individual who has a milk route is now familiar with the preservative qualities of formaldehyd. In our large cities the health officers are on the watch, and hence in these its use is being curtailed, but in the smaller towns and villages the people have not this protection. It would be well, therefore, for physicians to guard against this and keep it in mind when mysterious illness develops in milk-users. They should also be prepared to make an analysis of milk at any time as to its freedom from the drug. This is a simple procedure, and yet one that requires considerable technical skill in the use of some of the tests. We copy from the *Lancet-Clinic* the various methods for testing formaldehyd as laid down by Herman Harms, some of which are quite simple:

Rimini Test.—A—Phenyl-hydrazine muriate, 0.5 gm.; distilled water, 100 c.c.; dissolve. B—Sodium nitroprussid, 0.5 gram; distilled water, 30 c.c.; dissolve. C—Soda U. S. P., 15 gm.; distilled water, 60 c.c.; dissolve. To 15 c.c. of the suspected milk in a test-tube add 10 drops of A, mix and add 3 drops of B; mix and let 5 drops of C run in slowly on the side of the test-tube. In the presence of formaldehyd a blue color is instantly produced, changing, on standing, to red. On adding to the mixture of milk and solution A 2 drops of ferric chlorid solution, and then about 2 c.c. of concentrated hydrochloric acid, a red color is produced, which later changes to orange-yellow. In sour milk the above-mentioned blue is supplanted by green. The Rimini test is easily applied, and readily detects formaldehyd when present to the extent even of 1 part in 25,000 or 30,000.

Phloroglucin Test.—Dissolve 1 gram of phloroglucin in 100 c.c. of distilled water. Put 10 c.c. of the suspected milk in a test-tube and add 5 c.c. of the phloroglucin solution; shake and add 1 c.c. of solution of potassa, U. S. P. If formaldehyd is present a red color is developed at once, fading, usually, within five or ten minutes; hence, the color must be observed at once. One part in 20,000 gives a decided reaction.

Hehner's Test.—To 15 c.c. of concentrated sulphuric acid in a test-tube add 1 or 2 drops of ferric chlorid test solution, U. S. P., and mix. Then pour upon this, in such manner as not to mix the layers, the suspected milk. A violet color indicates the presence of formaldehyd. In the case of cream, dilute the cream with an equal volume of water, and then apply the test as above described. The violet color is sometimes produced at once, but oftener not for five or ten minutes, and sometimes not for an hour or so, depending upon the amount of formaldehyd present. By this test a part in 10,000 or 15,000 is readily detected.

Liebermann Phenol Test.—In the presence of small traces of formaldehyd, distill off from the milk a few cubic centimeters and add to this one drop of very dilute aqueous phenol solution. Then pour this mixture slowly upon concentrated sulphuric acid in a test-tube solution so as to form a layer. A bright crimson color appears at the zone of contact. This is easily seen in as little as 1 part in 200,000, and in greater proportion in 1 to 100,000. There is a milky zone above the red color, and, if more concentrated, there will be a whitish or pinkish precipitate. Sometimes the zone will appear in about one hour, one-tenth of an inch below the line of contact.

Hydrochloric Test.—Fifteen or 20 c.c. of suspected milk, together with 2 or 3 c.c. of strong hydrochloric acid, are boiled for a few minutes in a test-tube. A red coloration indicates formaldehyd. Other tests are known, but they are more complicated and require apparatus or reagents not kept by the average pharmacist. The above tests are all simple in their application and afford a ready means of detecting formaldehyd in milk and cream.

Remarks on the Foregoing Tests.—The Rimini test is highly recommendable. The reaction in sweet milk appears rapidly and with certainty. Hehner's test, as well as the phloroglucin and phenol tests, are very reliable and are all extremely sensitive. The hydrochloric-acid test is very simple, but is not to be depended upon. It may show formaldehyd in most instances; however, cases have come under our observation when it has utterly failed to show the reaction, probably because of the milk having undergone some unknown changes. The Liebermann test is simple, delicate, and shows formaldehyd very readily.

As corroborative evidence, it is well, after the tests are finished, to let the suspected milk or cream stand in a warm place for 24 hours. A pure sample will invariably turn sour and separate. A sample which has been "doctored" with formaldehyd, however, will show, at the end of 24 hours, but a very slight separation, if indeed any at all, and will have but a slight odor.

A Word of Caution.—It is desirable that all test solutions be freshly prepared, especially the nitroprussid of sodium solution in the Rimini test; and that the suspected sample be as fresh as possible. Sour samples are difficult to test, and may yield variable results, because in these formaldehyd has been oxidized, and is no longer present as formaldehyd. In carrying out the tests for formaldehyd, it is advisable to work side by side the suspected sample and the one known to be pure. Finally, do not expose your tests or have your milk placed where a bottle of formaldehyd is being opened, for the vapor is very penetrating, and you may thus be easily led to misleading results. When formaldehyd has been found to be present by at least three of the aforementioned tests, it may be considered that its presence has been shown.

Married.

J. L. DUSIC, M.D., to Miss Lavina Heyner, both of Cleveland, Ohio, August 12.

WILLIAM F. BAY, M.D., to Miss Nellie H. Davis, both of Columbus, Ohio, August 15.

EPHRAIM CUTTER, M.D., New York City, to Mrs. Anna L. Davison, of Boston, August 10.

JOHN D. TODD, M.D., Trezevant, Tenn., to Miss Emma R. Hart, of McKenzie, Tenn., June 5.

MARIE MERRILL, M.D., late assistant at St. Peter (Minn.) State Hospital, to William G. Hyde, of McMillan, Mont., at St. Paul, Minn., August 8.

Deaths and Obituaries.

Thomas J. Turner, M.D., University of Pennsylvania, Philadelphia, 1851, captain and medical director, U. S. Navy, retired, a member of the American Medical Association, died at Mackinac Island, Mich., whither he had gone for his health from his home in Coldwater, Mich., August 21, aged 72. He was appointed to the navy in 1853; was fleet surgeon on the Asiatic station in 1875 and 1877; a member of the examining board at Washington thereafter; secretary of the National Board of Health during the yellow fever epidemic of 1877, and was retired in 1891.

James C. Crenshaw, M.D., University of Louisville, 1887, for several years a practitioner in Memphis, Tenn.; thereafter assistant superintendent of the Arkansas State Hospital for the Insane, Little Rock, and for the last year a practitioner of Dermott, Ark., died suddenly at his home in that place, August 16.

Thomas Masters Markoe, M.D., New York City, died August 28, at Easthampton, L. I. A longer notice will appear next week.

David Wooden, M.D., Louisville Medical College, 1885, died suddenly at his home in Grayville, Ill., August 13, from gastro-enteritis, aged 41. At the time of his death he was president of the Board of Education.

Frederick G. Flesher, M.D., University of California, San Francisco, 1893, coroner of Rice County, Minn., died at his home in Faribault, after a short illness, from meningitis, August 14.

Benjamin H. Kittrell, M.D., Tulane University, New Orleans, 1897, of Winona, Miss., who served in the Spanish-American war, died August 17 at Fourth Lake, New York.

David Magie Cory, M.D., College of Physicians and Surgeons, New York, 1866, New York City, died August 19, aged 58.

Alexander McBride, M.D., a pioneer physician of Macon County, Ill., died at his home in Decatur, August 14, aged 71.

S. T. Morehead, M.D., formerly of Allensville, Ky., died suddenly in Nashville, Tenn., August 14, from heart disease.

Jacob Hartmann, M.D., St. Louis Medical College, 1875, of New York City, died in that city, August 18, aged 63.

John L. Dodge, M.D., New York University, 1846, died at his home in Groton, Conn., August 18.

Societies.

COMING MEETINGS.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 10, 1901.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.

Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Roentgen Society of the United States, Buffalo, N. Y., Sept. 10-11, 1901.

Rocky Mountain Inter-State Medical Association, Denver, Colo., Sept. 3-4, 1901.

Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.

Arkansas Colored Medical Association.—The seventh annual meeting of this Society was held in Hot Springs, August 15. Dr. Claude M. Wade, Hot Springs, was re-elected president and Dr. George W. Hayman, Little Rock, elected secretary.

Donley County (Texas) Medical Society.—This Society was organized at Clarendon, August 15, with the following officers: Dr. Joel P. Morris, Clarendon, president; Dr. Jerome D. Stocking, Clarendon, vice-president, and Dr. T. W. Carroll, secretary.

Lake Keuka (New York) Medical and Surgical Association.—The second annual meeting of this Association was held at Grove Springs, August 13 and 14. Dr. Clair S. Parkhill, Hornellsville, was elected president and Dr. William W. Smith, Avoca, secretary.

Fergus County (Mont.) Medical Association.—The physicians of Fergus County held a meeting at Lewistown, August 1, for the purpose of organizing a county society. Dr. William A. Long, Lewistown, was elected temporary chairman and Dr. Solon B. Stone, Lewistown, temporary secretary.

Gallia County (Ohio) Medical Society.—This Society was reorganized at a meeting held in Gallipolis, Aug. 22, 1901, and the following officers elected: Dr. Jehu Eakin, Patriot, president; Dr. Rufus D. Jacobs, Vinton, vice president; Dr. L. B. Turner, Bidwell, secretary, and Dr. J. B. Dastin, Bidwell, treasurer. As a special feature of this meeting, Dr. P. Maxwell Foshay, of Cleveland, addressed the society on "Medical Organization."

Medical Society of the Missouri Valley.—The fourteenth annual meeting will be held in St. Joseph on Thursday, September 19, and Eureka Springs, September 20 and 21. The 'Frisco railroad will carry members and their ladies free from Kansas City to Eureka and return. One fare for the round trip ($1.90) has been secured from St. Joseph to Kansas City. Pullman fare will be $1.00 each way, $2.00 for double berth, which must be remitted to the secretary before September 1, in order that extra cars may be provided for the party. A daylight ride on the return trip may yet be arranged, if a majority prefer it. One day's scientific session will be held in each city, and last day will be devoted to sight-seeing at the Springs. In the evening a reception will be tendered the association by the local profession and Commercial Club. The Western Passenger Association has granted a special rate of fare-and-one-third for round trip, on certificate plan from points in Missouri, Iowa, Kansas, Nebraska, Oklahoma, Arkansas, North and South Dakota. A cordial invitation is extended to the medical profession, and an interesting meeting is anticipated. —Dr. Charles Wood Fassett, secretary.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Chloretone in Pertussis.

W. Lyon, of London, recommends the following combination containing chloretone to prevent the vomiting in pertussis:

R.	Bromoformi	m. ii	12
	Chloretoni	gr. iss	09
	Tinct. aurantii	m. x	60
	Mucilag. acaciæ	m. xx	1 30
	Aquæ q. s. ad	3i	4

M. Sig.: At one dose; or

R.	Bromoformi	m. ii	12
	Chloretoni	gr. iss	09
	Tinct. aurantii	m. x	66
	Glycerini	3i	4

M. Sig.: At one dose.

Treatment of Acute Rheumatism.

Dr. George Dock, Ann Arbor, in an interesting article in the *Phys. and Surgeon*, states that the first thing to be observed in the treatment of rheumatism is rest, however mild the symptoms may be. Flannel nightclothes should be worn. Rest for the affected joints should be especially considered. This can be secured by well-applied woolen bandages, and if necessary render the joint immovable by applying splints. The patient should be kept in bed as long as there is fever and joint pain. The diet in the febrile stage must be light, and water given freely. Tea, coffee and alcoholics should be avoided.

The bowels should be moved with small doses of calomel. As to the drug treatment, he recommends the salicylates, but emphasizes the importance of giving them in large doses. The system should be saturated. Not less than 120 grains should be given within twelve hours. He recommends sodium salicylate combined with an alkali such as sodium carbonate given similar to the following:

R.	Sodii salicylatis	3ii	8
	Sodii carbonatis	3ii	8
	Aquæ camphoræ q. s. ad	3vi	192

M. Sig.: One tablespoonful every hour in water.

He adds that patients with acute nephritis or old interstitial nephritis should not be subjected to the foregoing treatment.

Aspirin as a Substitute for the Salicylates.

Aspirin, which is a comparatively new preparation, is recommended as possessing the following advantages over the salicylates: It does not cause any irritation of the stomach, nor does it disturb digestion. It does not produce the tinnitus aurium. The heart's action is not affected by its use.

Aspirin is a white, crystalline powder soluble in 100 parts

of water. Being a combination of acetic and salicylic acids it is used as a substitute for sodium salicylate, resorcin, salol, salophen and creosote, and should not be given in maximum doses with these preparations.

Treatment of Pruritus Ani.

The following gives great service in relieving the troublesome itching:

R.	Ahnmnol ..... gr. xxx	2	
	Pulv. camphoræ ..... ʒiss	6	
	Lanolini q. s. ad ..... ʒi	32	

M. Sig.: Apply locally night and morning.

To Relieve Burns.

The following containing hydrogen peroxid is recommended as an application for burns of the first or second degree:

R.	Hydrogenii peroxidi ..... ʒss	16	
	Adipis canæ ..... ʒi	32	
	Ol. rosæ ..... gtt. ii		12

M. Sig.: Apply locally.

The Treatment of Leg Ulcers.

Walbaum, in *Med. Rec.*, describes a dressing with which he states a cure is effected within three weeks. After thoroughly cleansing the skin, wet dressings of aluminum acetate are applied until the secretion has been somewhat checked and has lost its odor, which usually takes place in two or three days. A compress wet with spirits of camphor is then applied and covered with rubber protective, which in turn is surrounded with absorbent cotton and a bandage. The dressings should be renewed every second day.

Carbolic Acid in the Treatment of Eczema.

Carbolic acid has been employed in a very extensive manner in the treatment of different forms of skin diseases. Dr. J. F. Schamberg, as noted in the *Med. Standard*, states that the following renders good service as a lotion in the treatment of acute erythematous or papular eczema:

R.	Acidi carbol. ..... gr. xxx	2	
	Acidi borici ..... ʒi	4	
	Glycerini ..... ʒi	4	
	Zinci oxidi ..... ʒii	8	
	Aquæ q. s. ad ..... ʒvi	192	

M. Sig.: Apply locally night and morning.

In more chronic cases it should be used in greater strength as follows:

R.	Acidi carbol. ..... ʒii	8	
	Glycerini ..... ʒi	32	
	Etheris ..... ʒi	32	
	Spts. vini rect. ..... ʒvi	192	

M. Sig.: To be used locally.

In the subacute vesicular eczema he recommends the following ointment containing phenol and calomel:

R.	Acidi carbol. ..... gr. x		66
	Hydrarg. chloridi mitis ..... gr. xx	1	33
	Pulv. amyli ..... ʒii	8	
	Pulv. zinci oxidi ..... ʒii	8	
	Petrolati ..... ʒss	16	

M. Sig.: To be applied locally.

The above is to be used in all forms except the very acute eczemas.

In other cases of subacute eczema he employs the following:

R.	Acidi carbol. ..... gr. x		66
	Plumbi oxidi (C. P.) ..... ʒi	4	
	Petrolati ..... ʒss	16	
	Lanolini ..... ʒss	16	

M. Sig.: Cleanse the affected parts and apply locally.

Exercise in Treatment of Paralysis Agitans.

Dr. J. M. Taylor, in *Jour. of Ment. and Nerv. Dis.*, recommends a plan to overcome the muscular rigidity and impairment of movement. The treatment should consist of exercise, passive movements and massage with oil inunctions. Passive movements, especially of the neck, back, and limbs, should be given. The spine should be extended by stooping, the legs and arms stretched to the greatest extent and deep breathing practiced. The most important movements to overcome the tremor are slow, full, forcible expansions and the attainment of normal position. He reports improvement in several cases in which the foregoing outline of treatment has been employed.

Treatment of Tinea Tonsurans.

Dr. Brown, in *Post-Grad.*, recommends the following in treatment of tinea tonsurans and facial erysipelas:

R.	Acidi salicylici ..... gr. xx	1	33
	Chrysarobin ..... gr. xx	1	33
	Ichthyol ..... ʒi	4	
	Lanolini		
	Vaselini, āā ..... ʒss	16	

M. Sig.: Shave the scalp and rub the ointment over the entire surface.

A bandage covering the scalp should then be put on carefully to avoid any chance of the chrysarobin getting into the eyes. At the end of three days the bandage should be removed, the head washed and some emollient salve applied to check the dermatitis usually set up. After a few days the treatment is resumed if necessary.

Trichloracetic Acid in Hay Fever.

Dr. H. Krause, as noted in *Merck's Archives*, recommends the use of trichloracetic acid in 1 per cent. solution, to be snuffed up the nose as a cure for hay fever. During the past two years he has used it in more than thirty cases with good results. He states that improvement and cure follow in two to eight days.

Treatment of Rhus Toxicodendron Poison.

The following preparations are recommended in case of poison from rhus toxicodendron, to which not a few people are susceptible:

R.	Ext. grindeliæ robustæ flu. ..... ʒvi	24	
	Aq. menthæ pip. ..... ʒiss	48	
	Aquæ rosæ ..... ʒiv	128	

M. Sig.: Apply freely on cloths; or:

R.	Plumbi acetatis ..... ʒss	2	
	Tinct. opii ..... ʒss	16	
	Aq. destil. q. s. ad. ..... ʒviii	256	

M. Sig.: Apply externally in mild cases; or:

R.	Ichthyol ..... ʒii	8	
	Aquæ ..... ʒiv	128	

M. Sig.: Apply externally every three or four hours.

Treatment of Acne Rosacea.

In the treatment of acne rosacea much weaker local applications should be employed than in acne vulgaris. The best results in the former are obtained according to A. Brownlie, in *New York Lancet*, by a combination of local and internal treatment and where the skin is extremely tender internal treatment alone. His plan of treatment is the use of ichthyol in doses of 5 grains after meals three times a day, increasing to 10 grains. Every night and morning the face is steamed for fifteen minutes, and ichthyol salve afterwards applied, which he often combines with ammoniated mercury. The diet must be carefully guarded.

To Prevent the Shedding of Hair.

Dr. David Walsh, of London, according to the *Med. Standard*, recommends the following as a lotion, stating that it is preferable to an ointment, especially in the case of women:

R.	Acidi salicylici ..... ʒiii	12	
	Acidi carbol. ..... ʒi	4	
	Olei ricini ..... ʒiii	12	
	Spts. vini rectif. q. s. ad ..... ʒvi	192	

M. Ft. lotio. Sig.: Apply locally once or twice daily.

Treatment of the Paroxysms in Pertussis.

The following is recommended by Shoemaker:

R.	Tinct. lobeliæ ..... ʒii	8	
	Sodii bromidi ..... ʒiii	12	
	Spts. etheris nitrosi ..... ʒi	32	
	Syr. limonis q. s. ad ..... ʒiii	96	

M. Sig.: One-half to one teaspoonful every one or two hours.

Epistaxis in People Beyond Middle Age.

Dr. George Coates, in London *Lancet*, states that he has made a study of five cases of epistaxis occurring in the aged, and has observed the cause to be mainly the same in each case, namely: Long-continued high arterial tension, some sudden cardiac disturbance; a congested condition of the venous circulation, with a leakage from an over-filled vein. He treated the attack locally to check the hemorrhage and as prophylactic measures he employed remedies which influenced the general circulation. The important thing being to empty as much as possible the venous circuit, he administered drugs which dilated the arterioles, thus relieving arterial tension, lessening the heart's labor and consequently relieving the congestion in the venous circuit. To meet these indications nitroglycerin or amyl nitrite was very properly used. As heart tonics he employed strychnin and strophanthus. The latter ranks close to digitalis as a heart tonic if prepared by reliable druggists, otherwise the results obtained will be a disappointment. It differs from digitalis in that it does not increase arterial tension by contracting the peripheral arterioles and is therefore better suited in those cases in which it was used by Dr. Coates.

Medicolegal.

Fifteen Thousand Dollars too Much for the Injuries.—The Supreme Court of New Jersey holds excessive the award of damages in the case of Spicer vs. Boice of $15,395, of which only $395 could be accounted for by disbursements. The plaintiff was 66 years of age. His physical injuries were painful, and to some extent permanent; but, while they had impaired, they had not destroyed any function or faculty. Under these circumstances, the court makes a remittitur of $7,500, the condition of letting the verdict stand.

Showing Extent of Injuries by Movement of Arm.—The Supreme Court of Minnesota holds, in the personal injury case of Adams vs. the City of Thief River Falls, that there was no error in permitting the plaintiff to illustrate her power to use her arm, claimed to have been permanently injured in an accident, by movements thereof at the trial and before the jury, she having been allowed to illustrate, by the movement of her arm in raising and lowering it before the jury, the nature and extent of the injuries which, under her claim, were sustained by her. Such experiments, the supreme court holds, were permissible and within the proper exercise of the discretion of the trial court.

Disciplinary Power of State Board of Health.—The question presented for decision in the case of the State Board of Health vs. Ross was whether, under the present act of the legislature of Illinois to regulate the practice of medicine, in force July 1, 1899, the state board of health has power to discipline and revoke the certificates of persons who had been licensed to practice medicine and surgery by the board prior to that date. Section 6 of the act provides that the board may refuse to issue the certificates provided for in the act in certain cases, and "may revoke such certificates for like causes." The appellate court held that this power of revocation plainly referred to certificates issued under the act, stating that if it was the intention of the legislature to give the board of health the power to discipline the holders of certificates issued prior to July 1, 1899, and to revoke such certificates, it had certainly failed to express such intention by this act. If the consequences of interpreting the statute according to its plain and obvious meaning are likely to prove disastrous to the people of the state at large, as contended by counsel, and as would seem not improbable, considering the large number of physicians and surgeons throughout the state, and the temptations to obtain money and practice by a resort to dishonorable conduct which are supposed to beset professional men, the responsibility, the court continued, must rest with the legislature, and not the courts. If the tendency of a law is vicious, the stricter its enforcement the sooner it will be amended or repealed. So the court answered the question raised in the negative. And the opinion of the appellate court is now adopted by the Supreme Court of Illinois, which affirms its judgment. The supreme court merely adds to that opinion that it has carefully examined all of the questions involved, and considered the criticisms of the opinion by counsel and their arguments against the correctness of the same, and is of the opinion the conclusions reached and announced in the opinion are correct.

Pecuniary Value of a Woman's Life.—With striking unanimity have two different courts, in different states, reduced judgments for damages for the deaths of women. In the case of Oakes vs. the Maine Central Railroad Company, the deceased, who left as her beneficiary a healthy child 5 years of age, and whose husband and the father of the child was in poor health, was 35 years of age, in good health, a good milliner, a prudent and industrious woman and affectionate mother, possessing a fair education. Now, the expectancy of life of herself and the beneficiary, the probability of her surviving her husband and being the sole support of her child, the length of time that might reasonably be expected to elapse before the boy would be able to help his mother and care for himself, the possibility that in time she in her turn might become dependent upon him for her support, the loss of a mother's training and good influence, which would tend to make him a better man, and capable of acquiring more money—all these, the Supreme Judicial Court of Maine holds, were considerations in determining the amount of the pecuniary injury resulting to the beneficiary. At the same time, the damages, under the statute under which the action was brought, could not be punitive, neither could they be given for her physical pain and suffering, nor for the grief and sorrow of the child and husband who survived, but the sum given must be the present worth of the future pecuniary benefits of which the beneficiary had been deprived. Under all of these circumstances, the court holds that a verdict for $3,500 was excessive, and that a new trial must be granted unless all above $2,500 was remitted. Likewise, in the case of Rafferty vs. the Erie Railroad Company, where the deceased was a single woman, 45 years of age, who kept house for her three brothers and a sister, who were all single, the Supreme Court of New Jersey holds that, the damages being limited by statute, to the pecuniary loss sustained by the next of kin, a verdict for $5,000 was, under the evidence, excessive. It thinks also that $2,500 would be the limit of a proper assessment of damages in this case, and makes the acceptance of a reduction to that amount the condition of letting the verdict stand.

Restriction of Expert Evidence in Will Cases Urged.—The Court of Appeals of Maryland says, in the case of the Safe Deposit & Trust Company of Baltimore vs. Berry, that observation and experience teach that there is danger of reaching inaccurate conclusions as to a testator's mental capacity if much reliance is placed on expert testimony founded exclusively on mere hypotheses. The expert, not having seen the individual about whose sanity he speaks, must rely solely on hypothetical statements of facts assumed to have been deposed to by other witnesses, which facts may have been colored by the persons who narrated them, or may be erroneously interpreted in their presentation to the expert, while the expert himself may be mistaken in the deductions he draws, even when the facts have been accurately rehearsed. Added to these sources of uncertainty, there is, and probably it is quite natural that there should be, more or less unconscious bias towards the side upon which the expert is employed; and, as a consequence, it is no unusual thing to see equally intelligent and equally honest experts arriving at diametrically opposite conclusions from precisely the same hypotheses. This anomaly, however, is not confined to alienists, but exists among experts on handwriting and on other subjects as well. But it is, for all of these reasons, the court declares, of the utmost importance, when the testator is not present to speak for himself, or to be seen by the jury, or to be personally examined as to his mental condition, that especial care be taken by the courts to restrict, within the narrowest limits consistent with settled rules of law, what the

court terms, this hazardous species of evidence. Now, it goes on to say, as the opinion sought from the expert must have relation to the subject-matter being inquired into, it is obvious that it must be based on the facts proved, or tending to prove which there has been some evidence offered. It can not be founded on the mere naked conjectures, conclusions, or inferences of witnesses, because those conjectures, conclusions, or inferences might not represent the real conditions which existed, and thus there might be substituted by the expert, for a deduction which he could have properly drawn from the facts as they really were, precisely an opposite conclusion, at variance with the facts, and utterly false, because deduced from erroneous premises. Then, if this be so, much more is it certain, it says, that it would be improper to ask an opinion on a conjecture or conclusion or inference, not of a witness, but of the counsel who propounds the interrogatory. Again, the court says that it is perfectly self-evident that a question which is propounded to prove is essentially inadmissible. That is to say, a hypothetical question obviously cannot assume as true the ultimate thing to be proved.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, August 17.

1 *The Present Status of the Surgery of the Prostate. William N. Wishard.
2 *Infection Spread by Domestic Pets—Resemblances Between Diseases of the Lower Animals and of the Human Subject. William B. Meany.
3 *Hot Air as a Therapeutic Agent. Orrin S. Wightman.
4 *Dysentery in the Philippines. M. H. Bowman.
5 Antisepsis in Throat and Nose Surgery. Henry Wallace.
6 *Some Observations on the Relation of the Alkalescence of the Blood to the Urinary Reaction. Heinrich Stern.

Boston Medical and Surgical Journal, August 15.

7 *Demonstration of a Model of the Abdominal Viscera. Thomas Dwight.
8 *The Origin of Oxalic Acid from Protein and Protein Derivatives. Arthur E. Austin.
9 Bile in the Abdominal Cavity. John F. Thompson.

Medical Record (N. Y.), August 17.

10 *Syphilis of the Liver. Max Einhorn.
11 *Pregnancy Following Myomectomy. James N. West.
12 The Summit Fissure. Oversphere and Undersphere. Wallace Wood.
13 *Notes on Malarial Fevers in Central America. J. Hobart Egbert.

Medical News (N.Y.), August 17.

14 *Fibroma of the Mesentery. J. B. Murphy.
15 *Arsenic and Its Compounds; With Special Reference to Soda Cacodylate. Charles Wm. Heltzman.
16 Acute Peritonitis: Its Treatment upon an Etiological Basis. C. D. Hill.
17 *A Plea for the Better Appreciation of the Limitations of Operative Work. A. M. Cartledge.
18 The Etiology of Melancholia. H. H. Stoner.

American Medicine (Philadelphia), August 17.

19 *Expectant Treatment. (Concluded.) A. Jacobi.
20 *Some Observations on the Treatment of Acute Insanity in General Hospitals. Daniel R. Brower.
21 *A Report of 212 Cases of Ventrosuspension of the Uterus. Richard F. Woods.
22 A Case of Gastritis Complicated by Myasthenia Gastrica, with Remarks on Weakness of the Gastric Muscle. Edwin Zugsmith.
23 *A Study of the Hemorrhoidal Circulation, with Special Reference to the Prevention of Postbleeding in Radical Operations for Piles. Will B. Davis.
24 Congenital Malformation of the Vagina; Report of Two Cases. M. J. Konikow.
25 *The Sodium Tungstate Test for Combined Chlorid in Chyme. A. L. Benedict.

Philadelphia Medical Journal, August 17.

26 Slow Pulse with Special Reference to Stokes—Adam's Disease. Robert T. Edes.
27 *Progressive Hardness of Hearing and Its Arrest by Surgical Removal of the Incus. Charles H. Burnett.
28 The Difficulties Attendant upon the Proper Treatment of Diseases of the Ear in Dispensary Practice. Francis R. Packard.
29 *Meniere's Disease. S. MacCuen Smith.
30 *A Nosological Study, from a Clinical Standpoint, of Certain Manifestations Accompanying and Following Malaria. G. W. Penn.

St. Louis Medical Review, August 17.

31 *Some Complications of Syphilis of the Skin and Their Treatment. Martin F. Engman.

Cincinnati Lancet-Clinic, August 17.

32 The Physiology of Deglutition. Wm. H. Muhlberg.
33 Some Experience in Taking Rest and Recreation by a Busy Physician. Geo. J. Monroe.
34 "While There's Life, There's Hope." H. V. Sweringen.

Medical Age (Detroit, Mich.), August 10.

35 Some Surgical Cases. (Cholecystotomy, etc.) (To be continued.) N. Senn.
36 Correction of Eye Affections with Glasses. Robert M. Lapsley.

American Journal of Obstetrics (N. Y.), August.

37 *Post-operative Sequelæ and Conservative Gynecology. Frank R. Oastler.
38 *Pus in Abdominal Operations. Hunter Robb.
39 *Is the Kraske Operation Justifiable in Women? George M. Edebohls.
40 Ovarian Cysts. R. S. Hill.
41 *Sactosalpinx Hemorrhagica. Ralph Waldo.
42 Cesarean Section, with Report of a Successful Operation on Patient with a Rachitic Pelvis. E. C. Davis.
43 *Ovarian Symptoms and Their Value as Evidence of Ovarian Pathological Conditions. L. W. Atlee.
44 Cesarean Section versus Cranlotomy. Frank T. Merlwether.
45 Treatment of Abortion. Charles B. Reed.

American Practitioner and News (Louisville, Ky.), June 15.

46 Tuberculosis of Childhood. B. C. Frazier.
47 *Surgical Emergencies from a Medicolegal Standpoint; An Authentic Case. C. C. Godshaw.

Archives of Pediatrics (N. Y.), August.

48 *A Study of 555 Cases of Summer Diarrhea Among the Out-Patient Poor. Charles G. Kerley.
49 Case of Arteriosclerosis. Allen Baines.
50 *The Treatment of the Nasopharynx in Scarlatina. A. Seibert.
51 A Case of Appendicitis in an Infant Seven Weeks Old. George Blumer and H. L. K. Shaw.
52 Nodding and Rotatory Spasm of the Head, with Nystagmus, in Rachitic Children. Augustus A. Eshner.

Medical Fortnightly (St. Louis), August 10.

53 Frank C. Hoyt, Physician, Editor, Alienist. Gershom H. Hill.
54 The Prevention of Tuberculosis. A. N. Bell.
55 Diseases of the Lungs and Pleura. (Continued.) Albert Abrams.

Western Medical Review (Lincoln, Neb.), August 15.

56 *Two Rare Tumors: 1, A Calcareous Uterine Fibroma, and 2, a Fibromyoma of the Urethra. H. G. Wetherill.
57 Observations in Modern Smallpox. M. L. Hildreth.
58 *A Few Notes on the Recent Epidemic of Smallpox. S. R. Towne.
59 Hay Fever. Carroll Eugene Cook.
60 *Tuberculosis of the Fascia. J. Clark Stewart.
61 Tuberculosis of Tubes, Ovaries and Peritoneum. R. E. Cutts.
62 *The Treatment of Tuberculosis of Bones and Joints. James E. Moore.

Pediatrics (N. Y.), August 15.

63 *Hemophilia Neonatorum. K. G. Wm. Greef.
64 Clinical Demonstration at the Post-graduate Medical School and Hospital. Augustus Caille.
65 *Hemorrhagic Disease of the New-Born—A Clinical Report of Two Cases. Adelaide Brown.

Kansas City Medical Record, August.

66 School Hygiene in Reference to Transmissible Diseases. John Wilson.
67 Summer Diarrhea of Children. E. J. Veidt.

Chicago Medical Recorder, August.

68 *On Streptothrical Infections. John H. Musser.
69 *Mental Therapeutics in Nervous and Mental Diseases. Richard Dewey.
70 Cutaneous Anthrax—Malignant Pustule. J. M. G. Carter.
71 A Preliminary Report of Some Observations of the Blood in Anemia. Joseph A. Capps.
72 Report of a Case of Gastrointestinal Infection. W. E. Harwood.
73 *Fourth of July Tetanus. H. Gideon Wells.

Iowa Medical Journal (Des Moines), August 15.

74 The Diagnostic Value of Pain in Intra-abdominal and Pelvic Diseases. D. S. Fairchild.
75 Perineal Cystotomy. D. W. Finlayson.
76 Gonorrhea. Charles D. de M. Sajous.

Indiana Medical Journal (Indianapolis), August.

77 *A Consideration of the Present Laws for the Commitment of the Insane of Indiana. Wm. B. Fletcher.
78 Dysmenorrhea. L. H. Dunning.
79 The Diagnosis of Acute Peritonitis. H. O. Pantzer.
80 *Feather-beds and Colds. Robert Hessler.
81 Kitasato, the Japanese Pathologist—The Plague in Manila. Frank W. Foxworthy.

St. Louis Courier of Medicine, July.

82 Should Gonorrhea Be Considered as a Local or Constitutional Affection? F. R. Sturgis.
83 The Early Recognition and Treatment of Pulmonary Tuberculosis. Alexander McPhedran.
84 The Teaching of Therapeutics. T. M. Rotch.
85 Psychoneurosis. G. P. Edwards.
86 *Subphrenic Abscess in Its Relation to Some Complications. J. McF. Gaston, Jr.
87 *The Present Position of the Diagnosis of Cancer of the Stomach. Alois B. Graham.
88 Report of a Case of Anthrax. Amand Ravold.

Ophthalmic Record (Chicago), August.

89 *Advancement. Forms of Operation and When Indicated. Francis Valk.
90 *Chalazion. Albert B. Hale.
91 Hereditary Binocular Ophthalmoplegia. C. F. Heard.
92 Syphilitic Retinitis. Harry Friedenwald.
93 A Case of Spontaneous Couching of a Congenitally Dislocated Lens. T. B. Schneideman.
94 Simplified Form of Stereoscope. Charles A. Oliver.
95 Simultaneous Rupture of the Choroid and Paretic Mydriasis, Without Paresis of Accommodation. Alexander Duane.
96 A Lid Retractor. William E. Baxter.

Memphis Medical Monthly, August.

97 Some Remarks on Practical Obstetrics. I. A. McSwain.
98 Congestive Fever. Sydney Thompson.
99 Empyema, with Report of Cases. O. S. McCown.
100 *Our Recent Epidemics of Smallpox, and the Failure of Glycerinated Lymph. F. J. Runyon.
101 Voice Preservation. Richmond McKinney.
102 The Management of the Consumptive. C. M. Sebastian.

Columbus Medical Journal, July.

103 Rapid Dilatation of the Eustachian Tube by Electrolysis a Factor in Treatment of Chronic Catarrhal Otitis Media, with Report of Cases. C. P. Linhart.
104 Chronic Otitis Media Complicated with Mastoid Cholesteatoma and Cranial Abscess; Operation, with Report and Exhibition of the Case. Andrew Timberman.
105 Pleurisy in Children. T. W. Rankin.
106 More Amicable Relations Between Physician and Pharmacist. A. M. Steinfeld.
107 "Caffeine." George B. Kauffman.

Denver Medical Times, August.

108 *The Necessity for Post-Graduate Instruction in Sanitary Science; Psychopathic Cults of Healing and Worship. Wm. P. Munn.
109 *A Report of One Hundred Cases of Typhoid Fever—Seen in Private Practice During the Fall of 1900. W. A. Kickland.
110 The Present Status of Nephrorrhaphy. C. K. Fleming.
111 *An Outbreak of Pyemia Suggesting Bubonic Plague. J. N. Hall.
112 Slight Ailments and How to Cure Them. M. Beshoar.
113 Keloid; Vitiligo; Alopecia; Circumscripta; Ichthyosis. John V. Shoemaker.
114 Address to the Berks County Medical Society by the Retiring President. F. W. Frankhauser.
115 The Therapeutic Benefit of Music. John V. Shoemaker.

New Orleans Medical and Surgical Journal, August.

116 *The Nose and Throat in Their Relation to Diseases of the Chest. William Scheppegrell.
117 The Importance of an Early Diagnosis in Tuberculosis. James Kilbourne.
118 *The Combination of Chloroform and Nitrite of Amyl. Paul A. McIlhenny.
119 A Case of Malarial Remittent Fever Treated with Large Doses of Arsenic. C. J. Gremillion.
120 A Case of Malarial Polyneuritis. C. J. Gremillion.
121 Clinical Test of Sodium Cacodylate. E. M. Dupaquier.
122 A Case of Malignant Pustule of the Lip—Recovery. T. S. Dabney.
123 A Case of Abdominal Pregnancy. L. G. Stirling.

Medical Standard (Chicago), August.

124 Drug Habits and Their Treatment. T. D. Crothers.
125 Narrowing of the Anus; Stricture; Hemorrhoids. J. Rawson Pennington.
126 Appendicitis and Its Treatment. A. J. Ochsner.
127 Streptococci Infection Complicating Abortion—Recovery. E. J. Clark.
128 Empyema: A Discussion of the Condition and Its Surgical Treatment. Aime Paul Heineck.

Texas Medical News (Austin), July.

129 *Uncinariosis (Anchylostomiasis) in Man and Animals in the United States. Ch. Wardell Stiles.
130 Cholera Infantum. M. M. Pool.
131 Quarantine and Sanitation: Their Mutual Relations and Importance. I. J. Jones.
132 Post-Partum Hemorrhage. B. S. Ezell.
133 Typho-Malarial Fever. E. H. Gray.
134 Summer Diarrheas of Children and Their Treatment. M. A. Auerbach.

New England Medical Monthly (Danbury, Conn.), August.

135 *The President's Address, American Medical Association. Charles A. L. Reed.
136 *Internal Medicine in the Nineteenth Century. N. S. Davis, Jr.
137 *The Value of Clinical Microscopy, Bacteriology, and Chemistry in Surgical Practice. (To be continued.) John A. Wyeth.
138 Chronic Gastritis. Charles J. Polland.
139 Uricacidemia. Edmond John Melville.

Texas Medical Journal (Austin), August.

140 The Robert-Hawley Goat Lymph Compound. W. P. King.

AMERICAN.

1. **Surgery of the Prostate.**—After reviewing the various methods of treatment of prostatic pathologic conditions, Wishard sums up by saying that operative procedures are of the greatest value when undertaken early and that when they are long deferred, serious resultant bladder, urethral and renal diseases make the outcome increasingly dangerous. Where the catheter has failed to give adequate relief, death is reasonably certain to occur before long, especially in cases where the urethra has greatly increased in length by elongation of its prostatic end, unless the suprapubic opening for either prolonged drainage or removal of obstruction is obtained. If the symptoms are not of a severe type and are not amenable to the catheter, and if the length of the urethra from the meatus to the point where the urine is obtained does not exceed nine inches a perineal opening generally affords opportunity for stretching the entire length of the prostatic urethra, for dividing the small collar-shaped growths around the bladder end of the canal, and for removing the small projections by the finger, forceps, or cautery. One-fourth or as asserted by some, one-third of the operative cases are suitable for perineal opening. If the suprapubic operation has been thoroughly done and the obstruction all removed, the patients afterward are assured of more perfect bladder function than by any other method. He thinks it must be conceded, however, that in view of the serious dangers involved, many patients should be subjected to nothing more than the formation of a suprapubic channel, as suggested by McGuire and modified by Morris. Morris' improvement lines the channel with skin, and hence it is not so apt to contract.

2. **Infection by Animals.**—The dangers of the spread of infection by domestic animals, birds, cats, etc., are remarked upon by Meany and probable instances related. He refers in conclusion to the principle of isolation now insisted upon by sanitarians and favors the tendency of well-to-do individuals to be treated in hospitals rather than at home.

3. **Hot Air.**—The hot-air treatment and its advantages are noticed by Wightman, who sums up as follows: 1. Dry heat is a valuable pain-reliever without any of the depressant effects common to drugs. 2. In connection with constitutional and medicinal treatment, we have in it a positive curative agent. 3. It is a stimulant to rapid repair and absorption. 4. It is one of the most valuable eliminative agents we possess. 5. Where indicated, it possesses a sedative action on the nervous system obtained by no other means.

4. **Dysentery in the Philippines.**—Bowman holds that Cruikshank's researches have shown that dysentery in the Philippines is not a single, but two distinct and separate diseases, acute dysentery due to the bacilli of Shiga, which does not produce abscess of the liver or ulcer of the colon but acts similar to cholera, though requiring four, six or twelve days before its termination or crisis; and amebic dysentery which invades the layers of the colon producing punched-out ulcers

and also invades the liver producing characteristic lesions. There are two varieties of the ameba which vary in nowise except in size, the pathologic variety somewhat larger than the nonpathologic, and these two varieties have been the cause of all the confusion regarding the ameba as the etiologic factor in dysentery. He submits the following conclusions: 1. The duality of dysentery is proved. 2. Acute dysentery is the result of infection with the bacillus of Shiga. 3. It is infectious in the same way that the bacillus of typhoid fever is infectious. 4. Amebic dysentery is caused by an ameba. 5. There are both a pathogenic and a non-pathogenic ameba, which fact has produced much confusion regarding the ameba as an etiological factor. 6. The lesions of amebic dysentery differ from those produced by the bacillus of Shiga. 7. The therapeutic agents generally used for the treatment of acute dysentery are in no way curative. 8. Magnesium sulphate should be included in this list. 9. Quinin solution is a specific for the amebic dysentery, but its employment in rapid, acute ulcerating cases is fraught with danger, and from the nature of the lesions it cannot be retained for a sufficient length of time to produce beneficial effects.

6. **Blood Alkalescence and Urinary Reaction.**—From two series of observations on himself Stern offers the following inferences; from the first series he concludes, 1. The higher degree of urinary acidity concurs with a lessened blood alkalinity and the increased alkalescence of the blood with a decline of the urine's acidity. 2. There is no permanent and absolute ratio between blood alkalescence and urinary acidity. 3. The blood, under normal conditions, possesses a certain inherent alkalinity. The degree of alkalescence possibly varies slightly for certain periods of the twenty-four hours, but the influence of the ingesta upon these variations is neither a material one nor always determinable. 4. The degree of blood alkalinity is normally not affected by the quantity of the ingesta. The quality of the nutritives may normally contribute toward the rise and fall of the blood's alkalinity, but only to a very limited extent. 5. A portion of the substances elaborated from the nutriment will be egested without having been conveyed to the blood. 6. Some of the nutritive material, isolated and not utilized in anabolism, may be transferred into the urine in a more direct manner, and thus the accidental variations in the urinary reaction may be partly explained. The second series of observations were taken with the object of rendering the urine alkaline and studying the eventual relationship between urine alkalinity and the concurring degree of blood alkalescence. He recapitulates the data from this in the following: 1. A number of drugs effect the alkalinization of the urine without causing a corresponding increase in the degree of blood alkalinity. 2. The transitory augmentation of blood alkalinity, recurring mostly during certain hours of the afternoon, seems to be the result of certain innate processes, which apparently proceed independently of the ingestion of food or drugs. 3. While a higher degree of urinary acidity may concur with a more marked alkaline condition of the blood, a lower degree of urinary acidity, called forth by the introduction of a drug, may coincide with a lower degree of blood alkalinity on one and the same day.

7.—This article has appeared elsewhere. See The Journal of August 10, title 58, p. 406.

8. **The Origin of Oxalic Acid.**—Austin's article is a review of Salkowski's investigations and a description of his methods, which lead him to the following conclusions: 1. Oxalic acid is derived from the carbohydrate group in albumins, presumably through the intervention of glycocoll by a process of splitting, through which the remainder is converted to urea, a vital process though imitated by strong oxidizing agents. 2. Oxalic acid may also be derived from uric acid by fermentative action and oxidizing agents, and perhaps also by vital processes. 3. Oxalic acid, present in many organs of the body, practically absent in the feces of animals fed on non-oxalic acid containing foods, yet ever present in the urine after long periods of fasting, may rightly be called a metabolic product and rightfully take its place with acetone, lactic, acetoacetic and oxybutyric acids as a measure of abnormal retrograde metamorphosis.

10. **Syphilis of the Liver.**—The first part of Einhorn's article reviews the literature on the subject and it seems that syphilis of the liver is not infrequent. He divides it into three classes: 1. Gummata. 2. Syphilitic cirrhosis. 3. Syphilitic disease of the liver belonging to either of the above groups, and accompanied with icterus, either acute or chronic. Several cases illustrating these groups are reported with diagrams illustrating the extent and character of the disease. In the majority of the cases pains in the right hypochondrium are present, either constantly or intermittently; in the latter case they are severe, resembling gall-stone colic. We also have digestive disturbances, eructations, constipation, and more rarely diarrhea. A feeling of tension in the upper part of the abdomen is often met with and general malaise, restless sleep, weakness, moroseness, etc., and gradual loss of weight. Icterus may be acute or become chronic. No matter to which one of the above groups the morbid process belongs, the organ is usually more or less swollen in the right mammillary line between the free border of the ribs. Gummata may be sometimes recognized as uneven, round, hard nodules on the surface. If there is a cirrhotic process a marked swelling is encountered and in advanced stages an amyloid degeneration occurs. The organ then presents a harder and smoother appearance than normally. Enlargement of the spleen is not of uncommon occurrence; ascites may occur late. Diagnosis can be most positively made where gummata exist with other signs of recent or present attacks of syphilis. It is more difficult when tumors are present without other signs of existing syphilitic processes or without history; specific treatment may be required to confirm it. It is less certain when we have simply an enlarged, somewhat indurated liver, with or without icterus. Syphilitic cirrhosis resembles the ordinary hypertrophic cirrhosis so much that they are hard to clinically distinguish. Gummata are usually confounded with malignant neoplasms. If the disease has lasted for some time, with syphilitic manifestations, and no considerable loss of weight, it is probably syphilitic, but a slow, steadily progressive affection of the liver without intermission and with loss of weight and strength, and with neoplasm, the condition is, practically speaking, malignant. According to Neusser an increase of eosinophile cells in the blood points to syphilis. Alcoholic cirrhosis may be confounded, but the antiluetic treatment or the history may help to decide. It would appear from the literature that the prognosis is rather grave, but Einhorn seems to think if the diagnosis is made before the patient loses too much strength and before grave symptoms have yet occurred, the prognosis is very favorable. Of the 10 cases he reports only one died, and even this one had been considerably benefited; all the others were either permanently cured or much improved. Treatment is necessarily specific: the iodids play an important rôle, and while these may alone be sufficient, he has seen the best results from the combined use of this drug with mercurial inunctions. Special symptoms should be attended to: Icterus can be helped by using glycerin, a teaspoonful three times a day, one-half hour before meals. Iron and arsenic for anemia; special measures for ascites may be required. Proper hygienic and dietetic treatment is essential.

11. **Pregnancy Following Myomectomy.**—A number of cases from the literature are reviewed by West, and one is here reported by him: 14 in all, with 18 pregnancies, 3 patients having been twice pregnant. Of the 3 patients who were twice pregnant there were 2 healthy children born and 9 healthy children born to 14 at normal term. Two children went to term and were born dead. There were 6 abortions, most occurring in the third or fourth months; while all the uteri had extensive scars, in only 2 cases was it necessary to use forceps. All the presentations were normal. In the author's case in which nine incisions had been made into the uterine tissue, the labor lasted twelve hours and expulsive force was ample, the only complication being a lacerated perineum.

13. **Malaria in Central America.**—Egbert finds that fleas are active agents in transmitting malaria in the region of Honduras, where he made his observations. Mosquitoes were almost unknown.

14. **Fibroma of the Mesentery.**—Murphy reports a case and discusses the condition. He has been able to find in the literature not more than 11 similar cases. The gravity of the operation for mesenteric fibroid or malignant tumor is considerable on account of the shock and hemorrhage. In most cases of simple and encapsulated fatty tumors and cysts, however, the conditions are entirely different from fibroma or malignant disease. Statistics show that 28 per cent. of the cases recover by simple aspiration. Where the cysts have been tapped and fixed in the abdominal wound, there has been a mortality of 5 per cent., while where it has been directly removed the death-rate has reached 52 per cent.

15. **Soda Cacodylate.**—After noticing the use of arsenic under various conditions, Heitzman reports brief histories of a number of cases where cacodylate of soda was used. He thinks the drug is eminently adapted to cases requiring large doses of arsenic and is absolutely safe even in massive doses, being apparently non-toxic. It may be given hypodermically in doses of 1.5 gr. daily and up to 6 gr. daily by the mouth or rectum.

17. **Limitations of Operative Work.**—Cartledge pleads for more conservatism in operation. He thinks that there has been too much of a craze for operating, especially in abdominal cases and too many tyros have attempted it. He says, given a case where the focus of virulent infection has suddenly emptied its contents into the peritoneal sac at some point, either at the appendix, a septic tube or an intestinal lesion, if the sepsis has rapidly augmented, spreading to the entire peritoneal covering, characterized by no adhesion of limitation and manifesting itself objectively by a pulse-rate of 140 or 160, great abdominal distention, paresis of the intestine from toxemia and gas which precludes the possibility of attaining results from purgation, and the destruction of abdominal breathing—under such circumstances he does not believe that any surgical operation which has for its purpose the administration of an anesthetic, opening the peritoneal cavity with its subsequent drainage, can be other than productive of the greatest harm and hasten the usual disastrous termination. In reply to the argument which is usually made, that if 2 patients out of 100 can be saved, operation would be still justifiable, he answers that from a painstaking observation of a number of cases he is led to the belief that 5 per cent. would be saved by Nature, aided by such measures as sustaining the patient's heart, saline infusion, etc. Of course, the question will arise as to the accuracy of the diagnosis, but he is sure that we have all in the past operated on many of these cases that were hopeless and have swelled our mortality list and brought surgery into disrepute. Other unfavorable conditions than general septic peritonitis are mentioned, such as jaundice, renal insufficiency, ovarian and uterine cancer; here we can hold out but little promise of any recovery.

19. **Expectant Treatment.**—Jacobi commences with reporting some of his own early mistakes which he says still reveal themselves on sleepless nights even after nearly half a century, and he lays down the following platform, which he thinks should be adopted by the profession: In order to obtain indications for treatment, make a diagnosis. That art is becoming both more accessible and, through honest and hard work, more easy with the aid of modern methods. Remember that most diseases have, indeed, a tendency to spontaneous recovery, but also that recovery is not always complete and that invalidism should not be invited through neglect of treatment. Complications are possible as long as an illness lasts, and with every day cut short, the dangers of an otherwise typical disease are diminished. The experience of old men in the profession who claim they employ less drugs with advancing years, means sometimes either an inability to master new methods of diagnosis, or the knowledge of new medicines or physical remedies. There is no one treatment for a disease adapted to every patient. There is no such thing as a uniform treatment for pneumonia, or for typhoid fever, or, even in spite of antitoxins, for diphtheria or tetanus. We should not try to treat the name of an illness, but the patient.

20. **Treatment of Insanity in the General Hospital.**—Brower points out certain defects in public hospitals for the insane at the present time, that they are too large for proper individualization, too far from the homes of the patients and antiquated, cumbersome, and unscientific in their methods of admission. Also their degradation by politicians which has been too much the case in some of the states. He believes in the advantages of treatment of insanity in general hospitals, in special wards if necessary.

21. **Ventrosuspension.**—From 212 cases of ventrosuspension tabulated from the case-books of Drs. Penrose and Beyea, Woods deduces the following conclusions: 1. That the course of subsequent pregnancies and labors do not seem to be impeded by this operation. 2. That the operation in the great majority of cases carefully selected gives excellent results, and the relief experienced is lasting. 3. That it restores the normal condition of the uterus, and does not substitute a fixed unnatural anteflexion. 4. That the risk is minimum, and the danger from hernia very slight. 5. That by including a small amount of muscular tissue we increase the strength of the ligament without risk to the patient.

23.—See abstract in THE JOURNAL of July 13, p. 137.

25. **Sodium Tungstate Test.**—Benedict has noticed the following in his experience with the sodium tungstate test for combined chlorid in chyme. He was surprised to find that using dimethylamidoazobenzol, the free HCl seemed to have entirely disappeared, that is to say, the red color was lacking from chyme in which sodium tungstate had been dissolved, though previously present, while the total acidity had not correspondingly decreased. He repeated the tests three times, once using heat to dissolve the sodium tungstate. In all three instances the results agreed within the usual limits. The total acidity by phenolphthalein was 88 to 90 degrees free HCl by dimethylamidoazobenzol 50 to 60 degrees. After adding sodium tungstate the diminution of acidity was from 20 to 30 degrees. The diminution corresponding to combined chlorids by alizarin was 19 degrees. The large variation in the application of the tungstate test was one of method, not of inaccuracy. The lower reading—higher reading of total acidity—occurring when the first appearance of a distinct reaction with phenolphthalein was noted; the higher reading —lower total acidity—occurring when, after a lapse of 5 to 10 minutes, repeated increments of sodium hydrate solution were added as the end reaction faded. This fading of end reaction always occurs to some extent, especially when unfiltered chyme is used, owing to the slow neutralization of undissolved particles of proteid. In the present instance the chyme was decanted but was unusually free from such particles. The same chyme, without adding sodium tungstate, did not show a corresponding recrudescence of the end reaction. This phenomenon could not be due to an imperfect preliminary solution of sodium tungstate, as just the opposite effect would have been produced by the gradual solution and consequent diminution of acidity. His first thought, on noting the absence of color with dimethylamidoazobenzol was that the free HCl had also been neutralized, but this was obviously not the case, as the whole diminution of acidity did not equal that due to free HCl.

27. **Incudectomy.**—Progressive hardness of hearing or so-called chronic catarrh of the middle ear is, according to Burnett, associated with impaction of the stapes, and its liberation by the removal of the incus and consequent interruption of the retractive power of the tensor tympani, relieves the condition tinnitus aurium, and ear vertigo disappears. While it can improve the hearing only slightly in the ear affected, the progressive nature of the disorder is altered and the disease arrested. He has been able to observe closely some of the cases first operated on 13 years ago and finds

this result. The only explanation he offers is that the contraction of the tensor tympani, spasmodic in character, being overcome by the removal of the incus in one ear, the synergetic contraction of the tensor in the opposite ear induced by cross influence is also overcome by a beneficial cross influence emanating from the operation on the diseased ear. Several cases kept under observation are reported and the method of operation described. Since 1892 he has operated upon 53 cases of progressive hardness of hearing in order to break the retractive force of the tensor tympani, 41 times by incudectomy, 4 by resection of the long limb of the incus and 8 by tenotomy of the tensor tympani. Incudectomy he considers the preferable operation and proposes to present the results in a future communication.

29. **Meniere's Disease.**—The term Meniere's disease is criticized by Smith, who holds that, if it means anything, it must be restricted to that complexity of symptoms at present recognized as the outcome of what is termed apoplexy of the labyrinth and this must be primary and occur suddenly in patients previously free from ear trouble and enjoying excellent health at the time of the attack. Thus restricted, Meniere's disease is a most exceptional rarity, and if we exclude previous systemic disease as a causative factor, it must be regarded as the result of traumatism. The symptoms of Meniere's disease do not arise, as it seems to have been definitely shown, from a single disease of the labyrinth, but are more or less prominent in traumatisms and various other pathologic changes involving the ear and adjoining structures, and he asks would not the cause of otology be best served and confusion averted by adopting a nomenclature defining as far as possible the location of the various affections of the internal ear without the consideration of Meniere's disease. He thinks that in many instances, injuries to the brain substance proper are the cause of an inability to move in a forward direction. He offers the term tympanic vertigo as efficient and impressive, to distinguish between vertigo due to middle-ear disease and that involving other parts of the ear or neighboring structures.

30. **Malaria.**—The peculiar *x*-fever which follows malaria and is resistant to quinin in the South, is, according to Penn, best considered as post-malarial fever, a sequela of the estivo-autumnal form occurring in susceptible individuals or those whose condition is such as will permit the toxic effects of the germs to continue the fever after the germs have left the body. It is not, practically speaking, a malarial fever at all, nor is it a new fever, but it is a post-malarial fever. This accounts for the irregularity, the frequent mild type of the cases, and the time of their occurrence. He desires to call the attention of laboratory workers to this line of thought and suggests, if confirmed by investigation, the possibility of good effects from serum treatment or antitoxin in these cases.

31. **Syphilis.**—The skin complications of syphilis mentioned here by Engman are tuberculosis, epithelioma, blastomycetic infection, erysipelas, seborrhea, pyogenic infections, mixed chancre, trauma, and hemorrhagic syphilid. He also points out how iodin intoxication may be engrafted upon the syphilitic lesion.

37. **Post-Operative Sequels.**—It was the purpose of Oastler to obtain as far as possible the histories of post-operative sequels of about 200 cases of complete hysterectomy and double salpingo-oöphorectomy and 150 cases of more conservative operative procedures so as to compare the merits of the two. Of the 200 cases selected for the first series, the conditions were carcinomata, sarcomata, fibromata of the uterus, septic metritis, ovarian cyst, uterine rupture, pyosalpingeal abscess, tubercular salpingitis, hydrosalpinx and hematosalpinx and ectopic gestation. The methods employed, whether abdominal or vaginal, did not seem to make much difference. He finds that the symptoms of artificial menopause occur with more regularity and greater severity and are of longer duration than is generally supposed, some women being left invalids. The symptoms are dependent for the most part on removal of the ovaries rather than the uterus; therefore, after suprapubic hysterectomy, there is no indication for leaving the uterus. Also that many cases in which it has been customary to advise hysterectomy can be treated in future by more conservative methods, which have been mentioned, such as leaving the ovaries wherever possible, resecting cystic ovaries and implanting small portions of healthy ovary on the side of the uterus or broad ligament, resection of the tubes or seat of hydrosalpinx or hematosalpinx and draining pelvic exudates and cases of pyosalpinx by the vagina. These conservative methods do away with the artificial menopause, relieve symptoms, and allow patients to continue their sexual life with the possibility of pregnancy.

38.—See abstract in THE JOURNAL, XXXVI, p. 1650.

39. **Kraske Operation.**—Edebohls finds the Kraske operation objectionable; and recommends an operation consisting in removal of uterus, resection of cancerous bowel, and end-to-end anastomosis of the sigmoid and rectum, all performed at one sitting by anterior abdominal incision which he finds in every way superior. He claims its superiority over the Kraske procedure in cases of high carcinoma of the rectum in the following important particulars: "1. A preliminary colostomy and in favorable cases, a secondary operation for the closure of the artificial anus becomes unnecessary. 2. Removal of the sacral glands and all affected tissues posterior to the rectum can be accomplished with greater facility and thoroughness. 3. The liver can be examined for secondary cancerous nodules immediately after opening the abdomen, and, if such nodules be found, the abdomen can be closed without inflicting further unnecessary operative injury upon the patient. The unavoidable conclusion to be drawn from the above premises is that the Kraske operation is never justifiable in women."

41. **Sactosalpinx Hemorrhagica.**—Waldo reports two cases which he thinks demonstrate the fact that hemorrhagic accumulations in the tubes are not always due to ectopic gestation. They are carefully observed and reported and pathologic examinations made and appear to have been due to hemorrhage in the tube independent of any ectopic pregnancy.

43. **Ovarian Symptoms.**—The ovarian symptoms which are commonly attributed to inflammatory conditions are held by Atlee to be often due to other conditions than diseases of the ovaries themselves. He thinks certain other uterine pathologic conditions may cause symptoms most marked by pain referred to the ovaries and that in certain women whose health has deteriorated, though showing no pathologic condition beyond anemia of mild grade, symptoms referable to the ovaries are not infrequent. In women with neuralgic dyscrasia, if neuralgia develops in the lumbo-abdominal distribution, very confusing symptoms may arise, and in cases of oxyluria, symptoms referable to renal, ureteral or vesical dilatation may simulate or lead to a diagnosis of ovarian disease. Besides this we have two great neuroses, neurasthenia and hysteria, giving rise to symptoms simulating disease from pure pathologic conditions. The treatment is the correction of the morbid conditions giving rise to them and with a better diagnosis and understanding of these cases we find the indications for spaying narrowing themselves down to a very small figure as compared with those of the past decade.

47.—See abstract in THE JOURNAL, XXXVI, p. 1727.

48. **Summer Diarrhea of Children.**—An analysis of 555 cases of summer diarrhea was made at the out-patient department of the Babies' Hospital in New York during the months of June, July, August and September, 1900. The cases were all from the tenement population, the majority were under twelve months of age, and only 51 were over 2 years. About 14.5 per cent. were breast-fed, out of those under six months of age, and 10 per cent. between the ages of six and twelve months, though some allowance must be made for mothers' statements in this regard, as there are very few tenement breast-fed infants who are not given milk, soups, tea, etc. The larger proportion were fed on cow's milk diet wholly or in part. Very few took proprietary

foods. One hundred and fifty-seven cases were of twenty-four hours' duration before first seen; 197 had been ill from two to five days, and 76 from five to ten days; 111 had had diarrhea over ten days, and 11 had been ill for two weeks. With some there was simply so-called dyspeptic diarrhea with moderate fever and slight prostration, others had been ill for several days with high fever and were in a critical condition. Nearly one-half recovered within a week. Quite a number lingered along until the fourth or fifth week and some for several months. In 56 the treatment was not continued. Out of 449 treated to the conclusion of their illness, 10 died, the death-rate being a little over 2 per cent. There was one invariable rule of treatment and that was to stop the milk at once. It would be impossible to the great mass of physicians to differentiate bacteriologically the nature of the infection in a large proportion of cases; this has been impressed upon him by considerable autopsy experience. We learn that every case of summer diarrhea must be looked on as dangerous and treated vigorously whether the initial symptoms are mild or severe. He doubts whether, in the majority of cases, the streptococcus or colon bacillus play a very important part. The average case is of gradual onset. If the milk is discontinued, a substitute must be found and the one he finds most useful is cereal water, usually barley water, and where this does not answer, rice water. The directions are: Robinson's baked barley flour, two tablespoonfuls, water one pint, boil for twenty minutes, strain and add water to make one pint when the cooking is completed. Rice is similarly treated. Brandy and whiskey should never be given to children with summer diarrhea, as the dangers of nephritis and stomach involvement are enough without provoking them with liquors. Animal broths should not be added to the diet in too large amounts on account of their laxative effects, but he uses them moderately and with care. Brandy and egg water mixture, so popular with many, is an atrocious milk substitute. Dextrinized gruels have a useful field in summer diarrheas, the dextrinization being of value as it offers more concentrated nourishment. Care should be taken that the cereal water is not at a higher temperature than 100 F. The substitute diet should be allowed to be given at two-hour intervals, if the child will take and retain it in good quantities. Boiled water may be given at any time. The patient should be kept in the largest room, and if there is fever, sponged in cold water for fifteen minutes several times a day. The milk diet is resumed gradually, diluting the barley water, with slight increase every day or every other day, according to the condition of the stools. Various drugs were tried after the initial dose of castor oil. The newer tannin preparations were used in about 50 cases. There are four that may be relied on as of use in this condition, they are, calomel, castor oil, bismuth and opium. The two first were given in every case, and in 26 they were the only ones given. Calomel is preferred in cases where there is vomiting or a tendency thereto and when the case is not particularly urgent 1/20 to 1/10 of a grain at hour intervals. Castor oil is given in all septic cases with infrequent stools and without stomach involvement, in which a prompt washing out of the small intestine is desired. Bismuth was given in 432 cases and frequently large doses, not less than 10 grs. every one or two waking hours regardless of the age of the patient. To be of service it must produce black stools, that is, to be converted into sulphide in the intestine. If it passes through the bowel unchanged, sulphur should be supplied in the form of precipitate of sulphur, a 1-gr. powder given with each dose of bismuth. Opium is indicated if there is pain, tenesmus and frequent stools, and he has found it necessary to use it in 200 of his cases. Four or five passages a day are required to maintain drainage. But when the case is one of intestinal infection with infrequent foul stools or no stools at all, active laxatives are the only medication. Many children die because of the physician's idea that the diarrhea must be stopped. Kerley is not in favor of too frequent bowel irrigation as it may produce injury, straining, distension, etc. He usually employs a normal salt solution, luke warm, if there is high fever. Where there is blood in the stools he has used tannic acid, though he doubts its special value. The method he employs is the soft rubber catheter, No. 14, English, attached to a fountain syringe, the bag of which is held three or four feet above the child's body. When the catheter has been introduced about two inches the water is allowed to pass in slowly, filling the colon. This in a child eighteen months of age will require twenty-four to thirty ounces of water. When this or a lesser amount, at least one pint, has passed in, it is allowed to run in and out at the same time. The general management of the child is important; instruction should be given as to the care of bottle and nipple. He thinks that dispensaries do excellent work in instructing mothers how to care for their children. The municipalities should establish milk laboratories and ice stations for the poor, where these necessities may be obtained free or at a very small cost.

50. **Scarlatina.**—One of the graver dangers of scarlatina is in the invasion of the mucosa of the nasopharynx by bacilli causing scarlatinal sore throat, viz., streptococci. Seibert uses for this condition a prescription composed of tincture of iodin, 2 grams; potassium iodid, 1 gram; distilled water, 120 grams; carbolic acid, 10 drops. A teaspoonful of this mixture is administered every hour. An experience of twenty years has failed to show any carbolic intoxication with this mixture. Mild iodism and slight gastric pains may temporarily be produced. To clean and disinfect the infiltrated mucosa he employs irrigation with 1 to 5 per cent. warm solution of ichthyol repeated every six hours where the infiltration begins to obstruct the passageway between the nares. Where these are insufficient, more vigorous measures are required. During the past year he has treated six cases with local applications of 50 per cent. resorcin solution in alcohol, which he has also employed for the last eight years for the treatment of post-nasal catarrh in infants and children. He reports a case of scarlatinal nasopharyngitis treated with this prescription. He considers it imperative to attempt to destroy the pathogenic bacteria in scarlatina whenever they come within our reach and these resorcin-alcohol applications have proven themselves harmless and are indicated, he considers, whenever the nasopharynx becomes involved.

56.—See abstract in The Journal, xxxvi, p. 128.

58. **Smallpox.**—Towne thinks that modern sanitation has mitigated this disease, and it is not impossible but there may have been an acquired immunity through the vaccination of generations. The hesitancy with which the diagnosis has been made in this epidemic is due to various causes, inexperience with the disorder being one cause.

60.—See abstract in The Journal, xxxvi, p. 128.

62.—Ibid.

63. **Hemophilia Neonatorum.**—The nature of hemophilia has not been cleared up and Greef reviews the theories and findings in congenital cases. Three cases are reported, in two of which postmortems were made. He is inclined to believe that the condition rests upon abnormal permeability of the vascular walls. The large majority of children succumb and little can be done by treatment. He is inclined to think that many of the cases classed as melena neonatorum were fatal cases of hemophilia.

65. **Hemorrhagic Disease of New-Born.**—Brown reports two cases of hemorrhagic disease of the new-born, the clinical history of which corresponds more exactly with the classified description of Buhl's disease. The ictero-cyanotic skin, extreme wasting, marked gastro-intestinal hemorrhage, eczema, absence of continuous temperature and time of occurrence make points of agreement. The treatment in case 1 was with gelatin tubes containing about 1 dram, heated and diluted and fed to the child with very marked perceptible effect. In the second case gelatin was used in another form and the hemorrhage rapidly decreased.

68. **Streptothrical Infection.**—Musser reports two cases of streptothrical infection, one which, although postmortem observation was lacking, was interesting as determining the

possibility of recognizing the more or less obscure conditions met with in pulmonary streptothrical infection and the other as showing the doubtful symptoms and rapid course of localized cerebral infection by these organisms. He closes his paper with the following conclusions: "1. That the streptothrix in some varieties is pathogenic to man and gives rise to inflammatory, suppurative and necrotic lesions in the lungs and the skin, and by metastasis, probably in the brain and spinal cord and rarely, other organs (the kidneys). 2. That, while this pathogenicity is more than likely, and is primary, yet it must be remembered, it may be a secondary growth in the course of other infections. 3. That, in the pulmonary cases especially, death is due to a mixed infection. 4. That so-called sterile abscesses may be instances of streptothrical infections. 5. That afebrile processes may be due to this infection, or, conversely, this affection may be unattended by fever. 6. That the morphological relations to tubercle bacilli and allied organisms must be remembered. 7. That clinical observation and laboratory studies have yet to determine the clinical course of the streptothrical infections and their relationship to other streptothricæ on the one hand, and to tuberculosis on the other. They are not unlike other streptothrical infections, if these clinical facts are true, in that in actinomycosis, for instance, we find frequently a chronic afebrile course." He says these questions are as yet *sub judice* and require laboratory investigation and future clinical observation. As a suggestion of the nature of the infection, the question of leucocytosis should be looked into.

69.—This article has appeared elsewhere. See THE JOURNAL, xxxvi, paragraph 49, p. 1894.

73.—Ibid., paragraph 25, p. 1738.

77. **Commitment of the Insane.**—Fletcher criticises severely the old and new laws regarding the commitment of the insane in Indiana, maintaining that they are lacking in proper securities to those charged as being insane and in many respects take the form of secret inquisition. He does not believe that many non-insane persons are detained in public asylums. He thinks it impossible with the officers of these institutions, but it is perfectly possible under the Indiana law for persons to be picked up without chance for defense and committed as insane.

80. **Feather Beds and Colds.**—Hessler considers the use of feather-beds and the dusty condition developing after their long use, responsible for many of the irritations of the respiratory tract. The same objection applies to curtains, carpets and tapestry that collect dust and he particularly mentions the German fashion of using feather beds as objectionable.

86.—This article has appeared elsewhere. See THE JOURNAL, xxxvi, title 142, p. 1736.

87.—Ibid., July 27, paragraph 63, p. 287.

89. **Advancement.**—This term is defined by Valk as the bringing forward the insertion of the tendon of one of the straight muscles of the eye, from its normal position of attachment to the eye-ball to another in the same plane, but nearer to the cornea, but he includes also the shortening of the muscle plane at its insertion into the sclera. He discusses the different operations and describes the one which he has found most advantageous, which he credits to Savage, though he himself worked simultaneously in developing it. The operation as he performs it in latent, fixed or paretic squint, is described as follows: "After the eye has been properly prepared with a solution of boracic acid and a solution of cocain used or an anesthetic if necessary, the lids are separated by a speculum and the conjunctiva raised with the forceps over the lower or upper point of the insertion of the tendon. I then make a vertical incision followed by one horizontal, forming an L. This is dissected loose from the underlying tissue and then an opening is made in Tenon's capsule and the small hook is passed beneath the tendon, as the point of the hook comes out another hook is inserted in an opposite direction and the two hooks forcibly drawn apart, so exposing the tendon and part of the muscle. I now pass the small instrument, called twin strabismus hook, beneath the muscle and the hooks are allowed to separate by the action of the small spring in the joint and the two hooks are then removed. We now have the muscle and the tendon fully exposed and ready for the suture. Now, taking a piece of sterilized catgut from the capsule, we thread the needle and pass it first through the lower part of the tendon, then through the muscle, as far backward as we wish to make the 'tuck,' passing from within outward. It then goes across the belly of the muscle and is passed through, from without inward and back to the tendon where it passed from within outward, at a point corresponding to the first insertion. As the ends are tied over the tendon at this fixed point, we see readily the 'tuck' formed as the muscle belly is drawn forward and its long axis shortened. However, in case of fixed squint, I do a complete tenotomy of the opposing muscle before the suture is tied." The question when this operation is indicated seems to him the most important. He has no confidence in any method of examining that will "take the higher centers off their guard," or destroy the fusion force or guiding sensation of the eye and he uses the tests that destroy it simply as confirmatory. He asks, do not physiologic conditions show that Nature intended the eye should have power to move the eyeballs more in one direction than others, that the interni should be the most powerful—even independent of the power of convergence—and next, the externi, and in following order the inferior and the superior, the weakest of all. Should we not find, he asks, that the power of adduction is two to four times greater than that of abduction, and the power to turn the eyes downward somewhat greater than that of sursumduction, and, therefore, he fixes his standard as that in which the power of abduction is more or less one of fixed condition under which the eyes will diverge 6 or 8 prism degrees, so as to fuse or blend the retinal images, and then we can expect to find the power of abduction anywhere from 12 to 30 prism degrees without any muscular imbalance. Similarly we find the sursumduction one, two or three degrees in each eye and the opposing muscle will show deorsumduction of about one degree greater. With this condition of the muscular balance fully confirmed by several tests, he does not think we can have any muscular imbalance, without regard to what the other tests may develop when deprived of the fusion force. In defining noticeable modifications from that standard for his indications for operation, he points out the indications in various conditions, esophoria, exophoria, diplopia, convergent squint, etc. From his past experiences with the operation of advancement and shortening the indications depend upon one of degree, in reference to the change in position of the visual line; the power of the weak muscle, and that of imbalance of the muscle apparatus, as shown by the tropometer and tests of duction of prisms. He considers that advancement is fully required when we have a deviation of the visual line of more than thirty degrees of the arc. He concludes "That shortening is indicated in all cases of squint, if not too great, less than thirty degrees, combined with tenotomy, of the opposing muscle if necessary. That in all cases of imbalance—without any deviation of the visual line—the operation of shortening the weak muscle, thereby improving its power to turn the eye under the stimulation of the fusion force, is the best in my hands, as I have fully proved its application and usefulness. That the operation of shortening is also indicated in cases of paresis and the so-called paresis of divergence, in which we have a latent insufficiency of the muscular power, that frequently becomes manifest when they are about 40 years of age and presbyopia with hyperopia is present. That in all cases of heterophoria or latent squint, either lateral or vertical, the best results will always be obtained by the operation of shortening, without any fear of an over-correction, as long as the guiding sensation of the eye is free to act on the cerebral centers, as the process of healing takes place."

90. **Chalazion.**—Hale defines chalazion as tumor of the lid involving the Meibomian gland with obliteration of the glandular elements; limited by a surrounding membrane in which are found the perverted secretion of the earlier gland, glandular debris, micro-organisms and sometimes pus. He

thinks that the general health has much to do with its formation, some disorders producing a thickened secretion, and that the constant rubbing of the exposed lid, aided perhaps by germ infection, starts the inflammation which leads to chalazion. The only thorough treatment of this condition is excision in some cases, followed by the curette. Operation through the conjunctiva is more often called for in chalazion of the lower lid where the tarsus is thinner and the conjunctiva less intimately attached. In the upper lid the usual choice is excision through the skin of the lid.

100. **Smallpox.**—The epidemic of smallpox, the diagnosis of which is questioned by some in Clarksville, Tenn., is reported by Runyon, who calls attention particularly to the failure of glycerinated vaccin lymph in these cases. He does not know where the fault lies in the substance used. It may possibly have been in the original stock, or possibly from some other cause, but he would not risk the protective power of any glycerinated virus until he had followed it up with a point to make sure the subject had been rendered thoroughly immune to vaccination.

108.—See abstract in THE JOURNAL of July 13, p. 138.

109.—Ibid., p. 137.

111. **Pyemia.**—The cases of septic pyemia occurring early this year in Colorado and reported by Hall suggest bubonic plague in some of their symptoms and are of interest on that account. He has collected together 14 cases, 2 of which occurred in Chinamen and in connection with the existence of plague in California at the time caused some uneasiness. The occurrence of so many isolated cases of septico-pyemia within a few weeks in adults of previous good health was certainly unusual. His own opinion as to their existence is that many originated, as some certainly did, from a streptococcic sore throat, possibly not severe enough to attract much attention. He refers also to 2 cases of pneumonia accompanied with sepsis, which were fatal. The majority of the patients with abscess recovered; in many there was no bacterial examination made. In a few where they were made, a pure streptococcus infection was found.

116. **Nose and Throat in Chest Diseases.**—The object of Scheppegrell's paper is to emphasize the fact that the abnormalities of nasal respiration is due to partial or total destruction, atrophy, or other disease of the nasal cavities, may develop irritation of the lower respiratory organs. Therefore, in treating diseases of the chest, the possibility of irritation due to disturbance of the upper respiratory passages should not be overlooked, and no case of bronchitis or asthma should be considered incurable unless the nose and throat have been examined and abnormal conditions corrected, if possible. Often this examination, if made at all, is delayed until secondary changes have taken place, making cure no longer possible, but still some relief may be hoped for under proper management.

118. **Chloroform and Nitrite of Amyl.**—Mellhenny, on Senn's suggestion, started the use of nitrite of amyl. 1 dram, to a pound of chloroform in anesthesia, and the result was excellent. Nitrite of amyl acts as a decided check-rein to the chloroform, especially as to its effect on the circulation and respiration. It seems to modify the ill effects without interfering with its anesthetic properties. The stage of stimulation is much modified, the face does not become flushed, breathing is not labored or rapid, the stage of depression is often absent, the heart beats regular and strong. The pupils will be very misleading to a person giving nitrite of amyl with chloroform for the first time, for it requires very close attention to notice their response to light. Vomiting is very rare. The patient usually recovers consciousness very rapidly and there is no headache or fulness of the head as might be expected. The urinary secretion is increased, but contains no sugar or albumin. The body temperature is somewhat lower. From his experience he would greatly prefer this combination to chloroform alone.

129. **Uncinariosis.**—This term, which is applied by Stiles to the condition called anklostomiasis, is described as it occurs in man. A case is reported, showing that it exists in Virginia and he also had cases sent to him for confirmatory diagnosis from Ohio and the Rocky Mountain region, in which the condition was simulated by plant fibers. There is only one way in which it can be positively diagnosed, viz., by examination of the feces, but in this way its recognition is easy, and no special technique is necessary. The use of a moderately high power microscope will show eggs, though we must be careful not to mistake the eggs of ascaris for those of uncinaria, or those of oxyuris. The ascaris eggs have a thick gelatinous, often mammillated, covering and those of oxyuris have a thick asymmetrical shell, one side being almost straight. The whip-worm type, trichocephalus, possesses a smooth thick shell apparently perforated at each pole, and unsegmented protoplasm. The eggs of uncinaria are elongated ovals with thin shell and protoplasm either unsegmented or in the early stages of segmentation. Gross examination of the feces where the microscope is impracticable can be made by washing the stools thoroughly in a bucket and examining the sediment for worms about an inch long, about as thick as a hairpin or hatpin, with one end curved back to form a hook. The most commonly used drugs for treatment are thymol and male fern. The stools should be disinfected with quicklime. He describes the life history of the parasite, its zoological characteristics, the means in which it injures by biting the intestinal walls and also gives the different species found in different animals, the uncinaria duodenalis being the human parasite.

135.—This article appeared in THE JOURNAL, XXXVI, p. 1599.

136.—Ibid., p. 1606.

137.—Ibid., p. 1611.

FOREIGN.

British Medical Journal, August 10.

Plague and Its Prevention as a Disease Communicable from Animal to Man. DAVID SAMUEL DAVIES.—The published articles on plague were barren of interest to the epidemiologist, according to Davies, until Cantlie suggested that the endemicity of the disorder in certain ports of Central Asia, as it coincided with the distribution of a particular subfamily of rats, was possibly in causal relation with a definite rat habitat. Evidence rapidly accumulated, ultimately culminating in our present knowledge that plague is primarily an epizootic disease communicable to man rather than an epidemic disease communicable to animals. The records of the Sydney outbreak of plague may be taken as a typical manifestation of the introduction of plague epizootic amongst a wholly civilized white population. The following facts stand forth: "I. The disease did not spread by person-to-person infection. 2. The observed facts as to its spread can only be satisfactorily explained by assuming an animated host, not human, to diffuse the infection in place, and a second host to communicate the infection to man; the two hosts are the rat and the flea. 3. 'Contact' in regard to plague infection does not necessarily mean one who has lately been associated with a plague patient; it means rather one who has been exposed in more or less close association with plague rats within five days. 4. Nearly all the cases were bubonic in type, a type very little infectious. 5. The outbreak originated in connection with a wharf, almost certainly through the handling of plague rats from infected ports; and the history of further infection in the town pointed definitely to the same means of distribution." Davies remarks that the importance of rats need hardly be questioned or dilated upon in the spread of plague. He asks, are our present regulations sufficient to prevent the introduction of plague, or, in other words, are the means accurately adapted to its etiology? It is a great blunder to treat pestilence uniformly. The present local government regulations in England against cholera, yellow fever and plague are practically transcripts of the former regulations against cholera, to the circumstances of which purely human disease they are excellently adapted. Up to the spring of 1901 no further official instructions regarding

plague were issued. He calls attention to the fact that the port of Bristol found itself in a peculiar position in the beginning of the present year. A grain vessel arrived from an infected port with no history of illness, and, therefore, not infected under the regulations or liable to any detention or supervision. For some months special precautions as to off-mooring of vessels from the quayside, disc-guarding of ropes, up-lifting of gangways, and day and night watchmen had been enforced as stringently as the absence of special powers would permit, and careful watch was kept. Thirteen dead rats were found in the forehold and plague as the cause of death certified, but not until the cargo had been partly discharged and distributed. The ship was dealt with as an infected ship and 226 rats were destroyed. He says to bring infected rats to a port in unlimited numbers and then rely on attempts to prevent them coming ashore is obviously taking the evil at the wrong end. It is impossible to destroy all rats on a loaded ship, while it is not difficult to practically do this in an empty one. The best policy, therefore, is to secure rat-free merchant ships, and the author asks: Is this practicable? Dr. Ashburton Thompson suggests that if vessels which engage in coasting voyages, lasting three weeks to a month, are fumigated at the point of departure before loading and at the ultimate ports touched on the voyage, few if any rats are discovered to remain, and this statement applies to steam vessels of various tonnages up to 4000. This method has been carried out, he says, under intercolonial agreement requiring a vessel to produce a certificate of fumigation, without which they are subject to detention. The method, therefore, is practicable. Davies says it is high time our knowledge of the etiology of plague be utilized in international as well as in other traffic and the rats must be destroyed before loading the ship.

The Lancet, August 10.

Mortality from Phthisis and Tuberculous Diseases Considered in Some Aspects Which May Be Demonstrated by Means of Life Tables. T. E. Hayward.—The author publishes and discusses tables showing the total expectancy of life under various aspects, and the difference produced by excluding phthisis as a cause of mortality. He also gives tables showing the total life capital of England and Wales for the middle of the year 1891, and to what extent this life capital would have been increased by, 1, eliminating phthisis, and 2, by doing away with all other tuberculous disease as a cause of mortality. He finds that the average period of working life would be lengthened on the average by very nearly two years. The years of human life are now capable of being translated into terms of money; it is evident that the ravages of phthisis may entail a very serious financial loss to the community. He admits that this work is not that of a physician, but he leaves it to the actuaries to measure this and suggests to those concerned in the management of industrial and other life assurance societies that it might be an act of profit to them to subscribe something toward the establishment and management of sanatoriums for the treatment of phthisis.

On the Physiologic Cure of the Morphia Habit. W. Oscar Jennings.—The author claims that before the publication of his little work in 1890 there existed no treatment of the morphin craving founded on therapeutic indications. His first observations were made in his own case and he has had opportunity of verifying these during the last ten years. He remarks that there are many persons who lack the will power to carry out the treatment alone. There are others who want to get well and have no real craving that prevents them, but are suffering from hysteric neuro-mimetic craving. In these cases great tact is necessary. Such patients should never know how much morphin they are taking or what other agents are being administered. The symptoms, though really distressing, are entirely ideal. If a patient is seriously desirous of giving up, he should commence by renouncing all liberty of action during the treatment, give up his syringe and his solution and be guarded against all temptation. When the morphin is associated with some other addiction, the first thing is to suppress the other stimulant, whatever it may be. This is not difficult if it be alcohol or cocain. The quantity of morphin taken becomes more satisfactory instead of being antidoted, as it were, by the other stimulant when they were taken together. Jennings believes in the gradual reduction as slowly as is necessary to effect a cure without distress. It is desirable first to bring about a change as soon as possible in the mode of administration of the drug. If this can be effected early, so much the better; but there should be a gradual substitution of the rectal for the hypodermic injection the moment the patient is reduced to 2 grains by the skin. Two grains would seem to be the vital requirement; above 2 grains morphin can be found in the urine; below this it seems to be assimilated. From this point onward twice as much should be given by the rectum as by the skin. The great point is to get rid of the syringe, to wean the patient from his accustomed stimulant. Moreover, an injection by the rectum is not agreeable and has not the fascination that leads to the constant use of the syringe. The patient is satisfied with what is really required to prevent discomfort. In giving morphin it should be remembered that this is not a sedative but a stimulant, the withdrawal of which causes a suppression of vital force and gives rise to general functional disturbance greater than would result from the privation of other stimulants. The utility of heart tonics is evident. The next great factor of craving is hyperacidity of the stomach and organs generally. This suggests the administration of bicarbonate of soda, a method to which he has been calling attention for thirteen years and the importance of which is now recognized by every writer. Bicarbonate relieves craving so far as it is caused by over-acidity in the same way that heart tonics relieve it when caused by cardiac sluggishness and nothing more. Other means of relief may be supplied as indicated, but the third of his therapeutic triad is the hot-air bath. The effect of the bath is largely due to its tonic and sedative action, but it may also act as an eliminator of some excitant of craving. This may possibly be the oxi-di-morphin which is formed in the body and is considered by Marmé as its chief cause. He insists on the non-alcoholic régime. There must be no reading in bed during the progressive reduction. For insomnia, cerebral galvanization is sometimes magical, but if unsuccessful the best hypnotic is trional. The fluid extract of coca and kola are frequently of use and the only other drug taken constantly by his patients is valerianate of ammonia. He warns against the synthetic derivatives of morphia, such as dionin and heroin, which can get up a worse condition than morphin itself. The latter is only second to cocain as a drug to be avoided. It has been said that ex-morphin habitués are subject to periodical periods of craving, and these are more likely to occur in those who have undergone the slow reduction. These are errors. One of the best proofs of the progressive plan is that when properly carried out the patients gain in weight. One of the consequences of this, however, is a tendency to hyperchlorhydria and excessive uric acid, both of which are factors of craving. Besides this the ex-habitué is generally polydipsic and boulimic and does not restrain his appetite, drinks of alcoholics and eats in proportion. As he is easily tired, he has a disinclination to be active. He is nearly always saturated with uric acid and on the verge of bilious or gastric failure. This is the cause of what is called after-cravings. We must always remember that every morbid sensation during the past addiction having been treated with morphin, every malaise in the future will suggest it. The best proof that these are not real cravings is the result of treatment, for after being properly treated the cravings will disappear. When the ex-habitué is careful to lead an abstemious life he is not liable to such cravings. Everything should be done to keep up a healthy tone of the system, taking exercise as much as possible without fatigue; the regular use of Turkish baths is also specified. The remainder of his paper consists in an account of cases illustrating the different phases and forms of the condition and the results of special treatment.

Electrolytic Transmission of Sulphur Through Pig's Skin, and Its Therapeutic Value in Eczema, Gout, etc. Francis William Smith.—Smith has experimented on pig's

skin and found that sulphur can be driven through this substance from Harrogate sulphur water by electricity. The therapeutic value of this treatment is in its connection or use of the electric current with the baths. The fact that many cases of long-standing eczema have been benefited under the method would justify this treatment.

Bulletin de l'Academie de Med. (Paris), July 23.

Preparalytic Hemichorea. BOINET.—Bechtereff has recently published the case-report of a man of 68, suddenly seized with left hemichorea, subsequent to a violent emotion. He died fifteen days later with symptoms of paralysis of the heart. The autopsy disclosed a circumscribed hemorrhagic focus in the posterior portion of the optic layer. Boinet describes a case in which a sudden hemichorea appeared, followed by atrophy of the muscles of the left arm and leg, with corresponding facial asymmetry. In a second case, hemiathetosis and hemichorea coincided with the atrophy of the muscles, deviation of the tongue and facial asymmetry on the side affected. He has also witnessed a case of rhythmic hemichorea in a patient with general paralysis. He attributes this preparalytic or postparalytic hemi-athetosis or hemichorea to an interruption of the conductors connecting the central ganglia with the cerebellum—the route traversed including the superior pedunele of the cerebellum, the red nucleus, the optic layer, the internal capsule and the anterior portion of the lenticular nucleus.

Tuberculous Rheumatism. A. PONCET.—Three cases are described which presented the clinical picture of acute articular rheumatism. Bacteriologic investigation disclosed the tubercle bacillus, and inoculations of guinea-pigs confirmed the tuberculous nature of the arthritis. Poncet proposes the term "pseudo-rheumatism of bacillary origin" for the affection.

July 30.

Treatment of Chorea by Immobilization. HUYGHE.—The method of treatment described is a sort of auto-suggestion, and has proved invariably successful in an extensive experience. The patient is given a little chloroform—not enough to anesthetize—the limbs are massaged vigorously and placed in splints, immobilizing them for five or six days. If the slightest choreic movements are noted after this interval, the treatment is recommenced. The patient is all the time under the influence of auto-suggestion. He no longer sees his limbs, and forgets to move them. The treatment is entirely harmless and can be applied to all varieties of cases and in all kinds of surroundings.

Latent Cardiopathy and Sudden Death. KELSCH.—Cases may occur anywhere, but they are best studied in the army in which all the factors, both of cause and aggravation, are magnified. Kelsch has collected thirty cases of these non-rheumatic cardiopathies, developing without symptoms, and revealed only at death, which is precipitated by some extra exertion or excitement. The original cause is some poisonous influence—in which alcohol takes the lead—or the results of infection—diphtheria, typhoid fever, la grippe or an eruptive disease—or the rudimentary lesion may be the result of intoxication from infectious products. Overexertion or excesses of any kind, start these latent rudimentary lesions into an evolution which progresses insidiously to the fatal termination.

Centralblatt f. Chirurgie (Leipsic), July 27.

Hints for Cystoscopy. S. GOLDBERG.—Olive oil is better than glycerin to lubricate the tip and angle of the cystoscope. Neither cocain nor chloroform are so effective for anesthetizing the bladder in certain cases as 50 c.c. of a 5 per cent. solution of antipyrin, left for ten to twenty minutes, and then washed out before the introduction of the cystoscope.

Extirpation of the Appendix Between Attacks. M. JAFFE.—In certain cases of appendicitis, the process may develop without much disturbance, but may leave adhesions, infiltrations and cicatricial formations from perforation of the appendix into the cecum, or a similar lesion. Instead of the vain search after the appendix in such cases, Jaffe recommends resection of the portion of the intestine involved, and in case of stenosis, enteroanastomosis.

Deutsche Med. Wochenschrift (Berlin and Leipsic), July 25.

Therapeutic Application of External Palpation of the Rectum. W. EBSTEIN.—Palpation of the rectum through the gluteal groove almost invariably reveals that it is filled with accumulated fecal matters. By massaging from above downward it is possible to expel these contents, and the massage strengthens the muscular action of the rectal walls. The massage can be done by the individual himself, and will be found a useful therapeutic measure in case of stagnation and torpid muscles.

Multiple Hemorrhages of Face and Conjunctivae. HOPPE.—A sudden pressure on the thorax has been known to induce multiple hemorrhages in the face and conjunctivæ. The phenomenon was consecutive to trauma in the nine cases on record, but Hoppe observed a case in which it followed violent retching. The patient, a man of 35, had eaten mushrooms and fearing that they were poisonous, tried to vomit them by tickling his throat and retching. All the cases were distinguished by the swollen cyanotic aspect of the face, and the numerous hemorrhages, mostly petechial, with transient disturbance of sight.

August 1 and 8.

Acromegalia. A. FRAENKEL.—Four cases of acromegalia are described with the postmortem findings. Nothing was found peculiar to the disease in any organ, except a tumor in the hypophysis in each case. The tissue of the tumor showed alveoles with granulated cells and free vascular ramifications, evidently derived from the epithelial elements of the anterior lobe. In one case, the cells were almost exclusively free from granulations, with many polynuclear and round cells. The posterior lobe of the hypophysis was intact in all four cases. The hereditary character of acromegalia was evident in one case. One was not the complete type of acromegalia, but seemed rather a transition between this and gigantism.

Disturbances in Heart Action Not Due to Organic Troubles. T. RUMPF.—Several cases have come under Rumpf's observation, of disturbances in heart action noticed after considerable loss in weight from a course of treatment for obesity. He gives illustrations of the most severe case of this kind, showing that the apex changed its position by 13 cm., according as the young man lay on the right or left side or stood erect. The loss of the fat in the abdominal cavity after the weight had dropped from 238 to 153 pounds, evidently caused the previously stretched diaphragm to sag, and this allowed the displacement of the heart. The symptoms indicated cardiac insufficiency, but Rumpf advised the patient to cultivate his former obesity, which he did, with the complete disappearance of the heart disturbances, as confirmed by an examination thirteen years later. Rumpf has also observed two cases, simulating cardiac insufficiency in the symptoms after a hearty meal, or after eating certain foods, but vanishing as the stomach became empty. The troubles are due in such cases to the mechanical interference with the heart's action by the diaphragm distended by gases in the stomach. The cases described were observed for twelve years and no signs of cardiac insufficiency beyond the functional disturbances have developed. The heart disturbances may be of a reflex nature. The pulse may be accelerated, irregular or interrupted, or may show a second systole with no complete diastole. He calls attention to the variations in the heart action after eating and warm baths, observing that this physiologic variation is sometimes accepted as the result of treatment at a health-resort.

Muenchener Med. Wochenschrift, August 6.

Further Research on the Globulites. H. BUCHNER.—The results of further study of the globulites described in THE JOURNAL of August 17, p. 480, show that they are composed of barium sulphate. The barium is evidently derived from the peptone, while the sulphate is a product of the leucocytes themselves. The tests also demonstrated that any albumin or albuminoid substance from one species of animal attracts the leucocytes in another species with a specific

"Lockreiz," that is, acts as a stimulus to their local accumulation.

Injuries of the Vessels of the Root of the Mesentery. WILMS.—On the basis of two clinical cases and experimental tests, Wilms asserts that the superior mesenteric vein can be ligated below the pancreas without resulting gangrene of the intestine. It is dangerous to ligate it above the pancreas, where it merges into the portal vein.

Duplicity of Protopathic, Malignant Tumors. R. L. GRUENFELD.—Eight cases of the simultaneous occurrence of two varieties of malignant neoplasms are reviewed and a case personally observed is described. In Becker's case a melanosarcoma of the cheek and cancroid of the eye and ear appeared after extirpation of a rodent ulcer on the nose. In Niebergall's case a carcinoma, a fibro-sarcoma, a myoma and some polypi were found in one uterus. In Kretz's, an endothelioma of the dura mater coincided with a carcinoma of the esophagus. Other cases were those of a lipomyo-sarcoma in each kidney, associated with a psammoma in the brain and a carcinoma in the stomach; a carcinoma in the pancreas with multiple angio-sarcomata in the liver, and a case of round-celled sarcoma and diffuse adeno-carcinomatous proliferation in the same uterus. There are nearly a dozen cases on record of double carcinomata or other malignant tumor, including Albert's case in which both breasts were the seat of primary carcinomata; Carriere's with symmetrical epithelioma in each kidney, and Bucher's with a primary carcinoma in the right breast, six years after the extirpation of a similar tumor in the left. In the new case reported by Gruenfeld, a diffuse, infiltrating carcinoma of the rectum coexisted with an endothelioma originating in the posterior lobe of the hypophysis cerebri or in the adjacent dura mater—it was impossible to determine which. No clinical symptoms had been observed during life suggesting acromegalia or other probable consequences of a tumor in the hypophysis. Heusser has described a somewhat similar case in which a carcinoma of the rectum coincided with an undiagnosed lymphosarcoma in the hypophysis. Köhler found 8 sarcomata among 37 cases of tumor of the hypophysis, but none resembling an endothelioma.

Treatment of Motor Aphasia. VIDAL.—There are few fields more promising than the treatment of motor aphasia, especially when the memory is retained. The chief point in treatment is exercising the patient in the pronunciation of the words or syllables in which he is defective. It is important to study first, the sounds which he finds most difficult to pronounce. In one case it is the vowels, in another the labials, and so on. He must be trained to watch the lips of the speaker, and to watch his own lips with a hand glass. Gutzmann recommends teaching the patients to write with the left hand, as a means of educating a new, right speech center. Vidal, however, considers this too much of an effort for a patient past youth. The chief difficulty he has encountered in curing motor aphasia, is that occasionally mental effort causes headache, on account of the preceding apoplexy.

Wiener Klin. Wochenschrift, August 1.

Elimination of Chloroform from the Respiratory Organs. K. BUEDINGER.—In the tests reported in this communication, the elimination of chloroform continued for several days after the anesthesia. The chloroform clings to the sputa for days, and consequently its irritating effect is not restricted to the time of the narcosis, but persists long after. In persons with much mucous secretions, the chloroform is eliminated less rapidly, as it evidently combines with the phlegm and this may be a factor in the nausea and vomiting. It is evident that the removal of all accessible mucous secretions is indicated in all cases of protracted chloroform narcosis.

New Points in Skiagraphy. G. KAISER.—The rays are collected in a lead funnel which thus concentrates their action on the spot desired. Kaiser also states that he uses tubes made of red or blue glass, and finds that no symptoms of irritation have followed, no matter how long the exposure or how intense the light, since he began using these colored tubes.

Klinitchesky Journal (Moscow), May.

Clinical Significance of Myoidema in Cerebral Affections. HANNOUCHKINE.—In 84.8 per cent. of 355 cases of various cerebral affections examined at Moscow, myoidema was noted, pronounced in 73.8 per cent. and slight in 11. It is not pathognomonic of any special disease, as it was encountered in 57 to 100 per cent. of the 22 different kinds of cerebral affections investigated—constantly in the 11 cases of epilepsy and 11 of delirium tremens.

June.

Anatomy of Atrophy of the Intestines. P. KUSSKOW.—Examination of the intestines in infant cadavers, rabbits and kittens, has convinced Kusskow that others have been mistaken in their descriptions of some of the alterations noted in atrophy of the intestines in nurslings. The anatomic picture that Nothnagel and others have described is, in reality, merely the effect of putrefactive processes, chiefly due to distension of the intestines. No reliability can be placed on signs of atrophy except in undistended portions of fresh intestines. In the distended portions, the alterations can be attributed to atrophy only in the absence of destructive processes from distension and in case the lesser number of glands and orifices of the follicles fails to correspond with the extra thinness of the tense mucous membrane.

Vratch (St. Petersburg), June 1 and 8.

Early Diagnosis of Tubercular Peritonitis in Children. A. A. KISSEL.—A large number of cases are described in detail out of Kissel's personal experience of fifty-four little patients with tubercular peritonitis. He states that it occurs far more frequently than is generally recognized. In fact, he asserts that almost all the cases of so-called spontaneous abdominal dropsy are in reality nothing but tubercular peritonitis. It may commence with a stormy onset, but in the vast majority of cases it develops insidiously and the family notice merely that the child is growing thin and pale. Under general tonic treatment the effusion may be absorbed and the child restored to perfect health. The diagnosis is aided by the discovery of simultaneous pleuritis with effusion. The most important sign is the thickening of the layers of the peritoneum observed when a fold is pinched up between the fingers—never found in a non-tubercular affection. Even in the absence of any objective manifestations and in apparent health, a thick growth of more or less recent tubercular masses may be palpated in this way on the surface of the peritoneum. The ascitic fluid is very rich in albumin and has a high specific gravity. The diagnosis is most difficult in the rare cases in which a chronic ascites coincides with a tubercular pericarditis.

June 15.

Tuberculosis of the Lymphatic Glands. B. K. FINKELSTEIN.—Ten years' study of this subject with 456 patients, has convinced Finkelstein that tuberculosis of the lymphatic glands is the preliminary to very serious affections. The appearance of small tumors in the glands is an indication of an approaching serious affection. General treatment is sufficient to cure tuberculosis of the glands in the first stage, but in all other stages, operative treatment alone affords favorable results. Injections of arsenic, tuberculin, zinc chlorid and silver nitrate merely hasten the destruction of the gland. The most effective local measure is the application of heat. General treatment and good sanitary surroundings are indispensable to prevent recurrences. In his experience, 7 patients were under 10; 329 or 72.1 per cent. between 10 and 20; 97 under 30; 18 under 40; 3 between 40 and 50, and 2 between 50 and 60. Out of the 201 operated on he has been able to trace only 9 for one to five years after the operation, who have nothing left of the lesion but a linear scar. Recurrence has been known to occur in 43, but the majority of the operated patients have been lost sight of. The wretched hygienic environment of most of the patients has undoubtedly nullified the surgeon's efforts in many more cases than these.

Application of Psychotherapy to Children. R. A. PETERS.—This communication describes a number of cures

of hysteric affections, incontinence of urine and other neuroses in children between 8 and 15, by suggestion in hypnosis. Peters calls attention to the difference between hypnosis in children and in adults, considering the former essentially different from the latter. In only three out of forty children thus treated was he able to induce the hypnotic sleep as in adults, without verbal suggestion, leading to catalepsy, lethargy and somnambulism. These three were girls of 12 to 14 with chronic hysteria. In all the others, the hypnotizing measures had to be accompanied by verbal suggestion for each stage of the process. The sleep induced was light; somnambulism could be induced, but never catalepsy or lethargy. The awakening is different also. The usual measures, blowing in the face, etc., only caused the children to shut their eyes more tightly and never aroused them, unless accompanied by the verbal command to wake up. This pseudo-hypnotic sleep can be induced in healthy children as readily as in the nervously predisposed, and it is never accompanied by any unpleasant sensations.

June 29.

Streptococcus in Articular Rheumatism. V. E. PREDTETCHENSKY.—Pure cultures of the streptococcus were derived by this writer from the blood in two out of five cases of typical acute articular rheumatism. The cultures inoculated into animals reproduced a joint affection resembling in every respect the affection in man whence they were derived.

July 6 and 13.

Histologic Changes in the Puerperal Uterus in Streptococcus Infection. I. J. KLIFINE.—A long series of experimental researches are reported with the histology of the uteri of gravid rabbits inoculated with cultures of the streptococcus in various ways, sometimes in the mucosa of the vagina, sometimes in the cornu of the uterus or directly into the blood. Marked histologic alterations were observed in every case in the rabbits submitted to this acute streptococcus infection, alike in all cases. The administration of antistreptococcus serum, however, attenuated or entirely prevented these histologic changes. The serum evidently affects the cellular elements in such a way as to diminish the toxic action of the streptococcus. All the animals inoculated at the time the litter was cast, and then treated with the serum, invariably survived the control animals.

Differentiation of Diphtheria Bacilli. I. A. SHABAD.—The combined association of pseudo-diphtheria bacilli and of virulent and non-virulent bacilli in varying proportions, has been a fruitful source of error in their differentiation. The specific reaction of these different kinds of bacilli, however, to Neisser's stain is a constant and reliable means of differentiating them in bouillon cultures.

Etiology and Serum Treatment of Malignant Neoplasms. G. M. VLAEFF.—Blastomycetes derived from carcinomata in man have induced neoplasms with the characteristics of malignancy in animals, and Vlaeff has succeeded in producing an antiserum by repeated inoculation of these micro-organisms in geese and she asses. THE JOURNAL has already mentioned some of his experiences. He is convinced that all malignant neoplasms are essentially of the same nature, and that the variety observed is due to the special reaction of the tissues of the individual, the site of the tumor, the age, etc. He has seen instances of the simultaneous occurrence of sarcoma and carcinoma in the same patient. He states that with the antiserum derived by repeated inoculations of blastomycetes—saccharomyces hominis—during the course of a year, it is possible to cure a malignant neoplasm in an animal if—and this is the important condition—the neoplasm is still localized, with no metastases. At a later stage, the life of the animal is prolonged, an inoperable tumor rendered operable in many cases, but the affection continues a retarded course unless the neoplasm is extirpated in time. These experiences have been confirmed in every respect in the clinics. He has now an experience of sixty patients thus treated, and describes several cases in detail. Those with a strictly localized tumor, without mestatases in the glands or elsewhere, were improved to such an extent that they can be called cured, all regaining their former weight.

In one case after the tumor had been growing for seven months, the patient was treated with 13 injections of 10 c.c. of the serum in the course of nearly six months. She gained 8 pounds in weight and the tumor retrogressed to such an extent that the surgeons were skeptical in regard to its malignant nature. The remains of the tumor were therefore excised and examined by four Paris clinicians besides Vlaeff, including Brault and Cornil, and all confirmed the assertion that it was a typical, cylindrical-celled carcinoma. The patient has been in perfect health since, now more than a year. She is now 45 years old. In several cases of inoperable recurring malignant growths in the large intestine, the general health was remarkably improved and patients restored to comparative health. He concludes his communication by reiterating that in animals it is possible to completely cure if treatment is commenced before the formation of metastases, and his clinical experiences indicate that the same is true of man.

July 20.

Six Cases of Rupture of the Uterus. V. N. ORLOFF.—The pelvis was somewhat smaller than usual in each of the 2 cases of incomplete, and 4 of complete rupture of the uterus described in this communication. Two of the latter group died. The fetus was of normal size and weight in each case. Labor had lasted from twenty-nine to forty hours, except in one case in which delivery occurred in eighteen hours. The patients were all multiparæ. In 820 cases Orloff has collected from the literature, the mortality ranged between 55 and 75 per cent. The results vary in proportion to the condition of the patient and the extent of infection, rather than according to the method of treatment selected. Klein's statistics show good results from tamponing, drainage or mere irrigation. In 77 cases of complete rupture of the uterus, 75 per cent. of 28 patients recovered after drainage; 44 per cent. of 46 patients recovered after tamponing, and 50 per cent. of 10 patients with irrigation. In 35 cases of incomplete rupture 100 per cent. of 9 patients recovered after drainage; 50 per cent. of 20 patients after tamponing, and 50 per cent. of 6 patients after simple irrigation. Tamponing is indicated when the hemorrhage persists after delivery; and drainage when a purulent discharge appears several days afterward, especially in case of incomplete rupture. In the absence of hemorrhage and discharge, irrigation is indicated. In Orloff's cases of complete rupture of the uterus, laparotomy was done in 3, but the uterus was not removed in any case. The rent in the two incomplete ruptures extended from the wall of the cervix, commencing at the vaginal portion, to the point of attachment of the broad ligament, where the placenta was adherent. Both these patients recovered with merely vaginal irrigation. In the first case of complete rupture, the rent extended through the left wall of the uterus, and the fetus and placenta had escaped into the abdominal cavity. The uterus was tamponed with iodoform gauze, and laparotomy postponed on account of the weakness of pulse, etc., and the absence of hemorrhage. Symptoms of peritonitis developed, which proved fatal in five days. The rent in the second case extended through the left wall of the uterus and into the left broad ligament, following a tortuous course. The fetus was found in the abdominal cavity. The rupture was sutured through a laparotomy and patient recovered. In the third, the rent started in the anterior wall of the cervix and included the peritoneum, right broad ligament and vesico-uterine pouch, but the fetus had remained in the uterus. The laceration in the cervix was sutured through the vagina, and the broad ligaments, etc., through a laparotomy incision. The patient died eight days later from peritonitis. In the fourth case the cervix was but slightly lacerated, and the rupture chiefly involved the anterior cul-de-sac, the peritoneum of the vesico-uterine pouch and both broad ligaments throughout their entire extent. The fetus had not escaped from the uterus. The cervix was not sutured, but the broad ligaments, etc., were sutured through a laparotomy incision and patient recovered.

Queries and Minor Notes.

MEDICAL PRACTICE ACT.

LAKESIDE PARK, STATELINE P. O., CAL., Aug. 17.

To the Editor:—Will you please state the requirements for the practice of medicine in Montana? M. B.

ANS.—The requirements of Montana are the passage of a satisfactory examination and that the applicant should present evidence of having attended four courses of lectures of at least six months each, if he has graduated subsequent to 1898. Application for circulars, etc., should be made to the secretary, W. C. Riddell, M.D., Helena, Mont.

DR. GOETSCH ON TUBERCULIN.

MANSFIELD, OHIO, Aug. 17, 1901.

To the Editor:—The July 6 issue of THE JOURNAL gives a notice of Dr. Goetsch's paper on tuberculin; it is very important. Can you not give the paper in full? I assure you tuberculin in conjunction with outdoor life is the most promising treatment at our command for tuberculosis. If you can not publish it in full, will you inform me if it has been published in English, and where I can procure it? A. J. E.

ANS.—We do not know of any English translation of the paper mentioned.

NAMES OF SECRETARIES WANTED.

CANTON, N. Y., Aug. 24, 1901.

To the Editor:—Will you kindly give me the address of the secretaries of the state medical examining boards of Michigan and Wisconsin? W. H. G.

ANS.—B. D. Harison, M.D., Sault Ste. Marie, Mich., and H. M. Ludwig, M.D., Richland Center, Wis.

CELLOIDIN THREAD.

NASHUA, N. Y., Aug. 24, 1901.

To the Editor:—In reading the last number of THE JOURNAL my attention was attracted by the experience of Dr. A. Hammesfahn in simplifying suture process by using celloidin thread. In looking up the literature, I find no data on that kind of suture. Please tell me where I could procure some of that material, and oblige. A. G.

ANS.—We do not know where this can be obtained in this country, but Pagenstecher's celluloid thread is probably the same thing; its advantages are reported on by Drs. Keen and Rosenberger, whose article was published in the *Philadelphia Medical Journal*, of March 10, 1900, and abstracted in THE JOURNAL, March 24, 1900, p. 741.

New Patents.

680,122. Apparatus for vaporizing medicinal agents. Erasmus T. Camp, Gadsden, Ala.

679,890. Apparatus for measuring errors of refraction. Louis L. Ferguson, New York City.

679,980. Bandaging table. Benjamin G. Miller, Cumberland, Md.

679,993. Adjustable adhesive supporting plaster or bandage. John G. Ross and H. M. Taggart, Philadelphia.

679,784. Exercising machine. Michael B. Ryan, London, Eng.

680,179. Toilet-disinfecting apparatus. Leon C. Schoneman, New York City.

679,918. Shield for wounds. Edward C. Shears, Lakota, N. D.

679,802. Operating table. Thomas M. Vaughan, Mattoon, Ill.

679,925. Artificial ear-drum. Laura H. Vickers, West Philadelphia, Pa.

680,384. Fumigating and disinfecting. Charles T. Kingzett, Chiselhurst, Eng.

680,136. Shoulder-blade extractor. Elmer P. Nichols, Stamford, Conn.

680,556. Exerciser. Henry W. Wieland, London, Eng.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 8 to 14, 1901, inclusive:

Dallas Bache, colonel, assistant surgeon-general, sick leave extended.

James L. Bevans, contract surgeon, now at San Francisco, Cal., is relieved from further duty in the Department of Alaska, and assigned to duty in the Department of California.

William C. Borden, major and surgeon, U. S. A., leave of absence extended.

Henry F. Hoyt, major and surgeon, U. S. Vols., leave of absence extended.

John S. Kulp, captain and asst.-surgeon, U. S. A., detailed a member of an examining board in New York City and at Governor's Island, N. Y., during the temporary absence of Lieut. Allie W. Williams, asst.-surgeon, U. S. A.

Herbert G. Shaw, lieutenant and asst.-surgeon, U. S. A., member of an examining board at San Francisco, Cal., vice William M. Roberts, lieutenant and asst-surgeon, U. S. A., relieved.

Louis A Thompson, contract surgeon, now at San Francisco, Cal., will proceed to Washington, D. C., and report to the surgeon-general for instructions.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., previous orders directing him to proceed to San Francisco, Cal., en route to the Division of the Philippines, revoked.

J. Samuel White, contract surgeon, previous orders revoked. This revocation appears to leave him as relieved from duty at the General Hospital, Presidio of San Francisco, Cal., and under orders to proceed to Fort Gibbon, Alaska, for duty.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Aug. 17, 1901:

Medical Inspector F. Rogers, detached from the *Brooklyn* and ordered home.

Surgeon J. E. Gardner, detached from the Naval Hospital, Cavite, P. I., and ordered to the *Brooklyn*, temporarily.

P. A. Surgeon M. S. Elliott, detached from the *Annapolis*, and ordered to the *Kentucky*.

P. A. Surgeon E. M. Shipp, ordered to the Cavite Naval Station.

Asst.-Surgeon W. H. Ulsh, detached from the *Glacier* and ordered to the *Annapolis*.

Asst.-Surgeon W. E. G. High, detached from the *Kentucky* and ordered to the *Glacier*.

Asst.-Surgeon J. T. Kennedy, detached from the Marine Brigade, and ordered to the *Brooklyn*.

Asst.-Surgeon H. E. Odell, detached from the Naval Hospital, Cavite, and to duty with the Marine Brigade.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Aug. 15, 1901:

P. A. Surgeon H. D. Geddings, granted leave of absence for one month and fifteen days from August 15.

P. A. Surgeon C. H. Gardner, granted leave of absence for fourteen days from August 17.

Asst.-Surgeon S. B. Grubbs, granted leave of absence for three days from August 12.

Asst.-Surgeon J. F. Anderson, relieved from duty at Liverpool, England, and directed to proceed to New York City, and await orders.

Asst.-Surgeon C. H. D. Lord, granted leave of absence for seven days under paragraph 178 of the Regulations.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for seven days from August 11. Granted leave of absence for twenty-one days from September 5.

A. A. Surgeon R. S. Primrose, granted leave of absence, on account of sickness, for 21 days from August 10.

A. A. Surgeon S. D. Robbins, granted leave of absence for thirty days from August 5.

Hospital Steward F. R. Hanrath, granted leave of absence for ten days from August 12.

Hospital Steward M. Walerius, granted leave of absence, on account of sickness, for twenty-three days from August 8.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 17, 1901:

SMALLPOX—UNITED STATES.

Kansas: Wichita, July 27-Aug. 3, 1 case.
New Hampshire: Nashua, July 27-Aug. 3, 2 cases.
New Jersey: Newark, Aug. 3-10, 4 cases, 1 death.
New York: New York, Aug. 3-10, 36 cases, 13 deaths.
Ohio: Cleveland, Aug. 3-10, 1 case.
Pennsylvania: Philadelphia, Aug. 3-10, 8 cases.
Utah: Salt Lake City, Aug. 3-10, 1 case.
Washington: Tacoma, July 28-Aug. 4, 3 cases.
Wisconsin: Milwaukee, Aug. 3-10, 1 case.

SMALLPOX—FOREIGN.

Brazil: Pernambuco, June 15-July 15, 81 deaths; Rio de Janeiro, June 1-30, 52 deaths.
Colombia: Panama, July 29-Aug. 5, 7 cases, 1 death.
Egypt: Cairo, July 1-22, 2 deaths.
France: Marseilles, June 1-30, 4 deaths; Paris, July 20-27, 3 deaths.
Great Britain: Dundee, July 20-Aug. 3, 6 cases; Glasgow, July 27-Aug. 2, 2 cases; London, July 20-27, 11 cases.
India: Bombay, July 8-16, 6 deaths; Calcutta, July 6-13, 3 deaths; Madras, July 6-13, 8 deaths.
Italy: Messina, July 20-27, 19 cases, 16 deaths; Naples, July 14-28, 99 cases, 10 deaths.
Mexico: Mexico, July 21-28, 1 death.
Russia: Moscow, July 13-20, 4 cases, 2 deaths; Odessa, July 20-27, 3 cases; Warsaw, July 13-20, 3 deaths.
Spain: Barcelona, July 1-20, 5 deaths.
Uruguay: Montevideo, June 8-15, 12 cases.

YELLOW FEVER.

Colombia: Bocas del Toro, Aug. 2, 1 death.
Costa Rica: Port Limon, Aug. 3, 4 cases, 1 death.
Cuba: July 27-Aug. 3, Havana, 3 cases, 1 death; Marianao, 1 case, 1 death; Pinar del Rio, 1 case; Regla, 1 case, 1 death.

CHOLERA.

India: Bombay, July 6-13, 15 deaths; Calcutta, July 8-16, 2 deaths.
Java: Batavia, June 22-July 6, 63 cases, 43 deaths.

PLAGUE.

China: Hongkong, June 22-July 6, 109 cases, 107 deaths.
India: Bombay, June 8-16, 101 deaths; Calcutta, July 6-13, 16 deaths.

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Original Articles.

THE PRACTICE OF OBSTETRICS.*

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CINCINNATI, OHIO.

If the question is asked: Is there room for improvement in the general practice of obstetrics, it is answered in various ways.

Those physicians and surgeons, whether obstetricians or not, who have studied carefully the charaeter of the present mode of the practice of midwifery, have but one answer: The daily practice of obstetrics is not what it ought to be for mother, child nor the physician.

Some of the general practitioners, the so-called "lucky fellows," who have attended a large number of obstetric cases without a single sad experience (*sic*) will shrug their shoulders and say: Were it not for the great loss of time connected with waiting upon women pregnant, in labor and confinement, and the poor pay, we should be perfectly satisfied.

There are others in the rank and file of the profession, especially in the country districts, who claim: We are trying to do entirely too much in the practice of obstetrics. Only a few of the labor cases make trouble if permitted to take care of themselves.

Others cry out: Abolish the midwives. They are a source of mischief in the management of pregnancy, labor and confinement.

It is evident, from these statements and my own personal experience, that the present practice of obstetrics is not as satisfactory as it might be to any one class of practitioners of medicine and surgery generally, and the accoucheur especially; and certainly not so far as the average results regarding the mother and child is concerned.

What is the remedy? The writer belongs to those who believe that the practice of obstetrics can and ought to be improved in many ways. The principal questions which concern us are not so much those of time, pay and midwives, but rather of how and where can the best result be obtained.

Antisepsis and asepsis in the management of labor are of inestimable value; many lives have been saved by a thorough appreciation and application of the same. The mechanism of labor, the art of diagnosis of the attitude of the fetus *in utero*, and the art of taking the measurements of the maternal pelvis are well understood. Complications resulting from maternal diseases or deformities, or from malpositions or disease of the fetus, may be recognized in ample time. But what does it avail us when all of these, though scientifically applied, promptly determined and correctely interpreted, can not be properly carried out, successfully executed, or effectually met, because of the patient's surroundings? On this account, the knowledge and skill which we may possess and the care which we are ready to bestow upon the patient, are much reduced in value, and invalidism, disease and sometimes death follow where naught but health and happiness ought to prevail.

The present custom is to attend women in confinement at their homes. Only a small percentage is delivered in hospitals established and equipped for that purpose. By far the great majority of the women who go to maternities do so because they have no home. A few, very few, because they have not the means to pay for the services of a physician (or midwife) and nurse.

During the 26 years of my professional career, of which 15 were devoted to general practice, and 11 almost exclusively to the teaching and practice of obstetrics and diseases of women, I have had ample opportunities to observe and experience the difficulties attending the delivery of women at their homes and learn to appreciate the great advantages which lying-in hospitals possess over the long-established, deep-rooted but old and unscientific custom of confinements at home.

The most luxurious furnished and most favorably situated home, provided with all the modern sanitary arrangements, is not superior in safety to the most humble but well prepared and properly conducted maternity hospital! The reasons for this assertion are apparent, numerous and convincing.

For the sake of illustration let me divide the community into three, more or less, distinct classes:

1. The wealthy who can afford, or do not hesitate at least, to spend money lavishly when it concerns their personal safety and comfort.

2. The middle class, who live in their own modest little home, or, perhaps, in a so-called flat, or, as we sometimes find them, in a well-kept tenement house.

3. The absolutely poor, indifferent and uneducated, who, in the majority of instances, either because of necessity, carelessness or ignorance, occupy but one little, poorly-ventilated room, in a miserable hovel, located in a neighborhood defiled with filth and disease.

Class 1. By reason of their wealth and a comfortable home this class is enabled to engage the most competent and efficient service, an experienced obstetrician and well-trained nurses. One or even two rooms of the capacious residence may be set aside and fitted up like an operating or private room in a maternity. The nurses render everything (the patient and themselves included) as clean, neat and aseptic as it can possibly be done in the best hospital. The physician not only secures a sterilizer, but provides himself with all possible

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

instruments, dressings and medicines in order to meet promptly and, if possible, successfully any complication or emergency that may arise immediately before, during or after the event.

It would seem that, under the conditions and surroundings just described, in conjunction with the prospect of a handsome fee, it would be a great pleasure and an extreme satisfaction to practice the art of midwifery. No doubt it is so in some instances. But you know that the obstetrician, who wants to provide for every emergency and accident that may befall a woman in her confinement, has a great task on hand. And, forsooth, after he has brought upon the scene everything that might possibly be needed, he may discover to his great dismay, if not intense mortification, as well as the serious disadvantage of his patient, that he has forgotten the very thing he wanted most—though simple and insignificant it may be.

There is an impression abroad that the modern obstetrician puts his patient to much needless trouble, because of his extensive preparations. This is, apparently, supported by the daily observation that women pass through confinements with apparent safety to themselves and the newly born, in many instances without the aid of a skilled and experienced accoucheur, a trained nurse, and sometimes even with or without the help of a midwife. The above impression is fur her supported by the occasional loss of a mother or child, or both, in spite of all previous preparations, the presence of talented assistance and the greatest possible care during the labor. There are even "good" (?) doctors who counsel against the taking along any kind of instrument "for fear of using the same." These gentlemen always smile significantly when they see a young, well-trained and conscientious physician go to all the so-called "needless" trouble of preparing a woman and her surroundings for the approaching confinement.

Class 2. Nearly all of what has been said of the wealthy holds good of the middle class. There will be, however, but one nurse, if any, and she may or may not have had a systematic training; quite often she has no training at all. There will be no room especially set aside and prepared for the confinement. The most liberal and thorough use of antisepsis will only result in an imperfect aseptic condition of the patient, her bed and surroundings. The doctor's remuneration is very moderate, as a rule; sometimes it is distressingly small and occasionally it is not paid at all. This is especially true if all is not satisfactory. At any rate, in every instance the management of the case is handicapped from the beginning; its conduct becomes difficult and dangerous to the patient and rests like a heavy burden upon the obstetrician in charge. Let unforeseen complications arise or accidents occur, the embarrassment which follows because of the inability to meet them properly and promptly is often great and, not infrequently, leads from bad to worse and may result in serious injury, disease and even death. The obstetrician has labored hard. He is worn out by long-continued physical effort and prolonged mental strain in his anxious attempt to bring the case to a successful termination. He retires from the scene fully conscious that he has done his duty. He also knows that there will be no reward for his work, aye, that he will be damned if the result be an unfortunate one.

Class 3. The absolute poor, indifferent and uneducated, as may well be imagined, fare worse by far than the two preceding classes. The wonder is that any of the mothers escape the evil consequences of lack of proper attention, the dangers of sepsis, and that so many of the children survive, live and grow up.

As a rule there is little or no provision made for the care of the mother and the arrival of the infant. The assistance obtained is often seriously wanting in promptness and earnestness as well as knowledge and experience. Of late years, in the larger cities at least, outdoor obstetric clinics have been established; they are supported by colleges and maternity societies. Through these clinics the condition of the patients belonging to this class and who avail themselves of the advantages of those institutions, is somewhat improved, but far from tolerable. A recent graduate or senior student of medicine and sometimes a trained nurse is the help furnished these women. They are provided with antiseptics, sterilized dressings, etc.; but when difficulties and serious complications are threatened or do occur, the patients are promptly transferred to a hospital. It is because of this that the records of the outdoor clinics remain good, while the records of the hospitals correspondingly suffer. When a transfer to the hospital is refused, or the condition of the patient forbids removal, the officers of the clinic are called in to direct the future management of the case, and, sometimes after a great deal of hard work and plenty of time, the patient recovers. To what extent will always remain a question.

Probably the best evidence that the practice of obstetrics is not what it ought to be lies in the fact that, while we have plenty of teachers of obstetrics, we have not, in the ordinary meaning of the term, a single specialist in this department here or elsewhere. Why? 1, because there is not money enough in the practice of obstetrics to maintain a man and his family respectably; 2, because the work is hard and full of responsibility; and 3, it is often associated with unmerited blame and unjust criticism, to say nothing of the loss of time, sleep and irregular hours generally. Is there anything that upsets the busy practitioner's work more than a case of labor? This is the rule. The exceptions are few. There is, so far as my observation goes, no satisfaction in the private practice of midwifery as it is conducted at the present day.

From what has been said it would seem that little, very little, can be offered in favor of attending women (rich or poor) in the act of birth at their homes. The only objection to hospital deliveries that I have thus far heard and deserving of an answer is: "There is more danger of sepsis in the hospital than at home, because septic cases are constantly sent to the hospitals." It is true that septic cases are—and they should be—admitted to maternity hospitals. Why? Because there women thus affected have the best opportunity to recover. This alone speaks volumes in favor of hospitals. It is so because the necessary provisions have been made for the accommodation of these cases. Not only are the septic patients kept separate and by themselves, but superior facilities exist—or should exist—to treat these cases not only effectually and successfully, but to prevent a spread of the malady at the same time. More than that: the disease should be actually stamped out, if everything is done that can be done with that object in view.

The argument that women love their homes and abhor the idea of going to a hospital for the purpose of confinement is only a sentiment begotten of custom and deserves no special refutation. Let women once appreciate that the hospital is the safest place for them

to pass through the ordeal of labor, they will seek it of their own accord.

There was a time, not so very many years ago, when the men who argued in favor of hospitals as the proper place for the performance of a major surgical operation of any kind, were looked upon as unreasonable, selfish, short-sighted individuals; they were regarded as men prompted by greedy motives, nothing else.

How many capital operations are performed to-day at the houses of patients? Very few, indeed! At present men, women and children are taken to hospitals, not only for the purpose of having dangerous operations performed upon them, but they are taken there for trifling injuries and diseases. The results are good; better than before. Consequently everybody is satisfied. Objections are seldom heard.

Will anybody argue that the act of giving birth to a child is not a capital operation? Or an event free from special danger? Who will claim that every woman pregnant is hopeful and cheerful, because she knows she will pass through her labor safely and unharmed? Who is there that can always predict with certainty that there will be no complications and, if there are, that he can meet them with as much success as in a hospital equipped for this specific purpose?

A simple ovariotomy does not carry with it so grave an element of danger as does a normal case of labor. Yet every abdominal surgeon knows that, when he performs ovariotomy, though simple in its aspects, at the house of his patient, he does so at a greater risk than at the hospital. The care is far greater and the responsibility he assumes much more grave when he operates at the house. At the hospital he has but to say what he intends to do and when he wants to do it. Everything is then prepared for him. He has no care of minor details and he can concentrate his whole mind upon the work to be performed. Not so when he operates at the home of the patient. Here he must himself supervise all the details necessary for the success of the operation and the recovery of his patient; and still he runs the risk that, just prior to, during or immediately after the operation, something very important is wanting or has been left undone.

This is never more true than in a labor case attended at the patient's home; and yet, both the women and the great majority of physicians object (some of them earnestly and persistently) to maternity hospitals. Why? Because the former are not accustomed to it; the latter are apprehensive that they may lose a stronghold upon their patrons through which and through whom they believe to obtain the good will and confidence of the one and other families.

The prejudice against hospital deliveries can be as easily overcome, in my opinion, as the antipathy which existed in the past against the hospital for any kind of treatment, medicinal or surgical.

I have had occasion to attend ladies in confinements who were suddenly taken in labor while traveling, and who had no other choice than to go to a hospital. Some of them had had previous, others subsequent experiences of the same kind at their homes. All were unanimous in their expressions that the hospital is the better and the most convenient place for confinement purposes. It, too, has been my satisfaction of late not only to deliver the wives of prominent citizens at the hospital, but also the wives of some of my professional brethren. In every instance the difference between home and hospital was keenly appreciated and the verdict invariably in favor of the latter.

The fear that the family physician will suffer by the change and that the young physician will be deprived of a legitimate opportunity to "obtain practice," is imaginary, not real. Maternity hospitals should be so conducted that they would please the humblest as well as the most fastidious. Let the patient and her friends make their own selection of accommodations. The absolutely destitute should be admitted free of charge. Others should pay what they can, or for what they want. The latter two classes have the privilege of employing their own physician. This gives the family physician, if there is one, still the first choice. This being so, the doctor not only continues to sustain the same relations to his clientele as before, but it makes his work easier, safer and more satisfactory. He need no longer trouble himself with the minor details; the help he may want is there and already well trained; whatever instruments, dressings or other articles he may need without delay, will be ready for use; all he is to do is to look to his own aseptic condition and then help himself or ask for what he may need. His results will, therefore, be better; the work itself much more agreeable and not half so burdensome as when the patient is delivered at her home. He will thus save the patient's health and wealth, himself a great deal of time and worry, increase his reputation and be better paid in the end, financially and otherwise.

In our larger cities hospital accommodations are already very extensive, but by no means sufficient. The smaller cities and towns are beginning to build hospitals, and there is no good reason why the smallest village should not erect a hospital for this purpose alone, if not for any other. Where hospitals do not or can not exist the practice of obstetrics must, of course, be carried on as in the past.

POSITION OF THE WOMAN DURING DELIVERY.*

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The literature of this subject is practically confined to two questions: 1. What effect has posture on the mechanics of labor? 2. How does posture affect the pelvic diameters?

It is not the purpose of this paper to discuss either of these questions; but rather to consider posture with reference to its bearing on sepsis, and to determine, if possible, what position is most conducive to an aseptic technique. The plan of delivering the woman as she lies in bed—the amniotic fluid, the child, the blood, the placenta and often fecal matter being received by the bed or its protections—has had from antiquity to the present, the sanction of universal custom. With such conditions an aseptic technique is incompatible. In the homes of those who are able to command the comforts and some of the luxuries of life, these unfavorable conditions can be greatly modified.

Given a clean patient in clean garments, a firm mattress with clean protectives, sheets and pads, together with a competent nurse, and the danger is largely, though by no means entirely, eliminated. Under the most favorable circumstances there are dangers of infection which would not be tolerated in a surgical

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operation. When the head is on the pelvic floor, in spite of all preliminary preparation, fecal matter may escape coincident with the pains; and, if the labor is about to terminate, the nurse has not the necessary time for again cleansing the patient. Infection may occur through soiling the hand, which in the necessary haste, the accoucher might easily overlook. Or an accumulation of fluids may float fecal matter into contact with lacerations or abrasions or even into the vagina. The serious infections of the colon bacilli probably occur in some such way. Unless the mattress be exceptionally firm, the woman's hips occupy a depression which will be filled with fluids. When we recall the relaxed condition of the vaginal outlet at the end of labor, the wonder is that infection does not oftener occur.

This danger of immediate infection is not lessened by the Kelly pad as ordinarily used. It protects the bedding admirably. But with the woman in the ordinary position on the ordinary mattress, fluids will not drain away from the parts, owing to the depression in which the hips lie. The pad prevents the rapid escape and absorption of fluids, and by holding a pool about the vulva, the chances of infection are increased. This objectionable feature is sometimes overcome by following the English custom of placing the woman on her side with her hips well to the edge of the bed. In this position the Kelly pad can be well utilized. But it is a position in which it is difficult to control the patient, particularly when she is partially anesthetized. It involves flexion of the thighs which distinctly increases the danger of perineal laceration. And, moreover, it is a position which has never met with favor in this country.

For years it has been the invariable custom of the writer to deliver in the following position: The woman lies on her back across the bed, her hips well to the edge and on a Kelly pad, so arranged as to carry fluids into a vessel on the floor. For this purpose, the small square pad is most suitable. The patient's legs are separated and extended. They are supported by assistants, by a couple of suitably placed chairs, or—and preferably—over the knees of the obstetrician, who sits on a chair facing the bed at a convenient distance. She should wear her stockings, her thighs should be enveloped in clean towels and she should be covered with a sheet. This position is maintained from the end of the first stage until the termination of labor, unless the second stage be tedious. In that event, the patient can resume her ordinary position in bed, to be again brought into the position described before the end of the second stage. The position is not tiresome to the patient or physician and can be maintained for hours without discomfort to either.

The first thing after placing the woman in this position, is to have the nurse thoroughly cleanse the external genitals and inner surfaces of the thighs with a generous application of soap and hot water, followed by an antiseptic solution. This should, for obvious reasons, be a routine procedure, irrespective of previous preparation. It corresponds to the final preparation of the site of a surgical operation. It is claimed for this position that, with intelligent management, the parts so cleansed will not be infected during the labor. In case fecal matter escapes during a pain, it gravitates at once to the vessel on the floor, and all traces which could offend the sense of sight or of smell, are swept into the vessel by the free application of an antiseptic solution. The maintenance of a fixed position is unquestionably favorable to asepsis. The patient is less likely to contaminate the parts than if she were permitted to frequently shift her position. The physician can much more certainly keep his hands clean than if he were compelled to move about to accommodate himself to the changing position of his patient. He is constantly prepared to render assistance, and thus avoids the too common blunder of managing the termination of labor with hands improperly cleansed, on account of haste at the last moment.

This position also reduces the number of vaginal examinations. The examinations usually made from time to time by the accoucher, that he may be apprised as to the probable termination, are not necessary. Within reasonable limits, the time makes no difference, as the position insures constant readiness on his part.

This position, better than any other, insures control over the advance of the head as it is about to emerge. In the ordinary position the degree of control is by no means satisfactory. Unless anesthesia be profound, the woman is likely to toss about at the critical moment. This often results in a needless degree of laceration. The position advocated eliminates this unfavorable element. The patient, unable to secure points of resistance for her feet, can not change her position. The obstetrician is in complete control and can delay, to the most favorable time, the delivery of the head and can manage accurately the rate of advance when it is delivered.

When delivery occurs, first the head and then the body is grasped, and the child is carried up over the pubes. The nurse places the blanket, in which the child is to be wrapped, across the abdomen and pubes of the mother. On this the child is placed transversely and low enough to permit of ready manipulation of the uterus. This avoids the danger to the child of infecting the eyes or cord with fecal matter and there is less liability that it may aspirate fluids into the air passages. Before the child is moved the cord is dressed and dressing secured by a binder. To allow quite an interval to elapse between the cutting and the dressing of the cord, with the possible danger of infection, is an unsurgical procedure. The facility afforded by this position for the delivery of the placenta and for the detection and repair of perineal laceration needs no comment.

Of no very slight importance is the ease with which the patient can be cleansed at the termination of labor. No other position permits such free use of water. If ordinary care has been used the woman is clean and her garments and bedding spotless.

We have been considering that small minority of patients who live in well-appointed homes and command the services of the trained nurse. The vast majority of child-bearing women are unable to secure these safeguards. The membership of the lower classes is prolific as well as numerous. Living, as they do, in cramped quarters, the bath-tub an unknown luxury, it would be unfair to expect a high standard of household or personal cleanliness. In isolated cases, the housewife rises superior to her surroundings and is a model of neatness and cleanliness. She is the bright exception to the general rule of dirt and disorder. If the woman of this class is able to have in readiness, at the time of her labor, a change of linen for her bed and a few clean towels, she feels entitled to credit. She probably depends for nursing on some member or friend

of the family; or much worse, on a so-called nurse, but one without training, and whose ignorance of asepsis is equalled only by her assurance, and her readiness to act on her own initiative and in defiance of instructions. In this class the young physician, struggling to make his way, finds most of his obstetric work. Should he choose the usual position for delivery, his examinations are fraught with danger. Bedding and patient are likely to be in a sorry plight at the end of labor, and the chances are that these conditions will continue during the lying-in period.

If he adopts the position herein recommended he needs only soap and sterilized water to insure safety to his patient. A liberal application of soap and the use of a large fountain syringe of hot water, followed by an antiseptic solution, comprises a ready means of cleansing the external parts. If necessary, this can be done by the physician, and there is need of little or no exposure. If he will exercise the forethought to sterilize forceps, ligatures, sutures, needles, scissors, etc., and place these within convenient reach, it will be unnecessary for him to leave his chair until the labor has terminated and every necessary detail has received attention. He is in complete control of the situation and protects his patient from infection in the most unfavorable surroundings.

Incidentally, in an emergency such as post-partum hemorrhage, this position is advantageous. There is necessarily a prompt notification of the danger, and the woman is already in the most favorable position for treatment. Moreover, the young physician will find the position the best for studying the mechanism of labor.

In conclusion a brief recapitulation embraces the following claims for this position:

1. There is less liability of infection with fecal bacteria.
2. Fewer examinations are necessary.
3. There is better control of the head at the time of delivery, and consequently less danger to the perineum.
4. The woman can be more thoroughly cleansed after labor, and clothing and bedding are not soiled.
5. There is less danger of infecting the eyes or cord of the child and less risk of its aspirating fluids into its air passages.
6. In managing cases in the unfavorable environments of the lower classes, the position is especially valuable to the young physician, whose experience is gained largely among these classes.

THE PROPHYLAXIS AND TREATMENT OF PUERPERAL SEPSIS.*

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The recent developments in bacteriology and pathology have demonstrated conclusively the fallacy of the previously accepted theory of the essentiality of puerperal sepsis, and likewise have been able to explain its manifold manifestations by showing that wound infections and puerperal infections are identical and may be due to a variety of pathogenic organisms. Streptococcus, staphylococcus, bacillus coli communis, gonococcus and pneumococcus are the most frequent causes of puerperal infection, while the bacillus of diptheria, anaerobic and other micro-organisms have been demonstrated to be occasional factors in the pathogeny.

Streptococcus pyogenes is found in the body under a variety of circumstances, and is probably the most important cause of septicemia and pyemia following wounds of ulcerative endocarditis, of tonsillitis and erysipelas. Bacteriologic investigation shows it to be the most frequent cause of the various septic processes following labor, and it may be found pure or associated with other organisms. It has long been recognized that its manifestations are varied and that they depend upon several factors: the nature of the organism; the soil; the dose of virus, and the place of entrance. The most important factors are the virulence and character of the infecting organism. Variation is common to different specimens of the same species. Under certain conditions the virulence is increased, while under others it may be decreased or attenuated. It may produce abscesses at the point of inoculation, which may, or may not, become diffused throughout the body, or it may even cause death without the appearance of any local change.

The staphylococcus and colon infection are as a rule milder forms of sepsis, but Strunkman has collected twenty-five fatal cases of the former and three of the latter. The writer has seen one fatal case of staphylococcus aureus and two of the colon variety.

The parturient tract has been aptly compared to a surgical wound and it is easy to conceive, that, with the contusions and lacerations together with the lowered resistance of the system incident to labor, the conditions are very favorable for the development of germs when once they are introduced. According to Widal, Baum, and Gärtner, the placental site is the favorite point of invasion of the infecting germs, either by way of the lymphatics, or veins, or both. Yet infection frequently takes place from wounds of vagina and cervix.

The results of the bacteriologic examination, with regard to the presence or absence of pathogenic germs in the vaginal secretion under ordinary conditions, are by no means in harmony. Gonner and Döderlein in 1887 investigated the subject and, while the former obtained negative results, the latter obtained many varieties of pathogenic organisms, including streptococci. Since then, numerous capable observers have investigated the subject with variable results. Menge, Kronig, and Williams have gone over the work very carefully and find that the uterus and vagina, under ordinary conditions, are sterile as regards pathogenic organisms, and, that the discrepancies of other observers are due to faulty technique in obtaining cultures. Further, the investigations directed more particularly to the vulva, show that it is rarely, if ever, free from pathogenic organisms, and that it is almost impossible to render it so.

Döderlein attributes the absence of pathogenic organisms in the vaginial secretion to the bactericidal influence of the acid products of the vaginal bacillus. Kronig does not think this view justifiable and believes that several factors play a part, namely: chemical substances in the secretion, probably acids; antagonism of the bacteria living in the vagina to imported bacteria; leucocytosis and phagocytosis; lack of oxygen and tissue juices.

From the foregoing survey of the literature, it is seen that the uterus, under normal conditions, is sterile and some hold a similar view regarding the vagina; but

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all authorities agree that the vulva is scarcely ever free from pathogenic organisms. We can readily understand then, how easy it is to infect the vagina and uterus even by simple internal examination, or the giving of a douche. Further, the experiments of Bumm, Döderlein, Kronig and others show that antiseptic douches tend to impair the normal bactericidal influence of the vaginal secretion, and, as the pathogenic organisms are not destroyed, or diminished in number, their use should be dispensed with. Pestalozzi reports 4000 cases confined in the Maternity in which no ante-partal or post-partal douches were employed. It was only necessary to isolate 33 and of these, 30 recovered. These results are in accord with those reported by Leopold, Merman, Goldburg, Zweifel and others who have treated cases with and without douches. Again, let us compare the results obtained in the lying-in hospitals of Europe before the pathologic anatomy period, in which only prophylaxis was used. Vienna from 1786 to 1822, had a total death-rate of 6 per cent. in 44,858 cases. The Dublin Rotunda Lying-In Hospital in 93 years, from 1757 to 1849, had 1.23 per cent.; and the British Lying-In Hospital during the same period shows a mortality of only 2 per cent. It can hardly be sustained that the antiseptic treatment has accomplished all that has been claimed for it.

So it is seen that recent bacteriologic and clinical investigations are in accord, and the antiseptic treatment, which has steadily gained ground from the time that Semmelweiss showed a causal relation of cadaveric poison to puerperal sepsis, is gradually giving away to the more rational idea of asepsis. Routine douches, before and after labor, are being discarded, and our attention is being directed to the thorough cleansing and the disinfection of the external genitalia, of the hands of the physician and nurses, of the instruments, dressings, etc., and to the avoidance or restriction of internal examinations.

The treatment should vary according to the character of the infection. It may be local, with a view of removing or destroying germs at the point of infection; or general, by use of measures to neutralize the introduced bacteria or their toxins, and to fortify the system in its struggle against the infectious germs; or surgical, to remove collections of pus, and organs that may have become a menace to the welfare of the patient. It is well to regard every case of fever occurring during the puerperium as septic, until proved not to be so by a searching investigation. Our first duty, after obtaining a history of the case, should be to make a careful and thorough bimanual and specular examination of the uterus and pelvic organs. If there be lesions of the external genitals or vagina, they should be appropriately treated and the uterus not invaded unless indications point to infection of that organ. The possibility of pus existing in the pelvis before labor, due to pyosalpinx, ovarian or appendiceal abscess, should be borne in mind. If these and other causes of pyrexia, such as malaria, typhoid fever, etc., can be excluded, the uterus should be gently explored with the finger, or dull curette, and any placental debris or clots removed. If possible, a bacteriologic culture should be taken directly from the uterus, and then an intra-uterine douche, preferably of sterile water, or sterile salt solution, should be given. Should the bacteriologic examination reveal saprophytic infection, the douche may be repeated, especially if the temperature remains elevated and a foul-smelling discharge continues.

If it proves to be a case of pathogenic infection, further local treatment is contraindicated, as it can not possibly reach the organisms which have penetrated beyond the reach of such measures. If the infection has spread into the broad ligaments, as may be manifested by the extension of the pain over the region and the revelation of a boggy sensation on vaginal examination, the lymphangitis and localized peritonitis must be combatted by the application of the cold pack, or preferably, the rubber coil applied to the lower abdominal region, and the giving of anodynes to relieve the pain.

I am confident that the repeated giving of intra-uterine douches and the use of the curette in streptococcus infection, is decidedly harmful. The danger of introducing other germs and causing a mixed infection, and, the production of more or less traumatism of the endometrium, thereby breaking down Nature's protective zone of leucocytes, and opening up new avenues for wide-spread systemic infection, are strong arguments against injudicious local treatment. Again, the use of large quantities of the bichlorid of mercury and other antiseptic solutions, as recommended by many authorities, would seem to be irrational because of the invasive qualities of the streptococcus; it can not exercise its germicidal effect, besides there is great danger of poisonous effect from absorption. Douches are only necessary to wash away any retained debris, therefore sterile water and normal salt solution are to be preferred, as they are harmless.

The general treatment will embrace the use of strychnia, nitroglycerin and stimulants to strengthen the heart. The amount of stimulation that septic cases will bear, is surprising. I have seen so much as a quart of brandy used daily for two weeks with good results. Antipyretics should not be given as they depress the heart; quinin is of little avail, except in malaria—besides, given in large doses it is apt to derange the stomach.

Nuclein and albumose have been used for the purpose of increasing leucocytosis, and in recent years normal salt solution subcutaneously, or by the bowels, is being received with much favor. It is a rational measure—for it flushes the kidneys, eliminates the toxin and stimulates the heart. Mace, Fouchier, and others, recommend baths at a temperature 77 F., repeated every three hours and claim to have obtained good results.

The results from the use of anti-streptococcus serum have on the whole, been disappointing. Statisties show the mortality to be about 35 per cent. Many of the failures may have been due to the inferior quality of the serum. It is important to determine whether the case be one of simple or mixed infection. Curative effects are claimed for only a simple streptococcus infection. The most plausible explanation of failure would seem to be that offered by Smith, who says: "When we come to deal with those bacteria which do not produce a soluble diffusible toxin, but which have poisons either stored up in their bodies or represented in their body substance, the production of a satisfactory therapeutic serum has not yet been placed beyond doubt. It would seem that immunity towards these latter poisons can not be pushed beyond the endurance of a relatively small dose, and certain investigators have, for this reason, looked upon bactericidal functions of immune serum as the only hopeful prospect. It is now generally known, from the work of Pfeiffer and others upon typhoid and cholera bacteria, that such serum, which does not manifest, outside of the body,

more than agglutinative power, does actually start bactericidal forces in the animal body, when introduced with the bacteria.

It is probable that the action of the streptococci is subject to the same laws. If this phenomenon should be found generally true of the invasive bacteria (that is, those which enter the body and multiply therein, and not simply act from some one point through absorbed toxins, as is the case with diphtheria), it follows that any serum-therapy, so-called, to be successful, must come into play either before, or immediately after the time of infection, in order that the multiplication of the bacteria may be checked before much poison has accumulated. It is probable that, between the strictly toxin-producing and the infectious bacteria, transitional species will be found for which an anti-toxin may be of some use because of the presence of traces of toxins set free by the bacteria. This hypothesis may account for the favorable results occasionally reported after the administration of streptococcus serum."

In our experience, the serum in cases of pure streptococcus infection seemed to have a beneficial influence, and, during its exhibition, local and general treatment was withheld. It is impossible to say how much value the serum per se was, in these cases; but the gradual lowering of the temperature in from 7 to 24 hours, with a corresponding reduction and steadying of the pulse, attended by a profuse perspiration and marked improvement in the subjective condition after each injection, would seem, in the absence of any other measure having been used, to have exercised a salutary influence.

The most perplexing problem we have to solve in the treatment of sepsis is, when is surgical intervention necessary? No one will question the necessity of removing the uterus and its adnexa, if they are infiltrated with foci of pus which can not be properly drained; or, of evacuating purulent collections, whether they be in the pelvis, peritoneal or pleural cavity; but when shall we operate? Those of us who have had in maternity services the opportunity of observing the varying phases of puerperal sepsis, know, that there is a tendency to recover along conservative lines, and that a very small percentage require operation. Furthermore, there is great danger of converting a localized infection into a general one by the use of intra-uterine douches and the curette. If we carefully analyze the mortality statistics of septic cases treated surgically, we can not but be impressed with this fact—that too little attention is devoted to a systematic clinical observation and the study of the various forms of sepsis. What is needed, is greater care in the study of the differential diagnosis. Bacteriology and pathology are gradually adding to our knowledge in this direction. We know that the streptococcus is the most virulent and frequent variety, and when it spreads beyond the genital tract, it does so by way of the lymphatics or veins, or both. We also know that the peritonitis which follows is primary, but that the tubes and ovaries are only affected secondarily, if at all. On the other hand, gonorrheal infection spreads by continuity of the mucous membrane and invades the tubes and ovaries primarily, while the peritoneum is involved secondarily. Staphylococcus, colon, and other pathogenic organisms, act in a similar manner to the streptococcus but in a milder degree. However, the clinical features differ. In an infection by the streptococcus the pulse rate is apt to be rapid and out of relative proportion to the rise of temperature, and the constitutional symptoms are usually well marked. On the contrary, in staphylococcus, colon, gonorrheal and saprophytic infection, the temperature may at times be high but the pulse rate is relatively lower.

In conclusion, then, the treatment of sepsis will depend upon the skill and judgment of the physician and the condition of the patient. It would not be justifiable to open the abdomen without some physical reason. The different forms of sepsis should be thoroughly understood, for an operation will hardly be required except in pathogenic infection. When the operation is performed early many organs will be needlessly sacrificed, and if performed late, the mortality will be increased. When there is continued fever with increasing physical signs, the operation is permissible; without the latter, general symptoms would indicate systemic infection and surgical measures can only hasten the end.

THE INDICATIONS AND CONTRA-INDICATIONS FOR THE USE OF THE CURETTE IN OBSTETRIC PRACTICE.*

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The curette is a valuable instrument, in the hands of the obstetrician as well as the gynecologist. The indications and contra-indications for its employment are less understood in the practice of the former than of the latter, and much harm has resulted from its indiscriminate use.

In the earlier days of antiseptic midwifery puerperal fever was fought by active intra-uterine treatment, curettage and irrigation, without selection of cases. Even to-day, too little attention is paid to a consideration of the subject, and while the curette is valuable in one class of these cases, it is equally injurious in another.

The object of this paper is to bring out the experiences of the members of the Section; to break away from the old routine custom of using the instrument, and to point out clearly in what class of cases to use, and in what class to discard, the instrument.

We must bear in mind that it is employed in place of, and as a poor substitute for, the finger to remove foreign substances from the uterine cavity, as pieces of placental tissue, retained portions of membranes, blood clots, etc. In abortion, when the cervix can not be dilated sufficiently to pass the finger the curette must be used as a substitute; and again, when the expulsion of the product of conception is in the later months, the finger is unable to reach the fundus uteri. The indications for its employment to remove retained products of conception and blood clots are clear. The complications following abortion and miscarriage are almost invariably due to the retention of some part of the ovum. This is manifested by hemorrhage or fever, one or both. The hemorrhage may be coincident with the casting off of the ovum or some part of it, or it may continue afterward uninterruptedly or in recurrent attacks. Decomposition of the retained tissue accompanied by a foul odor to the discharge and febrile reaction is another complication. There is no question of doubt regarding the indications for the use of the curette in these cases. The removal of the offending material promptly stops the hemorrhage or fever.

Unfortunately, the treatment of incomplete abortion

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and miscarriage is too often expectant. Indifference on the part of the practitioner or a desire to consider the case unimportant leads to a neglect of radical treatment. Again, in many cases, a let-alone policy is followed because the general practitioner, to whom a large share of this work falls, modestly considers himself unequal to the emergency. These cases come under his care so often in the course of his daily practice, it is his duty to familiarize himself with the method of treatment necessary.

In incomplete abortion and miscarriage when the cervical canal is sufficiently dilated, the finger is used to clean out the uterus. In most cases the patient should be thoroughly etherized, the uterus depressed with one hand on the fundus, the other hand inserted into the vagina and one or two fingers passed into the cavity of the uterus. Retained and attached portions of placental tissue are removed, a hot intra-uterine injection given of sterilized salt or antiseptic solution. If the uterus is thus cleaned out all hemorrhage is checked and the case pursues an uninterrupted convalescence.

If the case be not one suitable for this simple method of treatment, curettage may be preceded by a short preliminary treatment with the tampon, in hopes the uterus may expel its contents. Failing to do so in twenty-four or thirty-six hours, the curette should be used, preceded generally by a rapid dilatation of the cervix. Except under anesthesia, the operation can not be done satisfactorily. Asepsis is a necessary part of the technique. During curettage the removal of blood clots which plug the uterine sinuses is frequently accompanied by severe bleeding.

The hot intra-uterine douche or gauze tamponade of the uterus will be necessary. The gauze should be removed in twenty-four hours and the uterus washed out with a hot sterile douche. Rest in bed and hot vaginal douches will complete the course of treatment.

We have dealt with the treatment of incomplete abortion and miscarriage with hemorrhage and fever. The fever is due to the absorption of ptomains produced by the action of the bacillus of putrefaction upon the foreign matter contained in the cavum uteri. The removal of the offending mass with the curette gives results that are all one can wish. The good effect that follows the treatment in these cases has led to its abuse in fever after childbirth.

In cases of criminal interference with pregnancy we often have to deal with a different and more serious infective agent than the saprophytic germ. Fever is now, unfortunately, too often due to streptococcic infection. Under these circumstances, the indications for curettage are similar to those met with after childbirth and we will consider the two together. Whereas great benefit is derived, as we have already seen, by the use of the curette in removing material acted upon by the bacillus of decomposition, on the contrary, harm will follow its use when the infection is streptococcic. By use of the curette it is impossible to get rid of streptococci. Nature makes a noble and often successful resistance by throwing out a protective zone of inflammatory tissue at the point of infection. Leucocytes swarm to her assistance and take up their burden of the fight to resist the aggressive germs.

Now, what does the curette do in these cases? It simply breaks down the earthworks, scatters the defenders and opens a door of entrance to the invaders. The infection, instead of being localized is made general. The clinical history bears out the statement. Cases of streptococcic infection invariably get worse after curettage. A chill shows systemic infection; the symptoms are all aggravated, and more cases end fatally than when the curette is not employed.

Hence, it is of prime importance in a given case to ascertain the nature of the infective agent, or agents, before resorting to the curette. The foul discharge that accompanies the action of the bacillus of putrefaction is a safe guide to indicate the use of the instrument. In the absence of that sign the indication is not clear, and we must rely upon the culture test.

The culture is taken by introducing a sterile glass tube into the uterus and with a syringe attached to the other end, the uterine discharge is sucked into the tube. It is then placed in a culture tube containing agar-agar. The growth of the organism will demonstrate its character in twenty-four hours. To be of value, the culture must be taken with the strictest detail to aseptic work. After having taken the culture, the uterus is thoroughly douched out with sterile salt solution and no further local treatment instituted for twenty-four hours, or until the result of the culture is known. If it prove to be streptococcic the curette is contra-indicated.

In another class of cases the curette does harm. Infection may exist in some laceration of the vulva, vagina, or more often, the cervix. The cavity of the uterus is not involved. The use of the instrument under these circumstances is uncalled for and will likely spread the infection into the uterus.

At the risk of being found guilty of repetition, we will consider the indications and contra-indications for the use of the curette by taking a hypothetical case. A woman having given birth to an infant, in three or four days afterward suffers from a fever, which is preceded or not by a chill. All the usual symptoms of puerperal fever are present. Shall we or shall we not curette? Believing that the curette does harm in some of these cases we must look for clear indications for its use. First carefully inspect the external genitals, the vagina and cervix. In not a small proportion of cases the door of entrance for the germs is located in one or other of these parts, and in such it is evident the curette would do harm by carrying the infection into the uterine cavity. If, on the contrary, the examination be negative, and the indications point to intra-uterine infection, the next point to decide is the character of the infection. The presence of a foul odor to the discharge would justify the careful use of the curette. A culture should then be made of the discharge and the cavity thoroughly injected with hot sterile water or salt solution. In the absence of foul discharge the curettage should be omitted, but the culture taken and the preliminary injection employed. After twenty-four hours the culture growth will demonstrate the nature of the infection. If other than saprophytic the curette must not be used.

Streptococci are the most common and serious germs encountered in puerperal infection, but the same rule regarding the use of the curette applies to others, such as the staphylococcus, gonococcus, colon bacillus, etc.

In obtaining the culture the external parts should be cleaned and washed in bichlorid, the hands and instruments must be clean, the cervix exposed and held with a double tenaculum or bullet-forceps. The sterile glass tube is passed into the cavity of the uterus, a syringe attached to the other end with a short rubber tubing and some of the fluid drawn into it. The cotton plug is removed from a culture tube containing the agar-

agar and the discharge inserted. During the twelve or twenty-four hours required for the growth of the organism the case is treated on general principles.

The clinical history of the case presented, as well as the history of confinement, aid materially in making the diagnosis before the bacteriologic test is available.

A final word of caution to the inexperienced may not be out of place, regarding the danger of using the curette in a septic uterus. The walls are easily punctured or torn, and any approach to force is unwarranted.

A CASE OF STREPTOCOCCUS INFECTION FOLLOWING LABOR—OPERATION AND RECOVERY.*

WILLIAM H. HUMISTON, M.D.

Associate Professor Gynecology in the Medical Department of Western Reserve University; Gynecologist-in-Chief to St. Vincent's Charity Hospital; Consulting Gynecologist to the City Hospital, Etc.

CLEVELAND, OHIO.

A primipara, aged 23 years, was delivered with forceps after six hours in labor, on Nov. 26, 1900. On the third day, after a slight chill, the temperature rose to 103 F. The uterine cavity was douched with a mild antiseptic solution. Failing to get a result from this procedure, the curette was employed, and thereafter daily intra-uterine douchings.

On December 5, the sixth day of the fever, I saw the case in consultation. Temperature was 100, and the pulse 120, irregular and weak. The fundus of the uterus was midway between the symphysis pubis and the umbilicus. There was no tympanites and but little tenderness of the abdomen. A deep laceration of the perineum, which had been repaired after delivery, but opened again, and the torn surfaces of the cervix (right lateral tear) were covered with a grayish slough, which in appearance was not unlike that of diphtheric origin. There was marked cellulitis to the right of the uterus extending to the pelvic wall.

I advised an incision and drainage of this mass through the vagina. The family desired to temporize, as the patient then seemed to them to be a little better. However, on the evening of that day they reported that a sudden change for the worse had occurred following a severe chill. The temperature as recorded was 103, and the pulse-rate 160. The patient was vomiting and complained of severe pain.

She was admitted to the hospital early on the following morning. Her temperature was 104 and pulse 160, arrhythmic, irregular and of small volume. Her general appearance was that of grave toxemia. There was great abdominal distention and increased tenderness. She was having a septic diarrhea. A small quantity of urine was obtained by catheterization and found to contain granular casts and renal epithelium.

After thorough cleansing of the vagina and the uterine cavity, the latter was packed with iodoform gauze. A very free incision was then made through the posterior vaginal vault, and the dissection carried upward and between the folds of the right broad ligament. There were several small foci of beginning softening in this area of cellulitis, but no pus formation as yet. When the pouch of Douglas was opened a large quantity of bloody serum, streaked with whitish flocculi, escaped. Examination of the Fallopian tubes showed that they were not involved in the process. After carefully drying the parts, two small pieces of rubber tubing were used for draining the cul-de-sac and the broad ligament. Iodoform gauze, rinsed in hot salt solution, was used to pack the cavities. During the operation two quarts of normal salt solution were injected under a breast.

Cultures were taken from the cervical canal and the peritoneal cavity. From the latter, growths of the streptococcus pyogenes and colon bacillus were obtained; and from the cervix, the same together with the staphylococcus pyogenes albus. Cover-slip preparations gave the same results. No diphtheria bacilli were obtained. Three drams of chloroform were used, and the patient was on the table thirty minutes. In twelve hours the temperature was 102.4, and the pulse 116.

On the third day the temperature again rose to 103.2 and the pulse 130. On removing the vaginal dressings an abscess containing one and one-half drams of pus was discovered in the vaginal wall. After this was opened the patient progressed rapidly. On the fifth day the temperature was normal and the pulse remained below 100.

With the Fallopian tubes apparently normal, the infection of the peritoneum must have occurred by an extension from the cellulitis. Even though, as in this instance, the physician may be in attendance upon cases of diphtheria and the slough may bear the characteristic appearance of diphtheric exudate, bacteriologic investigation is necessary to determine its causation. The absence of shock and the rapid reaction is not due alone to the use of a large quantity of salt solution, but to the rapidity and the ease with which these conditions can be cared for by the vaginal method. There is no necessity for complete narcosis, and the limited amount of the anesthetic required minimizes the dangers of unfortunate results.

An examination of the pelvis six months after the operation reveals a very satisfactory state. The obliteration of the cul-de-sac has made the uterus somewhat immobile, but this can be largely overcome by massage and judicious use of tampons. The right broad ligament, together with the uterine adnexa of this side, are practically in a normal condition.

I have reported this particular case, 1, because of its gravity; 2, because of the happy results; 3, because of its gravity and the results obtained, the report may stimulate others to use the vaginal route in preference to the abdominal. I have not yet lost a case of puerperal sepsis where the septic foci were confined to the pelvis since my adoption of the vaginal method.

122 Euclid Avenue

DISCUSSION ON PAPERS OF DRS. ZINKE, PORTER, MORAN, FRY AND HUMISTON.

Dr. Philander A. Harris, Paterson, N. J.—There is no reason why anyone should differ essentially from the points brought out in these papers. When I and others of my age studied medicine, hospitals were regarded as death-traps, and for long afterward we looked askance at maternity hospitals; conditions have changed since then, and now a well-ordered hospital is the very safest place for a woman during her confinement, especially when any instrumental or manual aid is necessary. The question as to what extent women may be taken from their homes to the hospital is a matter for consideration. It has its ethical side.

Dr. Fry's statement that the uterus may get into a condition where it no longer takes up an infection, is very true. I believe the endometrium usually acquires this immune condition in a few days, and that the toxemias and other evidences

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

of a continued infection are due to extensions from the primary infection to other parts. If, therefore, we employ a curette to field what Nature has already defertilized, or strong disinfectants, or anything which will destroy the vitality of the tissue, then we may have a local reinfection. The matter of curetting the uterus under these conditions is a very serious and important one, and I wish to endorse the work of Dr. Fry. I have worked mainly along the lines laid down by him, which we all ought to follow. In certain instances physicians who have asked me to see cases of puerperal fever with them, have looked rather disappointed when I have refused to curette the uterus. In regard to the vaginal section, I stand entirely with the last speaker, and also with many others here who follow the example of Pryor, of New York. I do not believe it does any harm. Vaginal section may reveal pus when the qualities of fluctuation or induration are absent.

DR. MILES F. PORTER, Fort Wayne, Ind.—Puerperal infection is a term that covers a multitude of pathologic conditions, and we can not speak about its successful treatment until we first determine the form of infection we are endeavoring to treat. It occurs to me that the loose way in which we have been talking about vaginal versus abdominal section in puerperal infection, has led to a great deal of practice which is not of the best character. My own impression is in accord with the writer of the paper on the use and abuse of the curette in cases of puerperal infection of the endometrium. Vaginal section has a place if there is in the pelvis a localized accumulation of infectious material—a localized peritonitis. On the other hand, in the treatment of a case of progressive septicemia, whether puerperal or not, operations are seldom beneficial and usually harmful. There are so many things to say, that we might prolong the discussion indefinitely, but the point I want to make is that puerperal infection covers such a multitude of conditions that to speak of its treatment by any one method is irrational.

DR. A. B. CATES, Minneapolis—I think that the profession does not appreciate the progress made by our surgeons in the use of the rubber gloves. For the last two years I have been using them in nearly all my cases of confinement, and have found that the lying-in period has been greatly improved. It is rare, indeed, for sepsis to occur. The vulva should also be carefully cleansed, and the patient must be instructed to keep her hands away from the external genital organs. This is especially important, as sepsis is frequently conveyed in that way. In a case of sepsis, treatment should be directed to the place from which absorption is taking place. Sepsis will frequently occur from absorption from the perineum or from a lacerated cervix. These are the most common foci of infection. If the infection extends, as it frequently does, we most commonly have an endometritis. If this occurs it is desirable to ascertain the character of the bacteria present. We have been told that the streptococcus should be let alone, that we are not to curette in a case of streptococcus infection. That is good advice. I think that the suggestion of Dr. Williams, of Johns Hopkins, is a good one, that if on examination of the interior of the uterus we find a smooth surface, it is a streptococcic infection; if it is a rough surface it is usually a mixed infection or a sapremia. If you have a sapremia there is no question but what you need the curette and intra-uterine douches. I believe that with proper precautions, we can not, as a rule, do very serious harm with intra-uterine douches in any case except a streptococcus infection.

The use of ergot has not been mentioned by any one in this connection. I think more stress ought to be laid upon the use of ergot in the earlier stages of the lying-in period. It not only tends to contract the uterus, but also to prevent absorption from the lymphatics.

DR. W. O. HENRY, Omaha, Neb.—I think we talk too much of ideal conditions. The large majority of women confined are absolutely outside of the reach of a prompt bacteriological examination. Theoretically, Dr. Fry's paper is all right, but practically it can not be followed at the present time by the large majority of practitioners. I fully endorse his investigation; but as in the majority of instances it is impossible to determine quickly the nature of the bacteria present, we ought to agree on a line of treatment that every man can use safely, readily and successfully. I am confident that the man who knows how to use the curette following abortions or normal labor with infection, can use it safely. He will never do any harm. It matters not what your infection is, nor whether it comes from the endometrium or a torn perineum or a lacerated cervix or a tear in the vagina; every raw surface should be absolutely and thoroughly cleansed with the curette. If you were to look inside the uterus following a labor, you would find there a large mass of lymphoid-like tissue which is gradually breaking down and which in part keeps up the flow following confinement. If infection has started there, the sooner you clean out that uterus and get rid of all this tissue the better it is for your patient. It has been my practice for several years to clean out the uterus thoroughly, clean off every raw surface in the vagina, cervix or vulva with a sharp curette; then I put on absolutely pure carbolic acid, after which a little alcohol can be used to counteract the acid. I do not use it as a routine practice, but it will do no harm. The acid is a mild caustic and kills every germ within reach. If you find a little fluctuation or infiltration back of the uterus, make a vaginal incision and drain. Sometimes you get pus and sometimes a bloody fluid. The vaginal section is preferable to opening the abdomen, which I believe is always wrong in acute cases and will cause you to lose a large portion of your patients.

DR. EDWIN RICKETTS, Cincinnati—Much has been said as to the recognition of these germs after they have once caused the infection. I wish to say a few words on the line of prevention. I think since the appearance of the lady physicians among us, we have a great prophylactic factor which will do away with the midwife. When we, as a profession, recognize this fact and extend our aid to the recognized lady physicians, rather than extending it to the midwife, we are going to do a great amount of good in the prevention of many cases of sepsis. I recall an instance which occurred a short time ago in which a midwife was responsible for seven cases of infection, four of whom died. When we see how these cases are handled it is enough to cause consternation. You can read between the lines of every paper read on this subject this afternoon and it is against this thing of not being clean, and that in turn is against the midwife. I am in full accord with the statement made by Dr. Zinke that the birth of a child is a surgical procedure. Treat that uterus as you would a broken bone. The time is coming when the recently delivered uterus will be carefully packed with gauze and it will be one of the greatest steps toward dealing with such infection that we will have at our command.

DR. C. A. DANNAKER, Kansas City, Mo.—Modern civilization has produced an environment which does not help the work of the obstetrician. A great majority of people live in flats which are not conducive to carrying out proper aseptic precautions. A large number of people are not prepared by their environment to become mothers. The maternity hospital fills a long-felt want. The parturient can be taken care of there with less expense, better surroundings and better results than would obtain in the above surroundings. The maternity hospital is the safest place for this work.

In regard to the pathological germs, which the gentleman said mean so much, it is plain dirt. How many of us go to the bedside of a maternity case after washing our hands? Ask the nurse or attendant to bring a basin of water so that whenever we make an examination we can wash our hands. How many of you give an enema before labor begins so that the rectum is clean and so that you will not introduce anything into the vagina with your finger? How many of us are extravagant in the use of cotton beneath the vulva to catch the debris? So many of us think so little of these little things that make our patient comfortable.

As to the position of the mother, it is impossible in private families to bring the patient around to the side of the bed, except in instrumental interference. That can only be done in hospitals. We should think of all these things in time, as much depends on doing these little things right.

Dr. J. Wesley Bovee, Washington, D. C.—I notice that there was some applause following Dr. Henry's statement as to the use of carbolic acid. There is no question that there is this very zone present mentioned by the essayist which is outside of material that is dangerous. This material Dr. Henry would remove with the curette and so would the rest of us if we could get it out alone, but the danger is that we might get into the zone beyond and thus open up the avenues for infection. It is impossible to remove all of the pathological organisms with either the curette or carbolic acid. As soon as you put the acid in it is diluted and thus gives an opportunity for the development of those bacteria that are left. The bacteria have a good pabulum to work on and avenues for spreading in the surrounding tissues. You must also remember a number of cases on record of carbolic acid poisoning resulting from its application to the uterus, and many other cases of dangerous toxic symptoms which, however, recover.

I am not willing to introduce my hand into the vagina of a woman who has been delivered two or three days previously. I do not consider the danger of my hand, but the danger of not getting a thoroughly sterile vulva from which infection can easily be carried into the uterus. This applies to the gloved hand as well as to the bare one.

I do not know how the last speaker expects to get rid of the danger of infection by washing out the rectum. It is perfectly proper to have an empty rectum during delivery, but he must not imagine that he has escaped the danger of infection by cleaning it out. One point of great value is to keep applied to the vulva an antiseptic solution. In my practice a pledget of sterile cotton is soaked in lysol or bichlorid solution and placed against the vulva, the vulva being spread open when the cotton is put there. That is kept there all during labor until the head of the child throws it off. It is also kept on for a number of days after the delivery. This is of extreme importance because it tends to asepticize the vulva.

Dr. W. D. Porter, Cincinnati—The use of intra-uterine douches is a procedure universally recommended by all authorities. They specify, as do the papers we have just heard, that such a douche shall be hot. Some seven or eight years ago a writer in the *Philadelphia Medical Journal* said that the chill which occasionally follows the use of the hot douche was due to the fact that the heat had the effect of contracting the vessels and of diminishing the drainage for a short time. The chill is the direct result of this failure of elimination. Since reading that article I have never used a hot intra-uterine douche and no chills have followed. I think it is important that the temperature of the douche be no higher than the body temperature.

Dr. Moran, in closing—My paper should have been entitled the "Prophylaxis and the Treatment of Puerperal Sepsis." It has been the custom in the Columbia Hospital at Washington to invariably use rubber gloves. Whoever examines the patient, is required to use the gloves. We have been doing that for the last year.

The Egyptian Medical Congress will be held under the patronage of the Khedive at Cairo, from December 10 to 14, 1902, under the presidency of Dr. Abbate Pacha. The honorary presidents are Dr. Ibrahim Pacha Hassan, Dr. Pinching and Dr. Ruffer. The general secretary is Dr. Voronoff. The work of the Congress will be divided among three sections, as follows: 1, Medical sciences, presided over by Dr. Comanos Pacha; 2, Surgical Sciences, presided over by Dr. H. Milton; and 3, Ophthalmology, presided over by Dr. Mohammed Bey Eloui. The program of the Congress will include discussions on affections especially rife in Egypt, such as bilharzia, ankylostomiasis, bilious fever, abscess of the liver, etc. Special attention will be given to questions relative to the epidemics which for some years past have regularly visited Egypt, and the prophylactic measures to be taken against them.—*Brit. Med. Jour.*

REMARKS ON SPINAL SURGERY, WITH ILLUSTRATIVE CASES.*

ANDREW J. McCOSH, M.D.
NEW YORK CITY.

(Concluded from p. 573.)

TUMORS.

Operations for spinal have generally been more satisfactory than those for cerebral tumors and offer better promise for future operative successes. There are good reasons for this. In cranial surgery the diagnosis, both as to the nature and location of the lesion, is less accurate; the lesion is often inaccessible to the surgeon and much permanent damage has often been done to the brain prior to the operation.

The symptoms of tumors of the cord are generally well marked and their location, at least within a certain limit, can be usually accurately determined. When studied with the history of the case the lancinating pains, the muscular paralyses and contractures, the altered reflexes, and the disturbances of sensation, lead us to a comparatively certain diagnosis and one is much less apt to meet with surprises than has been the case doubtless with most of us when operating for cerebral tumors. As already stated the location can generally be definitely determined. Uncertainty, however, always exists as regards the character of the growth and the structures involved.

Concerning the character of the lesion it is probable that tubercular masses, whether of bone or granulation tissue, are among the most frequent causes of pressure of the cord. In the present paper, however, this class of cases is not considered.

Of spinal tumors proper the most common are unfortunately those of malignant growth. The prognosis of these must of course always be bad, though not hopeless, as is shown by the permanent recovery of a patient from whose cord a sarcoma was removed by Davies Colley (Clin. Soc., London, 1892). Even if permanent cure can not be effected temporary relief for at least many months may be accomplished. As an example of this let me narrate the following cases, one of whom at the end of a year after operation is apparently perfectly well.

Case 11.—Sarcoma of upper Lumbar Cord; Removal; Recovery: E. K., male, aged 39, has good family history. For many years alcoholic. No venereal or traumatic history. In December, 1898, he noticed a lancinating pain shooting down the posterior part of his right thigh to the back of the knee. It was spasmodic in character. He was treated for sciatica. It continued intermittently; in July, 1899, he experienced pain in the sacral region, right buttock and posterior thigh. He went to the country, where he spent the summer and improved so much that he was able to remain at his work from October till January, 1900, when the pain became so severe that he was obliged to remain most of the day on the sofa. About this time he came to see me, complaining of what he termed sciatica, mainly on the left side. He also complained of pain in the lower lumbar region where there was also some tenderness to pressure, especially to the left. There appeared to be some stiffness in the lower part of the spine; there was no paralysis, no anesthesia; knee-jerks were normal. I suspected at the time pressure on the cord but was rather inclined to favor tubercular disease of the bone. He drifted away from my care. He was treated with a brace, mercurial injunctions, iodids, etc., without benefit. In fact his symptoms gradually progressed and after the end of April his pain became especially severe,

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

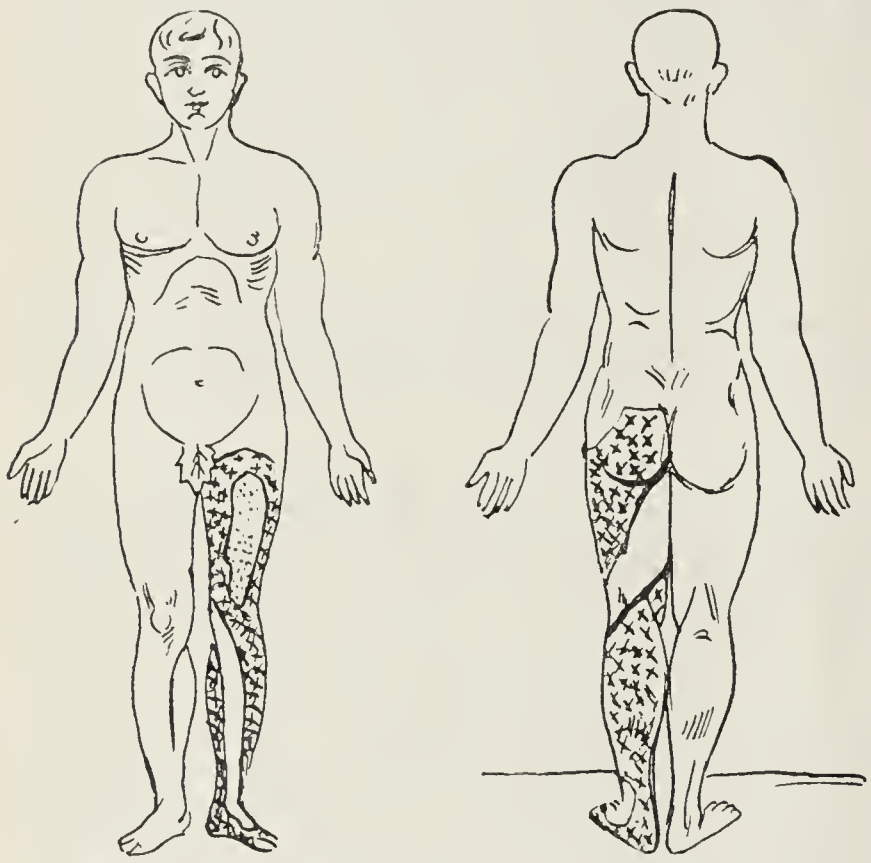
extending down the posterior surface of the thighs and legs to the feet. About May 1 he noticed numbness, which extended over the area where later anesthesia (shown in the diagram) appeared on the posterior and outer surface of the left thigh, leg and foot. At the same time he noticed decided weakness of the left leg.

After consultation with Dr. Pease Bailey the diagnosis of tumor of the cord at the upper part of the cauda equina was made, and he was sent to the hospital on May 15 for operation. There was pain and tenderness along the lower spine; pressure at this point caused a burning sensation along the posterior and outer aspect of the left thigh and leg. There was partial paralysis of the muscles of the left thigh and leg with some atrophy, the left thigh measuring two inches less than the right. The left patella reflex was entirely absent. There was no ankle clonus; no priapism.

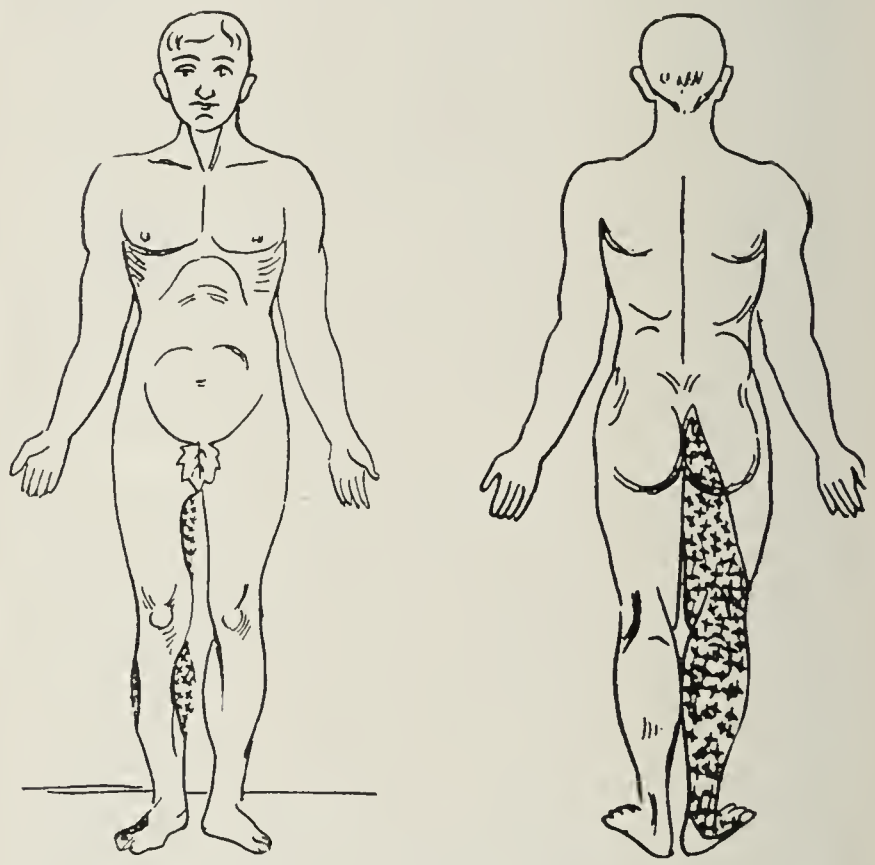
Operation May 22, 1900; gas and ether. An incision was made from the eleventh dorsal to the second lumbar spines; the spines and laminæ of the twelfth dorsal, first and second lumbar vertebræ were removed. Through the dura was seen a bluish substance. It was opened through the extent of the incision. No cord could be seen, but the canal seemed occupied by a bluish, watery, granulation-like mass which extended from the lower border of the twelfth dorsal vertebra to and somewhat below the upper border of the third lumbar vertebra. On pricking the tumor considerable greenish fluid escaped. At the upper part of the twelfth dorsal vertebra the normal cord was seen, and when followed downward was found displaced to the right and anterior part of the vertebral canal, where it was first exposed after removal of the tumor, which was done by a sharp spoon. The tumor, which was soft and vascular, extended well around the lateral surfaces of the cord. It was about two and a half inches in length, a half to two-thirds of an inch in thickness. All that was seen well around to the sides of the cord was carefully scraped away, as was also the bone. The hemorrhage was trifling. The dura was sutured, and also the wound. A small gauze drain being inserted. Shock was very slight and the patient made a perfect recovery from the operation. Previous to the operation for several weeks he had been using three to five grains of morphin daily, after the operation he required but one hypodermic of a quarter grain. His pain immediately ceased and on the day following he declared that he was more comfortable than he had been for months. He remained in the hospital for thirty days, during which time he gained 22 pounds. During this time he suffered no pain whatever, sensation gradually increased in the anesthetic area and when he left the hospital there was a slight knee-jerk in the right knee.

He continued to improve and on examination in September, 1900, sensation was found normal; the left patella reflex was completely restored; the left thigh measured but an inch and a half less than the right. He had gained 35 pounds in weight since the operation and said he was in perfect health. During the winter until May 25 he has remained at work lifting heavy printing plates weighing from 20 to 60 pounds from a table to a shelf above his head. He says that he experiences no stiffness or weakness in his back, and though he feels tired at night he feels well. While there is still a prospect of recurrence of the growth the man has been restored to perfect health and comfort for more than a year.

CASE 12.—Sarcoma of Lumbar Cord; Removal; Recovery; P. D., male, aged 46, had always been a healthy man of good habits, with no venereal or traumatic history. About Christmas, 1900, he began to feel some pain on the outer side of his ankles. About the middle of February he complained of considerable pain shooting down the posterior part of the right thigh and leg as far as the outer ankle. It increased rapidly, and by March 1 was so severe that he was obliged to give up work and go to bed. In the middle of March the pain began to shoot from the sacral region around towards the right groin, the glans penis, testicles and inner side of right thigh. He also had pain on defecation, and when his bladder was full. Micturition at times was difficult, and he was markedly constipated. He was brought to the hospital by ambulance on May 20, having fallen down in a severe paroxysm of pain. During a week's observation in the hospital, the pain, shooting from the sacral region across the right buttock and down the posterior surface of the right thigh and leg, was very severe. There was considerable loss of power in the right thigh and leg. He could not stand up, but thought this was partially due to his pain. There was an area of partial anesthesia, at times seemingly complete to both touch, temperature and pain along the right posterior thigh, leg, and over the outer side of the foot. On his buttock above and internal to this there was a narrow line of hyperesthesia. Both patella reflexes, but especially the right, were feeble. Jarring of the body did not cause pain, though it was somewhat increased on motion and there was some tenderness to pressure in the lower lumber region. In four weeks he had lost 80 pounds in weight.

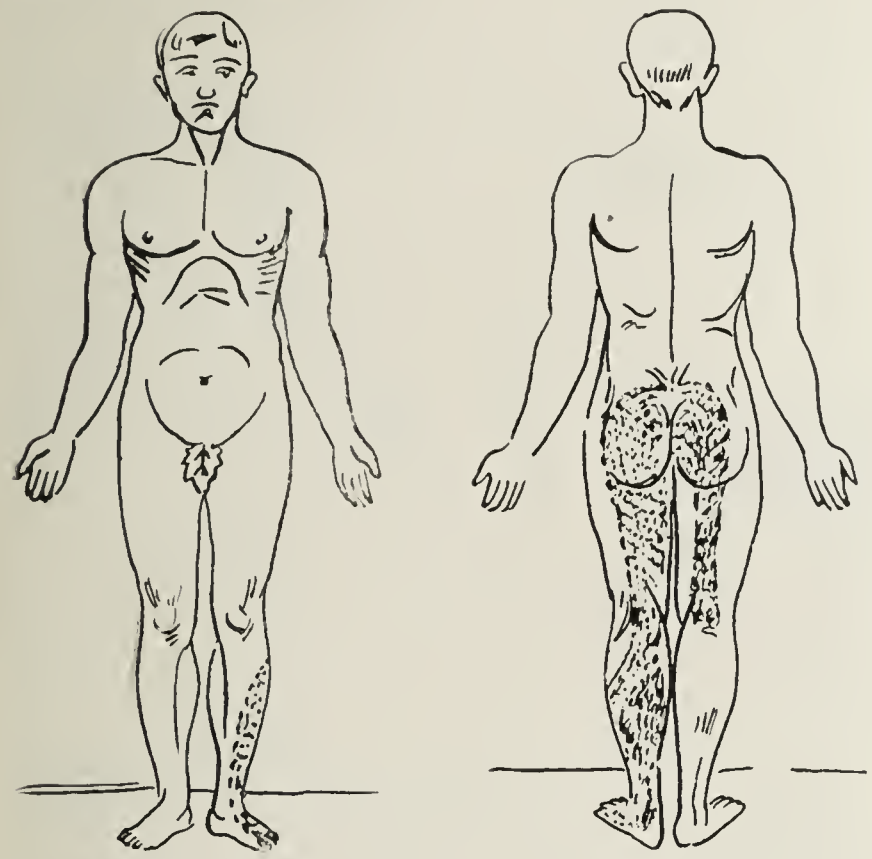


CASE 11.—Tumor. The small crossed lines represent partial, the dotted complete anesthesia.



CASE 12.—Tumor. Small crosses indicate area of partial anesthesia to touch, pain and temperature. Pain is also referred to this area.

After consultation with Dr. Northrup, the diagnosis was made of tumor probably malignant in the neighborhood of the third lumbar vertebra. Operation, May 28, 1901; gas and ether. An incision was made from the fifth to the first lumbar spines. The spines and laminæ of the second, third and fourth lumbar vertebræ were removed. There was seen lying on the dura a dark-red, purplish, vascular granulation-like mass, completely hiding the dura except at the upper and lower extremities of the wound. The tumor somewhat irregular, about two and a half inches in length, was spread out more than half way around the cord. It varied in thickness between a quarter and a half an inch. It was removed by a sharp spoon, and in order to reach its lateral projections the cord (cauda equina) was raised from its bed and almost lifted out of the canal. The tumor was apparently removed, but doubtless it was not thoroughly eradicated. It extended from the upper border of the fifth lumbar vertebra as high as the middle of the second lumbar vertebra. In its removal the dura was freely opened and in part removed. The nerves forming the cauda equina were considerably contused and somewhat lacerated. The dura could not be closed. The wound was sutured, with the exception of the gauze drain.



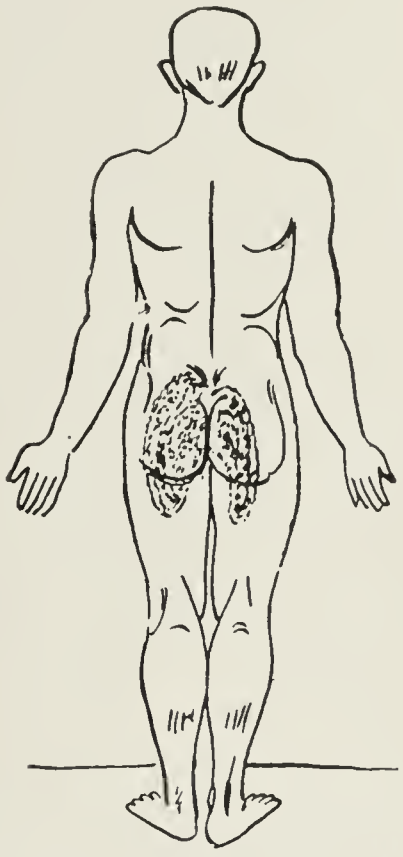
Case 13.—Tumor. Area of partial anesthesia to heat, Nov. 10, four days before operation.

Very slight shock followed the operation. The man suffered no pain, in fact when he recovered from the anesthetic he declared he was more comfortable than he had been for three months. There were no muscular twitchings and no increase in his paralyses.

The gauze drain was removed at the end of thirty-six hours. A considerable amount of cerebrospinal fluid continued to escape from the wound for four weeks, and then gradually ceased. The anesthetic area remained unchanged for five days, when slight improvement was noticed, which has continued.

Case 13.—Sarcoma involving Cord, Bone, and Muscles in Lumbar Region; Operation; Temporary Improvement, followed by Death: H. M., female, married, aged 30, is mother of four children. No venereal or traumatic history. Moderate drinker but always enjoyed good health. About the middle of September patient began to experience in the left foot and leg the sensation of pins and needles being stuck into the skin. This was most felt on the outer surface of the leg just above the ankle. It caused the patient considerable pain; during the next two weeks these sensations gradually extended upwards toward the trunk. The parts affected felt numb, less discomfort was felt when walking, than when at rest. About the middle of October the pain became less severe but the patient found she had lost the power to use her left lower extremity in walking or standing. At this time she still had control of her bladder and rectum.

On October 22 she was admitted to the medical side of the hospital; her general condition was then good; there was partial paralysis of the left leg, causing marked drop-foot. The patella reflex on the left side was completely lost, on the right markedly diminished. Sensation was normal to pain and touch. Several large blebs were present on the left foot. The circumference of the left leg was four inches smaller than that of the right. There was a beginning bed-sore over the sacrum. The symptoms rapidly increased, she soon lost control of bladder and rectum. In two weeks the paralysis had spread to the anterior tibial muscles of the right leg, and a saddle-shaped area of anesthesia developed in the lower extremities as far as the foot on the left side and the lower third of the thigh on the right. The paralysis of the right side continued to increase and the patient began to complain of very severe pain in the small of the back, and along the hips down into the thighs. The temperature was normal and the pulse ranged between 90 and 110. The urine contained albumin, casts, and some pus. In the meantime, on the supposition that the lesion might be syphilitic, iodid of potash was administered in increasing doses.



Case 13.—Tumor. Area of partial anesthesia to heat, Nov. 26, sixteen days after operation.

The diagnosis was made of tumor, probably malignant, in the neighborhood of the second and third lumbar vertebræ. The patient was transferred to the surgical side for operation on November 13, 1900; chloroform. An incision was made from the first to the fourth lumbar spines. The muscles next the bone were found infiltrated with a spongy, very vascular growth, which infiltration was afterwards found to spread laterally for a considerable distance. The spines and laminæ of the second and third vertebræ, and probably a fourth, were more or less disintegrated and were infiltrated with the same spongy, friable, very vascular growth. Considerable masses of bone were removed, as also of the soft parts, in hopes that the pain would thus be somewhat relieved. Radical operation was out of the question and the cord which could not be distinctly recognized was infiltrated by the same new growth, as was also probably the vertebral bodies. The bleeding was severe, but was controlled by pressure. Shock was severe, but she soon rallied.

Marked improvement followed the operation. Her pain practically ceased; there was some return of sensation and to our surprise the wound healed kindly. On January 1 the patient was comparatively comfortable and was able to sit up part of the day in a chair.

The bed-sores did not heal. During February, however,

all progress ceased; the patient began to grow weaker; she began to suffer pain; the paralysis increased and in March a tumor developed in the epigastric region. She gradually grew weaker and died on April 10, 1901.

In regard to the structures involved, whether the tumor arises from bone, membrane or cord, it is often impossible to determine. The bony tumor will generally be malignant or tubercular in character. In either case while an operation may not be able to remove the growth it may enable the operator to relieve, at least for a time, the pains, which are apt to be agonizing. This may be accomplished by division of appropriate nerve roots. To be of any service three roots must be divided, as the anastomosis between the sensory nerves is so perfect that the division of one or two nerve roots is practically useless for abrogation of pain.

As regards the situation of the tumor relative to the cord, it may be stated that no case has yet been reported where recovery has followed the removal of an intramedullary tumor; neither has a tumor been successfully removed from the ventral side of the cord. It seems to be the rule that the higher up in the cord the tumor be situated the worse becomes the prognosis.

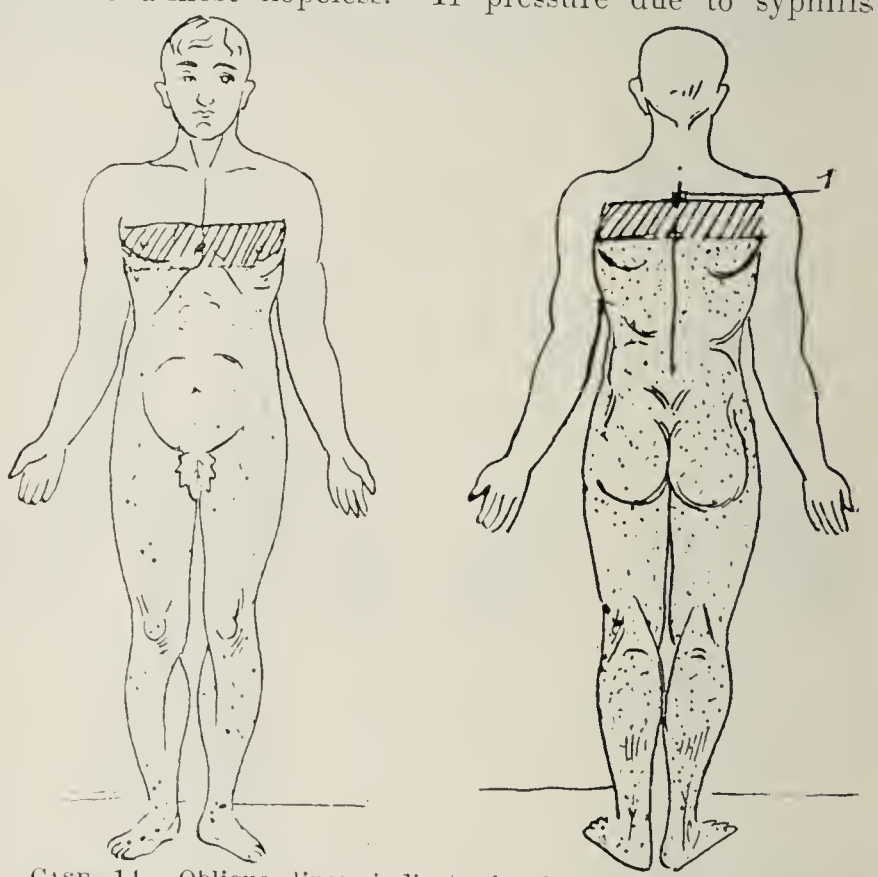
Provided a tumor of the cord is diagnosed, what is the surgeon's duty? Is he to operate at once on every case? Is he to wait for confirmatory symptoms, such as signs of degenerations or extension of paralyses? In regard to the first question the same principles should rule him as would were there any other organ concerned. He should ask: 1. Can the tumor be removed? 2. If irremovable can the patient be relieved by palliative operation? 3. What are the dangers of the operation? 4. What are the chances of permanent recovery? The nature of the growth—the structures involved and the damage already done to the cord are problems which as yet we are generally unable to solve, at least with certainty. Knowledge concerning the danger of operation is, however, more definite. While many cases have died as the direct result of operation and in others death has been hastened, the dangers at the present day should not be great. Certainly, a mortality directly due to operation should not be more than 10 per cent. Many of the reported cases where death followed within a week or ten days, were done years ago, when our methods were less perfect than they are to-day. Sepsis was the principal cause of death. At the present time we certainly would not expect this to occur in more than 1 or 2 per cent. of our operations. Death from shock or hemorrhage should result but rarely, certainly in not more than 5 per cent. of our cases.

Provided there is reasonable probability of the existence of a spinal tumor, and unless there be positive evidences that cure or relief is impossible, I would urge operation on every case at the very earliest possible moment. If it be postponed the chances of benefit become less with every day's delay. If no operation be done the outlook is hopeless. The result will be progressive pain, weakness and death.

Lloyd has collected 51 cases of operation for tumors of the cord, with a mortality of about 10 per cent.; 31 per cent. of these cases recovered. My own operations number 6. Of these none died as the result of operation. One patient at the end of more than a year is well; another at the end of two months. Two died from sarcoma of other organs. One died at the end of two months from sepsis due to bed-sores and cystitis.[2]

2. One, Case 1, reported as lipoma, should probably not be considered in this connection.

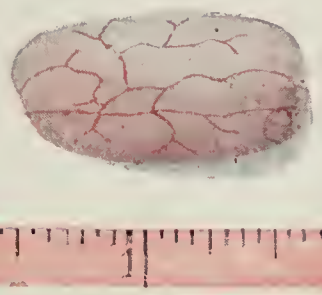
The possibility that the tumor is syphilitic, in the nature of a gumma, unfortunately, must be considered. I say "unfortunately," for the delay caused by this possibility has been responsible for the loss of many lives. It is rarely that a case of spinal tumor is not subjected to this treatment, which involves a delay of many weeks. Of the tumor cases which I have seen, with one exception, every patient has been subjected to antisyphilitic treatment. In one of my cases at least this treatment, or rather the delay, necessary for its test was largely responsible for the patient's death and I feel sure that most of you will recall similar cases. If a patient gives a syphilitic history it is certainly proper that the specifics should be tried for a reasonable time, but when no such history is given it seems to me most undesirable to soak the patient with mercury and iodid, and in the mean time allow bed-sores and other complications to develop, which render operative interference almost hopeless. If pressure due to syphilis



CASE 14.—Oblique lines indicate band of partial anesthesia. Dotted parts indicate area of complete anesthesia to touch, pain and temperature.

were common there might be some excuse for trying to relieve it by medication, but as gummata sufficient to produce the symptoms of pressure resembling those of tumor are very rare, it seems to me that it is generally wiser and safer practice, where there is lack of evidence of syphilis, to give the patient the benefits of an operation. Death which resulted in the following case may largely be attributed to such delay.

CASE 14.—Fibroma of lower Cervical Cord; Operation; Removal; Operative Recovery; Death in 43 days: Mrs. W., aged 37, had been a comparatively well woman until January, 1900, when she began to complain of some obscure abdominal pain. There was no history of syphilis or traumatism. In March or April, 1900, she began to complain of severe neuralgic pain, shooting around the chest just below the left breast. Soon after this she noticed numbness of her left leg and there was slight increase of both patellar reflexes. In the summer of 1900, her lower extremities became more or less paralyzed, and in August she began to lose control over her bladder and rectum. In September the paralyses in her legs became complete. The patellar reflexes became more exaggerated and any irritation to her body produced violent muscular spasms in her lower extremities. The neuralgic pain around the left side of the chest became very severe. Anesthesia of the body as high as a line drawn at the fifth or sixth dorsal nerve became complete.



Case 8.—Tumor compressing spinal cord. Actual size.

The patient was treated for weeks and months with mercury and iodid of potash. Her symptoms during the summer varied somewhat, being for weeks at a time of milder type, but in the autumn they became rapidly worse. In the meantime, due to the delay necessitated by the employment of antisyphilitic treatment, a foul bed-sore developed over the left hip.

The patient was sent to me for operation by Dr. M. A. Starr, with the diagnosis of tumor of the cord in the region of its fourth dorsal segment.

Operation Oct. 20, 1900. Chloroform. A 5-inch incision was made from the second to the sixth dorsal spine. The spines and laminæ of the second, third, fourth and fifth dorsal vertebræ were removed. A moderate layer of fat covered the dura. It was slightly purplish in color. It was opened for a distance of four inches. The pia seemed congested and bulged outward, caused by the excess of cerebrospinal fluid. It was punctured and an ounce or more of fluid escaped. The cord looked somewhat atrophied, but otherwise normal. The third and fourth posterior roots were picked up with a blunt hook and divided. A director, passed both inside and outside the dura upward and downward for two inches, met with no obstruction. The dura was sutured with catgut; the muscles and skin with catgut and silk.

Very little reaction followed the operation. For forty-eight hours there was some increase in the muscular spasms and some decrease in the pain across the chest. It was evident, however, that the lesion had not been found and judging from past experience we concluded that the tumor was situated at a higher point; and accordingly on October 23 the second operation was performed. An incision was made from the first dorsal or upper termination of the former wound to the fifth cervical spine. In the original wound there had been no attempt made at repair. It was perfectly clean, but there was no agglutination whatever of the skin or muscular edges. The spines and laminæ of the first dorsal, seventh and sixth cervical vertebræ were removed. Towards the upper end of the incision the dura for a space of two inches looked rougher and redder than normal and to it the ligaments had been slightly adherent. Superior to this point there was marked pulsation of the dura. It was opened through the whole length of the incision three to four inches, and at a point opposite the lower three-fourths of the seventh cervical vertebræ, the interspace below and the upper part of the first dorsal was seen a mass somewhat sausage-shaped, resting under the pia about an inch and a quarter in length, two-thirds of an inch in breadth, and half an inch in depth. Its color was pearly gray, slightly pinkish. The cord under it was practically concealed by the tumor, to which it was connected by a thin layer of connective tissue. It was completely encapsulated and was easily lifted from the cord by division of a thin fascia and removed entire. (At the former operation the opening of the dura had extended to within three-quarters of an inch of the lower end of the tumor. The dura was sutured with catgut and the wound closed.)

See colored plate, marked Case 8.

The operation was followed by comparatively little shock. For some days she complained much of pain in the wound and excessive hyperesthesia across the upper part of the chest extending a little above the clavicles. The muscular spasms soon ceased and she complained of no contraction or pain, except in the upper part of the chest and back of her neck. The bed-sores on her hips slowly increased in size and their base consisted of a sluggish, foul, sloughing area.

In a few weeks she began to develop evening temperature, and for weeks until her death her temperature ran a septic course due to absorption from the bed-sores. The pain in the neck and chest was so severe that anodynes were necessary. Her stomach became very irritable and it was with difficulty that she could be fed. Towards the beginning of December she began to have periods of delirium and semi-consciousness and she gradually failed and died on Dec. 3, 1900.

The wound remained clean throughout the course of her illness, but there was an entire absence of any sign at repair, its edges being kept together by silk sutures and adhesive plaster. On microscopic examination, the tumor proved to be fibroma, though it contained some cells suspicious of sarcoma.

It is, of course, of the utmost importance that the lesion be located before operation. One can not ruthlessly sacrifice spinous processes and laminæ, and a large flap is not practicable as it is in operations on the brain. The location within certain definite bounds can almost invariably be settled. It is impossible, on account of the anatomic arrangements, to assign a certain lesion to any one segment of the cord, but it is almost always possible to locate a lesion to an area embraced by three spinal segments. The reason for this is evident. There is no spot on the surface of the body and practically no muscle (with the possible exception of some of the deep small muscles of the back) which is innervated by one nerve root alone. The anastomosis between the sensory nerves is so perfect that every spot of skin derives its sensation from at least three or more nerve roots or segments, and every muscle derives its motor power from at least two segments of the cord.

In addition to this it is known that the afferent and efferent tracts run up in the substance of the cord for a considerable and according to location a variable distance, that degeneration will at times follow up these tracts for a considerable distance, perhaps two segments, before it reaches the real nerve center in the gray matter of the cord. As a consequence the cause of a paralysis or irritation of a muscle or of an area of anesthesia may, instead of being at the segment into which the nerve root supplying said muscle or spot of skin enters, be located at a point a considerable distance higher up in the cord.

This is one of the reasons why in many of the operations for lesions in the cord the spot selected as its site has been found to be considerably lower than the spot where the lesion is found at operations to exist. On this account more than one operation has been fruitless. Case No. 10 is a good illustration of this. The symptoms were most misleading and reliance was placed on published rules and tables and the lesion not found at operation. Fortunately the result was not affected by this failure.

A difficulty which not infrequently presents itself in these operations is the determination of the exact position of the different spinous processes. This is especially true as regards the cervical region, and in short-necked, fat females it is often difficult, sometimes impossible, to accurately locate the different spines. Errors because of this uncertainty have more than once been made, and I know of no rule whereby in certain cases various spines can be definitely located. In the cervical region it is, of course, easy to say, find the seventh or vertebral prominence and count upward. This is certainly easier than to count downward, beginning with the axis or atlas. But it is not always easy to determine which is the seventh spine. The sixth cervical as well as the first dorsal spines are often almost as prominent, and in a neck covered by adipose tissue it is sometimes difficult to distinguish between them. Likewise, in the dorsal and lumbar regions similar difficulties at times present themselves. Of course, in the former the ribs can generally be taken as a guide for locating the different spines, but, again, in stout people with strongly developed muscles this is not always easy.

Before considering the technique of the operation it may be well to make a few general suggestions in regard to spinal surgery.

1. The incision should be made as high up as possible. The main reason for this is that the nutrition of the

soft parts below the seat of lesion may be impaired because of destruction of the nutritive cells in the cord. Another reason of less moment is that the lesion has generally been found above rather than below its point of location.

2. The operation should be done rapidly. But few vessels need the application of artery clamps and still fewer of ligatures. If a bold incision be made the bleeding will not be great and can be controlled by the use of gauze pads held down by broad retractors. At times it may be necessary to pack one side or end of the wound with sponges and while these remain for a minute or two the operator can work at some other part of the wound. In my recent operations I have employed but very few artery forceps and often not a single ligature.

3. Ample space should be afforded for proper examination of the cord. For this purpose the removal of at least three laminæ is generally necessary. Of course, in cases of fracture, bullet or stab wounds of the cord the removal of one or two laminæ may suffice; but at least in cases of tumor one should be careful not to be hampered by too small an opening.

4. Support after operation of the spinal column by means of braces or plaster-of-paris jackets has not seemed to me necessary; indeed, it seems to me it adds only to the discomfort of the patient. An experience of nearly twenty laminectomies has convinced me that it is generally useless.

There are two methods of operation for exposure of the spinal cord:

1. By means of a vertical incision through the skin down to the tips of the spinous process and then division and separation of the muscles attached to these until the posterior arch of the vertebral column is well exposed. The spines and laminæ are then removed by bone forceps and no effort made to save the fragments for replacement at the close of the operation.

2. By means of an osteoplastic flap consisting of skin, muscle, and the posterior arches of the vertebra, the flap if single remaining attached by a hinge situated at one or the other side or end, or if double the hinge being in the middle. The advantages of the first method are greater rapidity, less hemorrhage, and better access to the cord. Its disadvantage is that because of removal of bone there must be left a gap in the posterior arch of the spinal column. I do not place much value on this objection, as in the majority of cases no special weakness of the back results.

The advantage of the second method is that the bony flap is replaced and consequently the posterior bony arch is completely restored. Its disadvantages are that the operation takes more time, more blood is apt to be lost, access to the cord is less satisfactory and there is a liability that the nerve roots may be irritated by resulting callus or imperfect adaptation of the bony surfaces.

My own preference is for the first method. Subperiosteal removal of the posterior arches is theoretically desirable, but practically it is very unsatisfactory. It is, however, desirable to retain attached to the muscles as much periosteum, ligament, and tendon as is possible.

In regard to the instruments most suitable for laminectomy each surgeon will probably have his own preference; mine is for bone forceps, and I know of none better than the old-fashioned rongeur forceps of Luër. The handles, however, should be made a little longer. Many other ingenious and equally useful forceps have been devised for this purpose. Saws, both hand and electrical, are employed by some operators and it is claimed that the removal of bone can thus be accomplished more rapidly. I have not found this to be the case with hand saws, and the use of electrical saws for this purpose has always seemed to me dangerous.

In my own operations a median incision five to seven inches long is made directly down on the tips of the spinous processes; the muscles and tendons on each side of these are divided by knife or scissors until the laminæ are exposed. From these the muscles are rapidly stripped, the bleeding being mainly controlled and the sides of the wound retracted by broad retractors, under which are held pads of gauze or sponges. The spinous processes are then divided at their base by heavy bone forceps. The laminæ well out toward the pedicles are then gnawed off by means of Luër ronguer forceps. Sufficient bone is removed to give a good exposure of the cord covered by its dura.

If the lesion for which the operation be done is not then seen the dura is opened and the cord with its nerve roots thoroughly explored. With proper precautions the increase of risk due to the opening of the dura should be only slight. If a tumor be found, its removal will depend on its character and situation. If benign, it will be easily enucleated without hemorrhage. If malignant, hemorrhage may be severe if the growth has infiltrated into adjacent structures.

CONCLUSIONS.

1. The risk of the operation of laminectomy is slight.
2. Early operation is of the greatest importance. Operate before the onset of degenerate changes.
3. In tumor cases do not waste time with antisyphilitic treatment.
4. Operate rapidly. Employ but few artery forceps or ligatures.
5. Support of the spinal column after operation is generally unnecessary.

LAMINECTOMIES FOR FRACTURES AND DISLOCATIONS.

No.	Name and Age.	Date.	Time after Injury.	Lesion.	Results.
1	E. G., 33	June 4, 1890	8 months.	Pachymeningitis, old fracture, 4th cervical vert.	Recovery.
2	G. A., 65	July 13, '90	12 hours.	Fracture, 3d cervical.	Death in 12 hours.
3	J. H., 42	June 27, '91	7 days.	Fracture, 10th dorsal.	Death in 66 days; sepsis due to bedsores and cystitis
4	J. T., 27	July 3, 1891	9 hours.	Fracture, 6th dorsal.	Recovery.
5	T. C., 41	June 1, 1892	6 hours.	Fracture, 7th cervical.	Death in 10 hours.
6	M. M., 35	Oct. 5, 1901	8 days.	Dislocation between 4th and 5th cervical.	Death in 12 days.

LAMINECTOMIES FOR TUMORS OF THE CORD.

No.	Name and Age.	Date.	Duration, months.	Location.	Lesion.	Results
1	E. R., 50	March 29, 1894	5	7th and 8th dorsal.	* See note.	Death in 15 months from tuberculosis.
2	M. H., 42	March 6, 1894	11	5th dorsal .	Sarcoma . .	Death in 18 days due to sarcoma lung, pleurisy.
3	E. K., 39	May 22, 1900	28	2d lumbar.	Sarcoma...	At end of 13 months patient well.
4	Mrs. W. 37	Oct. 20, 1900	10	7th cervical.	Fibroma .	Death in 43 days; sepsis due to bedsores.
5	H. M., 30	Nov. 13, 1900	2	2d, 3d, & 4th lumbar.	Sarcoma...	Death in 5 months; exhaustion.
6	P. D., 46	May 28, 1901	5	2d lumbar.	Sarcoma...	Recovery.

* Reported in Am. Journ. Med. Sc., June, 1895, incorrectly as lipoma of 10th dorsal. Future history of case showed it to be tubercular disease of the 7th and 8th dorsal.

SPINA BIFIDA OR HYDRORRHACHITIS.*

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Spina bifida or hydrorrhachitis is a congenital malformation consisting of a cleft in the vertebral column with protrusion of the lining membranes of the spinal cord.

This deformity is caused by an arrest of ossification of the vertebral arches, and is situated in any region of the vertebral column. It is more frequently found in the lumbar region, which constitutes about 50 per cent. of all cases; there are probably about 12 per cent. in the lumbo-sacral region, and about 25 per cent. in the sacral region. It is frequently associated with other congenital deformities, such as hydrocephalus, talipes, harelip, etc.

It consists of a tumor, varying in size from a marble to an adult's head, and occupies the central portion of the canal over the posterior aspect of the vertebral column, and is intimately connected with the canal in which a gap is felt in the bones of the vertebra upon raising the tumor. The tumor is elastic, smooth and fluctuating, and in some instances wholly translucent; in other cases it is covered by integument, which may be normal in character, but more often the skin is thin, covering the base and sides of the tumor, or finally emerging into the transparent membranes, which forms the apex of the growth. In some cases the tumor is pedunculer, in others sessile.

In this malformation there may be entire division of the vertebræ, involving even the bodies, with partial or complete absence of the lateral arches; or there may be perfect development of the lateral arches with the want of union at the median line. This protrusion generally takes place during the latter months of the fetal life; it may, however, be unobserved until some weeks or months after birth.

At present there are recognized three distinct varieties of this affection: 1, meningocele, the protrusion consisting only of fluid held in the membranes of the spinal cord; 2, meningo-myelocele, where we have the addition of a portion of the cord in the sac; and 3, syringo-myelocele, the central canal of the spinal cord being dilated, thus forming the cavity of the sac.

This is, as we are all aware, a very fatal affection, few children surviving longer than five or six months after birth, many dying before that time. Death usually occurs from convulsions, or ulceration and rupture of the sac. If the sac is ruptured during parturition, the infant is nearly always stillborn; and if it becomes open after birth, death usually follows in a few hours, the immediate cause of death being convulsions from the pressure being taken off the brain in consequence of the loss of the cerebrospinal fluid.

In the diagnosis of this affection there are some very important facts which should be borne in mind. The tumor is congenital and occupies the central portion of the posterior aspect of the spine. By pressure it is diminished in size, tension being easily seen at the fontanelle. By raising the tumor we are often enabled to discover the loss of the spinal arches and map out the bony margins of the spinal bodies; and when the child cries or coughs the tumor becomes more tense.

On account of the very fatal termination in the majority of these cases it can be readily recognized that the surgeon is warranted in pursuing any treatment which promises a prolongation of life or a radical cure. This treatment we can readily divide into palliative and radical. In the palliative treatment, when the tumor is small, or of moderate size, considerable pressure should be exerted upon it, either by the application of collodion, or a cup-shaped truss either made of surgeon's wool or some soft material, this pressure being maintained by a common roller bandage or adhesive strips. This treatment is suggested by a few accidental cures which have resulted by pressure being exerted by binders, which have been inadvertently placed tightly around the child's body, and in this way compressing the tumor. Some surgeons supplement this treatment by acupuncture, their method being by repeatedly pricking the thin portion of the cyst wall with a fine needle, allowing the fluid to ooze away upon an aseptic dressing; another method, following a similar course, is by tapping the cyst with a fine trocar and cannula, one or two drams of the fluid being drawn off at each tapping, gentle pressure being maintained either by pads of wool or cotton or the application of collodion.

In 1848, Dr. Brainard reported a number of successful cures by the injection of iodin into the cyst. The rules laid down by him are: 1, to make a puncture subcutaneously in the sound skin by the side of the tumor: 2, to draw off no more fluid than the quantity of fluid to be injected; 3, to evacuate the contents of the sac and, if symptoms of irritation supervene, to replace this fluid immediately with distilled water. The solution he generally used was iodin and iodid of potassium in the proportion of one-quarter grain of the former and three times the quantity of the latter to one ounce of distilled water. Morton's fluid has been lately employed more or less with success, and consists of 10 gr. of iodin, 30 gr. iodid of potassium to 1 oz. of glycerin. Two drams of the fluid are generally drawn from the cyst walls and replaced by the same quantity of this injection. These injections are repeated at intervals of from one to three weeks, so long as inflammation continues.

The radical operation consists in the excision of the sac. Dr. Bayer has reviewed the whole subject of spina bifida, and has discarded the treatment by acupuncture, seton, or trocar, and he condemns the injection of iodin or other irritants into the sac, and considers this condition to be one analogous to hernia, and suggests that the treatment of this affection should be maintained upon the same lines. He points out the danger of meningitis following this plan of treatment is no greater than that of peritonitis following the treatment of hernia, and as compared with the operation for hernia is both safer and more certain of success.

It does seem to me, from the statistics gathered from the treatment by tapping followed by the injection plan, the results of which have been most unfortunate, we are warranted, especially in this aseptic age of surgery, to treat this affection after the suggestion of Bayer; especially when the tumor is small and pedunculer. Some very brilliant results have followed this plan of treatment. The outlines of the operation are as follows: An incision is made through the skin on each side of the tumor about an inch from its base and two flaps are carefully dissected off the tumor, the sac is then punctured, withdrawing the fluid, and the sac so cut and separated as to leave two flaps, one longer than the other. Should the nerves or portions of the cord be found adherent to the sac, they are carefully separated from the wall of the cyst and returned to the spinal canal. These flaps are now sutured, the approximation

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

being so close that leakage will be impossible; the skin flaps are now brought together by silk or silkworm gut sutures, and should there be a deficiency of skin for covering, sufficient amount can be obtained by dissecting the skin from the loin and transplanting it.

In looking over the literature on the subject of operation by extirpation, I found among some of the rules laid down the following: Extirpation is unjustifiable in very young infants; in cases complicated by extreme hydrocephalus, paraplegia, or serious nerve lesion; and again, where also the disease is very extensive and the want of a normal amount of integument is inadequate for covering the outside of the cleft. The indications advised for such an operation are as follows: Where the child is over 7 or 8 years old, and where the tumor is rapid in its growth, rupture threatened, and where normal skin is abundant for covering.

In consulting the authors on this subject, I am also impressed with the fact that the great majority of them are united in condemning the ligation of the sac. I therefore desire in this connection to report the following very interesting case:

On March 5 I received a communication from a local physician, stating that he had under his observation a baby of tender days, who had a fatty tumor upon the back, and which had a nevus developed upon its most salient point. The tumor, he also stated, had been growing quite rapidly in the past three weeks, and he was exceedingly anxious to know what course to pursue. I advised him to bring the child to Nashville for an examination, which he accordingly did on the evening of March 18. On the next morning, in conjunction with Dr. W. A. Bryan, I called upon the family and made a very careful examination of the baby. I found a tumor between the scapulæ, situated in the median line of the spine, about the size of an orange, translucent for about three-fourths of its diameter, globular in shape and pedunculated.

The base of the tumor was covered by normal integument. My examination also disclosed a cleft in the spine corresponding to the fifth dorsal vertebra, and I was enabled to discern the absence of the lamina and the connection of the tumor with the central spinal canal. The head of the child was drawn backward, and was apparently too large for the size of his body; there was, however, no bulging of the fontanelles, their closure being about normal for this period of life.

The following history was obtained from the mother: The family history on both sides was excellent, with not a single trace of deformity in any other member of the family, both lines having arrived at an advanced age of life. The child was born on Dec. 27, 1900, and weighed 5 pounds at his birth. Shortly after birth the mother noticed a tumor about the size of a partridge egg, with a nevus over the most salient point, and which, she informed me, grew rapidly from the date of the child's birth, increasing when the child cried, and producing a slight bulging of the fontanelle, which was also noticed when I made gentle pressure upon the base of the tumor.

I gave it, as my opinion, that we had a spina bifida to deal with, which was concurred in by my consultants, and that on account of the rapid growth of the tumor and the attenuated condition of the sac, together with the small size of its pedicle—which in diameter was only about 1 to 2 inches—that the best procedure would be total extirpation and advised an operation. The consent of the parents and consultants being obtained, the patient was prepared for an operation, which was performed on April 20.

I was assisted in the operation by Dr. W. A. Bryan. Chloroform was the anesthetic chosen, but as the patient did not do well under this anesthetic, it was changed to ether, which proved very satisfactory, the patient standing it excellently during the whole of the operative procedure. An irregular incision was made at the base of the tumor, the object being to obtain as large a skin flap as possible. The skin was dissected from the sac, which required a very delicate dissection for separation, and the pedicle disclosed, which upon examination proved to be about the size of a quarter dollar. The pedicle was seized between two fingers for the purpose of seeing if there were any spinal nerves in the contents of the tumor, but none being discovered by this examination, a clamp was carefully adjusted to the pedicle and symptoms watched. Nothing of an alarming character developing, the sac was opened at its side and drained. This incision was now enlarged and a very careful examination made of the contents of the interior of the sac, which proved to contain nothing but cerebrospinal fluid. The pedicle was now transfixed beneath the clamp by a needle loaded by a double silk ligature; this was interlocked and the pedicle ligated. The stump of the pedicle was stitched by a double row of catgut sutures and made perfectly water-tight; the skin flap—which proved abundant—approximated by silk sutures and the wound dressed.

From March 20 to March 25 the temperature was below 100 F., with corresponding pulse rate and respiration; the first dressing was made at this date and no leakage discerned. On the evening of March 25 the temperature rose to 103 degrees, which proved to be due to a stitch-wound abscess in the skin flap; this stitch was removed and the wound thoroughly cleansed and dressed.

The temperature from this date immediately decreased, the wound being dressed each day, and on March 27 it struck the normal line. The remaining silk sutures were removed on the seventh day, the wound found almost healed, and from this date the child made an uneventful recovery, and was dismissed entirely well on April 8.

In conclusion, I desire to call attention to the following points:

The child I operated on was less than three months old; the tumor was rapid in its development, and threatened rupture was imminent; the pedicle was small, and consequently easily dealt with.

With authors to the contrary, I claim the only conservative plan that could be adopted is the one carried out in this instance; which leads me to say that, in the vast majority of cases, each individual surgical case is a law unto itself, and we have to exercise that good common sense, without which surgery would be at a standstill.

Cacodylate of Soda.—A correspondent calls attention to the editorial in THE JOURNAL for August 17, p. 455, on "Cacodylic Acid." He says: "There is an error in calling this cacodylic acid, for cacodylic acid as such is not used medicinally to any extent, but the sodium salt, known as 'cacodylate of soda,' is extensively used in some parts of the country, and I have had a broad experience in observing its effects. The cacodylic acid has been known for many years as possessing the virtues of arsenic, but it could never be used satisfactorily until it was combined with a sodium base. It is now used both hypodermically and internally, and I consider it one of the best remedies we have for many conditions."

THE IMMEDIATE AND REMOTE EFFECTS OF BRAIN INJURY.*

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CLINTON, IOWA.

Immediate Effects.—The phenomena which immediately follow as the result of brain trauma are interesting chiefly on account of their diagnostic value in revealing the nature and extent of the injury and are of some importance in determining the questions of prognosis and treatment. It must be considered, however, that in many cases the early manifestations may not reveal the seriousness of the lesion fully and may be misleading. On the other hand, the first symptoms may indicate a more grave condition than the subsequent history will confirm.

The early symptom most generally observed in serious head injuries is a state of unconsciousness. What this may signify can not always easily be determined from the symptom alone. The question of importance in this connection to be considered at an early moment is, whether the unconsciousness is from hemorrhage, or from concussion or contusion of the brain. The manner in which the injury is received is of the utmost importance in determining this question.

1. Whether the patient has fallen from a height, striking on his head in such a manner as to produce a serious lesion at the base of the brain.

2. If a direct blow has been received on the convex surface of the skull and of such a character as to produce a lesion in the cortical or subcortical brain substance. Having determined with reasonable certainty that the lesion is in the convexity of the brain, the value of ascertaining whether or not a considerable hemorrhage has occurred is very great in determining the immediate result of the injury and the treatment to be employed. The nature of the blow and its location may be of some importance, but can not always be relied upon. For instance, it is known that a man has received a blow on his head, but when he comes under professional observation, the marks of it may have been so completely obliterated, or may not have existed at all, or may be so general in character as not to reveal where the force of the blow was applied, and unless there are some focal symptoms the surgeon may be in serious doubt as to what has really transpired within the cranial cavity, and he patiently but inconsiderately waits for consciousness to return while an increasing hemorrhage is going on.

The unconscious state in itself will not reveal whether it is due to concussion or hemorrhage—except the hemorrhage from a cerebral artery, as in an apoplexy—and as the hemorrhage due to trauma is generally meningeal it does not produce the coma of a cerebral hemorrhage. While the general manifestations of unconsciousness do not indicate the cause, the manner of approach is in many cases significant. The appearance of the unconscious state some minutes or an hour or two after the accident or the return of consciousness after a primary loss, followed shortly by a reappearance of the former state, are almost diagnostic.

The unconsciousness due to hemorrhage is of course a pressure unconsciousness, and if the pressure is from a fracture with depression, the physical condition will reveal the fact, or if the marks of violence are found over the region of the middle meningeal artery, the fact should be very helpful in our diagnosis. If then the first symptoms of intracranial injury are determined to be from a rupture of a meningeal artery, particularly the middle meningeal, the immediate effects of the injury may be regarded as serious unless a prompt surgical procedure is employed. Three cases are now presented illustrating the foregoing observations:

FIRST SERIES.

CASE 1.—A brakeman was found lying on top of a freight car in an unconscious state. The cause of injury and the immediate symptoms were unknown. No marks were found on his person. He came under my care three days after the injury. He was unconscious, but somewhat restless when disturbed. There were no focal symptoms, but the long-continued unconsciousness was significant of some serious brain injury, which it seemed proper to especially inquire into. When the scalp was shaved there appeared to be a slight tumefaction in the anterior temporal region. The skull was exposed, a linear fracture was found crossing from frontal bone into parietal without displacement. Trephined over middle meningeal artery. A large clot of blood was found from rupture of artery. Clot removed, patient recovered and finally resumed work.

CASE 2.—A fireman struck his head against the side pieces of a bridge; train not moving rapidly. He was picked up in an unconscious state. I saw him three or four days after the accident. He was still unconscious. Paralysis of right arm, right leg and right side of face. Diagnosis: Compression from sub-dural hemorrhage, left side. Attending physician and friends opposed to operation at this time and trephining was not resorted to, contrary to my judgment. A week later he began to manifest evidences of returning consciousness. It was then discovered that he was completely aphasic! Could produce unintelligible sounds, but could not utter a word. In about three weeks was able to say, "yes," and "no." Could move his paralyzed leg a little, improvement appearing in face, speech and lower extremities in about equal degree, reaching arm and hand last, i. e., the pressure was greatest and most persistent in motor centers for arm and spreading out above to centers for lower extremities and below to face and speech centers. Cleared up in upper and lower extremities of motor area first and approached middle points last. The man made a complete recovery and resumed his employment as a fireman. I have always doubted the wisdom of the let-alone treatment as a principle in brain surgery, notwithstanding the fact that this patient recovered without operation.

CASE 3.—A young man, 24 years old, received a blow in the right temporal region from the fist of a companion during a controversy. The man was not knocked down, and it was supposed that he was not seriously injured. Walked to a house near by. Soon after complained of a headache and dizziness. Laid down on a couch. Two hours later he was found unconscious. After an interval of two hours more, he was seen by a physician, who apparently did not regard the case as serious. During the night the man died. Was present at autopsy ordered by coroner. No fracture of skull. Rupture of middle meningeal artery with a large hemorrhage which produced the fatal result.

The three cases above referred to illustrated three important classes of facts in relation to head injuries: 1, an indeterminate degree of trauma without definite symptoms to indicate the extent of injury; 2, an indeterminate degree of trauma with definite symptoms of a focal character; 3, a definite degree of trauma with definite symptoms to indicate the nature of the lesion. All were cases of hemorrhage and amenable to surgical treatment. All were due to direct violence applied to the head without the complicating influence of falls in which the weight of the body adds an important factor in

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damaging the brain at points remote from the application of force as seen in another series.

SECOND SERIES.

CASE 1.—A young lady was riding in a platform spring wagon. In crossing a bridge, the bridge fell a distance of 20 feet, striking on the surface of the water. She was not thrown from her seat and was apparently not much injured. She disengaged herself and walked a distance of nearly a half mile for help. Returned home and was apparently well for three days and then began to manifest speech difficulties. The aphasia increased and finally became complete. There was twitching of the muscles, particularly of right side. Became dull and stupid. Had a rise of temperature and finally fell into an unconscious state. She developed secondary pneumonia and died thirty days after the accident. I saw her a few days before she died and afterwards assisted in the autopsy. It was shown that at the time of the injury the left second frontal convolution and striate body were lacerated, establishing a communication between the left lateral ventricle and sub-arachnoid space. From this focus a process of softening had extended into the left third frontal and farther into the striate body. The vessels in this region were much congested and there was a considerable increase of cerebrospinal fluid tinged with blood. There were no clots and the blood seemed to come from numerous ruptured capillary vessels.

CASE 2.—A man was sawing off a large limb from a tree twenty or thirty feet from the ground, and was sitting on a limb below. When the sawing was nearly complete the limb fell, striking him in the head and carrying him to the ground. He was found unconscious, with an ugly and extensive scalp wound in right parietal region. No fracture of skull. The location of the wound and the symptoms taken together apparently excluded hemorrhage. On the third day skull trephined at seat of injury. Dura tense and pulseless; incision was followed by the escape of considerable clear serous fluid. Drainage provided for. Fluid continued to escape freely for several days, when the patient died. No autopsy. It was presumed that the combined effects of the blow and the fall produced such widespread damage to the brain as to result in death. The skull was very thick, and no doubt offered great resistance to fracture influences.

CASE 3.—A brakeman was thrown from a freight train in a collision. Train moving rapidly. He was found unconscious, with many bruises on his head. Saw him on second day. No fracture of skull discovered. No focal symptoms, but unconscious. Trephined at the point of apparent greatest injury—in right temporal region. Dura protruded into opening, pulseless; incised dura, a considerable quantity of clear fluid escaped with some force. Brain considerably depressed at this point by the accumulated fluid, but came up after being relieved of pressure. The man died a week later from an injury to the lung by a fractured rib. He is said to have shown signs of returning consciousness.

The above cases are selected to show the influence of much more violent injuries to the brain from the existence of more widespread influences in the organ itself. In the first series the force of the injury was expended upon a distinct and circumscribed area of skull surface and produced lesions in the brain of limited extent—chiefly pressure influences arising from hemorrhage. These cases, from the nature of the injury and the location, together with the symptoms following, point so clearly to what has transpired in the skull that a careful consideration of all the facts ought to lead to an early diagnosis and an operation for the relief of conditions, which are easily within the reach of the surgeon and which promise the most brilliant results.

The second series of illustrative cases present certain important pathologic facts. The direct injury to the brain may not have been more serious in its effects than in the first series, but the indirect influence of the fall, the jar to the skull contents and the movements of the cerebrospinal fluid may have effected more or less widespread contusion or laceration of the brain.

The first symptom—unconsciousness—may present identically the same phases and leave nothing in this respect to differentiate the two classes of cases; but when the surgeon carefully considers the history of his case in so far as to estimate the nature of the force and the manner of its application, he will be able to more than make a guess as to the gravity of the case, its prognosis and the principle of treatment to be employed.

A third series of cases illustrates the effect of a more limited area application of force than the first. The damage to the brain will chiefly depend upon the part of the brain involved, the extent of brain penetrated, the question of infection and the treatment employed. A variety of the class of cases here considered is well known to the military surgeon who has had actual experience in an active campaign. For obvious reasons I shall omit any particular reference to gunshot wounds of the brain and consider only such injuries as occur in civil practice. These cases are not generally dangerous to life if proper consideration is given them early; on the other hand, neglectful care at an early moment is liable to be followed by brain infection, particularly so if the surgeon fails to sufficiently explore the wound to remove fragments of skull and other foreign bodies which may be driven into the brain.

THIRD SERIES.

CASE 1.—A farmer was stacking hay, using a hay fork moved by horse power. The frame-work over his head fell in such a manner that the end of a projecting bolt struck him in posterior frontal region. The skull was penetrated. As soon as possible I examined the man and found a punched-out hole about ¾ inch in diameter. This was enlarged sufficiently to permit of an exploration. Some fragments of bone and a piece of felt hat were removed from the brain. The patient recovered without sequelæ.

CASE 2.—A boy, in an attempt to jump on a moving freight train, fell and lost his right arm at the shoulder joint, under the car wheels. At the same moment the end of an exposed bolt struck him on right frontal bone just above the hair line. When placed on the operating table he had a series of convolutions, which subsided when anesthetized. The bolt had penetrated the skull, carrying into the brain some fragments of bone. The opening in skull enlarged and fragments of bone removed. Recovered without any mental impairment.

CASE 3.—A young man was struck in frontal bone just below hairy scalp by a pistol ball. The ball split on the outer table of skull. It was found that fragments of bone had been driven into the brain causing some laceration of brain tissue. The fragments were removed after enlarging the opening sufficient to explore with finger. Patient recovered without mental or other nerve impairment.

The treatment of these cases involved no difficulty whatever, but if it had not been employed promptly with a view to meeting certain cardinal principles of surgery, infection would certainly have occurred early with the most disastrous results. The cases of the character above described were not followed by any remote effects. It will be observed that the anterior lobes of the brain were injured in all these patients. A similar series could be presented where the injury was to the posterior region of the brain with less fortunate termination, both as to immediate and remote results, particularly the latter. It has been observed by a number of writers that injuries to the posterior regions of the brain have been more serious than similar injuries to anterior portions.

Remote Effects.—The second section of this paper relates to the remote effects of brain injury. The cases referred to, as a rule, present no alarming symptoms immediately after the injury, and many of them present no indications for operative procedures. Others apparently do not make exception to the surgeon who has had considerable experience in brain injuries. They include cases which the practitioner believes will recover if left to themselves, and yet the experienced surgeon can see indications which point to serious results in the future, although as to the present recovery may be confidently expected.

I find it convenient to group the cases into two classes: 1, those involving pressure lesions, manifesting focal symptoms or irritation lesions, expressing themselves in Jacksonian epilepsy; 2, those involving nutrition lesions resulting in more or less extensive sclerosis manifested by mental symptoms of a more or less marked degree.

The importance of considering with care all cases of injury to the head which may produce lesions in any degree amenable to surgical treatment is very great. Experience has abundantly shown that if a course of waiting is permitted for future results, when the sequelæ are actually developed, an operation is then too late to cure what might have been prevented.

In the first class above referred to of cases considered in relation to remote effects of head injuries, may be included cases of fracture with depression and without symptoms, and cases suspicious of depression, or hemorrhage with focal symptoms. Fracture with depression and without symptoms will from the nature of things exercise a localized pressure upon the brain surface and particularly if a rough edge or spicula of bone bears upon the dura, and lead in many cases to irritation and local nutritive changes in dura, and pia-arachnoid with adhesions to cortex and even connective tissue formations in the cortex itself. In other cases where the examination shows no apparent fracture or depression, focal symptoms appear proving conclusively that a pressure lesion exists in the cortex, which in time results in organic changes in the brain giving rise to unfortunate sequelæ, and when the results do appear the effect of a late operation is always problematic. From my own experience I can not see what excuse can be offered for a neglect to restore, as far as may be, normal conditions by an operation. It is no doubt true that in some instances no serious results follow from the class of injuries above referred to, but the experience of surgeons point to so many individuals whose usefulness has been seriously impaired by secondary brain changes that the most thoughtful consideration should be given them and operative procedures should not be withheld when a doubt exists.

A child 2 years of age, while sitting in a high chair, was in some accidental way thrown backwards, striking the back of its head on the floor. The occipital bone was somewhat depressed. Some time later it was noticed that the child could not see well, and when it came under my notice two or three years later was totally blind. There was plainly pressure on the occipital lobe with certain secondary changes, leading to total blindness.

A young man was standing on the railroad tracks at a street crossing, watching an approaching train. An engine came along on the track on which he was standing and knocked him off. He was unconscious for two or three days. His physician found a scalp wound crossing from left to right parietal bone in posterior region, but no fracture. It was noticed during the period of unconsciousness that the right leg did not move freely, but the doctor saw no significance in this fact. Two months later I saw the man as the medical officer of the railway company, and found a scar two inches in length extending from left to right side of median line in posterior parietal region. The principal force of the blow was on left side over superior parietal gyrus or over leg center. Result was incomplete motor paralysis of right leg. No doubt a pressure lesion from a depressed fragment of bone existed. He refused treatment on account of a prospective claim for damages. Doubtless the unfortunate remote result could have been avoided by proper early surgical treatment.

In a small percentage the traumatic aseptic focus in the brain becomes the point of departure of lesions leading to a slow process of interstitial sclerosis more or less extended. These local disturbances of nutrition are closely connected in many of these cases with a permanent pressure irritation arising from untreated lesions which are within the reach of the surgeon and follow unwise conservatism.

In my own experience no case has occurred in which a localized lesion in the brain has been followed by either epilepsy or insanity when early operative treatment has been employed, except in wounds of the brain which have healed with scar production; while on the contrary, I have opened the skull many times at the point of an old injury for epilepsy or mental derangement with uncertain benefit and found localized organic lesions in the brain which I am quite sure in most cases could have been avoided.

The second class of head injuries are not uncommon and are particularly serious in regard to future results because of the fact that they involve widespread minute lesions which remotely affect the nutrition of the brain and bring about changes in the delicate mechanisms of the organ. The more diffuse sclerosis of a more widely extended nutritive disturbance is quite beyond the reach of the surgeon and the sequelæ must be regarded as permanent.

I have among my list a number of cases, particularly among trainmen who have fallen from rapidly moving trains and received head injuries, the symptoms of which precluded the probability of a fracture of the skull or of any localized hemorrhage, but were unconscious for several days. The return to consciousness was preceded for several days or weeks by a mild delirium, but they finally regained their mental balance, returned to work, and continued their employment for a few months or a year when it became necessary to discharge them from service on account of a developing insanity. The pathologic condition, as it appeared to me, was a more or less widely diffused connective tissue proliferation or a chronic meningitis.

Among localized brain injuries which should be excepted when considering trauma, may be mentioned scar proliferation from wounds of the brain itself. The scar thus produced may remain as a permanent condition or may undergo cystoid or other degeneration developing late symptoms. In a limited number, these cases are amenable to surgical treatment if considered early.

An interesting case of this kind came under my observation a few years ago. A boy 9 years of age received a gunshot wound. The ball entered the orbital plate near the inner angle of right eye and escaped from right parietal bone posterior to the upper end of the fissure of Rolando, passing through the fibers of the

internal capsule. I saw him six years after the accident, on account of the appearance of the premonitory symptoms of epilepsy. The boy had suffered no mental impairment, but the opposite arm and leg had not grown equal in length or size with those of the right side and he could use them but imperfectly. The scar tissue at point of exist of ball was dissected out. The opening in skull was enlarged and brain exposed. A well-developed cystoid scar was found and dissected out with complete relief to the epileptic symptoms.

Simple and compound fractures of the skull are omitted, except in so far as they relate to hemorrhage or future conditions of the brain. It is only intended to consider varieties of injuries which present elements of doubt as to what has occurred within the cranial cavity concerning immediate results which may interest the surgeon and the question of remote effects which may or may not be in a measure under the control of surgical treatment.

A large percentage of the cases referred to in this paper have possessed elements of liability either on the part of corporations or individuals and have potentially or in fact been the subjects of medico-legal investigation. For this reason not only have they been considered from the standpoint of the operating surgeon, but also for the purposes of an expert opinion. The observations referred to are now of great service to me in determining at an early moment the probable pathology of brain injuries with the view of obtaining the best practicable immediate results with as clear a conception as possible of what the future may bring. The following conclusions are offered:

1. Violence of no great intensity when applied to a limited area of skull may cause a fracture with only momentary displacement with a rupture of a meningeal artery, or a rupture of an artery without fracture.

2. A localizing injury which may lead to a fracture without displacement and hemorrhage does not as a rule cause a serious permanent brain lesion if early and judicious surgical treatment is employed.

3. A fracture may occur without apparent displacement, yet a real localized pressure on the brain exist which may cause irritative changes involving a more or less extended sclerosis and remote secondary results, as epilepsy or mental impairment.

4. A blow may be received on the head which may produce a more or less extensive laceration of the scalp which in itself is not serious. But the fall from a height or from a rapidly moving train may produce more or less extensive contusion or laceration of brain tissue leading to serious immediate or remote effects.

5. A fall from a height or moving train may without a fracture cause directly or indirectly a contusion or laceration of brain tissue or so disturb the cerebrospinal fluid as to primarily bring about such changes and cause immediate results or secondary serious remote effects by indueing degeneration and final interstitial changes producing insanity.

6. An injury may be of such a character as to produce a localized wound of the brain that may heal with the production of scar tissue which may extend, may or may not undergo cystoid or other degeneration with serious remote effects.

7. In the absence of localizing or other definite symptoms to indicate the nature of the lesion, the character of the accident and the manner in which the force is applied is of great value in reaching a conclusion as to the probable nature of injury to the brain.

DISCUSSION IN SYMPOSIUM ON SURGERY OF THE BRAIN AND SPINAL CORD.

DR. W. W. KEEN, Philadelphia—I think Dr. Eve has taken in his paper the proper ground in reference to the treatment of spina bifida. The time was when the injection of Morton's fluid, tapping, etc., were all we could do, but with the advent of modern cerebral and spinal surgery, and especially the introduction of the antiseptic and aseptic methods, I think we ought, except in occasional cases, to advocate such a treatment, and subject our cases of spina bifida to operative treatment, with or without closure of the opening in the spine, according to the nature of the case.

In Dr. Fenger's paper,[1] I was disappointed, in that he limited the exploration to the search for pus. We must have a very clear distinction in a methodical exploration of the brain for collections, either of pus or of purulent or semi-purulent fluid or of serum in some cases which may be outside the ventricle, but yet in the substance of the brain, or in other cases which are distinctly in the ventricles themselves. I have employed very much the same methods which he has advocated, by various instruments, especially for exploration outside of the ventricles, but, of course, in the texture of the brain itself. In the ventricles, however, we can also find fluid. More than ten years ago I proposed as a methodical operation and I formulated the process of several routes by which the ventricles themselves could be reached, and the ventricular or other fluid that may be there could be evacuated from the ventricles and the ventricles washed out—even irrigated from one side to the other. Unfortunately, a very elaborate paper which I presented at the International Medical Congress in Berlin was lost by the secretary and as I have no copy I have never had enough leisure to pursue the subject again; in that paper I have gathered all the recorded instances in which the ventricles have been opened by accident or design, and I will show very clearly that opening the ventricles is not the dangerous procedure or the dangerous accident that has been supposed. Within about six weeks I have had a very remarkable case and wholly an exceptional one in my experience, a young man who, in 1892, was thrown from a horse and had his skull fractured in the posterior lateral region on the right side. Epilepsy supervened seven years afterwards, in 1899, and I trephined him about six weeks ago, because at the time of his accident, there having only been small bits of bone removed, it was possible that there might be some lesion inside of the skull which had not been discovered. After I opened the skull I found the dura and opened it and evacuated a considerable quantity of fluid, and then at a distance of a centimeter (in size), not having seen any of the cortex of the brain, I found the skin over this membrane was scarcely as thick as the lining which covers the inside of an egg. It contained fluid, color dark. On incising this, a large amount of fluid escaped. Doubling up a bit of silkworm-gut to make a measure and yet not too sharp to puncture the brain tissue, I passed this in and found that I entered the cavity 10 centimeters in depth. Finding so large a cavity and desiring to know the nature of it, I incised a little farther this inner membrane. Then, to my astonishment, when I separated the edges and looked in by means of the electric light, I found that I opened widely the lateral ventricle. There was no free cerebral tissue arching over the lateral ventricle at all. Whether this had been absorbed as the result of accident or whether it had been destroyed as the result of accident, I can only surmise at the present time. I confess I was greatly startled when I saw this large open cavity with its choroidal plexus; I was perplexed to know what to do, but afterwards I concluded, in view of the fact that there would be some hemorrhage, that it would be proper to drain for a time. I inserted a small amount of gauze and brought this outside of the scalp wound which I then closed. To make a very brief story, next day I removed the drainage. Twice after that I was obliged to insert a pair of forceps, at once evacuating a considerable accumulation of fluid, which produced headache and which seemed to portend the possibility

1. Dr. Fenger's Paper on "Methodical Exploration of the Brain for Fluid" has not yet been handed in for publication.

of epilepsy returning and the man recovered. Two weeks after the accident he had two or three epileptic attacks in the course of one day. Since then, as far as I know, he has had none. But, of course, the time passed is too short to decide whether any permanent good will be done or not. I fear not, but the proposition that presented itself to me was that open ventricle, opened practically its entire length. It was totally new and I was very happy indeed to feel that the solution apparently seemed to be the correct one.

As to Dr. Fairchild's paper, I was very much interested in it and I think he has taken quite the right ground that interference is imperative upon us in these cases. In hemorrhage, of course, of a typical character, we have the three consecutive stages which are so important for us to recognize, namely, unconsciousness or partial unconsciousness of stunning from a blow; the recovery from this, and then, later, as either drop by drop, or in large quantity, the blood accumulates, the secondary unconsciousness which is due to pressure from the blood clot; but we must draw very sharply in our minds the distinction between the two totally different rates at which the blood accumulates. If you have a small rupture, a little laceration of a small branch of the middle meningeal or middle cerebral, you will have little leakage of blood, that will come drop by drop and you will have the period of secondary unconsciousness postponed. Or, if on the contrary, a large branch, and especially the main branch of the middle cerebral, ruptures, then you have the blood pouring out so rapidly that the period of unconsciousness between the two is obliterated. After the man recovers from the unconsciousness of stunning or blow, the unconsciousness is very apt to overlap. The other of the two experiences I had, was one of a man who fell to the floor of his barn from a hay-mow. I saw him three hours after the accident. There was no fracture of the skull. He had two or three wounds of the skull which I explored, but found no fracture. He was absolutely unconscious with stertorous breathing, with no paralysis; there was no motion; no method of determining voluntary or involuntary—I mean no paralysis of one side of the body. It was clear to my mind that we had a large hemorrhage in the skull. Which side was it? You have absolutely no guide in the matter of paralysis in one side or the other—only one trifling guide, which, however, proved of the greatest possible value. Though both pupils were dilated very much, on the left side the pupil responded very slightly to light, but did not respond to light on the other side. I judged, therefore, that upon the right side was the clot and I determined to trephine at once and if I did not find any clot to go up on the other side. The moment I trephined on the right side I found an enormous clot. The brain substance was pushed away from the inner surface of the skull and both the anterior and posterior branches of the middle meningeal were found ruptured and bleeding. The injury was so severe that life could not be carried on and in consequence of it the man died in the course of a few hours. I had used it, not so much by reason of the result as because it illustrates very well how the very fact of that pouring out of blood may make the period of unconsciousness overlap the second and obliterate the intermediate stage and enforce the proper treatment—especially the diagnosis by means of the very slight reaction of the pupil. On the contrary, instead of this intermediate state of unconsciousness being very brief or obliterated, it may be extraordinarily prolonged. Usually we know that it will be two or three hours up to a day or two. A few days ago I had an opportunity to see a decidedly exceptional case of a man in the other direction. A man was thrown off a street railway car directly in front of the Pennsylvania Hospital and received an injury on the left side of the temple. He was taken into the hospital, scarcely unconscious, stunned only. After two or three days there were, it seems, no symptoms which called attention to the fact of the necessity of his staying in the hospital. Six weeks afterwards the man became gradually duller and duller and finally became unconscious. Later when I trephined him on the left side over the anterior branch of the middle meningeal, I found a vast clot extending from the frontal region over to the occipital, where I made, as suggested by Weir, another opening through the posterior portion of the brain and passed drainage through. It was as large a clot as in the first place and I had in that case the happiness of seeing this man recover, although with a somewhat injured condition of his brain. He is slightly aphasic, still in a serious condition and will be all the rest of his life. The two cases illustrate the two extremes of hemorrhage which are so important for us to recognize and for which I think Dr. Fairchild has eminently recommended the proper treatment.

DR. ANGUS MCLEAN, Detroit—Dr. McCosh recommended that after laminectomy the patient go without support. I have tried it and find that patients get along as well without the support as with it. I have found much trouble in keeping on a support or spinal brace and think that the heavy muscular tissue there falls back in apposition and protects the posterior portion of the spine quite well.

As to Dr. Eve's paper on spina bifida, I think it is a good step to attempt the closure of the operation without aspirating or injecting fluid, but I think that it would be applicable to just such cases as he had with a small pedicle. I think the judgment of the operator would have to be called into consideration.

The last paper on injuries of the head is an interesting one. Those who fall from a distance or are thrown from a train as compared with those who have had something fall on them, or received a blow upon the head, are injured quite differently. A person receives a direct blow on his head; the force is spent over the vertex. It injures the soft tissue and may fracture and depress a limited portion of the skull. In a case like that, the endocranial contents—the brain tissue—is not disturbed much; the disturbance is more local. A person who falls from a building and strikes his head on the ground produces a general commotion of the cerebrum; the skull is elastic and impressionable; that has been demonstrated by many. The skull can be compressed laterally in a comparatively young person or in a person in middle life from one-quarter to one-half inch. You can put a clamp on the skull and compress it. The lateral walls come together and the tissue within must change; there must be a movement there of the brain tissue. A fall, striking on the head, will lessen the skull's diameter: there is a general commotion and the whole brain tissue is disturbed. An injury like that, without a fracture, is more dangerous than when you have a circumscribed, depressed fracture. You do not know how many small traumata you have there, nor the results. You may have disturbance of the ventricles or an injury to the roots of the cranial nerves or some such thing. Fractures of that kind, from a fall, are usually linear and frequently cross the base. If you take a skull and press it laterally over its opposite sides the fracture will not take place over the points of pressure, but across the base of the cranium, usually in the anterior portion or the portion anterior to the foramen magnum. That portion has a number of cavities and fissures; it is really the weak portion of the cranium.

Dr. Keen went over the different hemorrhages quite well: extradural, subdural and intracranial hemorrhage. In speaking of concussion or compression it is hard to say where concussion ends and compression begins. A slightly depressed fracture may produce compression that will afterwards disappear. Now, you first may have a compression there and, in time, the symptoms of that compression will disappear. In that case some cerebral fluid will escape from the cranium into the spinal canal and lessen the cranial tension. The spinal canal is not a bony canal, but made up partly of fibrous tissue. Where the whole brain enters into the commotion, it is much more serious that a slight tap on the vertex. You can have a much more dangerous lesion without fracture than you can have with a localized, circumscribed fracture and I think those patients deserve to be watched very closely for symptoms which may not show themselves in the first twenty-four hours, but may at the end of the first week; and they should be kept well under observation. I wish to say that in those injuries to the head produced by a fall, where there is much commotion the injury to the brain is to be considered the serious part, and not the injury to the skull.

Dr. Charles H. Frazier, Philadelphia—I should like to bring to the attention of the Section an operation that I would advocate for the relief of tic douloureux, or trifacial neuralgia, a modification of those operations previously recommended, in that it depends for its success upon the division of the sensory root of the ganglion and not on the removal of the ganglion itself. Every surgeon is aware of the difficulties besetting this operation and of the frequency with which operators have been unsuccessful in attempting to remove the ganglion *in toto*. Most all recognize hemorrhage as the greatest bugbear and accountable for the majority of failures and for not a few fatal issues. The most troublesome hemorrhage met with in this operation begins at the time the surgeon attempts to remove the ganglion from its bed and the most alarming hemorrhage may occur at that time as the cavernous sinus may be injured. Any modification of the present operative procedure which relieves the operator of the embarrassment, annoyance and anxiety of hemorrhage is deserving, it seems to me, of some consideration. Granting, for the time being, that the division of the sensory root will, *per se*, effect a radical cure of trifacial neuralgia, the advantages of this over other procedures are evident to all. Chief among them are the following: 1. Generally speaking, its execution is comparatively simple. 2. It reduces to a minimum the most annoying feature of the operation, namely, hemorrhage. 3. The operation is practically complete when the posterior aspect of the ganglion is exposed, a time after which in other operations one begins to encounter the greatest difficulties. 4. The integrity of the cavernous sinus is never in danger. 5. The risk of injuring the sixth nerve is avoided. 6. Lastly, the mortality should be reduced, chiefly because less traumatism is inflicted upon the tissues, less time is required and less blood will be lost. All these conditions should lessen the tendency of shock.

The operation itself resembles those which approach the ganglion through the temporal route, and is conducted as follows: 1. The ganglion is approached by the temporal route, a horse-shoe flap of skin and subcutaneous tissue being reflected with its base line one-half inch below and parallel to the zygoma. 2. Resection of the zygoma. In carrying out the operation upon dogs, in which the field of operation is, comparatively speaking, small, we find it absolutely necessary to remove the zygoma in order to be able to reach the ganglion, and in our work upon the cadaver we find this step in the operation very materially facilitates the approach to the ganglion. 3. Reflection of horse-shoe flap. 4. Removal of button of bone with trephine from an area corresponding to the center of the field exposed. 5. Enlarging opening with rongeur forceps. 6. Exposure of the ganglion by reflection of a flap composed of dura mater and dura propria. 7. Picking up and division of sensory root upon a blunt hook.

We have taken for granted that the effect of division of the sensory root will be permanent. This statement is based upon the assumption that physiological repair of the nerve will not take place at the point of division. To prove this, I began some fifteen months ago, with Dr. Spiller, a series of experiments upon dogs upon which was practiced the operation as above described. After the lapse of varying periods of time, the animals were killed and the specimens removed for histologic examination. Dr. Spiller now has in his possession a number of such specimens and while not yet prepared to make his final report, he has not as yet seen any evidence of regeneration of nerve fibers. Leaving for the time out of consideration what weight the results of these experiments might carry, and drawing an analogy from what we know is the case in the spinal cord, it is reasonable to assume that with the sensory root of the ganglion physiologic repair is more than improbable.

Dr. Robert F. Weir, New York City—There are two things upon which I would like to say a few words. In connection with these brain operations there is one point I consider of great moment about which we should all come to some conclusion, and at which we have not yet arrived. It is easy enough to come to a conclusion with a compound depressed fracture of the skull without symptoms; still more so with symptoms. We think those cases with depression should be operated on. Our distinguished friend, Dr. Agnew, of Philadelphia, went so far as to say that every fracture of the skull had better be operated on. I am not sure but that he is right. My efforts are directed just to that class of fractures where we have a little wound of the scalp and on exposing it, looking at it, and sticking your finger in and feeling it, you find a crack in the bone. You expose it and find a fissure. No symptoms. What are you going to do? Leave it? A little depends as to how the injury was received. If from concentrated violence, you know you had better open that skull, because from such violence the very brittle anterior table is apt to break and you may have danger there far exceeding that on the surface. In many of these cases, you can not learn how the injury was received, or it may have been received by a simple fall on the floor. What should you do then? For many years I did nothing but let it alone; I have lately changed my mind. I have seen many patients who have had subsequent trouble. I have seen many having trouble when I opened the skull, and found there was from this slight fissure the very danger I expected. As an objection to doing this operation or of going through the skull to see what is the condition of the vitreous table, it has been urged that the trauma that you make coming down to the dura will cause adhesions greater than the original injury produced. You know how surgeons have struggled to obviate such adhesions. You must accept the adhesions. Of late years I have felt easier in my mind in going down into these slightly fissured skulls, seeing what the trouble was. I have felt safer and many times my tentative efforts have been rewarded.

The second point is in regard to gaps in the skull, in any of the operations for trephining for depressed fractures of the skull, and particularly if the gaps are of considerable size, and more particularly if the opening in the skull is in a portion of the cranium where it is likely to be exposed to injury; in other words, if it is below the line of the hat or in front where it would be visible. For these reasons I would suggest and advocate the use of celluloid plates either at the time of operation or at a secondary operation. I have resorted to these some eight or ten times and saw one patient only a few days ago who had been wearing a celluloid plate for over six years. So I speak of what I know from personal experience in connection with this device which was suggested by Fraenkel of Vienna. In four operations that I have had, I have done it according to the older method and I see no reason for changing.

What do we gain by this small incision, such as Cushing has spoken of? We have the small operative field; we merely avoid damaging the middle meningeal artery, as it passes across the dura. I do not see the advantage of these small operations. Nay, I say disadvantage. I have done Celsus' operation for division of the nerve at the foramen ovale and the foramen rotundum, which requires division of the zygoma, and I have found after splitting of the zygoma and replacement, we do not always maintain it in place, and it is attended with a considerable difficulty in opening the mouth. So that with the experience I have had in the older operation, I do not feel like abandoning it for one which brings in a risk in another direction.

Dr. Jacob Frank, Chicago—I do not wish to take up the time of the Section in going over the subject spoken of, but I merely wish to speak on a class of cases that Dr. Fairchild considered and upon which at the present time I am making experiments; in the cases that come into the hospitals where nothing can be found, the patients are unconscious, with Cheyne-Stokes respiration, slow pulse, dilated pupils, and we are at a loss what to do. In 1890, at the time that Dr. Keen was tapping the lateral ventricles, I made a tapping of the lateral ventricle for just such a patient, with the delight of seeing the pulse become more rapid, the pupils contracted, respiration normal and recovery follow. Since that time I have had one more case. I was removed from the hospital that furnished me considerable material, and I have not had an opportunity to get any more cases.

I do not agree with Dr. McLean that if the patient is hit on the head it draws the fluid into the spinal column. This was first brought out by a French experimenter a few years ago, when experiments were made with concussion of the brain. Some would say if a blow was received on the head the fluid would proceed to flow. I do not believe it. My theory is this: It is not necessary to receive a blow on the head to become unconscious or to give us symptoms of the concussion. The concussion can just as well be on the spinal column. That is my belief and I hope to prove that at a future date. That is all. (After a pause.)

Since I have tapped the ventricle for these cases, it occurred to me it would not be necessary to do so. I have produced concussions in dogs and led the fluid off by the spinal column just the same as giving injections into the cord. I hope that some of the members who are connected with hospitals where these cases come in, will tap the spinal canal, and I hope to hear reports of the same.

Dr. W. H. Earles, Milwaukee—Owing to the limited time and lateness of the hour, I desire more particularly to address my remarks to Dr. Fairchild's paper. I think the time is here—the indications from the discussions and papers support me in this—when surgical treatment for injuries of the skull must receive greater attention. I am pleased with Dr. Fairchild's paper and wish he was a little more emphatic in his radicalism. I believe any injury to the head that produces a fracture of the skull is also forcible enough to produce injury to the brain tissue itself. If this be true, then it stands to reason that the surgical treatment of fracture necessarily implies that we should, at least, go down to the brain substance or dura mâter and ascertain how much injury exists. In other words, on the presumption that there is a possibility of brain tissue being injured, the skull should be trephined and the parts beneath it examined before closing it up. There is no other place in the human body where a surgeon will cover up diseased or injured parts without knowing what condition they are in, except in injuries to the skull. We all know that in injuries where we have cerebral hemorrhages there will sooner or later be symptoms which, in a measure, will direct us to a possible diagnosis, as to the conditions within; but we also know in a great majority of cases the general symptoms give us but very inadequate ideas of the possible injury of the brain substance itself. Therefore, on this point, I desire to be emphatic and I believe it as firmly as I do anything, that where we have a fracture, as a result of traumatism of the head, the plain duty of the surgeon is to ascertain the condition of the brain before closing up the wound.

We occasionally have injury of the head where there is not even a scalp wound and where the patient will die in three or four hours from internal hemorrhage. If this be true, it ought to admonish us that we ought to be extremely careful. Depressed fragments, we all admit, should be elevated, and Keen says that fractures of the internal plate can only be suspected. Now, if you have an injury to the skull sufficient to produce cerebral hemorrhage, where we are inclined to suspect a fracture of the internal plate, it would be poor surgery to cover up the external wound and dismiss the patient without making an effort to trephine and to satisfy ourselves as to the exact conditions. Having taken these steps, we will then feel as though we treated our patients in at least a surgical manner. We believe that the time has come when surgeons will treat every injury to the skull precisely as though they had trouble in the brain substance or coverings. I draw my conclusions, not alone from my own experience, but also from the experience of those who have had a greater number of cases. From an analysis of 76 cases, in my own practice, I have found injury to the brain or its coverings in 87 per cent., and for this reason, as well as for the reasons before mentioned, I believe we should be more radical in the treatment of these cases and not be satisfied with dealing with the outer surface. We should go down to the brain substance to determine the conditions there and feel that we have, at least, discharged our full duty to our patients.

Dr. James E. Moore, Minneapolis—I am very glad to hear the sensible conclusions of Dr. McCosh. I have been on the fence, for while I have not killed any of my patients with fracture of the spine by operation, the after-results have not come up to my expectations. I have seen some improve, but have not been fortunate enough to secure anything like recoveries or satisfactory results. I shall direct most of my discussion to the paper on spina bifida, because I happen to have had some experience in that direction; I have been interested in the prognosis and treatment. The prognosis has much to do with our decision as to treatment. I am free to say that I agree with those who say they do not believe these cases should be treated by injections. I have concluded from my limited experience, that operation should be advised in the large majority of cases. The writer of the paper laid down the limitations of the operation very sensibly. On the whole, I should rather be inclined to be very heroic. I think we should take an advanced position and advise operation in these cases. With reference to the technic, I have had some very interesting experiences. The prognosis after operation differs very materially according to the character of the case. In those cases in which we have a small opening and in which the tumor is covered entirely by integument, the prognosis is good and the operation is almost free from danger. It simply means that you cut down to the pedicle and close up the wound. That is about all there is to it; but unfortunately the majority of our cases are large tumors. We have found from experience, and from the writer, that we can operate on very young patients. I have operated on them under four months of age, removed a tumor as large as the patient's head and, seemingly, with no bad effects from the operation. At first I was very much exercised lest I should cause serious disturbances to the nervous system from evacuating the liquid too rapidly. I was very cautious to empty the fluid slowly for fear of this trouble. In my third case, in attempting to separate the integument from the lining of the tumor, I made a free incision through it and the fluid was evacuated quickly. I had my patient in this case, as I have in all cases, lying on his face over pillows, hips well up, tilted up to an angle of 45 degrees. When I made this incision there was no change in the child's breathing. Chloroform was the anesthetic and there were no bad effects.

The greatest difficulty in the point of technic with me has been to cover the wound securely, to cover the space in the bone securely and eliminate the dead space. I have not thought it wise or good surgery to undertake an osteoplastic flap in a case of this tender age, for that is a bloody, slow operation. If I thought it was necessary to put a solid substance in this space, I would follow the suggestion of Dr. Weir and put in a solid material of another kind—celluloid—as he suggests. In my later operations I removed most of the lining of the tumor, most of the meninges, taking care to separate the nerve fibers that are on the inside of the membrane. I am not sure that those nerve fibers are of value. I question whether they have much function after they have been bunched down into the wound. I have turned those down and closed the meninges, and then I have dissected the dense soft parts loose from the denser or bony parts and then made a longitudinal incision on either side and approximated these two flaps, bringing them together with chromicized catgut or kangaroo tendon. My only fear has been where I made my longitudinal incisions and brought these flaps towards the center that I would have dead space, but I depended on the blood-clot.

Another interesting point is that we have an ugly, sloughing surface which is very alarming and I have been very successful in securing asepsis by washing that off, gently, swabbing it with pure carbolic acid and then alcohol. I have repeated this process and succeeded in getting aseptic wounds. I have not had the misfortune to have a patient die immediately after this operation. One died suddenly on the second week after operation.

Dr. R. H. M. Dawbarn, New York City—About ten years ago I had the following patient: A man was struck upon the head and did not at once become unconscious, but gradually, in the course of a week, became so, with symptoms of almost

complete left hemiplegia. He was carried to the hospital with which I am connected; in the presence of the late Dr. Landon Carter Gray, I operated upon him, going down, of course, over the right motor area. The disc being removed, the dura bulged into the wound; there was no pulsation. Dr. Gray said: "Very evidently there is a clot immediately beneath." I opened the dura and the brain, covered with its pia, bulged into the wound. Still no clot. I took a slender canula and cautiously tapped in six different directions; in three of these cerebrospinal fluid escaped, evidently from the lateral ventricle, and I allowed, I think, fully an ounce to run away, because of the very severe symptoms of compression. But no clot was found, and no way of accounting for the distinct hemiplegia of the opposite side. The man lived about a week and died none the quicker for the operation, but certainly none the more slowly. I remember at the autopsy I found nothing wrong whatever upon the side where he had been trephined; but on the opposite side—that upon which he was paralyzed—was an enormous clot of blood, between the dura and the skull, as big nearly as my entire palm. If I had never heard of physiology and, as a first-year student might have done, operated upon the skull on the paralyzed side, that poor chap might now be alive. I sent the brain, together with the beginning of the spinal cord, to Dr. Gray, who carefully examined them. He found that it was one of those cases in which the motor fibers had not crossed into the medulla, but had gone down each upon its own side of the spinal cord. I discussed it at a meeting of the New York Surgical Society. Those present had known only of one case, Dr. Joseph D. Bryant's, and the latter had only heard of one additional case of the kind in his life.

I have my doubts about the extreme rarity of these things. Anatomists claim it is not so exeessively unusual in examining cadavers; but in clinical surgery it is reported with extreme rarity. Perhaps the reason is that when the customary operation gives no relief and the patient dies, an autopsy is generally refused us. Hence, we can not ascertain the true cause of the failure. The family feel that an unnecessary or a useless operation has been performed—perhaps attribute the death to it—and will not permit an autopsy. Should I ever again fail to find the cause of an acute compression of the brain by trephining according to the laws of physiology, I would now remove a second disc from the skull upon the paralyzed side. This would not add much to the danger of the man and we might save a certain number of lives in this way that otherwise would be lost, as was the case just recorded.

Dr. Weir has spoken most interestingly in regard to the use of Fraenkel's method of celluloid. I have brought with me a special plate of modified celluloid, especially made at my request, containing no free nitric acid and with a large percentage of its camphor removed and a little urea substituted, which is being used now. That plate I propose to show before this Section in connection with abdominal surgery; for filling a gap in the abdominal wall, where there is a ventral hernia, where we can not bring the muscular wall together. The skin is, of course, closed over it. In the skull I have repeatedly used this plate to fill bony gaps, and with much satisfaction. In skull work celluloid plates are not new; but whether they remain for years, and indeed, permanently, and cause no irritation, or soften and yield and act as irritants, depends wholly upon that composition. Celluloid, as ordinarily made, contains some free acids still, and will not do. Synthetically made, the urea acid has for some time been employed to give the necessary spring and elasticity, partly replacing the more expensive camphor, and it seems less irritating to the living tissues than using so much camphor. The plate I show resembles closely a piece of ordinary window pane in thickness and general appearance. When boiled it cuts, while still hot, as readily as soft horn. Being transparent one can place it over the gap to be filled and see to mark upon the plate the exact shape of contour desired.

Dr. A. C. Bernays, St. Louis—It seems to me that the paper by Dr. Fenger has opened a wide field, which heretofore is not mentioned in English literature of brain surgery. He proposes, if I understand him correctly, a systematic search for fluid located in the substance of the cerebrum and cerebellum, on both sides of the head. He proposes, I believe, a small trephine hole, to be made over the parietal prominence and through that trephine hole the introduction of a canula into the anterior and into the middle and posterior lobes of the cerebrum. Then, another hole on both sides of the head, through which a short canula can be introduced into the cerebellum, and, it strikes me, gentlemen, that this is an enormously long step in advance of anything that has been advocated in surgery of the brain, and it also strikes me as being important and a well-justified, well-founded step in the right direction. There are undoubtedly cases which the Doctor reported, in which the symptoms led to a well-founded suspicion of an abscess, in which we can not even tell which side of the brain or head is affected.

Now, I want to say one word about the technic of this operation, and there I think the Doctor should have been a little more explicit. It is not necessary to use a large trephine, but a small burr, not over three-eighths in its largest diameter, the hole in the outer plate being nearly twice as large as the one in the inner plate, so that an instrument could be obliquely introduced through that hole, forward, backward and downward, and that was the reason why I took the floor, to suggest that the hole must not be thought of as being a trephined hole in the ordinary sense, but a small hole made by an ordinary dental burr, or one of those instruments which Schwartz uses for boring a little hole into the mastoid process. Systematic search for fluid in obscure cases will, I believe, be rewarded by fine results.

Dr. T. M. Maxwell, Keokuk, Iowa—I had a case in which the whole left side of the skull was crushed. A piece of bone as large as a dollar was removed; he was completely paralyzed on the left side. After dressing the wound, the patient recovered from the paralysis.

Dr. W. J. Means, Columbus—I will confine my remarks to some points concerning the surgical treatment of injuries and diseases of the spine. It occurs to me that the text-books on surgery are too conservative and vague in their treatment of injuries and diseases of the spinal column. The advanced views in this direction taken by Dr. McCosh I believe to be in accord with the experience of most surgeons who have given the treatment of these cases some attention. In the last few years I have had several interesting cases of injury to the spine that have fully convinced me that the so-called conservatism or "do-nothing" treatment should be relegated to the past and more active and intelligent procedures adopted. Early operations on the spine are called for in every case where there is reason to believe from the symptoms that the cord is impinged upon by displaced vertebræ or fragments of the arch. I will also go further and include cases of hemorrhage either intradural or extradural, where the clot is producing paralysis.

The question of determining the extent of the injury—therefore the necessity and propriety of an operation—is one of considerable moment to the surgeon. In abdominal surgery the question of a positive diagnosis before the operation is secondary. The abdominal cavity is opened and the diagnosis made. Sometimes the character of the disease precludes any interference. The opening is closed and the prognosis determined accordingly. A laminectomy is practically free from danger; therefore, when a diagnosis is obscure, no harm can be done by exposing the injured area and determining the true condition. If the cord has been completely severed, no help can be given; the incision is closed and the friends advised accordingly. Unfortunately we are taught that complete paralysis of the extremities and pelvic organs, both sensory and motor, following an injury, means complete destruction of the cord. This is a false premise and should be corrected.

A case of gunshot wound came under my care a few months ago, in which there was complete paralysis of the body below the waist. There was absolutely no reaction to any test applied. Under the *x*-ray the bullet was located in the 4th dorsal vertebra. The bullet had crossed the spine diagonally, lacerating the membranes of the cord and lodging between the pedicles. There was quite a large blood clot and considerable inflam-

matory exudate around the portion of cord that was injured. The bullet and the blood clot were removed. Within one week after the operation there was some reaction to stimulation in the legs. When the patient left the hospital a few weeks after the operation he had slight movements of his feet and legs, and has since regained considerable power in them. Another case, an engineer on the railroad, had his spine injured in a wreck. I saw him within two hours after the accident, and found him completely paralyzed below the lower dorsal region. There was a deformity over the 10th and 11th dorsal vertebræ. There was no reaction to irritation either sensory or motor. From the symptoms I concluded the cord was severed and thought it unnecessary to operate. The patient was put in the hospital, and the usual expectant plan of treatment carried out. After ten days there was a return of sensation in certain areas followed by limited motion. The patient gradually improved. At the end of twelve months he could walk with crutches. Evidently the cord had not been severed or crushed. I might enumerate several other cases to illustrate the position I have taken, but this will suffice to emphasize the point that it is impossible to determine definitely the amount of injury to the cord from the existing paralysis. In similar cases to the last one I should operate as early as possible.

The second point I wish to make is that where there has been an injury to the spinal column followed by paralysis, and there is good reason to believe the cord is pressed upon by dislocated vertebræ or fragments of bone, benefit may follow an operation though several months have elapsed. The third point is that laminectomy is advisable in diseases of the vertebræ where the necrosis is confined to the arches and processes.

Dr. George W. Crile, Cleveland—I do not believe there is any difference of opinion as to what to do in any case of incomplete paralysis due to pressure upon the cord. But the question as to whether or not you can accurately diagnosticate complete cross lesion of the cord confronts me. I have had two cases in which I have depended on a group of symptoms to diagnosticate total cross lesion of the cord and the autopsy showed there was cross section. At the present time I have a patient who is recovering from the immediate effects of dislocation of the cord, which I believe to be cross section, but from what Dr. McCosh has said I confess to feeling an uneasiness in this case. I have always held to the dictum that the total loss of all the reflexes, of pain, touch and temperature senses below the point of injury, the loss of vesical, rectal and vasomotor tone show total cross lesion. The question then arises, in a given case of total paralysis, below a certain point of injury, whether you can diagnose with accuracy complete cross section of the cord. That, together with the fact that such a large percentage of cases of dislocation of the cord on the immediate reception of injury to the spinal cord the vertebræ spring back again; that if you do operate you can not give any further relief in that group of cases in which the dislocation is so manifest, operation would not be indicated. But I am free to say that, until it is proven that regeneration of the human cord is possible, any diagnosis of a case of cross lesion, if that diagnosis rests on a certainty, would contraindicate operation. Fact is always greater than theory, and I personally feel that my confidence in the theory I have had is shaken.

I would like to ask Dr. McCosh if he found in this case touch, pressure, heat and pain senses abolished, and whether he found an absolute vasomotor paralysis, as well as paralysis of the deeper reflexes in the case upon whom he operated and after the operation the patient grew better?

Dr. A. H. Tagert, Chicago—I wish to report a case of fracture and dislocation of the spine—2d lower dorsal. The patient was anesthetized and extension, counter extension and manipulation used which nearly restored the continuity of the parts. I put the patient to bed with continued extension and counter extension. When the patient regained consciousness the paralysis, pain and numbness were much improved, the man made a good recovery and for ten years has been able to do hard manual labor.

I will also call your attention to one point in fractures of the skull that is sometimes overlooked. The skull is elastic, so if the violence that makes the fracture is sufficient to spring the bone enough to injure the inner plate or admit septic material, we will find some little particles of tissue or foreign substance in the line of fracture. If we examine carefully the line of fracture and find no fragments of tissue or foreign particles therein and no symptoms of injury to the brain, I would let my case go without trephining; but on the contrary, if I found particles of foreign substance in the line of fracture I would certainly trephine whether we had brain symptoms or not. In these cases, as in all others, good judgment will dictate best what to do.

Dr. E. J. McKnight, Hartford, Conn.—On March 23, a man jumped from a moving trolley car and sustained a depressed fracture on the left side of the head. The bones in that vicinity were much broken up. I think there were three or four pieces. It was impossible to tell how much injury was done. The trephine was entered above and on the side; the bones put in good condition and the man made a very rapid and apparently complete recovery, and was discharged from the hospital certainly before the first of April. Later, my service having terminated April 1, he returned sometime during April with a severe headache and temperature, within the twenty-four hours going up to 105, but not regular, sometimes in the morning, sometimes in the afternoon. Dr. Howe explored the vicinity of the original injury and found everything apparently all right. Later the symptoms pointed more distinctly to the brain and a large flap was dissected off. Smaller pieces of bone were entirely removed and a grooved director passed several times into the substance of the brain. After making three or four attempts an ounce and one-half of clear serum was removed, flowing out in the channel of the director. The man made a rapid recovery from that time and was exhibited at our State Society two weeks ago apparently perfectly well. I should use in every case the grooved director. You can pass a probe in the groove as far as you wish, and it seems to me that it is better than any suction instrument.

Dr. S. C. Baldwin, Salt Lake City—My experience has taught me that even in slight injuries of the skull it is well to trephine oftener than we do. We have had some little experience in the hospital in the use of celluloid plates and we were unfortunate enough to have an opportunity to make an autopsy after using one. We found that a large part of the plate had been absorbed and it was as flabby as a piece of silk; it was simply acting as an irritant instead of a protection.

Dr. J. W. Vaughan, St. Louis—I wish to report a case which had complete paralysis below the fifth dorsal vertebra; sensory and motor nerves, bladder and rectum were affected. The patient was operated on. There was some motion under the influence of chloroform; this particular fact was manifest when there was irritation on the right side of the cord at the point where the incision was made. There was motion on movement of the leg on the opposite side. It was five months' standing, complete paralysis, in which he would not be operated; the vasomotor system was interfered with. Five weeks ago to-day that man was operated on and that man has continued to improve slowly, but constantly. There were no two days in succession in which there was not some improvement, so at this time he has motion all along the left leg. There was motion, after operation, in the left leg; some in the right leg, and anterior to this gradually extending down over the abdomen. Sensation is returning over his abdomen, and the last time I examined him there was some sensation over the penis. He can feel some sensation when the bowels are going to operate; that occurred four days ago—and sometimes when urine is withdrawn.

Dr. McCosh, in reply—I would like to lay stress on the importance of early operation in cases of injury to the spine. The mere exposure of the spines and laminæ by cutting through the muscles of the back is a very simple procedure and is attended with practically no risk. If the laminæ be removed the operation becomes somewhat more serious, but

still the risk is slight. As regards the treatment of suspected injury to the spine it seems to me that the same rule which we adopt in cases of suspected fracture of the skull applies also to cases of spinal injury, namely, to expose the bone and to ascertain if there be a fracture.

In answer to Dr. Crile's question concerning loss of sensation to touch, heat, and pain, I would say that there was absolute loss of all three functions. As regards the reflexes, the loss of knee-jerks was absolute and apparently of the superficial reflexes as well. As regards the vasomotor disturbances I am not positive. Formerly I have been under the same impression that the loss of tendon reflexes combined with paralysis contra-indicated operation. I have been led, however, to doubt the accuracy of these contra-indications as I have seen quite a number of cases of injury to the cord which have recovered without operation, where in the first hour or two after the injury the reflexes were almost completely abolished or at least were very hard to discover, and yet in a few hours these reflexes gradually returned, and in one or two days became normal. In the case referred to by Dr. Crile the operation was performed very soon after the injury, and it is possible had it been delayed for say eight or ten hours the reflexes might have returned. They were certainly abolished apparently for several hours, and yet one can not argue but that at a later period they would not have returned.

DIABETES MELLITUS IN CHILDHOOD;

WITH REPORT OF A CASE.*

A. C. COTTON, M.D.
CHICAGO.

The following is the history of a case which was first presented at my clinic Feb. 1, 1901:

Ruth M., aged 6 years, 3 months. Family history negative as far as diabetes, gout, tuberculosis and syphilis are concerned. Weight at birth 7 pounds. Was a healthy, plump infant.

Previous illnesses: Summer complaint at 10 months; whooping cough at 2 years, with protracted convalescence, since which time she has had occasional attacks of croup. At 5 years, chicken-pox. At 5½ years measles, from which time—April, 1900—she began to show nervousness, irritability, variable appetite, disturbed sleep and progressive emaciation. In August, it was noticed that she drank enormous quantities of fluids, to which fact her mother attributed the polyuria.

She entered school the middle of September, but was taken out after a few days on account of nervousness and frequent micturition. A physician was called and the child was treated for "nervousness and weakness," without improvement.

Status praesens: (Feb. 1, 1901.) On presentation to the clinic, the patient appeared undersized; weight 32 pounds; weak, anemic, with dry skin, harsh hair and carious teeth. Tongue red and clean, although there has been habitual constipation. Lungs and heart negative. No enlargement of liver or spleen. Very restless and easily fatigued. Extremely sensitive to cold. Pupils normal and no disturbance of vision. Patellar reflex absent. Blood examination showed 3,580,000 reds, 12,000 white cells and hemoglobin 85 per cent., notwithstanding pallor of the skin. Examination of 24 hours' specimen of urine; amount 84 ozs.; reaction acid; specific gravity 1028; thick cloud of albumin, sugar present, one drop giving marked reaction to Haine's test; no casts.

She was put on diabetic diet and pancreatic extract, with sodium salts for relief of constipation. A daily observation was made of the urine, the result of which is appended in the following table.

During the following 5 weeks the quantity of urine passed daily varied from 40 to 104 ounces; the difference in specific gravity, obtained by fermentation test, ranged from 13 to 32, the sugar from 1 1-12 to 6 3-12 oz. or from 2.99 to 7.36 per cent.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

Although a grave prognosis was given, the parents were much encouraged by her temporary improvement in strength and weight. The regulation of her diet was but imperfectly observed, owing to parental indulgence, and at times the fluctuations in the urinary findings were coincident with lapses from dietary regimen.

On March 11, she contracted a cold from exposure and developed symptoms which a neighboring physician, summoned hastily, pronounced croup. I saw her the following day and found her with a subnormal temperature, rapid pulse and exaggerated breathing, with crowing inspiration, without cyanosis. There was slight delirium and restlessness, with intervals of partial coma, but no suppression of urine. The next day the crowing inspiration ceased, although the dyspnea became exaggerated. She developed the characteristic "dyspneic coma" in which she died March 14, 1901. No autopsy was allowed.

Date urine was passed.	Amount of urine in 24 hrs. Fl. oz.	Sp. Gr. before fermentation.	Sp. Gr. after fermentation.	Difference in Sp. Gr.	Amount of glucose in twenty-four hours.	
					Grains.	Fl. oz.
Feb. 3.	40	1028	1015	13	520	1 1 12
" 5.	40	1031	1010	21	840	1 3 4
" 6.	48	1031	1014	17	816	1 7 10
" 7.	64	1032	008	24	1536	3 1 5
" 8.	48	1031	1009	22	1056	2 2 10
" 9.	48	1032	1010	22	1056	2 2 10
" 10.	80	1033	1003	30	2400	5
" 11.	48	1027	1010	17	816	1 7 10
" 12.	72	1031	1006	25	1800	3 3 4
" 13.	64	1035	1009	26	1664	3 7 15
" 15.	48	1032	1006	26	1248	2 3 5
" 16.	48	1030	1005	25	1200	2 1/2
" 17.	56	1036	1010	26	1456	3 29 120
" 18.	40	1034	1011	23	920	1 11 12
" 19.	72	1031	1002	29	2088	4 7/20
" 20	72	1035	1003	32	2304	4 4 5
" 23.	80	1034	1002	32	2560	5 1/3
" 24.	104	1031	1002	29	3016	6 17 60
" 25.	96	1030	1014	16	1536	3 1 5
" 26.	64	1031	1010	21	1344	2 4 5
" 27.	88	1031	1011	20	1760	3 2 3
" 28.	80	1035	1015	20	1600	3 1 3
March 1	64	1035	1015	20	1280	2 2 3
" 2	80	1010	1010	.	. .	. . .
" 3	56	1034	1016	18	1008	2 1 10
" 4	64	1032	1012	20	1280	2 2 3
" 5	64	1033	1015	18	1152	2 43 120
" 6	56	1033	1015	18	1008	2 1 10
" 7	56	1028	1014	14	784	1 19 30
" 8	88	1031	1012	19	1672	3 29 60
" 9	72	1032	1013	19	1368	2 51 60
" 10	64	1036	1011	25	1600	3 1 3
" 11	72	1031	1014	17	1224	2 11 20

How many physicians make the examination of the urine a part of the routine practice in the diagnosis of the disorders of childhood? The fact that analysis of urine is now recognized by the mass of the profession as an essential procedure in the examination of adults may help to explain the recent increase in the total number of diabetic patients reported. If this be true, it may not be unreasonable to urge that the well-known neglect to examine the urine of little patients may partially account for the seeming rarity of this disorder in young children.

The fatality of diabetes during the first decade of life should give to records of vital statistics significant value in estimating the prevalence of this disease in the very young. The essential objection to this method of determining its relative frequency lies in the fact above referred to., viz., the want of accuracy on the part of the attending physician in assigning the cause of death in his report to the registrar.

Most of our standard text-books agree in the statement that diabetes mellitus is rarely found in the extremes of life, but give no comparative figures.

Since vital statistics, as kept by our city health departments, seem to furnish the only information on this subject, the writer begs leave to quote from Dr. H. Stern's "Comments on the Official Records of Mortality from Diabetes Mellitus from the New York Health Department." and also from statistics from the Health

Department of Chicago, furnished through the courtesy of Assistant Commissioner, Dr. Reilly.

MORTALITY STATISTICS WITH REFERENCE TO DIABETES MELLITUS IN CHILDHOOD.

NEW YORK FOR 11 YEARS, 1889-1899.

Total number of deaths from diabetes mellitus	1867
Average per annum	168+
Deaths under 1 year	4
Average per annum	16 44
Deaths under 10 years	24
Average per annum	2 8 44

AGE.	DEATHS.	PERCENTAGE.
Under 1 year	4	0.21+
Under 10 years	24	1.28

CHICAGO FOR 4 YEARS, 1897-1900.

Total number of deaths from diabetes mellitus	418
Average per annum	104½
Deaths under 1 year	3
Average per annum	33 44
Deaths under 10 years	15
Average per annum	3 33 44

AGE.	DEATHS.	PERCENTAGE.
Under 1 year	3	0.71+
Under 10 years	15	3.58

Total deaths from all causes	95,046
Total deaths from all causes under 10 years	37,498
Average deaths from diabetes mellitus (all ages) to total deaths	0.44 per cent.
Average deaths from diabetes mellitus under 10 years from diabetes mellitus	3.58 per cent.
Average deaths from diabetes mellitus in children under 10 years, to total deaths from all causes under 10 years	0.04 per cent.

ETIOLOGY.

Heredity.—That heredity plays a rôle in the predisposition to diabetes there seems to be little doubt, since its history or that of allied disorders, such as gout, tuberculosis and other diathetic disorders in the immediate or remote ancestry is found too frequently to be passed by as a mere coincidence. Thus, Frerichs notes hereditary influence in 10 per cent. of his cases. Seeger in 14 per cent., Bouchard in 25 per cent., as quoted by Von Noorden. Schmitz gives an analysis of 600 cases of diabetes in which 248 were hereditary. The late Dr. Purdy found heredity in 30 per cent. of his cases and states that he has seen diabetes appear in four generations. The same authority quotes Sir William Roberts, who speaks of a family of eight children, every one of whom became diabetic. Pavy mentions a family of seven, four of whom were diabetic. It is even claimed by some that diabetes may be congenital. In support of this, Ballantyne cites a case—reported by W. B. Bell—of glycosuria in an infant of 3 months with diabetic history. Ludwig, also, in 1895, refers to a case of a diabetic mother with saccharin hydramnion surrounding a dead fetus.

Somewhat closely allied to this form may be considered cases of congenital syphilis, in which diabetes may occur as an early complication. Such a case is reported by Lemonnier, in which the diabetes yielded after four months of anti-syphilitic treatment.

The term diabetes mellitus, like that of rheumatism, is employed to designate, not a single constant pathologic process, but probably a variety of deviations from the normal, in metabolism or in organic function. On this account it has been suggested that the name should be exchanged for one more expressive of the pathogenesis. In each instance the particular substitute would depend upon the favorite pathogenic theory of its advocate, whatever that might be, whether alimentary, hepatogenic, pancreatic, neurogenic, bacteriologic, toxic, or plasmolytic. Even though a number of widely differing, separate disorders may be found to have been included clinically under one term, as was formerly the case in "Bright's disease," it still remains that diabetes mellitus expresses the common, most prominent, most pronounced and demonstrated clinical feature of this protean disorder.

Infectious Diseases.—It seems to the writer that the inclination of many to attribute to the infectious diseases of childhood a causal relation to diabetes is not based upon careful analysis of the evidence. Von Noorden, Herrick and others state that an attack of an infectious disease is frequently accompanied by a disappearance of sugar from the urine of diabetics. The same phenomenon has been observed during an attack of jaundice in a child, and Terrien seems to prove in his experiments that the existence of acute gastroenteritis in no way diminishes the glycolytic function. Hence it is argued that a pre-existing glycosuria, discovered through the closer observation during retarded convalescence, may be wrongly attributed to the acute infectious diseases.

Transient Glycosuria.—Many observers admit that any one of the exciting causes may act to produce a transient glycosuria and that the patient, recovering from the disturbance, may subsequently, even after a period of years, develop a serious diabetes.

Dr. Eugene Terrien, referred to above, has found, by injections of sterilized sugar solution into the circulation, that the glycogen storage capacity of the tissues is relatively high in infants. From this it might be inferred that transient glycosuria, at least as far as it is dependent on over-ingestion of carbohydrates, would be of less frequent occurrence in infants than in adults.

SYMPTOMS.

Since the obese type of diabetes is practically unknown in early childhood, an advanced case presents, briefly, a picture of extreme inanition, emaciation, muscular weakness, dry skin and hair, brittle nails, extreme irritability and sensitiveness to cold. The especial symptoms, polyphagia, polydipsia and polyuria are always present.

According to Comby, furunculosis and other skin lesions, common features in adult diabetes, rarely appear in children. This same authority attributes the rareness of the complicating albuminuria to the integrity of the kidneys and greater suppleness of the vascular system in early life. However, in the case cited above, albumin was almost constant while under my observation.

Of the nervous and ocular symptoms frequently associated with diabetes, such as symmetrical neuralgia, neuritis, motor, sensory, trophic or psychic disturbances, amblyopia, cataract, iritis or retinitis, none were observed in the patient whose history is given, with the exception of the diminished knee-jerk and occasional transient pain in the legs and epigastrium.

The disease in childhood is essentially acute. Reports of cases that survive more than a few months are rare.

TREATMENT.

So long as the etiology, and even the pathology, is involved in the obscurity which obtains at present no routine treatment applicable to even the majority of cases may be formulated. Of the many drugs and remedial agents that have found advocates, such as

opium, bromids, antipyrin, sodium salicylate, alkalies, etc., few, if any, have met with the approbation of more than a very limited number of clinicians. With perhaps the exception of opium, which seems to retard the progress of the disease, and alkalies to counteract the "acidosis" and impending coma, the benefits of drug therapy are admittedly restricted to rare, exceptional cases. Against the high rate of mortality from this disorder in childhood, the limited utility of opium affords but a modicum of encouragement as to help from medicaments. The prolongation of a life, with the establishment of the opium habit at its threshold, is not sufficient compensation.

At the present time the regulation of diet seems to be the most important therapeutic measure and by far the greater number of important improvements have been attributed to diet.

That the severe form is the one most frequently seen in early childhood is acknowledged, and the rapid course of the disease, rarely influenced by therapy, is the experience of all. The death certificate follows hard upon the diagnosis. If from this gloomy outlook concerning the prognosis in early childhood there be one ray of light it seems to the writer that, for the present at least, it must be sought along the lines of prophylaxis.

It is now believed that diabetes, if not an hereditary disease, at least develops along the lines of a somewhat positive diathesis. To the extent that the function of the family physician is supervisory over his patients, may he hope to avert such disorders by controlling their development through attention to hygiene, in order that the young, whose immediate or remote ancestry show diabetes, gout, tuberculosis, neuroses, or even syphilis, should be sedulously guarded. Dietary errors, such as ingestion of food beyond the child's capacity for absorption and assimilation, preponderance of saccharin substances, as sweetmeats, confections and pastries, must be carefully avoided.

That the elimination in these little patients is of the utmost importance receives additional significance when we consider that some observations emphasize autoinfection and reinfection as an etiologic factor. It is of interest in this connection to mention that injection of feces as well as the urine of diabetic patients in lower animals will reproduce glycosuria. A thorough care of the digestive tract, including the teeth, is all important. So, too, the care of the skin and respiratory organs, that elimination by the former and oxygenation through the latter may attain the highest possible perfection. Adenoids should receive attention, as well as other evidences of lymphadenitis and struma.

Especially should we protect these children from mental strain, shocks, frights, trauma and exposure to inclement weather, since cases are reported in which the development of glycosuria was preceded by such disturbance.

In a child thus carefully observed, diabetes may be anticipated by the appearance of pre-glycosuric signs, such as incontinence of urine, muscular debility, irritability, with progressive emaciation in spite of voracious appetite, even though a single test of the urine fail to reveal sugar. The importance of an early diagnosis is evident, for it is admitted that success in treatment bears an inverse ratio to the previous continuance of the disease.

The utmost care of the diet and hygiene is even more important in children than in adults, since a higher ratio of metabolism is essential to growth in addition to repair. But the child will not bear radical dietary changes well. Hence, though so important, the reduction of carbohydrates should be gradual. The same may be said of the augmentation of fats, when indicated. Finally, too much stress can not be laid upon the importance of protecting the child from a sudden lowering of the temperature.

DISCUSSION.

DR. C. F. WAHRER, Fort Madison, Iowa—When a school teacher, I had a peculiar pupil. He was a genius in spelling, but that was about all. He was finally apprenticed to a blacksmith. One day the boss sent him out to measure a wagon body, and the boy reported that its length was "8 feet 16 inches, and the length of the hammer handle, and so much," indicating a position on the hammer handle. This is about our position in regard to our knowledge of diabetes. I wish to speak in regard to a too emphatic treatment and dietary. Those who need the most enlightenment on this subject are, however, not the ones who come to these meetings, but those who stay at home and neglect even such simple measures as making analyses of urine. When young students in medicine we think we know something about diabetes. We have a few medicines which control the output of sugar in the urine, and perhaps also reduce the polyuria to some extent, but still we are unable to get at the root of things. Nearly all of these cases of diabetes mellitus die. I believe there are very few cases on record in which children under 10 years of age, suffering from true diabetes mellitus, recover. Why, then, take away from them the few things which they can eat and enjoy, and insist upon their eating things which it requires a strong stomach to digest. I do not condemn dietetic treatment by any means, but I object to the adoption of a routine treatment which may be more disastrous than the disease itself. Let us show mercy, and think carefully before we do things which are tyrannical or even cruel. I have a child who had scarlatina in connection with three of his brothers and sisters. The first child attacked was extremely ill, but the child I am thinking of was only moderately sick. All of these children made a very fair, and I may say, an uneventful recovery. This child was a boy who, with the exception of a tendency to obesity, was healthy in appearance. In the early part of August it was noticed that he often arose at night to go to the water closet. For a few weeks I paid no attention to this report, but then an analysis of the urine showed over 5 per cent. of sugar. I corresponded with many medical men, but received no more light than we have to-day. The case terminated fatally without any severe manifestations of the disease aside from those referable to the urine. Two weeks before death the boy enjoyed greatly a hunting trip, but he suddenly became very ill after it, and died after three days of diabetic coma.

Why diet and treat so radically that which we do not understand? Many who take no treatment whatever live just as long as others do. I do not want to disparage conservative treatment.

DR. COTTON, in reply—Of course, there is much that might be said on this subject, for no doubt we have all had interesting individual experiences. I must say that I consider myself somewhat of a failure in the effort to arrest diabetes in children. The dietetic theories which have been advanced are quite confusing, but I am convinced of the importance of watching diabetic children.

The authorities quoted in the paper seem to me to show very clearly their belief in hereditary tendencies. Thus Purdy asserts that he is satisfied that he has found a hereditary element in fully 30 per cent. of cases. If the true function of the family physician ever comes to be fully realized, and he becomes medical supervisor of the family, he must take into consideration everything which shows a predisposition to diabetes. In this way it is not improbable that he may prove of great value in stopping diabetes before it has become thoroughly established.

There are pre-glycosuric indications which should not be disregarded. Then there are attacks of transient glycosuria which should always be regarded with suspicion, for there are cases on record in which diabetes mellitus has developed even months and years after the appearance of a transient glycosuria. Until the lay mind is educated to the point of appreciating the true relation of the physician to the family, namely, that of conservator and supervisor, we shall not be able to make ourselves very useful in such disorders as diabetes mellitus in young children.

ALBUMINURIA IN DISEASE OF THE KIDNEY IN INFANCY AND CHILDHOOD.*

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CHATTANOOGA, TENN.

Diseases of the kidney in infancy and childhood are not so varied as in adults. They are chiefly active hyperemia and nephritis following the contagious diseases, especially scarlet fever. The acquired diseases of the kidney in childhood show considerable difference from adults, because acute affections, common to childhood, causing diseases of this organ, are seldom met with in after life. Under 15 years of age there is less likelihood to disorders of circulation than in later periods, and consequently under this age they are less likely to have chronic lesions of the kidneys.

Again, a child's kidney rapidly recovers from an injury. It is very rare to find a case of pyelonephritis, or hydronephrosis in children. But cachectic conditions lead to amyloid infiltration and this, in turn, to chronic albuminuria in children as well as in adults. Physiological albuminuria may occur at any period of infancy or childhood, but it is the most common between the ages of 5 and 15. The albumin is rarely present in the urine passed in the morning immediately on rising. Albumin alone being present, with an absence of blood corpuscles or other abnormal elements, indicates an absence of pathological changes.

While albumin in the urine does not, of necessity, indicate serious organic disturbances in the kidney, neither does it necessarily render the prognosis of a grave character, yet its presence, however slight, commands the utmost watchfulness and care before a decision is reached as to its being of no clinical significance. Albuminuria is the escape of serum-albumin and serum-globulin from the blood vessels into the renal tubes, and this escape of albumin indicates slight or grave nutritional disturbances. One is scarcely able, however, to certainly locate the site of these disturbances. For in each kidney it is estimated that there are about fifteen miles of tubing. This tubing is lined with basement membrane covered by epithelial cells of a variety of shapes and sizes. It is probable that the very shapes and sizes of the cells are accounted for, not by any peculiar function they each possess, but by the fact that they fill in the lumen of a tube that takes on the form, in quirk and curl, of almost every geometrical figure, from the capsule of Bowman to the excretory duct of Bellini. Yet it is thought that the columnar cells of the tubes of Henle select the urea, though this has not yet been certainly proved. While the tests for albumin and the use of the microscope will show disturbances, somewhere along the tubal track, yet nothing will appear that absolutely locates the lesion.

CAUSES OF ACUTE AND CHRONIC NEPHRITIS.

The scheme given here has been of much use to myself in locating the first appearance of the trouble and in giving the causes. It seems to me that it covers the whole field, as follows: The nutritional disturbances lie in the epithelium lining of the glomeruli, the tufts of capillaries, and the uriniferous tubules.

1. Renal Congestion.—Active: chronic liver, heart, pregnancy; passive: tumors.
2. Definite Lesions of Kidney.—Toxemia, scarlet fever, gout, amyloid and fatty degeneration, renal suppuration, renal tumors.
3. Indefinite Causes.—Scurvy, syphilis, medicinal poisoning, kidney, pregnancy of, epilepsy, tetanus, injuries to head, apoplexy, exophthalmic goiter.
4. Accidentals.—Pus: cystitis, pyelitis, urethritis; blood: pelvis, ureters, bladder.
5. Febrile.—Typhoid fever, smallpox, yellow fever, diphtheria, scarlet fever.
6. No Definite Lesions.—Functional, dietetic, intermittent, cyclic.

Albumin is found in the urine after a rich meal, heavy muscular exertion, intense emotion, or cold bathing. The cyclic variety bears upon life insurance. However, when every other constituent of the urine is normal, the case under careful management ordinarily recovers and the life insurance people sometimes accept the risk. I care not how little stress may be laid on the so-called functional albuminuria, the cyclic variety, or what not, undoubtedly some changes, though apparently trifling, do take place in the kidney somewhere. Fortunately, however, for the patient, these changes are non-progressive. But sooner or later, it may be after months or years have passed, grave lesions will show themselves, and insidious degeneration has been going on in the meantime. So for no other reason than that a certain relief may come to the mind of the physician, it becomes a necessity for him to determine, by differential diagnosis, whether he is dealing with a case of renal albuminuria or functional albuminuria.

I desire to report the case of a child, where the cause of the disease is somewhat uncertain. Early in March, I was called in consultation to see a little boy 4 years old, who in development would ordinarily be taken to be 7. He had a very large head, large body and large limbs. At the age of 12 months, I was told, he weighed forty pounds. The history of the boy is that he was never sick until the beginning of this illness. He never had the diseases common to children, such as scarlet fever, measles, whooping cough, etc. The preceding Christmas time, he seemed to be indisposed and it was observed that his eyes and face and lower extremities were edematous. A physician was called and treated him for a few days, when the child apparently recovered. Two or three weeks later he became sick again, with the same symptoms. An examination of the urine showed the presence of a large quantity of albumin.

When I saw the patient, the albumin was about two-thirds of the bulk of the urine. The specific gravity was 1040, the color dark, and the amount plentiful. The temperature was normal, eyes almost closed from the swelling, the face also very much enlarged, and the feet, ankles and lower extremities very edematous. The abdominal cavity was ascitic, the hands and arms were swollen, while the pulse was fair but showed consider-

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

able arterial tension. There was considerable loss of strength, and a great loss of red blood. In fact there was present the condition known as the "alabaster cachexia."

The diet in this case was nothing but sweet milk as long as he could take it, but after awhile his repugnance to milk became so great that he could scarcely swallow it. Then some stale bread was put in the milk, and he was also allowed some fruits in the form of oranges and lemonade. In some types of albuminuria, white meats may be given, namely, fish, chicken, turkey, sweetbread, birds, etc. In the way of vegetables, spinach, oyster plant, parsnips, etc., may be allowed. In the way of fruits, stewed apples, prunes, pears and peaches are sometimes used. But milk, two or three pints daily, is the food *par excellence*.

By way of treatment in this case, the wet pack, epsom salts and cream of tartar, a solution of the citrate of magnesia and vichy water, also a solution of the lactate of strontium, and Basham's mixture were used. The albumin ran from 1 to 2 per cent. In ordinary cases it runs from only 0.16 to 0.5 per cent. The specific gravity continued at 1040. The scrotum and penis were edematous to a very great degree. The eyes remained puffed and the arterial tension high. From time to time the urine was examined microscopically and pus, blood, and a few epithelial and hyaline casts were found. The history and progress of the case pointed to a chronic parenchymatous nephritis, immediately following an acute nephritis, a condition rarely found in children. This child died about ten days thereafter, from uremia and pulmonary edema.

Another case in point is that of a little boy 5 years old. His home was in Lookout valley. He had whooping cough the winter previous to my seeing him in July. The disease left him with albumin in the urine, in large quantities. I was called as consultant in July and found him in the home of his brother, a physician on Lookout Mountain, about 20 miles from Chattanooga. He had been carried thither by his parents, who hoped that the change, from the valley to the top of the mountain, would improve his condition.

He was very edematous over the entire body. The penis and scrotum were enormously swollen. He was voiding but little urine, which was heavily loaded with albumin and of a high specific gravity. The heart was weak but not diseased, the breathing shallow, and he was able to take but little nourishment of any kind. His principal longing was for fruit. The attending physician had used the customary means of treatment, excepting the hot wet pack. This was recommended by me, as was the use of the solution of the lactate of strontium, which was given in as large doses as the child would bear. Another suggestion was also carried out, and that was to take the child back to his home in the valley, thus hoping to give the skin a chance to aid in reducing the accumulated fluid. After taking him home, the attending physician reported that improvement began promptly and recovery rapidly ensued. After six months he told me that his little brother had fully recovered so far as he was able to discern.

The prognosis, in both of these cases, was grave on account of the aggravated symptoms and the age of the patients. They are of interest, however, in that the general symptoms and age were about the same. But in the one case the cause of the kidney involvement could not be determined, while in the other the cause was attributed to the whooping cough. In the first case, however, we might ascribe the cause to cold and wet weather, but it has been observed that exposure to inclement weather very rarely gives rise to acute degenerative nephritis.

As the prominent symptoms in these cases are albumin, high specific gravity and edema, I want to state that these symptoms are especially found in interstitial and chronic parenchymatous nephritis, active hyperemia, catarrhal nephritis, parenchymatous degeneration, passive hyperemia, and acute nephritis. In acute nephritis the amount of albumin depends upon the extent of involvement of the glomeruli, and the amount of casts depends upon the extent of the tubules affected.

A word about edema in renal disease. As this is a common symptom, it has always puzzled me to explain, to my own mind, the cause of its presence. Edema is the accumulation of watery fluid from the blood vessels, into cellular tissues and lymph spaces. Several theories have been advanced in explanation of this. 1.—the original theory was that, because there is an accumulation of the daily quantity of urine, the tissues are saturated with the water not excreted by the kidneys. 2.—Edema is the cause rather than the result of diminution. 3.—Transudation is due to the changes in or injury to the endothelium, increasing the perviousness of the blood vessels. None of these theories are fully tenable because the etiology and pathology of edema have not been satisfactorily explained. Hence, another theory was pronounced by Landerer, which is, that the relaxation of the tissues and loss of elasticity prevent the forcing of natural lymph into circulation, and as a result, a watery infiltration of the tissues ensues.

To meet and treat the symptoms of edema and ascites requires some thought concerning the condition of the patient. Of the three kinds of expellants, namely, diaphoretics, diuretics, and cathartics, the latter are indicated when general edema and threatening uremia exist. They are more certain in their action. Podophyllin, 1-10 grain, may be given repeatedly to a child 5 years old. Compound jalap powder, 5 to 10 grains, may also be used. A bath, 105 to 110 F., with the child wrapped in a woolen blanket, may be given for fifteen or twenty minutes. Then remove the child, take off the wet blanket and wrap in dry, hot blankets until reaction sets in. You may also add muriate of pilocarpin, in doses of 1-20 of a grain, by the mouth, to a child of 2 years, or hypodermically, to one 5 years old. Where ascites is extreme, tapping is of value. Teaspoonful doses of infusion of digitalis, every four hours, to a child 5 years old, is best.

TRAUMATIC AFFECTIONS OF THE UVULA

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From its peculiar position in relation to the oropharynx the uvula would appear to be extremely susceptible to severe traumatic influences, as it is constantly subjected to minor traumatisms in deglutition and excessive vocal efforts, yet reported cases of damage to this portion of the pendulous palate are comparatively rare, the text-books containing little or no reference to traumatic affections. The anatomic structure of the uvula, and its mobile characteristics, render it to a great degree exempt from traumatism otherwise

affecting the tissues in its immediate proximity. The mucous membrane covering it, especially at the tip, is of firmer consistency than that of the surrounding tissues, and is also less dense in structure. As an additional protection against damage from the lodgment or impact of foreign bodies, is the absence of glandular stomata or crypts, as occur on the pharyngeal walls and tonsils.

Pathologic alterations of the contour and structure of the uvula, as the result of traumatic influences, may best be classified from an etiologic standpoint, and may be divided into five classes. The first being extensive injury, the result of forcible contact with resisting foreign bodies, the soft tissues of the uvula being caught between the foreign body and the pharyngeal wall; the second class embraces those cases in which the mucous membrane is pierced by a minute body, such as bristle or stiff hair; the third class embraces the more frequent cases in which, as the result of swallowing caustic materials, and also in the application of caustics to adjoining regions, the uvular tissues become subjected to chemical traumatism. The fourth class is seen in accidental cases, in which this portion of the palate is subjected to traumatism as the result of operative procedures directed to the tonsils, larynx or nasopharynx, the uvula accidentally becoming engaged in the handle of the forceps, or whatever instrument of similar nature is being used. The fifth class results from indirect traumatic influences, being by far the most important from the standpoint of the individual as it occurs in singers as the result of excessive or ill-advised efforts at vocal exercise.

As illustrative of the amount of damage that may be done to the uvula as the result of forcible contact with a hard, resisting foreign body, the following case is presented:

C. J., a colored male, aged 30 years, was seen Feb. 23, 1899, when he presented the following history: While under the influence of alcohol and smoking a corn-cob pipe, he ran against a stone wall, on the evening previous to which he was seen. The stem of the pipe was violently forced into his throat and severe pain and bleeding ensued, lasting the entire night. The pain was intense, referred to the base of the tongue and pharynx and presented the taking of food, either solid or liquid; even the mere act of swallowing being impossible on account of the increase of pain produced at such times. The pipe had been held on the left side of the mouth and examination showed a deep laceration on the same side of the tongue and, after inflicting this damage, the stem of the pipe had evidently passed backward and jammed the uvula against the posterior pharyngeal wall. The uvula was perforated directly in the median line, 2 millimeters below its junction with the soft palate, the perforation being partial inasmuch as it did not go through the mucous membrane of the posterior aspect and corresponded in shape and size to the stem of the pipe. Inflammation and edema were severe and prevented to a great extent the opening of the mouth, but hemorrhage had spontaneously ceased. The parts were painted with ichthyol and an astringent mouth wash given, with prompt relief in a few hours, patient making uninterrupted recovery in a few days.

It is of interest to note that in cases of severe traumatism of the uvula edema is not as well marked as in apparently more trifling injuries, scarification rarely being necessary, as free bleeding has already taken place and the amount of swelling is limited. Another point of interest is the rapid improvement without the least suggestion of septic infection, following the use of antiseptic and astringent applications. It is also remarkable in the cases of severe local injury with what rapidity the healing of the lacerated or punctured wound takes place; this case, being typical of its class, well shows this marked recuperative power, as in forty-eight hours after the patient was first seen all the symptoms had disappeared and but slight congestion remained around the wound.

Of more frequent occurrence than severe lacerated or punctured wounds of the uvula are the minute lacerations of the mucous membrane, and oftentimes of the deeper structures, as the result of small foreign bodies, such as a bristle from a tooth-brush, etc. Belonging to this class is a case reported by Fisher,[1] in which the uvula was pierced by a bristle; severe hemorrhagic infiltration occurred, the uvula being greatly swollen and dark purple in color from the large amount of blood effused into the tissues. Small foreign bodies producing traumatic injuries of the uvula may induce pathologic alterations seemingly out of all proportion to their size. When the foreign material, such as a minute fish bone, merely enters the surface epithelium and does not penetrate into the deeper tissues a slight grade of inflammation results, dependent on the length of time the foreign body remains *in situ*, and then rapidly disappears without further treatment as soon as the offending particle is removed. The subjective symptoms are, however, most annoying, as the patient complains of the presence of a foreign body even for a considerable time after all traces of it have been removed, and the dysphagia, peculiarly, is very rarely referred to the uvula directly, but most frequently to the tonsillar or epiglottic regions. The characteristic features predominating, when a minute sharp-pointed body enters deeply into the uvular structures, are edema and extravasation of blood. The uvula becomes enormously increased in size and, as a rule, hemorrhagic extravasation of the uvular tissues is nearly always of traumatic origin.

The general symptoms of the varied traumatic inflammations of the uvula are, in the majority of cases, not well marked, except when the traumatism is severe, when the inflammatory reaction involves the adjacent parts by continuity of structure and pharyngitis results, attended with a moderate degree of temperature, such as occurs in the regular course of acute non-specific inflammations of this particular region. Within a few minutes or hours after the infliction of the injury, and dependent upon its extent, the patient complains of a sense of pharyngeal discomfort, which may in severe cases, as in the one reported here, amount to intense pain. The pain is constant, but becomes markedly exaggerated during deglutition, and food is refused for a limited time until the acute symptoms subside. Dependent on the amount of edema and inflammatory reaction are the changes in the voice. The functions of the uvula are for the time abolished, the resonating capacity of the parts is impaired, and articulation becomes thick from the swelling of the uvula and from the increased amount of mucus collecting in the oropharynx, due to indirect stimulation of the secretory glands. On account of the increased amount of saliva and mucus, there is a constant desire to swallow, this also being enhanced by the sensation of the presence of a foreign body which seems a constant local symptom in practically all cases. This foreign body sensation, in a few instances, may be due to the presence of a minute particle of adventitious material partially embedded in the mucosa and, from the constant motion and enlargement of this part, the tissues in its immediate locality are irritated by the foreign matter abrading their sur-

face with every act of swallowing, thus keeping up the inflammation. In the majority of cases, however, this is but a nervous element, but in all, careful search under good illumination should be made, and any adventitious material immediately be removed.

Dyspnea only occurs when the tissues are enormously increased in all their dimensions by the effusion of blood or serum into the structure of the uvula; it may be extreme, requiring immediate operative procedures, as in a case reported later in the course of the paper, and is also present in the class of cases where the traumatic influences are indirect, as in excessive vocal strain. The non-appearance of dyspnea, when the uvula is subjected to direct and severe traumatism, is readily explained by the laceration of the tissues as a result of the foreign body, allowing the fluids to escape, and in this manner excessive infiltration by liquids is prevented. Cough is not as commonly present as the other symptoms mentioned, and is rarely complained of when the parts are edematous, as in this condition the increase in the size of the uvula is one of bulk, that is, in the lateral direction, while the cough factor depends on the elongation of the tissues and the contact of its tip with the epiglottis. When cough is present, however, it is of an irritating, tickling variety and promptly disappears on the application of an astringent, so as to draw the elongated uvula away from the larynx or base of the tongue.

Acute uvulitis, characterized by the presence of a considerable amount of local edema, may result from the inadvertent swallowing of boiling water, acids, ammonia or any chemical irritant, the uvula participating in the general inflammation of the oropharynx. Cases in which the traumatic effects of irritant chemicals are alone limited to the uvula are much more frequently observed, and occur as the result of ineffectual or unskilful attempts to cauterize the adjoining tissues for therapeutic purposes. Under these circumstances but a limited portion of the organ is involved, although the resultant edema and inflammatory reaction is far in excess of the amount of damage inflicted. J. Solis-Cohen[2] reports a case where caustic applications produced an intense edematous condition of the uvula, and numerous other cases similar in character have been recorded in the literature. The loose structure of the upper two-thirds of the uvula, like that of certain portions of the larynx, renders it susceptible in a marked degree to the action of caustics, and it is surprising in what a short period of time, after a minute amount of caustic material has been inadvertently applied, the edema develops.

Injuries, the result of carelessness or accident during operations on the pharynx or larynx, are of more or less frequent occurrence, especially when the electrocautery or tonsil snare is used without proper precautions as regards the protection of the surrounding tissues. The resultant burn differs but little from that due to the action of chemical caustics when the traumatism is the result of the careless application of the electrocautery, while minor wounds due to catching the uvula in the joints of instruments are usually of little moment, except as they to a moderate degree augment the inflammatory reaction and for a short time cause the patient added discomfort. Objectively, when the uvula is injured by being caught in instruments during operations in this locality, we find a small laceration or bruise of the mucous membrane the most common feature, while traumatic ulcers the result of caustics are apt to develop in a few days after the injury has been inflicted, but readily heal under appropriate treatment. The liability to local and circumscribed sepsis after the infliction of this class of injuries upon the uvula, seems to occur more frequently than as the result of other forms of traumatism, as the injury, when due to instruments, is usually of a contused and lacerated variety and the resultant ulcer develops as the result of septic infection through the buccal cavity. Especially is this noticeable should the patient have decayed teeth and the parts be not thoroughly cleansed, as is frequently the case, before any operative procedures are instituted.

The first four varieties of traumatism, to which the uvula may be subjected, are all the result of direct violence to this portion of the oropharynx, while the fifth form results indirectly from excessive strain of the parts and the symptoms are out of all proportion to the apparent amount of injury inflicted, the ill-regulated column of respired air and the irregular muscular action combining to produce this variety of indirect traumatism. The following case illustrates in a forcible manner this form of traumatism, and is reported by Le Jeune[3]. He was hastily summoned to see a female singer, who was supposedly choking to death. The intense dyspnea came on after she had been singing for a time and immediately followed extreme and prolonged efforts to reach a note beyond her compass. The subjective symptoms were dyspnea, with the sensation of a foreign body in the throat. The uvula alone was affected and was of a dark purple hue and the size of an olive. Incision was immediately made, and gave exit to blood, which had extravasated into the tissues of the uvula; immediate relief was given the patient.

In a similar manner small submucous ecchymoses are produced by excessive and violent efforts to clear the throat, as in the act of hawking. The effects of this form of traumatism upon the voice, both singing and speaking, is marked; the range is lost, as is also the clearness and strength, and often it becomes tremulous until the uvula regains its normal tone.

No special forms of treatment are indicated when the uvula suffers as the result of traumatism, but when the tissues are lacerated, the local application of ice is most gratifying in conjunction with antiseptic and mild astringent applications. While in inflammations the result of inadvertent applications of caustics or instruments in operative procedures, bland soothing applications are valuable, such as ichthyol in weak solution. When edema is extensive, or the parts much enlarged from hemorrhage into the tissues, and dyspnea becomes imminent, multiple incisions promptly relieve all threatening symptoms and the uvula rapidly regains its normal size.

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Clinical Reports.

TWIN CONCEPTION.

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The lady referred to in this report is a Virginian, white, 42 years old, married eighteen years; has had seven pregnancies to the full term, all of the children living, and three miscarriages at two, four and six months. She was taken unwell on

November 29 last, and the usual symptoms of pregnancy progressed without incident until May 30, when she felt a sudden gush of water from the vagina, followed by quite a severe hemorrhage. I confined her to bed for ten days, and there being no further symptoms she got up and went about her usual household duties. On July 4, she had two sharp pains in her abdomen and went to the closet to relieve her bladder, when in her words, something passed from her, but was not detached, and, being afraid to pull on it, she supported it to the bed, where I found her about half an hour later. I found a fetus expelled and cord attached; used gentle traction and then quite forcible traction, without result; introduced my finger and found os sufficiently dilated to introduce three fingers, and felt head of living child; followed the cord along the right side of uterus as far as my finger would reach, and, finding no attachment, used considerable force and detached the cord. There was no hemorrhage, no discharge, no pain; in fact, no symptoms. I kept the patient in bed. The fetus was about three months growth; genitals sufficiently developed to distinguish the sex (male); head about the size of tennis ball, and compressed flat. There was no decomposition, no maceration. It looked as if it had been immersed in alcohol.

On July 7, the mother was delivered of a seven-month girl, after a normal labor. After delivering the placenta, I introduced my hand, but found no second placenta. After washing the placenta I found a portion of it, outside the membranes, as large as my hand, presenting the same appearance as the expelled fetus. There is no doubt in my mind that this was a twin conception, and not a superfetation, for there was only one placenta. The mother made an uneventful recovery; the child is well and growing.

A CASE OF PRIMARY RETROPERITONEAL SARCOMA.

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The following case of retroperitoneal sarcoma is reported because of its rarity. The extremely softened condition of the tissues was unusual, perhaps unique. In Steele's[1] summary of the literature of the subject he found 22 cases, or 35 per cent. of the total number of cases reported were cystic, and in 15 of the 22 the degeneration a hemorrhagic one, the center of the softened growth being filled with a dark brown fluid or semi-fluid material. This softening was so extreme in the case here reported as to make it impossible to name its exact origin. That it started in the upper retroperitoneal space was apparent. The case also presented many of the objective symptoms of a pancreatic cyst, which makes the case of interest in considering that affection.

T. A. D., male, aged 27, farmer, gave no history of syphilis or gonorrhea. He had good health until the spring of 1900, when the left scrotum gradually became swollen, and in August it was tapped and fluid removed by Dr. Asa L. Taylor, his family physician. After this, the hydrocele filled again and then the fluid disappeared spontaneously. In September the patient began to have pain in the hypogastrium; anorexia, distress after eating, belching of gas and occasional constipation occurred, and he had to give up work. Dr. Taylor, who examined the abdomen several times at the beginning without finding anything abnormal, on November 10 noticed a tumor, which increased rapidly in size up to the time of operation, November 30. One week before operation the patient became jaundiced, this condition increasing rapidly. The stools were clay colored and the urine very dark. He vomited several times in the three weeks previous to operation and the pain in the hypogastrium was quite severe.

Examination.—Man of fairly good physique, fairly well nourished, severely jaundiced and no marked cachexia present. The examination of the heart and lungs revealed nothing abnormal. Pulse ranged between 70 and 80, and temperature between 99 and 100. Examination of scrotum shows right testicle much smaller than usual, but otherwise apparently normal. Patient thinks it has diminished in size since last summer. Left scrotum evidently contains some fluid and the epididymis feels hard and nodular but not enlarged. Abdomen is flat. Just above navel and to the left is a slight bulging. A tumor can be distinctly felt here extending slightly below, two inches to the left of the median line and about an inch to the right. It is globular, fairly hard, non-fluctuating but slightly tender; does not move with respiration, and is tympanitic on percussion. Its most prominent portion seems to be just above and to the left of the umbilicus. Tumor shelves off rapidly into the depths of the abdomen. Liver and spleen dulness normal. Exploratory operation advised.

Operation.—Abdomen opened by vertical incision an inch to the left of the median line, extending one and a half inches above and the same distance below the umbilicus. The omentum presented, seemingly very much engorged with blood. The transverse colon lay just below the most prominent portion of the tumor. In attempting to get down to the tumor, the hemorrhage was profuse: then there was a sudden welling up of blood from the depths. The transverse colon and omentum were pushed quickly upwards and the tumor gotten at from below. It was seen that the blood came from a hole in the tumor, the thin walls of which were grasped and drawn through the incision. The hemorrhage had been profuse and it was some minutes before it was controlled by packing. It was not deemed advisable to attempt to bring the sac through the mesentery on account of liability to hemorrhage, and it was stitched to the abdominal wall, the omentum and transverse colon being pushed upward. The sac was packed with gauze. The patient was severely shocked, from the severe loss of blood, but rallied within a few days. Bile passed with the first movement of the bowels and jaundice disappeared completely in about two weeks. The general condition seemed to improve for a while, but the improvement was only temporary. He lost flesh rapidly and died four weeks after operation. The emaciation towards the last was very rapid. About two weeks previous to death, there appeared a bulging just above the incision. This pushed forward with remarkable rapidity, finally pushing the sac from the abdominal wall where it had been stitched and at death presented at least two inches above the surface of the abdomen. The mass oozed blood almost constantly, and in the last two days in large amounts. Patient complained a great deal of severe pain in the back for the last two weeks. Bowels were moved with great difficulty.

Postmortem.—Lungs and heart presented nothing abnormal except some fresh adhesions about the base of the left lung. The tumor mass projecting above the surface of the abdomen consisted of semi-solid material, mostly blood-clots, and a gray, mushy, partly organized material throughout. This mass occupied a cavity running back to the spine, then upwards, filling the left renal space and pushing the kidney outward and extended down to Poupart's ligament. It was surrounded everywhere by intestines firmly agglutinated but apparently not involved. The transverse and descending colons were pushed upward and outward against the wall of the abdominal cavity. In the structure of the left testicle was a small hard mass, which was removed for examination.

Report of Pathologist.—Organized pieces of the tumor were removed from several parts of the growth. Sections of some of these presented the appearance of a small round-celled sarcoma with a small quantity of stroma. In other sections taken from near the periphery there was much more fibrous tissue and many blood vessels. The tumor may be classed as a small round-celled sarcoma undergoing degeneration, which is so frequently met with in this class of malignant growths.

The nodule removed from the testicle was examined and found to be composed of fibrous tissue. There was no evidence of its being associated in any way with the abdominal growth.

1. Steele: Am. Jour. Med. Science, March, 1900.

Professor Howntze, a Danish physician, stated at the Congress of Scandinavian Surgeons, that he had cured several cases of cancer by freezing them.

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THE NATURE AND THE CAUSE OF PUERPERAL ECLAMPSIA.

At the Ninth Congress of German Gynecologists at Giessen, May 29-31, 1901, eclampsia constituted one of the subjects for an exhaustive general discussion, which was introduced by Fehling and Ryder.[1] Inasmuch as this discussion probably represents quite fully the present views concerning the nature and cause of eclampsia it may be of some interest to briefly review the principal facts and opinions brought out.

In his report on the pathogenesis Fehling announced the following theses: Puerperal eclampsia is a distinct and characteristic process, which occurs only in the period of gestation. There is no special form of placenta, no special form of renal or hepatic disease in eclampsia; it is not necessarily connected with ureteral dilatation, but albuminuria is almost always present. There is no definite pathological anatomy of eclampsia. That it is contagious has not been shown, and there is no proof of Bouchard's claims that it is caused by an increased toxicity of the plasma of the blood associated with diminished or absent toxicity of the urine. Eclampsia is neither an hepatotoxemia nor a leukomainemia. The lesions of eclampsia are associated with the presence in the blood of some coagulative substance. Finally, eclampsia is an intoxication of fetal origin.

A very important contribution to this discussion is Schmorl's report on the pathological anatomy based on a thorough study of the organs in no less than 73 cases. From the results Schmorl finds that the process has a fairly definite pathological anatomy, thus invalidating one of Fehling's theses. When the whole complexus of morbid changes are considered one must agree with Schmorl. The kidneys without exception are the seat of albuminous and fatty degenerative changes with more or less necrosis. These changes affect the secreting tubules and occur in varying degrees of extent and intensity. Thrombosis is frequent in the glomerular capillaries, as also in the arterioles and veins. Ureteral dilatation is of no greater frequency than in the non-eclamptic. In three cases there were hemoglobin infarcts and hemoglobinemia, but the exact cause could not be determined. In the liver there are albuminous changes in the cells, and hemorrhagic and anemic necrosis were present in 71 cases. In the two cases in which they were absent there was total thrombosis of the main stem of the portal vein. These necroses, when small, are situated in the peripheral parts of the lobules and invariably accompanied with thrombosis of the inter- and intra-lobular capillaries and often also of the larger vessels. The necroses do not stand in any relation to the severity of the symptoms, and they are not due to traumatism during the convulsion, because there may be very few in cases with many and severe convulsions and very many in cases with few and light seizures. In addition to secondary pneumonic processes, the lungs showed thromboses and hemorrhages in 66 cases. Fat embolism was also frequent, the source of the fat being, it is thought, the bone marrow, the subcutaneous tissue and possibly also the fat tissue in the pelvis. The most constant changes in the brain are small softenings and hemorrhages, especially in the cortex, but also in the brain stem and in the lenticular nucleus. Thrombosis and possibly increased blood pressure during the convulsions are regarded as the cause of these changes. In the heart are degenerative changes, hemorrhages, necroses, and thrombi, but the latter are not as common as in the other organs.

Schmorl does not attach any special importance to embolism of parenchymatous cells in eclampsia. Even placental cell embolism are not distinctive because it occurs in non-eclamptics. Schmorl is no longer disposed to attribute to placental cells the ability to liberate coagulative substances. He has not seen any other disease with the complexus of changes outlined in the foregoing. While no single lesion is absolutely characteristic or pathognomonic, the sum total of all the changes is as distinctive as in many other diseases. From the nature of the lesions he would assume that a peculiar substance enters the blood and leads to multiple thromboses. Whether this substance comes from the placenta or from the fetus can not be settled at this time. Possibly the applications of the principles of cytolysis may throw some light upon this dark problem.

It is regrettable that careful and complete systematic bacteriologic examinations do not accompany this valuable report which is based upon such a wealth of observations. The relations of bacteria and bacterial products to thrombosis are of such importance that they surely merit consideration in connection with eclampsia; and the clinical picture and pathological anatomy of eclampsia do not of themselves definitely exclude a microbic etiology. Indeed, Albert advances the theory that eclampsia is a microbic intoxication from the decidua.

Strassmann deals with the question of the why and the when toxic substances are retained in case eclampsia is a toxic disease. Kundrat and after him Herzfeld advanced the theory that abnormal divisions of the abdominal aorta may result in such displacements of the ureters as to subject them to compression. The frequency of eclampsia in primiparæ and in twin birth, in contracted pelvis, and the fact that the attacks may cease

1. Report in Centralbl. f. Allg. Path. u. Path. Anat., 1901, xii, 635-648.

after delivery, point to the influence of mechanical conditions. He could not find, however, after an exhaustive investigation, any relation between puerperal eclampsia and anomalous division of the aorta.

In the same discussion considerable reference is made to physical and chemical conditions of the blood and urine in eclampsia. Füth and Krönig found that the maternal and fetal blood have the same osmotic tension and specific gravity, showing that if there are toxins in the maternal blood they do not cause increase in its tension or its gravity. Dienst observed an increased amount of fibrin in both the bloods in pregnancy, and he assumes that during pregnancy a certain amount of poison is produced in the fetus and taken into the maternal blood where it may accumulate in fatal quantities in case elimination is interfered with. Schumacher established that the urine of eclamptics is no more toxic than normal puerperal urine of the same concentration. He regards the toxicity of eclamptic urine when concentrated as dependent entirely upon its hemolytic properties due to its different tonicity from that of the serum of the blood. Schroeder notes that the freezing point of urine in eclampsia falls below healthy urine and sometimes below that of the blood. As the attacks pass away concentration increases, but the observations are not sufficiently extensive to permit any definite conclusions. In connection with this question reference may be made to the article by Stern[2] in which he discusses osmotic pressure in its relation to uremia.

Veit did not find the maternal serum hemolytic for the blood cells of the fetus nor the fetal serum lytic for the maternal corpuscles. By inserting syncytial cells from the rabbit into the abdomen of geese the serum of the geese acquired the power of dissolving the placental cells of the rabbit—a placentolysin or syncytiolysin developed. Normally but few syncytial and placental cells enter the maternal circulation; should a larger number enter, lysins with toxic properties might develop, but Veit adduces no further evidence in favor of this idea.

Taking it all in all we must admit that eclampsia is a toxic disease in which coagulative substances exist in the blood, but the source of these substances has not been determined. No decisive proof is at hand to the effect that the intoxication is of fetal origin.

2. The Journal, July 27, 1901, p. 256.

NOCTURNAL ENURESIS IN CHILDREN.

Incontinence of urine may result from a variety of causes, but the principal and underlying factor resides, of course, in a relative or absolute weakness of the sphincter of the bladder. This may at times be in a sense conservative, as in the so-called incontinence of retention, when the bladder having become filled and distended to its utmost, the sphincter yields, and urine escapes. Irritation of the walls of the bladder in consequence of inflammation, the presence of new growths or foreign bodies, excessive acidity of the secretion of the kidneys, may result in involuntary discharge of urine. This may take place, further, during states of unconsciousness—even during sleep—and in the presence of various diseases of the nervous system, partly as a result of indifference and partly as a result of anesthesia or paralysis. The control of the urine is a voluntary function, and it is developed in a growing child as volition is evolved—sometimes earlier, sometimes later, in accordance with individual conditions and training.

There is reason to believe that the involuntary discharge of urine that takes place during the night, and sometimes also during the day, in some children, at a time when control of the sphincter of the bladder has usually been acquired, is a neurotic manifestation involving the sensibility of the mucous membrane, or the motility of the muscular coat of the bladder, or both, and Dr. Martin Thiemich[1] expresses the opinion that the disorder is of hysterical origin. He points out that the peculiarity of hysteria in children is its monosymptomatic character. From the study of a considerable number of cases he found that the majority of children suffering from enuresis were the offspring of neurotic parents, so that both heredity and environment contribute to the development of the neurosis. In fact, in many cases a history of enuresis in other members of the family could be elicited. Further, the involuntary discharge of urine not rarely becomes attended with or replaced by other symptoms of hysteria. Finally, the epidemic occurrence of enuresis, in schools and the like, is not unknown, and the best remedy under such circumstances has consisted in isolation.

Neither is the treatment generally employed opposed to the hysterical origin of enuresis. In this connection suggestion plays an important rôle, and mechanical or physical measures—especially the application of the faradic current—are more efficient than medicinal measures. A strong current to the point of causing pain should be employed, and it is a matter of indifference where the electrodes are applied, although it is customary to apply one in the neighborhood of the bladder. Subcutaneous injections of strychnin may likewise be employed, and be made either in the vicinity of the bladder or in some indifferent situation. Adenoid vegetations in the nasopharynx should, if present, be removed, and any local condition, such as preputial adhesions, hyperacidity of the urine, and the like, should be corrected.

THE MULTIPLICATION OF BOOKS.

On account of the rapid increase in the number of books the large library in Paris has been forced into new and larger quarters in order to find room for the rapidly accumulating literary treasures it is intended to house, classify and arrange in an accessible manner. The librarian is reported to have stated that it is becom-

1. Berlin Klin. Woch., 1901, No. 31, p. 808.

ing a more and more serious problem to properly house and arrange the books. If the present rate of increased production continues it will be but a short time before still larger quarters will be absolutely essential. He emphasizes particularly the difficulties of classification and practical arrangement. The overproduction is so excessive that the large libraries are threatened with perpetual and hopeless chaos in their efforts to make the vast accumulations accessible to their patrons. The transitory character and even absolute worthlessness of a large proportion of the publications are pointed out, and the remedy suggested is that writers restrict their production to the greatest possible minimum. The real literature is on the point of being buried beneath a mass of cheap trash. "One can not see the woods for trees."

This excessive literary production is characteristic also of medicine. The number of journals, of reprints, of books, and of printed matter issued from various sources is simply overwhelming. The transitory nature of the larger part of this material is so apparent as to need no emphasis at this time. Real, honest literary study of a fairly popular topic in current medical literature is rendered exceedingly irksome and laborious, because of the vast quantity of rehash and compilation without the addition of a single original idea or suggestion. It is practically out of the question to be in touch with all the literature issued in any one department of medicine, because of the expense and time it would involve to attempt to master the stuff sufficiently well to separate the wheat from the chaff. Not only are lengthy articles produced in large numbers, but they are frequently printed in two or three different places and reappear again and again under various disguises and modifications.

All sorts of medical societies attempt at great expense to issue some form of transactions or proceedings in which they too often simply reprint articles and reports that have appeared already in current periodicals. This custom seems to be spreading also to hospitals and laboratories, which reissue in the form of reports material previously printed. Surely there is a great deal of paper and printer's ink wasted to no particular good purpose in these days, acknowledge though we must that this productiveness betokens scientific activity and interest in medicine.

Some one has characterized America as the land that flows with ink and money, and the first ingredient is certainly liberally used by the medical profession here. The same is true of the medical profession abroad, possibly to a greater extent than here in some respects. In the interest of higher standards and greater concentration and accessibility of our medical literature an appeal must be made to the self-criticism of those who write. Let not your literary activity be measured by the number of papers and addresses printed each year, or by their length, but solely by the quality. And when publishers tempt you to cover again some well-trodden field, yield not!

AUTHORS AND MEDICAL SUBJECTS.

A novelist tells the story that in writing his latest work he called in his family physician to assist him in duly disposing of one of his characters and—here comes the special point of his tale—he received a bill for professional services for the same. While we did not learn the exact state of the author's mind when this occurred, it would appear from his reporting the event that he considered it somewhat extraordinary. Why this should be so is not self-evident unless it be that it seemed to him that doctors could deal only with actualities, and was not aware that medical opinion on fictitious cases has a legally recognized value and is constantly being called for in the courts. The service rendered in this case can hardly be questioned—certainly not when one recalls the too common medical mistakes of writers of fiction. The curious thing is, that the writer who had the sense to call for such aid should have not appreciated its money value.

BOVINE TUBERCULOSIS.

According to a printed interview, Dr. J. G. Adami, the distinguished pathologist of McGill University, while not endorsing Professor Koch's almost absolute denial of the communicability of bovine tuberculosis to man, yet thinks him nearer right than his critics. Among these he includes Lord Lister, Drs. McFadyean, Bang and Nocard. It is, in his opinion, just as extreme an assertion to say there is imminent danger of the transfer in all cases of the animal disease to our species as it is to unqualifiedly deny this, or to consider the peril an altogether negligible quantity as does Koch. For two years he says he has been working on this question in connection with Drs. [illegible] Martin and C. Higgins, and apparently his opinions heretofore expressed as to the difficulty and infrequency of such transmission, and the weakness of the evidence of its occurrence have not been changed to any extent by these later researches. Adami's opinion as well as Koch's will carry weight, and together are alone enough to cast a cloud over the universal validity of the generally accepted medical dogma of the danger of bovine tuberculosis to man.

ST. LUKE'S HOSPITAL AGAIN.

A subscriber writes us regarding the notorious St. Luke's Hospital and enclose circular letters, facsimile of diploma, etc., received by him from that institution, and says: "This abominable fraud is being sent out to hundreds of practitioners. . . . On looking over the names and degrees of the 'staff' one would be led to believe that it is one of the most eminent in the whole country." The doctor goes on to state that he writes to urge us to expose it and that it is the duty of medical journals to warn their readers of the swindling concern, etc. We have called attention several times to this Niles (Michigan) scheme for "working" physicians, and we doubt if any regular readers of The Journal of the American Medical Association are possessors of their "beautiful diplomas." We can hardly believe that any intelligent physician who acted deliberately could now be duped by the "eminent" names, though their affixes are imposing enough at first sight. They certainly

seem varied enough to satisfy the most liberal minded, including as they do representatives of all schools, with osteopathy thrown in. They only need a few Dowieites, "Christian Scientists," and other voodoos to make the assortment complete. Besides the great Granville, who heads the list, and presumably manages the concern, we see the name of the redoubtable Zwigtman Van Nopper of Independent Medical College fame, who, it is said, toured through India leaving a trail of Armstrong diplomas behind him. After all, the question is whether the doctor who buys one of these certificates and hangs it in his office for the purpose of impressing his patients with the idea that it means something of which he might be proud, is not practicing deceit just as much as the ones who sold him the parchment. While it hardly seems necessary to warn honest physicians against the concern, the attention of the Michigan authorities is again respectfully called to its existence.

THE PHILIPPINE INSULAR BOARD OF HEALTH.

The Philippine Commission has not neglected one of its chief duties, namely, attention to public health, a greater necessity in a tropical country even than in a temperate climate. Without positive knowledge as to the details of previous laws, it is yet safe to say that there has been much needing reform in this line, certainly this is so as regards the practical application of sanitary rules. Manila is already a very different place in this particular from what it was under former control, and the continuance of the good work is provided for, not only for the chief city but for the islands generally, by the enactment of a law constituting and providing for an Insular Board of Health, having full supervision of sanitary matters and vital statistics. The latter is also authorized as well to regulate and disseminate information on sanitary subjects among the people, to draft and recommend suitable laws, including those governing the admittance to the practice of medicine and has also authority to prosecute all violators of the sanitary regulations. The Board is composed of the commissioner of public health, who is chairman, a sanitary engineer, a chief health inspector, the superintendent of the government laboratories, ex-officio, and a secretary; all, except the sanitary engineer and the superintendent of laboratories, are specified to be duly qualified physicians. The chief surgeons of the Army and Marine-Hospital Service, and the president and vice-president of the Association of Physicians and Pharmacists of the Philippine Islands are also honorary members, but without the right to vote. Another enactment provides for government biologic, chemical and vaccine and serum supplying laboratories to act as adjuncts to the health authorities as well as for such other purposes, agricultural, economic, etc., as may be required in the development and betterment of the country and its resources. It is evident that the present government of the Philippines is not one of mere politicians. It is to our interest as well as that of the Filipinos that scientific sanitation is carried out in the islands and there appears to be no danger at present of any serious failure in that respect.

Medical News.

CALIFORNIA.

Smallpox, diagnosed as chicken-pox and Cuban itch, and the patients not quarantined has resulted in at least forty cases of the disease in the Elsinore valley.

Sanitary Recommendations.—Health Officer O'Brien of San Francisco, in his annual report, urges the use of individual drinking cups in the public schools, and the proper fumigation of telephone transmitters, which he considers, "are admirably adapted for the harboring of bacilli."

Trolley Rides for Convalescents.—Dr. Matthew Gardner, chief surgeon of the Southern Pacific Railway Company, has arranged with the Market Street Railway Company, San Francisco, to provide a special car every Monday, in which the convalescent patients of the hospital are given a ride for three or four hours.

Personal.—Dr. F. P. Conae-Marquis was appointed chief surgeon of the French Hospital, San Francisco, August 25, vice Dr. F. Dudley Tait.——Dr. P. C. Remondino, San Diego, has filed a petition in bankruptcy.—Dr. W. J. Bauer has been appointed resident physician of the 26th Street Hospital, San Francisco, vice Dr. Victor E. Putnam, resigned.

CONNECTICUT.

Dr. John J. Wagner, Greenwich, was injured in a runaway accident August 25, breaking his leg.

Personal.—Dr. John H. Billings has resumed the practice of his profession in Middletown.——Dr. Charles W. Page has retired from the superintendency of the Connecticut Hospital for the Insane, Middletown, and will spend the winter in Hartford and go to Europe in the spring.

Examination of School Children.—Drs. Alfred G. Nadler, Percy D. Littlejohn, Jeremiah J. Cohane, Frank A. Kirby and Edwin P. Pitman have been appointed examining physicians for the public schools of New Haven. For the time being they receive no salary, but it is hoped that the value of the service rendered may impel the Board of Finance to make an appropriation that the work may go on.

ILLINOIS.

Smallpox.—Coal City has four cases of sickness which has been pronounced smallpox by the official of the State Board of Health sent to investigate the matter.

Dr. George A. Lierle, Payson, was injured by the overturning of his buggy, August 14, sustaining a fracture of the skull and severe contusions of the chest and back.

Gift to Bloomington Hospital.—Abram Brokaw and his wife have given $10,000 to the Deaconess Hospital, Bloomington, on the condition that the institution be thereafter known as the Brokaw Hospital. The trustees have accepted the conditions and the money.

Peace at Elgin.—Members of the Woman's club look on the action of the physicians with favor. They assert, that in organizing, the doctors simplify matters and make possible an adjustment. The general feeling now is that instead of a preparation for concerted action against the Woman's club the organization of the physicians may be interpreted as an extension of the hand of fellowship.

Personal.—Dr. Roy B. Roberts, Brooklyn, has located for practice in Augusta, succeeding Dr. Chalmer R. Hecox.——Dr. Robert L. Frisbie, Baileyville, has been appointed attending physician at the Home for the Feeble-Minded, Lincoln.——Dr. James W. Smith, Cutler, has moved to Baldwin.——Dr. John T. Lloyd, Pulaski, has moved to Baldwin.——Dr. John C. Kirby, Verona, has located in Morton.

Chicago.

An Examination for District Physicians was held by the County Merit Board, September 4.

Operation at County Jail.—What is said by the lay press to have been the first operation for appendicitis performed in a jail in the United States, was made on a prisoner charged with murder, August 27, by Dr. Francis W. McNamara.

A fire at the County Hospital, August 27, caused a little damage, threatened for a time to destroy the hospital and created a panic which was quieted only after great efforts by the attendants under the personal direction of Warden Healy.

War on Quacks.—The attorney for the State Board of Health announces that the Board is about to take active meas-

ures for the suppression of the quack doctors, dispensaries and medical institutes "whose advertisements enrich the daily papers and attract the ignorant masses. Several individuals have been summoned on the charge of practicing medicine without license and the first cases are set for September 9.

Smallpox in Chicago.—The August 31 issue of the Weekly Bulletin of the Health Department states that for the first time in more than thirty months the City Isolation Hospital was emptied of smallpox patients last week. Between March 9, 1899, the date of the first case of the series, and August 12, 1901, the date of the last admission, 342 cases of smallpox were discovered in the city, and removed to and treated in the Isolation Hospital. The last case was discharged, recovered, August 28, the resident physician relieved from duty, and the hospital closed. During the period a total of 960,588 persons were examined as to their vaccinal status by the medical inspectors of the Health Department and the public vaccinators, and 220,648 were vaccinated. The greatest number in any one month was 303,725 examined and 44,904 vaccinated in February, 1901, since which time the disease has steadily declined until the city is now free from the pest. This is a very gratifying contrast to the exhibit made by other large cities of the country.

New Rules for County Hospital Staff.—Warden Healy of the Cook County Hospital has issued the following rules as a guide for attending physicians and surgeons, internes and nurses: "Transfers must be reported immediately to warden by interne in charge of patient at time transfer is ordered by attending man. Notice of emergency service and transfer cases should be immediately telephoned to attending surgeon and the particulars of the case given to party answering telephone. Operation blanks must be filled out each day and filed in the warden's office before 9 o'clock the following morning. Duplicate operation blanks must be left with the warden every Saturday before 5 o'clock p. m., for the use of the attending surgeon. The junior surgeon must make the final preparation of patient before operation, both in and out of clinic. The senior surgeon should not be permitted to make such preparations, as it greatly endangers the aseptic result. Instruments, needles, sponges, etc., at operations should be handled entirely by the nurses. Senior internes are directed to comply with and enforce orders and instructions of attending surgeons and physicians as to prescribed treatment for patients assigned to their service, and report to the warden any neglect of patients by nurses or junior internes. They will pay strict attention to rule governing the discharge of patients before 12 o'clock m. each week day. Train cases will be taken to Dunning on Mondays, Wednesdays and Fridays. Ambulance cases Tuesdays and Saturdays. Dunning cases should be reported to the warden's office the night preceding their discharge.

INDIANA.

Dr. J. C. O'Day, Montpelier, has moved to Bradford, Pa.

Dr. Herbert O. Statler is about to move from Goshen to Kalamazoo, Mich.

Medical College of Indiana.—The new $20,000 addition to this institution is nearly completed. It is a three-story building, the lower floor of which is to be used in connection with the Bobbs Free Dispensary. The second floor will be arranged for society halls and the third will be utilized for laboratory and microscopical work.

Insanity Trust Report.—The State Board of Charities today filed a report with the Governor on the investigation of the insane hospitals to ascertain if any sane persons are deprived of freedom. The report says no such persons are confined, and have not been within the last sixteen months, unless in the case of one patient, who probably recovered after he was found insane and before he was received at the hospital, a period of fifty-three days. The report says: "It may be proper for us to suggest that the effort to connect the 'insanity trust' with the hospitals was unfair to the institutions."

KENTUCKY.

Dr. William H. Forgy, Fairview, has disposed of his practice and will move to Pembroke.

Dr. Archibald H. Barclay, Lexington, knocked out a footpad who attempted to rob him, August 25.

Shows and Circuses Quarantined.—The Bowling Green Board of Health met, August 29, and adopted a resolution, establishing a quarantine "against all traveling shows or circuses of any kind coming into and showing in the city of Bowling Green or within two miles of said city limits within thirty days from date.

Conclave Medical Committee.—Under the efficient generalship of Dr. T. Hunt Stucky and the intelligent co-operation of his special medical aids and medical corps numbering ninety-one, the medical arrangements of the Knights Templars' Conclave at Louisville were as nearly perfect as they could be made. Eighteen litter corps stations were established and six ambulances were on duty.

MARYLAND.

Personal.—Dr. William H. McCormick, of Cumberland, celebrated the fiftieth anniversary of his marriage, August 28.——Dr. William H. De Courcey, of Queen Anne's County, is at Bedford Springs, Pa.——Dr. E. Williams, of Anne Arundel County, has gone to Boston.

Smallpox Epidemic Predicted.—The health authorities think that the approaching winter promises a wider prevalence of smallpox in the United States than the country has experienced in thirty years. All signs, they say, point that way, and the local boards of health are urged to take due notice and guide themselves accordingly. The vaccine physicians are instructed to visit the schools on the opening day and vaccinate all who need it. School boards are advised that there is urgent need of rigid enforcement of the vaccination law. Two cases of smallpox have appeared at Cooksville, Howard County, both in negroes. A large number of negroes have come in contact with the cases, and considerable anxiety is felt. Prompt vaccination, isolation and disinfection have been instituted. It is said the State Board will bring action against those responsible for not reporting the cases promptly as required by law.

Baltimore.

Personal.—Dr. H. B. Eggers is at Bridgeton, Pa.——Dr. Alfred Whitehead has gone to the Exposition, and will also visit Canada and the Adirondack Mountains.——Dr. Arthur O. Brickman is at the Blue Mountain House.——Dr. J. D. Fiske is at Atlantic City.——Dr. H. J. Carrick has gone to the Buffalo Exposition.——Dr. F. R. Rich is at Cape May.——Drs. C. C. Peebles and L. Gibbons Smart are in Lancaster County, Pa.——Dr. Isham R. Page is at Cape May.——Dr. John N. Mackenzie is at Narragansett Pier.——Dr. George Reuling has returned from Narragansett Pier.——Dr. M. H. Carter has gone to the Exposition, Niagara and Canada.——Dr. Robert Hoffman has returned from Berlin.——Dr. J. C. Hemmeter is in Montreal.——Dr. T. Chew Worthington is at Atlantic City.—Dr. J. E. Heard is at Dinsmore Beach, Md.——Dr. W. Tunstall Taylor has gone to Boston.

MASSACHUSETTS.

Personal.—Dr. Warren K. French has opened an office in Worcester.——Dr. J. Oswald Vogel has located at Mount Bowdoin.

A hospital for crippled children is to be established on Bumkin's Island off Hough's Neck in Hingham Bay, through the munificence of Mr. A. C. Burrage, who has secured a long lease of the island from Harvard University.

In Memoriam.—The Eastern Hampden Medical Society, at its meeting in Springfield, August 22, passed resolutions in memory of two recently deceased members—Drs. Harry A. Merchant, Monson, and Joseph T. Pero, Indian Orchard.

Italians Spread Malaria.—In the annual report of the State Board of Health Secretary S. W. Abbott says that during the last ten years every case of malaria investigated in Massachusetts has been traced to the presence in the neighborhood of Italian laborers.

Lowell Demands Isolation Hospital.—Agent Knapp, in behalf of the Lowell Board of Health, sent a letter, August 10, to the State Board of Health, asking the latter to take measures to compel Lowell to build a contagious hospital as required by the statutes. The reason is the prevalence of diphtheria and the insufficiency of accommodation.

MICHIGAN.

Scarlet fever is reported to be epidemic in Delray, where from forty to fifty cases have been reported.

Dr. Arthur MacGugan, Kalamazoo, for the last six years on the staff of the State Hospital for the Insane, has resigned, and expects to take a course of special study in Heidelberg.

Embalmers Examined.—By an order of the State Board of Health embalmers in Michigan will be required to pass an

examination and receive a license before they are permitted to practice their profession.

Personal.—Dr. George Dock, Ann Arbor, has returned from Europe.——Dr. Gustav Sweet, St. Joseph, will locate in Montana.——Dr. James A. Anderson, Big Beaver, has sold his practice to Dr. W. S. Gass, Rochester.

Dr. Henry D. Thomason, formerly of Albion, but now a major and surgeon U. S. V., on duty in the Philippines, has been made surgeon-in-chief of the Department of Southern Camerines with about 40 posts under his care.

MISSOURI.

Smallpox in malignant form has appeared near Fredericksburg and one patient has died.

Baby Farm Licenses Refused.—The applications for license for five "maternity hospitals," so-called, were refused by the Kansas City Board of Health, August 24.

Dr. Adams' Estate Sued.—University Medical College, Kansas City, has sued the estate of its late dean, Dr. Charles W. Adams, for $36,536.90 fees from students alleged to have been received by him and not turned over to the treasurer.

OHIO.

Removals.—Dr. Oliver T. Sproull, from Bentonville to West Union.——Dr. Melvin M. Acker, from Bryan to Butler, Ind.

Chief Surgeon Louis L. Syman of the Detroit Southern Railway has appointed a full staff of assistants and alternates in his territory.

Dr. Harry P. Findley, for several years assistant at the Massillon State Hospital, has resigned, and Dr. Edward L. Emrich, Wooster, has been appointed his successor.

Madame "Dr." Kelch, Cincinnati, has been arrested, charged with unlawful practice of medicine in Blanchester. She waived examination and was held over to the Court of Common Pleas.

NEW YORK.

Major William P. Kendall, surgeon, U. S. A., is now stationed at Fort Porter, N. Y.

Dr. Alton L. Smiley, Buffalo, has been appointed junior physician at the Manhattan State Hospital at a salary of $900.

Board of Health Conference.—A conference of state and provincial boards of health of North America will meet at the Cataract House, Niagara Falls, N. Y., September 13 and 14.

Typhoid fever is more prevalent in Buffalo this year than it was last year, for the same period. From August 1 to 24, 82 cases were reported to the Health Department. Last year for the entire month of August there were 77 reported. The number of deaths reported is but 7 this year, as compared with 13 last August.

Visiting Physicians.—The following physicians have been visiting Buffalo and the Exposition: Dr. Eugene Smith, Detroit; Dr. Lewis S. McMurtry, Louisville; Dr. Charles A. L. Reed, Cincinnati; Dr. N. R. Coleman, Columbus; Dr. George Henry Fox, New York; Dr. Gebhard Ulhman, Albany, and Mr. William Whitford, medical stenographer, Chicago.

Buffalo Academy of Medicine.—Regular sessions of the academy for 1901-1902 commenced at the academy rooms, Tuesday, September 3. The medical section, Dr. Julius Ullman presiding, entertained. Dr. John C. Hemmeter, Baltimore, delivered an address on "Intestinal Dystrypsia," and Dr. De Lancey Rochester read a paper on the "Treatment of Pneumonia."

PENNSYLVANIA.

Personal.—Dr. W. W. Dill has decided to locate in Pottstown.——Dr. Ruth Tustin has moved to Bloomsburg from New York City.——Dr. Walter S. Wilson, Lewisburg, has moved to West Chester.——Dr. Arthur C. Wheeler, Erie, has opened an office in Reynoldsville.

Uniontown Hospital.—A permanent organization of the Uniontown Hospital Association was made, August 20. Dr. Thomas N. Eastman was elected vice-president and Dr. Jacob S. Hackney, secretary of the association. The building fund already amounts to $5000.

TEXAS.

Dr. Ramsey D. Potts, Bonham, will locate in Helena, Montana.

State License and Name.—A well-connected criminal bearing the suggestive name of Killum, was arrested for malpractice a short time ago. It developed that he had stolen the license of Dr. Joel A. Blackwell, an esteemed practitioner of Cooper, and had also assumed his name and boldly started out to practice, his sole capital consisting of the license and experience gained while traveling with a horse-doctor.

The following are the resolutions regarding smallpox, adopted at the meeting of the County Judges and Commissioners' Association, held at Dallas, August 8 and 9: "Whereas, smallpox is now and has been widely prevalent over the State during a period of more than three years, thus demonstrating the total insufficiency of our present health laws to furnish the people with the protection against imported pestilential diseases, to which they are justly entitled; therefore be it resolved, that we appeal to His Excellency, the Governor, to recommend to the present session of the Twenty-seventh Legislature to pass an act creating a State Board of Health, with provision for the collection and preservation of the vital statistics of the State; and an equitable distribution of the expense incident to the administration of sanitary measures between the State, the counties and the municipalities thereof, in accordance with the provisions of the Constitution and the recommendation of the late Democratic State Convention in its session at Waco. And be it further resolved, that the secretary of this association be instructed to furnish the Governor with a copy of this resolution as soon as practicable."

GENERAL.

Prof. Paul C. Freer, of the University of Michigan, has been granted leave of absence for one year, with the privilege of more, from the regents. He has been appointed to take charge of one of the Government laboratories in the Philippines.

Tuberculosis in Hawaii.—The records of the Board of Health show an ever-increasing percentage of deaths due to pulmonary tuberculosis. The greatest spread of the disease is among the natives who move from the open air of the country into the closed houses of the towns; they are also lax in their general habits and expectoration.

The Territorial Medical Society of Hawaii met recently and the following resolution was passed: "That the recent attacks made upon Dr. L. E. Cofer, of the U. S. Marine-Hospital Service, for alleged impropriety and discrimination in examining passengers on the *America Maru*, were unfair, uncalled for and not justified by the facts."

Chiropodists Not Required in Army.—The Surgeon-General of the U. S. Army denies the necessity of pedal surgeons in that service, as recently recommended by Col. Philip Reade. The men selected for military service are not of the lame and decrepit variety, and if anything happens to their feet it is more likely to be sufficiently serious to require the attention of the regular surgeon.

Canadian Medical Association.—The most successful meeting of this Association ever held was that in Winnipeg, Manitoba, on August 28 to 31. Much progress was made in the question of Dominion registration, and a Medical Protective Association formed. The next meeting of the Association will take place in Montreal. The following officers were elected President, Dr. Francis J. Shepherd, Montreal; general secretary, Dr. George Elliott, Toronto; treasurer, Dr. Henry B. Small, Ottawa.

Scarcity of Physicians in Labrador.—Dr. Grenfell, superintendent of the mission to deep-sea fishermen, now operating in Labrador, publishes an article exposing the medical deficiencies of Labrador. He found people dying of cancer, dropsy, and scurvy, who had never seen a physician. He found no hospital near, no regular steam service to Gaspé or Quebec, and no means by which the people could procure medical or surgical treatment. He urges the Dominion government to take prompt steps to remedy these conditions.

Inefficiency of the Caldas Serum.—Dr. Caldas is returning to Brazil, since his experiments with the alleged yellow fever remedy have resulted in failure. He and Dr. Bellinzaghi came to this country some weeks ago and endeavored to enlist the co-operation of the Medical Department at Washington, but without success. They then went to Havana and Governor-General Wood was induced to appoint a commission to investigate the claims of the Brazilians. This board consisted of Drs. Gorgas, Finlay, Guiteras and Agramonte. It has finally decided that under no condition should further experiments of the kind be made. A full report will soon be made and filed with the Governor-General.

FOREIGN.

Prize for Van Gehuchten.—The Belgian quinquennial prize for medical research, amounting to $1000, has been awarded to Professor Van Gehuchten for his studies on the brain and spinal cord.

Heidelberg's New Restrictions on Foreign Medical Students.—The lay press announces that the authorities at Heidelberg have decreed that hereafter no foreign students shall be admitted to the medical course who have not passed an examination fully equivalent to the "Abiturienten examination" exacted in Germany.

English Commission on Tuberculosis.—King Edward has appointed the commission to investigate the transmissibility of animal and human tuberculosis. It is to consist of Sir Michael Foster, secretary of the Royal Society; Dr. Germain Sims Woodhead, the pathologist; Prof. J. McFadyean; Prof. W. Boyce, and Dr. Harris Cox Martin.

The French Degree of Colonial Medicine.—The French universities at Bordeaux and Marseilles are instituting a course of colonial medicine, entitling the graduates to the degree of Doctor of Colonial Medicine. The hospitals of Marseilles afford unusual opportunities for studying the diseases prevalent in the French colonies, mostly in the tropics.

Deaths Abroad.—Dr. Holland, gynecologist at Berlin, in his thirty-sixth year. His death was determined by sepsis from a professional injury. Other deaths reported are those of Dr. Fontorbe, professor of surgery at Rochefort; Dr. Salitschew, professor of surgery at Tomsk; Le Roy de Méricourt, of Paris, born 1825, founder and editor of the *Archives de la Méd. Navale.*

Success of the Danyz Bacillus for Exterminating Rats.—The *Deu. Med. Woch.* for August 22 contains a communication from Moscow describing the complete success of the experiments with the Danyz bacillus. It proved very pathogenic for rats, and by mixing the cultures with a concentrated alkaline solution, the acidity of the gastric juice was neutralized, and the virulence of the bacilli maintained unimpaired by passage through the animals.

Alwin Von Coler, Surgeon-General of the German Army, whose death was noted in the last issue of THE JOURNAL, was born March 15, 1831, at Gröningen, of an old patrician family of Hartz origin. After four years (1852-56) in the Military Academy of Berlin, he entered the Dragoon-Guards regiment as acting assistant surgeon, becoming assistant surgeon in 1857 and surgeon in 1863. Owing to his efficiency in the campaign of 1864-66 he was in 1867 promoted to the Medical Staff of the Prussian army, and, in 1868, on the establishment of the Medical Department in the war office was appointed decernent therein. Excepting 1870-71 during which years he was Division Surgeon of the First Active Division, his service in the war department has been continuous. In 1874 he became surgeon-general, in 1885 chief of the Medical Department, and in 1889, surgeon general of the army, chief of the sanitary corps and of the Medical Department of the war office and director of the Kaiser Wilhelm Academy for Military Medical Science. In 1889 he was appointed chief privy medical counsellor, in 1891 lieutenant-general, and in 1892 honorary professor in the University of Berlin. Under Von Coler's administration the organization of the Medical Department of the army for war or peace was placed on a new foundation and the sanitary corps was raised to a high grade of efficiency. It was also Von Coler's constant aim to establish close union of the military with the civil medical profession.

Miscellany.

Vaccine.—Not alone in Cleveland but all over the country are heard more or less positively expressed suspicions of the purity of much of the vaccine virus at present on the market. It is probable, we fear, that there is some fire beneath all this smoke, and yet certain makers of vaccine are now ideally careful and clean in the preparation of the virus. As matters stand, however, the innocent are likely to suffer with the guilty, unless there is designed some effective method of guaranteeing the purity of the virus. If it were possible, it would appear that the manufacture of vaccine should be placed under Federal inspection. The Department of Agriculture, by adding slightly to its very capable scientific staff, could very readily and authoritatively assume this work. Perhaps this reform, which should be demanded by the honest manufacturers for their own protection as well as by the medical profession, could best be compassed by placing a very small revenue tax on vaccine, just sufficient to raise money for the expense of the inspection, and by providing minimum standards of chemic and bacteriologic purity. This is a very important matter which should be dealt with thoroughly by the effectively reorganized American Medical Association. The matter should not be permitted to rest, but should be persistently agitated. No doubt some better method can be devised, and the only point on which the JOURNAL insists is that a means must be found to ensure the purity of vaccine.—*Cleveland Journal of Medicine*, August.

General Hospital in Samara, Russia.—The General Hospital at Samara is located in a handsome park near the western limits of the city, and consists of a number of wooden buildings, in barrack style. Each building does service for seventeen years, when it is removed and replaced by a new one. At present the hospital contains 400 patients. These patients are admitted from all parts of the Samara province and pay 20 kopeks a day. If the applicant is destitute, as is often the case, the district from which he comes pays this small charge for him. We spent half a day in the surgical section, in charge of Dr. Johannes Dsirne, a surgeon of more than a local reputation. We had the pleasure of witnessing two operations for stone in the bladder. Stone in the bladder is quite common in this section of the country, as this surgeon performs annually on an average 100 operations. Although the operating-room lacks many of the modern conveniences, the results obtained would compare well with those in our best equipped institutions, something we must attribute to the pedantic cleanliness of the operator and his assistants. The anesthetic, chloroform, was administered by a female feldscheer or barber surgeon, and two other women of the same grade of medical education rendered assistance. The chief assistant was a recent graduate in medicine. These barber surgeons, male and female, are expected to assist licensed physicians, but are not permitted to operate or prescribe except in cases in which the services of a regular graduate in medicine can not be secured. These barber surgeons must study their profession for four years, and the women are required to take an additional course in gynecology and obstetrics. Both patients were puny boys from the steppes of western Russia. In one case the high operation was performed; in the other the stone was removed by median perineal section after crushing. It is a fact worthy of note that according to the experience of Dr. Dsirne the peasants are almost immune against shock, he in his large experience having only observed one case. Dr. Dsirne invariably sutures the vesical wound in performing the high operation, using two rows of fine silk sutures, excluding carefully the mucous membrane. In most cases uncomplicated by cystitis he has seen the wound heal by primary intention. If cystitis is present he drains. Dr. Dsirne is a careful, conscientious, and dexterous operator. I am glad to know that he will visit the medical institutions of Chicago some time next summer.—Dr. N. Senn, in *Chicago Tribune*, Sept. 1.

Reorganization of the American Medical Profession.—The plan of the Committee for the federation and interdependence of the National, State and County societies is an excellent one. Membership in the county society becomes a prerequisite to membership in the other organizations. The county organization thus becomes an unit of the state association, and the state of the National body. Each is thereby strengthened and made more powerful, each becomes more cohesive and each develops into an effective, offensive or defensive organization which will command respect and consideration because it represents an organized power which is able to reward or punish, both its friends and its enemies. The medical profession in America is large in numbers, but it lacks stability and cohesiveness when called upon to protect its interests against agencies that are detrimental to its welfare. In this it, in no small manner, is similar to that Asiatic nation, the

so-called celestial kingdom, which is great in numbers but whose slight stability and cohesive power renders it an easy victim to its enemies. Reorganization of the medical profession in America is a necessity. This must begin in the county society which is to form the basic part upon which the entire fabric of an organized profession must rest. Upon these is to be built the state organization, and from the State societies must come the chosen few who are to wear the senatorial togas in the parliamentary body of the American Medical Association, the body that is to formulate the policy of the profession on matters of vital interests, the body that is to aid destiny to shape our ends to a satisfactory conclusion, rough hewn though they be, the recommended House of Delegates of the American Medical Association. As recommended by the Committee, regional, tri-state and district societies, save in a few instances, should be abolished. These, as at present constituted, serve but a slight purpose for good, while on the other hand they weaken and detract from the county and state societies that as federated units are essential to the integrity of the National Association. They are parasitic growths on the medical body politic which sap the life strength of the National organization, and as such should be lopped off and allowed to perish. Let their friends and promoters devote their energies to the upbuilding of their respective state and county societies where their efforts will add to the strength of the profession as a body, and where they will hasten and not hinder the consummation of professional unity. In the trinity of National, state and county organizations, a federated union, in which each is developed to its greatest possibilities, will the profession find a power, that, like faith, can move mountains.—*Courier of Medicine*, July.

Book Notices.

The Present Position of the Treatment of Simple Fractures of the Limbs. An Address Delivered in Opening a Discussion at the Meeting of the British Medical Association held at Ipswich, August, 1900. By William H. Bennett, F.R.C.S., Senior Surgeon to St. George's Hospital. To which is Appended a Summary of the Opinions and Practice of about 300 Surgeons. Reprinted, after revision, from the British Medical Journal, Oct. 7, 1900. Cloth. Pp. 41. Price, $0.80. New York and Bombay: Longmans, Green & Co. 1900.

This little volume is an address delivered before the British Medical Association in August, 1900, and reprinted from the *British Medical Journal* of Oct. 7, 1900.

In it the author briefly states the general plan of treating the ordinary fractures as employed by himself, and particularly emphasizes the advantages of early movement in the treatment of fractures and the employment of splints which can be readily taken off, so that the limb and fracture may easily be rendered accessible.

In an appendix are the answers from about three hundred surgeons in England to certain questions concerning the treatment of fractures, which were submitted to them by the author. As was to be expected, a larger percentage of those surgeons living in London and in large centers adopt the more advanced methods, such as the use of massage, passive movements and operative procedures, than of those living in the provinces. The general status of the treatment of fractures by English surgeons is well illustrated in the little volume.

On the Use of Massage and Early Passive Movements in Recent Fractures and other Common Surgical Injuries and the Treatment of Internal Derangement of the Knee-Joint. Three Clinical Lectures Delivered at St. George's Hospital. By William H. Bennett, F.R.C.S., Senior Surgeon to the St. George's Hospital. Reprinted, after revision, from The Lancet. With 12 Illustrations. Cloth. Pp. 97. Price, $1.40. New York and Bombay: Longmans, Green & Co. 1900.

The author, in his note, explains that these three lectures have been already published in *The Lancet*, the only difference being "a few verbal alterations," and the addition of three illustrations. The author's strong plea for the use of massage and early passive movements in the treatment of recent fractures is very convincing, and the explanations very rational. One criticism, however, might be offered with regard to fractures of the neck of the femur. He does not insist, as some modern surgeons do, that union is nearly always possible, but dismisses the subject by simply advising the use of massage and passive movement without any attempt at fixation. In all other fractures he is very careful to maintain fixation at the region of fracture with the hand while making use of passive motion, or as he terms it, internal massage. His advocacy of the use of the above procedures in the treatment of dislocations, sprains, etc., leaves nothing to be desired. The chapter on internal derangements of the knee-joint deals with the subject in a very clear and concise manner.

A Text-Book of Ophthalmology. By John W. Wright, A.M., M.D., Professor of Ophthalmology and Clinical Ophthalmology in the Ohio Medical University. Second Edition, Thoroughly Revised. With 117 Illustrations. Cloth. Pp. 378. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1900.

In this work the student and practicing physician learn the why and wherefore of anomalies and methods of treatment and procedure. It contains, among others, chapters on retinoscopy, ophthalmoscopy, injuries, color-blindness, elementary optics, and refraction. The different operations for extraction of cataract are carefully considered, but we miss the orthoptic exercises for muscular insufficiency. An important feature of the treatise is an ophthalmologic glossary; this is not only a convenient but also a necessary adjunct, as is evident from the inaccurate pronunciation of many of our oculists, for instance of the word "chalazion," and even "pterygium."

Transactions of the Indiana State Medical Society, Fifty-Second Annual Session held in South Bend, May, 1901. Logansport, Ind.; Wilson, Humphrey & Co. 1901.

The present volume, according to the preface, is the largest every published by the Society. It is certainly a large volume, but the Society is to be congratulated especially that the quality of its contents is so excellent. There are 41 original papers and 2 symposiums, besides several scientific reports; all of these are up to, and many above, the average. The paid membership is 1624, which is but little more than a third of the regular physicians of the state, not a good showing when it is remembered that membership in county societies carries with it membership in the state society. "Efforts to form new societies," says the secretary in his report, "have not been successful during the past year." It would be interesting to know what these efforts were and how they could be made more effective. Two-thirds of the members of the regular profession in a state who do not belong to any society is not a very satisfactory condition. And yet how many states are doing better?

Orthopedic Surgery. A Handbook. By Charles Bell Ketley, F.R.C.S., Surgeon to the West London Hospital. Cloth. Pp. 539. Price, $5.50 net. London: Smith, Elder & Co. 1900.

The author says he planned this work nearly twenty years ago, and that it is the result of twenty-two years devoted to thought and labor in the study of deformities and in practicing their treatment. He also says he has "felt a desire to remove some of the dust in which mistaken ideas of what constituted proof had gradually been hiding simple facts about the pathology and treatment of deformities."

He does this by attributing nearly all deformities involving the bones to rickets, and speaks of syphilitic rickets, scurvy rickets, common rickets, rickets of adolescence, etc., practically disregarding other factors, except infantile paralysis. This view is too extreme. There is also a tendency to dodge important points by asking questions, the answers to which are often not forthcoming. For instance, he denies the influence of muscular action in forming the arch of the foot by asking the question: "What muscles arch the Roman nose?" In the etiology of flat foot no mention is made of the effect of trauma in breaking down the arch.

On one page he says that after tenotomy the foot should be immediately placed in the best attainable position, and on the

next that "complete correction should only be aimed at by gradual extension, commencing a fortnight after the tenotomy and prolonged over several weeks."

The fact that the muscle sheath, fasciæ of the neck and other tissues besides the sterno-cleido-mastoid muscle are involved in wry-neck is not sufficiently recognized, neither under the pathology nor when considering the treatment. The chapter on scoliosis is very good; in fact the spinal troubles are better handled than are those of the extremities. While one may be disappointed with the pathology as laid down in the work, there are many valuable points to be learned under Treatment, and it is here especially that the author shows his great practical knowledge and ability.

Married.

STAFFORD P. JONES, M.D., to Miss Mary Wilmarth, both of Marinette, Wis., August 22.

M. R. BEAUDOIN-BENNETT, M.D., Jackson, Mich., to Miss Jean Martin at Trinity Church, Hewletts, L. I., August 21.

HERBERT EMMONS STOCKWELL, M.D., Stockbridge, Mass., to Miss Blanche Newton Cook, Brookline, Mass., September 4.

CHARLES HARRISON FRAZIER, M.D., Philadelphia, to Miss Mary Spring Gardner at the chapel of St. Marys-by-the-Sea, North East Harbor, Maine, August 24.

Deaths and Obituaries.

Thomas Masters Markoe, M.D., College of Physicians and Surgeons, New York City, 1841, died, August 28, at his summer home at Easthampton, L. I. Dr. Markoe was a native of Philadelphia and graduated from Princeton in 1836. After obtaining his medical degree he was made professor of anatomy in Castleton Medical College, Castleton, Vt., and from 1852 to 1854 filled the chair of pathological anatomy in New York University. From 1860 to 1870 he was adjunct professor of surgery in the New York University, and from 1870 to 1879 he filled the chair of surgery in the same institution. In 1879 he accepted the chair of principles of surgery in the College of Physicians and Surgeons, and this position he held until his retirement when he was made professor emeritus. He was consulting surgeon to the New York, Roosevelt, Mt. Sinai, Woman's and St. Mary's hospitals; consulting physician to the Nursery and Children's Hospital, and a member of the New York Academy of Medicine, New York County Medical Society, New York Pathological Society, New York Medical and Surgical Society and the Society for the Relief of Widows and Orphans of Medical Men. He was a frequent contributor to surgical and orthopedic literature.

Alfred Sanford Dana, M.D., College of Physicians and Surgeons, New York City, 1874, a prominent physician of Westchester county, residing at Yonkers, N. Y., was killed by an express train on the Harlem branch of the New York Central railroad at the Bronxville crossing, August 22, aged 50. He was driving across the tracks when an express train rounded the curve and the coachman was unable to get the team over in time.

Homer C. Markham, M.D., New York University, 1859, one of the pioneer settlers and practitioners of Kilbourn, Wis., who served throughout the Civil war as surgeon of the 19th Wisconsin, and then moved to Buchanan County, Iowa, died suddenly at his home in Independence, from Bright's disease, August 18, aged 63.

James B. Massie, M.D., St. Joseph Hospital Medical College, St. Joseph, Mo., 1887, health officer of Houston, Texas, a member of the State Board of Medical Examiners and a successful physician of Houston, died at Fayetteville, Ark., from Bright's disease, after a prolonged illness, August 24, aged 45.

William W. S. Butler, M.D., University of Virginia, Richmond, 1852, died at Harrisonburg, Va., August 18, at an advanced age. He was formerly connected with the U. S. Internal Revenue Service. For several years he resided in Roanoke, Va.

H. P. Mathewson, M.D., formerly a well-known physician of Omaha, Neb., and from 1874 to 1879 superintendent of the State Hospital for the Insane at Lincoln, died suddenly at the residence of his son, in Los Angeles, Cal., August 19, aged 70.

Columbus P. Brent, M.D., Miami Medical College, Cincinnati, 1854, who has practiced medicine in Cincinnati for more than thirty years, died at his home in that city, August 21. He was a member of the American Medical Association.

Joseph Moffat, M.D., University of Michigan, Ann Arbor, 1862, of Washingtonville, N. Y., a member of the Orange County Medical Society and the New York State Medical Society, died at his home, August 16, aged 68.

Abram R. Van Dusen, M.D., Albany Medical College, 1841, one of the oldest and most successful physicians of Columbia County, N. Y., died suddenly at his home in Humphreyville, August 21, aged 81.

James M. Howard, Jr., M.D., Jefferson Medical College, Philadelphia, was dragged to death in a runaway accident at Fairmont, W. Va., August 19. He was a resident of Masontown, Pa.

Robert M. Murphy, M.D., Bellevue Hospital Medical College, New York, 1880, died at his home in Kingston, N. Y., August 22, from apoplexy, aged 52.

Frank B. Smith, M.D., Rush Medical College, Chicago, 1880, died at his home in Springfield, Ill., after a prolonged illness, aged 42.

Russell C. Wyman, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1878, died at his home in Maitland, Mo., August 14.

Societies.

COMING MEETINGS.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.

Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.

Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 17-19, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Nevada State Medical Society, Reno, Sept. 21, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Oregon State Medical Society, Portland, Sept. 25-27, 1901.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.

Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.

Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.

Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee.—The thirteenth annual meeting of this Society will be held at Nashville, October 8, 9 and 10. The secretary is Dr. Frank Trester Smith, Chattanooga, Tenn.

Piscataquis County (Maine) Medical Association.—The annual meeting of this Society was held in Dover, August 15. The following officers were elected: Dr. Ralph H. Marsh, Guilford, president; Dr. William Buck, Foxcroft, vice-president; Dr. Charles W. Ray, Sangerville, secretary, and Dr. Alvin H. Stanhope, Dover, treasurer.

Trenton (N. J.) Medical Library Association.—At a meeting of physicians held in Trenton, August 22, it was decided to form a permanent organization for the purpose of establishing a medical library in connection with the Free Public Library, and Dr. Horace G. Norton was made president; Dr. F. V. Cantwell, vice-president, and Dr. George N. J. Sommer, secretary and treasurer.

Franklin District (Mass.) Medical Society.—This old Society, now in its 51st year, has just issued a booklet giving the names of the officers and members, and the programs of the meetings of the past year. There are 32 members, the oldest of whom is Dr. E. A. Deane, of Montague, who became a member in 1862, and is called the "dean" of the Society. The first officers of this society were Stephen West Williams, Deerfield, president; the first secretary and treasurer was James Deane, of Greenfield. The first members to be admitted were Stephen J. W. Talbot of Shelburne Falls and Charles L. Knowlton of Ashfield on June 3, 1850.

ELEVENTH FRENCH CONGRESS OF ALIENISTS AND NEUROLOGISTS.

Held at Limoges, August 1.

President's Address.

In his presidential address Gilbert-Ballet remarked that it is dangerous and presumptuous to fasten a stigma on the offspring in case of certain accidental affections of the nervous system, such as ataxia, general paralysis or hemiplegia from a circumscribed lesion. He concluded by emphasizing the tendency of the new century to regard the pathology of the nervous system, and especially mental pathology, from the standpoint of society at large. The study of the psychology of a crowd will lead to a knowledge of its pathology. The crowd has its own individuality, its special emotions, reactions, obsessions and morbid impulses, the same as the individual.

Joffroy reported two cases of general paralysis in which the temperature suddenly began to fall and the patients died in three to five days with a temperature of 25 and 27 C. (77 and 81 F.). One patient was in coma at the time, but the other had no symptoms of coma, convulsions nor diarrhea.

INHERITED DEGENERACY.

Bourneville announced that hereditary syphilis has been noted in only 1 per cent. of the idiot, imbecile or epileptic children in his service, but alcoholism was evident in the antecedents of more than 40 per cent. He stated that in 87 families in which one or both parents were engaged in handling white lead, mercury, phosphorus, copper, etc., 52 per cent. of the children died, and 21 per cent. of the surviving 200 children were idiots or epileptics. This shows that about 73 per cent. of the children of parents following an unhealthy trade are seriously or fatally affected. He also mentioned several instances of transient purpura occurring after epileptic seizures.

Practical Application of Mirror-Writing.

In a communication on this subject Meige called attention to the fact that mirror-writing is the spontaneous effort of the left hand to write, in persons writing normally and fluently with the right hand. A similar phenomenon is observed with other movements which the right hand has learned to perform. The left hand spontaneously reflects, in reversed order, the movement or action of the right hand. What the cortical center for the right hand has learned, is reflected on the center for the left hand, which is thus unconsciously educated to a certain extent. When a center presides over a movement, the symmetrical center has a tendency to command the same movement, but in reversed order. Consequently in re-educating a member, the task will be much facilitated by having the symmetrical member execute and repeat the same movement.

Juvenile General Paralysis.

Régis observed that a hundred cases of general paralysis under 20 could be collected in literature. Usually hereditary syphilis can be incriminated, but Westphal has reported a case of general paralysis in a girl of 17, traceable to syphilis acquired at 7. Ballet has observed several instances in which the paralysis appeared three to five years after the syphilitic infection.

Evolution of Syphilis.

Brissaud remarked that his experience is confirming Fournier's assertion, that syphilis is undergoing a process of evolution in our day, in virtue of which the manifestations during the secondary period are becoming milder and milder, while those of the tertiary period are becoming more numerous and more formidable. Régis proclaimed his conviction that tuberculosis or any other infection may be the etiologic factor in general paralysis—and not necessarily always syphilis. The first address was on

Acute Delirium.

Carrier's statements were generally approved that acute delirium is a syndrome of a toxi-infectious nature, depending on various infections and intoxications, and is not a morbid entity. The nervous elements are altered by the pathogenic agent and hence allow the development of secondary autointoxications, which are the cause of its gravity. Crocq, of Brussels, aroused much discussion by his address on the

Physiology and Pathology of the Muscle Tonus, Reflexes and Contractures.

The routes of muscle tonus in the lower vertebrates, he said, are the shortest possible. The higher in the animal scale, the more the longer routes take the place of the shorter, until in man, the long routes for the tonus of the voluntary muscles are the normal and the only ones. The sphincters still retain the short routes. Excitation of a voluntary muscle inhibits the tonus of its antagonist, and the reverse is also true, i. e., that with diminished tonus in one muscle the tonicity of its antagonist is increased. Crocq adds three new laws to these: 1. Complete destruction of the central or peripheral motor neurons or of their cylinder-axis prolongations entails the atony of the corresponding muscles with complete and definite laxness. 2. Their partial destruction entails diminished tonicity; and 3, lesions of the tissues surrounding the nerve cells or their prolongations may hamper the nerve in its functional activity by mechanical compression from the injured tissues, and induce a functional erethism manifested in an exaggeration of the muscle tonus. The reflexes were formerly all attributed to the spinal cord, but we know now that the reflex movements are moderated by still higher centers in man at least. The long routes are indispensable to the production of the reflexes in man as is shown by their complete disappearance after section of the cervico-dorsal cord. On the other hand, destructive processes in the brain abolish or attenuate the cutaneous while they exaggerate the tendon reflexes. Destruction of the motor cortex induces exaggeration of the tendon reflexes in all animals and this is also induced in man and higher animals by a destructive process in the cerebellum. Consequently, it seems evident that in the human adult the cutaneous reflexes have their centers in the cerebral cortex and the tendon reflexes in the mesocephalon. The short routes become atrophied as the child grows to maturity, but they always suffice for very rapid defensive actions induced by a violent stimulus. Weaker impressions (cutaneous reflexes) traverse by preference the long routes. The tendon reflexes are exaggerated when the cerebral or cerebellar inhibiting action is weakened or abolished, either from irritation of the pyramidal tract or the basilar cells, as in organic hemiplegia and pareto-spasmodic conditions, or from irritation of the peripheral neuron as in case of sclerosis or compression of the spinal cord. Exaggeration of the cutaneous reflexes is due to individual peculiarities and various intoxications, and not to organic lesions of the nerve routes. Diminution or abolition of both the tendon and cutaneous reflexes follows the alteration or functional disturbance of the cells or fibers engaged in their production. The relations between the condition of the sensibility and that of the cutaneous reflexes are very close. The parallelism is constant in organic affections. The antagonism between the tendon and cutaneous reflexes frequently noted in organic affections and even in supposed health, is another argument in favor of their different localization. The toe reflex should not be considered a true cutaneous reflex, as it may persist after the cord has been severed. In lesions of the tissues surrounding the cylinder-axes of the pyramidal tracts, the irritation of the fibers induces erethism of the basilar neurons presiding over the tendon reflexes, and exhaustion of the cortical neurons involved in the production of the cutaneous reflexes. Hence exaggeration of the former

and diminution of the latter. This also occurs after repeated stimulation of the reflexes; the cutaneous reflexes become weaker and weaker while the tendon reflexes become more and more exaggerated. Contracture is an exaggeration of the muscle tonus and may be due to inhibition of the antagonist muscle, or to a lesion of the tissues surrounding the central or peripheral motor neurons. There is no essential difference between the contracture in convulsions and that of hemiplegia, but in the pseudo-contracture of hemiplegia, with retraction of the tendons, there is evidently some alteration of the peripheral motor neuron with interference with its trophic function. Muscular hypertonicity does not necessarily coincide with exaggerated tendon reflexes—another argument in favor of their anatomic independence. The amount of contracture is usually proportional to the vigor of the muscle. Although some disturbance in the central or peripheral motor neurons is the principal, if not the only cause of contracture, yet there is considerable difference between the contracture due to each.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Removal of Lanugo and Hairs.

A subscriber asks for a safe method (not electrolysis) of permanently removing superfluous hair, especially lanugo of the upper lip of girls.

There is no method of permanently removing hairs other than by electrolysis. This should not be attempted in such cases as mentioned above. A growth of coarse hair will recur even after electrolysis.

Treatment of Pertussis.

Just at this time of year pertussis seems to be very prevalent in some localities. This time in the year is certainly favorable to the prognosis of the disease. The little patients can be kept in the open air, and not housed in close rooms, which lessens the number of paroxysmal attacks of coughing as well as the severity of the attacks. The medicinal treatment is divided into the antiseptic, the anti-catarrhal and the sedative treatment.

Yeo is convinced that carbolic acid inhalations is of great value in the antiseptic treatment of this disease. He places the child in a small room containing an open fire-place; a large iron spoon should be made hot from time to time and carbolic acid vaporized by putting a teaspoonful or two into the heated spoon. The atmosphere should be so strongly impregnated with this vapor, according to Yeo, as to make the atmosphere unpleasant to others. These fumes should be kept up night and day. As a spray for direct inhalation he recommends the following:

R.	Acidi carbol.	3i	4
	Glycerini	3i	4
	Sodii bicarb.	gr. x	66
	Aq. destil	℥i	32

M. Sig.: Use as a spray in front of the mouth of the infant constantly, so that he is compelled to inhale it.

The urine should be under constant observation during above treatment and if any discoloration occurs the treatment should be suspended for twenty-four hours.

FOR THE PAROXYSMS.

The following combination is recommended to lessen the severity of the paroxysm and to render the expectoration less tenacious:

R.	Sodii benzoatis	gr. lxxii	5
	Sodii bicarb.	gr. xlviii	3 20
	Ammonii chloridi	gr. xxiv	1 66
	Aquæ chloroformi	℥i	32
	Aquæ anisi, q. s. ad	℥iii	96

M. ft. mistura. Sig.: One to four teaspoonfuls according to the age of the child, in a little hot milk, every four hours.

Bamberger recommends the following the moment the attack comes on.

R.	Sodii bicarb.		
	Sacchari, āā	℥ii	8

M. Sig.: Dissolve a small amount of the powder in hot water and give to the patient as the paroxysm of coughing comes on.

Dujordin-Beaumetz recommends the triple bromids for relief of the paroxysm as follows:

R.	Ammon. brom.		
	Sodii brom.		
	Potassii brom. āā	℥ss	2
	Syr. chloralis	℥i	32
	Aquæ, q. s. ad	℥iv	128

M. Sig.: One teaspoonful or more according to age, in milk night and morning.

Roth recommends the following:

R.	Acidi carbol.	gr. xv	1
	Spts. vini rectif.	m. xv	1
	Tinct. iodi	m. x	66
	Tinct. belladonnæ	m. xxx	2
	Syr. papaveris	℥iiss	10
	Aq. menth. pip. q. s. ad	℥ii	64

M. Sig.: One teaspoonful every two hours for a child between one and two years of age; half the quantity diluted with water for infants under one year of age.

HEROIN IN WHOOPING COUGH.

Dr. H. H. Haralson, of Vicksburg, Miss., recommends the administration of heroin, beginning early in the attack and continuing it through the catarrhal and paroxysmal stage. During the last stage he recommends tonics, good nourishment and proper hygienic surroundings. The following combination is employed by him:

R.	Heroin hydrochlor.	gr. ¼ to ½	015-03
	Tinct. belladonnæ	℥i	4
	Spts. frumenti	℥i	32
	Syrupi simplicis, q. s. ad	℥iv	128

M. Sig.: One teaspoonful every five or six hours.

Dr. Haralson seems to be very enthusiastic over his success in ameliorating the paroxysm and lengthening the time between the paroxysms as well as cutting short the duration of the disease.

TREATMENT OF WHOOPING COUGH BY IRRIGATION OF THE NARES.

W. Lattey, according to *British Medical Journal*, states that the irrigation of the nares in pertussis should be more frequently employed. The child should be rolled up in a shawl with the arms confined, and placed face downward across the nurse's lap. Tepid water should first be used with a soft india rubber tube attached to the syringe. This should be followed by some antiseptic solution. The same treatment should be carried out with both sides.

Treatment of Erysipelas.

J. Hays, in *Jour. de Méd. de Paris*, recommends the following as a lotion in the treatment of erysipelas:

R.	Acidi carbol.		
	Tinct. iodi		
	Alcoholis, āā	℥ss	2
	Olei terebinthinæ	℥i	4
	Glycerini	℥iss	6

M. Sig.: For external application.

Every two hours the erysipelatous part may be painted with this liquid as well as a small zone of the surrounding healthy tissues, and the whole covered with aseptic gauze.

A Sedative in Tubercular Meningitis.

The *New York Med. Jour.* recommends the following, as advised by Malba, to combat the agitation, the cries and convulsions in tubercular meningitis.

R.	Strontii bromidi	gr. xv	1
	Chloralis hydratis	gr. viiss	5
	Syr. Valerianæ	℥v	20
	Syr. menthæ	℥ii	64

M. Sig.: One teaspoonful every half hour until quiet is obtained.

Intestinal Tuberculosis in Infants.

The following is noted in *New York Med. Jour.*:

℞.	Argenti nitratis .....gr. ii	12
	Pulv. amyli	
	Pulv. altheæ, āā .....gr. v	33

M. ft. pil. No. xv. Sig.: One pill to be taken daily for three consecutive days after the administration of a light saline aperient.

If the diarrhea does not stop, the dose should be raised to two or even three pills daily during two consecutive days. This treatment is suitable for children ranging in age from 5 to 10 years.

For young infants the following is recommended:

℞.	Argenti nitratis .....gr. 1/6		01
	Syrupi idei .....ℨiss	48	
	Aq. destil. q. s. ad.... .....ℨiii	96	

M. Sig.: From a dessertspoonful to the entire draught according to age once or twice daily.

Absorption of Drugs by the Bladder.

Barbiana, according to the *Ther. Gaz.*, has found by experimental research that dilute solutions of various drugs, with the exception of iodin, are never absorbed by the bladder at first irrigation, but that if consecutive irrigations are made there is fairly active absorption. This he attributes to certain functional disturbances of the epithelium incident to the mechanical action of the lavage upon the vesical walls, since such absorption may take place without further alteration of this epithelium. He believes that the complete retention is in itself sufficient to produce such changes in the vesicular wall as are calculated to encourage absorption.

Salivation Following Ether Narcosis.

The salivation in ether anesthesia is usually excessive and very often is a factor in the cause of bronchitis and pneumonia following its employment.

Dr. W. Reinhard, as stated in *Merck's Archives*, recommends the following as a preventive:

℞.	Atropinæ sulphatis .....gr. 1/6		01
	Morphinæ hydrochloratis .....gr. iii		20
	Aq. destil. q. s. ad.....ℨiiss	10	

M. Sig.: Inject from eight to sixteen drops, according to the condition of the patient.

Treatment of Umbilical Hernia.

The *Med. Record* makes a note of the treatment of umbilical hernia according to the method of J. C. Hubbard, by means of adhesive plaster strapping. He states that the younger the child the earlier the cure is to be expected. The failure of cure and the danger of recurrence are slight. The author reports 28 cures out of 60 cases.

Pelletierin Tannate in Tapeworm.

The following combination containing pelletierin tannate has been used with almost uniform success in treatment of tapeworm, but it disturbs the stomachs of some patients:

℞.	Oleores. aspidii .....ℨiv	16
	Olei terebinthinæ .....ℨii	8
	Pelletierin tannatis .....ℨi	4
	Spts. chloroformi .....ℨi	4

M. Sig.: Shake well. One teaspoonful in the morning on an empty stomach followed in about two hours by a saline cathartic.

Treatment of Tabes Dorsalis.

Collins, in *New York Med. Rec.*, summarizes the treatment as follows: 1. The determination as to whether antispecific treatment shall be employed. 2. The utilization of electricity, hydrotherapy, massage and counterirritation. 3. The education of the ataxic members, the rehabilitation of purposeful movements. 4. The relief of subjective symptoms, such as pain, crises, dereliction of bladder function, ocular paralyses, amaurosis and trophic disturbances. 5. Adopt a plan of treatment and carry it through.

It might be added in addition to Dr. Collins' statements that the value of antispecific treatment is questionable unless the symptoms of tabes come on comparatively early after the infection. In other words, if tabetic symptoms do not make their appearance earlier than five years or if the syphilis in its active stage has received strong treatment the employment of mercury and the iodids is usually productive of harm. On the other hand, too much stress can not be placed upon the value of exercise to re-establish co-ordination after Fraenkel's methods, while inactivity and disuse greatly decrease muscular control as well as discourage the patient.

Medicolegal.

Basis of Recovery for Services as Health Officer.—The Court of Appeals of Kentucky holds, in Henderson County vs. Dixon, that where an action is brought for the recovery of compensation for services alleged to have been rendered as health officer, and the appointment of the claimant is traversed by the answer to his petition, it is incumbent upon him to prove the organization of the county board of health, and also his appointment to the position claimed by him. It is further of the opinion, too, that such appointment should be proven by the records of the county board, or some reason given for the introduction of oral testimony. Again, when the appointment is denied, it holds that it is a question of fact for the jury to find that the claimant was duly appointed, before it can, in any event, allow him any compensation. Then, complaint was made in this case of the admission of testimony, in this: that the witnesses, in fixing a reasonable compensation, were permitted to base their opinion as to the value of services upon the standing of the claimant as a physician. But the court holds that it was competent to show that he was a physician of good standing and of long practice, and that the jury might take such facts into consideration in determining the value of his services, though the criterion of recovery, if entitled to recover at all, was reasonable compensation.

License a "Right"—Validity of Act as to Revoking.—The license to practice medicine which one receives, the Court of Appeals of Kentucky declares, in Matthews vs. Murphy, is certainly a "right" or "estate." Then it takes up the question of whether a person having fitted himself for this learned profession, and having been licensed to practice the same, the state board of health has the right to charge him with "unprofessional conduct likely to deceive or defraud the public," and erect a standard by which that conduct is to be measured, and if in its judgment he does not meet its requirements summarily deprive him of a right or estate or both. Referring to the Kentucky statute bearing on the subject, one section of which provides that the board may refuse to issue a certificate to practice medicine to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public; and it may, after due notice and hearing, revoke such certificates for like cause, the court remarks that the statute does not prescribe the manner by which a physician may regulate his conduct. It does not advise him in advance what act or acts may be in violation of its provisions. He is not told what is lawful or unlawful. He might do an act which he regarded as entirely proper, which neither violated moral law or involved turpitude, still such acts might, in the opinion of the state board of health, amount to unprofessional conduct, and which in its opinion did or was calculated to deceive or defraud the public. The physician who did the act of which complaint was made before the state board of health could not know at the time the act was done what standard would be thereafter erected by the board by which its effect was to be determined. As the statute does not advise him beforehand as to what is unprofessional conduct, he could not knowingly or intentionally be guilty of it. In other words, the legislature, in effect, has attempted to commit to the state board of health the right, after the physician has done some act, to determine what its effect is to be, and if, in its judgment, he should be deprived of the right to practice his profession, it can inflict the punishment upon him by revoking his license. Besides, what the present state board of health

might consider unprofessional conduct might be adjudged by another board not to be. For such reasons, the court does not think the Kentucky statute is valid in so far as it attempts to confer upon the state board of health the right to revoke a license which has been granted by it to a physician to practice his profession. This conclusion, however, applies alone to so much of the statute as authorizes the board to revoke a physician's license to practice medicine for unprofessional conduct. That part of the statute which authorizes the board to pass upon the qualifications of persons to practice medicine and to license them, the court says, is valid, though if the board should exercise that power either arbitrarily or capriciously, the party injured may obtain relief in the courts. It also says that if the legislature desires to declare for what acts or conduct a physician's license to practice medicine shall be revoked, it is competent to do so, and to vest in some tribunal the authority to investigate and try the charge which may be made under such a statute.

Medical Books—Reputation for Skill as Abortionist.—The rule in Kentucky, as it is at common law, the Court of Appeals of Kentucky says, in Clark vs. Commonwealth, is that books on scientific subjects are not admissible to prove the facts treated of in them. But that is not saying that such books, or, more particularly, medical books, may not be read to the jury for any purpose, otherwise, as the court suggests, an ignoramus in a profession might, by an assertion of learning, declare the most absurd theories to be the teachings of the science of which he is a professed expert, and, when pressed upon cross-examination as to either his own experience or the basis of his learning, would be enabled to hide behind the formidable name of some standard author, and thus foist upon the jury a most hurtful falsehood as a scientific deduction, asserted by the most eminent in the profession, solemnly declared and promulgated by him for the guidance of his brethren and the service of mankind. Therefore, in a case where such a witness (as for example, a physician) makes such an attempt, it is just and reasonable, the court holds, that the opposite side should be permitted to test the truthfulness of his statement, and expose his ignorance or mendacity by either compelling him to admit upon an inspection of the authority that it does not sustain his views, or by reading the authority to the jury to prove that it does not, and that the witness, either through ignorance or base motive, has falsely deposed. Then, the testimony of all the medical witnesses in this case being that certain lacerations indicated that they were made by a bungler, the court holds that it was competent for the prosecution to show, if it could show, by those personally acquainted with the skill of the accused as a surgeon and physician, that they knew him to be unskilful. But it was not competent for the commonwealth to prove the extent of his skill as a surgeon or physician by hearsay or reputation. And when the commonwealth introduces evidence attacking the professional ability or skill of a defendant, it necessarily follows that he should be permitted to prove affirmatively that he is a skilled surgeon, and this he may do, if he can, by those acquainted with his skill; and certainly those who have been his patients, and have had the very best opportunity of judging of that skill, should be permitted to testify. What his reputation is can not be proved for him any more than it can be against him, the question being as to what is the fact as to his being skilful. Evidence having been suffered to go to the jury from which it would appear that the accused was a professional or habitual abortionist, the court says that if it was shown or admitted that he had committed the abortion charged in this case, but attempted to justify it upon the ground of necessity, it is clear that the evidence would have been competent to prove his motive and intent, and to rebut or negative the idea that he was acting upon his professional judgment, and under a necessity of saving the life of the mother. On the other hand, as the purpose and effect of the evidence in this case was not so much to show intent or motive, as it was to establish primarily the guilt of the accused as to having perpetrated the act of abortion, in the opinion of the majority of the court the admission of this evidence was error, and it should have been rejected.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), August 24.

1 *An Ideal Colony for Epileptics, and the Necessity for the Broader Treatment of Epilepsy. William P. Spratling.
2 Cerebral Concussion, with Retinal Changes. L. A. W. Alleman.
3 *Indications For and Against Total Removal of the Human Stomach. George Childs-MacDonald.
4 *The Outlook of the Medical Man To-day. John Milton Dodson.
5 *Statistical Note Concerning the Contagiousness of Tuberculosis Pulmonalis. E. L. Shurly.
6 *Carcinoma of the Breast. Carl V. Vischer.
7 *Peculiar Nervous and Urinary Manifestations Following La Grippe in the Aged. O. P. Kernodle.

Medical Record (N. Y.), August 24.

8 *The Prognosis of Traumatic Hysteria, Based upon the Subsequent Histories of a Number of Litigated Cases. Pearce Bailey.
9 *Infantile Typhoid Fever. August A. Strasser.
10 A Series of Mastoid Operations. Charles H. May.
11 *The Zoological Distribution of Tuberculosis. Woods Hutchinson.
12 *Bifocal Lenses; What Area Shall Be Devoted to the Short Focus. John E. Weeks.

New York Medical Journal, August 24.

13 *A Case of Actinomycosis Hominis, with Remarks Concerning the Differential Macroscopic Diagnosis Between Actinomycotic and Tuberculous Peribronchitis. Gustav Fuetterer.
14 Remarks upon the Treatment of Hip Disease, and Presentation of a Further Modification of the Hip Splint. John Dane.
15 *The Treatment of Acute Hip Disease, with Description of a Splint. Robert W. Lovett.
16 A Case of Angeio-Sarcoma of the Nose. Stanley S. Cornell.
17 *The Importance of an Early and Radical Climatic Change in the Cure of Pulmonary Tuberculosis. C. F. Gardiner.
18 Sulphuric Ether in the Removal of Ceruminous Plugs. E. L. Meierhof.

Medical News (N. Y.), August 24.

19 *Further Notes upon the Diagnostic Test of Tuberculin. Edward O. Otis.
20 *A Study of Burns, with a Plea for Their More Rational Treatment. Frederic Griffith.
21 *Carbolic Acid in Burns. Otto L. Muench.
22 *Inertness of Petroleum Compounds When Given Medicinally. Robert Reyburn.
23 Strangulated Hernia of the Bladder; Ruptured Sarcoma of the Testis Mistaken for Strangulated Hernia. Thomas H. Manley.

Boston Medical and Surgical Journal, August 22.

24 *Treatment of Delirium Tremens. J. Frank Perry.
25 *On the Effect of Alcohol. H. G. Beyer.
26 *The Management of Delirium Tremens, with the Report of a Case. V. A. Ellsworth.
27 *Myomectomies for Fibroids During the Child-Bearing Period. W. H. Baker.

Philadelphia Medical Journal, August 24.

28 Slow Pulse, with Special Reference to Stokes-Adams Disease. (Continued.) Robert T. Edes.
29 *The Intimate Action of the Silver Nitrate Injections in the Treatment of Phthisis. Thomas J. Mays.
30 Peliosis Rheumatica. T. Avery Rogers.
31 Is the Central Fissure Duplicated in the Brain of Carlo Giacomini, Anatomist? Edward A. Spitzka.
32 The Foundations of Faith in Medicine. A. W. Crane.

St. Louis Medical Review, August 24.

33 Report of Two Cases of Pregnancy Requiring Operation. 1. Fibromyomata Complicating Pregnancy. 2. Extra-uterine Pregnancy. H. S. Crossen.
34 Foreign Bodies in the Lungs. Theodore Potter.

Cincinnati Lancet-Clinic, August 24.

35 The Prognosis of Apoplexy. Charles J. Aldrich.
36 *Is Water Necessary for the Cleansing of Floors? W. O. Owen.

Northwestern Lancet (Minneapolis), August 15.

37 A Case of Rhinoplasty, with Use of a Buried Metal Support. J. Clark Stewart.
38 The Essentials for the True Dignity of the Medical Profession. F. E. Bissell.
39 Smallpox in Minnesota. Theo. L. Hatch.

Annals of Surgery (Philadelphia), August.

40 *Intraperitoneal Rupture of the Bladder Treated by Laparotomy and Suture. Samuel Alexander.
41 *Strangulation of the Testis by Torsion of the Cord. Charles L. Scudder.

42 *Fracture of the Carpal End of the Radius, with Fissure or Fracture of the Lower End of the Ulna, and Other Associated Injuries. Carl Beck.
43 *An Operation for Saddle Nose. Fred Walker Gwyer.
44 *The Artificial Production of Connective Tissue by Means of Injection of Agar-Agar. Simon Pendleton Kramer.
45 *An Operation for the Radical Cure of Umbilical Hernia. William J. Mayo.
46 Sarcoma of the Wall of the Thorax. Charles B. Porter.
47 Congenital Anterior Dislocation of the Tibia Treated by Arthrotomy. John B. Roberts.
48 Cancrum Oris Successfully Treated by Excision and the Cautery. A. Z. C. Cressy.
49 Forward Dislocation of the Semilunar Bone. Percival R. Bolton.

Medical Times and Register (Philadelphia), August.

50 Motor Insufficiency of the Stomach. S. C. Norris.
51 *The Ambulatory Treatment of Fractures. Frederick Rustin.

Peoria Medical Journal, August.

52 Neurasthenic Asthma. Charles H. Brobst.
53 Legal Responsibility for Burns. O. B. Will.

Journal of Nervous and Mental Diseases (Nyack, N, Y.), August.

54 A Case of Peripheral Pseudo-Tabes with Exaggerated Reflexes. Autopsy and Microscopical Examinations, Showing Degeneration of the Peripheral Nerves and No Lesions of the Spinal Cord. Charles K. Mills.
55 *A Study of Insanities of Adolescence. Wm. Pickett.
56 A Large Subcortical Tumor of the Occipital Lobe, Producing Right-Sided Hemiparesis and Right Homonymous Hemianopsia Together with Wernicke's Pupillary Inaction Sign as a Distance Symptom. F. X. Dercum.
57 A Case of Astereognosis Resulting from Injury of the Brain in the Superior Parietal Region. William H. Teller and F. X. Dercum.

St. Louis Medical and Surgical Journal, September.

58 Report of Three Cases of Malignant Endocarditis: One Following Measles, Another Typhoid Fever in a Child and Simulating Splenic Lymphatic Leukemia, and Another Terminating in Recovery. Albert E. Roussel.
59 A New Bed Spring Especially Adapted to Hospital and Sick-room Purposes. A. Habermaas.
60 Asthma. Wm. Henry.
61 Comparative Treatment of Gonorrhea. L. Midy.
62 No Thieves in Germany—A Piece of International Medical History. Albert S. Ashmead.

Medical Mirror (St. Louis), July.

63 *Pulmonary Tuberculosis. H. Edwin Lewis.
64 *The Management of Fevers. I. N. Love.
65 A Remarkable American—Dr. William Pepper. Francis Newton Thorpe.

Journal of Eye, Ear and Throat Diseases (Baltimore), July-August.

66 Four Cases of Metallic Foreign Body in the Eyeball: One Case Ending Fatally; One Case with Wound of Lens Not Causing Traumatic Cataract, and Recovering with Perfect Vision. E. C. Ellett.

Medical Sentinel (Portland, Ore.), August.

67 *Division of the Fee. Robert L. Gillespie.
68 *Ophthalmia Neonatorum, Its Prevention and Treatment. Adolph Blitz.

Alabama Medical Journal (Birmingham), August.

69 Man's Predominant Passion—Sexual Instinct and Its Control. R. C. Bankston.
70 Spleno-Medullary Leukemia, with a Case. Edgar Allen Jones.
71 Cholera Infantum. J. C. Johnson.

American Medical Compend (Toledo, Ohio), August.

72 *Some Experiments in Pneumectomy. J. H. Jacobson.
73 The Life and Work of Louis Pasteur. A. D. Hobart.
74 Therapy of Protonuclein. C. S. Miller.
75 The Myometrium, Its Etiology and Physiology. (Continued.) Byron Robinson.

Canadian Practitioner and Review (Toronto), August.

76 *The Surgical Aspect of Gastric Ulcer. Henry Howitt.
77 Excision of the Upper Jaw for Sarcoma, with Presentation of the Patient and Specimen. Herbert A. Bruce.

New Yorker Medicinische Monatsschrift (N. Y.), August.

78 Ueber Luetischen Primaeraffect der Nase. W. Freudenthal.
79 Gynaecologische Krankheitsbilder von Allgemeininteresse. F. Foerster.

Medical Examiner and Practitioner (N. Y.), August.

80 *The Relation of Bodily Mutilations to Longevity. John Homans.
81 Arterial Hypertonus and Arteriosclerosis: Their Relations and Significance. William Russell.
82 The Pulse. Dr. Mahillon.
83 Examinations for Life Assurance. W. H. Pepler.
84 Two Infrequent Causes for Rejection: Renal Stone and Renal Tuberculosis. Henry Jacobson.

Post-Graduate (N. Y.), August.

85 *Indications for Operation on the Mastoid Bone. Wendell C. Phillips.
86 Congenital Malformations of the Rectum and Anus. Samuel G. Gant.
87 Chart of Work Done by the Lying-in Department of the New York Post-Graduate Hospital. Robert H. Halsey.
88 Mastoid Cases. Dr. Roosa.
89 Notes from the Clinics. Dr. Calile.

AMERICAN.

1. **Epileptic Colonies.**—The conditions for an ideal epileptic colony are discussed by Spratling, who insists on the importance of good water supply, drainage, etc. As regards location, he objects to too easy accessibility by outsiders, but still would wish to be in reasonable proximity to the centers of population from which the patients are received so as to have the advantages in obtaining supplies. He dwells on the importance of attractive landscape gardening and the value of the colony plan rather than large buildings containing great numbers of patients, and mentions the following requisites for colonization: 1. An administration building; 2, hospital building, complete and modern for the treatment of medical and surgical cases and having attached to it wings for receiving recent admissions. 3. Industrial buildings for educational and other purposes, proper farm equipment and a number of patient's cottages which he divides into three classes: 1. Those holding from 12 to 16 or 18 patients. 2. Those large enough to accommodate from 25 to 35, the most numerous class. 3. Infirmaries combining home and hospital for the use of perpetually bedridden and infirm patients. Homes for the employees should also be provided. The resident officers should include a medical superintendent, appointed by the managers, four or five assistant physicians, medical internes, pathologist, etc., these all appointed by the superintendent. The ratio of medical officers, not including the pathologist, should be one to every 100 patients. Other officers, such as steward, chaplain, matron, etc., should also be appointed by the superintendent and a training school for nurses should be an important feature of the institution.

3. **Gastrectomy.**—The advisability of complete excision of the stomach is treated of by Childs-MacDonald under the following heads: 1. The diagnosis and age. He would limit the operation to 55 in men and 60 in women, though this must not be absolutely the rule, as individuals differ. 2. The state of the blood. A high percentage of white cells means an unfavorable prognosis. 3. The absolute integrity of the heart, nervous, muscular and valvular, must be considered. A weak diffused pulse, arteries insufficiently filled, plus loss of tone, cardiac dilatation, organic valvular lesions, marked hypertrophy and muscular insufficiency, evidence of previous heart strain, atheroma, delirium cordis, irritability, all should prohibit operation. The heart should be in the best possible condition, or the patient's life may be lost by cardiac failure or shock. Other things being equal, workingmen and women furnish a more favorable prognosis than those who follow a sedentary or idle life. Total abstainers are favorable, while over-indulgence in liquor is a positive bar; even moderate beer drinkers are not good subjects. We must be sure there is gastric cancer and its location. The most favorable indications are a moderately dilated viscus with freely movable tumor situated to the right of the median line. A contracted or very dilated stomach, with a fixed or non-palpable tumor, or one located on a line extending from the center of the epigastrium to the anterior superior spine of the ilium on the left are decidedly unfavorable. Adhesions may be expected with all their complications, or disease may arise external to the stomach. If we have any grounds for suspecting that the disease has implicated the cardia, we should on no account attempt any operative procedure except to establish an opening between the stomach, jejunum or duodenum and skin, through which the patient may be fed. Twelve or fourteen months previous disease contra-indicates operation, while metastasis is an absolute bar. 6. The preparation of the patient should include absolute rest in bed for four or six days or more, with attention to excretions. Lavage of the stomach once in twenty-four hours, preferably at night, with some mild antiseptic, will relieve pain and lessen the catarrh. The patient

should be frequently and judiciously fed, to the capacity of his powers of assimilation, with peptonized milk, broths and gruels, both by mouth and rectum. The mind must be kept quiet and the patient amused. The liver and bowels should be kept active with small and repeated doses of podophyllin resin, in combination with similar doses of calomel followed by salines. The skin should also be treated with warm baths with soft green soap dissolved in alcohol. In addition to the food mentioned he gives 3 ounces of beef tea made by the cold and hydrochloric acid process. Food should be given every two hours during the day and twice during the night. Alcohol in the form of old pure brandy, well diluted, should be administered to the amount of 4 ounces in twenty-four hours at regular intervals; it strengthens the heart and retards waste. For the final two days he prescribes 1/100 of a grain of digitalin three times a day. The stomach should be well washed and a rectal injection given on the morning of the operation.

4. **The Outlook of the Medical Man To-Day.**—Dodson points out that only a moderate income can be expected as a rule from medical practice as compared with other successful occupations. He advises the physician to gain general culture outside of his own profession, not to neglect his social and political duties, but especially to remember that besides the care and study of his patients the largest hope lies along scientific lines. He points out that certain physicians have, under conditions that were not particularly favorable, done highly scientific and extensive work. For instance, there are physicians in small towns who conduct surgical clinics with success. Industry, honesty and a love of truth are essential.

5. **The Contagiousness of Tuberculosis.**—Shurly analyzes 130 cases observed during the year 1898 and finds that of these there were 9 doubtful cases. Of the remaining 121 there is a possibility of 9 only having originated through ordinary natural communicability; while on further analysis there is a possibility that only 5 so originated, and further, that of the whole number, 130, at least 112 were immediately preceded by some acute or subacute disease. The tendency of his paper is to minimize the importance of case-to-case contagion in consumption.

6. **Carcinoma of the Breast.**—In this condition the question of successful operation depends so much on its early performance that diagnosis becomes only secondary to treatment. Vischer finds that 80 per cent. of breast tumors were of this nature, while of the remainder 4 per cent. were sarcomas and the balance such as frequently undergo malignant change. He divides the breast for clinical purposes into four quadrants by two lines passing at right angles with the nipple. It is found that carcinoma is most frequent in the upper outer, and next in the lower outer quadrant. Sarcoma, a much rarer growth, is found most commonly in the inner upper segment. Retraction of the nipples is found comparatively seldom, and only where connective tissue enters largely into the formation. The form beginning with adenoma, gradually assuming epithelial change, is rather common, and is found in young women. The medullary form is most rapid in growth and shows an early tendency towards breaking down. Nodulation is significant of connective tissue hyperplasia and is of less importance than the mobility of the growth and its anatomic situation. The prime object of this paper is to attract attention to the early recognition of the condition. He suggests careful observation of any breast that has ever been the seat of inflammation. Attention is not apt to be called to this condition as subjective symptoms are few in the early stages. Of the 56 cases of removal occurring in private practice, of which he had a complete record, only about two-thirds have recovered. In multiparas, past the age of lactation, it would be far safer to remove all breasts which are the seat of tumors. In breasts that have had abscesses, any enlargement should be sufficient cause for removal.

7. **Influenza.**—Three cases are reported by Kernodle of la grippe in old people, showing peculiar nervous and urinary manifestations. Summarizing these he thinks that aged persons suffer more violently from la grippe than those in youth and vigor; the manifestations are more marked and profound in the aged, and never entirely disappear; nephritis and urinary disturbances are more pronounced and lasting, and there is a more decided tendency to recurrence, resulting in death; owing to the worn-out and deteriorated physical condition and lowered nerve resistance the results are more grave, the assaults more violent and profound and the death rate much higher in persons over 50 years.

8. **Traumatic Hysteria.**—Hysteria is a misunderstood condition, being a mental disease with physical manifestations. Bailey reports a number of cases illustrating this point. He thinks there is uncertainty regarding the prognosis in this as in all other mental affections. The patient may recover or may be a sufferer for years. Of the indications which enable us to make the prognosis, he mentions first heredity, but believes that it is very difficult to substantiate the teachings of Charcot that hysteria never develops except in degeneracy. Age is an important matter, and he believes that in healthy persons not over 35 or 40 years of age the chances of recovery are good, though not certain, but that, with increasing age, the chances become less. He thinks that immediately after an accident, if the patient could be isolated and cared for by a physician who understood the significance of the symptoms and the best way of treating them, we would have very little persisting traumatic hysteria. Such ideal conditions, however, are rarely possible, and sympathy, indulgence and suggestion may render the disease hopeless.

9. **Infantile Typhoid.**—Strasser has found in the majority of his own cases symptoms of typhoid infection at the end of the second week. The cases run about as follows: Few prodromata; incubation not noticeable; headache not severe in infants, though it may be intense in older children; both are liable to initial convulsions. The fever is usually the cause of anxiety and the call for the doctor. It runs a wide range, and is usually more or less rapid, though conforming somewhat to a fairly typical typhoid curve. The state of the bowels is of no diagnostic value. Bronchitis is common, remaining long in the congestive stage. Epistaxis may be quite frequent; the tongue is not characteristic; rose spots occur as in adults; there may be some suppression of urine and splenic enlargement is frequent, according to some authorities. The main symptom is subacute bronchial inflammation due to the excretion of the Eberth bacillus from the bronchi and this in children amounts to the main disease for the first few weeks. He reviews Jacobi's statement of the dangers of typhoid in children, and agrees with Noyes that, in spite of these, convalescence is more rapid than in the adult, the mortality is less and abortive cases are more frequent. The prime requisite in the treatment is an intelligent nurse. When the temperature reaches 102.5 or 103 F. and there is great irritability, threatening convulsions, and severe headache, it is time for the cold bath and pack. As regards antipyretics, he does not favor them. As to other medication, salol is good; in diarrhea the various bismuth preparations are best. If constipation is the feature, calomel is the best antiseptic. When there is perforation or even slight hemorrhage, turpentine is the internal sheet anchor, and for very distressing meteorism, it is very comforting in the form of stupes or enemata. Rest in bed, the use of fluid food, etc., are not necessary to mention. He warns against the use of ergot preparations for hypodermic injection. Convalescence should not be retarded, nor should solid or semi-solid food be withheld too long.

11. **Zoological Distribution of Tuberculosis.**—Hutchinson has studied for five years the mortality in the London Zoological Garden and finds an apparently greater susceptibility to tuberculosis among vegetarian animals and a much reduced susceptibility among meat eaters both in mammals and birds, though there are some serious exceptions to the apparent rule. The odd-toed ungulates among the vegetable-eaters have important resisting powers and seldom become infected. He finds the largest percentage of tuberculosis among the primates, and the lowest amongst the carnivora and marsupials. In birds the greatest percentage is among the gallinæ and the lowest among the raptores. The American monkeys which

take some animal food are much more free from tuberculosis than the old-world catarrhine form. As regards housing, he finds that the animals that can stay in better air are less affected. The carnivora seem in most cases to demand a higher degree of activity than the herbivora, and when from any cause this higher degree of vigor and dash has been acquired by herbivora, then immunity from tuberculosis follows. The conclusion to which this preliminary survey has led him is that the distribution of tubercle is a matter of vigor, endurance, and resisting power, rather than of race, food, or exposure to infection, and as these powers are usually higher in flesh eaters than in vegetable feeders, the former possess a marked relative immunity.

12. **Bifocal Lenses.**—Weeks discusses the disadvantages of these glasses and finds that after experiments with various devices, the best results can be obtained by the use of a paster of oval shape, which measures 10 mm. in its vertical and 15 mm. in its horizontal diameter, giving a field at the reading distance of approximately 7 in. in the horizontal, and 12.5 cm. (5 in.) in the vertical meridian. If the oval disc is placed 2 mm. above the lower edge of the distance lens it will permit of clear distance vision below, sufficient to enable the wearer to see the curb, descend stairs, etc., without trouble. It is sufficient to place the optical centers of the portion of the lens for reading at the center of the paster. The dispersion rays of light occasioned by the edge of the paster can be minimized by making the edge very thin. In his diagram he places the paster a little to the inner side of the center of the larger lens.

13. **Actinomycosis Hominis.**—The case reported by Fütterer is thoroughly studied, and he says in conclusion: That macroscopic diagnosis between actinomycosis and tuberculous peribronchitis is possible and not even difficult. In actinomycosis he finds small, sharply-defined, sulphur-yellow rings, with clear, round outlines, having little tendency to involve the lung substance. These rings show a decided tendency to grow toward the center of the lumen of the bronchus, which at last becomes entirely occluded. The color is important, for in tuberculosis this varies. Where there is caseation even, the yellow color has a more grayish tinge and is not uniform in quality. The tuberculous areas project above the surrounding tissues and have an uneven surface and irregular outline; there is not the same tendency to grow centrally and close up the lumen, but rather to spread peripherally and an early affection of the surrounding lung tissue is the rule. Tuberculous infection generally affects the apices first, but actinomycosis prefers the lower parts of the lungs.

15. **Hip-Joint Disease.**—The conclusions presented by Lovett are as follows: Cases of hip disease permitting not over 25 degrees of motion in flexion or extremely irritable cases should be treated by the best obtainable fixation plus traction. Treatment by recumbency is not generally necessary even in the most acute cases, if the apparatus described above is applied to the hip in the position of deformity. This deformity generally disappears under this treatment. The splint should be removed as seldom as possible, and the hip should not be disturbed by frequent examinations. Cases allowing 25 to 45 degrees of motion in flexion may be treated by Dane's splint with high shoe and crutches in preference to any other form of traction splint. Personally, he would extend the use of the spica traction apparatus to most of these cases in the hope of shortening the disease by over-efficient treatment, but that position could perhaps not be successfully defended. The use of the Davis-Sayre-Taylor long traction splint, with one or two perineal bands, should be limited to cases allowing well over 45 degrees of motion in flexion, and should be used with high shoe and crutches to prevent the intermittent traction necessarily incident to walking on the splint. It is probable that the more rational use of combined traction and fixation would lead to better results in conservative treatment in shortening the disease and improving the functional results than can be obtained by the routine use of traction.

17. **Climate in Tuberculosis.**—Gardner pleads for the importance of change of climate as a matter of treatment in tuberculosis. He claims that by change to a high, dry region, the organism undergoes formation of new cells, nutrition is stimulated, and isolation of tuberculous tissues is more rapid. In the winter the cold is more endurable and more beneficial than at lower altitudes, and the continuous sunlight is an effective germicide. The dryness of the air and the cool nights prevent exhaustion in the summer time. The electrical conditions are stimulating, The scenery has a physiologic value often overlooked. Climate comes in as such a factor that 15 per cent. better results can be obtained under home treatment of tuberculous cases in Colorado than in closed sanatoria in the East.

19. **Tuberculin.**—Otis has experimented with tuberculin as a diagnostic test in 36 cases of syphilis, or 35, throwing out one doubtful case. There were 6 undoubted reactions and 5 which he calls abortive reactions. Considering only the 6 we have 17 per cent. of reactions; including the abortive cases, we have 31 per cent. He does not find with Beck that one-half the cases of syphilis react to this test, but there does not seem to be any guide in the activity or quiescence of the disease as to whether or not the reaction is likely to occur. In his most violent reaction, in which the temperature went up to 104, the case was one of many years' duration and without active manifestations. He also examined 26 cases of suspected or proven tuberculosis, which gave some interesting and perplexing results. In 8 cases where the physical examination showed sufficient evidence of tubercle or where bacilli were found in the sputum, he had 4 reactions and 4 failures. In 3 cases where the tubercle bacilli were found in the sputum, 2 did not react. In one 7 milligrams were used and in the other 5 and 10. In the third case where 2, 5 and 8 milligrams were successfully used only a local reaction was obtained. He offers no explanation for such results. Of the remaining 18 cases of suspected tuberculosis there were 6 reactions and 12 failures. In none of the cases which failed to react could tuberculosis be more than suspected. A case of lupus of the face, besides giving a general reaction, showed a pretty local one. In using the tuberculin test for suspected tuberculosis, experience, he says, teaches us to look carefully for syphilis. He confesses that when he has a case of tuberculosis with tubercle bacilli in the sputum and failure to reaction, his confidence in the test is somewhat shaken, but it is well to bear in mind that there is always a chance of error and that we do not yet know what the minimum efficient dose is.

20. **Burns.**—Burns, according to Griffith, may be divided into two degrees of severity, the first class involving the skin only and the second including all others. The pathology of these is that of inflammation of the part locally affected. Early death and internal complications are due to direct action of heat, with fragmentation and vital change in the blood corpuscles. Later effects are due to infections taking place from the burned area. The granulations during the healing of burns are the determining factor in the amount of contraction and deformity. The greater the friction caused by irritation of any source, the larger the granulations, the greater the amount of connective tissue and the contraction. The local treatment from the earliest times has been along the lines of prevention of irritation, but the late advances in wound treatment have not been followed. The burned wound should be cleansed with the removal of as much burned, dead tissue as possible; the thoroughness with which this is done will determine the presence or absence of infection. Hydrogen dioxid to wash away the debris and render aseptic the denuded parts is the best antiseptic at our command. Rubber tissue in strips should be laid on the wound to prevent contact with absorbent dressing. The use of splints to secure relaxation and retention in obtaining rest for a burned part is of great importance, and is as much indicated in this form of injury as in fractures. The internal treatment is stimulative until reaction from shock has taken place, when it becomes supportive. Opium fills the indications for pain, internal inflammation, and diarrhea. The bowels and kidneys should be continually kept open, but enemas only should be employed.

Watchful attention must be given to early signs of internal complications of viscera.

21. **Carbolic Acid in Burns.**—Three cases are reported by Muench, one of his own experience and two others, in which pure carbolic acid was applied to burns, causing immediate cessation of pain with no subsequent swelling or inflammation. The corroded skin came off in a few days, leaving a new skin and causing absolutely no inconvenience or trouble, not even a scar or contraction of muscle. In one case the burn was very extensive, covering the entire head, face, neck and hands, and in this case he gave a hypodermic injection of morphin. The patient recovered without a single scar, although there was sloughing on the end of the nose and rim of the ears.

22. **Petroleum Compounds.**—Reyburn calls attention to the inertness of petrolatum when given internally. He says it passes unchanged through the intestinal tract and therefore is insoluble in the gastric juice and intestinal canal and can be recovered as a whole in the feces. Its usefulness as a remedy, therefore, must depend on its unirritating and demulcent properties.

24. **Delirium Tremens.**—Perry has no sovereign remedy for delirium tremens. He does not believe in the sudden withdrawal of alcohol in chronic habitués. It is his practice to put the patients on a liquid diet as nutritious as can be borne, a goodly quantity every two hours during the day. In mild cases he stops the alcohol at once; in severe ones it is seldom completely withdrawn before the fourth or fifth day. The quantity, however, is lessened and as substitutes he uses ammonia, camphor, hyoscyamus, valerian, capsicum, ginger, etc. The heart must be supported by strychnin, nitroglycerin, etc., and small doses of opium may be employed. He thinks chloral hydrate, alone or combined with potassium bromid, one of the best things there is in some conditions of insomnia. He has employed hyoscin hydrobromate, though this is not a safe remedy. A better agent is musk, but its high cost is prohibitive in many cases; apomorphia properly used is safe, but is usually pushed too far, as has been the case in the drink cures. Morphin is not constant in its action; in most cases it is quieting, but seldom efficient alone. When the patient goes to sleep he must not be disturbed, though the sleep may last fourteen or fifteen hours. The attendant should be fearless and humor the patients in a practical way. Some patients, however, are extremely obstinate, and may require restraint, though only as a last resort. Lying on the back, a spread eagle is made of the unfortunate by towels and sheets. The patient will tug at his fastenings and be irritated, but is finally exhausted and possibly will fall asleep.

25. **The Effects of Alcohol.**—Beyer finds alcohol is primarily a stimulant, but a protoplasmic poison. He criticizes Dr. Woodruff's expressed ideas as to its value in the tropics. He has seen very little good from giving it in tropical climates, though in some cases for temporary purposes he has employed it in the engine and fire-room force—one ounce of whisky every twenty-four hours. The temperance movement generally has done much good, and he mentions an experiment of practical total abstinence in a recent Dutch expedition in the East Indies with extraordinarily good results.

26. **Delirium Tremens.**—Ellsworth differs from Perry in that he would cut off alcohol in every case, give milk and water abundantly and avoid hypnotics. In his experience with over 500 cases, he has never used restraint or allowed alcohol. He has had only two fatalities, and these patients were in a state of collapse when he received them. He attributes his success to the perfect freedom he allows the patients, that is, in not hampering their movements, in keeping the room thoroughly ventilated, giving good nourishment at short intervals, and the absolute prohibition of alcohol. He reports a case.

27. **Myomectomies.**—Baker reports a case of myomectomy, and in reviewing it makes the following suggestions: 1. The importance of performing myomectomies in preference to hysterectomies in most of the cases of fibroids during the child-bearing period. 2. Even though the patient and her friends may prefer a total hysterectomy for various reasons, principally among which are the facts of the extreme suffering of the patient or the great loss of blood, which make them desirous of absolutely putting an end to the menstrual process, it is generally better surgery to remove the cause of the suffering, and leave the uterus and ovaries in a state which may be of great future usefulness and certainly able to perform their normal functions. 3. The greater length of time necessary to perform several myomectomies in any given case is usually more than overbalanced by the complete insurance of the integrity of the organs involved.

29. **Intimate Action of Silver Nitrate.**—Mays bases his treatment on the theory that pulmonary tuberculosis is, in the majority of cases, primarily a neurosis in which the vagi participate and that the pulmonary disintegration is secondary. He believes direct stimulation of the vagi favorably influences the condition of the lungs. The mechanism of silver nitrate injections is of such a nature as to stimulate the vagi to a more vigorous action and in this way they create antagonism to disease that diffuses itself throughout the manifold ramifications of these nerves.

36. **The Cleansing of Floors.**—Owen recommends a finish on hospital floors of wax, linseed oil, turpentine, floor finish and benzine in the following proportion: Wax, 5 pounds; linseed oil and turpentine, 2 gallons each; floor finish (permanere), 1 gallon, and benzine, 10 gallons. This is applied once a week and laid on with a piece of cotton, brushed and polished with a cotton mop. He believes that too much floor scrubbing is responsible for some of the sickening odors which are due to decomposition taking place both in and on the floors. The danger of fire from the use of this material is very slight if only a small quantity is kept on hand to use at a time.

40. **Intraperitoneal Rupture of the Bladder.**—In case of intraperitoneal rupture of the bladder treated by laparotomy, it is evident, according to Alexander, that successful results in every case depend upon three things: 1. Surgical interference at the earliest possible moment after the accident. 2. Thorough cleansing of the peritoneal cavity. 3. Perfect closure of the bladder wound by sutures. The great object of the operation is to prevent peritonitis and septic infection, and he asks how can we prevent delay of operation in these cases and suggests that suprapubic incision, and exploration of the prevesical space is the best method. The injection and infiltration tests are liable to be misleading and are dangerous. Asepsis of the peritoneum can be best obtained by thorough flushing of the cavity with hot normal salt solution. For closure of the bladder wound he has used silk, that is, a layer of interrupted Lembert sutures and a second layer of crossed mattress sutures. The main point is not the suture material, provided it will not be too quickly absorbed, but the manner in which the suturing is done. He reports an operation and gives a tabulated statement of cases from the literature.

41. **Torsion Strangulation of the Testis.**—Scudder reviews the conditions and the literature of this disorder and finds that, in the majority of cases, its causes are rather mysterious, though slight trauma may produce it. He has found 31 cases in the literature and reports an additional one.

42. **Fracture of the Carpal End of the Radius.**—The different forms of possible fracture of the carpal end of the radius are discussed and illustrated both by diagrams and skiagraphs. The advantages of the Roentgen ray in this injury are recounted; they have thrown new light upon its possibilities. Beck concludes that in many cases of fracture of the carpal end of the radius producing so-called sideward pushing of the ulna, there is, in fact, a fissure or fracture of the ulna which was not recognized in former years, and this is seen only through a good skiagraph made with a good tube. The treatment of the different forms is described and the importance of perfect replacement insisted upon.

43. **Saddle Nose.**—The operation of Gwyer is described as follows: A longitudinal incision in the middle line at or near the root of the nose, depending on the amount of deformity

and carried downward towards the tip of the nose. At a point depending on the conditions existing, the line of incision divides into two lines separating more or less and coming together again below the tip, forming an ellipse. The skin included in the ellipse is removed. The skin is then dissected loose for a sufficient distance on either side, especially in the region of the deformity. A flap is next dissected out of subcutaneous tissue, and perhaps cartilage, starting at or below the tip and raising the flap as far as the lower end of the depression. The flap is made thicker in the middle than at the sides or ends and the thickest part placed in a position corresponding to the most depressed part. It is better not to carry the upper end of the incision too high, but having loosened the skin at that point, to tuck the free end of the flap under it. Such a course makes a smaller scar and union is prompter and firmer. After raising this flap, a portion of the cartilage lying on either side of the median line of the tip is removed, the amount depending on the spread of the nostrils. The suturing should be done with a small needle, preferably with horse-hair. The approximation should be very accurate and not too tight. The stitches should be removed as soon as possible. The quantity of skin removed in the ellipse depends on the amount of broadening of the tip and alæ. A narrow piece should be first removed, and subsequently more if necessary. The skin is then approximated with very fine sutures throughout the length of the incision, a figure-of-eight suture being used at the tip to approximate the deeper parts, and the wound is covered by a light dressing of collodion, iodoform and gauze. The advantages of this operation are, in his opinion: 1. The absence of foreign bodies. 2. Correction made with living attached tissue, having its own blood supply. 3. Ability to correct at the same time minor deformities. 4. Having the field of operation in sight. 5. A minimum of scar.

44. **Agar-Agar Injections for the Production of Connective Tissue.**—Kramer has experimented with melted agar jelly introduced in the fluid state into one side of the chest in rabbits. The animals were killed after a varying number of days. In the animal killed forty-eight hours after injection there was found a mass that had lost the gelatinous appearance of jelly and resembled an antemortem heart clot more than anything else. On microscopic examination it was found that the jelly had become honeycombed with small round cells. A section taken from a mass obtained from an animal killed after seven days showed still further infiltration and signs of beginning degeneration. In one taken after twelve days there were many fibroblasts and new blood vessels beginning to be formed. The mass of agar jelly at first infiltrated by small round cells is being replaced by vascularized connective tissue. After thirty days a newly-formed blood vessel could be plainly seen in the section. He thinks these experiments will be found to be of some surgical value. It is very often desirable to produce an artificial growth of connective tissue by means of some such injection. In several cases of inguinal hernia the sac and canal have been filled with the material, which has become organized and cured the defect. The permanency of the cure will be determined only by time.

45.—See abstract in The Journal, xxxvi, p. 1582.

51.—See abstract in The Journal, xxxvi, p. 126.

55. **The Insanity of Adolescence.**—Pickett analyzes 58 cases of dementia and finds that a considerable proportion of these occurred in patients whose insanity began between the years of 15 and 30. He shows by a graphic method—a sort of birdseye view—that the great majority of cases come under what is called katatonia or the dementia precox of Kraepelin. On the average, two-thirds of the cases met with at the Philadelphia Hospital between the ages of 15 and 30 become chronic dements or die of intercurrent disease, an important clinical fact. He insists on the importance of using prognosis as a basis of classification, making the conventional forms only a primary and secondary classification for convenience sake.

63. **Pulmonary Tuberculosis.**—Lewis discusses the diagnosis, etiology, symptoms, prognosis and treatment of tuberculosis. As regards heredity he thinks there is little reason to consider it important, but he believes also that the human system is normally resistant to the invasion of tubercular germs. The predisposing cause is, in fact, decrease of vital resistance or special susceptibility. The exact nature of this is little known; it probably consists of a certain chemical or histological condition of the lymph nodes due to hereditary tendencies or conditions of environment, which fail to arrest or inhibit the growth and the ingress of germs, or second, of some retrograde metamorphosis of the structure in any part of the body, generally in the lungs, or a trophic, traumatic or toxic influence favoring the invasion. Among the causes which diminish the vital resistance he puts air starvation first, either deficient supply of good air or incapacity to receive it. Next to this come gastrointestinal disorders. The symptoms are discussed at length. He does not lay great stress on the absence of tubercle bacilli, for they may not be readily found. The temperature range is one of the earliest symptoms. He is in the habit of loaning an accurate thermometer to intelligent patients so that they can keep a two or four hour record of their temperature. Cough is also a symptom of which patients may make little; it is not necessarily spasmodic. Emaciation is a symptom of much importance. The symptom of early hemorrhage has not been, as a rule, common in the incipient stage in his experience. The physical signs are briefly noticed and the principal points of the diagnosis are, in his opinion, careful attention to the temperature range, character and frequency of the pulse, cough, changes in body weight, and sputum examinations. The prognosis is far better than it used to be. We should build up the vital resistance, encourage regular habits, use hydrotherapy, good nutrition, and compulsory notification. He believes in over-nutrition. He considers raw eggs excellent, and thinks that as many as ten or twenty a day are justifiable in feeding. Of all the drugs that have been tried, strychnin stands at the head and he would give it freely. Next to this comes arsenic and if the cough requires some amelioration, guaiacol carbonate combined with codein or heroin is very efficient. He has little faith in creosote. Atropin may be useful in night sweats. The average patient is markedly benefited by an alcohol bath and rub down at bedtime. Alcoholic stimulants have very little use internally. While admitting the importance of the stomach and its condition as pointed out by Osler, Lewis would go farther and show that the cure depends entirely upon absorption, assimilation of nutriment. If the body metabolism is such that its tissues are able to acquire an amount of nutrient and reconstructive material greater than the general waste, the patient will live, if not, he will die.

64. **Management of Fevers.**—Love insists on the importance of attention to the digestive tract in fevers particularly. He thinks that the liberal use of water and flushing of the alimentary canal are beneficial. In the management of fevers of whatever origin or cause he recommends the following: 1. Prompt, potent purgation. 2. Keeping up the action of all the eliminating organs to their full extent, and, the lungs are the most important of these, an abundance of oxygen, and after this comes water in abundance. 3. Intelligent attention to nutrition, which demands the complete withholding of food in the beginning for several days and later only the blandest and most digestible foods in small quantities. The pushing of food can not be safely done until the secretions have all been corrected, and it is evident that the digestive organs are in no way crippled. 4. Temperature can be best held down and the nervous strain tranquilized by hydrotherapy and flushing and the easiest way is the best. The cold bath not only helps the excretion, but quiets the fever. 5. We may also use gentle manual massage and even some of the manipulative methods of the osteopaths for soothing purposes and as a stimulant and tonic. 6. Sleep. Complete rest at proper intervals, physically and mentally are essential. 7. "The Big Four Route" to health in all diseases including fevers is first, elimination; second, disinfection; third, nutrition, this means little or no food during the acute stage including stimulation, and fourth, tranquilization—rest. 8. We should not ignore the psychic elements and we should lead the patient in

the direction of his best good. We should study disease not less, but man more.

67. **Division of the Fee.**—Gillespie reviews the question of remuneration to the physician and consultant, especially the surgeon, and suggests the following propositions: "1. That division of the fee is just to the physician, surgeon and patient, when a surgeon is called to operate and is assisted by the physician in preparation, operation and after-treatment. 2. That cases referred to a specialist for treatment or operation, without the assistance of the physician, belong to the specialist. No commission should be paid or received, hence no division of the fee. 3. That cases referred from the country to specialists in the city belong to the operator, as he assumes all responsibility of preparation, operation and after-treatment, and no fee or commision should be paid. 4. That a specialist, visiting the country for the purpose of operating only, should divide the fee with the attending physician who has charge of the case or for whom he operates. 5. That the general practitioner in the city should conduct financial matters, collect the bill and pay the surgeon what is agreed upon between them; and that with this arrangement the patient has nothing to do. 6. That a commision paid to the layman or commission as such paid to any one is wrong, unjust and unethical. 7. That the question of the division of the fee or the payment of commission should, if possible, be settled; that it is of necessity a condition difficult to reach by expedients available to the profession. 8. That the objects sought for are satisfaction, not disappointment for the patient, and a profitable visitation for the general practitioner and specialist, both present and prospective."

68. **Ophthalmia Neonatorum.**—Blitz recapitulates his views by insisting on strict antisepsis before birth; the nurse washing the eyes of the new-born first, before the rest of the face, head and body, using a sufficiently strong disinfecting solution at once when sure or suspicious of gonorrhea in the mother; but a mild cleansing wash only when no disease exists in the vagina. The eye should be inspected daily during the first week after birth, if possible; if impossible, the nurse should be instructed to report at once any signs of inflammation. If it is a case of true ophthalmia blenorrhoica, treat it promptly. Employ absorbent cotton in cleansing the eye: never using the same piece twice. Persist in the same treatment until inflammation has disappeared and the greatest possible amount of vision restored.

72. **Pneumectomy.**—After noticing a case in which there was an abscess destroying the right lung, relieved by operation for empyema, Jacobson reports his experiments on dogs in the removal of lungs. The case suggested to him that such an operation would be possible without destroying life or causing serious injury. Seven dogs were operated upon, in six of which there was total resection of the right lung and in one the removal of the upper two lobes. Of the total resections, 3 died and 3 lived; in none of the cases was the death directly due to the operation. The experiments prove that the removal of the entire right lung is possible and that one lung is sufficient to carry on life in comfort. The dangers of operation are two, pneumothorax and secondary hemorrhage. The best method of combating the former seems to be by the use of the Fels-O'Dwyer apparatus for artificial respiration during the operation. The complication of secondary hemorrhage presents difficulties which are not so serious and the author thinks that the use of the angiotribe as suggested by Murphy would be of decided advantage.

76. **Gastric Ulcer.**—The operative procedures in cases of gastric ulcer are treated of by Howitt. He first notices the operations for ulcerative stenosis of the pylorus for which pyloroplasty should be preferred, the part being as well as possible brought into view, the peritoneal cavity guarded with sterile gauze, and the ulcer removed by elliptical incision running in the long diameter of the parts, the length depending on the amount of contraction. It is then sutured in such a manner that when closed the line of union is at right angles to the original incision. In a large proportion of cases, however, this ideal operation is not possible and gastro-enterostomy is desirable. Two practical points are specially insisted upon: 1. To make sure that the proximal arm of the jejunum is sufficiently long to prevent tension in any possible movement of the stomach. 2. To anchor same arm to stomach wall with sutures just above and an inch or more to the right of point of anastomosis. This last does away with the spur or acute angle of the bowel, and prevents untoward events which frequently prove detrimental after gastro-enterostomy. In hour-glass contraction of the stomach, several methods have been suggested; some prefer gastro-anastomosis. Gastro-enterostomy is the only safe course when the hour-glass contraction is near the pyloric orifice and complicated by adhesions and inflammatory thickening of the parts. In perforating ulcer he thinks that as soon as we are satisfied it has taken place, it is good practice to give morphin hypodermically. It relieves suffering, mitigates shock and lessens the amount of anesthesia. It is good practice to eviscerate the bowels as soon as the incision is completed and protect them with sterile gauze, kept warm and moist by irrigation. This gives us ample room for thorough inspection. When the trouble is in the posterior wall near the esophageal opening, it may be impossible to excise the affected spot, in which case it may be inverted and closed by layers of sutures. The abdomen should be thoroughly flushed, care being taken with each flank, the pelvic cavity, and lesser peritoneum. On replacing the bowels it is good practice to spread the omentum carefully over and fix it below with sutures to prevent the coil becoming adherent to the line of incision. Care should be taken after suturing, to dress with dry sterile material and seal so as to prevent infection by discharge through the drainage tubes. The author advocates this practice of evisceration and temporary enterotomies to let out the gas accumulations, because it reduces shock, makes work easy, relieves bowel distention, permits the escape of germ-laden material and renders later vomiting and paralysis much less probable. The after-treatment consists of the external application of heat, strychnin hypodermically, normal saline solution by the rectum or subcutaneously, and nutritive enemata. No food is given by the mouth for four or five days.

80.—See abstract in THE JOURNAL, ¶24, p. 534.

85. **Mastoiditis.**—The question of when to operate in mastoiditis is discussed by Phillips, who thinks that when symptoms of mastoid suppuration become apparent, we are face to face with the necessity of decision on this point. The very early symptoms may be, and sometimes are, relieved by other measures than external operation, such as free incision of the drum membrane, which will frequently relieve all indications of mastoid involvement. The whole theory of relief is based on the importance of free drainage and further involvement of the mastoid cells is checked by this in some cases, together with local blood-letting, the ice coil and poultices. During the early stages of middle ear suppuration, and even after mastoid symptoms appear, irrigation with hot sterile water is good treatment, but the tendency is to carry all these measures too far. He does not use the ice coil longer than twenty-four or thirty-six hours and poulticing would be almost as bad. The external operation should be performed when permanent remission of symptoms has not been obtained by complete drainage through treatment or application of ice coil or local blood-letting, when there should be absolutely no delay. Most hospital cases reach this point before they are seen and the utility of the mild measures is past. By still further delay complications may arise that make the operation more extensive and may even endanger life. In chronic otorrhea external operation may be required to overcome suppurative processes. This is especially so in cases with chronic otorrheic discharge and attempts should be made to cure all these cases permanently.

FOREIGN.

British Medical Journal, August 17.

Enteric Fever: Its Natural History, Modes of Dissemination and Prophylaxis. A. C. HOUSTON.—In opening the discussion Houston remarks that he was struck by three things: 1. The inability of medical science to stamp out a dis-

ease which is still classed as preventable. 2. The failure in this direction in South Africa. 3. The notable discoveries that have been made in connection with its bacteriology in the last few years. He considers the agglutinative phenomenon as one of the most remarkable bacteriologic discoveries, though he points out its exceptions. He gives a tabulated statement of the points of differentiation between bacillus coli and bacillus typhosus. Nevertheless, it cannot be said that we have yet been able to isolate the bacillus typhosus from sewage and water supply. He asks whether there may not be some direct race of coli-like microbes having specialized properties and infectious qualities, but to consider them an agent in the propagation of the disease seems to him unsupported by present evidence. The water-borne nature of typhoid is an established fact, as is also the action of milk. He calls attention to the recent discoveries in regard to the danger of shellfish taken from sewage-polluted water. The question of soil in relation to typhoid fever is one requiring much caution, though he mentions that it is well to preserve an open mind on the question. The action of flood water, sewer gas, ground air, and ground water are also noted, and sewage, as it is a dangerous source of pollution. We must see that our water supplies are free from the bacilli of the colon group. The vitality of the typhoid germ in water is a matter in regard to which there is still much difference of opinion, but that some continue to exist for a long time seems to be indicated by Klein's results. The danger of dust is noted and also the fact of the bacillus typhosus escaping destruction under modern methods of sewage treatment, in which the author's own conclusions are somewhat different from those of the majority. He thinks it would be wise to regard the effluents from bacterial beds as still unsafe. Other points mentioned by Houston are typhoid bacilluria, and the action of urotropin on it, and recent evidences of infection through fried fish and laundry machinery. He mentions protective inoculation with Wright's vaccin, which he believes may be of use. The Widal reaction in relation to early diagnosis is too little employed by the profession. He then considered the sterilization of drinking water and filtration, and, as regards this last, believes that the sand filter only lessens the danger, and that small filters, with the exception of the Pasteur-Chamberland and, to a less degree, the Berkefeld, are only to be relied upon. The general measures which should be followed to-day are: To protect the water-supply and food from contamination; to be sure that drains and sewers are in good order, and to disinfect the stools and urine of enteric patients. Recent discoveries have shown us how manifold are the channels of infection, and how prolonged and serious the capacity of enteric fever patients to disseminate the disease may be. Recognition of the dangerous condition known as typhoid bacilluria and the value of urotropin as a remedy have a most important influence in the future in the control of the spread of the disease.

Vital Statistics of Enteric Fever. F. A. Dixey.—The summary of Dixey's article is given as follows: "1. The death rate from enteric fever in London is a fluctuating one, but has on the whole materially diminished, the most marked descent having occurred about sixteen years ago. 2. The seasonal relations of enteric fever remain fairly constant from year to year, but there seems to be a tendency, at least in years of low general prevalence, towards a progressive flattening of the autumnal maximum. 3. A comparison between London and New York in respect of their climate and enteric death rate, indicates that some meteorological conditions, especially perhaps temperature, are factors in the activity of the enteric infection. The relation, however, is not of such a kind as to make itself apparent from year to year in one given locality. 4. It is probable that the diminution in the death rate of enteric fever is really somewhat greater than it appears to be, from the inclusion in former times of enteric cases under other heads, notably typhus and simple continued fever. This source of error, however, was never very important, and is now practically non-existent. 5. The case-mortality of enteric fever is almost stationary, and seems likely for the present to remain so."

Neutral Red in the Routine Bacteriological Examination of Water. William G. Savage.—This author finds neutral red a very valuable agent for the differentiation of the bacillus coli and gives the results of a number of experiments made by him as showing this fact: "1. That a positive reaction obtained as described, while not certainly diagnostic of bacillus coli, yet in the vast majority of cases pointed to the presence of that organism. 2. That a negative reaction renders the presence of bacillus coli highly improbable. 3. That the test is very readily applied, and with reasonable care, fallacies in its employment can be avoided. 4. That it is a test which is of great value in the routine examination of water."

The Fallacy of the Permanganate Disinfection of Wells (Hankin's Method). M. L. Dhingra.—The author thinks Hankin's method of permanganate disinfection is of but little value. Potassium permanganate can only act under certain conditions, and even then is not continuous in action. It must first expend itself in oxidizing nitrites and organic matter before attacking the organisms, which are so resistant that it is applicable only in concentrated 5 per cent. solutions. For practical purposes it can be regarded only as a deodorant. The method is impossible in its practical application. The use of a couple of ounces of potassium permanganate does not bring about any profound changes in the chemical or biological constituents of well water.

The Lancet, August 17.

The Diagnosis and Surgical Treatment of Carcinomatous Stricture of the Colon. W. J. Walsham.—According to Walsham, the common form of carcinoma of the colon, viz., columnar-celled—is one of comparative benignity and may, for a considerable time, remain a purely local disease, the patient enjoying several years of comparative comfort before secondary deposits in the glands and internal viscera terminate his life. When, as is often the case, symptoms of acute obstruction have come on before surgical aid is sought, it is better to operate in two stages: 1. To do a primary colotomy with or without the withdrawal of the carcinoma on to the abdominal parietes. 2. When the patient has thoroughly recovered from the deleterious effects of obstruction, to remove the carcinomatous portion of the bowel and unite the ends above and below. There may be even almost complete stenosis and still no dissemination, but when dissemination at length occurs, with such symptoms as uneasiness, distension, eructations, and a series of conditions often attributed to indigestion, attacks of pain or spasm attributed to the colon independent of the time of taking food, liquid stools without any formed motions, constant progressive loss of weight and a constant desire to defecate. it is well to make an exploratory incision. If acute obstruction has supervened the safest course is to open the colon above the growth and to deal with the latter after the acute stage has subsided.

Annales de Dermatologie (Paris), July.

Treatment of Rodent Ulcer. Carle.—The slowly developing ulceration, with no propagation to the ganglia and no effect on the general health, is frequently misunderstood, as no one thinks of the possibility of rodent ulcer. Carle describes three cases of six, eight and eighteen years' duration respectively—each erroneously diagnosed and treated as lupus or syphilis. Complete extirpation is indicated when possible, but if the ulceration has extensively invaded the face, as was the case in two of his patients, curetting and cauterization will cure after the possible failure of skin grafting and cauterization with potassium chlorate. With or without anesthesia or eocain, the entire ulcerating surface is thoroughly curetted. Hemorrhage was considerable in one case but was arrested by tamponing. A gauze pad was then applied, impregnated with a mixture of 1 gm. arsenious acid in 75 gm. each of alcohol and water. The gauze was removed the fourth or fifth day and the area painted with a stronger mixture, increasing the strength to one part of the acid in forty parts each of water and alcohol, and leaving the affected part open to the air. No permanent dressings were applied and the eye was protected

merely by a bandage. In two and one-half months the ulcer was covered with a good quality of epidermis and only a slight redness now marks the spot.

Kerosene Frictions for Alopecia Areata. HALLOPEAU.—A young woman who had had rebellious alopecia for more than a year, was practically cured by washing the head twice a day with soap and then rubbing kerosene vigorously into the bald patches. They soon became covered with soft hairs which by the end of eight months, had almost all been transformed into adult hairs.

Compression as a Means of Treating Ichthyosis. HALLOPEAU.—In a severe case of congenital ichthyosis described, the skin under the garters worn by the patient was normal. This suggested that compression might have some influence on the affection, and a bandage was applied to one arm to test this assumption. In a few days all the concretions under the bandage had disappeared. This fact suggests a new line of treatment for ichthyosis, and also indicates that the interference with the nutritional processes in this affection is not so severe as hitherto supposed.

Annales de la Soc. Med.-Chir. de Liege, June.

Practical Diagnosis by Microbian Antibodies. E. MALVOZ.—The presence of pathogenic microbes does not necessarily indicate that the bearer is infected by them. But if the organic fluids contain the specific antibodies—showing that they must have been elaborated as a means of defense against the pathogenic action of the microbes in question—there is no longer any doubt that the organism has been invaded by these microbes. The properties of the humors—the consequences of the reaction of the organism in defense and in immunization—testify much more certainly to the existence of infection than the discovery of the pathogenic microbes on the mucous membranes. This defensive reaction is revealed by the elaboration in certain cells of the organism of special substances whose nature is still a mystery, but which we term antibodies. These pass from the cells into the organic fluids or at least into the blood serum. They induce the specific agglutination, precipitation, bacteriolysis or globulysis, and hence have been called by various writers according to the special process under consideration, agglutinins, precipitins, antidiastases, antitoxins, etc. Their action, it has been proved, depends on the combination of the alexin, which is found normally in the blood, and the specific between-body or *sensibilisatrice*. The presence of these antibodies in the serum is the best possible evidence that the organism has been invaded by the specific microbe, that a reaction has occurred, in short, that it is having or has had the disease. The alexin does not seem to differ in various species, but the *sensibilisatrice* is specific for each. The new method of diagnosis is based on the corpuscle-destroying property of the alexin in serum rendered globulytic beforehand. If a serum containing a specific *sensibilisatrice* is added to an emulsion of the microbes in question, the *sensibilisatrice* clings to the microbes and filters out of the fluid with them. The microbes thus *sensibilized*, acquire an affinity for alexin, and when added to normal serum, take up or bind the alexin in it in the same way. But if the microbes have not been previously submitted to the action of a *sensibilisatrice*, the alexin is unaffected by them. Consequently, for diagnostic purposes, all that is necessary is to determine whether the alexin in a given specimen of serum is free or whether it has been bound by the microbes. This is easily determined by adding to the specimen of serum some red corpuscles in blood previously *sensibilized* by an antibody. If the reds are destroyed, this hemolysis or globulysis, as it is called, is the proof that the alexin is intact, and hence, it demonstrates the absence of the specific *sensibilisatrice* in the serum. Malvoz finds the serum of rabbits, rendered hemolytic for hens' blood, most convenient for this new method of diagnosis. Defibrinated hens' blood is injected into the rabbits several times in succession. The serum of the rabbits then acquires the property of destroying the red corpuscles in hens' blood by the action of the alexin contained in it. The process is visible to the naked eye from the diffusion of the red color through the fluid as the reds are destroyed. The alexin is destroyed by a temperature of 55 C., consequently the rabbit serum lost its hemolytic property if heated to this point, but the *sensibilisatrice* is not affected by the heat. Tests with animals inoculated with blastomycetes, established the presence of a *sensibilisatrice* in their blood every time, but tests of persons with cancer failed to disclose any *sensibilisatrice* in their case. This is an argument against the causal relation of the blastomycetes to malignant disease. The serum from the rabbits inoculated with the blastomycetes was heated to 55 C. and added to an emulsion of the microbes after mixing with a little normal rabbit serum, containing the normal amount of alexin. The microbes—blastomycetes in this case—absorb the alexin in case they have been previously *sensibilized* by the specific antibody, and when hens' blood is added to the mixture, the red corpuscles remain intact, and no change ensues in the shape of the corpuscles or the color of the fluid. On the other hand, in case there is no *sensibilisatrice* for blastomycetes in the serum, the corpuscles are speedily destroyed. Lambotte by tests on these principles has demonstrated the identity of the bacillus alvei with the bacillus mesentericus, which he has long maintained, but which he was unable to prove until provided with this new method of diagnosing the specific reaction of the organism to a given pathogenic agent. [See Editorial in THE JOURNAL of June 29, p. 1832.]

Bulletin Medical (Paris), July 10.

Chyliform Effusion in the Pleura. F. BARJON.—A chyliform effusion usually commences insidiously, with little or no fever, and the patient is generally lost sight of before the cure is complete. Only 13 cases of chyliform effusion were found in a recent collection of 49 cases of milky effusion in the thorax. It is characterized by the long latency, the chronic course and the large amount of fluid, rich in fat, with no glucose. A personal case is described. As the patient reacted positively to the tuberculin test and as animals inoculated with the fluid exhibited evidences of tuberculosis, Barjon is convinced that the chyliform effusion is the manifestation of a chronic infection of the pleura, determined by an attenuated bacillary infection—by the tubercle bacillus in the case related.

Nord Medical (Lille), August 1.

Cold Rectal Injections in Typhoid Fever. LEMOINE.—When for any reason it is impossible to apply cold baths in the treatment of typhoid fever, Lemoine finds that cold rectal injections are an efficient substitute. The water should be boiled and cooled to 18 or 20 C. and should be injected every two or three hours, the receptacle for the water being not more than 50 cm. above the plane of the bed. The canula should be inserted for 20 cm. and about 2 liters of water injected, very slowly, interrupting the flow from time to time so as not to distend the intestine too much. In the 32 cases in which this technique was followed, the temperature was reduced more rapidly than with the baths, but the effect was less durable. The temperature drops to the lowest point in twenty to thirty minutes after the injection, but in another half hour rises to what it was before the injection. Notwithstanding the insufficiency of the effect, the cold injections, as a rule, seem to ensure a lower temperature on the whole than the baths. The oscillations are less pronounced and the disease seems to run a more regular course. This fact he explains by the disinfectant action of the fluid as it washes out the intestine. He therefore recommends these injections, as far preferable to cold packs or applications which fatigue without really benefiting the patient. Delirium is exceptional in patients thus treated.

Presse Medicale (Paris), July 10.

Experimental Research on Smallpox. H. ROGER AND E. WEILL.—Rabbits inoculated with pus from a smallpox patient resisted the disease or survived much longer than the control animals, when they were fed on exceptionally nourishing food. Other animals fed with ordinary food rapidly succumbed to the disease. Applying these results to man, smallpox patients were given eggs, soups, etc., even during the febrile period, and the results have surpassed anticipations. Experience

has also shown that cases in which the patients refused this abundant nourishment, from lack of appetite or difficulty in swallowing, prove unusually severe with a grave prognosis. The smallpox produced in rabbits resembles more the disease as it appears in the new-born than in adults. In Roger's experience infants born to mothers in the course of smallpox, almost invariably die. Some die with a slow septicemia, hypothermia and emaciation, with no eruption. Others with these symptoms have a slight eruption characterized by small papules which dry up without suppuration. Others still may present the clinical picture of smallpox as it appears in adults.

Deutsche Med. Wochenschrift (Leipsic), August 15.

Diagnosis of Pharyngo-Esophageal Diverticulum. H. Schmilinsky.—A patient with recent pulmonary tuberculosis presented symptoms suggesting an aneurysm of the aorta, but radiography was negative. The difficulty in swallowing and the return of ingested fluids into the mouth, accompanied by mucus, indicated a diverticulum in the esophagus. Mucus was constantly rising into the mouth, especially when the patient bent forward, and pain was frequently experienced in the neck. The autopsy disclosed a typical pharyngo-esophageal diverticulum. In a similar case in a woman of 72, the symptoms had been noisy eructations, without vomiting or regurgitation of food. After a year she noticed that mucus came up into her mouth with the eructations; six months later food seemed to stick in her throat, mostly meat and bread, sometimes fluids. What she was unable to swallow returned, gurgling, into her mouth. Her chief annoyance, however, was the frequent rising of mucus into the mouth which disturbed her even in sleep. A sound introduced into the esophagus for 17 cm. encountered an obstacle. A rubber bag on the end of the sound could be inflated to the size of a pigeon's egg without discomfort, but could not be withdrawn, showing that it must be in a diverticulum with a narrow entrance. The esophagoscope confirmed the existence of a diverticulum, the entrance 14 cm. below. The Roentgen rays also showed a diverticulum very distinctly after the patient had swallowed a little bismuth. The bismuth deposits could be seen in the diverticulum and could be stirred up with a sound. As they probably caused the mouth of the sac to gape and admit air, the diverticulum itself cast a shadow on the screen.

Diagnosis of a Deep Diverticulum in the Esophagus. W. Zweig.—There are only seven cases on record of a diverticulum low down in the esophagus, but three have been observed recently at Boas' clinic. Improved diagnostic technique will probably render their discovery more frequent. Zweig introduces a tube with a funnel-shaped opening into the esophagus. It almost invariably passes into the diverticulum. A second similar tube is then introduced, and this always passes on into the stomach. The first tube is then filled with a solution of methylene blue, the amount calculated to correspond to the capacity of the diverticulum, previously determined by aspirating the contents. The tube in the stomach is then withdrawn, if the blue solution is held in an actual diverticulum; the stomach tube will show no traces of the stain, while if the disturbances have been caused by a mere dilatation of the esophagus, the stomach tube will be stained and will contain more or less of the blue fluid. Radiography after the patient has swallowed bismuth, confirms the diagnosis. In none of the three cases was there any vomiting of food from a previous day. Swallowing was painful in only one case. It was impossible to obtain any information from gastrodiaphany. Attempted inflation of the stomach with carbonic acid caused the inflation of the diverticulum alone in two cases, with intense oppression and expulsion of foam. Zweig recently had a case of dilatation of the esophagus under observation. The food ingested seemed to stop just above the stomach where it remained until the man drank water, when it all slipped at once into the stomach. This phenomenon had been noted for twenty-seven years and had never caused any other disturbance. He is now 63 years old. He was run over by a carriage and had a rib fractured in 1863. The two-tube test disclosed a moderate dilatation of the esophagus 44.5 cm. below the teeth.

Mitteilungen a. d. Grenzgebiete (Jena), vii, 3.

Thyroidism in Case of Simple Goiter. J. von Mikulicz.—The functions of the thyroid gland are not necessarily disturbed in every case of simple goiter. Such disturbances are rather the exception than the rule. In 117 cases of uncomplicated goiter, 48 showed no other symptoms or merely symptoms of compression of adjacent organs, especially the trachea. In 69 there were nervous symptoms indicating hyperfunction of the thyroid gland, with or without indications of compression. Study of these various cases shows that a moderate degree of tachycardia—112 the maximum—must be included in the symptom-complex of a goiter unaccompanied by dyspnea or alterations in the heart and not complicated by Basedow's disease. There is no exopthalmus, but nervous symptoms were noted in nearly all of the last group of 69 patients: two symptoms in 9; three in 13; four in 8; five in 2 and six in 2. In the last 2 cases the entire picture of restlessness, subjective palpitation, angina pectoris and tremor of hands and tongue, coexisted with headache and vertigo. Tremor was the most frequent symptom and headache next. The clinical picture of the simple goiter in his cases, therefore, included a moderate amount of tachycardia, certain nervous symptoms, alone or in combination, and slight suggestions of the ocular symptoms of Basedow's disease in a few instances. He calls this the syndrome of spontaneous thyroidism. Basedow's disease, therefore, can not be explained by hyperfunction of the thyroid gland alone. The goiter, however, is an important factor, whether we attribute the disease to a primary neurosis or to any other kind of autointoxication. The thyroid gland in the circulation of the subject of Basedow's disease acts like a multiplier. The goiter is not a primary, but merely one of the co-ordinated symptoms of the disease. The thyroid gland becomes hypertrophied on the basis of the same influences which induce the manifold trophic disturbances in other organs and tissues. The hypertrophy of the gland impels it to excessive function, and thus the symptoms of spontaneous thyroidism are superposed, multiplying the entire clinical picture. Removal of the thyroid gland abolishes the multiplier, and renders recovery possible, either spontaneous or assisted by the usual internal measures. The failures to cure after extirpation of the gland are due to the severity of the original affection, which maintains the syndrome in spite of the removal of the multiplier. In the cases of Basedow's disease without a goiter, the primary disturbances are so severe that the typical clinical picture is produced without the aid of the multiplier.

Relations Between Erysipelas and the Streptococcus. P. Klemm.—The streptococcus induces serous inflammation as the principal effect of its action. Its pyogenic and necrotizing properties are only secondary and are not manifested except under certain conditions. The streptococci usually find their way into the circulation through the lymphatic apparatus of the throat, especially through the tonsils. Swelling of the joints, etc., in follicular tonsillitis, scarlet fever, etc., is determined by a serous or sero-fibrinous transudation into the cavity of the joint without destruction of tissue. Complete restitution is the rule, while a staphylococcus infection destroys the tissues and forbids anatomic and functional restitution. Notwithstanding the apparent differences between a simple surface erysipelas and an intramuscular streptococcus phlegmon, both processes are absolutely alike, and the difference between them is merely the mechanical conditions of the tissues involved. Klemm therefore considers erysipelas a rapidly spreading serous lymphangitis, located either above or below the fascia, and with the streptococcus as the causal agent. He is convinced that infection occurs by contact, as he never succeeded in inducing it or in developing cultures of the streptococcus from the air. The practical benefit of his researches is that he has succeeded in banishing erysipelas from his hospital. All patients with suppurating streptococcus affections, such as otitis media, follicular tonsillitis, etc., are liable to transmit the streptococcus infection to others whose skins or throats are in a specially receptive condition. New patients are examined for streptococci and if they are discovered, the patients are put in a special streptococcus ward with separate at-

tendants. Especial attention is paid to tuberculous fistulæ which are liable to become infected with streptococci at any moment. Every precaution is taken to reduce the chances of infection to the minimum. Dressings are cut off instead of being unwound, and are placed at once in disinfecting fluid. He is inclined to believe that an already existing streptococcus mycosis renders the body more resistant to a second infection, as not a single case of erysipelas has developed, even in the streptococcus wards since these measures have been adopted.

Functional Results After Operations on the Stomach. R. Rencki.—Seventeen cases in which operations were performed on the stomach for the cure of round ulcer or benign stenosis of the pylorus, have been followed to date. The cure has been complete and permanent in all those cases in which the chemistry of the stomach has returned to normal. All the patients have been wonderfully relieved and improved, but a few with persisting hyperchlorhydria complain of heartburn and oppression in the stomach, and a small number exhibit symptoms of a recurrence of the ulcer. The fate of a round ulcer depends on the chemistry of the stomach. As long as there is excessive secretion of HCl we can not be sure that the ulcer has healed over or that another may not recur, as in one of the cases reported. Hyperchlorhydria is the cause of the round ulcer, and it should never be neglected, for fear of this termination. In all other respects the functional results of the gastro-enterostomy have been satisfactory from every point of view.

Muenchener Med. Wochenschrift, August 13.

Diagnosis of Malignant Tumors. E. Leser.—Out of 392 patients operated on for malignant tumors in the last eleven years, 305 have been traced to date and 78 found in good health. They include 9 cases of carcinoma of the face, 16 of the breast, 29 of the alimentary canal, 3 of the testicles and 2 of the kidneys. None of the patients with carcinoma of the tongue or esophagus is still alive. The operation was performed over ten years ago in 7 cases; over six years in 25, and over three years in 29. The diagnosis of a carcinoma of the stomach or intestines is usually only presumptive, as there are no typical symptoms. The insignificant, invisible hemorrhages recently described by Boas (see The Journal, June 8, p. 1670), may prove of valuable assistance. Alternation between diarrhea and constipation is important and should suggest malignant disease in a patient between 35 and 50; and the feces should be carefully examined with the microscope. Digital examination in profound narcosis should never be neglected. In all cases an exploratory laparotomy should be done on the mere suspicion of carcinoma. When the diagnosis becomes positive, the patient is already doomed. Leser operates, therefore, at the earliest moment and does not refuse to operate even in advanced stages, as the patient's condition is rendered so much more tolerable. He adds that 14 of his 42 patients operated on for carcinoma of the rectum, are still alive, several more than seven or eight years after the operation. A number had been operated on elsewhere previously for one to three recurrences. The lymph glands in the vicinity—even those apparently sound—should be extirpated with the neoplasm and the connecting routes and connecting tissue. The cosmetic effect is less satisfactory, but the curative results are far better. He removes the entire lip and says that the entire tongue must be ablated in case of a carcinomatous growth—partial operations are insufficient. Nature compensates the absent tongue by drawing up the tissues beneath and down from the cheek until almost a new tongue results. Sharp instruments should be used as little as possible; the neoplasm should be enucleated with the fingers, aided by the closed scissors, remembering that the tendency to spread is always in the direction of least resistance. Leser ascribes his successful results to his strict enforcement of the orders that each patient must return for examination regularly, at first every eight to ten weeks, no matter how well he feels. This is the only way to forestall recurrences. He has one patient in permanent robust health after five operations for recurring carcinoma, and others after three operations. Recurrences require prompt operating and no one but the physician is able to detect their approach.

Atropin Treatment of Ileus. Gebele.—If an internal remedy is indicated in case of ileus, especially in ileus from paralysis, morphin is much to be preferred to atropin. In all other cases, surgical intervention is the only treatment. But in all cases of ileus benefit may be derived from lavage of the stomach and injection of several liters of oil, with, possibly, 70 to 100 gm. olive oil internally, repeated several times a day. An exploratory laparotomy is much to be preferred to the administration of atropin which masks the symptoms and allows the favorable moment for intervention to pass, as occurred in a fatal case reported.

Syphilitic Sciatica. A. Biewerth.—Mendel has recently described three cases of syphilitic sciatica and Niewerth has had occasion to treat another. All were promptly cured by mercurial treatment after the usual remedies, including potassium iodid, had demonstrated their inefficacy. Vapor baths caused violent exacerbations of the pains in one case, suggesting the existence of an acute inflammatory process.

Application of the Stomach Sound in Case of Ulcer. W. Flade.—The information that can be derived in regard to ulcer of the stomach from introduction of the stomach sound or even from artificial inflation of the stomach with air or carbonic acid, is not very important. On the other hand, the procedure is by no means so harmless as generally accepted. The danger of perforation is particularly great in case of young women, and is especially imminent when the ulcer is located in the anterior wall. Severe hemorrhage seldom results, but the injury caused by the sound may entail the imperceptible hemorrhages to which Boas has called attention. The use of the stomach sound should be absolutely rejected in case of an established ulcer, and also in many other gastric affections in which it is now currently used. The writer is a specialist for gastro-intestinal affections and speaks from a wide experience.

Therapeutische Monatshefte (Berlin), July.

Treatment of Cutaneous Affections With Cold. E. Saalfeld.—Very favorable results are reported in this communication from the application of liquefied air, ethyl chlorid or a mixture of the latter with methyl chlorid. Saalfeld asserts that the prompt improvement and the convenience of this method of treatment commend it for all chronic cutaneous affections, with much infiltration, and in which it may be anticipated that resorption will follow an acute, artificially induced inflammation.

Symptomatic Treatment of Cough. M. Saenger.—One of the best measures for relieving a cough is the inhalation of the vapors of menthol. Saenger says that an inexpensive and very effective method of inhaling is to warm a few crystals of menthol in a spoon over a candle for five to twenty seconds and then inhale the fumes, repeating as often as necessary. A simpler way, perhaps, is to pour ten to twenty drops of a 50 per cent. alcoholic solution of menthol on the palms and then hold them, like a mask, over the face. In case of excessive mucous secretions in the throat, he recommends injecting 1 or 2 gm. of a 10 to 20 per cent. solution of menthol in olive oil, directly into the throat. Violent coughing is induced which expels all the old accumulations of mucus, and enough of the menthol is retained to accomplish the purpose of an inhalation. This measure in chronic bronchitis or phthisis will arrest the cough for one to five hours after the first paroxysm is past, or even longer, if supplemented by inhaling as above described. It has a cumulative action and the intervals should gradually be lengthened. These injections have proved extremely effective in whooping cough. Hemorrhage is a contra-indication. [A writer in the *Bull. Med.* has recently suggested that the simplest method of inhaling menthol is to chew a crystal and then breathe through the mouth. Ed.]

Wiener Klin. Rundschau, August 11.

Case of Poisoning With Nitrobenzol. V. Simerka.—As nitrobenzol is not dissolved by water or the stomach secretions, it remains unchanged for an interval—usually about half an hour—after its ingestion. Consequently, thorough

lavage of the stomach is indicated until the fluid aspirated is odorless. Alcohol and oils dissolve it and all substances containing them, such as milk, wine, etc., should be avoided. The fatal cases on record were not treated with lavage. In two of the published cases the symptoms of intoxication were apparent at once. The only constant symptoms are the odor of the breath and the cyanosis. The blood becomes brownish and the entire central nervous system is more or less affected, with various manifestations. The dose in the fatal cases was 150, 20 or 15 gm. Serious intoxication has followed ingestion of three drops and recovery has followed ingestion of as much as 30 gm.

Wiener Med. Blaetter, July 4 and 11.

Atropin in the Differentiation of Bradycardia. A. JOHANESSEN.—Bradycardia may be caused by a direct or reflex irritation of the bulbar vagus center, or by some lesion of the automatic motor center of the heart in the myocardium. These primary causes can be readily differentiated by the subcutaneous injection of 1 mg. of atropin. In case the bradycardia is of intracardial origin, it continues unaffected by the action of the atropin. But if it is due to irritation of the vagus center, it is arrested by the atropin, as the latter paralyzes the heart-retarding apparatus—the terminals of the vagus in the heart. Several cases are described, with post-mortem discovery of sclerosis of a coronary artery in the cases in which the bradycardia persisted uninfluenced by the atropin. In the case in which the bradycardia was arrested by the atropin and the pulse increased at once from 45 to 110, fresh thrombosis was found in the left middle cerebral artery with softening of a portion of the internal capsule, the optic thalamus, etc. The heart was intact.

Ztft. f. Orthopaedische Chirurgie (Stuttgart), ix, 2.

Operative Treatment of Congenital Luxation of the Hip-Joint. A. CODIVILLA.—In cases in which the parts offer an obstacle to the reposition of the head of the femur, Codivilla levers the latter into place by an instrument shaped like a narrow, concave spade with a hook at the tip. It is inserted under the muscles and the capsular ligament until the hook fits over the anterior inferior spine, which affords it a solid support. The handle is then pushed downward, while the lower end of the femur is swung around to meet it. The combined leverage of the spade and of the lower end of the femur forces the head in the concavity of the spade, along into its normal position. If the complete absence of the acetabulum is the cause of the luxation, he remedies this by an extra-articular operation, detaching the capsule and taking a tuck in it, with freshening of the periosteum and ilium. If an incision in the capsule is necessary, he uses an instrument similar to König's mouth-opener to tear the capsular isthmus, supplementing it with the lever above described. The head of the femur must be left covered with its capsule, which will reduce the danger of ankylosis. The hip-joint should be opened up through an incision along the anterior margin of the tensor fasciæ latæ, continued upward along the iliac crest. The tensor fasciæ latæ and a portion of the gluteus minimus and medius is then detached from the ilium.

Gazzetta degli Ospedali (Milan).

Antitubercuiosis Serum in 1900-1901. MARAGLIANO.—THE JOURNAL has published from year to year Maragliano's reports of the results of treatment of tuberculous patients with his antitoxin. In the year closed in June, 130 out-patients were treated; 36 were clinically cured, including 17 with fever and destructive processes—with a cavity in 3; 58 were improved and the disease remained stationary in 31. In the remaining 5 the disease progressed. None of the advanced cases treated in the institute was cured. It is impossible for the antitoxin to cure without the assistance,—the re-enforcement of the organism. When the latter is unable to afford this assistance, the antitoxin is comparatively powerless. It is also unable to cope with the toxins from micro-organisms other than the tubercle bacillus. Maragliano has always maintained that tuberculosis is essentially a toxicosis—that the tubercle bacillus is harmful on account of the toxins it produces.

August 4.

Pathogenesis of the Disturbances From Helminthiasis. G. G. BATTISTA.—Four cases are described showing the various disturbances to which children with helminths are liable. In one, an acute intestinal catarrh with typhoid symptoms was accompanied by a diffuse bronchitis and was followed by death in twenty-nine days. In another, the only symptom was croup. After death from suffocation, an ascaris was found in the larynx and a bunch in the esophagus. Another child suffered from frequent, sudden bronchial attacks with fever, all symptoms vanishing after expulsion of a few ascarides. In another child a pneumonia, accompanied by fever and abdominal pains, rapidly subsided after expulsion of a few ascarides. The irritating action of the parasites in the intestines had probably irritated the peripheral fibers of the vagus and induced the bronchial spasms in these and other cases, or the relaxation of the pulmonary vessels in a bronchial catarrh or actual asthma. The irritation may be in the respiratory organs or in the respiratory center. There may be at the same time an intestinal autointoxication, induced by the mechanical action of the parasites, which may influence the vasomotor center or the local ganglia, inducing the angioneurotic disturbances. These assumptions would explain the epidemics of febrile asthma described by Bellotti, and the bronchial asthma from gastrointestinal autointoxication mentioned by De Dominicis, and also the development of pneumococcus infection from pneumococci vegetating harmlessly in the lungs until their latent activity is aroused by some—possibly slight—thermic, chemical or mechanical alteration in the tissues on which they are lying. The reflex irritating action of helminths in the intestines on the innervation of the pulmonary vessels, is similar to the effect of an external trauma on the thorax or the trauma of a surgical operation, which induces vasomotor disturbances and thus prepares the soil for the development of hitherto harmless pneumococci in the lungs.

Absorption by the Large Intestine. G. BARBIANA.—The large intestine has great absorbing power although less rapid than the stomach. Potassium iodid appears in the urine twenty minutes after injection into the large intestine, salol in forty-five, quinin in fifty, and chloroform and ether in sixty minutes. The influence of chloral is felt in ten minutes and apomorphin in four. The minimal fatal dose of a poison injected into the large intestine in animals kills them exactly as it does when taken by the mouth. Absorption is most rapid near the ileo-cecal valve and least rapid in the middle portion. The absorbing power can be increased by the mechanical action of water or by the chemical action of sodium sulphate. The latter stimulates the mucosa to increased function. The intestine does not absorb alimentary substances as well as it absorbs medicine. Even predigested foods are not absorbed in sufficient amounts to supply the needs of the organism except temporarily. The details of this research are given in the *Policlinico*, viii, C.

August 11.

Safe Limit in Operating on Veins. D. TADDEI.—Continuing his experimental research on suturing and lateral ligature of veins, Taddei considers himself justified in proclaiming that the amount of constriction which the veins will bear depends on their distance from the heart. It is possible to reduce the caliber of a vein by one-half, without ill results, if the vein is straight and not far distant from the center of circulation. But if at a distance, and if the conditions are unfavorable, as in the case of the femoral vein for example, the lumen is liable to become obliterated by a thrombus.

Iodipin Test of Gastric Motility. SCHUPFER has been experimenting with the iodipin test of the motor function of the stomach in Baccelli's medical clinic. He is impressed with its simplicity, facility and the general reliability of its results. He warns that icterus is a contra-indication, even for several days after the icterus has disappeared. By combining the iodipin and the salol tests it is possible in some cases to determine from the results obtained the permeability of the pancreatic duct.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 15 to 21, 1901, inclusive:

Earl S. Bullock, contract surgeon, leave of absence granted.

William H. Corbusier, major and surgeon, U. S. A., member of a retiring board convened at Governor's Island, N. Y.

G. Parker Dillon, contract surgeon, from Jefferson Barracks, Mo., to San Francisco, Cal., en route for service in the Division of the Philippines.

Charles R. Greenleaf, colonel, asst. surgeon-general, is detailed to represent the Superior Board of Health of the Philippine Islands at the meeting of the American Public Health Association, to be held in the city of Buffalo, N. Y., Sept. 16-20, 1901.

Alva R. Hull, contract surgeon, from San Francisco, Cal., to duty at Jefferson Barracks, Mo.

Richard W. Johnson, major and surgeon, U. S. A., member of a retiring board convened at Manila, P. I.

John S. Kulp, captain and asst.-surgeon, U. S. A., member of a board convened in New York City, N. Y., Sept. 24, 1901, to examine officers for detail to duty with the Ordnance Department.

Henry Lippincott, colonel, asst. surgeon-general, member of a retiring board convened at Governor's Island, N. Y.

Walter D. McCaw, major and surgeon, U. S. A., member of a retiring board at Manila, P. I.

Frederick H. Morhart, captain and asst.-surgeon, Vols., sick leave extended.

William E. Musgrave, contract surgeon, from San Francisco, Cal., to duty at the Army and Navy General Hospital, Hot Springs, Ark.

Louis A. Thompson, contract surgeon, leave of absence granted on account of sickness.

Edwin P. Tignor, contract dental surgeon, from Baltimore, Md., to duty at Fort Riley, Kan.

Allie W. Williams, lieutenant and asst.-surgeon, U. S. A., member of a board in New York City, N. Y., to examine officers for detail to duty with the Ordnance Department.

Robert N. Winn, lieutenant and asst.-surgeon, U. S. A., member of a board at Fort Riley, Kan., to examine officers for promotion.

Charles E. Woodruff, major and surgeon, U. S. A., member of a board at Fort Riley, Kan., to examine officers for promotion.

Appointments, Promotions, Retirements, Etc.,

Of Army Medical Officers recorded in the Adjutant-General's office, between July 15 and August 15, 1901. Previous notices of this character were published in THE JOURNAL of August 10, 1901. No appointment, promotion or other change in the status of medical officers of the Regular Army was recorded during the month. In the Volunteer Army the following were reported:

Appointments.—To be surgeon, with the rank of major: Ralph S. Porter, of Illinois; Robert Burns, of New Hampshire; Captain Vernon K. Earthman, asst.-surgeon. To be asst.-surgeons, with the rank of captain: George H. Calkins, of New York; W. Turner Wooten, of Maryland; Harry R. Lemon, of Illinois; Luther S. Harvey, of Florida; Michael A. Rebert, of Pennsylvauia, and Henry du R. Phelan, of California.

Honorably Discharged.—Major Franklin A. Meacham, surgeon; Major Frank A. Artand, surgeon; Captain Thomas T. Jackson, asst.-surgeon; Captain Edwin P. Hayward, asst.-surgeon; Captain Compton Wilson, asst.-surgeon; and Captain Henry H. Rutherford, asst.-surgeon.

Commissions Vacated by New Appointments.—By Major Damaso T. Laine, appointment as major and surgeon, U. S. Vols. (act of Feb. 2, 1901); by Captain Vernon K. Earthman, asst.-surgeon, by appointment as major and surgeon, U. S. Vols.

Mustered Out of Service, Porto Rico Regiment.—Captain Jose Lugo-Vina, asst.-surgeon, and Lieutenant Simon Moret, Jr., asst.-surgeon.

Navy Changes.

Changes in the Medical Corps of the Navy, for week ending Aug. 24, 1901:

Asst.-Surgeon C. R. Burr, detached from the *Monongahela*, ordered home, granted leave of one month, and resignation accepted to take effect at the expiration of that period.

Medical Director T. J. Turner, retired, died at Mackinac Island, Mich., Aug. 20, 1901.

P. A. Surgeon D. H. Morgan, detached from Norfolk Hospital and ordered to the *Monongahela*, August 26.

P. A. Surgeon D. A. Carpenter, detached from the *Franklin* and ordered to the Norfolk Hospital.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service, for the seven days ended Aug. 22, 1901.

Surgeon H. R. Carter, granted leave of absence for fourteen days from Aug. 20, 1901. Leave of absence granted by Bureau letter of August 16 revoked.

P. A. Surgeon J. O. Cobb, granted ten days' extension of leave of absence.

P. A. Surgeon J. B. Stoner, granted leave of absence for seventeen days from September 2.

P. A. Surgeon G. B. Young granted eight days' extension of leave of absence from August 22.

Asst.-Surgeon L. D. Fricks, relieved from duty in the Philippine Islands, and directed to proceed to San Francisco, Cal., and await orders.

Asst.-Surgeon M. K. Gwyn, relieved from duty at Louisville, Ky., and directed to proceed to San Francisco Quarantine and report to the medical officer in command for temporary duty; thence to proceed to Manila, P. I., and report to the chief quarantine officer for duty.

Asst.-Surgeon T. D. Berry, relieved from duty at Cienfuegos, Cuba, and directed to proceed to Louisville, Ky., and report to the medical officer in command for duty and assignment to quarters.

Asst.-Surgeon Edward Francis, relieved from duty at the Immigration Depot, New York City, and directed to proceed to Washington, D. C., and report to the director of the Hygienic Laboratory for duty.

A. A. Surgeon W. R. Hicks, granted leave of absence for ten days from August 15.

Hospital Steward M. Walerius, granted leave of absence for seven days from August 1, under paragraph 181 of the regulations.

Hospital Steward R. F. Troxler, granted leave of absence for one month from August 20.

Hospital Steward J. E. Beck, granted leave of absence for three days from August 15, under paragraph 181 of the regulations.

Hospital Steward M. H. Watters, granted leave of absence for seventeen days from September 3.

BOARD CONVENED.

Board convened to meet in Philadelphia, Pa., Aug. 21, 1901, for the physical examination of an applicant for appointment as lieutenant in the Revenue Cutter Service. Detail for the Board: Surgeon H. W. Austin, chairman; Asst.-Surgeon J. S. Boggess, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 24, 1901:

SMALLPOX—UNITED STATES AND INSULAR.

California: San Francisco, Aug. 8-11, 2 cases.

Georgia: Pickens County, July 1-Aug. 10, 37 cases.

Illinois: Chicago, Aug. 10-17, 1 case.

Massachusetts: Boston, Aug. 10-17, 2 cases.

Nebraska: Omaha, Aug. 3-10, 1 case.

New Jersey: Jersey City, Aug. 11-18, 1 death; Newark, Aug. 10-17, 4 cases.

New York: Elmira, Aug. 3-17, 4 cases; New York, Aug. 10-17, 36 cases.

Pennsylvania: Aug. 10-17, Philadelphia, 6 cases, 1 death; Pittsburg, 2 cases.

Utah: Salt Lake City, Aug. 10-17, 4 cases.

Washington: Tacoma, Aug. 4-11, 1 case.

Philippines: Manila, June 22-July 6, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, July 27-Aug. 3, 1 case.

Belgium: Antwerp, July 27-Aug. 3, 1 death.

Colombia: Panama, Aug. 5-12, 7 cases.

France: Paris, July 27-Aug. 3, 8 deaths.

Great Britain: Glasgow, Aug. 2-9, 2 cases; Liverpool, July 27-Aug. 3, 1 case; London, July 27-Aug. 13, 1 death.

India: Bombay, July 16-23, 2 cases, 2 deaths; Calcutta, July 13-20, 6 deaths; Karachi, July 14-21, 1 case, 1 death; Madras, July 6-19, 16 deaths.

Italy: Messina, July 27-Aug. 3, 11 cases, 4 deaths.

Mexico: Mexico, Aug. 4-11, 1 case.

Russia: Moscow, July 22-27, 5 cases, 1 death; St. Petersburg, July 13-27, 3 cases.

YELLOW FEVER.

Colombia: Bocas del Toro, Aug. 6, 1 case: total cases to date, 8.

Costa Rica: Port Limon, Aug. 3-10, 4 cases, 2 deaths.

Cuba: Regla, Aug. 7, 1 case: San Antonio de los Banos, Aug. 8, 1 case.

Mexico: Vera Cruz, Aug. 3-10, 2 cases, 1 death.

CHOLERA.

India: Bombay, July 16-23, 10 deaths; Calcutta, July 13-20, 23 deaths; Madras, July 6-19, 2 deaths.

Japan: Yokohama, July 13-20, 1 case, 1 death.

Java: Batavia, June 29-July 6, 33 cases, 23 deaths.

PLAGUE—FOREIGN AND INSULAR.

Australia: Brisbane, March 1-April 30, 15 cases, 3 deaths.

India: Bombay, July 16-23, 107 deaths; Calcutta, July 16-20, 11 deaths; Karachi, July 14-21, 7 cases, 1 death.

Philippines: Cavite, July 6, 3 cases; Concepcion, July 6, 1 case; Malabon, July 6, 3 cases; Malolos, July 6, 6 cases; Manila, June 22-July 6, 43 cases, 18 deaths; Naic, July 6, 3 cases; Paranaque, July 6, 3 cases; Santa Rosa, July 6, 1 case.

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Original Articles.

THE NATURE OF THE CANCEROUS PROCESS.*

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BUFFALO, N. Y.

Like a huge and frowning sphinx at the very gateway or entrance to the field of surgical pathology has stood for centuries the great problem of the nature of cancer. This has, at least until recently, remained the inscrutable mystery of ages, although, like the great sphinx at Gheizeh, it has been always a target for shafts of all kinds. Almost every theory which the ingenuity of the human race could conceive has been advanced to account for the existence of cancer, while each theory has been ardently supported until proven unsatisfactory, or often much longer. To-day, while we desire always to pay due deference to the scholars and thinkers of times past, the only hypotheses which are even worth mentioning in this connection can be characterized as the dietetic, the embryologic, the irritation, and the parasitic theories. The dietetic theory is of importance only in case we may succeed in maintaining the parasitic nature of the disease, when it may become a subsidiary question as to whether certain raw or uncooked food may furnish at least some of the parasites in question. So far as can be seen, only to this extent can the matter of diet have anything to do with the nature of cancer. How far it may come into consideration in explaining rapidity of growth, or even susceptibility to infection, is another matter, also of subsidiary importance.

The embryologic theory of Cohnheim was a vast stride in advance, in that it offered the explanation of many curious and anomalous growths, some of which are included among the dermoids and the teratomata, while others are more distinct neoplasms of benign nature; but nothing contained within the hypothesis can ever explain the peculiar behavior of cells which constitutes the essential feature of malignant growths. Cohnheim's explanation is sufficient to account for the presence of certain cells in unusual localities, but not for their peculiar behavior. The relation of irritation and trauma to cancer formation has always attracted attention, and to-day figures perhaps as prominently as it ever did in this respect. That malignant growths frequently do follow local injuries and local irritations is most certain. The same thing is exactly as true of certain of the infectious granulomata, especially of tubercular lesions, and viewed in its proper aspect we must hold that, while serious injuries provoke extensive and serious reaction, minor injuries are often followed by such incomplete reaction and such altered tissue relations as to leave points of least resistance, which in tuberculosis, as in cancer, are favorite foci for infection. Granting the ubiquitousness of the infectious agent, and a point of lessened resistance, one may easily appreciate the relation of trauma to cancer. The same is true of that constant but trifling traumatism which we term local irritation, as, for instance, from a dirty pipe or a jagged tooth. In connection with such irritation, there must always be an abrasion of surface, and this abrasion always invites infection. Nevertheless, the relation between irritation or trauma and cancer is an indirect one, and, while accounting for certain predisposition, does not account for the active disease.

The parasitic or infectious theory of cancer is the only one which satisfies the needs of both the pathologist and of the clinician. There has always been a strange apathy among the clinicians who meet so often the antemortem features of this disease, but who apparently remain so aghast at its mysteries that they have been content to leave its solution to the microscopist. The histologists, on the other hand, have their only opportunity of studying the disease in dried and hardened sections beneath the lens. The view points of these respective gentlemen have been so widely different that they have rarely, if ever, gotten together and discussed the situation on common ground. All examinations of fresh and still warm specimens and all interpretation of the phenomena during life have been neglected in this too minute division of labor. It was the realization of all this that impelled me years ago to outline the character of the investigation required, and to secure from the Legislature of the State of New York the facilities for furthering it. In a paper published years ago,[1] I insisted that the disease must be studied by the pathologist, the biologist, the chemist, the histologist, and the clinician, all working in close association, and not at long range. In the Laboratory that was founded through the appropriation of the New York State Legislature, provision was made for associating all these specialists, and the result has been that very marked advance has been made in our knowledge of the disease. The man who knows the disease solely by what he has learned from deadhouse specimens is in poor position to explain its course, whereas the man who has simply watched the disease during life may have strong views about its infectious nature, which, however, he can justify by nothing more than by analogy, but the combination of clinical observation with experimental and laboratory work is sure to solve this problem, if it be not already solved, in a way as brilliant and as helpful as did similar researches reveal the mystery of tuberculosis.

* Read in the Symposium on the Surgical Aspect of Carcinoma, before the Section on Surgery and Anatomy, at the Fifty-second Annual Meeting of the American Medical Association.

1. New York Medical Record.

To-day, you will with me hold this to be true, that the history of absolute failure during times past to demonstrate an intrinsic cause, combined with accurate clinical observation and constant contact with cases, with a study of the disease as it occasionally occurs in endemic form, with the arguments by analogy (upon which I shall elaborate in a moment), and with recent microscopic studies, all conspire to stamp the disease as due to an extrinsic cause, i. e., to be parasitic in origin. Thus far one may safely go without transgressing well-defined limits. Are we now able to go further and say that the parasites have been discovered? For myself, I do not hesitate to answer this positively in the affirmative; that is, I am firmly of this opinion, based upon work done elsewhere, and especially upon that done, to my own positive knowledge, in our own laboratory, and corroborated apparently by the independent investigations of Pfeiffer, Sawtschenko, Sjobring, Eisen, and most recently, of Max Schüler, whose new monograph just published is to me a striking, independent and beautifully satisfactory demonstration of every statement that has emanated from the Buffalo Laboratory.

The arguments that can be adduced in favor of the parasitic hypothesis can be summarized in brief space without consuming too much time. For this purpose, take first the argument by analogy, beginning with the lower forms of life. Tumors in trees and plants are well known to vegetable pathologists and botanists. They occur so often as to escape notice. They vary in size from the most trifling gall to those large woody masses known as xylomata, which bring about the eventual destruction of the tree. They are frequently spoken of as tree cancers. These are due almost invariably to a species of infection. In the case of the so-called galls, the infecting agent or parasite is some minute insect which disturbs cell growth and produces cell proliferation. In the oak genus alone, for instance, there are known over eighty varieties of nut galls produced in this way. In other instances the first injury is traumatism, or its equivalent, such as is produced by the freezing of water contained within the grooves of the bark and the consequent splitting open of this protective covering, with its possibility for infection of the growing wood beneath. Through this laceration infectious agents enter from without and produce similar results. When carried to the extreme, the nutrition of the limb, or of the entire trunk, may be so far disturbed as to determine the death of the whole, or a part, of the tree. Were parasitic agents entirely excluded there would be no such thing as cancer of trees. Could they be excluded, every laceration of bark would heal, as does any protected wound in animal forms, and the result would be protection from irritation and normal repair. The more one studies tumor formation in the vegetable kingdom, the more striking will this analogy become.

Comparative pathology will furnish many other arguments. Tumors are common in the lower animal forms and would be found much more so if our observations were more minute and exact. Ten years ago L. Pfieffer described, with extreme care and minute illustration, various forms of tumors occurring in many of the insects and invertebrate animals, all of which were produced by protozoa. The higher we go in the animal scale, the more closely do these tumors resemble those of human beings, until histological characteristics are almost exactly similar. One can not avoid the conclusion that tumors in animals and man are due to the same general causes. If, then, their existence in animals can be proven to be of parasitic origin, it strengthens the conclusions in favor of a similar origin for such lesions in man.

One of the strongest of all arguments, and one which is really irrefutable, is that which we may get from the study of well-known infections which produce tumor formations. Take, for instance, the so-called infectious granulomata. The essential differences between these and cancers are not their histologic structure, but the fact that we know their minute causes. These tumors which used to be included with malignant tumors have been put in a class by themselves, and their embryologic and every other characteristic taken away from them for the purpose of classification, simply because their causes are now well known; and modern writers have drawn very sharp lines between these tumors about which they have learned much and cancers about which they know but little. And yet these infectious granulomata are in many instances just as fatal as are the true cancers, and are amenable to the same methods of treatment and permit of the same general management; i. e., they are distinctly surgical lesions.

Take again the matter of metastasis. There is no known infectious disease characterized by metastasis, from the most acute of the septic or pyemic type to the slowest manifestations of tuberculosis, in which we do not regard metastatic lesions as one of the principal evidences in favor of their infectiousness. Why pathologists have been so loth to see in similar manifestations of cancer a like evidence of its own infectiousness I have never been able to understand. If it means anything in one case it certainly has exactly the same meaning in the other, and yet men have been blind to it for centuries.

Take again the matter of the local infectivity of cancerous lesions. There is the case recently reported of a woman who had an extensive epitheliomatous ulcer on the side, following a large burn. As a result of the cicatrix, her arm was bound down to her side and a cancerous ulcer appeared also on the inner side of her arm. Such a case as this means local contact infection, and is more weighty as evidence than one hundred failures to reproduce the disease by implantation. The numerous repeated and now well-known instances in which cancerous infection has followed the track of such instruments as the trocar, for example, afford other evidences whose value is undeniable. Aside from anything that the microscope may show, a few cases of this kind will have more value than all the failures of all the experimenters of the past century.

Next to the microscopic appearances of these growths, we have had almost numberless hypotheses advanced to account for the well-known fact that in and between the cells of cancerous growths are seen peculiar forms or particles which have been regarded by some as parasites, by others as products of cell degeneration, and by others yet as pure artefacts. It has been hard for observers to prove that they are cell degenerations and there are wide differences of opinion between those who hold to this view, as well as among those who regard them as parasites. Certain it is that no such appearances are noticed in healthy tissues or in the infectious granulomata or in the truly benign tumors. They must be either cell degenerations or parasites. No one has even been able to reproduce such degenerations under other circumstances, nor are they known or scarcely even named. On the other hand, exactly similar appearances

have been produced in large numbers after inoculation or experimentation. In our Buffalo Laboratory, we could show thousands of slides illustrating these familiar appearances. They are inimitable except after the introduction of cancerous material. Thus only they are reproduced.

It is true that observers have differed widely regarding their parasitic nature. Some have regarded them as low animal forms, some as low vegetable forms. Their exact nature is of secondary importance if their parasitic rôle can only be established. The first thing to prove is that cancer is of parasitic origin. Can this be done? It has been done, for instance, in the case of malaria where the parasites are seen inside as well as outside of the blood corpuscles, and, although we as yet know little, if anything, about their biologic characteristics, we nevertheless accept them as parasites. Exactly similar appearances can be noted in and around the cells of rapidly growing cancers, and especially in parts where growth is most recent and rapid. Moreover, if scrapings be taken from a cancer while still fresh and warm, there may be observed under the lens unmistakable ameboid movements of many of these bodies which, when stained in sections, are seen in locations mentioned above.

It is perhaps more or less negative evidence and yet it is perfectly proper to say that in no other way or on no other hypothesis can the peculiar appearances noted in cancer be accounted for. There is simply no other explanation which is at all satisfactory, or can be regarded as tenable.

This is not a question of bacteria. All the investigations made by bacteriologists have failed, and there is no thought now that bacteria are the cause of cancer, their presence being occasionally accidental, but nothing more. Bacteria are by no means the only possible parasites as the history of malaria has proven. It is now a question of organisms about which as yet we know very little; as little, in fact, as the profession in general knew of bacteria when Cohn first began studying them. We turn then from bacteria to some other form of parasitic life as the necessary explanation of known phenomena. Herein lies our greatest difficulty. We are as yet almost in total ignorance of these lowly forms of life and their biologic peculiarities. We do not even know that Koch's laws for the determination of the infectious nature of a given disease are valid here for these forms, since they may not fully apply to such varied conditions. Nevertheless, we may still hold to them until they are proven invalid.

For that matter, we have almost complied with these canons in our Buffalo investigations. In almost every instance, practically in every instance when conditions have been favorable, we have found organisms in cancer cases; and in practically every instance by the introduction of cultures made from these organisms we have produced fatal results in animals, although we can not truthfully say that in every instance we have produced distinct carcinomata. We do not yet know that this can be done in animals by the forms which produce it in man. We know that syphilis and various other diseases are not communicable to animals, and in the beginning of this investigation we must not be too exacting until certain other conditions are also complied with. Where we have so far failed in complying with Koch's canons lies especially in this direction, that we are unable yet to say that wherever we find the organism we find the disease. We do not yet know the cancer organism well enough to be able to identify it outside the human body, and, therefore, while this requirement has not yet been complied with, neither has it been constantly violated.

I have often heard it adduced as an argument against the parasitic theory that the duration of cancer is altogether too long to permit its recognition as an infectious disease. Such statements as these have nothing to justify them. I may be pardoned for calling attention to this fact which I have stated before, because of its importance in this connection. Infections follow no known limit nor time law. There are some which are exceedingly acute, like cholera, bubonic plague, etc.; they kill in a few hours. There are others which run their course in a few days, like pneumonia, tetanus, diphtheria, etc. Still others extend over a period of a few weeks, like typhoid fever and glanders. The time in yet others is only measured by months. This is true of actinomycosis and of tuberculosis, whereas some instances of the latter disease and syphilis extend over years. No matter how long their course may be, we do not decline to see evidences of infection therein, and so the argument against the infectious nature of cancer because it lasts sometimes so long, must fail. Cancer certainly is often as rapid as tuberculosis, even of the acute miliary form, and is usually more rapid than are syphilis or leprosy.

Leaving now the subject of minute agents, let us look at the matter from the purely clinical standpoint. What surgeon of experience can regard the various manifestations of cancer in any other light than as expressions of a slow infectious process? Take, for instance, the case of melanotic sarcoma of the leg. As he sees the gradual transmission of the disease up the limb, and becomes still later aware of the involvement of the liver, then of the lungs, and then of various other parts of the body, how can he help say but that this is a disease which travels along the same paths and after the same fashion as does tuberculosis; or when he sees cancer *en cuirasse* following an operation for cancer of the breast, how can he avoid the conviction that he has here to deal with a slowly creeping local infection which is gradually extending and traveling as only an infection can travel? It was the clinical features of this disease that impressed me with positive convictions as to its infectious character long before I attempted to judge of the same from mere microscopic study.

But, some one may ask, what about the failure of numerous experimenters to reproduce the disease by inoculation, or by implantation? I grant quite readily that until very recent times there has been almost complete disappointment in efforts in this direction. The disappointment, however, has not been so comprehensive as in the case of syphilis, since *every* effort in this direction has failed, and yet we do not deny the infectiousness of syphilis on that account. Because of the paucity of successes in this experimental work there attaches a certain suspicion or uncertainty to every alleged successful experiment. For me, however, as remarked above, one instance of cancer following the use of an instrument, along the track which it has made, is of very great value, far greater indeed than, on the other hand, would attach to one hundred failures in deliberate implantation. Failure does not prove that success may not be finally attained, whereas one positive success is indisputable. Surely clinical observation has amply established the possibility of infection with cancer. Once that be granted, the principal contention is

obtained. Failures in times past have been largely due to our ignorance regarding the biology of these minute organisms, and the conditions which favor their life or death. In our laboratory work, for instance, in Buffalo, it has been discovered that they grow best in an exceedingly weak solution, and that ordinary bacteriologic methods and culture media are absolutely inadequate. We have had best results in culture experiments by the use of an expedient suggested by Drs. Gaylord and Clewes in the use of collodion sacs. A little capsule is made of collodion; this is filled with cultures or with fresh fluids; it is sealed with collodion, then dropped into the peritoneal cavity of an animal. The organisms can not escape through the collodion, but there is sufficient osmosis of the living fluids surrounding the sac to permit them to grow, under natural conditions, and they thus undoubtedly grow in the living animal without possibility of escape. Under these circumstances, their virulence is very much enhanced, and it is found that after removal of this sac from the first animal and inoculation of its contents into a second animal, they will produce a very rapid hematogenous infection, with nodular formations in various parts of the body, corresponding exactly to acute miliary carcinosis, the nodules thus produced having often the minute character of adenocarcinoma.

It certainly is not too strong a statement, then, if I claim that in the Buffalo Laboratory Dr. Gaylord and our staff have absolutely produced adenocarcinoma by inoculation in a number of animals, and that this can now be produced in such a way as to afford unmistakable evidence of the infectivity of the disease.

When asked for a minute description of these organisms, it can scarcely yet be given. It must be enough for the present to say that they appear to belong to the protozoa, or possibly, as Schüler has hinted, to some still lower and less known animal form. They can be seen to undergo ameboid movement upon the warm stage, and careful study will reveal numerous changes which they undergo somewhat slowly, by which very positive and somewhat remarkable alterations in size, shape and general appearance are brought about. This would appear to take them out of the realm of the vegetable kingdom, and put them in that of the animal kingdom, and for the present it is enough to call them protozoa. Minute description or detailed statements can hardly be made yet, since they have to be most carefully studied, and, in fact, the whole matter of the biology of these lowly forms of animal life has to be gone over again before one talks too much about them.

These organisms, however, can be, and have been cultivated and successfully inoculated. In ordinary media they grow best in extremely weak solutions. The most successful way that has yet been devised is to deposit them in collodion sacs, as already described, in the living animal. They stand desiccation just as does vaccine lymph, and Gaylord has made some very successful experiments with lymph nodes kept dry for weeks, then rubbed up with sterilized water, and injected.

There seems to be the most absolute resemblance between results obtained in the Buffalo Laboratory and those just published by Max Schüler. There is scarcely a statement which he makes which is not corroborated by our own experiments, whereas almost everything that we have written or found is corroborated by independent statements of his own. The conditions which he portrays in his illustrations and plates are identical with those which can be seen in our forthcoming Annual Report. It seems to me that the statements of Schüler take away almost the last element of doubt which can remain as to the propriety of conclusions regarding the parasitic nature of cancer.

Of course, it is yet too soon to formulate any conclusions regarding its treatment or therapy. For the present, at least, cancer must remain, as it always has been, a surgical disease. I believe this general statement can be made, that if cancer can be recognized early, in accessible parts of the body, and be removed thoroughly, it can be absolutely cured. Unfortunately, early recognition is rare, and thorough removal too infrequent. Consequently, we have the present hideous picture of the disease displayed before the profession. For cancer in inaccessible parts of the body, diagnosis must necessarily be late, and operative treatment can benefit little, if at all. If, however, we can establish a parasitic cause and cultivate a sufficient acquaintance with the organisms at fault, it is not too much to hope that some agent, be it vegetable or mineral drug, or animal antitoxin, may yet be discovered by which the ravages of the disease may be checked or prevented. Drugs are known which destroy the protozoa that cause malaria. Let us hope that something may yet be found, and that speedily, which may have the same destructive effect upon the parasites which produce cancer, without being inimical to the animal cells of the human body. Until this can be brought about, cancer is still a surgical disease, and its discussion by this Surgical Section, or any other association of surgeons, is most proper, and in the interest of surgical science.

EARLY DIAGNOSIS IN CARCINOMA.*

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So far as our present knowledge of cancer goes the nearest approach to its successful management rests on early diagnosis, prompt and thorough operative removal of the widest possible area and a careful and systematic surveillance of the patient during the rest of his life. It would be trite to dwell on the importance of the earliest possible recognition of malignant disease. All surgeons know at what a late day the great majority of cancer cases reach the specialist. The delay is due, 1, to non-perception on the part of the patient or to his fear of being given an unpleasant report, and, 2, to lack of recognition by the medical attendant or to his delay while awaiting the appearance of positive evidences.

The first must be dealt with by the systematic instruction of the laity through suitable lectures of a popular nature, magazine articles and the like. It is the duty of those members of our profession who are competent and whose standing is such as to make their utterances carry weight to thus impress on the non-medical part of the community the importance of early attention to all lumps, growths, persistent ulcers and the like, and the securing of competent advice thereon. Such publicity is not non-professional, but is most commendable. Our brethren who are interested in the matter of pulmonary tuberculosis have accomplished great good in this way; we may learn much from them.

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* Read in the Symposium on the Surgical Aspect of Carcinoma, before the Section on Surgery and Anatomy, at the Fifty-second Annual Meeting of the American Medical Association.

Further, it is hardly necessary for me to say that our physicians as well as our surgeons should appreciate far better than they do now the vital importance of early recognition in malignant disease. Some years ago I tabulated the cases of cancer applying for treatment at the New York Cancer Hospital during a certain number of months and found that of all cases so seeking admission but 9 per cent. offered any reasonable prospect of cure even after the most radical operative procedure, and that the majority of hopeless cases had been for a longer or shorter period under the care of physicians. Must we not conclude that we, as a profession, are lax in the employment of our ordinary methods of diagnosis, that we must exercise greater care, that we must make better use of the methods which we now possess?

A comparison of the carefully made histologic report on a given neoplasm with the clinical history and examination of the case will most surely instruct the physician or surgeon, fix in him diagnostic methods and lead to the lowest possible percentage of error. Permit me before enlarging upon this thought to briefly lay before you a very few of many recent suggestions:

EXAMINATION OF THE BLOOD.

Hayem[1] states that when we are unable to obtain any physical signs of cancer of the stomach there are a number of symptoms obtainable from a study of the blood. If the latter fluid exhibits no giant and nucleated forms of red corpuscles, and no leucocytosis, we may exclude the presence of pernicious anemia. Tentacular and pseudoparasitic forms of red corpuscle with abundant hematoblasts point to cancer. Marked anemia without an anemic murmur suggests cancer.

Hayem refers to a case in which the diagnosis was correctly made by blood examination, but for the sake of absolute proof exploratory laparotomy was performed.

On the other hand, Krokiewicz, writing on "Blood State in Cancer of the Stomach,"[2] says that while much work has been done in this field the reports are conflicting. In 1898, Henry published a statement as to the value of the blood count in latent cancer of the stomach. He attempts to distinguish between this affection and progressive pernicious anemia by the number of red corpuscles in a millimeter cube. In cancer they should not fall below 1,500,000; while in the other disease they go beneath the million mark.

As is well known, several authors diagnose latent stomach cancer when the so-called digestion leucocytosis is absent and when no chlorhydric acid can be recovered from the contents of the stomach.

There is still unanimity in the belief that the hemoglobin of the blood is invariably reduced in cancer of the stomach. But we now know—contrary to what was once taught—that in simple gastric ulcer the same permanent reduction in the amount of hemoglobin occurs (it was formerly held that in simple ulcer the red cells lost in connection with vomiting were rapidly regenerated).

The author's own experiments, however, have taught him the untrustworthiness of these signs which are connected with the state of the blood and gastric juice. Thus he found digestion leucocytosis in four cases out of seventeen, and also noted the persistence of chlorhydric acid in the stomach contents in certain instances. He is therefore inclined to minimize these diagnostic resources.

EARLY DIAGNOSIS OF CANCER OF THE STOMACH THROUGH THE PRESENCE OF THE FILIFORM BACILLUS.

Ehret, assistant to Prof. Naunyn[3] of Strasburg, publishes a communication on this subject.

The study of the flora of the stomach has been largely neglected. A large variety of micro-organisms are found in the stomach contents introduced with the food and air which have been swallowed, but we now know that while the presence of a given organism in small quantities has no necessary pathologic significance, the reverse is the case when any of these organisms are found in large amounts.

The fact that any form of germ life is able to multiply within the stomach is an argument in favor of the existence of an abnormal condition of that stomach. If the normal motility and chemism of the stomach are disturbed, stagnation, etc., would contribute powerfully to the multiplication of germs; and on the other hand, these multiplied germs may themselves possess the power of causing some form of fermentation.

When the microscope shows the constant presence of a certain micro-organism in considerable amount and upon every slide examined, we may regard the germ in question as having some sort of pathogenic significance, either as cause or effect. The multiplication of germs may represent either the cause or the result of an abnormal state of the stomach.

After these preliminary notes the author proceeds with his description of the filiform bacillus. All observers in the field of pathologic fermentations of the stomach have doubtless recognized a peculiar micro-organism in cancerous stomachs—a thin, very long, thread-like bacillus present to such an extent that it occupies a large portion of the field of the microscope. This germ shows true ramification. Associated with it we find yeast, sarcinæ, and cocci and bacilli of various kinds.

Boas was the first to describe this organism in his work on diseases of the stomach and he also remarked as to the frequency of its occurrence in cancer. In 1895 Schlesinger and Kaufmann succeeded in making cultures of the germ. They also ascertained that the culture was able to cause lactic acid fermentation and thereby perhaps account for the presence of this acid in cancer. The germ grows on agar with 1 per cent. glucose, forming on the second day colonies the size of a pinhead, white, dryish and almost transparent, looking under the lens like flocculi of wool.

Some confusion may arise between the filiform bacillus and the bacillus butyricus, but the culture is shorter and less thread-like. It is often difficult to obtain the filiform bacillus in pure culture. However, it is hardly necessary to obtain cultures in order to make a diagnosis.

Ehret believes that the presence of this bacillus in the stomach contents is destined to be of great service in the early diagnosis of cancer before other symptoms are present. In the first place this germ is practically absent from the healthy stomach, both to the microscope and cultures. When present it is usually in vast amounts occupying perhaps almost an entire field of the microscope.

The author found the filiform bacillus in 29 patients at the Strasburg clinic; and in 25 of these cases cancer of the stomach was shown to be present. In the other 4 a diagnosis of cancer could not be made. It is not claimed that the bacillus is pathognomonic of cancer but of extreme stasis of the stomach such as occurs in

cancer. In the non-cancerous cases there was present a condition of pyloric stenosis, or of complete atony, as shown by the fact that the sound introduced into the fasting stomach gave exit to matters ingested many hours previous.

Ehret relates a case as follows: A woman, aged 49, always robust, began to suffer from indigestion. She received intestinal antiseptics without benefit. Two weeks later the stomach sound was used after a trial breakfast. Traces of lactic acid were found (chlorhydric acid .004). The filiform bacillus was present in great quantities. The patient was examined under narcosis after inflating the stomach with CO_2, but no evidences of cancer were found.

Operation was refused, and after six months' delay a tumor was recognized, associated with failure of the general health. The patient lived a year; after death no autopsy was obtained but no doubt could be felt in regard to diagnosis.

Ehret closes by reiterating that the discovery of the filiform bacillus in large amounts in the stomach contents justifies a diagnosis of cancer.

DIAGNOSTIC REACTION FROM THE USE OF CANCER-SERUM.

The various serums which have been put forth for the treatment of cancer, and which are thought by some to exert a specific though not a curative influence upon cancer tissue, seem at times to be accompanied by an alleged reaction when injected into the body.

Thus Bra and Mongour's[4] "nectrianine," a serum prepared from the parasite of the so-called "cancer of trees," is without effect if injected into healthy animals; but in man and animals with cancer injections produce a rise of temperature of from 1 to 3 degrees in from two to four hours. Larger doses provoke chills, quick pulse, cardiac palpitation, headache and thirst. The crisis terminates at the end of some hours in polyuria and profound sleep. Similar reactions have been claimed for other cancer serums. The latest one to be exploited is Whaeff's bird serum, made by the Pasteur Institute at Paris. Analogy between this and tuberculin as a diagnostic agent will readily be apparent.

AUTO-INOCULATION AS AN AID IN THE EARLY DIAGNOSIS OF CANCER.

Güntz[5] proposes the inoculation of suspected cancer tissue upon the bearer, on the assumption of the infectious nature of the process. He further takes into account the possible source of infection from some other person, with long interval of latency. For example, a man with an incipient, as yet unrecognizable cancer of the lip, may take his wife's nipple in his mouth and thereby propagate in her a cancer of the breast. Similarly cancer of the uterus may be due to infection from a latent focus of cancer in the husband's penis. The author's views are best shown in the following case which he reports:

A robust woman, aged 33, good family history, bore a child when 21 years old. The infant lived but eight weeks. The woman and her husband lived together for ten years after this event, and then suddenly—one year ago—she began to look miserable and prematurely old. The husband observed about this time a sort of subcutaneous itching in the inguinal region, which heralded the formation of a sebaceous tumor not connected in any way with the inguinal glands. It enlarged slowly. (Five years earlier a similar wen had appeared in the frontal region near the internal angle of the eye. This had been extirpated on suspicion of being cancerous.) Examination, however, showed that it was only a wen, and since that time there has been no tendency to recurrence in the scar.

During the past four months the husband, who cohabits regularly with his wife, noted some scalding upon urination after coitus, but without any accompanying discharge. The woman's condition, already mentioned, now compelled her to take to bed. The symptoms were those of nervous break-down of an extreme type. There was some pigmentation on the face like that seen in pregnancy. This attracted attention to the uterus. The rapid emaciation and pigmentation suggested a suspicion of cancer of the uterus, but there had been no discharge nor irregularity of the menses. Finally, however, there was a sudden escape of fluid from the uterus which indicated some ulcerative process. The diagnosis of cancer soon became apparent in the opinion of several consultants. After a normal menstruation symptoms of cancer became latent again, the woman appearing quite well. The husband had connection as usual and thereby caused his wife to bleed a little, while he suffered from the scalding of the urine afterwards.

A few days later the little wen in the husband's groin started to inflame. Within eight days it resembled a bubo and was of the size of a pigeon's egg. An artificial opening gave exit to pus. The abscess healed with persistence of an indurated node.

In the meantime it was thought best to extirpate the supposedly cancerous uterus and as a matter of fact a nodule of cancer, as yet intact, was found in the portio. The patient made a good recovery.

Güntz's article ends here abruptly with the statement that he will publish the rest of the case. This he has never done and thus his paper is somewhat obscure, but his theory seems to be as follows: Being principally a syphilographer Güntz is simply endeavoring to apply the principle of *confrontation* to cancer. If he suspects that an individual has an incipient or latent cancer he examines the persons with whom the suspect is most intimate. He is aware, of course, that in cancer of the uterus we do not find cancer of the husband's penis, but this may be due to the fact that the cancer germ does not cause a lesion at the point of contact but is absorbed and deposited elsewhere. In this locality it may not cause an outspoken cancer, but may give rise to a precancerous lesion or latent cancer, such as a wart or wen, which may remain as such through life without becoming malignant.

In his case, therefore, he believes that a latent or incipient cancer of the uterus transferred some of its germs to the male urethra, where only slight local initiation was occasioned. The germs entered the circulation or lymphatics and finally caused sebaceous tumors, which frequently become cancerous. The practical lesson here would be to consider many benign lesions as essentially precancerous, especially if there is actual cancer in some intimate. As a focus of cancer germs such a lesion should be extirpated, for if it does no harm to the bearer the germs may be transferred to some other person with a worse result.

Cabot[6] has recently made a most interesting observation on accidental inoculation in cancer. His patient was a man of 59 years with a cancer high up in the anterior wall of the rectum. Removal was made by the Kraske method. The cancer was dragged down into the posterior opening and removed through it. During this manipulation the cauliflower-like, juicy growth was rub-

bed about in close contact with the operative wound. Two years later, the patient having been quite free in the interval, a cancerous mass histologically similar to the primary disease was removed from the posterior scar where at the original operation the cancer juice had had contact. The original site was free and separated by five or six inches of healthy tissue from the secondary one. Further, the lymphatics from the primary area lead up into the lumbar glands rather than down toward the place of recurrence. The case seems plainly one of accidental auto-inoculation.

Other observations on these and similar lines might be cited did time permit. You will, perhaps, permit me to generalize the result of a careful examination of the literature, and this is to the effect that thus far nothing seems to be proven. Individual cases are given rather than series of cases. Our diagnosis of cancer must rest on our clinical appreciation of the various symptoms, this supplemented by microscopic examination.

Disparity of opinion exists as to the employment of trial excision for microscopic examination. Many surgeons resort to it as a routine measure in doubtful cases where the tissue is accessible. Others believe any incision of cancerous tissue liable to spread the disease, while in the precancerous stage the microscope may reveal nothing and thus valuable time may be lost. In this connection no less distinguished a surgeon than Jonathan Hutchinson[7] says that he has often felt it his duty to urge that the microscope is of no value in diagnosis of the precancerous stage of cancer. He has long been a warm advocate of early operation, even before a diagnosis could be made with certainty; in a well-defined case the microscope is unnecessary, in a doubtful case it can furnish us no assistance.

In other words, cancerous growths, recognized as such from their mode of growth, etc., by the educated eye, are not cancerous histologically. A negative result from the microscope begets a false security and leads to irreparable loss of time. This opinion is not intended to reflect upon the pathologist, for the precancerous stage of cancer consists almost invariably of the histological picture of chronic inflammation.

Hutchinson has recently had four cases of cancer under his care which illustrate this uselessness of the microscope. One case was a large, characteristic epithelioma of the soft palate, almost inoperable. The patient said that eighteen months before he had had a piece excised for microscopic study. The diagnosis had been that of a non-cancerous affection. Clinically he had had a white patch on his palate for at least three years. At the time the trial excision was performed the growth might have been safely removed. In another case the patient had a similar experience. An ulcer formed at the side of the tongue and a distinguished surgeon made a diagnostic excision. The pathologist reported negatively and four months' time was thereby forfeited. Diagnosis having become certain, one-half of the tongue was excised. In a third case a patient had primary cancer of the pharynx with secondary glandular enlargement. There was the same history of diagnostic excision and negative report. The fourth case was quite similar in character to the second. Since these four cases all occurred to him within one month it may be assumed that these erroneous diagnoses are being made constantly. He has himself seen many such. He once removed an entire tongue for what he diagnosed as a broken-down and suppurating cancer. The pathologist reported "no cancer, only an abscess." A few months later the glands beneath the jaw enlarged and the subsequent history of the case confirmed the diagnosis. Upon learning of this tissue the pathologist re-examined the original specimen and found evidences of epithelioma. In a case of cancer of the palm of the hand, microscopic sections of which were examined by pathologists of England, the Continent and America, there were the greatest differences in opinion, some finding evidences of syphilis. The patient died of secondary cancer.

Halsted[8] says that tumors should never be harpooned nor should pieces ever be excised from malignant growths for diagnostic purposes. He believes that there is great danger of rapid dissemination of the growth from injecting cancer of the tongue with cocain and then snipping off a piece of the tumor with the scissors.

Halsted says that in studying the published histories of cases of malignant tumors, particularly sarcoma, he has been impressed with the great number of cases in which general dissemination of the neoplasm has seemed to follow swiftly upon exploratory incisions.

On the other hand, Kelly, Halsted's colleague, seems to resort to trial excision in all doubtful uterine cases. Cullen, in his admirable work on "Cancer of the Uterus," describes at length the simple methods of removal of uterine tissues for examination. Frozen sections, he says, give satisfactory diagnosis in fifteen minutes. It is needless to say that the greatest care must be taken to prevent confusion of specimens.

Colderini (International Congress, 1900) places great dependence upon examination of the scrapings in suspected cancer of the body of the uterus. According to him it is not necessary to find fully developed cancer tissue in order to make a diagnosis. Since cancer of the body is almost always of the type known as adenocarcinoma, it is enough to find an atypical arrangement of the glandular tissue of the mucosa. He narrates a series of cases in which the diagnosis was unhesitatingly made from such atypical arrangement, and confirmed by results of operation.

I believe that I am correct in stating that at this time the majority of experienced surgeons resort to trial excision in suitable, doubtful cases. All recognize the element of error which may be present in an individual instance, yet in a series of cases a suitable piece taken from a typical portion of the growth in the presence of an experienced pathologist and at once transferred to him will give a fairly authentic diagnostic result. My own experience in this has been favorable. While on the one hand I am not certain that no avoidable spreading of the disease has been occasioned, on the other I can not recall an extension which can be so traced and I can cite a fair number of so-called "cures" of three or more years' standing, in which a positive trial excision was promptly supplemented by wide removal of the growth. These especially in cancer of the lip, skin of the extremities and face, breast and rectum. I am inclined to believe, however, that this trial excision should be avoided when possible and that it is always best to be prepared for immediate operation; the greater the surgeon's experience the greater reliance will he be able to place on his general estimate of the individual case.

It is not difficult to say that the physician or surgeon should recognize cancer by the eye and fingers as well as by the microscope, yet his ability to do this will

be in proportion to his practical experience and the careful study of his cases; we must not lose sight of the fact that in the great majority of instances early diagnosis is dependent on the family physician rather than on the skilled specialist.

As has been said, I have been personally impressed with the value of diagnostic excision. Whether or not this is wise there can be no question as to the absolute value of the most painstaking and far-reaching microscopic study of all tumor tissues after removal. This study should be made in direct connection with the history of the case and the clinical examination of the patient, and the findings should be verified by the operator himself. In the one column of his case-book may be placed his provisional clinical diagnosis; in another the pathologist's report. A comparative study of these will be productive of the greatest good. On the one hand we have the family and life history of the patient—the onset, duration and course of the growth; its general characteristics, resistance, "feel," tenderness, mobility or fixation; the condition of the skin or mucous membrane, of the deeper parts and glands; the blood examination if you like; in a word, all possible factors which can lead to provisional diagnosis. On the other hand lies the pathologist's report. Constant, comparative study of the two will lead to an increasing probability of accuracy in diagnosis.

I do not know that we can at this time go beyond this. In the smaller cities there is a great and increasing need of careful and capable pathologists. The accuracy of our work must be determined by them. Not long ago a well-known surgeon of Boston said to me as we were going through the superb Municipal Hospital there: "When Councilman came to this hospital he revolutionized our methods; we surgeons found that we had to live up to him and his work." We, whose lot is cast in the smaller places, must strive without ceasing for better laboratory work. Our laboratories must be consolidated, enlarged and endowed. It is not enough that the clinicians in the great centers should be in close touch with the pathologists; those in the minor cities and towns must enjoy a like privilege. Happily, facilities for the better training of pathologists are increasing rapidly.

In a recent presidential address before the Association of American Physicians, Professor Welch, the distinguished scientist, compared the opportunities enjoyed in this country by the men who desire to study the branches of scientific medicine and the opportunities open to those who wish to become proficient in clinical medicine and surgery. There are laboratories in this country, equal to any in the world, that are open to young men who have graduated and who wish to become teachers of anatomy, physiology or pathology. In these laboratories a young man must serve his apprenticeship, but Professor Welch says that his promotion is sure. May I not ask you whether (and this especially in the smaller places) we as clinicians recognize as we should the value and the importance of the work which these scientists do, and whether we sufficiently aid in making it possible for them to devote their lives to the purely scientific side of our calling? It is in this direction that advance is to be made, and it is in this direction that our duty lies; a duty seen by such wise and earnest men as Roswell Park, whose Buffalo Laboratory for the study of cancer attracts the attention and admiration of the medical world. Not all of us can create such laboratories, but we can all do something toward a better appreciation of the importance and value of the most painstaking, thorough and far-reaching laboratory investigation.

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SOME PHASES OF MALARIA.*

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On February 12, of this year, I was called to come quickly to see N. M., who the messenger said was speechless. He was a well-developed, strong negro man, 60 years of age, his family history good. He had smallpox about thirty years ago, since which time he has not been sick enough to require the services of a physician. He has never had syphilis, gonorrhea, nor rheumatism. He has lived in the Mississippi Valley eleven years, during which time he has had frequent attacks of "dumb chills." For four days prior to this illness, he had daily paroxysms of fever, which came on about noon. At 11 p. m., February 11, he had a hard chill which lasted for two hours. The fever rose quite high and was attended with vomiting. The patient became delirious, and from 2 a. m. to 9 a. m. he was comatose, his wife being unable to arouse him by calling, shaking or pinching. The coma was attended by stertorous breathing. I saw the patient about 10 a. m. He was complaining of headache and a slight burning sensation about his knees. Over each knee were large bullæ, extending from a few centimeters above the upper border of the patella to a few below the tubercle of the tibia. There were also two of much smaller size about the middle of the leg anteriorly. On the very black skin of this patient, these bullæ looked like burns of the second degree. The patient, in his delirium, had run across the room, taking his seat in a chair which sat before an open fire-place, in which were a few coals of fire. His wife states positively that he did not fall into the fire. His clothing was not burned. The temperature was 102 F., pulse 88, respiration about normal. The tongue was large and flabby, covered with a white coat; the mucous membranes were of fairly good color; the bowels were constipated, the spleen was enlarged, being palpable at the costal margin. The blood showed numerous estivo-autumnal parasites, all apparently of the same stage of development—about one-fourth the size of the red blood corpuscle. The urine did not show any albumin nor sugar.

Under vigorous antimalarial treatment for seventy-two hours, the fever subsided and did not return. The bullæ were pricked and a rather dark serum exuded. The places were dressed with gauze greased with vaselin. The patient was told to report if his legs gave him any trouble. I was called to see him again after about four weeks. I found gangrenous patches over areas referred to above, involving the skin and subcutaneous tissue. The ligamentum patella was exposed in the left leg. There was a gangrenous odor and the tissue was sloughing. The temperature was 99 F. The blood showed a few endoglobular, ring-form parasites and several estivo-autumnal gametes; red blood corpuscles, 4,028,000 per cm.; leucocytes, 6400. The differential count showed polymorphonuclears, 68.5 per cent.; small mononuclears, 23 per cent.; large mononuclears, 8 per cent.; eosinophiles, .5 per cent. Under the influence of quinin and antiseptic poultices, the gangrenous tissue sloughed away, leaving quite large ulcers which I show in the accompanying photographs.

The object in thus presenting this case in detail is to discuss some of the phases of malaria suggested by

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it, which are exceedingly interesting to practitioners in malarial regions. The first phase which I desire to call attention to is

PERNICIOUSNESS IN MALARIA.

The clinical forms of pernicious malaria have been recognized since Torti's classic description of the periodic pernicious fevers, in 1743. These do not differ materially from the graphic description by Dr. Joseph Jones, of New Orleans, of these fevers occurring in the southern portion of the United States.

Marchiafava and Bignami state that "since the time when the parasites of the tertian and quartan were first known, there is no instance on record of a malignant infection caused by them, and no autopsy has ever been made in connection with a spring tertian or quartan." However, in this country, a few cases showing pernicious symptoms in infections with the benign parasites have been reported. They must, therefore, be regarded as exceptions to the general law that "the malignant infections are caused by the summer-autumn varieties of the malarial parasites." My experience has



Estivo-autumnal Infection, with Multiple Spontaneous Gangrene



Estivo-autumnal Infection, with Multiple Spontaneous Gangrene.

been that the large majority of cases of malarial fevers occurring in the Mississippi Valley are estivo-autumnal infections.

It is a well-known fact that in these infections the estivo-autumnal parasites are found in exceedingly large numbers. If this is not shown in the blood from the peripheral circulation during life, the autopsy usually shows them markedly increased in the viscera. It also appears that there are usually two predominating broods of parasites, sometimes more, in the blood of patients with pernicious fever. But Marchiafava and Bignami report cases in which the viscera, as well as the peripheral circulation, show a very small number of parasites. Dr. Ewing emphasizes this point in his report on the cases of malaria at Montauk Point. The cases of pernicious fever where only one brood of the parasites is present, as seems to be the condition in the case I report, are not infrequent. So it is evident that we must look for the cause of malignancy in another direction than merely in the large quantity of parasites.

These causes may be found in what has been termed the biologic characteristics of the estivo-autumnal parasites. The first of these is their capacity for rapid propagation. This is seen in the great number of young forms which are seen in the blood a few hours after the beginning of the paroxysm. It is another characteristic of these parasites to disappear from the peripheral circulation to complete their cycle of development in other vascular areas.

The pathologic anatomy of these fevers teaches us that there is a decided tendency for the adult forms and forms of fission to accumulate in the capillary network of certain organs, e. g., the spleen, where the circulation is physiologically slow; in the brain, where the lumens of the vessels is small; and in the capillaries of the gastro-intestinal tract. Indeed, it has been proposed to explain the cerebral and choleriform types of these fevers by the mechanical obstruction thus produced in the respective areas. Frerichs thought this obstruction in the cerebral capillaries was produced by thromboses of malarial pigment. Laveran recognized the parasitic nature of these thromboses. Marchiafava and Bignami state: "Only exceptionally do we find in the cerebral vessels free pigment (thromboses of pigment), or masses of melaniferous leucocytes (thromboses of phagocytes), or rarely also free adult parasitic forms or accumulations of free spores (parasitic thrombi in the proper sense of the term)." But they attribute the cerebral hyperemia to the accumulation, in the cerebral vessels, of red blood corpuscles loaded with amebæ, this stagnation being brought about by the degenerative changes wrought by the parasites in the red blood corpuscles, which impair their capacity for free circulation.

No doubt we should attribute great weight to the mechanical theory in explanation of these symptoms. Another factor, however, must be taken into account in these as in other forms of pernicious malaria, viz., the virulence of these parasites.

Many attempts have been made to demonstrate a malarial toxin, chief among which are the experiments of Professor Celli. The injection of 25 c. c. of serum, from a case of comatose malaria, into a little child, failed to show any toxic effect. The experiment to find the toxin shut up in the red blood corpuscles proved

equally futile. Still, almost every one now speaks of the toxin or toxins set free at the time of sporulation of the parasites. There is good evidence for believing that a malarial toxin exists, although it can not be demonstrated, so it is probably this property of the estivo-autumnal parasites more than any other which accounts for malignancy in malaria.

It is known that many uninfected corpuscles give up their hemoglobin. The presence of brassy corpuscles, *the ottonati,* shows the toxic effect of the parasite in its endoglobular phase.

Another proof of the great virulence of these parasites is the occurrence of hemoglobinuria in these infections. It has been stated by a distinguished authority that hemoglobinuria is not malaria, because he has been unable to observe the correspondence between the amount of hemoglobinuria and the number of parasites in malarial fever; and in his series there was no case in which hemoglobinuria was present with a large number of parasites, whereas in many cases with a large number of parasites no hemoglobinuria was present. As against this view it is interesting to note the findings of the Malaria Commission to the Royal Society. It tabulated a series of 28 cases, including 17 reported by Koch, 3 by Ollwig, and 5 studied by the members themselves, in British Central Africa; and show that of these, 75 per cent. showed malarial infection. It also points out that of 21 postmortems in cases of blackwater fever, 90 per cent. showed malarial infection. In these cases, we most infrequently are unable to find the parasite in the peripheral circulation during the attack. I have seen them in only two of nine cases in which the blood was studied. But the blood affords other evidence of malarial infection than the presence of parasites in it, viz., the presence of pigmented leucocytes, and the characteristic leucocyte variation of malarial infection. There were pigmented leucocytes in all the cases studied by me. This pigmentation was seen especially in the large mononuclears. It has been stated that there is a true leucocytosis in these cases, i. e., an absolute increase in the white cells and a relative increase of the polymorphonuclears. I do not believe this statement is correct. Numerous observers have noted that there is often a large increase of white cells in pernicious fevers. Dr. Thayer reports one in which there was an enormous increase, but the differential count showed the characteristic variation of malaria—an increase of the large mononuclears at the expense of the polymorphonuclears. The malaria commission appointed by the Royal Society has made more extensive investigation of the leucocytes in the estivo-autumnal infections than I have been able to find elsewhere. As a rule, a slight leucopenia was found. During the intermission or the remission, when marked, there was a relative increase of the large mononuclears; but during the paroxysm of fever, the polymorphonuclears were not only reduced, but sometimes increased. The large mononuclears were increased at the expense of the polymorphonuclears when the large forms of the parasites were in the blood, and the polymorphonuclears were not decreased when the small forms were present. I have been able to confirm these observations in several counts recently made. In all 5 cases studied by them they found an absolute increase in the white cells, and the leucocytic variation characteristic of malaria. I made differential counts in 2 of the 9 cases referred to by me. One showed P. M. N., 64 per cent.; large L. M., 20 per cent.; S. M., 16 per cent. The blood was obtained during the decline of the fever, near the first intermission. The same patient showed P. M. N., 75 per cent.; L. M., 15 per cent.; S. M., 10 per cent. a few hours before death. Another case showed P. M. N., 64 per cent.; L. M., 19 per cent.; S. M., 16 per cent.; E., 1 per cent. So if pigmentation and leucocytic variations are evidences of malarial infection, where the parasites are few or absent in the peripheral circulation, hemoglobinuria must be malaria, and, being malaria, is a most striking evidence of the extreme virulence of the estivo-autumnal parasites.

Phenomena occurring in these infections, after the disappearance of the parasites, which have been termed post-malarial, are also evidence of the toxin theory. Kelch and Kiener, Mannaberg, and others, have noted the decrease in the percentage of hemoglobin after the disappearance of parasites. Dr. Ewing reports several cases of fatal anemia in his Montauk series, after the disappearance of the parasites. Dr. Thayer has reported a very interesting case of comatose fever, which he regards as post-malarial auto-intoxication. Marchiafava and Bignami state that, "in addition to the post-malarial fevers, there are individual cases of a post-malarial morbid condition, which must be put by the side of those which come after other infectious diseases (typhoid, pneumonia, scarlet fever, etc.)."

Another phase of malaria which the case reported suggests is

IMMUNITY

in malaria as it relates to the negro. We not infrequently see it stated that the negro is relatively immune from malarial infection, and sometimes that he is absolutely so. These statements are not in accord with my experience of eight years with the negro in the southern Mississippi Valley. Maurel, from his studies on this subject, concludes that no human race is immune from malaria, not even the black race.

On the plantation where I reside there were 24 whites last year. Of this number, 41 per cent. were infected with malaria. Of this number, however, 5 did not have malaria, and were away from home during the greater part of the malarial season. Excluding these, the malarial morbidity would be about 53 per cent. among the whites. There were 184 blacks; of these 61 per cent. were infected.

I have tabulated 20 cases of pernicious fever which I have seen since June, 1900, showing:

No.	Age.	Race.	Term of Residence. Days.	Month.	Type.	Result.
1	34	White.	34	June. . . .	Hemoglobinuria	Recovery.
2	4	Black.	4	June. . . .	Cardialgic	Death.
3	7	Black.	7	July. . . .	Comatose..	Death.
4	60	Black	20	July. . . .	Hemorrhagic, Melaena. .	Death.
5	15	Black.	2	July. . . .	Bilious continuous	Death.
6	3	Black	3	August. . .	Cerebral, convulsions . .	Recovery.
7	35	Black.	12	August. . .	Hemoglobinuria	Recovery.
8	55	White.	55	August. . .	Hemoglobinuria	Recovery.
9	4	Black.	3	August. . .	Comatose..	Recovery.
10	11	Black.	5	August. . .	Comatose..	Recovery.
11	5	Black.	5	August. . .	Cerebral, convulsions . .	Recovery.
12	55	White.	55	August. . .	Cerebral, delirium. . . .	Recovery.
13	10	Black	2	September	Comatose..	Recovery.
14	10	White.	1	September	Comatose..	Recovery.
15	18	White.	18	September	Hemoglobinuria	Recovery.
16	10	Black.	10	September	Comatose..	Recovery.
17	38	White.	10	September	Hemoglobinuria	Death.
18	30	White.	12	November.	Hemoglobinuria	Death.
19	60	Black.	12	February..	Comatose..	Recovery.
20	5	White.	60	February..	Comatose..	Recovery.

Of this number it will be seen that 12, or 60 per cent., were negroes. The mortality among negroes was 33 1/3 per cent.; among whites, 25 per cent. Indeed, I have seen the comatose, convulsive, cardialgic, gastric, choleriform, hemorrhagic and hemoglobinuric types occur in negroes, and in some death resulted.

The next phase which this case suggests is

GANGRENE IN MALARIA.

Several cases have been reported by Petit and Verneuill, in reviewing the occurrence of gangrene in connection with Raynaud's disease. These and others have been referred to by Barlow and Monroe. Osler reported a case of multiple spontaneous gangrene occurring in an estivo-autumnal infection, in the *Bulletin of the Johns Hopkins Hospital,* in February, 1900. He classifies three groups of gangrene: 1. In connection with Raynaud's disease. 2. Multiple spontaneous gangrene, in association with the acute infections, like measles, typhoid fever, typhus fever, scarlet fever, diphtheria, and malaria. 3. Multiple spontaneous gangrene of the limbs in young and middle-aged people without any obvious cause.

The case I report is one of multiple gangrene in an estivo-autumnal infection. I saw another case of spontaneous gangrene last year, which, from the clinical history, I regard as one in association with malaria. I regret very much that I could not get a blood-smear for examination, being without cover-glasses and slides at the time.

On March 27, 1900, the father applied to me for medicine for his child, C. S., a mulatto girl 4 years of age. He said that she had been having chills and fever for some time and was swollen about the face, hands, and feet. I prescribed iron, quinin and bitartrate of potash, under the influence of which, he said, the swelling disappeared. On May 16 I was called to see the child, and found her fairly well nourished. She had quite a high fever, with very rapid pulse and respiration. There was no edema and no eruption on the skin. The mucous membranes were anemic. The lungs were negative. There was no enlargement of the heart, and no cardiac murmurs. There was vomiting. The bowels were constipated; the spleen was enlarged, being palpable below the costal margin. The urine showed no albumin nor sugar. The child was put upon vigorous antimalarial treatment. On May 20, four days after my visit, the father reported that her fever had subsided and she seemed much better, but one foot was cold and apparently dead. The next day I visited the patient and found the right leg very cold as high as the knee, the toes in a state of dry gangrene, the dorsum of the foot black, with a few purpuric spots on the leg. The left leg appeared normal. There was no fever. A careful examination showed no endocarditis; there was no history of rheumatism. There were some pains about the knee on moving the leg. Another careful examination of the urine failed to show any albumin or sugar. I ordered a nourishing diet and tonic treatment, and advised the father to inform me when the line of demarcation formed. I did not hear any more from the patient until about two weeks afterward, when I happened to be passing the house, and asked how the child was getting along. The reply was, "Dat foot done come off." I went into the cabin and found the child sitting on a pallet on the floor, in very good spirits. On removing an old apron in which the leg was wrapped. I saw that spontaneous amputation had occurred at about the upper third of the leg.

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DISCUSSION.

DR. E. H. MARTIN, Clarksdale, Miss.—I have not many criticisms to make, but I do wish to draw attention to a distinction between the forms of pernicious malaria spoken of; for instance, hemoglobinuria and the comatose forms are all classed as pernicious malaria. Hemoglobinuria may be pernicious, but never in the sense we regard the other. Hemoglobinuria is malignant in that the germs present cause an absolute destruction of the blood cells. The other form is pernicious simply from an overdose of the toxin of malaria. In other words, one is pernicious from an overdose of the toxin and the other from the malignancy of the germs causing a destruction of the blood cells. In the negro we see but few cases of pernicious malaria in proportion to the total number of cases. In adults we see but few cases of pernicious malaria. In small children, especially in the small white children, we have a great many cases; it is quite an uncommon thing for a white family in the swamp lands of Mississippi to raise more than two out of five children, on account of the pernicious malaria, and the reason, I think, is evident; the blood of a child is very rich in the pabulum which nourishes the malarial germs; the vital resistance is low, and comparative immunity unattained. A vast number of the malarial germs develop, producing toxin, an overproduction of which kills the patient. I do not think that the mechanical theory can hold good; there is no reason why a few germs, and broken-down malarial organisms, should stop up the capillaries of the brain of a white child and not do the same for a white adult or negro child; yet it is a fact that these children have the "congestive" type almost exclusively. This is the idea that we get in speaking of pernicious malarial fever, that the toxins develop rapidly and in large quantity, and are administered to the patient in lethal doses.

Immunity in the negro is real, but only relative. It is a well-known fact that the number of white people that are affected with malarial troubles is less in proportion to the number of negroes affected than it was supposed to be; this is on account of the use by the whites of gauze doors, mosquito bars, the administration of quinin, etc. The class of "poor whites" who live as the negroes do are nearly all sufferers from acute or chronic malaria.

There is some hemoglobinuria among the negroes; but, where there were 400 negroes and 100 whites, there were 30 cases of hemoglobinuria among the whites and but 1 among the negroes. So, the negro has a relative immunity. Again, this relative immunity may be lessened by residence in non-malarial regions; a negro returning from a residence in New York, for instance, has lost it to a certain extent, but, after he has been in a malarial district for a time this relative immunity is regained. The negro is not fully immune, but is more nearly so than the white man; and the white man who has resided long in a malarious locality has a greater partial immunity than a newcomer.

DR. WILLIAM BRITT BURNS, Memphis, Tenn.—In referring to the immunity in the negro, the word relative, as mentioned by Dr. Martin, is a good one to employ. The negro is not immune to malaria, but he is relatively immune. The negro has malaria in mild form; it is true he has malaria in malignant forms, yet they respond to treatment quickly, much more so than the white people. I have seen several cases of comatose malaria in the black negro, and I have seen them get well; they all get well. I have never seen a case of comatose malaria in the negro terminate fatally, but I have seen many cases among the whites, especially in children. I have no doubt but what the accumulation of the malarial toxins in children is very rapid, and it is a common saying in the delta of the Mississippi valley, in Arkansas and Louisiana, that we must not allow a child to have a second or a third chill; it is the commonest thing to see, in a very large percentage of the cases, a child with congestion or congestive chill who dies. I have seen very few get well in infancy after the paroxysm of congestion came on. I have seen negroes, comatose for hours, get well.

DR. D. M. HALL, Memphis, Tenn.—I do not live in as malarial a district as those who have preceded me, and therefore I have not seen as many cases of malaria, especially of the malignant type. My experience, however, leads me to believe that the negro is relatively immune. I have seen a great many more cases of malaria among white people than among negroes.

I think that if you take an equal number of whites and negroes, under similar conditions of exposure, etc., a greater number of whites will have malaria than the negroes. I do not know why this is so. We have in the South negroes living in places where the mosquitoes are in droves and where the conditions are good for the production of the disease, and they live there with very little infection; yet, I am sure the white people could not live there without being infected. In one city in the South there is a little creek which runs through the town and a great deal of sewage is thrown into it despite the efforts of the board of health. This is a great breeding-place for mosquitoes and they are there in swarms; near this creek seems to be a favorite place for the negroes; they live there on its banks, in cabins, and they seem to be in good health. Yet the white people who live near there are greatly infected with malaria. Therefore, I do not think the negro is immune, only relatively so. I think he can be overcome by malaria, but this depends upon the quantity of the poison introduced into the system. It requires more of the poison, in a more virulent form, to overcome the negroes than it does the white people.

DR. DELANCEY ROCHESTER, Buffalo, N. Y.—I presume it is well known that the mosquito is one of the sources of malaria; I should like to ask the gentlemen present if they recognize any other mode of entrance of the malarial parasite into the body besides the mosquito.

DR. W. G. HARRISON, Talladega, Ala.—The negro is relatively immune to most every disease, except lung troubles. I remember, when a student of medicine, that Dr. Westmoreland, in his lecture, stated that the negro was greatly immune to most of the bad and alarming features of tertiary syphilis. I have watched closely since, and I am sure that what he said was true. I think the negro has some relative immunity to all diseases except those of the lungs. They die from pneumonia and tuberculosis most readily. I saw a family in February where five died from pneumonia in one week; in the same community I had five or six cases among the white men and none died; all had the same kind of medical attention, the same physician, the same nursing, etc. Negroes die rapidly from pulmonary diseases of every kind.

Scientific medicine is being introduced into the Southern malarial swamps. The physicians in Louisiana, Alabama, Georgia, etc., are rapidly learning the use of certain apparatus for the better diagnosis and treatment of disease. It is now necessary that any man who practices in the South should equip himself with a microscope and all other instruments for clinical diagnosis. I have seen many cases, some of them among the negroes, who were taken sick with some inflammatory trouble and they seemed in a fair way to recover, when there was an unexplained rise in the temperature; the microscope revealed the malarial parasite; without it the rise in the temperature could not have been explained. Recently, within the last six weeks, a little girl of 2 years was brought to the hospital with cholera infantum; she got along slowly. Under the use of the saline solution she gradually got better, but, after one week, without any apparent reason at all, there occurred an elevation of temperature. I expected a return of the vomiting and watery passages, but they did not appear. After thirty-six hours an examination of the blood revealed some of the organisms of malaria. Under the proper administration of quinin the patient promptly got well. Regarding the statement that negroes are more susceptible to all diseases, I can only say my experience is very different. They easily contract smallpox, and most of them have latent syphilis, but I am sure the race possesses a distinct relative immunity against all the fevers, stomach and intestinal derangements, rheumatism, gout and many other maladies.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.—I saw many cases of malaria in Cuba in 1898, and a large number of these were of the comatose variety. While I can not give any exact figures, I am under the impression that the comatose form of malaria, as we saw it in Santiago, was relatively quite as common among the negro soldiers as among the whites. Some time ago I went through the army records investigating this matter, and while I can not give exact figures, I am confident that the general statement that I have just made is correct. The last speaker surprised me when he stated that the negro is immune to many diseases to which the white man is susceptible. The question of relative immunity between races is an important one, and I do not believe that definite conclusions should be stated until we are sure of the data on which they are founded. Only a few years ago it was believed that the negro was quite immune to yellow fever, but later epidemics have shown that this is not true. When yellow fever prevailed in our army in Santiago in 1898, two companies of the 24th Infantry, composed of negroes, were detailed as nurses on account of their supposed immunity to the disease. Practically all of these negroes became infected, and the mortality was quite as great as it was among the whites. It should be stated that this regiment had long been stationed in the western part of the United States, and possibly the negroes composing it had lost any racial immunity that they may have originally possessed. I have always been of the opinion that the white man is hardier and as a rule less susceptible to the infectious diseases than the negro, and I am surprised to hear it stated here that the negro is largely immune to most of the diseases to which we are susceptible. In this country tuberculosis and pneumonia are the most fatal of the infectious diseases, and certainly the negro is quite as susceptible to either of these as the white men, and the mortality is greater among the blacks. I am also convinced from extended observation that the negro succumbs to typhoid fever quite as readily as does the white man.

DR. G. W. GOINS, Breckenridge, Mo.—I wish simply to ask a question whether, in the practice of any present, many cases with a malarial symptomatology have occurred which simulated more or less typhoid fever and which did not yield to the administration of quinin.

DR. LOUIS SCHWAR, Cincinnati, Ohio—Several of the gentlemen have spoken of a malarial imprint upon other diseases. This has been noticed in the progress of many of the diseases, particularly such that usually run an uninterrupted course. In the Millcreek valley, in which I live, many of the acute infections are observed to be disturbed in their behavior by malaria, and this belief is strengthened by the fact that quinin generally corrects the interrupted course. One reason why, in the treatment of the negro, better results are obtained by remedial agents, is perhaps because doses are more heroically given. This is particularly true where quinin is indicated for malarial affections. The statement that the negro enjoys an immunity from syphilis seems singular and can only be explained by invoking the belief that his immunity exists because he is born with the taint. The frequency with which unlooked-for fatal results occur in the negro is a matter of common observation on the part of those who have much to do with him. Sometimes, with no apparent reason for the fatality, death occurs, and it has been assumed by many that he loses his nerve just at the time he most needs it. It is known that the negro is very impressionable; this is best demonstrated by his conduct at religious exercises where in his excitement he is led to exhibit his fear in the most peculiar manner. It may be that a sense of impending danger lowers his resisting power and explains why he dies when there is no reason for it. Dr. W. S. Christopher, of Chicago, once applied the term "negroitis" to this manifestation.

DR. JOSEPH BRAYSHAW, Berlin, Ill.—In Central Illinois we have a few cases of malaria that so much resemble typhoid fever that a diagnosis can only be made by means of the microscope; but we have a large number of typhoid fever cases that so clearly resemble malaria that were it not for the Widal reaction and the absence of the malarial parasite a diagnosis would be impossible. We frequently have typhoid fever without pea-soup stools, without rose spots, and without very much abdominal tenderness, while we frequently have abdominal tenderness to a marked degree in malaria. The typhoid condition and typhoid tongue are frequent in our cases of malaria.

DR. T. B. FUTCHER, Baltimore, Md.—I should like to emphasize one important complication in malaria which Dr.

McElroy has already referred to in his paper, i. e., the occurrence of multiple gangrene in malaria. I was fortunate in having had an opportunity of seeing the case of gangrene of this nature which was under the care of Dr. Osler. The patient was a man, 23 years old, who was admitted to the surgical side of the Johns Hopkins Hospital, with dry gangrene over the dorsum of both feet, the heel of the right foot, and symmetrical patches over the fingers of both hands. There were, also, one or two large patches over the gluteal regions, and two small areas over the occiput. The case was at first a puzzling one from an etiological standpoint. There was slight elevation of temperature, and this, with the existence of an enlarged spleen, led to the examination of a specimen of fresh blood, which revealed numerous typical malarial crescents. This suggested the possible relationship between the malarial infection and the gangrene. Accordingly, the patient was transferred to the medical side and immediately placed upon anti-malarial treatment, quinin being administered in large doses. The patches of gangrene were treated locally. Improvement began at once, and the patient soon recovered from the local lesions. This was the first case of malarial gangrene that we have had at the Johns Hopkins Hospital out of a total of over 2000 cases, and it is undoubtedly an extremely rare complication. The case illustrated the importance, in cases in which the etiology is obscure, of a careful examination of the blood.

I should like to add that my impression in regard to the relative frequency of malaria in the two races in Baltimore, without having definite figures at hand, is that the negro race is practically as frequently affected as the white.

Dr. W. D. Haines, Cincinnati, Ohio—We have all seen delirium tremens follow in the wake of an accident, fracture, etc.; in the so-called moderate drinkers, on the other hand, we have seen malarial fever manifest its influence immediately after some surgical procedure. This would seemingly indicate that the prerequisite principle in either instance lay dormant until some exciting cause demanding extra attention on the part of Nature becomes operative. This is somewhat at variance with the usually accepted theory of disease, viz., that the host must prepare for the reception of the guest. We are exposed daily to the infectious principles of diphtheria, typhoid fever, tuberculosis, etc., and still we do not contract these maladies, forsooth the soil is sterile. On the other hand, how frequently we observe patients with lowered vitality or injury become an easy prey to these infections.

The statement made by one of the speakers, Dr. Harrison, astonished me not a little. He said: "The negro enjoys immunity from syphilis." It seems to me as I now recall personal experience in the treatment of this race that I have seen more cases of active syphilis in the negro than all other races combined. I never ask a negro *whether* he has had syphilis, but *when* he had it.

MEDICAL SHOCK.*

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Before discussing what I interpret to be a condition of medical shock, it may be well to say a few words concerning the justification of ever rendering a certificate of death from "heart failure." Far be it from my purpose to excuse, justify, or encourage the use of this term to aid ignorant certifiers of undiagnosed deaths, or to give a mystic covering to illegitimate deaths, whether due to actual malpractice, or to the careless use of active drugs.

It may be said that the certificate of death from medical shock or heart failure is unjustifiable, because, if we seek carefully enough, we will find a cause for the failing heart, such as myocarditis, fatty degeneration, an endarteritis or atheroma of the coronary arteries, etc., which causes, however, can many times be diagnosed only on the autopsy table.

Neurasthenia, which is a condition and not an entity, is recognized as a legitimate cause of death, but the pathology of this condition is more intangible than the condition of heart failure.

I do not wish to advocate the use of the term "medical shock" for conditions of failing heart, due to distinct pathologic conditions, or due to the gradual break-up or overpowering of the system by very acute or prolonged processes, but I think the term justifiable, when a badly acting and gradually weakening heart is the most urgent cause for anxiety, and its weakness is out of all proportion to the pathologic condition or symptoms present.

I believe it to be a fact that the hearts of our patients cause us more and more anxiety every year. If we doubt this statement, we have but to trace the treatment of acute conditions from the period of bleeding, calomel, tartar emetic, or other depletions, gradually down to the present time to find that first there was a cessation of depletions; next, the avoidance of nauseating doses of anything, denoting a greater care of the stomach; next, forced nutrition; then the general disuse of such drugs as aconite and veratrum viride; next alcoholic stimulation, and now we even note the loss of vasomotor pressure from alcohol and use strychnin in its place. This all means that the hearts of to-day do not withstand fevers or other systemic upsets as they formerly did.

To be specific, we are as justified in using the term "medical shock" as we are in using the term "surgical shock," and that the symptoms of heart failure which develop so unexpectedly in acute cases otherwise progressing satisfactorily, are due to this condition of shock. We all know the symptoms, viz., a more or less rapid heart, but with the least movement or excitement made very rapid; a soft, irregular, perhaps dicrotic or intermittent pulse; incomplete inspirations without much actual dyspnea, interspersed with frequent sighs, and the subjective symptom of precordial oppression. The temperature is generally low, the flesh cool and clammy, and if quick relief is not obtained, death will soon take place, caused by heart failure or medical shock.

The pathology of surgical shock is believed to be a paralysis of the vasomotor system, causing primarily a bleeding of the body into the large abdominal vessels, splanchnic paralysis, and secondarily great loss of heat from the dilated surface vessels.

I believe that medical shock is just as certainly a vasomotor paralysis, except, perhaps, in severe acute malignant affections where there may be a great destruction of red blood corpuscles. As a consequence of this paralysis, the major part of the blood is in the abdominal veins. The blood flows slowly into the dilated and, therefore, non-elastic arterioles; hence, slowly in the capillaries, and returning slowly in the veins, but imperfectly fills the heart cavities. The heart, not only from imperfect filling, but also from impaired nutrition, contracts irregularly, incompletely, and arrhythmically. The aorta has not the pressure ahead or the forcible quota of blood from behind, and consequently does not give enough elastic rebound to force blood properly into the coronary arteries, and the heart muscle is improperly nourished. By the lowered pressure, and the normal blood pressure is so vital, all the functions of the body begin to fail, all digestive processes are imperfect, and undoubtedly normal oxygenation is impaired, molecular death begins to take place, at least almost unaccountably

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gradual failure of body and mind occurs, till death closes the scene.

Surgical shock is more frequently caused by injuries to certain areas of the body than to others, such as the head, neck, splanchnic region or testicles. Many cases of operative shock are undoubtedly due to the intense pain from severed nerves, without loss of blood.

Returning again to medical shock, we find that severe, acute nerve pain will, if continued, give a lowered vasomotor tension, and if too long continued or too severe, vasomotor paralysis or shock, perfectly similar to that due to profound injuries of these nerves, or surgical shock. The nerves most likely to cause such lowered blood pressure from pain are exactly those which, if injured or operated on, are most liable to cause surgical shock, viz., in the region of the heart, solar plexus, the neck, the head, and the testicles.

We often see this depressed heart and softened pulse from precordial pain, or from a genuine migraine, or biliary and renal colic. The vasomotor depression is quickly shown in these cases, but in any subacute or chronic nerve pain, sooner or later, this condition, possibly mildly evident, supervenes. Even in hysterics and neurasthenics, imaginary pain can and does cause the same depression; in fact, a true neurasthenic is probably not much else than a patient in a chronic state of diminished blood pressure and semiparalysis of the vasomotor system.

Chronic organic diseases without pain do not cause symptoms of shock until profound anemia occurs. In acute fevers a successful issue is generally assured if the heart, and that really means the vasomotor system, can withstand the strain. The strain means the intensity and persistency of high temperature, the amount absorbed of the suppurative or putrefactive products of the pathologic process, plus the absorption of fermentative products due to intestinal stasis, and the central depressing influence of the toxins produced by the specific germ. If we can sustain the vital powers, and what does this mean other than the vasomotor tone, until the elimination of such poisonous products exceeds the absorption, our patient will get well, even if we have to fight through a tedious convalescence, showing the amount of muscle and nerve strain through which the patient has passed. In other words, our whole aim in acute feverish processes should be to make the elimination at least equal to the production of these decomposition and fermentative products, and to prevent the absorption of these products if possible. This means, specifically, to cause all of the emunctories to do good and proper work, or if one is impaired, to increase the action of another, and to keep as clean as possible every localized suppurating or inflammatory process that may be going on. The good results of such treatment are markedly evidenced in typhoid fever. By laxatives and intestinal antiseptics we reduce the temperature, clean the ulcerating surfaces and prevent fermentation from giving more toxins, and from producing that most troublesome condition of tympanites, with its liability to cause hemorrhage and perforation. A considerable portion of the persistently high temperature and bad pulse of typhoid fever is due to the added and often neglected factor of bowel-infection.

In all diseases or conditions where there is a piling-up in the blood of absorbed poisons, be they from typhoid or dysenteric ulcers, pus collections, malarial plasmodia, or hemoglobin debris, cancerous disintegration, or catarrhal edematous mucous membranes, which are such fine culture-grounds for all germs, any treatment that hastens the evacuation of the excreted bile, impregnated as it is with toxins, made temporarily inert by the good offices of the liver mechanism, will prevent systemic and nervous poisoning and ultimately vasomotor disturbance and medical shock.

Hence, in any disease, to forestall the condition which I have termed "medical shock" we should take every means to prevent the absorption of secondary toxins, or in other words, we should endeavor to prevent double infection. We should carefully promote nutrition, not overloading the stomach, stimulate the heart either with alcohol, strychnin, coffee or camphor, as indicated, and stop too acute, or too long continued, subacute pain. Coal-tar antipyretics and analgesics should be used with the greatest care. Of course any hemorrhage should be treated as the surgery of the part decides, and any subnormal temperature by every known method to keep up the normal heat of the body.

If medical shock occurs, we must treat it on the same general principles as laid down for the treatment of surgical shock. All cardiac and vasomotor medication should be administered hypodermically, as the stomach will not absorb in this condition of shock, and the tolerance of enormous doses of active drugs, as digitalis, given by the stomach for the shock of delirium tremens, is due to the very slow or non-absorption of it. Small quantities of hot liquids taken into the stomach can but do good by their warmth.

I have purposely but briefly mentioned the shock due to acute malignant infection, which may be largely profound acute anemia due to destruction of the red blood corpuscles. I have wished to emphasize the frequency and the pathology, as I interpret it, of the attacks of heart failure as we see it in our acute cases. Many deaths attributed to the acute disease present are really due to this condition of medical shock or heart failure. We all frequently have cause to combat, sometimes successfully, sometimes unsuccessfully, these attacks of medical shock. Whether we term this "medical shock," or "heart failure," we know that can we hold this heart and vasomotor system for a short time longer, our patient will recover from the disease which has attacked him.

DISCUSSION.

DR. C. W. LILLIE, East St. Louis, Ill.—It has long been a question whether the term "heart failure" is a proper one to use at any time, and especially as it is condemned by those who are looking for accurate statistics regarding the causes of death. It seems to me that the term, as used in the paper, would seem to cover the conditions produced by a number of influences exerted upon the patient by disease, i. e., by combined influences rather than by shock. The term shock I believe should be restricted to those cases in which there are influences of a direct character applied in such a way as to immediately overcome the vital forces. These influences can be overcome, or prevented, by the use of such general tonics as are indicated, and especially by strychnin. It does not seem to me that the term "medical shock" would be a proper one to apply.

DR. JAMES J. WALSH, New York City—The term "medical shock" seems to deserve a place in the discussion of certain difficult fatal cases, the etiology of which is as yet unsettled. For a time the term heart failure was employed, but owing to the abuse of it, has fallen into disrepute. There are, however, undoubtedly cases in which owing to the development of some nervous condition the heart stops beating though no lesion can be found postmortem. Most of us have experienced certain cases which, especially those beyond middle life, when attacked by some acute gastric or intestinal condition, are liable to paroxysms of heart disturbance, and may prove fatal. Sometimes death is almost instantaneous and would

seem to be due to the shock of pain. It is as if irritation of the digestive ends of the vagus led to irritative reflex, inhibitory impulses that brought the heart to a standstill. This state of affairs reminds one of nothing so much as surgical shock. What the underlying basis for surgical shock is we do not know. It seems an excellent idea, however, to have the analogous term, "medical shock," to apply to certain non-surgical cases, because this will stimulate the investigation of both conditions, so as to solve the important problems they involve.

DR. C. A. KELSEY, Minneapolis, Minn.—By whatever term we call it, surgical shock, heart failure, or any other term, we all experience the same anxiety when we are confronted with the condition. During the reading of this excellent paper one thought came to me which I would like to discuss here. In diseased conditions where heart failure is liable to occur, is it the wisest plan to fortify the patient against its occurrence, or shall we reserve our agents until the critical moment comes and they are demanded? I have sometimes thought that we make a mistake by crowding the hypodermic injections of strychnin, or other powerful heart tonics, in cases where it does not seem to be positively indicated. I have in mind a case of diphtheria in a child occurring not long since, in which the consultant advised beginning and continuing the use of heart stimulants by the hypodermic method in order to anticipate heart failure. That plan was pursued, the nurses were provided with the hypodermic syringes, and they continued to use the injections. But, when the critical point did come and the heart failed, the heart then refused to respond to stimulation and the patient died. The point I want to raise is this: Is there not a possibility of making a mistake in commencing the heart stimulants before they are positively indicated and thus get the system so accustomed to the stimulants that the heart fails to respond at the critical moment? A man in a race does not use the spur at the beginning, but at the proper moment; if he did use it at the beginning the horse would fail to respond to it when the proper time came.

DR. GEORGE W. WEBSTER, Chicago—Whether we employ the term heart failure, or weak heart, or surgical shock, or medical shock, we should, all of us, be ready, at all times, to recognize the condition. I believe there is no one point on which there is less clearness of conception than in regard to this matter of failure of weak heart, and the conditions which bring about a weak heart. I know that there are many physicians who, when they examine the heart with a stethoscope for the first time, and find no murmur and no apparent intrinsic cause for the heart giving out, pronounce it sound. We should remember that a weak heart may be brought about by overwork due to both intrinsic and extrinsic causes; it may be due to valvular lesion; or the right side may be overworked from causes in the pulmonary circulation, and the like; or the left heart may be overworked from systemic conditions, as a general arterial sclerosis; the heart may fail from toxemia due to many causes, such as alcoholism, gout, syphilis, or from the toxins produced by various acute infections. There are many of these toxins which influence the heart muscle directly, and both the intrinsic and extrinsic nervous mechanism of the heart. Again, the heart may fail from failure of nutrition, which may be due to disease of the coronary arteries, primary or secondary anemias, or reflex causes.

I remember an experience that I had as a medical student about twenty years ago. We had a rabbit upon which we were going to experiment, and that animal was actually scared to death. The conditions found were these: The heart was found to be absolutely bloodless and the abdominal veins were enormously distended with blood; in other words, the animal bled to death into his own veins, the veins presided over by the splanchnic nerves. There was a failure of the heart from the nervous influence. Mental emotion may of itself be sufficient to cause a dilatation in the splanchnic area, so lowering the arterial pressure, causing the heart to fail. If we use the term heart failure we should remember that it is merely a convenience for classifying, not in any definite way, but to cover up a large number of things where we were unable to make an accurate diagnosis.

DR. R. C. NEWTON, Montclair, N. J.—I agree with the last speaker in regard to the inadvisability of calling conditions "medical shock" which are due to toxemia, to weakness, to overstraining of heart muscle, and perhaps to overdrugging. I think the term is confusing. If we use this term it will convey to the laity the impression that the physician has done something or allowed something to occur to the patient that could have been prevented. I agree with Dr. Osborne's explanation of the condition, and think that his paper describes vividly a pathological state with which we are all more or less familiar. The paper is interesting and instructive; but it seems to me that if a new name be needed for this condition a better one might be found than the one the Doctor suggests.

DR. OSBORNE, closing—I have but little to add. I do not feel that I ought to back up the term too strongly, yet I think we should have some other term to denote this condition. Heart failure is an opprobrium. If we amputate a man's leg and the man dies we should not say that he died from the amputation of that leg. The way to treat medical shock is to prevent it in much the same way that we prevent surgical shock; there is a prevention for medical shock as there is for surgical shock. I think the term medical shock will help us in making up our statistics.

THE SPREAD OF TUBERCULOSIS BY COUGHING.*

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PHILADELPHIA.

The general opinion held by the medical profession at large has been that tuberculosis is disseminated chiefly by sputum, pus from tuberculous ulcers and sinuses, and from the dejecta of the bowel in persons or in animals suffering from tuberculous enteritis; these substances, from whatever source, becoming dry and later pulverized; they, together with their tubercle bacilli, are carried about by the currents of air. Such dust is commonly agitated by sweeping and dusting of carpets, rugs and furniture in rooms previously occupied by tuberculous patients. Indeed, the investigations of Cornet[1] go far to corroborate this popular belief.

Cornet showed that dried sputum—dust—remained dangerous for months. He collected dust from the floors, walls and furniture of rooms previously occupied by persons suffering from pulmonary tuberculosis in various prisons, hospitals, asylums, and private dwellings, and, inoculating animals with such dusts, he determined the presence of virulent tubercle bacilli. Of the 118 samples of dust collected from the rooms of phthisical hospital patients, 40 were found capable of producing tuberculosis in animals by inoculation. Dust collected from 21 medical wards was also proved to contain living virulent bacilli in 15 of such samples. In one instance the dust was found to be infective six weeks after the death of the patient. Cornet,[2] to prove further the infectiousness of such dust, shook in a room a carpet infected with tuberculous sputum dust, and forty-eight hours later placed in this room 48 healthy guinea-pigs, of which number 46 developed extensive lesions of tuberculosis. Attempts to infect animals by the blowing of tuberculous sputum dust was attended with negative results.

Heron, in the City of London Hospital, and Hance,[3] in the Adirondack Cottage Sanitarium, do not find tubercle bacilli common in the dust of these institutions,

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being found in but 1 of the 17 specimens studied. These and other investigators have shown that the air and dust of certain institutions and dwellings occupied by consumptives were contaminated with tubercle bacilli, and this, in connection with the clinical fact that healthy persons who occupied such places were likely to develop tuberculosis, furnished additional support to the belief that infection took place through the respiratory tract; and that the sputum was the chief source of danger, seemed evident.

The swallowing of bacilli from the mouth or upper respiratory tract has long been regarded as a dangerous procedure, as has also been the feeding of infants on milk from tuberculous cows, as shown by Cornet.[4] Klebs, Gerlach, and others have shown that milk from tuberculous cows is capable of producing the disease in animals fed upon such milk. Further, it has been shown by Klebs, Parrot, Aufrecht, Chauveau[5] and other observers, that if the sputum from consumptives be incorporated with the food for susceptible animals, such animals develop tuberculosis. It will suffice to make mere mention of direct infection, since such instances are comparatively rare, and certainly occupy a small percentage of all tuberculous processes.

Flugge[6] was probably the first to consider the question of the dissemination of tubercle bacilli by coughing. "It is not at all proved that inhalation of dried sputum dust can produce tuberculosis in healthy men. If there is infection in healthy men this can be produced either by contact or inhalation, not so much by dried dust as by sputum which is spread in the air in finest drops in coughing." This spray composed of droplets containing tubercle bacilli may float in the air for some time, and be carried by fine currents about the room. Flugge regards this spray to be the true cause of infection, and to support this view he compares the results obtained by spraying dried sputum and moist sputum into cages occupied by experimental animals, in which cases the latter only gives positive results. He calls attention to persons who cough with closed lips, and to those who allow the mouth to remain open while coughing; of these, the latter class only is regarded as dangerous, and this danger is obviated by the avoidance of hard coughing, or the application of a handkerchief to the mouth while coughing.

Laschtschenko continued Flugge's experiments by demonstrating that this spray containing bacteria was produced by loud talking, coughing and sneezing. For this purpose the bacillus prodigiosus was added to the mouth fluids, after which agar-agar plates were exposed in various portions of the room, and in this way the bacilli were recovered at a distance of ten meters from the patient after hard coughing. Tuberculous patients were permitted to cough into a glass box, in a distant portion of which a bowl containing distilled water was placed. This water, after being exposed to the spray emitted by an indefinite number of coughs, often contained tubercle bacilli. Glass plates were exposed one-half to one meter (19.75 to 39.50 inches) distant from the patient's mouth, when he was directed to cough against them, and by the staining of such plates tubercle bacilli were occasionally found.

J. J. Curry,[7] at the suggestion of Prof. Edwin Klebs, studied 12 cases of pulmonary tuberculosis, in all of which the sputum contained tubercle bacilli. Examination of the mouth fluids at various hours during the day, by staining, resulted in the detection of tubercle bacilli in 9 of the cases; bacilli were most plentiful during the morning hours and after a paroxysm of coughing. In 6 of these 9 positive cases, it was extremely difficult to demonstrate the bacilli in the mouth fluids. Glass plates were suspended before the patients, at distances of from one to three feet, during coughing. These plates presented two varieties of spray, one composed of very fine drops, the other of larger drops, one to five millimeters in diameter. In these larger drops were the tubercle bacilli found, 28 being the largest number noted in the large drops. By the staining of these plates Curry obtained positive results in 50 per cent. of cases.

W. Goldie,[8] assisted by Dr. Southerland and Mr. Young, repeated the experiments of Flugge, his assistant Laschtschenko, and Curry. They confirm the statements made by Laschtschenko by using an emulsion containing the bacillus prodigiosus in the mouth; they found that most colonies developed on plates exposed ten feet distant from the patient and at an elevation of five feet, during coughing, these findings being influenced by vigorous coughing and by currents of air. It was further shown that plates were infected at a distance of ten feet by laughing, six feet by loud talking, three feet by ordinary talking, while deep breathing seldom infected plates, even at a few inches from the mouth. During ordinary talking for two minutes, 90 droplets fell on a four-inch glass plate placed eight inches from the speaker, each droplet containing bacteria. Clean glass plates were held six inches from the mouths of phthisical patients while coughing, for twenty-four hours, and when stained by carbol-fuchsin gave positive results, as follows: 60 per cent. of all cases; 60 per cent. where cough was accompanied by expectoration; 33 1-3 per cent. where cough was not accompanied by expectoration; 28 per cent. where plates were used during a single coughing in the morning, and 14 per cent. when used during the evening. The droplets varied from a few (50 microns) to many millimeters in diameter, and were composed largely of thick mucus and leucocytes. Single fields, under the oil-immersion lens, were seen to display from 125 to 200 tubercle bacilli. The mouth fluids were rarely found to contain bacilli, and only when the sputum was noted to be profuse or liquid.

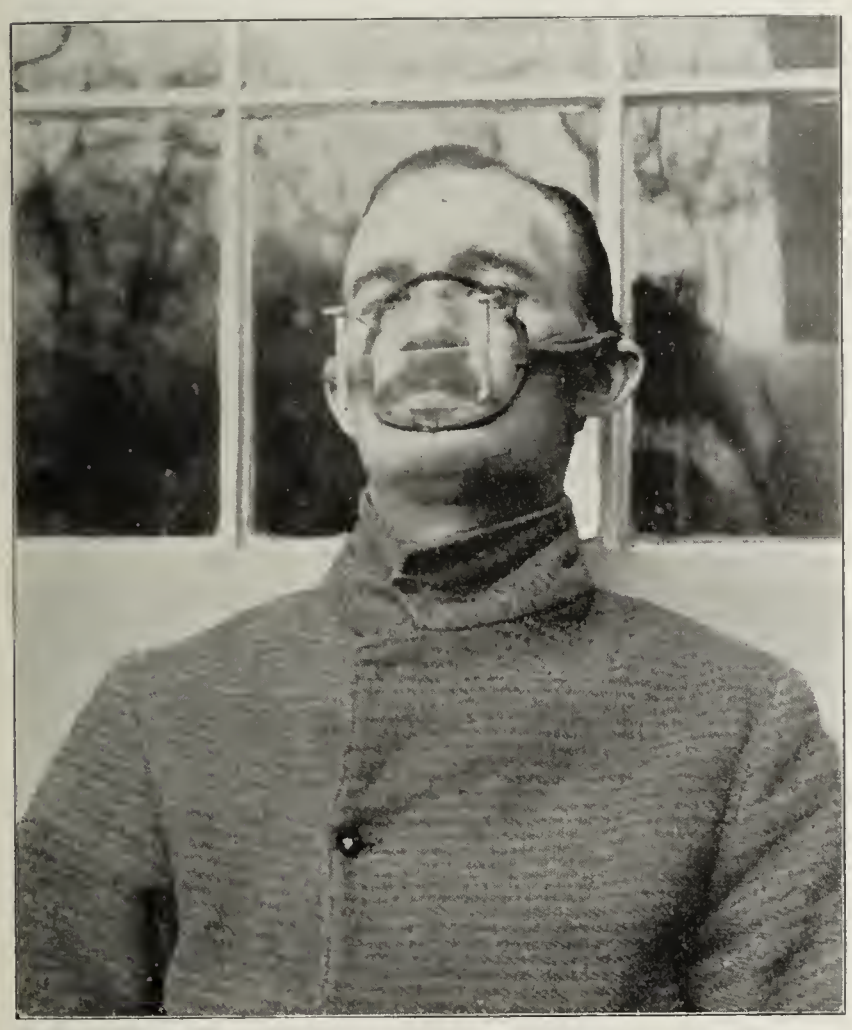
M. P. Ravenel[9] collected, on pieces of soft pine wood, the spray thrown out by tuberculous cows in coughing, by placing the wood near the bottom of a nose-bag which the animal wore for a variable time. In cases where only a small amount of spray had collected, this, when transferred to cover-glasses and stained, was always found rich in tubercle bacilli, and it was possible to demonstrate the bacilli in the spray from every tuberculous animal studied. Of 22 guinea-pigs inoculated with portions of this spray, 11 became tuberculous. Guinea-pigs were exposed to the breath of tuberculous cows, but in no instance did infection occur. Noteworthy is it that these cows were not all in the later stages of the disease, one living for more than two years after the experiments were made.

The causes which prompted me to investigate the degree with which tubercle bacilli are disseminated by coughing were as follows: 1, from the mouth of an inmate of the Philadelphia Hospital who presented the conditions common to advanced phthisis, I noticed that fine droplets of sputum were ejected with each cough, and 2, I observed that coughing was often excited by eating, not only in patients confined to their beds, but also in those able to walk to the dining-room. It ap-

peared to me that if this fine spray contained tubercle bacilli, when produced in such quantities in the dining-room where it must of necessity fall upon the food to be eaten by others, as well as those producing such spray, furnished a potent factor in the dissemination of tuberculosis, and possibly explained why patients in the early stage of the disease did not do well in this institution, where every possible attention is given to ventilation, light, and the disinfection of sputum.

METHOD OF COLLECTING SPRAY.

This was accomplished by means of a mask (Figs. 1 and 2). It was made from German silver wire, one piece of which is molded to fit the face, resting on the nose, cheeks and chin. To obviate any irritation to the patient, this portion was covered by a piece of rubber tubing. Suspended from this wire is a second oblong portion provided with two lateral grooves, which serve to accommodate two microscope slides. When the mask



is in position the slides are held directly in front of the mouth and nose, at a point three inches distant from the lips. The mask is held in position by an elastic band which passes above the ears and over the occiput.

Patients were allowed to wear the mask with the clean slides in position for from one to one and a half hours, during the day when they were apt to cough least and were instructed to remove it during a paroxysm of coughing. It was never worn during the morning or evening; the object being not to collect on the slide the spray produced by vigorous coughing, which had already been studied, but to determine whether or not consumptives emitted a fine spray, when talking, laughing, clearing of throat or by their characteristic hacking, that was in any way dangerous to the health of their associates.

Fifty patients, 34 males and 16 females, all of which presented unquestionable evidence of either pulmonary or laryngeal tuberculosis and in whose sputa tubercle bacilli had been found, were made to wear the mask as above described.

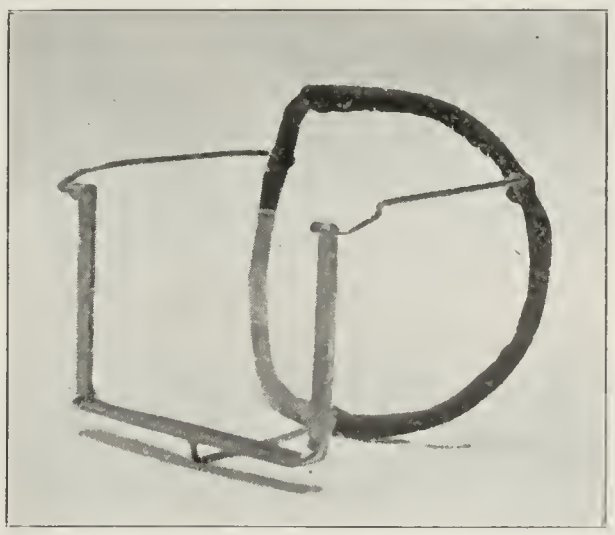
NAKED EYE APPEARANCE OF SPRAY.

This varied greatly and since patients were cautioned not to encourage coughing, no satisfactory explanation for such changes was noted. Certain slides displayed many droplets, varying from the size of a pin's point to that of its head. Others showed few droplets, while a third variety presented an evenly-spread film, very thin, covering the entire slide and seldom showing any distinct droplets.

MICROSCOPIC STUDY.

Specimens were fixed and stained by carbol-fuchsin and Gabbett's acid blue solution. Of the specimens collected from 50 patients, those from 49 were found to contain bacteria—the diplococcus and the streptococcus being the most constant, yet baccili and clusters of cocci were not unusual. A single minute droplet often contained organisms of each class.

Of these 50 specimens, 38 were found to contain tubercle bacilli in variable numbers, four to six bacilli being the smallest number found in any specimen, and many of the specimens, under a 1/12 oil-immersion lens, showed fields of bacilli too numerous to be counted. In fully one-third of the positive cases the bacilli were



very numerous. In one of the specimens where I hunted for fully one hour and passed the specimen as one not containing tubercle bacilli, Dr. W. J. Hawke, resident pathologist, in studying this slide later, found a droplet containing more than forty bacilli. I am further indebted to Dr. Hawke for his untiring interest and valuable assistance rendered.

Among other findings were large and small squamous epithelium and occasionally very small epithelial cells more or less intimately connected with thick mucus and leucocytes. The tubercle bacilli were commonly associated with these elements, but were occasionally found singly or a number of bacilli without any other elements in the field.

CONDITIONS INFLUENCING THE SPRAY.

From patients showing tubercular laryngitis and from those who talked loudly, or who were frequently clearing their throats, the most spray was found. In patients very weak, speaking only in a whisper, scarcely any spray collected on the slide and this seldom contained bacilli. Men wearing heavy mustaches ejected no spray on the slide until after the mustache was held from falling over the mouth. Coughing with the mouth open must necessarily favor the production of the spray.

Of the 12 negative cases, these explanations are

given: Sputum from 3 such patients contained only few bacilli and these were not found until after several examinations, none being found at the time when the specimen slides were collected. Another showed no bacilli in his sputum, yet autopsy revealed cavity formation. Three were extremely weak and did not talk while wearing the mask. The remaining 5 presented marked sprays containing many bacteria; yet careful examination failed to reveal the presence of tubercle bacilli.

The detection of the bacilli in these fine droplets of the spray was greatly facilitated by the use of a low power lens for the purpose of locating such droplets; after which a 1/12 oil-immersion lens was used. Droplets not perceptible to the naked eye were often found in this manner, and such minute particles not infrequently contained tubercle bacilli; at times they were present in great numbers. By the employment of these methods, it can be stated with safety that the finding of tubercle bacilli in the spray emitted by consumptives during the act of coughing, sneezing, laughing, and talking, is not attended with greater difficulties than is the finding of the bacilli in the sputum of patients early during the course of the disease.

VALUES IN DIAGNOSIS.

These are doubtless limited. However, from the extreme difficulty one always meets in eliciting satisfactory physical signs from the chest examinations of the insane, and since we are seldom able to collect the sputum from such patients, it would appear that if they be carefully guarded by the attendants, this method of collecting their sputum for clinical study should have at least a limited field of usefulness. In nearly all instances a slide could be placed in a forceps and then held by an attendant before the patient's mouth during one or more vigorous coughs. In one instance, that of a colored female, aged 19, few bacilli were found after wearing the mask for one and a half hours, during which time she did not cough, while the spray from a single cough during a paroxysm showed many bacilli. Where the mask was worn for ten minutes during such periods great numbers of bacilli were found.

Children, likewise, seldom expectorate and a mask could readily be adjusted to the face of any child, and by carefully instructing the nurse, specimens could be collected during the acts of coughing or crying. This, as well as its value in the clinical study of the insane, must be further tried, and estimated only from the results obtained.

HYGIENE.

Now that it is shown that the secretions of the mouth and respiratory tract are atomized and given off in the form of a fine spray, in both health and disease, and that this spray contains bacteria and other cellular elements known to be common to such secretions, it is reasonably fair to suppose that many other diseases are conveyed by this medium, and that the work accomplished through the study of consumptives is but a step in a direction which bids fair to modify, in a measure at least, the hygiene of infection. Conditions affecting these organs and consequently their secretions must of necessity be spread in this way; especially is this true of diphtheria, tonsillitis, and possibly other conditions, the etiology of which is not definitely known, such as smallpox, measles, scarlet fever, whooping cough, mumps, etc. It further furnishes additional cause for the rigid disinfection, now universally carried out, in connection with all cases known to be infectious in character.

Droplets alighting on clothing must serve as a favorable means to convey disease from house to house; and that man may become infected by the spray thrown off by horses, cows, and other domestic animals suffering from glanders, tuberculosis, influenza and similar affections, appears highly probable.

SURGICAL VALUE.

To repeat, "experiments show that during ordinary talking for two minutes, ninety droplets may fall in a four-inch circle at a distance of eight inches, each of these droplets containing from dozens to thousands of bacteria." (Goldie). At first this would tend to convey the impression that the danger of infecting open wounds during an operation by the sprays produced by the talking of the surgeon or any of his assistants is extremely great, and this would doubtless be true where any person assisting in the operation is suffering from either an acute or chronic infection of the mouth, throat, or respiratory tract. A fact ever to be borne in mind is, that in health this spray may contain great numbers of bacteria; yet few, if any, such organisms possess the properties necessary to infect man, even when introduced into an open wound. The advisability of all persons being provided with a mask of gauze on entering the operating room, to prevent all possibility of their contaminating the air of the room, would appear from a bacteriologic standpoint to be a rational procedure; yet before this precaution can be urged, it, too, must be tried by the surgeon, and shown to lessen the number of cases of infection for which at present no ascribable cause is given.

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TREATMENT OF CERTAIN FORMS OF CANCER BY THE X-RAYS.

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It is well recognized that cancer is on the increase, and reliable statistics made in various countries and extending over periods of years prove that the rapidity of this increase is surprisingly great. Any method of successful treatment, even though it may be limited in its application to certain forms of this disease, will prove to be a great boon to humanity. Further, as is natural with the advance in the application of science to medicine, the opportunities for the irregular practitioner will be curtailed.

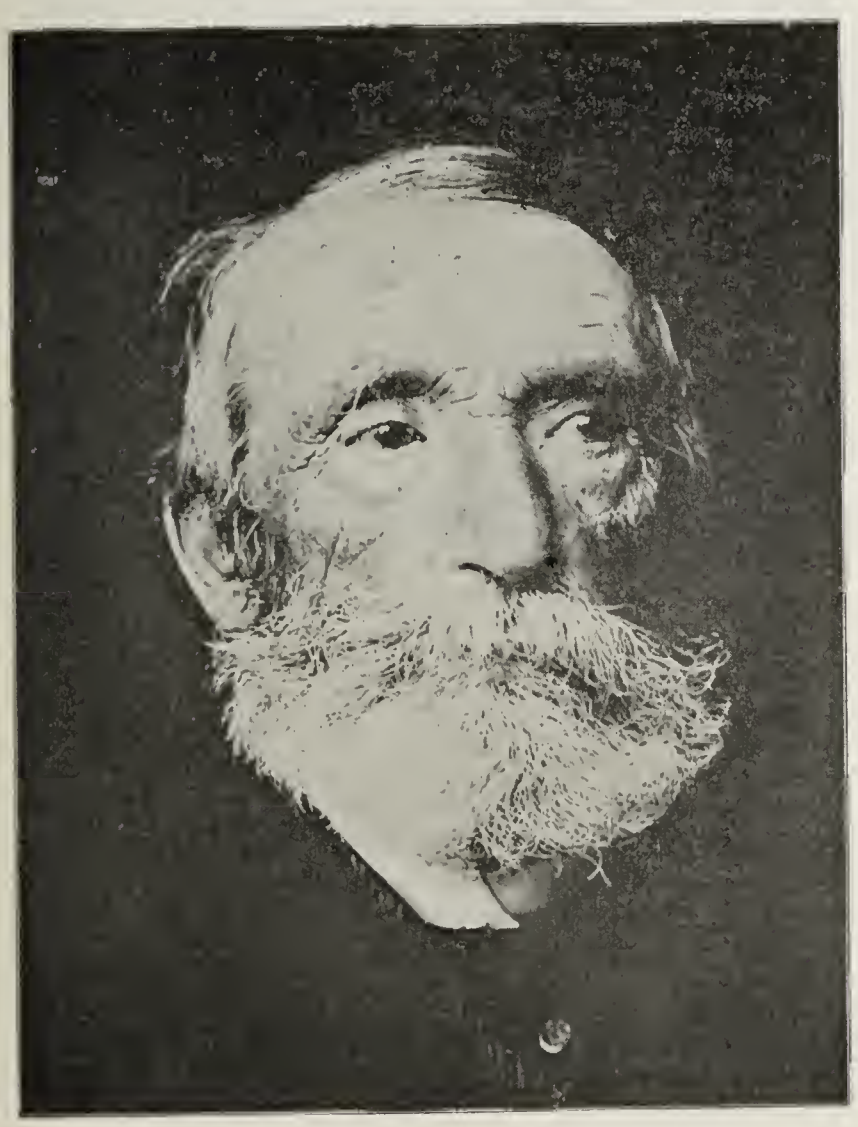
Although I shall refer to but few of the cases I have treated, I hope to present enough to have the reader share my opinion, namely, that in the *x*-rays we have an agent which causes superficial external forms of cancer to heal; and this may be done without pain to the patient.

From the standpoint of treatment by the *x*-rays, cancers may be divided according to their position into external and internal forms. Of the internal cancers

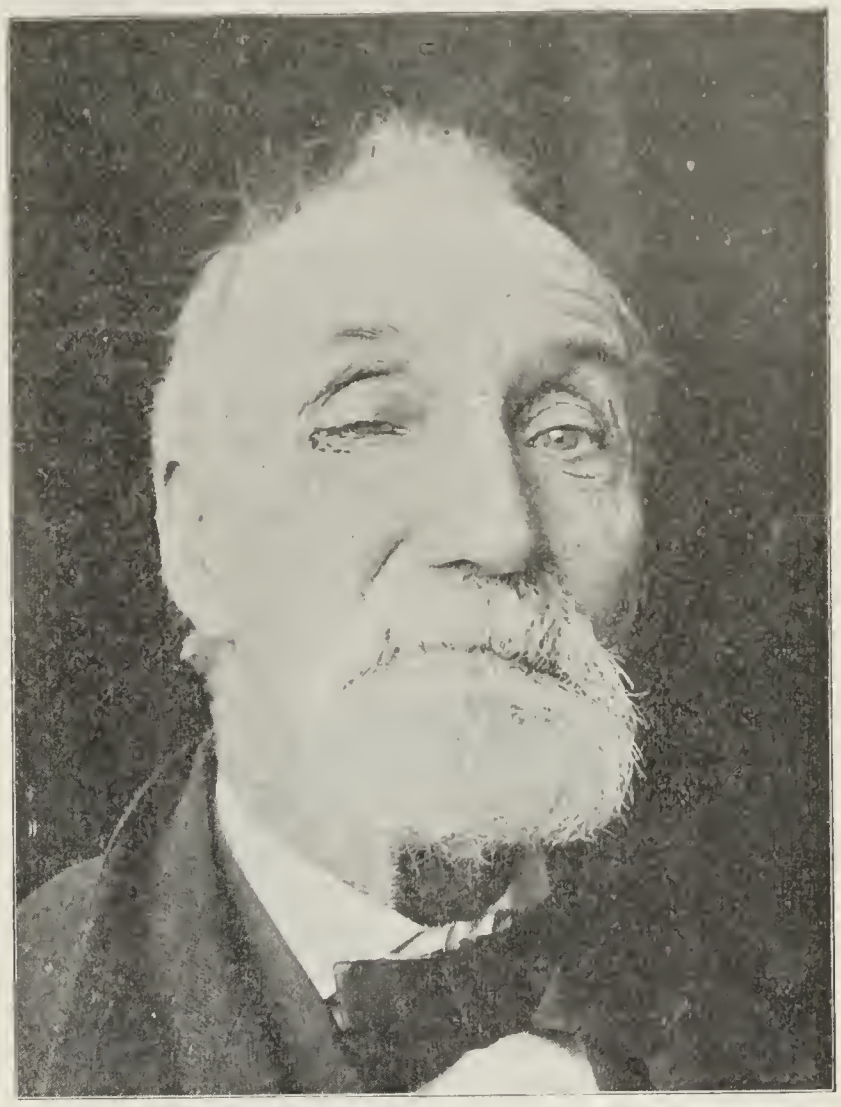
I will not speak at the present time, as it seems better to wait until I have had more experience with them, but will take up the external forms, which thus far appear most suited for treatment by this new method. I think the subject can be best presented by a brief report illustrated by photographs of some of the cases that have been or still are under my care.



Rodent Ulcer. Before treatment.



Rodent Ulcer, duration fifteen years. After treatment by X-rays. The ulcer, which was a deep one, healed by first filling up from the bottom and then closing over. The healing went on without pain or inconvenience to the patient.



This case shows how harmless the X-rays may be, when carefully used, even near the eye.



By further treatment by the X-rays this has improved more than is shown in these photographs.

The diagnosis in all the cases which I have treated, except one, which was undoubtedly a rodent ulcer, has been made by means of the microscope. They include epidermoid cancers, typical epitheliomas, and rodent ulcers, and also cases which had the clinical appearance of beginning cancers, but which under the microscope were found to be plasmoma, or simply cases of ulceration and necrosis, or chronic inflammatory tissue.

As the first cases of cancer yielded to treatment by the *x*-rays, I became sanguine enough to state to new patients that this method would cause the growth to disappear if it were cancerous in nature; if, however, the microscope showed that it was not of a serious form, I felt obliged to give a doubtful prognosis. But further experience teaches me that those growths which clinically resemble beginning epitheliomas also yield to treatment by the *x*-rays, and the indication is that we have in this new agent a useful therapeutic measure for most—possibly for all—forms of external new growths, except perhaps those due to syphilis.

From the fact that the *x*-rays are useful in treating a variety of abnormal conditions of the skin, or parts near by, it would seem that their local action must stimulate healing or that these abnormal conditions are due to organisms to whose life or life conditions the *x*-rays are inimical.

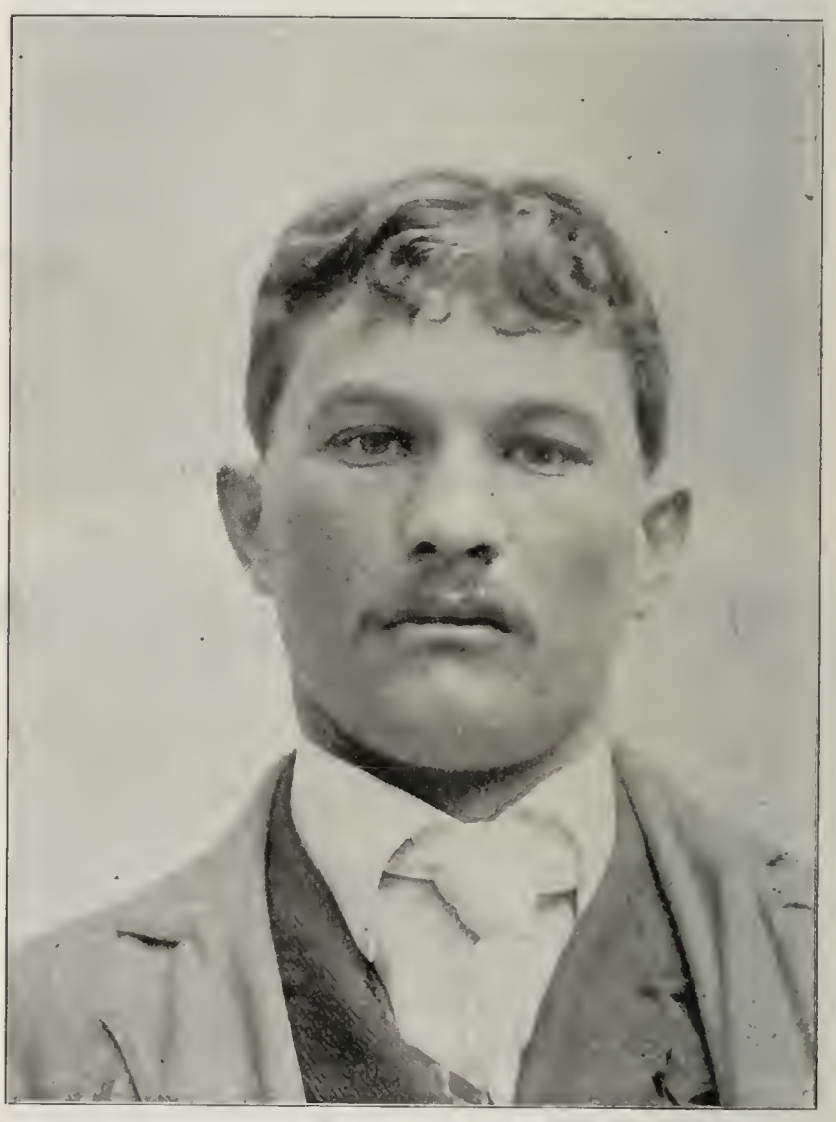
Thus far, all the forms of superficial growths mentioned above have yielded to treatment by the *x*-rays. That is to say, in every case, with the exception of one of rodent ulcer where the treatment was pursued for a short time only—and of course should not be included—the new growth has disappeared, or is improving under treatment. It would therefore seem that we have undoubtedly for external growths, a new, painless and harmless form of treatment, and also one which yields excellent cosmetic results. Whether these new growths will return within two or three years, can only be determined by time; but if there should be a recurrence, treatment can again be instituted.

This form of treatment also has the advantage of causing a diminution, or cessation of the pain resulting from the new growth, and the disappearance of foul odors from discharging ulcers. Further, it should encourage patients who have suspicious growths to consult a practitioner in regard to them at the very earliest moment, and not delay, as many are inclined now to do, through dread of the knife, until the growth has attained greater size and caused more inconvenience.

Great care is necessary to carry out the treatment properly. First, the surrounding parts should be protected from the action of the rays, and second, the treatment should not be pursued so vigorously as to cause an *x*-ray burn. While in making the ordinary *x*-ray examinations—as, for example, examining the heart and lungs—there is no risk whatsoever to the patient, of an *x*-ray burn, in treating cases of cancer it is necessary to have the tube so near the patient that, in unskilful or inexperienced hands, a burn may result. This might be a serious matter, as such burns yield only slowly, and might cause disfigurement. I do not mean to suggest that an *x*-ray burn is a necessary result of the treatment in external cancers; quite the contrary, for all of my cases have been treated without the occurrence of this accident, but I desire to emphasize the necessity for care.



Epidermoid Cancer of Lip.



Epidermoid Cancer of Lip. After treatment by the X-rays.

The details of treatment and the various precautions to be taken I have considered fully in my book on "The Roentgen Rays in Medicine and Surgery," and there-

fore will not present them here, as it would occupy too much of your time.*

In the following cases from which these photographs were taken, the microscopic examinations were kindly made by Dr. F. B. Mallory, assistant pathologist of the Boston City Hospital.

The first is an epidermoid cancer of the lip, and the photographs show the results obtained. The diminished amount of hair seen above the lip is not due to the *x*-rays, but to the fact that the patient shaved off his mustache after the first two photographs were taken, but let it grow again shortly before the last two were made.

The second case is an epithelioma of the eyelid, which was treated without causing the slightest trouble in the eye and without interfering with the work of the patient. Treatment was suspended for a time in this case, owing to my absence, but the improvement, already begun, continued during this interval.

The third case is that of a rodent ulcer on the side of the nose and cheek. The photographs, taken before and after treatment respectively, need no comment. They speak for themselves, like those already shown.

The last case that I shall take up is an epithelioma of the right hand, and is improving, but still under



Typical Epithelioma of Hand, before treatment by X-rays. This was 4 cm. wide and 7 cm. long.

treatment. The growth was cauliflower-like in form, four centimeters wide by seven long, with raised, indurated edges. The photograph shows the condition before treatment was begun. In inoperable cases, such as those of the orbit, the tongue or the larynx, the *x*-rays should be tried in the most thorough manner.

The external growths that I have treated with good results have varied in the length of time they have existed from a few months to twenty years. This fact shows that even when the growth is of long standing the *x*-rays are of assistance.

It has been known for many years that these growths yield to treatment by various forms of causties, so that if the *x*-rays simply act as a new form of caustic, some of the older forms might rather be employed; but my experience shows that we have in the *x*-rays a therapeutic agent that is novel in its mode of action, and that these growths disappear without a burn being produced.

The advantages of this new method may be summed up as follows: The treatment causes no pain; healing is produced without creating a burn; some cases improve after a certain number of sittings without further renewal of the treatment; the treatment can be carried out without interfering with the work of the patient.

The disadvantages are that the necessary apparatus is expensive and difficult to use; that great care must be exercised when the *x*-rays are employed as a therapeutic agent, and that the treatment must often be continued for some weeks.

* The cuts shown herewith are inserted by permission of the MacMillan Company.

THE RELATION OF UNBALANCED PHYSICAL DEVELOPMENT TO PUBERTAL MORBIDITY AS SHOWN BY PHYSICAL MEASUREMENTS.*

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The measurements upon which this paper is based were made by the Child Study Department of the Chicago Public Schools, under my direction as Chairman of the Department. The gentlemen composing this department are Mr. F. W. Smedley, Director, and Messrs. C. C. Krauskopf, Daniel P. McMillan, and C. Victor Campbell, assistants. These gentlemen are all thoroughly equipped for the work, and large experience in making measurements has made them exceptionally accurate, and this skill on the part of the observers gives great weight to the observations. I wish to acknowledge particularly my indebtedness to Mr. Smedley, who jointly with me has discussed every phase of the work done by the Department, and every detail of its official publications.

The tables are based upon the measurements of 6259 children, 2788 boys and 3471 girls. Seven measurements were made of each child, except that no ergographic work was done with children under 5 years of age.

The children examined were all pupils in the Chicago Public Schools and were mainly the children of American parents in comfortable circumstances, the schools where the examinations were made being selected with reference to these points. In each school, however, all pupils were examined. These measurements include net stature, height sitting, weight with ordinary indoor clothing, endurance as measured by the ergograph, strength of grip of the right hand, strength of grip of the left hand, and the so-called "vital capacity" or volume of expired air. The methods of making these measurements, and the instruments employed were described in my paper "Measurements of Chicago School Children," read before this Society last year, and therefore need not be repeated here.

Table 1 gives the norms for each sex, in each of the several measurements, at each of the ages from 4 to 21 inclusive. These norms have been determined by averages, the actual computations being made with the aid of an adding machine. The table also gives the average ages and the number of children of each age examined. The norms given last year were medians, and a comparison of the two tables will show that they differ but slightly from each other, except at ages at which the number examined was considerably increased, and even in such cases the differences are really not great, the greatest difference in stature, for instance, which is found being only 13 mm. The close coincidence of these tables measures their approximation to the truth.

* Read before the American Pediatric Society, at Niagara Falls, May 29, 1901.

At the time of making the measurements, the birthday of each individual was recorded, and from this the exact age in years, months and days was computed. All those having the same age in years were grouped together, and the averages of the exact ages, as well as the averages of the several measurements were calculated. As will be seen from the table, where the ages are expressed in years, months and days, the average ages approximate the even half years, but differ from them more or less, and in both directions. By determining the exact number of days between consecutive ages, figures were obtained which upon division into the corresponding differences in the other measurements gave the average daily increments of those measurements at the several ages. With the aid of these factors the norms were reduced to the integral years and half years. These norms we have called birthday norms, and they are given in Table 2. Table 3 gives the average monthly increments of the several measurements at the different ages. With the aid of these monthly increments and of

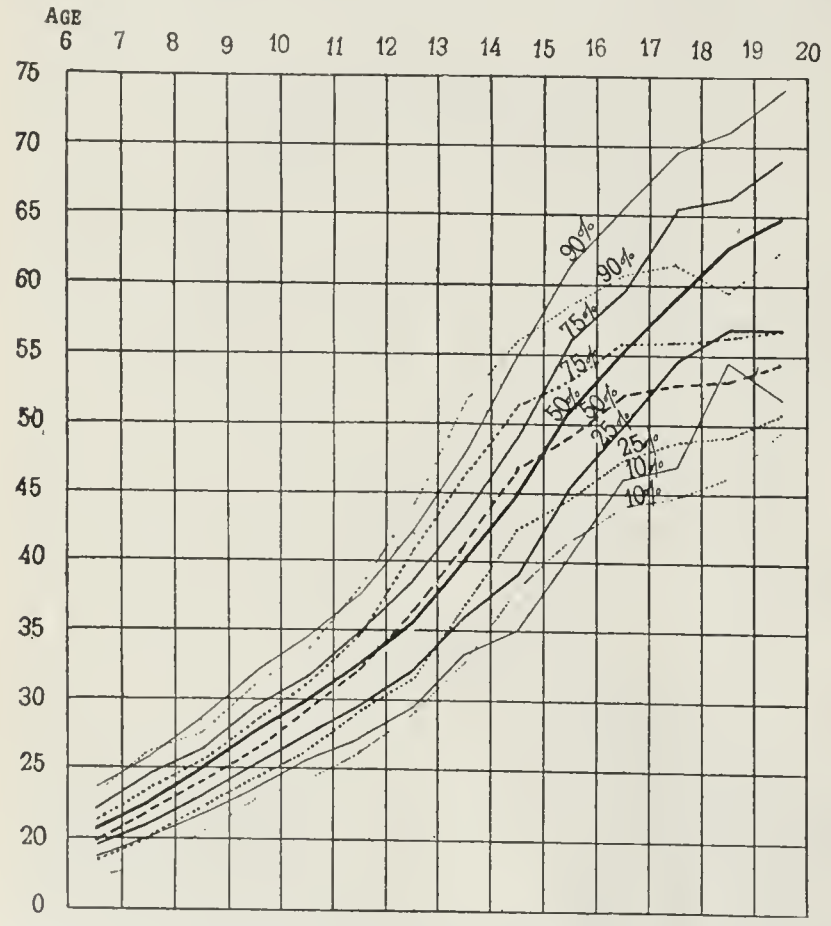


CHART 1.—Weight of pupils distributed into percentile groups. The dotted lines represent the girls; the solid lines the boys. Based on data in Table IV.

the table of birthday norms, the average normal measurements of a child of any age can readily be computed.

Table 4 is based upon the distribution of the children measured into percentile groups. Thus, of all the 4-year-old boys measured as to stature the shortest was 86 cm. tall; 10 per cent. were below 96 cm.; 25 per cent. were below 98 cm.; 75 per cent. were below 104 cm.; 90 per cent. were below 107 cm.; and the tallest measured 116 cm. On such basis this Table 4 has been computed, the distribution into percentile groups being given for each of the several measurements taken, for each age and sex. As originally printed in the second report of the Child Study Department, this table contains some errors. These errors have been corrected from the original records of this Department for the table here presented, and the table will be found correctly printed in the Forty-sixth Annual Report of the Chicago Board of Education, which will appear soon. The items of this table which relate to weight are shown graphically in Chart 1.

Table 5 shows separately for each sex and for each of the physical measurements taken the following points: 1, the special measurement under consideration, at the beginning of each year, as shown in the table of birthday norms; 2, the increase in that measurement found at the beginning of the next year, or the increment during the year; 3, the percentage that this increment is of

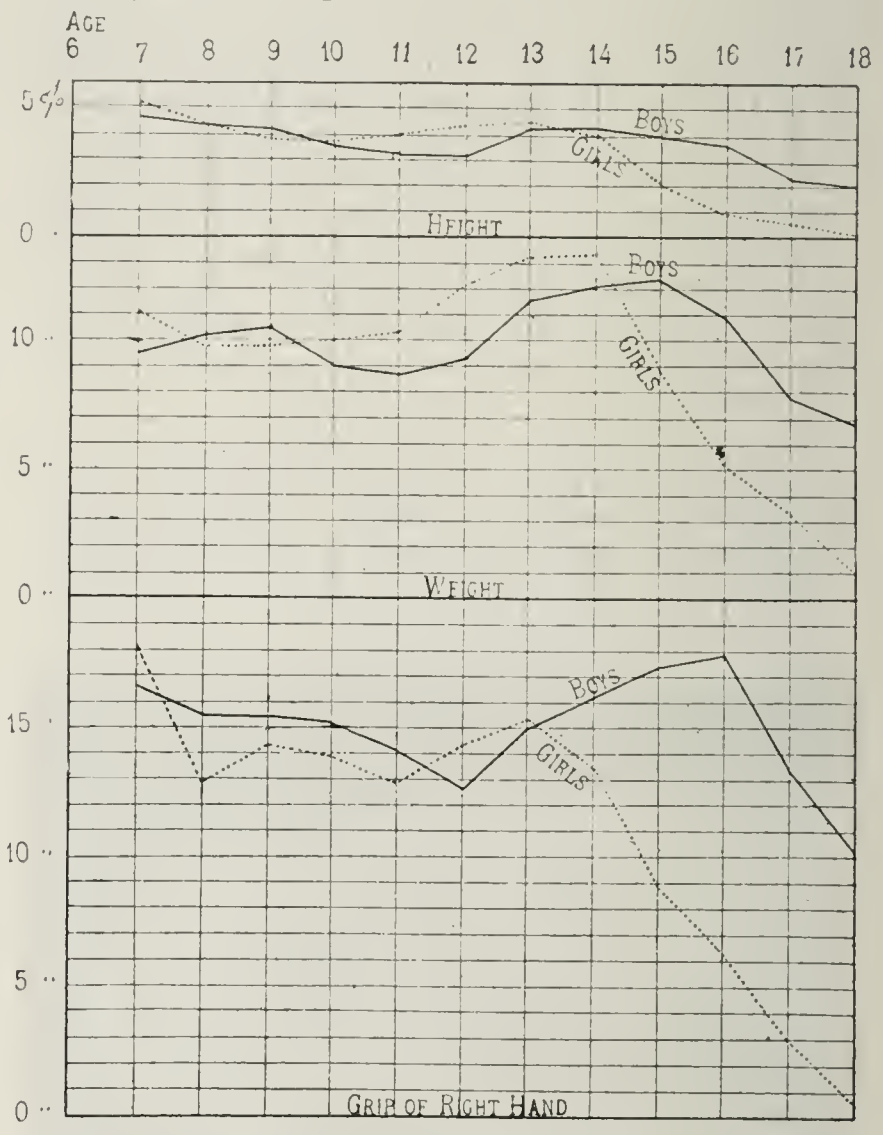


CHART 2.—Rate of annual increase in stature, weight, and strength of grip. Based on data in Table V.

the measurement at the beginning of the year during which it has occurred. These percentages of annual increase are shown graphically in Charts 2, 3 and 4.

An examination of these charts reveals some important truths of child life. First directing attention to the chart of annual percentage increase in height of boys, it is seen that the general trend of the curve is downward.

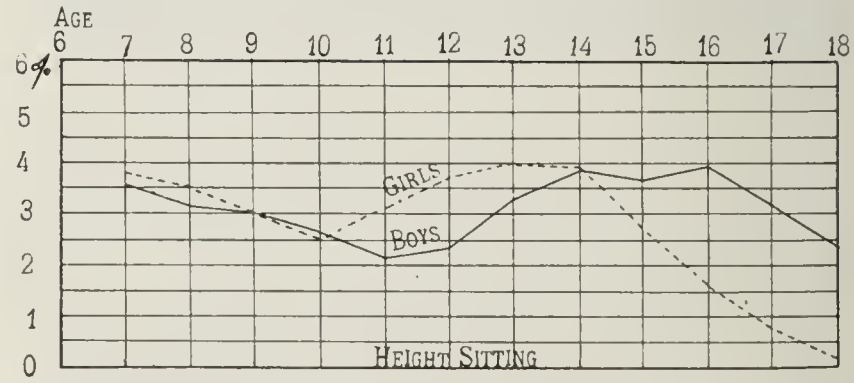


CHART 3.—Rate of annual increase in height sitting. Based on data in Table V.

From 7 to 9 the line is practically straight and if extended will be found to coincide with the line from 17 to 18. But from 9 to 12 the curve drops below this general trend, indicating a period of relative quiescence in growth. From 12 to 17, however, it rises above the line of general trend and indicates a period of accelerated growth. The curve for girls shows a less well-marked quiescent period, a better marked and shorter rise, and a

greater and more rapid decline. In each of the other measurements it is seen that there is a sharp rise commencing at 11 or 12 in boys, and generally a year earlier in girls, and in general following the conditions noted with regard to stature. It does not seem justifiable to attempt an interpretation of the minor features of the curves, but the following seems to me to be fairly shown:

There is an exaltation of life processes at the pubertal period which finds its expression not only in an increased rate of growth, but also in the development of physical power. This exaltation is preceded by a period of relative quiescence. In the sexes this exaltation differs in that it commences earlier and has a shorter duration in girls than in boys; moreover, it is more marked in girls than in boys in weight and in stature, and less marked in measurements involving physical power.

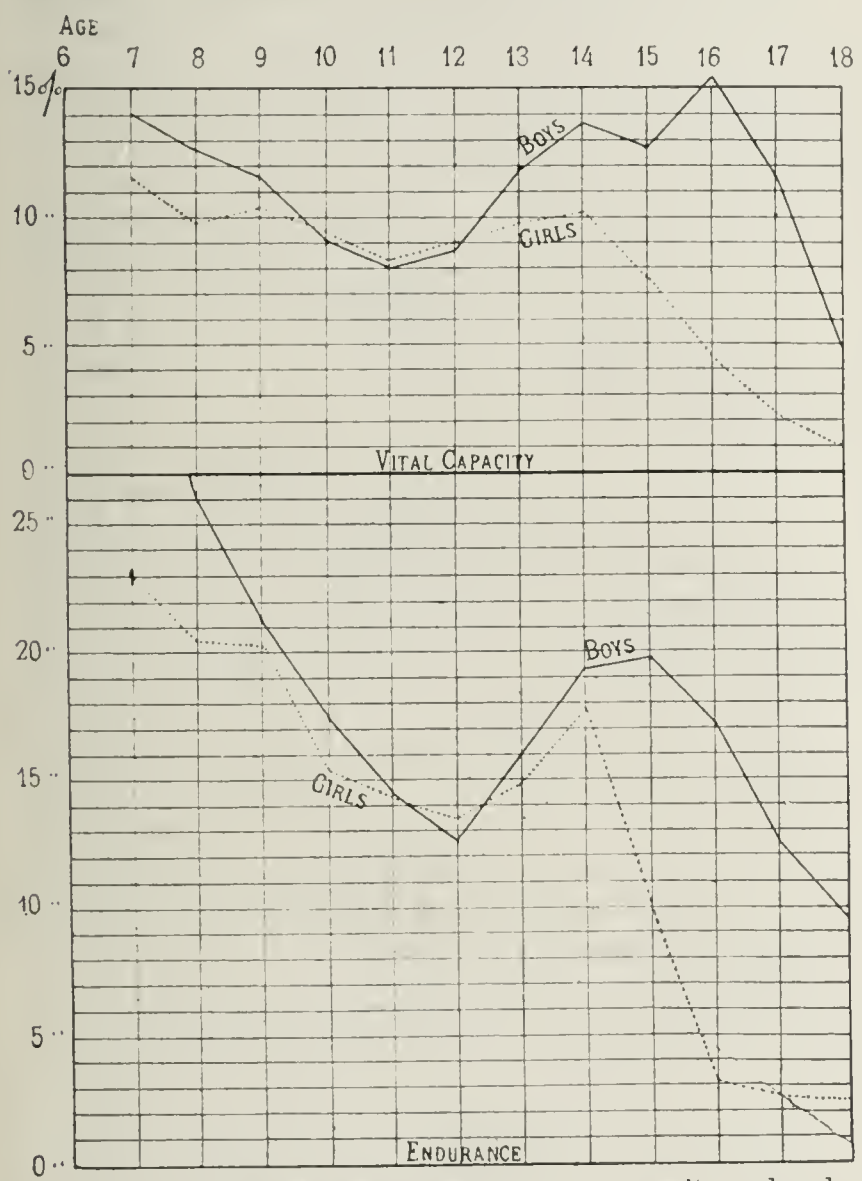


CHART 4.—Rate of annual increase in vital capacity and endurance. Based on data in Table V.

This pubertal exaltation has often been shown before as to height and weight, but I am not aware of any other investigation which shows it to be true of so many physical measurements.

In Table 1 the averages of each measurement for each age are given. The curves representing these averages are necessarily lines, but it is certainly true that there is a range of variation about these lines which must be considered normal, so that normal measurements should be represented by a belt rather than a line, for certain purposes at least.

Tables 6 and 7 and the corresponding charts show an attempt to investigate the nature of this belt. For this purpose the tables of percentile groups are utilized. Tables 6 and 7 are classified with reference to the sexes, ages, and the several physical measurements made. Each section of these tables gives four columns. The first column gives the difference in the measurement, or the range of the measurement, between the 10 per cent. group and the average given in Table 1. The second column gives the range between the average of Table 1 and the 90 per cent. group. The third column gives the range between the 10 per cent. and the 90 per cent. groups, or the range of measurement of the middle 80 per cent. of the children. The fourth column gives the difference in measurement between the 25 per cent. and the 75 per cent. groups, or the range of the middle 50 per cent. of the children. Columns 3 and 4 are graphically represented in Charts 5 and 6, while columns 1 and 2 are graphically represented in Charts 7 and 8.

From examination of Chart 5, which shows the absolute range of measurement of the middle 50 per cent. and the middle 80 per cent. of boys, it is clear that there is a general pubertal increase in the range of the measurements of both groups of the children, and that this increase in range is more marked in the larger than in the lesser group. Chart 6, relating to girls, shows these facts with reference to girls rather more clearly than they are shown with boys. Moreover, the pubertal increase in range occurs earlier in girls, as was to have been expected.

It is still necessary to determine how the ranges of measurements are distributed with reference to the average measurements at the several ages. This is shown in Charts 7 and 8, which show that in both sexes the range is distributed almost uniformly about the average line. While puberty is a period of great exaltation of life processes, Charts 5 to 8 show that it is also a period of great individualization. It is a time when the weak fail and the able forge to the front.

It is well known that mortality is less at puberty than at any other period of child life, and Axel Key has shown that the morbidity is high at this period. In my judgment, the explanation of the low mortality will be found in the laws illustrated in Charts 2, 3 and 4, while the conditions shown in Charts 5, 6, 7 and 8 will be found to have an important bearing upon the causation of the high morbidity.

The neuroses, psychoses, neurasthenias, cardiopathies, deformities and anemias of puberty are the principal morbid manifestations of the physical, intellectual and emotional turmoil which characterize the period.

At first thought it would seem that the subnormal portion of the belt shown in Charts 5 to 8 would contain the children who present the pathologic conditions. This, however, is not the case. It is the great range of the physical measurements of this period which permits of the existence in the child of an enormous lack of balance in the physical measurements, and it is this condition of lack of balance which gives rise to the morbid manifestations. For instance, if in a child the normal exaltation of height and weight, or of either, passes beyond, or taxes heavily, the capacity of the organs of nutritive supply, the child is on the borderland of physical insolvency, and any excessive voluntary expenditure of energy may be followed by morbid symptoms. In one case under my care (see Case 1), a neurotic boy, who increased in weight with great rapidity, had an epileptic convulsion follow every instance of excessive exertion. One such seizure followed a 20-mile bicycle ride, and another a game of baseball. He was practically free from convulsions as long as he refrained from unusual expenditure of energy. Rapid increase in stature, associated with deficient nutritive supply, is commonly productive of stoop and muscular atrophy, and is usually accompanied with rapid and irregular pulse,

and manifestations of fatigue and neurasthenia. It is in such cases also that the dilatation of the heart, well known to occur at puberty, is to be found. These cases require for their proper management rest, improvement in general nutrition, and the much-despised shoulder braces.

In general it may be said that an important factor in pubertal morbidity is unbalanced physical development.

The great range of pubertal measurements which makes possible the extensive unbalanced physical development of the period, being physiologic, is directly traceable to heredity, but there are factors other than

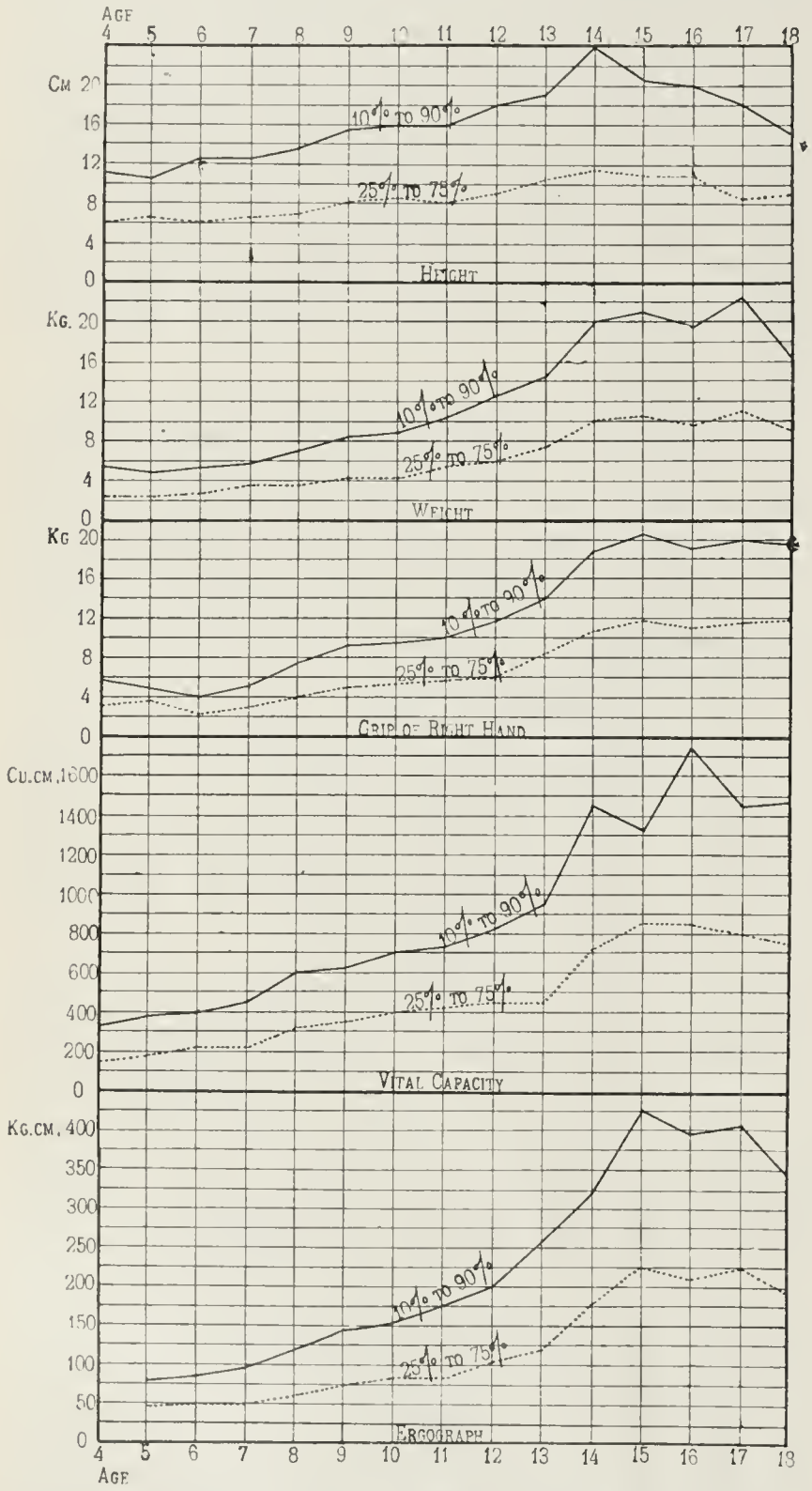


CHART 5.—Absolute range of measurements between percentile groups—Boys. Based on data in Table VI, columns 3 and 4.

heredity which assist in the production of the actual lack of balance itself, and which must be taken into consideration in determining the management of individual cases. These factors are nutrition and the physical and mental activities of the child.

I present here a plan for the investigation of cases of unbalanced physical development. The first three divisions of this plan are in general etiologic, and the last three are in general resultant, but such a classification would not be strictly accurate, for examination will show that some of the factors of the second group bear at times etiologic relations to factors in the first group, which means that vicious circles exist and that some conditions mutually augment each other.

PLAN FOR INVESTIGATION OF CASES OF UNBALANCED PHYSICAL DEVELOPMENT.

1. Hereditary tendencies and influences.

2. Nutrition. *(a)* Food supply (quantitative and qualitative). *(b)* Condition of nutritive organs, viz.: gastroenteric tract and liver. *(c)* Condition of the blood. *(d)* Type of the general metabolism. *(e)* Condition of the eliminating organs.

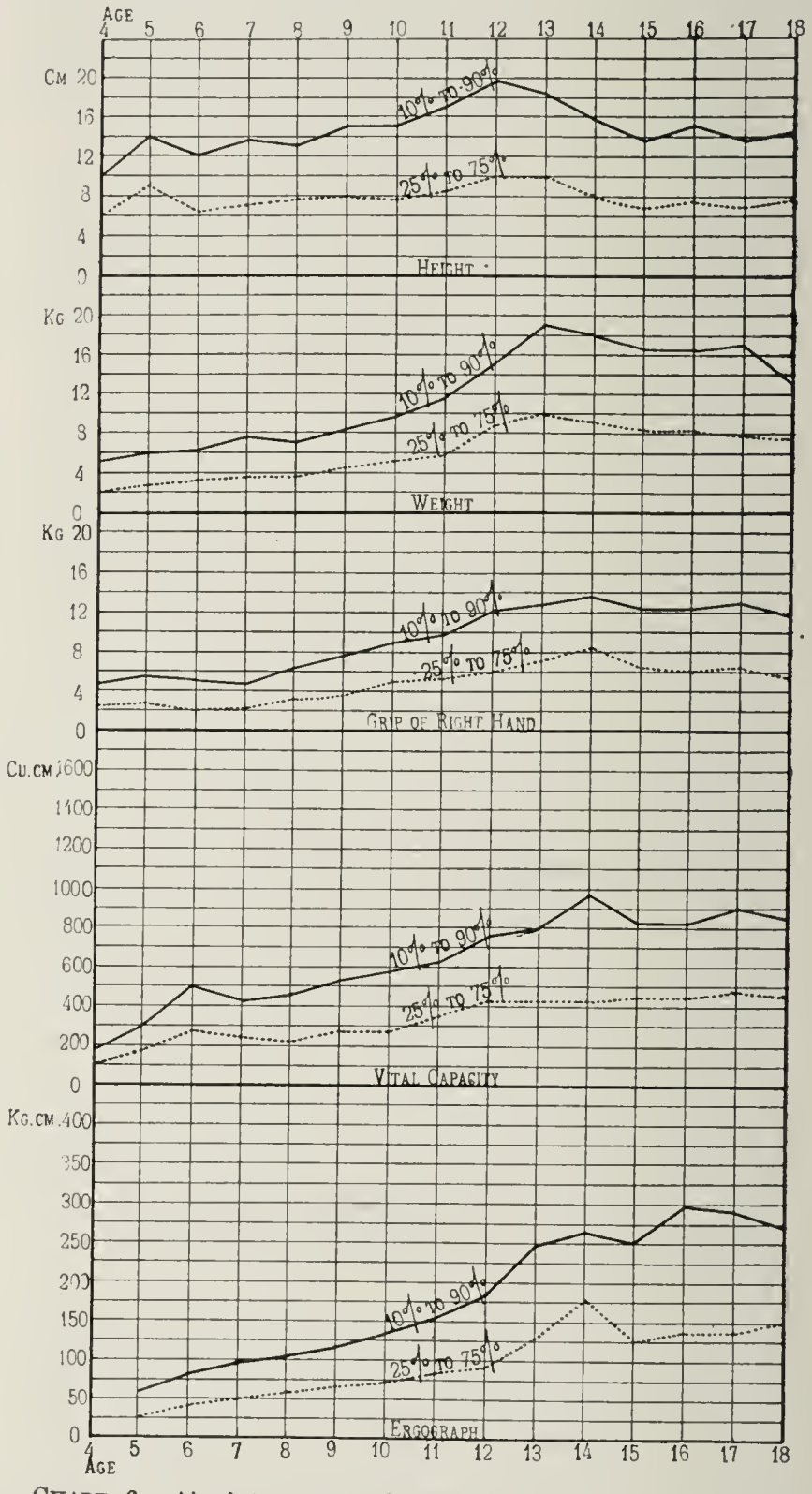


CHART 6.—Absolute range of measurements between percentile groups—Girls. Based on data in Table VII, columns 3 and 4.

3. Activities, physical and mental.

4. Commensurable physical conditions for which norms have been determined for comparison. *(a)* Weight. *(b)* Height. *(c)* Height sitting. *(d)* Strength of grip; right and left. *(e)* Vital capacity. *(f)* Endurance.

5. Relative capacity of other organs to demands made upon them, especially the heart and brain, and for which norms as to capacity do not exist, and possibly cannot be determined, but which must be estimated by means more or less indirect.

6. Conditions and symptoms resulting from the lack of balance.

For purposes of illustration a few cases are presented. With each case brief descriptive notes are given, together with a series of measurements of heights and weights. The age of the patient at the time of each measurement is given, together with the age at which the measurement found will be the normal average, according to Tables 2 and 3. This gives a basis for estimating the condition of developmental balance. In these cases

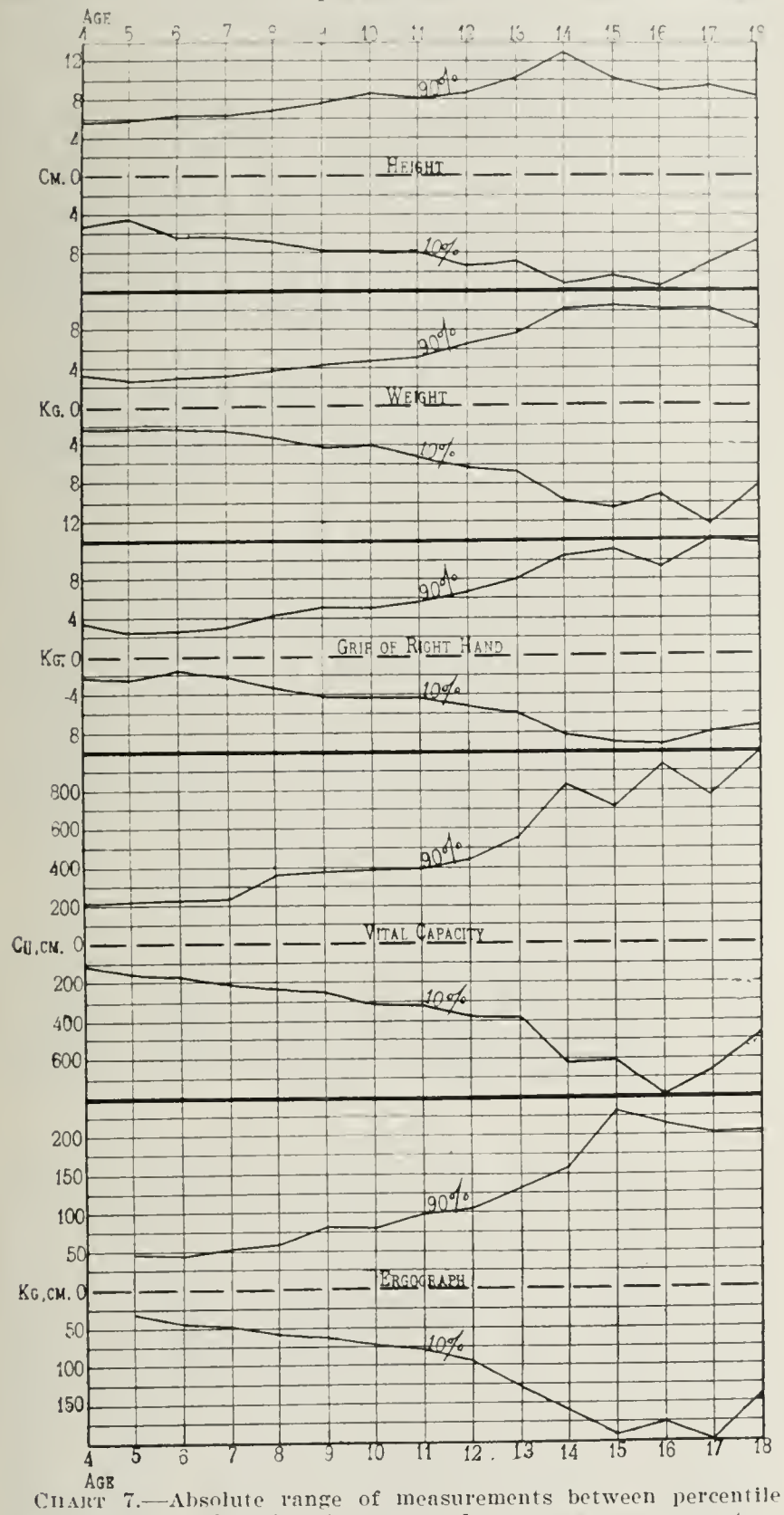


CHART 7.—Absolute range of measurements between percentile groups, distributed with reference to the average measurements—Boys. Based on data in Table VI, columns 1 and 2.

no attempt at completeness of exposition is made, as it would only obscure the illustration of the condition of unbalanced physical development and its resulting morbid manifestations.

CASE 1.—WM. S.—BIRTHDAY, AUG. 16, 1883.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
'96-9-16	13	1	15	..	15	7	1580	113.0
12-14	13	5	..	..	17	1	....	127.3
'97-1-27	13	6	..	..	17	6	....	130.5
4-6	13	8	..	..	18	..	....	135.3
6-6	13	10	..	..	17	7	....	131.5
7-27	14	..	..	..	17	9	....	133.3
10-11	14	2	..	..	18	..	....	135.5
10-26	14	3	15	8	18	3	1621	137.1
11-24	14	4	..	..	18	7	....	140.0
12-9	14	4	..	..	18	6	....	139.8
12-24	14	5	..	..	*		....	142.3
'98-1-18	14	6	..	..	..	..	....	143.8
3-2	14	7	..	..	..	..	....	138.0
3-28	14	8	..	..	..	..	....	142.5
4-20	14	9	..	..	..	..	....	143.0
5-25	14	10	..	..	..	..	....	144.0

* Above highest normal average of tables.

Epileptic; excessive and rapid weight increase; unusual exertion always followed by convulsions.

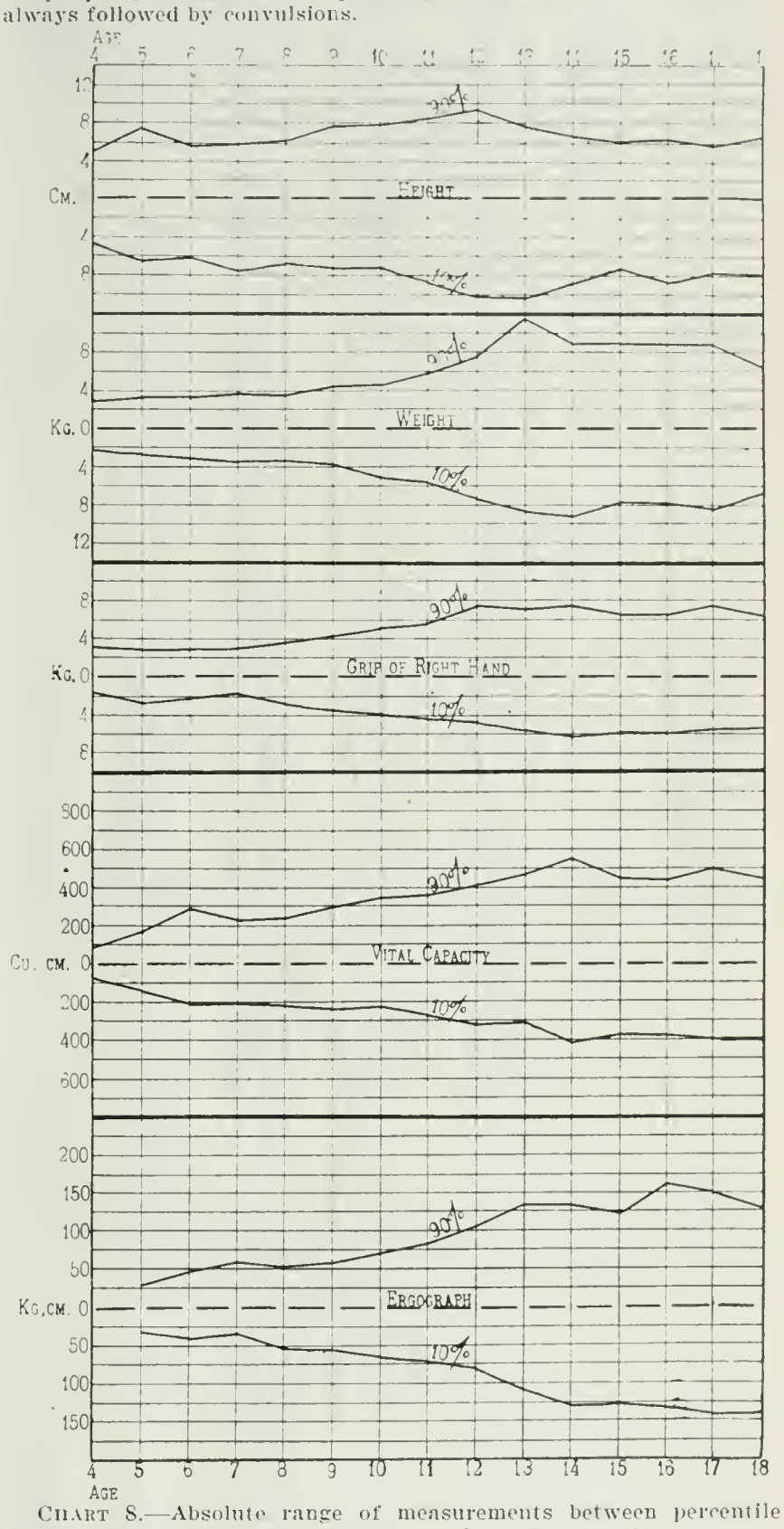


CHART 8.—Absolute range of measurements between percentile groups, distributed with reference to the average measurements—Girls. Based on data in Table VII, columns 1 and 2.

CASE 2.—MARJORIE P.—BIRTHDAY, MARCH 5, 1891.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
00-12-22	9	10	12	9	12	2	1464	77.7
'01-2-2	9	11	13	1	12	6	1481	80.0
3-12	10	..	13	1	12	7	1483	81.9
4-20	10	2	13	1	12	7	1486	81.5
5-18	10	2	13	5	12	9	1506	83.3

Bad temper; cries easily; does not like to play; marked mental hebetude; stooped shoulders; perfect picture of fatigue. In four months' time height has increased 8 months, and weight has increased 7 months, and both were, when first seen, much above normal—height 35 months, and weight 28 months. A typical case of excessive growth and profound fatigue. Is improving.

CASE 3.—GRACE L.—BIRTHDAY, DEC. 9, 1888.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
98-1-28	9	2	11	6	11	11	1385	75.0
4-11	9	4	..	..	12	..	....	75.5
'00-1-20	11	1	14	9	14	2	1565	101.5
2-24	11	2	14	6	14	6	1560	103.1
4-21	11	4	14	4	14	9	1557	105.5
5-15	11	5	14	4	14	5	1557	102.2
10-6	11	10	15	10	14	7	1580	104.1
'01-2-15	12	2	16	1	15	6	1585	108.8
4-25	12	5	18	8	15	8	1597	109.8

Fatigue; anorexia; stoop shoulders. From above table the following is formulated: In two months weight increased 1 month; fatigue and stoop. In 23 months height increased 39 months, weight increased 26 months; fatigue and stoop. In 9 months height increased 13 months, weight increased 5 months; fatigue and stoop. In 4 months height increased 3 months, weight increased 11 months; improvement; started to school. In 3 months height increased 27 months, weight increased 2 months; again fatigued.

CASE 4.—EDWIN L.—BIRTHDAY, APRIL 4, 1887.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
'97-1-4	9	9	11	9	9	9	1386	61.5
4-7	10	..	12	3	10	1	1405	63.5
'98-11-23	11	8	13	11	12	1	1514	75.5
'99-5-23	12	2	13	11	12	11	1511	82.8
8-12	12	4	14	10	12	10	1567	82.0
10-20	12	7	..	..	13	3	....	86.2
'00-2-19	12	11	..	..	13	11	....	93.0
6-25	13	3	16	5	14	2	1663	95.8
12-26	13	9	18	3	15	4	1723	109.8
'01-3-21	14	..	18	8	15	3	1748	109.2

Some fatigue; pulse rapid and irregular; heart area sl. increased; no valvular disease; rapid increase in stature; height and weight balance disturbed.

CASE 5.—BERTHA H.—BIRTHDAY, OCT. 6, 1888.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
'98-3-19	9	5	11	3	12	..	1370	75.5
7-12	9	9	11	7	11	10	1390	74.0
9-4	9	11	11	8	12	..	1395	75.5
10-22	10	1	12	1	12	6	1420	79.9
11-25	10	2	12	4	12	6	1432	80.4
'99-1-7	10	3	12	4	12	6	1435	80.0
8-9	10	10	12	8	12	9	1456	83.0
'00-1-2	11	3	13	1	13	8	1485	93.4
'01-4-20	12	6	15	..	14	5	1568	102.3

Excessive stoop, with slight lateral curvature later; rapid pulse; fatigue; rapid and excessive growth in height and weight, especially height; unbalanced measurements. Improved under rest, massage, and shoulder braces. Much of the last increase in height is due to greater erectness.

CASE 6.—JOHN K. M.—BIRTHDAY, JULY 1, 1886.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
'00-2-3	13	7	18	7	16	6	1740	121.8
3-10	13	8	..	..	16	2	1750	119.0
4-7	13	9	..	..	16	7	1756	123.3
6-12	13	11	..	..	16	1	1772	118.3
9-21	14	3	..	..	17	8	1796	132.0
'01-2-12	14	7	..	..	..	..	1818	142.3

Excessive height and weight, and unbalanced height and weight; shoulders badly stooped; pulse irregular. Improved under rest and shoulder braces. Hereditary tendency to great stature.

CASE 7.—ELSIE K.—BIRTHDAY, NOV. 10, 1884.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
'97-12-8	13	1	12	7	11	10	1449	74.3
12-23	13	1	..	..	12	..	....	75.4
'98-1-27	13	3	..	..	12	3	....	78.1
3-5	13	4	..	..	12	4	....	79.2
10-1	13	11	..	..	12	6	....	80.5
'00-9-29	15	11	*		14	4	1601	102.3
'01-2-5	16	3	*		..	..	1612	98.5

* Above highest normal.

Subnormal height and weight, with excessive school work: fatigue. Taken from school, '97-12-8; returned to school, '98-9-5, in excellent condition; '01-2-5, shows work of first year in high school is beginning to drag on her.

CASE 8.—DAVID I.—BIRTHDAY, MAY 4, 1887.

Date.	Age. Yrs.	Mos.	Normal Age for Ht. Yrs.	Mos.	Normal Age for Wt. Yrs.	Mos.	Net. Ht. mm.	Wt. lbs.
'00-10-20	13	6	15	1	14	6	1587	99.3
12-22	13	8	15	4	15	..	1602	105.0
'01-5-4	14	..	15	11	15	4	1635	110.4

A magnificent fellow, height and weight above normal, but balanced, and not increasing beyond the capacity of his nutritive organs and heart. No functional disturbance of any kind. Prescribed golf, baseball, and tennis. Is the stuff of which good athletes are made.

The following conclusions are offered:

1. There is an exaltation of life processes at the pubertal period which finds its expression not only in an increased rate of growth, but also in the development of physical power. This exaltation is preceded by a period of relative quiescence. In the sexes this exaltation differs in that it commences earlier and has a shorter duration in girls than in boys; moreover, it is more marked in girls than in boys in weight and stature, but less in measurements involving physical power.

2. Puberty is also a period of great individualization, as indicated by the great normal range of physical measurements at this period.

3. The range of physical measurements at all ages in childhood, including puberty, is distributed uniformly above and below the line of average measurement.

4. At puberty mortality is low and morbidity is high.

5. Neuroses, psychoses, neurasthenias, cardiopathies, deformities and anemias are the principal morbid manifestations of the physical, intellectual and emotional turmoil which characterizes puberty.

6. The great range at puberty of the measurements of the physical features of the child expresses the condition which permits the existence in individual children of unusual lack of balance in physical measurements, or maladjustment of physical features.

7. Unbalanced physical development is an important factor in the production of morbid manifestations. It is operative throughout the developmental period of life. It occurs with greatest frequency at puberty, and it there finds its most marked expressions. It is found associated, in a causal relation, with most of the morbid manifestations of puberty, particularly disturbed heart action, dilatation of the heart, fatigue, anemia, and some deformities, such as round shoulders and scoliosis, as well as many of the neuroses of the period.

TABLE I. NORMS—BY AVERAGES.

Age.	Number Examined.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph. Kg.-Cm.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
BOYS.								
4-6-13	41	1012	583	16.984	.....	5.50	5.08	736
5-7-14	70	1076	612	18.402	82.1	7.80	7.12	930
6-6- 6	227	1133	636	20.716	105.4	10.	9.32	1098
7-5-27	230	1183	658	22.535	139.2	11.50	10.91	1240
8-5-21	255	1234	677	25.022	168.2	13.27	12.40	1388
9-6- 4	228	1289	699	27.616	205.6	15.39	14.54	1549
10-6- 2	254	1330	713	29.837	235.	17.68	16.66	1659
11-5-17	228	1370	729	32.519	267.7	19.94	18.72	1799
12-5-23	256	1418	747	35.626	297.8	22.40	20.58	1956
13-5-14	230	1488	777	40.276	357.2	26.26	24.23	2246
14-5-20	250	1546	806	44.786	423.8	30.29	27.94	2527
15-5-25	205	1613	837	50.994	513.5	36.30	33.65	2858
16-5-15	146	1665	871	55.219	584.7	42.12	38.82	3363
17-5-18	92	1690	891	59.243	651.4	46.99	42.74	3570
18-4-27	40	1731	914	62.858	700.9	51.04	46.75	3701
19-4-18	23	1721	911	64.326	733.4	54.11	49.33	3872
20-5-12	8	1741	923	68.294	737.8	56.	48.50	3788
21-3-14	5	1704	911	63.955	727.4	52.	47.40	3770
GIRLS.								
4-7-10	36	1008	585	16.342	.....	5.64	5.17	754
5-7- 2	81	1065	602	17.972	62.2	7.23	6.58	855
6-6- 8	204	1126	629	19.968	98.3	9.15	8.52	1008
7-6-15	236	1185	653	22.115	109.5	10.71	10.06	1121
8-6- 1	232	1228	674	23.995	142.5	11.67	10.96	1215
9-6- 7	221	1278	692	26.540	171.4	13.89	13.01	1360
10-5-15	240	1322	708	28.969	190.1	15.37	14.40	1456
11-5-16	223	1381	735	32.132	221.7	17.57	16.50	1587
12-5-15	247	1441	762	36.326	245.9	20.09	18.88	1729
13-6-13	255	1513	797	41.629	294.5	23.60	21.51	1924
14-6-13	301	1564	826	47.181	344.2	26.19	24.11	2117
15-6- 1	379	1574	840	49.345	356.5	27.92	25.81	2225
16-6- 0	354	1592	851	51.964	397.3	29.50	27.31	2306
17-5-10	251	1597	853	52.761	370.1	29.62	27.11	2304
18-4-25	137	1595	857	53.015	381.6	29.84	27.76	2351
19-5- 4	48	1599	855	54.600	416.8	31.21	28.85	2441
20-4-12	22	1588	848	54.033	363.3	29.96	27.45	2348
21-5- 8	4	1583	862	54.763	506.9	32.19	29.31	2250

TABLE II. BIRTHDAY NORMS.

BOYS.

AGE.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph. Kg.-Cm.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
6-0	1106.9	624.0	19 738	92.86	9.21	8.48	1023
6-6	1132.5	635.4	20.675	104.79	9.97	9.29	1096
7-0	1158.2	646.7	21.613	122.12	10.74	10.11	1168
7-6	1183.9	657.8	22.550	139.45	11.51	10.92	1241
8-0	1209.3	667.5	23.817	154.17	12.41	11.67	1316
8-6	1234.8	677.2	25.083	168.89	13.31	12.43	1392
9-0	1261.4	687.9	26.336	187.07	14.34	13.47	1469
9-6	1288.0	698.5	27.589	205.24	15.37	14.51	1547
10-0	1309.1	705.6	28.707	220.03	16.52	15.59	1603
10-6	1330.3	712.6	29.825	234.82	17.67	16.66	1659
11-0	1351.1	721.0	31.223	251.86	18.85	17.72	1732
11-6	1371.9	729.3	32.619	268.89	20.03	18.80	1806
12-0	1395.4	738.0	34.151	283.83	21.24	19.71	1883
12-6	1418.9	747.0	35.684	298.75	22.45	20.62	1960
13-0	1455.4	762.4	38.084	329.21	24.44	22.51	2108
13-6	1490.9	777.9	40.485	359.69	26.43	24.40	2257
14-0	1519.2	792.1	42.696	392.62	28.42	26.22	2395
14-6	1547.4	806.4	44.908	425.55	30.40	28.04	2533
15-0	1580.7	821.8	47.993	470.13	33.39	30.88	2697
15-6	1614.1	836.8	51.078	514.72	36.38	33.73	2860
16-0	1640.3	854.3	53.238	551.22	39.37	36.39	3120
16-6	1666.5	871.7	55.398	587.73	42.35	39.04	3380
17-0	1678.5	881.6	57.384	620.64	44.74	40.96	3483
17-6	1690.4	891.4	59.371	653.53	47.14	42.87	3586
18-0	1712.3	903.0	61.288	679.73	49.28	45.01	3655
18-6	1734.1	914.6	63.204	705.82	51.43	47.16	3725
GIRLS.							
6-0	1096.6	617.2	18.870	87.79	8.36	7.74	950
6-6	1125.1	629.0	19.922	97.90	9.12	8.49	1006
7-0	1153.7	640.7	20.974	108.00	9.88	9.24	1061
7-6	1182.2	652.5	22.026	118.10	10.65	9.99	1117
8-0	1204.9	663.4	23.010	130.24	11.16	10.48	1165
8-6	1227.5	674.3	23.994	142.38	11.67	10.96	1214
9-0	1252.4	683.2	25.257	156.73	12.77	11.97	1286
9-6	1277.4	692.1	26.520	171.08	13.88	12.99	1358
10-0	1300.7	700.5	27.795	180.98	14.65	13.72	1409
10-6	1324.1	708.9	29.072	190.88	15.43	14.46	1460
11-0	1353.5	722.3	30.662	206.90	16.54	15.52	1526
11-6	1383.0	735.8	32.250	222.92	17.65	16.58	1592
12-0	1413.1	749.3	34.373	234.92	18.92	17.78	1664
12-6	1443.2	762.9	36.495	246.92	20.19	18.97	1736
13-0	1476.8	779.1	38.974	269.89	21.84	20.39	1827
13-6	1510.4	795.4	41.454	292.86	23.49	21.80	1918
14-0	1536.4	809.9	44.219	318.12	24.79	22.92	2014
14-6	1562.4	824.3	46.983	343.38	26.10	24.03	2111
15-0	1568.3	832.1	48.161	349.83	27.00	24.92	2168
15-6	1574.2	839.9	49.339	356.29	27.91	25.80	2225
16-0	1583.0	845.4	50.652	361.10	28.70	26.56	2266
16-6	1591.8	850.9	51.964	365.92	29.50	27.31	2306
17-0	1592.6	852.0	52.386	370.74	29.56	27.43	2319
17-6	1593.4	853.0	52.807	375.55	29.63	27.55	2331
18-0	1594.2	855.1	52.923	380.37	29.75	27.66	2343
18-6	1595.0	857.2	53.039	385.19	29.87	27.77	2355

TABLE III.

AVERAGE MONTHLY INCREMENT OF BIRTHDAY NORMS.

BOYS.

AGE.	Standing Height. Millimeters.	Sitting Height. Millimeters.	Weight with Clothing. Kilograms.	Work on Ergograph Kilogram-Centimeters.	Grip of Right Hand. Kilograms.	Grip of Left Hand. Kilograms.	Vital Capacity. Cubic Centimeters.
6½ to 7½	4.3	1.8	.156	2.89	.13	.14	12
7½ to 8½	4.2	1.6	.211	2.45	.15	.13	13
8½ to 9½	4.4	1.7	.209	3.03	.17	.17	13
9½ to 10½	3.5	1.2	.187	2.46	.19	.18	9
10½ to 11½	3.5	1.4	.233	2.84	.19	.18	12
11½ to 12½	3.9	1.5	.256	2.50	.20	.15	13
12½ to 13½	6.1	2.6	.400	5.08	.33	.32	25
13½ to 14½	4.7	2.4	.368	5.49	.33	.30	23
14½ to 15½	5.6	2.5	.514	7.43	.50	.48	27
15½ to 16½	4.4	2.9	.360	6.08	.50	.44	43
16½ to 17½	2.6	1.6	.331	4.49	.40	.32	17
17½ to 18½	3.7	1.9	.320	4.34	.36	.36	11
GIRLS.							
6½ to 7½	4.7	2.0	.175	1.68	.12	.12	9
7½ to 8½	3.8	1.8	.164	2.02	.09	.08	8
8½ to 9½	4.2	1.5	.211	2.39	.18	.17	12
9½ to 10½	3.9	1.4	.213	1.65	.13	.12	8
10½ to 11½	4.9	2.3	.265	2.67	.18	.18	11
11½ to 12½	5.0	2.2	.353	2.00	.21	.20	12
12½ to 13½	5.6	2.7	.413	3.83	.28	.23	16
13½ to 14½	4.3	2.4	.461	4.21	.22	.19	16
14½ to 15½	1.0	1.3	.196	1.08	.15	.15	10
15½ to 16½	1.5	.9	.219	.80	.13	.12	7
16½ to 17½	.1	.2	.070	.80	.01	.02	2
17½ to 18½	.1	.3	.019	.80	.02	.02	2

TABLE IV. DISTRIBUTION INTO PERCENTILE GROUPS—Height.

BOYS.

AGE	Minim.	10 Per Ct.	25 Per Ct.	75 Per Ct.	90 Per Ct.	Maxim.
	Cm.	Cm.	Cm.	Cm.	Cm.	Cm.
4	86	96	98	104	107	116
5	96	103	104	110.5	113.5	118
6	101	107	110	116	119.5	125
7	103	112	115	121.5	124.5	132
8	109	116.5	120	127	130	138
9	107	121	125	133	136.5	146
10	116	125.5	129	137.5	141.5	147
11	121	129	133	141	145	159
12	125	132.5	137	146	150.5	164
13	131	140	143.5	154	159	168
14	130	143.5	148.5	160	167.5	178
15	132	151	155.5	166.5	171.5	179
16	142	155.5	161.5	172.5	175.5	185
17	137	160.5	165.5	174	178.5	182
18	161	166.5	168	177	181.5	183
19	148	163	165.5	178	184	197
GIRLS.						
4	92	96	98	104	106	110
5	93	100	102	111	114	118
6	95	106.5	109.5	116	118.5	128
7	103	111	114.5	121.5	124.5	133
8	105	116	119	126.5	129	140
9	115	120.5	124	132	135.5	143
10	115	125	128.5	136	140	147
11	119	129.5	134	142.5	146.5	155
12	121	134	139	149	153.5	163
13	129	140.5	145	155	159	170
14	126	147.5	151.5	159.5	163	169
15	140	150	153	160	163.5	172
16	144	150.5	154.5	162	165.5	177
17	144	152	155	162	165.5	177
18	137	151.5	155	162.5	166	176
19	143	152	156	163	167	169

DISTRIBUTION INTO PERCENTILE GROUPS—Weight.

BOYS.

AGE.	Minim.	10 Per Ct.	25 Per Ct.	75 Per Ct.	90 Per Ct.	Maxim.
	Kg.	Kg.	Kg.	Kg.	Kg.	Kg.
4	12	14.75	15.5	18	20.25	21
5	13	16.25	17	19.5	21	26
6	15	18.5	19.5	22.25	23.75	27
7	17	20	21	24.5	25.75	32
8	17	21.75	23	26.5	28.75	62
9	20	23.5	25.25	29.5	32	38
10	19	25.75	27.5	31.75	34.5	50
11	23	27.25	29.5	35	37.75	49
12	25	29.5	32.25	38.25	42.25	54
13	28	33.5	36	43.5	48	72
14	29	35	39	49	55	68
15	30	40.5	45.5	56	61.5	97
16	34	46	50	59.5	65.5	105
17	34	47	54.5	65.5	69.5	81
18	45	54.5	57	66	71	83
19	47	52	57	69	74	98
GIRLS.						
4	12	14	15.5	17.5	19.25	21
5	13	15.25	16.5	19.25	21.25	23
6	13	17	18.25	21.5	23.25	27
7	15	18.50	20	23.5	26	31
8	17	20.5	22	25.5	27.5	35
9	19	22.75	24	28.5	31	41
10	19	24	26	31.25	33.5	50
11	21	26.5	29	34.75	38	50
12	21	29	31.75	40.5	44	69
13	24	33	36.5	46.5	52	69
14	28	38	42.5	51.75	56	74
15	30	41.5	44.5	53	58.25	81
16	33	44	47.5	56	60.75	91
17	38	44.5	48.25	56	61.5	75
18	35	46.25	49	56.5	59.5	80
19	38	49.5	51	57	62.5	88
20	30	46	48.5	59.5	66	71

DISTRIBUTION INTO PERCENTILE GROUPS—Right Hand Grip.

BOYS.

AGE	Minim.	10 Per Ct.	25 Per Ct.	75 Per Ct.	90 Per Ct.	Maxim.
	Kg.	Kg.	Kg.	Kg.	Kg.	Kg.
4	3	3.25	4	7.25	9	10.50
5	4	5.25	6	9.75	10.25	12
6	7	8.50	9.25	11.50	12.50	16
7	5	9.25	10.25	13.25	14.50	27
8	6	10	11.25	15.25	17.50	24
9	8	11.25	13.25	18.25	20.50	30
10	10	13.25	15.25	20.50	22.75	33
11	11	15.50	17.50	23	25.50	31
12	11	17.25	20	26	29	37
13	17	20.25	22.25	30.50	34.25	62
14	15	22	25	35.75	40.75	51
15	19.50	27	30.25	42	47.50	56
16	21	32.5	36.50	47.50	51.5	75
17	20	39	42	53.50	59	72
18	36	43.50	46.25	58	63	71
19	43	46.50	48	62	68	77
20	40	51	52	57.50	59	59
GIRLS.						
4	3	4	4.50	7	8.75	9
5	3	4.50	5.50	8.25	10	12
6	4	7	8.50	10.50	12	14
7	5	9	10	12.25	13.75	16
8	6	9	10.25	13.50	15.25	18
9	8	10.50	12.25	15.75	18.25	24
10	9	11.50	13	18	20.50	32
11	8	13.25	15.25	20.50	23	27
12	10	15.25	17.50	23.50	27.50	35

TABLE IV—(Continued).

DISTRIBUTION INTO PERCENTILE GROUPS—Right Hand Grip.

GIRLS—(Continued).

13	11	18	20.25	27.50	30.75	45
14	14.50	20	22.50	31	33.50	38
15	16.50	22	25	31.50	34.50	47
16	18	23.50	26.50	32.50	36	48
17	18	24	26.50	33	37	45
18	22	24.50	27	32.50	36.25	46
19	20	25	27.50	33.50	36.50	39
20	21	26	28.50	34	35.50	36

DISTRIBUTION INTO PERCENTILE GROUPS—Vital Capacity.

BOYS.

AGE.	Minim. Cu. cm.	10 Per Ct. Cu. cm.	25 Per Ct. Cu. cm.	75 Per Ct. Cu. cm.	90 Per Ct. Cu. cm.	Maxim. Cu. cm.
4	500	625	675	825	950	1050
5	500	775	850	1025	1150	1250
6	700	925	1000	1225	1325	1600
7	700	1025	1150	1375	1475	1800
8	800	1150	1250	1575	1750	2100
9	950	1300	1400	1750	1925	2200
10	900	1350	1450	1850	2050	2700
11	1100	1475	1600	2025	2200	3000
12	1150	1575	1750	2200	2400	3100
13	1600	1850	2000	2450	2800	4200
14	1100	1900	2175	2900	3350	4000
15	1400	2250	2450	3300	3575	4500
16	2000	2550	2950	3800	4300	5100
17	1800	2900	3200	4000	4350	5000
18	2400	3225	3425	4175	4700	5000
19	3000	3100	3500	4200	4800	5600
20	2200	2100	3300	4600	5000	5100
			GIRLS.			
4	600	675	725	825	850	900
5	600	725	800	975	1025	1100
6	600	800	900	1175	1300	1400
7	750	925	1000	1250	1350	1600
8	700	1000	1125	1350	1450	1800
9	900	1125	1225	1500	1650	2100
10	900	1225	1325	1600	1800	2100
11	1000	1325	1450	1800	1950	2300
12	800	1400	1550	1975	2150	3000
13	1100	1600	1750	2175	2400	3000
14	1350	1700	1925	2350	2675	3100
15	1450	1850	2000	2450	2675	3400
16	1350	1925	2100	2550	2750	3600
17	1250	1900	2075	2550	2800	3300
18	1500	1950	2150	2600	2800	3600
19	1700	2000	2200	2700	3000	3300
20	1300	1900	2200	2700	2825	2900

DISTRIBUTION INTO PERCENTILE GROUPS—Ergograph.

BOYS.

AGE.	Minim. Kg.-cm.	10 Per Ct. Kg.-cm.	25 Per Ct. Kg.-cm.	75 Per Ct. Kg.-cm.	90 Per Ct. Kg.-cm.	Maxim. Kg.-cm.
5	50	52.5	55	100	130	150
6	30	62.5	77.5	127.5	150	230
7	40	92.50	115	165	190	280
8	40	110	135	200	227.5	300
9	50	140	167.5	242.5	287.5	390
10	110	162.5	190	272.5	315	520
11	110	190	222.5	295	365	490
12	100	202.5	242.5	347.5	402.5	580
13	130	230	285	405	490	880
14	160	265	332.5	510	585	880
15	150	320	390	615	745	1040
16	260	410	470	680	800	1320
17	230	440	545	770	855	1110
18	380	560	600	790	905	1010
19	390	520	610	850	1040	1140
			GIRLS.			
5	20	30	45	70	90	100
6	30	60	75	117.5	142.5	200
7	40	75	95	145	170	280
8	30	90	112	170	195	280
9	50	115	137.5	202.5	230	430
10	40	125	155	225	260	600
11	70	150	175	260	305	390
12	70	165	195	285	350	650
13	80	185	225	355	430	570
14	90	215	227.5	405	480	660
15	100	230	290	415	480	690
16	120	232.5	305	442.5	530	840
17	150	230	292.5	430	520	640
18	130	240	300	450	510	820
19	160	270	340	480	575	870

TABLE V.

ANNUAL RATE OF INCREASE—BOYS.

Age.	Height at Beginning of Year. mm.	Amount of Gain. mm.	Per Cent. of Gain.
6 to 7	1106.9	51.3	4.63
7 to 8	1158.2	51.1	4.40
8 to 9	1209.3	52.1	4.30
9 to 10	1261.4	47.7	3.77
10 to 11	1309.1	42.0	3.20
11 to 12	1351.1	44.3	3.27
12 to 13	1395.4	60.0	4.29
13 to 14	1455.4	63.8	4.39
14 to 15	1519.2	61.5	4.04
15 to 16	1580.7	59.6	3.70
16 to 17	1640.3	38.2	2.32
17 to 18	1678.5	33.8	2.01

TABLE V—(Continued).

ANNUAL RATE OF INCREASE—BOYS.

Age.	Height Sitting at Beginning of Year. mm.	Amount of Gain. mm.	Per Cent. of Gain.
6 to 7	624.0	22.7	3.64
7 to 8	646.7	20.8	3.21
8 to 9	667.5	20.4	3.05
9 to 10	687.9	17.7	2.57
10 to 11	705.6	15.4	2.18
11 to 12	721.0	17.0	2.35
12 to 13	738.0	24.4	3.30
13 to 14	762.4	29.7	3.89
14 to 15	792.1	29.7	3.74
15 to 16	821.8	32.5	3.95
16 to 17	854.3	27.3	3.19
17 to 18	881.6	21.4	2.41

Age.	Weight at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	19.738	1.875	9.50
7 to 8	21.613	2.204	10.20
8 to 9	23.817	2.519	10.57
9 to 10	26.336	2.371	9.00
10 to 11	28.707	2.516	8.76
11 to 12	31.223	2.928	9.37
12 to 13	34.151	3.933	11.51
13 to 14	38.084	4.612	12.11
14 to 15	42.696	5.297	12.40
15 to 16	47.993	5.245	10.92
16 to 17	53.238	4.146	7.78
17 to 18	57.384	3.904	6.80

Age.	Ergograph at Beginning of Year. Kg.-cm.	Amount of Gain. Kg.-cm.	Per Cent. of Gain.
6 to 7	87.47	34.65	39.62
7 to 8	122.12	32.05	26.24
8 to 9	154.17	32.90	21.34
9 to 10	187.07	32.96	17.56
10 to 11	220.03	31.83	14.46
11 to 12	251.86	31.97	12.68
12 to 13	283.83	45.38	15.98
13 to 14	329.21	63.41	19.29
14 to 15	392.62	77.51	19.74
15 to 16	470.13	81.09	17.23
16 to 17	551.22	69.42	12.59
17 to 18	620.64	59.09	9.52

Age.	Right Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	9.21	1.53	16.61
7 to 8	10.74	1.67	15.55
8 to 9	12.41	1.93	15.55
9 to 10	14.34	2.18	15.20
10 to 11	16.52	2.33	14.10
11 to 12	18.85	2.39	12.67
12 to 13	21.24	3.20	15.06
13 to 14	24.44	3.98	16.28
14 to 15	28.42	4.97	17.44
15 to 16	33.39	5.98	17.90
16 to 17	39.37	5.37	13.38
17 to 18	44.14	4.54	10.14

Age.	Left Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	8.48	1.63	19.22
7 to 8	10.11	1.56	15.43
8 to 9	11.67	1.80	15.42
9 to 10	13.47	2.12	15.73
10 to 11	15.59	2.13	13.66
11 to 12	17.72	1.99	11.23
12 to 13	19.71	2.80	14.20
13 to 14	22.51	3.71	12.03
14 to 15	26.22	4.66	17.77
15 to 16	30.88	5.51	17.84
16 to 17	36.39	4.57	12.55
17 to 18	40.96	4.05	9.88

Age.	Vital Capacity at Beginning of Year. Cu. cm.	Amount of Gain. Cu. cm.	Per Cent. of Gain.
6 to 7	1023	145	14.17
7 to 8	1168	148	12.67
8 to 9	1316	153	11.62
9 to 10	1469	134	9.12
10 to 11	1603	129	8.04
11 to 12	1732	151	8.71
12 to 13	1883	225	11.95
13 to 14	2108	287	13.61
14 to 15	2395	302	12.60
15 to 16	2697	423	15.68
16 to 17	3120	363	11.63
17 to 18	3483	172	4.93

ANNUAL RATE OF INCREASE—GIRLS.

Age.	Height at Beginning of Year. mm.	Actual Gain. mm.	Per Cent. of Gain.
6 to 7	1096.6	57.1	5.20
7 to 8	1153.7	51.2	4.44
8 to 9	1204.9	47.5	3.94
9 to 10	1252.4	48.3	3.86

TABLE V—(Continued).

ANNUAL RATE OF INCREASE—GIRLS.

Age.	Height at Beginning of Year. mm.	Actual Gain. mm.	Per Cent. of Gain.
10 to 11	1300.7	52.8	4.06
11 to 12	1353.5	59.6	4.40
12 to 13	1413.1	63.7	4.51
13 to 14	1476.8	59.6	4.04
14 to 15	1536.4	31.9	2.08
15 to 16	1568.3	14.7	0.94
16 to 17	1583.0	9.6	0.61
17 to 18	1592.6	1.6	0.10

Age.	Height Sitting at Beginning of Year. mm.	Aetual Gain. mm.	Per Cent. of Gain.
6 to 7	617.0	23.7	3.84
7 to 8	640.7	22.7	3.54
8 to 9	663.4	19.8	2.98
9 to 10	683.2	17.3	2.53
10 to 11	700.5	21.8	3.11
11 to 12	722.3	27.0	3.74
12 to 13	749.3	29.8	3.98
13 to 14	779.1	30.8	3.95
14 to 15	809.9	22.2	2.74
15 to 16	832.1	13.3	1.60
16 to 17	845.4	6.6	0.78
17 to 18	852.0	3.1	0.36

Age.	Weight at Beginning of Year. Kg.	Actuai Gain. Kg.	Per Cent. of Gain.
6 to 7	18.870	2.1o4	11.15
7 to 8	20.974	2.036	9.71
8 to 9	23.010	2.247	9.77
9 to 10	25.257	2.538	10.05
10 to 11	27.795	2.867	10.31
11 to 12	30.662	3.711	12.10
12 to 13	34.373	4.601	13.38
13 to 14	38.974	5.245	13.46
14 to 15	44.219	3.942	8.91
15 to 16	48.161	2.491	5.17
16 to 17	50.652	1.734	3.42
17 to 18	52.386	0.537	1.03

Age.	Ergograph at Beginning of Year. Kg.-cm.	Aetual Gain. Kg.-cm.	Per Cent. of Gain.
6 to 7	87.79	20.21	23.02
7 to 8	108.00	22.24	20.59
8 to 9	130.24	26.49	20.34
9 to 10	156.73	24.25	15.47
10 to 11	180.98	25.92	14.32
11 to 12	206.90	28.02	13.55
12 to 13	234.92	34.97	14.89
13 to 14	269.89	48.23	17.87
14 to 15	318.12	31.71	9.97
15 to 16	349.83	11.27	3.22
16 to 17	361.10	9.64	2.67
17 to 18	370.74	9.63	2.60

Age.	Right Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	8.36	1.52	18.18
7 to 8	9.88	1.28	12.90
8 to 9	11.16	1.61	14.43
9 to 10	12.77	1.78	13.94
10 to 11	14.65	1.89	12.95
11 to 12	16.54	2.38	14.39
12 to 13	18.92	2.92	15.43
13 to 14	21.84	2.95	13.52
14 to 15	24.79	2.21	8.91
15 to 16	27.00	1.70	6.30
16 to 17	28.70	0.86	3.00
17 to 18	29.56	0.19	0.60

Age.	Left Hand Grip at Beginning of Year. Kg.	Amount of Gain. Kg.	Per Cent. of Gain.
6 to 7	7.74	1.50	19.37
7 to 8	9.24	1.24	13.42
8 to 9	10.48	1.49	14.21
9 to 10	11.97	1.75	14.62
10 to 11	13.72	1.80	13.11
11 to 12	15.52	2.26	14.56
12 to 13	17.78	2.61	14.66
13 to 14	20.39	2.53	12.40
14 to 15	22.92	2.00	8.72
15 to 16	24.92	1.64	6.58
16 to 17	26.56	0.87	3.27
17 to 18	27.43	0.23	0.85

Age.	Vitai Capaeity at Beginning of Year. Cu. cm.	Amount of Gain. Cu. cm.	Per Cent. of Gain.
6 to 7	950	111	11.68
7 to 8	1061	104	9.80
8 to 9	1165	121	10.39
9 to 10	1286	123	9.56
10 to 11	1409	117	8.30
11 to 12	1526	138	9.04
12 to 13	1664	163	9.79
13 to 14	1827	187	10.24
14 to 15	2014	154	7.64
15 to 16	2168	98	4.52
16 to 17	2266	53	2.34
17 to 18	2319	24	1.03

TABLE VI.

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—BOYS.

Age.	Height. Cm.				Weight. Kg.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	5.2	5.8	11.0	6 0	2 23	3.27	5.50	2.50
5	4.6	5 9	10.5	6.5	2 15	2.60	4.75	2.50
6	6.3	6 2	12.5	6.0	3 22	3 03	5.25	2.75
7	6 3	6 2	12.5	6.5	3 53	3 22	5.75	3.50
8	6.9	6.6	13.5	7.0	3 27	3.73	7.00	3 50
9	7.9	7 6	15.5	8.0	4.12	4.38	8.50	4.25
10	7 5	8.5	16 0	8.5	4.09	4.66	8 75	4.25
11	8.0	8 0	16.0	8.5	5.27	5 23	10 50	5.50
12	9.3	8.7	18 0	9 0	6 13	6 62	12.75	6.00
13	8.8	10.2	19.0	10 5	6.78	7.72	14 50	7.50
14	11 1	12.9	24.0	11.5	9.79	10 21	20.00	10.00
15	10 3	10.2	20 5	11 0	10 49	10 51	21 00	10.50
16	11.0	9.0	20.0	11.0	9.22	10.28	19.50	9.50
17	8 5	9.5	18 0	8 5	12 24	10 26	22.50	11.00
18	7.1	8 4	15.0	9.0	8 36	8 14	16.50	9.00

TABLE VI.—(CONTINUED.)

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—BOYS.

Age.	Grip of right hand. Kg.				Vital capaeity. Cc.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	2 25	3 50	5.75	3 25	111	214	325	150
5	2 55	2.45	5.00	3.75	155	220	375	175
6	1.50	2.50	4 00	2 25	173	227	400	225
7	2.25	3.00	5 25	3.00	215	235	450	225
8	3.27	4.23	7 50	4 00	238	362	600	325
9	4.14	5.11	9.25	5.00	249	376	625	350
10	4.43	5 07	9 50	5.25	309	391	700	400
11	4.44	5.56	10 00	5 50	324	401	725	425
12	5.15	6.60	11.75	6.00	381	444	825	450
13	6.01	7 99	14.00	8 25	396	554	950	450
14	8.29	10.46	18.75	10.75	627	823	1450	725
15	9 30	11.20	20.50	11.75	608	717	1325	850
16	9.62	9.38	19 00	11.00	813	937	1750	850
17	7.99	12.01	20 00	11.50	670	780	1450	800
18	7.54	11.96	19.50	11 75	476	999	1475	750

TABLE VI.—(CONTINUED.)

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—BOYS.

Age.	Endurance as measured by ergograph. Kg. em.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4				
5	29.6	47.9	77.5	45.0
6	42 9	44.6	87.5	50.0
7	46.7	50.8	97.5	50 0
8	58 2	59.3	117 5	65 0
9	65.6	81 9	147.5	75 0
10	72.5	80 0	152 5	82.5
11	77.7	97 3	175.0	82.5
12	95 3	104.7	200.0	105.0
13	127 2	132 8	260.0	120.0
14	158.8	161.2	320.0	177.5
15	193.5	231.5	425.0	225.0
16	174.7	215 3	390.0	210 0
17	201.4	203.6	405 0	225.0
18	140.9	204 1	345 0	190 0

TABLE VII.

ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—GIRLS.

Age.	Height. Cm.				Weight. Kg.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	4.8	5 2	10.0	6.0	2 34	2.91	5.25	2.00
5	6.5	7.5	14.0	9 0	2 72	3.28	6.00	2.75
6	6.1	5.9	12.0	6.5	2 97	3.28	6.25	3.25
7	7.5	6 0	13.5	7.0	3.62	3.88	7.50	3.50
8	6.8	6.2	13.0	7 5	3.49	3.51	7.00	3.50
9	7.3	7.7	15.0	8.0	3.79	4.46	8.25	4.50
10	7.2	7 8	15 0	7.5	4 97	4.53	9 50	5.25
11	8.6	8.4	17.0	8.5	5.63	5.87	11.50	5.75

TABLE VII—(Continued).

12	10.1	9 4	19.5	10.0	7.33	7.67	15.00	8.75
13	10 8	7.7	18.5	10.0	8.63	11 37	19.00	10.00
14	8.9	6.6	15.5	8.0	9 18	8 82	18.00	9.25
15	7 4	6 1	13.5	7.0	7 84	8 91	16.75	8.50
16	8.7	6.3	15.0	7.5	7.96	8.79	16 75	8.50
17	7.7	5 8	13.5	7 0	8.26	8 74	17.00	7.75
18	8.0	6.5	14.5	7.5	6.77	6.48	13.25	7.50

TABLE VII.—(CONTINUED.)
ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—GIRLS.

Age.	Grip of right hand. Kg.				Vital capacity. Cc.			
	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.	10 per cent. to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	1.64	3 11	4.75	2.50	79	96	175	100
5	2.73	2.77	5.50	2.75	130	170	300	175
6	2.15	2.85	5.00	2.00	208	292	500	275
7	1 71	3.04	4.75	2.25	196	229	425	250
8	2.67	3 58	6.25	3.25	215	235	450	225
9	3.39	4 36	7.75	3.50	235	290	525	275
10	3.87	5.13	9.00	5 00	231	344	575	275
11	4.32	5.43	9.75	5.25	262	363	625	350
12	4 84	7.41	12 25	6.00	329	421	750	425
13	5.60	7.15	12.75	7.25	324	476	800	425
14	6.19	7.31	13.50	8.50	417	558	975	425
15	5 92	6.58	12 50	6.50	375	450	825	450
16	6.00	6.50	12.50	6 00	381	444	825	450
17	5.62	7.38	13 00	6.50	404	496	90	475
18	5.34	6.41	11.75	5.50	401	449	850	450

TABLE VII.—(CONTINUED.)
ABSOLUTE RANGE OF MEASUREMENTS BETWEEN PERCENTILE GROUPS.—GIRLS.

Age.	Endurance as measured by ergograph. Kg. cm.			
	10 per cent to average.	Average to 90 per cent.	10 to 90 per cent.	25 to 75 per cent.
4	. . .	. . .	. . .	. . .
5	32.2	27.8	60.0	25.0
6	38 3	44 2	82.5	42.5
7	34 5	60 5	95.0	50.0
8	52.5	52.5	105.0	58.0
9	56.4	58.6	115.0	65 0
10	65.1	69.9	135.0	70.0
11	71.7	83.3	155.0	85.0
12	80 9	104.1	185.0	90.0
13	109.5	135.5	245.0	130.0
14	129.2	135.8	265.0	177.5
15	126.5	123.5	250.0	125.0
16	134.8	162.7	297.5	137.5
17	140.1	149.9	290 0	137.5
18	141.6	128.4	270.0	150.0

Clinical Reports.

REDUCTION OF DISLOCATION OF THE SHOULDER BY CONTINUOUS TRACTION.

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TELLURIDE, COLO.

Dr. L. A. Stimson[1] described a method of reducing recent shoulder and hip dislocations, which he used with very gratifying results. His method appealed to me as being scientific and practical; hence, I have made use of the principle in all recent cases of dislocation of those parts coming under my care since his article was published. The results were so satisfactory that I feel justified in noting them.

The principle on which reduction of dislocations of the shoulder by continuous traction depends, is that the muscles are relaxed and rendered passive, thus offering no resistance to the movements of the humerus. There remains, then, only the ligaments and the atmospheric pressure to prevent reduction. The ligaments of the shoulder are so arranged that they offer no resistance to it and the looseness of the capsule is so great that the arm will fall about an inch from the scapula when the muscles are dissected from the capsular ligament and an opening is made in it to remove the atmospheric pressure. From the foregoing, it is evident that when the resistance offered by the muscles and by the atmospheric pressure is overcome, which is done by the slow, continuous traction on the arm, the capsular ligament allows the articular surfaces of the scapula and head of the humerus to be separated to such an extent that they become placed opposite each other, and when the traction is removed they return to their proper places—reduction having been accomplished.

Technique of Reducing the Dislocation.—The method of reducing the dislocation, as recommended by Stimson, is as follows: Place the dislocated arm through a 6-inch hole, made 18 inches from one end, in a canvas stretcher, the patient lying on the stretcher in a lateral position; a ten-pound weight is then attached to his wrist. In all cases tried, reduction was completed in six minutes.

Hofmeister applied the same principle and obtained equally good results, by using a complicated set of pulleys. In my first cases, the following method was used: The patient was



placed on an ordinary dining table, in the lateral position; the dislocated arm allowed to hang through an opening made by removing one of the leaves; the patient supported by pillows and blankets, and the necessary number of flatirons attached to the wrist or elbow. In six cases treated by this method, reduction was accomplished at the end of six minutes in each of them. In some of the cases, at least, the reduction appeared to be effected in a shorter period; but this was not proven, as each time the weight was attached for the six minutes.

It occurred to me that carefully applied muscular force could be substituted for the weights, and, therefore, in treating the next dislocation of the shoulder, I pulled gently and steadily on the arm, held at right angles to the body, the patient relaxing his muscles. This he did, willingly, for he found that the traction was painless. After I had pulled gently and continuously for about two minutes, I felt the arm twist slightly, and, on relaxing my hold, found the dislocation reduced. I have tried this method in 7 cases and have succeeded in reducing the dislocations in all of them. In no case was I obliged to apply the traction longer than four minutes, and in most instances, a shorter period was sufficient.

The advisability of employing this method of reducing shoulder dislocation may be considered from two standpoints.

1. An Easy Method of Reducing Dislocations of the Shoulder and Hip, N. Y. Med. Rec., March 3, 1900.

It offers the following advantages: 1. It has not failed to reduce a dislocation in any case. Stimson tried it on 10 cases, and I have reduced 13 cases; 6 by the use of weights and 7 by substituting muscular force for them; 2, in no case has the patient complained of the reduction being painful; 3, there has been no evidence of injury to the soft parts in this method of treatment, and it is difficult to understand how such could occur when so little force is used; 4, anesthesia is unnecessary, and 5, I have succeeded in reducing dislocations by this method where other methods have failed.



The disadvantages are, thus far in my experience, none. Of course, it is possible that some cases of shoulder dislocations can not be reduced by the method, but I have not found them. Traction on the arm, at right angles to the body, is advised against by most writers, on account of the danger of injuring the vessels and nerves. I do not think the objection holds in cases where such mild traction is used as is advised in the method of treatment outlined in the foregoing. I can see no reason why the method should not be tried in reducing shoulder dislocations, and judging from the results I have obtained, though the cases are few in number, it is the best method for treating recent cases.

BABE WITH ONE LUNG.

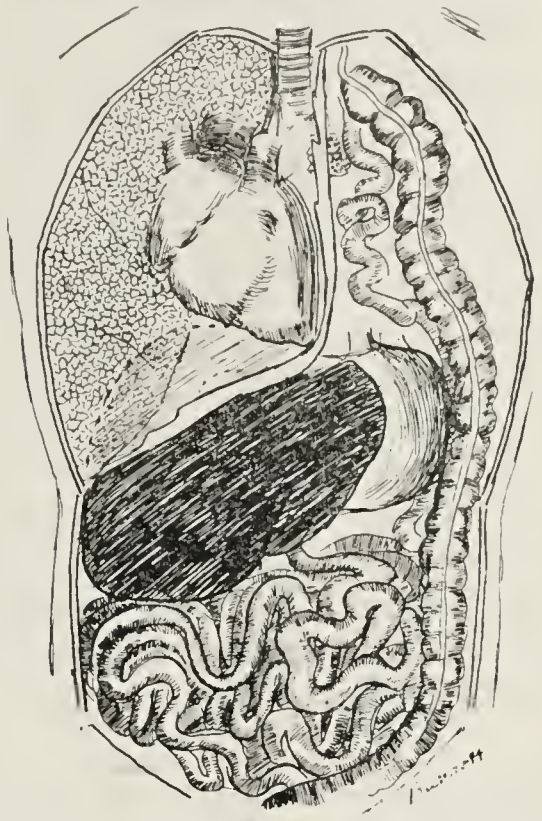
RALPH HANSON, M.D.
LEWISTOWN, ILL.

Mrs. W. G. M. was delivered after a normal labor of a seven-pound female child on October 27, 1900, at about the thirty-sixth week of gestation. It breathed immediately, but not satisfactorily, the respirations being shallow and at too long intervals. There was no cry; the color was pale. The pulse in the cord was strong so the child was removed from the mother, and all usual efforts made to establish normal respiration, but without success. The respirations became less frequent and more shallow and ceased entirely in about fifteen minutes. The heart continued beating for several minutes longer.

In working with the child the heart-beat was discovered to be on the right side and was easily felt, and the impulse was visible to both myself and the nurse. I thought I had a case of transposition of the viscera, and asked for permission to hold a postmortem examination, which was granted.

On opening the chest the heart was found on the right side, just to the right of the sternum and base under right nipple. The right lung was normal in shape, but rather smaller than usual. The left lung was rudimentary in the extreme and looked like a bunch of millet seed not longer than a buckshot, the bronchus being simply a cord about one-twelfth of an inch in length. The diaphragm was normal on the right side, but was only a small band of muscular fibers about one-eighth of an inch in width along the border of the ribs. There was nothing on the posterior wall to indicate where it should have been, this wall being perfectly smooth from apex to pelvis.

The liver and stomach were normal in size and position. The small intestines were as usual, except the lower portion turned to the left and ascended behind the stomach into the left chest cavity at the apex of which it entered the cecum. The vermi-



form appendix lay in the apex against the clavicle. The colon passed directly down from this point to the sigmoid flexure. The pelvic organs were normal.

History of the Clinical Thermometer.—*Janus* quotes from Daniels' history of the thermometer at the sick bed, recently published in the *Tijdschr. v. Geneesk*, that Currie, of Edinburgh, employed a thermometer in treating typhoid patients with the cold douche, as early as 1797. His example was not followed by others, and he was even held up to ridicule by his German contemporaries as an "instance of the sad condition into which English medicine has fallen." To Sanctorius of Padua, professor of medicine and author of the famous book "De Statica Medica," belongs the first clinical application of the thermometer. He invented a kind of air-thermometer, open at one end. After being held by the patient the attached tube was plunged into cold water and the height of the column of water was recorded. The great Dutch physician Boerhaave taught the importance of the temperature in disease, and used the thermometer. Van Swieten, one of his pupils, recommended Fahrenheit's thermometer for the purpose, but to another pupil, De Haen—1704 to 1776—is due the honor of having introduced the thermometer into current use at the bedside. It was not till 1835 that thermometry began to make real progress, and not till 1850 to 1870 that it came into general use, mostly due to Traube and Wunderlich's studies on temperature in disease.

Hygienic Advantages of Evening Dress.—An eminent English physician states that the evening dress suit is a distinct hygienic gain. It compels the changing of the clothes, the æration of the body. The wearer feels obliged to stand more erect, to throw out his chest and thus breathe deeper. In short, he contends that a change from the business to the dress suit every evening will add years to one's life.

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THE ATTEMPTED MURDER OF THE PRESIDENT.

Our country has been called again to bow in sorrow and, at the same time, in humiliation. In sorrow, because an honest, laborious, well-meaning patriotic public servant has been murderously assaulted while doing his duty, and this without any cause whatsoever. In humiliation, because here, in this land of free speech, of free press, and of democratic government, where the poorest has as much to say who shall be ruler as the most wealthy; here, where the ruler is as a brother to the poorest citizen, where despotism is unknown and liberty in its broadest sense is the heritage and the right of all; here the anarchistic assassin plies his accursed work and excuses his deed by calling it a righteous one.

With feelings of sorrow and abhorrence, mingled with rage, the American people have again stood in the presence of their chief magistrate lying prostrate from a bullet sent by the hand of a being in the form of a man, but who, thank God, bears a name that can not be mistaken for that of an American.

Murder most wanton, murder most foul, murder absolutely unprovoked, yet deliberate, predetermined, and carried out with the tactics of a snake, was attempted. And why? Because William McKinley stood for law and order; because he was the representative of the government. There was no other reason, not even an imaginary one.

Shall we say that Leon Czolgosz is a degenerate? If by this is meant that he is worse than his fellows, yes. If by this is meant that he is so constituted by birth or development that he is physically abnormal and therefore not responsible, no. This idea of calling degenerates all those whose views of affairs become perverted by association with those who glory in pulling down everything that exists because it does exist, by reading only firebrandish literature of anarchism, and by devoting their time to concocting arguments against the fundamental principles of law and order and good government, is absurd. No, Czolgosz is an anarchist, that is all.

So let us leave him and turn to the other side. President McKinley is living to-day, thanks to the skill of the surgeons. This prospect of a fortunate result in this case of national and world-wide interest is due to the prompt surgical intervention and the application of the best technique and surgical science of to-day. But for these, the anarchist's bullet would have been successful or a practical miracle would have had to have occurred. Those who were called on to save the President deserve all the praise and honor that will be theirs for having proved themselves equal to the occasion.

Surgeons are being called on daily to do more delicate and more difficult operations than was this on the President, but in a patient so illustrious, it required courage in any one who should attempt it. A critical world watched, and the hopes of a nation were centered on this operation, and a false step, or faulty technique in the slightest degree would mean a mighty disaster. Had there been lack of prompt decision to operate, irretrievable damage would have been done, and the tragedy would have been complete.

This prompt decision to operate gave evidence of courage as well as rare surgical judgment. Perforation of the gastro-intestinal tract into the peritoneal cavity is a most serious condition in any case and those who attempt to meet it know that conditions may be revealed when the abdominal cavity is opened that might defy even the surgical skill of the day to overcome. It is for this reason that courage in this case was necessary. When the cavity was opened and the stomach and the intestines had been examined and two openings in the stomach was the sum of the pathological lesions found, the surgeons certainly breathed more freely, for modern surgery was equal to the emergency. If conditions passing surgical skill had been discovered, who can tell what imprecations would have been heaped on those who operated, when death should end the scene!

We repeat: under the circumstances, it required courage for the surgeons to do their duty, but they did it. The medical profession of America is proud of and congratulates the surgeons who worked so faithfully to save the chief magistrate of the Nation. They only did their duty, it is true, and thousands of others might have done as well, but nevertheless praise is theirs and we accord it.

THE METHODS OF THE ANTIVIVISECTIONISTS.

There has just come into our hands a pamphlet entitled "Concerning Human Vivisection, a Controversy," which calls for some notice. It contains the original letter of Mr. James M. Brown, the president of the American Humane Association, to Dr. W. W. Keen and the latter's reply published in The Journal, together with

a counter reply or "Review" of the same by an anonymous writer.

It is unfortunate that the American Humane Association can not in its publications give evidence of the truth of the assertion of its president in a recent communication to The Journal that it "can have no quarrel with the medical profession." Its first pamphlet on "Human Vivisection" showed an animus to make the greatest use and widest application of certain alleged facts against the profession generally, not so much by specific statement as by the utmost utilization of illegitimate inference. In the pamphlet just received, the same spirit is manifested. If the Association had really desired to put the matter fairly before the public why did it not include Dr. Keen's last letter? If it had done this the anonymous reviewer would have had an opportunity to point out the "serious misquotations" spoken of by Mr. Brown in his recent communication (August 31), if they existed, a possibility of which we have our doubts. A writer who meets the proven charge of interpolation of whole sentences and ideas foreign to the context in an alleged quotation, as in the Schreiber case, only by admitting a "far too free translation" and who leaves an important term like *carcinoma disséminé* in the original rather than put it into intelligible English, is not one that inspires faith in his criticisms or the accuracy of his assertions.

The subject of human vivisection appears to have been brought up as a side issue to help the general antivivisection crusade, and Dr. Keen's remarks before the Senate Committee that some of the references to the experiments quoted were vague and indefinite, and in other cases that they were garbled, was the starting point of the present controversy. Dr. Keen has fairly proved his statement, as will be admitted by any one who reads his first letter, and it it difficult to conceive how any clear-headed individual can be made to believe the contrary. The attempt to make out a difference of meaning, because in his oral statement he did not use the word "references" but spoke only of experiments, is an unworthy quibble and would not be made except by a quibbler. The context shows that he could mean nothing else, and the quibble is not an answer to the fact that he fully proved their vagueness and indefiniteness as well as the garbling of the quotations.

When a reviewer attempts to excuse the addition of words and sentences to pervert the meaning of an alleged quotation on the plea of the necessity of "brevity of quotation" it is hard to believe he is not conscious of being a humbug. When the original authority is referred to, and in his "review" the anonymous author quotes the original text, the value of the plea of nonresponsibility for the "far too free translation" can be properly estimated. The only way one can account for the vagaries of the reviewer in this case is on the theory that he possesses an altogether vicarious conscience that enables him to disregard the ordinary moralities of veracity and the observance of the ninth commandment.

The impression the Humane Association seeks to convey through its anonymous champion is that the medical profession commonly indulges in what it calls human vivisection and that it is generally an apologist and supporter of unjustifiable experiments on human subjects. The fact is there have been a few rare instances of the kind that were promptly condemned by the profession generally, long before the Humane Association ever paid any attention to the subject. The medical conscience is alert on this matter, for if human life and welfare is sacred to any one it is to the physician, and in this he is in bright contrast to the average antivivisectionist. There are other experiments that are questionable in their propriety though their results are not serious, but these also are few and are generally condemned. There are still other cases that are open to misconstruction and misrepresentation; every new operative or therapeutic measure is in its way an experiment, and the venturesome investigator is liable to charges of recklessness and inhumanity by such critics as those of the Humane Association. Ephraim McDowell was in danger of his life from the humanitarians of Kentucky in his day; only his brilliant success saved him, and he was even then under the condemnation of the conservatives of his own profession.

If the antivivisectionists had their way there could be little progress in medicine and surgery; the chance for President McKinley's life is due to the sacrifice of hundreds of lower animals, and the courageous application of the facts thus gained on human subjects falls fairly within what Mr. Brown and his anonymous hack writer would call human vivisection. Twenty-five or even twenty years ago, President McKinley's case would have been hopeless from the start, and if the antivivisection branch of the Humane Association had had its way it would have been so now. Twenty years from now other conditions at present hopeless will probably be within the physician's and surgeon's control, but only through experimentation on the lower animals and the cautious but fearless testing of the results thus gained on the human system.

No one can calculate the beneficial results to mankind of the recent yellow fever experiments in Cuba attended as they were by risk voluntarily assumed and even loss of life. If the justification of such deeds as these is what the Humane Association calls "suggestion of excuses for offenders," they may go on with their threatened exposure of the "crime against civilization" as rapidly as they may desire, only we would suggest to them and their writers that a disregard for truth, not only in direct statement but also in insinuation, is neither advisable nor commendable. So far there seems to have been a very general lack of consideration of this fact in their contributions to the present controversy, especially by their anonymous hack writer.

ACCIDENTAL SERUM DEMONSTRATION.

The Calmette antivenene has, as we learn from the Paris correspondent of the London *Lancet*, been put to the test as regards its efficieney by Dr. Calmette himself on his own person. While handling one of his reptiles the forceps slipped and he was severely bitten in the right hand. He immediately gave himself an injeetion of antivenene, and though his hand swelled eonsiderably and there was some fever, he was able to attend to business on the afternoon of the same day, and was perfeetly recovered on the following one. The serpent was one the poison of whieh is exeeedingly rapid in its aetion, and the result is elaimed as conelusive proof of the proteetive virtue of the serum. While an experiment like this is hardly to be recommended, the aeeident was in its way a fortunate one, and was doubtless as satisfaetory to Dr. Calmette as if it had been premeditated.

DOG LIVER OIL.

The latest consumption eure—or rather one of the latest, for new ones are bobbing up almost daily—hails from one of our interior eities, and, as given out in one of the dailies of that city, it does not seem an attraetive one. The gentleman who has the eontract for the removal of dead animals from the streets has found that an oil prepared from the hearts and livers of dogs is a sovereign eure, and a number of cases are named where wonderful results are said to have followed its use. All other seekers for a eure are said to be wasting their time, now that the virtues of the extract from the hearts and livers of deeeased eanines have been diseovered; thus dog liver, not eod liver, oil, is to be the oil of the future. The assoeiations in the aeeount are not exaetly sueh as to make the preparation partieularly appetizing, but what does that matter with an infallible eure for sueh a disease! It finds a utility in even a dead dog, whieh has heretofore been the very superlative expression of worthlessness.

THE OFFICIAL BULLETINS.

The judieious method of imparting information to the public by bulletins of the President's eondition, is a feature that is to be eommended. The possibilities of miseonstruetion of statements and the danger of premature announeements have been very evidently considered. In a ease like this, medical seereey is of eourse impossible; the people demand information, but it is a matter of some importance that the facts are given out in such a way that they can not be distorted by the imagination of the reeipients. The surgeons in attendance on President MeKinley have adopted the plan of having every offieial bulletin signed by the President's secretary as well as by themselves and have, in spite of pressure, apparently refrained as far as possible from any individual expression of opinion. The public ean, therefore, feel assured that what it learns is reliable and that there is no eonfusion of individually expressed opinions or medical gossip in regard to the case. While the President is a publie eharacter he has also the rights of a citizen, and it is proper, therefore, that what is given to the publie and whieh in the nature of the ease it has a right to demand, should be sent out under official sanction and as it were from the President himself.

INFECTION OF THE URINARY BLADDER.

By reason of the frequent presence of intestinal baeteria, or the eolon bacillus, in the bladder, in eases of eystitis, and of the anatomic relations of the reetum and the bladder, it has been thought that under sueh circumstanees direet infeetion takes place from the reetum. It has, further, been possible experimentally to exeite eystitis by inflieting injury upon the reetal epithelium. In order to verify or refute these propositions R. Faltin[1] undertook an experimental investigation, as the result of whieh it was found that following a lesion of the reetum at the level of the prostate, however profound or extensive, neither eystitis nor the presenee of intestinal baeteria in the bladder was observed so long as the latter viscus was uninjured, providing fatal general infeetion or peritonitis did not oeeur at the same time as a result of the lesion. Such infection or peritonitis was rather frequent, especially in the sequence of more considerable lesions. Under these circumstanees elimination of baeteria through the kidneys may take plaee and give rise to baeteriuria. In one series of experiments, eystitis developed gradually but onee without simultaneous septieemia or peritonitis, and in another series transitory baeteriuria but onee. On the other hand, microscopie examination of the rectum and the bladder showed that at times baeteria in large number may invade the rieh lymphatie struetures between the reetum and the bladder and surrounding the prostate, the seminal vesieles and the bladder beneath the peritoneum, in the sequenee of quite inconsiderable lesions of the epithelium. If the bladder is injured in eonsequenee of artifieial retention, intestinal baeteria may oeeasionally find their way from a wound of the rectum along the anatomieal paths indieated, with the development of baeteriuria or eystitis.

THE ETIOLOGY OF YELLOW FEVER.

The experiments of Reed, Carroll and Agramonte, while generally aeeepted as eonelusive by the seientifie world, are not so aeeepted by some of the adherents of Sanarelli. One of the most striking attaeks on the mosquito theory of the eonveyanee of yellow fever infeetion has been made in a paper read before the National Aeademy of Medieine of Rio Janeiro by Dr. J. B. Laeerda and published in the *Brazil Medico* of August 1. The author rejeets the diagnosis of the American physicians because he does not find in their reported eases the eharaeteristie symptoms of yellow fever, the anuria, etc., and all recovered eompletely in a few days (ignoring the case of Dr. Lazear), and in other ways he deduees that their eonelusions are unjustified and fallaeious. His great argument, however, is that Sanarelli's baeillus is an established faet, and that it is presumptuous on the part of any one to question it. The clinical picture of yellow fever, he says, is throughout that of a bacillary disease like typhoid or plague, and nothing about it indieates a protozoan origin whieh he assumes is accepted by Reed and Carroll. Their work therefore is, he elaims, unsei-

1. Centralblatt f. d. Krankheiten d. Harn- und Sexual-Organe, Band xii, Heft 8, p. 401.

entific and their attempt to discredit the discoveries and theory of Sanarelli, whether through partisanship or in a general spirit of opposition by unestablished and imaginary findings, is to deliberately seek to obscure the clear facts of science and hinder the onward march of truth! The later results of experimentation must be now known to Lacerda, but in Dr. Caldas, whose serum has failed, he will probably still find an ally in questioning the diagnosis. The paper is, however, altogether too *a priori* and his insinuations of national prejudice, etc., on the part of the American investigators are, to say the least, unscientific. The mosquito origin of yellow fever will be none the less generally accepted, until some stronger points are made against it.

THE PRESIDENT'S CASE AND THE NEWSPAPERS.

The majority of the newspapers of the country have honestly tried to supply their readers with all the facts, and only facts, about the President's case. But the possibilities for the "fake" in yellow journalism were too many to be ignored and consequently these were "extraed" with profitable results to the proprietors. While the bulletins of the attending men repeatedly announced that their patient was resting comfortably, these newspapers contained columns, double-leaded and scare-headed, about the "agony" and the "torture" which the President was bravely bearing, all pure "fake." The "agony" of the operation consisted in the little unpleasantness of the first few whiffs of the ether. Except when the wounds were dressed, the President has had no pain, and the dressing of the wounds probably caused but little suffering, if any. There would be no pain from the wounds in the stomach, and of course none from the abdominal wound, unless vomiting ensued after the anesthetic, which we understand was not the case. As is usual in such cases, a few of the newspapers have been free with advice as to what should and what should not have been done by the surgeons, this supplemented by suggestions from members of our profession in the form of interviews. As a rule, those in attendance on a case know better what are the conditions and how they are to be met than outsiders. This does not seem to be realized by some, who, we are sorry to say, belong to the medical profession. The papers are placing the credit of the successful outcome where it belongs. There is no attempt to belittle the work of the surgeons or to reflect on the good judgment of those in charge of the President's case. The advance of surgery is acknowledged by one paper in the sentence: "The surgery of to-day and not that of twenty years ago was applied to the stricken President." Another says: "The public in its gratitude for the progress made by the president within the most critical period following the operation will not forget the credit due to the surgeons who attended and to the practitioners who during the past half century have worked with such good purpose in securing the wonderful advance of surgical science." And another: "If he should finally recover, as all signs now indicate, it will be justly regarded as the most notable triumph of twentieth century surgery." In similar manner the newspapers are all speaking a good word for modern medicine.

The Shooting of the President.

(From our Correspondent.)

Buffalo, N. Y., September 12.

Within an hour of the infliction of the wounds received by President McKinley, he was operated upon at the Exposition Emergency Hospital. The surgeons present were Drs. Matthew D. Mann, Professor of Obstetrics and Gynecology, University of Buffalo; Dr. Herman Mynter, Professor of Operative Surgery, University of Buffalo; Dr. John Parmenter, Professor of Anatomy and Clinical Surgery, University of Buffalo; Dr. E. Wallace Lee, of St. Louis, Mo., who happened to be on the Exposition grounds; Dr. Eugene Wasdin of the Marine-Hospital Service, and Dr. Presley M. Rixey, physician to the President.

The operation was performed by Dr. Mann; first assistant, Dr. Herman Mynter; second assistant, Dr. John Parmenter; third assistant, Dr. Lee. Dr. Eugene Wasdin gave the anesthetic, which was ether. The operation lasted forty-five minutes. Dr. Rixey arrived at the latter part of the operation. There were two wounds, one about the center of the sternum, the other two and one-half inches below the free costal border on the left side and in the semilunar space. It was this latter wound which necessitated the speedy operation. A five-inch incision was made and the course of the bullet followed up. It was found to have penetrated the anterior wall of the stomach. The opening was small and was sutured with silk. After closing this a search was made of the intestines; the stomach was lifted from its position and a larger perforation was found in its posterior wall. It was over an inch in diameter, jagged and irregular. This wound was sutured with black silk also. Continuous catgut was used for the fascia. The skin was coaptated with six through-and-through silkworm stitches, and interrupted catgut was passed between the silkworm gut. The abdominal cavity was thoroughly irrigated with normal salt solution. There was very little food in the stomach at the time of the shooting; because of the dexterity of the operators and this happy incident no foreign matter entered the peritoneal cavity from the stomach. The wound was closed with catgut, without drainage, and bandages were applied. The bandages were removed at 8:30 a. m. Saturday and showed but little staining.

Before anesthesia had passed off, the President was conveyed by ambulance to the residence of Mr. John G. Milburn, president of the Pan-American Exposition, the emergency hospital being for temporary use only.

There are three nurses and three orderlies in attendance on the President. Dr. Rixey and one of the surgeons are with the President each night, and consultations of all the surgeons are held three times a day. Dr. Roswell Park was at Niagara Falls and came on a special train, and assisted during the latter part of the operation. He is surgeon in charge. Dr. Charles McBurney, New York, was called in consultation on Saturday, and is still here. He is the guest of Dr. Mann.

The surgeons are much inconvenienced by the incessant inquiries from reporters and are very guarded in their remarks.

NURSES ATTENDING THE PRESIDENT.

The male nurses in attendance on the President are from the United States Army Hospital Corps, who were detailed for this duty immediately after the shooting of the President, from the detachment of Hospital Corps men on duty with the Field Hospital Exhibit of the Army Medical Department at the Pan-American Exposition. The men selected for this responsible duty were Acting Hospital Steward Palmer A. Eliot, and Privates Ernest Vollmeyer and John Hodgins. All of these men completed the excellent courses of instruction at the School for Hospital Corps men at the Army General Hospital at Washington Barracks, D. C.; besides which Steward Eliot is a graduate of the Bellevue Hospital Training School for Nurses, and Private Vollmeyer is a graduate nurse of the Presbyterian Hospital of New York City. Private Hodgins is a soldier of nine years' army service and long experienced in military hospitals. Much of the attention required in the President's case is of such nature as can not well be performed by female nurses in attendance, and the efficiency of these men

is such as to have elicited much favorable comment from the staff of attending surgeons. Army medical officers are highly gratified that the hospital corps should be officially connected with the President's case and have the opportunity of so publicly demonstrating its professional efficiency and the excellence of its personnel.

The female nurses in attendance on the President are Miss Helen Mohan, a graduate of the Buffalo General Hospital Training School; Miss Conley, a graduate of the Buffalo General Hospital Training School and lately clinic nurse at the German Hospital; Miss Hunter, nurse of Mrs. McKinley, and Miss Grace McCullough, of Baltimore, has been summoned.

As the President continues to improve the excellent judgment and great wisdom in the surgeons who first saw him in treating the President as a citizen and in not being concerned with too much formality or red tape become more and more apparent. The operation from the course of symptoms is to be regarded as an aseptic one. The heat resulting from the discharge of the revolver made the bullet practically aseptic, and the perforations of the stomach wall will heal soon because the sutures passed through normal tissue, and not, as in the case of tumor or ulcer, through diseased tissue. The wonderful dexterity of the operators, Drs. Mann and Mynter, prevented any discharge of stomach contents into the peritoneal cavity; hence no symptoms of peritonitis have or are expected to occur.

It is impossible at the present time to get a more detailed technical description of what was done at the operation than that which I have already given.

One of the surgeons in attendance was asked by a press representative to compare Garfield's case and its treatment with that of President McKinley, and in reply stated that to do so would be to give the history of the progress of twenty years of surgery. Besides, he said, the two cases are entirely different. Garfield's wound was an extremely unfortunate one in every way, hard to get at and difficult to handle. The wound of President McKinley, on the other hand, is in many respects a fortunate one. No comparison is possible.

During Tuesday night two stitches were removed, on account of some perceptible irritation. The wound was cleansed and again closed. It is the belief of all the surgeons in attendance on the President that his recovery is certain. If peritonitis were to have appeared its symptoms would have been manifest long before the time of this writing, and the fact that the kidneys and bowels have been functionating normally since Tuesday showed that the surgeons have good reason to be hopeful. Until early Tuesday morning the President received stimulants only hypodermically, but at that time was given a nutritive enema. In the afternoon beef juice was given by mouth. It is not necessary to give sedatives, for the patient gets four or five hours sleep.

Medical News.

ALABAMA.

Personal.—Dr. Blaekshear, of Gordon, has located at Webb. ——Dr. Thomas S. Mitchell, Eufaula, has moved to Pensacola, Fla.

Cornerstone of Colored Hospital Laid.—The cornerstone of the Woman's Mission Congress Hospital for Colored Sick at Birmingham, was laid with appropriate ceremonies, August 29.

CALIFORNIA.

Dr. Benjamin F. Church, Los Angeles, is spending September and October in New York, engaged in special lines of post-graduate work.

Dr. Orville O. Witherbee, Los Angeles, has been elected superintendent of Los Angeles County Hospital, vice Dr. Ernest A. Bryant, resigned.

Lectures at Cooper Medical College.—Dr. Malcolm Morris, London, editor of the *Practitioner*, delivered the Lane lectures on "Affections and Diseases of the Skin," at Cooper Medical College, San Francisco, last week.

Dr. Antrim E. Osborne, Eldridge, for fifteen years superintendent of the Home for the Care and Training of Feeble-Minded Children at Glen Ellen, Sonoma County, has been succeeded by Dr. William M. Lawlor, San Francisco.

Personal.—Dr. Louise M. Richter, Garvanza, who has been ill for six weeks, has gone to Santa Barbara for a month.—— Dr. Peter L. Wheeler, Oakland, trustee of the Merritt Hospital, has taken a trip to the eastern cities to study the conduct of hospitals.——Dr. Richard C. A. Urquhart, Los Gatos, has gone to Bolinas Bay for his vacation.

Physicians Warned.—The secretary of the San Francisco Board of Health states that a list is being compiled to include the names of all the physicians in the city who neglect to file certificates of birth as required by law. The law requires the filing of birth certificates just as much as it requires the filing of death certificates, and there is a heavy penalty for failure to observe the law. It is intimated that legal proceedings will be begun against every physician whose name is on the list.

COLORADO.

New Hospital at Victor.—It is rumored that the Victor Miners' Union, the Teller County Commissioners and the physicians of Victor are planning to build an emergency hospital.

On the Trail of Itinerant Physicians.—Dr. Seymour D. Van Meter, Denver, secretary of the State Board of Medical Examiners, is in Colorado Springs, investigating the doctors and alleged doctors who come to Colorado Springs, Manitou and vicinity to practice without license.

"Faith Healer" Yields.—Francis Truth, the "faith healer," who is under indictment for fraud and using the mails to deceive, has retired from business permanently, according to an agreement sanctioned by the attorney general, and has publicly burned all his papers, priestly costumes and healing appliances in the presence of representatives of the United States district attorney.

FLORIDA.

Dr. J. H. Colson, Waldo, has been appointed surgeon to the State Hospital for the Insane, Chattahoochee, vice Dr. Louis De M. Blocker, resigned.

The Pensacola Quarantine Station, which has recently been taken over by the United States Marine-Hospital Service, has been appraised at $20,000.

Personal.—Dr. John C. Bishop, of Aucilla, has moved to Alachua.——Dr. Henry H. Stebbins, Tampa, has been visiting his old home in Central City, Colo.

"Mental Healers" Bonded.—Three leaders of the Mental Science Association of the World, who were arraigned at Jacksonville for using the mails for fraudulent purposes, have been released on bonds of $5000 each. They made a specialty of "absent" treatments, with excellent financial results.

GEORGIA.

New Dispensary.—The Presbyterian Hospital, Atlanta, has opened a free dispensary and clinic at 80-82 Central Avenue.

Augusta City Hospital is now reopened after extensive repairs. The present capacity of the hospital is 75 beds, exclusive of rooms for private patients.

Personal.—Dr. George Brown, Atlanta, on his return from the Tuberculosis Congress in London, was shipwrecked near Boston.——Dr. Marion O. Fulcher, Waynesboro, late acting assistant surgeon, U. S. Army, has returned from the Philippine Islands and resumed practice in Waynesboro.

Competitive Examination.—A commission of physicians, consisting of Drs. William S. Elkin, James B. Baird and Joseph B. S. Holmes, Atlanta, has been appointed to conduct a competitive examination, in Atlanta, October 7, of applicants for appointment on the medical staff of the sanatorium at Milledgeville. This examination required by the laws of the state, is necessary to render applicants eligible for election to any vacancy that may occur on the medical staff, but does not apply to persons now holding office in the sanatorium. All applications must be filed with the chairman of the commission, Dr. William S. Elkin, Atlanta, at least one day before the time set for the examination.

ILLINOIS.

The Norbury Sanatorium Company, Jacksonville, has been incorporated with a capital stock of $9000 by Dr. Frank P. Norbury and others.

Dr. Alanson W. Hawley, of the staff of the Illinois Eastern Hospital for the Insane, has resigned, and will go to Europe to take special work in diseases of the eye and ear.

Vaccination Ordered.—The East St. Louis Board of Health has issued a proclamation enforcing vaccination on all persons, and has also formulated rules for the government of the local isolation hospital.

Sherman Hospital Once More.—Peace has decided not to brood over Sherman Hospital, Elgin, just now, despite the reports noted in last week's JOURNAL. The ladies in charge not only formally accepted the resignations of Drs. Rutledge, Taylor and Bridge, September 2, but also cited them to appear before the next meeting of the hospital board and show cause why they should not be dismissed from the staff.

Personal.—Dr. Roy H. Garm, Beardstown, expects to practice in Rock Island.——Dr. and Mrs. James W. Cormany, Mt. Carroll, have returned from an extended visit in the East.——Dr. Samuel E. Munson, Springfield, who was injured by a runaway team in Rochester, is securely convalescent.——Dr. C. C. Rayburn, Roseville, expects to open an office in Kewanee.——Dr. J. Frank Wilson, Versailles, will locate in Bluffs.——Dr. James E. Woelfle, New Grand Chain, has moved to Paducah, Ky.—Dr. and Mrs. E. W. Weis, Ottawa, are visiting Hot Springs, South Dakota.

Chicago.

Christian Hospital has been incorporated with a capital stock of $25,000 by Dr. Emma M. Moore and others.

Needed Precautions at County Hospital.—Within a year three delirious patients at the County Hospital have escaped from their attendants and leaped or fallen from windows unprotected by bars. Two of them were killed.

Chicago Mortality.—There were 483 deaths during the week ended September 7, this being 32 fewer than during the preceding week, but an excess of 39 as compared with the corresponding period of last year. The reduction in the week's mortality as compared with the week preceding is due chiefly to the lower mortality among children under 5 years of age, and is principally attributed to fewer deaths from the acute intestinal diseases, diphtheria, convulsions and infantile marasmus. The continuance of the remarkably low mortality from diphtheria which has prevailed throughout the summer months still holds good, there having been only 4 deaths recorded as due to this disease during the week. With the reopening of the public schools, however, there has in times past been a marked increase in the contagious disease mortality—especially diphtheria.

Personal.—Dr. Robert C. Wilson has returned from a two-months' vacation at Lake Harbor, Mich.——Dr. and Mrs. George W. Whitfield, who have been spending the summer in Colorado, Utah and California, expect to return to the city September 15.——Dr. and Mrs. B. Brindley Eads have returned from their trip to the Pacific Coast and Yellowstone Park.——Dr. Harry P. Woley and wife have returned from Harbor Springs, Mich.——Dr. G. Frank Lydston has returned from a trip through Colorado and New Mexico, and has moved into his new house on Sheridan Road.——Dr. Charles Gilbert Davis has returned from his summer home, Waunita, Colo.——Dr. and Mrs. E. Perry Rice have returned from a trip on the great lakes and the St. Lawrence.——Dr. and Mrs. John E. Owens have returned from a trip to the Atlantic seaboard and Baltimore.——Dr. Violet H. Palmer, formerly of the staff of the Illinois Eastern Hospital for the Insane, has opened an office at 100 State Street.——Dr. Henry Parker Newman has sold his summer home in Highland Park and moved into his new house in Edgewater.

INDIANA.

Dr. James S. Hinkle, Indianapolis, who was injured a year ago in a street-car accident, has filed suit against the Indianapolis Street Railway Company for $10,000 damages.

An Old Offender.—A "doctor" of Mier has been arrested charged with practicing medicine without a license and with having failed to make a death return. He is reported to have been previously arrested on a similar charge, and also to have served a ninety-day sentence in the Indianapolis workhouse for passing counterfeit money.

Typhoid Fever in a Convent.—The opening of the Academy for Young Ladies at Oldenburg, Franklin county, has been postponed until September 17 by order of the State Health Board. There are many cases of typhoid fever in the mother house of the convent, although but five are considered serious. Examination of the structures on the spacious grounds revealed them to be in perfect sanitary condition, but the fifteen cisterns and four wells upon the place were immediately sealed by the officials and samples of the water reserved for analysis. During the past two months sixty cases of typhoid fever have been reported from the institution, but at present writing there seems to have been no mortality.

IOWA.

Charles Francis, Davenport, has been appointed the civil engineer member of the State Board of Health.

Smallpox was discovered in Finley Hospital, Dubuque, August 21, and the patient removed to the isolation hospital.

Smallpox.—Dr. Heinrich Matthey, Davenport, member of the State Board of Health, discovered four cases of smallpox in West Liberty, August 31.

To Raise Fees.—The Council Bluffs Medical Society has decided to raise fees for night calls to five dollars. It is to be hoped that the members will be able to raise the fees.

Dr. Bernard C. Kelly, Carroll, has been annoyed of late by an unscrupulous individual who has been traveling around Carroll county taking orders for glasses. He offers a reward of $10 for information that will lead to the arrest and conviction of the swindler.

Dr. M. Nelson Voldeng, Des Moines, was elected superintendent of the new State Hospital for the Insane at Cherokee, September 5, by the State Board of Control. Dr. Voldeng was for nine years assistant superintendent of the State Hospital for the Insane at Independence.

Personal.—Dr. McCoy had his leg broken in a runaway accident in Clinton, August 20.—Dr. Anne E. Burnett, for several years assistant physician at the Iowa Hospital for the Insane, Clarinda, has resigned and will go to Scotland for a year of study.—Dr. Edward D. Piper, formerly of Chicago and Wall Lake, has located in Moorhead.—Dr. Charles P. Tillmont has moved to Centerville.

LOUISIANA.

The Orleans Parish Medical Society has appointed a committee to investigate the mosquito in its relation to disease.

Lawrence Gomila, a member of the class of 1901, Tulane University, and an interne student in the Charity Hospital, died from appendicitis, August 18.

Tulane Appointments.—Dr. John Smythe, Jr., has been appointed demonstrator of minor surgery, and Drs. L. C. Chamberlain, C. N. Chavigny and I. I. Lemann have been appointed chiefs of clinic to the chair of gynecology, medical department, Tulane University.

MAINE.

New Physicians.—The Board of Medical Registration at its recent examination held at Portland passed fifty out of the fifty-five applicants.

Dr. Philip H. S. Vaughan, Augusta, who has been assistant physician at the Maine Insane Hospital, has moved to Bangor, where he is to occupy a similar position in the newly-established insane hospital.

Personal.—Dr. C. F. Kendall has opened an office in Biddeford.——Dr. D. W. Wentworth, York, has moved to Sanford.——Dr. John Knowlton has returned from six months of study in Germany, and will practice in Bath.——Dr. M. M. Small, Deer Isle, intends to locate in Gorham.——Dr. P. M. Andrews, Gray, has begun his work as house physician of the Maine General Hospital, Portland.

MARYLAND.

The Howard County Grand Jury has found indictment charging Dr. J. W. Sim with failure to report smallpox cases.

Killing of Flies.—The Lonaconing Health Board prescribes the killing of house flies as a sanitary measure, and an anti-pigeon law will go into effect this fall.

Smallpox.—Several case of smallpox are reported in the southern part of Caroline County (Eastern Shore) near the Delaware line, traced to a negro camp meeting.

Personal.—Dr. Joseph Ennis, Burkittsville, has moved to Waynesboro, Pa.——Dr. Frank Dorsey, Green Spring Valley, Baltimore County, has gone to Butte City, Mont.

Baltimore.

Raising Standard for Nurses.—The Sisters of Mercy in charge of the City Hospital are raising the standard in their school for nurses. The course will be a three-year one, with dietetics in the third year.

Smallpox.—In Baltimore during the past three years there have been 48 cases of smallpox, and in no instance has the disease spread beyond the house in which it was discovered. Slight outbreaks in the counties have been treated almost as effectively.

Personal.—Dr. Isabella K. Godfrey is at Atlantic City.——Drs. George A. Fleming, A. Friedenwald and J. C. Hemmeter have returned from summer vacations.——Dr. Ira Remsen, president of Johns Hopkins University, has been cruising along the coast of Maine in Mr. R. Brent Keyser's steam yacht, and is now at Bar Harbor.——Dr. C. P. Strauss is at Buffalo.——Dr. Alfred Whitehead is at Montreal.——Dr. J. L. Graham is at Boston.——Drs. L. M. Allen and H. A. Naylor sailed for Bremen from this port, September 4.——Dr. Allen will take a special course of studies abroad for a year.

MICHIGAN.

Personal.—Dr. Edward B. Patterson, Manistique, has disposed of his practice to Dr Cole, Traverse City, and will go to Europe for a course of special study.

Dr. Benjamin F. Sheeder, Saline, who has lain unconscious for five months at his father's house, in Springfield, Ohio, as a result of cerebral hemorrhage, is improving so that he now can talk and move his limbs.

W. Fred. Buck, Muskegon, a diplomate of the "Independent Medical College," Chicago, plead guilty of practicing medicine without a license, August 30, and on his promise to abandon practice in Michigan, was fined $15 and costs.

MINNESOTA.

A new contagious ward for the St. Paul City and County Hospital is to be erected this winter.

The Detention Hospital, Benson, was struck by lightning, August 28, and set on fire. Fortunately, no patients were in the building at the time.

A hospital annex to the Minneapolis Home for Children and Aged Women, is to be erected at a cost of $7000. It will accommodate about thirty patients.

The anti-vaccination movement in Minneapolis appears sluggish. At a meeting called, August 28, for the purpose of organizing an anti-vaccine society only two persons appeared, and the matter was postponed indefinitely.

Personal.—Dr. Thomas N. McLean, Fergus Falls, is taking a two weeks' vacation, and Dr. Thomas F. McLean will care for his practice.——Major H. F. Hoyt, formerly of St. Paul, who has been serving in the Philippine Islands, is visiting in Minneapolis on leave of absence.——Dr. H. F. Sterzing, Austin, Texas, has located in Mankato.

MISSOURI.

Dr. J. W. Williams, Bloomington, was fined $50 in Macon, August 29, for practicing medicine without a license. He took an appeal to the Circuit court.

New Dispensary.—Drs. John W. Perkins, B. Clark Hyde and others have established a free dispensary in connection with the North End Day Nursery, Kansas City.

Personal.—Dr. Frank Bleakney has opened an office in South St. Joseph.——Dr. F. H. Randall, house surgeon of the Wabash Hospital, Moberly, has resigned and will study in Vienna for a year.

New Hospitals.—Permits were granted to two persons to conduct private hospitals in Kansas City, on the condition that they care for children only and take no maternity cases. ——Jefferson City is to have a new hospital to cost $15,000.

NEBRASKA.

Refrigerator for Creighton.—Creighton Medical College, Omaha, has awarded a contract for a refrigerating plant for preserving its cadavers.

Personal.—Dr. and Mrs. Chester A. Brink have returned to Ord after a visit in Chicago. Dr. J. J. McGirr, Beatrice, has returned from a post-graduate course in Vienna.

Lt.-Col. Charles K. Winne, U. S. Army, has been ordered to Omaha to assume charge of the chief surgeon's office of the Department of the Missouri, relieving Lt.-Col. James P. Kimball.

Smallpox among Sioux Indians has caused the postponement of the council of Sioux Presbyterians and Congregationalists, which was to have convened this month at Santee agency.

NEW YORK.

Quarantine Raised.—The smallpox epidemic in Whitehall, which began in June, is now over, and quarantine has been raised.

Age Disqualifications.—The partial examinations for medical students provided for by the last legislature can not be taken by any person under 21 years old. Many students are thereby debarred from taking the examination, and the relief sought for by the law is nullified.

Dr. C. W. Hoyt, Corning, mysteriously disappeared from a C. & B. steamship while en route from Cleveland, Ohio, to Buffalo. His body was recovered from Lake Erie at Geneva, Ohio. As no money was found on the person of the deceased the first theory that the doctor was robbed and afterward thrown overboard is confirmed.

New York State Population.—According to the bulletin issued by the U. S. Census Bureau, dated August 29, the total population of New York state is 7,268,894, the percentage being 50.3 females to 49.7 males. Of these 26.1 per cent. are foreign born and 1.5 per cent. are colored. The latter class is divisible into 99,233 negroes, 7170 Chinese, 354 Japanese, and 5257 Indians.

Buffalo.

Dr. H. R. Hopkins was seriously injured by a collision with a trolley car.

Dr. George H. Calkins has been appointed assistant surgeon of volunteers, with the rank of captain.

Dr. Irving Phillips Lyon has been awarded the Hartwig prize of $50 for his essay on cancer distribution in Buffalo for the past 20 years, with especial reference to the parasitic theory.

Dr. Preston H. Bailhache, surgeon U. S. A., has been detached as delegate to represent the service at the meeting of the American Public Health Association to be held in Buffalo, September 16-20.

Death Certificate Refused.—The coroner of Erie County has refused to issue a burial permit in a case in which the death certificate was signed by Dr. Ferdinand Simon, because the latter is not registered with the health department.

Dr. Kinyi Ugai, a graduate of Bellevue Hospital Medical College and of the Royal University of Japan, Tokyo, has registered and received a certificate entitling him to practice in the state.

Legacy to St. Luke's Hospital.—The will of the late Louis T. Hoyt provides, after the payment of certain legacies, that one thirty-second part of the residue be given to St. Luke's Hospital for the Treatment of Consumptives.

Bequests to Hospitals.—The seventeen institutions which expected to receive $25,000 each under the provisions of the will of the late Andrew J. Garvey, will now, on account of shrinkage in values and litigation, receive less than $9000 each.

Health of Buffalo.—According to bulletins from the Department of Vital Statistics, Buffalo during the last decade has been the healthiest of the large cities of the country. Buffalo is fortunate in her natural healthy geographical position and in a department of health which has as its director Dr. Ernest Wende.

The Park Avenue tunnel nuisance, which may grow into an issue at the coming autumnal elections, was not taken up at the meeting of the Health Board, as it had sent a mandatory letter, and as the New York Central road had promptly complied with what one newspaper claims to be engineering impossibilities. Smoke is to take the brunt of the battle.

More Accommodations for Smallpox Patients.—At a recent Health Board meeting two more pavilions were voted to be erected on North Brother Island. These are to be wooden structures about 100 by 50 feet and one story high. Each will accommodate thirty patients, the total cost to be $17,000. Strictly speaking, the epidemic has been thus far mild and a comprehensive quarantine has much improved the mortality statistics.

OHIO.

The next regular meeting of the Ohio State Board of Medical Registration and Examination will be held in the new office of the Board in the new State House Annex.

The entrance examination to medical colleges will be held September 27 and 28 in Cincinnati, Cleveland, Toledo and Columbus, under the direction of the examiners residing in these cities.

Personal.—Dr. Myron S. Clark, Youngstown, has been elected supreme medical examiner of the Foresters of America.

——Dr. Henry Baldwin, Jr., Springfield, has resigned from the staff of the Clark County Infirmary.

Cincinnati.

Dr. Clarence J. Beckley, interne to Christ's Hospital, is convalescing from a severe attack of typhoid fever at the home of his parents at Price Hill.

Madam Kelch, a cancer doctor, was found guilty of practicing medicine illegally at Wilmington, Clinton County, on August 30 and was fined $50 and costs.

Cincinnati Teachers' Institute.—At the third day's session, September 5, Dr. W. S. Christopher, Chicago, gave an address, "The Child Study Department in the Chicago Public Schools," and Dr. Carl Ziegler addressed the high-school section on "Physical Training for High School Pupils."

PENNSYLVANIA.

Organize Against Deadheads.—The physicians of Hazleton and vicinity have organized an association having for its object the exchange of deadhead lists among its members.

General Vaccination Recommended.—The Mahanoy City Board of Health has urged the advisability of general vaccination in view of the likelihood of an outbreak of smallpox.

Personal.—Dr. Newton S. Rice, Durham, is in charge of the practice of Dr. H. W. Johnson, Riegelsville, during the absence of the latter at the seashore.——Dr. George B. Goheene has opened an office in Glasgow.——Dr. James Love has located in Dayton.

Bequest to German Hospital.—By the will of the late John D. Lankenau, Philadelphia, president of the board of trustees of the German Hospital, $750,000 is bequeathed to that institution and a similar amount to the Mary J. Drexel Home for Aged Patients of the German Hospital.

WISCONSIN.

William Caswell, Hillsboro, who was found guilty several weeks ago of violating the state law by practicing medicine without a license, was arrested and brought to Viroqua, August 24, but escaped, and, it is believed, has left the state.

Lumber Camp Inspection.—Dr. Henry J. Connor, West Superior, has been appointed inspector of lumber camps for the State Board of Health. He will attend to the cleansing and fumigation of the camps and will also take charge of any smallpox cases in Douglas County.

Dr. H. Booth Kendall, Menasha, on August 28, was convicted of failing to report a smallpox case to the health authorities, and was fined $75 and costs. He states that he will appeal the case. Dr. Rodermund, the anti-contagion agitator, took the stand in the defendant's behalf.

Personal.—Drs. Ernest Copeland, Henry V. Ogden and Henry B. Hitz, Milwaukee, are taking a hunting and fishing trip in Northern Wisconsin.——Dr. J. E. Metcalf, Platteville, has succeeded to the practice of Dr. Thomas E. McDermott, Fennimore.——Dr. Frank Foley, Montello, intends to locate in Neshkoro.

Sanatorium for Consumptives.—A Milwaukee syndicate has been formed to build a sanatorium for consumptives in the pine woods north of Rhinelander. The project includes the purchase of 12,000 acres of land, and the projectors expect to make an initial expenditure of $100,000. Dr. Ferdinand W. Schultz has gone to look over the ground and report on its hygienic fitness.

GENERAL.

Examinations for Army Medical Department.—The examination of applicants for appointment as assistant surgeon in the army has been resumed in Washington and San Francisco; the Army Medical Boards convened in those cities will remain in session so long as there are candidates to be examined. Seventy-six vacancies in the Medical Department still remain to be filled, and as it is desired by the military authorities that the Department be filled up to its full legal limit as early as practicable, all eligible applicants will be afforded opportunity for examination; those found qualified will be commissioned at an early date. For further information see elsewhere in this issue or apply to the Surgeon-General, U. S. Army, Washington, D. C.

CANADA.

Anthrax in the West.—Dr. Hargrove, veterinary for the Department of Agriculture at Medicine Hat, N. W. T., states that anthrax has broken out among sheep at Little Current, and that they are dying at the rate of fifty-six per day. Fourteen thousand doses of anthrax vaccine have been wired for from a Detroit firm.

Anthrax in the East.—The outbreak of anthrax in the eastern townships around Ottawa has taken on a serious and peculiar turn. A large number of cattle were inoculated with antitoxin lymph, and a few days later they began to die off in large numbers. Postmortem examinations have shown large numbers of anthrax germs present.

Smallpox Outbreak.—Smallpox is said to be spreading rapidly in the counties of Ottawa and Labelle, province of Quebec; the disease is of the mildest character, and although there are thirty-five cases to date, no deaths have been recorded. The territory is extensive and sparsely settled, and danger is apprehended, as the shantymen who will shortly be going up the Ottawa river will be traversing the infected district.

Deaths from Consumption in Ontario.—The fight against consumption in Ontario is at last beginning to tell in the vital statistics, so says the provincial Medical Health Officer. During July of this year municipalities containing 91 per cent. of the population of the province registered only 182 deaths from consumption, as compared with 284 recorded in July, 1900, by municipalities containing 97 per cent. of the population. A small but noteworthy decline has thus resulted from the improved methods of isolation and the anti-spitting regulations.

Military Doctors Qualify.—The following-named medical officers, having successfully passed the qualifying examinations, have received certificates of proficiency: Surgeon-Major J. Ross, 77th; Surgeon-Captain R. H. Arthurs, 97th; Surgeon-Major J. M. Piper, 7th; Captain A. T. Hobbs, A.M.S.; Lieut. C. N. Lawrie, A.M.S.; Lieut. D. B. Bentley, A.M.S.; Surgeon-Lieut. Balfour, 1st Hussars; Lieut. Tremayne, A.M.S.; Surgeon-Major D. P. Lynch, 42d; Surgeon-Lieut. J. Macoun, 40th; Lieut. A. R. B. Williamson, A.M.S.; Acting Surgeon-Lieut. P. Maloney, 59th; Surgeon-Lieut. A. V. Roy, 6th C. A.; Surgeon-Lieut. Cote, 61st; Surgeon-Major L. M. Genest, 92d; Surgeon-Lieut. E. Savard, 11th; Surgeon-Major T. L. Brown, 54th; Surgeon-Lieut. H. B. Yates, 3d; Surgeon-Lieut. D. D. McTaggart, 1st.

FOREIGN.

Death of Professor Fick.—The Würzburg physiologist, Adolph Fick, died August 22, in his 73d year. His contributions to scientific literature have been numerous and valuable.

Deaths Abroad.—Dr. Hamean, vice-president of the Medical Association of France; Dr. Hermann von Widerhofer, professor of pediatrics at the University of Vienna; Dr. Steinbrugge, professor of otology at Giessen.

Steffan Is Relieved of His Title.—The title of Sanitätsrath—usually coveted by German physicians—was repudiated by Dr. Steffan, as he had no wish to pay the $75 fees attached to the title. After a year or so of red tape the title has finally been withdrawn. The authorities do not state, however, whether the fees are to be repaid or not.

Prohibition of Prescribing by Mail in Germany.—The German authorities are on the point, it is said, of prohibiting "distance treatment," that is, treatment exclusively by correspondence. The kingdom of Saxony was the first to move in the matter, and the Imperial Council of Health has indorsed the proposition, although distance treatment in thinly settled districts can not always be avoided by regular physicians. The measure is to apply exclusively to "mail order" prescribing.

The German Hospital Year for Medical Graduates.—The Prussian "Medicinalministerium" has announced the particulars of the "practical year" in some hospital henceforth to be exacted of all medical graduates before they are inscribed as fully entitled to the degree of "approbirte" physician. The list of hospitals includes only those with fifty beds at least, and the "Praktikants" are assigned one to each twenty-five beds. The list includes all the public and general hospitals, except the plague hospitals and the convalescent homes. All the institutes for special research in anatomy, physiology, pathology, pharmacology, hygiene and legal medicine are included, although not estimated as equivalent to the general hospitals. Only a certain proportion of the time spent in them will be applied on the "practical years." Such institutes, to be eligible, must possess an established scientific reputation and dispose of sufficient material, with resources sufficient to occupy the "Praktikants." The "Landrath," with the assistance of the district physician, will compile the list of eligible establishments for each region.

Married.

JOHN F. DOUDNA, M.D., Lake City, Mich., to Miss Jessie Ross, of Saginaw, August 21.

S. CHARLES MISH, M.D., to Miss Wanda Shirek, both of San Francisco, Cal., August 25.

SAMUEL MOWBRAY HAMMOND, M.D., New Haven, to Miss Katherin Dayton, of Torrington, Conn., September 5.

THOMAS W. KEOWN, M.D., resident physician at St. Agnes Hospital, Baltimore, Md., to Miss Edith Livingston, at St. Albans.

JOHN H. GIBBON, M.D., Philadelphia, to Miss Marjorie Young, daughter of Major General S. B. M. Young, U. S. Army, at San Francisco, Cal., September 2.

Deaths and Obituaries.

George William Wells, M.D., Bellevue Hospital Medical College, N. Y., 1868, of Richmond Hill, Queen's County, N. Y., died September 2, aged 57. He was a member of the Kings County Medical Society (N. Y.) and also of the Association of Medical Directors of Life Insurance Companies. He was the editor of the *Medical Examiner and Practitioner,* and was also medical director of the Manhattan Life Insurance Co.

Gates B. Bullard, M.D., Dartmouth Medical College, Hanover, N. H., 1855, one of the best known physicians of Northern New England, died at his home in St. Johnsbury, Vt., September 4, aged 72. He served as surgeon of the Fifteenth Vermont Infantry in the Civil war; later on was made surgeon-general of Vermont, served in both houses of the legislature and was a commissioner for the insane.

William M. James, M.D., College of Physicians and Surgeons, New York, 1862, died at his home in Whitesboro, Utica, August 26, from heart disease and dropsy, after an illness of seven months, aged 62. He served as examining surgeon of recruits and as acting assistant surgeon during the Civil war, and thereafter practiced in Whitesboro and Utica.

Adolph Aronstein, M.D., University of Munich, Germany, 1860, a prominent physician of San Francisco and consulting physician to Mount Zion Hospital, died at his home in that city, August 28, after a lingering illness, aged 66.

William Barnsmore Pape, M.D., Medical College of Alabama, Mobile, 1882, died in that city, August 30, aged 51. He began a career as pianist at the age of 13, but afterwards gave his time to the practice of medicine.

Abner Franklin Bliss, M.D., Castleton (Vt.) Medical College, 1851, who had practiced for thirty-five years past in Wardsboro, Vt., died at his home in that place from pneumonia, August 13, aged 72.

Alexander Bulla, M.D., University of Wooster, Cleveland, Ohio, 1881, who had practiced medicine in Davidson County, N. C., for forty-five years, died at his home in Jackson Hill, August 20, aged 75.

R. T. McMorrine, M.D., McGill University, 1893, died suddenly at his home in Richmond, Que., September 4, aged 34. He was at one time house surgeon at Bellevue Hospital, New York City.

Clyde W. Crumrine, M.D., Western Pennsylvania Medical College, Pittsburg, 1895, of Charleroi, Pa., died at the Allegheny General Hospital, August 29, from nervous prostration, aged 32.

Lawrence Miller, M.D., McGill University, Montreal, for many years a citizen of Bellevue and Dubuque, Iowa, died after a lingering illness, August 27, at his home in Bellevue, aged 73.

John D. Kielty, M.D., College of Physicians and Surgeons, Boston, Mass., 1883, of Fitchburg, Mass., died at his summer home, East Princeton, August 27, from asthma, aged 43.

William Platt McLaury, M.D., College of Physicians and Surgeons, N. Y., 1875, long a resident of Catskill, N. Y., but more recently of New York City, died August 30.

John S. Combs, M.D., Medical College of Ohio, Cincinnati, 1850, of Owensville, Ohio, died at his home in that place, August 21, after a protracted illness, aged 80.

Daniel T. Taylor, M.D., New Orleans (La.) School of Medicine, 1859, for sixteen years a resident of Hot Springs, Ark., died at his home in that city, August 29.

John F. Baughman, M.D., Starling Medical College, Columbus, O., 1851, died, after a prolonged illness, at his home in North English, Iowa, August 29.

William S. Little, M.D., a resident of Cynthiana for fifty-one years, died from heart disease, August 21. He had been an invalid for about five years.

Robert L. Luckett, M.D., Tulane University, New Orleans, La., 1891, of Alexandria, La., died suddenly at his home in that place, August 29, aged 36.

Richard D. King, M.D., University of Nashville, Tenn., died at his home in Bells, Texas, August 19, after an operation for appendicitis, aged 37.

Frank H. Ravenscroft, M.D., Kentucky School of Medicine, 1893, died at his home in Friendsville, Md., August 19, from typhoid fever, aged 31.

Junius D. O'Brien, M.D., New York University, 1858, of Christian County, Ky., died suddenly at his home in Hopkinsville, August 23, aged 70.

Societies.

COMING MEETINGS.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 17-19, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Nevada State Medical Society, Reno, Sept. 21, 1901.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Oregon State Medical Society, Portland, Sept. 25-27, 1901.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.

Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.

Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.

Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Vermont State Medical Society.—The place of the next annual meeting of this Society has been changed from Bellows Falls to Montpelier. It will occur October 10 and 11.

Omega Upsilon Phi Fraternity (Medical).—The fifth annual convention of this body was held August 29 and 30 at Buffalo, N. Y. Dr. Edward M. Thompson, New York City, was elected president, Dr. Dean O. Thompson, Hornellsville, N. Y., secretary, and Dr. George H. Minard, Lockport, N. Y., treasurer. The next convention will be held in New York City in September, 1902.

Reading (Pa.) Medical Society.—The annual meeting of this Society was held August 26. The following officers were elected: Dr. Irvin Hartman, president; Dr. Seymour T Schmehl, vice-president; Dr. Louis L. Thompson, secretary; Dr. Oan J. Thompson, treasurer; Dr. W. Murray Weidman, librarian; Dr. M. Le Roy Wenger, curator, and Drs. M. Le Roy Wenger and Fremont W. Frankhauser, censors.

New Hampshire Surgical Club.—The sixth annual meeting of this organization was held at Ben Mere Inn, Lake Sunapee, N. H., August 29. The attendance was good and the program carried out in full. The following officers were elected: Dr. John M. Gile, Hanover, president; Dr. Arthur C. Heffenger, Portsmouth, vice-president, and Dr. Nelson W. McMurphy, Concord, secretary-treasurer.

Tri-State Medical Society of Alabama, Georgia and Tennessee.—The next annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held at Nashville, Tenn., October 8, 9 and 10. An interesting feature of the meeting will be a series of papers on sociological questions. The following papers have been promised: "Syphilis in the Male as a Social Question—Its Prevention," Dr. Julius A. Childs and W. Leon Champion, Atlanta; "Gonorrhea in the Male as a Social Question—Its Prevention," Dr. W. Frank Glenn, Nashville; "Gonorrhea in the Female—Its Results," Dr. Walter J. Bogart, Chattanooga; "Syphilis in Relation to Diseases of the Eyes," Dr. Alexander W. Stirling, Atlanta; "Tuberculosis—Its Prevalence and Prevention," Dr. J. Dawkins Cromer, Atlanta; "Suppression of Consumption," Dr. Richard C. Bankston, Birmingham; "Marriage and Heredity in Relation to Insanity," Dr. T. O. Powell, Milledgeville, Ga.; "The Development and Control of the Sexual Instinct," Dr. John W. Macquillian, Chattanooga; "Legislation and Its Limitations in the Prevention of Crime and Disease from a Legal Standpoint," "Heredity and Acquired Characteristics as Social Questions," Dr. Rufus R. Kime, Atlanta, and Report of the Sociological Committee through Dr. Rufus R. Kime, its chairman.

CANADIAN MEDICAL ASSOCIATION.

The Thirty-fourth Annual Meeting, held at Winnipeg, Manitoba, 28-30, 1901.

There were in attendance over 175 members from all parts of the Dominion, the second largest gathering in the history of the Association. There were several visiting physicians from the United States.

DR. H. H. CHOWN, of Winnipeg, the president, occupied the chair.

The Question of Medical Defense.

DR. RUSSELL THOMAS, of Lennoxville, Que., had been delegated by the St. Francis District Association to present this subject. He made a strong plea for the formation of a medical defense union and thought that all were agreed of the necessity for such. He supported his contentions by citing two or three cases already well known to medical practitioners in Canada, and after showing that such defense unions were a success in England, he concluded by outlining the plan of medical defense already in vogue and supported by the St. Francis District Medical Association which he was authorized and prepared to hand over entire to the Association. The discussion of this important matter was deferred until later.

The Question of Medical Education.

DR. J. R. JONES of Winnipeg delivered the address in medicine. In opening his remarks he referred to the unsolved problems of medical education, the importance of which were especially manifest in view of the establishment of a Dominion Medical Board. Uniform or equivalent curricula, he thought, would greatly facilitate paving the way for the accomplishment of this object. He thought that the great aim of the Association should be to create a Dominion Medical Board upon such a sound and enduring basis that the qualifications could be registered in every province of the Dominion. They should not only be Canadian, but imperial, capable of registration in Great and Greater Britain. There should be no special education for the profession of medicine and the defect in the preliminary education of medical students should be corrected. The standard is not high enough. Many students came into the medical colleges, their minds totally unprepared, undisciplined, not competent to engage in the different studies of a profession with advantage. He quoted from two eminent authorities who favor the retaining of "classical education" as training for professional studies, Dr. Alexander Hill, a member of our own profession and Master of Downing College, Cambridge, and Professor Jebb of Dublin. He referred to medical matriculation examinations and deplored the lamentable defects in the English paper, the most neglected subject in our primary schools. From an experience of many years as an examiner at the University of Manitoba Dr. Jones has concluded that the teaching of English takes a very subordinate position in our schools. The defect was a universal one; and it was obvious that if English should become a prominent subject of medical matriculation examination every student ought to be able to express his thoughts coherently and intelligently. The didactic lecture came in for adverse criticism, and defects and useless wastes of time, which could be more profitably employed, were pointed out. Persistent work in the dissecting room under the guidance of an experienced demonstrator who will describe, discuss, and constantly orally examine the student, is a rational and effective method of teaching anatomy. Medical jurisprudence and sanitary science were not properly taught.

Dr. Jones supported the "case" method of teaching; and from personal experience he favors the English system of clinical clerkships and dresserships as the most feasible, practical and thorough for the development of medical teachings. He referred to the question of Dominion registration and pointed out two serious objections to Dr. Roddick's Bill: 1, the great number of the representatives of the council, entailing expenses beyond, at least, our immediate resources; and 2, the fact that one of the contracting parties to Dominion registration may secede and the elaborate fabric, the work of many years, tumble to the ground.

Dominion Registration.

DR. T. G. RODDICK, of Montreal, who has so long and so ably advocated this much-to-be-desired measure, ably reviewed the subject of Inter-Provincial registration from the time of its inception to the introduction of his Bill at the last session of the House of Commons. The special committee appointed on this subject had not yet reported, so the discussion was postponed until that committee had a chance to meet and report later on in the session. Dr. Roddick now seems to hold to the opinion that the suggestion of Dr. Britton of Toronto, that representation by population, for Ontario at least, would be advisable.

Infectious Pneumonia.

DR. W. S. MUIR, Truro, Nova Scotia, reported four cases, all of which had occurred between April 1 and 13 of this year, in the same house and in the same family. The first occurred in a child of 10 years, the disease terminating by crisis on the sixth day, the child making a good recovery. A sister, age 14 years, contracted the disease; terminated by crisis on the ninth day, but followed two days after by left-sided pleuro-pneumonia. This proved fatal. The third occurred in a sister of 15 years of age, beginning with a pain on the left side and terminating on the tenth day by crisis and recovery. Number four developed pneumonia, but recovery was quick, the patient being about in two weeks. There was no influenza in the town at the time.

President's Address.

DR. H. H. CHOWN referred to the work performed in Winnipeg for the purpose of making that city a healthy one, and in spite of the level nature of the land, an excellent system of sewers had been introduced through all the streets; and efficient arrangements had been made for regular flushing of the sewers by means of tilting basins at the upper end of each main sewer. As Winnipeg has two rivers at her door the problem of removing sewage was easily and safely solved. Dr. Chown then referred to the question of tuberculosis and thought that Koch's tentative denial of the oneness of tuberculosis of man and cattle still needs the proof of non-inoculability from cattle to man. He instanced cases of young farmers free from tuberculous taint living in newly-built houses harboring no bacilli and separated by long distances from their neighbors, in whom tuberculosis constantly makes its appearance; and we have here an experiment on a wide scale, and if you can eliminate heredity, house infection and contagion from other cases, to what cause can you describe the origin of these outbreaks?

Epidemic Cerebrospinal Meningitis.

DR. JAMES MCKENTY, Gretna, Manitoba, presented this paper, which gave an account of an epidemic occurring in North Dakota during the winter and spring of 1893, within an area extending 50 by 20 miles and was comparatively definitely lim-

ited. About 70 persons were seriously ill, and almost as many others suffered from mild manifestations of the disease. Of the 70 cases 25 ended fatally, a mortality of about 35 per cent. In the practice of Dr. McKenty there occurred some 30 cases, a brief record of 22 of these being kept. The average age was 17 years; the youngest fifteen months; the oldest 38 years. The duration of the illness extended from twelve hours to fifteen weeks. No postmortem was made in any case. Dr. McKenty then described in detail the clinical aspects of several cases.

Splenic Anemia, with Case.

DR. A. J. MACDONNELL, Winnipeg, contributed this paper, with the history of the case. In 1898 the number of cases recorded did not exceed thirty, but since that time there have been fifty additional cases reported. Patient aged 27 years; born and lived all his life in Manitoba; family history good; environment good; has never had malaria; habits and mode of life good; positively never had syphilis. The present illness began in August, 1899. Felt heavy on the right side, with a feeling of fulness and weight. In January, 1900, gave up work on account of muscular weakness. There was no vomiting. The patient consulted Dr. Macdonnell in March, 1900, walking into his office with considerable difficulty. There was no enlargement of lymphatic glands. Enlargement of the stomach could never be percussed or palpated. Liver dulness was practically normal. There was no jaundice or pain in the liver region. The patient succumbed to the disease, but no postmortem was held.

Report of Cases Treated with Super-Heated Dry Air.

DR. W. H. PEPLER of Toronto briefly described the apparatus and the method of treatment. It only takes twenty minutes to reach a heat of 300 degrees F. The average duration of the application of the heat is forty-five minutes. The physiological and therapeutical effects noticed were referred to, as dilatation of blood vessels, etc. He administers the treatment one hour after meal time, with due regard that there shall be as little excitement and exertion as possible. He has not seen any ill effects from the treatment. He first gave notes of the case of a patient, a man aged 35 years, who had suffered for some time from varicose ulcer of the right leg, with considerable pain. This patient had a treatment of thirty-five minutes' duration and was able to walk home with very little discomfort. After three times, in ten days, the ulcer was very much reduced in size. The second case was a patient, 22 years of age, who had been troubled with rheumatism for two years past. A temperature of 320 degrees was employed with good satisfaction. Several cases of rheumatism and eczema were reported. The treatment in each case proved highly satisfactory, patients never complaining of any discomfitures and all expressing satisfaction with the treatment. Dr. Pepler subjects a considerable portion of the patient's body from a temperature of 280 to 320 degrees F. The results are often not apparent for some time after treatment.

Orthopedic Treatment of Deformities and Disabilities Resulting from Diseases of the Nervous System.

DR. B. E. MCKENZIE of Toronto spoke of disabilities and deformities resulting from paralysis, some of which were commonly regarded as hopeless; but the conditions of a great majority of them were remediable and should receive a considerable amount of attention. He was at some pains to explain the respective motion of joints, particularly the ankle joint and knee joint, especially calling attention to the normal conditions of equilibrium, and then showed how the muscles of some of the groups at times become paralyzed and the balance and equilibrium thereby destroyed. Mechanical treatment was often necessary and often efficacious as well; massage and electricity had their respective places, but he made particular reference to the method of treatment that had been in vogue for twenty years and had been introduced on this continent by Dr. Parish of Philadelphia.

Mild Smallpox.

DR. G. A. KENNEDY, McLeod, Alberta, dealt with the recent outbreak of the disease in the Northwest Territory, an outbreak which was widespread and which had existed for some time before its true nature was recognized. Dr. Patterson, Quarantine Officer for the Dominion Government, was satisfied that there had been 1500 cases. A noteworthy fact was that the greatest number of cases occurred among the French halfbreeds, who had never been vaccinated, and, further, Indians on reserves had not suffered to any great extent, as annual vaccination is the rule. Fifty per cent. of all cases were extremely mild in character; 40 per cent. were cases of typical varioloid; 10 per cent. were severe, almost confluent. The mortality was slight, only thirteen deaths occurring; and the disease prevailed fully as much amongst adults as amongst children.

At the close of this discussion the following resolution was moved by Dr. R. S. Thornton, seconded by Dr. J. L. Bray, and unanimously adopted: "Resolved, That in view of the general prevalence of smallpox throughout the continent, this Association desires to urge upon the profession and the public generally the necessity of vaccination and re-vaccination."

Chronic Ulceration of the Stomach Simulating Cancerous Disease.

DR. J. F. W. ROSS, Toronto, described the case of a woman of 20 years of age, the condition of whose stomach had been bad for three years. She was a nurse in the training school of a hospital and her gastric conditions grew gradually worse. Dr. Ross was asked to see the patient by Dr. E. B. O'Reilly, Hamilton, in December, 1899. He found her emaciated with the opium habit already formed. In January, 1900, rectal alimentation was being persevered in with considerable benefit. In March, 1900, she was discharged from the hospital and remained well for two weeks. As soon as food passed into the stomach great rigidity of the right rectus muscle was noted. When the patient came under Dr. Ross's attention she weighed about 75 pounds. As malignant disease of the stomach is rare at this age of life, it was difficult to diagnose the tumor as such, and the symptoms pointed to the pyloric end of the stomach. It was not possible to say whether cancerous or not. The symptoms pointed to the presence of ulcer, but the thickening easily made out led to the belief that malignant disease had been grafted on to the ulceration. Some dilatation also could be made out, but the rhythmic muscle waves so characteristic of pyloric obstruction could not be found; but large growth was found at the pyloric end. The case was looked upon as hopeless and decision was arrived at not to remove the growth, but to give temporary relief by gastroenterostomy. This was done and the patient made an uninterrupted convalescence. Eleven months after the operation the patient weighed 140 pounds and looked the picture of health. On examination of the abdomen no mass could be felt and the patient was not suffering from any gastric symptoms at all.

Medical Defense.

The report of the Committee on Medical Defense was here presented by W. S. Muir of Truro, Nova Scotia. It reported favorably on the formation of a Medical Union, and the organization thereof was immediately perfected. It will be known as the Medical Protective Association, will be incorporated, and will have for its object the protection of the character and interests of medical practitioners in Canada. It will further promote honorable practice, will aid in suppressing or prosecuting unauthorized practitioners, and will seek to advise and defend or assist in defending members in cases where proceedings involving questions of professional principle or otherwise are brought against them and other like matters. Dr. R. W. Powell of Ottawa was elected president; Dr. McKinnon of Ottawa, secretary, and Dr. James Grant, Jr., of Ottawa, treasurer.

Report of Committee on Dominion Registration.

It is proposed to secure an amendment to the B. N. A. Act, or, to take advantage of section 91 of that Act, and under it obtain legislation from the Dominion parliament, by which the profession in Canada might form a Dominion Council

which could be supplemented by legislation by the various provinces recognizing any certificate of standing issued by the Dominion Council as entitling a holder to practice in such provinces. Dr. Muir approved of Dominion registration and spoke for the province of Nova Scotia. Dr. Jones voiced the sentiments of the profession for Manitoba. Drs. A. A. McDonald and J. L. Bray endorsed the scheme for Ontario. Dr. Russell Thomas spoke for Quebec. Dr. Christie said that New Brunswick was in favor of Dominion registration. Dr. Lafferty said the Northwest Territories were favorable.

Varieties and Distribution of Bacillus Diphtheriae and Their Clinical Significance.

DR. F. F. WESTBROOK of the University of Minnesota presented a paper on this subject, primarily from the laboratory point of view. He exhibited a carefully prepared chart showing in tabulated form the results of numerous examinations in schools and stated the conclusions which he deducted from these facts. Formerly, it was believed that the bacillus remained localized at its point of entrance, but now within recent years, however, careful observations have shown that the toxins had been distributed throughout the body and the bacillus itself found in organs far removed from the atrium. From evidences of 230 cases of diphtheria at autopsy, observers had called attention to the frequency with which the bacillus of diphtheria was found in the organs of the body. The bacillus and its toxins have been shown to be capable of producing lesions which differ greatly from each other, as in ulcerative endocarditis, meningitis, etc.

Hairy Tumor from the Stomach Weighing 23 Ounces. Specimen. Recovery.

DR. H. A. BRUCE, Toronto, described this case, a woman aged 26; she had been married six years and had two children. A lump was noticed in the abdomen two months previous to the birth of the last child. Patient had no symptoms. The lump was about 5 inches in width and it could be lifted forwards. It reached to within 3 inches below the umbilicus. It gave the patient no special discomfort, there being absolutely no symptoms present. Dr. Bruce advised exploratory incision. This was done on July 22 last at St. John's Hospital, Toronto. On opening the abdomen in the middle line the spleen and kidneys were found in a normal condition, but there was a large mass in the neighborhood of the stomach. The surgeon could make out the mass lying free in the stomach, a portion extending through the pyloric end of the stomach. An incision was made into the stomach and the tumor removed. After removing the mass of hair, the opening of the stomach was closed in the usual way. Hot salt solution was given for two hours and nutrient enemata for six hours. Twenty-three hours after the operation sips of hot water were given by the mouth. Forty-eight hours after operation patient was given one-half ounce of milk and lime water every hour. She left the hospital on the twentieth day. The tumor was entirely of hair exactly the same color throughout, and the same color as the hair on her head. It was about 24 inches in length, being about 2 inches in diameter at one end and gradually tapering down to a point at the other. Dr. Bruce offered no solution as to how the hair got into the stomach. There were no evidences of hysteria present in the patient. There are some specimens of hairy tumors in the McGill Museum at Montreal.

Case of Transplantation of the Ureter for Cure of Utero-Vaginal Fistula.

DR. A. LAPTHORN SMITH, Montreal, related the case of a married woman, 34 years of age, who came to him on July 1, 1901. During parturition, forceps were employed and the vagina lacerated and ever since there has been a constant flow of urine by the vagina. Operations for her relief had been performed in England without success. Dr. Smith had seen Sanger perform an operation of this character in Leipsic when he was there three years ago, namely, to open the peritoneum running over the large vessels at the brim of the pelvis and to feel for the artery, see the vein and pick up the third tube, which was the ureter. The operation was done in the highest Trendelenburg posture. A very small incision was made in the peritoneum lining the pelvis in the line of the ureter, a silk ligature was passed around it and then the ureter was severed a little above the ligature. The end of the ureter was split open to a distance of a third of an inch. A slit was then made obliquely into the right upper corner of the bladder and the ureter stitched into it, the mucous membrane of the ureter to the mucous membrane of the bladder with very fine chromicized catgut. This is the first time this operation has been done in Canada, and Dr. Smith stated that not a drop of urine had passed through the fistula since.

Syphilis as Seen by the Ophthalmic Surgeon.

DR. F. BULLER, Montreal, said that it often falls to the lot of the ophthalmic surgeon to discover the presence of active syphilitic virus where the disease had long been considered cured, or that the subject cherished the belief that there was no more to fear from it. The ophthalmic surgeon is scarcely, if ever, called upon to treat the disease in the primary stage. The largest share of his work is in connection with the tertiary period, and in this class of cases the disease has been apparently cured for a long period of time. Discussing medication, Dr. Buller does not believe that the protiodid of mercury, at least as ordinarily administered, is a reliable anti-syphilitic. He appears to favor the inunction method first and then gray powder.

The Present Outbreak of Smallpox in America.

DR. H. M. BRACKEN, Minnesota, outlined the origin and traced the course of many outbreaks in various parts of the state of Minnesota, with a total of 9429 cases, and the disease has still many centers in that state. It is impossible to locate positively the source of the present widespread epidemic farther than that it spread from the Southern and Southwestern states into North Dakota, Minnesota, Nebraska and Montana. He suggested that it was probably imported into the United States by Cuban refugees before war broke out. Vaccine was frequently spoilt by not being kept in proper temperatures, as it was frequently being shipped in cans which were too hot and subsequently kept in warm offices. The health commissioner of Minneapolis kept all his vaccine in an ice-box, but, of course, not frozen, and had obtained good results. Replying to a question in regard to isolation Dr. Bracken favored eighteen days' quarantine.

Necessity of a Recognition and Isolation of Trachomatous Patients in Canada.

DR. W. GORDON M. BYERS, Montreal, in his paper, recited the history of a young girl from Glengary county, Ontario, who came to the clinic at the Royal Victoria Hospital, Montreal, with a most intense condition of granular lids. She had been unable to open her eyes properly for months past, and her vision was reduced to the counting of fingers. The seriousness of her disease had not been recognized at home, as she mixed freely with other members of the community. Another case was referred to in the County of Leeds, and in this case as well no precautions had ever been taken to prevent the spread of the disease. Dr. Byers believes that there are many unrecognized and untreated cases scattered here and there throughout the Dominion. The disease is said to be prevalent in districts of Manitoba and certain centers in the eastern counties of Ontario and others in Quebec. The trachoma problem has had to be faced by one government in Europe, and the matter has been brought to the attention of the Dominion government, which has not yet taken any action in the matter. Dr. Monti zambert stated that the question of exclusion of trachomatous immigrants had been under consideration by the government for some time. He considered these people somewhat undesirable immigrants.

On the Treatment of Typhoid Fever.

DR. J. L. BRAY of Chatham discussed this subject under medicinal, dietetic and hygienic headings. The first he thought might be eliminated except in cases where complications arise, and he thought a certain amount of medicinal treatment useful during the initiary stages. He was in the habit of em-

ploying calomel. Tympanites could be avoided to a great extent by a proper diet. In feeding he now gives very little milk, but that little always peptonized. He believes in making the patient drink two or three quarts of pure water in the twenty-four hours. Albumin water with sugar may be given from the first; after the first two weeks he gives liquid peptonoids, or some of the numerous preparations of beef, jellies, mutton broth or a soft-boiled egg.

The Address in Surgery.

DR. O. M. JONES, Victoria, B. C., opened his address with a reference to surgical diseases in Western Canada as compared with those in the East, and stated that he had often found Western sufferers more impatient, which often demanded severer methods.

A Surgical Procedure for the Relief of Ovarian-Tension Pain.

DR. HENRY HOWITT, Guelph, Ontario, read this paper. Is not pain frequently, if not usually, caused by tension on some nerve filament? In Dr. Howitt's opinion the answer should be in the affirmative. The operation Dr. Howitt employs is quite simple. The ovary is exposed and then a number of cross-sections are quickly made through the tense capsule in such a manner as to divide it. Then the larger Graffian follicles are opened. These are merely touched with carbolic acid. If the capsule is thickened a portion should be removed. Hemorrhage has never been troublesome. Adhesions give rise to no complications. Dr. Howitt recited the histories of two or three cases in support of the operation.

Symposium on Tuberculosis.

PROF. RUSSELL of the University of Wisconsin introduced this subject in a paper on human and bovine tuberculosis and their inter-relation. The rapid extension of the disease among cattle within the last few decades has forced upon breeders and dairymen the necessity of considering this subject whether they desire it or not. It is customary in many quarters, even yet, to decry all consideration of this matter as unnecessary, inexpedient, and harmful to the dairy interests. But as is too frequently the case, the motive for such action rests upon a financial foundation, and many breeders are averse to a calm, judicious discussion of the matter simply because it may mean financial loss to them.

The slow, insidious nature of the disease that characterizes it in the human is also to be found in the cattle, and not infrequently an animal may be infected with the seeds of the disease for a considerable time—even a year or so—without showing in any degree physical symptoms that are manifest to even the animal expert. Such animals are not diseased in the ordinary term, i. e., they are not capable of transmitting the disease, either directly or indirectly, through their milk supply or meat. The affection in such cases is latent, generally confined to various lymphatic glands; but animals so affected are, however, potentially dangerous, for the latency of the disease may be overcome through the operation of various factors, and the chronic type may thus be awakened into an acute phase. It is in this way that the disease spreads slowly and unperceived through a herd. Before it has made such inroads as to cause actual death of any considerable number of animals, many more have acquired the trouble, at least in the earlier phases. Necessity of controlling its spread and eradicating it is evident for the sake of the herd itself, if from no other point of view.

DR. A. J. RICHER of Monreal contributed to the next paper on the "Sanitarium Treatment of Tuberculosis." The treatment is made up of rest, outdoor life, overfeeding and medical supervision. This latter was described as the keynote to success in phthisical treatment. Overfeeding was also emphasized.

DR. GILBERT GORDON of Toronto referred to the "Etiology and the Early Diagnosis of Pulmonary Tuberculosis." He spoke of the early stages of the disease, and thought that we ought to be able to diagnose it before the appearance of the bacilli in the sputum. Direct inheritance he considers very rare. The inhalation of dried sputum is the most direct cause. Dr. Gordon considered that people are woefully behind in Canada in fighting this plague, and more money should be spent by governments and philanthropic individuals in fighting this disease. He went carefully into the symptoms of the pre-tubercular stage and considered that a persistent cough was a very dangerous symptom.

Election of Officers.

These officers were elected for the ensuing year: President, F. J. Shepherd, Montreal; vice presidents: For Prince Edward Island, S. R. Jenkins, Charlottetown; for Nova Scotia, T. F. Macdonald, Hopewell; for New Brunswick, Wm. Christie, St. John; for Quebec, J. Alex. Hutchison; for Ontario, Bruce L. Riordan. Toronto; for Manitoba, A. J. Macdonnell, Winnipeg; for Northwest Territories, H. G. McKid, Calgary; for British Columbia, J. M. Lefevre, Vancouver; general secretary, George Elliott, Toronto; treasurer, H. B. Small, Ottawa. Montreal was selected as the next place of meeting.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Acne Vulgaris (Blackheads).

According to Dr. E. M. Alger, in *New York Med. Times*, the choice of a local application in the treatment of the foregoing depends largely upon the condition present. Where blackheads are numerous and but few pustules are present the following is recommended by him:

℞.	Hydrarg. bichloridi	gr. ii	12
	Resorcin	ʒiss	6
	Aq. rosæ q. s. ad	℥iv	128

M. Sig.: Apply to the face several times daily.

The above should be applied often enough to cause considerable exfoliation of the epidermis, without producing inflammation of the true skin to any extent.

In cases where pustulation is the important feature for treatment, he regards sulphur as far more useful than resorcin. He, under such circumstances, advices the following, the strength of which may be varied to suit the conditions in each individual case:

℞.	Sodii hyposulph.	ʒiv	16
	Sulphuris	ʒi	4
	Aq. rosæ	℥iv	128

M. Sig.: Apply externally as desired.

Caution is given not to use the bichlorid and the sulphur on the skin at the same time. He further states that individual lesions can often be aborted in their infancy by passing into the follicle a blunted needle dipped in carbolic acid, or by painting with pure ichthyol over night. If after this treatment the skin remains rough and dry the following should be applied:

℞.	Resorcin	gr. xx	1 33
	Olei theobrom	℥i	32

M. Sig.: Apply locally at night.

Salve to Remove Corns.

The following combination in the form of a salve is recommended for the removal of corns:

℞.	Pulv. plumbi acetatis		
	Pulv. myrrhæ		
	Pulv. camphoræ		
	Plumbi oxidi āā	ʒi	4
	Olei olivæ		
	Petrolati āā q. s. to make paste.		

Misce. Sig.: For local application; or:

℞.	Acidi salicylici	ʒss	2
	Acidi lactici	ʒss	2
	Ext. cannabis indicæ	ʒiv	16

M. Sig.: Use as a local application in treatment of corns.

Treatment of Scarlatinal Nephritis.

Dr. Charles G. Kerley, as noted in *Med. News*, states that every case of scarlatina, whether mild or severe, ought to be treated as if nephritis were to be expected. A child with scarlet fever is to be considered ill for five or six weeks, even if no complications are present. The nephritis, if present, is too often overtreated by the physician. He deprecates the heroic use of drugs like digitalis and pilocarpin, which are too often indiscriminately prescribed, as well as irritant cathartics and the diuretic salts of potassium. He recommends, first of all, a light diet, the relief of constipation with small doses of calomel; small doses of aconite, ¼ minim of the tincture every two hours to a child of 3 years, to promote diaphoresis and diuresis. He also recommends colonic flushings, employing the normal saline solution at a temperature of 110 F. A child of 3 years should be given 16 to 24 ounces of the solution, to be retained and repeated every six or eight hours. The child should be kept in bed until the urine has been normal for two weeks.

Camphor in the Treatment of Varicose Ulcers.

Attention has been called to the value of camphor dressings in promoting cicatrization of varicose ulcers of the legs by the *Med. Press;* especially is this dressing adaptable in ulcers which are very refractory to treatment. An ointment made up similar to the following is recommended:

℞. Pulv. camphoræ .....gr. v |30
Zinci oxidi .....gr. l 3|30
Adipis q. s. ad .....3iv 16|

M. Sig.: Apply locally.

If this should be found to be too irritating the following should be applied in its stead:

℞. Camphoræ .....gr. vi |36
Zinci oxidi .....3ii 8|
Olei olivæ .....3iiss 10|

M. Sig.: Apply locally.

An alternative application is a solution of camphor in spirit, but this should be applied only after the ulcerated surface has been thoroughly cleaned of scabs and crusts by poultices. It is asserted that complete healing of the ulcer will take place within three weeks.

For the Obstinate Diarrhea of Tuberculosis.

The following combination containing ichthoform is recommended in the treatment of tubercular diarrhea:

℞. Ichthoformi .....gr. v |33
Tannalbin .....gr. x |66
Bismuthi subgal. .....gr. x |66
Codeinæ .....gr. ¼ |015
Olei menth. pip. .....m. ¼ |015

M. Ft. Chart. No. i. Sig.: One such powder every two to six hours.

Treatment of Cystitis.

Howland, in *Med. News*, states that cystitis is always caused by the presence of micro-organisms, chiefly the colon bacillus, streptococcus pyogenes and staphylococcus pyogenes. In the treatment of acute cystitis, he advises rest in bed, the use of opium and belladonna, either by the mouth or in the form of a suppository. In severe cases he instils into the deep urethra a few drops of a 4 per cent. solution of cocain. He does not recommend any local treatment to the bladder. In the chronic form he irrigates the bladder daily with solutions of salicylic acid, nitrates of silver or mercury bichlorid. Internally he employs urotropin in 7-grain doses as an antiseptic.

Alcohol Compresses in Appendicitis.

Prof. Filatoff, in *Rev. de Ther.*, has used with success alcohol compresses in appendicitis. A gauze compress folded four times and large enough to cover the whole abdomen is soaked in a 95 per cent. solution of alcohol and lightly squeezed before being applied to the abdomen. When applied, a piece of flannel should cover the gauze and an ice bag placed over this. The gauze compress should be changed when the alcohol has evaporated. Opium should be given internally at the same time.

Treatment of Acute Eczema.

Dr. R. Lederman, in *Kan. City Med. Rec.*, states that the best results are obtained by the free application of dusting powder during the erythematous and early papular stages. He considers zinc, bismuth, aluminum and dermatol as the best. For the itching he recommends a lotion similar to the following:

℞. Thymol .....gr. i |06
Aq. rosæ .....℥i 32|

M. Sig.: Apply locally before using the dusting powder.

When crusts have formed he uses a paste of salicylic acid in olive oil or, what he considers even better, the following:

℞. Zinci oxidi .....3ss 2|
Bismuthi subnit. .....3ss 2|
Ung. aq. rosæ .....3ii 8|
Ung. simplicis .....3ii 8|

M. Sig.: For local application.

For the chronic form, salicylic acid should be used in the form of an ointment of 5 or 10 per cent. strength.

Treatment of Acute Coryza.

The *Archiv. fur Laryngologie* recommends orthoform as a valuable drug in abating the symptoms and cutting short the attack. The following combination is used in the form of an insufflation:

℞. Orthoformi .....3ii 8|
Sodii-sozoiodol .....3ii 8|

M. Sig.: Use in the form of an insufflation to cover the membranes of the nasal fossæ and posterior nares.

This should be repeated several times a day until the local symptoms have subsided. The effect of the orthoform is to produce a certain amount of anesthesia of the membranes and to reduce the congestion. In this way the local inflammation may be aborted. The sooner the treatment is begun the better.

Treatment of Paralysis Agitans.

The cure of paralysis agitans is hopeless, but Dr. R. L. Williamson, in *Med. Chronicle*, considers a number of methods he has tried for the relief of the more pronounced symptoms. He has found no virtue in any treatment by drugs, except in the use of hyoscin hydrobromate, duboisin sulphate and hyoscyamin hydrobromate. He recommends that the first of these preparations be used in doses not to exceed grain 1/150 each, dissolved in aqua chloroformi. The dose may be increased to 1/100 grain in some cases, when no toxic symptoms have appeared. If hyoscin fails to relieve the tremor he suggests the use of duboisin sulphate, which as a rule is not so efficient as the former.

The following is employed hypodermically by M. Bourneville in the treatment of paralysis agitans:

R. Liq. potass. arsenitis .....3ii 8|
Glycerini (neutral) |
Aq. destil. āā .....3i 4|

M. Sig.: Inject fifteen minims hypodermically.

Treatment of Tuberculous Peritonitis.

I. Burney Yeo, in *New York Med. Record*, states that he has seen good results follow the internal administration of iodoform gr. ¼ and creosote m. ½ and the application to the surface of the abdomen of an ointment as follows:

℞. Ung. iodoformi (10 per cent.) |
Olei morrhuæ āā .....℥i 32|

M. Sig.: Apply locally to the abdomen twice daily.

He states that the best results are obtained in the early stages and in those where there is more or less ascitic fluid. In the advanced chronic cases with induration of the various intestinal coats, adhesion of the coils of the bowel to each other, large caseous mesenteric glands, neither surgical nor medical treatment offer much. He believes, however, that if iodoform is rubbed into the skin of the abdomen in a young person, it rapidly enters the circulation and is eliminated and detected in the secretions including the secretions of the serous cavities and therefore reaches the location and seat of the tubercular deposit.

To allay the pain and irritation of the bowels a mixture containing the following was prescribed:

R.	Bismuthi salicylatis .....gr. xv	1 |
	Spts. chloroformi .....m. xv	1 |
	Tinct. card. comp. 3i	4 |

M. Sig.: At one dose to be repeated in six hours.

Treatment of Meningitis.

Dr. Daniel R. Brower, in an article on treatment of tuberculous meningitis, gives most satisfactory results obtained from the use of the following:

R.	Iodoformi 3i	4 |
	Lanolini .....℥i	32 |

M. Ft. Ung. Sig.: Apply locally to the scalp.

Before applying this ointment the head must be closely shaved and the ointment thoroughly rubbed in, after which the ice-cap can be applied. The iodin reaction in the secretions can be obtained within a very few minutes after the ointment has been applied. His percentage of recoveries indicates that there is virtue in this method of treatment.

Medicolegal.

One Thousand Dollars for Breaking of Leg.—The Supreme Court of New Jersey holds, in the case of Wiezynski vs. the American Sugar Refining Company, that an award of $1000 for the breaking of the leg of an employee, a Pole, who was engaged in receiving bags of crude sugar thrown down to be loaded on trucks, was not unreasonable.

Twenty-Five Thousand Dollars Too Large an Award.—The Supreme Court of Mississippi holds it impossible to sustain a verdict for $25,000 in the appeal of the Cumberland Telephone & Telegraph Company vs. Pitchford. Here a lineman, 22 years of age, was thrown to the ground by coming into contact with a live wire while up a telephone pole. His spinal column was fractured, and he was paralyzed from the waist down. The attending physician stated that he found him in a condition of profound shock, and that he suffered considerably up to within 24 hours of his death, which occurred two weeks after the accident. The court holds $12,500 to be a sufficient amount of damages to allow in the case.

Data Required to Recover for Medical Services.—In St. Louis Southwestern Railway Company of Texas vs. Stonecypher, an action brought by the latter party to recover for personal injuries, it was averred that it had been necessary for him to incur an expense of $100 for doctors' bills and medical treatment; $40 to one physician named, and $60 to another, and that the amount charged by each of the physicians was a reasonable charge for the services. Exception was taken because the dates and place at which the alleged services were rendered were not also stated. But the Court of Civil Appeals of Texas sees no error in the overruling of the exception. It says that the party was suing for the amount that the company had caused him to pay for doctors' bills and medical treatment, and it was not incumbent upon him to more specifically set out his claim. He was not suing on account, where he had performed services at different times and places, but was suing for an amount that he was compelled to pay by reason of the company's negligence. The case would have been different had the doctor been suing to recover the amount of his bill. In such case it would have been necessary for him to have itemized his account.

Statements of Injured Persons as to Past Suffering.—The Court of Civil Appeals of Texas says, in St. Louis Southwestern Railway Company of Texas vs. Martin, that the declarations of a person suffering pain are admissible in evidence, but must be expressions or complaints made at the time, and the natural and instinctive manifestations of pain and suffering. But the same principle does not apply to statements made to an attending physician, because he testifies as an expert, and his opinion must be based upon data furnished him. Again, it says that statements made to a physician as to symptoms and past suffering are no more admissible as evidence in favor of the injured party in a personal injury case than if they had been made to some other person. They are only admissible for his information, in order to enable him to form an opinion. If they are made to him in the course of treatment, they come within the exception. But, when the physician has been employed by the plaintiff to make the examination for the purpose of testifying in the case, such statements, it holds, should not be admitted.

Liability for Injury of Property by Pest House.—The Court of Appeals of Kentucky holds, in City of Paducah vs. Allen, that, where a city or other municipality erects and maintains a public institution, such as a hospital for the treatment of smallpox or eruptive diseases, which, by reason of its nature, endangers the lives or health of the occupants of adjacent premises, as by subjecting them to contagious or infectious diseases, it is not only a nuisance, but it is such an invasion of the property rights of such adjacent holder or holders as amounts both to an injuring and a taking of property, under the provision of the state constitution which requires that just compensation must be made for private property taken, injured, or destroyed, for public use. The measure of damages to which an adjacent owner will be entitled, if the establishment of such a hospital or pest house is permanent, the court holds, will be the amount that the market value of his property is impaired thereby. Nor does the court consider that it will be rendered otherwise by the fact that medical witnesses testify that there is no actual danger of the disease being contracted by persons on such adjacent property. For example, it holds in this case that there was such an invasion of the property rights of an adjoining owner as to entitle him to recover for the depreciation of the market value of his property, although the hospital or pest house in question was located about 250 yards from his fence, and about one-half mile from his residence.

Board of Health Can Not Be Controlled by Injunction.—The Supreme Judicial Court of Massachusetts holds, in the case of Stone vs. Heath, that the board of health of a town can not be restrained, either under the general equity power vested in the Superior court, or otherwise, from entering on premises where it has adjudged that a nuisance exists, and abating the alleged nuisance, if the owners of the property do not abate it as ordered, and that it can not be restrained from instituting proceedings against such owners on account of their failure or neglect to comply with the order of abatement. The jurisdiction conferred by the statute, it says, is summary in its nature, and the objects to be attained by its exercise would be defeated in many, if not most, cases, if the orders of boards of health were subject to judicial examination and revision at the instance of parties affected by them before they could be carried into effect. The decision of the board of health is not, however, in such cases final and conclusive to all purposes in regard to the parties interested on the question whether the thing complained of was a nuisance. It establishes, for the time being, that there is a nuisance, and those who act under the orders of the board of health in abating it are protected thereby while engaged in the performance of the duty thus imposed. But they act at their peril if it turns out in subsequent proceedings that there was in fact and in law no nuisance. And the question whether there was a nuisance, or whether, if there was one, it was caused or maintained by the parties charged therewith, may be litigated by such parties in proceedings instituted against them to recover the expense of the abatement, or may be litigated by the parties whose property has been injured or destroyed in proceedings instituted by them to recover for such loss or damage, and may also be litigated by parties charged with causing or maintaining the nuisance in proceedings instituted against them for neglect or failure to comply with the orders of the board of health directing them to abate the same. A board of health having adjudged that a nuisance exists, the question of what influences or motives may have set the board in motion, the court holds, is immaterial.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record, August 31.

1 *Metastatic Choroiditis Occurring in the Course of Pneumonia, Due to Grippe. Based on a Study of Six Cases with Two Autopsies. Charles Stedman Bull.
2 *Protozoal Life in the Blood of Man and Animals, and Some of Its Evolutionary Phases in the Bodies of Suctorial Insects. M. P. Overholzer.
3 *Suggestions in Infant Feeding. Charles Gilmore Kerley.
4 *The Clinical Aspect of Acute Intestinal Obstruction. Howard Lilienthal.
5 *Remarks on the Scientist, the Practitioner, and the Antitoxin Treatment of Diphtheria. Adolph Rupp.

American Medicine, August 31.

6 Two Cases of Injury to the Diaphragm by Puncture Successfully Treated by Suturing. Transdiaphragmatic Suture of the Liver and Kidney. Carl Schlatter.
7 *Disease and Sin. George M. Gould.
8 *The Operative Treatment of Saddle-Nose, with Two Illustrative Cases. Emanuel J. Senn.
9 *Pulmonary Tuberculosis as an Insurance Problem. Chas. Lyman Greene.
10 *The Value of Antitoxin in Diphtheria. Walter R. Greiss.
11 The Treatment of Neurasthenia. W. Blair Stewart.
12 Report of a Case of Purpura Hemorrhagica. A. Hymanson.
13 The Medical History of Dr. Samuel Johnson. W. C. Cahall.

The Boston Medical and Surgical Journal, August 31.

14 The Treatment of Stricture of the Esophagus. Theodore Dunham.
15 *A Discussion of the Indications for Operation in Gastric Ulcer. Arthur T. Cabot.
16 *Cancer of the Intestine. Fred B. Lund.
17 *New Procedures in the Treatment of Hip Disease; Operative Dislocation and Drainage of the Acetabulum in Acetabular disease. E. H. Bradford.
18 An Apparent Case of Diphtheria Infection from Well Persons Carrying Diphtheria Bacilli. Franklin W. White.

Philadelphia Medical Journal, August 31.

19 *Sweat Baths and Baths that Increase Bodily Temperature. R. Friedlaender.
20 Traumatic Hysteria: Cranial Operation; An Interesting Pathological Condition: Recovery. Frank R. Fry.
21 The Use of Drugs in Pulmonary Tuberculosis. W. R. Huggard.
22 *The Inhalation of Formic Aldehyde as an Aid in the Open-Air Treatment of Pulmonary Tuberculosis. Crowry Muthu.
23 Slow Pulse, with Special Reference to Stokes-Adams Disease. Robert T. Edes.

New York Medical Journal, August 31.

24 *The Diagnosis, Etiology, Prophylaxis and Treatment of Cystitis, Pyelitis, and Pyelonephritis in Women. Thomas R. Brown.
25 *A Study of the Temperature, Pulse and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. J. T. Eskridge.
26 *The Esophagometer, or Intragastric Whistle—A New Device for Measuring the Length of the Esophagus in the Living. C. D. Spivak.
27 *Dupuytren's Contraction of the Palmar Fascia. Noble Smith.
28 *The Effect of Nasal Stenosis on the Throat, Ear and Organs at a Distance. W. Peyre Porcher.
29 *Atrophic Rhinitis in Its Purely Clinical Aspect. Carl Seiler.

St. Louis Medical Review, August 31.

30 Cutaneous Anthrax—Malignant Pustule—Report of Two Cases. J. M. G. Carter.
31 *Gastro-jejunostomy in Gastrectasis. A. H. Cordier.

Cincinnati Lancet-Clinic, August 31.

32 *Tracheal Injections. John A. Thompson.
33 Syphilis. George J. Monroe.

Medical News, August 31.

34 *Blood Examinations as an Aid to Surgical Diagnosis. Joseph C. Bloodgood, M.D.
35 *The Racial Factor in Hysteria. Julius Ullman, M.D.
36 The Drug Habit—Its Cause and Restrictions. Joseph M. Aiken, M.D.
37 Two Fatal Cases in Infants—Pemphigus and Erysipelas. Frank S. Meara, Ph.D., M.D.

Pacific Medical Journal (San Francisco), August.

38 Causes and Treatment of Habitual Constipation. Alfred W. Perry.
39 A Capital Sin of Modern Gonorrhea Therapeutics. V. G. Vecki.
40 *Medical Education in Japan. K. Ikeuchi.

Occidental Medical Times (Los Angeles), August.

41 *The Pathology and Bacteriology of Bubonic Plague. W. H. Kellogg.
42 The Surgical Treatment of Cervical Lymphadenitis. Charles G. Levison.
43 Puerperal Sepsis. John Life.

Charlotte Medical Journal, August.

44 A Case of Osteo-Arthritis of the Spine. Michael Hoke.
45 Chronic Interstitial Nephritis, with Report of an Atypical Case, and Autopsy. H. N. Rafferty.

Therapeutic Gazette (Detroit, Mich.), August 15.

46 *The Value of Veratrum Viride in Puerperal Eclampsia. J. Clifton Edgar, Richard C. Norris, Barton C. Hirst, Edward P. Davis, George M. Boyd, W. Reynolds Wilson, J. Whitridge Williams, and Edward Reynolds.
47 *The Use of Gelatin for Controlling Hemorrhage. Joseph Sailer.
48 *Remarks on the Use of Pilocarpin in the Treatment of Inflammations of the Interior of the Eye. Howard F. Hansell.
49 A New Method of Radical Cure of Hydrocele of the Tunica Vaginalis Testis. T. Hope Lewis.

American Practitioner and News (Louisville, Ky.), July 1.

50 *The President's Address, Kentucky State Medical Society. James H. Letcher.
51 Some Observations on Administration of Anesthetics. B. C. Frazier.

Johns Hopkins Hospital Reports (Baltimore), Vol. x.

52 Structure of the Malarial Parasites. Jesse W. Lazear, M.D.
53 *The Bacteriology of Cystitis, Pyelitis and Pyelonephritis in Women, with a Consideration of the Accessory Etiological Factors in these Conditions, and of the Various Chemical and Microscopical Questions Involved. Thomas R. Brown.
54 *Cases of Infection with Strongyloides Intestinalis (first Reported Occurrence in North America). Richard P. Strong.

Colorado Medical Journal (Denver), July.

55 The Necessity for Post-Graduate Instruction in Sanitary Science; Psychopathic Cults of Healing and Worship. William P. Munn.
56 Hysterectomy for Fibroid Tumor and Ventro-suspension of the Stump for Bladder Prolapse and Urinary Incontinence Due to Symphysiotomy and Extensive Laceration of the Anterior Vagina and Neck of the Bladder. H. G. Wetherill.

Medical Fortnightly (St. Louis), August 26.

57 Quackery. James E. Free.
58 Angioneuroses. Frank Parsons Norbury.
59 Diseases of the Stomach. (Continued.) J. M. G. Carter.
60 Diagnosis in Diseases of Infancy. John Zahorsky.
61 *The Relation of the Medical Editor to Original Communications. Harold N. Moyer.

Journal of Cutaneous and Genito-Urinary Diseases (N. Y.), September.

62 Six Cases of Bullous Dermatitis Following Vaccination, and Resembling Dermatitis Herpetiformis. John T. Bowen.
63 On a Case of Parakeratosis Variegata. T. Colcott Fox and J. M. H. MacLeod.

Canadian Journal of Medicine and Surgery (Toronto), September.

64 Address in Surgery, Maritime Medical Association. A. Primrose.
65 Pulmonary Tuberculosis: Its Treatment in Special Sanatoria. J. H. Elliott.
66 The Outdoor Treatment of Sick People. George H. Carveth.
67 The Relation of Nasal Obstruction to Obscure Cases of Asthma. Arthur W. Maybury.
68 A Rare Variation in Phalanges of Hands and Feet. Frederick Winnett.

Annals of Gynecology and Pediatry (Boston), August.

69 Address Delivered May 17, 1901, at the Annual Meeting of the New Hampshire Medical Society by the Retiring President, William T. Smith, M.D.
70 *Malignant Neoplasms. D. M. Currier.
71 Preventive Medicine. Loren A. Sanders.

Kansas City Medical Index-Lancet, September.

72 Hernia and Its Treatment—Reducible, Incarcerated and Strangulated. Herman E. Pearse.
73 Annual Address, North Missouri Medical Association. J. Franklin Welch.
74 Some Practical Points from My Experience in the Treatment of Diseases of Children. John W. Kyger.
75 Legitimate Proprietary Medicines. R. W. Gardner.
76 The Treatment of Acute Insanities. John Punton.

Medical Herald (St. Joseph, Mo.), August.

77 Legal Sanitation or Some Errors and Shortcomings of Attempted Medical Legislation. John D. Seba.
78 A Consideration of Some Methods of Treating Epilepsy. W. J. Alexander.
79 Epidemic Influenza. H. E. W. Barnes.
80 Some Neglected Symptoms of Non-Surgical Gynecology. John A. Hale.

Hot Springs Medical Journal, August.

81 Two Cases of Urethral Stricture. St. Cloud Cooper.
82 Tubo-ovarian Abscess, and How Best to Deal with It. Edwin Ricketts.

American Gynecological and Obstetrical Journal (N. Y.), August.

83 *Treatment of Puerperal Eclampsia. O. A. Gordon.
84 *The Treatment of Retroflexions of Mobile Uteri. George Gellhorn.
85 Indications for the Treatment of Posterior Displacement of the Uterus. Augustus P. Clarke.
86 *Operation for Cystocele. Emerson M. Sutton.
87 *Some of the Uses of Electricity in Gynecology. W. H. Walling.
88 *Gold-Beater's Skin Court-Plaster as a Dressing for Operative Wounds. Edgar A. Day.
89 *The Dry Method in Surgery. Edwin Walker.
90 Cancer of the Uterus. W. O. Henry.

Canada Lancet (Toronto), August.

91 Normal Vaccination. H. R. Frank.
92 A Case of Advanced Arteriosclerosis in a Child. Allen Baines.
93 An Anesthetic Chart. Charles O'Reilly.
94 The Bromid Sleep. Arthur A. Small.
95 A Peculiar Case of Mastoiditis. Chas. Trow.

The American Journal of Insanity, July.

96 *An Anthropological Study of the Small Brain of Civilized Man and Its Evolution. Chas. E. Woodruff.
97 Presidential Address, Delivered at the Annual Meeting of the American Medico-Psychological Association, Held at Milwaukee, Wis., June 11-14, 1901. P. M. Wise.
98 Cerebral Hemiatrophy in an Adult, with Hemiplegia and Aphasia. A. L. Harrington and W. L. Worcester.
99 *Dispensary Treatment of Mental Disease. Walter Channing.
100 *A General View of Dementia Precox. Albert E. Brownrigg.
101 *Experience with Chloretone. Wm. Rush Dunton, Jr.
102 *Schools for the Insane. Francis M. Hamlin.
103 A Statistical Study of One Thousand Patients. Frederick L. Hills.

Clinical Journal (Chicago), September.

104 Fracture of the Humerus; Fracture of the Femur; Strangulated Inguinal Hernia. Edward H. Lee.
105 Clinical Lectures Upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

AMERICAN.

1. **Metastatic Choroiditis.**—The disease, as presented in the six cases here reported, is characterized by pain in the head and eyes, intense vascular congestion, and the usual symptoms of choroiditis and irido-choroiditis, and results in a rapid and total loss of sight. Severe headaches and fever may precede it, and the intraocular tension is at first increased, but subsequently sinks much below normal, even when no perforation of the eye-ball occurs. The course of the disease is from three to six weeks, and the prognosis is always bad, the case ending in total blindness with sunken eye-ball. Enucleation is not advisable in the acute stage, especially if Tenon's capsule and the orbital tissues are involved. Bull discusses the theories of this metastasis, especially referring to Goh's article on the subject, and he doubts whether the occurrence of metastatic ophthalmia signifies a particularly severe type of the general disease causing it, since as a symptom it has not the prognostic significance for the original condition that would, in such cases, be expected.

2. **Protozoal Life in the Blood.**—Overholzer reviews the various facts in regard to the appearance of the lower forms of animal life in human and other blood, with special reference to malaria. He makes the practical point that in his section of the country, the so-called intestinal colic of babies under six months and older, is often more benefited by quinin than by all the food modifications or remedies that have been suggested. He has no doubt but that in these cases microscopic examination of the blood would show the true etiological factor of the condition.

3. **Infant Feeding.**—The subject of infant feeding is discussed by Kerley, who criticises the use of set formulæ, as they do not make distinction as to the food strength in different seasons of the year. In the hot months the infant's digestive capacity is lessened. There is but one substitute for breast milk, and that is cow's milk, and the important point is to combine it in such a manner as to give the strength of fat, sugar and proteid normally found in mother's milk. He says: Beginning with the feeding of the child at birth, for the first three days one-half per cent. of sugar-water mixture is given; after the third day a milk mixture containing 1. of fat, .4 proteid, 4.5 sugar; after the tenth day 1.5 fat, .7 proteid, 5. sugar; after the twenty-first day 2. fat, .8 proteid, and 5. sugar. The increase is very gradual, so that when the average child is six months old he will receive .3 to 3.5 of fat, 1. to 1.5 of proteid, and 7. of sugar. A very weak strength is given at first, which is increased if the child thrives. The baby is weighed every two or three days, and the stools are examined daily for signs of indigestion. The fat, proteid, and sugar are independently increased or diminished as may be indicated by the stools and the condition of the patient. When this method of low feeding is followed at birth, it is, with very few exceptions, followed by success. The usual error is in beginning with too strong a mixture, and in inattention to the case. For aiding in the digestion of casein, two methods have their advocates. One is the peptonizing of the milk, and the other the use of cereals. The former in his hands is of no value except when completely peptonized milk is introduced directly into the stomach or rectum. Partially peptonized milk is an impossibility. Cereals he finds valuable as diluents and for the nutrition they furnish, but he has never been able to increase the proteids in a case of proteid incapacity. He gives details of the management of difficult cases and reports two cases of the rare condition of idiosyncrasy where cow's milk can not be borne at all.

4. **Intestinal Obstructions.**—This not infrequent condition is treated of by Lilienthal, who attributes part of its increase to the increased frequency of abdominal section, but thinks also that true ileus is often due to appendicitis. He cautions against mistaking the expulsion of air introduced by enema for the expulsion of flatus and suggests that the physician himself conduct the administration of the enema for this reason. Sudden abdominal cramp-like pain with vomiting but no fever, should be treated by enema and in the adult by a small dose of morphin (Treves). If permanent relief does not follow, the case is a suspicious one, and operation is indicated. The medical treatment of intestinal obstruction is safe no longer than until the diagnosis is made. After that, the earlier the operation, the better the chances. Some interesting recoveries, however, have been reported with the use of atropin, which may have its utility as an antispasmodic, and a tonic in paralytic obstruction. The suggestion of Vidal of the serum treatment is mentioned, but Lilienthal thinks that its utility must be limited to cases where operation has been already performed, and the symptoms have not subsided. This treatment should never supersede surgery. He advises washing out the stomach before the operation, and in desperate cases abstinence from general anesthesia. The incision should be small at first, and enlarged if necessary. If strangulation exists, it must be relieved before the patient leaves the table, and the possibility of more than one obstruction should be kept in mind. Enterostomy or colostomy should be performed when a prolonged operation would entail the gravest danger of death. In making an artificial anus, one must be sure that the opening is above the occlusion. Gangrenous intestines must be at once resected. When there is great distension of the small intestines, a number of small incisions opposite the mesentery should be made for evacuation of the gut, before searching for the obstruction. The author has practiced this for four years, and feels justified in continuing it. There is rarely, if ever, any advantage in the administration of a cathartic after the strangulation has been relieved. Surgery, and surgery alone, he believes can logically furnish relief in acute intestinal obstruction.

5. **Antitoxin.**—Rupp's article is an unfavorable criticism of the antitoxin therapy, which, he thinks, has a very limited utility.

7.—See JOURNAL, July 7, p. 135.

8. **Saddle-Nose.**—E. J. Senn prefers an external excision in the treatment of saddle-nose, refracturing the bones at a definite point, and removing any excess of callus in traumatic cases. He advises the following operation: A vertical excision one and a half to two inches in the middle line of the nose over the depression, carefully dissecting back the skin and soft structures. With a narrow chisel, the nasal bones are frac-

tured at the point where they join the nasal process of the superior maxillary, care being taken not to injure the mucous membrane. A Kocher director, covered with gauze, is now passed into each nostril alternately, the fragments mobilized and the nose molded into the proper shape. A straight needle, armed with a medium-sized silver wire, is passed through the nose transversely underneath the fragments. Lead discs are placed at each end. The wire is tightened and fixed on the discs, thus supporting the fragments, and also narrowing the nose to any desired degree. He suggests the use of cork instead of lead to avoid pressure necrosis. Next, rubber tubes of the desired caliber are placed in the nostrils to facilitate breathing and to act as an intra-nasal splint, retained by adhesive strips fastened to the cheek. A plastic splint is made to conform the new bridge, with hygroscopic gauze and plaster-of-Paris, molded to the nose and held there until it sets. It should reach from the root of the nose to the lower border of the nasal bones, and should be retained by adhesive strips. After the operation the patient should be watched carefully, the tubes frequently removed and the cavities cleansed. The silver wire should be removed at the end of five or six days, the tubes and casts in fifteen to eighteen days. He gives illustrative cases showing the success of the operation.

9. **Pulmonary Tuberculosis in Life Insurance.**—The following conclusions are offered by Greene: 1. The present requirements of a majority of our insurance companies and the usual methods of insurance examiners are not sufficient to exclude persons suffering from incipient or arrested tuberculosis. 2. Improper preparation of the patient is a fertile source of error, and should be covered by specific instructions and direct inquiry, as is now done in but few instances. 3. Light weight in an applicant should lead to a careful scrutiny in every case, and suggests an afternoon appointment for temperature determination. Many accepted as sound light weights are actually cases of incipient or arrested tuberculosis. 4. Heavy weights can not be accepted at their face value. 5. Recent loss of weight is suggestive and important. It is important that the "best" weight should be stated. No blank known to the writer contains the latter inquiry. 6. Hoarseness should arouse suspicion, and be met by postponement until recovery. 7. The determination of the body temperature is extremely important and its present neglect inexplicable. 8. The physical signs of tuberculosis are obscure and require skill and judgment, both in their detection and the weighing of their importance. The proper attitude, viz., demonstration of the normal, greatly simplifies matters. Hence: 9. A knowledge of the normal chest is all important. 10. Unilateral hyperresonance is as important as unilateral dulness, and absence of the normal breath sounds no less significant than the presence of abnormal sounds. 11. Broadly speaking, the examiner must rely more upon auscultation than percussion. No one sign available to the insurance examiner is pathognomonic, and hasty conclusions are deplorable and disastrous. 12. The tuberculin reaction and demonstration of tubercle bacilli in sputum are impracticable measures, save in the case of substandard lives. 13. Greater stress should be laid upon the question of direct infection, and specific questions in relation to environment should be inserted in every medical blank.

10. **Antitoxin in Diphtheria.**—The subject of antitoxin and its value in diphtheria is noted by Griess, who offers the following in conclusion: 1. Antitoxin should always be given as soon as the diagnosis is made with certainty. 2. Children require larger doses, as their natural resources for fighting disease are always less than those of adults. 3. In mild cases of diphtheria 2000 units should be given as an initial dose, and if no improvement takes place within 12 hours, it should be repeated. 4. All laryngeal cases, or cases in which prostration is severe, should have 4000 units as an initial dose, and 2000 units in 8 or 12 hours if there is no marked improvement. 5. Intubation in children should be practiced before the child becomes exhausted, and if it is not successful, no time should be lost in making a tracheotomy. Before performing either of these operations, however, a stimulant should be administered as the shock during these operations is very great. More than one child has been saved by a hypodermic injection of ether, injected when the patient was apparently dead, after the trachea had been opened; this, together with artificial respiration, caused the child to soon show signs of life. 6. The results to be expected from antitoxin depend especially upon two things: When used in the course of the disease (late or early), and in what type or class of cases it is employed.

15. **Gastric Ulcer.**—Cabot reviews the surgical treatment of gastric ulcer and its present status, which he states as follows: 1. Acute hemorrhages should rarely be treated by operation; the results of interference have not been good, while the results of medical treatment have been satisfactory. When, however, a hemorrhage frequently repeats itself, even if severe in amount, it will demand operative treatment as soon as its recurrent character is plain. 2. Small, frequent hemorrhages, threatening anemia, give a clear indication for operation. 3. Perforation of the stomach, either acute with general peritonitis, or chronic with surrounding adhesions and perigastritis, demands instant operation. 4. When an ulcer runs a chronic course with a strong tendency to recurrence, and gradually diminishes the patient's capacity for work and for the enjoyment of life, an operation is indicated, especially when the patient is so situated as to be dependent on his daily work for support and unable to closely regulate his diet.

16. **Intestinal Cancer.**—The operations indicated for intestinal cancer are stated by Lund as follows: Operation is indicated absolutely in all cases in which the tumor is suspected of being a cancer of the intestines after careful eliminative diagnosis. If a benign tumor or obstruction is found, so much the better. It is also indicated when the symptoms point to the possibility of stenosis, whether it is palpable or not. Exploratory operation is indicated whenever vague intestinal symptoms, associated with a loss of weight, in persons past middle life suggests intestinal cancer. Exceptions should be made of cases of general peritoneal metastases, hepatic cancer, etc., where no radical operation can be performed, and only palliative measures are suitable. In regard to the nature of the operation, this has to be determined in each individual case. Excision of the growth and immediate union of the ends of the bowel is the ideal.

17. **Hip Disease.**—A case of acetabular disease of the hip, in which amputation of the joint seemed indicated, but was refused, was treated by Bradford by throwing the head of the femur out of joint by an incision similar to that for excision and placing it on the dorsum of the ilium. A free incision was made, allowing drainage from the acetabulum, which was found perforated. A celluloid drainage tube one inch in diameter was inserted to a sufficient depth and secured by a stitch. The base of the acetabulum was touched with carbolic crystals and washed off with alcohol. The limb was fixed in flexion and adduction by a plaster-of-Paris spica. Marked improvement followed. Drainage was kept up for six months, and then the boy was allowed to go about. The tubercular osteitis of the acetabulum has been healed and a future operation may correct the present deformity.

19. **Sweat Baths, Etc.**—Friedlander has experimented on himself and others with various forms of sweat baths, and baths that increase bodily temperature, such as the Russian steam bath, and gives the indications for either variety as follows: He prefers temperature-increasing baths. 1. In combating infectious and toxic conditions. In acute and subacute diseases due to exposure, catarrh of the upper respiratory passages, fresh rheumatic affections of the muscles and joints, and also in other infections, the onset of which is not characterized by high fever and in which individual conditions render an increase of the fever permissible and desirable for the course of the pathological process. Furthermore in syphilis, and in a general gonorrheal infection. 2. When an intense increase of metabolism is indicated from other causes, such as autointoxication, and in conditions affecting metabolism, like gout.

On the other hand, he favors sweat baths: 1. When a cure by means of free diaphoresis is contemplated; in exudations and transudations, in nephritis with edema, in hydremia and chlorosis, in metallic poisoning, and in obesity as an adjunct to other methods of treatment. 2. When chronic inflammatory processes are to be influenced by peripheral hyperemia. In chronic and especially rheumatic affections of the muscles, joints and nerves, in the residual conditions of acute articular rheumatism, in chronic muscular rheumatism and arthritis deformans, in neuritides, and in tubercular arthritic affections.

22. **Formic Aldehyde in Tuberculosis.**—Formic aldehyde has been employed by Muthu in two ways, by the dry method, in which the tabloids are placed over a methylated spirit lamp and volatilized, and the moist method, in which, together with this, there is steam mixed with the formaldehyde vapor, rendering it more diffusible and efficacious. The gas is used either by suffusion throughout the atmosphere, or when in the aqueous solution, it is employed in an inhaler or nebulizer. He has used it with 15 patients from three to five months. Five, all men, were completely cured; seven, six men and one woman, were almost cured, that is, though the symptoms did not completely disappear, and a few bacilli remained, they have been able to go back to their former occupations, and have been in good general health; one, a woman, was slightly benefited, and in the remaining two there was no effect. Of the five who were completely restored, three had affection of one lung, one had a large cavity in one lung, and the other had marked signs of breaking down in both lungs. Of the seven nearly cured, two had cavities in one lung, and consolidation of the other; one had empyema complicating pulmonary tuberculosis, and the rest had more or less extensive affections of both lungs. He believes that the treatment should be given a fair trial in every sanitarium, systematically and persistently used by some one who is careful and enthusiastic.

24. **Cystitis Pyelitis and Pyelonephritis in Women.**—From a study of the pathology, bacteriology and symptoms of cystitis, pyelitis and pyelonephritis in women Brown comes to the following conclusions: 1. The great majority of cases of pyelitis, pyelonephritis, and cystitis are due to infection with various micro-organisms (of which the colon bacillus is the commonest) which may reach the kidney or bladder either exogenously or endogenously. 2. In the majority of cases the condition either can be prevented or can be cured if the conditions underlying its development are recognized and understood, and the correct measures inaugurated. 3. There are various conditions, such as urinary hyperacidity, which may simulate almost exactly true vesical infections, and yet in which misinterpretation and improper treatment may lead to the development of a true cystitis and its deplorable consequences. 4. In no condition is prophylaxis more essential than in that of the infections of the urinary tract, while to be able to prevent such conditions, we must have constantly before us the danger of the development of infection in all cases associated with conditions which tend to lower the general resistance of the patient, and also those which render the bladder susceptible to infection, especially by the trauma of an operation or catheterism. 5. While an absolute diagnosis of renal infection can be made only by ureteral catheterism, in the majority of cases a very probable diagnosis may be arrived at by a consideration of the relation between the grade of albuminuria and pyuria and by careful cystoscopic examination of the bladder, especially that portion about the ureteral orifices, and the character of the urine flowing therefrom. 6. Contrary to the opinion expressed in the majority of textbooks, a great majority of the infections both of the bladder and of the kidney are associated with acidity of the urine—that is, are due to micro-organisms which do not split up the urea. 7. Probably in the majority if not in all the cases of renal infection due to a urea-decomposing micro-organism, after the condition has lasted for a certain length of time, a stone is formed by the decomposition of the precipitated salts about the bacteria as a nucleus. 8. To be able to thoroughly understand the cases of cystitis, pyelitis, and pyelonephritis, to make the proper diagnosis to inaugurate and carry out a rational line of treatment, to be conversant with the proper means of prophylaxis, and to give a correct prognosis, a careful chemical, microscopical, and bacteriological study of the urine is absolutely essential. See also 53.

25. Eskridge's article is to be continued, and will be noted later.

26. **Esophagometer, or the Intragastric Whistle.**—After first noticing the variations of the estimates of the length of the esophagus and the position of the cardia, which are quite noticeable, Spivak gives his reasons for assuming a practical value in ascertaining these data. It is important to know how much rubber tubing should be allowed to enter the stomach in severe gastric lesions, and the diagnosis of gastrectasis and gastroptosis largely depends on the proper location of the cardia. He then describes his instrument, which consists of a stomach tube, provided at the proximal end with a whistle, which is inserted in such a way that the opening through which the air is blown in looks towards the distal end, and the opening at which the air makes its exit is in apposition with the side opening of the tube. The tube is introduced into the esophagus and air blown in. As long as the whistle traverses the esophagus, no sound is heard, but as soon as the cardia is reached, a distinct whistle is heard. In this way the exact length of the esophagus is ascertained. The advantages of the device are given as follows: 1. Precision in measurement not attainable by any of the other methods, except by that of Purjesz. 2. Cheapness. The materials necessary for manufacturing this instrument are a stomach tube, whistle, and a piece of thread. It does not take more than two minutes to insert and secure the whistle in the tube. 3. No special instrument is needed. It is an esophagometer only when used for the purpose of esophagometry. In the twinkling of an eye the component parts are separated and the stomach tube and whistle are ready for other uses.

27. **Dupuytren's Contraction of the Palmar Fascia.**—Noble Smith discusses the etiology of Dupuytren's contraction, and reports a case in which he believes he observed it in its very early stages. In a man aged fifty a small nodule developed subcutaneously at the base of the ring finger on the left hand. The first symptom was pain, and was followed by the characteristic slight contraction of the palmar fascia. There was no history of gout in the family, but a slight tendency to muscular rheumatism and to bilious attacks, so-called. A full dose of Pil. cathart. comp. U. S. P. was given, followed by relief of the pain and subsidence of the nodule. After several repetitions of the treatment it entirely disappeared and there has been no apparent tendency to recur.

28. **Nasal Stenosis.**—Porcher calls attention to the varied symptoms from nasal stenosis, and reports several cases of cough, deafness, abscess of the ear, etc., apparently relieved by nasal operation. He also refers to still more extraordinary reflex phenomena reported by Schiff and Gomperz, already abstracted in THE JOURNAL.

29. **Atrophic Rhinitis.**—From his studies on the subject Seiler finds atrophic rhinitis most frequent in American-born males of Irish parents, next in Irish born, then Italian born, French and German, while the smallest contingent is furnished by the negro race. He also finds that occupation seems to have very little to do with its occurrence, excepting in special case of employes working in chemicals. The treatment which he finds best has been the removal of the dried secretions by gradual solution and loosening with liquid solvent, to which should be added some of the ethereal antiseptics, the formula for which is embodied in the Seiler antiseptic tablets. After removing the scabs and ozena, he employs the Goldstein cotton nasal plug, with the nitrate of silver and stearate of zinc.

31. **Gastrectasis.**—The deductions which Cordier draws from the study of the operative treatment of gastrectasis are, that cancer of the pylorus, even though removed, returns quickly, and is always fatal and that pylorectomy is attended

by high mortality and is not a justifiable procedure in advanced pyloric carcinoma. Gastrectasis, due to a malignant closure of the pylorus, is best treated by gastro-jejunostomy, according to Woelfler's or Von Hacker's method. It is not necessary to twist the bowel in making the anastomosis to prevent the bile from entering the stomach. The anastomotic opening in the stomach should be at the most dependent point of the dilated organ. The operation is attended by a low mortality, and should be performed whenever marked dilatation of the stomach, with emaciation, pain and invalidism is present. Relief follows at once, and the patient gains in weight, and, if no malignant disease is present, is restored to former health.

32. **Tracheal Injection.**—Thompson has found special benefit from tracheal injections and has come to use them largely in his practice. The technic is as follows: The larynx is illuminated as usual. The patient holds his own tongue while the physician guides a properly curved laryngeal syringe back over the glottis. Then, while the patient takes a slow full inspiration, the medicine is injected between the cords and into the trachea. It is not necessary to touch any part of the larynx, and if the patient will follow directions, the operation is easy. It is only with a few who have very little self-control that this method is impossible. The advantages are the direct local action of the medicine, and its quick constitutional effect from being injected directly into the lungs. It also undergoes no chemical changes before it reaches the spot. He advises this method in the late stages of bronchitis, in chronic bronchitis, asthma, pulmonary emphysema and chronic inflammation of the trachea. The most effective medicines are those that are volatilized slowly by the temperature of the body, such as menthol, camphor, creosote and guaiacol carbonates and chlorophenol. He says the longer he employs the method, the greater is his opinion of its value.

34. **Blood Examinations.**—The value of blood examinations in surgical diagnosis, the leucocytosis of shock, and the necessity of a careful blood examination before general anesthesia are first noted by Bloodgood. The blood-count may enable us to detect and gauge a hemorrhage, and he finds that the dangers from an anesthetic are greatly increased with a hemoglobin estimate below 50 per cent. There is need of more study as regards post-operative leucocytosis; a sudden rise may indicate complications. The most certain value is in the early recognition of intestinal obstruction, in which there is always a rise of usually over 20,000. In a few cases of post-operative phlebitis there was a rise in the leucocytes ranging from 15,000 to 20,000. This has been frequently observed in typhoid phlebitis, but, on the whole, the observations of the changes in the leucocytes after operation are not well established. The principal theme of the paper, however, is the importance of the leucocyte-count in the early recognition of acute abdominal lesions, appendicitis, etc. A tabulated statement of the counts in different phases of the conditions, acute, chronic, abscess, etc., is given and several cases illustrating certain points are reported in detail. While there is need of more observations before definite conclusions can be reached, these are enough to make a careful surgeon insist on a blood-count in every case of acute abdominal lesion, and even every four to six hours during the first two days. He says, "A rapid rise in the leucocytes, especially above 18,000, should be a sufficient indication for exploration, even in those cases where the local symptoms are very slight. In the few exceptions in which the local symptoms are sufficiently distinct to indicate an operation, a low leucocytosis should not influence as to delay operation." The article concludes with remarks on the leucocytosis of intestinal obstruction and cholecystitis, in both of which there is a significant rise.

35. **Hysteria.**—Ullman recognizes a special susceptibility to hysteria in certain races, especially the Jews; the Latins and Slavs are also to be regarded as hysterical. It appears to be frequent in the negro, and under civilization is appearing in the North American Indians. He concludes that no race is free and its greater frequency in some is attributable rather to environment than to special racial peculiarity.

40. **Medical Education in Japan.**—The medical universities of Japan are described by Ikeuchi. The medical education is given in that country by the Tokyo and Kioto Imperial universities, the medical departments of the high schools in five provinces, the Kioto, Osaka, and Aichi provincial medical schools, and two private medical colleges. Besides these are the Naval and Army medical academies in Tokyo, which do not educate the student, but instruct the surgeon-probationers and surgeons who are put on service out of easy reach of the scientific world. The first two are government institutions with a medical course of four years, ample clinical advantages and post-graduate courses. The medical departments of the five high schools differ more or less. They also have four-year courses. He gives a summary of the physicians at present in Japan: 1. Graduates of the universities, 1514, with the title of Igakushi. 2. Graduates of the higher schools, 2329, with the title of Tokugyoshi. 3. Graduates of Saisei and Charity Hospital Medical Schools, 10,779, with the title of Eishi. 4. Those qualified in foreign medical schools, 94. 5. Practitioners before the present regulations went into force, and who received license without examination, 21,940. The first four classes are physicians who were educated under modern systems; the rest are Chinese physicians, including bonesetters, shampooers, administerers of acupuncture, etc. Therefore, in Japan, as he says, many physicians are really ignorant of modern medicine, and better medical education in Japan is demanded.

41. See abstract in Journal, xxxvi, p. 1491.

46. **Veratrum Viride.**—This article is given up to the replies that have been received by the editor of the *Therapeutic Gazette* from various prominent obstetricians as to the value of veratrum viride in puerperal eclampsia. J. Clifton Edgar believes it invaluable in cases where we have to use temporizing means until we can secure dilatation of the cervix. It is second in efficiency only to chloroform. It diminishes the pulse rate and convulsions are almost unknown when the pulse is 60 or under. He gives 10 to 20 minims of the fluid extract or one-half that quantity of Norwood's tincture subcutaneously, and repeats until the pulse continues below 60 to the minute, keeping the patient in the recumbent position. Richard C. Norris finds that the cases suitable for veratrum viride are those in which bleeding is often indicated. It can be employed sometimes when bleeding is not possible. A knowledge of the proper dose is essential. He nearly lost a patient from a hypodermic dose of 20 drops of the fluid extract. Smaller doses at frequent intervals are better, the interval being determined by the effect produced by the drug. Beginning with an initial dose of 8 minims he has repeated the administration in 5 minim doses as soon as the effect of the first dose did not appear in fifteen minutes or had begun to pass off. Barton C. Hirst has employed it for some twelve or fifteen years and has great confidence in its efficiency. It is most valuable in asthenic conditions; he would not use it in asthenia. Edward P. Davis expresses a similar opinion. Drs. George M. Boyd, W. Reynolds Wilson, Whitridge Williams, and Edward Reynolds have either had very little experience with it or consider it of slight value or even dangerous. Dr. Wilson thinks that it may possibly interfere with active uterine contractions which are Nature's means of removing exciting causes of convulsions.

47. **Gelatin in Hemorrhage.**—As a result of an analysis of the literature Sailer thinks the following conclusions are reasonable: 1. Gelatin increases the coagulability of the blood, whether applied locally, taken internally by the mouth, or injected subcutaneously or intravenously. 2. Applied locally it is usually harmless, and may, as Carnot suggested, aid in healing by improving the nutrition of the cells, although he regards this as doubtful. It may be injurious by promoting bacterial growth, and should probably always have some antiseptic added to it. 3. Injected subcutaneously or intravenously it is entirely harmless, and when the technique is perfect, practically painless. The solution should be thoroughly sterile; the dose employed should vary from one to three

grams of pure gelatin. 4. When administered by the mouth from 1 to 300 grams or perhaps more, should be employed daily. 5. It is of advantage in any form of local hemorrhage, such as epistaxis, hemorrhoids, or injuries. 6. It checks certain forms of internal hemorrhages such as hemoptysis, hematemesis, metrorrhagia, melena neonatorum. 7. It appears to be the best remedy at our command in the treatment of hemophilia, and to be of great advantage for purpura hemorrhagica, and in hemorrhagic forms of infectious disease. 8. At present it appears to be contra-indicated in only one condition, viz., acute nephritis.

48. **Pilocarpin in Eye Disorders.**—Hansell finds the effect of pilocarpin is of value in certain cases of inflammation of different structures of the eye. His method is as follows: A convenient hour is chosen, usually 3 p. m., and the patient is put in a hot bath ranging from 106 to 110 F.; during the bath he drinks a cup of tea. After twenty minutes immersion he is put into bed and receives a hypodermic injection of 1/12 to 1/8 of a grain of pilocarpin muriate. The sweating begins in a few minutes and is encouraged by hot bottles and blankets for two hours or more. If it should become slight or insignificant during the two hours, a glass of ice water is given, when the glands take on renewed activity. After the sweating, the wet blankets are removed, clean bed clothing substituted and the patient is allowed to remain quietly in bed until the next morning, when he may get up and dress until time for the next bath. If exhaustion follows the bath, a hypodermic injection of strychnin is given one-half hour before the next bath. The diet should be largely fluid and whatever local eye treatment is called for, is of course, administered and is not interfered with by the sweats. He refers to a number of cases in his practice and suggests that his own experience and that of some others who have tried it, has been so favorable that he feels he can recommend it in all chronic deep-seated inflammations of the eye that are not amenable to the usual remedies.

50.—See abstract in THE JOURNAL, xxxvi, p. 1725.

53. **Cystitis, Pyelitis and Pyelonephritis in Women.**—From a study of the results obtained in his investigation, Brown concludes: 1. The direct cause of the infection of the urinary tract in women is the invasion and multiplication of some form of micro-organism. 2. The commonest cause of these infections is the B. coli communis, which a consideration of the cases of acute cystitis definitely proves can and does in a large number of cases set up a true infection without the aid of any other micro-organism. 3. Marked variations are seen in the virulence of this micro-organism and in its pyogenic properties. 4. Other micro-organisms frequently found are the tubercle bacillus, various staphylococci and the B. proteus vulgaris; while numerous varieties of micro-organisms have been less frequently and occasionally met with, as the B. pyocaneus and typhoid bacillus. 5. The proportion of cases of infection due to the B. coli communis is greater in women than in men, probably due to the close proximity of the female urethra to the anus. 6. Besides the entrance of the micro-organisms, other factors are in most cases essential to the development of a cystitis; chief among these factors are anemia, malnutrition, trauma and pressure upon the bladder, congestion of the bladder and retention of urine. 7. In cystitis the chief mode of infection is by the urethra, although one must also consider as possibilities a descending ureteral infection from an infected kidney, pyogenic metastasis by means of the blood and lymph currents, and direct transmission of the micro-organisms from the intestinal tract, or from some adjacent focus of infection. 8. In pyelitis and pyelonephritis the usual modes of infection are along the ureter from an infected bladder, and by means of the blood and lymph currents; in the author's cases these modes of infection were found about equally represented. 9. In the great majority of cases of cystitis, both acute and chronic, and in the majority of cases of pyelitis and pyelonephritis, the urine is acid. 10. In the cases in which the urine is ammoniacal, the infection can be produced without the aid of any of the accessory etiological factors mentioned above, the irritation of the ammoniacal urine apparently being sufficient to render the bladder susceptible to infection. 11. In the case of infection of the kidney due to urea-decomposing micro-organisms, a stone is very likely to be present if the case is at all chronic. 12. Certain conditions exist which present most of the symptoms of cystitis but no infection; the most difficult of which to diagnose is probably urinary hyperacidity of neuropathic origin, the successful treatment of which depends upon the successful recognition both of its urinary features and its general basis. 13. Although the diagnosis of renal infections can be made with absolute certainty only by ureteral catheterization, a probable differentiation between renal and vesical infections can be made by a careful study of the urine alone. 14. Tuberculous infections of the urinary tract frequently occur with no other demonstrable tuberculous lesions elsewhere in the body. Probably a tuberculous gland would be demonstrable postmortem in most of these cases. 15. The colon bacillus seems to be the commonest cause of pyelitis, while the B. proteus vulgaris and members of the staphylococcus group are also found less frequently. 16. And finally, to be able to thoroughly understand the cases of cystitis, pyelitis and pyelonephritis brought to our notice, to make the proper diagnosis, to inaugurate and carry out a rational line of treatment and to give a correct prognosis, a careful chemical and bacteriological study of the urine is absolutely essential." See also 24.

54. **Strongyloides Intestinalis.**—Strong reports cases of dysentery with ulcer of the large intestine and abscess of the liver and retroperitoneal abscess in which there was an intestinal infection of the strongyloides intestinalis. The kidneys were degenerated and the liver, also the heart muscle. A thorough postmortem examination was made, and a description of the parasite is given with a historical review of the literature in the pathology. From a study of the microscopical sections of two fatal cases and from observations made upon five clinical cases he cannot consider the parasite harmless, nor does he regard it as a direct danger to man. He believes that it can produce an intermittent diarrhea with intestinal disturbances, and anatomically, a catarrh of the small intestine. The parasite certainly causes some injury from its rapid mechanical movement, but whether it produces any chemical substance harmful to man has yet to be proven. Moderately severe infections probably cause only slight injuries. The milder cases of infection generally yield to large doses of thymol, with general tonic treatment. It may be necessary to repeat the treatment at intervals. In very severe infections neither male fern nor thymol are of any apparent value in curing the disease and ridding the patient of the parasite.

61.—This article has appeared elsewhere. See THE JOURNAL of August 10, title 60, p. 406.

70. **Malignant Neoplasms.**—Currier favors the non-surgical treatment of cancer, pointing out that many cases treated by quacks recover. He has watched them for years. He resolved to know the value of these methods so he has been studying general and local medication. For the general medication to assist nature in her endeavor to relieve herself, he believes in the free use of phosphates, protonuclein, thyroid extract, the iodids to stimulate glandular activity, which in many cases is the most important thing to do, Chian turpentine, which he thinks has good results when properly administered, phytolacca, sulphur, echinacea, and conium. For local treatment he believes that electricity will be an agent of great value, though it has failed in private practice. Cataphoresis is opening up a field of vast possibilities. Arsenious acid, which has been much used, is an excellent thing, though quite painful unless prepared with some local anesthetic, such as cocain or eucain B. Chromium chlorid should be used in cases of scirrhus situated deep in the cellular tissue with the skin intact. It has the same selective action as arsenious acid when the strength is properly regulated and its action can be guided in any direction. It is best to commence by removing the cuticle over the most prominent part, and he says one who has never tried it would be surprised to see how quickly the tumor contracts and how smoothly it separates

from the parts around. Salicylic acid with lactic acid makes a desirable application for disease on the accessible mucous surfaces other than the mouth. It must be applied freshly prepared each day. If persevered in it will cause the diseased mass to separate in from five to ten days. He reports good results with formalin. As soon as the line of separation commences it should be filled in once or twice a day with protonuclein special. Eucain B. or cocain is the best local anesthetic where there is pain. The general edema being so great that no tumor can be discovered, he uses resorcin and phytolacca ointment which soon outlines the growth. He reports three cases, one of epithelioma, the second and third of cancer of the breast, and the second with enlarged axillary glands, in all of which there was good recovery.

83. **Puerperal Eclampsia.**—The remedy here recommended for puerperal eclampsia is veratrum viride with which Gordon has treated four cases, all of which recovered. In no case was there a convulsion where the pulse was held below 60. In the most recent case there were six convulsions before veratrum viride was used, under the administration of chloral, chloroform and morphin, while 10 minims of fluid extract of veratrum hypodermically brought the pulse down to 50, made it soft, and convulsions ceased. The uterus was emptied in all of these cases out of regard for the general opinion of the profession, and not from a lack of confidence in the medication. He holds that there is ground for some conservatism in this matter when we consider the twenty-six successful cases thus treated by Dr. Newton without interference with pregnancy. He thinks 10 minims the proper initial dose, with 5 minim doses at intervals of one-half hour until the pulse comes down to 60 or below. It is not often necessary to give a second dose, as the first is generally efficient.

84. **Retroflexions.**—Gellhorn recommends a method of vesico-fixation invented by Mackenrodt in 1895 for retroflexion of the mobile uterus and describes the operation. For the details of this the reader is referred to the article. A number of cases are reported. The advantages claimed are the restoration of the physiologieal situs in the pelvis as much as possible. The peritoneum being shortened by loosening up the bladder and sewed high up to the fundus on a line between the tubes, and a serous connection between uterus and bladder being thus established. The second part of the operation consists in sewing the vesico-vaginal septum to the anterior surface of the womb, thereby the bare posterior wall of the bladder becomes attached to the anterior wall of the uterus, which is covered with peritoneum, thus forming a sero-fibrous connection, sufficiently strong to hold both organs in place, but not so rigid and unyielding as to interfere with the development of the womb in case of a later pregnancy.

86. **Cystocele.**—In Sutton's operation "the incision is made around the cervix extending to the lateral sulci, forming the base of a triangle the apex of which is at the meatus, the sides of which take in sufficient of the anterior wall when edges reunited will completely retain the superimposed bladder; denudation made as one flap. Amputation of the cervix, or repair of the cervix, as the case may require, being performed at the time of the first incision, and dissection of the tissues from the anterior surface of the cervix sufficiently to allow the easy repositing of the uterus. Sutures introduced in front of the cervix may be continuous catgut or interrupted silk as the surgeon desires. Buried sutures not necessary, wound closed; result is a lengthening of from two and a half cm. of the vaginal wall with repositing of the cervix into the hollow of the sacrum, where it properly belongs, out of the reach of the patient who usually informs me after the operation that she can no longer feel the womb. This operation, of course, being supplemented with repair of the posterior wall of the vagina and perineum. When performed in this manner suspension of the uterus or shortening of the round ligaments intra-abdominally can be dispensed with, as the organ assumes its natural position in consequence of the lengthening of the anterior vaginal wall." He has performed this operation a number of times, and the results are uniformly as stated.

87. **Electricity in Gynecology.**—Walling recommends the use of electricity by galvanization, faradization and static spark in amenorrhea, dysmenorrhea, ovarian neuralgia, delayed menstruation, erosions, metritis and endometritis, pyosalpinx, subinvolutions and fibroids.

88. **Gold-Beater's Skin Court-Plaster.**—Day recommends gold-beater's skin court-plaster as having the following advantages as a surgical dressing when prepared by the cumol process: "1. It is aseptic, antiseptic, and impervious to germ life. 2. It is thin and pliable. 3. It is transparent. 4. It is fibrous and adherent. 5. It forms a light and comfortable dressing. 6. It is readily removed by the application of moisture."

89. **The Dry Method in Surgery.**—Walker advocates the use of the dry method in surgery as meeting all the requirements and favoring infection less. He has performed by the dry method 262 operations on 234 patients with a mortality of 5. One of these fatal cases was a suppurating fibroid, and the patient had been septic for weeks, and it was done *in extremis;* another was a resection of the pylorus and one-third of the stomach for cancer; the third was a resection of the sigmoid flexure for malignant disease, and the fourth, an infected urachus. In the fifth, death occurred forty-eight hours after a prostatectomy. Of the total number 163 were clean cases, and in 2 there was a suppuration in the wound. The remainder were absolutely aseptic in healing. The infected cases were 71 in number, of these there was no suppuration afterward in 47; 24 were septic after the operation. Some were emergency cases and the preparation not as good as it should have been. Of the total number 72 were laparotomies.

96. **The Brain and Its Evolution.**—The special point in Woodruff's article is that civilization and brain development have gone hand in hand, and that the lower races that have not taken part in it are forever unfitted for the former, the more so the earlier "they escaped from the factory of brain." He holds that the negro is unsuited for civilization, and must necessarily become extinct; that change of climate must necessarily be accompanied by change of type; that religion is purely a matter of brain evolution and race; that evolution is still a constant effective factor, and that efforts to modify it by checking or preventing degeneration are futile. We are now passing through the critical period, separating the earlier era of savagery and the future one of specialists.

99. **Dispensary Treatment of Mental Diseases.**—Channing gives an account of the methods of treating out-patient cases of mental disorder in the Boston dispensary. Many of them were developed cases of insanity, unrecognized or otherwise. Others were incipient cases in which the attack was checked by the treatment received, or cases that were prevented from developing into insanity. Still others were epileptics, cases of simple depression, or were defective children, susceptible of amendment under proper treatment. Some cases were benefited by being sent to the hospital in time, others they were able to prevent from going there. The clinical advantages are also discussed.

100. **Dementia Precox.**—Browning's article is a translation from the German of Kraepelin.

101. **Chloretone.**—Nine cases of the continued use of chloretone are reported by Dunton; in all but one unfavorable action on the heart, kidneys, etc., was observed. He thinks the main disadvantageous action is on the heart and that it is depressant in character. The total amounts given in each case ranged from 200 or 300 to 1100 grains. The latter amount was reached only in the patient who showed no bad effects.

102.—This article was noticed in The Journal in the issue of July 20, page 218.

FOREIGN.

British Medical Journal, August 24.

Treatment of Wounded in Naval Actions. Fleet-Surgeon Gilbert Kirker, M.D.—The author discusses the sub-

ject under these heads: 1, the surgeons' station; 2, the time of treatment; 3, the conveyance of the wounded. As regards the first, modern ships of war have not the old cockpit; Kirker thinks an operating room should be provided, protected in time of action, so that the experience of the Japanese ship *Hujei*, where all medical supplies were destroyed and the whole medical force was put hors de combat by a shell, should not be repeated. As regards time of treatment it seems to be generally held now that any elaborate surgical work during action is impracticable; but naval actions are liable to be quickly over. The men should receive instruction as to first aid, and stimulant and restorative drinks be provided. For the conveyance of the wounded, a ship ambulance should meet several indications; it must retain its occupants safely in all positions; it must be able to slide down steep ladders, at any angle, be short enough to go around corners, in confined spaces, and where two men can not move it well in confined spaces it should be transportable by one. He mentions certain appliances, among them one of his own device, an "ambulance sleigh," which is now under trial.

The Disposal of the Wounded in Naval Actions. SURGEON F. H. A. CLAYTON, R. N.—This article reviews the conditions rather more in detail than does Kirker, pointing out the necessity of safe storage of the principal medical supplies, having dressing stations only on deck with first aid appliances, mattresses, etc. On ships where a protected operating room is unavailable several localities may be selected, in case any one is liable to be wrecked, and utilized at the earliest opportunity. Sterilized clothing for the men to be put on before action is suggested, and the desirability of a good and always ready application for burns. The picric acid treatment suggests itself from its simplicity and the infrequency of needed changes of dressing. The importance of ambulance drill and instruction is dwelt upon.

Floating Hospitals. INSPECTOR-GENERAL BELGRAVE NINNIS, R. N. (retired).—The points emphasized as of supreme importance by the author are the following: 1. That the ship should be of metal, cased on the outside with wood, thus combining the cleanliness of metal with the coolness and non-conductibility of wood, and that there should be no possibility of communication between the bilge and the wards. 2. That the wards should be absolutely without communication one with the other, and that each should have direct and independent air communication with the upper deck. 3. That the portion of the main and middle decks appropriated to the waterclosets should extend across the deck, so that a through current of air could be secured. 4. That the watercloset when in use should be absolutely cut off from this space. 5. That the platforms fitted outside the main and middle decks be of such a size as to accommodate a stretcher or lounge, and the parts leading on to them be in such a position as to give easy passage to a stretcher or carrying chair. It is most essential that in these ships lighting should be by electricity, as the power required for producing this would be utilized for various other purposes, as is done in our larger passenger steamers.

Healthfulness of Modern Warships. STAFF-SURGEON W. E. HOWE, R. N.—Howe shows from official tables that the earlier ironclads were healthier than the old wooden ships, and that the more modern vessels are better still than these. The requisites for a healthy ship are given by him as follows: "1. Have certainly not less than 120 cubic feet of space for each man, and more in the tropics. 2. Have uptake ventilators from every compartment, opening as near the top as possible. These should be so constructed as to be capable of being cleaned by a brush pulled through. 3. Cowls and air-shafts are needed to be supplemented in all favorable weather by a windsail for each hatchway and wind scoops for each port or scuttle in the side. Artificial ventilation is required for every space in which men live (only to be used on the main deck in bad weather). 4. She should be warmed and kept dry by steam radiators. In 1888, the *Alexandra* having been fitted with electric light and being now kept drier by the heat radiated from the boiler always alight, had less than half as many cases of Malta fever as she had had in each of the four preceding years. 5. Whenever decks are washed, the last washing over should be done with a 1 in 1000 solution of perchlorid of mercury or another antiseptic. The mess tables and stools are similarly washed. This reduces the liability of casual wounds to inflame. I would like also to spray the beams overhead with formalin solution once a week in order to diminish the occurrence of sore throats and other septic diseases. But I quite believe the best general antiseptic on board a ship to be fresh dry air in plenty. 6. There should be a drying room for the wet clothes and bedding of the ship's company."

The Theory of Air-Borne Typhoid in Armies. H. E. LEIGH CANNEY, M.D.—From a consideration of the conditions under which typhoid originates and spreads in armies in India, South Africa, and Egypt, which he reviews in detail, including those of the camps of workmen at the Assouan dam, Canney concludes: 1. That the evidence of air-borne typhoid recorded in Indian military experience is not established. 2. That in South Africa and Egypt the evidence is opposed to this theory. 3. That in India, South Africa, and Egypt the immense weight of evidence and probability is in favor of a water-borne origin and spread. 4. That the evidence from Egypt proves that if the avenues to man by means of water be protected, all other avenues are powerless to originate and spread typhoid in large bodies of men. There is strong evidence to suppose that the same methods would bring about like results in India, South Africa, and other countries. 5. That the origin and spread of typhoid by means of flies and dust being theory only, can only be discussed as such in relation to certain laboratory experiments, and that in practice it is unjustifiable to hold this theory, if it should deter, delay or hinder the adoption in armies of the most vigorous, and comprehensive measures against water-borne typhoid. The laboratory research, he holds, proves: 1. That in soils in which it might be expected it is never found. 2. That it is extremely difficult for the typhoid bacillus to live in soil, and that, if much moisture exists and a temperature above 66, it will only live some hours. 3. That the action of light and total drying on the superficial layers of infected dust are so specially deadly to the typhoid bacillus as to account for the fact that, though it may be partly dried in the laboratory, it has not been driven through the air and recovered. 4. That its recovery from water is difficult, and failure to recover it does not show either that it was not there at the time of examination, or at any previous time. It is interesting to find that the conclusion arrived at in the study of the natural experiments or epidemics coincides closely with the facts which laboratory research has established. Enteric fever will have to be met in all parts of the world on the water-borne theory mainly, though every other avenue must be guarded. His conclusions were combated in the discussion following by Lieut.-Col. Giles, I. M. S., who criticised his deductions from India where air-borne and fly-borne typhoid was a frequent mode of infection and the water-borne theory failed to account for many attacks.

The Lancet, August 24.

How Can the Tuberculin Test be Utilized for the Stamping Out of Bovine Tuberculosis?—SHERIDAN DELEPINE, M. D.—Delepine finds from his investigations that: 1. Tuberculin is an almost infallible test of the presence of tuberculosis in animals under seven years of age when this fluid is used with proper care. In older cattle clinical methods are more reliable than the tuberculin test as used at present. (The use of larger doses than the usual ones may, however, be resorted to with advantage in these cases.) 2. It is possible by the use of tuberculin and thorough disinfection of cattle-sheds to stamp out tuberculosis from a herd in the course of one year. 3. Cases of infection which may accidentally occur after this preliminary removal of tuberculous cattle can be easily and economically detected by periodical use of tuberculin. 4. Tuberculous animals between two and three years of age can be disposed of on the meat market without serious loss. 5. The slaughter of cows in calf or of milch cows not in an advanced stage of tuberculosis involves a serious loss to the

farmer, and so long as tuberculosis is as prevalent as it is at the present time it is doubtful whether the measures necessary for the extirpation of tuberculosis can be left to private efforts without state help. 6. To remove the chief sources of infection immediate slaughter should be resorted to in the case of all animals in a state of advanced tuberculosis, and of all cows with tuberculosis of the udder. 7. Milch cows and cows in calf in which tuberculosis is not very advanced should be isolated and slaughtered only after they have been suitably prepared for the butcher. The milk of tuberculous cows should invariably be sterilized by boiling. 8. Valuable breeding animals free from advanced tuberculosis or tuberculosis of the generative organs should be isolated; and they can be kept for a time for breeding purposes, provided the calves are isolated and fed on sterilized milk. 9. Measures which do not provide for the removal of all tuberculous animals from a district, for the disinfection of all cattle-sheds in that district, for the periodical testing of all the animals within the district, and which do not give the means of preventing the importation of tuberculous animals can not be expected to yield satisfactory results. On the basis of these conclusions he advises dividing the country into administrative and inspection districts; marking and registration of all cattle and isolation of tuberculous animals, and disinfection of sheds where they have been; immediate slaughter of all advanced cases, and fattening for the market of those less advanced, the slaughter to be done in public abattoirs to insure proper meat inspection. He would have compensation for condemned animals allowed for a year or two; after that, the finding of an advanced case to subject the owner to a penalty. He advises the testing of all introduced cattle to prevent fresh sources of disease; no cattle over six years old should be imported. All milk from tuberculous cattle should be boiled before used, and control of imported foreign dairy produce to insure equal standard of purity as with home produce. In order to prevent disturbance in the dairy business he would enforce these rules gradually, first in one, then in another part of the country, taking five or six years to make them complete and uniform.

The Treatment of Melancholia. L. C. Bruce and H. de Maine Alexander.—The authors say: "We believe melancholia to be a disease of disordered metabolism and that treatment should be directed towards increasing the excretion of waste products of this metabolism through the channels of the urinary and integumentary systems, and we mechanically accomplish this end by administering to our patients an abundant fluid dietary. By means of this treatment the blood gets rid of its overcharge of waste products and the arterial tension falls. We assist digestion by giving milk frequently, and in small quantities, as it is the most easily assimilated food. We consider the forcing of solid food (or such as custards) upon a patient suffering from acute melancholia just as injudicious treatment as would be the feeding of a patient suffering from typhoid fever exclusively on beef-steaks." They give charts illustrating the progress of the treatment in four cases; also a weight table of the last eight cases treated. They believe that thus managed, melancholia is a disease very amenable to treatment.

The Conditions of the Blood in Scarlet Fever. F. Percival Mackie.—From the examination of the blood in twenty-five cases of scarlet fever of varying degrees of severity, and at various stages of the disease, Mackie found that moderate anemia was a constant feature. In half the cases the red cells numbered between 3,500,000 and 4,000,000 per cubic millimeter; the highest count was 4,170,000. The percentage of hemoglobin was in direct ratio to the number of red cells, so that the individual corpuscular richness kept him very nearly normal. All the cases were accompanied by leucocytosis to a pathological degree, that is, over 10,000 per cubic millimeter. This leucocytosis seems to bear no direct ratio to the temperature, but varies rather with the severity of the throat lesion, and to a less extent with that of the rash. In most cases the increase of leucocytosis began about 24 hours after the appearance of the rash, and reached a maximum after the subsidence of the general symptoms, and at times varying in different cases from the third to the tenth day. Mild cases show a maximum increase about the fourth day after the appearance of the rash, and therefore generally not less than 24 hours after the complete disappearance of the rash. In the presence of septic complications the duration and intensity of leucocytosis naturally depends upon the intensity and duration of such complications. In anginal cases the leucocytosis may be very high (93,300 in one case), and in the one fatal case it diminished as the disease became more severe. This seems analogous with the blood condition in pneumonia, where a decrease of leucocytes in a severe case is looked upon as a bad sign. Percentage enumeration of white corpuscles was only carried out in a few instances, but in these the chief increase of eosinophile cells was present (5 or 6 per cent.). These results agree in the main, as he shows, with those of other observers. They also tend to bring the question of leucocytosis in scarlet fever into line with that found in other diseases, notably pneumonia, and indicate that this leucocytosis is a favorable sign, perhaps having some relation to acquired immunity. Its absence, on the other hand, especially in a severe case, is of bad import, and the same is true of a sudden drop in a case of increasing severity. It is of further value in his experience as indicating septic complications such as deep suppuration in the neck or obscure middle ear disease not revealed by the temperature. The condition of the throat has much to do with the leucocytosis which is not excessive when the discharge is free. Contrary to Cabot's experience, Mackie found no leucocytosis until the rash had appeared for twenty-four hours. He remarks that the increase of eosinophile cells is interesting and supports the theory of their having to do with the production of antitoxin, though unfortunately it does not hold good in other diseases where antitoxin is produced. He is inclined to think that these cells are in some relation to skin conditions, as they are increased in many skin diseases. He has not, however, been able to determine any relations between them and the scarlet fever rash or between the leucocytosis and the kidney complications. The deficiency of red blood cells indicates rational use of iron medication, except possibly in cases with arthritic complications.

Annales de l'Institut Pasteur (Paris), July.

Importance of the Micellae in the Chemistry of the Cell. S. Posternak.—Posternak describes a series of comprehensive researches on the structure and changes in colloid substances. He has become convinced that the different groups can be differentiated by the elective character of the adhesive affinity of their micellæ. The adhesive affinities of the micellæ are distinctly elective and specific, like chemical affinities. As protoplasm is made up principally of colloid matter—whose micellæ do not become dissociated without the intervention of a chemical reaction—the most important factor in the structure of the cell may prove to be the elective affinities of the micellæ. The chemistry of the cell is something more than merely molecular; it is evidently to a large extent, micellar.

Annales des Maladies des Org. Gen.-Urin. (Paris), June.

Indications for Nephrectomy in Renal Tuberculosis. F. Legueu.—Patients are frequently treated for tuberculosis of the bladder when the real trouble is incipient renal disease. Nephrectomy is indicated when the tubercular lesions are progressing and causing emaciation. Hemorrhage and pain are secondary indications. Emaciation progressing in spite of medicinal measures clearly indicates nephrectomy. Tubercular infection of the bladder or lungs is not an obstacle to nephrectomy. It is frequently remarkably benefited by it. The ureter must be resected also, if very much affected. The upper end alone may be removed, leaving the rest to atrophy. When the kidney is removed before the appearance of other manifestations of tuberculosis, permanent cure may result. One patient with tuberculosis of the lung, kidney, one ureter and bladder, gained fifteen pounds after the infected kidney was removed.

July.

Pathology of the Seminal Vesicles. R. Duhot.—Acute and chronic inflammation of the seminal vesicles is much more

frequent than generally supposed, Duhot asserts as the results of extensive clinical and experimental researeh. Gonorrhea is not the sole eause—any of the pyogenie microbes may induce it. Chronie spermatoeystitis is espeeially frequent. It may be eonseeutive to chronie gonorrhea or merely the eonsequenee of repeated inflammations in the neighboring organs. The ehanges induced in the vesicles by inflammation are both numerous and severe, interfering with the funetions of the organ and indueing sterility by altering the eomposition of the sperm and killing the spermatozoids. The changes from amyloid degeneration and acute diphtheritie inflammation of the seminal vesicles in two cases are illustrated.

Treatment of Contusion of the Kidney. P. DELBET.—The 320 eases collected from the literature inelude Fenger's, published in THE JOURNAL in 1889. Delbet's eonclusions from this review, from one personal case and eonsiderable experimental research, are that the treatment of renal contusion is of neeessity purely symptomatic. Immediate intervention is indieated on suspieion of intraperitoneal hemorrhage. Hematuria alone does not justify it. Secondary operation is indieated only in case of symptoms and gradually increasing subperitoneal hemorrhage, anuria or persisting hematuria. Intervention, however, is formally indicated in case of seeondary hematuria. The operation should be as eonservative as possible, unless the kidney has been torn from its pediele, or is crushed eompletely or has the "dead leaf" color; any of these conditions demand nephrectomy. Otherwise the kidney should be merely exposed, tamponed and the wound left open. In the personal case deseribed a young man had fallen from a seeond story. The kidneys showed no signs of injury at first, but suddenly hematuria and a swelling in the region developed, apparently eured by nephrotomy and suture. Five months later, however, the symptoms reeurred, and notwithstanding attempted nephreetomy, death oeeurred in a few hours.

Technique of Suturing the Urethra. J. ZADOK.—The healing of an incision or wound in the urethra is mueh facilitated by the technique whieh Zadok has practiced on fifteen patients with brilliant success. The urethra alone is sutured. The wound in the soft parts is merely extensively drained through the gaping lips. This technique is indicated in all cases in whieh the urine is septic or there is suppuration of the meatus or perineum at any point. The permanent sound should be ehanged on the third day, and removed on the fifth to eighth day at latest, and progressive dilatation eommenced.

Presse Medicale (Paris), August 7.

Transmission of the Meningococcus by the Respiratory Passages. BUSQUET.—Nasal mucus from patients with epidemic cerebrospinal meningitis was placed in the nose of guinea-pigs. All the inoculated animals beeame infected and the meningococeus was eultivated from the cerebrospinal fluid of those that died. Other animals inoculated with nasal mucus from the infected animals also died. Nasal mucus from the infected animals was placed in the nose of other animals of the same speeies, and the latter likewise suceumbed to the infection. Cerebrospinal fluid from patients dying from the disease was placed on the nasal mucosa of animals with like positive results.

August 14.

Forceps for Simultaneous Hemostasis and Suturing. J. C. LIMA CASTRO.—The upper surface of the forceps is cut in a series of deep, parallel, transverse grooves. The side view of the blades of the instrument resembles an are of a cogwheel. The foreeps are applied for hemostasis as usual, and the stitches of the suture are taken through the tissues squeezed flat between the blades, one stiteh at the bottom of each groove in turn. The forceps was designed especially for use in hemorrhoids, but has proved valuable in many other operations.

Revue de Chirurgie (Paris), August.

Radiography in Surgery of the Lungs. T. TUFFIER.—Operations on the lungs in which the lesion was aeeurately diagnosed beforehand were successful in 71 per eent., that is, the mortality was only 29 per eent., while the mortality was 60 per eent. in the cases in whieh there was a mistake in the diagnosis. In 300 cases whieh Tuffier has colleeted, the lesion had been ineorreetly diagnosed in 48. In 9 eases the lesion was supposed to be in the lung when it was in reality in the pleura, liver or kidney. Tuffier's personal experienee now includes 25 operations on the lungs. He was able to apply radiography in 8. In 5 the results were extremely satisfactory; in 3 they were negative. He urgently advises radiography and espeeially stereo-radiography, in all eases before operating on the lung. When the radiographie findings eontradict those obtained by perenssion and auseultation, the latter should be negleeted and the radiographie indieations followed. The *x*-rays, however, are liable to fail in ease of living hydatids, and they are unable to afford information in regard to the multiplicity of the foei. The results are liable to be negative when the lesion is on the left side, as the shadow of the heart may eover it. In two eases gangrenous abscesses in the lower lobe of the right lung east distinet shadows, enabling them to be promptly evaeuated with rapid reeovery of the patients. In another ease the entire left lung was opaque, but the shadow was a trifle denser in the lower third, where the dulness was most marked, where the foeus was found. In a fourth case, radiography located the lesion toward the base of the lung while the stethoseope indieated a higher site. The ineision was made at the latter point, with negative results even after resection of the rib. The rib below was then reseeted, and the pleura was found adherent with the lung selerosed and hard, and a series of pockets in the bronehi were diseovered at the points indieated by the *x*-rays. In the three negative eases, the lesion was on the left side.

Laceration of the Vessels in Fractures of the Clavicle. E. GALLOIS.—Laeeration of the vessels is a very serious eomplieation of simple fracture of the elaviele. Only 2 patients reeovered in the 11 eases collected. The sueeesses reeently obtained in operation on the vessels of the neck, justify the assumption that improved technique will reduee the mortality of these injuries of the vessels from fragments of the fraetured elaviele. Free ineision must be made and the entire elaviele reseeted if neeessary. Wounds of the veins seem generally less serious than those of arteries. Gallois' experiments on the eadaver and clinical experienee have shown that the subelavian vein is always injured at the point back of the inner third of the claviele, and the internal jugular, several eentimeters above the sterno-elavieular articulation. Compression or ligature has great possibility of sueeess under these eireumstances. There is no danger conneeted with the interruption of the eireulation of the large veins at the base of the neek. A diffuse aneurysmal hematoma from the subelavian is more serious. All the patients have died, irrespective of the method of treatment adopted. In a personal ease reported, the indirect fracture of the right elavicle was followed by an arteriovenous aneurysm. An injeetion of gelatinized serum was made, but the results were deplorable. Suppuration at the point of injection followed, with eonsequent inflammation of the aneurysmal sac, requiring operation to forestall pyohemia from perforation of an abscess into the large vessels. The wall of the sae had become weakened by the suppuration, and ruptured. Gelatin treatment should be reserved for internal aneurysms in which surgical interference is impossible. It should be absolutely rejected in all eases amenable to operation. In the ease of the aneurysm mentioned above the inner fragment of the claviele was removed and the ineision earried along the entire margin of the sterno-cleido-mastoid muscle.

Anuria in the Course of Carcinoma of the Uterus. PATEL.—Anuria may appear as the first symptom of malignant disease in the uterus, or it may appear suddenly in the eourse of reeognized carcinoma, or may develop progressively. The latter most frequently oeeurs. Nephrostomy by the lumbar route is the operation of choiee, exeept in advanced stages of malignant disease. If the general condition is good, the operation should be performed promptly, to forestall or eure the resulting uremia. In two ureterostomies and six nephrostomies that have been reported in Franee, the patients

survived several months after the latter operation, but death followed in a few days after the operations on the ureters.

Traumatic Rupture of the Spleen.—Two cases of rupture of the spleen from the kick of a horse were related at a recent meeting of the Société de Chirurgie. There were no signs of internal hemorrhage until twenty-four hours afterward, when splenectomy was performed. Only one patient recovered. The other succumbed to septicemia the sixth day. The only signs of the injury at first were pallor, vomiting once, and rigidity of the contracted abdominal wall.

Semaine Medicale (Paris), August 14.

Clinical Utilization of the Dosage of Iron in the Blood. L. Bard.—According to Bard's belief, all the tissues of the organism are constituted on a common plan, and comprise a fundamental species of cell, which ensures their special existence, but has nothing to do with their physiologic activity, and, on the other hand, one or more derived substances, formed by the cells in their protoplasma or outside, which are the only substances endowed with the physiologic function. In the blood, for instance, the fundamental cell is represented by the leucocytes, while the hemoglobin and the serum are the derived substances. According to this theory, the hemoglobin is not a stable substance, with the definite composition usually attributed to it. It varies according as it is freshly formed or ripened, and these variations cause the relations between the hemoglobin and the color of the blood to be modified under diverse circumstances. For example, the iron is increased in proportion to the color, that is, the amount of iron is increased more than the color has changed, in comparison with normal blood, in all cases of simple anemia with normal blood-producing and blood-regenerating powers. On the contrary, the amount of iron is less, in proportion to the color, in all cases in which the regeneration of the blood is defective from cachexia or serious organic disease. In certain affections the diagnosis is uncertain owing to the impossibility of determining whether the accidents observed in chlorosis, for instance, are due to the intensity of the latter, or whether the chlorosis itself is caused or maintained by some organic affection of heart or lungs. Dosage of the iron will promptly decide the question. In simple chlorosis, before it is improved by treatment, the proportion of iron surpasses the color by 10 to 20 per cent. on an average. When the chlorosis is complicated by tuberculosis, the inverse proportion prevails and the iron is 10 per cent. behind the color. The same phenomenon is noted in anemia symptomatic of tuberculosis, with or without chlorosis. This comparative dosage of the iron may also serve to solve some of the problems of the effect of altitude on the blood.

Berliner Klin. Wochenschrift, July 29.

Chronic Pentosuria. F. Meyer.—A patient was treated at Leyden's clinic for chronic pentosuria. The symptoms were extreme emaciation and neurasthenia with rebellious neuralgia. The tolerance for carbohydrates and food rich in nuclein was remarkable. The patient rapidly improved on a mixed diet.

August 12.

Subcutaneous Injections of Gelatin for Hemostasis. Grunow.—Twenty-seven cases of severe internal hemorrhage were treated at Quincke's clinic by the subcutaneous injection of gelatin, with only one death. In 7 cases the hemorrhage was from the lungs, including one of gangrene consecutive to injury from swallowing lye. Five days after the first injection, a quantity of clots was expectorated, with 380 c.c. of blood. Four days later another mass of clots was expelled with less blood. The largest clot was the size of the finger, with distinct ramifications. In fifteen days the sputum was quite free from blood. The patient died a week or so later from the consequences of an abscess, not from hemorrhage. In 8 cases the hemorrhage was in the intestines; 6 in the course of typhoid, 1 in leukemia and 1 in purpura hemorrhagica. In 7 the hemorrhage was from the stomach; from ulcer in 5, carcinoma in 1 and hemophilia in 1. Twice the hemorrhage was from the bladder, twice from the kidney and once from an aneurysm. In the overwhelming majority of cases the hemorrhage was arrested, transiently or permanently. The failures were probably due to inadequate dosage. As the hemostatic influence of the gelatin is transient, it is administered daily as long as necessary, injecting 2 gm. of gelatin in each thigh, dissolved in 100 gm. of salt solution, using a bulb instead of a syringe, with the air filtered through cotton. The apparatus is kept always ready for immediate use. Other hemostatics were applied at the same time, but the recurrence of the hemorrhage when the amount of gelatin was reduced, and the expulsion of large, tough coagula, indicate that the gelatin was principally responsible for the hemostasis. The gelatin is useless unless a sufficient quantity is injected, and repeated as long as the tendency to hemorrhage persists, and for a few days afterward. There are no contra-indications. The temperature commences to rise a few hours after the injection in nearly every instance, sometimes accompanied by a chill, and may reach 102 or 103, or even to 104 F., but is lower at each succeeding injection. In one case a 3 per cent. solution was used, and three tumors developed under cool skin, quite tender, but subsiding in a couple of days. Urticaria was observed several times in one case. These by-effects are disturbing to nervous patients, but their inconveniences are not sufficient to prohibit the use of the gelatin in case of severe internal hemorrhages. The degree of pain of the injection is proportional to the tension of the tissues. The gelatin is absorbed in a few minutes to twenty-four hours or longer. Absorption is more rapid in lean patients with loose subcutis and in patients who have lost much blood. The needle should be pointed in various directions to distribute the gelatin as much as possible. The urine was free from blood in eight days after commencing the injections in a case of acute hemorrhagic nephritis. In a case of aneurysm of the pulmonary artery, systematic injections were followed by the retrogression and final disappearance of all the symptoms of perforation, including a palpable, fluctuating tumor under the skin.

Centralblatt f. d. Grenzgebiete (Jena), August 10.

Surgical Treatment of Essential Epilepsy. A. Pilcz.—An array of 105 communications on the surgical treatment of essential epilepsy, is reviewed in this article, including Beck's and Laplace's articles in The Journal in 1897 and 1899. Pilcz concludes that on the whole we may safely assume that operation is useless. Neither sympathectomy nor craniotomy is capable of insuring a permanent cure nor even a lasting improvement. He personally considers these operations as more serious than usually accepted. Graf, for instance, reports a mortality of 6.1 per cent. from trephining. Three cases of death after sympathectomy have recently been reported, including two reported by Braun, out of nine in which he had operated without a single success.

Muenchener Med. Wochenschrift, August 20.

Stab Wounds of Diaphragm. C. Schlatter.—Frey collected 33 cases of stab wounds of the diaphragm, all fatal but 4, generally from incarceration of the protruding intestine. Schmidt, on the other hand, collected 43 cases in which operation resulted in the recovery of all but 6. When death occurred it was always in the first few hours. These figures indicate the necessity of operative treatment, and the danger of delay. They justify Postempski's recommendation of investigating the wound in the diaphragm with the disinfected forefinger, enlarging the external wound for the purpose if necessary. Schlatter reports 2 cases of stab wound in the lower portion of the thorax, with evidences of hemorrhage into the pleural cavity. The symptoms of marked anemia—scarcely to be attributed to a hemorrhage from the lungs on account of the limited area of dulness—and the vomiting, suggested injury of the diaphragm. The dyspnea and results of percussion and auscultation were not pathognomonic. In one of his cases, a rib had been cut by the blow and he surmised deep injury. He, therefore, resected the ninth rib and enlarged the wound found in the diaphragm from 3 to 8 cm. Blood poured out from the abdomen. The forefinger introduced through the diaphragm revealed an incision 2.5 cm. deep in the edge of the liver and another, shallower, lower down. The bleeding was

checked by compression, when it was found that the kidney had also been incised to a depth of 8 cm. and more. The wounds in liver and kidney were disinfected with small gauze sponges, and the incision in the kidney was sutured with 5 stitches taken deep in the parenchyma. The larger incision in the liver was sutured with 4 stitches through the parenchyma and capsule, and the smaller, with a single stitch. The bleeding was immediately arrested. The abdominal cavity was then cleansed of the accumulated blood with gauze sponges, and the wounds in the diaphragm and pleura sutured with silk. The wound in the skin was then sutured without drainage and the patient rapidly recovered with no symptoms of any reaction on the part of the peritoneum or pleura. He left the hospital in thirty days and continued his mountain climbing without the slightest inconveniences. This patient was a printer, 24 years old. The second patient was 17, and the stab wound was in the seventh interspace, and extended into the pleural cavity. The eighth rib was resected and an incision 3 cm. in length discovered in the diaphragm. A sound introduced failed to demonstrate any opening in the peritoneum. A vessel in the wound in the diaphragm was bleeding profusely. This was ligated and the wound in the diaphragm closed by four silk stitches. After removal of the blood clots from the pleural cavity the wound was sutured, leaving a gauze drain. The cyanosis and dyspnea seemed somewhat intensified by the operation, but soon subsided. Slight temperature was observed the third day, but otherwise recovery was uneventful and rapid. The patient was dismissed in thirty-three days completely recovered. Schlatter observes that the immigration of Italian laborers may increase the frequency of such wounds, as almost all of the 89 cases of stab-wounds of the diaphragm on record were inflicted by Italians. In a case he published a few years ago, a portion of the omentum, the size of a fist, protruded from the wound in the pleura. He was able to reduce the hernia and suture the diaphragm with six silk stitches and patient recovered.

Thrombosis of Left Innominate Vein with Pericarditis. P. v. ZEZSCHWITZ.—A case is described of thrombosis of the left innominate vein from compression, the consequence of a pericardial exudate superposed on a pleuritic effusion. The latter alone had been diagnosed, and the unilateral hydrothorax of 5 liters was a surprise, also the condition of the heart, which was found small, but intact. Immediately after evacuation of the pleural effusion by puncture during life, the hitherto inaudible heart sounds became distinct, but they disappeared again as the pleural area of dulness increased.

Tracheal Hemoptysis. G. AVELLIS.—Obstinate constipation and hemorrhoids with violent straining at stool for years, resulted in a varicose condition of the veins in the anterior upper space between the rings of the trachea in a case described. The consequences were occasional hemorrhage from the dilated veins. The cause of the hemoptysis was surmised by Avellis from theoretical study of the conditions, and on examination the varicose veins were discovered at the point where he had anticipated finding them. Cauterization of the dilated veins soon cured the tendency.

Medicinal Phosphorus Poisoning. NEBELTHAU.—A child of 2 years took 3 mg. of phosphorus in the course of sixty hours, combined with cod-liver oil in the usual proportions. The child was well-nourished, but showed symptoms of rachitis. Symptoms of rapidly fatal phosphorus intoxication developed, confirmed by the pathologic changes in the organs. In future, Nebelthau proposes to reduce the proportion of phosphorus from .01 to .001 per cent., a teaspoonful twice a day, not increasing the dose until convinced of its harmlessness.

Wiener Klinische Wochenschrift, August 8.

Collateral Arterial Circulation after Complete Obliteration of all the Arteries at the Arch of the Aorta. W. TUERK.—The origins of all the large arteries in the arch of the aorta were completely obliterated by an endo-arteritis on a basis of lues. The clinical picture was the exact reverse of what is observed in stenosis of the isthmus of the aorta. The patient was a baker's assistant, 44 years old. All the arteries in the trunk, head and extremities were almost if not entirely pulseless, while the cervico-abdominal aorta and the femoral arteries pulsated vigorously. The entire trunk, especially the back, was covered with dilated, tortuous and strongly pulsating arterial vessels, with an upward current. There was also a small aneurysm on the arch of the aorta compressing the left recurrent laryngeal nerve. The right coronary artery was also occluded. The only symptoms had been occasional pains, as from pressure, in the extremities and weakness, with slight transient vertigo on exertion. The arms toward the last became easily fatigued and the patient became emaciated, with symptoms indicating the small aneurysm. The remarkable feature of the case was that the symptoms were so few and slight when the supply of blood to the brain, neck and arms had been completely cut off for a long time, without essential functional disturbances.

August 15.

New Blotting-Paper Test of the Blood. S. PERTOT.—The factors that enter into the absorption of fluids by a porous substance are both physical and chemical. Pertot suggests a new method of clinical diagnosis of the blood at the bedside, which is based on absorption, and is so simple and inexpensive that it is within the reach of every one. All that is required is a square of good blotting paper about the size of a playing card. A small amount of blood is aspirated in a pipette and mixed with water, in the proportion of 2.5 cm. to 1 cm. The blotting paper is placed on a sheet of glass and the pipette is placed inverted upon it, held perpendicularly in a small standard, just touching the paper. The fluid is slowly absorbed by the paper, and forms rings of various hues, the tints and size of the rings characteristic of the different composition of the blood. Two pipettes are always used, in one the blood is diluted with water from the faucet and in the other with distilled water, as the resulting pictures differ with these media, probably owing to the presence of salts in the undistilled water. Pertot has made hundreds of these blotting-paper pictures of the blood, and found them invariably identical under the same conditions of health and disease. The color fades in time, but the rings are still perceptible. The clearest pictures were obtained with the blood of new-born infants; their blood contains a larger proportion of reds than that of adults. Paper treated with dilute hydrochloric acid exhibits a picture resembling a narcissus flower.

Operative Evacuation of Mastoid Abscess with Schleich's Local Anesthesia. G. ALEXANDER.—Eleven cases are described in which general narcosis was contra-indicated on account of pregnancy, pleuritis, nephritis, severe anemia, or other cause, and the operation was performed under local anesthesia alone in Politzer's clinic. The conditions of success are that the patient retain the same position throughout the entire operation and if pain is experienced, that he announce it to the operator without immoderate manifestations. These conditions were fulfilled in all but one case, and in this, the operation was successfully concluded in spite of the patient's restlessness. The ear affection had lasted from three weeks to eight months in the various cases. The amount of fluid used varied from 35 to 70 c.c., corresponding to 7 to 14 cg. of cocain, but as most of it is evacuated at once by the operation, very little can be absorbed. Each step of the operation is preceded by thorough infiltration of the soft parts down to the bone, especially of the attachment of the sterno-cleido-mastoid muscle, which is pushed back to expose the bone completely. The deeper portions of the bone are injected merely to anesthetize the granulations and swollen endostium. Solid bone is not sensitive. Chiseling the process is felt as a mere pounding, disagreeable, but not painful. The noise is reduced by covering the face of the mallet with gauze, and the patient's attention should be diverted at first by conversation with an attendant. The analgesia is not so complete as in general narcosis, but the superior advantages in certain cases are so marked that the method is recommended for all tranquil, trusting patients. Even nervous, excited patients may become tranquil during the operation. All the patients made a

normal recovery. In five cases no pain was experienced and the patients had appetite for lunch. In the others, there was moderate pain in the wound or head. In two cases the patients vomited several times, and in one, radiating pains were experienced in the upper jaw for a time.

Xeroderma Pigmentosum. A. HALLE.—Only two cases of complete recovery from this affection are on record, although a few authors have reported long survivals. Most of the subjects die in youth, generally from carcinoma cachexia. A personal observation is described in detail. On the basis of this case and those in the literature, Halle is convinced that the influence of sunlight in this affection has been exaggerated, and that it is a factor only in the initial erythema. The succeeding manifestations, the pigmented hypertrophy, the atrophy of the skin, the tendency to malignant proliferation of the epithelium, suggest the assumption of premature senility as a more plausible explanation of the cause of the disease.

Vratch (St. Petersburg), August 3.

Peritoneal Adhesions. E. Y. KATUNSKY.—Peritoneal adhesions in general, and especially the typical adhesion described by Gersuny, afford very important information in regard to abdominal affections and the organs of the abdominal cavity, including the female internal genital organs. It is of the greatest importance to determine the presence or absence of peritoneal adhesions before operating, and even before deciding on the method of operation. The existence of peritoneal adhesions—even if merely suspected—is an argument against the vaginal route. Much research is needed to establish the typical objective signs of various peritoneal adhesions, the origin, the clinical picture and the appropriate operation. Among the cases cited is that of a boy who was suddenly seized with vomiting spells eleven months after contusion of the abdomen. The appetite was good and there was no nausea, but pains appeared in the epigastric region four or five hours after eating. This region was also abnormally protuberant. The laparotomy showed that the upper surface of the transverse colon was adherent to the peritoneum and small intestine its entire length. In another case, in which the liver, gall-bladder and transverse colon were connected by peritoneal adhesions, the symptoms had been oppression and pains in the epigastric region after eating, nausea, vomiting, occasionally hemorrhagic, eructations with the odor of rotten eggs, and constipation. The patient was an adult with a history of contusion of the abdomen fifteen years before. The lesion had been diagnosed an ulcer of the stomach before operating.

[Gersuny's typical adhesion, described in the *Arch. f. Klin. Chir.* lix, p. 102, was discovered in twenty-one cases, all characterized by an identical clinical picture. The pseudo-membranous band is about 4 cm. long by 2 or 3 wide, and runs parallel with the outer layer of the mesocolon, from the point where the latter is attached to the intestine to its origin in the parietal peritoneum. The band may be adherent to the mesocolon or stretch above it like a bridge. In either case it prevents any movement of the intestine from the lateral abdominal wall toward the median line, and may cause volvulus, or invagination of the sigmoid flexure into the rectum, according as the sigmoid mesocolon is abnormally long or short. In other cases, the symptoms are constant pain in the lower abdomen, with violent pain in the left side just before defecation, and generally chronic constipation. The appendix was palpable and tender, and the left side still more sensitive at a symmetrical point. The pains were usually increased by movements, and consequently the working capacity was much diminished. According to the patients' stories there was no preceding illness, and the pains maintained their characteristics in spite of all kinds of treatment, for years, unmodified. In 2 cases there was a history of perityphlitis; in 1 an intestinal catarrh, and in 1 the pains were first noticed after lifting a heavy weight and persisted unchanged for six years until operated on. All but 3 were women, and Gersuny is inclined to attribute the adhesion to some effusion of blood into the peritoneum, occurring without symptoms, during menstruation or from trauma, in a certain proportion of the cases, which may likewise explain the etiology of appendicitis. Inflammation may develop secondarily to the formation of the adhesion and restriction of the movements of the appendix. The adhesion is not found unless carefully sought for, lifting up the colon and tracing the sensitive region inward from the anterior iliac spine. Irrigation and abdominal massage may be required to complete the cure. All Gersuny's patients were cured or very much improved by the operation.—ED.]

Queries and Minor Notes.

CHAPARRO ARMAGOSO.

CAMERON, TEXAS, Aug. 29, 1901.

To the Editor:—In reference to the query of S. A. F., in THE JOURNAL of August 24, I beg leave to submit the following:

Chaparro Armagoso is Spanish for bitter chaparro, a thorny bush that grows in Southern Texas and Northern Mexico. Synonym: armagoso; chaparro bush; goat bush.

Part used: bark of root. Natural order: Simarubaceæ. Properties: tonic, astringent, and somewhat antiperiodic.

It is much used in this section for chronic dysentery, and is an excellent remedy in doses of 30-60 minims of fluid extract. The history of its use is about as follows: It has long been used by the Mexicans in the form of a tea made from the root. A physician of Southwestern Texas, seeing the success attending its use, sent the root to one of the manufacturers, who prepared from it a fluid extract. It is prepared by Parke, Davis & Co., and perhaps by others. Respectfully, R. L. JONES, M.D.

TREATMENT OF TUBERCULOSIS WITH TUBERCULIN.

DENVER, Sept. 2, 1901

To the Editor:—In THE JOURNAL of July 13, page 151, there is a paper copied from a German medical journal, "Treatment of Tuberculosis with Tuberculin," by Dr. Goetsch. I am most anxious to get some of the tuberculin used by him for the treatment of cases now under my care. Could you tell me in next issue of THE JOURNAL or as soon as convenient where and how it may be obtained? And much oblige, Yours, etc., A. E. F.

ANS.—Koch's tuberculin T. R. can be obtained from Victor Koechl & Co., New York City. Dr. Goetsch used both the old and the new tuberculin. The original article was published in the *Deutsche Med. Wochenschrift*, June 20.

STATISTICS IN REGARD TO TYPHOID FEVER.

A correspondent is anxious to get the following statistics in regard to typhoid fever: 1. Number of cases that occur annually. 2. Number of deaths annually from typhoid. 3. Percentage of deaths from hemorrhage and perforation, respectively.

X-RAY DERMATITIS.

WAYCROSS, GA., Aug. 23, 1901.

To the Editor:—Can you advise me where I can get literature on constitutional effects (if any) of *x*-ray burns? I have a case in which the patient has developed various nervous troubles. I would also be pleased to have your opinion in regard to after-effects from *x*-ray dermatitis, and death of soft parts from same cause; does sloughing take place shortly after burn is received, or at a remote period? Thanking you in advance for courtesy.

Yours truly, R. P. I.

ANS.—Some cases are on record in which exposure up to an hour with non-focused tubes produced no inflammation of the skin, but accumulative effects from numerous exposures are to be borne in mind and feared. Single exposures of much less duration with focused tubes have been followed by severe burns of *x*-ray dermatitis. The symptoms of the mild form consist of inflammation, hyperemia, papules, vesicles, itching with marked pigmentation, loss of the fine lanugo hairs, and marked diminution of sweat and sebaceous secretions. This in turn may be followed by the graver condition characterized by sloughing of greater or less degree, dependent upon individual peculiarities. Dermatitis may appear any time from three to fourteen days after exposure, and sloughing may occur either during this or at a later period. A year or more may be required for recovery in the graver cases, and is accomplished usually either by skin grafting or cicatrization. The following references may be consulted: *Deutsche Medicinische Wochenschrift*, 1896, No. 30, p. 481 (Marcuse); ibid., No. 41, p. 665 (Sehrwald); ibid., No. 42, p. 681 (Marcuse); ibid., 1897, No. 7, p. 105 (Forster); ibid., No. 26, p. 417 (Mles); *Berliner Klinische Wochenschrift*, No. 23, 1898 (Behrend); *Johns Hopkins Bulletin*, February, 1897, 23 cases by Gilchrist. See various articles and abstracts in THE JOURNAL.

Books Received.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF GEORGIA. Fifty-second Annual Session, 1901. Cloth. Pp. 436. Atlanta, Ga.: Published by the Association. 1901.

THE ELEVENTH ANNUAL REPORT OF THE EYE, EAR, NOSE AND THROAT HOSPITAL, of New Orleans, La., Jan. 1, 1900, to Dec. 31, 1900. Paper. Pp. 53. New Orleans: L. Graham & Son, Ltd. 1901.

THE FOOD VALUE OF MEAT. FLESH FOOD NOT ESSENTIAL TO MENTAL AND PHYSICAL VIGOR. Illustrated. By W. R. C. Latson, M.D., editor of Health-Culture. Cloth. Pp. 72. Price, 50 cents; paper, 25 cents. New York: The Health-Culture Co.

THE ESTIVO-AUTUMNAL (Remittent) MALARIAL FEVERS. By Charles F. Craig, M.D. (Yale), Acting Assistant-Surgeon, U. S. A. Illustrated by 2 Colored Plates and 21 Cliuical Charts. Cloth. Pp. 221. Price, $2.50. New York: William Wood & Co. 1901.

PRACTICAL FIRST PRINCIPLES. Simplifying the Study of Normal and Abnormal Structure and Function, and Aiding Diagnosis. Designed for the Use of Students and Practitioners of Medicine. By A. H. P. Leuf, M.D., Associate Editor of the *Medical Council*. Cloth. Pp. 105. Price, $1.00 net. Philadelphia: The Medical Council. 1901.

THE READY REFERENCE HANDBOOK OF DISEASES OF THE SKIN. By George Thomas Jackson, M.D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. With 80 Illustrations and 3 Plates. Fourth Edition, thoroughly revised. Cloth. Pp. 642. Price, $2.75. New York and Philadelphia: Lea Brothers & Co. 1901.

New Patents.

Patents of interest to physicians, issued August 20 and 27:

680,689. Device for distributing odors. Charles T. Bradshaw, Philadelphia.

681,100. Disinfectant holder. Daniel N. Calkins, Rochester, N. Y.

680,723. Depurator. Ruth J. Maurer, La Crosse, Wis.

680,936. Bristle probaug. Richard P. McCully, Brooklyn, N. Y.

680,814. Invalids' bed. Patrick C. Smith, Indianapolis, Ind.

680,898. Machine for impregnating thread with virus. O. Thomas, Verdun, France.

681,174. Treating curvature, etc. K. Wegner and E. Repke, Berlin, Germany.

681,010. Vaginal syringe. Frank Y. Wilhoft, New York City.

34,964. Design, electrotherapeutic device. B. G. Stauffer, Harrisburg, Pa.

681,664. Exercising apparatus. John S. Addleman, Cleveland, Ohio.

681,387. Speculum and medicine distributor. Martin Bohlig, St. Paul, Minn.

681,494. Chin rest for ophthalmometers. John E. Chambers, Chicago, Ill.

681,622. Respirator. Harvey S. Cover, South Bend, Ind.

681,498. Separator for cellulose. Robert Dietrich, Merseburg, Germany.

681,631. Bath cabinet. Warren A. Durrin, Woodville, Wis.

681,483. Sterilized surgical dressing. Henry C. Lovis, New York City.

681,568. Making ammonium ichthyol sulfonate. A. C. McLaughlin, Austin, Tex.

681,505. Quinin methyl-dihydrazin perchlorate and making same. Max Meyer, New York City.

681,331. Combination massage roller and exerciser. Geo. W. Milkman, New York City.

681,333. Spitting pot. John F. T. Mjoen, Christiania, Norway.

681,338. Ether inhaler. Gustav Otto, Jersey City, N. J.

681,463. Apparatus for treating diseases. H. E. Waite, New York City.

681,289. Apparatus for rendering water pure. J. S. Wrightnour, Oil City, Pa.

34,994. Design, inhaler. Moriz Bauer, Vienna, Austria-Hungary.

34,995. Design, bag for ice or water. C. W. Meinecke, Jersey City, N. J.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., August 22 to 28, 1901, inclusive:

John R. Clark, contract surgeon, from duty at the General Hospital, Presidio of San Francisco, Cal., to his home in New York City, for annulment of contract.

Guy L. Edie, major and surgeon, U. S. A., sick leave extended.

William R. S. George, contract surgeon, to proceed to Ponce, P. R., for duty during the absence on leave of Captain Beujamin Ten Eyck; on completing this duty he will rejoin his proper station, San Juan, P. R.

William O. Owen, major and surgeon, U. S. A., leave of absence granted.

James Reagles, contract surgeon, leave of absence from the Department of the Columbia extended.

Roy A. Wilson, contract surgeon, previous orders requiring him to proceed to San Francisco, Cal., en route for duty in the Philippines revoked.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Aug. 31, 1901:

P. A. Surgeon R. M. Kennedy detached from the *Bennington* when placed out of commission, and ordered home.

P. A. Surgeon D. H. Morgan, detached from the *Monongahela*, and ordered to the Naval Hospital, Newport, immediately, for treatment.

Asst.-Surgeon R. T. Atkinson, detached from the Washington Hospital, and ordered to the *Wabash*, immediately.

Asst.-Surgeon A. W. Balch, detached from the *Wabash* and ordered to the *Monongahela*, immediately.

Medical Inspector D. N. Bertolette, detached from the *New York* and ordered to the *Brooklyn* as Fleet Surgeon.

Surgeon J. E. Gardner, detached from the *Brooklyn* and ordered to the *New York*.

Asst.-Surgeon J. M. Brister, assigned to the Marine Brigade, Asiatic Station.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service, for the seven days ended Aug. 29, 1901:

Surgeon Preston H. Bailhache, detailed as delegate to represent the service at the meeting of the American Public Health Association, to be held in Buffalo, N. Y., September 16-20.

P. A. Surgeon A. C. Smith, granted leave of absence for one day, Aug. 21, 1901, under paragraph 181, Regulations, U. S. Marine-Hospital Service.

A. A. Surgeon W. C. Todt, granted leave of absence for 14 days from August 18.

Hospital Steward F. S. Goodman, granted leave of absence for thirty days from September 1.

Hospital Steward C. A. Warhanik, granted leave of absence for thirty days from September 4.

Hospital Steward L. P. Hall, relieved from duty at Boston, Mass., and directed to proceed to Vineyard Haven, Mass., and report to medical officer in command for duty and assignment to quarters.

RESIGNATION.

Hospital Steward C. A. Warhanik resigned, to take effect Oct. 4, 1901.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 31, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 11-18, 1 case.
Illinois: Freeport, Aug. 17-24, 1 case.
Maine: Aroostook County, Aug. 2, present.
Massachusetts: Boston, Aug. 17-24, 5 cases, 2 deaths.
New Jersey: Newark, Aug. 17-24, 5 cases, 2 deaths.
Pennsylvania: Philadelphia, Aug. 17-24, 7 cases, 1 death; Pittsburg, Aug. 19-24, 1 death.
Wisconsin: Green Bay, Aug. 18-25, 3 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, July 14-28, 64 deaths.
Canada: Woodstock, District, Aug. 2, 80 cases.
Colombia: Panama, Aug. 12-19, 7 cases.
Ecuador: Guayaquil, June 12-22, 3 deaths.
Great Britain: London, Aug. 2-10, 11 cases, 1 death.
India: Bombay, July 23-30, 2 deaths; Calcutta, July 20-27, 4 deaths; Madras, July 20-26, 3 deaths.
Italy: Messina, Aug. 3-10, 5 cases, 2 deaths; Naples, Aug. 4-11, 123 cases, 26 deaths.
Japan: Osaka and Hiogo, July 22-27, 1 case.
Netherlands: Rotterdam, July 27-Aug. 10, 3 cases.
Spain: Malaga, July 1-31, 2 deaths; Valencia, July 27-Aug. 3, 11 deaths.
Straits Settlements: Singapore, July 13-20, 1 death.
Uruguay: Montevideo, July 6-20, 43 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, July 14-20, 7 cases.
Cuba: Havana, Aug. 10-17, 1 case, from Fincia Riquena.
Mexico: Tampico, July 26-Aug. 2, 2 cases, 1 death; Vera Cruz, Aug 10-17, 6 cases, 2 deaths.

CHOLERA.

India: Bombay, July 23-30, 5 deaths; Calcutta, July 20-27, 22 deaths; Madras, July 20-26, 1 death.
Japan: Yokohama, July 31, 1 case.
Java: Batavia, July 13-20, 10 cases, 6 deaths.

PLAGUE—INSULAR.

Philippines: Manila, July 6-13, 12 cases, 10 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, July 20-28, 3 deaths.
India: Bombay, July 23-30, 113 deaths: Calcutta, July 20-27, 16 deaths: Karachi, July 21-28, 5 cases, 7 deaths.

Educational Number

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Original Articles.

A METHOD OF TEACHING RELATIONAL ANATOMY.*

C. M. JACKSON, M.S., M.D.

ASSISTANT PROFESSOR OF ANATOMY, UNIVERSITY OF MISSOURI.

COLUMBIA, MO.

For many centuries the science of anatomy has been universally recognized as the foundation for the study of medicine. It is, therefore, evident that the best method of studying and teaching this fundamental subject is a problem of great importance. To anatomy belongs the credit of being the first science to adopt the objective, or laboratory method of study. Anatomists long ago insisted that the only way to gain real knowledge of anatomy is by dissection. The art of dissection has therefore been diligently cultivated for many centuries, and the practical limit of its development was reached nearly one hundred years ago. Indeed, the anatomists of the present day are perhaps inferior in the art of dissection to those of the previous generation. This is undoubtedly due to the increased attention paid in recent years to the related subjects of comparative anatomy and embryology, and to the new world of facts revealed in microscopic anatomy or histology. The effect of these studies has been to revolutionize the science of anatomy, so that its present scope and significance are perhaps better expressed by the more comprehensive term, morphology.



Fig. 1.—From photograph of head and neck, anterior view. Lines I to XVII indicate where the sections were made. Female subject, age about 60 years. Landmarks are clearly shown.

Yet, with all the time spent in dissection, and in spite of the flood of light thrown upon the subject by recent advances in comparative and microscopic studies, we still fail to accomplish the desired end. The ambition of the student of anatomy is, or should be, the ability to *see through* the body, perceiving in the mind's eye all the structures included therein, and their complicated relations to each other. This ability the student must gain somehow, if he is to achieve real success in medicine or surgery; for upon this knowledge are based both physical diagnosis and surgical procedure.

Bearing this in mind, and also the fact that the average medical graduate is very deficient in his knowledge of anatomy from this standpoint, it must be admitted that there is something wrong with our present and past methods of teaching the subject. Wherein do we fail? The reason, it seems to me, lies in the fact that in all the time we devote to the study of the various branches of anatomy—comparative anatomy, osteology, dissection, descriptive anatomy, histology, embryology, etc.—in all these branches we spend practically our entire time upon the study of the individual organs and organ-systems, while practically no time is spent in considering the anatomical relations of these organs to each other, and to the surface of the body. To me it seems clear that so long as this is true, the student's knowledge of anatomy, at least from the standpoint of medicine, must necessarily remain incomplete and unsatisfactory.

This being true, the question arises: What method can we use to study what we may term the relational anatomy of the various organs? Take the liver, for example. How shall we proceed to study the exact spatial relations of the liver to the neighboring structures, such as the stomach, kidneys or lungs: and how shall we determine its relations to the surface of the body? It is evident that the ordinary methods of dissection give us very imperfect knowledge in this regard, for in the very act of dissection we must necessarily remove those surrounding structures whose relations it is so important to determine. There is, I believe,

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

only one way in which relational anatomy can be thoroughly, systematically and satisfactorily studied; and that is by means of sections made in various planes in the different regions of the body. Only by this method are the organs made visible in their actual spatial relations to each other. This is by no means a new method of investigation. It has long been used in histology and embryology, where objects are too small or too delicate to be studied otherwise. It has also been applied, to a very limited extent, to the gross anatomy in a few special regions of the human body.[1] But on account of certain difficulties in the application of the method, it has never come into general use. The method which I have to present, therefore, while old in principle, is new in its application; since, so far as I am aware, in no other laboratory of anatomy is it made a regular part of the system of instruction.



Fig. 2.—Lateral view of the head and neck, photographed from the same subject as Fig. 1.

The plan which I have worked out for instruction in relational anatomy involves the following consecutive steps: 1. Hardening of cadavers. 2. Study of surface form. 3. Making of sections. 4. Study and drawings of sections. 5. Reference to literature. 6. Written report of results.

Hardening of Cadavers.—Suitable cadavers, selected especially for this work, are injected, not with the usual embalming liquids, but with 50 per cent. formalin, that is, pure formalin (40 per cent. formaldehyde) diluted with equal volume of water. I inject about one gallon, or more if possible, of this liquid into the arteries, usually through the common femoral. This may be followed in a few hours by a second colored injection mass, if desired. Within a few days all the softer tissues of the body become thoroughly hardened. Every organ is thus fixed perfectly in the exact shape and position it occupied during life. Sections may be made at any time after one week. If the cadaver is to be kept some time before using, all that is necessary is to apply vaselin to the skin and wrap with oil muslin bandages to prevent drying. The cadaver will then preserve perfectly, at any temperature, for an indefinite time.

Study of Surface Form.—For the work in relational anatomy, the class—which has previously completed its dissections by the ordinary method—is divided into groups of two, who work together. Two are assigned to the head and neck, two to the thorax, two to the abdomen, and two to each arm and leg. The first thing that each student does is to make a very thorough study of the surface form of the region to which he is assigned. Special stress is laid upon the landmarks, whose relations to the underlying structures are of great importance. The student makes careful measurements, and records his observations in a note-book kept for the purpose. A mounted skeleton, an Auzoux manikin, and various other models are at hand for comparison.



Fig. 3.—Posterior view of the head and neck. Photograph from same subject shown in Figs. 1 and 2.

At this point, photographs are taken showing different views of each region. A set of these photographs is supplied to each student, and they serve a double

1. Braune, Macewen, Dwight, and others, have made sections for the investigation of relational anatomy, chiefly by the freezing method.

purpose. In the first place, they furnish an exact picture record of the surface form; and secondly, by means of reference lines drawn later in ink, they serve to indicate the exact level and plane of each section taken. This is a very important feature. In case the photographs were not obtainable, it would be necessary to make very careful outline drawings, upon which the landmarks and reference lines would be shown.

Making of Sections.—Having carefully studied the surface form, and having a record of his observations in notes and photographs, the student now proceeds to cut sections through the body in the desired planes. As soon as made, the sections should be thoroughly washed with water, taking care not to displace any organs. Blood-clots, fecal material, excess of formalin, etc., are thus removed. Cross sections of the extremities are best made at definite intervals, every half inch or inch. In the head, the sections need not be more than one-fourth inch apart. In the trunk, sections should be somewhat thicker. I have found that it facilitates the handling of sections, and especially the problem of determining the exact level of a given structure, if the sections in the trunk region be made to pass through the intervertebral disks. Then each slice corresponds to the body of a vertebra. It is remarkable how well sections made by this method will hold together, even when they pass through the intestines. Occasionally a piece becomes loose or detached, but it is easily secured in place by a stitch of thread. In the head and trunk, and a few special regions, besides cross sections, coronal and sagittal sections are also necessary. Wherever possible, consecutive sections are left attached to each other at one edge by the skin. The sections are made with a long butcher knife and an ordinary butcher's saw (for bones). If the tissues are thoroughly hardened, the sections are easily and smoothly made.

In this connection, I may remark that this formalin method offers several advantages over the method of frozen sections. No freezing is necessary; the sections are made more easily and smoothly; and, finally, they do not thaw out and become loose or flabby upon handling. This method is also superior to all embedding methods, since not only the surfaces of the sections, but also the structures between, are accessible for examination. In fact, it combines the advantages of dissection with those of plane sections.

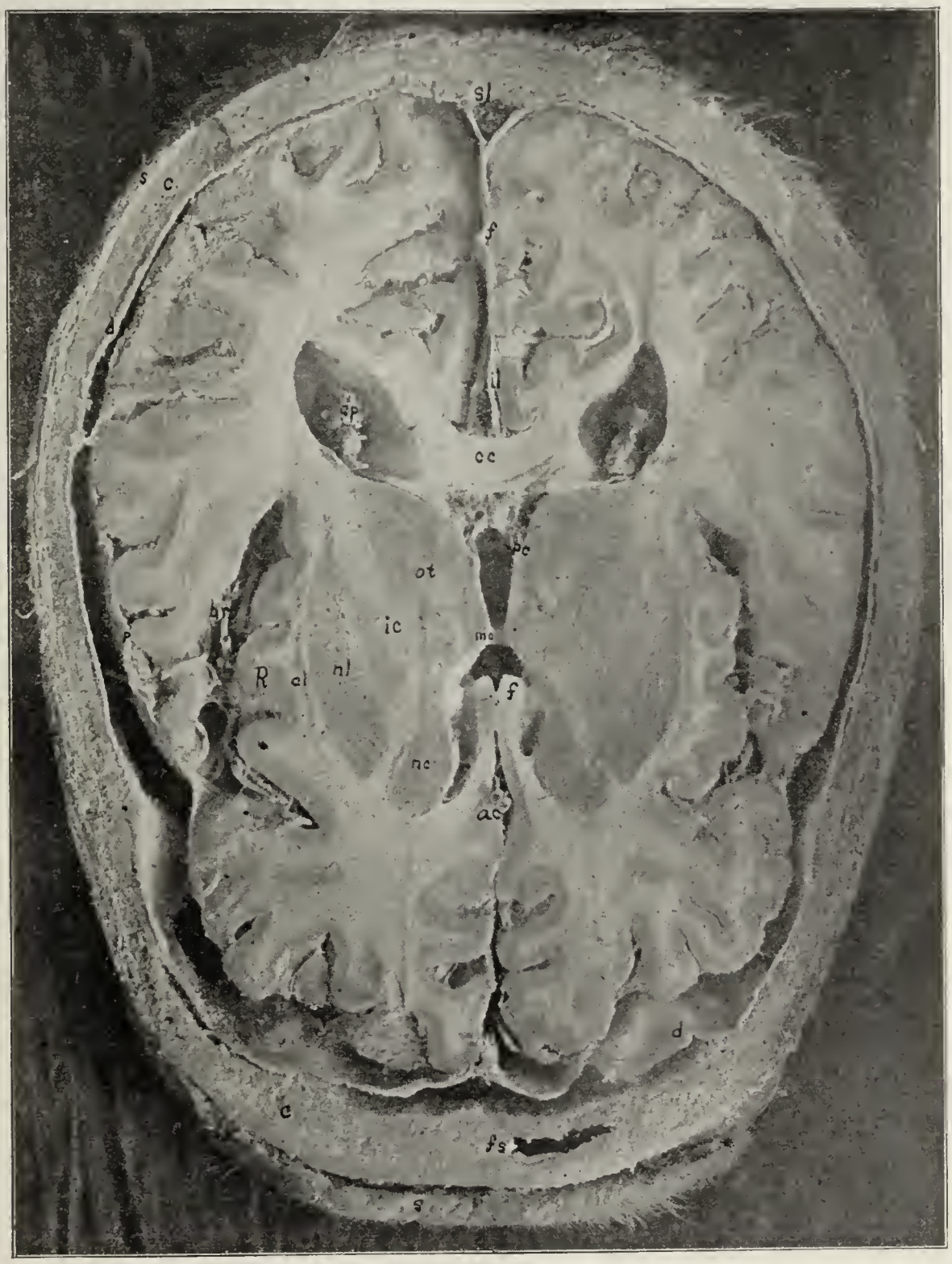


Fig. 4.—From photograph showing horizontal section through the head, viewed from above, at the level indicated by reference line III, in Figs. 1, 2 and 3. Section passes through the frontal, temporal, and occipital lobes, and the Island of Reil. *s*, Scalp; *c*, cranium; *d*, dura mater; *p*, pia mater; *fs*, frontal sinus; *f*, falx cerebri; *sl*, sup. longitudinal sinus; *il*, inferior longitudinal sinus; *ac*, anterior cerebral arteries; *br*, branches of middle cerebral arteries; *r*, Island of Reil; *f*, fornix; *cc*, corpus callosum; *cp*, choroid plexus in lateral ventricle; *mc*, middle commissure (in 3d ventricle); *pc*, posterior commissure; *ot*, optic thalamus; *ic*, internal capsule; *nc*, nucleus caudatus; *nl*, nucleus lenticularis; *cl*, claustrum.

Dr. Terry[2] has suggested that the bones be decalcified with acids, thus avoiding the use of a saw. This is perhaps admissible in the head region, where dense skeletal parts are so closely related to delicate organs; but elsewhere, I consider it desirable for the student actually to saw through the bones upon reaching them. The location and physical characters of the skeleton are thereby more firmly impressed upon his mind. Even through the head region, as the accompanying figures show, excellent sections can be made without decalcification, which is therefore necessary only when very thin sections are desired.

Study and Drawing of Sections.—After the sections are cut, the student begins the most important part of

2. Proceedings of the Association American Anatomists, Washington, D. C., 1900.

his work, viz., the study of the sections. Every structure which appears in each section must be identified, every nerve and blood-vessel followed. The position of the various organs with respect to each other, and to the surface, must be carefully observed and recorded in a note-book. The sections are studied first separately, and later collectively, by placing them together in their natural order. Finally, in order to impress the relations more strongly upon the student, he is required to make a careful outline drawing of each section. We have adopted for this work a method of drawing which makes it easy and at the same time very accurate. A piece of plate glass in an open frame is laid directly upon the section which is to be drawn. Then, by means of pen and India ink, the outlines are traced, showing all the organs visible through the glass, in their exact relations. When the ink is dry, a sheet of drawing paper or bristol board of the proper size, is placed in the frame and fastened by an inner frame behind the glass which contains the ink outline (See Fig. 8). Upon holding up the frame toward the light, the ink outline shows through distinctly, and can readily be traced with a pencil upon the drawing paper. At night the drawings are readily transferred by placing the frame over an electric light. The principle of tracing upon glass was suggested by one of my students, the drawing frame being an invention of my own. The most difficult and important part of the drawing, an accurate outline of the various structures, is now upon the drawing paper. The pencil outline is retraced with ink, and the details are readily filled in with ink, water colors, etc., according to the taste of the individual student. These drawings are very highly prized by the students, and, indeed, form a valuable set of plates for future reference.

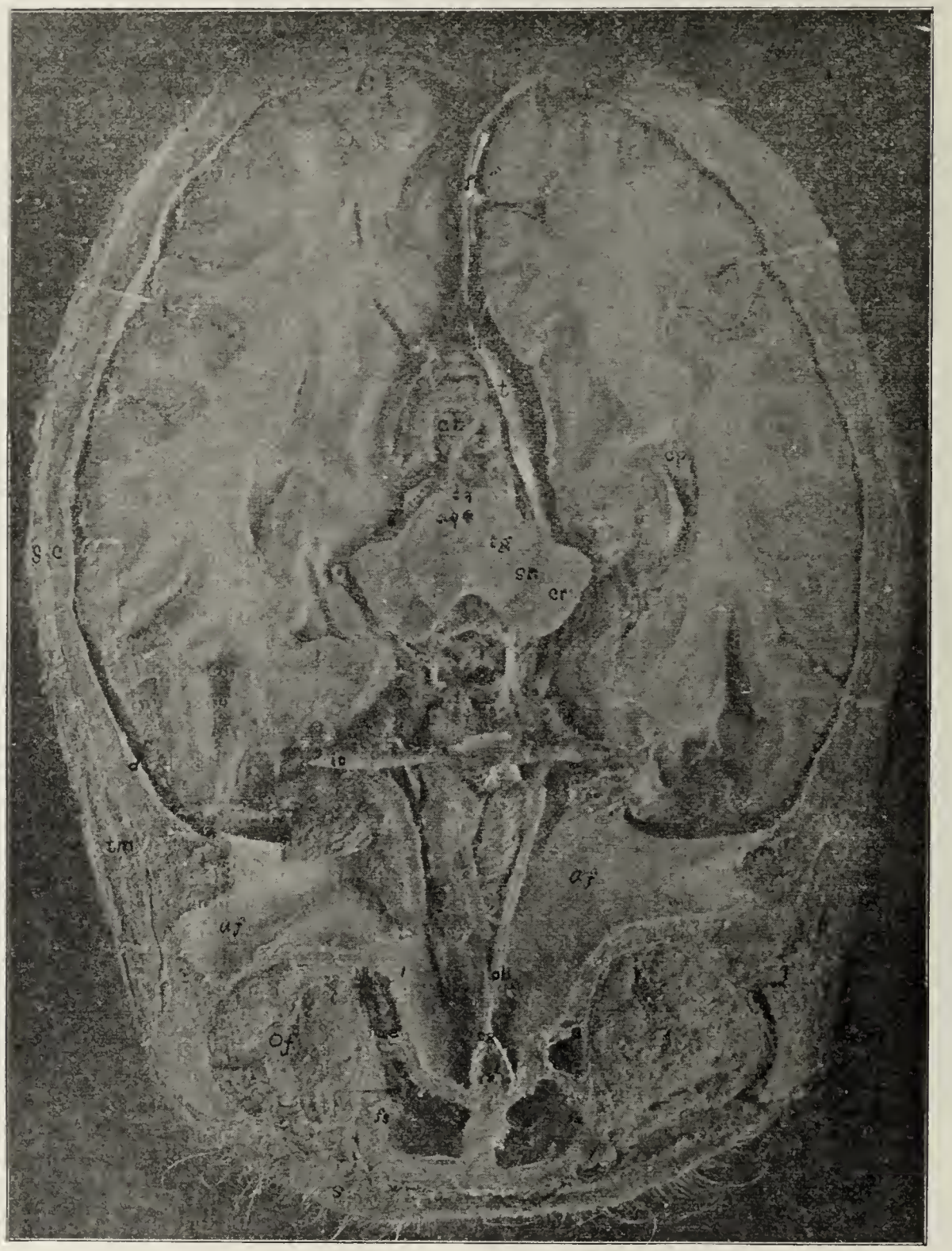


Fig. 5.—From photograph showing horizontal section, viewed from above, through the head at the level indicated by line IV in Figs. 1, 2 and 3. This section passes through the temporal and occipital lobes, and the upper part of the orbital cavity. *s*, Scalp; *c*, cranium; *tm*, temporal muscle; *d*, dura mater; *f*, falx; *t*, tentorium; *sl*, sup. long. sinus; *il*, inf. long. sinus; *of*, orbital fat; *e*, ethmoidal cells; *fs*, frontal sinus; *cg*, crista galli; *ob*, olfactory bulb; *af*, anterior fossa; *ic*, internal carotid; *cp*, choroid plexus of lateral ventricle; *cq*, corpora quadrigemina; *aq*, Sylvian aqueduct; *sn*, substantia nigra; *cr*, crusta; *tg*, tegmentum; *cb*, cerebellum.

Every structure appearing upon these drawings is, of course, carefully labeled, and the reference line on the photograph showing the plane of the section is also indicated by numbers.[3] For the sake of uniformity, every drawing should represent the *upper surface* of the section, unless there is a special reason for the contrary. Moreover—and this is a point upon which I insist strongly—every section should be studied and drawn in the position it would occupy if the cadaver were facing the student, that is, with the *ventral* body wall *nearest*, and the dorsal wall on the further side of the drawing. Some uniform method of position is necessary, both in studying and in drawing, otherwise no clear and permanent mental images can be formed. How could one form any idea of geographical location from maps, if the top of the map sometimes indicated north, sometimes south, sometimes east, and sometimes west? The reason for placing the dorsal side of an anatomical figure toward the top of the page is because that represents (when the drawing is held upright) the typical vertebrate position: dorsal surface upward and ventral surface downward. Since a thorough study of human anatomy, is impossible without reference to comparative anatomy, the same standard of position should be adopted for both.

Reference to Literature.—The student has now studied and compared his sections, and finished his drawings of them, but still his task is not completed. He has yet to compare his own work with the results of other

3. A blue print copy of every drawing, and a duplicate of each photograph, are preserved by the laboratory as a record for reference in the future.

investigators. To do this he is required to look up references concerning the relational anatomy of the region in the various books and periodicals in the department library. He takes notes here also, and finds, often to his astonishment, that the authors sometimes disagree with each other, and also with the facts as he *knows* them to be in his own sections. Thus he learns the important lesson that the real source of knowledge is Nature, not books.

Written Report of Results.—Finally, in order to get his knowledge arranged in a systematic way, the student is required to write a report in which he sums up briefly and clearly, the results of his own observations, and compares them with the statements found in the literature. The writing of this paper, which is, of course, accompanied by the explanatory photographs and drawings, forms an excellent review of the entire subject, and puts the work of the student in a convenient form for future reference.

Besides the thorough study of one region, according to the method outlined, the student is required to review the remainder of the body from sections already made. Thus he becomes familiar with the more important topographic relations of the entire body. More advanced work in topographical anatomy is assigned to students who wish to make a special study of the subject.

In conclusion, allow me to suggest that this method for the study of relational anatomy will be of the utmost value to practitioners who are not located conveniently near anatomical laboratories, but still desire to devote some time to the study of anatomy, especially in its relations to surgery. The method is simple, the apparatus inexpensive, the material keeps indefinitely, and the knowledge gained from a study of the body in this way can hardly fail to be of great practical value. Drying of the sections is the only trouble to be guarded against. This may be prevented, 1, by placing a cloth wet with some slightly antiseptic liquid between every two sections, when not in use; 2, by wrapping the entire part in water-proof cloths; 3, by keeping the sections in an air-tight receptacle, either box, can or jar. Formalin sections dry much less rapidly than alcoholic specimens, however, and can be exposed to the air for two or three hours without damage.

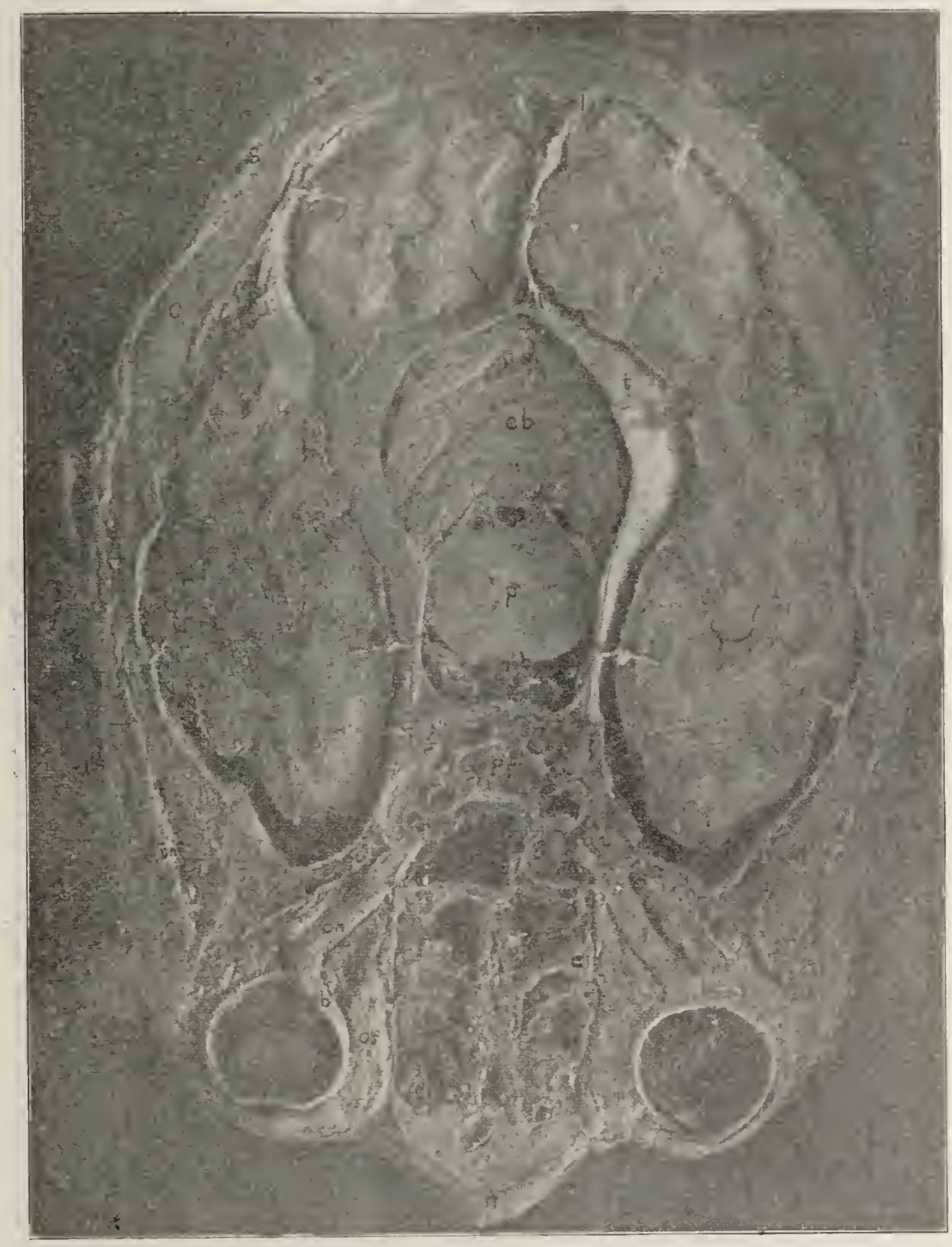


Fig. 6.—From photograph showing horizontal section, viewed from above, of the head at level indicated by line V in Figs. 1, 2 and 3. Section passes through temporal and occipital lobes, and just above the center of the eyeball. *s*, Scalp; *tm*, temporal muscle; *c*, cranium; *n*, nose; *f*, falx; *sl*, sup. long. sinus; *il*, inf. long. sinus; *t*, tentorium; *eb*, eyeball (retina shrunken); *of*, orbital fat; *on*, optic nerve; *e*, ethmoidal cells; *s*, sphenoidal cell; *ic*, internal carotid; *pt*, pituitary body; *b*, basilar artery; *p*, pons varolii; *aq*, aqueduct of Sylvius; *cb*, cerebellum. (Figs. 7 and 8 in following article.)

An Italian Professor Exonerated.—Professor D'Antona, of Naples, was recently accused by the relatives of having caused the death of a patient by overlooking a gauze compress in an operation on the liver. A committee of investigation was appointed by the Senate, who have honorably exonerated the surgeon from the slightest blame. The patient had malignant disease of the liver, and in operating, a gauze drain was purposely left. The patient left the hospital contrary to his wishes, and her death soon after was attributed to the gauze.

Rovsing's Ablation of the Stomach. — In Rovsing's patient the discovery of the carcinomatous condition of the stomach was a laparotomy surprise. He found it necessary to remove the entire stomach with a portion of the esophagus. The stump of the latter slipped up through the diaphragm and union with the duodenum proving impracticable, he sutured it to a loop of the jejunum, 40 cm. from the duodeno-jejunal angle, inserting the esophagus in a longitudinal incision 12 cm. in length. The patient showed signs of collapse at first, and slight phlebitis was observed during convalescence. Recovery was uneventful.

THE AIM OF MEDICAL EDUCATION, AND ITS RELATION TO RESEARCH WORK, BY MEDICAL STUDENTS.

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The work of the medical colleges twenty years ago was such that almost any change in it was a change in the direction of improvement. The result was that as changes were suggested, they were hailed with delight, and adopted as rapidly and as thoroughly as the different schools could accommodate themselves to them, until it has now almost become a habit to accept as good and desirable any innovation in medical college work which may be suggested. The last two decades have seen a general extension of the time of medical study from two courses of five months each to four courses of eight or nine months each; this period has seen introduced into the curriculum many branches of study, previously never attempted; it has seen the standard of admission raised, and the requirements for the degree, and for the right to practice made more stringent. During the same time the subject of laboratory work has practically had its whole development in our American schools, excepting only certain work in dissection, and some very rudimentary chemical work. The didactic lectures of the older days have been severely criticised, and the recitation method has found many advocates, and some application. So numerous and far reaching have these changes been in so short a time, that we must admit that we are in the midst of "boom times" in medical education. And "boom times" are not without their dangers; their products are not always solid. A mere glance at the changes show that they involve standards of admission to professional study, subject matter of such study, methods of teaching, and the relations of the profession to the community. Each of these factors is complex; it has many sides and many relations, pedagogical, professional, and social, not all of which are apparent at a glance, and some of which can only be determined as time and experience reveal them. It would seem, therefore, wise to stop occasionally and review the situation broadly and compare our position with fundamental landmarks, to take our bearings and determine if possible if our progress is all that we fondly think it to be.

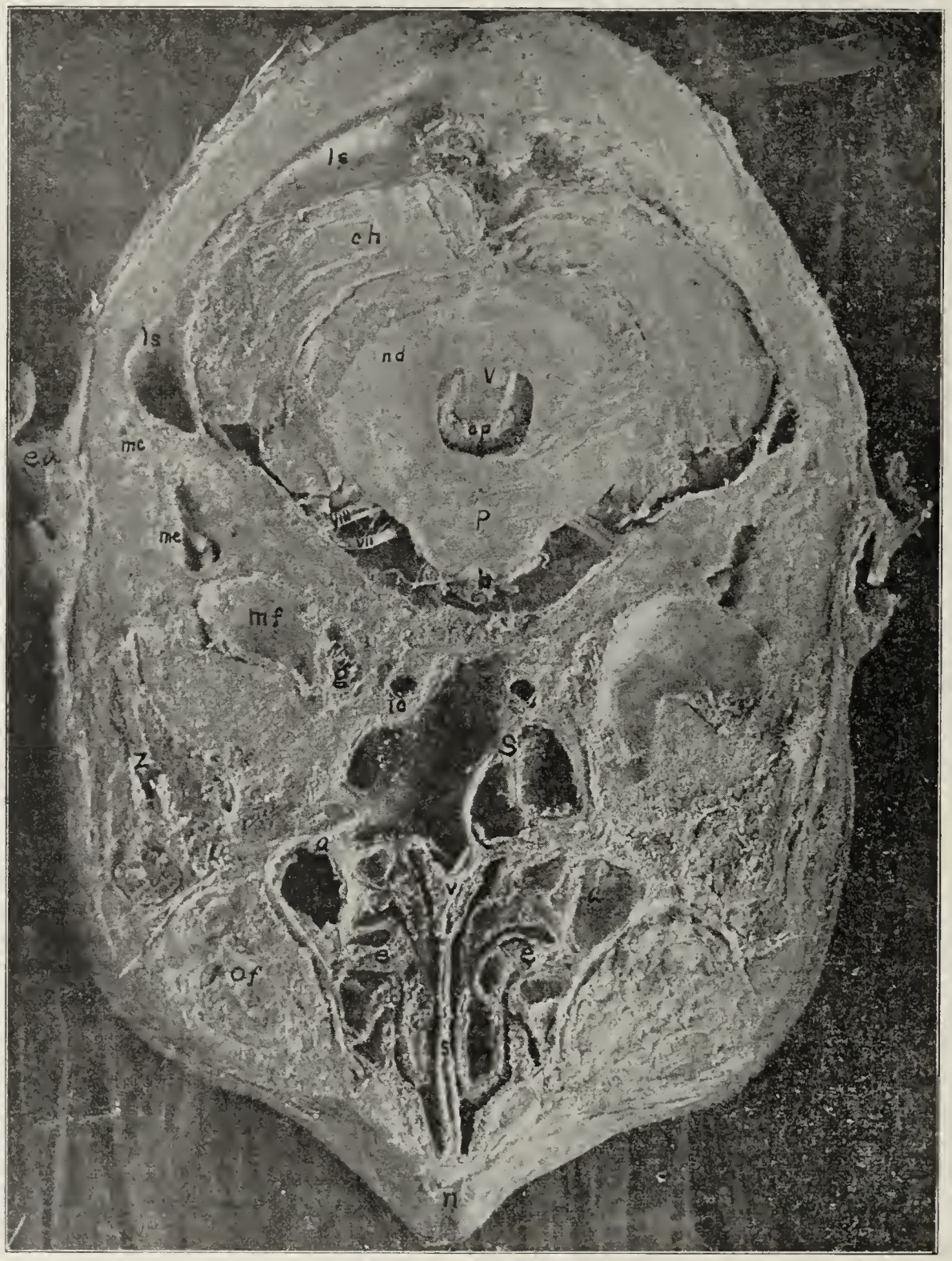


Fig. 7.—From photograph of horizontal section, viewed from above, of the head at the level of line VI, in Figs. 1, 2 and 3. This section passes below the cerebrum, striking the cerebellum middle ear and lower part of the orbit. *ea*, External ear; *z*, zygomatic arch; *n*, nose; *of*, orbital fat; *s*, nasal septum; *v*, vomer; *e*, ethmoidal cells; *a*, antrum of Highmore; *s*, sphenoidal cells; *ic*, internal carotid; *b*, basilar artery; *g*, Gasserian ganglion; *mf*, middle fossa; *mc*, middle ear, showing chain of bones; *mc*, mastoid cells; *ls*, lateral sinus; *ch*, cerebellar hemisphere; *nd*, nucleus dentatus; *v*, vermis; *cp*, chorold plexus of the 4th ventricle; *p*, pons varolii; *VII*, 7th cranial nerve; *VIII*, 8th cranial nerve.

I propose here to take bearings from just one fundamental landmark, for the light which it may throw on the situation, and compare it with one proposed innovation. The landmark to which I refer is the one which defines the province of the physician and thereby establishes the functions, duties, and scope of the medical college, the place where he is prepared for his life work. The province of the physician is to prevent and relieve sickness, and to prolong life. To perform his functions he must be familiar with the nature and cause of disease—pathology; have the skill and means for determining its various phases—diagnosis; be armed with the best means for combating it—therapy; and be possessed of good professional judgment to guide him in his art. His pathology must be based upon anatomy, physiology and chemistry, the two former of which must be acquired within the walls of the medical school, simply because they have not yet become subjects of such widespread study for purposes of general culture that they can generally be acquired in other institutions, and

not because they are subjects of exclusive medical interest or use. For the same reason that chemistry, to have its truly medical aspect emphasized, is still taught in medical schools, anatomy and physiology will probably also continue to be taught there even when their study in institutions of general learning becomes much more extensive than it is now. The pathology of the medical student must always be taught in the medical schools. It constitutes a very large percentage of the subject matter of the curriculum, and demands a large part of the student's time. The subject is divided among many chairs, the etiological portions going to one or more departments, the general and comparative aspects to other departments, while special features are presented by the so-called practical chairs, or what should more properly be spoken of as the philosophical chairs. In

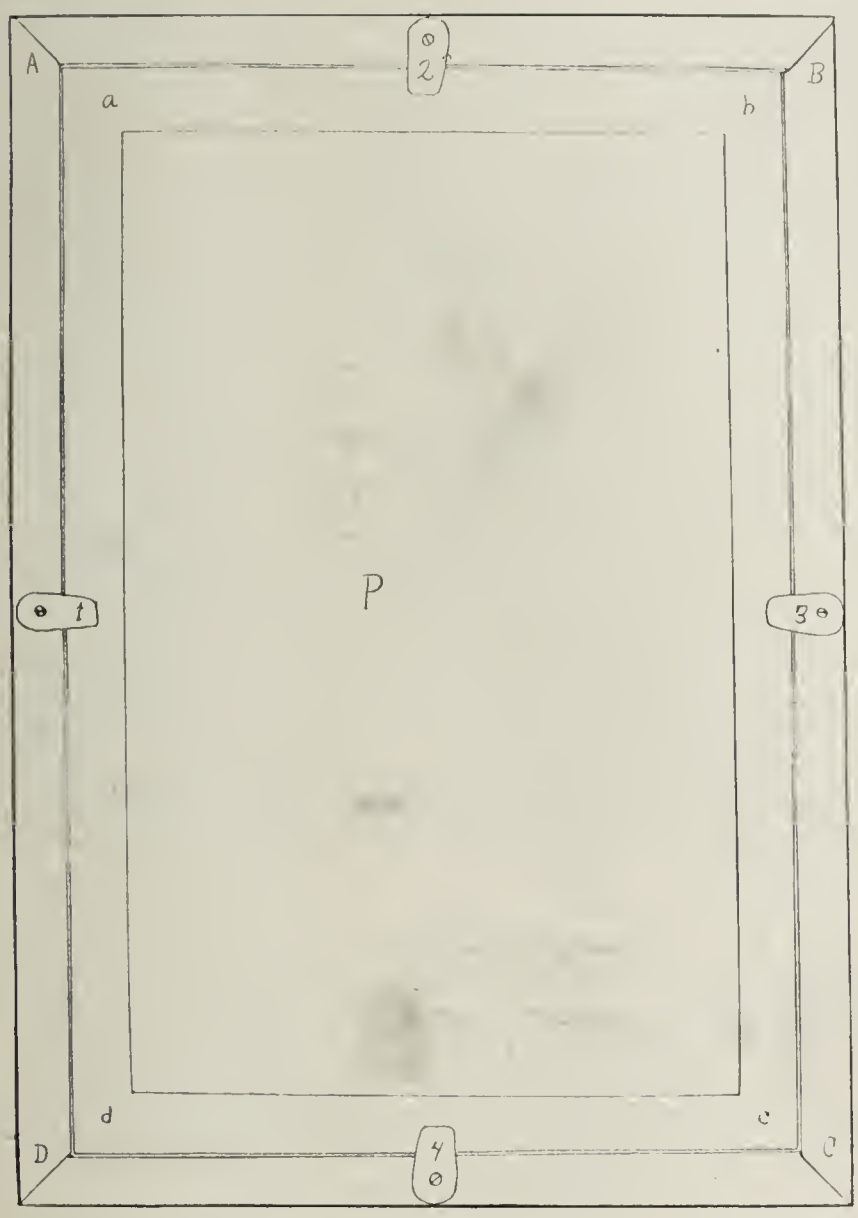


Fig. 8.—A diagram of the Drawing Frame. *abcd*, The *outer* frame, which resembles an ordinary picture frame, in which the glass and drawing paper are placed; *abcd*, the *inner* frame, which fits into the outer frame behind the glass and drawing paper, holding them firmly in place: 1, 2, 3, 4, wooden "buttons," fastened each by a screw into the outer frame, and serving, when turned as in figure, to hold the inner frame tightly behind the glass and paper; *p*, space occupied by the glass and drawing paper.

all of this work the student is gathering data, is securing information, of the importance of which he is but illy qualified to judge.

Having acquired a knowledge of the nature of disease, he is next introduced to the means of combating it. He is shown that therapy includes drugs, dietetics, and surgical, psychic and social factors, and the mastering of the data of this vast armamentarium is a work truly prodigious. And thus far, the work has still been wholly a collection of data. Now comes the work of the philosophical chairs whose duty it is to present the subject of diagnosis; to show the correlations of the data of pathology and the data of therapy, and to crown all with the training of the professional judgment. The art of diagnosis is necessary because diseases do not come labeled. Diagnosis is a purely logical procedure. In each of the great departments of human thought, the logic of that department has peculiarities of its own, and so the logic of medicine is peculiar to it. Certain methods of reasoning are especially fruitful of results; certain fallacies are apt to recur frequently, and to use the one and avoid the other requires training. It is convenient to group the peculiarities of medical reasoning under the term "medical mode of thought." I can not here undertake to prove the truth of these latter assertions, but am content to refer any who question them to Bain, who in his chapter on the Logic of Medicine, in his "Inductive Logic," has fully and conclusively set the matter forth.

Among the more recent innovations in medical education upon which divergence of opinion and practice exists, is that of completely separating the teaching of the basic sciences, usually presented in the first two years of work, from the remainder of the instruction. Closely associated with this, is the tendency to offer to undergraduate medical students, opportunities for original research in these basic sciences. It has been said that, "When a physician makes a diagnosis he follows precisely those methods of observation, comparison and experiment which are employed in original research." Granting the verbal accuracy of the language, the statement is still misleading. The statement is in principle true of every investigation from original research to common gossip. It is, therefore, too broad to be of any peculiar utility. It is misleading in that it implies that in original research, and in diagnosis the methods of observation, comparison, and experiment are identical, and that the fulness of diagnosis, conclusion, and that the end of research, truth, more general than specific, are both reached by similar acts of judgment. So long as the logic of medicine has its own peculiarities, its methods of observation, comparison and experiment can not be absolutely identical with those of anything else, not even with those of one of its basic sciences. But it is in the latter parts of the two methods of reasoning that the great differences occur. I shall endeavor to make this appear by analyzing the two processes of original research and medical diagnosis. Original research has for its object the determining of new truths of a more or less general character. The new truth may first exist merely as a creature of the imagination, an hypothesis. This hypothesis is then subjected to verification by experiment and observation. If the experiments and observations confirm the hypothesis so fully that no alternative or modifying hypothesis can be conceived of to limit the original hypothesis, that original hypothesis is accepted as a truth, but not until it is so completely verified. New truths may also be derived by direct comparison of data established by observation and experiment. A characteristic feature in research work is deliberation. The supposed new truth waits for its announcement, certainly at least for its acceptance, until a sufficiency of data has been collected to establish it beyond doubt. As Huxley[1] says: "There is one guiding rule by which a man may always find this path [to truth] and keep himself from straying when he has found it. This golden rule is—give unqualified assent to no propositions but those the truth of which is so clear and distinct that they can not be doubted." Any so-called re-

1. On Descartes' "Discourse."

search less critical is unworthy of the name. It follows, therefore, that a research must often wait, and wait indefinitely for the collection of the necessary data to round it out, and bring forth a just conclusion. A so-called conclusion to an incomplete research, hedged with the adjective "tentative" is no conclusion at all; it carries no responsibility. The time element therefore is an important feature in original research, and the time may be indefinitely prolonged. In medical diagnosis the problem is to determine the state of affairs in a given patient. The particular methods of obtaining the data are those peculiar to medical investigation. When obtained these data are often insufficient to afford a positive basis for any conclusion. Occasionally, conditions are such that time may be spent waiting for additional data, but much more frequently the decision must be made at once, for action is demanded, and that action is determined by the decision as to the meaning of the data. Frequently, it is quite impossible to obtain a sufficiency of data, because original research in correlated branches of knowledge has not yet formulated laws governing the conditions. But nevertheless a conclusion must be made, for action is necessary. The time element is here important also but the time must be short, or life may be the forfeit. It follows from this, therefore, that the tentative conclusion is common in diagnosis, and unlike the tentative conclusion in research, it is one involving great responsibility. Inasmuch then as tentative conclusions must be made in diagnosis, and as it is essential that those diagnoses be as accurate as possible, great care must be exercised in the methods of thought used in reaching these conclusions. To this end we have recourse to the Logic of Medicine, which has become the logic of medicine, precisely because experience has shown that it is the most potent in reaching the truth under such circumstances. The "medical mode of thought" therefore ought to be inculcated throughout the whole of the medical student's career. When the diagnosis is made, it must then be compared with the data of therapy, in order that a second conclusion may be reached, and this second conclusion is the one which formulates the specific action to be taken, and in making it, psychic and social factors must be considered as well as the purely medical, and here again the "medical mode of thought," the trained professional judgment, comes into action.

So far as research work trains observation it is good, but powers of observation can be trained equally well on pulse and tongue, facies and feces, as with the aid of balances and microtomes; so far as research work trains the judgment, it trains it in a bad direction for the young medical man. It tends to establish modes of thought which hamper rather than help him at the bedside. For anybody to do research work on problems formulated by some one else is largely child's play and hardly rises above the dignity of ordinary clerical work, while at the same time it tends to inculcate a sense of personal importance which is so far from the truth that it can not but be detrimental to its victim. The clinic is the field for medical thought and action. Resting upon its basic sciences, which are for its purposes tributary and subordinate, medicine has a systematized knowledge of its own, extensive in scope, highly complex, difficult to acquire, and requiring the best efforts of the best intelligences for its highest use. The systematized, truly medical knowledge may be designated by the word clinicism, which is the true science of medicine. The time for the medical man to undertake research work is when his experience has become sufficiently ripe for him to formulate his own problems; then his research work will have some life in it; his problems should be clinical problems, and certainly there are enough of them to satisfy the most varied tastes. The importance of inculcating the medical mode of thought and training professional judgment, is, in my opinion, so great that I would have them meet the student at every turn in his medical college career, from the very day of his entrance, and to this end I would have the teachers of the so-called scientific branches of the curriculum associated, as far as possible, with clinical work, and urge them to put themselves in constant touch with clinical men, that they may impress upon the student the professional bearings of their tributary work. The medical course is short enough now; it is difficult to find time to present all that should be presented to the student, and there is certainly no time to let him stray after strange gods. It is the business of the medical student to receive medical knowledge and to be trained in its use; he is under no obligations to add to the sum total of medical or any other knowledge. To-day an overwhelmingly large percentage of the physicians of the country devote their whole time to the application of medical knowledge to individual patients. It is right that they should. It is what the community expects of them. It will continue to be so in the future. With the few physicians who do research work, it is a side issue, and their real work is this same application of medical knowledge to individual patients. Such medical students as wish to engage in research work should limit themselves to it, and not hamper themselves with practice and they will find that their medical brethren will welcome every contribution of knowledge which they send out. If legislation should be for the benefit of the greatest number, so ought education, and to this end the medical college should keep its prime duty ever before it. It is the function of the physician to practice medicine; it is, therefore, the duty of the medical college to train him for that work. Let us make physicians rather than scientists.

NECESSITY OF A PRACTICAL KNOWLEDGE OF DIETETICS, HYDROTHERAPY AND PHYSICO-MECHANICAL THERAPEUTICS.

THE NEED OF ESTABLISHING COURSES OF INSTRUCTION IN THESE SUBJECTS IN OUR MEDICAL SCHOOLS.

FENTON B. TURCK, M.D.
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Until very recently the profession has for the most part relied upon the administration of drugs for the alleviation and cure of disease—all other means except surgery being left to the abuse of charlatans and quacks. But it is the sign of the present state of scientific development, that the attention of the thoughtful has been called to the effects that may be obtained by agents not emphasized in books on materia medica, therapeutics, or in the pharmacopeia. The value of general hygienic conditions and of surroundings; the necessity of proper and systematic bodily exercise: the curative power obtained through the placing of the patient's mind in the proper psychological attitude: the importance of the use of a diet suitable to the case and to the individual; the bearing that heat and cold may have upon the bodily functions in general, and especially on the different parts of the human organism when intelligently applied; the efficacy of massage and electrical therapeutics—

all these are now recognized as forming important elements in the alleviation and cure of many pathologic conditions.

Since these means form so vital a part as therapeutic agents, it would seem that the time has come to consider the urgent necessity for the systematic teaching of their principles and the intelligent application of the most important and neglected of them. Broadly speaking, these would appear to be the subjects of dietetics, hydrotherapy, and physico-mechanical therapeutics.

The reasons for viewing these subjects mentioned as so extremely important are, that, in the first subject—dietetics—the question is involved of how life is sustained and nourished, with the laws that govern such a process—a fundamental proposition; in the second subject—hydrotherapy—the consideration is required of how the body and its parts are affected by three of Nature's most common and potent agencies, to whose modification we, and every form of matter, are more or less subject at all times—viz., heat, cold and water—the latter modified in temperature from the normal to one extreme or the other; in the third subject—physico-mechanical—is contained a pointed reference to the broad and universal truth, that the thing which has ceased to use or perform its functions has begun to die, that the exercise of function is one of the most potent factors in maintaining life, and that, if the individual is not able to maintain such exercise of himself, the question of some outward agency may help him to accomplish it, or that such agency may obtain for him in some way the physiologic results of such exercise, is a consideration the importance of which can not be overestimated.

In order to learn whether the necessity for the teaching of dietetics, hydrotherapy and physico-mechanical therapeutics was realized, and whether the need of such instruction was being met, the writer sent letters to the various medical schools and colleges throughout the United States, asking each for its bulletin, catalogue, or yearly announcement. Most of the institutions written to immediately responded. Upon examining the printed curricula of the different schools, it was found that the three subjects above referred to were for the most part given but small space in the general scheme of study, and in not a few institutions were entirely omitted from the course.

To get the voice of competent opinion from medical teachers (after learning the conditions as they were at the schools), the writer prepared a second letter, which he sent to the dean of each institution in the United States. The letter was as follows:

Dear Doctor:—I would like to obtain your opinion of the importance of teaching medical students three subjects now neglected in medical education, viz.: 1, Hydrotherapy; 2, Medical Gymnastics and Massage; 3, Dietetics.

The practical demonstration method of teaching these branches would not seem to burden the student, especially Medical Gymnastics, which would rather be a physical benefit and a mental rest.

Hydrotherapy and other physical methods of treatment seem now to be almost a necessity in the armamenture of modern therapeutics. This branch and Dietetics are left to the nurse or to the caprice of the patient. A thorough and practical knowledge should belong to every physician. The practical and scientific knowledge of these three branches would put a check upon quackery and ignorance.

Kindly answer enclosed questions, and oblige.

Accompanying this letter was a blank on which were printed five questions, as below. Over half of the representatives of the schools written to returned the blanks originally mailed, with complete answers written upon them. These replies fairly represent the consensus of opinion of the colleges and medical schools of the country, as they came from institutions of different types, both large and small. The questions were:

1. Are you in favor of including the subject hydrotherapy in the curriculum of medical schools?

2. If so, are you in favor of teaching by practical demonstrations in the hospital and dispensary, or by the didactic method?

3. Are you in favor of teaching medical students practical medical gymnastics and massage?

4. Do you consider the study of practical dietetics a necessary part of the student's education? The character and preparation of food, cooking, etc.? The physiology, pathology, and therapeutics of dietetics?

5. What would you suggest as the most practical method of teaching this branch? Practical demonstration or otherwise?

To the first question, out of 59 answering, 1 replied: "Not as an undergraduate study;" 2 replied: "No;" 39 replied in unqualified terms: "Yes;" and the balance answered that hydrotherapy was already being taught as a branch of general therapeutics, or that they advocated its so being taught, but not as a special subject by itself. In all of these replies, save two, the prime importance of the serious consideration of hydrotherapy is fully recognized.

To the second question, out of the same number of letters received, 3 gave no answer; 1 replied: "No;" 1 advocated the didactic method; 16 advised practical demonstration; and 38 suggested both practical and didactic methods as likely to afford the best results.

To the third question, 1 gave no answer; 1 was undecided, not having given the subject sufficient study; 1 replied: "Yes; not under these names, however, but as a sub-topic of general therapeutics;" 1 answered: "Desirable, but doubtful whether time is sufficient;" 2 said: "To a limited extent;" 46 wrote unqualifiedly, "Yes;" and 7 answered, "No."

To question No. 4, 1 gave no answer; 1, "In a limited way;" 1, "Business of the nurse," 1, "Not as a separate course;" 1, "Desirable, but can't see how it can be accomplished;" 1, "Questionable whether it can be introduced into four years' curriculum;" 1, "Character and preparation of food, yes; cooking, no;" 3, unqualifiedly, "No;" 49, unqualifiedly, "Yes."

To the fifth question, 16 made no reply; 3 said that dietetics is already sufficiently taught by didactic and practical methods in their institutions; 4 advocated lectures and didactic methods; and 36 preferred practical demonstration in the hospital, coupled with theoretical teaching.

On reviewing and analyzing these various answers, it will be seen that there is an overwhelming majority of those who favor the establishment of some method by which the subjects we are considering may be more carefully and systematically taught; and that the greater number of those who have replied to the questions propounded lay very great stress on the importance of teaching by practical and illustrative methods.

Together with these answers written on the printed slips, and categorically replied to, many letters were received, giving the personal opinion of the writers as teachers and professors. The following are included here, as showing that not only are dietetics, hydrotherapy and physico-mechanical therapeutics not sufficiently

taught, but that there is a genuine and urgent demand on the part of trained medical educators for placing these branches in the curriculum of the schools:

David Streett, Dean of the Baltimore Medical College, Baltimore, Md., says:

. . . There can be no question about the importance of teaching Hydrotherapy; indeed, such has been done a number of years, its importance in the medical curriculum growing each year; and of Dietetics there are few subjects of more intrinsic importance to the practitioner, as well as to the surgeon. As to Medical Gymnastics and Massage, I think they are less important than Hydrotherapy and Dieteties; still they eminently deserve a place in our medical curriculum, provided there be found time for their teaching. . . . I regret to state, in my judgment sufficient importance has not been attached to the thorough knowledge of these two subjects.

Victor C. Vaughan, Dean of the University of Michigan, favors instruction in these three subjects, and says:

I know I talk three hours a week for three months on this subject, and give them a good grounding in the scientific principles of Dietetics. . . . As to Hydrotherapy, our students get considerable instruction along this line. . . . We also give considerable instruction in Medical Gymnastics and Massage. . . .

One correspondent, Dr. A. F. Jonas, Dean of the Omaha Medical College, and President of the Western Surgical and Gynecological Association, writes:

. . . I feel that the three subjects mentioned should occupy a first rank in our therapeutics; but, for some unknown reason, they have been neglected by our schools the world over. It is in the use of these particularly that "quackery" has obtained a large part of its capital stock. I am sure that if these subjects will be scientifically taught and properly applied by the profession, we will have added to our armamentarium most important factors for good.

H. G. Brainard, Dean of the College of Medicine, University of Southern California, Los Angeles, says:

. . . I feel very strongly on the point that some systematic teaching should be given in the medical college in regard to the use of Hydrotherapy, and in regard to Dietetics. I do not feel so sure about the question of Medical Gymnastics and Massage. While I think that a more thorough knowledge of these subjects would be beneficial, it does not seem so imperative as a more thorough knowledge of Hydrotherapy and Dietetics. Though I presume that a thorough knowledge of gymnastic manipulations and massage would drive osteopathy out of the field.

Dr. E. O. Sisson, Dean of the College of Physicians and Surgeons, Keokuk, Iowa, writes:

I hasten to give affirmative answers to the questions you have propounded, for I believe you have struck the keynote, and that the introduction of such teaching will mark an epoch in medical science.

The only school that I know of that carries out practical instruction in Dietetics is the Medical Department of the Minnesota State University, and the professor of that department told me that it was not compulsory there. They have a very complete laboratory, fitted with gas ranges, and the necessary cooking appliances, and each student prepares his own dishes.

Medical Gymnastics, as you say, would not burden the student, but would rather be a physical benefit, and a mental rest.

Hydrotherapy, although taught to a greater or less extent in most schools, it is very seldom that a practical demonstration is given of it.

I heartily agree with your statement that "a practical and scientific knowledge of these three branches would put a check upon quackery and ignorance."

We are dealing with subjects here, the value of which thinking people must realize sooner or later, and the physician by an intelligent practice of such will do a great deal towards doing away with the superstition and mystery with which the charlatan has always loved to surround the practice of medicine.

In my lectures on Hygiene to the medical students, I try to impress upon them the value of these subjects, but as my work is necessarily all didactic I fear they fail to take the interest that they should, and therefore they do not realize the importance of the subjects. In my lectures to the nurses, where there is more opportunity for practical demonstration, I believe that more is gained.

I certainly wish you success in your investigation, and hope that your work will be productive of much good.

Dr. S. W. Williston, Dean of the School of Medicine, University of Kansas, says:

I believe that all these subjects should find a place in medical instruction, and, of course, wherever taught, they should be, so far as possible, taught by the laboratory method, that is, by actual doing or seeing done.

Dr. Alfred C. Wood, of the University of Pennsylvania, Philadelphia, writes:

Of course, I appreciate the difficulty of having hours set apart for these subjects in a curriculum already so full; at the same time, in my opinion the necessary readjustment should be made to admit these subjects.

Besides reports from the medical schools the writer has received similar complete reports from many of the editors of our medical journals, and also from the president and other officers of the state medical societies, offering their views and comments as to the importance of more practical instruction in these subjects.

Lack of space prevents the publication of these reports here.

In order intelligently to approach the question we are considering, and that practical suggestions of value may be made, it will be well to review what consideration is generally being given to hydrotherapy, dietetics and physico-mechanical therapeutics, and how they are being taught.

From the replies we have received, it would seem that small part of the attention due these subjects is being paid them. The physiology of dietetics is usually embodied as a part of the lectures under the chair of physiology in the first year of the student's course. In the majority of the colleges the subject is not made plain by any means of actual demonstration; while the therapeutics of dietetics is taught, only incidentally, in connection with the subject of general medicine, usually in the fourth year. The student graduates, with superficial instruction in, or practically ignorant of, the application of dietetics in health or disease. A large number—nay, the larger number of the graduates of our schools—afford examples of the deficiency of knowledge of the composition of foods, the chemical changes taking place in cooking, the digestibility and the absorbability of the various forms of nutriment. And from this it also follows that there is a woeful lack of the understanding of the therapeutics of dietetics, which latter involves the practical application of the facts and laws of this subject in the treatment of different diseases.

The very important subject of hydrotherapy, which comprises the application of water internally and externally, from solid to fluid and vapor—from ice to steam—depending for the result upon the judicious adaptation of its mechanical and thermal influences, is being neglected also. This branch of therapeutics it is customary to teach from the chair of general therapeutics; in most cases, merely by didactic methods. As a result,

the student has neither a definite knowledge of the physiologic action of water, which can only be gained by practical experience, nor the understanding of its intelligent application in diseased conditions. The effect of heat in all its variations of temperature, with such a wide range of therapeutic uses, is of both scientific and clinical importance.

Physico-mechanical therapeutics, which embraces medical gymnastics and massage, with some forms of the application of electricity, is not less important than the other two subjects, and what may be said in regard to the lack of proper training and instruction in these two may apply to the other.

Practical dietetics can not be universally introduced without the free use of hospitals equipped with dietetic kitchens; but in schools where such hospital facilities are at hand, a section of the class could take its turn under a competent instructor, certain hours in the day, during the week, in acquiring the accurate knowledge of the preparation of foods and their proper administration in the cases being treated in the institution. The effects could then be readily appreciated by actual demonstration; and thus another and most important element would be added to the skill of the future practitioner.

No objection, however, can be urged against the illustrative method of teaching hydrotherapy and physico-mechanical therapeutics. Every school is equipped with college dispensaries. All that is needed is to arrange a room, or suite of rooms, equipped with the necessary appliances for the application of water in various forms, and with the different mechanical apparatus to be used. These arrangements may be as elaborate or simple as the school can afford. A separate, or adjoining room may be equipped for placing the patient where he may obtain the benefits of the various forms of physico-mechanical therapeutics. In the customary division of students into sections, for the different dispensary classes, a certain number can readily be allotted to each of the rooms above mentioned, just as they are assigned now to the rooms for instruction in surgery, gynecology, nervous diseases, general medicine, dermatology, etc. The clinical material may come direct, or may be referred from the other departments of the institution. Students will gain more exact knowledge by being called upon to assist the instructor in his daily work; and more patients can be treated when the students are turned into assistants—which is a double gain. This method would not trespass on the time allotted to other work, or unduly press upon the strength of the student; and therefore it would appear to be perfectly feasible. As the value and practicability of the subjects we have been considering become further recognized by the faculties of our medical schools, special elective courses may be established, under trained instructors, in order to give the student theoretical and practical teaching combined. The writer has found in his own experience in teaching that these practical methods are easier for the student. They give him an opportunity to learn more accurately by actual observation and experience, associating the clinical importance of the case with the therapeutic measures used.

It will thus be seen that such observation and experience will help the student to comprehend the pathologic condition of the patient—whether a medical or surgical case, and he is better enabled to grasp the clinical and scientific phenomena presented to his mind. The significance of medical teaching will become real, better understood and more easily remembered. The accumulated facts obtained from didactic teaching will also thus be better utilized, and the mind stimulated for further investigation and study.

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THE SEMINAR METHOD IN MEDICAL TEACHING.

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The present is a time of great change in methods, as well as in the principles of pedagogy in our medical schools. The extent of medical science is so great that no individual can expect to be master of the whole field. The duration of the course preparatory to the practice of medicine is now long enough, and the preliminary education is now thorough enough to allow the best methods of study to be used. For a certain part of the medical curriculum there is no plan of teaching which promises so much as the seminar.

In previous publications[1] I have called attention to my own efforts in this direction. It is my purpose here to make another plea for the more general adoption of the seminar, in teaching almost any topic of interest to the student.

In order that we may understand each other, let me say that the seminar is a method in which each member of the class does independent laboratory, clinical or library work on a subtopic of general interest to the class as a whole, this subtopic chosen by the student or assigned by the teacher. The seminar is a meeting of the students and the teacher to hear, question, criticise and discuss the work of individuals. When the seminar meets for the first time the teacher presents the general subject in the form of a lecture, in the course of which the whole topic is outlined and interesting questions are put forward. From these questions and the outline, and from a knowledge of the individual members of the class, the assignments of subtopics are made. A student takes his assignment and studies up the question, and at the next or some subsequent meeting of the seminar, he presents to the class in such a manner as the case requires, the results of his study. This time it may be an analysis and blackboard talk, the next time a carefully-written abstract, then again a microscopic demonstration and written paper, or later and more complete than any of these, a finished thesis. During the presentation the student who has the floor is in the position of the teacher. The teacher for the moment becomes one of the students. At any moment during the presentation questions may be asked or explanation required. At the end criticsms are to be expected. Such exercises, like laboratory investigation, are time-consuming. The student should have not less than one-half his daily study time for a seminar of two hours a week. The seminar class should not exceed 20 students, selected by their interest in a topic or in the teacher. The management of larger classes is limited to unusual teachers and special topics and methods of procedure. In a very limited field I have used the seminar with a class of 150 students.

The seminar presupposes an elective course. In no other way can the student have time for the exhaustive

1. Holmes, Bayard: "The Seminary Method in Teaching Surgery," The Journal A. M. A., Aug. 3, 1896, *et seq.*

study of a limited number of subjects. The student will, however, be bound to learn in the course of this study most of the general information which lectures and text-book study is intended to teach. The seminar requires an open library of current and standard medical literature and an ability on the part of the student to make economical use of it. The library must be open during all reasonable study hours, e. g., from 8 a. m. to 10 p. m., and it must be thoroughly catalogued even down to the monographs and important articles in the serials. It will often, in the course of a study, be necessary to get material from the Surgeon General's Library and even to make purchases, and provision should be made for these contingencies so that there will be no paralyzing delay. The laboratories, museums, collections, clinics and other equipment of the college must be at ready and unobstructed, even helpful, disposal of the student. If the student has for his topic the appearance of fat necrosis in gallstone disease, he may require not only the literature from the library, specimens from the museum and laboratory, but he may need to undertake considerable correspondence with pathologists and surgeons, and even wait for autopsies or operation specimens.

The seminar is certainly a poor method at the beginning for the bottle-fed incompetents of our compulsory, graded medical course, but many of them even grow and thrive under the exercise and liberty of the seminar and in moments of forgetfulness manifest the ardor of enthusiasm. But there are always some in every class who bear with difficulty the straitjacket of a required course and the lockstep of class instruction, and these erratic men are the delight of the seminar. They plunge with fervor into their subject and devour the literature. They seek on the cadaver or at the operation table the positive anatomical knowledge which their topic requires. They leave no stone unturned which promises the least elucidation of the subject, and they present the results of their study to the class in a convincing argument and with a persuasive enthusiasm.

There are, of course, certain conditions which the student must meet. He must have a motive for study based for the most part upon a considerable amount of bedside experience. Unless the student is actually in the position of the physician with the immediate obligation to cure the patient safely, quickly and pleasantly, he does not possess the strongest, truest and surest motive for study. When this motive is lacking it can often be supplied by giving the student the necessary patient, or by taking such a topic as the student has already met in his practice. When all other means fail, the student's own ailments or deformities may secure the necessary interest.

The student must also have such a preliminary literary training as will make his routine work perfect in form and availability. It is necessary sometimes to secure at the beginning a chirography suitable to such accurate and manageable work as this form of study demands. Every page must be written as perfectly as if for the printer. The slipshod penmanship which the ordinary note-taking in our medical schools begets, entirely precludes the idea of good work. The student must, from the first, do all his work neatly, in an orderly manner and completely, so that it may never require revision or correction. It is only by writing a library hand or something approaching it that good literary work of such a technical character as medicine requires can be satisfactorily done.

The student must know how to use the library. Only a rare librarian can put students in the way of using the library independently. The shelves as well as the catalogue should be accessible to students. The stacks should be in alcoves, with tables and writing material handy, so that the student, after his ability to find them and replace them has been established, can easily consult many books without troubling the librarian. The same may be said of the laboratory and museum. In order that the student may master his subject completely he must be able, if the subject requires it, to study the anatomy of the part concerned in a thoroughly equipped anatomic laboratory, in the pathologic laboratory and in the autopsy room. In fact, the seminar method of study presupposes for its fullest utilization a complete co-ordination and co-operation of all the resources of the medical school. Through its best and freest use the student becomes an investigator of the topic in his hand, of the literature of the various aspects of his subject, and incidentally of the history of medicine itself. The student is put or puts himself in the position which he will occupy after he leaves the school when he attempts to study any medical topic suggested by the requirements of his practice.

Last of all, through the seminar, the medical teacher may secure for the profession the careful literary and experimental study of a large and growing number of subjects which he can never have time to follow out by himself, and he may be instrumental in bringing these subjects before the profession through his students' theses. A considerable number of the most valuable contributions to medical literature comes to us now through the theses of applicants for the doctor's degree in foreign universities. The American students are not less talented or diligent. Our teachers are not less devoted. The continuous course which many medical schools are adopting promises that the end of the course shall be punctuated by the return to the discarded thesis. To make the thesis possible or valuable a considerable portion of the curriculum must be conducted on the seminar plan, whether it is called by that name or not.

MEDICAL EDUCATION.*

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The writer, after considering the several phases of the subject of medical education, registration, etc., as they apply in Canada, said:

PROFESSIONAL EDUCATION.

The medical curriculum has subjects difficult to acquire, worthless as mental gymnastics, useless in practice and speedily forgotten when acquired. The methods of teaching are imperfect and vicious. The student in didactic lectures is not taught—he is over-lectured and under-taught. The lecturer describes rather than demonstrates and instead of making the student follow him step by step in his methods of observation, collecting, comparing, testing, and recording facts and of reasoning thereon, the didactic lecturer leaves them to be learned by being described, forgetful that they can be learned only by being practiced.

The main tendency of the present method of didactic lectures is to give students smatterings of scientific knowledge at the cost of that thorough knowledge of their art which is essential to its successful exercise. In the curriculum there is overlapping of similar subjects in the didactic and clinical courses. The course of didactic lectures should be entirely abolished or radically modified. Teaching should be bedside

* Abstract of the Address in Medicine, delivered before the Canadian Medical Association, Winnipeg, August 28.

work, oral and written examinations with comments by the teacher. In analyzing the didactic course, I would like to direct the attention of the Association to several defects and useless waste of time which could be more profitably employed.

What use is there for a didactic lecture on descriptive anatomy; a subject which can only be mastered in the dissecting room. Professor McAllister, of Cambridge, states that anatomy being a practical subject can be learned only in the dissecting room. The line of demarcation between descriptive and practical anatomy is arbitrary and fanciful. In a large class in descriptive anatomy, the favored few near the lecturer and the dissected part derive some instruction, but to all the rest the hour is useless and wasted. Persistent work in the dissecting room under the guidance of an experienced demonstrator who will describe, discuss and constantly orally examine the student is the rational and effective method of teaching anatomy.

Another useless subject is Medical Jurisprudence; the interest in it ends after the examination and to the general practitioner the knowledge thus gained is of no practical value. Few men are called upon to give evidence in criminal cases, and when they are the knowledge acquired while at college is either useless, fragmentary or forgotten, and in order to cut a respectable figure in court, we frantically read up Taylor and Reese. All knowledge is useful, but that derived from Medical Jurisprudence is about as practical to the general practitioner as the geography of Timbuctoo or the philosophy of Confucius. The object of medical teaching is to turn out good practitioners.

Another subject as at present taught which is a weariness to the flesh is Sanitary Science. Its pretensions are stupendous; it is supposed to teach everything—land surveying, architecture, organic chemistry, agriculture, plumbing, drainage and civil engineering. The student is crammed with this conglomerate stuff, which he must intelligently reproduce at the annual examination. In Sanitary Science we have a splendid exemplification of the "cram" system and the utter uselessness of the knowledge, the very essence of smattering. . . .

The burden of the medical student of to-day is very great. More attendance at lectures are demanded, more subjects are being wedged into the curriculum. That a conglomerate heap labeled "Materia Medica" might be treated in a bag and baggage fashion. It is impossible to encompass this large mass of dry technical knowledge in the student's course. Materia medica is a mere tax to the memory—the acquisition largely of bare facts being necessary and facts that are neither retained nor applied. Mr. Huxley's views in an address to the students of St. Mary's Hospital are appropriate. He says: "I am quite prepared to admit, and, indeed, I have always had a strong conviction that there is something absolutely preposterous in the volume and bulk to which some of our treatises on materia medica extend, and the enormous quantity of irrelevant matter with which their pages are crammed." What scraps of information can a didactic lecturer impart to his students which they can not readily find in the text-books! An occasional quiz class with specimens of drugs and their preparation should take the place of the systematic lecture; in fact, let pharmacy and therapeutics take its place. . . .

The system of imparting instruction by lectures is a mediæval custom originating when text-books were few, costly and inaccurate. It is a purely traditional system. Now that there are text-books in abundance covering the whole range, and of excellent merit, these lectures should be modified. The chief value of lectures is that the student is obliged to hear a certain quantity of a subject every day whether he likes it or not, while no authority can compel him to work at a text-book except by moral suasion or arguments of a practical character addressed to his self-interest. A restricted number of lectures may be advisable, but the number could be abbreviated with advantage, and confined to the inculcation of principles; removing difficulties and obstacles from the student's path; explaining types and divergencies of disease; giving information not within the pages of a text-book. The time hitherto employed in systematic lectures might be devoted to class examination on previously announced subjects in which the teacher should indulge in questions, explanations, corrections and comments. This is the true education—a drawing-out instead of a pouring-in process. The lecture system reminds one of the daughters of Danaus, whose destiny was to fill pitchers which could hold no water; the students are percolated receptacles of transitory knowledge. . . .

The "Case" method advocated by Mr. Cannon, of Harvard University, in March, 1900, has received the indorsation of many teachers in England and the United States. This method is supposed to supplant the dreary old-fashioned didactic lecture, and is an imitation of the plan adopted in the law department of Harvard. The plan is to secure printed histories of actual cases which perhaps the student may have seen in the hospital. Each student is previously supplied with a printed copy of the history for careful perusal sometime prior to the discussion. The class and teacher meet and discuss the diagnosis, pathology, symptoms and treatment. Text-books and other literature are consulted, and the case is thoroughly thrashed out. The student is learning the judgment of clinical data, the estimation and relative value of the various symptoms, distinguishing between the important and the unimportant, the common features and the more unique. He not only receives but acquires knowledge. The Case method may supplant or supplement the didactic and clinical courses. This plan is no experiment for it has been on successful trial by several professors at Harvard, by Dr. J. White, of Philadelphia, and Dr. R. E. Riggs, of the University of Minnesota. Possibly I may be prejudiced, but from personal experience I favor the English system of clinical clerkships and dresserships as the most feasible, practical and thorough for the development of medical teaching. It embraces all the advantages claimed by the advocates of the "Case System" and the sectional plan. Moreover, the student is brought into direct contact with the patient for whose history he is responsible. By this method the medical student is trained to habits of minute, careful methodized observation and registration of the phenomena of disease. The student observes his cases from the incipient stage to either recovery or the post-mortem room, to the verification or otherwise of his daily recorded observations. Upon this solid foundation of actual personal experience, he builds to fit himself for life's battle.

Malarial Cases Must Be Reported.—Private physicians, public institutions, hospitals and asylums of New York City, are required to report all cases of malarial fever that come under their observation to the Board of Health. At a recent meeting of the board the following resolutions were adopted: Whereas, Recent investigations have shown that malarial fever is an infectious disease and can be largely prevented by the adoption of simple precautions, and Whereas, It is the desire of the Department of Health to prevent the extension of malarial fever, which now exists in some of the boroughs, to the other boroughs, and to restrict its prevalence in those boroughs where it already exists; Resolved, That all public institutions, hospitals, homes, asylums, etc., be required to report all cases of malarial fever which come under their observation, giving the name, age, sex, occupation and present address of the patient, and also information as to whether the attack is a primary infection or a relapse, and the address where the disease was probably contracted. Resolved, That all physicians in the city of New York be requested to furnish similar information in regard to patients suffering from malarial fever under their care. Resolved, That the circulars of information of the Department of Health regarding the causation and prevention of malarial fever be mailed to the addresses in which malarial infection has apparently been contracted, and also to the addresses from which the cases are reported, when these are different. Resolved, That postal cards for furnishing the required data be prepared and forwarded to institutions and physicians for reporting the cases of malarial fever which come under their observation, as is done in other infectious diseases.

MEDICAL SCHOOLS IN THE UNITED STATES.

Below is given a brief description of every college in the United States that is legally chartered to confer the M. D. degree and whose diploma is recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The order in which the colleges are placed is according to date of organization, grouped in cities. The information given is obtained, as a rule, from the catalogues.

ALABAMA.

Alabama, population 1,828,697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College.

Mobile.

MEDICAL COLLEGE OF ALABAMA.—This is the medical department of the University of Alabama, and was organized in 1859. It is located in Mobile, a city of 38,469 inhabitants. The City Hospital, under the management of the Sisters of Charity, furnishes free clinical material. The faculty consists of 9 professors and 17 lecturers, 26 in all. It is well equipped with buildings, laboratories, dispensary, etc. Its requirements for admission are those of the Southern Medical College Association. The course of study is graded and covers four years of six months each, but students entering on medical college work prior to the session beginning in 1899 may be graduated in three years. The total fees for each of the first three years is $100; for the fourth year, $125. Board and lodging, $3.50 to $5 per week. The Dean is Dr. George E. Ketchum, Mobile, Ala. Total registration, 1900-1901, 130; number of graduates, 38. The thirty-sixth session will begin on Oct. 8, 1901, and will close April, 1902.

Birmingham.

BIRMINGHAM MEDICAL COLLEGE.—This school was incorporated in 1894 and is situated in Birmingham, a manufacturing town of 38,415. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The clinical, histological and pathological laboratories are well equipped. There are 12 professors and 8 lecturers; total teachers, 20. The requirements for admission are those of the Southern College Medical Association. The course of instruction is a graded one and embraces four separate sessions of six months each. Those commencing prior to January, 1899, can graduate after three years. The fees are $75 for each of the first three years and $105 for the fourth. Good board can be obtained at from $12 to $20 per month. The Dean is Dr. B. L. Wyman, 212½ N. 20th St., Birmingham. Number of students registered last session, 77; number of graduates, 15. Next session opens Oct. 2, 1901, and closes April 1, 1902.

ARKANSAS.

Arkansas, population 1,311,564, has one medical college.

MEDICAL DEPARTMENT OF THE ARKANSAS UNIVERSITY.—This college is located at Little Rock, which has a population of 38,307. It was organized twenty-two years ago as the Arkansas Industrial University Medical Department. It belongs to the Association of American Medical Colleges, having become a member of the Association at its organization, and the requirements for admission are those of that Association. Hospital facilities are furnished by "Logan H. Roots Memorial Hospital," St. Vincent's Infirmary, and Pulaski County Hospital, the latter having a capacity of 200 beds. The teaching body consists of 21, Dr. F. L. French, Little Rock, being Secretary of the faculty. The fees are: Matriculation $5, paid but once; annual fees $58, and graduation $25. Board and lodging costs from $13 to $18 per month. Total number of students at last session, 240; graduates, 20. The next course of lectures begins Oct. 4, 1901, and ends April 11, 1902.

CALIFORNIA.

California, population 1,485,053, has six medical colleges. Five are located in San Francisco, a city of 342,782 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Hospital College, and the College of Physicians and Surgeons. The clinical facilities of San Francisco are good, and board and lodging can be obtained for from $20 to $30 a month. The other, the College of Medicine of the University of Southern California, is situated in Los Angeles, population 102,478. Board and lodging can be obtained in that city for $4 a week and upwards.

San Francisco.

COOPER MEDICAL COLLEGE.—This school was organized in 1858, though its present name was not adopted until 1882. The faculty consists of 17 professors, and 13 lecturers, demonstrators, etc., 30 in all. Lane Hospital, adjoining the college; the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The requirements for admission are that the applicant must show by certificate or examination sufficient knowledge of English grammar and composition, United States history, geography, arithmetic, elementary physics, Latin grammar and translation, and some knowledge of another modern language or science. After August 15, 1902, the requirements will be raised to equal those of admission to the State University. The college building supplies good laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight months each. Fees: First year, $115; second, $110; third, $100, and $125 for the fourth year. The Dean is Dr. Henry Gibbons, Jr., 920 Polk St., San Francisco. Total registration for 1900-1 was 167; graduates, 27. The present session opened August 15, 1901, and will close April 29, 1902.

MEDICAL DEPARTMENT UNIVERSITY OF CALIFORNIA.—This department of the State University was organized in 1872, and has a faculty composed of 17 professors, 9 associates and lecturers, 14 instructors and assistants, a total of 40. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The senior class is divided into sections of six students each and bedside instruction is given them five days a week. Practical laboratory examinations are required of the students in the laboratories of the hospital, and practical obstetrical demonstrations are given at the bedside. The building is commodious and furnishes good laboratory and lecture-room space. The course covers graded work for four years of eight months each. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those prescribed by that organization. The total fees for the first year are $115; second, $110; third, $100, and $125 for the fourth year. The Dean is Dr. Arnold A. D'Ancona, San Francisco. Total registration for 1900-1 was 164; graduates, 28. The thirtieth session opened August 15, 1901, and will close May 15, 1902.

CALIFORNIA MEDICAL COLLEGE.—Eclectic. This school was organized in 1878. Its faculty includes 14 professors, 8 lecturers and 6 instructors, a total of 28. The clinical material is supplied by the Maclean Hospital. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. D. Maclean, San Francisco. Total registration for 1900-1 was 49; graduates, 10. The next session opens October 7, 1901, and closes May 21, 1902.

HAHNEMANN HOSPITAL COLLEGE.—Homeopathic. This was organized in 1884, and has a faculty of 20 professors, and 18 lecturers, instructors, etc., in all 28. The Pacific Homeopathic Polyclinic, the Homeopathic Sanatorium and the San Francisco Nursery for Homeless Children and Marie Kip Orphanage, accommodating respectively 75 children and 120 girls; Fabiola Hospital, and the City and County Hospital furnish clinical material for study. Matriculants must possess a knowledge of English composition, arithmetic, geography, history and Latin, as evidenced by certificate or examination; however, one year after entrance is permitted in which the student may prepare himself. The course includes four years of seven months each. Total fees for the first year, $160, and $75 for each of the other three years. The Dean is Dr. James W. Ward, 606 Sutter St., San Francisco. Total registration for 1900-1 was 40; graduates, 6. The nineteenth session opened May 16, and will close December 12, 1901.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1896, and has a faculty of 10 professors and 26 associates, lecturers, etc., 36 in all. The City and County Hospital, 32 beds of which are available to students of this school for bedside instruction; St. Winifred's Hospital, with 100 beds; City Receiving Hospital, and a sanatorium at San Mateo supply material for clinical instruction. Applicants for matriculation must show an equal amount of work done or pass a satisfactory examination in English, history and government, geography, physics, mathematics and Latin grammar and translation. The college building, recently completed, is large and well supplied with laboratories and lecture rooms. The curriculum embraces four years of six months each. Fees: First year, $90; second, $85; third, $75, and $100 for the fourth year. The Dean is Dr. D. A. Hodgehead, San Francisco. Total registration for 1900-1 was 171; graduates, 38. The next session opens January 2, 1902, and closes June, 1902.

Los Angeles.

COLLEGE OF MEDICINE, UNIVERSITY OF SOUTHERN CALIFORNIA.—This school was organized in 1885, and has a faculty of 21 professors and 10 instructors, etc., 31 in all. The County Hospital, having 200 beds, and a college dispensary furnish clinical material. Applicants for admission are required to pass an examination in English, arithmetic, elementary algebra, physics and Latin equal to one year's work, unless they can show by certificate that they have covered that ground. The building is amply provided with laboratories and lecture rooms. A graded course, covering four years of twenty-six weeks each, is offered. The total fees for the first year are $145; second and third, $130 each, and $40 for the fourth year. The Dean is Dr. H. G. Brainerd, 315 W. Sixth St., Los Angeles. Total registration for 1900-1 was 87; graduates 19. The next session opens October 25, 1901, and closes June, 1902.

COLORADO.

Colorado, with a population of 539,700, has four medical colleges. Three of these are in Denver, which has a population of 133,859: Denver College of Medicine, Gross Medical College and Denver Homeopathic College; the other, the Colorado School of Medicine, is at Boulder. The clinical facilities in Denver

available to the three colleges are the Arapahoe County Hospital, which has a capacity of 225 beds; St. Joseph's Hospital, with 200 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upwards.

Denver.

DENVER COLLEGE OF MEDICINE.—This is the medical department of the University of Denver, and was organized in 1880. Besides the clinical advantages offered in the above hospitals, the State Home for Dependent Children and the City Contagious Hospital are open to its students. The faculty is made up of 35 professors and 11 lecturers, 46 in all. Its location is central and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months each. This college is a member of the Association of American Medical Colleges and its requirements for admission are governed by the rules of that Association. Final examinations at the end of each year are held. The fees for the first year are $90; for the next two, $86, and for the fourth year, $101. Dr. Henry Sewall, 23 Eighteenth Ave., is Secretary. Total registration 1900-1, 60; number of graduates, 20. The twenty-first session began Sept. 6, 1901, and will close May, 1902.

GROSS MEDICAL COLLEGE.—This is the medical department of the Rocky Mountain University, and was organized when that institution was founded in 1887. Situated in Denver, the clinical facilities are good, and besides the hospitals used in common by all, St. Anthony's Hospital and the National Jewish Hospital for Consumptives are claimed for its students alone for clinical material. The faculty consists of 28 professors and 16 lecturers, 44 in all. Its buildings are well adapted for didactic, clinical and laboratory teaching. Its requirements for admission are those laid down by the Association of American Medical Colleges, of which this college is a member. The course of study covers a four-year graded course, eight months constituting a year. The total fees for the first two years are $100 each; for the third, $90, and for the fourth year, $75, except to students who matriculated prior to the session of 1900-1 and who have attended their four years at this college, in which case the fourth-year fees are $55. The Secretary is Dr. Robert Levy, California Bldg., Denver. The total registration for 1900-1 was 78; number of graduates, 15. The fifteenth session began Sept. 11, 1901, and will close May, 1902.

DENVER HOMEOPATHIC COLLEGE.—This college was organized in 1894. Besides the Arapahoe County Hospital, exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven and the Belle Lenox Nursery are claimed for its students. The faculty is made up of 19 professors, and 12 lecturers and instructors, 31 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of seven months each; monthly examinations are held in each subject. A five-year scholarship may be had for $300, payable in advance, otherwise the tuition is $100 a year; there is a matriculation fee of $5, payable once. The Dean is Dr. James P. Willard, Masonic Temple, Denver. Total registration for 1900-1 was 41; the number of graduates, 5. The eighth session began Sept. 18, 1901, and will close April, 1902.

Boulder.

COLORADO SCHOOL OF MEDICINE.—This is the Medical Department of the University of Colorado, and was opened in 1883. It it situated in Boulder, a town of 6150 inhabitants. The University Hospital, under the control of the state, is equipped to accommodate 40 patients and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located in Boulder offers additional advantages in this line. The faculty embraces 15 professors and 10 lecturers and assistants, a total of 25. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Griffin, Boulder. Total registration for 1900-1 was 70; graduates, 9. The twentieth session began Sept 9, 1901, and closes June 7, 1902.

CONNECTICUT.

Connecticut has a population of 908,420, and contains one medical college:

YALE MEDICAL SCHOOL.—This is the department of medicine of Yale University, and is located in New Haven, a good railroad and manufacturing town of 108,027 people. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as The Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which from the granting of the first charter had taken an active part in its control, released itself from a further responsibility and the University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 150 beds and is the general hospital for New Haven; the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, which, with its 1800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Besides these, the New Haven Dispensary, having a staff of 30 physicians, offers material for clinical teaching. The faculty embraces 11 professors, 4 lecturers, 12 instructors, and 16 assistants, a total of 43. The lecture rooms and laboratories are large and well equipped. Matriculants are admitted without examination, provided that they have received a degree in Arts or Sciences, that they present certificates showing that they have successfully prosecuted the subjects of the examination at some college, high school, academy, or preparatory school approved by the faculty, or that they have passed matriculation examinations, equivalent to those required, at some approved professional school. This school is a member of the Association of American Medical Colleges. The course covers a four-year graded curriculum, eight months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialties, is presented. The fees are $150 for each of the first three years, and $130 for the fourth year; in the first year there are additional fees amounting to $18, and in the second, $8. Board and lodging in New Haven can be obtained for $4.50 and upwards. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1900-1 there were 133 matriculants and 18 graduates. The eighty-eighth session opens October 4, 1901, and closes June 26, 1902.

DISTRICT OF COLUMBIA.

Washington, population 278,718, offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, together with the libraries in the Surgeon-General's Office, the Toner Medical Library and the Museum of Hygiene, in all over 125,000 volumes upon medicine, opens to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at extremely reasonable rates. The medical schools are four, and are as follows:

MEDICAL SCHOOL OF COLUMBIAN UNIVERSITY.—This school was organized in 1821 as the Medical Department of Columbian College, which in 1873 became Columbian University. Besides University Hospital, under the immediate control of the faculty and giving the students of this school exclusive clinical advantages, the Garfield Hospital, the Children's Hospital, Central Dispensary and Emergency Hospital, the Providence Hospital, the Lutheran Eye and Ear Infirmary, the Episcopal, Columbia and the St. Elizabeth's Hospitals, all permit of abundant opportunity for clinics and clinical material. The faculty is composed of 29 professors, and 23 demonstrators and assistants, 52 in all. The candidates for matriculation are required to conform to the regulations of the Association of American Medical Colleges, of which this school is a member. The equipment and facilities for laboratory, didactic and clinical work are good. The completion of graded work covering the period of four years, eight months to the school year, is required; semi-annual examinations are held. Total fees for each year are $110. The Dean is Dr. E. A. de Schweinitz, 1325 H St. N. W., Washington. For the school year 1900-1 the total registration was 249; the graduates were 26. The eightieth session begins Oct. 7, 1901, and closes May 19, 1902.

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE.—This is the medical department of Georgetown University and was organized in 1850. The Georgetown University Hospital is under the control of the School of Medicine and affords excellent facilities for clinical teaching and ward classes. Clinics are also held for the benefit of the students in Providence Hospital, containing 300 beds; in the Children's Hospital, the Central Dispensary and Emergency Hospital and the Garfield Hospital. Attendance upon clinical instruction is obligatory in the third and fourth years. The faculty contains 27 professors, and 22 instructors and assistants, a total of 49. The requirements for admission are those of the Association of American Medical Colleges, of which this school is a member. The building is conveniently located, and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight months each. Examinations are held at the end of each session. The fees for the first year are $100; for the second, $105, and for the last two years, $100 each; a fee is charged for the material used in practical anatomy and operative surgery. The Dean is Dr. George M. Kober, 1600 T St., Washington. The total registration for the session 1900-1 was 123; graduates, 21. The next term opens Sept. 28, 1901, and ends May 31, 1902.

HOWARD UNIVERSITY MEDICAL DEPARTMENT.—Colored. This institution was organized in 1867 and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, so that it is devoted to them exclusively. The Freedmen's Hospital and Asylum is a general hospital of 300 beds and permits of the study of clinical cases among their own race. The faculty comprises 15 professors, and 10 lecturers and assistants, 25 in all. Matriculants are held to the requirements for admission prescribed by the Association of American Medical Colleges, to which this college belongs. The teaching has been in the past devoted to night classes, but the faculty announces that "it is probable that for the session of 1902-3 the first-year work will be day work almost altogether." Students are required to attend four courses of lectures in separate years of seven months each. The fees for each session are $80, plus $2 per part for dissecting material. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 714 13th St. N. W., Washington. Total registration for the year 1900-1 was 142; graduates, 19. The thirty-fourth session begins Oct. 1, 1901, and closes May, 1902.

NATIONAL UNIVERSITY MEDICAL DEPARTMENT.—This school was organized in 1884 and has a faculty made up of 30 professors, 1 assistant and 10 demonstrators, a total of 41. Clinical facilities are obtained at the Providence, Garfield and Episcopal Hospitals, the Eastern and Presbyterian Dispensaries and the Home for Incurables. Candidates for admission are held to the requirements laid down by the Association of American Medical Colleges, of which this school is a member. Instruction is given by lectures, recitations, clinical teaching and practical laboratory work. Oral examinations are held each week and final examinations, both oral

and written, at the end of each lecture term. The course consists of graded work for four years of eight months each. The total fees for each year are $100, except the first, when an additional fee of $5 is charged. The Dean is Dr. H. H. Barker, 1116 H St. N. W., Washington. Total registration for 1900-1 was 33; graduates, 11. The eighteenth session will begin Oct. 1, 1901, and will extend to May 3, 1902.

GEORGIA.

Georgia, population 2,216,331, has three medical colleges: Medical College of Georgia, located in Augusta; Atlanta College of Physicians and Surgeons, and Georgia College of Eclectic Medicine and Surgery, both in Atlanta.

Augusta.

MEDICAL COLLEGE OF GEORGIA.—This school was organized as a medical academy in 1829, and in 1873 was made the medical department of the University of Georgia, which relationship it still holds. It is situated in Augusta, a city of 39,441 inhabitants, and its faculty is made up of 15 professors, and 5 assistants, 20 in all. All students who entered on their first course after Sept. 30, 1900, must attend four sessions of six months each, those beginning previous to that time are compelled to take only three years' work, but in order to encourage these to take the additional year no tuition is charged them for the fourth year. Applicants for admission must, by examination, certificate or diploma, show that they possess an education equal to that required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted and they may remove the condition any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80; the Polyclinic, and Hospital for Contagious Diseases supply clinical material. Total fees for first two years are $100 each; third year, $90, and $120 for the last year. Board and lodging can be procured for from $3 to $5 a week. The Dean is Dr. Eugene Foster, Augusta. Total enrolment for 1900-1 was 107; graduates, 30. The seventieth session opens October 1, 1901, and closes April, 1902.

Atlanta.

ATLANTA COLLEGE OF PHYSICIANS AND SURGEONS.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It is situated in Atlanta, an enterprising manufacturing city with a population of 89,872, and has a faculty composed of 14 professors and an adjunct faculty of 17, a total of 31. Clinical facilities are furnished by the Grady Hospital, which is the general hospital for Atlanta; clinics are free to the graduating class. First course students are required to "give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country." The course of study covers four years of six months each and is graded; the coming commencement, April, 1902, will graduate the last three-year students. The buildings are large and a new building for practical anatomy has just been added. Fees: Matriculation, paid once, $5; tuition, each year, $100, and $30 for graduation fee. Board and room can be obtained for from $3 to $4 per week. The Dean is Dr. W. S. Kendrick, 71 Washington St., Atlanta. Total registration of students for 1900-1 was 282; graduates, 67. Next session begins October 2, 1901, and closes April 4, 1902.

GEORGIA COLLEGE OF ECLECTIC MEDICINE AND SURGERY.—This was organized in 1886, and has a faculty of 11 professors and 1 demonstrator. The college dispensary and Grady Hospital furnish clinical material. Applicants for admission must adhere to the requirements established by the National Confederation of Eclectic Colleges, of which this college is a member. The curriculum covers four years of six months each. The Proctor is Dr. Elzie B. Thomas, Atlanta. Total number of students for 1900-1 was 55; graduates, 21. The next session opens Oct. 2, 1901, and closes April 1, 1902.

ILLINOIS.

Illinois, population 4,821,550, has sixteen medical colleges. They are all located in Chicago, a city with 1,698,575 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, Woman's Medical School, Chicago Homeopathic Medical College, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Harvey Medical College, Illinois Medical College, Dunham Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University and Chicago Eclectic College. Room and board can be obtained for from $2.50 a week upwards.

RUSH MEDICAL COLLEGE.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898, and in the latter year became affiliated with the University of Chicago. The faculty is composed of 24 professors, 31 associate and assistant professors, and 59 instructors, assistants, etc., a total of 124. Good clinical facilities are furnished by Cook County Hospital, caring for about 20,000 patients yearly; Presbyterian Hospital, with 250 beds; a college dispensary, and an obstetric department. In addition to these, extra-mural clinical courses are offered at the West Side Hebrew Dispensary, St. Luke's Hospital, Illinois Charitable Eye and Ear Infirmary and Chicago Isolation Hospital. Bedside instruction is given. The requirements for admission are those of admission to the better universities or colleges. For the sessions of 1902 there will be required a certificate of admission to the second academic year of an accredited university, and for 1904-5 to the third year. By the addition of a recently completed, seven-story building, the facilities for clinical instructions are largely increased. The laboratories and their equipment are unexcelled. The curriculum covers graded work for four years of three quarters each, a quarter being three months. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both Science and Medicine. All freshmen and sophomore studies are given at the University of Chicago. The total regular fees are $157 this year, but it is designed to gradually increase the fees to $200 per year. However, students in continuous attendance, i. e., three quarters in twelve months, may complete their course by paying the fees in vogue when they first enter the college. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Dean is Dr. Frank Billings, 100 State St., Chicago. Total registration 1900-1 was 1055; graduates, 213. The fiscal year begins July 1; final examinations are held at the end of each quarter for those who have completed their work.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.—This school was organized in 1859 as the medical department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as medical department of Northwestern University. The faculty comprises 30 professors, 10 associates and assistants, and 46 instructors, demonstrators, etc., in all 86. The newly completed Wesley Hospital, with 225 beds; Mercy Hospital, containing 400 beds; Provident Hospital, having 100 beds, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. St. Luke's, Cook County, and the Chicago Lying-in Hospitals are also open to them for study. Applicants for admission must, by diploma, certificate or examination, show possession of the educational acquirements required to enter the College of Liberal Arts of Northwestern University. This school is a member of the Association of American Medical Colleges. The laboratory and lecture-room facilities are ample and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Final examinations are held at the end of each semester. The fees for each year are $135 and a matriculation fee of $5, paid once, is charged. The Dean is Dr. N. S. Davis, Jr., 65 Randolph St., Chicago. The total registration for 1900-1 was 344; graduates, 74. The next session opens Oct. 1, 1901, and closes June 19, 1902.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL.—Homeopathic. This was organized in 1851 and has a faculty of 19 professors and 30 associates, lecturers, etc., 49 in all. Hahnemann Hospital and a college dispensary supply clinical material. The requirements for admission are sufficient knowledge of English, arithmetic, geography, algebra, physics, United States history and Latin. A continuous course is held, in which the year is divided into three terms, two of which make up a school year. Four such years are necessary to cover the curriculum. Fees: Matriculation, paid once, $5; each term, $50, and hospital tickets, $5 each for third and fourth years. The Dean is Dr. E. Stillman Bailey, Marshall Field Bldg., Chicago. Total registration, 1900-1, was 175; graduates 51. The fall term began Sept. 9, 1901.

BENNETT COLLEGE OF ECLECTIC MEDICINE AND SURGERY.—Eclectic. This school was organized in 1868, and has a faculty of 25 professors and 4 assistants, 29 in all. Bennett Hospital, Cook County and Baptist Hospitals, and a college dispensary supply clinical facilities. Matriculants must present a diploma or "pass a satisfactory examination in conformity with the minimum requirements of the State Board of Health." The course covers four years of twenty-six weeks each. This school is a member of the National Confederation of Eclectic Medical Colleges. Fees for each year are $100, with a matriculation fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1900-1, was 124; graduates, 37. The thirty-fourth session begins Sept. 24, 1901, and ends May 13, 1902.

NORTHWESTERN UNIVERSITY WOMAN'S MEDICAL SCHOOL.—This school was founded in 1870, and in 1892 became a department of the Northwestern University. The faculty is made up of 25 professors and 27 assistants, lecturers, etc., a total of 52. The clinical facilities are furnished by Cook County, Wesley and the Woman's Hospitals, the Illinois Charitable Eye and Ear Infirmary and a college dispensary. The requirements for admission are those of admission to Northwestern University College of Liberal Arts. This school is a member of the Association of American Medical Colleges. There is a continuous session, the year being divided into four terms of three months each; three terms constitute a college year, and at least forty-five months must elapse from matriculation to graduation. The fees are $100 each year, with a matriculation fee of $15 for the first year and a diploma fee of $10. The Dean is Dr. Eliza H. Root, Chicago. Total registration, 1900-1, was 72; graduates, 19. The fall session begins Oct. 1, 1901.

CHICAGO HOMEOPATHIC MEDICAL COLLEGE.—Homeopathic. This was organized in 1876, and has a faculty of 21 professors and 46 adjuncts, lecturers, etc., a total of 67. The Chicago Homeopathic and Cook County Hospitals, together with a college dispensary, furnish clinical material. Applicants for admission must show by certificate or examination a sufficient knowledge of English, arithmetic, algebra, physics, United States history, geography, botany, and Latin equivalent to a year's study. The course covers four years of seven months each. Total fees are about $110 for each year. The acting Dean is Dr. A. C. Cowperthwaite, Marshall Field Bldg., Chicago. Total registration, 1900-1, was 152; graduates, 48. The next session opens Sept. 24, 1901, and ends April 22, 1902.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1882 and in 1896 became the medical department of the University of Illinois. The faculty is composed of 39 professors, 38 adjuncts and clinical professors and 38 instructors, etc., a total of 115. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and maternity clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the following hospitals for clinical study: Augustana, Baptist, Chicago, Woman's, Samaritan and Alexian Brothers' Hospitals, and the Illinois Eye and Ear Infirmary. Applicants for admission must conform to the requirements prescribed by the Association of American Medical Colleges, of which this school is a member. A magnificent building has recently been added to the college, and the laboratory, amphitheater and lecture-room space and equipment is good. A continuous session is held and the calendar year is divided into three terms of sixteen weeks each. Two terms constitute a collegiate year and credit

for more than that amount of work can not be obtained in any calendar year, except with the permission of the Dean. Four collegiate years are necessary for graduation. The fees are $130 each for the first two years, $115 for the third, and $125 for the fourth year. The Dean is Dr. William E. Quine, 103 State St., Chicago. Total registration for 1900-1 was 676; graduates, 164. The next fall term begins Oct. 1, 1901.

HERING MEDICAL COLLEGE.—Homeopathic. This school was organized in 1892. The faculty comprises 23 professors and 13 associates, lecturers, etc., in all 36. Hering College Hospital, National Temperance and Cook County Hospitals supply clinical facilities. The course covers four years of seven months each. The total fees for a full course are $300. The Dean is Dr. H. C. Allen, 5142 Washington Ave., Chicago. Total registration for 1900-1 was 60; graduates, 12. The tenth session begins Oct. 1, 1901, and ends April 11, 1902.

JENNER MEDICAL COLLEGE.—This is an evening school, organized in 1892. The faculty consists of 24 professors and 8 assistants, 32 in all. Cook County Hospital and college dispensary supply clinical material. This college conforms to the requirements of the Association of American Medical Colleges. The course covers four years of forty-two weeks each and embraces laboratory, didactic and clinical instruction. The total fees each year are $100, with a $5 matriculation fee, paid but once. The Secretary is Dr. Stuart Johnstone, 34 Washington St., Chicago. Total enrolment for 1900-1 was 101; graduates, 13. The next session begins Sept. 2, 1901, and ends June 19, 1902.

HARVEY MEDICAL COLLEGE.—This is a night school and was organized in 1894. The faculty comprises 39 professors and 8 assistants, demonstrators, etc., 47 in all. The college dispensary, having departments for both indoor and outdoor patients, where one evening clinic a week is held, furnish most of the material for clinical study. The requirements for admission are those of the Association of American Medical Colleges. The course covers four years of ten months each. Total fees for the first three years are about $130 each, and for the fourth year $150. The Secretary is Dr. J. Chase Stubbs, Chicago. Total registration for 1900-1 was 270; graduates, 17. The eighth session opened Sept. 2, 1901, and closes June 28, 1902.

ILLINOIS MEDICAL COLLEGE.—This school was organized in 1894 and has a faculty made up of 24 professors and 15 assistants, associates, etc., a total of 39. A college dispensary and Cook County Hospital are available for clinical study. The requirements for admission are based on those of the Association of American Medical Colleges. A continuous course consisting of four terms to the calendar year is offered, two terms of three months each constituting a college year. Four collegiate years are necessary for graduation, and forty-two months must elapse between that time and matriculation. Total fees are about $75 for each year. The Dean is Dr. B. B. Eads, Chicago. Total registration for 1900-1 was 202; graduates, 36. The next fall term begins Oct. 1, 1901.

DUNHAM MEDICAL COLLEGE.—Homeopathic. This was organized in 1895 and has a faculty of 31 professors and 8 associates and lecturers, in all 39. Cook County Hospital, Garfield Park Sanitarium, St. Anthony's Hospital and a college dispensary supply the clinical facilities. Four years' work of seven months each is required for graduation. The fees are about $110 for each year. The Dean is Dr. James T. Kent, 92 State St., Chicago. Total registration for 1900-1 was 122; graduates, 18. The eleventh session begins Sept. 24, 1901, and ends April 29, 1902.

AMERICAN MEDICAL MISSIONARY COLLEGE.—This school was organized in 1895, and has the primal object of educating men and women to act as missionaries and emphasize their religious teachings through their ability to heal the body. The faculty comprises a total of 21 teachers. The didactics and laboratory work, covering the first two years, is carried on at Battle Creek, Mich., and the clinical studies in Chicago. A hospital with 20 beds, in connection with the college, together with a college dispensary, containing an obstetric department, supply material for practical work. The requirements are based upon those of the Association of American Medical Colleges. The course covers four years of nine months each. Total fees are $120 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1900-1 was 119; graduates, 13. The seventh session opens Sept. 25, 1901, and closes June 24, 1902.

COLLEGE OF MEDICINE AND SURGERY.—Physio-Medical. This school was organized in 1896 and has a faculty of 31 teachers. A college dispensary supplies material for clinical work. The course covers four years of seven months each. Fees for the first year, $100; for the second and third, $95 each, and $110 for the fourth. The Dean is Dr. H. P. Nelson, 631 Jackson Blvd., Chicago. Total registration for 1900-1 was 46; graduates, 9. The next session begins Sept. 26, 1901, and ends April 26, 1902.

NATIONAL MEDICAL UNIVERSITY.—This was organized in 1889, and from the catalogue it seems to grant any degree desired, whether medical, dental or osteopathic, and to offer instruction at any time, whether day or night, summer or winter. A teaching force of 61 is shown, and it claims to require of applicants for admission the equivalent of a standard high school education. A four-year course of thirty-nine weeks each is claimed to be necessary for graduation. The total fees are $100 for each year, but "when the fee—$300 for the entire osteopathic course is paid in advance, the student may take the entire medical course and obtain the degree, Doctor of Medicine, without any further charge." Its degrees are recognized by the Illinois State Board of Health. Total matriculants for 1900-1 were 144; graduates in March were 6, and in June 6, a total of 12.

CHICAGO ECLECTIC COLLEGE.—The first session of this school will begin September 17. It has not yet been recognized by the Illinois State Board of Health.

INDIANA.

Indiana, population 2,516,462, has five medical colleges. Four are situated in Indianapolis, with 169,164 people: The Physio-Medical College, Central Medical College of Indiana, Central College of Physicians and Surgeons, and the Eclectic Medical College. The clinical facilities of Indianapolis are good and board and lodging can be obtained from $2.50 a week upwards.

The Fort Wayne College of Medicine is situated in Fort Wayne, a railroad and manufacturing town of 45,115 inhabitants. Board and room can be obtained there at an average of $3 a week.

Indianapolis.

PHYSIO-MEDICAL COLLEGE.—This school was organized in 1873 and has a teaching force of 29. The course has been lengthened to four years of 26 weeks each, beginning with this school year. Total fees for the four years are $65 each. The Secretary is Dr. C. T. Bedford, Indianapolis. Total enrolment, 1900-1, was 34; graduates, 9. The next session begins Oct. 1, 1901, and closes April 2, 1902.

MEDICAL COLLEGE OF INDIANA.—This is the medical department of the University of Indianapolis and was organized in 1878. The faculty embraces 25 professors and 32 adjuncts, lecturers, etc., a total of 57. The City Hospital, containing 200 beds; Indianapolis Dispensary, Central Hospital for the Insane, with a capacity for 1800 patients; St. Vincent's and the Maternity Hospitals, and a college dispensary provide clinical facilities; the wards in the charity hospitals are open to students of this college for bedside instruction. The laboratory and lecture-room space is ample. This college is a member of the Association of American Medical Colleges and the requirements for admission are those of that organization. The course extends over four years of seven months each. Fees: First and second years, $80 each; third, $75, and $100 for the fourth year. The Dean is Dr. Henry Jameson, 28 E. Ohio St., Indianapolis. Total enrolment for 1900-1 was 253; graduates, 46. The thirty-second session opens September 24, 1901, and closes April 24, 1902.

CENTRAL COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1879, and has a faculty of 22 professors, and 21 lecturers, demonstrators, etc., 43 in all. The City Hospital, Central Hospital for the Insane, City Dispensary, and a college dispensary supply material for clinical teaching. Applicants for admission must show educational requirements prescribed by the Association of American Medical Colleges, of which the school is a member. Instruction is by means of laboratory, didactic and clinical teaching, and the equipment is ample. The course of study covers four years of six months each. Fees: First year, $100; second, $110; third, $50, and $75 for the fourth year. The Dean is Dr. Samuel E. Earp, Indianapolis. Total registration for 1900-1 was 87; graduates, 23. The present session opened September 20, 1901.

ECLECTIC MEDICAL COLLEGE.—Eclectic. This school was organized two years ago and claims a teaching force of 22. The requirements for admission claimed are those of the National Confederation of Eclectic Medical Colleges. The catalogue shows a four-year course of six months each. A total of 14 students matriculated for 1900-1.

Fort Wayne.

FORT WAYNE COLLEGE OF MEDICINE.—This school was organized in 1879 and has a faculty of 24 professors, and 7 lecturers and assistants, a total of 31. St. Joseph's Hospital, with a capacity of 350 patients; Hope Hospital, with 200 beds; St. Roche's Hospital, having accommodation for 35 patients; Indiana School for Feeble-Minded Youth and Allen County Orphan Asylum, capable of holding 150 children, supply the clinical facilities. This school is a member of the Association of American Medical Colleges and the requirements and rules are those of the Association. The curriculum covers four years of six months each. The course is practical, supplemented by lectures and laboratory work. The total fees for each year are $75, with an additional $5 matriculation fee, payable once. The Dean is Dr. C. B. Stemen, 25 Broadway, Fort Wayne. Total number of students registered 1900-1 was 35; graduates, 4. The present session opened September 11, 1901, and closes March 25, 1902.

IOWA.

Iowa, population 2,231,853, contains five medical colleges. They are: College of Medicine of the State University of Iowa, College of Homeopathic Medicine of the State University of Iowa, Iowa College of Physicians and Surgeons, Sioux City College of Medicine, and Keokuk Medical College, College of Physicians and Surgeons.

Iowa City.

COLLEGE OF MEDICINE OF THE STATE UNIVERSITY OF IOWA.—This is situated in Iowa City, population 7987, and was organized as the Medical Department of the State University in 1870. The faculty is made up of 14 professors, 7 lecturers, and 10 demonstrators and assistants, a total of 31. The University Hospital, built in 1897 at a cost of $50,000, contains separate surgical, gynecological, medical, ophthalmological and laryngological operating rooms and furnishes good clinical material. A well-equipped hospital also supplies clinical material. Applicants for admission must conform to the requirements of the Association of American Medical Colleges, of which this college is a member. The course of study covers four years of thirty-six weeks each, embracing graded laboratory, didactic and clinical work. Combined courses leading to more than one degree are offered. Total fees for each year is $65. Board and lodging costs from $2.50 to $5 per week. The Dean is Dr. William D. Middleton, Iowa City. Total number of students registered for 1900-1 was 272; graduates, 35. The thirty-second course of lectures opened September 19, and will end June 12, 1902.

COLLEGE OF HOMEOPATHIC MEDICINE OF THE STATE UNIVERSITY OF IOWA.—This is a department of the State University and was organized in 1877. The faculty is composed of 10 professors, and 9 lecturers and assistants, a total of 19, but some of these are of

the faculty of the College of Medicine. The requirements for admission, and the work, with the exception of that pertaining to homeopathy, are the same as those for the other department. The fees are also the same. The Dean is Dr. Gorge Royal, Iowa City. Total registration for 1900-1 was 59; graduates, 16. The twenty-fifth session began September 19, and will end June 12, 1902.

Des Moines.

The Iowa College of Physicians and Surgeons.—This is the Medical Department of Drake University and is located in Des Moines, a city of 62,139 inhabitants. It was organized in 1882. The faculty contains 17 professors and 6 assistants, a total of 23. Mercy Hospital furnishes clinical material and attendance upon clinics is required the same as upon lectures. The requirements for admission are those determined by the Association of American Medical Colleges, to which this school belongs. Instruction is given by means of lectures, recitations, demonstrations, laboratory work and hospital clinics. The work covers a graded course of four years, of nine months each. Board and lodging can be obtained for $15 a month. The total fees for the first two years are $80 each, and for the last two years, $75 each. The Dean is Dr. Lewis Schooler, Des Moines. The total registration for the year 1900-1 was 78; graduates, 14. The twentieth session began September 18, and will end June 13, 1902.

Sioux City.

Sioux City College of Medicine.—This is located in Sioux City, population 33,111, and was organized in 1891. The faculty is made up of 14 professors and 1 demonstrator, 15 in all. Clinical material is supplied by St. Joseph's, Mercy and Samaritan Hospitals, and a college dispensary. The requirements for admission are those of the Association of American Medical Colleges, of which this college is a member. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fee, $5, and graduating fee, $20. The Dean is Dr. H. A. Wheeler, Sioux City. Total number of students registered 1900-1 was 52; graduates, 5. The twelfth session opened September 10, and will close April 30, 1902.

Keokuk.

Keokuk Medical College, College of Physicians and Surgeons.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized and four years later it became the Medical Department of the University of Iowa, continuing as such until 1870, when the original name was resumed. By the union, in 1899, of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. Situated in Keokuk, a town of 14,641 people, and drawing much from the surrounding country, the clinical material is good. St. Joseph's Hospital, under the charge of the Sisters of St. Francis, is open to the student for study and the clinics held there are large and varied. The faculty is composed of 17 professors and 1 demonstrator, 18 in all. This college is a member of the Association of American Medical Colleges and the requirements for admission are those of that organization. The studies embrace a graded course of four years, seven months to the year. Board and room can be secured for from $2 to $4 per week. The total fees for the first year are $63; for the second and third, $58 each, and $53 for the last year. The Secretary is Dr. Oliver D. Walker, Keokuk. Total registration for 1900-1 was 247; graduates, 51. The next session begins October 1, 1901, and ends April, 1902.

KANSAS.

Kansas, population 1,470,495, has three medical colleges, as follows: School of Medicine of the University of Kansas, located in Lawrence; Kansas Medical College in Topeka, and the College of Physicians and Surgeons, situated in Kansas City.

Lawrence.

School of Medicine of the University of Kansas.—This school does not confer the degree of Doctor of Medicine. It is situated in Lawrence, a town with 10,862 inhabitants, and was organized in 1880 as a department of the University of Kansas. The faculty is composed of 4 professors, 7 associates and assistants, and 7 lecturers, demonstrators, etc., a total of 18. This school is a member of the Association of American Medical Colleges and the requirements for admission are those of that Association. Only the purely scientific subjects are taught, but the work in these is thorough, seventy-two weeks being devoted to the two-year course. The greater part of the work is in the laboratory, with recitations and assigned readings, the lectures being supplementary only. For this reason the equipment and arrangement of the laboratories have been given special attention. A combined course of four years is offered, conferring the degree of Bachelor of Arts in Medicine. The total fees to residents of the state are: For the first year, $60, and for the second, $30; non-residents of the state are required to pay $25 additional for each year. The average cost of board and lodging is $3.75 a week. The Dean is Dr. S. W. Williston, Lawrence. The number of students registered for 1900-1 was 47. The present session began September 11, and will end June 11, 1902.

Topeka.

Kansas Medical College.—This college was organized in 1890 and is situated in Topeka, population 33,608. Its faculty is composed of 27 professors and 6 lecturers and assistants, 33 in all. Good material for both medical and surgical clinics is found in Christ's Hospital, with 100 beds; Riverside Hospital and Dispensary, and Topeka State Hospital; the dispensary at the college also supplies material for class demonstration. The requirements for admission are those prescribed by the Association of American Medical Colleges, of which this school is a member. The college building affords ample laboratory and lecture-room space. The course of study is a graded one covering four years of twenty-six weeks each. Individual instruction is especially aimed at. The total fees for the first two years are $70 each, and $68 each for the last two years. The cost of board and room varies from $2.50 to $4 a week. The Dean is Dr. John E. Minney, Topeka. The total registration for 1900-1 was 98; owing to the change from a three to a four-year course there was no graduating class in 1901. The twelfth session began September 10, and will close March 21, 1902.

Kansas City.

College of Physicians and Surgeons.—This was organized in 1894 as the Medical Department of Kansas City University, and is situated in Kansas City, a city with a population of 51,418. The faculty is made up of 29 professors, 3 lecturers, and 5 demonstrators and assistants, a total of 37. Bethany Hospital, with 60 beds; St. Margaret's Hospital, a college dispensary, and an outdoor obstetric department supplies clinical material. Praetical demonstration and bedside teaching is emphasized in the work. It is claimed that the requirements for admission are in accordance with the rules of the Association of American Medical Colleges, but this college is not a member. The course of study is a graded one of four years, seven months each. A scholarship is offered for $175, but taken separately the total fees for the first three years are $60 each, and for the fourth year, $50; a matriculation fee of $5, payable but once, is charged. The Dean is Dr. J. W. May, Topeka. The total registration of students for 1900-1 was 87; graduates, 31. The eighth session opened September 3, 1901, and will close March 26, 1902.

KENTUCKY.

Kentucky, population 2,147,174, has eight medical colleges. They are all situated in Louisville, a growing city of 204,731 inhabitants, and are as follows: University of Louisville Medical Department, Kentucky School of Medicine and Hospital, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department, Louisville National Medical College, and Medical Department of State University. Board and lodging can be obtained in Louisville from $2.50 to $4 per week.

Louisville.

University of Louisville Medical Department.—This school was organized in 1837, under the name, Louisville Medical Institute, and in 1846 it assumed its present title. It has a faculty of 8 professors, 3 clinical professors, 26 lecturers, demonstrators, etc., a total of 37. The University Hospital, City Hospital, St. Mary's and St. Elizabeth's Hospitals, together with the college dispensary, furnish good clinical material. Applicants for admission must show that they possess the educational requirements held by the Association of American Medical Colleges, of which this school is a member. The course covers graded work for four years of six months each. Total fees: First year, $107; second, $122; third, $105, and fourth, $112. The Dean is Dr. J. M. Bodine, Louisville. Total registration for 1900-1 was 157; graduates, 35. The sixty-fifth session begins Sept. 23, 1901, and ends March 31, 1902.

Kentucky School of Medicine and Hospital.—This school was organized in 1850, and has a faculty composed of 10 professors, 10 lecturers and 16 instructors and assistants, a total of 36. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges, and the requirements for admission are those of that organization. The laboratories and their equipment are good. The curriculum embraces a four years' course of six months each. The fees for the first two years are $110 each; for the third year, $90, and $80 for the fourth year. The Dean is Dr. W. H. Wathen, 658 Fourth Ave., Louisville. Total number of students registered for 1900-1 was 309; graduates, 43. The next session begins Jan. 2, 1902, and will end July 1, 1902.

Louisville Medical College.—This school was organized in 1869 and has a faculty of 10 professors and 13 instructors and assistants, 23 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be aequired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The total fees for each year are $100. The Dean is Dr. C. W. Kelly, Louisville. Total registration of students for 1900-1 was 196; graduates, 35. The next session opens Sept. 16, 1901, and closes March, 1902.

Hospital College of Medicine.—This school is the medical department of the Central University of Kentucky and was organized in 1873. The faculty is composed of 9 professors, 9 adjuncts and 23 lecturers, demonstrators, etc., a total of 41. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. The requirements for admission are those of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of six months each. Total fees for each of first two years, $120; for the third year, $85, and $125 for the fourth year. The Dean is Dr. P. Richard Taylor, Louisville. Total enrolment for 1900-1 was 347; graduates, 52. The twenty-eighth session opens Jan. 1, 1902, and closes June 27, 1902.

Southwestern Homeopathic Medical College.—Homeopathic. This college was organized in 1893 and has a faculty of 18 professors and 13 lecturers and assistants, 31 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven months each. Total fees: First year, $85; second, $80; third, $170, and $65 for the fourth year. The Dean is Dr. A. L. Monroe, Louisville. Total number of students for 1900-1 was 33; graduates, 11. Next session opens Oct. 1, 1901, and eloses April 29, 1902.

Kentucky University Medical Department.—This school was organized in 1898 and is the medical department of the Kentucky

University. The faculty is composed of 13 professors, 22 lecturers, demonstrators, etc., 35 in all. Broadway Infirmary, the City Hospital, and a college dispensary furnish clinical material. The requirements for admission are those of the Association of American Medical Colleges, this school being a member of that organization. The buildings provide ample facilities for clinical, laboratory and didactic instruction. The course of study embraces graded work of four years of at least twenty-five weeks each. Total fees: First year, $120; second, $110; third, $95, and $115 for the fourth year. The Dean is Dr. Thomas C. Evans, 419 W. Chestnut St., Louisville. Total number of students registered in 1900-1 was 204; graduates, 20. The next session opens Jan. 1, 1902, and closes June 26, 1902.

MEDICAL DEPARTMENT OF STATE UNIVERSITY.—This is a school for colored students organized in 1899. The faculty has 8 professors. The catalogue claims a four-year course of six months each. Total matriculants for 1900-1 were 12.

LOUISVILLE NATIONAL MEDICAL COLLEGE.—Colored. This was chartered in 1888 and shows a teaching force of 15. The catalogue claims a four-year course, six months to the year; the total fees are about $44 for each year. Total enrolment for 1900-1 was 21; graduates, 4.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 287,104 people. The cost of room and board is from $10 to $22 a month.

MEDICAL DEPARTMENT OF THE TULANE UNIVERSITY OF LOUISIANA. This school was organized in 1834 as the Medical College of Louisiana, and in 1884 it was incorporated under its present name, but remained the medical department of the State University. The faculty embraces 7 professors, and 17 lecturers, instructors, etc., 24 in all. By acts of legislature the Charity Hospital, with its 900 beds, has been opened to the students of this school for clinical study not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1900 there were 8301 cases treated in the wards of this hospital; these were indoor patients, and, in addition to these, 19,058 outdoor patients were treated in the free dispensary, a department of the hospital. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. This college is a member of the Southern Medical College Association and its requirements for admission are those of that organization. The laboratories are large and well equipped, and the lecture and recitation rooms are ample. The course of study covers four years of six months each. Total fees for the first two years are $135 each, and for the third and fourth, $145 and $165, respectively. The Dean is Dr. Stanford E. Chaille, New Orleans. Total number of students registered for 1900-1 was 390; graduates, 114. The sixty-seventh session begins October 31, 1901, and will close April 30, 1902.

MEDICAL COLLEGE OF NEW ORLEANS UNIVERSITY.—Colored. This school was organized in 1889 as the Medical Department of New Orleans University. It is devoted to the education of negro students. The faculty is made up of 6 professors and 3 instructors, 9 in all. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. The rules for admission are those of the Association of American Medical Colleges, of which this college is a member. The curriculum covers a graded course of four years, twenty-six weeks each. The laboratories and lecture rooms are ample. Examinations are held monthly. Total fees for the first year are $34; for the second, $37.50; third, $36.50, and $40 for the last year. The Dean is Dr. H. J. Clements, New Orleans. Total enrolment for 1900-1 was 32; graduates, 2. The thirteenth college year began September 3, and will end March 3, 1902.

MAINE.

Maine, population 694,466, has one medical college:

MEDICAL SCHOOL OF MAINE.—This is the Medical Department of Bowdoin College and is situated in Brunswick, a town with 5210 inhabitants; it was organized in 1820. The faculty is composed of 13 professors and 5 assistants, 18 in all. The clinical facilities are supplied by the Maine General Hospital. Applicants for admission, unless they possess a diploma, are examined in English, arithmetic, algebra, geometry, United States history, physics, chemistry and Latin. The course covers four years of twenty-six weeks each. The total fees are $120 for the first year; for the second and the third, $110, and $130 for the fourth year. Board and lodging cost from $3 to $5 a week. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students enrolled for 1900-1 was 90; graduates, 40. The next session opens December 26, 1901, and closes June 26, 1902.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges. They are all located in Baltimore, a city with 508,957 inhabitants, and they are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Woman's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School, and Maryland Medical College. The Bay View Hospital, having a capacity for 2,000 patients, is open to students for clinical instruction, and furnishes good opportunities for practical demonstrations. Board and lodging can be obtained for from $3 to $5 per week.

SCHOOL OF MEDICINE OF THE UNIVERSITY OF MARYLAND.—This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 14 professors, 21 clinical and associate professors, and 24 lecturers, demonstrators, etc., a total of 59. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Besides this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 10,734 patients were treated in 1900; the Hospital for the Relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital, and a college dispensary furnish material for clinical study. This school is a member of the Association of American Medical Colleges, and its requirements for matriculation are those specified by that Association. The laboratories and lecture rooms are ample and well equipped. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instructions, special attention being paid to bedside work, make up the system of teaching. The course covers four years of seven months each, and is graded. The total fees for the first two years are $120 each; for the third year, $110, and $140 for the final year. The Dean is Dr. R. Dorsey Coale, Baltimore. The total number of students registered in 1900-1 was 332; graduates, 71. The ninety-fifth session begins Oct. 1, 1901, and will terminate May 1, 1902.

COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.—This school was organized in 1872, and in 1878 Washington University School of Medicine, established in 1827, was consolidated with it. The faculty embraces 16 professors, 18 associate and clinical professors, and 18 demonstrators and assistants, a total of 52. The clinical facilities, besides those afforded in common with other schools, are supplied by the Baltimore City Hospital, the Hospital for the Colored Race, containing 100 beds; the Nursery and Child's Hospital, with 150 beds; the Maryland Lying-in Asylum, and a college dispensary. The requirements for admission are those established by the Association of American Medical Colleges, of which this school is a member. The work covers a graded course of four years, seven months constituting a year. The laboratories are well lighted and supplied with complete equipment; one important addition is the clinical laboratory for practical work. A sklascopic laboratory is also a recent addition and instructs the students in the use of the *x*-ray apparatus. Total fees for the first three years are $115 each, and $135 for the last year. The Dean is Dr. Thomas Opie, Baltimore. The total number of students registered in 1900-1 was 359, of which number 59 were graduates. The next session opens Oct. 1, 1901, and closes April 15, 1902.

BALTIMORE MEDICAL COLLEGE.—This college was organized in 1881, and has a faculty made up of 26 professors, 5 lecturers, 3 associates and 11 demonstrators and assistants, 45 in all. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital, in which 171 deliveries took place in 1900; the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, besides the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own treatment. Requirements for admission are those of the Association of American Medical Colleges, to which this college belongs. The college buildings afford ample laboratory, clinical and lecture-room space. Bedside teaching in the hospital wards is carried on in sections and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of seven months each. The Dean is Dr. David Streett, Baltimore. The total number of students registered in 1900-1 was 507; graduates, 97. The twenty-first session opens Sept. 26, 1901, and closes April 19, 1901.

WOMAN'S MEDICAL COLLEGE.—This school was organized in 1882 and has a faculty of 14 professors, 5 adjunct professors, and 9 assistants and lecturers, a total of 28. The Hospital of the Woman's Medical College, Presbyterian Eye, Ear and Throat Charity Hospital, St. Mary's Asylum and a college dispensary furnish clinical material. The college is a member of the Association of American Medical Colleges, and applicants for admission are controlled by the rules of that organization. The laboratories and lecture rooms are equipped with all necessary apparatus; the practical work is emphasized. Eight months constitute a school year, and the course covers graded work for four years. The total fees for the first three years are $105 each, and $85 for the last year. Total number registered for 1900-1 was 31; graduates, 7. The twentieth session opens Oct. 1, 1901, and closes June 5, 1902.

BALTIMORE UNIVERSITY SCHOOL OF MEDICINE.—This school was organized in 1884, and has a faculty made up of 12 professors, and 11 lecturers, demonstrators, etc., in all 28. The Baltimore University Hospital, Lying-in Hospital and the clinical material used in common with the other schools, supply the facilities for practical work. In the hospital wards the student is given bedside instruction, and in surgical clinics the students act as assistants in the operations, and are taught to administer anesthetics. The requirements for admission are those of the Association of American Medical Colleges, of which this college is a member. The college dispensary affords much clinical material and the students, under the direction of the physician in charge, make calls and treat patients at their homes. The lecture rooms and laboratories are ample, and the course of instruction, which consists of graded work for four years of six months each, is practical. The total fees for the first two years are $100 each; for the third year, $80, and $110 for the fourth year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St., Baltimore. Total registration for year 1900-1 was 66; graduates, 31. The eighteenth session opens October 1, 1901, and closes April 15, 1902.

SOUTHERN HOMEOPATHIC MEDICAL COLLEGE.—Homeopathic. This school was organized in 1890, and has a faculty of 13 professors, 3 associate professors, and 23 lecturers and demonstrators, a total of 39. The clinical facilities are those offered by the Maryland Homeopathic Hospital, which has 55 beds, and the dispensary; the obstetric department also furnishes clinical material. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history, and Latin, unless they possess satisfactory evidence that they have done a corresponding amount of work. The course covers graded work for four years,

seven months to the year. The fees are $105 for the first year, $100 each for the second and third, and $130 for the last year. The Dean is Dr. George T. Shower, 421 Roland Ave., Baltimore. Total registration 1900-1 was 32; graduates, 10. The eleventh session begins September 30, 1901, and ends May 7, 1902.

JOHNS HOPKINS MEDICAL SCHOOL.—This is the medical department of Johns Hopkins University and was organized in 1893. The faculty comprises 11 professors, 14 clinical and associate professors, 14 lecturers and associates, and 25 instructors and assistants, a total of 64. The Johns Hopkins Hospital and Dispensary furnishes abundant and varied clinical material; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has, (a) completed the chemical-biologic course which leads to the A. B. degree in the University; (b) graduated at an approved college or scientific school, and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and such knowledge of physics, chemistry and biology as above indicated. If the candidate is unable to show this, he must pass a satisfactory examination covering this ground. This school is a member of the Association of American Medical Colleges. The anatomic, physiologic, pathologic and clinical laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid upon practical work in the laboratories, dispensary and in the wards of the hospital. The first two years is devoted to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years, eight months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented; that fee is $5 a year. The Dean is Dr. William H. Howell, 232 W. Lanvale St., Baltimore. Total registration in 1900-1 was 209; graduates, 54. The ninth session begins October 1, 1901, and ends June 15, 1902.

MARYLAND MEDICAL COLLEGE.—This school was organized in 1898, and has a faculty of 14 professors, and 11 associates, lecturers, etc., 25 in all. The Franklin Square Hospital and a college dispensary furnish clinical material. The course of study covers three years of eight months each, but after October, 1902, all students matriculating will be compelled to take a four-year course. A matriculation fee of $5 and total laboratory fees for the three years of $45 is charged; the tuition for full course is $65 each year. The Dean is Dr. J. Wm. Funk, Baltimore. Total registration for 1900-1 was 75; graduates, 29. The fourth session begins October 1, 1901, and closes May 15, 1902.

MASSACHUSETTS.

Massachusetts, population 2,805,346, has four medical colleges: Medical School of Harvard University, Boston University School of Medicine, College of Physicians and Surgeons, and Tuft's College Medical School. They are all situated in Boston, a city of 500,892 inhabitants, and enjoy in common the following clinical advantages: The Massachusetts General Hospital, in which during the past year 5086 patients were treated in the wards and 31,003 in the out-patient departments; the Boston City Hospital, where during that time 8719 ward patients and 22,640 out-patients were treated, and the Massachusetts Charitable Eye and Ear Infirmary, which furnished treatment for 22,349 patients during the past year. Library facilities are good. Board and lodging can be obtained for from $5 to $7 per week.

MEDICAL SCHOOL OF HARVARD UNIVERSITY.—This was organized in 1872 as the Medical Department of Harvard University, and has a faculty composed of 20 professors, 10 associates and assistants, and 1 demonstrator, a total of 31. Besides the clinical advantages mentioned, the Boston Lying-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year; the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in Arts, Literature, Philosophy or Science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case." Each candidate is required to hand in the original note-book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each; the course is graded, and each correlated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; for the first three years, $200 each, and for the last year, if the three previous years have been taken in this school, $130; total of other fees charged is $22. The Dean is Dr. William L. Richardson, 688 Boylston St., Boston. Total registration for 1900-1 was 591; graduates, 116. The 120th session begins September 26, 1901, and ends June 26, 1902.

BOSTON UNIVERSITY SCHOOL OF MEDICINE.—Homeopathic. This school was organized in 1873; in 1874 the New England Female Medical College, founded in 1848, was merged into it. The faculty includes 17 professors, 21 associates and lecturers, and 20 instructors and assistants, a total of 58. Clinical material is furnished by the Massachusetts Homeopathic Hospital, containing 225 beds, and a dispensary and maternity hospital. Candidates who have taken their degree in arts, philosophy or science, are not examined; all others are examined in English, Latin, French or German or history, mathematics and physics. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year is $105; for the second and third, $125 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 295 Commonwealth Ave., Boston, Mass. Total registration for 1900-1 was 127; graduates, 24. The twenty-ninth session opens October 3, 1901, and closes June 6, 1902.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1880, and has a faculty of 24 professors, and 9 lecturers and assistants, a total of 33. Clinical facilities are furnished by the North End Hospital and Dispensary, Union General Hospital, and the city and state institutions. The requirements for admission are those of the Association of American Medical Colleges, of which this school is a member. The course of study covers graded work for four years of eight months each. The total fees for the first year are $100, and for each of the other years about $110, with a graduating fee of $30. The Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total students registered 1900-1 was 127; graduates, 9. The twelfth session begins September 25, 1901, and ends June 26, 1902.

TUFTS COLLEGE MEDICAL SCHOOL.—This school was organized in 1893 as the Medical Department of Tuft's College. It has a faculty of 16 professors, 6 assistant professors and 31 lecturers, instructors and assistants, a total of 53. Clinical material is furnished by the Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; the student has also the advantages derived from an out-department in connection with the Boston Dispensary. "Graduates of a high school, college or university, and students having certificates of entrance to a college or university, or holding the state of New York Regents' certificate," also certain approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics and mathematics, including arithmetic, elementary algebra and plane geometry. The laboratories and lecture rooms are ample in their equipment and capacity. Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent examinations are held during a course and a final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. The total fees is $125 each year; dissecting material is furnished at cost. The Dean is Dr. Harold Williams, 528 Beacon St., Boston, Mass. Total number of students for 1900-1 was 277; graduates, 35. The ninth session begins October 2, 1901, and ends May 28, 1902.

MICHIGAN.

Michigan, population 2,420,982, has seven medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a town of 14,509 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 285,704 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room can be obtained for $3 a week upwards. Grand Rapids Medical College is located in Grand Rapids, population 87,565, and here the cost of room and board is from $3 to $3.50 a week. The other school, Saginaw Medical College, is located in Saginaw, a city having a population of 42,345. Board and lodging can be procured for from $3 to $4.50 a week.

Ann Arbor.

UNIVERSITY OF MICHIGAN DEPARTMENT OF MEDICINE AND SURGERY.—This department of the State University was organized in 1850 and has a faculty composed of 12 professors, 15 associates and lecturers, and 39 instructors, assistants, etc., a total of 66. The University Hospital, together with a lying-in department, furnish the clinical facilities. Beginning January 1, 1901, the requirements of admission provide that the applicant either by certificate or examination show a sufficient knowledge of the following: English grammar, rhetoric and composition, United States and general history, algebra, through quadratics, plane and solid geometry and plane trigonometry; physics, biology and chemistry; German or French, and Latin. The laboratories and their equipment are good, and the training in them and in didactic work is thorough. This school is a member of the Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course, leading to degrees in both science and medicine in six years, is offered. The total fees for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan, Ann Arbor. Total registration for 1900-1 was 563; graduates, 75. The next session begins September 25, and will end June 20, 1902.

HOMEOPATHIC COLLEGE, UNIVERSITY OF MICHIGAN.—This department of the University was organized in 1875 and has a faculty of 6 professors, 3 assistants and 2 non-resident lecturers; the remainder of the teaching force utilized is that of the other departments of this University. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching. The course covers four years of nine months each. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. Walter B. Hinsdale, Ann Arbor. Total enrolment for 1900-1 was 68; graduates, 16. The present session began September 24.

Detroit.

DETROIT COLLEGE OF MEDICINE.—This school was formed in 1885 by the union of Detroit Medical College, organized in 1868,

and the Michigan College of Medicine, established 1880. The faculty embraces 21 professors, 44 lecturers, instructors, etc., and 30 clinical professors, a total of 95. Clinical facilities are offered by the following hospitals: St. Mary's and Harper, each of which contain a free dispensary; Woman's, St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges and the requirements of admission are those of that organization. The course covers four years of seven months each. The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once $5; tuition, each term, $60; hospital and laboratory tickets, each $10, and extra senior fees, $40. The Secretary is Dr. H. O. Walker, Detroit. Total enrolment for 1900-1 was 224; graduates, 45. The next session begins September 25, and will close May, 1902.

MICHIGAN COLLEGE OF MEDICINE AND SURGERY.—This school was organized in 1888, and has a faculty of 14 professors and 9 assistants, in all 23. Clinical facilities are offered by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges and the requirements for admission are those established by that Association. The course covers graded work for four years of seven months each. Fees: For the first two years, $85 each; third year, $70, and $95 for the fourth year. The Dean is Dr. Hal. C. Wyman, 46 W. Adams Ave., Detroit. Total registration for 1900-1 was 75; graduates, 25. The fourteenth session began September 18, and will end April 24, 1902.

DETROIT HOMEOPATHIC COLLEGE.—Homeopathic. This was organized in 1899 and has a faculty of 18 professors, and 15 lecturers, assistants, etc., in all 33. Grace Hospital and a college dispensary are available for study of clinical cases. Unless possessing certificate of an equal amount of work completed, applicants for admission will be examined in English, arithmetic, history, geography and elementary Latin. The course embraces work for four years, seven months making a year. Fees: First year, $80; second, $75; third, $65, and $85 for the fourth year. The Dean is Dr. D. A. MacLachlan, Detroit. Total enrolment for 1900-1 was 41; graduates, 4. The next session begins September 25, and will close April 22, 1902.

Grand Rapids.

GRAND RAPIDS MEDICAL COLLEGE.—This was organized in 1897 as a three-year school, but the catalogue shows that all students matriculating after January 1, 1901, will be compelled to take a four-year course of six months. The faculty is made up of 23 professors and 8 associates, assistants, etc., in all 31. Clinical cases in the U. B. A. Hospital, St. Mary's, Woman's Butterworth Hospitals, and St. John's Orphan Asylum and a college dispensary are available for study. The total fees are in the neighborhood of $65 for each year. The Dean is Dr. E. G. Edwards, Middicomb Bldg., Grand Rapids. Total enrolment for 1900-1 was 47; graduates, 17. Next session opens about October 1, 1901.

Saginaw.

SAGINAW VALLEY MEDICAL COLLEGE.—This school was organized in 1896, and claims a teaching force of 30. Clinical material is supplied by a college hospital and a college dispensary. The catalogue states that the equivalent education to graduation from a recognized high school is required for admission. The course as shown covers four years of eight months each: Fees: Matriculation, paid once, $5; tuition, each year, $50; laboratory and hospital and dissecting ticket, each $10, and graduation fee, $25. The Secretary is Dr. W. B. Cornell, Saginaw. Total enrolment for 1900-1 was 102; graduates, 24.

MINNESOTA.

Minnesota, population 1,751,394, contains three medical colleges: College of Homeopathic Medicine and Surgery, Hamline University College of Medicine, and College of Medicine and Surgery. They are all situated in Minneapolis, a city with a population of 202,718, and owing to its proximity to St. Paul, the following clinical advantages are available to them: City Hospital, Minneapolis; City Hospital, St. Paul; and St. Luke's and St. Joseph's Hospitals, both in St. Paul. The average cost of board and lodging is $20 a month. An agreement as to requirements for admission has been entered into between the University of Minnesota and Hamline University. They are (a) proof that the candidate has completed work in English composition and rhetoric; history, both ancient and modern; physiology, physics, algebra, geometry, and Latin equal to one year's work, or (b) ability to pass a satisfactory examination in these subjects.

COLLEGE OF MEDICINE AND SURGERY.—This is a department of the University of Minnesota and was organized in 1883. Until 1883 its work was only to examine for the degrees of B. M. or M. D., but at that time, with the absorption of the Minnesota Hospital Medical College and the St. Paul Medical College, it was reorganized and its present function assumed. Its faculty is made up of 24 professors, 11 clinical professors, 22 instructors and lecturers, and 20 assistants, a total of 77. Besides the clinical advantages enjoyed in common with the other schools, St. Mary's, St. Barnabas and Asbury Methodist Hospitals, the City and County Hospitals of St. Paul and the St. Paul Dispensary, as well as the college dispensary, all furnish valuable material for clinical study. This college is a member of the Association of American Medical Colleges. The medical buildings, four in number, offer good laboratory and lecture room facilities, and the equipment is all that is needed for thorough instruction. The curriculum covers four years of nine months each and the work is carefully graded. The total fees for each year is $100. The Dean is Dr. Parks Ritchie, Minneapolis. Total number of students registered for 1900-1 was 322; graduates, 60. The next session opens September 23, 1901, and closes June 5, 1902.

HAMLINE UNIVERSITY COLLEGE OF MEDICINE.—This is the Medical Department of Hamline University, and was organized in 1883. Its faculty is composed of 27 professors, 6 associate and clinical professors, and 12 instructors and assistants, a total of 45. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. Besides the hospitals mentioned, clinical work is offered to the student in Asbury Methodist Hospital, Barnabas and St. Mary's Hospitals in Minneapolis, Bethesda Hospital in St. Paul, and the college dispensary. This school belongs to the Association of American Medical Colleges. The course of study covers graded work for four years, nine months making a year. Total fees, first year, $87.50; second year, $82.50, and for each of the last two, $75. The Dean is Dr. L. M. Crafts, Minneapolis. Total number of students 1900-1 was 131; graduates, 25. The next session begins September 17, 1901, and ends June 5, 1902.

COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY.—This is a department of the University of Minnesota and was organized in 1888. The faculty comprises 17 professors and 5 assistants, 22 in all. The primary branches are taught by the professors of the College of Medicine and Surgery. The course is graded, extending over four years of eight and one-half months each. The total fees for the first two years is $100 each, and $80 each for the last two years. The Dean is Dr. Alonzo P. Williamson, Minneapolis. Total number of students registered in 1900-1 was 26; graduates, 4. The next session opens September 23, 1901, and closes June 5, 1902.

MISSOURI.

Missouri, population of 3,106,665, has fifteen medical colleges. St. Louis, population 575,238, contains six of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Marion-Sims Beaumont College of Medicine, Washington University Medical Department, and Barnes Medical College. Board and lodging can be procured for from $3.50 to $5 a week. Kansas City, with 163,752 inhabitants, also has as follows: Kansas City Medical College, University Medical College, the Hahnemann Medical College of Kansas City, Woman's Medical College, Medico-Chirurgical College and Eclectic Medical University. Room and board can be obtained in this city for from $3 to $5 a week. Ensworth Medical College and Central Medical College are located in St. Joseph, population 102,979; board and room can be had for from $2.50 to $5 a week. The Department of Medicine of the University of Missouri is at Columbia, a town of 5651. Board and lodging can be obtained at Columbia for from $2 to $5 a week.

St. Louis.

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1878, and has a faculty of 21 professors, 19 lecturers, demonstrators, and clinical instructors, and 4 special lecturers, a total of 44. The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only; City Hospital, with 600 beds; French Hospital, having 250 beds; City Insane Asylum; City Poorhouse and the college dispensary. Applicants for admission must show that they are possessed of the requirements prescribed by the Association of American Medical Colleges, of which this college is a member. The laboratory and lecture-room space and the equipment are ample. The course of study covers four years of seven months each, and is graded. Total fees for the first year are $70, second $60, third $50, and $75 for the fourth year. The Dean is Dr. Waldo Briggs, 1405 Olive St., St. Louis. Total number of students registered, 1900-1, was 243; graduates, 52. The twenty-third session began September 17, 1901, and ends April 9, 1902.

AMERICAN MEDICAL COLLEGE.—Eclectic. It was organized in 1873, and has a faculty of 14 professors, and 13 clinical instructors, a total of 27. Metropolitan Hospital, containing 40 beds, and a college dispensary supply clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges, of which this college is a member. The course of study covers four years of twenty-six weeks each. The total fees for the first two years are $80 each, third year $75, and $100 for the fourth year. Total registration for 1900-1 was 75; graduates, 16. The Dean is Dr. E. Younkin, St. Louis. The present session opened September 16, 1901, and closes March 25, 1902.

HOMEOPATHIC MEDICAL COLLEGE OF MISSOURI.—This was organized in 1882 and has a faculty of 26 professors and 5 demonstrators and assistants. Clinical facilities are offered by the City Hospital, Children's Free Hospital and a college dispensary. The curriculum covers four years of seven months each. Fees: First year, $80; second, $75; third, $60, and $85 for the fourth year. The Dean is Dr. W. B. Morgan, St. Louis. Total registration for 1900-1 was 66; graduates, 11. The present session opened September 10, 1901, and closes April 17, 1902.

MARION-SIMS BEAUMONT MEDICAL COLLEGE.—By the recent union of Marion-Sims, which was organized in 1890, and Beaumont Hospital Medical College, organized in 1886, the present school has been founded. The faculty is composed of 36 professors, 20 lecturers and assistants, and 4 demonstrators, a total of 60. Clinical facilities are offered by Alexian Brothers' Hospital, with 250 beds; St. Mary's Hospital, containing 200 beds; Rebekah Hospital, having a capacity for 50 patients; St. Mary's Infirmary, containing 150 beds; the City Hospital and Insane Asylum, each with a capacity of 600 patients. Grand Avenue Dispensary also furnishes good material for practical instruction. The requirements for admission are those outlined by the Association of American Medical Colleges, of which this college is a member. The buildings afford ample laboratory and lecture-room space and they are well equipped. The course of study embraces laboratory and clinical instruction,

with recitations and lectures. The curriculum covers four years of seven months each. The total fees for the first year are $85; for the second and third, $80 each, and $100 for the fourth. The Secretary is Dr. H. W. Loeb, St. Louis. Total number of students registered for 1900-1 was 366; graduates, 87. The next session opens October 1, 1901, and closes May 1, 1902.

WASHINGTON UNIVERSITY MEDICAL DEPARTMENT.—This school was organized in 1891 from the St. Louis Medical College, which was organized in 1841, and in 1899 the Missouri Medical College, organized in 1840, was added. The faculty comprises 33 professors, 19 clinical professors and lecturers, and 4 instructors, a total of 56. Clinical material is furnished by the St. Louis Mullanphy Hospital, St. John's Hospital, the Polyclinic and Bethesda Hospitals and O'Fallon Dispensary; the out-patient departments also furnish good opportunities for clinical study. In addition to these, the City Hospital, French Hospital, Insane Asylum and Poorhouse is used in common with the other schools. The requirements for admission are claimed to be those of the Association of American Medical Colleges. The college buildings, of which there are two, furnish good laboratory and lecture-room facilities. The course is four years of seven months each, and the system of study embraces laboratory, didactic and clinical teaching. The total fees for the first year, $121; second, $116, and for the third and fourth years, $100 each. The Dean is Dr. J. B. Shapleigh, St. Louis. Total registration of students for 1900-1 was 227; graduates, 54. The next session opens September 26, 1901, and closes May 8, 1902.

BARNES MEDICAL COLLEGE.—This school was organized in 1892, and has a faculty of 24 professors, 9 lecturers, and 11 assistants and instructors, a total of 44. The clinical advantages are those offered by Centenary Hospital, with 150 beds; City Hospital; the college dispensary and the outdoor obstetrical department. This college is a member of the Association of American Medical Colleges and the requirements for admission are those prescribed by that organization. The laboratories are well equipped and other facilities ample. The course of study includes graded work for four years of seven months each. The total fees for the first three years are $75 each, and $85 for the fourth year. The Secretary is Dr. Pinckney French, Century Bldg., St. Louis. Total registration for 1900-1 was 520; graduates, 111. The ninth session opens Sept. 23, 1901, and closes April 11, 1902.

Kansas City.

KANSAS CITY MEDICAL COLLEGE.—This was established in 1869, and has a faculty made up of 19 professors, and 12 lecturers, demonstrators, etc., in all 31. The clinical facilities are those of St. Joseph's Hospital, which also contains an out-patient department; the City Hospital, St. Margaret's Hospital, Scarritt Hospital, St. Anthony's Home for Children and the college dispensary. This college is a member of the Association of American Medical Colleges and its requirements for admission are governed by the rules of that Association. The building is large and well equipped, the course is graded and the classes in practical work are divided into sections of ten each, in order that personal instruction may be obtained. The curriculum embraces four years of seven months each. The total fees for the first two years are $75 each, for the third $80, and $85 for the fourth. The Dean is Dr. Andrew S. Fulton, Deardoff Bldg., Kansas City. Total registration of students for 1900-1 was 114; graduates, 44. The thirty-third session opened Sept. 17, 1901, and closes March 21, 1902.

UNIVERSITY MEDICAL COLLEGE.—This was organized in 1881 as the University of Kansas City Medical Department and in 1888 was reorganized under its present name. Its faculty comprises 21 professors, 11 adjunct professors and lecturers, and 14 assistants, a total of 46. Clinical material is furnished by the University Hospital, the City Hospital, German Hospital, Home for the Aged, containing 147 beds; the Sisters' Hospital, Scarritt and St. Margaret's Hospitals, the Children's Home, St. Joseph's Orphan Asylum, and the college dispensary and obstetric department. Instruction is given by means of lectures, recitations, demonstrations, and laboratory work and clinics. The requirements for admission are those of the Associatiou of American Medical Colleges, of which this school is a member. The college building, which has been recently enlarged, furnishes ample accommodations for laboratories and lecture rooms. The course of study covers four years of six months each, and the work is graded. The total fees for each of the first two years are $80, for the third $60, and $85 for the fourth year. The Dean is Dr. Samuel C. James, Junction Bldg., Kansas City. The total number of students registered in 1900-1 was 246; graduates, 69. The twenty-first session began Sept. 9, 1901, and ends March 26, 1902.

KANSAS CITY HOMEOPATHIC MEDICAL COLLEGE.—This school was organized in 1888 and has a faculty of 32 men. The City Hospital, Homeopathic Hospital, the Sanitarium, Scarritt, University, Women's and Children's, German, Bethany and Children's Hospitals are open to its students for clinical study. The college dispensary and clinics also supply clinical material. Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography, United States history, and Latin equal to one year's work. The course covers four years of seven months each. Total registration for 1900-1 was 50; graduates, 12. The fourteenth session began Sept. 9, 1901, and closes April 1, 1902. [Recently consolidated with the Kansas City University College of Homeopathic Medicine and Surgery, under the name, Hahnemann College of Kansas City.]

WOMAN'S MEDICAL COLLEGE.—This school was organized in 1895, and has a faculty composed of 27 professors, 7 lecturers and assistants, and 3 special lecturers, a total of 37. Material for clinical study and demonstration is furnished by St. Joseph's, Scarritt, German, Sisters', Agnew, St. Margaret's and City Hospitals, and the college dispensary. The requirements for admission are those determined by the Association of American Medical Colleges. The course of study embraces graded work for four years of seven months each. The total fees for the first year are $68; second, $60; third, $55, and $80 for the fourth year. The Dean is Dr. Nannie P. Lewis, 1219 Wyandotte St., Kansas City. Total number of matriculants for 1900-1 was 23; graduates, 9. The seventh session opened September 18, 1901, and closes March 27, 1902.

MEDICO-CHIRURGICAL COLLEGE.—This school was organized in 1897 as the Kansas City College of Medicine and Surgery of Kansas City, Kan., and was reorganized the following year under its present name. Its faculty embraces a total of 46. Clinical facilities are furnished by the hospitals of Kansas City used in common by the medical colleges, and a college dispensary. The course covers four years of six months each. The fees are: For the first year, $70; second, $65; third, $55, and $75 for the fourth year. The Dean is Dr. George O. Coffin, Kansas City. Total registration for 1900-1 was 117; graduates, 25. The present session opened September 17, 1901, and closes March 20, 1902.

ECLECTIC MEDICAL UNIVERSITY.—Eclectic. This is a new school, organized in 1898, with 20 names in its faculty. The catalogue claims that the curriculum covers four years of six months each. Fees, about $70 each year, with a graduation fee of $15. The Dean is Dr. C. Palmer, Kansas City. Total students for 1900-1 was 48; graduates, 14. The next session begins Sept. 16, 1901, and ends March 14, 1902.

Columbia.

DEPARTMENT OF MEDICINE OF THE UNIVERSITY OF THE STATE OF MISSOURI.—This department was organized at Columbia in 1872. The faculty embraces 9 professors, 8 lecturers and assistants, and 8 instructors, a total of 25. The Parker Memorial Hospital and the Boone County Infirmary supply the clinical material. Applicants for admission are required to show by certificate that they possess educational acquirements which are about equivalent to a good high school education. The laboratories and lecture rooms are large and well equipped; in the scientific work they are the same as used by the other departments of the University, and they are under the charge of the heads of the different chairs. The training in the technical studies and laboratory work is excellent. The course covers four years of nine months each, and the work is graded. A combined course of six years is offered, conferring the degrees of both Arts and Medicine. There is no charge for tuition, the only expense being a library fee of $5 each year and the actual cost of the materials used in the laboratories. The Dean is Dr. A. W. McAlester, Columbia. Total registration of students for 1900-1 was 85; graduates, 11. The present session opened Sept. 10, 1901, and closes June 4, 1902.

St. Joseph.

ENSWORTH MEDICAL COLLEGE.—This was organized in 1888, and has a faculty of 18 professors and 5 lecturers and assistants, 23 in all. St. Joseph's Medical Hospital, with 250 beds; City Hospital, containing 40 beds; the State Hospital No. 2, which is open to the students once a week, and a college dispensary furnish clinical material. Applicants for admission must show by certificate or examination, that they possess a sufficient knowledge of English, arithmetic, algebra, physics and Latin equal to one year's instruction. The building furnishes ample laboratory and lecture-room facilities. The curriculum covers a graded course of four years of six months each. The fees are about $55 each for the first three years, and $75 for the fourth year. The Dean is Dr. Jacob Geiger, St. Joseph. The present session opened Sept. 16, 1901, and closes March 17, 1902.

CENTRAL MEDICAL COLLEGE.—This school was organized in 1894, and has a faculty made up of 16 professors and 14 lecturers, in all 30. The Methodist and St. Joseph's Hospitals, State Hospital No. 2, and the City and County Hospitals are available for clinical study; a college dispensary also supplies clinical material. The requirements for admission are the possession of a certificate for work completed, or an examination. The curriculum embraces four years of six months each. Fees: First year, $55; second, $50; third, $40, and $65 for the fourth year. The Secretary is Dr. T. E. Potter, St. Joseph. Total enrolment for 1900-1 was 57; graduates, 2. The seventh session began September 2, and will end March 1, 1902.

NEBRASKA.

Nebraska, population 1,066,300, has three medical colleges: Omaha Medical College, Lincoln Medical College, and John A. Creighton Medical College.

Omaha.

OMAHA MEDICAL COLLEGE.—This is the Medical Department of the University of Nebraska and was organized in 1881. It is situated in Omaha, a city with a population of 102,555, and its faculty is composed of 24 professors, 9 adjunct professors and lecturers, and 3 assistants, a total of 36. The Douglas County Hospital, accommodating 300 patients; Bishop Clarkson Memorial Hospital, Immanuel Hospital, the Omaha Methodist Hospital and the college dispensary furnish good material for clinical study and demonstration. This college is a member of the Association of American Medical Colleges and its requirements for admission are governed by that organization. The college building is well adapted for its purpose and the laboratories and lecture rooms are commodious and completely equipped. The course of work embraces graded studies covering four years of seven months each. The method of instruction is made up of didactic and clinical lectures, demonstrations, quizzes and laboratory work. The total fees for the first two years is $80 each, and $85 for each of the last two years. Board and lodging can be obtained for from $3 to $5 a week. The Secretary is Dr. Ewing Brown, Omaha. Total number of students registered in 1900-1 was 149; graduates, 23. The twenty-first session begins September 24, 1901, and will end April, 1902.

JOHN A. CREIGHTON MEDICAL COLLEGE.—This school was organized in 1892, and is also situated in Omaha. It is the Medical Department of Creighton University, and has a faculty of 27 professors, 8 associates and lecturers, and 7 assistants, a total of 42. The clinical facilities are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 160 beds; Douglas County Hospital, Presbyterian Hospital, and the college dispensary; the material is abundant and varied. The requirements for admission are those of the Association of American Medical Colleges, of which organization this school is a member. The building, which was completed in 1898, contains excellent facilities for laboratory and lecture-room work, and the equipment is good. In the methods of instruction, including clinical, didactic and laboratory work, special emphasis is laid upon practical work. The course of study embraces four years of eight months each. The total fees for the first

two years is $80 each, and $85 for the last two years. The Dean is Dr. D. Bryant, McCague Bldg., Omaha. Total number of students registered in 1900-1 was 123; graduates, 27. The ninth session opens September 15, 1901, and closes April 15, 1902.

Lincoln.

LINCOLN MEDICAL COLLEGE.—Eclectic. This school was organized in 1889, and is situated in Lincoln, a city of 40,169 people. It has a faculty of 23 professors and 2 lecturers. The college dispensary furnishes clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges, of which this college is a member. The course of study covers four years of twenty-eight weeks each. The total fees for the first year is $83; second, $78; third, $70, and $65 for the fourth year. The Dean is Dr. W. S. Latta, Lincoln. Total number of students for 1900-1 was 74; graduates, 12. The present session began September 15, 1901, and ends April, 1902.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains one medical college.

DARTMOUTH MEDICAL COLLEGE.—This school is the Medical Department of Dartmouth College, and is located in Hanover, population, 1825. The school was organized in 1797. Its faculty is made up of 14 professors and 3 demonstrators, 17 in all. The Mary Hitchcock Memorial Hospital, a college hospital of 36 beds, supplies the clinical material. Applicants for admission must possess an education at least equivalent to graduation from a registered high school. The laboratories of the academic department afford good facilities for work in physics, biology and chemistry. The course covers four years of twenty-six weeks each. Total fees for the first three years are $110, and $135 for the fourth year. The Dean is Dr. William T. Smith. The total number of students registered for 1900-1 was 89; graduates, 27. The work for the entering class begins with that of the academic department, commencing in September and closing in June; for the advanced classes it begins in July and ends in February.

NEW YORK.

New York State, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Long Island College Hospital, New York Homeopathic Medical College, New York Medical College, Eclectic Medical College, Cornell University Medical College and the University and Bellevue Hospital Medical College are located in New York City, population 3,437,202. This city, with its hospitals and dispensaries, offers abundant clinical material. Board and lodging can be obtained for from $5 to $7 a week.

Albany Medical College is located in Albany, a city of 94,151 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population 352,387; here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city with 108,374 inhabitants. Board and lodging can be procured for from $3.50 a week upwards.

The laws of the state of New York require of the prospective student of medicine a preliminary education equivalent to that obtainable in a four years' course in any of the public high schools recognized by the regents as maintaining a satisfactory standard. Upon proof of at least this amount of education, a medical-student certificate will be issued by the state authorities. The colleges, therefore, have a common standard for the requirements of admission.

New York City.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1807 and its present relation, that of medical department of Columbia University, was assumed in 1860. The faculty embraces 21 professors, 18 clinical and adjunct professors and 43 demonstrators, instructors, etc., a total of 82. The new Vanderbilt Clinic, where 48,967 patients were treated during the year 1900 and which is equipped with all modern appliances for the study and treatment of disease, and Sloane Maternity Hospital, containing 116 beds, offer exclusive clinical advantages to students of this school. Besides these, Roosevelt Hospital, containing 238 beds; New York Hospital, with 150 beds; Bellevue, 850 beds; Presbyterian, 330 beds; St. Luke's, General Memorial, and New York Foundling Hospitals, together with the Eye and Ear Institute, containing 40 beds, St. Mary's Free Hospital for Children, and the Hospital for the Ruptured and Crippled, all offer free clinical teaching to matriculants of this school. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The total fees for the first year are $205; for the second and third, $200 each, and $225 for the fourth year. The Dean is Dr. James W. McLane, New York City. Total registration for 1900-1 was 801; graduates, 149. The next session begins Oct. 7, 1901, and ends June 11, 1902.

LONG ISLAND COLLEGE HOSPITAL.—This was organized in 1856, and has a faculty of 11 professors, 13 adjunct and clinical professors and 45 lecturers, instructors, etc., a total of 69. Long Island College Hospital, containing 300 beds and being connected with a four-story maternity hospital; Polhemus Memorial Clinic, and Hoagland Laboratory, completely equipped with the most modern apparatus, are all a part of the college. Besides the clinical facilities furnished by these, members of the faculty attend at Kings County, St. John's, Brooklyn, Norwegian, Williamsburg, Methodist Episcopal and the Brooklyn Eye and Ear Hospitals, where the students are offered opportunities for clinical study. Many of these also contain out-patient departments, thus permitting advanced students to attend personally to cases. Bedside instruction is also given in the wards. The course covers four years of thirty weeks each. Fees: First year, $190; second, $195; third, $160, and $145 for the fourth year. The Dean is Dr. Jarvis S. Wight, New York City. Total registration, 1900-1, was 187; graduates, 47. The forty-third session opens Oct. 1, 1901, and closes May 15, 1902.

NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND HOSPITAL.—Homeopathic. This school was organized in 1858 and has a faculty of 27 professors and 21 lecturers, instructors, etc., 48 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department, Metropolitan Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children furnish the clinical facilities. The course covers four years of seven months each. Total fees for the first year, $110; second, $130 third, $125, and $155 for the fourth year. The Dean is Dr. Wm. T. Helmuth, 504 Fifth Ave., New York. Total number of students registered for 1900-1 was 107; graduates, 127. The next session begins Oct. 2, 1901, and ends May 8, 1902.

NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN.—Homeopathic. This school was organized in 1863, and has a faculty of 19 professors, 5 adjuncts and 19 lecturers and assistants, a total of 43. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Flower and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of thirty weeks each. Fees: First year, $125; second, $110; third, $100, and $130 for the fourth year. The Dean is Dr. M. Belle Brown, 30 W. 51st St., New York. Total registration for 1900-1 was 33; graduates, 9. The next session opens Oct. 1, 1901, and closes May 14, 1902.

ECLECTIC MEDICAL COLLEGE.—This was organized in 1865 and has a faculty of 12 professors and 23 lecturers, demonstrators, etc., 35 in all. A college dispensary, Manhattan and Red Cross Hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. Total fees: First year, $125; second, $120; third, $105, and $130 for the fourth year. The Dean is Dr. George W. Boskowitz, New York. Total registration for 1900-1 was 84; graduates, 12. The next session opens Sept. 24, 1901, and closes May, 1902. This school is a member of the National Confederation of Eclectic Medical Colleges.

CORNELL UNIVERSITY MEDICAL COLLEGE.—This department of Cornell University was established in 1898. The faculty is composed of 12 professors, 19 clinical professors, 31 instructors, and 36 clinical instructors and assistants, a total of 98. The City Hospital, having 1000 beds; Bellevue Hospital, New York Hospital, Presbyterian, Willard Parker and Reception, with 200 beds; New York Skin and Cancer; St. Francis, having a capacity of 230 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Hospital, and the Eye and Ear Infirmary, in addition to a large college dispensary, furnish the clinical resources; the material is abundant and varied. The first two years of the course are taken at Ithaca and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped and supplies ample practical laboratory facilities required in the advanced work. "The essential feature of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $180 each, and $200 for the fourth year. The Dean is Dr. William M. Polk, New York. Total registration for 1900-1 was 356; graduates, 26. The next session opens Sept. 24, 1901, and closes June 19, 1902.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE.—This is a department of the New York University, and was founded in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 30 professors, 33 clinical professors and lecturers, and 50 instructors, demonstrators, etc., in all 113. Bellevue and City Hospitals, Hospitals of the Workhouse and Almshouse, Manhattan State Hospital for the Insane, Willard, Parker and Reception Hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's, General Memorial, Gouverneur, Columbus, Harlem, New York Foundling, and the Society for the Lying-in Hospitals, the New York Eye and Ear Infirmary, and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a new five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture room facilities. The course of instruction covers four years of seven months each. Actual clinical teaching, in conjunction with and founded upon laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Edward G. Janeway, New York City. Total registration for 1900-1 was 285; graduates, 43. The next session opens Oct. 2, 1901, and closes June 5, 1902.

Albany.

ALBANY MEDICAL COLLEGE.—This school was organized in 1838, and in 1873 it assumed its present relations, as medical department of Union University. The faculty is composed of 13 professors, 10 adjunct and clinical professors, and 32 lecturers, instructors and assistants, a total of 55. Albany, St. Peter's, Child's and County Hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of six months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: First year, $135; second, $120; third, $110, and $130 for the fourth year. The Dean is Dr. Albert Vander Veer, Albany.

Total registration for 1900-1 was 142; graduates, 28. The next session opens Sept. 24, 1901, and closes March 6, 1902.

Buffalo.

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT.—This was organized in 1846 and has a faculty made up of 26 professors, 27 adjunct and clinical professors, and 15 lecturers, etc., a total of 68. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German Hospitals and the German Deaconess' Home supply ample clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. Bedside instruction is insisted upon and the senior students are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The total fees are: First year, $455; second, $55, and $15 each for the third and fourth years. The Dean is Dr. Matthew D. Mann, 37 Allen St., Buffalo. Total registration for 1900-1 was 212; graduates, 46. The fifty-sixth session opens Sept. 30, 1901, and closes May 2, 1902.

Syracuse.

COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY.—Shis school was organized in 1872, as the medical department of Syracuse University. The faculty is composed of 16 professors and 25 lecturers, iustructors, etc., in all 41. Clinical facilities are furnished by St. Joseph's Hospital, with a capacity for 200 patients; Hospital of the House of the Good Shepherd, Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum, and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. This school is a member of the Association of American Medical Colleges. The curriculum embraces a four years' graded course, eight months making a school year. The total fees for each of the four years are $125. The Dean is Dr. Henry D. Didama, 424 S. Salina St., Syracuse. Total number of students registered for 1900-1 was 116; graduates, 19. The next session opens Oct. 1, 1901, and closes Juue 11, 1902.

NORTH CAROLINA.

North Carolina, population 1,893,810, has three medical schools. They are, Leonard School of Medicine, North Carolina Medical College, and the University of North Carolina Medical Department. The latter school does not confer degrees.

LEONARD SCHOOL OF MEDICINE.—This school was established in 1882 by the American Baptist Home Mission Society, for the purpose of training colored students of medicine. It is located in Raleigh, a city of 13,643, and has a faculty of 8 teachers. A free hospital and dispensary supplies clinical material. A preliminary entrance examiuation is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of six mouths each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room costs $2 a week. The Dean is Dr. James McKee, Raleigh. Total enrolment for 1900-1 was 98; graduates, 18. Next session opens Sept. 28, 1901, and closes March 15, 1902.

NORTH CAROLINA MEDICAL COLLEGE.—This school was organized in 1893 and has a faculty of 6 teachers. It is located at Davidson, a village of 904 people, and a small hospital supplies the clinical facilities. The course covers but three years of eight months each. The requirements for admission claimed are those established by the Association of American Medical Colleges. Fees: First year, $90; second year, $85, and $100 for the third year. The President is Dr. J. P. Monroe, of Davidson. The present session began Sept. 5, 1901, and closes May 12, 1902.

UNIVERSITY OF NORTH CAROLINA MEDICAL DEPARTMENT.—This is a school not conferring degrees, but embracing the first two years of medical instruction covered in that time by the better class of medical colleges. It was organized in 1891. It is a member of the Association of American Medical Colleges, and its certificate of work completed is accepted by all colleges that are members of that association.

OHIO.

Ohio, population 4,157,545, has twelve medical colleges. Six of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College, Cincinnati College of Medicine and Surgery, Pulte Medical College and the Laura Memorial Woman's Medical College, are located in Cincinnati, a city of 325,902 inhabitants. The clinical advantages of Cincinnati are good; besides many smaller hospitals, the Cincinnati Hospital, where 4940 patients were treated in 1900, is open to the students for study. Board can be procured in Cincinati for from $3 to $5 per week.

Cleveland, population 381,768, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 125,560, contains two: Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 131,822 people, has one medical school: Toledo College of Medicine. It has good clinical advantages. Board and room can be had for from $3 to $5 per week.

The laws of Ohio require that in order to practice medicine in this state, any student not possessing a diploma or certificate showing that he is possessed of the educational advantages required, must pass a satisfactory examination, under the direction of the State Board of Medical Registration and Examination, in the following subjects: English, including rhetoric and spelling; geography, arithmetic, algebra, physics, botany, United States history, and Latin equal to a year's work. This is the standard adopted by all the medical colleges in the state.

Cincinnati.

MEDICAL COLLEGE OF OHIO.—This is the Medical Department of the University of Cincinnati, organized in 1819, and has a faculty made up of 19 professors, 22 lecturers, demonstrators, etc., a total of 41. Good Samaritan Hospital, with 400 beds, Cincinnati Hospital and a well-equipped college dispensary furnish clinical facilities. The buildings supply ample laboratory and lecture-room space, and their equipment is good. The course of study is graded and covers four years of seven months each. This school is a member of the Association of American Medical Colleges. The total fees are for the first year, $105; for the second and third, $100 each, and $125 for the fourth year. Total registration of students for 1900 was 200, graduates 60. The Dean is Dr. P. S. Conner, Cincinnati. The eighty-third session begins Oct. 2, 1901, and ends May, 1902.

ECLECTIC MEDICAL INSTITUTE.—Eclectic. This school was organized in 1845, and has a faculty of 29 members. The Seton Hospital, Cincinnati Hospital, and a college dispensary furnish clinical material. It is a member of the National Confederation of Eclectic Medical Colleges. The course covers four years of twenty-eight weeks each. The fees are $75 for each year, with a graduation fee of $25. The Dean is Dr. F. J. Locke, Newport, Ky. Total enrolment 1900-1, was 141, graduates 26. The next session begins Sept. 23, 1901, and closes April 15, 1902.

MIAMI MEDICAL COLLEGE.—This school was organized in 1852 and has a faculty of 18 professors and 16 lecturers and demonstrators, a total of 34. The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary. This college is a member of the Association of American Medical Colleges. The curriculum embraces a four-year graded course of seven months each. The total fees are, for the first year, $115; for the second and third, $110, and $130 for the fourth year. The Secretary is Dr. Oliver P. Holt, 134 W. Ninth St., Cincinnati. Total registration for 1900-1 was 112; graduates, 25. The next session opens Oct. 1, 1901, and closes May, 1902.

CINCINNATI COLLEGE OF MEDICINE AND SURGERY.—This school was organized in 1852, and has a faculty of 21 professors and 16 lecturers, demonstrators, etc., 37 in all. St. Mary's, Cincinnati, the Jewish, and Christ's Hospitals supply material for clinical study. This school is a member of the Association of American Medical Colleges. The work covers four years of seven months each, and is graded. The total fees for the first three years are $75 each, and $100 for the fourth year. The Dean is Dr. F. V. Fitzpatrick, 32 Garfield Place, Cincinnati. Total enrolment for 1900-1 was 82, graduates 16. The next session opens Sept. 26, 1901, and closes May, 1902.

PULTE MEDICAL COLLEGE.—Homeopathic. This was organized in 1872 and has a teaching force of 22 professors and 9 assistants, 31 in all. Cincinnati Hospital, Bethesda Hospital, and a college dispensary supply clinical material. The curriculum covers four years of seven months each. Fees: First year, $80; for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. J. D. Buck, Cincinnati. Total enrolment for 1900-1 was 39, graduates 5. The next session opens Oct. 2, 1901, and closes May 6, 1902.

LAURA MEMORIAL WOMAN'S MEDICAL COLLEGE.—This school was formed in 1895 and has a faculty of 19 professors and 7 assistants, in all 26. Presbyterian and Cincinnati Hospitals and a college dispensary supply material for clinical study; the out-patient department of Presbyterian Hospital is open to students of this school exclusively. This college is a member of the Association of American Medical Colleges. The course embraces four years' study of seven months each. The total fees are $50 for each year. The Dean is Dr. John M. Winthrow, Cincinnati. Total registration of students for 1900-1 was 24, graduates 5. The next session opens Sept. 26, 1901, and closes May 1, 1902.

Cleveland.

WESTERN RESERVE UNIVERSITY MEDICAL COLLEGE.—This department of Western Reserve University was organized in 1843. Its teaching faculty includes 19 professors, 17 lecturers and demonstrators, and 20 assistants, a total of 56. The clinical facilities are offered students of the school by Lakeside Hospital, having 250 beds; St. Vincent's Hospital, with 75 beds; City Hospital, containing 150 beds; Home of Maternity, and a college dispensary. The buildings afford ample laboratory and lecture-room space, and the equipment is good; a new clinical laboratory has recently been added. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years' work, of eight months each. The total fees are $125 for each year. The Dean is Dr. Benjamin L. Millikin, 278 Prospect St., Cleveland. Total enrolment for 1900-1 was 133, graduates 24. The next session begins Oct. 2, 1901, and ends June 12, 1902.

CLEVELAND COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1863, but did not assume its present name and become the Medical Department of Ohio Wesleyan University until 1896. The faculty is composed of 25 professors and 22 associates, lecturers, etc., 47 in all. Cleveland General Hospital, City Hospital, St. Alexis and St. John's Hospitals, and a college dispensary are available for clinical study. Beginning Sept. 18, 1901, the work was made continuous, the calendar year being divided into three terms of four months each; the work of two terms constitutes the maximum amount of credit that can be obtained in a collegiate year, four years being necessary for graduation. This school is a member of the Association of American Medical Colleges. The total fees for the first two years are $130 each, and $110 for the last

two years. The Dean is Dr. C. B. Parker, 425 Euclid Ave., Cleveland. Total enrolment for 1900-1 was 78, graduates 15. The present term began Sept. 18, 1901.

CLEVELAND HOMEOPATHIC MEDICAL COLLEGE.—Homeopathic. This school was founded in 1890 by a consolidation of Cleveland University of Medicine and Cleveland Medical College. The faculty includes 29 professors and 16 adjuncts, lecturers, etc., 45 in all. The clinical facilities are obtained from the Cleveland Homeopathic Hospital, and a college dispensary. The course embraces four years of thirty weeks each. Fees: First year, $110; second and third years, $105 each, and $125 for the fourth year. The Dean is Dr. Gains J. Jones, Cleveland. Total number of students registered 1900-1 was 150, graduates 46. The present session opened Sept. 18, 1901, and closes April 9, 1902.

Columbus.

STARLING MEDICAL COLLEGE.—This school was organized in 1847 and has a faculty composed of 13 professors and 16 lecturers, associates, etc., a total of 29. St. Francis Hospital, which is under the control of this faculty, Hawke's Hospital, of Mt. Carmel, and a college dispensary are available for clinical study. This college is a member of the Association of American Medical Colleges. The laboratory and lecture-room space is ample. The work covers four years of seven months each. Fees: First year, $73; second, $71; third, $60, and $80 for the fourth year. The Dean is Dr. Starling Loving, Columbus. Total enrolment for 1900-1 was 173, graduates 32. The present session opened Sept. 11, 1901, and closes April 10, 1902.

OHIO MEDICAL UNIVERSITY.—This school was organized in 1890 and has a faculty of 26 professors and 5 assistants, 31 in all. The Protestant Hospital, Ohio Penitentiary Hospital, and a college dispensary provide material for clinical work. The amphitheaters and laboratories are well equipped. This school is a member of the Association of American Medical Colleges. The course embraces work over four years of seven months each. Fees: First year, $86; second, $79; third, $51, and $61 for the fourth year. The Dean is Dr. George M. Waters, Columbus. Total number of students enrolled for 1900-1 was 228, graduates 45. The present session began Sept. 11, 1901, and ends April 15, 1902.

Toledo.

TOLEDO MEDICAL COLLEGE.—This school was organized in 1882 and has a faculty made up of 18 professors and 16 lecturers and assistants, in all 34. Toledo Hospital, St. Vincent's and Robinwood Hospitals, Lucas County Infirmary Hospital, Toledo State Hospital for the Insane and a free dispensary supply good clinical facilities. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of seven months each. The fees are $75 for each year with a matriculation fee of $5, payable once. The Secretary is Dr. Park L. Myers, 1921 Franklin Ave., Toledo. Total enrolment for 1900-1 was 55, graduates 8. The next session opens Sept. 26, 1901, and closes April 24, 1902.

OREGON.

Oregon, population 413,536, has two medical colleges: Medical Department Willamette University, and University of Oregon, Medical Department.

MEDICAL DEPARTMENT WILLAMETTE UNIVERSITY.—This school is situated in Salem, a town of 4,258 people, and was organized in 1864. The faculty consists of 17 teachers. Clinical facilities for study are supplied by Salem Hospital, and a college dispensary. This school is a member of the Association of American Medical Colleges. The course embraces four years' work of six months. Fees: First year, $110; second, $100; third, $75; and $50 for the fourth year. Board and lodging costs from $3 to $5 a week. The Dean is Dr. W. H. Byrd, Salem. Total enrolment for 1900-1 was 27, graduates 5. The next session begins Oct. 2, 1901, and ends April 2, 1902.

UNIVERSITY OF OREGON MEDICAL DEPARTMENT.—This department of the State University was organized in 1887 and has a faculty of 15 professors and 11 special lecturers, a total of 26. It is situated in Portland, population 90,426. Good Samaritan and St. Vincent's Hospitals, containing 200 and 350 beds respectively, furnish good material for clinical study. The requirements for admission are those of the Association of American Medical Colleges. The college building is modern and well equipped, presenting ample teaching facilities. The course is four years of six months each. Fees: First year, $142.50; for the second and third, $137.50 each, and for the fourth the only fee is $7.50 for examination fee. Board and room can be obtained for from $4 to $6 a week. The Dean is Dr. Simeon E. Josephi, Portland. Total number of students for 1900-1 was 64, graduates 11. The next session opens Oct. 1, 1901, and closes April, 1901.

PENNSYLVANIA.

Pennsylvania, population 6,302,115, has six medical colleges. Of these Philadelphia, having a population of 1,293,697, contains five, as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, and the Medico-Chirurgical College of Philadelphia. The clinical facilities of Philadelphia present abundant and varied material for study. Besides the individual hospitals connected with each of the schools the charity hospitals are open to all the students in common. Board and lodging cost from $4 a week upwards.

The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 321,616 people. The cost of board and lodging is from $4 to $6 a week.

A preliminary examination is required of all applicants for a license to practice medicine or surgery in the state. This examination is held at stated intervals by the State Examiners, and includes: (a) English composition, grammar and rhetoric; (b) mathematics, covering algebra and plane geometry; (c) elementary physics, and (d) United States history, and (e) Latin equivalent to a year's study. Upon passing a successful examination a medical-student certificate is issued to the applicant. This certificate will admit the possessor to matriculation in any medical college in the state.

Philadelphia.

UNIVERSITY OF PENNSYLVANIA MEDICAL DEPARTMENT.—This is the oldest medical college in this country, having been organized in 1765 as the medical department of the College of Philadelphia; the first degree was granted in 1768. When the University of Pennsylvania was organized, in 1782, it became the medical department of the University, its present relation. The faculty is made up of 19 professors, 7 clinical professors, and 77 assistants, lecturers, etc., a total of 103. Abundant and varied clinical material is furnished by the University Hospital, where during 1899 there were 9215 cases treated; Maternity Pavilion, with 50 beds; Philadelphia Hospital, containing 1000 beds; Pennsylvania, Children's and German Hospitals, and the Southeastern Hospital and Dispensary. Special attention is paid to bedside instruction and to thoroughly practical work. Applicants for admission must furnish evidence of the education required to enter the academic department of the University. The buildings known as Medical Hall, Laboratory Hall and the Laboratory of Hygiene supply excellent laboratory and lecture room facilities and they are well equipped. The course embraces study for four years of eight months each. The total fees for each year are $200 each, with a matriculation fee of $5 for the first year. The Dean is Dr. John Marshall, Philadelphia. Total enrolment for 1900-1 was 565; graduates, 160. The next session opens October 2, 1901, and closes June, 1902.

JEFFERSON MEDICAL COLLEGE.—This school was organized in 1826, and has a faculty of 15 professors, 11 clinical and adjunct professors, and 58 lecturers, demonstrators, etc., a total of 84. Jefferson Hospital, together with its Maternity Department, are used exclusively by students of the school for clinical study. Bedside instruction is given daily to small sections of the senior class. In addition the following hospitals are open for study of clinical cases: Pennsylvania, Philadelphia, St. Joseph's, German, Municipal and Will's Eye Hospitals. This college is a member of the Association of American Medical Colleges, and applicants for admission must conform to the regulations of that association. The course of study covers graded work for four years of eight months each. The laboratories are large and well equipped, a new five-story laboratory building having recently been added; the lecture rooms and amphitheaters are also ample. The tuition is $150 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland, Philadelphia. The total number of students for 1900-1 was 736; graduates, 106. The next session opens October 1, 1901, and closes May 29, 1902.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL.—Homeopathic. This was organized in 1848 and has a faculty of 15 professors and 42 lecturers, instructors, etc., in all 57. Hahnemann College Hospital and Pennsylvania Hospital furnish material for clinical work. The requirements for admission are those established by the Intercollegiate Committee of the American Institute of Homeopathy. The work covers four years of thirty weeks each. Fees: First year, $105; second and third, $125 each, and $155 for the fourth year. Total number of students for 1900-1 was 264; graduates, 52. The Dean is Dr. Pemberton Dudley, Philadelphia. The next session begins September 30, 1901, and will end May 15, 1902.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.—This school was organized in 1850, and has a faculty of 11 professors, 19 clinical and assistant professors, and 23 lecturers, etc., in all 53. Clinical facilities are offered exclusively to this college by the Woman's Hospital, West Philadelphia Hospital for Women. Other clinical advantages offered are those of the Pennsylvania, German, Children's and Philadelphia hospitals, Will's Hospital for Diseases of the Eye and the Philadelphia Lying-in Charity. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those established by the organization. The lecture room and laboratory equipment is good. The curriculum covers four years of eight months each. Fees: First year, $141.50; second, $138.50; third, $135.50, and $100.50 for the fourth year. The Secretary is Dr. C. N. Pierce, Philadelphia. Total enrolment for 1900-1 was 175: graduates, 37. The fifty-second session begins September 26, and will end May 22, 1902.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—This school was organized in 1881 and has a faculty made up of 19 professors, 10 clinical and associate professors, and 43 lecturers, demonstrators, etc., 72 in all. Opportunities for clinical study are offered exclusively to students of this school by the Medico-Chirurgical Hospital, with 130 beds; Children's Hospital, containing 40 beds, and a maternity hospital having 40 beds. In common with other schools the following are used: Philadelphia, Pennsylvania, German, Samaritan, St. Joseph's, St. Agnes', St. Mary's, Methodist and the Philadelphia Lying-in Hospitals. Applicants for matriculation must follow the rules of the Association of American Medical Colleges, to which this school belongs. With laboratories, lecture rooms and amphitheater this college is amply provided and the equipment is good. The work embraces four years of eight months each. Fees: First two years, $140 each; third year, $130, and $100 for the fourth year. The Dean is Dr. Seneca Egbert, 4814 Springfield Ave., Philadelphia. Total enrolment for 1900-1 was 408: graduates, 67. The next session opens October 1, and will close May 24, 1902.

Pittsburg.

WESTERN PENNSYLVANIA MEDICAL COLLEGE.—This is the Medical Department of the Western University of Pennsylvania, and was organized in 1886. The faculty is composed of 29 professors, and 39 associates, assistants, etc., 68 in all. Clinical material for study is furnished by a college dispensary, and the Emma Kaufman Clinic, Reinemau Maternity Hospital, Mercy, South Side and

St. John's hospitals. This school is a member of the Association of American Medical Colleges and matriculants must be possessed of acquirement prescribed by that organization. Well-equipped laboratories provide ample facilities for individual work; the lecture-room space is sufficient. The course of study embraces graded work for four years of eight months each. Special attention is given to practical bedside work. The total fees are $130 for each year. The Dean is Dr. J. C. Lange, Pittsburg. Total enrolment for 1900-1 was 338; graduates, 73. The next session begins October 1, and will close May 29, 1902.

SOUTH CAROLINA.

South Carolina, population 1,340,316, has one medical college,

THE MEDICAL COLLEGE OF SOUTH CAROLINA.—This is situated in Charleston, a city of 55,807 people, and was founded as the Medical College of South Carolina in 1823; ten years later it was reorganized under its present title. The faculty is made up of 10 professors and 14 adjuncts, assistants, etc., 24 in all. The clinical facilities are those offered by the City Hospital, where surgical, obstetrical and medical instruction is given. Applicants for matriculation must show by certificate or examinatiou that they possess the education required of second-grade teachers in the public schools. The course covers four years of six months each. The total fees for each of the first two years are $100, and $75 each for the last two. Board and room can be obtained for from $12 to $16 a month. The Dean is Dr. Francis L. Parker, Charleston. Total enrolment for 1900-1 was 95; graduates, 35. The next session opens October 1, 1901, and closes April, 1902.

TENNESSEE.

Tennessee, population 2,020,616, has ten medical colleges. Of these the Medical Department of the University of Nashville, Vanderbilt University Medical Department, University of Tennessee Medical Department, and Meharry Medical College are situated in Nashville, a city with a population of 80,865. The City Hospital, containing 100 beds, is used by all the schools in common for clinical study. Board and lodging cost from $3 to $4 a week. Knoxville, population 32,637, contains two colleges, Tennessee Medical College and Knoxville Medical College. The cost of room and board in that city is from $2.50 to $4 a week. Chattanooga Medical College and Chattanooga National Medical College are situated in Chattanooga, a city of 30,154 people. Board and lodging cost there from $1.50 a week upwards. There is one college, Memphis Hospital Medical College, located in the growing city of Memphis, population 102,320. Good board can be obtained for from $3 to $4 a week. The other school, the Sewanee Medical College, is located at Sewanee, a mountain town of 1200 people.

Nashville.

MEDICAL DEPARTMENT UNIVERSITY OF NASHVILLE.—This school was established in 1850, and has a faculty of 14 professors, and 13 lecturers, assistants, etc., in all 27. This school is a member of the Southern Medical College Association and the requirements for admission prescribed by that organization are enforced. The course of study covers four years of twenty-six weeks each. The total fees for each of the four years are $65. The Dean is Dr. William G. Ewing, Nashville. Total enrolment for 1900-1 was 182; graduates, 66. The next session begins October 1, 1901, and ends April 2 1902.

VANDERBILT UNIVERSITY MEDICAL DEPARTMENT.—This school was founded in 1874, and in 1895, when the present medical building was completed, the course was extended, the standard raised, and the present faculty, consisting of 10 professors and 20 associates, lecturers, etc., appointed. The requirements for admission are those of the Southern Medical College Association, of which this school is a member. The course covers four years of six months each. The total fees for the first three years are $105 each, and $130 for the fourth year. The Dean is Dr. William L. Dudley, Nashville. Total enrolment for 1900-1 was 211; graduates, 92. The next session begins October 1, 1901, and ends April 3, 1902.

UNIVERSITY OF TENNESSEE MEDICAL DEPARTMENT.—This was organized in 1876 as the Nashville Medical College; its present relations, as Medical Department of the University of Tennessee, were assumed in 1879. The faculty is composed of 14 professors, and 13 lecturers, assistants, etc., 27 in all. The requirements for admission are those of the Southern Medical College Association, of which this school is a member. The course of study includes work for four years of six months each. The total fees for each of the first two years are $100; third year, $90, and $115 for the fourth year. The Dean is Dr. Paul F. Eve, 614 Broad St., Nashville. Total enrolment for 1900-1 was 182; graduates, 75. The next session begins October 1, 1901, and ends April, 1902.

MEHARRY MEDICAL COLLEGE OF WALDEN UNIVERSITY.—Colored. This school was organized in 1876 as the Medical Department of Central Tennessee College, now Walden University, "for the purpose of furnishing to the colored people of the South an opportunity of obtaining a medical education." The faculty is made up of 9 professors, and 11 instructors, demonstrators, etc., 20 in all. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those prescribed by that Association. The work embraces a four-year graded course, six months to the year. The total fees for the first three years are $40 each, and $50 for the fourth year. The Dean is Dr. G. W. Hubbard, Nashville. Total registration for 1900-1 was 217; graduates, 39. The twenty-fifth session begins September 21.

Knoxville.

TENNESSEE MEDICAL COLLEGE.—This school was organized in 1889, and has a faculty of 13 professors and 6 assistants, 19 in all. A college hospital and a free dispensary supply material for a study of clinical cases. This school is a member of the Southern Medical College Association, and the requirements for admission are those prescribed by that Association. The curriculum includes graded work for four years of six months each. Fees: First year, $75; second, $70; third, $67.50, and $94 for the fourth year. The Secretary is Dr. Henry J. Kelso, Knoxville. Total number of students for 1900-1 was 97; graduates, 35. The thirteenth session begins October 1, 1901, and closes April 1, 1902.

KNOXVILLE MEDICAL COLLEGE.—Colored. This school was established in 1900 following the discontinuance of the Medical Department of Knoxville College, organized in 1895. The teaching force comprises 11 professors. The City Hospital and a college dispensary supply clinical material. Applicants for admission not possessing a certificate of the necessary educational requirements "must pass a satisfactory examination." The catalogue says that the course covers four years of six months each. Fees: First year, $42; second, $37; third, $30, and $40 for the fourth year. The Dean is Dr. E. L. Randall, Knoxville. Total number of students for 1900-1 was 34; graduates, 4. The next session opens December 4, 1901, and closes May 30, 1902.

Chattanooga.

CHATTANOOGA MEDICAL COLLEGE.—This is the Medical Department of Grant University and was organized in 1889. The faculty is made up of 12 professors, and 22 demoustrators, instructors, etc., in all 34. Erlanger Hospital and a free college dispensary supply material for a clinical study of cases. The catalogue says that before an applicant for graduation can matriculate he must present a certificate showiug that he is possessed of scholastic attainments equal to those required for a first-grade teacher in the public schools. The course of work covers four years of six months each and is graded. The total fees for the first, third and fourth years are $75 each, and $85 for the second year. The Dean is Dr. E. A. Cobleigh, Chattanooga. Total enrolment for 1900-1 was 224; graduates, 54. The thirteenth session begins October 7, 1901, and ends April 15, 1902.

CHATTANOOGA NATIONAL MEDICAL COLLEGE.—Colored. This was chartered iu 1899 and shows a teaching force of 9. "The college has a large lecture room, two recitation rooms, one dissecting and a large pharmaceutical room." The catalogue claims that the course covers four years of seven months each. Total fees are $50 each year, with an additional graduation fee of $20. Total enrolment for 1900-1 was 20; graduates, 2.

It was the presentation of a diploma from this school, for a license to practice, in connection with other facts, that convinced the legislature of Tennessee of the necessity of state control. Hereafter all who expect to practice in that state must stand a state examination, except matriculates of Tennessee colleges who graduate before July, 1902.

Memphis.

MEMPHIS HOSPITAL MEDICAL COLLEGE.—This school was organized in 1878, and has a faculty composed of 10 professors and 15 assistants, 25 in all. Good clinical facilities are furnished by St. Joseph's Hospital, the City Hospital, with 200 beds, and a college dispensary. It is a member of the Southern Medical College Association. The course includes graded work for four years of six months each; "this, however, applies only to students who matriculated for the first time on or after January 1, 1899." With the addition of a large new building, ample laboratory and lecture-room space is afforded; facilities for practical laboratory work, in connection with the study of clinical cases, have also been added. The total fees for the first two years are $75 each, and $105 for the last two. The Dean is Dr. W. B. Rogers, Memphis. Total registration for 1900-1 was 750; graduates, 189. The twenty-second session begins November 1, 1901, and ends April, 1902.

HANNIBAL MEDICAL COLLEGE.—Colored. Some twenty years ago there was chartered under the laws of Tennessee an organization under this name, but there never has been an attempt to carry on regular lectures. Diplomas have been issued at various times, but always to negroes. It is thought that the recently enacted state law, compelling an examination, will abolish this practice.

Sewanee.

SEWANEE MEDICAL COLLEGE.—This is a three-year school and is the Medical Department of the University of the South. It was organized in 1891 and has a faculty of 7 professors, and 14 associates, lecturers, etc., 21 in all. The requirements for admission are those of the Southern Medical College Association, of which this school is a member. The course covers three years of six months each, but the catalogue says that after 1902 four years will be required. The fees are $65 for each of the first two years, and $90 for the last year. The Dean is Dr. John S. Cain, Sewanee. Total enrolment for 1900-1 was 207; graduates, 102. The tenth session commenced July 3, 1901, and will close January 1, 1902.

TEXAS.

Texas, population 3,048,710, has four medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month. The Medical Department of Fort Worth University is at Fort Worth, population 26,888. The cost of board and room in that city is from $12 to $15 a month. The other two colleges, University of Dallas Medical Department and Dallas Medical College, are situated in Dallas, population 42,638.

Galveston.

UNIVERSITY OF TEXAS MEDICAL DEPARTMENT.—This department of the State University was organized in 1891, and has a faculty

of 9 professors, and 15 lecturers, assistants, etc., a total of 24. The John Sealy Hospital, also having an outdoor department, and St. Mary's Infirmary supply good material for clinical study. The requirements for admission are proof, either by certificate or examination, that the candidate is sufficiently proficient in English, including grammar, composition and rhetoric; mathematics, through plane geometry and algebra including quadratics, and general history. The curriculum embraces graded work for four years of eight months each. Fees, to residents of the state: First year, $50; second, $20; third, $15, and $5 for the fourth year. Non-residents of the state are required to pay an additional fee of $50 each year. The Dean is Dr. Henry P. Cooke, Galveston. Total registration for 1900-1 was 119; graduates, 6. The next session begins October 1, 1901, and ends June 1, 1902.

Fort Worth.

MEDICAL DEPARTMENT FORT WORTH UNIVERSITY.—This school was organized in 1894, and has a faculty of 17 professors, and 14 lecturers, assistants, etc., in all 31. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Delia Collins' Rescue Home, having 50 beds, and a college dispensary. The requirements for admission are those of the Southern Medical College Association, of which this school is a member. Instruction is carried on by laboratory, didactic and clinical study. The course covers four years of six months each. The total fees for each of the first three years are $75, and $100 for the fourth year.. The Dean is Dr. Bacon Saunders, Fort Worth. Total enrolment for 1900-1 was 157; graduates, 27. The next session opens October 1, 1901, and closes April 3, 1902.

Dallas.

UNIVERSITY OF DALLAS MEDICAL DEPARTMENT.—This school has but completed its first year. The faculty shows a teaching force of 23. Parkland Hospital, with 90 beds; St. Paul's Sanitarium and a college dispensary are utilized for clinical study. Applicants for admission not possessing a certificate of sufficient work done, "must pass a satisfactory examination before a committee of the faculty." The course covers four years of six months each. The fees are $75 for each of the four years, with a matriculation fee of $5, and a gradnation fee of $25, each paid but once. The Dean is Dr. Charles M. Rosser, Dallas. Total registration for 1900-1 was 81; graduates, 15. The second session opens October 1, 1901, and closes April 1, 1902.

DALLAS MEDICAL COLLEGE.—This school has also completed but one year of its existence, recently becoming the Medical Department of Trinity University. The catalogue shows a faculty of 18, and requires four years of six months each for the graduation of all who matriculated after January 1, 1899. The City Hospital, Polyclinic Infirmary and a college dispensary supply clinical material. The requirements for admission claimed are those of the Association of American Medical Colleges, but this school is not a member. Fees: $75 each year for general fee; matriculation fee, $5, and $25 for graduation. The Dean is Dr. Jesse B. Titterington, Dallas. Total enrolment for 1900-1 was 51; graduates, 8. The second session begins October 28, 1901, and ends April 30, 1902.

VERMONT.

Vermont, population 343,641, has one medical school,

MEDICAL DEPARTMENT UNIVERSITY OF VERMONT.—This school is located at Burlington, a town of 18,640 people; it was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 20 professors, and 14 adjuncts, instructors, etc., in all 39. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must show by certificate or examination sufficient knowledge of the following: English, including grammar, orthography and composition; geography, United States history, arithmetic and elementary physics. The laboratory and lecture room space and equipment are good. The course of study embraces graded work for four years of six months each. The total fees for each of the first three years are $115, and $114 for the fourth year. Board and room costs from $3.50 to $5 a week. The Secretary is Dr. B. J. Andrews, Burlington. Total registration of students for 1900-1 was 155; graduates, 15. The forty-ninth session begins January 2, 1902, and ends June 25, 1902.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges. The University of Virginia Department of Medicine is situated in Charlotteville, having a population of 6449. Board and room can be obtained at that place for $18 a month and upwards. The other two colleges, Medical College of Virginia and University College of Medicine, are located at Richmond, a city of 85,050 inhabitants. The clinical facilities are good and board and room can be obtained there for from $12 to $20 a month.

UNIVERSITY OF VIRGINIA MEDICAL DEPARTMENT.—This school was organized in 1825, and has a faculty of 7 professors, and 10 lecturers, instructors, etc., in all 17. A free dispensary furnishes clinical facilities for the present, but the new four-story hospital, now almost completed will add greatly in that direction. The requirements for admission claimed are those of the Association of American Medical Colleges, but this school is not a member of that Association. The course of study embraces four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. Total enrolment for 1900-1 was 173; graduates, 53. The seventy-seventh session opened September 15, and will close June 18, 1902.

MEDICAL COLLEGE OF VIRGINIA.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, and in 1854 the present name was assumed. The faculty is made up of 15 professors, and 20 lecturers, instructors, etc., a total of 35. Clinical material is furnished by the Old Dominion Hospital, Maternity Hospital, and the City Dispensary; an outside obstetric department also furnishes opportunities for clinical work. This school is a member of the Southern Medical College Association, and the requirements for admission are those determined by that Association. The buildings are large and contain well equipped laboratories and amphitheaters. The course embraces four years of seven months each. The fees are $65 for each year, with an additional graduation fee of $30. The Dean is Dr. Christopher Tompkins, Richmond. Total registration for 1900-1 was 203; graduates, 47. The next session begins October 1, 1901, and will end May 3, 1902.

UNIVERSITY COLLEGE OF MEDICINE.—This school was organized in 1893 and has a faculty of 17 professors, 32 lecturers, assistants, etc., a total of 49. Good clinical facilities are furnished by Virginia Hospital, with a maternity department and annex which was built especially for the purpose of affording clinical instruction; Richmond Eye, Ear and Throat Infirmary, containing 34 beds; the City Hospital, and a college dispensary. Applicants for matriculation must show by certificate or examination to be possessed of a certain proficiency in English, mathematics and Latin. The laboratory and lecture-room space and equipment are ample. The curriculum covers four years of seven months each. The total fees are $85 for each year. The Dean is Dr. J. Allison Hodges, Richmond. Total enrolment for 1900-1 was 224; graduates, 72. The next session begins October 1, 1901, and ends May 15, 1902.

WISCONSIN.

Wisconsin, population 2,069.042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 285,315 people. Clinical facilities are furnished them in common by the County Hospital, with 175 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

MILWAUKEE MEDICAL COLLEGE.—This school was organized in 1893, and has a faculty of 22 professors, 7 associates, and 28 lecturers, instructors, etc., a total of 57. Good clinical material is furnished by Trinity, St. Mary's, and the County hospitals, Milwaukee Hospital for the Insane, and a college dispensary. This school is a member of the Association of American Medical Colleges, and the requirements for admission are those specified by that body. Ample laboratory and amphitheater facilities are afforded. The course covers four years of seven months each. The total fees are $60 each for the first three years, and $70 for the fourth year. The Dean is Dr. William H. Earles, Milwaukee. Total number of students for 1900-1 was 178; graduates, 36. The eighth session began September 18, and will close April 15, 1902.

WISCONSIN COLLEGE OF PHYSICIANS AND SURGEONS.—This college was organized in 1893, and has a faculty composed of 24 professors, and 22 associates, assistants, etc., a total of 46. St. Joseph's Hospital, containing 150 beds; Wisconsin Maternity Hospital, a college dispensary and the material used in common with the other school supply ample facilities for clinical study. The requirements for admission are those of the Association of American Medical Colleges, of which this school is a member. The laboratories and lecture rooms are well equipped. The curriculum includes work for four years, seven and one-half months constituting a year. Fees: Matriculation, paid once, $5; general ticket for each semester, $40; for the use of microscope, a fee of $2 is charged for each course. The Secretary is Dr. J. A. Bach, Milwaukee. Total enrolment for 1900-1 was 123; graduates, 18. The next session begins September 24, 1901, and ends May 13, 1902.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Regarding the requirements for admission to be maintained by colleges belonging to this Association. They are as follows:

SECTION 1.—Each college holding membership in this Association shall require of each student, *before admission* to its course of study, an examination, the minimum of which shall be as follows:

1. In *English*, a composition on some subject of general interest. This composition must be written by the student at the time of the examination, and should contain at least 200 words. It should be criticised in relation to thought, construction, punctuation, spelling, and handwriting.

2. In *Arithmetic*, such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion.

3. In *Algebra*, such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

4. In *Physics*, such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

5. In *Latin*, an examination upon such elementary work as the student may offer, showing a familiarity usually attained by one year of study; for example, the reading of the first 15 chapters of Cæsar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

SEC. 2.—In place of this examination, or any part of it, colleges, members of this Association, are at liberty to recognize the official *certificates of reputable* literary and scientific colleges, academies, high schools, and normal schools, and also the medical student's certificate issued by any state examining board covering the work of the foregoing entrance examination.

SEC. 3.—Colleges, members of this Association, may allow students *who fail in one or more branches* in this entrance examination the privilege of entering the first-year course, but such students shall not be allowed to begin the second course until the entrance requirements are satisfied.

SEC. 4.—Colleges, members of this Association, are free to honor official *credentials issued by medical colleges of equal requirements*, except in the branches of study embraced in the last year of their own curriculum.

SEC. 5.—Candidates for the degree of Doctor of Medicine in the year 1899 and thereafter shall have attended at least *four courses*

Name of College.	Population of city in which coll. is located.	No. students registered, Session 1900-1.	Graduates, 1901.	Total No. of teachers.	No. of weeks in college year.	Total graduates all colleges in state, 1901.	Total students, all colleges in state, 1900-1.	Population of state.	No. of physicians in the state.	No. of population to one physician.
ALABAMA	.....	.....	.....	.....	.....	53	207	1,828,697	2000	914
Birmingham Medical College.—R	38,469	77	15	26	27					
Medical College of Alabama.—R	"	130	38	20	26					
ARKANSAS	.....	.....	.....	.....	.....	20	240	1,311,564	2400	546
Medical Department Arkansas University.—R	38,307	240	20	21	26					
CALIFORNIA	.....	.....	.....	.....	.....	128	678	1,311,564	2400	416
California Medical College.—E	342,782	49	10	28	32					
College of Physicians and Surgeons, San Francisco.—R	"	171	38	36	26					
Cooper Medical College.—R	"	167	27	30	32					
Hahnemann Hospital College of San Francisco.—H	"	40	6	28	28					
University of California, Medical Department.—R	"	164	28	40	32					
Pacific Coast Regular College of Medicine.[1]—R	"	.....	.....	.....	.....					
College of Medicine, University of Southern California.—R	102,479	87	19	31	36					
COLORADO	.....	.....	.....	.....	.....	49	248	539,700	1300	415
Colorado School of Medicine.—R	6,150	70	9	25	36					
Denver Homeopathic College.—H	133,859	40	5	31	27					
Gross Medical College.—R	"	78	15	44	36					
Denver College of Medicine.—R	"	60	20	46	34					
CONNECTICUT	.....	.....	.....	.....	.....	18	133	908,420	1550	585
Yale University, Medical Department.—R	108,027	133	18	53	38					
DISTRICT OF COLUMBIA	.....	.....	.....	.....	.....	77	547	278,718	1000	271
Howard University, Medical Department.[5]—R	278,718	142	19	25	30					
Medical Department, Columbian University.—R	"	249	26	52	32					
National University Medical Department.—R	"	33	11	41	34					
University of Georgetown School of Medicine.—R	"	123	21	49	35					
GEORGIA	.....	.....	.....	.....	.....	118	444	2,216,331	3200	692
Atlanta College of Physicians and Surgeons.—R	89,872	282	67	31	26					
Georgia College of Eclectic Medicine and Surgery.—E	"	55	21	12	26					
Medical College of Georgia.—R	39,441	107	30	20	26					
ILLINOIS	.....	.....	.....	.....	.....	736	3662	4,821,550	8600	561
American Medical Missionary College.—R	1,698,575	119	13	21	36					
Bennett College of Eclectic Medicine and Surgery.—E	"	124	37	29	26					
Chicago Homeopathic Medical College.—H	"	152	48	57	28					
College of Medicine and Surgery.—Ph.M	"	46	9	31	28					
College of Physicians and Surgeons, Chicago.—R	"	676	164	115	39					
Dunham Medical College.—H	"	122	18	39	28					
Hahnemann Medical College and Hospital.—H	"	175	51	49	36					
Harvey Medical College.—R	"	270	17	[2]47	40					
Hering Medical College.—H	"	60	12	36	28					
Illinois Medical College.—R	"	202	36	39	26					
Jenner Medical College.—R	"	101	13	[2]32	42					
Northwestern University Medical School.—R	"	344	74	86	36					
Rush Medical College.—R	"	1055	213	124	36					
Northwestern University Woman's Medical School.—R	"	72	19	52	39					
National Medical University[7]	"	144	12	61	36					
Chicago Eclectic College.[6]—E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
INDIANA	.....	.....	.....	.....	.....	82	423	2,516,462	5100	493
Central College of Physicians and Surgeons.—R	169,164	87	23	43	26					
Curtis Physio-Medical Institute[1]	"	.....	.....	.....	.....					
Medical College of Indiana.—R	"	253	46	57	28					
Physio-Medical College of Indiana.—Ph.M	"	34	9	29	26					
Eclectic Medical College of Indiana.—E	"	14	0	22	26					
Fort Wayne College of Medicine.—R	45,115	35	4	31	26					
IOWA	.....	.....	.....	.....	.....	121	708	2,231,853	3700	603
Keokuk Medical College of Physicians and Surgeons.—R	14,641	247	51	15	28					
Iowa College of Physicians and Surgeons.—R	62,139	78	14	23	38					
Sioux City College of Medicine.—R	33,111	52	5	15	33					
State University of Iowa, Homeopathic Medical Dept.—H	7,987	59	16	[3]19	38					
State University of Iowa, Medical Department.—R	"	272	35	[2]31	38					
KANSAS	.....	.....	.....	.....	.....	31	232	1,470,495	2650	555
College of Physicians and Surgeons of Kansas City.—R	51,418	87	31	37	28					
Kansas Medical College.—R	33,608	98	0	33	26					
School of Medicine, University of Kansas[4].—R	.....	47	....	[3]18	36					
KENTUCKY	.....	.....	.....	.....	.....	190	1266	2,147,174	3900	551
Hospital College of Medicine.—R	204,731	334	52	41	26					
Kentucky School of Medicine.—R	"	309	43	36	26					
Louisville Medical College.—R	"	196	25	23	26					
Louisville National Medical College.[5]—R	"	21	4	15	26					
Southwestern Homeopathic Medical College.—H	"	33	11	31	28					
Medical Department, University of Louisville.—R	"	157	35	37	26					
Kentucky University, Medical Department.—R	"	204	20	35	25					
Medical Department, State University[5].—R	"	12	....	8	26					
LOUISIANA	.....	.....	.....	.....	.....	116	422	1,381,625	1400	987
New Orleans University, Medical Department.[5]—R	287,104	32	2	9	26					
Tulane University, Medical Department.—R	"	390	114	24	26					
MAINE	.....	.....	.....	.....	.....	40	90	694,466	1250	556
Medical School of Maine, Bowdoin College.—R	5,210	90	40	18	26					
MARYLAND	.....	.....	.....	.....	.....	358	1611	1,188,044	2100	566
Baltimore Medical College.—R	508,957	507	97	45	28					
Baltimore University School of Medicine.—R	"	66	31	28	26					
College of Physicians and Surgeons of Baltimore.—R	"	359	59	52	28					
Medical Department, Johns Hopkins University.—R	"	209	54	64	32					
Southern Homeopathic Medical College.—H	"	32	10	39	28					
University of Maryland, School of Medicine.—R	"	332	71	59	28					
Woman's Medical College of Baltimore.—R	"	31	7	27	32					
Maryland Medical College.—R	"	75	29	25	26					
MASSACHUSETTS	.....	.....	.....	.....	.....	184	1122	2,805,346	6200	452
Boston University School of Medicine.—H	560,892	127	24	58	32					
College of Physicians and Surgeons.—R	"	127	9	33	32					
Harvard University Medical School.—R	"	591	116	31	36					
Tufts' College Medical School.—R	"	277	35	53	32					
MICHIGAN	.....	.....	.....	.....	.....	206	1119	2,420,982	4573	529
Detroit College of Medicine.—R	285,704	224	45	95	28					
Detroit Homeopathic Medical College.—H	"	41	4	33	28					
Michigan College of Medicine and Surgery.—R	"	75	25	23	28					
Grand Rapids Medical College.—R	87,565	47	17	31	26					
Saginaw Valley Medical College.—R	42,345	102	24	30	32					
University of of Michigan Dept. of Medicine and Surgery.—R	14,590	563	75	66	36					
University of Michigan Homeopathic Medical College.—H	"	67	16	11	36					

Name of College.	Population of city in which coll. is located.	No. students registered, Session 1900-1.	Graduates, 1901.	Total No. of teachers.	No. of weeks in college year.	Total graduates all colleges in state, 1901.	Total students, all colleges in state, 1900-1.	Population of state.	No. of physicians in the state.	No. of population to one physician.
MINNESOTA	.....	....	....	....	....	89	480	1,751,394	1745	1004
College of Homeopathic Med. and Surg., Univ. of Minn.—H.	202,718	26	4	22	34					
College of Medicine and Surgery, Univ. of Minnesota.—R.	"	323	60	77	36					
Medical Department of Hamline University.—R.	"	131	25	45	36					
MISSOURI	.....	....	....	....	....	525	2300	3,106,665	6125	507
Medico-Chirurgical College.—R.	163,752	117	25	46	26					
Kansas City Univ. College of Homeo. Med. and Surg.[9] [1]—H.	"	....	....	....	....					
Woman's Medical College.—R.	"	23	9	37	28					
University Medical College of Kansas City.—R.	"	246	69	56	26					
Kansas City Homeopathic Medical College.[9]—H.	"	50	12	32	28					
Kansas City Medical College.—R.	"	114	44	31	28					
Eclectic Medical University.—E.	"	48	14	20	26					
Central Medical College.—R.	102,979	57	2	30	26					
Ensworth Medical College.—R.	"	63	8	23	26					
Barnes Medical College.—R.	579,238	520	111	44	28					
Marion-Sims-Beaumont College of Medicine.—R.	"	366	87	60	28					
St. Louis College of Physicians and Surgeons.—R.	"	243	52	44	28					
American Medical College.—E.	"	75	16	27	26					
Homeopathic Medical College of Missouri.—H.	"	66	11	31	28					
Medical Department, Washington University.—R.	"	227	54	56	28					
University of the State of Missouri.—R.	5,651	85	11	25	36					
NEBRASKA	.....	....	....	....	....	62	346	1,066,300	1475	723
Omaha Medical College.—R.	102,555	149	23	36	28					
John A. Creighton Medical College.—R.	"	123	27	42	32					
Lincoln Medical College of Cotner University.—E.	40,169	74	12	25	28					
NEW HAMPSHIRE	.....	....	....	....	....	27	89	411,588	730	564
Dartmouth Medical College.—R.	1,825	89	27	17	26					
NEW YORK	.....	....	....	....	....	400	2323	7,268,894	12,-	603
Albany Medical College.—R.	94,151	142	28	55	26					
College of Physicians and Surgeons.—R.	3,437,202	801	149	82	32					
Cornell University Medical College.—R.	"	356	26	98	36					
Eclectic Medical College.—E.	"	84	12	35	28					
Long Island College Hospital.—R.	"	187	41	69	30					
New York Homeopathic Medical College and Hospital.—H.	"	107	27	48	28					
New York Medical College and Hospital for Women.—H.	"	33	9	43	30					
University and Bellevue Hospital Medical College.—R.	"	285	43	113	28					
Syracuse University College of Medicine.—R.	108,374	116	19	41	32					
University of Buffalo, Medical Department.—R.	352,387	212	46	68	28					
NORTH CAROLINA	.....	....	....	....	....	9	50	1,893,810	1600	1184
Leonard Medical School.—R.	13,643	8	1	8	26					
North Carolina Medical College.—R.	904	42	8	6	26					
Medical Department, University of North Carolina[4].—R.	.....	[8]	....	....	....					
OHIO	.....	....	....	....	....	307	1415	4,157,545	8500	489
Western Reserve University Medical College.—R.	381,768	133	24	56	32					
Cleveland College of Physicians and Surgeons.—R.	"	78	15	57	32					
Cleveland Homeopathic Medical College.—H.	"	150	46	45	32					
Eclectic Medical Institute.—E.	325,902	141	26	29	28					
Cincinnati College of Medicine and Surgery.—R.	"	82	16	37	28					
Laura Memorial Woman's Medical College.—R.	"	24	5	26	28					
Medical College of Ohio.—R.	"	200	60	41	28					
Pulte Medical College.—H.	"	39	5	31	28					
Miami Medical College.—R.	"	112	25	34	28					
Ohio Medical University.—R.	125,560	228	45	31	28					
Starling Medical College.—R.	"	173	32	29	28					
Toledo Medical College.—R.	131,822	55	8	34	28					
OREGON	.....	....	....	....	....	16	91	413,536	887	466
University of Oregon, Medical Department.—R.	90,426	64	11	26	26					
Medical Department, Williamette University.—R.	4,258	27	5	17	26					
PENNSYLVANIA	.....	....	....	....	....	495	2486	6,302,115	9526	662
University of Pennsylvania Department of Medicine.—R.	1,293,697	565	160	103	32					
Hahnemann Medical College and Hospital.—H.	"	264	52	57	30					
Jefferson Medical College.—R.	"	736	106	84	32					
Woman's Medical College of Pennsylvania.—R.	"	175	37	53	32					
Medico-Chirurgical College of Philadelphia.—R.	"	408	67	72	32					
Western Pennsylvania Medical College.—R.	321,616	338	73	68	32					
SOUTH CAROLINA	.....	....	....	....	....	32	95	1,340,316	1194	1123
Medical College of the State of South Carolina.—R.	55,807	95	32	24	26					
TENNESSEE	.....	....	....	....	....	658	2126	2,020,616	3635	556
Tennessee Medical College.—R.	32,637	97	35	19	26					
Knoxville Medical College.[5]—R.	"	34	4	11	26					
Medical Department University of Nashville.—R.	"	182	66	27	26					
Vanderbilt University Medical Department.—R.	"	211	92	30	26					
University of Tennessee, Medical Department.—R.	80,865	182	75	27	26					
Meharry Medical College.[5]—R.	"	217	39	20	26					
Memphis Hospital Medical College.—R.	102,320	750	189	25	26					
Sewanee Medical College.—R.	1,200	209	102	21	26					
Chattanooga National Medical College.[5]—R.	30,154	20	2	9	28					
Chattanooga Medical College.—R.	"	224	54	24	26					
TEXAS	.....	....	....	....	....	56	408	3,048,710	4980	612
Medical Department Fort Worth University.—R.	26,688	157	27	31	26					
University of Texas Department of Medicine.—R.	37,789	119	6	24	32					
University of Dallas Medical Department.—R.	42,638	81	15	23	26					
Dallas Medical College.—R.	"	51	8	18	26					
VERMONT	.....	....	....	....	....	15	155	343,641	750	451
University of Vermont Medical Department.—R.	18,640	155	15	39	26					
VIRGINIA	.....	....	....	....	....	172	600	1,854,184	2200	843
Medical College of Virginia.—R.	85,050	203	47	35	30					
University College of Medicine.—R.	"	224	72	49	30					
University of Virginia Department of Medicine.—R.	6,449	173	53	17	36					
WISCONSIN	.....	....	....	....	....	54	301	2,069,042	2212	935
Milwaukee Medical College.—R.	285,315	178	36	57	30					
Wisconsin College of Physicians and Surgeons.—R.	"	123	18	46	32					

[1]No information to be obtained except that such college is in existence.
[2]Some are also teachers in day schools.
[3]Some are in both departments of this university.
[4]Does not grant degrees.
[5]Colored.
[6]Just organized.
[7]Apparently grants any degree.
[8]Could not be ascertained.
[9]Recently consolidated under the name, Hahnemann College of Kansas City.

Name of College.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Dist. Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indian Ter.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
Birmingham Medical College	74	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Medical College of Alabama	117	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..
Med. Dept. Arkansas University	..	..	206	..	..	..	..	..	..	..	..	..	12	..	..	..	..	3	..	..	..
University of California Med. Dept	..	2	..	139	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1
Denver Homeopathic College	1	..	2	3	15	..	..	..	..	..	..	2	..	2	2	..	..	..	..	..	..
Gross Medical College	..	..	..	..	49	2	..	..	..	..	..	1	..	..	2	..	..	2	..	..	..
Denver College of Medicine	..	..	1	..	30	3	..	..	..	..	..	2	..	..	1	..	..	..	..	..	2
Yale University Medical Department	..	..	..	..	..	100	..	1	..	..	..	..	..	..	..	..	..	..	1	..	11
Howard University Medical Department	3	..	2	..	..	..	1	22	3	8	..	2	..	3	1	2	1	1	1	5	..
Medical Department Columbian University	..	..	..	..	..	1	..	..	..	4	..	..	..	4	1	1	..	..	..	..	4
University of Georgetown Medical Dept	1	..	..	1	1	1	..	38	1	1	..	3	..	1	1	1	..	1	..	6	29
Atlanta College of Physicians and Surgeons	23	..	3	..	..	..	..	..	15	171	..	..	..	..	..	..	..	6	..	..	1
American Medical Missionary College	..	..	..	8	1	..	..	1	1	..	..	8	..	4	13	1	2	..	..	..	2
Bennett College of Eclectic Med. and Surg	..	..	1	..	..	..	..	..	..	..	..	53	..	18	6	..	2	..	..	..	..
Chicago Homeopathic Medical College	..	..	..	..	..	..	..	..	..	..	..	64	..	13	14	7	2	..	1	..	2
College of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	23	..	..	2	..	..	..	..	..	..
College of P. and S. of Chicago	..	..	3	..	1	..	..	..	1	1	..	322	..	37	99	12	1	..	..	..	..
Dunham Medical College	..	..	..	..	3	1	..	..	2	..	..	70	..	5	7	1	..	..	..	..	..
Hahnemann Med. College and Hospital	..	..	..	1	..	..	1	1	..	..	..	78	..	6	19	4	1	..	1	..	1
Hering Medical College	..	..	..	..	..	..	..	..	..	..	..	19	..	4	2	3	1	..	..	..	..
Illinois Medical College	1	..	..	2	1	..	..	..	..	1	3	57	..	42	6	2	1	3	..	..	1
Northwestern University Medical School	1	..	..	1	4	..	..	..	..	..	..	182	..	14	25	11	1	..	..	..	..
Rush Medical College	2	..	..	8	6	1	..	..	1	1	1	313	..	54	106	30	5	1	..	..	3
Northwestern Univ. Women's Med. College	..	..	1	2	..	..	..	..	..	..	1	37	..	2	7	2	..	..	..	..	..
Medical College of Indiana	..	..	1	..	..	..	..	..	..	..	..	11	..	233	..	1	1	..	..	..	..
Physio-Medical College of Indiana	..	..	..	1	..	..	..	..	..	..	..	3	..	15	2	..	..	..	..	..	..
Keokuk Medical College of Phys. and Surg	..	..	..	1	1	..	..	..	..	..	..	78	..	3	109	6	..	..	..	..	1
Iowa College of Physicians and Surgeons	..	..	..	..	..	..	..	..	..	..	..	..	..	..	72	1	..	..	..	..	..
Sioux City College of Medicine	..	..	..	..	..	..	..	..	..	..	..	1	..	1	39	..	..	..	..	..	..
State Univ. of Iowa Homeo. Med. Dept	..	..	..	..	..	..	..	..	..	..	..	3	..	..	53	..	..	..	..	..	..
State Univ. of Iowa Med. Dept	..	..	..	..	..	..	..	..	..	..	..	10	..	..	249	..	..	..	..	..	..
College of P. and S. of Kansas City	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	65	..	..	..	..	..
Kansas Medical College	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	87	..	..	..	..	..
School of Medicine of Univ. of Kansas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	..	..	..	..	..
Hospital College of Medicine	4	..	8	..	..	..	..	..	2	2	..	13	..	43	..	..	207	1	..	..	..
Louisville Medical College	4	..	8	1	1	..	..	..	..	2	..	3	1	27	3	4	58	6	..	..	..
Medical Department State University	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	8	..	..	..	..
S. W. Homeopathic Medical College	1	..	..	..	..	..	..	..	..	..	..	1	..	6	..	..	22	..	..	..	..
Med. Dept. Univ. of Louisville	..	..	4	..	1	..	..	..	1	..	..	3	1	32	..	..	83	..	..	..	1
Kentucky University Med. Dept	3	..	2	1	..	1	..	..	1	6	..	5	1	25	1	3	90	4	..	..	..
New Orleans University Med. Dept	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	20	..	..	..
Tulane University Medical Department	25	12	..	..	..	..	..	..	5	5	..	..	..	..	..	..	2	194	..	..	..
Med. School of Maine at Bowdoin College	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	74	..	8
Baltimore Medical College	5	..	..	..	..	20	4	..	1	3	..	5	..	3	1	..	2	1	23	63	95
Baltimore University School of Medicine	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	1	21	4
College of P. and S. of Baltimore	4	..	..	..	..	8	2	..	2	5	..	..	..	..	..	..	..	..	5	42	24
Med. Dept. Johns Hopkins University	1	..	1	8	..	10	..	6	1	5	..	14	..	3	1	2	5	1	8	41	12
Southern Homeopathic Med. College	..	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	18	..
University of Maryland School of Medicine	..	..	..	..	..	3	2	1	5	16	..	..	..	..	..	..	1	..	1	146	6
Women's Medical College of Baltimore	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	14
Maryland Medical College	1	..	..	..	1	1	1	..	..	2	..	..	..	..	..	..	..	..	2	12	2
Boston University School of Medicine	1	..	..	..	..	4	1	..	..	..	..	1	..	..	..	..	..	..	6	1	88
College of Physicians and Surgeons	..	..	..	..	..	3	1	..	..	..	..	1	..	..	1	..	..	..	4	..	78
Harvard University Medical School	..	..	..	1	1	8	..	..	..	1	..	5	..	1	5	1	..	..	26	..	471
Tuft's College Medical School	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	10	..	224
Detroit College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	2
Saginaw Valley Medical College	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1
University of Michigan Dept. of M. and S	2	..	..	5	2	2	..	..	..	1	..	42	..	21	11	6	1	..	..	..	4
University of Michigan Homeo. Med. Coll	..	..	..	..	..	1	..	..	..	..	..	2	..	4	..	..	..	..	..	..	1
Detroit Homeopathic Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
College of Homeo. M. and S., Univ. of Minn.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Medical Department of Hamline University	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
University of Minnesota College of M. and S.	..	..	..	3	..	..	..	..	..	..	..	..	..	1	10	..	..	..	..	..	1
Medico-Chirurgical College	..	1	1	1	..	..	..	..	..	..	..	1	..	..	3	41	..	2	..	..	..
Woman's Medical College	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	3	..	..	..	..	..
Central Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	10	..	..	..	..	..
Barnes Medical College	1	1	19	1	..	..	..	1	..	2	1	102	9	17	27	17	18	1	..	..	..
University Medical College of Kansas City	..	1	1	1	1	..	..	..	..	..	1	5	3	..	6	80	2	..	..	..	..
Kansas City Homeopathic Medical College	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	20	..	..	..	..	..
Marion-Sims-Beaumont College of Medicine	..	1	11	3	..	..	..	..	1	..	..	94	5	6	12	10	3	3	..	..	1
St. Louis College of Physicians and Surg	..	..	12	1	..	..	..	..	1	..	..	80	1	6	22	1	6	..	..	..	..
American Medical College	..	..	6	..	..	..	..	..	..	..	..	13	..	3	..	3	..	..	..	..	..
Kansas City Medical College	..	1	2	..	..	..	..	..	..	..	..	1	1	..	..	59	..	..	..	..	..
University of the State of Missouri	..	..	1	..	..	..	..	..	..	..	..	4	1	..	3	1	1	..	..	..	1
Medical Department Washington Univ	..	..	11	..	1	..	..	..	1	..	..	56	2	4	2	5	1	2	..	..	1
Eclectic Medical University	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	13	..	..	..	..	..
Omaha Medical College	..	..	..	..	1	..	..	..	..	..	..	2	..	..	35	1	..	..	..	..	..
John A. Creighton Medical College	..	..	..	..	..	..	..	..	..	..	..	2	..	..	28	1	..	..	..	..	..
Union University Albany Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7
Cornell University Medical College	1	..	..	1	..	8	..	1	..	..	..	1	..	..	1	1	2	1	..	..	7
Eclectic Medical College of New York	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Long Island College Hospital	..	..	..	..	..	4	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..
New York Homeo. Med. Coll. and Hospital	..	..	..	..	..	3	..	..	..	..	..	..	..	1	..	..	1	1	1	..	..
Syracuse University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..
Leonard Medical College	6	..	..	..	..	1	..	..	..	3	..	..	..	..	..	..	..	..	..	1	1
North Carolina Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cincinnati College of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	..	8	..	..	..	..
Cleveland College of Physicians and Surg	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cleveland Homeopathic Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eclectic Medical Institute	..	..	1	1	..	..	..	1	1	1	..	10	..	20	1	1	9	..	..	..	..
Laura Memorial Woman's Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	5	..	..	..	..
Medical College of Ohio	1	..	..	..	..	..	..	..	..	..	..	..	..	17	..	3	34	..	..	..	..
Medical Department Western Reserve Univ	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Miami Medical College	..	..	..	..	..	..	..	..	1	..	..	4	..	8	1	..	15	..	..	..	..
Ohio Medical University	..	..	..	..	..	..	..	..	1	..	..	2	..	..	..	1	2	..	..	..	..
Pulte Medical College	1	..	..	1	..	1	..	..	..	..	..	..	..	2	..	..	7	..	..	..	1
Starling Medical College	..	..	..	1	..	2	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..
Toledo Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Rush Medical College and College of Physicians and Surgeons, Baltimore, do not give complete list by states.

Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	New Hampshire	New Jersey.	New Mexico.	New York.	Nevada.	N. Carolina.	N. Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	S. Carolina.	S. Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	W. Virginia.	Wisconsin.	Wyoming.	Foreign.
1		1							1				1					1			1								
		8																			14								
13																													
4																													
12																													
20																													
8																													
15																													
1

Name of College.	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Dist. Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indian Ter.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.
University of Oregon Medical Department..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Williamette University Medical Department.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Department of Medicine University of Penn..	4	..	..	4	..	6	6	2	2	1	..	11	..	3	5	4	4	2	11	10	9
Hahnemann Medical College and Hospital..	..	..	..	1	2	8	8	2	..	..	..	1	..	1	1	..	..	..	..	9	2
Jefferson Medical College	2	..	6	8	4	7	10	1	1	8	1	10	..	9	9	2	4	2	8	8	30
Western Pennsylvania Medical College	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Woman's Medical College of Pennsylvania..	1	..	..	..	2	6	..	2	..	..	..	..	..	1	1	5	2	1	..	1	13
Medico-Chirurgical College of Philadelphia..	..	..	..	2	..	5	8	..	..	..	..	..	..	1	2	..	9	..	1	3	5
Medical College of the State of S. Carolina.	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..
Chattanooga Medical College	27	..	9	..	1	..	..	..	7	22	1	3	5	1	1	..	2	8	..	..	1
Medical Department Univ. of Tennessee....	9	..	2	..	..	..	..	..	1	2	..	4	5	2	..	..	24	3	..	..	..
Meharry Medical College	15	..	11	1	..	1	..	..	10	17	..	6	..	3	..	5	16	3	..	..	..
Memphis Hospital Medical College	45	..	133	..	..	..	..	..	..	2	..	..	14	1	1	..	5	57	..	..	..
Medical Department University of the South.	16	..	7	..	..	1	..	..	3	14	..	1	..	..	4	..	3	23	..	..	3
Tennessee Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	9	..	..	..	..
University of Nashville Medical Department.	8	..	11	..	..	..	..	..	..	2	..	..	2	3	..	3	9	11	..	..	..
Vanderbilt University Medical Department.	23	..	16	2	..	..	..	..	2	4	..	4	..	..	5	..	15	3	2	..	..
Chattanooga National Medical College	3	..	..	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..
Hannibal Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Medical Department Ft. Worth University..	..	..	..	..	..	..	..	..	..	..	1	..	7	..	..	..	..	..	..	..	..
Medical Department University of Texas...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
University of Dallas Medical Department...	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..
Dallas Medical College	..	1	..	..	..	1	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..
University of Vermont Medical Department.	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	8	..	21
University College of Medicine	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	1	..
University of Virginia Medical Department.	..	..	..	2	1	..	..	..	2	2	3	..	..	..	..	1	..	4	1	..	4
Milwaukee Medical College	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	1	..	..	..	..	..
Wisconsin College of Physicians and Surg..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Total.	438	20	508	219	123	235	49	81	85	325	14	1860	82	560	1051	599	717	372	199	389	1202

of medical instruction, each course of at least six months' duration, no two courses of which shall have been in the same calendar year.

Sec. 6.—Colleges, members of this Association, are free to give to students who have met the entrance requirements of the Association additional *credit for time* on the four years' course as follows: (*a*) To students having the A.B., B.S., or equivalent *degree* from reputable literary colleges, one year of time; (*b*) To graduates and students of colleges, of *homeopathic or eclectic* medicine, as many years as they attended those colleges, provided they have met the previous requirements of the Association and that they pass an examination in materia medica and therapeutics; (*c*) To graduates of reputable colleges of *dentistry, pharmacy,* and *veterinary* medicine, one year of time.

Sec. 7.—A college not giving the whole four courses of the medical curriculum, and not graduating students, but otherwise eligible, may be admited to membership.

THE SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following extracts from the Constitution show regulations controlling matriculants and fees:

ARTICLE IV.

Section 1.—Every student, before being matriculated for the first course of medical lectures in any college belonging to this Association, shall be required to possess the following qualifications:

Sec. 2.—He shall hold a certificate from some known reputable physician, showing his moral character and general fitness to enter upon the study of medicine.

Sec. 3.—He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate from some legally constituted high school, general superintendent of State education, or superintendent of some county board of public education, attesting that he has been regularly examined and is possessed of at least the educational attainments required of first grade teachers of public schools, or a certificate that he has passed the entrance examination to a State University; and a student may be given one month, from the date of his admission, to submit his certificate of qualification.

* Amend Section 2, Article 4.—After the word "certificate" in the first line, insert "duly sworn to."

* Further amend Section 3, Article 4.—After the word "certificate," in the fourth line from the top insert "duly sworn to;" and after the word "University," in the fourth line from the bottom, insert "or other collegiate institution."

Sec. 4.—A set of tickets showing that the holder has attended one full course of medical lectures in any regular and recognized medical college shall be essential for matriculating for a second course of lectures in any college belonging to this Association; and every student prior to matriculating for a third or fourth course of lectures, shall be required to show, by similar evidence, that he has previously taken two or three courses of lectures.

* Amend Section 4, Article 4, by marking the first paragraph "a," and by adding to this paragraph at the end the following: "The minimum per cent. of actual attendance during any session requisite to credit a student with a full course, shall be 80 per cent. of the collegiate course; and a certificate of such attendance, signed by the Dean or Secretary, shall in all instances be promptly furnished by the college so attended." Amend this Section still further by adding paragraph "b," as follows: "Students shall be examined at the end of the first, and every succeeding year, on the studies of the year, and shall be graded. If a student fail on any of the studies of the year he shall not be credited with a full course, but only with the branches that he has passed successfully. He must be examined on every subject upon which he may have passed an unsatisfactory examination, during the ensuing session, at a time determined by the Faculty.

Sec. 5.—The following classes of students may apply for advanced standing and obtain it, provided every applicant undergoes a satisfactory examination upon every branch below the class desired to be entered:

(*a*) Graduates of Dentistry, of Pharmacy, and of Veterinary Medicine.

(*b*) Graduates and matriculates who have completed one or more courses in Colleges of Homeopathy and of Eclectic Medicine.

(*c*) Graduates of recognized colleges and universities who have completed therein prescribed courses in elementary branches of medicine, including chemistry and biology.

* Amend Section 5, Article 4, by adding paragraph "c" as follows: "Any legally qualified non-graduate practitioner of medicine may be admitted into the second year on passing a satisfactory examination on all of the studies of the first year."

Sec. 6.—The same charges shall be made in each of the courses, except where students are exempt from dissection and from laboratory work by reason of having performed the same before, and are not candidates for graduation; and colleges shall enforce and collect their published rates of charges, except in cases deserving reduction on account of the demands of worthy and deserving charity, and such cases shall not exceed 7 per cent. of the whole number of matriculates of the previous session. This law shall not apply to endowed institutions, whose benefactions are confined to their own State; or to colleges receiving State appropriations, or whose charter privileges compel them to give free scholarships to students of their respective States.

The following is recommended as the minimum rate of charges allowable by colleges belonging to this Association:

Matriculation Fee	$5.00
Professors' Tickets	75.00
Anatomical Ticket	10.00
Laboratory Courses, each	10.00
Graduation Fee	25.00

* Amend Section 6, Article 4, by striking out the following: "Except in cases deserving reduction on account of the demands of worthy and deserving charity, and such cases shall not exceed 7 per cent. of the whole number of matriculates of the previous session."

INTERCOLLEGIATE COMMITTEE OF THE AMERICAN INSTITUTE OF HOMEOPATHY.

Under date of Sept. 10, 1901, Dr. George Royal, Secretary of this organization, says: "Every college which secures admission to the Intercollegiate Committee of the American Institute of Homeopathy, must present evidence that they have complied with the requirements of the State Board of Health in their state, or, if there is no such board, then of those of the State Board of the state nearest them. They must show that they teach the principles of similia and agree to be regulated by such rules as the Committee has or may formulate. The following colleges are now in good standing: Denver Homeopathic Medical College; Hahnemann Hospital College, San Francisco; Chicago Homeopathic Medical College; Hering Medical College; Dunham Medical College; Hahnemann Medical College and Hospital, Chicago; Homeopathic Medical Department University of Iowa; Southwestern Homeopathic Medical College, Louisville; Boston University School of Medicine; Southern Homeopathic Medical College, Baltimore; Homeopathic Medical College University of Michigan; Homeopathic Department University of Minnesota; Hahnemann Medical College of Kansas City University; Homeopathic Medical College of Missouri; New York Medical College and Hospital for Women; Pulte Medical College; Cleveland Homeopathic Medical College; Hahnemann Medical College and Hospital, Philadelphia."

* Amendments proposed at the last meeting, but not yet acted upon.

Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	N. Hampshire.	New Jersey.	New Mexico.	New York.	Nevada.	N. Carolina.	N. Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	S. Carolina.	S. Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	W. Virginia.	Wisconsin.	Wyoming.	Foreign.
1															51										7			4
															27													
1		1	4		1	1	32		24				21		2	347	6	3		2	4	3	1	4	2	3	4		10
1		1	2		1	1	38		12				6		1	159		1			2			1					4
					2	1	59		26		7	1	29		3	428	1	3	1	1	5	4	1	3	1	9	1	1	13
1		2	1	1			13		13				4			331		1											1
	1			1		2	27	1	13		12		1			89		1					2	4		1	1		2
1		8	1	1					1		21	1	3			300	2	12			1	1	1					1	13
																		91						1					
1		32					1		2		12					1		3		63	23	1		3		3	1		
		33	11		1													3		83	18								1
1		205	17								1		3	1		1		9		46	16						1		5
		19	2				6		5		11		3	1		8		12	1	26	14			18		2			6
1											33		1							59				3					
		34									12							2		66	18				1	4			1
1		16	3										1	2						94	14			1					1
		1																1		5				1					
														5							143								
																					119								
		1						1						1							74								
			1			19			23							3	3				39		70						
	1						32	2	5		42		1			4		1		1				144		14			1
1			3	1			1	2		4		4					1		3	4		8			112	1	3		1
4		1							1			1	1			1											162		1
	122																										122		
745	525	478	1192	43	289	113	331	5	1286	6	290	62	1392	66	102	2098	88	238	61	580	980	46	135	326	162	191	682	10	404

NOTES.

The population given of both city and state is that of the last United States census (1890).

In estimating the time necessary to complete a course of study, the number of weeks in the table should be multiplied by four, except for the three-year schools.

There are but two colleges in the country that do not claim a four-year course, these being the North Carolina Medical College and the Sewanee (Tenn.) Medical College.

Last year an attempt was made by THE JOURNAL to cover the ground in the same manner as has been done this year, but at that time without success as regards certain of the statistics, and that special number was therefore given up. The number of graduates for the school year 1899-1900, however, were obtained, correctly we believe, and were as follows according to states:

Alabama, 56; Arkansas, 8; California, 146; Colorado, 44; Connecticut, 24; District of Columbia, 78; Georgia, 153; Illinois, 681; Indiana, 62; Iowa, 91; Kansas, 49; Kentucky, 166; Louisiana, 118; Maine, 32; Maryland, 262; Massachusetts, 212; Michigan, 228; Minnesota, 69; Missouri, 501; Nebraska, 38; New Hampshire, 30; New York, 436; North Carolina, 20; Ohio, 315; Oregon, 16; Pennsylvania, 502; South Carolina, 43; Tennessee, 600; Texas, 40; Vermont, 40; Virginia, 140; Wisconsin, 39. A total of 5239.

About fifteen colleges were not included in the above, but at the outside these did not graduate over one hundred men and possibly not half that number. We estimate seventy-five and believe this is within fifteen of being correct. This number added would make the total number of graduates for last year (1900) 5314, against 5444 for this year.

There were 23,846 students registered at the regular colleges during the year ending July 1, 1901; 1683 at the homeopathic; 664 at the eclectic, and 224 at the physio-medical and nondescript—a total of 26,417.

There were 4879 graduates from the regular colleges; 387 from the homeopathic; 148 from the eclectic, and 30 from the physio-medical and nondescript—total M.D. degrees conferred during the year, 5444.

There are in all 5,958 teachers in the medical schools of this country.

There are 10 medical colleges located in towns of less than 10,000 inhabitants; 24 in towns between 10,000 and 50,000; 11 in towns between 50,000 and 100,000; 36 in towns between 100,000 and 250,000; 28 in towns between 250,000 and 500,000, and 45 in towns of more than 500,000 inhabitants.

The following states and territories have no medical colleges: Arizona, population 122,931; Delaware, 184,735; Florida, 528,542; Idaho, 161,772; Indian Territory, 392,060; Mississippi, 1,551,270; Montana, 243,329; New Jersey, 1,883,669; New Mexico, 195,310; Nevada, 42, 335; North Dakota, 319,146; Oklahoma, 398,331; Rhode Island, 428,556; South Dakota, 401,570; Utah, 276,749; Washington, 518,103; West Virginia, 958,800, and Wyoming, population 92,531.

In the Table indicating homes of students, those marked foreign include Canadians. This will explain the number in the "foreign" column, in certain colleges located near the border; for instance, Detroit College of Medicine registers fifty students from the Province of Ontario, and Saginaw Valley Medical College has fourteen students registered from the same province.

CANADA.

The Dominion of Canada, with a population of 5,335,055, distributed through seven provinces and the Northwest territories, an area which reaches from the Atlantic to the Pacific, contains only 12 medical colleges. Of these, 5 are situated in Ontario, 4 in the province of Quebec, 2 in Nova Scotia, and one in Manitoba. One of the five colleges in Ontario is merely a teaching body; it does not confer degrees, since it is not in affiliation with any university. The distinction between university and college in Canada is definite, namely, the latter is a teaching body only and has no right to grant a degree. The

announcements of the following institutions were not received: 1, Faculty of Medicine, Queen's University, Kingston, Ont., and 2, Manitoba Medical College, affiliated with the University of Manitoba. The course of the latter is four years of eight months each.

Toronto, Ontario.

UNIVERSITY OF TORONTO, MEDICAL FACULTY.—All the lectures and demonstrations of the 1st and 2d years are given in the laboratories and lecture rooms of the University: more than two-thirds of the instruction in the 3d and 4th years are given in the wards and in the pathological and clinical laboratories. A 5th year is now demanded by the Ontario Medical Council, for which provision will be made. Clinical instruction is given in the Toronto General Hospital, Mercer Eye and Ear Infirmary, Burnside Lying-in Hospital, Hospital for Sick Children, and St. Michael's Hospital. Before commencing students must satisfy, as to qualifications, the College of Physicians and Surgeons of Ontario (Provincial Board). Fees are: Registration (payable once), $5; each of the first four years, $100; fifth year, $50; for the degree of M.B., and M.D., each $20. Number of students registered last session, 339; graduates, 52. The 15th session, since the re-establishment of the Medical Faculty of the University, will commence October 1.

TRINITY MEDICAL COLLEGE.—This college is in affiliation with Trinity University, the University of Toronto, Queen's University, and the University of Manitoba. It is situated in Toronto. Toronto General Hospital, Hospital for Sick Children, St. Michael's Hospital, Burnside Lying-in Hospital, and the Eye and Ear Hospital are open to the students for clinical instruction. The entering candidate must pass the examination required by the Provincial College of Physicians and Surgeons. The fee for each session of eight months is $100, exclusive of fees for examinations and hospitals. Matriculates during last session were 157; graduates, 37. The 31st "consecutive winter session" will begin September 25, and continue for eight months.

ONTARIO MEDICAL COLLEGE FOR WOMEN.—This college is located in Toronto, and is not empowered to grant degrees in Medicine, but it qualifies students fully to take the examinations in any University. The college requires no certificate of matriculation examination, but will accept that of the university selected by the student. The fee for each year is $100, exclusive of all hospital and university fees. The number of undergraduates last session was 339; graduates, 52. The 18th session will open Septembr 17 and continues for eight months.

London, Ontario.

MEDICAL DEPARTMENT OF THE WESTERN UNIVERSITY.—This college makes use of Victoria Hospital for its clinical work. The fee each year is $90, and $25 for graduation. The requirements for matriculation are those demanded by the College of Physicians and Surgeons of Ontario, and the full course is one of 5 years. The matriculates of last session were 77; graduates, 13. The 20th session opened September 10.

Montreal, Quebec.

UNIVERSITY OF BISHOPS COLLEGE, FACULTY OF MEDICINE.—The course leading to the degree of C.M., M.D., extends over four years and consists of 4 sessions of six months each, and three summer sessions of three months each, only one of which is compulsory; the faculty strongly recommends attendance upon the three summer courses. Students who require the Quebec license will be given an extended course to comply with the provincial laws. The Montreal General Hospital, Roval Victoria, Western Hospital, Hotel Dieu Hospital and Women's Hospital afford opportunities for clinical instruction. Students must, on commencing, satisfy the Provincial Board as to their preliminary qualifications. The fee for the first year is $81; second year, $84; third year, $86; fourth year, $74, and summer course, $25, and degrees, $25. During last session the students numbered 106. The 31st annual session will commence October 1.

MCGILL UNIVERSITY, FACULTY OF MEDICINE.—This college has a course of four years of nine months each. The total fees for the course are $500. Clinical instruction is given in the Montreal General Hospital, Royal Victoria Hospital, and Montreal Maternity Hospital. Students, except university graduates in arts, must pass the preliminary examination required by the Provincial College of Physicians and Surgeons. Last year's matriculates numbered 490; graduates, 106; post-graduate students, 23. The 70th session will commence September 23.

ECOLE DE MEDECINE ET DU CHIRURGIE.—This college is the Montreal branch of the Medical Faculty of the Universite-Laval in Quebec. It is a French school and was incorporated in 1845. Its students in all classes now number from 280 to 300 each year.

Quebec, P. Q.

UNIVERSITE LAVAL, FACULTE DE MEDECINE.—The course consists of four years. The fees for the entire course are $180 and $216, according to preliminary qualifications. The matriculates during last session were 102; graduates, 24.

Halifax, Nova Scotia.

FACULTY OF MEDICINE OF DALHOUSE UNIVERSITY.—The course consists of 4 years of 8 months each, and leads to the final M.D. and C.M. examination. Prospective students must pass the preliminary examination of the Provincial Medical Board or a university examination. During last session there were 95 students, of which 14 belonged to the graduating class.

HALIFAX MEDICAL COLLEGE.—This college supplies no "preliminary examiners:" students are referred for examination to the Registrar of the Provincial Medical Board. The course consists of four years of eight months each. The fees for the full course are $300, and $30 for graduation. During last session the students numbered 88; graduates, 12. The 33d session began August 29.

Six Years' Course for the Degree in Arts and in Medicines.—As the number of subjects about which it is necessary for the student to know something has increased during the past years the medical course has gradually been lengthened, the demands upon the student have been greater and the average age at which men enter practice has continually increased. This state of affairs has given rise to a considerable discussion as to whether it is advisable for a young man intending to study medicine to take a preliminary course in arts or sciences. The requirement of such degrees as a condition for entrance at Harvard and Johns Hopkins is sufficient evidence that some of the most progressive and representative members of our profession consider such a course of study not only advisable but indispensable. The poor quality of instruction in our secondary schools is no doubt responsible for the delay of students in entering college, and this has made the average age very high for the student who graduates from both a collegiate and medical course. With improvement in secondary education this state of affairs will be remedied and students will be able to enter upon their professional work at a reasonable age. At present the requirement of the degree in arts and science with a four years' course in medicine is considered too high by many, and various solutions of the problem have been suggested. Certain schools have given credit to graduates in arts and science for studies with a medical bearing taken during their academic courses. Other schools have sought to arrange a schedule of studies which shall give a reasonably complete liberal education in connection with a medical course in a shorter length of time than has been previously customary. Within the past year we have noticed from the announcements of Cornell University, McGill University and the University of Michigan, an arrangement by which students can cover the course and receive both degrees in six years. In Cornell before the establishment of the medical department a number of courses were given in anatomy, physiology, histology, embryology, bacteriology and physics which counted toward the degree in arts. There seems to be no reason why these studies should not be considered general culture courses suited to the student desiring a general education along biologic lines who has not in view the study of medicine. On the other hand, all of these studies are indispensable for the man who is to take up medicine, and if they are taken during the academic course, there is no reason why the medical course should not be shortened by the time required to take them during the academic course. The amount of general culture which the student gets by such an arrangement is about the same that English, French, and German students are now required to have, and while the complete college course with broader culture is desirable if possible, the combination of two courses in six years is a far better arrangement than that the student should not take any college course at all. A number of leading universities have now arranged courses which tend in this direction. For several years it has been possible for the student to obtain the degree in arts at Harvard in three years. The regular course of study at Johns Hopkins is three years, the scientific course at Yale has never been more than three years, and in some colleges and universities the somewhat lower requirements for entrance make the four years' course about the equivalent of a three years' course in other institutions. This shortening of the general culture course is of great importance to the man who must spend at least a year in hospital training as well as four years in the medical school, and we believe that the still more radical change which has been adopted in the universities which we have mentioned might be wisely introduced at other universities. This would not prevent younger men who had the time and inclination from pursuing a more comprehensive course, and it would encourage many men who now go into medicine without the advantage of academic study to try to get this valuable extra two years of training. No doubt the time will come in the future when our medical instruction in the United States will be more nearly uniform in all States, as is the case in nearly all European countries, and this combination six years' course is about what we may expect will be the standard.—*Am. Med.*, Aug. 24.

MEDICAL EDUCATION.

UNIVERSITY WORK IN MEDICINE.

It is no longer necessary for a young man who wants an education first to make the fateful choice between "culture" and professional training. Culture and preparation for a calling in life are not mutually exclusive. Culture that does not prepare for a distinct vocation is a pious fraud. Professional training which does not yield culture is a routine drill in some selected knack, with mind as much as possible left out. Culture that deserves a genuine man's respect is not something apart from the ordinary concerns of life. It is not to be had by withdrawing interest from real work, and devoting attention to a range of thought outside and above and beyond men's practical pursuits. What we really want to express when we praise culture is respect for well-developed, well-balanced, and well-adapted human capacity. There can be no culture which does not consist in doing something well. If there were only one sort of thing which is worth doing well, there would be only one possible culture. As there are innumerable kinds of career, all necessary to progressive human happiness, there are equally numerous possible cultures. The cultured man is he who is not merely mechanically fitted to a social function, but he whose thoughts and feelings work intelligently and harmoniously out into the whole process of life, from the point where his own part has to be done. To fit men for life by fitting them for something different from their life, is an ideal that would be grotesque if it had not so long been sacred. To fit a man for life by giving him insight into the most and best possible in his part in life, and zeal to realize that conception, is the sane and social ideal worthy to guide educational programs.

All this is old and familiar enough. It has ranked, however, as contemptible heresy. It is getting to be practical orthodoxy. It is too much to say that educational authorities have modified their verbal formulas to this extent, but actions still have the most prophetic voice, and the logic of events is arguing the case for rational education almost as fast as the most eager could wish.

With more specific reference to medical education it may be said that there are two contrasted types of demand which medical instruction might be planned to supply. The first may be suggested by supposing the case of a young man who says to himself: "I want to get out of life all there is in it for myself, and I want to do it by means of the medical profession. I want, therefore, to get, in the shortest possible time, all the medical information that I can turn to my uses." The other demand may be put in the form of an imagined expression of the general public interest: "We want a proper quota of men of first-rate natural endowment, to make protection of health their special function. We want them to acquire knowledge, and to develop judgment and skill to the limit of their capacity. We want them to bring all the resources of preventive and remedial medicine to the service of their fellows."

The history of quackery need not be called upon for proof that with very little education, involving practically no culture at all, men are able to achieve notorious successes in satisfying the former type of demand. The ideal of the medical profession is distinctly of the other type. The man who enters into the spirit of the profession wants to be the sort of man that the interests of society require him to be. His education should be of the kind which will do the most to satisfy the general need.

Medical instruction in the universities is adjusting itself very rapidly to these perceptions. The ideal of the scholar is knowledge of everything in its relations. When "pure" scholarship controls educational programs they tend to meander off from concrete affairs until the typical scholar is so interested in everything in general that he is good for nothing in particular. The ideal of the practical man, on the contrary, is ability to bring something specific to pass. When this aim controls education it tends to make trade-schools—places where men learn to turn out piecework of a prescribed pattern. The trade may be preaching or teaching or lawyering or doctoring or carpentering. In effect it is, in either case, rule of thumb work. The union of the technical school and the university provides the best conditions imaginable for proper balance between these tendencies. No knowledge or skill would be absolutely worthless to a medical practitioner or investigator. There are, nevertheless, many kinds of knowledge and skill that would cost a member of the medical profession much more than they are worth. On the other hand, the physician can hardly know too much about his own profession, yet he may concentrate his attention so exclusively upon technicalities as to miss many other things that would make him a more effective man. Every professional man has to fix on a working program between the two extremes. The medical curriculum in our universities is the best proposition that scholars and practical men together can offer at present toward a balance of the different claims.

There are just as sharp differences of opinion as ever among university men about fundamental theories of higher education, but whatever individuals think about the matter the universities are actually moving ahead, as fast as they can see footing for next steps, toward solving the problems of reasonable ratio between the more and the less essential in medical training.

With variations both of kind and degree for latitude and longitude and social stratum, the people with whom American physicians practice demand of the medical profession, and are sure to demand more and more, certain attitudes and habits of mind and certain sorts of information which, whether rightly or wrongly, are regarded as credentials of education. This fact requires at least a certain minimum of attention to those subjects which tradition has pronounced cultural. The physician is a man among men, a citizen among citizens. Not alone in his general relations to the state, but as a frequent incident of his professionl duties, he is called upon for knowledge and judgment about business and law and government. It would be an abortive scheme of education that would omit the rudiments of industrial and

civic economy. All the special knowledge which the physician must use consists merely of more particular cases which fall under the general laws of matter. Of course, he must be initiated at least into all the physical sciences. He must know the logic of scientific reasoning, the methods of scientific discovery, and some of the more important results of physical, chemical and biological research. It is not absolutely necessary to read French and German in order to be a progressive physician. It is a prodigious convenience at any rate, and if one wants to be sure of ability to keep among the best informed in his profession he must acquire those languages. The universities are not building a trocha around the medical profession when they propose a program of medical study based upon a foundation which includes all these elements. The standard thus established is justified not by an arbitrary theory of culture, but by calm calculation of the demands which a physician's proper functions must satisfy. In other words, the university influence in medical instruction brings into the curriculum those non-essential factors which a strictly professional training would ignore. These are in some respects more important to the fully equipped physician than the reputed essentials.

The university element assures one more capital factor in medical education. It guarantees that the knowledge which the student gets shall look toward science, and not stop with mere information. The old culture superstition located educational values in certain high caste subjects. We now find culture values not in the things known, but in the way they are known. To know anything in its connections is to be on the way toward all the culture possible. Perception of the relations within things and among things is science. The conduct of medical studies by the universities involves methods which will put the most technical details in scientific organization. Facts will be traced to principles. Phenomena will lead back to laws. Objects and occurrences will get their proper setting both in the genetic series and in the functional organization to which they belong. In the universities, therefore, technical training becomes more precise because it is cultural, and culture becomes more genuine by working out to technical values.

If the physician can not see his facts as they are, and can not draw correct conclusions from pertinent evidence, his failures have more direct and serious consequences than those of any other vocation. When we consider the gravity of the services which society expects of medical men, the highest standard for their education can seem neither too liberal nor too severe.

ON RESEARCH WORK FOR UNDERGRADUATES IN MEDICAL SCHOOLS.

One of the questions which the modern medical student sometimes has to answer during his course rather than at the beginning of it is, "Shall I or shall I not as an undergraduate engage in special research?" The question was formerly but little likely to come up. Teachers, as a rule, knew but little and students less of the real meaning of original investigation. Even those professors who had the capacity to undertake it or to guide it were prevented from doing so by the demands of private practice upon their time or the limitations of the equipment of the colleges. Now, that an increasing number of the occupants of chairs in our best medical schools give up private practice and give their whole time to the subjects which they represent, and are appointed to these chairs not only because they can teach, but because they can produce and are capable of guiding productive study the conditions are very different. The more earnest and ambitious medical graduates attach themselves to such professors and their laboratories and spend a period of time in attacking problems and solving them, for it is coming to be that demonstration of power in some sort of original work is necessary if a man wishes to enter the lists for the higher successes open to members of the medical profession. The enthusiasm of the capable investigator is enormously stimulating and it is but little wonder that young and eager minds coming into contact with it in the medical school or medical department of a university should themselves be fired with the desire of increasing the world's general stock of knowledge instead of being satisfied merely with gaining information regarding the contributions of others.

It seems to us, however, that, under the present conditions of medical education, for the majority of undergraduate medical students research work is not suitable. We recognize fully the influence of research upon development and the importance of gaining as early as possible in one's career the attitude of mind which alone comes through working for knowledge for its own sake in fields before insufficiently cultivated, but in most instances a student, if he is to occupy himself with it at all, does best to postpone until after he has graduated the undertaking of such work. It is but rarely that the undergraduate student is sufficiently prepared for original work. The average student of medicine has quite enough to do to follow faithfully the regular work of the medical course, and if he can do more than is absolutely required without injury to his health he will usually do best to direct his spare energies toward extending his knowledge beyond the confines of what is demanded in one or more of the fundamental branches. If he succeed in urging an unwilling instructor to put him upon a special problem he too often will neglect his regular studies, or injure his health and fall short of success in both. In such instances the student is injured and his instructor's time is worse than wasted.

There are some exceptions to this general rule; medical curricula are of necessity constructed for average students. In every medical school a few students stand out conspicuously as being especially capable, and the tendency is growing to provide more advanced and special courses for such pupils. Among the men of such a group there may occasionally be one who by virtue of unusual mental capacity, or of special training antedating his entrance upon medical studies, is easily recognized by a teacher as a man capable of undertaking research work during the undergraduate period without detriment to the student or to the school. The higher the standard of entrance to the medical school the greater the probability of finding such

men in its classes. If a student be asked by a professor in a good medical school to engage during his course in original research, the student will do well to acquiesce; for, in a good medical school the professors should be men who are capable of sound judgment in such matters, and the responsibility will lie with the teacher rather than with the student. Here is applicable as much as anywhere Goethe's admirable maxim:

Vor den Wissenden sich stellen
Sicher ist's in allen Fällen.

If the student has confidence in his teacher he can not do better than temporarily place himself unreservedly in his hands. He should regard it a great honor and privilege to be chosen to engage in original work and his master's confidence in his ability will make him doubly desirous of proving himself worthy of it. If, on the contrary, a student be ambitious to undertake original investigation and the faculty advise him to devote his whole time and energies to the regular work of the school, he will be wise if he be guided by those best capable of judging as to what is best for him.

While it is undesirable for most undergraduates to undertake any special original research which will require a considerable length of time for its completion, there can be but little doubt of the advantages which accrue to medical students who approach the regular work of the medical course by the methods of research. Perhaps as great an improvement as any recently made in medical education has been the introduction of such methods in the teaching of the regular course. The student may be led to acquire knowledge, in territories already explored, more or less according to the methods used by the original discoverers. In the study of law the "case method" of teaching is analogous. In this far, "research work" may be unreservedly recommended to all undergraduates. The responsibility of the proper conduction of such work depends upon the faculties of our medical schools. The method is past the experimental stage and its success is assured. It will no longer do to urge students to gain their principal knowledge from books. The knowledge which a student really makes his own has to be wrested with a certain amount of difficulty from Nature herself. Books and teachers may be good guides to direct the student in his own work; they are too apt to be harmful when more is expected of them. The utilization of the methods of research—personal observation, reflection and experiment—in the ordinary courses of the medical school will reveal many mistakes in current text-books; properly organized such courses may lead after a few semesters to the accumulation of data which will permit of the correction of various errors and so really constitute a collective original research.

If the class system could be done away with, and it is already falling to pieces in some schools, the objections to undergraduate research work would in large part disappear. At present we disgrace a student who does not graduate in medicine in a stated number of years along with the other members of his "class." It is desirable that the student have liberty to prolong his course without disgrace. When some such arrangement has been perfected it might be advisable for the best students to spend six or even more "Lehrjahre" in completing their training in the fundamental branches by Monographic Work in one or more departments. The course followed by Huxley in his own work before 1860 might well be applied to some extent at least in an undergraduate course of a school of the highest order.

It will be noted that while we are of the opinion that the majority of medical students are unfitted, especially during their undergraduate years, for original research, our reasons for this are different from those brought forward by one of our contributors.[1] His principal argument lies in the assumption that the methods of original investigation in the medical sciences are not only fundamentally different from, but actually injurious to, the "medical mode of thought" which is to be used in observing symptoms, arriving at a diagnosis, and deciding upon a course of treatment. But has he any evidence which would indicate that such an assumption is true? Surely every-day experience points to the opposite view and certainly the statements made in his paper can scarcely be regarded as convincing. It is difficult to understand how a training which teaches a man how to think and work independently can be an injury to his future career or how practice in the weighing of evidence and the arriving at justifiable conclusions should lead to unnecessary deliberation and slowness of judgment. Is it not an error, too, to think that research is limited to the determining of new truths of a general character only, and is it not rather the case that the majority of original investigations deal with particular problems in special fields? Only occasionally does that master-mind appear which is capable of new generalizations, justifiably far-reaching. Again, is it fair to consider that work unworthy of the name of research which, though it fail to say the last word upon the problem upon which it is engaged, gathers all the data at the time available, reflects upon them and draws legitimate inferences from them, even when the result is only an approximation to the whole truth? We think not. Indeed, since the time of Heraclitus, our main consolation after ineffectual attempts to reach the absolute has, perforce, lain in the habit of forming relative judgments. Nor will one regard such relative judgments or tentative conclusions as being devoid of responsibility when it is recalled that one of them may lead thousands of men into action under the most serious circumstances. Finally, does not danger lie in ambush on that road which would lead the "medical mode of thought" too far away from the principles which underlie the accurate observation, logical reflexion and judicious experiment which characterize all scientific methodology? It would not be a far cry, it is to be feared, from such a vagabond mode of thought to that "medical intuition" or *das aerztliche Gefühl* which was formerly accredited with the making of brilliant diagnoses, as it were, "by the Grace of God."

We must confess to seeing but little danger of our medical students or of our medical practitioners becoming too scientific. This country demands not only more scientific physicians in whom the people may safely put their trust, but also more medical scientists capable of

1. See page 736.

properly training them. It is gratifying to find that the medical schools of the better sort are making strenuous efforts to supply both urgent needs.

INDEPENDENCE OF STUDY AND THOUGHT IN MEDICAL EDUCATION.

Twenty years ago, when the course for the medical degree was compassed in two five months' sessions, it seemed essential that every moment should be utilized in lectures and clinics and the day's work uniformly consisted of eight or nine hours of lectures and arena clinics, with two or three hours additional of work in the dissecting room or chemical laboratory, the only practical courses given at that time. No time was left the student for study and reflection and it is small wonder that many of the facts presented eluded his comprehension at the time, and that many of them escaped his memory even before his course was completed. Such a system could not fairly be called one of education, but was rather a mere cramming of information.

The most significant fact in the recent remarkable progress in medical education is not the increase in the requirements for admission, nor the longer time now demanded in the course for the degree; it is the change in the methods of teaching, the great development of the laboratory and of the dispensary and ward clinics, and the subordination of the didactic lecture and the arena clinic, which are no longer deemed the all-sufficient means of training for the medical man. It is the object of medical, as of any other education, to develop and train the faculties that the student may acquire the power to observe closely, to record accurately, and to think logically and clearly along medical lines. The acquisition of information is incidental, and, at best, the amount of knowledge which a student can accumulate in his college course is but a small fraction of the sum total of that knowledge; much of that which he does acquire, of the wisest teacher, he may never use, and it is certain that most of the knowledge which he will use in his practice will be acquired during his post-collegiate career. The great purpose of the medical college life, is, therefore, to educate the student how to observe facts, to acquire information, and how to reason logically and closely in reference to them.

How is he to acquire the ability to observe keenly and accurately? Surely, not by reading or by hearing of the observations of others, helpful as this may be, but by the systematic and constant exercise of his own faculties; hence, the great utility of the laboratory and the small clinic in which he is brought in contact with the facts themselves and not with what somebody else has said or written of them. Likewise, he can acquire the power of clear, logical, sustained thought only by the exercise of his reasoning power, not by a mere description of what others have thought, or by the observation of the teacher, clinical or otherwise.

If these statements are correct then time must be allowed the student for study and reflection outside of the hours scheduled for lectures, clinics, recitations and the other stated work of the curriculum. Adequate time for this purpose is provided in very few medical schools of to-day. Almost without exception the curricula are overloaded, too many hours being demanded for scheduled work. This has doubtless resulted from the manner in which the course of study has been constructed. Each professor, duly impressed with the importance of his own subject, has demanded as much time as he could secure for the work of his department. The result has been not only an overloaded curriculum, but in most cases, one very poorly balanced. The amount of time allotted to any particular branch has depended, not on the relative importance of that branch, but on the comparative persistence and persuasiveness of the professor in charge. Evidence of this need only be sought in the wide variation in the courses of study in our numerous colleges. Branches taught in some are not taught in others, and the number of hours allotted to a particular branch in one schedule may be several times that given to it in another.

An effort was made recently to construct a curriculum on a rational basis, which is of interest in this connection. The faculty of this school having determined that radical measures were necessary, set before itself the following propositions: 1. How many hours daily should the average student be expected to devote to work, both in and out of the college? It was agreed that nine hours should be a maximum for students of the first two years, and ten hours for those of the last two years of the medical course. 2. What part of this time should be allotted to scheduled work in the college, and what part to preparation, reading and reflection, outside? 3. What proportion of the scheduled hours should be allotted to lectures and recitations, and what to laboratory, practical, and clinical work? Considering these two queries together, it was agreed that a one-hour lecture or recitation should receive from the average student two hours of preparation, while a two-hour laboratory, practical or clinical exercise would require only one hour of preparation. Three hours, therefore, should constitute a period, whether for lecture, recitation, laboratory, or clinic, with this difference, that in case of the lecture or recitation one hour of the three would be spent in the class room, in the laboratory or clinical period, two hours, would be so spent. It was further decided that for the first two years an equal amount of time should be assigned to lecture and recitation periods on the one hand and to laboratory periods on the other. If, for example, during a certain portion of the year a student has one lecture, and one recitation daily, involving four hours of preparation, and a two-hour laboratory exercise involving one hour of outside work, during another interval he would have only one lecture or recitation and four hours of laboratory work—a total of nine hours of work daily in either case. During the clinical years a larger portion of the time is spent in scheduled work, the amount of time given to clinics and practical courses being larger, but not less than four of the ten working hours daily are allotted for outside study and reflection.

4. The above propositions having been agreed upon, it remained to determine how much time should justly be allotted to each of the required branches of the curriculum. And this, be it noted, was not ascertained by asking each head of department how much time he felt

that he required to teach his branch exhaustively—that being clearly impossible in any case—but by general discussion and conference, as to the relative importance of the several subjects. It is of interest to note in passing, how promptly and amicably this question was settled. Heads of departments, previously insistent upon a large amount of time, when faced with the proposition that after all the student had only a given number of hours at his disposal, readily assented to an allotment of hours fairly proportionate to the importance of the several subjects.

This specific case has been cited to illustrate what seems to us a rational method of constructing a course of study, but the most significant feature of it all is the large amount of time allotted to the student for independent reading, reflection—thinking—outside of the scheduled hours. The medical college is not so much a place where the student is to be taught, but a place where he is to be educated, to be given the proper environment for the growth and development of his faculties. The faculty must abandon the idea that he is a reservoir to be placed upon the benches of the lecture room during his every waking hour and stuffed with facts, and accept the idea that he is an observing, thinking mind whose chief need is an opportunity to grow.

THE ELECTIVE SYSTEM IN THE MEDICAL SCHOOL.

Among the modern pedagogical methods which are being discussed in relation to medical education, is the elective system, now so generally adopted by the leading institutions for general learning in this country and abroad. It may be defined as that method under which a student pursuing a course for a degree is allowed some choice in the studies he shall take, the method by which he shall pursue them, and the teachers who shall instruct him. Election finds its chief *raison d'etre* in the fact that individuals differ widely in mental make-up, not only, and not so much perhaps in reference to the sum total of mental capacity, but in the relative strength of the faculties; some men excel in powers of observation, others in memory, others in imagination, and others in reasoning power, and if it be the object of an education to develop a well-balanced, thoroughly-trained mind, it is obvious that, if there are wide differences in the individuals to be trained, the methods of training must differ in different cases.

The acquisition of information is one of the purposes of a college course, and here, too, there is abundant room for election by the individual student, because of the immensity of knowledge. It is obvious that the amount of information which the most diligent student can obtain of any subject during a college course, constitutes but a fraction of the sum total of knowledge therein. A teacher of anatomy, for example, devotes his life to the acquisition and promotion of knowledge of his chosen subject and finds that life all too short for its mastery. While, it is true, there are certain fundamental facts which every student must be taught, it seems clearly impossible for any teacher to select a group of topics, and to present them by any method which shall be the best possible for every individual student. It may, indeed, be safely asserted that no two teachers of anatomy would agree as to what constitutes an ideal course in that subject for a medical student, and this assertion would hold good for teachers in any other branch. Evidence of this is furnished in the widely diverse character of the courses offered in the various medical schools. This being the case, why should not the individual student, aided by the advice of his teachers, be allowed some choice in the matter and permitted to adapt his course of study to his tastes, his abilities, and his needs?

The fundamental idea of the elective system is then, the adaptability of a course of study to the peculiar needs and purposes of the individual student, and it is the opinion of the best educators that ideal results can be procured in no other way. But there are further advantages in the system. Not the least of these is the increased enthusiasm and interest with which the student pursues his work. The difference in the spirit which animates one who is taking courses of his own election, courses which he has taken voluntarily, and not merely because they were prescribed by the faculty, has been noted by almost every teacher who has had to do with them. This difference in spirit reacts in turn upon the teacher and affords him a constant stimulus to faithful and efficient work. It has sometimes happened that an enthusiastic, progressive teacher, having been promoted to an assured place in the faculty, has begun to show a decline in diligence and effectiveness soon after attaining the coveted place. Sure of his position, certain of large classes, his course being required of every student, a strong incentive to good work is removed. Very different is the situation under the elective system; the pupil being allowed to choose the professor's course, or one of several others, offered by ambitious younger men, perhaps assistants in the department, soon begin to discover that the larger experience and knowledge of the older men are more than offset by the eager enthusiasm and energy of the younger assistants, and presently the professor finds that the attendance upon his course is diminishing. Not less important is the opportunity and stimulus afforded to the younger man. Like the privat docent of the German University, he is placed squarely in competition with others and realizes that his future career is in his own hands, to be determined solely by the ability, capacity for work and efficiency which he displays as a teacher and investigator.

Then, too, the very act of election on the part of the student, his careful consideration of his own needs, and the selection of the courses best fitted to them, constitute an educational resource of no mean value.

The chief objections urged against the elective system are, first, the danger that the student will be inclined to specialize, devoting all, or most of his time to one subject, and second, the expense involved in increased space, equipment, and instructors. The advocates of election insist that these objections are invalid. In reference to the danger of specialism, it is said that election does not necessarily imply unlimited freedom of choice as to the general branches to be taken, but that, if the student be allowed some latitude as to the topics under each branch, as to the

method of study, whether by lecture, recitation, laboratory or clinic, and as to teachers, all of the benefits of the plan can be secured. A broad and thorough course can be insured by insisting, first, that each student present before graduation a specified minimum of credit in each general branch; second, that his cards of registration be subject to approval of the dean or other officer of the college, and third, that he be required to pass a thorough, practical examination in each department before graduation. It is urged further that the student's own judgment and common sense are prone to be underrated. The number of those is very few who do not realize the necessity of a good knowledge of all of the branches as a preparation for medical practice.

In reference to the need for larger facilities in the matters of space, equipment, and faculty, the advocates of the elective system reply that these must be provided in any event, if the demands of modern medical education are to be met. The subdivision of large classes into small groups for recitation and conference, laboratory and practical exercises, and especially for bedside teaching, is a *sine qua non* for the proper and adequate training of medical men.

A further advantage of the elective plan is the fact that it opens the way for the utilization, under some such scheme as the extra-mural plan of Edinburgh, of many hospitals where no students are admitted at present. This can not well be accomplished except under some plan by which the members of the staff giving instruction are suitably recognized and students are given full credit for work done.

The elective system has been introduced more or less extensively into a number of medical schools. In the Harvard Medical School the Medical Departments of Columbia University, Johns Hopkins University, the University of Pennsylvania, Rush Medical College, and some others, more or less amount of election is allowed. The plan is so generally in use and has been so successful in the larger institutions of general learning that the experience of those medical schools in which it is being tried will be watched with great interest by all who are concerned in any way with medical education.

VALUE OF THE FUNDAMENTAL BRANCHES.

As soon as the student has satisfied the requirements for admission to the study of medicine in some reputable school he may be said to have "burned his bridges" in a much more accurate sense than obtained ten or fifteen years ago. The matriculation examination is becoming yearly more stringent in the larger number of medical colleges, while the demand that the prospective candidate for graduation shall be a person of broad and liberal culture is now more imperative than ever. Time was when the medical student and his friends regarded the freshman as a sort of experimental bread-winner; if the preliminary canter over the medical course did not please him or was not successful any other race could be easily entered. If the boy discovered that he did not care to be a physician, he could take up the grocery business or go back to the farm. Contrariwise, if he failed in, or for any reason abandoned some other occupation, there was always a convenient, and frequently a complaisant, medical "college" to be entered at short notice. A comparison of the Announcements of the previous decade with the present will readily show how much more difficult it now is than it formerly was to carry out the curriculum, and this difficulty is much more likely to increase than diminish. The time is probably at hand when many of the subjects now taught in the freshman and sophomore years will form part of the student's preliminary education.

The additions thus made have an important bearing on the courses commonly known as the fundamental medical branches—biology, anatomy, chemistry, physiology, etc.—because the student must himself decide whether he will attend a college where the latter are mostly disposed of as a part of his preliminary studies and where, consequently, more time is devoted to purely medical investigations, or whether he will undertake them as a portion of the regular collegiate program. It is not our purpose to discuss this matter here except to point out that the pursuit of one or other plan is probably as desirable for one class of students as it is undesirable for another, and that to the average student it matters little when or where he has received such instruction, as long as he does receive it, before engaging in more advanced studies.

Apart from the ambition that most students exhibit to proceed to the final degree, there is a feeling that the subjects of the earlier years are merely means to an end—a sort of ladder on which to climb and when the top is reached to be flung aside as so much useless lumber. It is a common experience to hear even the senior student, not to speak of the recent graduate, glory in the fact that the elements of histology and chemistry, once so familiar to him, are now but a dim memory of that distant past when he was an unsophisticated freshman. While this declaration is not so frequently heard as in former days when the line of demarcation between biology and pathology was more plainly drawn, yet the feeling that there is a great gulf fixed between the theory of the fundamentals and the practice of the bedside has by no means died out.

Is there any reason why, for instance, human anatomy, or embryology or organic chemistry should not be studied, as an introduction to the practice of medicine, with the same persistence and the same singleness of purpose that seems to be so readily accorded to general surgery? If the fundamentals are really essential to his success as a practitioner and to his growth as a scientific man, it is fatal for the student either to neglect them altogether or to regard them, in his after years, as the cast-off clothing of a medical fashion long outworn and fit only for the garret of his mental storehouse.

Probably one of the reasons why in the past certain fundamental studies failed to appeal to students and practitioners of medicine as essential branches was the short time allowed for grasping all the facts and fancies of medical teaching. When the two or three year student (often defective in a preliminary scientific training) was confronted by the mass of material that then, as now, was set forth for him to learn and digest he,

perforce, chose the so-called "practical" studies and rejected the others—singing, meantime, the ancient song:

"Could a man be secure
That his days would endure
As, of old, for a thousand long years,
What things might he know!
What deeds might he do!
And all without hurry and care."

We have not recovered, even with the lengthening of the courses of study and the relegation of some branches to the entrance examination, from this feeling that art is long and life is brief.

This neglect of the fundamental branches, in the choice of studies that the student has felt and still may feel it necessary to make as a burden upon his memory, sometimes results from a notion that a large portion of them is, in some sense, more ornamental than useful, just as many educators still cling to that vague idea, current with our grandfathers, that a more or less intimate knowledge of Greek and Latin forms the chief ingredient in the education of a gentleman.

Yet another obstruction in the path of the student was the manner in which the fundamental branches were formerly and—in some colleges are still—taught. Without denying certain inherent virtues in didactic teaching, there can be no doubt but that the mere memorizing of facts in physiology, anatomy and chemistry presented almost entirely in lectures and textbooks during the freshman and sophomore years furnished the most certain means of forgetting them the year after graduation. The embryo physician at the beginning of the twentieth century has, it is safe to say, no such excuse. There are few, even of the smaller colleges, in which the old-fashioned and uninteresting "knife and forceps" anatomy (furtively studied in a foul and nauseating room) is not replaced by demonstrations, recitations, illustrated by models, dried and moist preparations, drawings from the subjects, etc., all carried on in a clean and pleasant laboratory or amphitheater. A corresponding improvement has also taken place in the methods of teaching all the other primary branches, where the laboratory has displaced the old lecture-room, where the student is trained to observe and to record his observations in a manner that will be of the greatest service to him when he is face to face with diseased conditions in after life.

If we accept, in this connection, Spencer's test and inquire what knowledge is of most worth, it is surely not necessary to argue, for example, that without a knowledge of anatomy, general, regional and pathological, surgery would in practice be about as rational and effective (to quote his words) as if "a merchant were to commence business without any knowledge of arithmetic and bookkeeping. We should exclaim at his folly and look for disastrous consequences. Or if, before studying anatomy, a man set up as a surgical operator, we should wonder at his audacity and pity his patients." In like manner, if a knowledge of anatomy be essential to the practice of surgery it is also required in internal medicine, in medical jurisprudence, in obstetrics, in gynecology—in every condition and walk of medical life.

If the intimate relations of anatomical studies to the more advanced subjects of the curriculum be admitted as an axiomatic truth, the importance of physiology—which may be regarded as including biology, embryology and histology—chemistry, pharmacy, etc., to one who desires a lasting and widening knowledge of every other branch of medical learning can not be gainsaid. But this study of fundamental medicine is not to be pursued simply because it is a help in getting "credits" or because it is useful in passing examinations in the final branches. It represents the scientific part of medicine and it certainly begets that most useful and valuable of all habits—the scientific habit. It teaches the student to try and see things as they really are, and, while exercising a rational skepticism, to give due weight to evidence of the proper kind. This is one reason why a conscientious study, in accordance with modern methods, of the subjects of the first semesters is likely to assist the physician in unraveling the tangles of everyday practice, to enable him to keep abreast of the times as he progresses in all useful knowledge, to distinguish false from true, to reject doubtful theories and to help him from being driven hither and thither by every wind of doctrine. Most important of all, a continued study of them furnishes the index by which his fellow practitioners and—at last—the public decide what kind of physician he really is.

To the student who is just entering on his first work we would say: If you wish to be commonplace in every acceptation of that term the way is easy and medical degrees not so very difficult to obtain. If, on the other hand, you desire to live and work among the worthy and be classed among the best no better preparation can be had than setting upon bedrock and keeping in subsequent repair the foundation stones of our temple of art. Against such a defense, the winds and waves of ignorance of both "regular" and "irregular" charlatanism, of exaggerated therapeutics, and of false pathology, will surely beat in vain.

TEACHING BY RECITATION, DIDACTIC LECTURE, THE AMPHITHEATER CLINIC, THE WARD CLASS.

The four methods by which the practical branches of medicine, surgery, obstetrics and the specialties are generally taught are by recitation, by the didactic lecture, by the amphitheater clinic and by the smaller clinic in the dispensary or ward of the hospital, i. e., the ward class. By these methods, with a little practical laboratory work, the student in his junior and senior years is expected to be drilled in applied medicine so that he will be fitted to engage in practice.

What are the advantages of each of these methods and what their mutual relations? It is frequently said that the didactic lecture should be discarded, that recitations are unnecessary and a waste of time, as the student can learn by reading without reciting; that the clinic to large classes is but a dramatic display, and that teaching should be done wholly to small sections and in the ward or in the laboratory. May it not be that there is something of good in each of these methods and that a too hasty discarding of the one or the other may be detrimental to the best interests of medical education?

If by recitation is meant merely the reciting from memory of certain allotted portions of a text-book, and if the teacher is but a timekeeper who records attendance and marks the student according to the nearness of his approach to repeating the order and wording of the approved text-book, then the teacher is a figurehead, the recitation a farce and an injury to teacher and pupil alike. The true recitation is a conference. The teacher not only listens and criticises, but he invites inquiry; he explains and expounds; he may talk much more than does the pupil; he does not hesitate to call attention to debatable statements in the text-books; he quotes other authorities; he incites his students to look up original articles; he is something far different from a recording clerk who marks percentages showing a student's ability to memorize. And the student under this method of teaching is not only acquiring facts, but is learning how to study. Many students do not know how to read and assimilate a medical article even though it is well written. They fail to put in their proper relations the facts of prime and of subordinate importance. Their conception of a disease is, therefore, a distorted one, its relation to other diseases is misty, the bearing of facts in physiology, pathology and therapeutics upon this disease and its clinical manifestations are poorly appreciated. When such students attempt to tell what they know their failings at once become apparent to themselves and to others. One often thinks he understands until he tries to put his knowledge into articulate or written words. Loose statements made in the recitation do not pass the muster of the critical instructor and the critical fellow-students. Exactness of knowledge and of expression is demanded, and the student makes but a few failures of this sort before he begins to change his habits of study and learns to read, think and express himself clearly and logically.

The proper place for the recitation is at the beginning of the junior year, when the study of the practical branches is first taken up. Before beginning the higher work of the senior year and the study of actual clinical cases there should be a general survey of the subject so that things may be seen in their proper relations, diseases may be grouped and differential diagnoses made understandingly. The study of practical medicine and surgery should not be begun with the oil-immersion lens, but with an objective of lower power and wider field. The recitation course carefully conducted, with properly fitted teacher, good text-books, classes or sections of no more than twenty-five gives this training that is necessary before the student enters upon the more advanced work.

Clinical work is in reality laboratory work. The ward is the laboratory, the patient and the instruments of precision the material; problems are here to be wrought out requiring the same powers of observation, the same collocation of facts, the same logical reasoning, the same precise demonstration, that are required in the laboratory of chemistry or pathology. Every argument elsewhere made for laboratory methods applies to the clinical method of teaching. The closer the student comes to his patient, the more he works out for himself the problem of disease confronting him in a given case, the more firmly fixed in his mind will be the facts thus learned and the better training has he had in independent work. The spirit of original research can easily be developed where students can have ward and bedside opportunities for the daily observation of patients and the comparison of different cases of the same disease, with free access to case records and a consulting library. Instruction in ward classes of six or seven, where the instructor quizzes and expounds, using as a text a concrete case already carefully studied by the members of the class and watched by them for days or even weeks, this is an ideal method of teaching the practical branches.

And there can be no question that this method of teaching more than any other benefits the instructor and keeps him stimulated to do his best. The case must be carefully studied by him before he can intelligently demonstrate it to a critical group of bright senior students. Loose statements will not be tolerated, nor can the teacher in the ward class, as is sometimes done in a clinic and in the arena, draw upon his imagination to fill in the missing symptoms or physical findings that enable him to make out a typical case of some disease. He must demonstrate not what the book says ought to be, but what is actually present.

But what of the amphitheater clinic? Is it wholly useless and to be discarded? As a means of training the student's own powers, of teaching him self-reliance and ability to reach conclusions and to produce independent work it can not be compared with the ward class just mentioned. But ward classes must be small and instructors must be many. From the nature of things in a large school these ward classes can not all be taught by the great physician or surgeon who stands at the head of his department, a man perhaps of world-wide fame, one from whom all the students desire to receive instruction and to whose teaching they are by right entitled. In order that all may learn of him his sections must be larger, fifty, a hundred or more; the amphitheater and not the ward must be the schoolroom. The man selected to give the large clinic should be a man of proven unusual ability in some one direction. He should be either a great operator, an original investigator, a physician of unusually wide experience, or a teacher who has unique ability in imparting knowledge. Such a man can teach a large audience. With a certain class of cases there is much to be learned by seeing the patient even from the distance of the benches of the amphitheater; such as a deformity of a fracture, its method of reduction, and the dressing applied. A tabetic can be well demonstrated as to gait, sensory and motor disturbances to a large class. Further, a class learns much from a careful review of the history of the case and from observing the methods of a good teacher in eliciting a history. The analysis of symptoms, the careful differential diagnosis, the discussion of prognosis are all valuable in the right hands.

The didactic lecturer who repeats the text-book to the class is a thing of the past, or should be. The didactic lecture should be limited to the taking up in detail of special topics, the work as a rule elective; subjects can thus be gone into more fully than is possible in a recit-

tation course and more systematically than in the clinical work. Here, too, the same high-grade teacher is demanded as for the clinic, the man who by his own original work has something new to propound, or who has by an extended study of the work of others made himself master of the subject so that he can speak authoritatively, or who has an unusual ability in the presentation of a topic so that the crooked is made straight and the rough places plain for the student. Especially fitting for the didactic lecture is the discussion of recent work in the different branches of medicine, work that is not yet in the text-book, that is as yet in magazine and monograph. This is the proper field for the didactic lecturer. Merely to repeat the old familiar story that the student has read or can read in the text-book, that has been rehearsed in ward class and in clinic is to waste valuable time.

Recitations lay the foundation; they give the broad view, enabling things to be seen in their proper relations; the ward clinic trains the individual powers of observation, teaches independence of thought, gives manual training and skill in technique; the clinical lecture shows especially the methods of a master in his specialty; the didactic lecture takes up a topic exhaustively and brings the knowledge up to date.

There is a place for all these methods of teaching the practical branches, and where the work is properly divided, where instructors are not mere automatons, but wide-awake teachers; where the professors are experts as well as teachers, students should get a training enabling them to go out and become not only successful as practitioners of medicine, but successful as students in continuing their studies by themselves, their zeal in the pursuit of knowledge keeping them abreast of the times for many decades after they have been graduated and in spite of the cares and exactions of a busy practice.

CHANGES IN OUR MEDICAL SCHOOLS NECESSARY TO MEET MODERN CONDITIONS.

It is difficult to take the part of a prophet and it is thankless to take that of an adviser. There are, however, some changes which nearly all agree are coming to our medical schools, here earlier and there later, but eventually everywhere. The most important of these is the elective course. This system seems to be necessary on account of the enormous overgrowth of the curriculum and of the necessity of more thorough and more individual work. It gives the greatest possible liberty to the teachers and to the students alike. It eliminates by the law of the survival of the fittest the antiquated and the careless teachers. It makes the fictitious differences in professorial titles null and void, and it gives the active teacher immediate and effective recognition. It makes all changes in methods of study and institutional management easy.

The architecture of the medical school must be modified. Heretofore a single roof has been broad enough to house the medical college. It is not so any longer. There must be an anatomical institute, an institute of pathology as well as a hospital to make an effective medical school. One roof and even one location is not enough. Perhaps one faculty is not enough, but several faculties may be necessary to the coming medical education—one working in one part of the city or country and one in another—but all co-ordinated by the unifying and correcting action of the student's privilege of election under the guidance of his dean.

Extramural or non-resident teaching promises to increase greatly the facilities for education. In no way can adequate obstetric teaching be secured except by dividing the students among scattered lying-in hospitals and dispensaries. The same may be said of medicine and surgery, of the various specialties and of that intimate dependence between patient and student so necessary to his best interest and success. The medical school that shall achieve the widest success will be the one that allows its students the greatest liberty in selecting their teachers and places of study, still giving credit and ultimately a degree on evidence of work done.

In the coming medical school the social and esthetic life must be more fully satisfied. The buildings and furniture should take on dignity and beauty if they are to bring out the best in thinking men in the four years or more they are in use. There must be appropriateness and beauty in the lecture rooms and library, in the laboratories and assembly hall. The physical needs of the students must be met in the gymnasium and perhaps in a common dining-room or in clubhouses. Lecture-laboratories and libraries are not enough to educate a medical profession which shall command the esteem and receive the economic tribute of modern society. Our medical students need all those helps to social life and esthetic culture which the university finds itself obliged in modern times to offer. Consider the activities of the university, and the needs of the medical school are counted. The club, the fraternity house and the common dining-hall; the dormitories, the gymnasium and the open playground; the esthetic decorations of the buildings, grounds, audience rooms and study rooms; the assembling of the broadest, most enthusiastic and most masterly scholars; the cultivation of all that is earnest, refined and devout in the student body—these and much more that these things stand for, are before the administrators of our medical schools for utilization.

Medical schools must become imbued with a more scientific and democratic spirit. Into the management of the school must come not only the influence of every member of the intramural and extramural faculty, but the student body must be well represented in the educational councils of the college. Only so can the dwarfing influence of vested interests and of antiquated ideals be overcome and the modern spirit of individual, active, life-imbuing education be given free course.

THE PLACE OF TEXT-BOOKS IN THE MEDICAL CURRICULUM.

It may be set down as a proposition from which there will be no dissent that every agency should be availed of that will contribute to the better comprehension and application of the science and art to which the medical student dedicates his life, and that will help to make him a more intelligent and a more practical physician. All education should have for its ultimate object not

merely the imparting of knowledge, but even more, its successful and practical application. This end can be attained in divers ways, and while not a little depends upon the teacher and his methods, far more depends upon the pupil.

Discussion has recently waged about the part that the didactic lecture should play in the medical curriculum, and there has been a sort of frenzy with regard to the place that should be given to laboratory teaching. A sober judgment will decide that each of these has its own peculiar value, and that a better result will be secured from a judicious combination of the two than by any undue preponderance of the one over the other. Nor are all of the requirements yet fulfilled by these means. It is not possible in any course of medical instruction, however complete, to cover the entire field in all of its details, and this unavoidable deficiency must be made good by the use of text-books. This has a further advantage in stimulating intellectual activity and growth and developing intellectual independence, as well as in broadening the mental view and strengthening the mental grasp. As compared with the artist's picture, didactic, clinical and laboratory instruction may be considered as furnishing the sketch or outline, the details of which must be filled in by ample and judicious reading. It is a physiologic axiom that an unused organ atrophies and an unexercised faculty becomes enfeebled, and the brain and the intellect are better developed for being given a certain amount of pabulum to assimilate, in addition to that which it receives from the teacher, as it were, in a predigested form. The text-book, therefore, remains an important adjunct in the medical curriculum, its use in its place should be encouraged and we would commend especially the use of those that deal fully, comprehensively, and in a detailed manner with all the phases of the subject with which the student should be familiar, rather than the more concise and condensed presentations which may be committed to memory, and do not form a strong foundation upon which a worthy superstructure of knowledge may be built.

The several elements of a thorough system of medical education, including didactic lectures, clinical instruction and laboratory teaching, and the collateral use of text-books may be compared to the constituent factors of chromoscopy, or colored photography, of which if any one be wanting an uncolored picture results instead of the naturally-tinted reproduction.

WHAT DOES THE PRACTICE OF MEDICINE OFFER AS A LIFE WORK?

Under the present status of medicine in this country, what has medicine to offer as a life work? To the student deficient in preliminary training, and who must, in consequence, enter the only schools which will receive him, namely a poor one, the outlook is bad. Such a student begins the study of medicine with the idea of gaining a livelihood only. He has no conception of medicine as a science; no pleasure in the investigation of the many problems which confront the physician; only a half knowledge of the responsibilities of his calling; he can have no pleasure in scientific discussion and in fellowship with the best men of the profession; he will exist without social standing among the educated and cultured people of the community. He enters medicine to gain a livelihood, and he will find that his investment was a poor one.

To-day the status of medicine is such that he who would meet success must have a good preliminary education. The discipline of mind, the broad culture of a college education would be of great assistance to the student and to the practitioner. But if the student has not this training he should be able, as a minimum preparation, to pass the entrance examination of a good university or college. In addition, a reading knowledge of French and German is very essential to-day.

To a student so prepared who will spend at least four years in honest work in one of our best medical schools, and supplement the medical course with a service of one or two years on the house staff of a hospital, medicine offers much.

To a physician so educated, who is energetic, painstaking, and thorough in his work and whose integrity is unimpeachable, medicine offers more than the law, theology or politics. As a practitioner his life will be full of the most laborious and exhausting work. He will be much exposed to inclement weather, at all seasons of the year. His duties may interfere with his social and material pleasures. His sleep will be broken by calls to the suffering.

But to offset the discomforts which experience and fortitude lessen until he no longer considers them, he has the robust health and sturdy character which open-air exercise and the constant battle with and frequent mastery of the fell destroyer bring him. In the city his duties may fall in more pleasant lines of work, for a metropolitan practice is attended with less physical discomfort than is that of a country practice.

Wherever located, a good physician has no idle hours. Work—good, well-directed, persistent work, such as a properly educated physician knows how to do—will distinguish him from the indolent and ignorant in medicine, as it will in all walks of life. Medicine to-day offers opportunities for work as it never has in the past. For him who knows how, there are many problems to be worked out. The alleviation of human suffering, and the prolongation of life are subserved not alone by attendance upon the sick but by every measure which will enable us to discover the cause of and prevent disease. Much remains still to be investigated, and it lies within the province of the practitioner, quite as much as in the field of work of the pathologist, to make scientific observations and experiments. The intellectual life of such a man is full. He has the pleasure of constant intercourse with scientific, broad and cultured people. His work gives him but little time for the so-called pleasures of society. But he is a factor in the community, honored, respected and loved by all who know him. Such a man working unselfishly, doing good work because he is interested in it, and not because he expects a fee for it, will perhaps not become wealthy. He will, nevertheless, have a sufficient income to make a comfortable home and lay by enough to keep him and those dependent upon him when old age shall have come.

There never was a time in the history of the world, probably, when medicine gave as much promise to the student of a successful career, as now. But he who takes it up as a life vocation, from sordid motives, or who is poorly prepared and improperly educated, will meet defeat in competition with the man who is a physician because he wishes to benefit mankind. The true doctor is a nobleman. Carlyle said of the profession: "He that can abolish pain, relieve his fellow mortal from sickness, he is indisputably usefullest of all men. Him savage and civilized honor. As a lord chancellor, under one's horsehair wig, there might be misgivings; still more so, perhaps, as a lord primate, under one's cauliflower; but if I could heal disease I should say to all men and angels without fear, En Eece!"

THE MEDICAL COLLEGE ASSOCIATIONS AND THEIR INFLUENCE ON HIGHER STANDARD OF MEDICAL EDUCATION.

The progress of medical education in the United States is one of the most remarkable phases of modern culture which has been observed during the past fifteen years. For the motives of this progress we are obliged to look in various directions: to the enormous increase in wealth which has marked our mastery over the physical resources of the earth through modern machinery: to the equally unexpected increase in our knowledge of diseases through the general scientific advancement, and lastly, to the coincident revival of a science or art of pedagogy. But aside from these general motives which underlie the progress of medicine as a whole, the course of progress in medical education and its most remarkable unanimity throughout the whole United States is in a peculiar measure due to the influence of the Association of American Medical Colleges, and its sister organization, the Southern Medical College Association. These bodies have kept the various rank and file of medical colleges in step and up to time. There have been leaders and scouts far in advance of the general body, but the great bulk of reputable colleges have been kept near these leaders by the unifying influence of these Associations, seconded by the hearty support of the various State Examining and Licensing Boards.

Through the influence of these pedagogic Associations, we have a gradually advancing standard for our professional education which is unparalleled by any similar growth in law, theology or schoolmastery and equaled only by that of dentistry and pharmacy. The preliminary requirements are now about those of the second year of the high school, but fortunately many, perhaps one-fourth of the eighty schools united in these bodies, are one or two years in advance of this minimum. The course of study now covers four years, and this is probably the maximum of required intramural study.

In attaining these ends the Associations have acted very cautiously and very firmly. These two objective points have been held firmly in view, but topics of general pedagogic interest have not been neglected as a reference to the proceedings of their meetings show.[1] The "Syllabus" was the work of three educational conferences and contained information and detailed instruction which saved much expensive and discouraging experimentation in the rapid change from a two-year to a four-year graded course. Later the establishment of medical libraries was encouraged and directed and the elective system was advocated. At each meeting numerous papers on medical pedagogy were introduced and the discussions were active, interesting and valuable. Delegates went home with added enthusiasm for better and more ideal work. Some radical and revolutionary papers in the early meetings of the Associations have been lived up to by the faculties of all the members and now the ideals of these iconoclasts are held as fundamental.

The work of these Associations has been so quiet and unpretentious, so full of argument and persuasion and so lacking in contention and compulsion that were it not for its depth and vigor it would attract little attention. A few of the leading colleges have never entered either Association. Three colleges have for one cause or another resigned, and two colleges have been expelled. Eight colleges have been denied membership. Out of 125 regular medical schools about 80 hold active membership in one Association or the other. There are now only five or six schools outside this membership which maintain a standard equal to the required minimum. It would seem as likely that all medical schools would find it to their advantage pedagogically and socially to unite into one helpful association as that literary colleges and even high schools have done so.

There is every evidence in the combined meetings of the two Medical College Associations which have been held during the last three years at Columbus, at Atlantic City and at St. Paul, and by the action taken in both Associations at their last meeting, that some union is likely to take place during the coming year. Nothing stands in the way except slight differences, which are rapidly passing away. The work of the Associations hereafter will be almost entirely pedagogic. Such great changes as medical education has suffered has been attended by much erudity and lack of system. The methods, purposes and motives of clinical and laboratory teaching and the general coördination of the whole curriculum is the work of much individual and collective labor. Let the Associations lay aside their differences and their legislative action and attend to this great problem on which so much of the honor and credit of our profession depends.

1. Bulletin of the American Academy of Medicine, 1890-1901, inclusive; THE JOURNAL, 1889, et seq.

AN OVERCROWDED PROFESSION—THE CAUSE AND THE REMEDY.

We have in the past called attention to the overcrowded state of the profession in this country and the prospects for the future. It is not difficult to name a cause for this evil; it is chiefly to be looked for in the multiplication of facilities for medical education of a certain sort, and to the ambitious and advertising proclivities of a certain portion of the profession. For many years in the past there has been a steady multiplication of medical colleges, organized to meet a felt want —not of the medical profession—but of the founders. Articles of incorporation are easily and cheaply gotten, and with a little investment the new institution is

launched. The result is not only an oversupply of diplomaed graduates, but the usual inverse ratio of quantity and quality. The highways and byways are raked for students; the preliminary requirements are nominal in the strictest sense; and the graduation requirements too often necessarily follow the same rule. The instruction is mediocre, the clinical facilities poor, but the institution goes its way and flourishes; the faculty gets an advertisement and a growing clientele of half-fledged doctors, all the readier by reason of their insufficient mental and professional acquirements to furnish business for their revered professors in the way of consultations, etc., while the profession as a whole and the public suffer in proportion. We have cheapened the medical profession by making it too common and lowering its standards, if not actually as compared with the past, at least relatively as compared with the scientific advances of the day. It is true that our best is in no way inferior to the best of any land, but our average is not what it should be, and our lowest is infinitely below what ought to be endured.

This is what has been in the past and what we have not yet fully outgrown. That there are agencies and influences at work for the better is undeniable and their effects are already visible. The medical practice acts that exist now in the great majority of states are to be counted among these, and this we owe to the organized effort of the profession which has latterly become, more than ever before, alive to its own interests and that of the public in this regard. There is much yet to be done in this line; they must be made more universal and more uniform, and as regards the latter there must be no leveling down. If we wish to make ourselves respected we must make ourselves respectable—a truism too much overlooked in the past. Then, there should be a self-denying ordinance adopted by the profession generally and the title of professor be no longer an indication of stockholding in a corporation for profit, direct or indirect, but on the other hand a valid evidence of acquirements that have received the endorsement of public and professional appreciation. With this advance in requirements for practice there should be a marked and general stiffening up of the preliminary educational requirements; the reform must start at the fountain head if it is to be what is imperatively required. The control of entrance examinations must be put out of the hands of the medical college faculties, which should be delivered from the temptation of augmenting their student lists. There should be in each state a non-political authority, independent of the colleges, to regulate the requirements for admission to the medical course as well as to medical practice. This is already the rule in some states. Until this system is universally and efficiently applied we still shall have much that should not be.

The prospect, however, is brightening, and there is no call at present for any very pessimistic outlook for the future if we can only sacrifice self-interest and work together for the common good. Of the 160, more or less, existing medical colleges in this country and their thousands of professors and other medical attachés, there are a large number that can profitably be spared. It is to be hoped that with higher standards universally applied their number will soon be adequately reduced, and that only the fittest will survive.

WHAT SHOULD GOVERN THE STUDENT IN THE SELECTION OF A MEDICAL SCHOOL?

Young men and women entering on the study of medicine may be divided into two general classes. In the first are those who look upon the practice of medicine as a calling in which there must be self-sacrifice, hard work, constant care, and great responsibility. These are ambitious to prepare themselves to the best of their ability for the duties they assume. Their motives are high and noble. In the second class, happily getting smaller each year, are those who look upon the practice of medicine as a calling in which one can make a living without effort and into which entrance is easy. The only ambition of this class is to get a degree with the smallest outlay of time, energy, and money. To these we have no advice to give.

It is of the highest importance that the young man entering on the study of medicine should select a school which will best fit him for his work. The four years he spends in getting his degree will prove to be the most important four years of his life. If the student spends these four years in a medical college whose requirements for entrance are low, whose teachers are mediocre, whose facilities for instruction are poor, whose clinical advantages are inferior, there are nine chances to one that he will go through life a "poor doctor" in more ways than one. One of the laws of physics as applied to hydraulics is that water never rises higher than its source.

The first two years of the medical student's life are more important than the two later years, for in them the scientific foundation is laid. A practitioner must study the practical branches of medicine and surgery all his life and he will obtain clinical experience from every case which he treats, but the fundamental subjects are rarely studied after leaving college. It therefore behooves the student seeking a school to select one that is thoroughly equipped and capable of giving him the best possible instruction in the fundamental branches. Too many make the mistake of selecting for the first two years a school poorly equipped with teachers, with laboratory facilities, etc., with the intention of going to one of the leading colleges for the two later years. This is often done on account of ecomomy, but it is very poor economy. Better wait and save and then start right, for the extra investment thus made will bring satisfactory returns through life.

The better colleges have good laboratory facilities in connection with every fundamental branch, such as anatomy, histology, embryology, pharmacology, bacteriology, etc. They generously equip laboratories with necessary instruments for thorough individual instruction in all these branches. A student must often judge of the worth of an institution by personally examining its facilities for teaching these branches, for sometimes the catalogue will not give him reliable information in this regard.

In the last two years the practical side should be considered: that which applies to the everyday work which

will fall to the young physician when he enters on his practice. To do good practical teaching here, clinical material is necessary. Without these no school can fit the young man in the final two years of his medical studies no matter what facilities it may have aside from them.

Laboratory and clinical facilities being the fundamental necessities, there will come other advantages that are not to be entirely slighted. For instance, the school that has connected with it men of repute, men who have made a name for themselves through investigations and scientific medical work, are to be considered before the schools which have no such men connected with the teaching faculty. While it does not follow that these names in themselves will necessarily make good students—and no one should aim to shine merely by reflected light from his alma mater—there is always an advantage in hearing instruction directly from the recognized masters in the profession. Such men, moreover, are generally appreciative of genuine interest on the part of students and will often give their special aid and attention in such cases.

While every systematic educational course has for its chief end to fit the student to use his mind, in medicine, as in every technical branch, a man must be trained to do as well as to think. Hence, the advantage of hospital training, the "practical year," the importance of which has been so emphasized by Ziemssen and Von Jaksch. Every student should look forward to an interneship as a final crowning of his medical course, and since this is not attainable by all, it is well for him to select a school in which the clinical instruction includes practical hospital work for every student as a dresser or clinical aid. Without some practical experience of this kind the conscientious newly launched practitioner will often feel almost overwhelmed by his responsibilities. The old preceptorial system met this need in a way, though otherwise lacking, the modern medical school in the recent past, if not at present, has too often worked ill in the opposite way by sending out graduates without adequate training under skilled oversight.

It must not be imagined that the good schools are only to be found in the large cities. There are institutions scattered all over the country, whose facilities are excellent, whose teachers are above the average, and who strive to give their students a thorough practical education. Such schools may have moderately small clinical advantages, compared to some in the larger cities; but this apparent lack is made up by there being fewer students to be subdivided into classes for personal instruction and for clinical work at close range. The medical department of some of our state universities, although located in small towns, are splendidly equipped for the first two years' work, even though the same institutions may not be well supplied with clinical advantages. The school, however, which creates in the young man an ambition to study, a craving for knowledge and a desire to keep up the work after he leaves the college, is the one that is to be considered as foremost. Such schools turn out men who become leaders in the profession, and their greatness reflects credit on their alma mater. A school with such credits is a safe one to select.

THE CASE METHOD OF TEACHING.

The case method of teaching which has been incidentally mentioned elsewhere in this issue, while originally elaborated in legal institutions, has also been utilized to advantage in medical instruction. In a crude form it has long been in use; the practice of demanding bedside diagnosis, etc., at clinics is an old one and has been employed by many teachers. The introduction of the fully-elaborated method at the University of Pennsylvania occurred some two years ago, and the details, as followed out in that institution, are given by Frazier in the University *Medical Bulletin* for September.

Each student is given a manifold copy of the complete clinical data of a case in the hospital records, including family history, physical examination, antecedents, blood, urine, sputum, etc., examinations as well as the full history of the disease. He is instructed to prepare a report from these facts including diagnosis, prognosis and treatment; in some cases only one or two of these may be required; in others, special attention is called to the diagnosis, prognosis or treatment. No conclusions are accepted or given credit for unless based on logical reasoning from the facts given. These papers are distributed each Saturday and a report required on the following Saturday. A week later the instructor analyzes the reports before the class, points out their errors and omissions, states what further examination might be conducted to elucidate the case, and gives the subsequent history, results of treatment, etc., as they occurred. As a rule, typical cases are not selected, but those that give the student some exercise of judgment in his diagnosis and they are so chosen as to work into a systematic scheme embracing instances of affections of each important class. Dr. Frazier finds the methods of value in developing the power of discrimination, educating the judgment, encouraging research into authorities, and widening the reading of the student. He also finds that it especially arouses enthusiasm and interest, a point the importance of which is not to be underrated.

It is evident that a plan that presents, as this does, cases as they will occur in actual practice must be more interesting than purely impersonal facts or dry enumeration of symptoms. Instruction in case-taking, which is at least indirectly involved in this method, is also important and perhaps it could not be better given. Though the observations here are ready-made, so to speak, they indicate what ought to be observed and it may be that this will prove to be one of the best adjuncts in the education of the faculties of medical observation.

THE PREPARATION FOR THE MEDICAL COURSE.

When the nation was younger, and the supply of physicians was small, and the demands of a rapidly increasing population for medical attention large, two years was considered sufficient time to equip the raw recruit for the performance of his professional work. The course of instruction at the medical school was, however, preceded and ably supplemented by association with an active practitioner as preceptor, and whose tutelage often constituted a most valuable and highly important factor in the education of the young physician

This method, in conjunction in some instances with post-graduate study in foreign countries, resulted in a race of physicians who understood especially the art of medicine, and whose labors and results entitle them to the highest meed of respect praise and commendation. As time went on, however, the supply of medical men became ample, and eventually excessive, while at the same time the field of medical knowledge became wider and more difficult of encompassment, so that a fuller measure of learning and a higher degree of proficiency were required of the medical graduate. Thus, a period of study covering three years was declared insufficient, and the present course of four years was established.

With these advances, and by reason of the requirements growing out of them, it became necessary to make entrance upon the study of medicine conditional upon the possession of certain intellectual and scientific qualifications. It thus comes about that in a small, but growing number of medical schools, the post-session of a Bachelor's degree as an indication of adequate preparation has been made the prerequisite of matriculation. Now, it has been found that by this course the graduate of medicine is pretty well on in life when he receives his professional degree, and it is contended, as it seems to us reasonably, that by making a part of the work of the last collegiate year preparatory to that of the medical course at least one year of this long period of study could be saved the student, without detriment either to himself or to the profession of medicine. Elementary work should have no place in the curriculum of the medical school proper, and the student should be thoroughly grounded in such branches as botany, biology, chemistry, physics, etc., apart from the possession of a general education before he is permitted to enter the medical school.

Other things being equal, the best and most broadly educated men and women will make the best and most successful medical students and practitioners. But it is evident that a certain harmonization in our general educational scheme is necessary to give it a unity and a continuity that it has not in the past possessed, but in which, evidence is now accumulating, a good beginning has already been made.

THE TEACHING OF ANESTHESIA IN MEDICAL SCHOOLS.

The contempt bred by familiarity is exhibited by the comparative indifference to danger displayed in the practice of anesthesia. The gravity of narcosis by ether, chloroform, nitrous oxid, ethyl bromid, etc., is not always fully appreciated, although in order to effect the desired result the patient is necessarily brought in varyingly dangerous proximity to the point of dissolution. In view of these facts no special argument should be required to make clear the wisdom, nay, the urgency, of including instruction in both the practice and the principles of anesthesia as an essential part of the medical curriculum. In this spirit there should be given a series of lectures dealing with the physiologic actions and the toxic effects of the various anesthetics employed, and the means for combating the latter should they arise, and laying down the indications for and against individual anesthetics in the presence of varying disturbing factors, together with a demonstration of the various forms of apparatus and their mode of employment, as well as the measures to be taken for resuscitation; and, finally, the student should be required to witness a certain number of narcotizations, and under skilled supervision participate directly in a number of others. As things are at present, the graduate must gain his own experience either in private or in hospital practice, and while fortunately this course is in the overwhelming majority of cases unattended with serious results, these may under certain circumstances be most disastrous. A few hospitals have specially trained anesthetists under whose supervision narcosis is practiced, and it would be a step in advance if all institutions of this character were similarly officered. For these reasons it must be obvious that the practical teaching of anesthesia in the medical schools is an end much to be desired.

THE USE AND ABUSE OF LABORATORIES.

It is a truism that every agency capable of doing good is in equal degree capable of doing harm. The difference resides in the mode of application, or, as with drugs, in the dose. This statement is applicable to laboratory work as it exists in medical education. Knowledge is complex, and isolated facts often have little value, but when correlated with others their importance may become manifest. So the teachings of the laboratory, which can not be considered as final, if not correlated with those of clinical observation and of reading, may be barren and even lead to misconception. Demonstrative instruction is the most impressive, and in so far as the work of the laboratory is directed to a demonstration of normal and morbid processes will it be of practical value. The laboratory student further acquires or develops a spirit of investigation which will stand him in good stead in the scientific study of cases, with the result that his diagnoses will be the more accurate and his treatment the best adapted to the individual case and the most successful in result.

MEDICAL EDUCATION TO-DAY FAR BETTER THAN IN THE PAST.

Unsatisfactory as the condition of medical education in this country has been in the past and many as are the desiderata of the present time, there is ample reason for encouragement. Twenty-eight years ago there was but a single medical school in the country with more than a two-year course, and few even fifteen or eighteen years ago. Now, as shown by tables elsewhere, there are but two in the country that do not demand, or at least profess to demand, four years' attendance before graduation, and of these two, one proposes to adopt the four-year course after 1902. It is true that there may be evasions of the rule and that some institutions may profess more than in fact they perform, but these must be rare exceptions among those recognized as reputable colleges, if they really exist at all. Medical education in this country is a different thing from what it was two decades ago, and there is every prospect that the progress of the recent past will be continued in the future.

Death of President McKinley

Without reproach in life or fear in death, William McKinley, Christian knight and twenty-fifth President of the United States, has passed away.

A fateful fortnight is gliding into its place in history. A cruel assault; a gallant and blameless man stricken; a day or so of gloom and the hot wrath of millions; a day or so of wild joy, with the mirage of health and service luring on; a day or so of fear and foreboding; a smile, a gasp, a woman yearning by; and they who thought to change the rule of man by force began to feel, and long will feel, the dagger of their new dispensation press hard and cold against themselves.

The solemn thunder of the funereal car has ceased; ceased, too, has the sonorous tribute of the minute gun, and the first flood of neighbors' silent tears. The dead, who knowingly wronged no man, is in his grave; and the Nation that is mightier, juster, better for his having lived, sobs "Amen," faces front and marches on.

Few words and simple speech best voice the dead man's requiem. William McKinley had those things and did those things that mark a great man. No extravagant eulogy nor intoxicating rhetoric should cloud or confuse our judgment of the man as he was in his heart. Years ago, when he climbed the first steps of his broad career, he was already an average American. He knew, had sacrificed for, and was helping to get what his country needed to make it one, to make it strong, to make it great among the nations. To the knowledge and deeds of the apprenticeship of this average American came, in richer form, in the harvest years of his mastery, tact, prudence, kindliness, brotherly love, and an abiding purpose and courage to know and do the will of his people and his God. Of such are statesmen whom nations trust and love.

In the category of the great we may write him who sleeps in glorious peace beneath the martyr's palm. He has led a pure life and shone a peerless husband. He has taken up arms for his country. He has put away bitterness from within his party. He has led his countrymen to the conquering stand of a nation that makes, sells, and lends, rather than that of one that begs, borrows, and defaults. He has preached brotherhood and pursued it, and from his touch no wounds smart. He has made war only when he must, and when he has ceased he finds no foe. Triumph has brought new lands and problems of rule without precedent. With his last breath he has warned his brethren that a nation can not live in, upon, and for itself alone; and, hence, for new conditions he has proclaimed new policies. As a man he has been the American's ideal, and higher there is none; as a statesman he has been trustworthy, if not aggressive in initiative. We know he was good; let us err, if err we do, upon the right side and also call him great.

Meantime trade, the Nation's life, halts not, nor falters the Nation's trust in itself and form of government. To the widow of the beloved dead goes out sympathy deep and significant in its universality. Continents and isles mourn with us. Little that has followed in the train of the martyr's fall would we have had unsaid or undone. "God's in His heaven; all's well with the world."

A great man that was loved has fallen. In the crises of time primitive virtues revive and rule. An ancient Roman has passed from among us. Of such they sang:

"Integer vitae, scelerisque purus."

THE WOUNDS OF PRESIDENTS GARFIELD AND M'KINLEY.

Naturally enough, laymen, the lay press and many medical men have compared the wounds of President Garfield and President McKinley since the latter was so brutally murdered on September 6. There is, however, from a surgical standpoint, absolutely nothing similar in the wounds of these illustrious patients. The wound in President Garfield's arm was a flesh wound, as was the one in President McKinley's breast, and can, therefore, be dismissed, as having no bearing upon the result.

The second and fatal wound of President Garfield was fired from the rear, and was made by a 44-caliber bullet, fired from a British bulldog revolver. The result of the autopsy showed how completely the distinguished surgeons in attendance had been deceived as to the real nature of the injury; for instead of passing through the liver, transversing the abdominal cavity, and lodging in the anterior wall, as was thought, the wound was en-

tirely extra-peritoneal. The records of the autopsy leave no room for doubt, for the postmortem was made by the President's eight surgeons themselves and the report signed by all. The official announcement of its results said:

"It was found that the ball after fracturing the right eleventh rib, had passed through the spinal column in front of the spinal canal, fracturing the body of the first lumbar vertebra, driving a number of small fragments of bone into the adjacent soft parts and lodging below the pancreas, about two inches and a half to the left of the spine and behind the peritoneum, where it had become completely encysted.

"The immediate cause of death was secondary hemorrhage from one of the mesenteric arteries adjoining the track of the ball, the blood rupturing the peritoneum and nearly a pint escaping into the abdominal cavity. An abscess cavity, six inches by four in dimensions, was found in the vicinity of the gall-bladder, between the liver and the transverse colon, which were strongly adherent. It did not involve the substance of the liver, and no communication was found between it and the wound. A long suppurating channel extended from the external wound between the loin muscles and the right kidney almost to the groin. This channel, now known to be due to the burrowing of pus from the wound, was supposed during life to be the track of the ball."

While the immediate cause of President Garfield's death is said to have been secondary hemorrhage, such a result was due to a sloughing blood vessel, one of the usual terminations of septic cases. President Garfield had pyemia. His symptoms indicated it; the autopsy proved it. The question has been asked thousands of times during the past few days on account of the favorable bulletins reporting President McKinley's condition, if his distinguished predecessor in office could have been saved by modern surgery. Possibly he could; though it is optimistic and presuming too much to say that such a result would have been, as has so often been said in the recent past, reasonably certain.

A 44-caliber bullet fracturing the rib, then crashing through the body of a lumbar vertebra and driving a number of fragments into the soft parts, thence lodging behind the pancreas, makes a wound and condition not to be despised by even the boldest and deftest of modern operators. Moreover, President Garfield was a very stout man, which would have increased the difficulties. Were such a bullet promptly located to-day by the X-rays, any experienced and conscientious surgeon would hesitate as to his course. If he elected to remove the bullet, again he would be embarrassed to know whether it were best to choose the anterior or posterior route. A laminectomy is a comparatively simple operation in a thin subject; but to reach the body of a vertebra, much less go anterior to it, as would have been necessary to have recovered the ball and removed the spiculæ of bone driven forward by it, in a patient of President Garfield's build, would have taxed both the anatomical knowledge and surgical daring of the greatest of his surgeons, the gifted Agnew. If the anterior route were chosen, one has only to think of the important vessels and nerves superimposed on the bullet, and were almost in contact with it. By either, anterior or posterior route, the danger from hemorrhage would of necessity have been great.

Again, can we say that pyemia has been banished from surgery? Certainly not; rare it is, to be sure, at present; but President Garfield had just the kind of a wound that is to-day, with all our much-vaunted aseptic and antiseptic surgery, difficult to treat and uncertain in its results. Compound fractures, especially of soft bones such as vertebræ and ribs in inaccessible situations, constitute the most fertile cause of pyemia to-day. Moreover, pyemia following bone injuries is admittedly more fatal than pyemia following injury to soft parts. Therefore, there should not have been at the time so much criticism of those brave and skilful men who labored incessantly for nearly three months to save their distinguished patient. Now, that the matter is up again for discussion, it should be the duty of medical men, particularly, to set matters and history right, and not encourage the belief, so very general, that President Garfield's wound, fatal in 1881, would be trivial to-day. It was fatal in 1881 and would probably be fatal in 1901. Mistakes may have been made; but even if they had not been, there is little likelihood that the Nation would have been spared the poignant grief at the brilliant Garfield's untimely taking off and the disgrace of a second murdered president.

President McKinley was shot from the front with a 32-caliber ball entering five inches below the left nipple and one and one-half inches to the left of the median line. It traversed the abdominal cavity, perforating both anterior and posterior walls of the stomach, the opening in the former being small, the one in the latter large and ragged—just the character of wound usually made by a pistol ball at very close range. After thorough closure of the gastric wounds, from which there had been some extravasation, a careful search was made for other possible injuries. None were discovered, and the surgeons were reasonably certain that the bullet had found lodgment in the muscles of the back. The abdominal cavity was freely irrigated with normal salt solution, and closed without drainage by through-and-through sutures of silkworm gut. A small piece of clothing—presumably from the undershirt—had been carried in by the bullet; but was, we understand from the statements given out, found in the abdominal portion of the wound.

In exploring the abdomen, Dr. Mann acted wisely in enlarging the original wound, rather than performing median section. Irrigation of the cavity is to be distinctly commended; likewise the use of interrupted sutures, saving as they do the loss of time, and facilitat-

ing to no inconsiderable degree, when rightly placed, drainage—two very important elements in the President's condition.

Whether or not provision should have been made for further drainage depends entirely upon the existing conditions, and they were best judged by the distinguished surgeons charged with the responsibility of saving, if possible, the most precious life in the world. The profession has had the utmost confidence in each of them; the Nation has shown its gratitude for the promptness with which their awful responsibility was assumed, and the thoroughness and ability with which it was carried out.

If the operation had been hurried there might be some reason to feel that possibly each step of it could not have been considered as judiciously as the occasion demanded. Such was not the case; the President was under ether an hour and a half and was in such good condition all the time that there was no demand made upon the operator for haste. The autopsy shows that good judgment was shown in not prolonging search for the ball.

In declining to use the X-rays subsequently, notwithstanding the general anxiety as to the ball's exact location, the surgeons were judiciously passive and following the teachings of the greatest of military surgeons. A second anesthesia and operation for the extraction of a 32-caliber bullet in the muscles of the back would, under the circumstances, have been not only injudicious, but censurable. One can not forbear to say at this time that the Roentgen rays are not an unmixed blessing, as death has followed operations for encysted bullets that were doing no harm at the time of their removal. One of a yielding nature may be induced to act against his better judgment, on account of the anxiety and importunings of patient and friends, always greater than they should be, but due to an exaggerated importance given by laymen to the "ball" and its recovery. Those who knew the President's surgeons personally have felt assured from the first that no precipitate action would be taken to meet a danger largely chimerical in its nature, whilst urgent, portentous, awful problems were pressing forward for solution.

What were the probabilities when it was known that President McKinley, a man 58 years old, with a weak heart, had sustained a penetrating wound of the abdomen? Death, undoubtedly, was the likelier issue. When, however, the details of the operation were given Saturday morning, and it was recalled that the President was shot at 4:30 in the afternoon, when his stomach was presumably empty, or nearly so, more than a modicum of comfort and hope was felt by a stricken Nation. The operation had been promptly done; it had been thoroughly well done; it had been done by the best exponents of modern surgery. The incidents of the first, second, and third days—the period of greatest danger—were distinctly favorable to the President's recovery, though his abnormally high pulse-rate caused uneasiness. It had all along been out of proportion to the temperature and respirations, but it was explained as being usual with him. The fourth and fifth days served only to fortify his surgeons in the opinion already expressed that he would recover. It seemed that he would and that he should get well; yet there were still dangers ahead to which a too hopeful and impulsive people were oblivious. They came on the sixth day and had practically ended this magnificent life in another twenty-four hours!

Of the exact causes leading to the change which resulted in death, we shall know more when the full report of the autopsy is published. This will be after cultures have been made and a histological examination has been completed. When this full scientific report is officially given out it will be time to discuss the cause which led to the necrotic condition found at the autopsy but not before. Until then at least there should be no criticism of the management of the case and full credence should be given to the official bulletins signed by the attending surgeons and to these only. The absence from Buffalo of the nearest relatives of President McKinley at the time of the unfavorable change showed plainly enough that they had left him doing so well that only recovery was thought of. The public were fairly and candidly treated from beginning to end. The unexpected happened. While the Nation grieves as it has never done before on account of the pathetic and unusual circumstances surrounding President McKinley's death, we should give full credit and honor to the heroic surgeons who, with a moment's notice, gave to the President of the United States everything that science had to offer. As we think so will the lay press, his countrymen and the world.

The criticisms of 1881 are not, we hope, to be repeated. The courageous action of Dr. Mann and his associates in performing an immediate laparotomy is more to be commended now than it would have been three years ago; for since our war with Spain and the Anglo-Boer war in South Africa non-intervention in gunshot wounds of the abdomen has been the rule in military surgery. A masterly inactivity in such injuries has had the weighty endorsement of Senn, Nancrede, Lagarde, Parker, and other surgeons of prominence in our army, and Treves, Sir William MacCormac, and others of the English surgical staff. Many of the *supposed* perforating wounds of the abdominal cavity in the American and English armies recovered without operation. A rule which is applicable and proper in military surgery can not always be accepted in civil practice. The wounds are different; the facilities and environments are different. The modern rifle-ball is small, conical, .303 of an inch in caliber, of great velocity, and cuts like a knife. Such a wound occurring in soldiers with comparatively empty gastro-intestinal tracts—brought about by starvation and diarrhea, com-

mon conditions in soldiers—might be recovered from; whereas, a pistol ball which is usually larger, rounder and of less velocity, makes a greater and more ragged opening, through which extravasation from any of the hollow viscera injured would almost surely take place. It is also far more likely to carry in clothing and other foreign material which would have a tendency to cause irritation and even sepsis.

It is of interest to recall the fact that the first successful laparotomy for a shot wound of the abdomen was a pistol shot wound of the stomach, successfully operated on by Kocher of Berne in 1884. Kinloch of South Carolina had previously (1882) unsuccessfully operated on a case of multiple wounds of the small intestines. The first successful laparotomy for an intestinal wound was by W. T. Bull in 1884.

While the prompt, commendable and praiseworthy surgery at Buffalo did not result as it deserved to, in the recovery of President McKinley, it has placed the treatment of gunshot wounds of the abdomen upon a firmer and better footing than ever before; just at a time, too, when it had suffered a partial eclipse, on account of the teachings of military surgeons; teachings which are right for the battlefield and emergency hospitals, with their poor equipment for abdominal work, but wrong when one can have the benefit of timely aid from a competent abdominal surgeon in a well-equipped modern hospital.

If in dying, this great and good man has advanced the cause of surgery, and has been the means of exterminating anarchy in the country he loved and served so well, then he will not have suffered and died in vain!

NO DISAGREEMENT AMONG THOSE WHO ATTENDED PRESIDENT McKINLEY.

The undersigned surgeons and physicians who were in attendance on the late President McKinley have had their attention called to certain sensational statements recently published in the daily papers, and particularly one New York paper, indicating dissensions and mutual recriminations among them.

We desire to say to the press and public, once for all, that every such publication and all alleged interviews with any of us containing criticism of one another or of any of our associates are false, and are nothing but scandal-mongering.

We say again that there was never a serious disagreement among the professional attendants as to any of the symptoms or as to the treatment of the case or as to the bulletins which were issued. A very unusual harmony of opinion and action prevailed all through the case.

The unfortunate result could not have been foreseen before the unfavorable symptoms declared themselves late on the sixth day and could not have been prevented by any human agency.

Pending the completion and publication of the official reports of the postmortem examiners and attending staff, we shall refuse to make any further statements for publication and alleged interviews with any of us may be known to be fictitious. MATTHEW D. MANN; ROSWELL PARK; HERMAN MYNTER; EUGENE WASDIN; CHARLES G. STOCKTON.

Buffalo, Sept. 17.

MANAGEMENT OF THE CASE OF PRESIDENT M'KINLEY.

It is not unusual for physicians or surgeons to make mistakes in judgment and therefore it often occurs, when a case is ended and death supervenes, that those who have been in attendance look back and wish they had done a little differently here or there. Such things are liable to occur until the time comes when human judgment is infallible. But reviewing the facts of President McKinley's case from the beginning, so far as they have come to us from reliable sources, and supplementing the reports by all that we can reasonably surmise, we see no reason for the slightest criticism of the surgical and medical treatment. Whatever medical science could do at the present time was apparently done. The administration of a minute quantity of

solid food on Wednesday, which has been criticised, appears to us to have been perfectly justifiable and that it could have had no ill effect is sufficiently proven by the autopsy. From the prompt acceptance of responsibility by the surgeons at the beginning to the last sad phase there is nothing in the conduct of the case that calls for self-reproach on their part or justifies criticism of their course by others. It shows more prominently than many cases our limitations and is in this way humiliating, but this does not in any way detract from the services of those who did all that human wisdom and ability could do.

When on Friday morning announcement was made of the relapse which had taken place, those in charge were criticised for the supposed optimistic reports that had been circulated. Before criticising, however, it would be well to inquire whether criticism was just. Physicians who have been interviewed know that the report of what they say is more likely than not to be incorrectly given to the public. Those connected with this case have disclaimed responsibility for what appeared in the newspapers both before and since the President's death. Our reporter called on three of them for information for this journal and they justly refused to make any statement outside of the official bulletins. If they were expressing opinions to the newspaper reporters, they certainly would not have held them back from the medical journals. Dr. Roswell Park denied on Thursday morning, the day before the relapse, a previous newspaper report crediting him with having expressed a belief in the certain recovery of the President.

Others of the Buffalo surgeons also have repeatedly denied any responsibility for statements attributed to them in the papers. Drs. Mann and Park, we are authoritatively informed, have stated that at no time were they free from anxiety, and it is probable that the same can be said of the others, with possibly one exception.

The surgeons should be held responsible for the official bulletins which they signed and for these only. These show no utterance of absolute confidence in recovery. Rather, the continued high pulse was indicative to members of the profession that all was not as it should be. We therefore see no reason for criticism on this point. When the facts are made known it will probably be found that some symptoms were present that were not what might have been desired, but it would have been just as unwise to have given publicity to this indication of possible danger as to give the optimistic opinions that were unjustly credited to some of the surgeons. The editorial opinion expressed in the last issue of THE JOURNAL regarding the official and other statements of the attending surgeons is still held as the only one justified by the facts.

When the full official report of the autopsy is published comments may be made regarding the gangrenous condition found in the track of the bullet. It would be merely theorizing to discuss the subject before the bacteriological and the histological examination has been made and the findings published.

THE SHOOTING OF THE PRESIDENT.

(From our Correspondent.)

BUFFALO, N. Y., September 17, 1901.

The feeling of security for the recovery of the illustrious patient which the attending surgeons had was of only brief duration. From the time of operation the pulse was rapid and gave great concern to the attendants. This was at first supposed to be due to the shock from the wound and operation, especially when it was seen that the great sympathetic nervous system and its solar plexus was in the line of the track of the second bullet. The continuance of the high pulse, however, compelled the discarding of this theory. The question of peritoneal sepsis then arose; but there was no abdominal tenderness, no meteorism and no muscular retraction; as peristalsis was present, as the temperature fell instead of rising, and the pulse kept high, and as, furthermore, the examination of the blood made by Dr. Wasdin showed no leucocytosis, this cause was excluded.

During Tuesday of last week it was noted that the nutritive enemata gave the President a good deal of discomfort and were not retained. Broths were, therefore, ordered to be given in small amounts by the mouth, and on the following day a bit of toast was given. The bowels had not moved on that day and as the heart action still remained unsatisfactory it was thought expedient by the surgeons in charge to call Dr. Charles G. Stockton in consultation.

The question next arose whether the high pulse might not be dependent on intestinal toxemia. A considerable amount of indican was found on examination of the urine, but it diminished greatly when, as the result of cathartics, several evacuations had occurred. Nevertheless the high pulse continued. The increasing weakness during Wednesday night and Thursday resulted in the calling of Drs. William W. Johnson of Washington, D. C., and Edward G. Janeway of New York City, in consultation.

Despite heart stimulants, digitalis, adrenalin, normal salt transfusion and oxygen inhalations, the heart's action became weaker and weaker, and because there was no reaction from all the stimulation, the President's condition became one of utter hopelessness. It was expected that he would die during Friday but he survived until 2:15 Saturday morning.

He suffered little pain, and his sturdy faith, courage and bravery continued to the end. Dr. Mynter says of him: "The fortitude, courage, cheerfulness, and gentle consideration toward all his attendants, the doctors, nurses and orderlies, was remarkable. The martyred President won the love affection and admiration of everyone who had the privilege of administering to his wants during those seven sad days."

THE POSTMORTEM EXAMINATION.

The autopsy was held at the Milburn house at 11 a. m., Saturday, September 14. The examination was made by Dr. Harvey R. Gaylord, of the New York State Cancer Laboratory, assisted by Dr. Herman G. Matzinger, professor of clinical pathology in the University of Buffalo. Major W. B. Kendall, surgeon U. S. A., Fort Porter, and Captain Edward L. Munson, assistant surgeon, U. S. A., of the Brigade Hospital represented the

Government. Drs. Mann, Mynter, Park, Wasdin, Rixey, Stockton, Janeway, Johnson, Cary, and Baer, and the District Attorney and a stenographer were also present.

The following were the findings of the autopsy: Rigor mortis. The wound on the chest consisted of a blackish-yellow abrasion, surrounded by a large zone of discoloration. The point of impaet of the first bullet was between the second and third ribs, just at the right edge of the sternum. Incision through the tissues at this point showed a moderate blood infiltration, extending to the muscle, and immediately under the point of impact, a small cavity was seen, the size of a pea, where the skin had been torn away from the subcutaneous tissue.

On opening the abdomen, the wall of which was two and one-half or three inches in thickness, the omentum was found adherent all around the wound of operation. This wound was five inches long, extended down to the muscle and was healthy in appearance, no gangrene being present. The omentum was healthy and no signs of peritonitis were evident. The intestines were smooth and shiny without adhesions or exudate. The mesentery of the transverse colon was adherent to the stomach wound. On loosening these adhesions, the sutures of the wounds of the anterior and posterior walls of the stomach were found tight and in place, allowing no leakage.

Around the sutures, however, there was a zone of total gangrene of the wall of the stomach about two inches in diameter and ready to slough. A similar gangrenous condition was found on the opposing surface and adherent mesentery of the transverse colon, the necrosis extending into the head of the pancreas.

From the wound in the posterior wall of the stomach it was found that the bullet passed through the transverse mesocolon, near its attachment, thence through the posterior layer of peritoneum, cutting a groove into the upper end of the left kidney, and entering the retro-renal fatty tissue. The whole track of the bullet presented the appearance of a gangrenous hole, the gangrene in the retro-renal tissue being of the size of a fist. From this point the bullet passed into the posterior muscular tissue and could not be found, although careful search was made for four hours.

The heart was small, covered and infiltrated with fat, and the muscular walls were thinned. One dram of a turbid yellow serum was found in the pericardial cavity, but there was no evidence of injury of the heart, nor was pericarditis present. The kidneys were somewhat contracted, but all the other organs were normal.

THE CAUSE OF DEATH.

The necropsy showed that death was the result of sepsis due to gangrene resulting from the wound and that it could not have been avoided. Had the President lived twenty-four hours longer the gangrenous area around the stomach would have sloughed and death would have resulted from diffuse peritonitis.

The result of the operation so far as it went was perfect. No peritonitis was present, no particles of food were found outside of the stomach, but Nature had made no effort to repair the injury.

About twenty-four cultures were taken from the pericardium blood, right auricle, the healthy parts of the peritoneum, and along the entire gangrenous track.

REMARKS.

There has been much lay criticism because of the small bit of toast which the President was allowed to have on Wednesday morning, and these criticisms credit intestinal toxemia to its ingestion. Nothing was ordered for the President without the concurrence of all the surgeons in attendance, and the report of the autopsy just given demonstrates that the toast could have had absolutely no effect on the outcome of the case.

Towards the last, the surgeons were inclined to believe that the wound from the first bullet on the sternum might have produced a contusion of the heart with a probable myocarditis or pericarditis from which the high pulse-rate might be due, but this hypothesis also was not borne out by the findings of the autopsy. It was at one time suggested that the President had a tobacco heart, but as he smoked only three or four cigars a day this is very unlikely.

The question whether or not the bullet was poisoned is attracting considerable attention just now. It could not have been poisoned with curare as was suggested, since this agent produces a rapid paralysis of the heart. The claim that it might have been steeped in a culture of virulent bacteria is ingenious, and Dr. Mynter says that if it had been dipped in a pure culture of pyogenic bacteria, just such a wound might have been produced. The three remaining cartridges are in the hands of Dr. Herbert Hill, the city chemist, who will make a chemical analysis, and Dr. Herman Matzinger will make a bacteriologic examination.

It has also been suggested that the necrosis might be accounted for by the injury to the pancreas and the leakage of pancreatic juice. Dr. Park considers this possible and refers to the work of Williams, Flexner and Opie in this direction.

The surgeons disclaim many reports in the lay press reported as coming from them. The official report will not be ready until next week. The bacteriologic examination of cultures taken and the microscopic examination of sections of tissues are not yet completed. The lack of leucocytosis in the blood-count may be attributed to lack of reaction in the repair of the wound. All the samples of urine taken were negative with the exception of that obtained after the operation, which, it is reported on good authority, showed hyaline casts but with a normal amount of urea and with no albumin reaction. This was considered to be possibly due to ether.

OFFICIAL BULLETINS.

BUFFALO, Sept. 6, 7 P. M.—The President was shot about 4 o'clock. One bullet struck him on the upper portion of the breastbone, glancing and not penetrating. The second bullet penetrated the abdomen five inches below the left nipple and one and one-half inches to the left of the median line. The abdomen was opened through the line of the bullet wound. It was found that the bullet had penetrated the stomach. The opening in the front wall of the stomach was carefully closed with silk stitches, after which a search was made for a hole in the back wall of the stomach. This was found and also closed in the same way. The further course of the bullet could not be discovered, although careful search was made. The abdominal wound was closed without drainage. No injury to the intestines or other abdominal organ was discovered. The patient stood the operation well. Pulse of good quality, rate of 130. Condition at the conclusion of the operation was gratifying. The result can not be foretold. His condition at present justifies hope of recovery.—George B. Cortelyou, Secretary to the President.

10:40 P. M.—The President is rallying satisfactorily and is resting comfortably. Temperature 100.4 degrees; pulse, 124; respiration, 24.—P. M. Rixey, M. B. Mann, R. E. Park, H.

Mynter, Eugene Wasdin, George B. Cortelyon, Secretary to the President.

BUFFALO, Sept. 7, 1 A. M.—The President is free from pain and resting well. Temperature, 100.2; pulse, 120; respiration, 24.

3 A. M.—The President continues to rest well. Temperature, 101.6; pulse, 110; respiration, 24.—P. M. Rixey, George B. Cortelyou, Secretary to the President.

6 A. M.—The President has passed a good night; temperature, 102; pulse, 110; respiration, 24.—P. M. Rixey, Roswell Park, George B. Cortelyou, Secretary to the President.

9 A. M.—President passed a fairly comfortable night and no serious symptoms have developed. Pulse, 146; temperature, 102; respiration, 24.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

12 M.—There is no decided change in the President's condition since last bulletin. Pulse, 136; temperature, 102; respiration, 28.—P. M. Rixey, George B. Cortelyou, Secretary to the President.

3:30 P. M.—The President continues to rest quietly; no change for the worse. Pulse, 140; temperature, 102.2; respiration, 24.—P. M. Rixey, M. D. Mann, Roswell Park, H. Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

6:30 P. M.—There is no change for the worse since last bulletin; pulse, 130; temperature, 102.5 degrees; respiration, 29. —P. M. Rixey, George B. Cortelyou, Secretary to the President.

9:30 P. M.—Conditions continue much the same. The President responds well to medicine. Pulse, 132; temperature, 102.5; respiration, 25. All temperatures reported are taken in the rectum. The physicians in attendance wish to say that they are too busily engaged to repy to individual telegrams.—P. M. Rixey, Roswell Park, H. Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

BUFFALO, September 8.—The public will be kept fully advised of the actual condition of the President. Each bulletin is carefully and conservatively prepared and is an authoritative statement of the most important features of the case at the hour it is issued. The people are entitled to the facts and shall have them.—George B. Cortelyou, Secretary to the President.

3:20 A. M.—The President has passed a fairly good night; pulse 122; temperature 102.4 degrees; respiration 24.—P. M. Rixey, H. Mynter, George B. Cortelyou, Secretary to the President.

9 A. M.—The President passed a good night and his condition this morning is quite encouraging. His mind is clear and he is resting well; wound dressed at 8:30 and found in a very satisfactory condition. There is no indication of peritonitis. Pulse 132; temperature 102.8; respiration 24.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

12 M.—The improvement in the President's condition has continued since last bulletin; pulse 128; temperature 101 degrees; respiration 27.—P. M. Rixey, George B. Cortelyou, Secretary to the President.

4. P. M.—The President since the last bulletin has slept quietly, four hours altogether since 9 o'clock. His condition is satisfactory to all the physicians present. Pulse 128; temperature 101; respiration 28.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

9. P. M.—The President is resting comfortably and there is no special change since last bulletin. Pulse 130; temperature 101.6; respiration 30.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

BUFFALO, September 9, 6 A. M.—The President passed a somewhat restless night, sleeping fairly well. General condition unchanged. Pulse, 120; temperature, 101; respiration, 28.—P. M. Rixey, M. D. Mann, George B. Cortelyou, Secretary to the President.

9:20 A. M.—The President's condition is becoming more and more satisfactory. Untoward incidents are less likely to occur. Pulse, 122; temperature, 100.8 degrees; respiration, 28.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

3 P. M.—The President's condition steadily improves and he is comfortable, without pain or unfavorable symptoms. Bowel and kidney functions normally performed. Pulse, 113; temperature, 101; respiration, 26.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

9:30 P. M.—The President's condition continues favorable. Pulse, 112; temperature, 101; respiration, 27.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

BUFFALO, September 10, 7 A. M.—The President has passed the most comfortable night since the attempt on his life. Pulse, 118; temperature, 100.4; respiration, 28.—P. M. Rixey, Roswell Park, George B. Cortelyou, Secretary to the President.

9 A. M.—The President's condition this morning is eminently satisfactory to his physicians. If no complications arise a rapid convalescence may be expected. Pulse, 104; temperature, 99.8; respiration, 26. This temperature is taken by mouth and should be read about one degree higher by rectum.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

3:20 P. M.—There is no change since this morning's favorable bulletin. Pulse, 110; temperature, 100; respiration, 28. —P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

10:30 P. M.—The condition of the President is unchanged in all important particulars. His temperature is 100.6; pulse, 114; respiration, 28. When the operation was done on Friday last it was noted that the bullet had carried with it a short distance beneath the skin a fragment of the President's coat. This foreign material was, of course, removed, but a slight irritation of the tissues was produced, the evidence of which appeared only to-night. It has been necessary on account of this slight disturbance to remove a few stitches and partially open the skin wound. This incident can not give rise to other complications, but it is communicated to the public, as the surgeons in attendance wish to make their bulletins entirely frank. In consequence of this separation of the edges of the surface wound the healing of the same will be somewhat delayed. The President is now well enough to begin to take nourishment by the mouth in the form of pure beef juice.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Charles McBurney, George B. Cortelyou, Secretary to the President.

BUFFALO, September 11, 6 A. M.—The President has passed a very comfortable night. Pulse, 120; temperature, 100.2; respiration, 26.—P. M. Rixey, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

9 A. M.—The President rested comfortably during the night. Decided benefit has followed the dressing of the wound made last night. His stomach tolerates the beef juice well, and it is taken with great satisfaction. His condition this morning is excellent. Pulse, 116; temperature, 100.2.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

3:30 P. M.—The President continues to gain and the wound is becoming more healthy. The nourishment taken into the stomach is being gradually increased. Pulse, 120; temperature, 100.2.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

10 P. M.—The President's condition continues favorable. Blood count corroborates clinical evidence of absence of any

blood poisoning. He is able to take more nourishment and relish it. Pulse, 120; temperature, 100.4.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles McBurney, George B. Cortelyou, Secretary to the President.

BUFFALO, September 12, 6:20 A. M.—The President has had a comfortable night. Pulse, 122; temperature, 100.2.—P. M. Rixey, George B. Cortelyou, Secretary to the President.

9:30 A. M.—The President has spent a quiet and restful night, and has taken much nourishment. He feels better this morning than at any time. He has taken a little solid food this morning and relished it. Pulse, 120; temperature, 100.2 degrees.—P. M. Rixey, Roswell Park, Herman Mynter, Eugene Wasdin, M. D. Mann, Charles McBurney, George B. Cortelyou, Secretary to the President.

3 P. M.—The President's condition is very much the same as this morning. His only complaint is of fatigue. He continues to take a sufficient amount of food. Pulse, 126; temperature, 100.2 degrees.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, George B. Cortelyou, Secretary to the President.

piration, 30; temperature, 100.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

9 A. M.—The President's condition has somewhat improved during the past few hours. There is a better response to stimulation. He is conscious and free from pain. Pulse, 128; temperature, 99.8.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

2:30 P. M.—The President has more than held his own since morning, and his condition justifies the expectation of further improvement. He is better than yesterday at this time. Pulse, 123; temperature, 99.4.—P. M. Rixey, M. D. Mann, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

4 P. M.—The President's physicians report that he is only slightly improved since the last bulletin. The pulse and temperature remain the same as at that hour.—George B. Cortelyou, Secretary to the President.



TEMPERATURE, PULSE AND RESPIRATION CHART OF THE CASE OF PRESIDENT MCKINLEY MADE FROM OFFICIAL BULLETINS.

8:30 P. M.—The President's condition this evening is not quite so good. His food has not agreed with him and has been stopped. Excretion has not yet been properly established. The kidneys are acting well. His pulse is not satisfactory, but has improved in the last two hours. The wound is doing well. He is resting quietly. Temperature, 100.2; pulse, 128.—P. M. Rixey, M. D. Mann, Roswell Park, Herman Mynter, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

12 M.—All unfavorable symptoms in the President's condition have improved since the last bulletin. Pulse, 120; temperature, 100.2.—P. M. Rixey, Eugene Wasdin, Charles G. Stockton, George B. Cortelyou, Secretary to the President.

BUFFALO, September 13, 2:50 A. M.—The President's condition is very serious and gives rise to the gravest apprehension. His bowels have moved well, but his heart does not respond properly to stimulation. He is conscious. The skin is warm and the pulse small, regular, easily compressible and 126; respiration, 40.—George B. Cortelyou, Secretary to the President.

5:35 P. M.—The President's physicians report that his condition is grave at this hour. He is suffering from extreme prostration. Oxygen is being given. He responds to stimulants but poorly. Pulse, 125; respiration, 40.—George B. Cortelyou, Secretary to the President.

6:30 P.M.—The President's physicians report that his condition is most serious in spite of vigorous stimulation. The depression continues and is profound. Unless it can be relieved the end is only a question of time.—George B. Cortelyou, Secretary to the President.

9:30 P. M.—"The President is dying."

BUFFALO, September 14, 2:15 A. M.—"The President is dead."

BUFFALO, September 14.—Autopsy.—The bullet which struck over the breastbone did not pass through the skin and did little harm. The other bullet passed through both walls of the stomach near its lower border. Both holes were found to be perfectly closed by the stitches, but the tissue around each hole had become gangrenous. After passing through the

stomach the bullet passed into the back walls of the abdomen, hitting and tearing the upper end of the kidney. This portion of the bullet track was also gangrenous, the gangrene involving the pancreas. The bullet has not yet been found. There was no sign of peritonitis or disease of other organs. The heart walls were very thin. There was no evidence of any attempt at repair on the part of nature, and death resulted from the gangrene which affected the stomach around the bullet wounds as well as the tissues around the further course of the bullet. Death was unavoidable by any surgical or medical treatment, and was the direct result of the bullet wound.—Harvey D. Gaylord, M.D.; Herman G. Matzinger, M.D.; P. M. Rixey, M.D.; Matthew D. Mann, M.D.; Herman Mynter, M.D.; Charles Cary, M.D.; Edward L. Munson, Assistant Surgeon United States Army; Roswell Park, M.D.; Eugene Wasdin, M.D.; Charles G. Stockton, M.D.; Edward G. Janeway, M.D.; W. W. Johnston, M.D.; W. P. Kendall, Surgeon United States Army; Hermanus L. Baer, M.D.

Medical News.

[Because of the large amount of Educational matter, and likewise of that on the death of the President, a considerable portion of our regular Departments has been crowded out.]

ILLINOIS.

Dr. Andrew H. Kimbrough, Danville, is seriously ill as the result of a paralytic stroke.

The new hospital at Elgin, which was to have been opened September 1, by the Sisters of St. Joseph, is not yet ready, and the opening has been postponed indefinitely.

Smallpox is reported from East Hillsboro, and from Champaign County near Tolono. In the first case the infection is supposed to have been received at Alton, and in the second at Peoria.

Chenoa Doctors Raise Rates.—At a meeting of the physicians of Chenoa it was decided that to be in harmony with the physicians of McLean and Livingston counties all fees charged would be the same as agreed upon by the medical societies of the two counties.

Personal.—Dr. Babcock Meloy has succeeded to the practice of the late Dr. Katharine Miller, Lincoln.——Dr. William C. Dixon, Terre Haute, has moved to Canton.——Dr. Emerson M. Sutton, Peoria, has returned from Europe.——Dr. Isaac B. Ennis, Martinton, has located in Gilman.——Dr. J. Frank Wilson, Versailles, has moved to Bluffs.——Dr. Edmund Ludlow, Paxton, has gone to Denver, Colo., to practice.——Dr. Edward D. Howland, Lockport, has moved to Chicago.——Dr. William K. Farley, Waterman, has gone to Oregon.——Dr. and Mrs. William D. Nelson, Jr., Marietta, have gone to Europe for study.——Dr. Edward C. Lemen, Jr., Upper Alton, has been commissioned assistant surgeon of Volunteers, with the rank of captain, and assigned to the Eighth Infantry, U. S. army.

Chicago.

The Chicago Eye, Ear, Nose and Throat Hospital has provided a number of free beds for charity patients.

To Sterilize Pencils.—Dr. Arthur R. Reynolds, commissioner of health, has recommended the sterilization of pencils used in the public schools.

Baptist Hospital Changes.—Dr. Reuben Peterson has resigned as gynecologist, and Dr. Palmer Findley has been appointed in his stead.——Dr. A. E. Halstead has been appointed to the surgical staff and Dr. Charles E. Paddock obstetrician.

Scariet Fever in Rogers Park.—There are now 55 cases of scarlet fever in this suburb with two deaths, and the Health Department has been forced to threaten to station policemen at the doors of infected houses unless the quarantine is more strictly observed.

New Hospital.—The new hospital of the Sisters of Mary, erected at a cost of $250,000, is nearing completion. The structure is six stories high, fire-proof, of cut stone and pressed brick, with strikingly high porticoed entrances. The ground dimensions are 196 by 87 feet. The operating rooms are on the top floor. On the north and south sides of the building are inclosed porches, which can be so heated as to be habitable the year around.

Personal.—Dr. Robert A. McArthur has returned from his summer vacation.——Dr. James Nevins Hyde has returned from his summer vacation in Salem.——Dr. and Mrs. Julian E. Hequembourq have returned from a month's visit to the Massachusetts coast.——Dr. Emma Morgan has located in Rock Island.——Dr. Paul E. N. Greeley has moved to Waterman.——Dr. James M. Lyons has opened an office in Lockport ——Dr. H. R. Struthers has located in Martinton.

Banquet to Dr. N. S. Davis, Sr.—The Chicago Medical Society is arranging to tender a banquet to Dr. N. S. Davis, at the Auditorium Hotel, Chicago, Saturday evening, October 5. Dr. Davis is the oldest living ex-president of the Society, one of the founders and the oldest living ex-president of the American Medical Association, widely known and highly respected by the profession of the whole country, and a man who has always stood out for the best interests of the American medical profession. He deserves all the honors that any society can confer on him.

Anthrax.—The recent outbreak of anthrax at Palatine, and its increasing prevalence in the surrounding country, which is largely devoted to dairying interests, prompted the health commissioner to send the secretary of the department, together with one of its meat inspectors—an expert veterinarian—to that section to investigate the existing conditions. As a result, and at the suggestion of the representatives of the department, the farmers throughout the infected district have formed a local association for the purpose of stamping out the disease and preventing its further spread. This association, through its officers, has pledged the department that no milk or veal calves or beef cattle will be shipped from any of the infected herds. In view of these pledges, and the thoroughly reliable character of the men who made them, it was not deemed necessary on the part of the city to establish any quarantine against the food supplies from this district. It is believed that with the enforcement of the measures now under way the present outbreak will soon be under control.

The Smallpox Situation.—The Health Department points out that in the group of states of which Illinois is the center and with which Chicago is in most immediate and constant communication, there have been, during the first 36 weeks of this year, a total of 15,373 cases of smallpox reported, as against a total of only 5620 cases reported during the corresponding period of 1900. This is an increase of 273 per cent. in Northwestern states as against an increase of less than 75 per cent. in the rest of the country. In the state at large, outside of Chicago, there have been fewer cases—229—this year than last—250—but in the city itself there have been 248 cases this year, as against only 51 last year. This great increase—nearly five times more than last year—is due, of course, to the repeated importations from the surrounding infected territory, and while no new case has been discovered since August 12, and the city has been free from the disease since August 28, it is not to be expected that further importations can be prevented during the fall and winter. The experience in New York City forbids such hope; there they have had this year, up to the close of August, 1831 cases and 370 deaths—as against Chicago's 248 cases and 2 deaths. The lesson of these facts and figures is that Chicago is more exposed now than a year ago, and that individuals not properly protected by vaccination are in greater danger of contracting smallpox now than then.

INDIANA.

Typhoid fever in Muncie is reported to be much more fatal than usual and, it is said, is not water but mosquito borne.

Dr. Brose S. Horne, Bluffton, has been appointed physician of the state penitentiary at Michigan City, vice Dr. Alva L. Spiuling, resigned.

A Methodist hospital and deaconess' home to cost not less than $200,000 is to be built in Indianapolis on land recently purchased at 29th and Illinois streets.

Dr. Baker's Death.—The faculty of the Medical College of Indiana has passed resolutions expressing the loss sustained by the college in the death of Dr. Philip S. Baker, who for many years had held the chair of chemistry.

Personal.—Dr. Samuel M. Reid has resigned as city health officer of Muncie.—Dr. Brook B. Freeman, Valparaiso, is critically ill with dropsy.—Dr. Frank Songer, Hillsboro, who has been ill for five months, will spend the winter in Florida.—Dr.

Frank H. Wilcox, New Albany, has been elected township physician.

KANSAS.

Smallpox.—The Secretary of the State Board of Health reports that at the end of August there were less than a dozen cases of smallpox in the state, in five localities. On September 2 two new cases of the disease were discovered in Topeka.

Personal.—Dr. B. W. Toothaker will remove from Westmoreland to St. Joseph, Mo.—Dr. Edward Trachsell, Meriden, has moved to Denver, Colo.—Dr. Carroll Montgomery has decided to remain in Manhattan, and assume charge of the practice left by his father.

New Medical Law.—The registration of physicians prior to the date the new medical law went into effect amounted to 2300 of the 2600 physicians estimated to be in the state. Of these about 1600 presented diplomas from reputable medical colleges; 100 had certificates from other states; 400 were admitted under the seven-year practice clause and the remainder took the prescribed examination.

MICHIGAN.

A "Christopathic" sanatorium is the latest addition to the roll of sanatoria in Battle Creek.

Personal.—Dr. D. E. Newcomb, Carleton, was stricken with paralysis September 6, and is in a precarious condition.—Dr. Abiel S. Martin, Vicksburg, intends to locate in Otsego. —Dr. P. H. Wilson, Hancock, has been appointed physician to Baltic mine.

Transportation of Bodies.—At a special meeting of the State Board of Health a rule was adopted providing that all bodies, without regard to cause of death, will be subject to transportation, when prepared by licensed embalmers in accordance with the rules of the State Board. In all states with the exception of Michigan, the transportation of bodies dead from smallpox, Asiatic cholera, yellow fever, typhus fever or bubonic plague, is absolutely forbidden. By permitting the transportation of such bodies in Michigan, the qualifications of licensed embalmers are recognized. The detailed rules in caring for such bodies will insure the public health against contagion from these bodies.

NEW YORK.

Personal.—Dr. Homer E. Smith, Norwich, has returned from his trip to South America.—Dr. Homer C. Tarbell, West Groton, has opened an office in Groton.—Dr. James King, Buffalo, who has been in Vienna for the past five months, is now in London, England.

State Antitoxin Laboratory.—A building has been secured for the establishment of a state antitoxin laboratory in Albany and Dr. H. D. Pease, of the Sheffield Scientific School, Yale University, has been appointed director. The animal house will be provided with the most perfect hygienic conditions attainable for such purposes, and will be supplied with about 15 horses for the manufacture of serum. The Commissioner of Health proposes to supply state institutions with diphtheria and other antitoxins free of cost, and also to furnish these remedies to municipalities in the state which are not already provided with a similar laboratory. These new departments are intended to supply to all the health officers throughout the state the same facilities for investigation, diagnosis and treatment of infectious diseases now afforded by the city of New York.

Mortality of New York.—According to the state health department's report for July, New York City reported 1155 deaths from insolation and in the entire state 1283 deaths were ascribed to the effects of heat. There were 8 deaths reported from lightning stroke, and 111 deaths occurred from drowning, altogether making over 2000 deaths attributed to accidents and violence, much beyond any former record. The rural death rate was 13 per 1000 population, the urban being 23, while that of the entire state was about 20. There were 400 deaths from pneumonia out of 602 from all acute respiratory diseases, and of 400 deaths from diseases of the urinary system, outside of New York City, 240 were from Bright's disease. Smallpox is reported as causing 89 deaths, a number in excess of that of any heretofore recorded, 74 having occurred in June; of these, 80 occurred in New York City, where about 250 new cases developed during July, the last four weeks showing a decrease.

Buffalo.

Census Statistics.—In New York City there are 638,045 foreign-born males and 632,035 foreign-born females. In the entire city there are 33,587 colored males, of which 27,132 are negroes, and 33,717 females, of whom 33,534 are negroes. The same locality presents in return native males 1,067,660, and native females 1,099,462. The exact enumeration in the case of the four boroughs of New York City is given without materially disturbing the ratio of the percentages, barring the colored element.

OHIO.

Medical Colleges Open.—Ohio Medical University, Columbus, opened September 11, with 197 new students registered and more than 400 present at the opening exercises.—Starling Medical College opened the same day with an initial registration exceeding one hundred.

Personal.—Dr. Kate M. Johnson has opened an office in Wooster.—Dr. E. B. Davis has located in Covington.—Dr. Johnson S. Hunter, Piketon, has moved to Jackson.—Dr. Luther Schofield has moved from White House to Maumee.—Dr. David H. Biddle has moved from Haydenville to Athens.—Dr. O. S. Wood, Pomeroy, has located in Haydenville.

Grand Army Medical Arrangements.—The medical committee for Grand Army week at Cleveland was made up of two corps of physicians: the first a consultant body and the second an active medical corps of relief. Dr. George C. Ashmun was chairman of the committee. The consulting body was composed of 24 physicians, some of whom were constantly on duty at headquarters. The medical corps of relief was made up of 32 physicians who answered telephone calls from all parts of the city. The committee provided 19 ambulances, which were stationed at intervals along the line of march.

PENNSYLVANIA.

Typhoid fever is reported to be epidemic at Bolivar.

Anthrax is raging among cattle on Loyalsock Creek, and two persons at Laporte have been infected.

A physician of Bismarck has been arrested by order of the president of the Cornwall Township school board, charged with having neglected to report a case of smallpox.

Personal.—Dr. James Mitchell has returned from his service with the army in the Philippines and will open an office in Lancaster.—Dr. W. S. Bertelot has located for practice in Reading.

A patent medicine vender of Washington, D. C., who was tried at Chambersburg for practicing and prescribing medicine without a license, was acquitted on the technicality that she had not opened an office.

Dr. Miller Honored.—Philadelphia professional friends of Dr. John S. Miller, Denver, Col., who was formerly one of the demonstrators of anatomy in the Jefferson Medical College and surgeon to St. Joseph's Hospital, Philadelphia, tendered him a dinner, September 10. Professor Francis X. Dercum, of Jefferson Medical College, presided and acted as toastmaster.

Medico-Chirurgical Hospital Improvements.—At a cost of $70,000 extensive improvements have been begun to the Medico-Chirurgical Hospital, Philadelphia, which will be completed in October. The infirmary will be moved into the new building at Seventeenth and Cherry streets, which is now practically finished. The old dental laboratories will also be moved from the rear of the hospital into the new building, and will be made into a dormitory for nurses. The old laundry adjoining the accident room will be discontinued, and this, together with the present dispensary, will be made into a new receiving ward for the treatment of emergency cases. Two new refrigerating plants are to be installed.

MARYLAND.

Dr. J. Walter Sims, Cooksville, has been indicted for not reporting to the State Board of Health the existence of smallpox in his neighborhood.

Typhoid fever is epidemic in Cumberland County. The local board of health attributes the spread of the disease to flies and has informed residents that they must make war on the flies, which, it believes, carries the disease from house to house.

Personal.—Dr. Albert K. Hadel, Baltimore, is at Cape May.——Dr. William Oakley Haines, Baltimore, has gone to Canada.——Dr. Thomas Sudler, Baltimore, former city councilman, has been presented with a handsome silver service.——Dr. Sewell S. Hepburn, Jr., West River, has moved to Annapolis.

Nurses for the Insane.—The recommendation of Dr. J. Clement Clark, superintendent, that a training school for nurses be established at Springfield State Hospital for the Insane, was adopted at the last meeting of the Board of Directors. There are 20 male and 16 female nurses who will be instructed on the treatment and care of the insane by the medical staff and supervisors. The course will be a two years' one, and a certificate and increase of salary is to be given to the graduates. There were in the hospital, August 31, 328 patients, 231 male and 97 female.

Site for Isolation Hospital.—Health Commissioner Bosley has been authorized to secure an option on ten acres of land on the Reisterstown road near Pimlico and West Arlington, as the site for the Municipal Hospital for infectious diseases. Dr. Bosley's idea is to erect several different buildings on the property, thus keeping the patients suffering from one infectious disease separated as much as possible from those with others. To do this it is estimated the commission will need considerable more money than the $25,000 which has been provided, and an additional appropriation will be included for this purpose in the ordinance of estimates for the year 1902.

CANADA.

Physician Arrested.—A Toronto doctor was arrested on the 13th, charged with procuring an abortion.

Huron Medical Association.—The regular quarterly meeting of this Association was held at Clinton, Ontario, on September 6. Dr. William Graham, presided, and Dr. J. W. Shaw acted as secretary.

College of Physicians and Surgeons, Quebec.—Sixteen physicians will represent the District of Montreal on this Board for the ensuing year, thirteen the District of Quebec, three the District of Three Rivers, and three the District of St. Francis.

Personal.—Dr. Laberge, medical health officer of Montreal, has started for Germany.——Dr. W. H. P. Hill, who has just completed his term as house surgeon at the Montreal General Hospital, has gone to Europe prior to entering upon practice in Montreal.

Montreal General Hospital.—The medical staff of the Montreal General Hospital for the ensuing year will be made up as follows: Dr. von Eberts, medical superintendent, and Drs. Turner, Secord, Robertson, Campbell, Howard, Bruce, Brown, Rogers and Ker as house surgeons.

Dr. Montizambert, director of public health, has handed in his report to the Minister of Agriculture on the recent Tuberculosis Convention at London. It is understood that the report combats Professor Koch's theory that bovine tuberculosis is not transmissible to human beings.

Dowieites Arrested.—A special dispatch from Victoria, B. C., dated the 12th inst., states that an elder of the Dowieite persuasion and one of his disciples have been arrested on a charge of manslaughter for refusing to provide proper medical assistance for the infant child of the latter.

Bacteria in Cheese.—On account of frequent complaints as to certain cheese being "off" flavor, Professor Harrison, bacteriologist of the Ontario Agricultural College, was ordered by the government to investigate, and he has found a species of bacteria which he thinks is responsible for the trouble.

Toronto Druggists to Meet.—There is to be held on the 19th inst., a general meeting of the retail druggists of Toronto for the purpose of considering relations with the proprietary trade. It is understood that a number of the druggists of the city are in favor of cutting adrift from patent medicines.

Collapsed in the Witness Box.—Two years ago Dr. J. H. Morrison, an oculist of St. John, N. B., was injured in a street railway accident in that city. He sued the company for $60,000, and after various delays the suit came up for trial during the past week. While under examination the doctor collapsed from nervous strain and is now said to be at the point of death. Dr. Morrison was for many years inspector of schools in Manitoba.

Doctor Appeals to the Courts.—Dr. H. C. Dumont, who has been denied a license to practice in the Province of Quebec, has been granted a petition for a writ of mandamus by Mr. Justice Langelier against the College of Physicians and Surgeons of that province. The writ of mandamus orders the College to issue the license. Five or six cases of a similar nature were decided in Quebec last year in a similar manner. The College will take the case through the Court of Appeal, and, if necessary, to higher courts.

St. Francis Medical Association.—This Association held its regular meeting on Thursday, the 13th inst. Dr. McCabe, of Windsor Mills, was recommended to the position of joint coroner of the district in succession to the late Dr. McMorrine. Dr. P. Pelletier reported that it was the intention of the Quebec Provincial Board of Health to take steps to instruct the people in hygiene, and that a convention would be held shortly at Sherbrooke in this connection. He asked the support of the Association for this movement. The following officers were elected for the ensuing year: President, Dr. J. F. Rioux, Sherbrooke; first vice-president, Dr. W. D. Smith, Sherbrooke; second vice-president, Dr. McCabe, Windsor Mills; honorary secretary, Dr. Russell Thomas, Lennoxville.

War on the Ontario Medical Council.—A meeting of the executive committee of the Medical Defense Association, which it will be understood has nothing to do with defending practitioners from suits for alleged malpractice, and is no part nor parcel of the organization recently perfected at the Canadian Medical Association meeting—the Physicians' Protective Association—was held recently in Toronto, when a sub-committee of publication was appointed to supervise the issuing of a short series of letters to the public press setting before the profession, the public and the legislature of the province the disabilities under which the medical profession in Ontario is supposed by the members of this Association to be resting. Dr. J. H. Sangster, of Port Perry, has undertaken to do this work at the urgent and unanimous wish of his executive committee: and for the next month or two the officials of the Medical Council will be kept busy reading what Dr. Sangster thinks of that august body.

British Columbia Medical Association.—The second annual meeting of this Association was held at Victoria on the 5th and 6th inst. and there was a good representation of the profession from the province. Several eastern physicians came on from the meeting of the Canadian Medical Association at Winnipeg. On the forenoon of the first day the delegates were taken by special steamer to the William Head quarantine station, which was inspected. In the afternoon, Dr. John Dune, the president, delivered the annual presidential address reviewing the history of medicine from his student days. Dr. R. E. McKechnie, of Nanaimo, read a paper on midwifery, which provoked an interesting discussion. On the afternoon of the 6th the visitors were taken to D'Arcy Island, where the lepers were inspected. In the forenoon, Dr. Fagan read a paper on tuberculosis, and in the evening a banquet was held at the Driad. The following officers were elected for the ensuing year: President, Dr. Walker, New Westminster; vice-president, Dr. Helmcken; secretary, Dr. Pearson, Vancouver.

Deaths and Obituaries.

John Eliot Woodbridge, M.D., Charity Hospital Medical College, Cleveland, Ohio, 1866, a member and former trustee of the American Medical Association, died at Bad Nauheim, Germany, from heart disease, August 31, aged about 55. After graduation he practiced for a time in Kentucky and as an acting assistant surgeon in the army. In 1870 he settled in Youngstown, Ohio, where he speedily gained a large practice. It was in 1884 that he first began to experiment with the treatment for typhoid fever, which has since been known by his name, and for a time attained a measure of popularity with the profession. At the outbreak of the Spanish-American war he entered the Volunteer army as major and surgeon and was placed in charge of the hospital at Fort Meyer. A year ago, to regain his health he went abroad, spent the winter in Egypt and then went to Bad Nauheim, where he died.

Gustav Schiff, M.D., University of Würzburg, Germany, 1856, who had practiced in Chicago, Nashville, Dallas and San Francisco; served throughout the Civil war, and labored heroically during the Tennessee cholera epidemics of 1866 and 1873, died at his home in San Francisco, September 2, from Bright's disease, aged 68.

John M. Meyer, M.D., Transylvania University, Lexington, Ky., 1843, the oldest practicing physician in Kentucky, and a member of the American Medical Association, who had been in declining health for some time, died at his home in Danville, September 5, aged 84.

Philip Schaffner Baker, M.D., Medical College of Indiana, Indianapolis, 1879, professor of chemistry in De Pauw University, Greencastle, Ind., and known throughout the country as an educator, died at Asheville, N. C., September 2, from tuberculosis, aged 50.

Conrad R. Ohlinger, M.D., Ohio Wesleyan University, Cleveland, 1898, of Cleveland, acting assistant surgeon, U. S. Army, was drowned while returning from a scouting expedition in the Pambugan Mountains, Samar, Philippine Islands, August 20.

Sidney Rogers Burnap, M.D., College of Physicians and Surgeons, New York, 1862, a prominent physician of Windsor Locks, Conn., died at his home in that place, September 3, from brain tumor, after an illness of several months, aged 68.

Edmund P. Duval, M.D., University of Pennsylvania, Philadelphia, 1847, a practitioner for 33 years in Maryland, and from 1880 to 1892 state librarian of Maryland, died at his home in Annapolis, September 5, aged 75.

Alonzo D. McComb, M.D., Western Reserve University, Cleveland, Ohio, 1880, for twenty years a practitioner of medicine in Hawthorne, Pa., died at his home in that place, September 5, from Bright's disease, aged 47.

Etienne Gosselin, M.D., Laval University, Quebec, 1883, a prominent physician of Quebec, died at his home in that city, September 6, from typhoid fever, after an illness of three weeks, aged 46.

Louis Warfield Ritchie, M.D., University of Georgetown, Washington, D. C., 1863, a veteran of the Civil war, died at his home in Washington, September 9, from Bright's disease, aged 58.

Charles F. Atwood, M.D., Bellevue Hospital Medical College, New York, 1879, died at his residence in Winterport, Maine, September 6, after an illness of two weeks, aged 45.

William Washington Rigby, M.D., Baltimore Medical College, 1892, died at his home in Spartanburg, S. C., from typhoid fever, after a long illness, September 4, aged 30.

Charles De Saussure Clarkson, M.D., Medical College of the State of South Carolina, 1890, died suddenly from apoplexy, at his home in Allendale, S. C., September 3, aged 35.

George Lewis Staley, Jr., M.D., College of Physicians and Surgeons, Baltimore, 1878, died at his home in Baltimore, September 9, after an illness of six weeks, aged 44.

Dennis B. Dorsey, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1891, died at his home in Braymer, Mo., September 2, after a prolonged illness, aged 71.

John R. Williams, M.D., Vanderbilt University, Nashville, Tenn., 1892, died at his home in Port Royal, Tenn., from typhoid fever, September 3, aged 33.

Samuel R. Owens, M.D., University of Tennessee, Nashville, 1886, died at his home near Somerset, Ky., August 29, aged 76.

Charles W. Adkins, M.D., University of Louisville, Ky., 1858, died at his home in Langston, Ala., September 4, aged 60.

J. M. Winn, M.D., died at his home in Forest City, Ill., September 5, aged 71.

Book Notices.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS FOR STUDENTS AND PHYSICIANS. By John H. Musser, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Fourth Edition, Revised and Enlarged. Illustrated with 250 Woodcuts and 49 Colored Plates. Cloth. Pp. 1105. Price, $6.00. Philadelphia and New York: Lea Brothers & Co. 1900.

This excellent volume is well supplied with artistic and, for the most part, original illustrations, and the text is clear and concise. In this edition the author has introduced the latest acquisitions of medical research. His desire to make use, as much as possible, of methods of scientific precision, has placed the work facile princeps of its class. The treatise should find its way into the library of every practitioner and student, if it is not there already.

THE TREATMENT OF FRACTURES. By Charles Locke Scudder, M.D., Surgeon to the Massachusetts General Hospital, Out-Patient Department. Assisted by Frederick J. Cotton, M.D. Second Edition, Revised. With 611 Illustrations. Cloth. Pp. 457. Price, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

That a second edition of this work should be necessary in less than a year speaks well for the manner in which the first edition was received by the profession. As the first edition was so recently reviewed in these columns, it will be necessary to mention here only the changes and additions which appear in this, the second edition. One of the most important changes is the introduction of a number of additional *x*-ray plates. The value of the *x*-ray plate in the diagnosis of many fractures can not be overestimated. The value, therefore, of the introduction of good *x*-ray plates of the various fractures in a work of this kind is very apparent. A series of clinical cases has also been introduced, which makes a fitting supplement to the chapter on skull fractures. The use of plaster-of-paris dressings in the treatment of fractures is particularly emphasized, and numerous excellent plates have been introduced illustrating the various methods of their application. The same excellent style has been maintained in the work, and the publisher's part equally well done.

Association News.

New Members.

The following is a list of new members of the American Medical Association for the month of August:

ALABAMA.
Westmoreland, H. D., Huntsville.

ARKANSAS.
MacCammon, Vernon, Arkansas City.
Graham, J. F., Hot Springs.

CALIFORNIA.
Cagliera, G. E., San Francisco.

CONNECTICUT.
Lynch, Robt. J., Bridgeport.

FLORIDA.
Bize, L. A., Tampa.

ILLINOIS.
Kilbourne, E. D., Chicago.
Sharpe, Annie McFarland, Jacksonville.
Stees, Marie J., Freeport.
Chapin, C. E., Bloomington.
Lucas, F. B., Peoria.
Hopkins, S. W., Walnut.
Heywood, C. W., Riverside.
Becker, E. C., Chicago.
Swan, C. F., Chicago.
Burdick, A. B., Chicago.
Melton, W. A., Jr., Warrensburg.

IOWA.
Beach, M. A., Carroll.
Stiles, F. N., Davenport.
Hoxie, W. E., Hampton.
Pollock, W. L., Boone.
Stalford, G. A., Latimer.
Russell, C. R., Ottumwa.
Smith, E. J., Harlan.
Cantwell, J. D., Davenport.

INDIANA.
Wolferman, A. Gertrude, Indianapolis.
Keller, F. G., Alexandria.

KANSAS.
Wever, J. S., Leavenworth.
Berry, J. A., Topeka.

KENTUCKY.
Wash, Bishop, Cornishville.
Bates, S. W., Sheperdsville.
Rodgers, J. F., Bowling Green.
Cain, C. E., Mt. Victory.

LOUISIANA.
McBride, R. E., Houma.
Ballowe, H. L., Diamond.

MASSACHUSETTS.
Packard, G. H., Medford.
Anderson, R. H., Fall River.

MICHIGAN.
Kay, W. J., Attica.

MINNESOTA.
Lynch, J. L., Winona.
Egge, T. S., Moorhead.
Bagley, W. R., Duluth.

MISSOURI.
Paris, R. W., Lawrenceburg.
Gaines, J. J., Liberty.
Thorpe, J. L., Jefferson City.
McHenry, D. D., Princeton.

NEBRASKA.
Hepperlen, H. M., Beatrice.

NEW HAMPSHIRE.
Robb, W. M., Marlow.

NEW YORK.
Merenna, Giovanni, Brooklyn.
Marsh, J. P., Troy.
Rood, Edgar, Westfield.
Tieste, L. E., Brooklyn.
Distler, L. G., Westtown.
Preston, A. W., Middletown.
Pomeroy, S. G., W. Oneonta.
Burkelman, A., New York City.
Preston, J. L., Kingston.
McGuire, F. W., Buffalo.

OHIO.
Haefele, G. L., Peninsula.

PENNSYLVANIA.
Ford, F. A., Altoona.
Berry, E. S., Shippensburg.

SOUTH DAKOTA.
Wood, T. J., Huron.

TENNESSEE.
Todd, J. D., Trerevant.

TEXAS.
Parker, W. S., Calvert.
Atkins, W. E., Pilot Point.
Norsworthy, O. L., Houston.
Chapman, H. J., San Antonio.
Barr, H. A., Beaumont.

UTAH.
Noyes, J. F., Am. Fork.

VIRGINIA.
Strickland, J. T., Roanoke.

WASHINGTON.
MacLeod, A. F., Spokane.

WISCONSIN.
Wayman, Sarah M., Baraboo.
Klemm, L. F., Milwaukee.
Mason, C. H., West Superior.
Coon, J. W., Milwaukee.
Marshall, A. P., Viroqua.

Miscellany.

Medical Corps of the U. S. Army. Information for Candidates Seeking Appointment.

The Medical Corps of the Army, as increased from a total of 192 to 321 medical officers by recent Congressional action, consists of a Surgeon General with the rank of brigadier general, eight Assistant Surgeons General with the rank of colonel, twelve Deputy Surgeons General with the rank of lieutenant colonel, sixty Surgeons with the rank of major, and two hundred and forty Assistant Surgeons with the rank of first lieutenant, mounted, for the first five years, and the rank of captain, mounted, thereafter, until promoted to major. Section 1172, Revised Statutes of the United States, provides that "No person shall receive the appointment of Assistant Surgeon unless he shall have been examined and approved by an Army Medical Board, consisting of three Surgeons or Assistant Surgeons, designated by the Secretary of War; and no person shall receive the appointment of Surgeon unless he shall have served at least five years as an Assistant Surgeon in the Regular Army, and shall have been examined and approved by an Army Medical Board, consisting of not less than three Surgeons, designated as aforesaid." The act to increase the efficiency of the military establishment of the United States, recently approved, further provides "That the period during which any Assistant Surgeon shall have served as a Surgeon or Assistant Surgeon in the Volunteer Army during the war with Spain or since shall be counted as a portion of the five years' service required to entitle him to the rank of captain. All vacancies are filled by appointment to the junior grade (first lieutenant). Promotion through the intermediate grades of rank from that of captain to that of colonel is by seniority, but there is an examination for the rank of captain and another for that of major, to ascertain the fitness of the officer for promotion. Advancement to lieutenant colonel and colonel takes place without further examination. The Surgeon General is selected by the President from among the members of the corps.

Pay and Emoluments.—To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by 10 per cent. for each period of five years' service until a maximum of 40 per cent. is reached. An Assistant Surgeon with the rank of first lieutenant, mounted, receives $1600 per annum, or $133.33 monthly. At the end of five years he is promoted to captain and receives $2000 a year, which, with the increase of 10 per cent. for five years' service, is $2200, or $183.33 per month. After ten years' service as captain the pay would be $2400 annually, or $200 per month. The pay attached to the rank of major is $2500 a year, which, with 10 per cent. added for each five years' service, becomes $3000 after 10 years' service, $3250 after fifteen years and $3500 after twenty years. The monthly pay of lieutenant colonel, colonel, and brigadier general is $333.33, $375, and $458.33 respectively. Officers in addition to their pay proper are furnished with a liberal allowance of quarters according to rank, either in kind, or, where no suitable Government building is available, by commutation. When traveling on duty an officer receives mileage for the distance traveled; the amount allowed is sufficient to cover all expenses of journey. On change of station he is entitled to transportation for professional books and papers and a reasonable amount of baggage at Government expense. Mounted officers, including all officers of the Medical Corps, are provided with forage, stabling, and transportation for horses owned and actually kept by them, not exceeding two for all ranks below a brigadier. Groceries and other articles may be purchased from the Commissary and fuel from the Quartermaster's Department at about wholesale cost price. Instruments and appliances are supplied in abundance for the use of medical officers in the performance of their duties. Well selected professional libraries are supplied to each hospital and standard modern publications on medical and surgical subjects are added from time to time; current issues of a number of representative medical journals are also furnished for use of medical officers.

Army Medical School.—In 1893 the Secretary of War authorized the establishment of an Army Medical School in the city of Washington for the purpose of instructing medical officers who have been appointed since the last preceding term of the school, and such others as may be authorized to attend.

The course of instruction is for five months, and will be given annually, when practicable, at the Army Medical Museum, in Washington City, commencing in November. Five professors are selected from among the senior medical officers of the Army, stationed in or near the city of Washington, also an instructor in first aid and ambulance drill. . . .

Duties and Privileges.—Leave of absence on full pay is allowed at the rate of one month per year, and this when not taken may accumulate to a maximum of four months, which at the end of four years is then available as one continuous leave. Beyond this an officer may still be absent with permission on half pay. Absence from duty on account of sickness involves no loss of pay.

Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty, or after forty years' service. On attaining the age of sixty-four they are placed upon the retired list by virtue of law. Retired officers receive three-fourths the amount of their pay proper at the time of retirement.

When medical officers with the rank of captain approach the period of their examination for promotion to a majority they are usually assigned to duty as attending surgeons in the principal medical centers of the United States, to enable them to become familiar with the practice of the leading physicians and surgeons in this country, and to attend medical lectures, meetings of medical societies, etc. These assignments are made for one year only, in order that as many medical officers as possible may be enabled to avail themselves of the advantages thereby afforded. At the end of this tour of duty they are required to make a detailed report to the Surgeon General showing how much of their time has been occupied by their official duties and to what extent they have availed themselves of the advantages offered for professional advancement. . . .

Examination.—Permission to appear before the Board is obtained by letter to the Secretary of War, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates, based on personal acquaintance, from at least two reputable persons as to his citizenship, character, and habits. The candidate must be a citizen of the United States, between twenty-two and twenty-nine years of age, in the case of a candidate applying for appointment from civil life, and between twenty-two and thirty-four years of age in the case of a candidate who has served honorably in the Army of the United States, either as a commissioned medical officer of volunteers or as an Acting Assistant Surgeon during the war with Spain or since. He must be of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the Board. The scope of the examination includes the morals, habits, physical and mental qualifications of a candidate, and his general aptitude for service; and the Board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars. The physical examination comes first in order, and must be thorough. Candidates who fall below sixty-four inches in height will be rejected. Each candidate is also required to certify "that he labors under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required." Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection. The professional examinations are conducted by both written and oral questions, upon anatomy, physiology, chemistry, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children. Examinations are also con-

duetcd at the bedside in clinical medicine and surgery, and operations and demonstrations are required to be made by the candidate upon the eadaver. Hospital training and practical experience in the practice of medicine, surgery, and obstetrics are essential to candidates seeking admission to the Medical Corps of the Army, who will be expected to present evidence that they have had at least one year's hospital experience, or the equivalent of this in practice. Candidates presenting a degree in arts, sciences (other than medicine) or literature, those who hold first-class teachers' certificates or who submit evidence of graduation from a reputable high school or similar institution (approved by the Board), will not usually be examined in other than the professional subjects enumerated above. Should a candidate, during his professional examination by the Board, present evidence of a deficiency in his general education in elementary subjects, he may be required to undergo an oral examination in arithmetic, history, geography, literature, and physics, and such examination, if unsatisfactory, will be cause for his rejection. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry, or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency. To save unnecessary expense to a candidate desiring a preliminary physical examination, written authority may be given by this office for him to present himself at the nearest military post, garrison, or recruiting station for such examination. Any opinion given as to the result of such preliminary examination must, however, be considered as purely advisory and not as determining the subsequent action of an Army Medical Board in the case.—Circular of the Medical Department.

Intellectual Precocity Among Physicians.—The *Semaine Médicale*, in a recent review of this subject, has been able to collect only five instances of unusual intellectual precocity among physicians. One of these, Goethe, never completed the medical course. Cardan was an Italian physician in the sixteenth century who graduated and commenced teaching at 22. Boerhaave, the great Dutch physician, 1668-1738, was proficient in Greek and Latin when he was 11, but did not commence his medical studies until the age of 22. His famous pupil, A. von Heller, received his medical degree at 19. At 10 the latter composed a Hebrew and a Chaldean grammar for his own use, and at 15 had written several comedies, tragedies and an epic of 4000 verses. In our own day Flourens, best known for his physiologic researches, received his medical degree at 19. Oliver Wendell Holmes, while yet in his 'teens, wrote the poem "Old Ironsides," which prevented the breaking up of that historical vessel.

Societies.

Medical Society of the State of Pennsylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Oregon State Medical Society, Portland, Sept. 25-27, 1901.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.

Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.

Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.

Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.

New York State Medical Association, New York City, Oct. 21-24, 1901.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-seventh Annual Meeting, held at Put-in-Bay Island, Ohio, September 12-14, 1901.

Election of Officers.

The following officers were elected for the ensuing year: President, Dr. S. P. Collins, Hot Springs, Ark.; first vice-president, Dr. J. C. Culbertson, Cincinnati, Ohio; second vice-president, Dr. Paul Paquin, Asheville, N. C.; secretary, Dr. Henry E. Tuley, Louisville, Ky.; and treasurer, Dr. Thomas H. Stucky, Louisville, Ky.

Death of President McKinley.

The following resolutions were offered:

"Our President is dead. Our President, who accomplished the unification of our country; the abolition of sectional lines; the expansion which made us a world power, his last public utterance being in favor of peace, international reciprocity and sympathy, has been removed by the enemies of Society.

"We are overwhelmed with sorrow and personal grief for the death of the greatest of the world's rulers; for one who, from the standpoint of statesmanship, political foresight, sympathy with all the people, morality, the sweetest features of personal character and home-life, appealed to the appreciation of and affections of every citizen.

"A professional sorrow and disappointment taking the place of a hope that had inspired us from the first day the nation's calamity overwhelmed us.

"Joining in the personal grief and bereavement from which every true and loyal American citizen is this day suffering, we, the members of the Mississippi Valley Medical Association, in our twenty-seventh annual meeting assembled, do postpone the further presentation and consideration of special papers, in token of the love and respect with which we shall ever cherish the memory of our martyred President, William McKinley.

"(Signed.) ANDRUS TIMBERMAN, M.D.
H. O. WALKER, M.D.,
I. N. LOVE, M.D.
Committee."

On account of the death of President McKinley, a motion was made and unanimously adopted by a rising vote, that the papers listed for the third day be read by title, referred to the Committee on Publication, and that the Association adjourn out of respect to the distinguished dead.

(To be continued.)

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting held Aug. 27, 1901.

Dr. D. W. Montgomery, in the chair.

X-Ray Dermatitis.

DR. T. W. HUNTINGTON presented a man 35 years of age, who during last October was subjected to the *x*-rays several times, the result being an extensive dermatitis over the right rectus muscle above the umbilicus, over an area the size of a saucer. The case was presented to the Academy by Dr. Montgomery at the April meeting. At that time there was an elliptical area of skin necrosis, whose dimensions were three and a half by two and a half inches. It presented a dull mottle appearance. It was slightly moist, sluggish and parchment-like to the touch. Surrounding the ulcer there was a hyperemic zone, which faded gradually at its outer margin. The patient complained of intense itching, which at times was unbearable. At the junction of the necrotic and hyperemic areas there was marked hyperesthesia and over the entire surface the pain was a constant factor. Through the courtesy of Dr. Montgomery the case came under the Doctor's care, May 9, 1901, and the following day entered the hospital. For two days strong antiseptic lotions were applied as a preliminary to operation.

On May 12, under chloroform anesthesia, the ulcer was circumscribed by a deep incision, extending through a thick layer of fat to the sheath of the right rectus. In dividing the layer of fat it offered so much resistance to the knife as to suggest an abnormal condition of that tissue. Accordingly the margin fat was also removed for a considerable distance from the periphery of the original incision, the overlying skin being left as a loose flap. This flap was then carefully sutured to the sheath of the rectus, and to secure a better lodgment for the grafts, the exposed sheath was removed up to the suture line. Upon the belly of the rectus, skin grafts, after the method of Thiersch, were adjusted and the wound was dressed with silver foil and dry aseptic gauze.

The patient made a quick, uninterrupted recovery, leaving the hospital. The recovery seems to have been permanent and he makes no complaint save of hypersensitiveness of a small area below the lower segment of the cicatrix. At this joint the skin is slightly reddened but there seems no tendency to necrosis, although the patient has been roughing it in the mountains for several weeks. The only feature of the case worthy of further comment is a keloidal ring encircling the grafted area following the line of cultures.

DR. DUDLEY TAIT said that there is a little point in the Thiersch graft that is of interest and that is the advisability of overlapping the grafts. He finds when the graft is not overlapped we get an area of granulation. If we overlap, a certain amount of skin disappears but there is a perfect line between the graft and the skin, and we do not get the cicatricial tissue that always accompanies the granulation tissue.

DR. J. HENRY BARBAT said that with the *x*-ray there is no need to burn except where one treats with the *x*-ray and then you may get a burn. Even in that case there is no need to burn unless you want to. He has burnt a patient slightly on purpose to get the slight inflammatory action without severe burning, but there is no necessity now in taking a skiagraph and burning the skin.

DR. D. W. MONTGOMERY said that the patient came to him some time before Dr. Huntington saw it. He was then suffering excruciating pain. It was not only tender but spontaneously painful. Simple ointments such as balsam of Peru and red oxid of mercury ointment were tried with temporary benefit and then there would be a relapse. The best dressing was a 3 or 4 per cent. solution of lysol. This gave ease and comfort for some time and it looked as if the wound was going to heal, but then it became worse again. He showed it to the society and Dr. Huntington said he thought he had a plan for such a wound. The interesting part to me is that the Doctor went in under the skin and the skin was stitched to the aponeurosis of the muscle. All of the fat and a part of the aponeurosis were removed. It is very interesting to me to know that he went in, in a flaring direction, but I suppose that is the direction of the rays. The result is excellent.

Medication into the Epidural Space.

DR. DUDLEY TAIT read a short paper describing the anatomy and technic of puncture; he referred to the experimental work done by Cathelin, Laborde and himself. The epidural route was first described and proposed by Cathelin, an assistant of Guyon, shortly after surgeons had pointed out numerous dangers following the injection of cocain by the subarachnoid route. Sicard was the first to show its use in medical therapeutics. Up to the present time, this method has been used principally to check pain, as in sciatica, lumbago, herpes zoster, fulgurant pains, intercostal neuralgia, gastric and vesical crisis. In the domain of surgery epidural injections of cocain have not as yet given sufficient analgesia for operative work. Chipault alone has been able to perform several operations on the lower limbs by this method. The essayist tried it unsuccessfully in circumcision. Prolonged and pronounced relief has been obtained in inoperable cases of cancer of the rectum, in painful accouchements, cystitis, tuberculosis and dry arthritis. In four cases of incontinence of urine due to various causes, Albarran and Cathelin report almost complete cessation of the incontinence after two or three epidural injections of cocain. The quantity of cocain used by this route is from 3 to 4 centigrams in a solution of 1 to 200. Mauclaire recently made a series of epidural injections of iodoform emulsion in Potts' disease. His results have not yet been published. Huchard has used this route to administer various cardiac stimulants. Cathelin believes that this route may be used for the majority of soluble drugs; he strongly urges injections of cyanid or benzoate of mercury in malignant or cerebrospinal syphilis. Compared with the subarachnoid route the epidural method possesses many advantages from the medical point of view and up to the present time it has been spoken of favorably by the eminent physiologists who condemned in the strongest terms Corning's subarachnoid method.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Hyperchlorhydria.

Einhorn, as stated by *Phil. Med. Jour.*, recommends cold sponge baths in the morning for ten minutes before breakfast and light exercise during the day. The diet should be of that character which will most intensely excite the glands to action. Acids and spirits must be avoided and the food should be rich in albumin, and the starchy foods excluded. Three large and two small meals should be taken daily. Alkalies are indicated in the way of medication. From one-half to one dram of the sodium bicarbonate should be given three times a day about one hour after meals, with the addition of magnesia and rhubarb when there is constipation. When the nervous element is pronounced the following is recommended by Einhorn:

R. Strontii bromidi	℥iii	12
Aq. menthæ pip. q. s. ad	℥ii	64

M. Sig.: One teaspoonful three times a day at meal time.

Palliative Treatment of Cancer of the Larynx.

A. Courtade, in *Laryngoscope*, gives this treatment in cancer of the larynx: The introduction of a suitable canula to produce easy respiration; check the hemorrhage by the use of perchlorid of iron or peroxid of hydrogen; diminish the quantity of secretion and the odor by instillation of mentholated oil, such as eucalyptus; prevent granulations by swabbing with pyoktannin.

Treatment of Chalazion.

The following combination has been used with success in the treatment of Meibomian cyst:

R. Iodi puri	gr. iii	18
Potassii iodidi	gr. vi	36
Lanolini	ʒi	4
Petrolati liquidi	ʒiiss	80

M. Sig.: To be applied locally at night.

Treatment of Secondary Anemia.

Blackwood recommends the following combinations of iron and arsenic in the treatment of anemia:

R. Euquininæ	ʒi	4
Ferri lactatis	ʒii	8
Liq. acidi arsenosi	ʒiss	6
Tinct. lavend. comp.	ʒss	16
Elix. aurantii	ʒiv	128

M. Sig.: One teaspoonful four times a day in water.

Burns of the First Degree.

The following is recommended as a local application in burns before vesication has taken place:

R. Acidi acetici dil	ʒi	32
Glycerini	ʒi	32

Bismuthi subnit. q. s. to make paste.

M. Sig.: Apply to the affected parts.

Comparative Value of the Seed and Root of Colchicum.

It is well known that the value of the preparation of colchicum depends upon how it is prepared and from what prepared. Many preparations of this drug produce no results because of substitution of an inferior grade of the drug. The same may be said of strophanthus, gaultheria and digitalis.

These preparations, depending as they do upon their active principles for their efficiency in therapeutic use, should be selected with care and that part of plant made use of which contains the largest per cent. of the active ingredient.

Dr. L. Schulze, in *Western Druggist*, in speaking of the comparative value of the seed and root of colchicum, states that the seed contains on an average from .6 per cent. to .7 per cent. of the active principle. The root contains between .4 per cent. and .5 per cent. Consequently, he states, there should

be no valid reason why the root should be retained in the pharmacopeia since the seed contains so much more of the active prineiple colchieine.

Sulphur in Dysentery.

Dr. G. A. Richmond, as noted in monthly *Cyc. of Med.*, recommends the following combination in the treatment of dysentery:

R.	Sulphuris (sublimed) .....gr. xx	1	33
	Pulv. opii et ipecacuanhæ .....gr. v		33

M. Ft. chart. No. i. Sig.: One such powder to be taken every four hours until the diarrhea is checked.

Dr. Richmond states that in all his cases treated by the foregoing method, recovery has been rapid and the patients derived very speedy relief from pain and tenesmus. The blood and mucus were easily checked and relapses never occurred. As soon as the diarrhea becomes less it is desirable to give the powders less frequently.

Habitual Constipation.

R.	Sulphuris loti .....℥i	32	
	Potassii bitartratis .....℥i	32	
	Pulv. sennæ .....℥iv	16	
	Syrupi rhei .....℥ii	8	
	Ext. casearæ sagradæ flu.....℥ii	8	

M. Ft. confectio. Sig.: One teaspoonful at night to move the bowels.

Vomiting of Acute Gastritis.

The following is recommended to suppress the vomiting in acute gastritis:

R.	Vini ipecacuanhæ .....℥iv	16	
	Tinct. nucis vom. .....℥ii	8	

M. Sig.: Take ten drops in water every two hours.

Treatment of Fissure of the Nipples.

Dombrovsky, in *Deutsche Aerzte-Zeitung*, recommends that the nipple be bathed several times a day with a 3 to 5 per cent. solution of potassium permanganate. He states that the first few applications are somewhat painful, but the pain soon disappears. Before the infant nurses the breast should be washed with warm water and the breast protected with some waterproof material having a perforation through which the nipple may project. He states that a cure will result in a week.

To Remove Dandruff.

The following combination is recommended to remove the dandruff from the hair:

R.	Resorcin .....℥iss	6	
	Glycerini .....℥i	32	
	Alcoholis .....℥iss	48	
	Aq. rosæ .....℥iii	96	
	Aq. destil. q. s. ad .....℥viii	256	

M. Sig.: Apply locally and thoroughly rub into the scalp.

In Insomnia of Hysteria.

R.	Pot. bromidi .....℥iv	16	
	Chloralis hydratis .....℥iii	12	
	Tinct. asafetidæ .....℥iv	16	
	Syr. simplicis .....℥vi	24	
	Aq. destil. q. s. ad.....℥vi	192	

M. Sig.: One tablespoonful every three hours until sleep is produced.

Treatment of Acne in the Young.

The following is recommended by Brocq, as noted in *New York Med. Jour.*: The patient should eat of fat and butter sparingly and should abstain from the use of coffee, tea, pork, wine, pastry, cheese and spiced foods. The following preparation is advised to be taken at the beginning of each meal:

R.	Sodii biearb. .....gr. ivss		27
	Magnesiæ (calcined) .....gr. iii		18
	Pulv. cascaræ sagradæ .....gr. iiss		15
	Benzonaphthol .....gr. iiss		15

M. Ft. cachet No. i. Sig.: One such before each meal.

The face should be cleansed with pledgets of absorbent cotton and water as hot as can be borne, in which is boiled two teaspoonfuls of bran and a soupspoonful of sodium biborate to the quart.

At night the following ointment is to be applied to the spots:

R.	Beta-naphthol (camphorated) ....gr. ivss		27
	Resorcin .....gr. iii		18
	Saponis nigri .....gr. iii		18
	Cretæ preparatæ .....gr. viiss		50
	Sulphuris precip. .....gr. xxii	1	50
	Vaselini .....gr. iii		18

M. Sig.: Apply locally at night.

In the morning the following should be applied after washing the face:

R.	Sodii boratis .....℥iiss	10	
	Etheris sulph. camph. .....℥x	40	
	Aq. rosæ .....℥iii	96	
	Aq. destil .....℥ivss	144	

M. Sig.: Applied locally.

Mustard in Pneumonia.

In the *Post-Grad.*, Dr. L. Weber highly recommends the use of the mustard bath in the treatment of pneumonia, especially in children. He uses about one pound of mustard to one child's bath-tub of water. The child should remain in the bath ten minutes or until the skin becomes pinkish instead of blue. Friction must be carried on while the patient is in the bath. He should then be removed from the bath and wrapped in blankets. These should be repeated every second or third day.

Treatment of Hemorrhoids and Ulcer of Rectum.

Darche, in *Canad. Pract.*, has used with success the following applications in such cases:

R.	Mercuralis .....gr. v		30
	Chloretoni ..... gr. xv	1	
	Acidi boracici .....℥ss	2	
	Petrolati .....℥i	32	

M. Ft. unguentum. Sig.: To be applied three times daily.

In cases of ulcer of the rectum he used the following in the form of a suppository:

R.	Mercurolis .....gr. i		06
	Chloretoni .....gr. ii		12
	Acidi boracici .....gr. viii		5
	Olei theobromæ .....gr. xxx	2	

M. Ft. suppos. No. i. Sig.: To be inserted at bedtime.

In cases of chronic gonorrhea he recommends the following in the form of a bougie:

R.	Mercurol 1	per cent.
	Chloretoni 2	per cent.
	Acidi boracici 8	per cent.

M. Ft. bougies. Sig.: Insert night and morning.

Medicolegal.

Requiring Examination by Expert Oculist and Aurist.—The Supreme Court of the State of Washington holds, in the personal injury case of Myrberg vs. the Baltimore & Seattle Mining & Reduction Company, that the trial court has the power, within its discretion, to require a submission to an examination by an expert oculist and aurist where damages for alleged injuries to eyesight and hearing are claimed. But it does not think that an application to require a submission to such an examination was seasonably made, or that the trial court abused its discretion in not requiring it, when the application therefor was not made until in the midst of the trial when all the witnesses had been examined in chief on the one side, and several on the other, and it would involve a delay in the trial and loss of time for court and jury.

Attending Physician as Witness in Poisoning Case.—The Supreme Court of Oregon says, in the case of State vs. Simonis, that there is some conflict in the authorities as to whether a medical witness is qualified on a trial for poisoning to give an opinion that the symptoms indicate poisoning, when

this knowledge was not obtained from personal experience or observation. But, whatever the rule may be in this particular, the books all agree that, before one can testify as an expert on that subject, it must first be shown that he is qualified to do so, either by actual experience, or such careful and deliberate study as enables him to form a definite opinion of his own in reference to the matter. Indeed, the definition of an expert, the court says, implies as much. It is one who has made the subject upon which he gives an opinion a matter of particular study, practice, or observation. He must have a particular and special knowledge upon the subject; and his competency, which is a question for the court, must be shown before he is permitted to testify. The mere fact of a witness being a regularly licensed and practicing physician the court does not consider sufficient of itself, as a matter of law, to qualify him to give an opinion as an expert as to the cause of the symptoms of his patients, as for example where poisoning is claimed. This conclusion it largely bases, in this case, on the fact of the act of 1889 regulating the practice of medicine providing that it did not apply to persons then practicing in the state, who, within a certain time, should register in the proper county office, while by the acts of 1891 and 1895 such persons were to be taken and considered as licensed physicians. It can not be assumed, it holds, that such a witness is entitled to testify as expert on the subject referred to. Furthermore, the court holds that a medical witness can not be asked to give his opinion, as a physician, as to what the general symptoms of a case indicated, the question not being so framed as to confine his opinion to facts previously testified to, but being intended to call for his opinion, based upon all the facts within his knowledge, whether stated or not. He must first detail the symptoms; then, if qualified, may be allowed to express an opinion based thereon.

Powers of Secretary of County Board of Health.—The Indiana statute makes the board of commissioners of each county a board of health ex-officio for the county. It then makes it the duty of the board to protect the public health by the removal of causes of disease, when known, and in all cases to take prompt action to arrest the spread of contagious diseases, to abate and remove nuisances dangerous to the public health, and perform such other duties as may from time to time be required by the State Board of Health, pertaining to the health of the people. Annually, the board is required to elect a secretary, who shall be its executive officer and shall serve as health officer for one year. Under this statute, the Appellate Court of Indiana says, in the case of Martin vs. the Board of Commissioners of Montgomery County, the county board of health has authority to protect the public health, and such expenses as are authorized by the board for the public benefit should be borne by the public. But this case presented the question of whether the secretary of the county board of health, irrespective of any action of the board of health, has authority to incur an indebtedness for which the county can be held liable. The court practically holds that he has not. It says that the statute makes the secretary the executive officer of the board, but it does not give him the powers the board itself has. If he has all the powers of the board itself, then the board is a useless body, and the only necessity for its existence is to elect a secretary each year. This was not the intention of the legislature. When the statute says that he shall be the executive officer of the board, it means that he shall carry out such orders and regulations as the board may make. If he has power, for example, to hire a pond of stagnant water drained and thereby abate a nuisance dangerous to the public health, he may do any act without authority from the board. There is no statute giving him authority to bind the county for such services. The statute creates a board of health, says who shall constitute the board, prescribes the duties of the board, and makes the secretary simply the executive officer of the board. If a nuisance is to be abated, that fact must be determined by the board of health, and not by the secretary. Whether, however, in a given case, an emergency might arise requiring immediate action by the secretary, the court says was not presented.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), September 7.

1 Correction of Occipito Posterior Positions Through Seizure of the Anterior Ear by Two Fingers in the Vagina. Robert L. Dickinson.
2 *Disease and Sin. (Concluded.) George M. Gould.
3 *Resections and Exsections. Fernand Henrotin.
4 What Is True Conservatism in the Treatment of Appendicitis? Miles F. Porter.
5 *The Manifestations of Rheumatism in Children. William F. Cheney.
6 An Unusual Type of Smallpox, with Fatal Termination. Louis Leroy.
7 The Future of the Negro from the Standpoint of the Southern Physician. Seale Harris.

Boston Medical and Surgical Journal, September 5.

8 *Under What Circumstances (Excepting Emergencies) Is It Desirable to Operate Upon Gallstones for Radical Cure or for Relief? Maurice H. Richardson.
9 *Obstructive Diseases of the Lower Bowel. Henry O. Marey.
10 *The Indications for Operation in Malignant Neoplasms of the Stomach. Charles G. Cumston.
11 Remarks on Tuberculosis and Its Treatment. Dr. Baradat.
12 *The Chemical Properties of Leucocytes. Edward T. Williams.

Medical Record (N. Y.), September 7.

13 *The Work of the Sanitary Department of Havana, with Special Reference to the Repression of Yellow Fever. W. C. Gorgas.
14 A Personal Experience in Radiography. Alexander B. Johnson.
15 *Can Nasal Catarrh and Catarrhal Deafness be Cured? Carolus M. Cobb.
16 The Need of Better Provision for the Proper Care of Cases of Delirium Tremens and Cases of Doubtful Mental Disease. Henry C. Baldwin.
17 *A New Continued Fever. Edgar J. Spratling.

Philadelphia Medical Record, September 7.

18 *On Streptothrical Infections. John H. Musser.
19 *Light and Radiance in the Treatment of Disease. George G. Hopkins.

Medical News (N. Y.), September 7.

20 *A Study of the Temperature Laws in Epilepsy Based on One Thousand Observations. William P. Spratling.
21 The Treatment of Puerperal Infection. David J. Loring.
22 Generalized Vaccinia. John H. Huddleston.
23 A Massage Roller for the Application of Heat and Cold, Combined with Electricity. Robert C. Kemp.
24 A Consideration of Hemorrhoids. John Turner, Jr.
25 Autotoxemia. William W. Pennell.

New York Medical Journal, September 7.

26 *Modern Methods in the Management of Typhoid Fever, in Nursing, Feeding, and Bathing, with Special Reference to the Private Patient. Russell Bellamy.
27 Imperative Conceptions. Hugh T. Patrick.
28 Study of the Temperature, Pulse, and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. (Continued.) J. T. Eskridge.
29 *Therapeutics of Whooping Cough. Thomas J. Mays.
30 An Unusual Case of Gastric Ulcer. Frank H. Murdoch.

St. Louis Medical Review, September 7.

31 Hernia and Its Treatment: Reducible, Incarcerated and Strangulated. Herman E. Pearse.

Cincinnati Lancet-Clinic, September 7.

32 The Doctor Harris Case. Brose S. Horne.
33 Trifacial Neuralgia—Treatment. B. Merrell Ricketts.

AMERICAN.

2.—See abstract in THE JOURNAL of July 13, p. 135.

3. **Resections and Exsections.**—Henrotin favors radical operations in diseases of the ovary and tubes. He says he has performed at least 250 operations and can safely say that 40 per cent. may be termed delayed or partial cures or failures. Of this 40 per cent. the heaviest proportion by far comes from such patients as have had salpingotomy or tubal resection performed. The next most complaining class includes those patients in whom ovaries alone were resected, and the best results were obtained in those in whom the tubes were entirely excised, and the whole or portion of the ovaries removed. The argument in favor of tubal resection that it saves reproductive power is not to be considered very valid, and he says that

when such an operation is performed for every baby born there will be 40 uncured or only partially cured patients. He does not wish to be classed among the ultra-radical operators, however, and the question how much of an operation should be done at each time arises even in these cases.

5.—See abstract in THE JOURNAL, xxxvi, p. 1493.

8. **Gall-Stones.**—The treatment of a case of gall-stone is discussed by Richardson, who favors early operation. As a rule the operation is easy, safe, rapid and effectual and remote dangers are avoided and lessened. If the diagnosis turns out to be wrong other lesions may be discovered, perhaps even more serious. The difficulties of determination between lesions in this locality causing pain is very great and the more appreciated by the surgeon the greater his experience. Late operations for gall-stones are difficult and dangerous. The objections to the operation are, first, the danger which, though slight, is worth considering and should be emphasized, though he does not believe that it equals the dangers that attend the passage of a single stone from the gall-bladder to the duodenum. The diagnosis is frequently wrong, but he does not believe that this necessarily prohibits exploratory operation. For one case of needless or hopeless intervention there may be many permanent cures. Hernia may result though it is not liable to be serious in the upper abdomen. It is, nevertheless, a disadvantage. The possibility of recurrence is considered, but he has never seen or had reason to suspect it after cholecystotomy and drainage. This argument, therefore, seems to have little weight. As regards the possibilities of spontaneous cure he considers the chances so remote and the dangers so great that it may be safely neglected. We have on the one hand slow and painful ulceration lasting for years and on the other, safe, rapid, intelligent and scientific work of a few minutes with absolute demonstration of a permanent cure which is impossible in other cases. The possibility that after offending enough to prove the diagnosis, gall-stones may give no further trouble should be little considered, unless where there are distinct contra-indications to operation; the other possibility that the last decisive attack of biliary colic may have been caused by the last remaining gall-stone is not of sufficient force to prevent exploratory operation. If one gall-stone begins to give trouble there is no telling where the process will end, except that the chances are that it will end in permanent disability or death, if let alone.

9. **Obstruction of the Lower Bowel.**—The various conditions in cases of obstruction are noted by Marcy with the therapeutic indications in each. The most important are those due to malignant growths, which unfortunately, however, come to the surgeon as a rule too late to hope for cure by complete removal. When the case has so advanced as to come within the strict limitation of his subject, that is, obstructive disease of the lower bowel, little can be hoped except palliation by colostomy. In his surgical experience he finds he has steadily enlarged the class of cases considered operable; he is governed much more by the evidences that the disease is absolutely local than by its precise location. Any circumscribed growth limited to the portion of the bowel within reach of the finger in either sex is operable. If there is distinct evidence of glandular infiltration it is doubtful whether operation is advisable, and here relief is experienced and life prolonged by colostomy. He speaks well of the Kraske operation in some of these cases as giving an enlarged field of operation and affording the possibility of removal of many of the pelvic glands. Abdominal section in the Trendelenburg position is also noticed; resection of the lower bowel for cancer by approaching it from above in many instances is a very great advantage in modern technique for a variety of reasons. The lymphatic glands of the pelvis can be examined and removed as by no other route. Resection may be made much more accurately, and in many instances the function of the lower bowel preserved and restored.

10. **Malignant Disease of the Stomach.**—Cumston sums up that the surgical treatment of carcinoma of the stomach is indicated not only when the stenosis is present, but also as a radical cure of cancerous disease. If it has radically cured a few patients only, it has at least given, in more than 33 per cent. of those operated on, a new lease of life of from one to eight years, while the mortality has been reduced to 20, 15 and even 10 per cent. In every case of suspected carcinoma an immediate exploratory laparotomy should be advised and every new growth that can be removed should be taken out no matter what its nature may be. A confirmed diagnosis of cancer of the stomach should not be waited for as exploratory laparotomy is justified in every case where the patient is affected with gastric troubles when: 1. An analysis of the gastric juice shows absence of pepsin, or the presence of lactic acid. 2. When medical treatment carefully conducted does not increase the body weight and keep it there. The indications are those drawn from the general condition of the patient and the presence of visceral metastases demonstrated by palpation or exploratory incision as well as from the immobility and adhesions of the tumor and the propagation of the neoplasms beyond the movable portions of the duodenum or esophagus. The age of the patient, presence of some enlarged glands, size, position and extent of the new growth in no way contraindicate operation.

12. **Leucocytes.**—Williams suggests a change of name for Ewing's classification of leucocytes, using the terms acid, neutral and alkaline instead of basophile, neutrophile and oxyphile. In all three classes the nuclei, like the bodies of the normal single-nucleated leucocytes, take the alkaline dyes. The normal, many-nucleated leucocytes are neutral to dyes as are also the neutral myelocytes, which are found only in disease. The bodies of the so-called eosinophile leucocytes and myelocytes take only the acid dyes. They are, therefore, alkaline. The alkaline leucocytes, he thinks, occur chiefly in disease and any marked increase in their number is sure to be a pathologic symptom. He suggests that the presence or absence of nuclei is a condition on which the taking up of acid dyes depends and that the alkaline leucocytes are the dyeing forms. He therefore includes all alkaline leucocytes under the designation of necrotic cells. This opinion is supported not only by their presence in disease, but by their association with xanthine and spermin, which are the products of decomposition of nuclein.

13. **Yellow Fever in Havana.**—The methods of sanitation adopted in Havana are described by Gorgas. Since the demonstration of the mosquito origin of the disease, a complete change has been made in the system of quarantine. A certain number of rooms selected by the physician and patient's family are quarantined, completely isolated by nets made mosquito proof, and all mosquitoes in adjoining rooms and even in adjoining houses are destroyed as far as possible, and the insecticide methods adopted. The results are very striking. The disease seems to have been almost absent during the present year, at a time when it should be most prevalent. The city is divided into eight districts for the purpose of destroying mosquitoes by the use of oil, mosquito-proof receptacles for water, etc. He says in conclusion, there being a very large non-immune population in the city, and yellow fever having been introduced into the city on a dozen different occasions, they have so far managed to keep it out later than has ever been done before. Even if it should occur later in the season, he feels confident the destruction of mosquitoes is the proper method for fighting the disease and that we shall be eventually successful on these lines.

15. **Nasal Catarrh.**—The importance of finding the source of infection in cases of nasal catarrh is emphasized by Cobb, who reports several cases demonstrating his points. Each case, he thinks, must be carefully studied, and it may be a question of weeks and even months before we can be certain of the cause, but if we bear in mind that chronic discharge in the throat is caused in the same way as chronic discharge in other parts of the body, and study the cases in this light, we should be able to treat it intelligently. His experience has led him to believe that the disease is curable. Some of the cases were cured by the treatment of antral disease, others by

removal of portions of the turbinate and in one case the diseased root of a tooth was the cause of the condition.

17. **New Continued Fever.**—In the spring and early summer of this year Spratling has observed what is to him a new fever in his part of Georgia. It begins with malaise, muscular pain, especially in the neck, slight chilly sensations, temperature rising at once to 102 F. sometimes, pulse from 112 to 120, respiration to 30 or 40; nausea was present, a hacking cough and mental depression; later the pains were more pronounced, and headache severe, with photophobia and dizziness on rising; the temperature was 104 to 106 F., pulse 120 to 140, respiration 40 to 60; the abdomen was sore and tympanitis, there was anorexia, and scanty, offensive and highly-colored urine. The mind was periodically clouded, often actively delirious, according to the temperature, which changed rapidly, sometimes four or five fluctuations in twenty-four hours; the slightest noise, disturbance, or exertion, mental or physical, causing rapid exacerbations. The cases differ from dengue in the very widely varying symptoms. In several cases the temperature reached 106.5 F., and the influence of environment was very marked, which also differed from dengue. There was also no involvement of whole families; the cases were isolated. The symptoms lasted from two to five days, then gave way rapidly, but the fever and scant urine persisted for several days longer, and there were frequently profuse sweats. We have here, he thinks, a close relative, if not actually the same thing as Malta or Mediterranean fever. In about one-half of the 60 cases the disease was mild. The longest course was twenty-three days. The prognosis was good when no organic heart lesion existed. The kidneys were stimulated with alkaline diuretics and depressant medication avoided; strength preserved and quiet maintained. Tests for malaria and typhoid fever failed to give any reactions; and these diseases are rare in that locality.

18.—This article has appeared elsewhere. See THE JOURNAL of August 31, ¶68, p. 603.

19. **Light Treatment.**—Hopkins describes his methods of using light and the *x*-ray. In cancerous growths he prefers soft tubes and has found the static machine worked by an electric motor preferable to the alternating current. For the protection of the parts not to be treated he uses several layers of lead foil, glued to pasteboard or more flexible material, making an opening where the rays are desired to act. The theory on which he advocates the use of the soft *x*-ray tube in the treatment of carcinoma is that the power to produce changes in the tissues must be proportionate to the resistance which the cells of the tissue to be acted on offers to any destroying agent. Theoretically, the longer wave of the soft tube, as compared with the harder tube, has more destroying and disintegrating effect. He reports a case which he thinks was cured by this method. The first effect in all the cases is decrease in the density of the tumor. This change in consistency governs very largely the time of exposure. If the time is too long necrosis would occur, which should be avoided.

20. **Epilepsy.**—The temperature in epilepsy has been carefully studied by Spratling, who notices Bourneville's conclusion that isolated attacks augment the central temperature. His own observations agree in part only with Bourneville, who does not classify the types of seizures studied or make due allowance for certain physiologic conditions. After making due allowance for diurnal variation, he finds that 40 per cent. would be the lowest of such cases showing increased temperature after seizures, and 70 per cent. the highest, making the general grand average of cases showing increased temperature after seizures 55 per cent. The part played by muscular activity in creating heat is noted and its action in these cases wholly irrespective of any influence exerted on the cerebral heat centers. In many petit mal and psychic attacks in which muscular activity plays a small part and in which the temperature is increased after seizures, such increase is due to disturbance either of the cortical heat center or centers, or of centers that observers believe have been located in the corpus striatum and optic thalamus. He finds that subnormal temperatures follow epileptic seizures after grand mal more than after petit mal or psychic seizures, the proportion being 15 per cent. of the former to 10 per cent. of the latter types; and while he agrees in the main with Lemoine in considering such cases as anomalous in having abnormally low temperature in health, he does not consider this explanation quite sufficient. There will usually be found in these cases some chronic disease or general esthenic condition of long standing that lowers the stamina and vitality of the individual. All that has been said by Bourneville, Lemoine and others in reference to the high temperature in status epilepticus is confirmed by his observations. The temperature in serial attacks runs uniformly higher than in isolated attacks, but not so high as in status, serial attacks occupying a middle ground, between the two. As a possible factor in establishing the presence of toxins or other agencies in the body prior to and possibly causing the convulsion, an effort was made to take the temperature in some cases when the aura was of sufficient length, before the attack, but was successful in only one case where the heat began two hours before the fit, when it ran steadily up to 102 F. and the patient passed into convulsion.

26. **Typhoid.**—The details of hospital treatment are given at length by Bellamy with special reference to the nursing, dieting, bathing methods, etc. He has not had much success with the ice tub, but believes that systematic tubbing on modern lines is the most advantageous. The methods used in the Johns Hopkins Hospital are described and illustrated by plates, as is also the author's bathing apparatus. As regards other methods he mentions the use of saline baths, which he thinks are of practical advantage in many cases, also olive oil inunctions following these to relieve the irritation caused by the salt. He believes in the use of turpentine if tympanites exists and sweet spirits of niter and digitalis in small doses, strychnin sulphate, etc. When convalescence occurs he insists on the necessity of care as regards diet, etc.; as much care and consideration should be given the patient as during the stage of pyrexia.

29. **Whooping Cough.**—The treatment suggested here by Mays is the use of counter-irritants over the pneumogastric nerves, which he says is the only method that has ever given him good results. The practical way of applying the remedy is as follows: Trace the pulsating carotid artery from behind the angle of the lower jaw to the clavicle on both sides of the neck. This will be a landmark for finding the pneumogastric nerves which lie in close proximity and slightly behind the carotids. Gentle massage and kneading of this region of the neck, every hour or two, yield beneficial effects in many cases of this disease. The application of a strip of mustard plaster, about two inches wide, from the angle of the lower jaw to the clavicles on each side of the neck, two or three times a day, until the full effects of the mustard are evident, is almost sure to cause amelioration of the spasmodic cough. Equal parts of gum camphor, chloral hydrate, and menthol, applied over this region, are also very useful. Painting the same area with tincture of iodin, twice a day, until irritation of the skin is produced, is a beneficial procedure. Finally, in very stubborn cases the hypodermic injection of silver nitrate over the vagi must be resorted to in accordance with the following plan: Lift the skin over the vagus between the thumb and the forefinger of the left hand, introduce the hypodermic needle just under the elevated skin, and inject five minims of a two-and-a-half-per-cent. solution of cocain hydrochlorid. Detach the syringe from the needle and allow the latter to remain in the puncture. Wash out the syringe with water, draw a two-and-a-half-per-cent. solution of silver nitrate into the syringe, attach the latter to the needle, and throw in from three to six minims of the silver solution. Under this treatment he says the child becomes more comfortable, the paroxysms less frequent and the severity of the cough decreases. The affection assumes a different character even in a day or two.

FOREIGN.

Revue Hebd. de Laryngologie (Bordeaux), July 27.

Acute Inflammatory Edema and Abscess of the Larynx. LUBET-BARBON.—The principal indication is to gain time. The

edema will become stationary in forty-eight to sixty hours and subside after three to four days. Antiphlogistic measures internally and externally, possibly leeches, hot fumigations, wet packs around the neck, a 1 to 1000 carbolized spray and insufflations of morphin are some of the measures recommended. If the abscess points, incise immediately. In 3 cases observed by the writer this intervention revealed pus and relieved the patients. Intubation or tracheotomy is the last resort. Nineteen cases are reported, including several of personal observation. Only one patient was a child. The edema may be due to irritation from a foreign body, to a chill or other cause favoring infection, which is produced by various germs. The dyspnea may be the first symptom and appear suddenly. Inspiration is difficult and whistling. Expiration is protracted and croupy. The patient is unable to cough or expectorate as the dyspnea is increased by the slightest effort of the kind. He can not sleep for fear of suffocation, and the waking coma is due not only to the fatigue from sleeplessness but to the slow anoxhemia, the consequence of the dyspnea. Dysphagia is so pronounced that the patient feels as if a sharp instrument were in his throat at every effort to swallow. There may be fever and chills. Two cases are on record in which the removal of the obstacle by tracheotomy failed to prevent the fatal termination.

August 10.

Aberrant Mastoid Cellulitis. J. TOUBERT.—Osteitis from an otitis of the middle ear developing at a distance, beyond the antrum, is a rare affection. The aberrant abnormal cell in which it occurs is always retro-antral or mastoido-occipital. This cellulitis in Moure's case proved fatal. In Richard's it caused hemicrania, nausea and vomiting. The lymphatic or venous route was evidently the source of contagion, as there was no direct connection between the middle ear and the aberrant cells in the four cases on record. Recovery was remarkably rapid after evacuation. The abundance and the persistence of the suppuration indicate its origin in the bone.

Revue Mensuelle des Maladies l'Enfance (Paris), August.

Treatment of Old Forward Luxation of the Radius. BROCA.—The technique advocated is the resection of the head of the radius if it will not stay under the condyle after reposition on account of the rupture of the ligament in front. After the head is removed, the stumps of the ligament can be brought across the small neck and sutured, thus holding the radius in its normal position. The functional results in a case described were perfectly satisfactory. The patient was a lad of 7 and the luxation had occurred eight months previously.

Heart Disease in Children. MARFAN.—Mitral insufficiency from endocarditis, without other lesions, in children is sometimes curable. When it persists, it causes little if any functional disturbance while childhood lasts. If asystolia, that is, symptoms of insufficient contraction of the left ventricle occur, some other lesion must be present, probably congenital. An idiopathic endocarditis sometimes develops in children. It is more severe before 4 or 5 than after this age, and most frequently affects children with some congenital lesion. Acquired lesions of the aorta are very rare in children. Marfan has observed 3 cases and been able to find only 24 in the literature. They are of a rheumatismal or atheromatous type. The former includes pure aortic insufficiency, with the same manifestations as in the adult, although the functional disorders are less pronounced. This tolerance diminishes with age. Aortic insufficiency associated with aortitis, is a second variety. True stenosis of the orifice of the aorta is exceptional in children unless congenital. This variety, with its double souffle at the base, is more serious than the first. The lesions are diffuse instead of circumscribed. There may not be angina pectoris, but pain occurs frequently in the sternum, without distress or irradiation. The attacks of suffocation sometimes suggest asthma, sometimes dyspnea with pallor and vomiting, but they last only a few seconds. In the third variety, the lesions are associated with some alteration of the mitral orifice, and in the fourth and last, with pericardial adhesion. The latter causes, in children, recurring asystolia with brief intermissions. Only a few instances of atheromatous lesions in children are on record. They usually appear under the form of a chronic aortitis with a systolic souffle at the base, usually erroneously attributed to stenosis. If isolated, it causes little trouble. In one case, neuralgia of the phrenic nerve was the only symptom, but it may lead to an actual aneurysm or induce fatal asystolia. This insufficient contraction of the left ventricle, in children, is usually due to pericardial adhesion, but occasionally to an acquired endocarditis complicating a congenital cardiac lesion. After 6 years of age it is almost invariably due to pericardial adhesion. In children, the heart rhythm is usually preserved. Tricuspid insufficiency is very rare, as is also apoplexy of the lungs, while the hepatic phenomena predominate. The liver remains comparatively enlarged even during the intermissions. In rheumatismal pericardial adhesion, the heart is hypertrophied, while in the tubercular variety it is of normal size or even smaller than normal. Edema, cyanosis and the cardiac liver are common to both. The cardiac liver in these cases tends to cirrhosis, and the exaggeration of the symptoms may simulate a tubercular peritonitis or alcoholic cirrhosis, and perihepatitis may obscure the picture still more. Digitalis must be given at the slightest suspicion of insufficient contraction of the left ventricle. Marfan prefers a maceration of 20 to 40 cg. of the pulverized leaves in 60 to 100 gm. of cold water, strained after twenty-four hours and administered at one dose in the morning before breakfast, for five or six days to a child of 5 or 6. He then substitutes .75 gm. of theobromin for a child under 6 and 1 gm. after this age. This stimulates the renal function. Digitalis again after ten days if necessary. Caffein may advantageously supplement these measures, one subcutaneous injection of 10 to 20 cg. of caffein for two or three days. A purgative should not be given before the digitalis, as it may start a diarrhea hard to control. Sometimes the diuresis is not established until ascites has been relieved by puncture. Absolute rest in bed is essential, and a milk diet, with possibly revulsion over the heart with methyl chlorid, etc. By these measures an impending attack of asystolia may sometimes be averted. To forestall the tendency of the cardiac liver to cirrhosis, Marfan gives calomel every fifteen to twenty days, 5 cg. in five doses at half-hour intervals in the morning.

Archiv f. Kinderheilkunde (Stuttgart), xxxii, 1 and 2.

Radioscopy of the Chest in Children. G. VARIOT.—Radioscopy of the chest in pneumonia in the adult is difficult, but children can be wrapped up warmly and carried to the apparatus in another room without discomfort or danger. The results of radioscopy in genuine croupous pneumonia confirm those obtained by percussion and auscultation and frequently afford information when the latter fail. It is possible thus to differentiate pneumonia from meningitis, especially when the solidification is taking place and the slightest difference in the transparency of the lung is plainly perceptible. It reveals centrally located pneumonic foci which have hitherto baffled all diagnostic measures. It is more difficult of interpretation in case of bilateral bronchopneumonia on account of the lack of the sound lung for comparison. There is merely a slight decrease in the transparency of the parenchyma, most pronounced with confluent foci, especially the pseudo-lobar forms. The edge of the heart shadow is vague as it blends with the opacity of the parenchyma.

Atresia of Larynx After Intubation. G. v. RITTER.—A child of 16 months exhibited suddenly symptoms of laryngeal stenosis, requiring intubation, suffocating as soon as the tube was removed. Tracheotomy was therefore done after a few days; four days later the larynx was found to be completely occluded just above. The child died from intercurrent measles and autopsy confirmed the complete obstruction of the larynx just above the tracheal wound, corroborating O'Dwyer's assertions in regard to the possibility of this occurrence after tracheotomy during inflammation. Since then Ritter has made a practice of continuing the intubation indefinitely if necessary, gradually substituting smaller and shorter tubes until in his five cases he found that the children—all between 15 months and 3 years—were cured without the necessity of fur-

ther intervention. The intubation was continued for twelve to thirty-two days. The tube was coughed out sixteen times in one case.

Iron in Mother's Milk. J. K. Friedjung.—One of the disadvantages of the artificial feeding of infants is probably the lack of the iron which is always found in the normal milk of healthy women—in a proportion of 3.52 to 7.21 mg. to the liter in twenty-one cases investigated. The women were 19 and 27 years old, the infants 10 days to nearly 10 months. When nurslings do not thrive on apparently normal milk, the proportion of iron is usually found to be subnormal.

Ambulant Lewaschoff Treatment of Purulent Pleuritis. A. A. Kissel.—An apparently hopeless case of purulent pleurisy in a boy of 2, with high fever, great emaciation and a tubercular affection of the knee, was completely cured by the Lewaschoff method of the systematic substitution of warm saline solution for the pleuritic effusion. About 35 c.c. were removed in four applications of the aspirator, each followed immediately by the injection of the same amount of the salt solution. The fluid, which was a thin pus at first, was only slightly turbid at the last application. The procedure was repeated twice later, at intervals of about two weeks.

Beitraege z. Klin. Chirurgie (Tubingen), xxx, 2.

Intermittent Hydrops of the Knee. A. Linberger.—All of the 68 cases of intermittent hydrops of joints which Linberger has succeeded in collecting were in the knee, or knees, except one. Rheumatic antecedents were noted in 25, trauma in 8, gonorrhea in 4, the puerperium and tuberculosis in 2. Only 18 have completely recovered. The best results have been attained with arsenic—3 cures and 2 improvements out of 14; quinin—with 2 cures and 2 improved out of 18, and operation, which resulted in 4 cures of 7, and 3 improved although with recurrence later. Immobilization, ergotin injections in the vicinity, electricity, potassium iodid, a "dry diet" and change of occupation cured one patient each. No constant relation could be discovered between the recurrence of the effusion and menstruation. It is probably the result of inflammation, and consequently requires the same treatment, sparing the knee as much as possible. In the two personal cases observed, the hydrops recurred regularly every thirteenth day, with pain and inability to use the joint, conditions returning to normal in three days. One patient was a young man with a history of gouty attacks. The recurrence of the hydrops was postponed for six months at one time after puncture and disinfection. No benefit was derived from quinin, thyroid medication or Bier's stagnation hyperemia. [An English physician has recently called attention to a painless effusion in the right knee, liable to occur during the menopause or at puberty. It does not require local treatment, he says, as it subsides spontaneously.—Ed.]

Centralblatt f. Innere Med. (Leipsic), July 1.

Case of Three Lungs. G. Hernheimer.—At the autopsy of a three-weeks infant bifurcation of the trachea was noted, and a third lung was discovered communicating with it by a separate bronchus. All the three lungs showed the lesions of the fatal catarrhal pneumonia. Three other observations have been published of rudimentary lungs, but this is the first with actual functional connection with the trachea.

July 15.

Experimental Tuberculosis of the Suprarenals. B. de Vecchi.—Clinical conditions were imitated as closely as possible in the experimental research reported. Cultures of the tubercle bacillus were injected through the back into one suprarenal. All the animals exhibited the picture of severe intoxication, but no tubercular processes were found in the organs, merely the alterations in the cells of the nerves, liver, spleen and heart, and destruction of the blood with consequent deposits of pigment in the blood-forming organs, characteristic of severe intoxication. The most severe morbid changes were found in the central nervous system, indicating an elective action of the toxins on the gray matter of the cord. The entire cerebrospinal axis was affected, but the changes were most intense in the dorsal portion of the cord. The findings corroborate the assumption that Addison's disease is the sum of two factors: Insufficiency of the suprarenals and intoxication from the products resulting from the tubercular process developing in or outside of these organs. They also explain why caseous processes induce the classic picture of Addison's disease, while a tumor in the organ causes merely the indications of insufficiency.

Dermatologische Zeitschrift (Berlin), August.

Mechanism of Neurotic Alopecia. A. Bayet.—A young laboring man of a decided neuropathic tendency received a blow in the face. Three weeks later the hair fell out en masse over a large part of the head. Examination of the hairs showed that for 6 mm. from the proximal end each hair was degenerated, much diminished in diameter and with no traces of pigment. The hairs that did not fall out but continued to grow, showed the same shrinking and absence of pigment for a corresponding distance of 6 mm., while the hair was normal above and below the lanugo portion. The trauma must evidently have affected the nourishment of the papillæ for a time corresponding to the growth of 6 mm. of hair, after which conditions returned completely to normal.

Fortschritte a. d. Geb. d. Roentgenstrahlen (Hamburg), iv, 4.

Therapeutic Application of X-Rays. Sjögren.—Seventy-eight patients with various cutaneous affections have been treated at the writer's establishment in Stockholm. In 18 out of 27 cases of lupus the results were excellent. In 6 other cases the lupus had been treated in vain by other methods and was promptly and apparently permanently cured by radiotherapy. A complete cure followed its application in the 5 cases of scrofuloderma and 10 of chronic eczema, and also in 4 of intolerable pruritus of anus or vulva. All ulcerations were favorably influenced, fresh granulations rapidly developing while rodent ulcers shrank and finally disappeared. Hypertrichosis may require several repeated applications unless used with exceptional vigor from the start. Psoriasis did not seem to be affected by radiotherapy.

Jahrbuch f. Kinderheilkunde (Berlin), August.

Family Amaurotic Idiocy. Falkenheim.—A number of new cases have been published of Sachs' infantile family amaurotic idiocy with more or less paralysis, since his communications, raising the total to 64, of which 38 are known to have terminated fatally while the fate of 23 is unknown; 47 were seen by physicians and 17 diagnosed from others' descriptions. One of the first reported patients is still alive, 8 years old, but the affection is usually fatal before 3. Falkenheim has found 37 cases in 13 families, and notes that 4 of these families were interrelated. There did not seem to be any syphilitic, alcoholic or nervous antecedents in the family history, nor consanguinity, but the parents were Jews in the majority of cases. The development of the affection was not prevented by artificial feeding of the infants nor a wet nurse. No prophylactic measures have been discovered and no treatment has been of any benefit. The only consolation the physician is able to offer the parents is that they may have other children who will be free from the affection, as healthy children have been born before or after those thus afflicted in nearly every case. Falkenheim reports 4 new cases. The largest number—30—were observed in America, with 11 in England, 14 in Germany—generally Polish Jews—and 23 elsewhere on the continent. The symmetrical, congenital grayish-white opacity around the fovea, the weakness or paralysis of all the extremities, and the marasmus are the most striking features of this affection.

Wiener Klin. Wochenschrift, August 22.

Heart Failure from Insignificant Superficial Ulceration. Zuppinger.—In the three cases described, a small apparently insignificant ulceration was followed by death in a few days, with symptoms of insufficiency of heart action. The patients were healthy children between 1 and 3 years of age. The autopsy of two showed pronounced myocarditis and acute nephritis, evidently due to some severe intoxication, and from

the absence of all other foci, the infection must have been exclusively localized in the superficial ulceration, a phlegmon on the foot in one case, an ulceration in the inguinal region in another and bilateral abscesses in the glands of the neck in the third. There were no symptoms of sepsis, merely those of cardiac insufficiency, rapidly fatal. The parents were healthy and had other healthy children in the two cases in which an autopsy was possible.

Gaceta Medica de Mexico, August 1.

Epilepsy in Mexico. S. SOSA.—This report was prepared at the request of Dr. Letchworth, president of the Association for the Study of Epilepsy. It states that there are 118 epileptic women and 48 epileptic men in the special wards set apart for them in the insane asylums of the City of Mexico. The treatment is usually bromids alternating with belladonna, a week at a time, with hydrotherapy. Various other methods of treatment have been tried with little result. Three Mexican plants, traditionally beneficial in epilepsy, were given partial trials. One, the *senecio canicida*, is an active poison for dogs, affecting the nervous centers and inducing a syndrome similar to that of epileptic grand mal. Toussaint discovered that this action was restricted to the protuberance and medulla oblongata. Various clinical experiments with it demonstrated that 10 to 20 cg. a day of the pulverized leaves diminished the number of seizures. Sosa administered it to ten women, but he noticed that cerebral congestion was easily produced while they were taking it, and he then abandoned its use. *Ipomea stans* is another plant which has for generations been credited with the power of curing epilepsy. It has never yet been really scientifically tested. The *indigofera anil* was tentatively tried on account of its reputation for curing epilepsy, and Sosa states that its administration has a certain effect in diminishing the epileptic grand mal seizures, although it has never been tried on an effective scale.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Aug. 29 to Sept. 4, 1901, inclusive:

R. E. Austin, contract surgeon, leave of absence from the Department of Cuba, extended.

Alfred E. Bradley, captain and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Thomas S. Bratton, captain and asst.-surgeon, U. S. A., leave of absence extended.

Frederick A. Dale, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Basil H. Dutcher, lieutenant and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Harry A. Eberle, contract surgeon, now at Canton, Ohio, is relieved from further duty at Aibonito, P. R., and on the expiration of his present leave of absence will report for duty at Fort Totten, N. Y.

Henry S. Greenleaf, lieutenant and asst.-surgeon, U. S. A., from Alcatraz Island, Cal., to duty at the Presidio of San Francisco, Cal.

Herbert W. Hatch, contract surgeon, former orders relieving him from duty in the Department of Alaska and directing him to proceed to San Francisco, Cal., en route for duty in the Division of the Philippines, revoked.

Franklin M. Kemp, lieutenant and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

William P. Kendall, major and surgeon, U. S. A., to represent the Medical Department of the Army at the annual meeting of the American Public Health Association, to be held at Buffalo, N. Y., Sept. 16 to 20, 1901.

Edward L. Munson, captain and asst.-surgeon, U. S. A., to represent the Medical Department of the Army at the annual meeting of the American Public Health Association, to be held at Buffalo, N. Y., Sept. 16 to 20, 1901.

Harry O. Perley, major and surgeon, U. S. A., now at San Francisco, Cal., will proceed to Plattsburg Barracks, N. Y., for duty at that post.

Frederick P. Reynolds, captain and asst.-surgeon, U. S. A., leave of absence granted.

Herbert G. Shaw, lieutenant and asst.-surgeon, U. S. A., from the Presidio of San Francisco, Cal., to Alcatraz Island for post duty.

Richard P. Strong, lieutenant and asst.-surgeon, U. S. A., leave of absence extended.

Benjamin L. Ten Eyck, captain and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Philip G. Wales, captain and asst.-surgeon, U. S. A., ordered before a board in Washington, D. C., for examination for promotion.

Roy A. Wilson, contract surgeon, from Fort Totten, N. Y., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Sept. 7, 1901:

Asst.-Surgeon E. Thompson, detached from the *Solace* and ordered home and to wait orders.

Medical Director E. S. Bogert, retired, detached from the Boston Navy Yard, September 5, and ordered home.

Surgeon I. W. Kite, detached from the *Monterey*, upon reporting of relief, and ordered home and to wait orders.

Surgeon V. C. B. Means, detached from the marine recruiting rendezvous, September 25, and ordered to the *Monterey* as relief of Surgeon I. W. Kite, sailing from San Francisco, Cal., by Army transport about October 1.

Surgeon G. T. Smith, ordered to the *Amphitrite* as relief of Surgeon J. M. Edgar.

Surgeon J. M. Edgar, detached from the *Amphitrite*, upon reporting of relief, and ordered home and to wait orders.

Asst.-Surgeon E. O. Huntington, ordered to the Naval Hospital, New York.

Asst.-Surgeon J. F. Murphy, detached from the Naval Academy, upon reporting of relief, and ordered to the *Indiana*.

Asst.-Surgeon W. M. Garton, detached from the *Indiana* and ordered to the Naval Academy as relief of Asst.-Surgeon J. F. Murphy.

Medical Director G. F. Winslow, ordered to the naval recruiting rendezvous, Boston, Mass., October 1.

Surgeon C. J. Decker, ordered to the marine recruiting rendezvous, San Francisco, Cal., September 25, as relief of surgeon V. C. B. Means.

Asst.-Surgeon P. E. McDonald, detached from the Naval Museum of Hygiene, Washington, D. C., September 9, and ordered to the *Constellation* as relief of Asst.-Surgeon C. A. Crawford.

Asst.-Surgeon C. A. Crawford, detached from the *Constellation*, upon reporting of relief, and ordered to the Naval Hospital, Chelsea, Mass., as relief of Asst.-Surgeon R. R. Richardson.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Sept. 5, 1901:

P. A. Surgeon J. O. Cobb, granted ten days' extension of leave of absence.

P. A. Surgeon Rupert Blue, granted leave of absence for ten days from Sept. 2, 1901.

P. A. Surgeon J. H. Oakley, granted leave of absence for two months from Sept. 17, 1901.

Asst.-Surgeon H. C. Russell, to proceed to Cleveland, Ohio, and assume temporary command of service during absence of Surgeon W. J. Pettus.

Asst.-Surgeon H. B. Parker, to proceed to Amite City and Abite Springs, La., for special temporary duty.

Asst.-Surgeon M. K. Gwyn, granted leave of absence for one day.

Asst.-Surgeon B. S. Warren, granted leave of absence for fourteen days from Sept. 14, 1901.

A. A. Surgeon P. N. Barnesby, granted leave of absence for one month from Sept. 1, 1901.

A. A. Surgeon R. E. Ebersole, granted leave of absence for seven days from Sept. 3, 1901. Paragraph 181, Regulations, M.-H. S.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Sept. 7, 1901:

SMALLPOX—UNITED STATES.

California: Los Angeles, Aug. 17-24, 1 case; San Francisco, Aug. 18-24, 2 cases.
Kansas: Wichita, Aug. 24-31, 1 case.
Louisiana: New Orleans, Aug. 24-31, 1 case.
Massachusetts: Boston, Aug. 24-31, 6 cases.
Minnesota: Minneapolis, Aug. 17-24, 5 cases.
Nebraska: Omaha, Aug. 24-31, 2 cases; South Omaha, Aug. 23-30, 2 cases.
New Jersey: Newark, Aug. 24-31, 5 cases, 2 deaths.
New York: New York, Aug. 17-31, 37 cases, 12 deaths.
Pennsylvania: Philadelphia, Aug. 24-31, 31 cases, 2 deaths.
Utah: Salt Lake City, Aug. 19-24, 2 cases.
West Virginia: Wheeling, Aug. 18-31, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 10-17, 1 case.
Brazil: Rio de Janeiro, July 28-Aug. 4, 42 deaths.
Colombia: Panama, Aug. 19-26, 10 cases.
France: Paris, Aug. 3-17, 19 deaths.
Great Britain: Dundee, Aug. 10-24, 4 cases; London, Aug. 10-17, 13 cases, 2 deaths.
India: Bombay, July 30-Aug. 6, 2 deaths; Calcutta, July 27-Aug. 3, 5 deaths; Madras, July 27-Aug. 2, 9 deaths.
Italy: Messina, Aug. 10-17, 7 cases, 1 death; Naples, Aug. 10-17, 119 cases, 17 deaths.
Mexico: City of Mexico, Aug. 18-25, 2 cases.
Russia: Moscow, July 27-Aug. 10, 4 cases, 3 deaths; Odessa, Aug. 3-17, 2 cases, 1 death; Warsaw, July 27-Aug. 10, 5 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, July 14-23, 7 deaths.
Colombia: Bocas del Toro, Aug. 21, 1 case.
Costa Rica: Port Limon, Aug. 11-18, 8 cases, 4 deaths.
Cuba: Cumanayagua, Aug. 17-24, 1 case; Matanzas, Aug. 31, 2 cases.

CHOLERA.

India: Bombay, July 30-Aug. 6, 8 deaths; Calcutta, July 27-Aug. 3, 17 deaths; Madras, July 26-Aug. 2, 26 deaths.
Japan: Yokohama, July 20-Aug. 3, 2 cases.
Straits Settlements: Singapore, July 6-13, 1 death.

PLAGUE.

Brazil: Rio de Janeiro, July 14-28, 4 deaths.
China: Hongkong, July 13-27, 37 cases, 35 deaths.
India: Bombay, July 30-Aug. 6, 158 deaths; Calcutta, July 27-Aug. 3, 11 deaths.

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Original Articles.

AN IMPROVED METHOD OF TREATING HIGH-SEATED CANCERS OF THE RECTUM.*

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NEW YORK CITY.

Many will agree with me, I fancy, in considering the Kraske operation a very unsatisfactory one for the removal of the high-seated cancers of the rectum. In addition to the depth of the wound, the more or less jagged invasion of the peritoneal cavity, the possible difficulty of satisfactorily drawing down the upper portion of the bowel, and, finally, the trouble that is involved in the proper suturing of the preserved anal portion to the proximal end, all render it, with its annoying hemorrhage, an operation that is often, in my judgment and experience, troublesome and devoid of surgical neatness and precision. It is true that within four or five inches from the anus the affected part of the bowel can be easily reached and removed with the creation, if the anus is involved, of a fairly satisfactory sacral artificial anus. But if the anus, and say two inches of the adjoining rectum, can be saved, a point which is of great importance to the subsequent comfort of the patient, and to do which the bowel above must be liberated and brought down, then the foregoing objections to the surgical procedure in vogue must be taken strongly into consideration. They apply as well to the methods of approach from behind, as in Kraske's method, or from the front (by the vagina), as Murphy has recently advised. The latter I have not essayed, but an experience of over 20 cases of Kraske's resection, 9 of which were followed by an attempt at union of the divided rectal ends, has markedly impressed me with the desirability of attacking high-lying cancer of the rectum by a somewhat different method. The abdominal route has been tried by others but last year, i. e., in January, 1900, I ventured to practice such an extirpation after the plan that Maunsell[1] (then of New Zealand) had advised. His suggestion, as you may remember, was, to open the abdomen above the pubis, separate the peritoneum from the bowel largely and then to pass a loop of tape by a long mattress needle from the opened pelvis through the rectum and out the previously enlarged anus. By this loop he proposed to pull down the neoplasm loosened by peritoneal divisions and by some additional blunt dissection with the finger, so that it would appear at the anus, everting the lower part of the rectum as it protruded. If the protrusion was accomplished, and to do this it might be necessary to acquire more room by freely dividing the anus back to the coccyx, then the tumor was removed and the two ends of the bowel now, so to speak, out in the cold world, were easily connected by sutures and then replaced. The final step was the suturing of the divided peritoneum. This was a finely conceived operation, but it did not work with me in my trial of it, the hitch being that the tumor would not pass through the divided anus and that the forcible traction enlarged the tape openings into the bowel so much that escape of its contents was possible. I therefore changed the plan of procedure in this way: My fingers had freely detached the divided peritoneum so that the bowel and the entire contents of the sacral curve were liberated behind nearly to the tip of the coccyx and in front to the edge of the prostate; this gave me room to tie around the bowel, some three inches from the anus, a couple of iodoform tapes, about an inch apart. The intestine was here cut through and, being free, was readily raised out of the abdominal wound and held aside by an assistant. The lower end of the rectum was then seized by a forceps in the hands of another assistant, who drew it down and out of the anus in an everted condition. Untying the tape that closed this everted bowel, its lumen was opened so that a longer forceps could be carried through it into the pelvis, when the end of the upper bowel was brought down within its clasp and by it the latter was drawn through the lower bowel out into the world. A couple of needles passed through the invaginated ends of the bowel—near their margins—allowed easy union by sutures of their edges (with the knots inside the bowel) and replacement of the same followed. After the peritoneum had been sewn together and to the bowel so that the pelvis and general abdominal cavity had been separated one from the other by a peritoneal shelf, I deemed it best to provide drainage from the peri-intestinal space below by a tube introduced from just in front of the coccyx. These details will be better understood on inspection of Figs. 1 to 4.

The outcome made a delightfully satisfactory operation, and its success justified its repetition in two other recent cases, reports of which are here appended. Two of these patients recovered and one died, not from any peritonitis, but from a persistent diarrhea without temperature elevation. In the two that recovered inspection shows no recurrence eighteen months and nine months, respectively, after the operation. It was necessary in each case, some three to six weeks afterward, to use a No. 7 or 8 Wales rectal bougie, for there was somewhat more stenosis than is seen in the reunion of peritoneally covered bowel ends. This, however, was to be expected in a measure. The patients are well and in good health, and have one or two movements daily with ease. Some points are worth touching on a little more fully.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

1. Lancet, Aug. 27, 1892.

1. Concerning the Division of the Peritoneum.—By drawing the neoplasm backwards the folds of the peritoneum stretching from the bladder in the male, and from the uterus in the female, are rendered prominent and a small cut is made in each, and through these openings a scissors curved on its side or the common bandage scissors can be introduced just under the peritoneum and this divided up to the bowel, across, and behind it. A transverse cut across the front of the bowel joining the two knife punctures frees the bowel entirely and by pushing downwards anteriorly the prostate is soon reached. Before, however, peeling off the sacral tissues I have found it advantageous to search for and to tie the superior hemorrhoidal artery, as this renders the operative field nearly bloodless. This exposure of the sacral curve can be carried much further upwards should necessity arise, in a hunt for enlarged glands. If the lower blade of the scissors is kept persistently against the under surface of the peritoneum no risk of damage to vessels, nerves, etc., will be experienced.

2. As to Surgical Cleanliness.—The risk of this and similar procedures is, of course, the possible abdominal

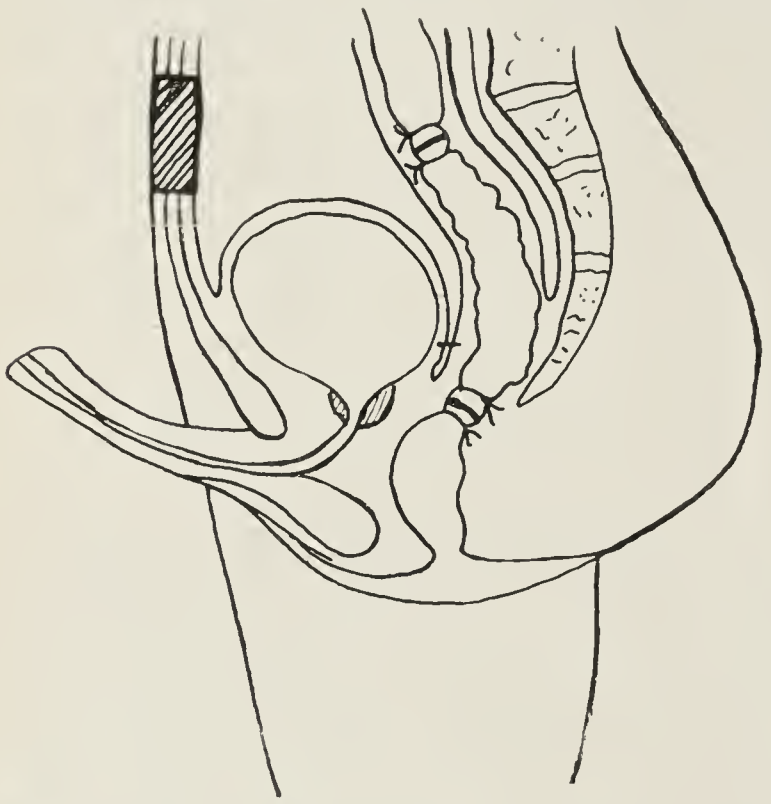


Fig. 1.—Tying off the tumor through an abdominal incision, after separating peritoneum from sacrum and bladder.

sepsis from the divided ends of the bowel. I have not only exercised particular care in this respect, but have, as soon as the lower division has been accomplished, touched the divided exposed mucous membranes with pure carbolic acid, which is promptly swabbed off with alcohol, and similarly treated the upper divided gut as it rests outside the abdomen. Prior to putting in the final sutures and while the bowel ends protrude from the anus this cauterized portion is cut off also. After the eversion of the lower bowel the whole pelvis is repeatedly washed with sterile salt solution, the parts being under good exposure by the retraction of the intestines above by pads or by a broad wire-handled retractor covered by gauzes, three inches by eight inches, which admirably keeps them back like a diaphragm. I prefer this to the diaphragm that Maunsell originally proposed (loc cit).

3. The Anus and the Drainage.—In my first case, to enable me to extract the neoplasm by traction, I freely divided the anus backwards with a somewhat prolonged impairment of power. In the other two cases only stretching in the usual way was resorted to. In all the cases a short drainage tube was carried up to the site of the line of suture and inside the bowel was placed a small rubber tube covered with iodoform gauze.

The contrast in this operation of Maunsell, which I have only slightly modified, with the usual Kraske operation, is most marked. Its signal precision, its freedom from hemorrhage and its thorough exclusion of the area of trauma from the peritoneal cavity lead me to hope that it may come into more general use, as it conduces to the desired end in such diseases, which is, more thoroughness in their extirpation.

It is especially important to have a reliable assistant in this procedure. He should evert the lower bowel, pull down the upper, conduct the suturing, replacement and drainage. The surgeon in charge had better restrict himself to the interior abdominal work and thus be able to maintain the required asepsis. It is true that the use of rubber gloves, easily disinfected as they are, or so readily changed, will often do away with this need.

CASE 1.—Mr. C. H., aged 64. Referred to me by Dr. Knickerbocker in January, 1900, with the history of pain in the lower bowel for over a year, with constipation increasing in character with occasional attacks of obstruction. Loss of flesh moderate, not more than ten pounds. Some loss of strength. No anemia.

By examination a carcinomatous mass can be felt about four inches from the anus. Into this the tip of the forefinger can be passed sufficiently to enable one to prove that the mass above can be moved quite freely. The upper end of the neo-



Fig. 2.—Lower end of rectum everted through the anus and the upper end of bowel drawn out of the abdominal cavity.

plasm can not be reached. Its nature was confirmed by a microscopic examination.

On Jan. 30, 1900, rectal extirpation by Maunsell's method by abdominal section was attempted with the assistance of Drs. Frank Hartley, Foote and Taylor. Nitrous oxid gas with oxygen was administered by Dr. Goldan.

The bowels had been freely moved on the day previously, as I do not like fecal flooding at the time of operation. After the abdomen was opened a transverse septum 3 by 8 inches of gauze stretched on stout copper wire with a handle was used to retain the small intestines above the pelvis. It answered its purpose very well. The peritoneum was cut through on each side of the rectum back to the sacrum and also across just behind the bladder. The contents of the sacral curve were peeled off after tying the superior hemorrhoidal artery. Several small glands were found here. None could be found above the upper limit of the peritoneal division. An attempt was made by a loop of tape drawn through the upper part of the tumor out through the anus to pull down the growth, but this failed though the anus had been enlarged and the rectum itself previously dilated by Dr. Hartley by means of specula and fingers. The tugging not only failed, but tore the gut badly and was abandoned as impracticable. Therefore, a tape of iodoform gauze was applied around the rectum below the

tumor and a clamp was fastened just above this. On dividing the intervening intestine the tumor was able to be lifted outside the abdominal cavity after a little further liberation of the peritoneum covering the mesentery. The tumor which was four inches long, that is to say, its upper limit was 8 to 9 inches from the anus, was cut off and the tied end of the bowel remaining was sterilized by pure carbolic acid, as was also the anal end of the rectum left in the pelvis. Dr. Hartley now, with a forceps, seized the lower portion of the bowel and everting it caused it to protrude through the anus. Another introduction of the forceps through the everted gut caught the end of the upper bowel and this in turn was drawn through the everted anal portion. Both ends of the rectum were held *in situ* for a time by two long straight needles passed across their wall at right angles near the suture line, which was freshened by cutting off the cauterized edge. Between 20 and 30 interrupted fine chromicized catgut sutures were used to close the circumference of the bowel. The united portion was then drawn up into position by slight traction from Dr. Weir. After this the divided peritoneal edges were carefully sewn together by interrupted sutures, first freely irrigating the raw pelvis, which was drained from below by a drain inserted thither through the wound reaching to the coccyx, The operation lasted over three hours by reason of the time spent in endeavoring to pull down and drag out the tumor in accordance with Maunsell's directions. The patient had no shock, but was found to have on coming out of his anesthesia a complete muscular and sensory paralysis of his entire left

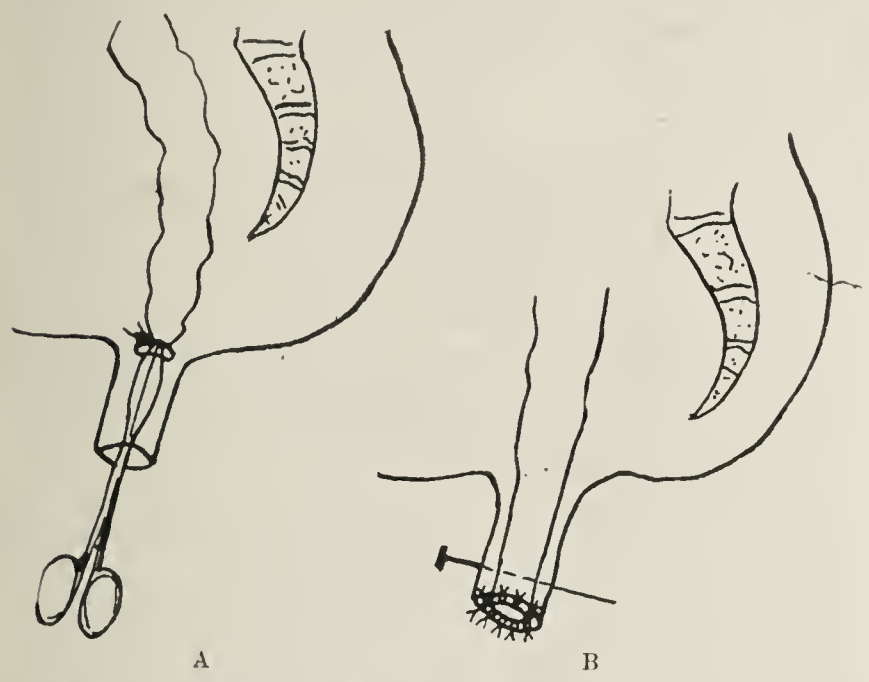


Fig. 3.—A. The upper bowel drawn out through the everted lower end of rectum. B. The ends of the two portions of the rectum sewn together.

arm. During the anesthesia both arms had been fastened above his head, which latter, moreover, for ease of working the somewhat cumbrous apparatus of the mixed anesthesia, had been kept strongly to the right side, thus all the more stretching the brachial plexus. It may be said that it required some six months for him to recover from this, my first experience in position paralysis. His recovery from the operation was satisfactory and prompt. He was up and about in three weeks, a slight mural abscess delaying a little his progress. He noticed at the end of six weeks some little trouble in defecation, and I found on examination that a cicatricial contraction linear in character had occurred which yielded to a No. 3 to No. 8 Wales bougie in the course of a month. Since then he has been in good local and general condition.

CASE 2.—Mrs. A. H. T., admitted to Roosevelt Hospital, Oct. 17, 1900, with this history: She began six months ago to have blood and mucus preceding stools, which continued up to time of admission without any considerable increase. Six weeks ago pain was felt deep in the pelvis, which was not increased by defecation; aching in character but worse at times. No diminution in size of fecal mass. Bowels regular. Slight loss of flesh.

Examination showed general condition good. Rectal: 3½ inches from anus an ulcerated mass 1½ inches in width attached to anterior and left side in a sessile manner; finger can not reach above it; slightly tender; not markedly hard; no constriction. No glands felt. No bleeding from examination. Rectum slightly movable. Microscopic confirmation of carcinoma.

Operation.—Oct. 27, 1900, anesthetic, gas and ether. Trendelenburg position. Celiotomy in median line; intestines retracted upward by 3 by 8 inch gauze-covered retractor. Tumor found movable and running upwards and involving the upper part of rectum and lower part of sigmoid. Peritoneum divided on each side of diseased gut; 4½ inches excised between ligatures. Distal stump invaginated through rectum and anus. Ligature removed; proximal stump then drawn through everted distal portion; a circular enterorrhaphy done outside rectum. Gut retracted into abdominal cavity again; peritoneum sutured over it. Abdominal wall closed. Drainage posterior to anus. Operation almost bloodless. Glands in hollow of sacrum not much involved.

Course.—Uneventful recovery; bowels moved ninth day; all drains removed and wounds healed by fourteenth day; slight discharge of mucо-pus from rectum for two weeks more.

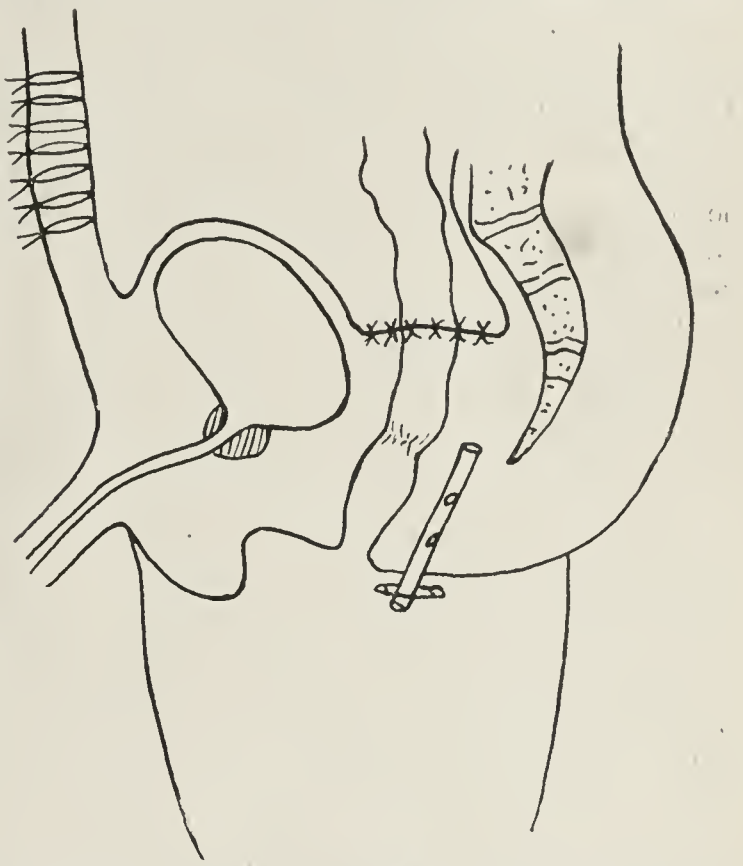


Fig. 4.—The united bowel replaced with posterior drainage, and the divided peritoneum so sewn together as to shut off the general peritoneal cavity from the pelvis.

Developed mild pneumonia then, transferred to medical side from which discharged improved, Dec. 20, 1900. Three months after operation a smooth stricture felt of some thickness, admitting No. 6 and 7 Wales bougie. Movements twice a day. In good general health when seen in May, 1901.

CASE 3.—Man, 54, sent to me by Dr. Forman, of Freehold, N. J., with a history of rectal trouble going back many months. from about 2½ inches from the anus upwards so that deep above pubis its impulse from below could be felt. Was only in fair condition. The operation was done in the manner previously described, but it varied in two ways. There was much more than the usual oozing of blood, and after opening the peritoneum and separating the wall it was found that the infiltration of the carcinoma extended along the right lateral wall toward the anus so that there was at this point not more than 1 to 1½ inches of sound intestinal wall. This in its eversion demanded its truncation and also additional loosening of the upper bowel from its mesentery. The other steps were as usual. He did well for twenty-four hours and then began to have a diarrhea without pain or vomiting or distension, which was not controllable, and which brought about a fatal issue at the end of the fourth or fifth day.

THE PRESENT STATUS OF THE CARCINOMA QUESTION.*

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CHICAGO.

There is no subject in pathology and surgery that has been studied with more care and diligence during the last two decades than the carcinoma question. The most intense interest in this subject was awakened with the origin and development of the modern science of bacteriology. As soon as it became known that all inflammatory processes are caused by specific pathogenic micro-organisms, it was natural that by reasoning from analogy the conclusion was reached that carcinoma is a parasitic disease. There are so many similarities between chronic infective diseases, notably tuberculosis and carcinoma, that we can readily appreciate the motives that led to the investigations in all parts of the civilized world concerning the microbic origin of carcinoma. Various methods of tissue staining, cultivation and inoculation experiments have all been utilized by thousands of earnest investigators in their efforts to discover the essential microbic cause of carcinoma. Numerous intracellular and extracellular bodies have been discovered and described as the specific parasitic cause of carcinoma, but for none of them has the claim been substantiated by the crucial tests. Searching criticisms from different reliable sources have shown almost conclusively that these bodies are not living organisms, but the products of degeneration of the cell protoplasm of cell inclusions of a non-parasitic nature. From an etiologic standpoint, very little has been added to our knowledge since the epoch-making labors of Virchow, Cohnheim and Waldeyer.

Something has been gained by the study of tumors in plants and in the lower animals in contributing to our knowledge of the etiology and pathology of tumors in general. Pathologic processes in plants are much simpler than in animals, owing to the absence in the former of many complicating factors, such as nerves and blood vessels; at the same time, the plants are constructed upon a much simpler embryologic plan. Both animal and vegetable cells have in common the nitrogenous carbon compound called "protoplasm." The idea of carcinoma being a local manifestation of a general dyscrasia has been abandoned years ago. Virchow established by his immortal researches that great pathologic law, *omnis cellula e cellula,* which applies with special force to the origin and growth of carcinoma, as well as other tumors, and the histogenesis of all inflammatory swellings. Students of this subject are now all agreed upon the fact, well established by the most accurate and painstaking microscopic investigations, that carcinoma, in all its histologic and clinical varieties and in the different anatomical localities where it originates, is a local disease, and that generalization only takes place by metastasis from the primary tumor.

Pathology has been materially advanced by careful microscopic work concerning the origin, growth, multiplication and life-history of the carcinoma cell and its manner of local and general dissemination. The atypical irregular mitotic figures which are seen in the segmenting carcinoma cell are in strong contrast with the regular symmetric mitosis observed in indirect cell division in normal tissue. The metastatic processes have been traced step by step through the lymphatic channels and the systemic circulation, and it has been demonstrated beyond all doubt that the secondary tumors are the direct offspring of migrating carcinoma cells from the primary tumor, and that the pre-existing tissues take no part in the tumor formation, primary or metastatic.

With these few exceptions, the enormous energies expended in determining the true nature of carcinoma have yielded very little of scientific or practical value.

From these introductory remarks we can formulate the first proposition.

PROPOSITION 1: The most notable contributions to the present status of the carcinoma question are to be found by the investigations which have thrown new light on the origin, growth, segmentation and manner of local and general dissemination of the carcinoma cell.

Definition.—The definitions of carcinoma must necessarily vary in accordance with the idea entertained by the author or speaker regarding the nature of the disease. That no unanimity has been reached in defining carcinoma becomes very evident in the perusal of the most recent literature on the subject of tumors.

"A tumor is a new formation of tissue possessing atypical structure, not exercising any function of service to the body, and presenting no typical limit of growth." —Ziegler.

The following is very similar: "A tumor proper is a mass of cell tissue or organs resembling those normally present, but arranged atypically. It grows at the expense of the organism, without at the same time subserving any useful function."—C. P. White.

An allusion to absence of function in any definition of carcinoma is superfluous, as the most characteristic clinical feature of this tumor consists in progressive destruction of tissues regardless of their anatomic structure and physiologic function.

Author's definition: "Carcinoma is an atypical proliferation of epithelial cells from a matrix of embryonic cells of congenital or post-natal origin."

This definition includes what is known of the histogenetic origin of carcinoma. It refers the tumor to its primary location in mesoblastic tissue, and the origin of its cellular elements to a matrix of embryonic epithelial cells. In 1846 Piguè explained the occurrence of congenital tumors by inclusion of embryonic remains, a process he termed *diplogenesis.* Remak, in 1851, distinguished the three germinal layers and believed the epithelial cells were the histologic origin of carcinoma. In 1855 Cruveilhier described an enchondroma of the hand, and traced its origin to an imperfect ossification of cartilage at the site of tumor formation. In 1860 Heschl gave a description of the origin of dermoid tumors in the orbital region, neck and perineum, which he claimed were the products of inclusions derived from the epiblast. The theory of embryonic tumor germs was placed upon a scientific basis by Durante in 1874, and a year later by Cohnheim, a theory so warmly championed by Waldeyer and other contemporaries. The heterotopic location of the epithelial cells distinguishes carcinoma from all the benign epithelial tumors. Atypical proliferation of epithelial cells means their growth and multiplication in a locality where epithelial cells have no legitimate citizenship. The matrix may occupy a vascular location from the very beginning, when embryonic epithelial cells have

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

been displaced into mesoblastic tissue during the development of the embryo in the case of congenital matrices; or when in a burn or wound or an inflammatory process embryonic cells become buried in the mesoblast after injury, or destruction of the membrana propria in matrices of post-natal origin; or, finally, if the matrix is confined to the epiblastic or hypoblastic embryonic layer, the carcinoma dates back to the time when the embryonic cells passed through and beyond the membrana propria into the vascular mesoblastic tissues. The above warrants us in framing

Proposition 2: Carcinoma is a tumor resulting from an atypical proliferation of epithelial cells from a matrix of embryonic cells of congenital or post-natal origin.

Origin and Histogenesis of Carcinoma.—The first attempt to trace tumors to their legitimate histogenetic source was made by Virchow, who believed that the carcinoma cells, like the cells of nearly all tumors, were derived from the connective tissue. He found epithelial cells far away from their normal location, and from their resemblance to epithelial cells he called them epitheloid cells. He believed that these cells were produced in the localities in which he found them. Virchow's theory predominated, until Remak established the doctrine of the independence of the different histologic elements, and founded the law of the normal succession of cells, which has remained firm and unaltered up to the present time. In the light of recent embryologic investigations, the doctrine of metaplasia, as expounded by Virchow and his contemporaries, is no longer tenable. Connective tissue can not produce epithelial cells, and epithelial cells are never transformed into connective tissue; hence,

Proposition 3: The law of the legitimate succession of cells holds true in the origin and growth of tumors, both benign and malignant, as well as in the production of normal and inflammatory tissue.

Barfurth takes the position that tumors originate before and after birth from a partial or complete separation of cells or groups of cells from their organic connections, traumatism being an influence capable of causing the epithelial metastasis. The separated cells, no longer subject to the restraining influence of their normal connections, and still receiving an adequate nourishment, grow and form tumors which, according to the size and organization of the segregated mass, correspond in general structure with the organ from which they are derived, sometimes more, sometimes less.

A somewhat similar view is entertained by Adami, only he presents the subject in a stronger light, and bases upon it a new theory of tumor formation which he calls "habit of growth." This theory presents many convincing points. He says: "Briefly, this theory is based on the fact that cells and their descendants, which for long periods have been subjected to certain influences whereby their properties and structures have become modified, eventually retain those properties after the influences referred to have ceased to act upon them. I base it again upon that principle of inertia already indicated—a principle which some years ago (1896) in this connection I referred to as the 'habit of growth.' Whatever the origin, therefore, of the tumor proper, however it started, what makes the tumor is the assumption by the primary cells of that tumor of the habit of work, and according to the extent of this replacement, so do we set the various grades of tumor formation from the most benign to the most malignant."

Fabre-Domergue's theory of the nature of epithelial tumors is based on the supposition that from the most benign papilloma and adenoma to the most virulent carcinoma they all constitute an uninterrupted chain of genetic processes, the same only gradually varying tumors. The slightest disorganizations of the normal behavior are shown by the papillomata and adenomata, which he terms "entheliomata"; to these are added without any sharp lines of distinction the more disorganized epitheliomata and carcinomata. The cause of the abnormal growth is the *"disorganisation cellulaire,"* that is, the displacement of the axis and segmentation direction of the cells to the basal membrane. In a normal condition the nuclear karyokinetic figures stand perpendicular to the basal membrane, so that the equatorial plates form a parallel layer to the basal membrane. If segmentation takes place in another direction, it is an indication of tumor growth. This theory is a short-lived one, and I doubt if any other observer has made the same distinction between such karyokinetic processes in normal and tumor cells.

Ribbert maintains that carcinoma does not begin in the penetration of epithelial cells into the connective tissue, as taught by Thiersch and others, but from the growth of the subepithelial connective tissue. This subepithelial connective tissue proliferation elevates the epithelial cells, disturbs their proper anatomic relation, and envelops them in connective tissue; and these cells then continue to grow in the direction of least resistance, that is, in the lymphatics and connective tissue spaces. Hauser, with most modern pathologists, takes the opposite ground. He has observed during the very early stages in the growth of carcinoma of the stomach the epithelial lining hypertrophied and continuous with the submucous epithelial infiltration composed of cells of the same structure. The writer has seen numerous specimens of epithelial carcinoma of the skin presenting an identical picture during the very earliest stages of tumor growth. The connective tissue proliferation takes place later, secondarily, after the epithelial cells have invaded the vascular tissue. The earliest stage in the development of a carcinoma is invariably an active proliferation and migration of epithelial cells.

As carcinoma is always developed from a matrix of epithelial cells, and only embryonic cells possess migrating power, we are prepared to defend

Proposition 4: As carcinoma always originates from epithelial cells, primary carcinoma in mesoblastic tissue is impossible from a histogenetic standpoint, unless a matrix of embryonic epithelial cells has become displaced during the development of the embryo, or when embryonic epithelial cells have become buried in mesoblastic tissues, after birth, by injury or disease.

W. R. Williams very correctly opposes the parasitic origin of carcinoma from the difference in the histologic structure of the cells which constitute the mass in carcinoma, and inflammatory products. Carcinoma differs morphologically, according to the structures whence it originates, and which it resembles histologically, as seen in the different organs; while inflammatory products present the same structure independent of their anatomic location or character of tissue involved. The great resemblance between the primary and secondary tumors could not be explained as the product of an inflammatory process. The writer has had numerous opportunities to examine specimens during the very earliest stages of glandular involvement, and has never failed to find as the nucleus of secondary tumor forma-

tion a group or groups of epithelial cells, which resembled invariably in every respect the cells in the primary tumor. These facts afford sufficient ground upon which to base

PROPOSITION 5: The histology and histogenesis of carcinoma speak against the parasitic origin of this disease.

Nearly all pathologists take it for granted that the stroma of carcinoma consists of the pre-existing connective tissue fibers and their descendants. Epithelial cells in normal and pathologic conditions are never converted into connective tissue. Carcinoma begins as an infiltration of the vascular connective tissue by migrating embryonic epithelial cells; hence the only source for the stroma is the connective tissue.

Williams, of Baltimore, finds that when the reticulum of the carcinoma is of new formation, it is usually devoid of elastic tissue fibers. The tumors in which newly-formed elastic fibers occurred either contained a large amount of connective tissue stroma, or the newly formed fibers were in connection with pre-existing elastic elements of the original tissue involved by the tumor. These, as well as numerous similar observations, lead to

PROPOSITION 6: The stroma of carcinoma consists of pre-existing connective tissue fibers and their descendants.

Asymmetric Karyokinesis in Carcinoma Cells.—The exaggerated vegetated capacity of carcinoma cells, as compared with the productive power of the cells of normal tissue, suggests irregular karyokinesis. Ferris has made an elaborate study of the morphologic changes in the cells in carcinoma. The most important of his observations shows that bipolar mitosis is more indicative of malignancy than the multipolar. The production of multipolar and asymmetric mitosis by chemic agents seems to suggest that a faulty chemistry may be a factor in the etiology of carcinoma. Hypochromatic and asymmetric mitosis are found usually only in carcinoma. Their presence, therefore, may prove of considerable diagnostic value.

Nedjelsky made an extended investigation of cell division more especially as it occurs in carcinoma. According to this observer, cells multiply by karyokinesis and by direct segmentation. In neither sarcoma nor carcinoma did he find any exclusive form of amitotic cell division, and in all pathologic processes various forms of amitotic cell division may be seen. In some of the tumors, particularly in an ovarian carcinoma, the author found both mitotic and amitotic segmentation.

Different types of pathologic karyokinesis were discovered in the tumor tissues studied. Amitotic cell division is initiated by an active increase in the size of the nucleolus which gradually segments. In some instances the nucleolus divides simultaneously into several new nucleoli. The division of the nucleolus is connected with that of the nucleus, the process, as a rule, being that the nucleolus lies at right angles to the long axis of the nucleus and approaching the walls of the latter, as it elongates, eventually fusing with it. The segmentation of the nucleus is often asymmetrical. The study of atypical cell division in tumors deserves accurate and more extended study.

Hemmeter places great weight on pathologic mitosis as an indication of malignancy. In carcinoma of the stomach he believes that a correct diagnosis can be made by microscopic examination of segments of tissue in the stomach contents by observing the presence of pathologic mitosis, more especially if with this condition the existence of atypical formation of tubules can be demonstrated. It is now a well-established fact that the carcinoma cells multiply by mitosis (Flemming), karyokinesis (Schleicher), nuclear segmentation (O. Hertwig), cytodiaresis (French authors). The process of segmentation as observed by different pathologists is usually atypical.

Pianese has made the most exhaustive study of the structural changes which take place in the epithelial cells in carcinoma during segmentation. He describes:

1. Comparatively typical, bipolar symmetrical mitosis. *a.* Hyperchromato-mitosis, hypochromato-mitosis. *b.* Giant mitosis.

2. Atypical mitosis. *a.* Pluripolar, atypical mitosis. *b.* Atypical, asymmetrical mitosis.

3. Abortive mitosis.

The above recent researches concerning the manner of cell division in carcinoma support

PROPOSITION 7: Carcinoma cells usually multiply by irregular, atypical karyokinesis, and this pathologic segmentation is an important indication of malignancy and as such is of considerable diagnostic value.

Local Growth.—One of the most conspicuous clinical features of carcinoma is its progressive extension *in loco*. The primary tumor grows at the extreme of the adjacent tissues, regardless of their anatomic structure. It respects no tissue. A carcinoma of the skin, if allowed to pursue its own course, attacks in succession the subcutaneous connective tissue, muscles, tendons, fascia, periosteum and bone. A carcinoma of the uterus frequently does not destroy life until the rectum and bladder have become involved. A carcinoma of the pylorus in the advanced stage usually involves the liver and pancreas. Local extension of carcinoma may also take place by the growth of the tumor masses in the interior of glandular ducts. In carcinoma of the breast, for instance, a perforation of one of the ducts by the tumor is followed by a speedy obliteration of its lumen by tumor growth which fills the duct somewhat in the same manner as an injection mass which becomes attached to the intact epithelial lining. There is no other tumor or disease that so constantly and to the same extent invades adjacent tissues and organs, and such clinical manifestation is a strong evidence of malignance, and is expressed in

PROPOSITION 8: The progressive extension of a tumor to adjacent tissues and organs, regardless of their anatomical structure, is a strong proof of its carcinomatous character.

Metastasis.—While Proposition 8 refers to one of the constant clinical manifestations of carcinoma, it is of less diagnostic value than the regional and general dissemination of the disease by metastasis, which is observed so constantly during the later stages of carcinoma. As a rule, regional metastasis takes place through the lymphatics; general metastasis through the systemic circulation.

The exhaustive researches of Regaud and Barjon appear to prove that the lymphatic vessels in carcinoma are destroyed, and are not reproduced, which must be regarded as a means of protection against regional and general infection. The large lymphatic channels are often used as pathways for the diffusion of carcinoma, but are seldom infected themselves. The cells from the periphery of the tumor ultimately find their way into the lymphatic channels, and are carried with the lymph stream to lymphatic glands, which serve the purpose of a filter, in which the migrating cells become entangled,

localize and establish an independent center of tumor growth.

Borst has made a very careful study concerning the behavior of the endothelial cells lining the lymph channels when the seat of invasion by carcinoma. He found, 1, endothelial cells in a passive state, without a trace of alteration; or 2, they undergo inflammatory hyperplastic proliferation, and, finally, 3, they take part in the formation of new connective tissue. Even when the endothelial cells gave rise to a colossal proliferation, he could never satisfy himself that they were ever transformed into carcinoma cells, and took no part in the destructive process. On the other hand, they seemed to be in their normal as well as altered conditions antagonistic to the carcinoma cells.

The next proposition is upheld and fully endorsed by all pathologists of the present day.

Proposition 9: Regional metastasis in carcinoma takes place exclusively through the lymphatic channels, and the pre-existing lymphatic structures take no active part in the origin and growth of the secondary tumors.

General Metastasis.—General metastasis may occur by the progressive extension of infection of the lymphatics after the last lymphatic filter has been passed and carcinoma cells find entrance into the general circulation, but such a source of general dissemination is rather the exception than the rule. Usually general metastasis takes place in a more direct manner by extension of the carcinomatous process to veins, and the entrance of carcinoma cells into the general circulation from a tumor thrombus. The researches of Goldman tend to prove that the veins in carcinomatous tumors are involved at an early stage. He stained the specimens by the Unna-Taenger orcein method. Even in the primary tumor he found the veins frequently implicated by the carcinoma tissue perforating the vein walls. The same takes place in the blood vessels of the carcinomatous lymphatic glands, and distant metastatic tumors. The arteries are seldom found involved by carcinoma to the extent of causing more direct general dissemination. The carcinomatous affection of veins appears either, 1, in the form of an obturating tumor thrombus with complete degeneration of the vein wall, or 2, as an intramural extension of the tumor with the symptoms of a proliferating endophlebitis, during which the lumen of the vessel and its wall may be preserved for a long time, or 3, a circumscribed perforation of the carcinoma cells into the vein. During this manner of extension of the tumor to the veins coagulation symptoms of the blood may be entirely wanting.

In all of those events, carcinoma cells reach the venous circulation and either become lodged in the vascular pulmonary filter, giving rise to secondary tumors in the lungs, or they pass through the capillary network of the lungs, enter the arterial current, and become arrested in the capillaries of a distant organ or organs, where they establish independent centers of tumor formation.

Ribbert explains the retrograde transportation of carcinoma cells through the venous system by assuming that the cells which enter the veins soon become surrounded by a layer of the third corpuscle of the blood, and, owing to the great viscidity of the minute embolus, become atached to the inner surface of the vein wall. Without impulse of the heart these minute epimural masses are propelled against the venous current and again become adherent to the intima, an occurrence which is repeated without the heart's action, so that eventually by this method of intravenous transportation wide retrograde dissemination of the disease may take place without obliteration of the lumen of the vessels.

Retrograde extension of carcinoma is of more frequent occurrence through the lymphatics than the veins.

Calzavara describes a very interesting case of this kind. The patient was a woman, 55 years of age, the subject of carcinoma of the body and cervix of the uterus. In the lateral wall of the vagina two hard submucous nodules were found just below the cervix. On removal of the uterus and the two nodules it was found that the uterine tumor presented the typical form of adeno-carcinoma. The submucous vaginal tumors presented an identical structure. In this case the migration of carcinoma cells from the uterine carcinoma through the lymphatics by the retrograde route is clearly shown, as the vaginal mucous membrane was intact. Retrograde extension of carcinoma through the lymphatics is not infrequently seen in advanced cases of carcinoma of the mammary glands after the disease has reached the superficial lymphatics of the skin. Undoubtedly in many of these cases the retrograde extension takes place by carcinomatous thrombo-lymphangitis.

Proposition 10 explains the usual manner in which general metastasis takes place in carcinoma.

Proposition 10: General dissemination of carcinoma usually takes place by direct implication of veins in the primary or secondary tumors. Carcinoma cells reach the venous circulation from an intravenous tumor thrombus, by carcinomatous endophlebitis, or, finally, by perforation of the vein wall by isolated carcinoma cells. Retrograde intravenous extension of carcinoma is due to the transportation against the venous current of minute emboli of carcinoma cells surrounded by a mantle of the third corpuscles of the blood which move step by step upon the intima. Retrograde extension through the lymphatics may take place in the same manner, but there is very little doubt that it is more frequently the result of carcinomatous endolymphangitis.

Is Carcinoma on the Increase?—This question is attracting a great deal of attention at the present time, and is deserving a most careful investigation. Barling, Payne, Jackson and Park are of the opinion that the frequency of carcinoma is rapidly increasing. Statistics appear to sustain this view. From investigations made in Massachusetts with reference to this subject, W. F. Whitney comes to the following conclusions:

"1. the death-rate based upon the total number of deaths and the total population has been made; 2, the rate for each age period (decade) above 30 has been made; 3, the ratio of deaths from cancer to the total number of deaths above 30 and for each age period, also to deaths other than from acute infectious diseases. In whatever way the subject was studied there was found a marked increase in the death-rate from this disease."

Newsholme and Edmund Andrews claim that the alleged increase of carcinoma is more apparent than real. Substantial proof can be advanced for the correctness of this position. More accurate diagnosis, more frequent postmortems, a more general resort to operative interference and increased longevity are some of the more important arguments in proving the relative increase of carcinoma. Carcinoma is a disease of

advanced age, hence, with an increase in longevity the number of cases of carcinoma would increase. Andrews has shown by statistics that the average age of persons living in Chicago thirty years ago was 15 years, while at the present time it is 29 years. Before the microscope came into general use as a diagnostic resource many carcinomatous tumors were mistaken for something else, and vice versa. The great advances that have been made in diagnosis have revealed many internal carcinomatous affections that only two or three decades ago would have been overlooked. For these reasons we are warranted in stating in

PROPOSITION 11: The increase of carcinoma as claimed by some recent statistics is more apparent than real.

Etiology.—Very little actual progress has been made during the last five years in the elucidation of the etiology of carcinoma. This subject is receiving at the present time everywhere well-merited attention. In this part of the paper the writer proposes to utilize the more important literature on the parasitic nature of carcinoma *pro* and *contra*, which has accumulated during the last few years. Search for the microbe of carcinoma is a laudable undertaking, but so far it has not yielded any definite reliable results.

PREDISPOSING CAUSES.

Heredity—Every surgeon of large experience has met with numerous cases in which he could trace carcinoma to an hereditary origin. The writer has had cases in which the disease could be traced through several successive generations. The percentage of cases in which carcinoma has been shown to be hereditary is estimated differently by different authors. Paget found a family history of carcinoma in 33 per cent. of the cases collected. Bryant in 12 per cent.

In studying the influence of heredity, it is not fair to exclude from the statistics distant cancerous relatives, as has been done by Cripps, because it is well known that congenital deformities, physiognomy, and mental peculiarities frequently reappear several generations apart, and in distant relatives. There is no reason to doubt that an aptitude for carcinoma is transmitted in a similar manner. What such an heredity predisposition consists of is not known. There are few surgeons, if any, who would not subscribe to

PROPOSITION 12: Heredity is a generally recognized potent predisposing cause of carcinoma.

Age—Advanced age plays an important rôle in the etiology of carcinoma. De La Camp collected 9906 cases of carcinoma with special reference to age as a predisposing cause. Among this number there were only 19 cases less than 20 years of age. Four of these were observed in the new Hamburg hospital. One case was a girl, 19 years old, the subject of a large carcinoma of the ovary. The second case was a large ulcerating carcinoma of the stomach with extensive metastases in a patient 17 years of age. The third, a carcinoma of the pylorus, the size of a walnut, in a boy of 16. The last was a boy, 16 years old, suffering from carcinoma of the rectum with extensive metasases. The writer has seen a carcinoma of the breast in a girl, 21 years of age, a carcinoma of the rectum in a boy 17, and several cases of carcinoma of the stomach in persons between 25 and 30 years of age. These observations tend to prove

PROPOSITION 13: As a rule, carcinoma occurs in persons of advanced age, but occasionally is met with in persons less than twenty-five years of age, and in the latter case the disease is characterized clinically by its great malignancy.

Trauma.—Ziegler has studied the clinical history of 499 tumors in the Munich Clinic, from 1890 to 1895, with special reference to their traumatic origin. This number comprised 328 cases of carcinoma, and 171 of sarcoma. This author found the general assertion corroborated that sarcoma is more likely to follow a single injury; carcinoma, on the other hand, repeated injuries or continuous irritation. In the 328 carcinoma cases the disease developed after a single injury 35 times, and in consequence of prolonged irritation 92 times; in the 171 cases of sarcoma the disease could be attributed to trauma 35 times, chronic irritation 32 times. Löwenthal collected 800 cases in which tumor formation is claimed to have been the result of trauma, and he is inclined to believe as the result of his investigations that trauma has a greater influence in the etiology of tumors than is generally admitted.

PROPOSITION 14: Carcinoma seldom follows a single injury, but develops more frequently in consequence of repeated injuries or prolonged continuous irritation.

Racial, Dietetic, Climatic and Topographical Influences.—It is a well-known fact, confirmed by reliable and extensive statistics, that some races are much more predisposed to carcinoma than others. Diet appears to exercise some influence in the causation of carcinoma. Legrain states that epithelioma is unknown in Algeria, except as it appears in a European. This may possibly be due to an almost exclusive vegetarian diet. Verneuil and Reclus asserted long ago that the herbivora were much less liable to carcinoma than the carnivora; and they ascribe the sixfold increase in the number of patients suffering from carcinoma at their hospital the last forty years to the increased consumption of meat by the laboring classes.

Behla has made a study of the geographical influences in the causation of carcinoma. He states that carcinoma is very rare in the extreme northern and southern countries. The temperate zones of Europe, Asia and America appear to act as a predisposing cause. Carcinoma is very prevalent in Australia, rare in Central Africa, and almost unknown in New Guinea.

Haviland, in his researches, found the disease most frequently along river courses and in localities subjected to periodic inundations, while it is less prevalent in high altitudes and in the spring districts at the head of rivers. It was a noteworthy fact that geologically the alluvial soil appeared to constitute a local predisposing cause, while a chalky or lime soil had the opposite effect. Heimann made similar inquiries, and came to the same conclusions.

PROPOSITION 15: Among the predisposing causes of carcinoma must be enumerated racial, climatic and topographical influences.

Inflammatory Products, Scar Tissue and Benign Tumors.—Carcinoma not infrequently develops in the inflammatory product of tubercular affections of the skin. Desbonnet collected from different sources 86 such cases, and since that time a great many additional cases have been reported.

Goodhart has called especial attention to irritation as a cause of ichthyosis of the tongue and of carcinoma. It has been known for a long time that this superficial chronic inflammation of the tongue frequently precedes carcinoma. In many instances carcinoma of the tongue and of the mucous membrane of the cheek has

been traced to prolonged irritation and inflammation caused by displaced carious teeth and to the sharp projecting margins of normal teeth. One of the most instructive illustrations of the influence of prolonged irritation and inflammation in the causation of carcinoma is chronic eczema of the nipple, known as "Paget's disease of the nipple." Another inflammatory product very often the starting-point of carcinoma is the wart. The warts upon the forehead and cheeks of aged persons, "verruca senilis," most frequently undergo such a transformation. The occurrence of carcinoma in an inflammatory product is undoubtedly due to the displacement or penetration of embryonic epithelial cells into the inflammatory product, where they are brought in contact with vascular tissue, which increases their vegetative capacity, and alters their habits of life. A similar histologic cause explains the frequency with which carcinoma develops in scar tissue, where the disease almost without exception begins as a subepidermal nodule from a matrix of embryonic epithelial cells buried in the mesoblastic tissues.

Among the benign tumors which are most prone to become transformed into carcinoma are the papillomata and adenomata. In both of these tumors the essential parenchyma of the tumor, the epithelial cells, are beyond the reach of blood vessels. Any and all influences, local and general, which are capable of stimulating cell growth beyond the physiologic requirements, and growth beyond the physiologic requirements, and which result in penetration of the membrana propia by young epithelial cells, are the causes upon which depends the transition of a benign epithelial tumor into a carcinoma. Among the local causes which bring about such a transformation of a benign into a malignant tumor may be enumerated injury, prolonged or repeated irritation, and incomplete removal of the benign tumor by excision, cauterization and ligation. The above remarks may be summarized in

Proposition 16: Chronic inflammatory products, cicatrices and benign epithelial tumors produce local conditions favorable to the development of carcinoma.

Parasitic Theory of the Etiology of Carcinoma.—The local, regional, and systemic dissemination of carcinoma is strongly suggestive of the existence of some virus or microbe as the essential cause of the origin and spread of carcinoma. In many respects carcinoma resembles several infective processes, the microbic origin of which has been well established. The infectiveness of tuberculosis was recognized a long time before its microbic origin was demonstrated. Pathologists for years have made numerous experiments to prove the inoculability of carcinoma. Hahn, Bergmann, the writer and others have extended their experiments to the human being. In the case of an inoperable carcinoma of the leg, the writer implanted subcutaneously fragments of aseptic carcinoma tissue at two points on the affected limb. A little nodule formed at the point of inoculation during the first two weeks, which gradually disappeared after that time. These nodules represented the product of proliferation of the tissues adjacent to the implanted aseptic foreign substance, in response to the local irritation caused by the carcinomatous graft, which acted the part of a local irritant. The new tissue which formed around the graft was completely removed in the course of two or three weeks by absorption. It is my intention in this part of the paper to utilize the most important literature of the last five years pertaining to the efforts made to prove the parasitic origin of carcinoma, and the material utilized will be divided into two classes, according to the results obtained by experimentation.

Alleged Positive Results.—Among the first to study the parasitic origin of carcinoma upon a scientific basis were Nedopil (1881), Schenerlen, Schill and Frère, Darier, Wickham, Malassez, Albarran, Soudakewitsch, Pfeiffer, Sjöbring, Thoma, Podysoski, Delépine, Ruffer, Stroebe, Steinhaus, O. Israel, Karg, Eberth, Ribbert, Hauser, Hanau, Klebs, Ballance and Shattuck, Kurloff, Ohlmacher and Korotneff. Among the more recent investigators must be mentioned Plimmer, Roncali, Walker, Sawtschenko, J. J. Clark, Foa, Vedeler, Park, Sternberg and many others. The discovery of coccidia in the nuclei of carcinoma by Thoma, in 1889, gave rise to a renewed stimulus to the search of micro-organisms in carcinoma tissue. The parasites found in carcinoma and which have been credited with being the essential cause of the disease are the following:

Schizomycetes 1. (Schenerlen and Koubashoff); histozoons; coccidium of Darier. 2. Coccidium of Albarran. 3. Coccidium of Sjöbring; gregarina monocystidea, or, 4, Rhapalocephalus canceromatosus of Korotneff. 5. Ameba sporidium of Pfeiffer, or sarcolithus of Adamkiewicz. 6. Hematozoon or Kahanr. 7. Histozoon and ameba of Nepvean.

Blastomycetes: 1. Fuchsinophile bodies of Russell. 2. Canceromycet of Niesen. 3. Saccharomyces niger of Maffuci. 4. Blastomycetes of Sanfelice and Roncali.

The parasitic theory takes it for granted that carcinoma is an infectious disease of a chronic type, and is supported to a certain extent by clinical observations; because, if there is a disease, which, by its origin, its rapid development, the frequency of regional and general metastases, the accompanying profound impression on the organism proves to be infectious, it is carcinoma. However, all of the experiments so far made do not answer the requirements laid down by Koch to prove the parasitic origin of this disease.

Positive results from inoculation were obtained by Eiselsberg, Hanau, Francotte and Richter in mice; Firket in rats, Langenbeck, Follin, Lebert and Weber in dogs; Guyon in dogs and cats, and Quinquaud in guinea-pigs; Wehr made 26 experiments with one successful result only; Norinsky had two positive results in 15 experiments.

Hanau inoculated the base of the scrotum of three rats with fragments of carcinoma tissue from a carcinoma of the vulva of a female rat, with positive results. Pfeiffer succeeded in transmitting a carcinoma from one rat to another; Moran from one white mouse to another white mouse; Goujon from one guinea-pig to another, and Klencke from horse to horse.

Auto-inoculations in persons suffering from inoperable carcinoma are four in number. These experiments were made by Hahn, Cornil and the writer with three positive and one negative results (Senn).

Moran, quoted above, succeeded in inoculating a cylindric-celled epithelioma of a white rat through several generations of the same species of animals. Metastasis followed the inoculations. With each generation the transplantation of the neoplasm became more and more difficult, and the malignancy of the tumors produced was gradually diminished. Sanfelice believed that the bodies found in carcinoma cells were blastomycetes, because of their morphologic resemblance. He obtained a pure culture of a blastomyces, "sac-

charomyces neoformans," from the juice of fruits and cultivated it upon vegetable media. Injection of pure cultures in guinea-pigs produced a sarcoma-like tumor, with glandular involvement, and metastatic foci in the kidney, liver and spleen. The same results were obtained by inoculating mice, while rabbits and dogs proved more refractory. He also succeeded in isolating pure cultures of blastomycetes from human tumors and from tumors of cattle and pigs. The parasite thus isolated, however, did not manifest any pathogenic activity.

Plimmer repeated the experiments of Sanfelice and reached approximately the same results and conclusions. He found those bodies in 1130 out of 1270 cases of carcinoma examined. The number of parasites appeared to be proportionate to the malignancy of the tumor. In this respect the results of observation were the reverse of those observed by R. B. Greenough. The latter states: "Furthermore, those cases which showed the most satisfactory specimens of bodies, and of the four cases in which the bodies were most numerous, three were clinically characterized as being of slow growth." The cultivation of this parasite proved most successful under amebic conditions.

Max Schueller has found minute refractile spheres, oval or round, three times the size of a blood corpuscle, with a granular center and a capsule in giant cells of sarcoma and epithelial cells of carcinoma, and believes that these bodies are the cause of malignant tumors, but so far he has not succeeded in reproducing the disease in animals by inoculation. R. B. Greenough, of Boston, who has made a series of careful experiments on the so-called "Plimmer bodies," has reached the following conclusions:

"1. The appearances known as the 'Plimmer bodies' were found in each of 23 cases of breast cancer. 2. They were more numerous in the periphery of the tumors, and in the metastases. 3. They were not found in areas which had undergone even slight degeneration, whether before or after removal. 4. They were more numerous in the slow-growing carcinomata, and less frequently found in the rapidly-growing ones. 5. They were more numerous in scirrhus than in medullary or adeno-carcinoma types of cancer. 6. They were not found in three cases of the epithelioma type (one of which was a typical Paget's disease of the breast). 7. They were present in one case of ovarian carcinoma, and absent in another case of general peritoneal cancer, of probable ovarian origin."

The most recent contribution in support of the parasitic origin of carcinoma is from the New York State Pathological Laboratory, by H. R. Gaylord. The paper appeared in the May number of the *American Journal of Medical Sciences*, and contains much that will interest bacteriologists and pathologists in the near future. He is a firm believer in the protozoon theory of carcinoma. He found these bodies present in all malignant tumors examined in varying number and forms. He followed Plimmer's method of staining, which he considers a great advance in the parasitic study of carcinoma. The form and size of the parasite vary according to age. The mature form possesses ameboid movements. He reproduced the disease in several species of animals by different methods of inoculation. It is too early to accept or reject the deductions he formulates from his own researches. The work done in the important institution of which Dr. Gaylord is director will give a new impulse to the study of the parasitic nature of carcinoma, and within a short time we may expect reports from different laboratories confirming or correcting his conclusions. It is very unfortunate that this contribution first reached the lay press, because the profession for good reasons, regard with suspicion concerning startling discoveries heralded through the general press.

From the evidence produced above, it is not difficult to conceive that the parasitic theory of carcinoma at the present time is based upon inadequate experimental proof. Two great objections present themselves against the validity of the claim that carcinoma is a parasitic disease: 1. The variety of microbes and bodies which have been found in carcinoma tissue by different experimenters, and for all of which, at different times and by different authors, the same specific pathogenic qualities have been claimed. 2. The histologic structure of the products of implantation of carcinoma tissue, or inoculation with the supposed carcinoma germs, does not correspond with the structure of a true carcinoma. This statement applies with special force to the fruit germ of Sanfelice. During the early period of scientific investigation of the cause and nature of tuberculosis, many experimenters produced in different ways local and metastatic pathologic conditions, which resembled in many respects genuine tuberculosis histologically, but lacked the essential microbic cause, and hence was designated as pseudo-tuberculosis. For the same reason, the new tissue produced by the implantation of carcinoma tissue, or inoculation with the so-called carcinoma bodies, might very properly be called pseudo-carcinoma.

In the light of searching criticism, the results of experimentation on the positive side of the parasitic theory of carcinoma can be summed up in

PROPOSITION 17: The positive results of implantation and inoculation experiments have so far failed in establishing beyond all doubt, upon a bacteriologic and histologic basis, the parasitic theory of carcinoma.

Negative Evidence of the Parasitic Origin of Carcinoma.—A vast amount of material has accumulated during the last few years, calculated to combat the claim made by a number of enthusiasts that carcinoma is a microbic contagious disease. The contagiousness of carcinoma is firmly believed by the people, and this opinion is firmly rooted for a long time. A few isolated cases of carcinoma of the penis, attributed to sexual intercourse with women the subject of carcinoma of the uterus, furnish no proof of the contagiousness of carcinoma, as Demarquay collected 134 cases of carcinoma of the penis, and only one of the patients had been exposed to such a source of infection.

No well-authenticated case of inoculation carcinoma has occurred among surgeons who have frequently injured their fingers and hands during operations for carcinoma, while inoculation tuberculosis from the same cause has been frequently observed. The same can be said of persons who take care of carcinoma patients, or who live with them in the same room.

A number of interesting cases of auto-inoculation have been reported by Waldeyer, Klebs, Spiegelberg, Luecke, Kaufmann, Ricard, and Hyvert. At least some of these inoculations are wrongly interpreted, as extension to adjacent parts may have taken place through the lymphatics. Carcinoma epidemics have been described by Arnaudet, Brown, Desplons, Roy, Lucas-Championnière and Marrichon, but these reports have not been confirmed by subsequent and more reliable observations.

Pianese mentions the four cases of inoculation from man to man by Alibert, who experimented upon himself and his students, all with negative results.

On May 4, 1901, the writer inoculated himself with carcinoma tissue immediately after he had completed a radical operation for advanced carcinoma of the lower lip. The patient from whom the malignant graft was obtained was an Irishman 60 years of age. The submental and submaxillary lymphatic glands were involved. The glands were immersed in warm saline solutions and from one of them a fragment the size of a split pea was used for implantation. A small incision was made about the middle of the forearm over the supinator muscles under strict aseptic precautions. One of the margins of the little wound was undermined sufficiently to make a pocket large enough to receive the graft. After implantation the wound was closed with a horse-hair suture and iodoform collodium. The operation was performed by one of my assistants, Dr. Lyman. The carcinomatous nature of the glandular affection was proven by microscopic examination of the gland from which the graft was taken. In the course of a week a nodule the size of a pea made its appearance, which remained stationary for two weeks when it gradually disappeared. At the present time (June 22) a linear red scar indicates the site of implantation.

Inoculations from man to animals, made by Peyvilhe, Schweninger, Klebs, Cazin and Duplay, Valentin, Vogel, Weber, Dubuisson, Hyvert, Chatin, Henocque, Billroth, Villemin, Cothin, Shattuck, Paulowsky, Fischel, Bogninet, D'Auna and Arcangeli, Pianese and Mayet were all negative. Inoculations from animal to animal were made on an elaborate scale by Paul Bert, Rinne, Doutrelepont Duplay and Cazin, Lablanc, Senn, D'Auna, Trasbot, Cadiot, Thiroloix, all with negative results.

Sippel implanted fresh carcinoma tissue underneath the dura in 25 rabbits. In not one instance were metastases or lymphatic infiltrations observed.

Peterson and Exner made experiments on guinea-pigs and mice with the saccharomyces neoformans of Sanfelice. They witnessed a general dissemination of this organism throughout the body of the animals experimented upon, but came to the conclusion that this yeast fungus has no connection whatever with the etiology of malignant tumors; and that the cellular inclusions in carcinoma are to be identified only to a limited extent with the fungus, and, finally, that the diseases in man attributed to the saccharomyces have absolutely nothing to do with malignant tumors.

According to Sternberg, Maffuci and Sirleo, the new tissue produced by some blastomycetes when injected into animals can not be regarded as having the histologic structure of carcinoma or sarcoma, but rather as granulomatous productions.

Fabre-Domergue, in his recent work on epithelioma, is outspoken regarding the parasitic origin of carcinoma. He says: "The forms described as sporozoa have merely the morphologic resemblances and not the true characteristics. All the pseudo-coccidia so far pictured are connected by insensible gradations with the tumor cell, from which they emanate by way of degeneration."

Gratia and Lénaux have made inoculation experiments with fresh carcinoma tissue into the lower animals, and uniformly failed to reproduce the disease. Fresh tumor tissue was ingrafted into the skin, the peritoneal cavity, and the walls of the stomach. Fresh carcinoma juice was injected into the organs most frequently the seat of the disease. They did not succeed in transmitting the disease from human to dog, or from dog to dog, and consequently conclude that contagiousness direct or indirect has not been present; that the parasitic origin is yet a matter of doubt; that the course and pathogenesis are still undecided.

Kurscherf and Bartsch repeated the experiments of Adamkiewicz on carcinoma implantation. They ascertained that if careful aseptic precautions were employed, the grafts degenerated and were absorbed.

Suspecting that the soil had something to do with the prevalence of carcinoma, Ruver obtained soil from parts of England where carcinoma is prevalent to a high extent, mixed it with the pulpified carcinoma tissue and placed rats upon it so that the feet and tail were constantly in contact with the mixture. The animals were also exposed to the spray of carcinoma tissue, and the accessible mucous membranes were kept in a state of irritation, and yet, in spite of all those potent etiologic agencies, the disease could not be reproduced in the animals thus experimented upon.

Sternberg has arrived at the conclusion that, while the investigations into the parasitic origin of malignant tumors have given rise to a more careful study of the cells, they have not advanced our knowledge of the etiology of tumors a single step. MacFarland, from his own observations, and studies comes to the conclusion that carcinoma is not a specific disease, that its etiology may be said to be dependent upon the inherent proliferative tendency of the epithelium: that is, it is epitheliogenetic, not parasitic.

Curtis has been experimenting five years with the saccharomyces tumefaciens. In that time he has never been able to produce a real tumor, compared to those observed in the human subject. The lesions produced were always the same; either a local growth of the fungus, sometimes of large size, or an inflammatory product with leucocytosis and more or less connective tissue proliferation—a granuloma. He makes the assertion that in non-ulcerating carcinoma he has never seen a single blastomyces.

Duplay and Cazin decide from their own observations that it is improbable that malignant growths are transmissible, either by graft or inoculation, from animals of one species to those of another.

Steinhaus has well said recently: "It is time to take up again the investigations on carcinoma, without neglecting the scientific method, as the principal cause of the errors committed so far is due to the neglect of the scientific method."

Peterson regards Darier's psorosperms to be forms of degeneration of the epithelial cells. He obtained his best pictures by staining with pictrocarmin and hematoxylin. The latter was used in weak solution and the preparations were overstained. They were then removed for from one-half to two minutes to a solution of the ferric sulphate oxydatum, and then decolorized in HCl—alcohol.

The painstaking researches of Pianese, of Naples, seem to prove that all carcinoma parasites so far discovered and described are the products of cell alterations.

Schwarz made a critical study of 40 cases of carcinoma in reference to the parasitic origin of the disease, and came to the conclusion that the "carcinoma parasites" which have been described under different names are either leucocytes or the products of cell degeneration and abnormalities of nuclear segmentation.

He discusses at length and in a logical manner the intracellular and extracellular cell inclusions.

Lubarsh, in his recent classical treatise ("Zur Lehre von den Geschwülsten u. Infektionskrankheiten," Weisbaden, 1899), studied the blastomycetic theory of Sanfelice, Roncali, etc., experimentally, and obtained only negative results.

All inoculations with Sanfelice's original cultures without exception yielded negative results. The experimental work of E. H. Nichols, of Boston, in search for the parasite of carcinoma, its cultivation and attempts to reproduce the disease artificially in animals, is summed up by him as follows:

"Typical cancer bodies have been found generally present in certain types of cancer. They never have been found in epidermoidal cancer. Attempts to produce cancer in animals by inoculating them with bits of tissue from human cancer so far have uniformly failed. No attempt to isolate an organism from human cancer has succeeded. Inoculation of animals with the organisms of Sanfelice and Plimmer has resulted in the formation of nodules composed of proliferated connective tissue cells and newly formed blood vessels (granulation tissue), but no tumor resembling cancer of human beings has been produced."

Professor Adami, in his recent instructive article on carcinoma, says: "In other words, so far as our present knowledge permits us to conclude, bacteria—schizomycetes—below a certain degree of toxicity of their products, can not maintain an existence in the tissues of animals. They succumb to the anti-bacterial mechanisms of the organism, and, succumbing, any proliferative activity they may have induced comes to an end. In plants, it is true, we meet with definite bacteria living a symbiotic existence in the rootlets and causing well-marked overgrowths. It may be eventually found that bacteria are capable of initiating progressive cell growth in the higher animals, but of this power proof is so far wanting." Again: "Continuous purposeless growth is characteristic of all forms of tumors proper; nevertheless, as I have already stated, in a very large group of tumors all the evidence we possess points surely to the fact that microbes have not initiated the growth, and are not concerned in the continuance of the growth." The evidence introduced to prove the non-parasitic side of carcinoma overbalances by far the testimony furnished on the positive side, both as far as the number of investigators is concerned, and the logical deductions drawn from their work. We are, therefore, warranted in stating in

PROPOSITION 18: A careful study of the experimental researches and bacteriologic and histologic investigations concerning the etiology of carcinoma does not at the present time warrant us to claim for this disease a parasitic origin.

TREATMENT.

As we are still ignorant concerning the essential etiology and true nature of carcinoma, the treatment pursued up to the present time has been largely of a palliative, tentative and empirical nature. The only real advances made have been in its operative treatment. It is true, from time to time remedies have been proposed for which specific curative properties were claimed.

Internal Medication.—Arsenic, condurango, turpentine, chelidonium, and many other drugs administered internally have all had their advocates, but none of them on extensive trial have shown any decided, to say nothing of specific, curative effect in retarding or arresting the growth of carcinoma.

During one of the meetings of the American Medical Association, Washington Atlee extolled the therapeutic virtues of arsenic in the treatment of carcinoma, more especially after operation, with a view of preventing a recurrence. He insisted that this drug should be invariably administered, and that its use should be enforced, even if the stomach would tolerate only a fraction of a drop of Fowler's solution. Since that time the writer has always followed out his directions, but after an extensive experience he is not prepared to assign to it any curative properties whatever. Jonathan Hutchinson is of the opinion that the use of arsenic rather favors than retards the evolution of carcinoma.

Denissenko claims to have obtained more benefit from the internal use and subcutaneous injections of chelidonium majus. The injections were not made into the tumor, but into the tissues surrounding it, where the injected irritating substance initiates a sclerosis like other sclerogenic agencies. The injections used were composed of half a gram of the extract and the same quantity of water, properly sterilized by boiling, and injected every two to five days.

Berezkin gave this remedy a faithful trial in nine cases by internal administration and hypodermic use, and failed to observe the slightest curative effect.

J. Carne Ross asserts that the internal use of large doses of cinnamon mitigates the pain and retards the growth of carcinoma.

Mr. Snow advocates very strongly the use of opium as soon as it has been ascertained that the disease is beyond the reach of a radical operation.

PROPOSITION 19: The experience of centuries and the internal use of innumerable remedies have demonstrated that so far carcinoma has not been materially influenced for the better by this method of treatment.

Parenchymatous Injections.—Direct medication of the carcinoma tissue by parenchymatous injections has had an extended but unsatisfactory trial. Acetic acid, nitrate of silver, and the different antiseptics have all failed in making a curative impression on the evolution of the disease; in fact, in most instances tumor growth was favored by such attempts. Schwalbe many years ago advocated the injection of alcohol into the loose connective tissue around the periphery of the tumor, and reported a number of cases in which this treatment appeared to have been useful in retarding if not arresting further growth of the tumor. The stimulating effect of this powerful antiseptic on the connective tissue resulted in sclerosis and diminished the blood supply to the tumor. The writer has given this treatment an extensive trial, and believes it is the least objectionable and most useful form of treatment by parenchymatous medication. He has used Lannelongue's sclerogenic chlorid of zinc solutions with similar results. The experience with parenchymatous injections up to the present time is voiced in

PROPOSITION 20: Direct medication of carcinoma tissue by parenchymatous injections has no influence in retarding or arresting the growth of carcinoma, while the injection of sclerogenic substances into the connective tissue around the border of the tumor appear to restrain the local extension of the disease by impairing the blood supply to the parenchyma of the tumor.

Local Applications.—Upon the very highest authority methyl-blue was recommended a few years ago as a

local remedy in the treatment of carcinoma. The ease with which this staining material permeates the protoplasm of cells was considered a strong argument in favor of its therapeutic value. Accumulated experience, on the whole, with the use of this agent has been disappointing. Darier has seen good effects from the local application of a 20 per cent. solution to open, ulcerating carcinoma. He advocates strongly as a palliative measure the conversion of an open into a closed carcinoma by a plastic operation about the fifteenth or twentieth day after treatment with methyl-blue.

W. Mitchell recommends the local use of formalin in the treatment of certain inoperable malignant tumors. He uses a 20 per cent. solution. The dry eschar produced by the formalin is removed after a few days, when the formalin is again applied, and this procedure is repeated until the tumor is removed. The applications occasion a great deal of pain, and are followed by considerable edema of the surrounding tissues. Very little is to be expected from local applications in the treatment of ulcerating carcinoma; hence it is safe to assert in

Proposition 21: Local applications of any kind in the treatment of ulcerating carcinoma must be considered at best only in the light of palliative measures.

Cauterization.—Among the earliest attempts to destroy carcinoma were the red-hot iron and chemical caustics. This method of treatment has its advocates to-day.

Czerny and Trunceck have found a solution of arsenic in equal parts of alcohol and water, 1 to 75, of much value in the treatment of ulcerating non-operable epithelioma. The ulcerated surface is thoroughly cleansed and brushed daily with the solution, and the eschar is gradually thickened. With the increase in the thickness of the eschar a stronger solution is applied. Pain is caused only in the beginning of the treatment. Finally, the eschar becomes detached and the epithelioma is destroyed. Three cases of extensive epithelioma of the nose in aged persons are reported as cured. This treatment was given a thorough trial in four cases of epithelioma of the skin in Bruns' clinic, and Honsell, who made the report, states distinctly that in all of them the result was negative. The arsenical application did not affect the carcinoma tissue to any extent. It is safe to affirm in.

Proposition 22: The actual cautery and chemical caustics have only a limited field of usefulness in the treatment of open inoperable carcinoma. They should never be employed in the treatment of closed carcinoma, as a substitute for the knife.

Serum Treatment.—If carcinoma is a microbic disease, the search for a healing serum must be regarded as the most logical attempt to find an effective cure. So far all efforts in this direction from Adamkiewicz carcinoma serum to Coley's fluid have proved utter failures. Coley himself does not claim much for his toxins in the treatment of carcinoma. The report on Coley's treatment, made in 1896 by Stimson, Gerster and Curtis, to the New York Surgical Society, represents the experiences and opinions of nearly every surgeon who has given the treatment an extended trial. "1. The danger of the treatment is very great. 2. The alleged successes are few and doubtful in character, and the most that can be fairly claimed for the treatment by toxins is that it may offer a slight chance of amelioration. 3. Valuable time is often lost in operable cases by pursuing the treatment. 4. The method should never be resorted to except in absolutely inoperable cases."

The writer has given this treatment a long and faithful trial in a very large number of operable cases, and has never witnessed the slightest improvement; on the other hand, it generally aggravated the local conditions and hastened the fatal termination.

Peterson made a careful study of the literature of the bacterial treatment of malignant disease, more especially of the cases treated in Czerny's clinic, and came to the conclusion that the treatment is not of the slightest use in carcinoma; that in very exceptional cases sarcoma disappears under its influence; and that the treatment itself possesses many elements of danger.

The employment of blood serum obtained from animals, goats, dogs, asses and sheep, treated by injecting carcinoma juice until the animals no longer responded, has also yielded only negative results. Six years ago this method of treatment was highly extolled by Emmerich and Scholl, and Richert-Héricourt and a number of other French surgeons. The latter reported fifty cases treated by this serum, and claimed to have observed marked improvement in the symptoms under its influence. Bruns treated five cases of carcinoma, and one of malignant lymphoma, by this method. In not a single case did the injections prove of the slightest benefit in diminishing the size of the tumor.

Rydygier made use of the Emmerich-Scholl carcinoma serum in three cases of inoperable carcinoma. Not the slightest curative effect was observed in any of them. The negative results following the different methods of serum treatment heretofore employed would speak rather against than in favor of the parasitic nature of carcinoma.

Proposition 23: The treatment of carcinoma by different sera has without any exceptions yielded only negative results.

Operative Treatment.—The operative treatment of carcinoma has undergone a decided improvement during the last decade. A better knowledge of the manner of local and regional extension of the disease has resulted in a more effective and radical technique in operations upon different organs and regions of the body. The more radical procedures are the outcome of the laborious and accurate researches of Heidenhain, who showed the way to surgeons in following the disease along the pathways of local and regional extension. He emphasized the importance of early and thorough operations. He was one of the first who, upon a scientific and anatomic basis, urged surgeons to perform more radical operations, by following the regional lymphatic channels and glands and remove them with the organ primarily affected. He insisted that local recurrences are seldom the result of traumatic inoculation, but follow in consequence of imperfect removal of the regional metastases. Every surgeon now recognizes the importance of early and radical operations. In this country Halsted was the first one who fully appreciated the teachings of Heidenhain, and accepted and applied in his practice his suggestions. In his last paper on the operative treatment of carcinoma of the breast he makes his operations more radical of late. He almost invariably removes both pectoral muscles and clears out the supraclavicular space, and says in defense of this procedure that in 34 per cent. of cases of mammary carcinoma it will be found that the disease has extended to this region. He does not consider it necessary to divide the clavicle preliminary to this

step of the operation. He begins the dissection at the junction of the internal jugular and subclavian veins, and this point is exposed by a vertical incision along the posterior border of the sterno-cleido-mastoid muscle. He now removes both pectoral muscles, and thinks it probable that he will come to remove the contents of the anterior mediastinum. Of 76 patients operated upon over three years ago, 31 are now living, without evidence of local recurrence of metastasis. Of 10 patients who died, more than three years after the operation, only one showed local recurrence. Thus, over 52 per cent. of his patients lived more than three years without either local recurrence or metastasis. This is certainly an enviable record, which it would be found difficult, if not impossible, to duplicate, and furnishes the strongest argument in favor of the most radical treatment.

Sanderson and others approve of the clearing-out of the supraclavicular space when the apex of the axilla is extensively involved, or when the supraclavicular glands are enlarged.

A. Lane advises section of the clavicle as a preliminary to clearing-out the triangle, but, as a rule, this can be done without dividing the bone. In very extensive disease of the axilla, supraclavicular space and Mohrenheim's fossa, the same author advocates amputation at the shoulder joint. He argues that in such cases the loss of the arm would in any case result from the dissemination of the disease, and death would soon follow, consequently we are justified in sacrificing the arm, because we may obtain full recovery with merely the loss of the arm. The same heroic treatment under similar conditions was recommended by Theodore McGraw in 1878, but it is doubtful if the suggestion from either of these sources will ever become an accepted practice. The same radical procedures which are now so generally practiced in the removal of a carcinomatous breast are being applied with the same thoroughness in the removal of other organs. Thus, in carcinoma of the lip, it is not generally conceded that the submental and submaxillary glands should be removed with the adipose and connective tissue in one connected piece at the same time.

As one of the modern curiosities in the modern operative treatment of carcinoma must be mentioned the suggestion first made by Beatson, to perform oöphorectomy for carcinoma of the breast. Cases have been reported by Beatson, G. E. Herman, Stanley Boyd, Watson Cheyne, and others. The results were usually only temporary, if any. Cheyne believes the operation might prove of value in young subjects. The curative effect of this operation is attributed by its advocates to the occurrence of atrophy of the gland, and fatty degeneration of its parenchyma, which conditions are established after the normal menopause, and hence would follow the anticipated menopause by the removal of the ovaries. This freak of modern surgery will not find any new advocates. The modern operative treatment of carcinoma is summed up in

PROPOSITION 24: The early and radical operative treatment in carcinoma offers the only prospect in permanently eliminating the disease.

Contra-indications to Operative Treatment.—The operative treatment of carcinoma has at the present time its well-defined limits. Many lives are lost prematurely and much additional suffering induced by indiscriminate operations for malignant disease. A radical operation is only indicated if, from the extent of the disease and the physiologic importance of the organ primarily involved, all diseased tissue can be removed without any immediate or remote danger to life. An incomplete operation invariably aggravates the local conditions and shortens life. An incalculable amount of harm has been inflicted by ignoring the importance of contra-indications to radical attempts, and many patients have succumbed prematurely to such indiscreet attempts. The surgeon has no right to cut life short by such interference simply because the patient is suffering from an incurable disease. If the general and local conditions of the patient are such as to preclude the possibility of obtaining a result warranting a radical attempt, the surgeon must be content to limit his functions to palliation and should never ignore, from a moral and professional standpoint, the significance of the time-honored adage, *nil nocere*.

Time of Recurrence.—Carcinoma statistics showing the permanency of the curative results of operative treatment are very misleading. The three-year limit is still regarded as a standard, which is certainly a great mistake. The writer has seen in a number of his cases recurrence at the site of operation six and seven years after operation, in consequence of which he has become fully convinced of what is stated in

PROPOSITION 25: The permanency of the results of the operative treatment of carcinoma can not be determined in less than ten years after the operation.

PROPOSITION 26: A radical operation for carcinoma should never be attempted unless the local conditions and general health of the patient are such as to promise an equivalent of the immediate and remote risks to life and comfort involved by the operation.

Suggestions.—If carcinoma is, as we have every reason to believe at the present time, the produce of an erratic cell proliferation beyond the limits of the influences which preside over and regulate normal tissue growth, it appears rational to search for some remedy which would affect the parenchyma of the tumor in one of two ways: 1. An agent or agencies which would destroy the epithelial cells by causing speedy and early degeneration of the imperfectly developed epithelial cells. 2. The employment of a local or general remedy or remedies possessing the power of converting embryonic into mature epithelial cells. Ligation of the principal arteries supplying the tumor tissue with blood, and the employment of sclerogenic substances have been employed for the purpose of accomplishing the first object, but so far only with indifferent results. Very little, if anything, has been accomplished in the conversion of the low type of epithelial tissue into mature tissue, that is, in transforming a carcinoma into a benign epithelioma. It is, however, not beyond the range of possibilities that future experiments and observations will open up a wide field of usefulness by the discovery of such agencies that will exert a beneficial or curative effect on the essential tumor elements by inciting degenerative processes, or by converting them into tissue of a higher, mature type; remarks which lead us to frame

PROPOSITION 27: Taking it for granted that carcinoma is the product of an erratic, planless cell growth outside of the range of the physiologic influences which preside over and regulate normal growth and tissue repair, it appears logical in the search for curative agencies to make experiments and observations with the view of finding a remedy which would destroy the tumor by causing an early and speedy degeneration of

its parenchyma, or which would possess the property of converting embryonic into mature epithelial cells, thus converting a carcinoma into a benign epithelioma.

CIRRHOSIS WITH PIGMENTATION.*

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The cases of cirrhosis of the liver with pigmentation of the skin or tissues, or of both together, constitute a small but most interesting group. There has been a great deal of speculation as to the etiology of these cases. The purpose of this paper is to present as briefly as possible the history of this form of cirrhosis, the clinical symptoms and pathology of the disease and the present views entertained concerning its etiology.

HISTORY.

Pigmentation of the skin and tissues, other than that resulting from the staining with the bile, does not occur in association with the atrophic cirrhosis of Laennec. In 49 cases of this type of cirrhosis that have been treated in the medical wards of the Johns Hopkins Hospital up to the present date, no single instance of permanent pigmentation has been observed. Of 8 cases of hypertrophic cirrhosis of the liver 1 presented a remarkable grade of bronzing of the skin. Reference may be made here to the fact that a considerable percentage of a consecutive series of livers at autopsy have been shown to contain iron-holding pigment in the liver cells and connective tissue. Thus, Lindemann[1] examined 25 livers, which practically showed no pathologic change, and found a deposition of iron-containing pigment in about two-thirds of them. Kretz,[2] on the other hand, in the examination of a much larger series, found hemosiderin in only 5 to 6 per cent. of the livers.

The forms of cirrhosis with pigmentation have been studied chiefly by German and French physicians. Previous to two years ago, when Opie[3] reported a case, there was practically no literature on the subject in English, with the exception of a brief reference to a case by Adami.[4] in 1898. The most comprehensive review of the subject has been made by Anschütz.[5]

The French physicians were the first to draw attention to the pigmentation of the skin in association with cirrhosis of the liver. In 1882, Hanot and Chauffard[6] described 2 cases of diabetes mellitus associated with hypertrophic cirrhosis of the liver and bronze-like pigmentation of the skin. The autopsy on the first case showed cirrhosis of the liver, characterized by wide bands of connective tissue. The liver cells, as well as the interlobular connective tissue, contained brown pigment granules in great quantities. The second case, which was more carefully studied, showed definite brown pigmentation of the pancreas and liver, both of which were the seat of advanced chronic interstitial inflammation, the parenchyma and connective tissue both containing masses of pigment. The stomach and duodenum were of a bluish-black color and pigment in small granules was found beneath the serosa. Four years later, Letulle reported two similar cases. In 1886, Hanot, in association with Schachmann, published a fifth case. He believed that the knowledge acquired from the study of these five cases established the existence of a new form of cirrhosis, *cirrhose pigmentaire diabètique*, and of a new clinical condition, *diabète bronzé*.

CLINICAL SYMPTOMS.

The clinical symptoms of the condition known as *diabète bronzé* are quite similar in all cases. Anschütz analyzed twenty-four cases which he had found in the literature up to 1899. The picture is one of rapidly fatal diabetes mellitus, associated with cirrhosis of the liver, usually of the hypertrophic variety. The diabetic symptoms have manifested themselves in the majority of cases within one year previous to death. Pigmentation of the skin is usually present but not constant. All the 24 cases were in males; Letulle has stated that of 30 known cases all were in men. The cases have all occurred between 30 and 60 years of age and the majority have been in the fourth and fifth decades. It has been thought that the disease is more common in France than elsewhere and the fact that 17 of the 24 cases occurred in that country would seem to support this belief. This frequency may, however, be due to the French physicians being more familiar with the condition and less likely to overlook its occurrence.

PATHOLOGY.

At autopsy the liver presents the features of a pigmentary cirrhosis. This was the type in 23 of the 24 cases. The liver was enlarged in all the cases but one. An ochre-colored pigment containing iron was present in the liver cells and connective tissue of all the cases. In 2 cases no statement was made concerning the condition of the pancreas. Of the remaining 22, all showed gross changes excepting one. In the 18 cases in which a microscopic examination was made, pigmentation of the glandular epithelium and connective tissue was present, and in 15 of the cases there was marked increase in the amount of connective tissue. The ochre-colored pigment is also present in the muscle fibers of the heart and in the lymphatic glands. The frequency of the occurrence of sclerosis of the pancreas is of importance from the standpoint of the etiology of the diabetes.

ETIOLOGY.

There has been much speculation regarding the pathogenesis of these cases of *diabète bronzé*. Hanot, Chauffard and Schachmann have held that the primary etiologic factor is the diabetes mellitus. They believe that the diabetic alteration of the blood, in association with endarteritis, which has been constant in their cases, causes a nutritional disturbance of the liver cells, with a consequent alteration of the pigment metabolism and a deposition of pigment within the cell-body. They further believe that the pigment thus formed is reabsorbed by the capillaries, and diffused possibly in the form of emboli over the entire organism. As the same form of pigment deposition takes place in other organs —e. g., the heart—as that which takes place in the liver, Letulle came to the conclusion that the pigment is formed in the cells of the various organs in which it is found, from the hemoglobin of the blood. He also holds that the diabetes is primary and thinks that the disintegration of the hemoglobin occurs under the influence of the hyperglycemia. Brault and Galliard, Hernandez, Mossé and others also consider the diabetes the primary and essential cause of the pigmentation.

Another smaller group of observers hold that the pigmentation is produced by a primary disease of the blood and that as a result of some fundamental cause

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there is an alteration of the blood and subsequent formation of pigment from the altered hemoglobin. An explanation must then be sought for the associated diabetes and cirrhosis of the liver. Marie holds that as a result of some primitive cause, there follows a dissolution of the hemoglobin, which is transformed by the protoplasm of the various body cells into pigment, which is deposited in them. This pigment in turn causes a degeneration and destruction of the containing cells and consequently a chronic interstitial inflammation of various organs, particularly the liver. He believes that bronzed diabetes is neither clinically nor pathologically the classic diabetes, but a distinct morbid entity. Acard, Dutournier, and Jeanselme support Marie's theory, and suggest that the diabetes is possibly only an accessory phenomenon which appears alone when the chronic interstitial pancreatitis reaches a certain grade.

In 1889 von Recklinghausen[7] described, under the name of "hemochromatosis," a condition of pigmentation affecting various organs. This pigmentation, he states, may be either local or general. Brown pigment, which he thinks is derived from the hemoglobin of the blood, is deposited within certain tissues and gives to them macroscopic pigmentation. Quincke, in 1877, had already described a case of diffuse pigmentation in anemia, and Tillmanns observed a case of pigmentation of the liver and lymph glands following trauma. Further, Hindenlang had described a pigmentary infiltration of the lymph glands, liver and other organs in a case of morbus maculosus Werlhofii.

The anatomical features of von Recklinghausen's hemochromatosis cases are striking. The majority of the glands of the body have a deep brown color and their secreting cells contain reddish-yellow or ochre-colored granules. The liver is usually enlarged and often enormously so, the enlargement frequently involving the left lobe to a greater extent than the right. The ochre-colored granules are contained in the parenchyma cells and in Kupffer's cells, and their presence gives the organ a brownish, slaty appearance. The pancreas is usually enlarged and shows chronic interstitial disease. The pigment has the same distribution and appearance as in the cases of diabète bronzé already described. The spleen is often very much enlarged, firm and pigmented. The skin, when pigmented, shows a deposition of pigment in the cells of the sweat glands. This pigment, so far considered, has been shown to be an iron-containing pigment. A second kind of pigment, differing from the first by its occurrence in finer granules of a pure yellow color, is found in the smooth muscle cells of the stomach and intestines, of the blood and lymph vessels and rarely in those of the urinary bladder and vas deferens. It also occurs in the connective tissue of certain localities, for example, Glisson's capsule, the splenic trabeculæ and the sheaths of blood vessels. This yellow pigment does not give the reaction characteristic of iron. Von Recklinghausen called the iron-containing pigment "hemosiderin," the iron-free pigment "hemofuchsin." He thinks that both of these pigments are derived from the hemoglobin.

Von Recklinghausen described 12 cases which he considered examples of local and general hemochromatosis. He defines hemochromatosis as a condition of pathologic pigmentation due to the deposition of pigment derived from the blood. There is a form of localized pigmentation of the intestine, caused by the deposition of fine yellow granules in the smooth muscle cells. Such cases have been described by Goebel and Hintze and must not be confused with true hemochromatosis. This pigment does not contain iron, whereas in hemochromatosis the iron-containing pigment is the most striking and characteristic feature of the disease.

Opie states that the important features of hemochromatosis are: 1. The presence in the epithelial cells of various glands, notably the liver and pancreas, of an iron-containing pigment. 2. The presence of an iron-free pigment in smooth muscle cells of the gastro-intestinal tract and of the blood vessels and lymph vessels and in certain connective tissue cells. 3. The association of cirrhosis of the liver with the pigmentation. He says that to this condition, which is apparently a distinct pathologic entity, the term hemochromatosis should be limited, even though von Recklinghausen, its originator, applied it to conditions of local pigmentation as well.

In this disease the questions which are of most interest to us are: 1, the cirrhosis of the liver and its etiology; 2, its relation to the diabète bronzé of the French. Without going into detail, it may be stated that the deposition of the pigment in the liver is now universally regarded as the exciting cause of the liver changes. This deposition leads to a degeneration and destruction of the liver cells with the eventual setting up of an interstitial hepatitis.

The relation of hemochromatosis to diabète bronzé is very close and the general opinion of the most recent observers is in favor of their being identical. According to this view, the cirrhosis is merely a question of the duration of the disease. A considerable percentage of the reported cases of hemochromatosis have developed diabetes in the late stages of the disease, at once suggesting an analogy between the two conditions. Diabetes was present in 1 of von Recklinghausen's 12 cases. It will be remembered that a small group of French writers regard the diabetes the result rather than the cause of the disease, and that the essential etiologic factor is a primary disease of the blood. This group of observers hold that the diabetes only occurs when the chronic interstitial pancreatitis, resulting from the pigment deposition, reaches a certain grade. Those who have published cases of hemochromatosis with diabetic symptoms ascribe the latter to the same cause.

Buss and Opie have reported cases which seem to bridge over the gap between the two conditions. The former reported a case of diabetes associated with cirrhosis of the liver and of the pancreas and with general hemochromatosis. He found the iron-containing and the iron-free pigment in locations corresponding with those mentioned by von Recklinghausen. There is no reason to doubt that in this case the pigmentation was identical with that of hemochromatosis, while it also presents the clinical and pathologic picture to which Hanot gave the name diabète bronzé. In Opie's case, associated with hemochromatosis, there was bronzing of the skin, cirrhosis of the liver of advanced grade, and chronic interstitial pancreatitis, but diabetes was not present. Opie states, "It is evident, then, that the generalized pigmentation of bronzed diabetes is the hemochromatosis of von Recklinghausen." It will be of great interest if the pancreas in those cases associated with diabetes will be found to show the hyaline degeneration and selerosis of the islands of Langerhans which Opie[9] has recently demonstrated in chronic interstitial pancreatitis with glycosuria and in a case of ordinary diabetes.

While Opie and others regard hemochromatosis as a distinct morbid entity, Adami and Dr. Maude Abbott[10] are not fully convinced that it is a distinct and separate disease.

Whatever the final decision as to the relationship between hemochromatosis and diabète bronzé many turn out to be, it is sufficient to say that practically all cases of cirrhosis of the liver with diffuse pigmentation of the tissues conform to one or the other of these two conditions. The cirrhosis found with pigmentation is practically always of the hypertrophic type. The liver is always firm, easily palpable and frequently the enlargement seems to involve the left lobe to a greater degree than the right. There is usually a firm, enlarged, palpable spleen associated with the cirrhosis.

Our present knowledge concerning hemochromatosis may be best stated by quoting the conclusions of Opie, which were drawn two years ago:

"1. There exists a distinct morbid entity, hemochromatosis, characterized by the widespread deposition of an iron-containing pigment in certain cells, and an associated formation of iron-free pigments in a variety of localities in which pigment is found in moderate amount under physiologic conditions.

"2. With the pigment accumulation there is degeneration and death of the containing cells and consequent interstitial inflammation, notably of the liver and pancreas, which become the seat of inflammatory changes accompanied by hypertrophy of the organ.

"3. When chronic interstitial pancreatitis has reached a certain grade of intensity, diabetes ensues and is the terminal event in the disease."

So far as I am aware, only four cases of cirrhosis of the liver with general pigmentation, or, in other words, hemochromatosis, have been reported from this country. The first was Opie's case, reported before the meeting of the Association of American Physicians in May, 1899. At the same meeting Adami, in discussion, spoke of a case to which he had referred in an article in the "Annual and Cyclopedia of Practical Medicine" for 1898, and which was later, in 1900, reported in full by Dr. Maude E. Abbott. The other two cases were reported by Osler,[11] in 1899.

Dr. Abbott's case is of especial interest, in that it is the first case of hemochromatosis that has been reported in a female. It is also of interest that none of the American cases have had glycosuria.

I shall refer briefly to Case 1 reported by Osler, as I have frequently seen the patient personally and he is still under observation. The patient is now 50 years of age and a pilot by occupation. There is nothing in his family or personal history of direct bearing on his present illness. He had used alcohol very moderately. Five years previous to the present date he had his first attack of purpura over the feet. Since that date he has had scores of these outbreaks of red blotches over the feet and legs, and recently the purpura has extended to involve the thighs. There was some swelling of the feet associated with some of these attacks. In February and October, 1897, he had severe attacks of pain between the right costal margin and iliac crest. For some time before he entered the Johns Hopkins Hospital, on May 1, 1899, the patient's friends had noticed that his face had become much darker in color and the patient himself observed that his hands were becoming darker. On examination, in May, 1899, he was a sparely built, healthy-looking man. The skin of his face was slightly bronzed. The general surface of the skin was moderately pigmented. The areolæ of the nipples and the genitalia were very much pigmented. The skin of the hands and wrists, and of the legs as high as the knees was very deeply bronzed. The liver was markedly enlarged: the edge could be distinctly felt in the median line 8 cm. below the ensiform cartilage and between 6 and 7 cm. below costal margin in the mammillary line. The surface was everywhere smooth and it was hard, firm and rounded. There was an audible friction rub over the liver on deep inspiration. The spleen was enormously enlarged, was distinctly visible and its border was palpable 6 cm. from the costal margin. The urine contained no albumin. Indican was present. The reaction for iron was also present. No sugar was found on repeated examination. Seventy-five grams of glucose were given on an empty stomach without sugar appearing in the urine. A portion of the skin of the leg was excised and Opie found the characteristic iron-containing, ochre-colored pigment granules in the cells of the sweat glands, practically demonstrating the fact that the case is one of hemochromatosis.

The patient has repeatedly returned for observation, and was examined by Dr. Osler on May 30, 1901. The same general features are still present. The bronzing of the skin had become intensified. The liver and spleen were enormously enlarged and he then had a purpuric eruption over the legs. He had been quite ill for one month and was decidedly weaker and thinner. The urine was still free from sugar. It would thus seem that if he has changes in the pancreas, of which there is little doubt, they are not sufficiently advanced to produce diabetes.

This case illustrates the long duration of the disease, which is so common in these cases. The recurring hemorrhages are of interest. This is a common symptom of the true hypertrophic cirrhosis of Hanot. Evidences of a hemorrhagic diathesis have been noted in 5 of the 24 cases of diabète bronzé collected by Anschütz. In 3 cases a moderate grade of purpura had been noted. In 1 case hematuria occurred and in 1 repeated attacks of epistaxis.

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CIRCULATORY DISTURBANCES ACCOMPANYING HEPATIC CIRRHOSIS

AND INOSCULATION OF THE PORTAL BRANCHES WITH THE SYSTEMIC VEINS.*

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In typical atrophic cirrhosis of the liver—the cirrhosis of Laennec—the most striking clinical features

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are those related to the disturbances in circulation. The obstructed portal radicals and consequent distension of the portal vein, the raising of the blood pressure in the portal vessels, the resulting congestion of the abdominal viscera, and the development of ascites are familiar manifestations. In a paper, read before this Section at the Newport meeting, in 1889, I ventured to express some views connected with this subject, which did not meet with the approval they seemed to me to deserve, and I, therefore, purpose reviving these views on this occasion.

RELATION OF PORTAL TO GENERAL CIRCULATION.

When one considers the anatomy and physiology of the portal system of veins, it is apparent that nature seeks to prevent the entrance of portal blood into the general circulation, except by passage through the liver. The inosculations of the portal with the systemic veins are normally few and small, yet these inosculations always exist, and, in some healthy individuals, are numerous and comparatively large. In my former article[1] this matter was discussed at length. Since then the subject has been fully presented by F. Tischer, San Francisco,[2] who reproduced a diagram from Henlde's "Anatomy," showing the anastomosis of the portal vein with the superior vena cava, the inferior vena cava, and the azygos veins. Admitting that such inosculations exist, the question arises, why does not the portal blood pass directly into the general circulation? As a matter of course such passage of the portal blood would occur, provided the blood pressure of the portal was higher than that of the systemic veins, a state of affairs that undoubtedly sometimes occurs in disease; but normally this does not take place, because the portal blood pressure is lower than that of the other veins of the body.

So far as I know, Lauder Brunton[3] was the first to show the low blood pressure of the portal veins. His conclusions were confirmed by the experiments of Prof. Julius Pohlman, Buffalo, who demonstrated that in dogs, both while fasting and feeding, there was much lower pressure of the portal than of the systemic veins. The pressure was increased by feeding, but it never rose to a point equal to the general venous pressure. It is thus apparent that under ordinary conditions, even when the inosculations are numerous, the portal blood fails to contaminate the general circulation.

ATROPHIC CIRRHOSIS.

In atrophic cirrhosis of the liver the situation changes, and we find a high portal blood pressure, higher even than that in the systemic veins. If proof of this statement is needed, it may be found in the visceral congestion that attends the disease; further, in the dilatation of the portal veins, and, finally, in the increase in number and caliber of the inosculating vessels. In some cases of cirrhosis of the liver the intercommunications are so complete that the visceral congestion and ascites do not develop; or, having developed, they gradually subside. Meantime we have evidence of marked dilatation of those veins that are known to carry on a collateral portal circulation. Clinically, we recognize the dilated para-umbilical vein, the hemorrhoidal vein, and the esophageal vein, besides the new vessels in the adhesions that are often found between the liver or omentum and the abdominal walls. These vessels are seen dilated even in cases in which ascites and visceral congestion continue; but all of us have observed instances where there was marked evidence of this collateral circulation and where ascites has never occurred, although postmortem, the liver is found to be in a state of advanced cirrhosis. I have had the opportunity of following a number of these cases to autopsy; in several instances death took place through perforation of a dilated esophageal vein, leading to fatal gastrorrhagia. In some of these cases there was preceding toxemia worthy of more extensive consideration than I can present in this discussion. It is interesting to note that nearly all cases of fatal gastrorrhagia depending upon hepatic cirrhosis, that have come under my observation, have been exempt from ascites, or, if ascites were present, it was only as a terminal event. While this is not a universal rule, I find that, as to the frequency of this relation, the experience of others confirms my own. In other words, in those cases going to gastric hemorrhage, there is likely to be marked dilatation of the esophageal vein, and although such dilatation exists, the blood pressure in the portal vein and its branches continues so high as to endanger the thin vessel walls. It is generally admitted that many cases of cirrhosis of the liver escape ascites throughout their course, a fact which can be explained in no other way than by the establishment of free inosculations.

I have had the opportunity of studying for years several victims of toxemia, who never have had ascites, but in whom the liver is found, by all means of physical examinations, to be extremely small. One instance is that of a professional friend, Dr. P., in whom the liver can not be discovered by palpation and scarcely by percussion. More than ten years ago he was told by the late Dr. Loomis that he had cirrhosis of the liver, and such is my own diagnosis. This man is able to escape symptoms of toxemia only by resorting to light diet, consisting chiefly of milk and vegetables, and by taking every morning Friedrichshall water. If he indulges in proteids, especially shell fish, cheese or game, or takes any food in excess, he suffers, not from symptoms of indigestion, but from lebetude, dizziness, and disturbances of the urine that indicate toxemia. This man is 55 years old, and his condition has not apparently changed during the past ten years.

A similar case was that of J. C. L., a country attorney, aged 38. He had a history of typhoid fever when 23, but in other respects had been well, save that for the past ten years he had suffered from dizziness, disturbance of appetite, heavily-coated tongue, and great languor and depression. These symptoms had been more or less constant for several years when he visited me, in 1897. The physical examination showed that his liver could not be palpated; the liver dulness extended from the sixth to the eighth rib; over the liver could be heard, on auscultation, a distinct bruit, systolic in time. The patient was instructed to exclude certain articles of diet and was given Friedrichshall water. In fact he was treated much after the method adopted for my friend, Dr. P., and with similar results. The man has consulted me again within the last month, and he states that he is perfectly free from symptoms so long as he conforms to the directions, but that if he eats ordinary foods, especially those containing proteids that have undergone some decomposition, he immediately suffers, sometimes seriously, from the old symptoms. The history of this improvement under treatment extends over three and a half years.

Another very interesting case, seen with Dr. A. L. Benedict, was that of a man past middle age, a school teacher, who had always lived most carefully, but never-

theless suffered constantly from biliousness. He was compelled to keep to a light diet and to care for his digestive tract most carefully. A clinical diagnosis of contracted liver had been made several years before, although he had never had ascites. There had been no special change in his general condition when gastrorrhagia developed and proved fatal within a few days. The postmortem—the record of which I have mislaid—revealed a classic atrophic cirrhosis, with the portal vein greatly dilated, as were the vena azygos and the esophageal vein, from which latter vessel, through a "pin-hole" opening, the hemorrhage occurred.

In all of the above cases the men were very temperate. Another case, in which ascites occurred as a terminal event, was that of Mr. G., a railway engineer, seen in consultation with Dr. John Gray. The man had drank excessively of whisky for years. For a long time he had suffered from symptoms of indigestion and toxemia, which were usually attributed to alcohol. He had a muddy skin, distended capillaries, especially those around the abdominal region; his eyes were bloodshot, he was fat, and without much muscular strength. He attended to his duties as a railway engineer until a month before his death. Soon after stopping work he developed anasarca. Two weeks before death there was ascites, which required tapping; he died somewhat suddenly as the result of profuse gastrorrhagia.

Postmortem, made by Dr. F. G. Mochlau, showed the lungs much pigmented, emphysematous, free from adhesions, somewhat edematous at the posterior portions of the base. The heart was of moderate size, there was no pericardial effusion. There were red-stained vegetations on the tricuspid leaflets; there were also some thickened nodules along the margin of the mitral valves. All the valves were competent; the heart cavities were empty. The liver was light-yellow in color, universally hobnailed and cut with great resistance; the weight of the organ was about four pounds. The portal veins were dilated, but free from thrombi. The esophageal veins were tortuous and dilated, and apparently had for a long time carried on a considerable part of the collateral circulation. The azygos veins were not examined. The stomach contained several ounces of dark, fluid blood; its mucous membrane was highly congested and pigmented. The kidneys were macroscopically in good condition.

A similar case, seen in consultation with Dr. De Lancey Rochester, was that of J. C., aged 59, a business man, who had long been an alcoholic. He had complained of indigestion, bilious attacks, lassitude, and general muscular weakness. He was found to have an extremely small liver. He was under medical treatment at intervals for several years. Shortly before his death he developed ascites, and was tapped several times during the last weeks of his life. He died as the result of gastrorrhagia.

Postmortem made by Dr. H. U. Williams, eighteen hours after death, showed rigor mortis marked, moderate emaciation. On opening the abdomen, the omentum was found adherent to the anterior abdominal wall; liver adherent to abdominal wall, above and in front; liver at sixth rib on the right; pleural cavity free, and contained about two ounces of fluid; pericardium contained three drams of fluid. The lungs crepitated well and showed some edema, otherwise not important. The heart was large, pale, supereardial fat was found normal, wall of right ventricle thin; valves normal; moderate sclerosis of coronary arteries and aorta. Spleen was large, capsule thickened, on section not remarkable. Kidneys and bladder not remarkable. The liver was deformed by the adhesions mentioned; the adhesions were marked in the neighborhood of the common bile duct. The gall-bladder contained one ounce of greenish bile; no calculi. The liver was very friable; on section it was shown to be cirrhotic and fatty. The pancreas was small, pale, fatty. The veins at the lower end of the esophagus were markedly dilated. The mucous membrane of the stomach appeared normal, its contents contained dark, reddish streaks. The ileum contained apparently fresh blood; there was no blood in the remainder of the intestines. The source of hemorrhage could not be found.

Another case, E. B., died at the Buffalo General Hospital, aged 41; the patient had been an alcoholic and died as the result of severe and repeated gastrorrhagia.

The autopsy, made by Dr. H. U. Williams twenty-four hours after death, showed rigor mortis firm; slight lividity; abdominal cavity contained a large quantity of straw-colored fluid. The omentum was adherent to the anterior abdominal wall, and the peritoneum was greatly thickened; much fibrin was present on the abdominal surfaces of the intestines. The inner muscular tissue of the abdominal wall showed edema. Fluid was found in both pleural cavities and in the pericardial sac. The heart was small, pale with normal valves; the cavities empty; the muscle pale, firm and of the usual thickness. The aorta and coronary were normal; the bronchial tubes were coated with bloody mucus; both lungs showed edema; the veins on the pleural surface of the diaphragm in the neighborhood of the esophagus, also the veins in the lower part of the esophagus and the cardiac end of the stomach were dilated and prominent. Three inches above the stomach, on the posterior aspect of the esophagus, the mucous membrane showed reddened, denuded areas the size of a lead pencil; the esophagus and the stomach were both dilated and prominent. Efforts were made to show an anastomosis between the veins of the lower part of the esophagus with the gastric veins, but these were only partially successful. The esophagus, stomach and intestines all contained blood. The liver weighed 3 pounds, 3 ounces, was coarsely lobulated and its capsule very thick. On section, the parenchyma was lobulated, and traversed by bands of fibrous tissue. The parenchyma was pale, soft, and in some places bile stained. The spleen weighed 14 ounces, with greatly thickened capsule; other organs were not remarkable. The hemorrhage was believed to have sprung from the denuded areas in the esophagus.

Another case was that of F. W. T., aged 59; a business man of high standing and strictly temperate habits. He had cholera in 1852, but otherwise had escaped sickness until six months before, when he suffered from pulmonary congestion secondary to dilatation of the heart. He had sclerosed arteries, pulmonary emphysema, an extremely small liver and a large spleen. He reported that for many years his appetite had been very slight and he had felt better when he ate sparingly. Of late his appetite further declined, and he showed evidence of marked toxemia, which was partly owing to poor elimination. The bowels were irregular, skin muddy and loaded, and the urine showed traces of albumin, containing 18.30 grams of urea in twenty-four hours and cylindroids. The man was benefited by taking Friedrichshall water, vapor baths, and a course of medical gymnastics. He was found on the floor of his bathroom in syncope, having vomited a large amount of blood. The hemorrhages were repeated during the next forty-eight hours, when he died. A rather remarkable coincidence in this case

was that the hemorrhage had been predicted, because of the marked evidence of cirrhosis, the dilatation of the superficial abdominal veins, the absence of ascites, and the presence of the toxemia. It was believed that the inosculating vessels must be much dilated, and judging from the condition of the arteries, it was assumed that the veins were becoming weak. No autopsy was permitted. Here was another case of marked cirrhosis terminating in fatal gastrorrhagia in which ascites never appeared.

It is not uncommon, as I have stated, to find cases of cirrhosis without ascites dying from various affections. In these cases it will be quite uniformly found that the communicating veins are enlarged, or that new vessels have been formed through adhesions; but ascites may be absent even without the presence of adhesions, as the following case illustrates:

Mrs. A., Buffalo General Hospital March 6, 1899. The patient was 65 years old; dead 36 hours; nutrition poor, lungs showed old disease; the pleural and pericardial cavities were dry; heart showed fatty infiltration and degeneration as proved by microscopic examination; marked sclerosis of the aorta and somewhat of the coronaries. The liver weighed 3 pounds, 13 ounces; the surface was yellow and granular; the lobules distinct; the veins of the stomach and duodenum were dilated; the spleen was enlarged, soft and dark. Other portions of the history are omitted.

In the absence of data in some of these cases it can not be proved that all suffered from toxemia, the result of inosculations; but in most of them it is so highly probable that it may be assumed.

CONCLUSIONS.

From the facts stated, I am led to conclude that the passage of the portal blood into the general circulation, without having traversed the liver, is a source of toxemia that produces definite symptoms. This view, which I propounded in 1889, was not accepted by the gentleman who did me the honor to discuss my paper, but further observation convinces me that the view is correct. We now have the opportunity for experimental proof of this explanation of toxemia in cirrhosis of the liver, in cases of epiplorrhaphy for the relief of chronic ascites, the result of hepatic cirrhosis. My attention was first called to this in a report by Mr. Rutherford Morrison,[4] in which he speaks of a "peculiar toxic condition, with sallowness and drowsiness, which sometimes followed the operation and was relieved by purgation." In other words, by lowering the portal blood pressure. In discussing this communication, Dr. Beattie stated[5] that "Such a toxic condition was known in medicine, and cited three cases where drowsiness had gone on to complete coma, and was sometimes associated with hematuria. It commonly occurred in cases of cirrhosis without ascites, where collateral circulation had been well established by a large vein of Sappey."

Besides the cases of epiplorrhaphy reported by Morrison,[5] numerous cases have been reported both in this country and abroad. A notable contribution is that made by Packard, Philadelphia,[6] with which you are all familiar, and in which reference is made especially to the toxemia that follows operation.

Another case in point is one of twenty operated upon for deviation of the blood in the portal veins, reported by B. Schiassi.[7] The patient, a young man, had suffered from cirrhosis of the liver for ten years, with constantly recurring ascites. Since the operation he has gained twelve kilograms in weight, and at present has but a few cubic centigrams of fluid in the peritoneal cavity. During the third and fourth week after the operation intense dyspnea and profuse sweating, with slight fever, appeared after eating some raw eggs. These symptoms disappeared when the diet was restricted to carbohydrates.

S. Salaskin and J. Zuleski[8] report experiments showing that in dogs in which was allowed a communication of the portal veins with the vena cava, symptoms of ammonia and carbonic acid poisoning appeared, apparently as a result of the relative inactivity of the liver. Complete extirpation of the liver leads to increase in the general content of acid in the body, as is shown by the acid increase in the urine.

Two practical conclusions may be drawn from these data. 1. The fact, to which it would seem unnecessary to call attention but for the reason that it appears to have been somewhat overlooked, that the normal blood pressure in the portal vein is low; that when it is suddenly raised it is apt to be followed by symptoms of toxemia, and that these symptoms may be promptly relieved by purgation. 2. The important conclusion that, when the vascular changes and the raised portal blood pressure that permit the passage of the portal blood into the systemic vein are brought about gradually, the subject is better able to resist the toxemia, becoming, as it were, immunized to the offending portal blood, hence symptoms are less striking, and with proper care as to diet and purgatives may be practically overcome.

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ROENTGEN RAYS IN THE TREATMENT OF DISEASES OF THE SKIN.

A REVIEW OF RECENT LITERATURE AND A PERSONAL EXPERIENCE.*

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CHICAGO.

A little over a year ago I reviewed the literature of the use of Roentgen rays in the treatment of diseases of the skin.[1] The subject is of active interest and there have been frequent contributions to it during the last year, so that I trust I am warranted in bringing the review down to the present time and adding to this a brief account of my own experience. In general it may be said that the experience of the last year has been strongly confirmatory of previously made claims for the value of the method. Recent reports have not established new fields of usefulness for the method, but they have put us in a position to appreciate more accurately the indications for it and to form a better opinion of its value.

An analysis of clinical reports and of the reports of microscopical studies of tissues affected by *x*-rays indicates broadly that this method of treatment may be of use in the following conditions: 1, in conditions where it is desired to produce an atrophy or partial atrophy

* Read before the American Dermatological Association, May 31, 1901.

1. Journal of Cutaneous and Genito-Urinary Diseases, July, 1900.

of some of the appendages of the skin, as in hypertrichosis; 2, in mycotic diseases, such as tinea tonsurans, favus and sycosis; 3, in chronic inflammatory affections, such as indurated patches of eczema and lupus erythematosus, where the purpose is to stimulate the tissues and cause absorption of inflammatory products; 4, in certain specific affections, such as lupus and epithelioma, where the purpose is to cause the destruction of tissues of low vitality.

REMOVAL OF HAIR.

As Oudin Berthelemy and Darier have shown, the effect of *x*-rays upon the epithelial structures of the skin is to increase the vitality of the least differentiated skin elements, while the differentiated elements—hair, nails and glands—undergo retrogressive changes and atrophy. It is this effect of *x*-rays that is useful for the removal of hair. Freund was the first to suggest the use of this agent for this purpose, and he and Schiff have perhaps done more in this direction than anyone else. I had the opportunity of investigating their work during the summer of 1899 in Vienna; I found that observers, who had seen their work from the beginning, had no doubt that they were able to produce permanent alopecia by their method of using *x*-rays. Their claims in this direction are being confirmed by many other observers. One of the most interesting cases of this sort was reported by Neville Wood: in this case a profuse growth of down and large hairs was removed from the chin by the use of *x*-rays, and there was no recurrence eight months after the cessation of the treatment. Startin has reported four cases in which he has successfully used this method for the removal of superfluous hairs with results that were permanent after several months. Jutassy has reported similar cases.

My own experience in the treatment of hypertrichosis by this method now extends over about a year. I have 9 cases in which treatment began not less than four months ago; 2 of these were compelled to give up treatment before results could have been expected. In the 7 other cases partial or complete alopecia has been produced. In only 1 case has the result failed to satisfy the patient. The following 2 cases have been longest under treatment and show the most striking results:

CASE 1.—Miss A., brunette, age 22, with a profuse growth of coarse black hairs from half an inch to an inch and a half long on chin and upper lip. The growth was not less than that found on many men of the same age and was very disfiguring. After twenty-seven exposures, which were given at the rate of five or six per week, some erythema and pigmentation developed and treatment was discontinued for a month, during which time these manifestations entirely disappeared and many hairs came out. Sittings were renewed until twenty-five more were given, when erythema developed and treatment was discontinued for three weeks. During this intermission there was continuous falling of the hairs. By the end of three weeks almost all the hairs on the chin had come out and a great many on the upper lip. Sittings were renewed after three weeks and twenty-four sittings were given, when considerable erythema developed. Upon the occurrence of this third reaction all of the remaining hairs came out from the lower part of the face and only a few fine hairs were left on the upper lip. Three months after the stopping of exposures the patient came back with the recurrence of a very few hairs; these were small and not conspicuous, and after nine sittings they all fell out. The last sitting was given March 28 and up to the present there has been no recurrence. The entire improvement is remarkable; the skin is white, smooth and perfectly normal in appearance, and aside from the absence of hairs her complexion is unquestionably better than it was before treatment began.



Case 1.—Fig. 1.



Case 1.—Fig. 2.

CASE 2.—Miss B., age 26, with an abundant growth of brown, coarse hairs, the longest over an inch long, on lower part of face and upper lip, greatly disfiguring an otherwise attractive face. The course in this case was very similar to that in the preceding, except that results were produced with less difficulty, and only slight erythema was ever produced. Sixty-seven sittings in all were required to cause entire removal of the hairs, and there is no recurrence up to the present. The patient's skin is in good condition, and shows similar improvement in appearance to that observed in the first case.

These two are, with one exception, the most exaggerated cases of hypertriehosis that I have treated. In four of my cases the course has been somewhat different from that outlined above. In these, there has not been a rapid fall of hairs at one time, but they have gradually fallen out week after week until the number remaining is very few, without complete alopecia. While the results in these cases are not so striking to report, they have been equally as satisfactory to the patients. The falling of the hairs has been very like a rapidly progressing alopecia from natural causes. In two cases, sisters, the result has been attained with more difficulty, owing to the appearance of a slight dermatitis, which was very slow to disappear. In one of these cases the erythema and pigmentation lasted four months. It was, however, only slight and not sufficient to cause the patient any annoyance. During this time there was constant but gradual thinning of the hairs, so that the patient to-day, while still showing a good many lanugo hairs, has no coarse or long hairs left.

I have found that it takes a greater number of sittings to cause outfall of the hairs than Schiff and Freund and other observers report, but this may be due to the fact that I have pursued the treatment with great caution. The time required for the removal of the hairs the first time has varied, in my cases, from twenty to sixty-six sittings; the removal of recurrent hairs has required from five to fifteen sittings. According to the observations of Schiff and Freund, recurrence of a few hairs must be expected at intervals of from four weeks to several months, until a year and a half has passed; these hairs must be removed as they recur. In none of my cases has sufficient time elapsed to justify an opinion as to the permanency of the result, but in the length of time that the hairs remain away after their removal and the ease with which the recurrent hairs are removed, my experience confirms the claims of Schiff and Freund.

In no case, except the first one detailed above, has any considerable dermatitis developed. The cases usually show slight erythema or pigmentation after three or four weeks of daily sittings, and then in a few days the hairs begin to come out. If treatment is stopped at the first appearance of these symptoms the erythema rapidly disappears; the pigmentation is somewhat slower to disappear. My experience in treating hypertrichosis indicates, contrary to the statements of some observers, that with all the factors that determine the strength of the light the same individuals vary considerably in their reaction to the rays. I have been able to cause falling of the hair in some cases by as few as twenty exposures; in another case it required sixty-six exposures. In some cases erythema appears without pigmentation; in others erythema and pigmentation appear together, and in different cases the relative degree of erythema and pigmentation varies. In a recent case the course of treatment has been complicated by the early appearance of very considerable pigmentation, which has proved very slow to disappear. In my experience the reaction of different individuals to *x*-rays is very similar to their reaction to sunlight. Skins which burn rather than tan under sunlight develop erythema rather than pigmentation under exposures to *x*-rays, and skins which tan without burning show greater pigmentation under *x*-rays. In some cases the hairs fall rapidly upon the occurrence of erythema or pigmentation; in others they come out slowly for weeks after the production of these symptoms and the stopping of treatment.

It is not to be lost sight of that atrophy of the other appendages of the skin occurs to a greater or less degree along with the atrophy of the hair follicles, and it is conceivable that this might produce an injurious effect upon the skin. In the cases which I have treated the action of the rays upon the skin has caused distinct improvement in its appearance. In all of my cases, after the disappearance of the erythema and pigmentation, the skin of the parts treated has been left smooth and soft, of good color and healthy appearance. Some of these cases have had slight acne and following exposures the acne and the comedones have disappeared. During the existence of the erythema the affected areas have shown increased sensitiveness to local irritation, particularly to exposure to cold winds, but after the disappearance of the erythema the skin has shown no lowered resistance. The increased sensitiveness to cold has disappeared and the areas treated have shown themselves to be quite as tolerant of local irritants as other parts.

ACNE.

The fact that the sebaceous and sweat glands are similarly, though to a less degree than the hair follicles, affected by the *x*-rays suggests the possibility of the use of them for the treatment of disorders of these glands, and a number of favorable reports of the treatment of acne by this method have been published. Upon theoretical grounds there is good reason to believe that this method has a field of usefulness in treating acne. There is another property of the rays, in addition to the property of causing atrophy of the appendages of the skin, that probably comes into play in treating acne, and that is the property of inhibiting the formation of pus. This property of the rays will be referred to again in considering Zechmeister's case of sycosis parasitica treated by this method. Whether the rays have any bactericidal properties or not—a point which seems still open to question—there can be no doubt as to the inhibitory influence of *x*-rays upon the formation of pus in the skin.

HYPERIDROSIS.

The effects of *x*-rays are perhaps less upon the sweat glands than upon either the hair follicles or the sebaceous glands. There seems to be, however, some theoretical ground for believing that the method may be useful in local forms of hyperidrosis. So far as I know, no one has suggested the use of the rays in these cases. I have not tried the experiment myself, but believe there is sufficient ground to warrant its trial in intractable cases of hyperidrosis, as, for example, of the axillæ or of the feet.

TINEA TONSURANS AND FAVUS.

In tinea tonsurans and favus the use of *x*-rays has been highly recommended by Schiff and Freund, who report rapid cures of these conditions by this method. I know of no reports upon the subject within the year.



Case 2.—Fig. 3.



Case 2.—Fig. 4.





Case 4.—Fig. 5.



Case 4.—Fig. 7.

SYCOSIS.

The use of *x*-rays in the treatment of sycosis was first suggested by Schiff and Freund. I had the opportunity of observing some of their cases in Vienna two years ago, and I believe that in cases of deep-seated parasitic sycosis there is no other method of treatment that compares with this. Other observers are confirming the results obtained by Schiff and Freund in the treatment of this disease. Gassman and Schenkel have reported, to use their own words, "an unquestionably favorable result" in a case of non-parasitic sycosis. Zechmeister has given a careful report of a successful case treated by this method. This was a case of deep-seated parasitic sycosis of two years' standing in spite of persistent treatment in which the disease disappeared entirely within a month under *x*-ray exposures. Without the use of antiseptics the pustules rapidly dried up, and the subcutaneous abscesses disappeared without incision. There can be no question that in the use of *x*-rays we have a most valuable method of treating this very intractable affection.

LUPUS ERYTHEMATOSUS.

The utilization of this method in treating chronic inflammatory affections of the skin has been confined chiefly to the treatment of eczema and lupus erythematosus. Schiff, Jutassy, and Hall Edwards have reported cases of lupus erythematosus treated by this method. Improvement and even cures are reported, but in a disease so uncertain in its course as lupus erythematosus, conclusions as to the value of any method of treatment must be very carefully drawn. The efficacy of this method in the treatment of this condition requires for its determination a much larger experience. It is recommended by theoretical considerations.

ECZEMA.

Favorable results in the treatment of eczema have been reported by a number of observers, among them, Jutassy, Holland, Mackay and Hahn and Albers-Schoenberg. Practically the same may be said of the treatment of eczema by *x*-rays as was said of the treatment of lupus erythematosus. I see no reason to change the opinion which I ventured a year ago, viz., that the cases of eczema, in which this method of treatment seems to have a field of usefulness, are those with very intractable, circumscribed patches of eczema, in which there is necessity for marked stimulation of the skin in order to get absorption of the inflammatory products.

LUPUS VULGARIS.

The reports of last year upon the treatment of lupus vulgaris with *x*-rays strongly confirm the previous claims for its value. Cases have been reported by Jutassy (1 case), Gassman and Schenkel (4 cases), Hall Edwards (2 cases), Scholefield (1 case), Knox (1 case), and 1 case by the writer. Knox's is the second case reported in the United States, the first case having been reported by Jones, San Francisco, two years ago. My first case was reported two weeks later than Knox's. There can be no question as to the accuracy of the diagnosis in all of these cases. The length of time that they have been well varies from a few weeks to two and a half years. Among Gassman and Schenkel's 4 cases, 2 cases had relapses, 1 at six, the other at seven months after stopping exposures, but that so mischievous a disease as lupus should recur in rare instances after any method of treatment is hardly surprising.

I have treated three cases of lupus vulgaris by this method. The condition of Case 1, at the beginning and at the end of treatment, is shown in the accompanying portraits (Figs. 1 and 2).[2] The last exposure given to this patient was on Jan. 12, 1901. The patient remains well at the present time with perfectly healthy scars. I will exhibit her at our clinical meeting.

Case 2.—Girl, age 18, referred to me by Dr. A. J. Ochsner, with a diagnosis of lupus, for treatment with *x*-rays. It was a typical lupus of the nose involving tip, alæ and septum. The disease began four years ago on the tip of the nose and gradually spread to its present extent in spite of persistent treatment. The patient had been under Dr. Ochsner's treatment for two and a half months and during this time the condition had greatly improved. The photograph herewith presented (Fig. 3) shows very well the condition at the time she came under my care. The entire tip of the nose and alæ were a mass of reddish-brown, soft, friable, apple-jelly, lupous tissue. The middle half of the upper lip was covered by similar tissue, some of which was ulcerating, and scarred. The disease had also involved the mucous membrane of the nasal orifices and septum. Exposures were begun on October 1, and were given almost daily until December 20.

With the exception of a reddening, sharply confined to the lupous area, which occurred after thirty sittings, there was no change in the condition until the middle of December, when considerable redness developed in the lupous tissue and slight redness in the surrounding healthy part which had been exposed. As the lesions had proven quite intractable, exposures were continued until ten more were given. On December 20, after sixty-four exposures, treatment was stopped on account of dermatitis and tenderness of the exposed surfaces; on December 28, without further exposures, a not very tense bulla, the size of a thumb-nail, developed on the tip of the nose, where the effect of the light had been greatest. This was accompanied by tenderness and slight pain. Within a week most of the dermatitis subsided, the bulla ruptured, and at its site there showed a very superficial ulceration. This bled easily, was quite painless after a few days, and was covered with a superficial necrotic membrane. Its borders rapidly contracted, and on January 20 it had entirely healed. With the healing of this surface almost all traces of lupus disappeared. There was left only a small suspicious area, the size of a little finger-nail, on the right ala; to remove this, exposures were given, at from one to two day intervals, during February and March. After thirty sittings this spot on the ala of the nose became red and swollen, and these manifestations were quickly followed by a very remarkable softening of the lesion, so that it felt as soft as a flaccid bulla, without, however, any suspicion of a separation of the epidermis occurring. This redness and softening was quickly followed by the disappearance of the last suspicious area. From the beginning of treatment up to the time of the disappearance of the last lesion, March 16, 1901, she had ninety-five sittings, extending over a period of six months. Since the disappearance of the last lesion she has had irregular exposures simply as a precaution. She has been for two months free from any evidence of the disease. The condition at present is shown in the accompanying photograph (Fig. 4), and I will exhibit the patient at our clinical meeting.

The results, from a cosmetic standpoint, is, I believe, as perfect as can possibly be expected. There is some diminution in the size of the nose, but aside from this there is no deformity. There is entire absence of scarring in all of the areas treated by this method; the only scars are those on the upper lip resulting from ulcers which healed before this treatment was begun. The skin is soft, pliable and natural in appearance. I do not believe that as good a result as this is possible under any other method of treatment, except Finsen's. The only local treatment that this patient had was boric acid vaselin applied to the tip of the nose during the time it was inflamed by *x*-rays. She had no internal treatment whatever.

Case 3.—Woman, age 41; occupation, trained nurse, with lupus of the face of twenty-five years' duration. This is a very extensive lupus, which has had vigorous treatment for many years. Two and a half years ago, an attempt was made at extirpation of the disease surgically, with restoration of

2. This case was reported in The Journal A. M. A., Dec. 8, 1900, and the reader is referred thereto for a full history of the case.

the face by plastic operations. The disease promptly recurred. This patient has been under my care for six months. The transplanted tissue has proven very irritable to *x*-rays, so that it has been impossible to give her vigorous treatment.

There is considerable improvement in the condition, but the disease is by no means cured, and I present the case only that my report may be complete.

CARCINOMA.

The most interesting development of the last year in the use of *x*-rays has been in the treatment of cutaneous carcinoma. There are reports of favorable results previously, but the accumulation of evidence in favor of the treatment by *x*-rays has taken place within the last year. Cases have been reported by Stenbeck (1 case), Johnson and Merrill (6 cases), Sequeira, London Hospital (12 cases), Smith (1 case). In practically all of these cases the diagnosis is beyond question. In most of them confirmatory, histological diagnosis was made. The results are not in all cases cures, but in all cases there is unmistakable evidence of the beneficial influence of the rays. Stenbeck's case is a cure of a rodent ulcer of the nose. Everett Smith's case is similar. Of Johnson and Merrill's cases, three epitheliomas of the nose are entirely cured, as far as can be determined in the time that has elapsed. One epithelioma was not entirely cured, but showed great improvement. One recurrent carcinoma of the breast had, after four weeks, shown an improvement in the patient's health and disappearance of pain. One case stopped treatment after a very few exposures. Of Sequeira's twelve cases, three cases were apparently cured; these cases have been demonstrated before the London Dermatological Society. The other nine cases were still under treatment and showed more or less improvement, according to the length of time treated. Williams, Boston, has reported favorable results in epitheliomas treated by this method, including a report of one case which is apparently cured.

I have treated one epithelioma by this method:

CASE 4.—Mrs. C., age 68, with the following history, most of which is taken from the records of St. Luke's Hospital. About twenty years ago a wart appeared in the right supraclavicular space and gradually increased in size. Three years after its appearance the surface broke down and an ulcer developed, which, after two years' duration, was excised by a well-known Chicago surgeon.

The disease recurred in the upper angle of the scar and enlarged until 1894, when she came to St. Luke's Hospital. It was then the most extensive epithelioma I have ever seen, covering almost the entire upper third of the back, and extending over the right shoulder to the clavicle. I fortunately photographed her at that time.

During 1894-5 she was in St. Luke's Hospital, in the services of Drs. John E. Owen and L. L. McArthur, where vigorous attempts were made to extirpate the diseased tissue. A large part of the tumor was destroyed and extensive grafts were made, so that the diseased area over the back was converted into scar tissue, which has remained healthy until the present. The area over the right shoulder, from the spine of the scapula behind, to a point below the clavicle in front, an area covering the entire upper surface of the shoulder, was not cured.

From that time until this winter she has been more or less constantly an out-patient at St. Luke's and for two years past it has not been thought feasible to make any further attempt at extirpation of the growth. The extent of the growth, at the time she presented herself for treatment with *x*-rays, is shown in the photograph (Fig. 5) presented herewith. As shown in the photograph, the disease involved the greater part of the area over the right shoulder. The largest lesion was situated at the juncture of the neck and shoulder, and consisted of three confluent ulcers, forming in all an ulcer with a diameter of about three inches. This was a typical epitheliomatous ulcer with elevated, rolled, hard, pearly borders. In addition, there were perhaps twenty other epitheliomatous ulcers, varying in size from a finger-nail to a small pea, located around and posterior to the large ulcer. Extending down over the front of the shoulder was a triangular space with the apex below the clavicle, which contained numerous small epitheliomas. Some of these were ulcerating, but most of them were intact nodules.

All of the tissue of the affected area was inflamed and indurated. There was no evidence of involvement of contiguous glands or of the underlying tissue. There was free discharge from the ulcers and for many years the patient had suffered severe pain. Tissue for examination was excised from the border of the large ulcer and sections of this are presented to-day. [Only one illustration is given here, namely, Fig. 6, the central photomicrograph of the insert.] The tissue presents the typical histological picture of superficial epithelioma (Fig. 6). The tissue has also been examined for blastomycetes, which were absent.

Through the courtesy of Dr. Porter, who was an interne at St. Luke's during her residence there, I am able to show a section that was made seven years ago. This section also shows characteristic epithelioma.

The patient was put under exposures to *x*-rays on Jan. 15, 1901, and had almost daily sittings until February 14, eighteen in all. Within a week the discharge from the ulcers almost entirely ceased, and the patient volunteered the statement that her shoulder was free from pain and that she was able to sleep comfortably for the first time in many years. Since this first week there has been practically no discharge from the ulcers, and almost no recurrence of pain. The disappearance of the discharge was the more interesting because before the patient came under treatment with *x*-rays she had been a regular attendant at St. Luke's Hospital out-patient department, where her shoulder had been dressed as often as necessary.

On February 4 the ulcers were decreasing rapidly in size, and, what was more significant, the rolled edges were shrinking. On that date, the patient was hurt by a fall and was not able to appear for further exposures until March 13. In the interval she was in the Charity Hospital, where, at my request, the physicians kindly saw that no change in the local treatment was made from my application of boric acid vaselin.

She returned for treatment on March 13, and from March 13 to May 4 she had twenty sittings, varying from daily sittings to sittings at intervals of from four to five days. By April 5, the evidences of epithelioma were limited to a small ulcer not larger than a little finger-nail at the site of the previous large ulcer, and to two rows of very characteristic nodules in the supraclavicular space.

Up to this time the exposures had always been made so that the greatest intensity of light fell on the shoulder, and the lesions over the clavicle, therefore, had received less of the rays. After April 5 the upper surface of the shoulder, which had been getting exposures of fifteen minutes, was given exposures of five minutes, and the lesions over the clavicle were given direct exposure of fifteen minutes. Within five days after beginning these exposures over the nodules in the supraclavicular space a very remarkable change was noticed in them. They began to shrink and to disappear rapidly.

By April 16, that is, after ten direct exposures of fifteen minutes each, these nodules had entirely disappeared. They were absorbed and disappeared, leaving no trace of their existence, without dermatitis or any breaking-down occurring. Sittings were discontinued on April 16, as the shoulder showed slight dermatitis.

By April 29 this irritation had entirely disappeared. Between April 29 and May 8 the small ulcer on the upper surface of the shoulder, the last trace of epithelioma, entirely healed. Her condition at present, and since May 6, is shown by the photograph (Fig. 7).[3]

I particularly call attention to the character of the scars. They are called scars for lack of a better term, but there is hardly any evidence of scar tissue. The skin is smooth and soft without contractures and shows practically no trace of the previous ulcers. Whether this case is a cure or not time can only determine. There is no evidence of epithelioma remaining and, as far as can be told in the length of time that has elapsed, the case is cured. Regardless of the possibility

3. All the patients whose photographs are shown were presented at the clinical meeting of the American Dermatological Association. All of them remain well at present, Sept. 1.

of recurrence, I believe the result may still be called remarkable.

The only local treatment which the patient received while undergoing this treatment was the application of a cloth covered with vaselin containing one dram of boric acid to the ounce, and the occasional wiping of the surface with cotton sponges wrung out of a bichlorid solution. There has been no care exercised to keep the surface free from contamination with pus organisms and in spite of conditions most favorable to infection the ulcers remained clean and almost entirely free from discharge. The only internal medication which the patient had was compound syrup of hypophosphites during the month of April, when she was much depressed from chronic bronchitis.

I have also treated, by this method, a recurrent carcinoma of the breast. This case was only undertaken after further surgical intervention had been refused by her surgeon, a man of well-known standing. This patient remained under treatment four weeks. There was, in her opinion, a lessening of the pain and she certainly improved in her general health, but there was no perceptible effect upon the tumor, and, as the patient was compelled to be away from her family in order to have the treatment, at my suggestion, the treatment was not carried further. It seems hardly to be expected that the method should be of service in inoperable carcinomas of the breast, with their extensive metastases, nevertheless the method deserves a trial even in these desperate cases. In this connection it is not to be forgotten that Williams has reported a case of epithelioma of the lower lip, treated with *x*-rays, in which the enlarged gland, under the inferior maxilla, disappeared after the lip was healed.

Dr. T. A. Davis has suggested to me the use of *x*-ray exposures after removal of carcinomas of the breast as a means of preventing recurrence of the disease. With the facts before us as to the destructive influence of *x*-rays upon carcinomatous tissue, this ingenious suggestion is worthy of trial, not only after removal of carcinomas of the breast, but also after removal of carcinomas in other superficial locations.

In my cases I have followed the technique suggested by Schiff and Freund, and it meets all of the requirements of accuracy and safety. This technique has been described in my previous article. Of course, the application of *x*-rays, whether for the removal of hair or for other conditions, must be made with great caution. To this end it is necessary that all of the factors involved in producing the light be definite and that there be repeated exposures to a weak light, the effects of which may be controlled, rather than the use of a strong light for a few exposures. The treatment should be interrupted at the first indication of reaction. The work should not be undertaken with static machines or with the ordinary apparatus used for diagnostic purposes.

The question of the effects produced upon tissue by *x*-rays, and of the factors in the rays which produce these effects, I considered in my previous article and I shall not take time to go into a full consideration of these again. I will venture the opinion that the reasons are constantly becoming stronger for believing that the effects of *x*-rays are due to the peculiar stimulation of the tissues which they cause, and not to any strong bactericidal effects in the rays themselves. As to the active factor in the rays, I repeat, with increasing assurance, the opinion offered a year ago, that the essential factor is something in the rays themselves and not, as has been suggested, some incident of their production, like ozone, or brush discharges, or induced electrical currents in the tissues, or particles of platinum carried off from the anticathode. As Prof. Elihu Thompson expresses it, in discussing some experiments on the point, "There is only the supposition left that the effect was produced by Roentgen rays or something that comes with the rays." The lesser degrees of *x*-ray burns resemble sunburns more closely than any other pathological process, and there seems to be no good reason for not believing that the effects of *x*-rays on the tissues are due to the actinic rays of the *x*-rays, just as sunburn is due to the actinic rays of sunlight. That certain of the *x*-rays are strikingly similar in their actinic properties to the rays of light at the violet end of the spectrum is shown by their similar effect on photographic plates. And it is no violence to the reason to suppose that the same actinic properties of the *x*-rays that cause rearrangement of molecules and the formation of new salts on photographic plates can exercise a similar power on the molecular arrangement of tissue cells and influence their metabolism. I am more fully convinced than ever that the active rays among the *x*-rays are identical, or at least so similar in all of their properties as to be practically identical, with the rays at and beyond the violet end of the spectrum. If this is true this method of treatment is identical in principle with that of Finsen, and I am willing to record myself as holding the opinion that such is the case.

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CONGENITAL CYSTIC KIDNEY.*

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In accepting the opportunity kindly offered me by the Chairman of this Section to present the clinical history of a case of unilateral cystic kidney in a child of 4 months and 14 days, I am actuated by the hope that the rarity of the condition, at least as far as I am able to determine, may elicit a degree of interest which would otherwise not be merited by the report.

The salient points in the case, briefly stated, are the following: The child, Freda W., female, born July 13, was the second child of German-American parents; from the time of birth until 2 or 3 days prior to securing this history she was seemingly possessed of perfect health. November 27, Dr. Stidworthy was called to see the child on account of vomiting and constipation, no evacuation of the bowels having occurred for nearly 48 hours.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

On the evening of Nov. 29, 1900, I was requested by Dr. Stidworthy to see the child with him, and found her to be well nourished, presenting all the appearances of having been possessed of a normal degree of health. The rectal temperature was 101 4/5, pulse 164, respiration hurried and embarrassed. It had been vomiting some, and no movements of the bowels had occurred for nearly 4 days, despite the fact that laxatives in generous doses had been administered repeatedly. The mother thought that the diaper had been wet about as usual.

Examination of the child's abdomen showed that it was immensely, and apparently uniformly, distended, the integument tightly stretched and glistening; the umbilicus protruded and was surrounded by an area of active hyperemia, as if the structures were the seat of an infective inflammation. This area was about two inches in diameter.

Palpation revealed the presence of a circumscribed collection of liquid in the abdomen, seemingly confined mostly to the right side. Percussion showed dulness over the whole abdominal area, except in the left hypochondriac, lumbar, and inguinal regions, backwards from about midway between the mammary and axillary lines.

I was under the impression that I had to deal with an accumulation of liquid within the remains of an imperfectly occluded urachus or vitello-intestinal duct, being inclined to the former opinion. The febrile condition present, as well as the area of inflammation about the umbilicus, led me to suspect the presence of an infection from some source. It did not seem that the intra-abdominal tension was sufficient to cause the inflammation mentioned. In order to determine the character of the fluid, I removed a small quantity by aspiration, through a point about one and one-half inches below the umbilicus, in the middle line. It was found to be a liquid of a light amber color. It occurred to me that possibly the vesical end of the urachus remained patent, and that this fluid was urine. I therefore emptied the bladder by means of a grooved director, not having on hand a catheter which could be passed.

The urine, as well as the liquid removed by aspiration, were then tested for albumin. The urine was found to contain none, while the aspirated liquid nearly solidified into a starchy-looking or colloid material on boiling, with nothing to indicate that the liquid was the product of renal excretion. It was now apparent that there was present one of the following conditions: An ovarian cyst; cystic kidney; cyst of the liver or pancreas; distention cyst of the gall-bladder, or distention of lesser peritoneal cavity, through closure of foramen of Winslow.

It was impossible to determine what intra-abdominal structure was giving rise to the cyst, yet I inclined to the belief that it had its origin from the kidney or ovary. The child's condition being precarious, and relief being necessary, it was decided to do a celiotomy and remove the cyst, if possible. Accordingly, the child was taken to the St. Joseph Mercy Hospital the following day, when, under chloroform anesthesia, the above views were carried out. The primary incision through the abdominal parieties was about one and one-half inches in length, and in the middle line, the upper end of the wound being about half an inch below the umbilicus. It was subsequently extended upward for nearly another inch. The primary opening in the abdominal parieties exposed the cyst wall, which was found to be adherent to the abdominal wall over an area of probably three or four inches in diameter about the umbilicus and to the right of it. This adhesion was separated, however, without much difficulty, but the cyst filled the abdominal cavity so thoroughly that its origin could not be determined.

The cyst was now opened between the grasp of two pair of hemostat forceps and partially emptied of its contents. Exploration of its surroundings showed its origin to be from the upper part of the abdominal cavity on the right side, and my diagnosis was that of a cystic kidney. The uterus and ovaries could be felt in their normal position. I re-introduced my finger into the sac to determine its exact point of attachment. The expanded portion of the kidney structure proper was found to lie under the liver, and its margins came so far forward that it quite covered the liver; I was, for a moment, in doubt as to the correctness of my diagnosis, fearing that I might be dealing with a cyst of the liver or a distended gall-bladder, and it was only after I had sought the liver and determined its normality that I was satisfied.

Thus, even after the abdomen was opened, the diagnosis of a cystic kidney was only problematic, and it was only after the other structures, from which the cyst might have arisen, were examined and found to be normal that the diagnosis could be verified.

As a detailed description of the steps in the operation are probably of little interest we will omit them, only stating that the time of the operation was fourteen minutes and that the child made a rapid recovery without any untoward symptoms and has since seemingly been enjoying the best of health.

Medical literature acquaints us with the fact that prenatal development of cystic kidney, while rare, is not an unknown condition. It at times reaches a degree of development which precludes a normal birth, evisceration having in some instances been found necessary before delivery could be accomplished. A large per cent. of children who survive birth are presumed to succumb early to the effects of pressure, as in the embarrassment of respiration induced by the limitation of diaphragmatic movement, or in the disturbance of the functions of the intra-abdominal viscera; while toxemia, resulting from inadequate renal function, is another potent factor in the early demise of these patients.

In cases where the size of the affected organ or organs, or the limitation of functionable renal structure is not extreme, the condition may not be incompatible with life, and it is believed that a small per cent. of such patients may reach adult years, or even old age. That is, providing that the condition remains latent and no intercurrent malady leads to an overworking of the remaining renal parenchyma.

It would appear that, while congenital cystic kidney may involve one organ, yet it is found to involve both organs in most instances, and associated with the condition there not infrequently may exist other malformations, namely, a horseshoe kidney or abnormally placed kidneys, or kidneys without pelves or ureters—hydrocephalus and hydrencephalus also existing. Cysts of the liver at times may co-exist. Instances are recorded of a mother having successively or interruptedly given birth to several children with cystic kidney.

Cystic kidney has had its cause ascribed to various factors by different investigators. Dr. Hektoen[1] concludes, after an exhaustive study of the subject, that the theories divide themselves into the following three sets: 1, retention; 2, cyst-adenomatous, and 3, teratological.

1. Chicago Med. Record, September, 1892.

1. The theory of retention and dilatation, resulting in the formation of cysts, is based upon the study of a number of cases of cystic kidney in the old as well as in the newborn, in which there were actually demonstrated various causes of obstruction in the uriniferous tubules at the papillæ or elsewhere in their course. Mere mention of the various possible modes of obstruction suggested, but not demonstrated, will be enough; occlusion by the impaction of fibrinous casts, desquamated epithelium, blood, precipitated salts, etc. Virchow assumes a papillary atresia, or stenosis, due to a fetal inflammation, in order to explain the congenital cystic kidney. Complete obliteration, or absence of the pelvis, is mentioned by Thorn, Sutton, and others as capable of causing cystic kidney. Ewald, in briefly reviewing the literature on the etiology, states that many authors believe that chronic interstitial nephritis, with desquamation and impaction of epithelial cells or strangulation of the tubules by connective tissue, may cause cystic kidneys in some cases; the peculiarities, which would determine the instances in which total cystic degeneration and not merely small cortical cysts should take place, are not described.

2. The cyst-adenomatous theory is based upon the demonstration, in cases of cystic kidney, of the appearances characteristic of adenomata. In these cases the chronic interstitial changes are usually held to be secondary, although Sabourin concludes his study as follows: "Renal cysts in cirrhosis develop from tubules whose epithelium is reduced to an indifferent state; by fusion, cysts are formed, which merit the name of adenoma." Hommey, Lejars, Cornil et Brault, Brigidi, Sevin and Phillipson adopt the same view.

3. Theoretically, the kidney should be the organ of all others able to furnish instances of the teratoid origin of tumors from persistent embryonic rudiments, but few renal growths have been regarded from this point of view. S. G. Shattock concludes that the congenital cystic kidney is formed by a combination of the meso- and meta-nephros, the remnants of the Wolffian body developing into cysts scattered through the proper renal tissue; the tension upon the intertubular tissue by the enlarging cysts might cause the interstitial changes; the presence of urinary constituents in the cysts does not mean, according to Shattock, that they originate from the kidney proper, because the meso-nephros in the fishes and the amphibia perform the function of the permanent mammalian kidney. Bland Sutton adopts and advances this view enthusiastically. He says that the microscopical appearances of a congenital cystic kidney and of the meso-nephros at its fullest development, the sixth week, agree completely.

Dr. Hektoen's own conclusions are:

1. The common cystic kidney in the old is best explained as due to retention caused by a chronic interstitial inflammation of the pyramids, and the medullary rays especially, as well as of the labyrinthine structure of the cortex. The epithelial lining of the cysts is entirely passive and often absent. There is no epithelial proliferation and new cysts formation demonstrable. A congenital or adenomatous origin for the cysts can only be inferred and not demonstrated. The etiology of the chronic inflammation is obscure in many cases; in others it may be referred to an ascending pyelopapillitis from calculi or to the same causes that produce the ordinary chronic interstitial nephritis.

2. Cystic kidneys, presenting a proliferating epithelial lining, with evidences of new cyst formation by budding from the old cysts or from uriniferous tubules, are plainly instances of renal cyst-adenomata.

Reasoning by analogy from other organs in the body, occasionally the seat of cystic adenomata, it would be expected that this variety of cystic kidney would most frequently be unilateral.

3. Congenital cystic kidney, without any demonstrable cause for obstruction and urinary retention in the tubules and presenting the structure characteristic of the meso-nephros, as described by Shattock and Sutton, is most reasonably to be regarded as coming from misplaced meso-nephrotic remnants. To look upon all cystic kidneys as congenital cannot be considered proper in view of the instances cited of cysts developing directly as the result of compression of the tubules and the papillæ by fibrous tissue, and cystic adenoma of the kidney can occur at any time of life.

The etiology of the case which I have presented is in doubt, I having been unable to fix upon any definite factor for its production. However, I am of the opinion that its cause must have been an occluded ureter, or even an absence of it, for I have not been able to find it. If a ureter did exist and was subsequently occluded the cause and whether this condition developed prenatal or postnatal must remain an open question.

The points of interest which are presented by this case are the following:

1. It involved only one kidney, and the fact that it developed to such a degree without leading to serious disturbances till occasioned by its encroachment upon the gastro-intestinal tract, through pressure, was of interest. However, involvement of one kidney can not be considered remarkable if my conception of its production be correct, namely, an occlusion or absence of its ureter; for then it would be likely to involve but one kidney, and with one normal kidney the excretory functions of those structures were no doubt properly carried on by the healthy one, thus leaving the child's general condition normal, except for the disturbances from the pressure.

2. The difficulties in the way of arriving at anything but a problematic diagnosis prior to direct inspection of the growth, it seems to me, are quite insurmountable; and even inspection of the growth does not lead to a positive diagnosis, till all structures from which a more or less similar condition might arise are examined as to their normality, and a diagnosis being thus arrived at by exclusion. An organ thus distended no longer possesses any recognizable characteristics of its former self.

3. The case is further illustrative of the capability of children to endure what may be considered capital operations, provided that precautions are exercised in reducing to a minimum the period of anesthesia and operation, as well as the loss of blood. As nearly as I am able to learn from records which I have, this is the youngest child that has survived a nephrectomy. Dr. Roswell Park,[2] some years ago, having done a nephrectomy for congenital cystic kidney upon a child aged 23 months, with resulting recovery. Up to that time this was the youngest child that had recovered. Since that time Rovsing[3] has operated upon a child 9 months old for congenital hydronephrosis, with recovery.

GONORRHEA IN BOYS.*

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Of late the number of cases of gonorrhea in boys has been so large in some quarters that it has attracted more than passing notice, both as to the cause of their occurrence and to their general behavior and treatment. Within the past two years, twenty-two cases have come under my supervision, in patients ranging in age from 18 months to 12 years.

For purposes of scientific accuracy, the secretions were stained by the Gram method, and examined for

2. Surgery by Am. Authors, vol. i, p. 432.
3. International Text-Book of Surgery, vol. ii, p. 596.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

the Neisser gonococcus, and in each case, without a question of doubt, the specific germ was found. In addition to the evidence furnished by the microscope, the clinical symptoms were carefully noted, and, when combined with the microscopic testimony, left no room for doubt as to the true nature of the infection.

It is commonly maintained that the source of infection, in the majority of juvenile cases, can be traced to the using of soiled linen, or infected water-closet seats—and to infected catheters in hospital cases. A most careful inquiry into the prevailing social conditions, however, and the histories of the cases that have come under my observation, lead to the conclusion that there are strong reasons for assuming that in children, boys as well as girls, the usual mode of infection is responsible for the disease, in more cases than we are accustomed to believe. Especially is this true in districts where the poor are crowded together in tenement houses, where the children are alive to the enjoyments of sexual gratification at an extremely early age, and where the dark cellars and water-closets and the roofs offer splendid opportunities, first for experiment, later for enjoyment.

It is not at all uncommon to learn that boys and girls, who have not yet reached the age of puberty, indulge in sexual gratification. Contact with older children, who have had their curiosity satisfied by personal experience, stimulates the sexual appetite in these children of the tenement and so-called "red-light" districts, at an age when impressions are easily made and habits contracted. The result is an excessive desire for the gratification of their precociously developed appetite, which, as can be easily shown, is not difficult to satisfy.

In my study of this subject there have been observed three cases of gonorrheal urethritis, in boys aged respectively 4, 10 and 12 years, which were acquired in the usual manner, from girls ranging between 10 and 12 years of age. In each case, according to the story told by the victim, the girl made the first advances, and in one case, that of the 4-year-old boy, the act was consummated in the form of an assault, by a girl 12 years old, in which the child was threatened with injury unless he performed his part.

In about one-half of the cases, there was no history of infection in this manner, but the cause was traced to the child sleeping in the same bed with a parent, brother or sister, who were found to be suffering from gonorrhea. Here again the cramped quarters of the tenement dwellers, with their lack of proper sleeping accommodations and their promiscuous intermingling of the sexes, may be held responsible, in a large measure, for the causation of this disease in young boys.

Then there were a number of cases that were admittedly produced by acts of pederasty. This mode of sexual gratification, among these highly stimulated children, is not at all uncommon. The roofs and water-closets of tenement houses, in the spring and summer especially, offer public exhibitions of this kind, to those who are alive to the existence of the practice.

In districts where prostitutes live in tenement houses and mingle with young children, gonorrhea may develop in boys as the result of an attempt on the part of the prostitute to rid herself of the disease by cohabiting with a male "virgin." This practice is induced by a superstition brought to this country from some parts of Europe. It promises those suffering from gonorrhea, of either sex, who cohabit with a virgin of the opposite sex, that they will thereby rid themselves of the disease.

Whatever the cause of the infection may be, the period of incubation and the general character of the disease do not differ from these manifestations in the adult. In from four to seven—sometimes ten or twelve—days after the infection, the subjective symptoms, pain and burning sensations on micturition, frequent desire to micturate, and sometimes almost complete retention, manifest themselves. A day or two later the meatus becomes red, swollen and puffy, and presents the typical "angry" appearance that constitutes an almost positive landmark in making the diagnosis of gonorrheal urethritis. The discharge is usually profuse from the beginning, not differing in appearance or consistency from that seen in the adult.

The pain which some of these children suffer is often out of all proportion to the clinical picture presented: but this hypersensitiveness is often found to be coincident with the presence of a contracted meatus or a tight prepuce, which probably acts as a dam to the secretions and by preventing proper drainage of the urethral canal, causes retention, and a consequent increase in the inflammatory products. Other children, on the other hand, suffer very little pain, and would probably not be brought to the surgeon for treatment but for the presence of the redness and swelling at the meatus, and the discharge.

Right here the importance and great value of circumcision may be pointed out. The redundant foreskin very materially interferes with the cleansing of the parts, and helps to complicate the condition of urethritis *per se*, with the additional balanitis and gland infections that are so often also found in the uncircumcised adult. Every case of gonorrheal urethritis in uncircumcised children offers a most eloquent plea for the circumcision of all male infants, when the possibility of future gonorrheal infection is considered. Both as a prophylactic measure against infection of the urethra by retained secretions within the prepuce, and as an invaluable aid in the treatment of urethritis should it appear, the operation of circumcision in infants deserves a position in the routine management of male infants after childbirth, second only to the care of the eyes and of the umbilical cord.

When the disease has lasted several days complications similar to those in the adult may appear. Posterior urethritis, and even prostatitis and epididymitis, has occurred in these cases; and in one case, that of a child 19 months old, with a very small meatus, there was an almost total inability to pass the urine, which condition was relieved only by the introduction of a fine woven catheter.

If the prostate is involved it becomes swollen and highly sensitive, causing exquisite pain when attempts are made to move the bowels. The epididymis, when involved, is also swollen and exquisitely tender to the touch.

In general, it may be said that the disease presents the same symptoms and complications as are seen in the adult, and it is interesting to note that the duration of the disease, from four to six weeks, is also about the same as in the adult.

The prognosis, as to complete recovery, seems to be better than in the adult. In young boys, there does not seem to be that tendency toward the continuance of the disease in the chronic form, and strictures are not so likely to follow as in the adult. I have never seen rheumatism develop in these cases. Recovery is complete

and the inflammation leaves slight, if any, traces behind it.

Under the subject of treatment, the question of prophylaxis must be considered. The occurrence of gonorrhea in boys and infants would be one of the rarest of diseases, if proper care were taken by the parents and associates of these children. There is a strong element of criminality present when young children are permitted to become infected with a disease that is acquired only through actual contact with the infected discharges, and in a well-regulated society there should be a severe penalty for that criminal negligence or viciousness that results in the production of gonorrhea in children. If parents, or relatives, or playmates are suffering from the disease in any of its forms, the most stringent precautions should be taken to prevent healthy children from contamination. The physician, especially when practicing among the poor, should see to it that healthy children are not permitted to sleep in the same bed with those who are suffering from gonorrhea. He should also take care that the discharges be destroyed before infecting others, and that, immediately on the appearance of any of the symptoms of an infection, the patient be warned of the dangers that lurk in the urethral discharge, and be instructed in the measures to be taken to prevent the infection of other members of the family.

The primary requisite for the proper treatment of the disease is cleanliness, even carried up to the surgical degree. The cleansing of the parts will not only aid in bringing about a cure, but will also prevent the occurrence of some of the painful complications that would otherwise follow. If the child has been circumcised, the problem of keeping the parts clean is not a difficult one. Warm water, applied at intervals of three or four hours during the day, will keep the meatus and the surrounding tissues clean. A solution of boric acid or a weak solution of bichlorid of mercury may also be used for this purpose. If the prepuce be present, great care must be used to remove the secretions by constant cleansing with any of the above mentioned solutions. If the prepuce be a tight one and not easily drawn back over the glans, the solution may be slowly injected, by means of a small glass syringe, between the prepuce and the glans. This must be done at frequent intervals in order that the accumulated secretions may be removed. The development of phimosis will also be averted, if due attention is paid to this subject.

For the urethritis itself, the medicinal treatment will largely depend upon the extent and character of the inflammation. If the anterior portion alone of the urethra be involved, the injection of a one-half per cent. solution of protargol, three times daily, retaining it about five minutes each time, will often prove wonderfully effective in stopping the pain and removing the discharge. In three of my cases, a complete cessation of the pain and the discharge followed the second injection of this solution.

Unfortunately, however, these excellent results do not follow in every case. In spite of this treatment, or perhaps because of it, the inflammation often extends to the posterior portion of the urethra, bringing with it all the symptoms of posterior urethritis. In conditions like this, the injections into the anterior urethra are not only useless, but sometimes positively harmful. Irrigation of the urethral tract, with a mild solution of potassium permanganate (1-6000) or of the Thiersch solution, will prove of decided benefit. This is best accomplished, either by the use of the catheter with the eye in the posterior portion of the urethra, or by the small glass syringe. With the latter, the fluid can be slowly and gently injected directly into the bladder, without causing pain or irritation. When the bladder is fairly well filled, the irrigating fluid is permitted to flow out and the process repeated. The injection of weak solutions of protargol—1 to 400—into the bladder in this manner will also prove of value in some cases.

For internal administration, the pure oil of wintergreen, in doses of 5 to 10 minims, in milk or water, three times daily, will be found valuable in some cases. In others, an alkaline mixture, containing potassium bicarbonate and tincture of hyoscyamus, will bring relief from the pain and tenesmus.

When complications arise, they must receive appropriate attention. Epididymitis is best treated by the application of guaiacol ointment, 10 per cent. strength. Hot poultices also bring relief in some cases. When the prostate is inflamed and extremely painful, rectal irrigations of hot water will bring grateful relief. At night, suppositories containing a small amount of morphin and belladonna may be employed to relieve the intense pain and tenesmus. The bowels must be kept open by the use of irrigations or laxatives, and rest in bed should be enforced.

A dressing should be applied to the meatus and so applied that it can not fall off or be removed by the patient. Small sized "gonorrhea bags" may be used with excellent effect, in the prevention of further contamination. It is needless to point out the importance of preventing an infection of the eyes from the urethral discharge. In children, moveover, who can not always be made to understand, especial pains should be taken to prevent this. Strict attention to cleanliness and the use of a "gonorrhea bag" will positively guard against the occurrence of eye inflammation.

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DISCUSSION.

Dr. Edwin Rosenthal, Philadelphia—I have seen gonorrhea in children so very frequently. With regard to the superstition of prostitutes that they can get rid of the disease by giving it to a virgin, I would say that this prevails very widely and often accounts for attacks of rape. At one time I saw a whole troop of boys who had contracted gonorrhea in this way, and I only checked it by hunting up the guilty prostitute, one "Rachel" by name. The mode of infection was various. The proof of the crime can be easily established by microscopic examination of the discharge, both from the guilty person and the one infected. Within the last twenty years there has grown up in the larger cities a sort of system of tenement houses in which two or more families live in one room, separated perhaps only by a chalk line. I am disposed to be a little skeptical regarding the dissemination of the disease by infection from dirty water-closets.

Dr. Clifton Scott, Des Moines—I do not think this is confined to the tenement houses. There is great need for widespread information among the very best classes of society. No one holds woman in higher respect than I, but it is a most pernicious doctrine which is promulgated in women's clubs, that men are naturally vicious and women are naturally pure, and that every prostitute is the victim of man's duplicity. The people at large should understand that there are vicious women as well as vicious men, who have been vicious from their youth up. I have seen a few of these cases, and I know that a number of them originate from servant girls who seduce boys left in their charge or allowed to sleep with them.

Dr. A. C. Cotton, Chicago—I believe this is a subject of unusual interest to those who are family advisers. The ignorance of the laity on these subjects, which are considered a little too delicate to discuss, is quite astonishing. I have been

the city physician in Chicago for two terms of four years. One of the duties of that office is to look after the police stations, the bridewell, and, in fact, any one for whom the city assumes even temporary responsibility. In cases of rape and alleged assault the city physician is naturally the first one called in by the prosecuting attorney to see if there is any medical evidence. It is astonishing what a large number of cases of alleged assault on little girls there are. These cases rarely come to trial. I have been surprised at the large number of cases of gonorrhea among such little girls. As city physician I learned of one source of gonorrheal infection, i. e., the practice of men "playing" with the genitals of little girls, though not committing rape. This happens even in children so young that they do not know what is being done to them. I have had many cases to show that little boys go through the motions of copulating with the assistance of an older female. I recall a string of little girls coming to my clinic suffering from gonorrhea. A search of the records indicated that they all came from a certain locality, although these children represented quite a variety of nationalities. A week later my assistant brought to me a boy of 10 years who had been infecting these ten or twelve little girls.

DR. J. C. COOK, Chicago—I was very glad to hear the paper, and yet it seemed to me to be lacking in scientific knowledge; for the time has arrived when we should know whether it is possible to transmit the gonococcus from fabrics to human beings. It is trying to our credulity to find a 4-year-old daughter and a 35-year-old father having gonorrhea at the same time with no other source of infection to the daughter other than the father, and yet I have observed this in a family of educated and refined people. I am glad to hear restated that it is possible to contract the disease in a water-closet. The superstition about getting rid of gonorrhea is a very prevalent one among the colored people of the South. I believe with Dr. Scott that there are many vicious men, and some vicious women, but, according to my observations, men are greater distributers of gonorrhea than women; because in dispensary work by far the largest number of cases of gonorrhea occur among females. It must be admitted that in many instances the male is the aggressor.

PREVENTION OF TUBERCULOSIS IN BABES BORN OF TUBERCULOUS PARENTS.*

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In the presentation of this subject, I desire to present two cases and from them draw my conclusions and upon them base my arguments.

CASE 1.—Mrs. A. H., a young woman, married at 19 years of age, had suffered with chronic pulmonary tuberculosis for five years previous, the existence of which, she and her mother denied. During the first two years of her married life she had frequent mild attacks of hemoptysis. She continually consulted her old family physician, a homeopath, for these troubles, until Oct. 15, 1896, when she had a severe hemorrhage and I was called in haste. By putting her in bed and applying ice to the chest, the hemorrhage was controlled. I was then invited to take charge of the case.

I found a pulse of 96, temperature of 101, some moist rales in the lungs, quite marked emaciation; cough was not serious, except a paroxysm in the morning; there were no night sweats, and an examination of the first two specimens of sputum revealed no bacilli; in a third specimen, however, about fifteen or twenty to the field were found. I put her on hypophosphites with iron, quinin and strychnia; gave her liquid peptonoids with creosote, and recommended a liberal diet with a glass of cream to drink at each meal, with outdoor exercise and by arranging the changes in this treatment, she improved, gaining some ten pounds in weight. The cough diminished and the bacilli disappeared; no more hemorrhage occurred. She remained under my care for six months, when she ceased visiting me and I concluded that she thought she had discovered the method of treatment I was using and that she could carry it out herself.

About six months later her husband called upon me and wanted a prescription for indigestion, saying that she was nauseated and vomiting, and that she thought the medicine had disturbed her stomach. I inquired as to the possible existence of pregnancy, which he denied. I gave her a gastric sedative and heard nothing more for four months, when he announced that she was five or six months pregnant and that she was greatly alarmed, lest she might not be able to live through the ordeal. I advised him how to reassure her and saw nothing of her for two months, at which time she applied to me for a sore throat. She was now eight months pregnant and had developed laryngeal tuberculosis. There was marked hoarseness, almost complete aphonia. I applied an antiseptic spray and an alleviating treatment, and at term she was delivered of a girl baby, weighing five pounds. The child had an imperforate anus, which I corrected.

I had the child taken to an aunt and fed on modified cow's milk, and prevented communication between it and the mother. The mother was able to sit up and walk slowly about the house after a period of about 2 months. The laryngeal trouble had increased, the general emaciation of the body progressed from this time on and she died when the baby was about five months old. The child is now three years old and is a picture of health and vigor. It is well developed, having exhibited no symptoms of infection or hereditary effect.

CASE 2.—A young woman, married at 20 years of age, claimed to have enjoyed previous good health. Father died of tuberculosis several years before. Marriage occurred in the second week of May, 1899. She claimed to have enjoyed good health during pregnancy. She had worked hard washing woodwork and cleaning a house into which they moved about February 10, and about March 1, I was engaged to attend her in confinement. I found a pulse of about 80, with no albumin in the urine. She claimed to feel perfectly well. I afterwards learned that she misrepresented her general condition of health. Her lungs were not examined.

She was confined March 14; mother and babe did well the first week after confinement and I did not see them again for three weeks. Twenty-five days after confinement, the mother rode three miles into the city in a street car and did some shopping. Two days after this she walked five blocks and read a paper at a literary club. The child had been nursed during this time, and twenty-eight days after confinement I was called to see her. I found her walking about the house, with a pulse of 120 and temperature, 103. I ordered her to bed and notified her mother, who came to attend her. An examination of the lungs exhibited some rales in the left lung. The range of the temperature, and character of the sputum did not indicate pneumonia. The progress of the condition for the next three days excluded bronchitis.

Dr. Eli Grimes was called in consultation; I had collected some sputum, which was stained and examined by Dr. Grimes and myself. The fields exhibited an im-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

mense number of tubercle bacilli. A diagnosis of acute tuberculosis was made. Dr. J. T. Priestly was called in consultation. The babe was immediately put upon modified cow's milk. The mother's condition progressed rapidly to an end, she dying just sixteen weeks after her confinement, and the child having nursed during the first five weeks after birth. Immediately after weaning, it began to exhibit loss of weight, palor and cough, also rales could be detected in the lungs. It passed through a well marked history of acute tuberculosis, dying one week after the mother.

In discussing these two cases, what evidence have we that the second one suffered from hereditary tuberculosis any more than should have been expected in the first? To be sure, in one case, tuberculosis was chronic in the mother, in the other, acute. But in the first case, the child was not allowed to nurse and in the second, because tuberculosis had not been diagnosed, it was allowed to nurse and it seems possible that the infection in the second case came from the mother's milk or possibly from kisses, caresses and other contact. I do not think that infection of the child in fetal life, through membranes of the placenta, can be positively denied, but that its occurrence is very infrequent is clearly proven.

The principal point, for which I wish to plead, is, that the old stereotype methods of visiting the mother a few weeks before confinement, securing a specimen of her urine and testing it for albumin is not a sufficient precaution for the safety of the child. These preliminary examinations, made at safe intervals during the last two months of pregnancy, should include a general physical examination and careful search for tubercle bacilli; many cases will thus be found, and our knowledge of the existence of tuberculosis, in otherwise unsuspected cases, will not only enable us to guard better the mother's condition, but will save many babes from infection, through guarding against the use of the mother's milk and infection by contact. If this method be carried out rigidly and the people educated to appreciate its importance and value, many children of tubercular parents can be saved from infection.

DISCUSSION.

DR. EDWIN ROSENTHAL, Philadelphia—I have at the present time under my care an exactly similar case. A woman with tuberculosis gave birth to a child one year ago. The usual bacteriological tests had been made to insure the correctness of the diagnosis. From the moment that this little girl was born it was not allowed to take any of the mother's breast milk. The child was fed on a home modification of cow's milk, and has not shown any evidence of tuberculosis. This is only one of many cases, yet I believe these are the exceptional ones. I believe we should use our influence to advise against marriage of a woman known to be tuberculous. I am convinced that this would greatly diminish the number of cases of tuberculosis.

DR. COLLINS H. JOHNSTON, Grand Rapids, Mich.—This paper brings up several subjects of interest. I think we can learn something from the experience of the veterinarians. The Wisconsin Agricultural Experiment Station has adopted the Stockholm plan of treating tuberculous cows. When an animal reacts to the tuberculin test it is not slaughtered, if in the early days of tuberculosis; nor is the milk of such animals used for any purpose. But experience has shown that these cows can be used for breeding purposes, and that if their calves are removed from the infected atmosphere, placed under good hygienic surroundings and fed on milk free from tubercle bacilli, they will not show any taint of disease. I think most of us must have observed the same thing in the human. Osler, as I have said, insists that there are only twenty cases of congenital tuberculosis in the literature. Dr. Scott's two cases were evidently the result of infection of the mother by her sputum or tuberculous milk. It has been proven, both experimentally and otherwise, in this country and in England, that tubercle bacilli exist in milk of tuberculous cows, and also in the cream and in the butter of milk from tuberculous animals. There can be no question, therefore, that tuberculous mothers can infect their offspring by nursing them. Another cause of tuberculosis in infants is the poor aliment frequently given children in the first year of their lives, whereby they are rendered less resistant to the germs of disease. The great mass of the profession pay very little attention to the question of infant feeding. It is one of the most important problems before the profession to-day.

DR. F. X. WALLS, Chicago—I should like to call attention to a specimen in the pathologieal exhibit here by Dr. Fütterer. The case is that of a child of a year old who died from localized miliary tuberculosis. In that case there was a primary tuberculosis of the intestine, with an extension of the tuberculosis to the mesenteric and the mediastinal lymph glands. The specimen has been so treated as to preserve the fresh appearance, and it shows the rupture of a caseous lymph node into a branch of the pulmonary vein, and from that a dissemination of miliary tubercles to the remainder of the lung. This emphasizes very well the care which we should take in the management of the babies of mothers who have tuberculosis in evolution. The mother of this infant had been ill with tuberculosis, and becoming insane had been sent to an asylum. It is very probable that tuberculosis is rarely acquired through the milk of a nursing mother, because tubercle bacilli are not eliminated through the normal mammary gland, but only through a tubercular gland. The point made in the paper about keeping these little ones as far as possible from all sources of infection is very well taken, and should be borne in mind.

DR. J. NOER, Stoughton, Wis.—A wrong inference may be drawn from the investigations of the Experimental Station in Wisconsin. I live near that station and am familiar with the work. It is now six or seven years since the first investigation was made. It was found on testing 27 or 30 cows at the station with tuberculin that 86 per cent. of them were infected with tuberculosis. These were all, as I recollect, slaughtered, partly because of the danger of contagion and partly to demonstrate postmortem the diagnostic reliability of the Koch tuberculin test, then new, in incipient cases presenting no clinical evidences of disease. It is true that isolation and quarantine rather than the slaughter of tuberculous cattle has since been the practice in Wisconsin. It has been shown at the Wisconsin Agricultural Station that healthy calves could be raised from tuberculous cows, that is, provided that the calf was at once isolated from the mother and carefully protected from tubercular infection, through milk, drinking water, feeding trough or the stable. Now, as regards the danger of spreading tuberculosis in man through the use of milk and butter from cows having incipient or early tuberculosis, we have, I think, very much exaggerated the danger of transmission. I do not wish to be understood as advocating the use of milk from tuberculous cows. I would like to have all milk cows tested with tuberculin and those showing reaction excluded from the herd supplying milk for human use. This would be a reasonable precaution pending further investigation. There is, however, as yet no evidence to show that bovine tuberculosis is transmissible to man. Is there a person here who can report a case of such transmission? When it was shown that nearly all the cows at the Wisconsin Agricultural Station were tuberculous, a great deal of anxiety was felt by the families at the station, who had been using the milk from these cows for their children. No case of transmission has, however, been traced.

The early studies of the Russian student Rabinowitsch indicate that tubercle bacilli are very exceptionally present in market butter. Adami, of Montreal, has shown that only a fraction of 1 per cent. of Canadian cattle are tuberculous, yet human tuberculosis is fully as prevalent in Canada as it is in the Eastern States, where bovine tuberculosis exists in from 20 to 40 per cent. of the cattle tested. It is evident that we

need more light on this subject before we formulate any conclusions that are worthy of serious consideration.

DR. C. H. JOHNSTON—I do not say that the milk of every tuberculous cow shows tubercle bacilli, because this is not the case, but it has been proven repeatedly that the milk of tuberculous cows may contain tubercle bacilli, even though there is no demonstrable tubercular lesion of the udder. The detection of a tuberculous udder in its incipiency is difficult even for an expert; hence, it may often happen that milk contains tubercle bacilli though no tubercular lesion can be demonstrated in the udder.

DR. I. A. ABT, Chicago—I wish to enter a protest against the idea that there are only a limited number of cases of tuberculosis which are congenital in origin. There is no doubt in my own mind that the number of cases of congenital tuberculosis which occurs in young infants must far exceed the origin in any other way. When we think that children, three months, six months or a year old often die of tuberculosis, although they have been under the best possible hygiene, it seems to me reasonable to suppose that these cases are of congenital origin. The only proof of the hereditary origin of the disease would be the demonstration of tubercle bacilli in the placenta or in the endometrium.

DR. EDWIN ROSENTHAL—Dr. W. P. Northrup presented a paper on "Tuberculosis in Children" before the Philadelphia Pediatric Society, and showed that the very inception of tuberculosis in children is through the lymph nodes primarily.

DR. NOER—I should like to know if any one present can produce a single case in which tuberculosis has been transmitted from the cow to a child. I am not aware that it has been demonstrated that bovine and human tuberculosis are the same.

DR. J. C. COOK, Chicago—I have under observation a lady sick with tuberculosis. It began as a cervical tuberculosis. A most minute inquiry as to the source of infection leaves very little doubt about its having arisen from a pet monkey. This animal had been sent away two years previously because it had tuberculosis.

DR. C. F. WAHRER, Fort Madison, Iowa—It would take a person with much fortitude to feed his children on the milk from a tuberculous cow. I wish to call attention to the specimens exhibited here by the Army Medical Museum. In this collection are several very beautiful ones of tubercular lesions of the udders. I advised a tuberculous mother not to nurse her infant, but to feed it on cow's milk. The cow presented every appearance of being healthy. The child died a few months later, and was found to be tuberculous, showing the importance of examining the animal before accepting the milk. Even if transmission of bovine tubercle to children can not be proved to take place directly, it were surely a good precaution not to feed a child milk from a tuberculous cow.

DR. E. F. BRUSH, Mount Vernon, N. Y.—Some years ago I had a cow suffering from acute miliary tuberculosis. I took the animal to another part of the farm and killed her. I shut up 24 laying hens and a rooster and fed them with tubercular masses from the lungs and intestine of this cow. I selected for this experiment hens because their body temperature is high, about 108 F. Some of them developed tuberculosis within eight days after beginning the feeding experiment. All of them died within five or six weeks from the time I began the experiment. I took the last 24 eggs laid by these hens and set them under healthy hens. All of these eggs developed a chick, but every one of them was dead. I took four of the dead chicks down to the Carnegie Laboratory, but through some mistake or carelessness, they were not examined nor reported upon. I purpose to repeat the experiment.

In regard to the transmission of tuberculosis from cattle to children, I would say that at one time I found a cow with acute miliary tuberculosis and killed her. There was a large tubercular encysted mass in the cow's mediastinal space, which she had probably had for years. The gentleman who owned this cow had brought up seven children on her milk, and although these children must have been fed on tuberculous milk, they remained healthy and did not develop tuberculosis. There must be something else besides the mere presence of tubercle bacilli to start the tubercular disease. The additional element, I think, is an elevation of temperature. I think tuberculin is doing an immense amount of harm, and that its use is entirely unnecessary as a means of diagnosis. I know of a herd that is kept tuberculous by testing the animals with tuberculin. It is a very easy matter to make a diagnosis of tuberculosis in a cow when the disease has advanced far enough to do any harm.

DR. CLIFTON SCOTT, in reply—I wish to thank the members for this interesting discussion. I was much pleased to hear Dr. Abt point out what must be the conditions to have congenital tuberculosis. I do not believe that congenital tuberculosis is so frequent as Dr. Abt seemed to indicate, but the fact that a cow may be tuberculous and not give tuberculous milk unless there is a lesion of the udder points strongly to the fact that the mother may have tuberculosis and yet if the endometrium is not tuberculous during pregnancy there is not much probability of infecting her child. I have always felt a little guilty about not having discovered that the mother in my case was tuberculous before her confinement, for I might possibly have been able to save that child. I did not know that the mother was tuberculous, yet I think if I had been given the opportunity to give the case sufficient attention before confinement I should have discovered this fact.

THE ETIOLOGY OF PARETIC DEMENTIA.*

FRANK P. NORBURY, M.D.
JACKSONVILLE, ILL.

The lesion of paretic dementia is that of a diffuse parenchymatous atrophy of the nerve cells and part, at least, of the neuroglia. This process is essentially chronic and involves more or less the whole of the cortex, even extending to the basal ganglia and the cord. The well-known vascular changes start in the minute arterioles and in a slow but progressive manner involve the nutrition of the cells thereby causing degeneration of the neurons and neuroglia. The cortical substance undergoes atrophic changes and the lymph spaces dilate or widen; the lymph currents are interfered with —they are laden with debris—and ultimately the combined processes produce profound degenerative changes.

The question of the cause of this now well-recognized degeneration is seemingly in dispute, but I dare say that we all feel that there should be but little controversy over this question, when in the light of the accumulated knowledge of to-day we find syphilis paramount as an etiological factor. In fact, it is the one factor—the primary factor—and with Dana we can say "if there were no syphilis there would be no paretic dementia. Other authorities endorse this view, notably Mongeri,[1] who says "syphilis is necessary for the disease to develop; it is the factor which prepares the soil, while alcohol and heredity merely aid in its development." "Without syphilis, congenital or acquired, it is impossible to have general paralysis." These statements do not seem to lack verification when we consider the inoculation experiments, detailed by Krafft-Ebing, where in a series of cases, typical examples of paresis, in which by strict inquiry and examination the previous existence of syphilis could not be ascertained and in the face of this negative history, the patients were inoculated with virulent specific virus and yet after the allotted time for infection no evidences of syphilitic infection occurred. Not a sign or a symptom appeared, thus confirming at least by negative evidence that previous infection had occurred and serves to impress us

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1. Am. Year-Book, 1901.

in the belief of the existence of latent syphilis in all cases of paretic dementia.

Paretic dementia certainly, then, has for a background syphilis. It is not in truth a syphilitic disease *per se*, but a para-syphilitic disease, due to the effects of the syphilitic poison. That is not a syphilitic disease, we know, by the therapeutic test. It is not amenable to anti-syphilitic treatment, in fact such treatment is utterly useless, although many practitioners persist in giving it a trial. The luetic poison of syphilis acts as do intoxicants—it is a toxin—there is auto-intoxication interference with nutrition and after its very early and prodromal stage causes a degenerative change of the nerve elements. There are no syphilitic lesions and in my experience the evidences of syphilis are, as a rule, seldom marked. In the beginning, the vascular stage of paresis, the lesions are those due to a toxin. There are none of the common lesions of syphilis such as noted in cerebral syphilis, viz., gummata and endarteritis. The toxin acts upon neural tissues to produce the morbid alterations, which, while at first they may be purely functional, ultimately become well-defined organic changes.

In the etiological study of about two hundred cases of paretic dementia, I found the history of syphilis in fully 60 per cent., which, in view of the fact that the history of many of these cases is meager, is yet conclusive as to syphilis in the general run of such cases. Inasmuch as it is impossible to confirm by inoculation tests the cases in dispute, we are disposed to believe that possibly many more of these cases are syphilitic and lack but the opportunity to establish the proof. I have sometimes thought that while we regard syphilis as the primary etiological factor, there may be other contributing factors, inasmuch as in my experience I have had several cases that, seemingly at least, have been pronounced or developed after some one of the infectious fevers. Thus suggesting the thought that these fevers assisted in some way in the development of the disease.

The following case, recently under my care, is an illustration:

A ranchman, with syphilitic history, who after successful years in business was induced to go to the Transvaal. Here he contracted pernicious malarial fever, from which he suffered greatly while in Pretoria. He was sent home and while en route it was noticed that he was acting queerly, developed mental peculiarities which in view of subsequent history were indicative of general paralysis. I say in view of subsequent history, simply to enforce what I said in a paper before the Illinois State Medical Society in 1892, that the early symptoms, the functional stage, of paretic dementia is not recognized from other forms of insanity by the attending physician and in consequence the prodromal stage is passed before the alienist meets the case. The stage when if any help is to be had for this disease it is to be given at this time. This patient developed into a typical case of paretic dementia and died after two years from the first appearance of the disease.

Another case first showed recognizable mental peculiarities during convalescence from typhoid fever, the mental symptoms being attributed to a post-febrile psychosis. This case was of the fulminating type, rapid in its course and terminated by death in three years. Another case with negative syphilitic history, during convalescence from an acute articular rheumatism, was noticed by his family to have certain marked changes in his disposition. They thought nothing of it after the family physician assured them "it would pass away." But no, the case progressed, and rapidly too, resulting in death in about two years and a half after the attack of rheumatism.

I am sure that one swallow does not make a summer, but here are three cases coming under my observation, wherein after acute infectious fevers there has followed paretic dementia. Syphilis appears in the history of two—arthritic diathesis and rheumatism in one, all of whom had severe illness, just prior to appearance, at least of recognizable symptoms of paresis, and from such coincidences I am inclined to believe these diseases were contributing etiological factors.

The hereditary history of most of my cases shows that the neuropathic diathesis is the soil upon which this disease grows. Berkley says: "Heredity and syphilis are the most potent etiological factors." In his pathological findings he notes "microscopical evidences of irregular construction and anomalies in the cortical cells." From these facts we infer that there is a certain instability of the nervous elements which contributes to the susceptibility of an individual to the luetic poison of syphilis; that there is in fact selective action of this toxin upon neural tissue under certain conditions. This opens up that great question of immunity and susceptibility which is not to be discussed here. However, experience among the insane, including the cases of paretic dementia, leads all clinicians to form an opinion as to the family peculiarities, the hereditary considerations necessary in studying his cases, when he comes in contact with other members of the family than the patient himself. From this observation, however cursory, he draws the practical conclusion that heredity is certainly a factor and a potent one in paretic dementia.

Alcoholism is a contributing factor, but not of the importance ascribed to it by some. The brain lesions of the alcoholic are not those of paretic dementia and they simply are contributing degenerative conditions, which directly interfere with brain nutrition. I am told that in Colorado, alcoholism is usually a part of the history of such cases, but whether they are mere coincidences or not remains to be seen. I am inclined to believe alcoholism is coincidental in most all cases. I very much question cold, exposure and traumatism as being etiological factors; they can not cause such grave pathological changes. I conclude that:

1. Syphilis is the factor in chief which causes paretic dementia.
2. Infectious fevers with their toxic influences are contributing etiological factors.
3. Heredity is a potent factor.

DISCUSSION.

Dr. Harold N. Moyer, Chicago—I do not know that I have any exception to take to some things stated by the essayist, but I certainly do not agree to all of the three deductions with which he closes his paper. I think we are not prepared to make the claim that paretic dementia is a para-syphilitic disease, nor do I think the author makes that claim. I know that in from 60 to 80 per cent. of cases of paretic dementia we get a syphilitic history, but does that justify us in saying that all the cases are syphilitic? If so, we must assume that because in a considerable proportion of cases syphilis is the etiological factor, the rest must have had latent syphilis which we were not able to recognize. I believe that such a doctrine is fraught with considerable error, because it is not justified by facts.

The hereditary influence in paretic dementia is very limited and is usually confined to cases of impure paretic dementia, those where we have it with a background of paranoia.

There is one question in relation to paretic dementia which is of considerable importance, namely, the racial distribution

of the disease. Among the natives of Hawaii, syphilis is a household disease; there is scarcely a native who has not been syphilized. Still, not a single case of paretic dementia has been recognized. There are other races among whom syphilis is very common, while paretic dementia is rare. The converse is also true. Recent statistics have shown that while syphilis is rare among the Hebrews in London, as compared with other Caucasians, paretic dementia is relatively quite common.

DR. E. G. CARPENTER, Columbus, Ohio—While my own experience is in accord with the general consensus of opinion that syphilis plays an important part as an etiological factor in paresis, still cases have come under my observation in which it was impossible to obtain any history or evidence of syphilitic lesions, and it is my belief that it is possible for paresis to be caused by factors other than syphilis. I believe that in the causation of many cases of paretic dementia, stress is an important factor. This, together with exhaustion from sexual excesses and the abuse of alcoholic stimulants, is sufficient to produce paresis in one having a neuropathic constitution. I think that in all cases we should be very cautious in asserting that a certain condition is due to syphilis, as there are circumstances where such a statement might do some people much harm; for example, in cases where the question of a pension and insurance is involved.

DR. RICHARD DEWEY, Wauwatosa, Wis.—I have seen at least six or eight cases of paretic dementia in which—as far as you can exclude anything—syphilis could be excluded, unless hereditary syphilis would be assumed. That assumption, however, can not be accepted without the existence of certain data upon which to base it. The statement made by Dr. Moyer, with reference to the racial distribution of syphilis and paretic dementia, leads me to refer to a confirmatory article bearing upon this subject which recently came under my observation. In this article the statement was made that while syphilis was very common in Mohammedan countries, paretic dementia was much rarer there than in non-Mohammedan countries, especially in Christian countries.

DR. SYDNEY KUH, Chicago—It seems to me that the question as to the etiology of paretic dementia, so far as anything definite can be said about it to-day, may be summed up as follows: That there is much evidence to show that syphilis is by far the most important etiological factor, both in paralytic dementia and in that other disease which is so closely allied to it, tabes. Whether or not syphilis is the only etiological factor it is impossible to say. The argument that in countries where syphilis is common, paretic dementia and tabes are very rare would prove nothing either in favor of or against the theory that there is some connection between the two conditions. The character of syphilis has changed completely within the last four centuries. When syphilis was first described, it had the character of an acute infectious disease which in a relatively short period terminated fatally. It is very possible that in certain countries the character of syphilis has assumed a different form from that which it has assumed with us. It seems that certain types of syphilis are particularly prone to produce grave degenerative changes in the nervous system of certain individuals. Instances have been recorded where two or three men were infected with syphilis by the same woman at practically the same time, and all developed the symptoms of tabes.

DR. EDWARD E. MAYER, Pittsburg—While it is a well-known fact that most cases of paretic dementia give a syphilitic history, it seems to me that we must place the relationship between these two diseases upon a more scientific basis. Because syphilis has occurred in a case of paretic dementia, it does not indicate to me that syphilis is the etiological factor. We should try to ascertain if the syphilis is responsible for the lesions. As the essayist has pointed out, the lesions found in paretic dementia are not those of syphilis. The time that has elapsed between the syphilitic infection and the onset of the paretic dementia should also be borne in mind. We should not at once jump to the conclusion that syphilis is the cause of the paretic dementia. That syphilitic toxins—whatever they are—may evoke nutritional disease of the brain-cells can not be doubted, sufficient, indeed, to produce pronounced disease, but we must satisfy ourselves as to what conditions are produced by it, how it impairs nutrition and what action its toxins have. There may be other factors—the various toxemias, or exhaustion, or even traumatism may be the factor in the disease. I am willing to admit that syphilis is a most important factor in the causation of paretic dementia, but it should not be necessarily regarded as the only cause.

DR. H. A. TOMLINSON (chairman)—In considering the possible etiological relationship between syphilis and paretic dementia we should not lose sight of the fact that syphilis is a widely prevalent disease and almost as old as history, while general paresis, or paretic dementia, as the writer calls it, is comparatively infrequent, and, so far as we know, limited to the centers of modern civilization. Furthermore, when paretic dementia occurs in a syphilitic, the manifestations of the latter disease are not conspicuous and do not resemble other syphilitic affections of the nervous system, either in symptoms of somatic involvement or in its histology. Besides, syphilis frequently attacks the brain and produces degenerative disease, accompanied by dementia; that is not general paresis. It may also be claimed that the victims of syphilis and general paresis come from the same general class, and would therefore be equally liable to other possible causes of general paresis.

DR. FRANK P. NORBURY, in reply—I do not know that I can add anything further to the discussion. The fact is the Chairman covered the points that I had in mind. One of the speakers referring to stress as a factor in the production of paretic dementia, said that it was a prominent cause. In my experience this is not such a factor as is supposed, for comparatively few of my cases have come from the large cities—the busy centers of civilization—most of them come from the rural districts, and I am quite sure that they were not subjected to any special stress, either in connection with their occupation or social conditions. I believe the neurasthenic class alone succumb to stress. I have never seen a neurasthenic develop paretic dementia. In most of my cases the paretic dementia developed from fourteen to eighteen years after syphilitic infection, while several of them gave no history of infection at all. Yet from my knowledge of them as individuals I knew that they had often been exposed to such infection. In conclusion, I wish to emphasize the importance of the early recognition of paretic dementia. At the beginning of this disease there is a functional stage, as pointed out by Folsom some time ago, and if the symptoms are recognized during this stage we may be able to do something to arrest its progress. If allowed to go on, organic changes occur, with resulting dementia and death.

Clinical Report.

CASE OF SIMPLE FRACTURE OF THE VAULT, WITH MENINGITIS ON THE THIRD DAY. AUTOPSY.

EDWARD T. ALFORD, M.D.
INTERNE IN THE CHICAGO BAPTIST HOSPITAL.
CHICAGO.

The patient, Mr. W., while riding on a bicycle, Tuesday morning, June 1, was struck by a street car and severely injured. He was immediately taken to the Baptist Hospital, entering the service of Dr. Bayard Holmes, at 10:15 a. m. At this time he was conscious; there was no deviation of the eyes, no ptosis and the pupils were neither contracted nor dilated, and they both reacted to light. His hearing was apparently normal and there was no hemorrhage from the ears. There was no aphasia, as speech was normal, and no paralysis in any part of the body was evident. There was a good deal of hemorrhage from the nose and mouth, the upper lip being cut from the left nostril through the lower border of the nasal septum and through the lip a little to the left of the median line. This involved all the structures of the lip. A second wound on the inner surface of the mouth was found extending backward from the right angle of the mouth for

the distance of an inch or more. Some of the teeth on the right side of the lower jaw were broken off, and the mucous membrane lacerated; the right lower jaw was fractured with over-riding displacement, the posterior fragment over-riding the anterior. This fracture was shown by crepitus and deformity of the lower dental arch. A small contused incised wound was found over the occipital region and another long contusion at the outer right border of the frontal bone.

The patient was then anesthetized, the occiput shaved, and the wounds about the nose and mouth were carefully sutured and dressed. An attempt was made to reduce the fracture of the lower jaw by the use of a four-tailed bandage, but reduction could not be maintained. Patient was then put to bed.

Tuesday afternoon the patient vomited considerable blood, and that night was delirious for a short time. His temperature at this time was 99.5, pulse 88. On Wednesday morning I examined the patient with Drs. Holmes and Teschan. There was at this time no extravasation of blood under the lids or over the mastoid regions. The pupils were equally contracted, which contraction might have been the result of median line and muscular tonus was normal. There was no deviation of the eyes or ptosis. The tongue protruded in the median line and muscular tonus was normal There was no evidence of blood in the ears and hearing was apparently perfect. His temperature was 99.4 and his pulse 76. In his conversation he seemed rational, but he did not realize his serious condition. On Thursday morning, June 13, an examination showed improvement. There were no evidences of fracture of the base of the skull or compression of the brain. His temperature still remained about 99.4 and his pulse 88. The examinations of the urine were negative. The right lower jaw had become very much swollen and infiltrated.

An examination Friday morning, with Drs. Holmes, Teschan and McCaw, showed no paralysis or spasms of the face, arms or legs. There was no aphasia. There was no deviation of the eyes. The pupils were equally dilated and reacted to light. An extravasation of blood was noticed over both mastoid regions. This extravasation was more marked on the right side, and we thought that there was a slight extravasation under the right eye. Hearing was apparently normal. At noon of the same day he complained of a severe headache; his temperature was 98.6, and his pulse 78. At 3 o'clock in the afternoon he became delirious, got out of bed and walked about the halls. He rapidly grew worse, and about 4 o'clock was put in restraint. At 8 o'clock that night I examined the patient with Drs. Holmes, Boice, Teschan, Biggar, and McCaw; during the examination Dr. Sippy came in. At this time the temperature, per rectum, was 104.4, the pulse 78, and the respiration 25. The restraint which had been applied was removed. Some hemorrhage was noticed from the nose. The pupils were equally dilated. There was no ptosis or deviation of the eyes. Sensation on both sides of the face seemed to be normal. He was easily tickled in either nostril, and when struck lightly on either side of the face he seemed to respond. Two or three times a slight spasm was noticed going up the left side of the face and involving the lids. Extravasation of blood was seen under the right eye and over both mastoid regions. This was peculiar in that it extended above and in front of the ear. The right lower jaw and floor of the mouth were infiltrated and swollen. Kernig's sign was not present. The patient was excited, had illusions and was constantly picking and pulling, with a good deal of force, at objects seen about him.

At this time we assumed from the findings: 1, that there was no compression of the brain, either from depressed bone or hemorrhage; 2, that there was a fracture of the base of the skull in spite of the fact that there was no deviation of the eyes, no ptosis, no hemorrhages from the ears, no apparent loss of hearing, or no paralysis, but from the fact that there was hemorrhage from the nose and extravasation of blood over the mastoid regions and under the right eyelid; and, 3. that the patient was suffering from acute general meningitis, the infection having probably occurred through a fracture in the ethmoid or a fracture through the petrosa into an infected antrum.

The prognosis made at this time was that the disease was absolutely fatal, and that no treatment was indicated. The patient was then put in the care of a strong male nurse, without restraint, and directions were given to watch the patient for two hours or more without treatment in order not to obscure the diagnosis of the case, and after two hours a sedative might be given in sufficient quantities to keep the patient quiet. An ice bag was applied to the head, but no medicine was given until 2 o'clock, when 60 grains of sodium bromid was given per mouth. The patient rapidly grew worse during the night, and had involuntary urinations. His temperature at 5:20 a. m. was 107, his pulse 144, and respirations 58. There was a tendency for his tongue to fall back into the throat and to impede his respiration. He died June 15, at 4 o'clock a. m., while in a general convulsion.

POSTMORTEM.

Permission was given to enter the cranium by the coroner. It was held in the presence of Drs. Holmes and Boice.

The contused wound over the occiput and over the right border of the frontal bone were healthy and showed no redness, swelling or edema. The lower jaw on the right side corresponding to the fracture was very much swollen and densely infiltrated, the base of the tongue was also infiltrated and swollen. Extravasation of blood was seen over both mastoid regions, this extended above and in front of the ears. After dissecting the scalp forward an extravasation of blood was found starting from a crucial fracture of the vertex and extending downwards on both sides of the head in front and back of the ears, thus accounting for the extravasation seen in previous examinations.

The fracture followed the sutures, commencing about the posterior third of the interparietal suture, running forward and extending into the frontal bone for about an inch, turning a little to the right as it entered the frontal bone. It also extended from the interparietal suture along the frontoparietal sutures on either side for the distance of an inch and a half. The fracture opened into the superior longitudinal sinus, and a small thrombus was found along its course extensive enough to cause obliteration of the sinus.

The meninges were injected and somewhat edematous. The ventricles were distended and the cerebrospinal fluid increased in quantity. The brain tissue seemed somewhat softer than normal. The dura mater about the base of the skull was carefully and thoroughly removed and a careful search made for the fracture of the base of the skull, but none could be discovered.

The middle ears were opened and inspected. The drum and ossicles on both sides were normal and there was no evidence of any present or previous inflammation. There was peculiar circular depression about one-half inch in diameter in the middle fossa of the skull on the right side just at the base of the petrous portion of the temporal, looking as though it might have been the result of a previous ulcerative process, but no present pathologic significance was attached to this. Cultures were taken from the spinal cord by subarachnoid puncture and from the ventricles, but showed no growth.

This case is of peculiar interest in three respects: 1. The scalp was apparently uninjured over the seat of the fracture of the vault. 2. The extravasation of blood behind the ears, so common and almost pathognomonic in fractures of the base, came from an unrecognized fracture of the vault. 3. The infection of the meninges must have come through some small and undiscovered fracture into the ethmoid cells, or the offending microbes gained access into the blood from the focus afforded by the swollen and infiltrated jaw and localized in the meninges, causing an acute serious leptomeningitis; or the meningitis may have occurred as a part of a progressive sepsis.

Petrifaction of Kidneys.—More than 400 calculi were found in the left kidney and 60 larger ones in the right, at the autopsy of a young soldier who had died suddenly with heart symptoms. Death was due to enormous dilatation of the heart, as there had been no retention of urine. It is described in *Méd. Moderne*, 1901, 29, as actual petrifaction with consecutive interstitial nephritis and fibrous degeneration.

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A PREMATURE CRITICISM.

An editorial on the surgical aspect of President McKinley's case in a leading medical weekly calls for some comment. The preceding issue was generally optimistic, as were all at the time from the apparently favorable aspect of the case during the first few days. The editorial under consideration is distinctly critical, and indeed decidedly unfriendly, in its comments on the conduct of the case and the shortcomings of the autopsy. The medical profession as yet has had no full report of the findings, none that in our opinion authorizes us in indulging in unfriendly criticism or in extensive premature generalizations, but this is evidently not the view held in the editorial in question. It admits that while the operation on the President was faultless in its technique and brilliant as far as it went, it was necessarily an incomplete one, but it goes on to say that the surgical judgment of the surgeons was in error, implying that they should have disregarded the necessary limitations of the operation, the patient's condition and the value of the precious time. Attention is given to the autopsy, and while admitting that not one of the principal lesions gave any evidence of its existence during life, the writer talks about "a most startling error in diagnosis," and wants to know why, if it was impossible to follow the course of the ball at the time of the operation, the gentlemen in the case were so satisfied with the "real nature of a wound that they obviously knew nothing about?" The absence of an *x*-ray examination during life is harshly commented on as if there could be no possible reasons against it, and the insinuation—certainly not a justifiable one as is proven by the evidence submitted at the trial just closed—is made that it was not thought worth while at the autopsy to thoroughly search for and find the bullet. It even goes further than this and speaks of a condition of which we have no evidence whatever, such as a leaking kidney. There is, it seems to us, an evident "I told you so" spirit in the editorial that is unfortunate, to say the least.

We see no reason to change the opinion we have already expressed, namely, that all that medical science and conscientious care could do for the President was done. Whether "under like circumstances in future the gentlemen concerned would act somewhat differently" may be a question, even with the knowledge gained by this experience; the conditions might make it impossible to do more. We do not know that such conditions did not exist in the case of the President, and lacking that assurance we believe such a comment unnecessary and unbecoming. The operation was one to try to the utmost the courage and judgment of those in charge, and we do not feel assured that any others in their place could have done better. To err is human, as our contemporary judiciously quotes, but we do not think it has been clearly demonstrated beyond question that there were any avoidable errors in the management of this historic case.

While we believe that honest criticism is always to be encouraged, on such an occasion as this it would be well to be sure of the absolute truth of the statements on which criticism is based before it is made. A journal claiming to represent the medical profession ought certainly to guard the rights of those it claims to represent so long as truth and facts allow it to do so. There will be time to criticise the management of the case of President McKinley when all the facts shall be revealed in the full report of the case and in the official report of the autopsy. It is well in all cases where there are not the strongest reasons to the contrary that, as a lay journal says, "we should give good men credit for good motives, good judgment and good actions. . . . Some time a valuable life may be lost because the would-be life saver is not at his best and bravest through fear of hostile criticism or carping misapprehension."

RELATIONAL ANATOMY.

Professor Jackson has done a real service in introducing what must be regarded as a new and important method for preparing and studying gross sections of the human body, which he described in his paper printed in these columns last week.[1] The great value of the frozen sections made by Braune and others has been generally recognized, but the difficulty of making these sections has hindered many anatomists from using them to the extent which the importance of the study for the acquisition of a knowledge of topography renders desirable.

The formalin injection used by Dr. Jackson fixes each organ perfectly in its natural position. Freezing is entirely unnecessary for the making of sections; they can be satisfactorily prepared with the aid of only a butcher's knife and saw. The principal advantage of the method, aside from its simplicity, lies in the ease with which the preparations may be preserved, handled and studied without danger of injury.

The procedure promises to be of value not only for surgical anatomy but also for the study of human anatomy as a pure science. The student who learns his gross anatomy by dissection alone can not possibly gain a normal conception of the natural relations of the various parts to one another. Dissection consists essentially of the removal of the coarser connective tissues and fat from the body. This has to be done gradually, and while the method permits of the gaining of

1. See The Journal of September 21, p. 731.

knowledge concerning the form of the individual gross structures, the student unavoidably loses sight of the real relations of structure to structure as they exist before the tissue has undergone that mechanical analysis which dissection necessitates. If three series of sections—corresponding to the three dimensions of space—through the whole body made by Dr. Jackson's method be carefully studied and drawn the student should be able to make a mental reconstruction of the entire organism of greater practical value to him than that obtainable by any other method. We do not mean by this that dissection is likely to be superseded by a study of such series of sections; on the contrary, thorough and clean dissections are now more important than ever; but it may fairly be prophesied that dissecting-room anatomy will from now on be supplemented in much greater degree than heretofore by some such topographical method as Dr. Jackson suggests. The two methods, that of a study of serial sections and that of dissection, will be reciprocally beneficial to one another.

It is gratifying to note that the topographical method employed has been introduced by a professor of anatomy in a medical college of the Middle West. Now, that medical schools of the better sort in this part of the country have come to recognize the necessity of having the chairs in the scientific branches of medicine filled by men who give their whole time to teaching and investigation, we may hope not only that anatomy, physiology and pathology will be better taught to medical students than they have been in the past, but also that these sciences will from time to time be enriched through the activities of their representatives in the fields of original research.

THE RESORPTIVE POWERS OF THE PLEURA.

This important question has been investigated experimentally by Grober[1] in Stintzing's clinic in Jena. Of the various factors that have been emphasized as promoting absorption from the pleural cavities, Grober does not attach any importance to the aspiration on part of the thoracic duct nor to the *vis a tergo* of the blood pressure and of the tissue fluids. The purely physical forces of osmosis and capillary attraction are of some importance undoubtedly. Whenever accumulations of fluid in the pleural cavities are of less concentration than the blood serum and the lymph, the walls of the vessels in the pleuræ will act as semipermeable membranes and permit currents of fluid to pass into their contents, according to the general laws of osmotic pressure.

Thus Castaigne[2] finds that during the first week of exudative pleuritis the pleural fluid is more concentrated than the serum of the blood. Aspiration would be useless at this time because fluid would rapidly accumulate in the pleural cavities.

But the most important factors are found in the movements of the respiratory organs. During respiration the intrapleural pressure varies as the lungs are pressed more or less firmly towards and against the chest walls; in case the pleural layers come in contact at certain points the fluids in the cavity are pressed into the openings in the wall; and finally as the ribs are separated and approximated the lymph vessels in the costal wall which communicate by openings with the pleural cavity are alternately compressed at some points and extended at others, thus constituting a suction pump. When respiration is shallow and superficial, absorption from the pleura is less marked than when the respiration is normal. And naturally absorption is also dependent largely upon the actual conditions of the tissue in the pleural membranes, whether normal or pathological. It is not at all surprising that absorption is greatly delayed when the pleuræ are the seat of various forms of inflammation. Grober also adduces a certain amount of evidence that the healthy pleura absorbs living micro-organisms and toxins which are thereby rendered harmless. In the inflamed pleura this power is also diminished. To the surgeon and the physician who alike are interested in the removal of pleural exudates Grober's experiments present much of value and interest.

1. Ziegler's Beiträge, 1901, xxx, 267-347.
2. Soc. Méd. des Hopitaux, 1900, July 6.

COMPLEXION AND ABILITY.

Mr. Havelock Ellis' recent papers on certain questions of British ability have developed some interesting statistics. He finds from an analysis as regards complexion, of the portraits in the National Gallery, that fair complexion is more frequent among political agitators, soldiers, sailors, scientific men, poets, etc., while statesmen, clergymen, literary men, etc., are predominantly dark. Political agitators and reformers are at the one end of the list, being very largely blonds; the opposite extreme is occupied by actors and actresses, who are almost always dark. So far as Ellis can learn, "no really fair person has ever risen to the highest dramatic eminence in England," and, so far as he has been able to observe, the case is the same throughout Europe. He concludes that excess of fairness prevails among those of restless enterprising spirit, and the reverse is true in the aggregate of dark people, which includes the men of thought rather than of action, the teachers of religion, the humble classes, in short those whose tendency is to practice and preach resignation.

The explanation he gives is that the relation between pigmentation and mental aptitude is chiefly indirect and due to race. The fair man is energetic and restless, it is suggested, because he belongs to an original fair stock of people that possessed these qualities, while the dark man tends to be resigned, religious and imitative, yet highly intelligent, because he belongs to a stock with those characteristics. There are some criticisms that are naturally suggested by these conclusions. In the first place, the figures are too small; the writer generalizes in regard to people of low birth, who are probably not very fully represented in the British National Gallery of

portraits, from a dozen individuals. Considering the composite origin of the British race and the frequency of ultra family variations it appears incorrect to speak of anyone belonging to any particular stock, whether fair or brunette. It might be a little better to say, "throws back" to such a stock; but this also is a conjecture. There is no one of the average Britons who has not had a very mixed ancestry in this particular respect; the one pure race, one of the most enterprising and active ones, at least in a business way, is very generally brunette in Great Britain—the Jews. On the whole it would seem better to explain the facts, so far as they exist, by the old temperament doctrine, which has at least a little basis of truth, at the same time recognizing the imperfection of the data and the weakness of any extensive generalization upon them.

MEDICAL EDUCATIONAL STATISTICS.

The task of working up the data and tables which appeared in the educational number of THE JOURNAL was one of great magnitude and was rendered all the more difficult by some of the minor schools neglecting requests for information. It is possible that there may have been an error in the matter of some of the figures, but we believe that those given are practically correct and that we have presented statistics that have never before been attempted in this country. It will be appreciated if the authorities of the different colleges will verify our work, or notify us in the event of any misstatement that it may be corrected. It is intended that the work shall be carried on in an educational number each year, thus giving reliable information and figures in the matter of medical education. One mistake was made in a note crediting the figures of the population to the United States census of 1890; they were taken from that of 1900.

The table which gave the number of students from the different states in the several colleges was necessarily incomplete owing to the fact that the catalogues of some of the schools do not indicate the state from which the student comes. However, many lessons may be learned from it. It is, for instance, interesting to note especially in regard to the small schools, how the patronage is entirely local.

Considering all physicians in this country, as given by Polk's Medical Register, 1900, except army and navy surgeons, we find that there is one physician to each 637 inhabitants. Of the total number, there are about 104,094 belonging to the regular school, 10,944 to the homeopathic, and 4,752 to the eclectic and nondescript schools —in all 119,788. To this number must be added those receiving degrees the past two years, and of course death subtracted. The probability is that in round numbers there are 125,000 licensed physicians in the United States.

After much correspondence the Pacific Coast Regular College of Medicine has been reported as having had 14 matriculants and 7 graduates the past year. This gives a total of 5,451 graduates and 26,431 students registered for the school year 1900-1, and it is thus shown that one of every 2,888 inhabitants was a medical student.

There are in the United States 155 colleges that confer the degree of M.D.—122 of the regular school, 20 homeopathic, and 13 eclectic and nondescript. In our table of medical colleges 159 were shown, but two of these, the School of Medicine of the University of Kansas and the Medical Department of the University of North Carolina, do not grant degrees, the two homeopathic colleges in Kansas City, Mo., consolidated, and the Curtis Physio-Medical Institute, Indianapolis, was believed to be in existence, but nothing authentic has been learned. This gives the almost startling ratio of one medical school to approximately every 500,000 population in this country. Comparing this to the figures shown in some of the other countries: Great Britain has one to every 2,350,000; Germany, one to 2,500,000, and Austria, one to 5,000,000.

TESTIMONIAL BANQUET TO DR. N. S. DAVIS.

The banquet to be given in honor of Dr. N. S. Davis, at Chicago, on October 5, ought to be a notable event. We, in this country, are beginning to adopt the praiseworthy custom of showing our great men that we appreciate them while they are yet with us, and there has been no better opportunity afforded to give honor where it is due than this one. It is sixty-five years since Dr. Davis entered on the practice of medicine and these have all been years of active usefulness and prominence in the profession. His connection with the founding of the American Medical Association would of itself insure him an immortality in our records and memories, but it is only one incident of his leadership in all good works and causes. His active advocacy of higher medical education, which he was one of the first to promote, of higher ethical standards, of temperance, etc., can never be forgotten so long as there is a history of American medicine, and while in his long life of usefulness there may have been many who have differed with him on some details, no one has ever questioned the sincerity and honesty of his opinions or his honorable methods. There is no one living at the present time that the American medical profession ought more to delight to honor, and we are sure that its members will not allow the occasion to pass without showing their appreciation of the opportunity.

LOW BIRTH-RATE NO CAUSE FOR ALARM.

An English clergyman, the Dean of Ripon—in that usual outlet of British feeling, a letter to the *Times*—laments the decrease of the birth-rate in England, which has fallen from 34 per 1000 of the population in 1875 to 29 per 1000 in 1900. At this rate he concludes the birth-rate will in time be entirely suppressed and the climax of England's decadence be complete—with its final baby. Such forebodings remind one of Mark Twain's calculations on the length of the Mississippi.

which was continually being shortened by cutting off bends. He calculated the time when Cairo would be a suburb of New Orleans and offered the result as an example of the beauties of statistics which give the largest results of theory for the smallest investment of facts. The birth-rate of England, like that of every modern civilized country with a higher standard of living and diminishing proletariat, tends to decrease, and if this decrease does not progress too far it is a sign of prosperity and well-being of the population. An excessive birth-rate, like that of parts of Russia, means usually an excessive infantile death-rate; children come too often to be properly cared for, and are too common to be duly valued. If the birth-rate falls below the death-rate, of course the result is national extinction; but this has not happened anywhere lately, to our knowledge, except among a few degenerate Indian tribes, etc. Even a low enough ratio to indicate immediately threatening decadence is rare where vital statistics are reliably collected. Those of Great Britain must be beyond any question, but the fall of 5 per 1000 in twenty-five years need not as yet be very alarming.

"SHADOWING."

The Sacramento *Bee*, the paper which was so indefatigable in its opposition to the ostrich policy of the California authorities as regards the plague last spring, publishes a curious detective's bill recently paid by the California State Board of Health. The bill is for "shadowing" Drs. R., F., and W., which the *Bee* interprets to mean Dr Ryfkogel, the ex-bacteriologist of the State Board of Health, who left the board apparently on account of his diagnosis of the plague in the earlier San Francisco cases; Dr. J. M. Flint, bacteriologist of the Marine-Hospital Service, and Dr. J. H. White, United States quarantine officer and successor of Dr. Kinyoun at San Francisco. If these identifications are correct and the paper furnish some evidences supporting them, at least in part, besides its positive editorial affirmation, the question naturally arises why was this bill incurred, and what good has come of such expenditure. "Shadowing" is practiced for two purposes: legitimately to obtain evidence of crime, illegitimately to manufacture evidence of crime. Of what crime have Dr. Ryfkogel and these United States officials been guilty, or what good reason was there of suspecting them of contemplating one? If these questions can not be satisfactorily answered there was no ground for the legitimate use of spies upon their movements. We do not say that the California authorities can not give a good reason, but what it is, is beyond the scope of our imagination. If they have none, the performance is a disgrace to them and an insult to respectable physicians as well as to a department of the public service of the United States.

UMBILICAL INFECTION WITH BACILLUS PYOCYANEUS IN THE NEWBORN.

In an epidemic of so-called umbilical sepsis in Berlin, involving eleven fatal cases, Wassermann[1] found in all umbilical arteritis, one or both arteries being filled with softened thrombi and pus up to their union with the hypogastric artery. In seven cases there was a metastatic focal pneumonia with hemorrhagic and cellular as well as fibrinous exudation, necrosis and abscess formation. In two cases there was an acute fibrinous pericarditis. In the last four cases the bacillus pyocyaneus was obtained in pure culture from the umbilical thrombo-arteritis and the pulmonary foci. This bacillus produced an inflammation around the umbilical arteries and a general infection after application in pure culture to the umbilicus of newly born guinea-pigs. It seems that a continuous grouping of umbilical sepsis like this described by Wassermann is practically a new observation. The constant involvement of the umbilical arteries, while the vein remained free, illustrates the previously noted predilection for infection of the arteries. Runge found the arteries involved 54 times in 55 cases of umbilical sepsis. The explanation given of this marked predominance of arterial infection is as follows: The infection begins in the perivascular tissue, whence it extends to the vascular wall; the connective tissue around the arteries at the umbilicus is double as thick as that around the veins, hence the much greater chance for infection of the arteries. Wassermann reviews the literature of pyocyaneus infections in man and shows that it is especially in infancy that the bacillus of green pus acquires special importance. The occurrence of eleven cases of umbilical sepsis within a period of about six weeks in one obstetrical clinic is in itself somewhat remarkable, and the more so as the cause seems to have been bacillus pyocyaneus. But Wassermann offers no explanation as to the probable mode of infection nor as to the source of the infectious agent.

1. Virchow's Archiv, 1901, clxv, 342-364.

THE YELLOW FEVER EXPERIMENTS IN CUBA.

The Caldas serum experiments in Havana appear to have come to an end in a way that is decidedly unsatisfactory to the discoverer of this alleged cure. According to the telegrams from Cuba the commission appointed to examine its merits has recommended a discontinuance of all experiments on the ground that Dr. Caldas keeps his discovery a secret, it is said, to favor a company which has been organized for its exploitation, that his claims that the yellow fever agent is found only in the intestinal tract is not supported by other evidence of mosquito inoculation and direct blood inoculations, and lastly, that his attempt to immunize individuals against yellow fever by his serum has failed. As regards this point there is a question raised by Dr. Caldas; he denies the correctness of the diagnosis of yellow fever in the serum-treated patient by the American physicians. Against this alleged failure he claims a long record of successful experiments by himself and Dr. Bellingzaghi in Brazil and Mexico; hence, he considers the Cuban test inconclusive as regards the merits of the cure. It is hardly possible that there are any material differences between yellow fever in Brazil and Cuba, and that the experts in the latter country are less skilful diagnostieians than Dr. Caldas. His assertion also that the cases in Havana were all instances of blood poisoning from mosquito bites does not carry with it any inherent evidence of probability—accidents of that character do not happen so frequently. It does not appear

that any prejudices on the part of the commission on account of his unethical secretiveness to the nature of his remedy stood in the way of their giving it the trial in which it has failed, and any complaint by him on that account is scarcely justified except indeed that he may claim that it was not complete enough. From the telegraphic dispatches it would appear that his methods were not such as to convince the commission of his genuine scientific spirit as an investigator, and the medical profession generally will pardon the members for not desiring to be utilized in furthering any commercial exploitation of a secret formula. If Dr. Caldas goes back discredited he will apparently have himself to thank for his ill fortune.

Medical News.

CALIFORNIA.

Santa Fe Hospital.—The Santa Fe system has decided to erect a hospital building in Los Angeles for the use of its employees.

Dr. Harkness' Estate.—The appraisement of the estate of the late Dr. Harvey Wilson Harkness, San Francisco, places its value at $29,343.

Tuberculosis Reports.—The Oakland Board of Health has adopted a resolution recommending an ordinance which will compel all physicians promptly to report cases of tuberculosis to the board.

Dr. Thomas W. Huntington, San Francisco, associate professor of clinical surgery in the Medical Department of the University of California, has been recently appointed professor of clinical and operative surgery.

To Isolate Consumptives.—Dr. John M. Williamson, president of the San Francisco Board of Health, in his annual report, recommends that a separate ward be constructed at the City and County Hospital especially for consumptives.

The new Emergency Hospital, Golden Gate Park, San Francisco, the foundation for which has just been laid, will be ready to receive patients, January 1, 1902. It will have a capacity of 60 patients and is expected to cost more than $8000.

San Francisco Deaths.—The report of the vital statistics for the year ended June 30, 1901, shows that 7008 deaths were registered. Of these 1107, or 15.8 per cent., were from tuberculosis; 713 from heart disease; 691 from pneumonia; and 573 from violence. Only 4877 births were registered during the year.

Personal.—Dr. Theodore F. Johnson, National City, has gone to San Francisco for two months of post-graduate work. ——Dr. Walter M. Boyd, Los Angeles, is dangerously ill with blood poisoning.——Dr. Harry Wilson, who served in Cuba and the Philippine Islands, has left the army and settled at Fresno for practice.——Dr. Herbert A. Johnston, Anaheim, has purchased a residence which he will maintain as a sanatorium. ——Dr. L. Franklin Dozier has been appointed resident physician at the State Hospital for the Insane, Napa, to succeed Dr. Alden M. Gardner.

COLORADO.

Typhoid at Denver.—The Arapahoe County Hospital is now full of typhoid fever patients. They are mostly from ranches or the mountains and not from Denver itself.

New Medical Licensees.—The Colorado State Board of Examiners passed upon and granted licenses to 268 applicants during the year ending June 30, 1901. Of these 232 were regulars, 28 homeopaths and 8 eclectics.

The Sanitary Bulletin of August 31 states that during the month of August, 71 cases of diphtheria, 104 of scarlet fever and 52 of smallpox were reported to the State Board of Health. This shows an increase over July of 5 cases of diphtheria and a decrease in scarlet fever of 142 cases and in smallpox of 11 cases.

CONNECTICUT.

Dr. William H. Barton, New Britain, has been elected pathologist and bacteriologist at the New Jersey State Hospital, Morristown. He will assume the duties of his new position, October 1.

Personal.—Dr. Myron P. Robinson, Terryville, has moved to Windsor Locks.——Dr. James Stretch, Meriden, has located in New Haven.——Dr. Louis E. Cooper, has been appointed medical examiner of Ansonia, vice Dr. William H. Cooper.

Mortality of Connecticut.—The Bulletin of the State Board of Health shows that by mortality reports received there were 1310 deaths during the month of August. This was 13 more than in July, and 332 less than in August of last year, and 151 less than the average number of deaths in August for the five years preceding. The annual death rate was 18.5 per 1000 for the large towns, for the small towns 13.8, and for the whole state 17.3. The deaths reported from infectious diseases were 423, being 32.2 per cent. of the total mortality.

ILLINOIS.

Diphtheria at Maroa has caused the closing of the public schools and churches.

Smallpox has been reported at Jimtown, near Berlin, Sangamon County; Delavan and Springfield.

Dr. Amos F. Moore, Dixon, has been commissioned assistant surgeon, with the rank of captain, and assigned to the Sixth Infantry, I. N. G.

Personal.—Dr. William T. Sloan, health officer of Peoria, has resigned, and Dr. William R. Allison has been appointed temporarily to the position.——Dr. Charles G. Rayburn, Roseville, has located in Kewanee.

Psychurgery.—The Elgin College of Psychurgery has been incorporated by three individuals said to be "doctors," but whose names have for some unexplained reason been omitted from the list of registered physicians of the state. The object of this "college" is to teach drugless healing.

Chicago.

Dr. P. J. H. Farrell has been commissioned major and surgeon and assigned to the Sixth Infantry, I. N. G.

Hold-Ups and Burglary.—Two physicians have been held up and robbed within the last week, and Dr. D. Lee Shaw lost property valued at $500 by a burglary, September 16.

Seven women physicians have been arraigned by the State Board of Health for practicing medicine without licenses and for advertising as physicians. Of these only one name appears on the physicians' register.

Banquet to Dr. N. S. Davis.—The following invitation has been sent out: "You are cordially invited to a banquet and memorial presentation in honor of Nathan Smith Davis, M.D., LL.D., in honor of his long and distinguished services in medicine in its every form of usefulness, to be given by the medical profession of America, in the banquet hall of the Auditorium Hotel, Chicago, Saturday, October 5, 1901, six o'clock p. m. The committee consists of Drs. Christian Fenger, J. H. Stowell, F. X. Walls, W. S. Haines, Edward F. Wells, and Arthur R. Edwards.

Personal.—Dr. Henry S. Zimmerman has bought the property of Dr. John A. Schreck, Cameron, and will locate there. ——Dr. Elmore S. Pettyjohn has returned from Europe and opened an office in suite 902, Stewart Building.——Dr. F. Gregory Connell is taking a month's trip to the Pacific Coast. ——Dr. Joseph M. Patton and family have returned from a two months' vacation in the Alleghenies.——Dr. and Mrs. Lewis L. McArthur have returned from their summer home at Mackinac Island.——Dr. and Mrs. Ralph E. Starkweather and Dr. John R. Neely registered recently at Buffalo.——Dr. and Mrs. Frank Allport have returned from a European tour of six weeks.——Dr. Frank Billings has returned from Mackinac.

IOWA.

The new Mercy Hospital, Fort Madison, was opened this week.

Dr. J. B. Wilson, Ottumwa, is suffering from a severe attack of appendicitis and is at the Ottumwa Hospital.

An emergency hospital is to be provided for Marshall County in Marshalltown. The supervisors have agreed to fit up and equip rooms and an operating room, and the city council of Marshalltown will co-operate.

Personal.—Dr. R. H. Graham has located in Davenport.—— Dr. R. V. Henry, Hedrick, expects to engage in practice in Kellogg.——Dr. N. A. Sloan has opened an office in Pella.—Dr. Francis A. Ely, Clarinda, has moved to Des Moines.——Dr. Joel E. Morrill, Hamburg, has located in Chapman, Neb.—— Dr. Fred J. Graber, Stockport, has moved to Fairfield.

KENTUCKY.

Dr. William Kenney, Paris, is suffering from appendicitis and has been taken to St. Joseph's Hospital, Lexington.

The Louisville Pathological Society resumed its monthly meetings on September 16, after a recess during the summer months.

Communicable Disease.—Smallpox has appeared at Oakdale, and typhoid fever is said to be epidemic near Pellytown, Adair County.

Dr. Matthew K. Gwyn, U. S. M.-H. Service, stationed at Louisville, has been ordered to Manila, where he will be placed in charge of one of the new quarantine stations.

The Conclave Emergency Hospital.—The field hospital at the Triennial Conclave of Knights Templar at Louisville, received and cared for about 40 cases on the day of the procession.

Dr. Ewing Marshall, Louisville, has been selected as medical director of the Interstate Fair. He will organize a medical corps which will attend to all emergency cases during the fair.

Sale of Cocain Prohibited.—The use of cocain and similar drugs has grown to such an extent as to render some action absolutely necessary, and the city council has passed an ordinance prohibiting the sale of such drugs, except on a physician's prescription.

Unlicensed Practitioner.—An individual who has been practicing medicine for two years at Holbrook, Grant County, and who is said to be a member of the North Kentucky Medical Society, has been found to possess neither a license to practice nor a diploma, and has been fined $50 and costs.

Organizing County Health Boards.—Dr. J. N. McCormack, Bowling Green, president of the State Board of Health, and Dr. William Bailey, Louisville, have made a tour of the state organizing county health boards. They visited forty counties and intend to organize a health board in every county in the state.

Personal.—Dr. J. Crittenden Jordan, Rocky Hill, has moved to Coral Hill.——Dr. W. V. Tucker is about to move from Greensburg to Huntsville, Kas.——Dr. Harry B. Kurtz has located in Garfield.——Dr. George B. Young, surgeon in charge of the U. S. Marine-Hospital, Louisville, has returned from his vacation in the East.——Drs. H. Horace Grant, P. R. Taylor and James Vance have just returned from a hunting trip in the wilds of Wyoming.——Dr. Thomas Hunt Stucky, the newly elected treasurer of the Mississippi Valley Medical Association, and Dr. Henry Enos Tuley, the re-elected secretary, have returned to the city from Put-in-Bay.

MARYLAND.

Mortality of Baltimore.—For the week ended September 21 there were 181 deaths, being an annual rate of 18.17 per 1000. The rate for whites was 15.16 and for the colored, 34.88. Births reported, 170.

Vaccination.—The Health Commissioner of Baltimore reports a perfect rush to be vaccinated and that the health wardens are overwhelmed with work. Over 1000 vaccine points were issued in one day last week.

A severe storm on September 15 did great damage to Monteone Hospital for the Insane at Frederick. A portion of the roof was carried away and 1500 window lights were broken. Some of the hailstones drove into the buildings, breaking mirrors and glassware. The stable was wrenched from its foundation, and the corn crop was ruined.

Personal.—Dr. R. Percy Smith, of Baltimore County, has accepted a position in Baltimore Medical College, and will hereafter make Baltimore his home.——Drs. Wm. Osler, Caspar T. Gilchrist and A. Aronsohn, Baltimore, have returned from Europe.——Dr. Louis Stick, resident, and Drs. Louis Rosenthal and Albert Conroy, assistant resident physicians at the City Hospital, have resigned.

Sewer System for Baltimore.—The mayor, in a message last week to the new city council, calls its attention to the act of the Legislature of 1901 empowering the mayor and city council to provide a general sewer system for Baltimore. In the interest of the health of the community he urges that the power thus conferred be at once exercised. The act requires that the question be submitted to the people of Baltimore by a city ordinance.

Appropriations for Charities.—The total amount asked for by the Department of Charities and Corrections, Baltimore, for next year is $340,220. Of this $119,400 is for the care of the insane, $62,000 for city patients in hospitals, $34,770 for destitute and neglected children, and $106,700 for the City Almshouse. At the latter institution there is room for only 360 insane, while 405 are being cared for, including 151 colored. An increase of $15,000 over last year for the insane and of $2500 for the case of the sick is asked for. The hospitals of the city now carry more charity patients at their own expense than ever before. The board proposes to investigate the financial condition of all patients, as many of them should properly be taken care of by their relatives.

MASSACHUSETTS.

Dr. Arthur R. Perry, city physician of Somerville, has resigned.

The City Emergency Hospital, Boston, will be ready to receive patients, October 1. It is a three-story building thoroughly equipped and with a roof garden, which is rather a novelty in a hospital.

Consumptive Hospital.—Boston has now $150,000 available for the erection of a hospital for consumptives. The mayor has sent to the city council a draft of an ordinance creating a new department to deal with chronic diseases, including consumption.

Personal.—Dr. Percy H. Brigham, Dorchester, has opened an office in Brockton.——Dr. Leslie H. Hendee, Palmer, has sold his practice to Dr. J. Homer Miller, Boston.——Dr. Joseph C. Boulay, Three Rivers, has moved to Ware.——Dr. Henry C. B. Snow, Ashland, Buzzard's Bay, has located in West Somerville.

Hospital Bequests.—By the will of the late Charles H. Hayden, Boston, $100,000 is given to the Massachusetts General Hospital and $50,000 each to the Children's Hospital and the Massachusetts Eye and Ear Infirmary. Clinton Hospital receives $2000 by the will of the late John W. McNamara, of Clinton.

MINNESOTA.

Hamline University, Medical Department, Minneapolis, held its opening exercises, September 18. Professor Charles F. Dight delivered the address.

Swedish Hospital.—The contract for the new Swedish hospital, Minneapolis, has been let for $24,000, not including the plumbing or the heating plant.

Dr. Robert I. Hubert, St. Cloud, has been bound over to the grand jury on the charge of having failed to report cases of contagious disease to the local board of health.

Smallpox is under control in the northern part of the state, but in the southern portion the disease is more prevalent. Dexter, in Mower County, and Okaberia, in Jackson County, have been placed under quarantine.

Personal.—Dr. Edmund B. Johnston, Fairmont, intends to locate in Benson.——Dr. Albert W. Shaw, Everleth, has gone to Buhl, where he has been appointed physician of the Drake and Stratton works, and also for several mines in the vicinity.

Seek Sanatorium Site.—Drs. H. Longstreet Taylor, St. Paul, George S. Wattam, Warren, and James L. Camp, Brainerd, the commission appointed by the governor to look for a suitable site for a state sanatorium for consumptives in the northern woods, is visiting Grand Rapids, Cass Lake and Bernidji.

MISSOURI.

Ensworth Medical College, St. Joseph, opened September 16, with an enrolment of 58 students.

Personal.—Dr. Irwin Phillips, Lead Mine, is seriously ill with blood-poisoning contracted during an operation in June last.——Dr. Charles E. Houser has moved from Gentry to Burlington.

Changes at State Asylum.—The board of managers of the State Hospital for the Insane, No. 3, Nevada, met September 3, and elected Dr. James W. Smith, Pleasant Hill, to succeed P. B. Stratton. Drs. L. M. Thompson, Atlanta, and J. M. Angle, Smithton, were elected assistant physicians.

MONTANA.

St. Peter's Hospital, Helena.—The work on the new $60,000 building for the hospital will begin soon.

New County Hospital.—The commissioners of Silver Bow County have decided to erect a new county hospital at Butte, to cost $20,000.

Personal.—Dr. Ellis P. Townsend, Billings, formerly local surgeon of the Burlington railway, has been appointed physician to the Crow Agency.

The Detention Hospital recently erected for Lewis and Clarke County, at Helena, at a cost of $4000, has been accepted by the county commissioners.

Railroad Hospital Enlarged.—The Northern Pacific Railway hospital, Missoula, has had an addition constructed which nearly doubles the capacity of the institution, and which will be ready for occupancy, October 1.

Vaccination Not Compulsory.—The attorney-general of the state has decided that the State Board of Health has no power to enforce vaccination of school children. If any authority exists it is under the general police powers of the state exercised for the purpose of preventing the outbreak of contagious diseases.

NEBRASKA.

Dr. B. B. Hauser, formerly located near Admah, has purchased the office and residence of Dr. William O. Wisner, Hooper, and will locate there.

Fatal Fire at Norfolk Asylum.—Eight of the eleven buildings of the State Insane Asylum were destroyed by fire, September 23. The building contained 300 insane people, seven of them women, who were rescued with the utmost difficulty. Two patients were fatally burned and a third was seriously burned and slightly injured. The fire was discovered about 3 o'clock in the morning in a subcellar, and burned slowly until about 10 o'clock. The entire building is gutted, but the walls are standing and apparently in good condition. The loss to the state is $150,000, with no insurance. The institution is situated two and a half miles from Norfolk and depends for fire protection upon its own water system. The supply of water gave out very soon after the pump was started, and from that time on the hospital force, together with the fire department and hundreds of willing spectators who had responded, were compelled to stand idle. The worthlessness of the fire protection at the institution has been repeatedly made the subject of reports by former superintendents, but legislatures have failed to act.

NEW HAMPSHIRE.

Dr. James T. Greeley, Nashua, secretary of the State Board of Medical Examiners, has sailed for Europe, where he will spend several months in study.

Personal.—Dr. Orlando B. Douglas, New York, who has spent his summers in Suncook for ten years, has opened an office in Concord.——Dr. E. L. Sawyer, Exeter, has sold his residence to Dr. Alice G. Chesley, and will retire from practice.

NEW JERSEY.

Typhoid fever is said to be epidemic in Dunellen.

Isolation Hospital for Newark.—The Common Council has voted $20,000 for the construction of a new isolation hospital for Newark.

Middletown's Pustulous Disease.—A contagious pustular epidemic disease has broken out in Middletown, which is declared not to be chicken-pox or smallpox. The disease is called new and mysterious.

Diploma Vendor Surrenders.—"Dr." J. W. Norton Smith, whose Central University of Medicine and Science in Jersey City, of which he was president, came into disrepute because it granted degrees of various grades at $5 apiece, or two for $7.50, and who has been wanted for almost a month by the police officials, surrendered himself, September 13. He was promptly arraigned in the First Criminal Court and released under $200 bail. It is expected that he will immediately call a meeting of the stockholders of his university and dissolve the institution. By this practical forfeiture of his charter, the university having been legally incorporated, the prospect of further harm in the matters of undeserved degrees will be wiped out and the case will be dropped.

NEW YORK.

French Hospital.—The French Benevolent Society is to build a hospital in New York City to cost $500,000. It will be a stone and brick structure, seven stories in height, absolutely fireproof, and will accommodate 150 patients.

Prof. Simon Harry Gage, Cornell University, gave some demonstrations, with a projecting microscope, before the Pathological Section of the Buffalo Academy of Medicine, of embryological specimens, including some abnormalities.

The Austro-Hungarian Hospital, with thirty beds and a dispensary, was opened for the reception of patients, September 16. The medical staff is composed of Drs. John Guthman, Ignatz M. Rottenberg, Max Landesmann, Bartholomew Lefkowics and others.

Personal.—Dr. Eugene E. Heriman, resident physician at the Albany County Hospital, has resigned.——Dr. Thomas Cunningham, interne at the Albany Hospital, has resigned on account of ill health, and Dr. Clayton K. Haskell, Saratoga, has been appointed his successor.——Dr. David R. Bowen, Wellsburg, will soon locate in Marcellus.

New Medical Directory.—The Medical Directory of New York, New Jersey and Connecticut for 1901, published by the New York State Medical Association, has just been issued. It comprises more than nine hundred pages, containing the names and addresses of physicians legally registered in New York, New Jersey and Connecticut, and much additional information valuable to the profession. The total number of names contained in the lists of physicians is 12,644, of which 10,112 are in New York, 1472 in New Jersey, and 1060 in Connecticut.

NORTH CAROLINA.

Smallpox is said to be raging in Granville County and quarantine has been established.

Transfer of Hospital.—The James Walker Memorial Hospital, Wilmington, has been formally transferred to the city and New Hanover County. Dr. Thomas Meares Green has been elected superintendent and physician in charge.

Personal.—Dr. R. T. S. Steele, Roberdel, has been appointed assistant surgeon of the Atlantic Coast Line with headquarters at Wilmington.——Dr. A. C. Woodruff, Sparta, has located in Independence, Va.

New School of Medicine.—The executive committee of the Wake Forest College board of trustees, which met at Raleigh recently to consider the question of the establishment of a school of medicine in connection with the college, has decided to postpone action in regard to the matter until next June.

NORTH DAKOTA.

Smallpox.—It is reported that eight cases of smallpox have developed among the laborers on the Northern Pacific Railway, west of Bowdon.——Carrington has one case of smallpox securely quarantined.

To Build Isolation Hospital.—Fargo and Cass County will, jointly, build an isolation hospital. It will be modern in every respect, with sewer and water connections.

Vaccination.—The Board of Education of Valley City has decided that pupils of the public schools must be vaccinated before being permitted to enter, unless satisfactory evidence is given that they have been properly inoculated heretofore.

OHIO.

Scarlet fever is reported to be epidemic in La Rue, and the schools of that village have been closed.

Medical Staff for Fall Festival.—The Medical Relief and Emergency Hospital of the Fall Festival, Cincinnati, will be under the charge of Dr. John L. Davis, medical director, assisted by eighteen physicians who have volunteered their services without pay.

More Room Needed.—The Protestant Hospital, Columbus, is so overcrowded that the trustees contemplate enlarging the hospital, and for the time being will obtain a house for the nurses, which will permit the fifteen rooms now used by them to be given to patients.

Personal.—Dr. J. Phil. Schilling has moved from Louisville to Canton, where he will be associated in practice with his son, Dr. Charles E. Schilling.——Dr. S. D. Good, Newton Falls, has sold his practice to Dr. H. McA. Mealy, of Palmyra, and will take six months' post-graduate work in New York.——Dr. Thomas A. Mitchell, Owensville, has moved to Cincinnati.

OKLAHOMA.

Smallpox has again appeared at Guthrie.

Certificates Granted.—As a result of recent examinations, the Superintendent of Health of the territory has granted certificates to practice to 27 practitioners.

Appointments.—Dr. Richard Foster, Hobart, has been appointed superintendent of the Board of Health of Kiowa County.——Dr. Richard W. Brown, Kingfisher, has been appointed superintendent of the Board of Health of Kingfisher County.

County Boards of Health.—The superintendent of the Territorial Board of Health has appointed practically all the members of the various county boards of health, and urges the necessity of a joint session to confer on measures against contagious disease.

SOUTH CAROLINA.

Rhett Memorial.—The friends of the late Dr. R. Barnwell Rhett, Jr., Charleston, propose to endow a room in the St. Francis Xavier Infirmary in memory of him, which shall be known as the Robert Barnwell Rhett room.

Personal.—Dr. James H. Downey has removed from Pacolet to Gainesville, Ga.——Dr. J. Mercier Green, Charleston, has been elected health officer, vice Dr. H. B. Horlbeck, deceased. ——Dr. William Mazyck has been elected dispensary physician of Charleston, vice Dr. Henry Horlbeck, resigned.

Decision on Medical Law.—In reply to a question regarding the eligibility to practice of a three-year graduate, the attorney-general has decided that the amendment to the medical law "does not refer to a graduate who has taken a four years' course, but refers to and is descriptive of a 'college which has a four years' course of instruction.' The limitation applies directly to the institution. When the college conforms to these qualifications and issues a diploma to a graduate, whether he has attended three years or five or six years, the mere granting of the diploma and the evidence of his standing having been made to the State Board of Examiners the graduate is exempt from the provisions of section 970, volume I. of the revised statutes of 1893, and the criminal statutes above cited do not apply to such a graduate."

SOUTH DAKOTA.

St. Luke's Hospital, Aberdeen, is practically completed and will be ready to receive patients in a few days.

Smallpox has broken out afresh on the Sisseton reservation and has been carried from there to Poplar Creek.

Dr. Tillison J. Wood, Huron, has been commissioned assistant surgeon in the South Dakota National Guard with the rank of first lieutenant.

Compulsory Vaccination.—The Board of Health of Mitchell has passed a resolution providing that all persons residing in the city of Mitchell, and all persons attending school in said city who have their homes elsewhere, shall be vaccinated as a preventive of smallpox before Oct. 1, 1901. Provided that all persons who furnish a physician's certificate of having had smallpox, or of successful vaccination, during the three years last past shall not be required to comply with this order.

TENNESSEE.

City Hospital to be Finished.—The Knoxville City Council has passed over the mayor's veto, an appropriation of $2000 to complete the new City Hospital, which will be ready to receive patients about October 15.

Oil vs. Mosquitoes.—The health officer of Knoxville has commenced a crude oil crusade against mosquitoes in and around Knoxville. He proposes to cover all pools with crude oil once a month until cold weather comes.

Gift for Meharry Medical College.—The Meharry heirs have pledged a gift of $10,000 for Meharry Medical College, Nashville, and have also promised to endow a ward in the new hospital to be built in connection with the college.

Communicable Diseases.—Scarlet fever has appeared in several localities in South Weakley County, in Side View, Sumner County and in Charleston. In the latter place the schools have been closed and a rigid quarantine instituted.—— Diphtheria is raging near Indian Mound, Stewart County. ——Whiteville has had three cases of smallpox of mild type.

Personal.—Dr. Frank A. Jones, Memphis, is convalescing at Tate Spring, East Tennessee.——Dr. Gideon H. Morgan, Rogersville, has moved to Fountain City.——Dr. Walter S. Nash has resigned from the chair of bacteriology in Tennessee Medical College, Knoxville, and has been succeeded by Dr. W. R. Lockett.——Dr. Howard Gunn, Gadsden, has located in Guntersville.——Dr. Marshall M. McRee, Trenton, has opened an office in Grapevine, Texas.

UTAH.

Dr. George W. Middleton, Paragoonah, starts for Europe this month to take post-graduate studies in Germany.

Salt Lake City Hospitals.—The St. Mark's and the Hospital of the Holy Cross are recipients of $10,000 each, given without conditions, by General Palmer and George F. Peabody.

Four emergency hospitals are to be erected in the mining districts—one each at the Sunnyside, Castlegate, Winter Quarters and Clear Creek mines. For this purpose $20,000 has been donated by the former president and vice-president of the Rio Grande Western Railway, General William J. Palmer and George Foster Peabody.

VIRGINIA.

Smallpox.—Another case of smallpox has developed in Lynchburg, the first in several months.

A Pasteur department has been opened at the University College of Medicine, Richmond. It is in charge of Dr. Adolph G. Hoen, formerly of Johns Hopkins University, Baltimore.

Personal.—Dr. Thomas R. Marshall has returned to Bedford City after two years of service as surgeon of the Forty-first Volunteer Infantry in the Philippine Islands.——Dr. Samuel I. Conduff, Hollins, has moved to Salem.

New Physicians.—At the examination recently held at Staunton by the State Board of Medical Examiners, 102 applicants passed. Of these 28 were graduates of the University College of Medicine, Richmond; 18, of the University of Virginia, Charlottesville, and 22 of the Medical College of Virginia, Richmond.

WASHINGTON.

Unlicensed Practitioners.—Dr. W. H. Fahnestock, Walla Walla, and Dr. Edmund Bunton, Spokane, have been arraigned for practicing medicine without a license.

Personal.—Dr. Charles E. Case, Tacoma, has gone to New York to take a post-graduate course in medicine.——Dr. Ella J. Fifield, district supreme medical examiner of the L. O. T. M., has returned to Tacoma from Port Huron, Mich.

New Hospitals.—A permit has been issued for a three-story addition to Sacred Heart Hospital, Spokane, to cost $9000.——The directors of St. Luke's Hospital, Spokane, expect to begin work on the new $100,000 building this fall.—— Endowment of free beds at the Seattle General Hospital was secured at a mass meeting held recently at the Opera House, at which a handsome sum for this purpose was subscribed.

GENERAL.

Professor Czerny, of Heidelberg, is making a prolonged visit in the United States. He is at present in New York State.

Capt. H. Eugene Stalford, assistant-surgeon U. S. army, Manila, has been appointed attending physician to the civil employes of the Philippine Islands.

Isolation of Leprosy in Hawaii.—A stockade has been built around the buildings containing the lepers at Molokai Island. The Board of Health adopted this method to prevent relatives and friends from coming into personal contact with members of the colony.

Dr. Dedriek Left in the Arctic Regions.—Dr. T. S. Dedrick, of the Peary Arctic expedition, resigned, owing to a dispute with Lieutenant Peary, and went ashore at Etah, the headquarters of the North Greenland tribe of Eskimos and the farthest northern settlement. He refused to return to the arctic steamer *Erik,* and was supplied with arms and ammunition.

Beck's Letters from America.—The *Munich Med. Wochenschrift* is publishing a series of letters from Carl Beck, of New York, describing the St. Paul meeting of the American Medical Association and the medical trip to Yellowstone Park. They are bright and entertaining, and give a very good idea of the proceedings at the meeting and the views presented by men whose names are almost as familiar across the water as at home. He makes merry over the incident of the "Frauenrechtlerinnen and the canteen," which has particular zest for his German readers, as the "woman's rights movement" in any form meets but little sympathy from the profession there.

Dr. Rixey Surgeon-General of the Navy.—It has been reported that Dr. Presley M. Rixey, who during the last few months has become prominent as the physician of President and Mrs. McKinley, will be appointed surgeon-general of the Navy at the expiration of Surgeon-General Van Reypen's term of service. This will not be until Nov. 14, 1902, but his commission as surgeon-general expires December 28 next, and it is possible that Dr. Rixey's appointment may be expected then. Dr. Rixey has been the physician of President and Mrs. McKinley since 1898, succeeding Dr. Leonard Wood when the latter organized the rough riders. He was born at Culpepper, Va., in July, 1852, was graduated from the Medical Department of the University of Virginia in 1873, and entered the Navy as

assistant-surgeon in January, 1874. For the first three years he was on various vessels belonging to European, South American and home squadrons, but since 1887 he has been on special duty in Washington nearly all the time.

The President's Case.

Trial of Czolgosz.—The trial of Czolgosz, the assassin of President McKinley, is now ended and the prisoner has been found guilty of murder in the first degree and sentenced to death. At the request of the Erie County Bar Association, Dr. Carlos MacDonald, New York, examined the prisoner and pronounced him sane. His sanity has been also proclaimed by Drs. Joseph Fowler, Floyd S. Creyo, and James W. Putnam, who examined him at the request of the prosecuting attorney. Dr. Harvey R. Gaylord was the first medical witness. He testified that he performed the autopsy and stated that back of the stomach was a track filled with dark fluid matter into which he could insert the tip of his finger. The pancreas was involved; the cause of death was the gunshot wound and the search for the bullet was not continued after the cause of death had been determined. He asserted that the stomach had been affected by the gangrene and that the kidney showed changes which could have been caused only by wounds during life. The wounds in the stomach were not neeessarily the cause of death, but the fundamental cause was the absorption of the broken-down matter in the pancreas. Dr. Herman Mynter described the operation, which he, together with Dr. Matthew D. Mann, performed upon the President. After the wound in the stomach had been closed, as the President's temperature was rising, it was agreed by the physicians that the further course of the bullet should not be followed, and on their advice the President was removed to the residence of Mr. Milburn. Dr. Mynter stated the cause of death primarily as gunshot wound, but that it was directly due to blood poisoning from the absorption of poisonous matter caused by gangrene. He stated that the pancreatic fluid escaped, not by reason of direct injury to the pancreas, but by deterioration of the tissues surrounding it. He stated in addition that the physicians who performed the autopsy tried for four hours to locate the bullet and that the President's representative refused to allow the autopsy to proceed further or to permit more mutilation of the body, which would have been required. Dr. Matthew D. Mann, who operated on the President, testified that it would have been necessary to remove the bowels from the abdominal eavity in order to find the track of the bullet back of the stomach, and that this proeedure would probably have resulted fatally, as the President had already begun to grow weaker as the result of the operation. He stated as the eause of death, gunshot wound in the stomach resulting from the bullet that passed through both the walls of that organ and lodged in the muscles of the baek.

Bullet Not Poisoned.—The theory that the bullet eausing the wound which killed President McKinley was poisoned or was steeped in a virulent culture of pyogenic bacteria, is disproven. City Chemist Hill, who holds the professorship of chemistry at the Medical Department of the University of Buffalo, reported to the prosecuting attorney that the bullets examined by him chemically and bacteriologically revealed nothing.

Examination of Cultures in Progress.—The examination by Drs. H. R. Gaylord and Herman G. Matzinger of the cultures taken at the autopsy on the President, as also of sections, is still in progress. As soon as eompleted the findings will be embodied in the official report of the case.

CANADA.

An examination for barbers is favored by the Trades Congress whieh has been in session at Brantford, Ontario, during the past week. The Federal Government will be petitioned to enact a law making it necessary for all barbers to proeure a certificate of three years' apprenticeship and pass an examination before a board appointed by the government, and that the government establish a proper system of sanitary inspection for barbers' shops.

Prof. Goldwin Smith has donated $10,000 for the library of the University of Toronto. The gift is a timely one in view of the straightened circumstances of the university. The gift will manifest the esteem of Dr. Smith in the university and will also pay tribute to the memory of the restorer of English learning, the present time being the millenary of King Alfred, who is the patron hero and legendary founder of Professor Smith's old college at Oxford.

The Death of the President.—As evidencing the high esteem and affection felt for the sorrowing nation to the south of us, all Canada took on a mournful aspect on the day the body of the late Chief Magistrate of the United States was eonsigned to its final resting-place. Lord Minto, the Governor-General, by official proclamation, declared that the day should be solemnly observed throughout the Dominion and that His Majesty's subjects should abstain from all forms and sorts of amusement.

"Christian science" Suffers in the Toronto Poliee Court.—What is described as the hottest attack ever made on "ehristian science" in the city of Toronto took place on the morning of the 19th inst., during the preliminary investigation in a charge against a father that he had killed his little 6-year-old son by omitting to send for a physician when he was suffering from diphtheria. Police Magistrate Denison did his best to get a description of the "silent" treatment, but was unsueeessful. The crown attorney who was prosecuting the enquiry eharaeterized the fake as follows: "I have no hesitation in saying that this 'christian science,' as set out in Mrs. Eddy's book, is the most damnable blasphemy I ever heard or read." The crown attorney then proceeded to read extracts from the book, when he was interrupted by the magistrate enquiring: "Is that woman still at large?" "Yes, she got this message from God copyrighted." "Oh," said the magistrate, "that shows she's sane enough in one respect." The magistrate and the crown attorney having strongly expressed themselves that this sort of treatment on young children must be stopped, the father was committed for trial at the coming sessions.

Royalty at McGill.—His Royal Highness, the Duke of Cornwall and York, opened the new medical buildings of McGill on the 19th inst. The formal proceedings were opened with an address from the Dean, Dr. Craik, who offered on behalf of the Medical Faculty, teachers, students and workers, a most respeetful welcome to their Royal Highnesses. In this address Dr. Craik gave the history of McGill since 1824, when the total number of students was only 25. At the time of its incorporation with the University, the year 1829, the number had only reached 30. Last year the number of students enrolled was 490. In 1824, four professors comprised the teaching staff; now there are 70. The present new buildings are given to the staff by two members of Lord Stratheona's family, Lady Stratheona and the Honorable Mrs. Howard. At the close of the address, a little casket of the labradorite—a native Canadian metal from Labrador—enclosing a key of solid gold was presented to His Royal Highness. The Duke made suitable acknowledgment for the Duchess and himself, after which he declared the buildings opened for the work set apart for them. A visit to the Royal Victoria Hospital followed this function.

FOREIGN.

Contagious Diseases in London.—Smallpox appears to be increasing in London; there are about 200 cases isolated in hospital ships. Typhoid fever is quite prevalent, due, mainly, it is said, to infected suits of khaki brought from South Africa, either for sale or as family heirlooms.

Changes at the University of Leyden.—Professor Korteweg, of Amsterdam, has accepted the chair of surgery, vaeant since the death of Van Iterson. Van Walsem, the prosector at the largest insane asylum in Holland, has been appointed sueeessor to the late Siegenbeek van Heukelom, whose works on medical ethics and medical jurisprudence have won him a reputation. The first post-graduate course in Holland has reeently been inaugurated at Groningen, and Leyden will soon have one.

Death of Dr. Thudichum.—Dr. J. L. W. Thudichum died in London, September 7, from cerebral hemorrhage. He was born in Germany, near Giessen, in 1829, and studied in that eity and Heidelberg, graduating at the former university in 1851. He settled in London in 1853, and devoted his attention thereafter to chemistry. In 1865 he was appointed lecturer on pathological ehemistry at St. Thomas's Hospital and direetor of its ehemieal and pathologieal laboratory. His publieations are numerous.

Steffan's Title.—Dr. Steffan, by repudiating the title of Sanitätsrath offered him, has eonferred a benefit on the entire profession in Germany. He repudiated the title on account of the assessed fee of 300 marks, and the official decree withdrawing the title states that the medieal profession is ealled upon so often in matters of public health and has had sueh responsibilities and obligations placed upon it in the matter of eontagious diseases and the public health in general, that its members are quasi-public officials to a certain extent, and eonsequently, heneeforth, no assessment will be made when a

title is conferred upon a physician, as when it is conferred upon a private individual.

Silver Jubilee of Prof. B. S. Schultze.—The pioneer of gynecology in Germany is celebrating this year his silver professional jubilee. The list of his works and articles on subjects connected with obstetrics and gynecology includes 139 titles. His large work on the "Treatment of Alterations in the Position of the Uterus" has been translated into several languages, and investigation by combined bimanual examination which Schultze and Hegar inaugurated, opened a new era in gynecology. He also called attention to the benefits of laminaria, and of exploratory tamponing for the detection of chronic endometritis with slight secretion. His "Manual of Midwifery" is in current use as a text-book in Russia, Spain, Italy and Roumania, as well as in Germany, where the twelfth edition has recently appeared. Schultze's name is best known, however, by his method of resuscitating apparently still-born infants, which is generally recognized as the most effective and most harmless method yet devised, as E. Fraenkel states in a review of his professional career, published in the last *Deutsche Med. Wochenschrift*. His father and older brother were both professors of anatomy.

LONDON LETTER.

Outbreak of Smallpox in London.

After enjoying practical immunity from smallpox for several years a severe outbreak has occurred. A week ago there were 15 cases on the hospital ships; now there are between 60 and 70. The outbreak has practically developed within the last seven days and so far has been confined to the northwestern district. Thirty cases have been notified in three days. The medical officers of health are taking every precaution to hunt up the cases and by careful disinfection to prevent the spread of the disease. In connection with this, as with a previous outbreak, the fact has become apparent that comparatively few medical men are competent to diagnose smallpox in its earliest stage, because the disease has become so rare that most of them have never seen a case. There has been only one death, and the outbreak is judged to be very mild. London is not regarded as a place of origin of smallpox and it is believed that this outbreak will be traced to some external source.

Koch Criticised.

A good deal of adverse criticism has been showered on Professor Koch since the Tuberculosis Congress. At the autumn conference of the Sanitary Inspectors' Association, which has just been held, Sir James Crichton Browne read a paper on "Tuberculosis." He said that the sound of Dr. Koch's voice had hardly died away in St. James' Hall when Lord Lister uttered words of protest. Since then there had been a steadily rising tide of opposition and a growing accumulation of evidence against Koch's doctrine. This great Nestor was premature in his announcement and unfortunate in the choice of an opportunity. The question would, he had no doubt, be settled by a government inquiry. Meanwhile, it would be wise for sanitary inspectors to act as if Koch had never spoken.

Prevention of Lead Poisoning in Pottery Glazing.

According to a report made to the government by Professor Thorpe, the use of raw lead compounds in glazing pottery is no longer necessary, and this source of lead poisoning can be eliminated. Fritted lead, which is produced by fusing silica or other material with raw lead so as to form a definite compound—silicate or boro-silicate of lead—answers all purposes. "Fritts" may be soluble or insoluble in acids. The former are little less poisonous or soluble than raw lead itself; the latter are almost innocuous. The proportion of lead in fritts may vary widely—from 15 to 55 per cent.—without any increase in the solubility of the lead. Thus, manufacturers of pottery have a considerable margin of choice in innocuous compounds. In 1899 special rules were proposed by the Home Office: 1, that lead shall be fritted; and 2, that the fritt shall be practically insoluble in acids. A maximum solubility of 2 per cent. was suggested. The manufacturers objected and complained that they were asked to accept conditions "never before employed by any potters in the world." But Professor Thorpe points out that this standard is reached without difficulty in large works abroad. Here as in other matters the unreasonable conservatism of the British manufacturer is the obstacle. But without doubt the result of this report will be that Parliament will compel him to use only fritted lead in glazing.

Paralysis after Dislocation of the Shoulder.

At the polyclinic, Mr. Hutchinson showed the following remarkable case: The patient was a boy, aged 16, who six months previously was caught in machinery and sustained a subcoracoid dislocation of the shoulder, which was reduced about two hours later without difficulty. Loss of power in the arm followed, from which he was slowly recovering. Three months after the accident there were anesthesia of the ulnar side of the hand involving the little and ring fingers, hyperesthesia in the median area, over-extension of the metacarpophalangeal joints and flexion of the phalangeal joints, paralysis of the ulnar interossei, inability to flex the fingers or bring them together, wasting of the thenar and hypothenar eminences, and inability to oppose the thumb to the finger-tips. Passive movement and massage were used. When the patient presented himself at the clinic there were almost complete paralysis and loss of sensibility in all the structure supplied by the ulnar nerve. The fingers were flexed on the palm but could be extended. The wrist was in a condition of partial drop but could be extended at will, though only feebly. Movements of elbow were free but flexion was accomplished almost entirely by the supinator longus, which was large and vigorous, the rest of the forearm being wasted. The triceps was also vigorous, but the biceps and trachialis anticus were very weak and atrophied. Sensibility was present in all parts except in the area of the ulnar nerve, but probably it was below normal everywhere. The muscles of the upper arm were weak, except the triceps and shoulder muscles.

Mr. Hutchinson pointed out that nothing in direct connection with the dislocation would explain the paralysis. Rupture of the circumflex nerve and paralysis of the deltoid sometimes occurred, but so long as the clavicle remained intact it was extremely improbable that the brachial plexus as a whole could be injured. He inquired minutely as to the nature of the injury. The lad said that a revolving wheel seized his coat and dragged on his arm and struck it with considerable force in the upper third on the inner side, where a large bruise followed. Mr. Hutchinson concluded that the nerve trunks in the upper arm were severely bruised, the ulnar nerve being almost disorganized, and the musculo spiral nerve being struck after it gave off its branch to the supinator longus. The incompleteness of the paralysis and the steady progress towards recovery fitted well with this suggestion. He referred to more or less similar cases of paralysis of the nerves of the arm after dislocation of the shoulder which had been recorded by Duchenne. But this writer gave no details of the nature of the injury which caused the dislocation, and though he was aware of the difficulty of explaining the paralysis and quoted Malgaine as to the impossibility of injuring the brachial plexus by a dislocation of the shoulder, he suggested no alternative hypothesis.

Eradication of Rabies from England.

According to the government report recently issued, "During 1900 no case of rabies was confirmed in England or Scotland, and it may be stated with some confidence that the disease which has been present for so many centuries has been eradicated." During the last four years rabies has been confined to the Welsh counties of Brecon, Caermarthen, and Glamorgan, in which six cases in dogs, four in cattle and one in a horse occurred. Credit for this splendid achievement is due to Mr. Walter Long, minister for agriculture, who has enforced an order for muzzling dogs in the face of much opposition. The gratitude due to him and the veterinary department is more apparent when it is remembered that in France 2000 to 3000 cases are annually reported, and that in Italy nearly five times as many cases were declared in 1900 as in 1899; that in Belgium the disease is on the increase; that in India and America it is still present.

Plague.

At the Cape, for the week ending August 17, only 3 fresh cases were recorded, 2 in colored persons and one in a native. The total cases up to August 17 were as follows: Cape Peninsula 357, Port Elizabeth 18, and all other places 2.

Correspondence.

The Septic Tank.

VANCOUVER, B. C., Sept. 14, 1901

To the Editor:—In your issue of August 24, you refer to the sewage disposal at Stratford, Ont., which I understand is by means of the septic-tank system. Your remark that this is the only system of its kind in Ontario, and probably in Canada, is not quite correct, for I am sure that the city of Van-

couver, B. C., was the first to introduce it into the Dominion. The septic-tank system has been in operation in Vancouver for six months and is giving the very best satisfaction. The neighboring city of Victoria is also installing it, and Seattle, Wash., is observing its operations closely with the view of adopting it in the near future, if in further time its success is fully demonstrative, which I thing is certain. So many inquiries have been made at the City Hall here about the workings of it that our city engineer, Col. T. H. Tracy, has not time to answer them all, and has published the following pamphlet on the subject:

THE SEPTIC TANK.

The economical disposal of sewage is a problem which has engaged the attention of engineers and scientists for a great many years with varying results.

Sand filtration, sewage farming, chemical precipitation, bacterial filtration are the most notable processes tried and found wanting. The objection to each of these processes are briefly as follows:

Sand Filtration, continuous or intermittent.—The area of suitable sand ground required is usually difficult to obtain in the neighborhood of a city, and if obtainable the elevation or position is such as to necessitate pumping and conscquent continuous expense.

Sewage Farming is growing into disuse for principally the same reasons.

Chemical Precipitation is expensive, both on account of the cost of the chemicals and handling and also the dealing with the "sludge" which is produced in excessive quantity. The effluent is also liable to become offensive.

Bacterial Filtration.—Considerable success has attended this method of treating sewage, but taken alone there are objections to it. In treating raw sewage the filters become clogged and require to be of considerable size and consequently expensive construction.

Septic Tanks.—The most effective method of treatment of sewage so far known is the Septic Tank, either used alone where the discharge is into salt water or where a high degree of purification is not necessary or in conjunction with bacterial filters where the effluent must be comparatively pure. The tanks are usually constructed of concrete, arched over and of a capacity equal to 18 to 24 hours' flow of sewage with a depth of about 5 feet, the inlet and outlet pipes being turned down to a depth of about 18 feet below the surface, so as to leave the scum, which forms on the surface, and in which the bacterial action is carried on, undisturbed. After the tank has been in use about a week a brown scum forms on the surface, which gradually increases, until the full action is attained. In this scum the action of what are known as anaerobic bacteria goes on, the greater part of the sewage being liquefied and a very small deposit resembling black ashes being deposited; that about 90 per cent. of the organic matter in suspension and about 30 per cent. of that in solution are removed and that the deposit does not require to be removed for several years. The practical result undoubtedly is that the offensive matter of the sewage is destroyed and the effluent is sufficiently clear for discharging into salt water or where a high degree of purification is not necessary.

Where discharged into a running stream or where greater purification is desirable a small bacterial filter or set of filters may be added. In such a case much smaller area of filter is necessary than if filters alone are used, as the effluent from the septic tank will go through at least four times as fast as the raw sewage, and the filter beds are not liable to be clogged.

The Vancouver Septic Tanks are three in number, designed for populations of 5000, 3000 and 2000, respectively, and were constructed in 1900 from plans furnished by the Septic Tank Syndicate, the first being put in operation about Jan. 1, 1901, and the others a month or two later. The results so far (August) are quite satisfactory, though the quantity of sewage passing through is not such as to make the conditions most favorable for the development of bacterial action. In one of the tanks near the Crematory the scavengers have been dumping night soil to the extent of five or six loads a night, and, though the last tank to be put in operation, the effluent is the clearest.

There have been no analyses yet made, either of the sewage or the effluent, but the practical effect of the bacterial action is very apparent. There is no smell from the tanks or the effluent. The earth has been filled over the tanks, leveled and seeded, so that the appearance of the surface is not unsightly or offensive in any way.

Some slight changes have been made in the plans furnished by the Syndicate; in order to avoid the use of wood covering for the inlet and effluent channels the concrete walls having been continued up and arched over, leaving only the necessary manholes appearing on the surface.

The above is a report I obtained to-day from our city engineer. Yours respectfully, W. J. McGuigan, M.D.

Value of Rest in Pulmonary Tuberculosis.

Colorado Springs, Colo., Sept. 13, 1901.

To the Editor:—A very interesting letter from Dr. Chas. Denison appears in the columns of The Journal, of August 31.

It seems to me, however, that he, as well as many others who speak of the treatment of pulmonary tuberculosis, voices a deeply-rooted error when he says in the concluding paragraph of his letter "they are all coming around to the same belief . . . namely, pure air and an *active* (italics mine) outdoor life in that climate where it can be had the easiest and most comfortably."

Having myself been the victim of pulmonary tuberculosis for more than seven years past and becoming thereby deeply interested in all that pertains to the therapeuties of this disease and watchful of all procedures for its amelioration in others as well, I feel that the subject of exercise in this condition ought to be settled without much difficulty. In no other form of tuberculosis is an active functionating of the part affected permissible. In tuberculosis of hip, knee, spine or any other joint, rest is of prime importance. In glandular tuberculosis anything like massage is contra-indicated, and who would be daring enough to advocate systematic thinking as a therapeutic measure in tubercular meningitis?

If once a clear conception of the difference necessary in outlining treatment for those predisposed to tuberculosis and those who already have it actively present is grasped, I believe the present haziness on the subject of exercise will disappear.

As a prophylactic measure in those who by reason of inheritance, environment or poor anatomic development are predisposed to pulmonary tuberculosis, exercise of the chest and lungs is of undoubted advantage. When, however, an active process is present in the lungs the quieter such organs can be kept the better.

Soft, weak muscles are made firmer and stronger by systematic exercise. If such muscles become the seat of an inflammatory action no sane physician would prescribe exercise in any form for them.

I fail to see why the analogy is not fairly applicable to the lungs. If the lungs are sluggish, the pulmonary breath sounds are feeble, especially if the chest is contracted and the family history for pulmonary troubles is bad, by all means prescribe graded and systematic pulmonary gymnastics; but, on the other hand, when tuberculosis has already started in the lungs let us follow the rational methods used for treating tuberculosis elsewhere, by putting the lungs as nearly at rest as possible. I am well aware that not infrequently but one lung is affected, and when this is the case pulmonary gymnastics, while benefiting and strengthening the healthy lung, damages the one that is diseased, and occasionally the benefit is greater than the harm. I am, however, strongly of the opinion that generally in such cases the evil exceeds the good.

Full diet, fresh air, day and night, careful attention to the hygiene of skin and bowels, and rest, including a large amount of sleep (ten hours or more), with occasional counter-irritation to chest and otherwise symptomatic treatment when called for, sums up, it seems to me, what may be termed a safe basis for the treatment of pulmonary tuberculosis.

I may add that these are not merely theoretical considerations but are the results of observations on many afflicted, myself included. Truly yours, W. F. Martin, M.D.

A Use for Criminals.

Palmerston, Ontario, Sept. 20, 1901.

To the Editor:—President McKinley has been laid to rest and his assassin remains to be dealt with by the law as a nuisance to society. Before he is executed might he not be used for some useful purpose? Recent investigations in tuberculosis and cancer, two of the world's greatest scourges, have shown the necessity of the use of a human subject for further research. Already a physician has offered himself as a subject to test whether bovine tuberculosis is transmissible to man. The necessary experiments would not entail any great suffering on the criminal, and public opinion generally would be thoroughly in accord. I can see no objection to this use of desperate criminals. This practice was in vogue when Jenner introduced vaccination to the world, but in the nineteenth century seems to have fallen entirely into disuse. W. R.

Nerve Nostrums and Their Dangers.

Sonyea, N. Y., Sept. 21, 1901.

To the Editor:—The undersigned is preparing a paper on "Nerve Nostrums and Their Dangers," by request of Dr.

George F. Butler, Chairman of the Section on Materia Medica, Pharmacy and Therapeutics, of the American Medical Association, for the June, 1902, meeting, and would be glad to have physicians and others send him samples or literature of such nostrums coming under their notice, or tell him of them and where they may be procured.

WM. P. SPRATLING, M.D.,
Craig Colony for Epilepties, Sonyea, N. Y.

Married.

GEORGE MASON CREEVY, M.D., to Miss Lucy Morris Ellsworth, both of New York, September 12, at New Hartford.

EMIL GRASSER, M.D., to Miss Bessie Clay, both of Louisville, last April.

FRANKLIN JEROME HALL, M.D., Dallas, Tex., to Miss Rowen Mary Russell, Winchester, Mass., August 28.

JOHN T. HUBEL, M.D., to Miss Mary Engle, both of Detroit, Mich., September 2.

LEE WEBER, M.D., Davenport, to Miss Annie Louisa Corner, Des Moines, Ia., September 12, at Des Moines.

WILLIAM B. S. RICHARDSON, M.D., to Miss Birdice Blye, both of Chicago, September 18.

HOWARD A. IJAMS, M.D., to Miss Mae Armstrong, both of Knoxville, Tenn., September 12.

W. H. JONES, M.D., to Miss L. E. Griffitts, both of Unitia, Tenn., September 7.

LEROY W. KING, M.D., to Miss Marion Allen, both of Lowville, N. Y., September 13.

GEORGE L. MARION, M.D., Elgin, Ill., to Miss Berg, Chicago, September 3, at the home of the bride.

JOSEPH A. MORRIS, M.D., Wilton, N. C., to Miss Lizzie Reid Martin, at Roanoke, Va., September 3.

ERNEST S. REEDY, M.D., to Miss Josepha Mae Ator, both of Bloomington, Ill., September 5.

JAY G. ROBERTS, M.D., to Miss Louise Carnahan, both of Hastings, Neb., September 4.

F. CONGER SMITH, M.D., New York, to Miss Kate Comstock, Topeka, Kan., September 3, at the home of the bride.

JAMES E. TAYLOR, M.D., to Miss Martha J. Neal, both of Richmond, Ind., September 12.

E. OTIS SMITH, M.D., to Miss Eugenia Bradley, both of Cincinnati, September 4.

WILLIAM SIDNEY THAYER, M.D., to Miss Susan C. Read, both of Baltimore, September 3.

GEORGE HALLECK WHITE, M.D., to Miss Harriett King Ricker, both of Rochester, N. Y., September 5.

LEOPOLD SCHILLER, M.D., to Miss Charlotte Miller, both of Milwaukee, September 24, at the home of the bride.

Deaths and Obituaries.

William F. Holt, M.D., Jefferson Medical College, Philadelphia, 1857, who had gone to New York for medical treatment, died suddenly at that place, September 10, aged 65. He was born in Georgia, educated at the State University and had been in active practice at Macon for the last forty-four years, with the exception of the time he served as a surgeon in the Civil war. He was several times chosen president of the Georgia State Medical Association, having first been elected in 1882, and in 1890 was a delegate to the International Medical Association, which met at Paris that year. He was for ten years a member of the Board of Education, served for twenty-three years as physician for the Academy for the Blind, and was physician for the Methodist Orphans' Home for twenty-five years. He had served as chairman of the medical board of the City Hospital since its organization, and he was a member of the American Medical Association. The Macon Medical Society met and voted to attend the funeral in a body and to devote the next regular meeting to a memorial meeting in his honor.

Josias A. Ireland, M.D., Kentucky School of Medicine, 1851, died at his home in Louisville, September 20, from arteriosclerosis, aged 77. For the past fifty years, up to his retirement from active practice, he had been a prominent member of the medical profession in Louisville, having been president of the Mississippi Valley Medical Association in 1879, and one of the founders of the Louisville Medical College, of which he was dean and professor of gynecology for a number of years. He was also a member of the American Medical Association, American Public Health Association, and the Kentucky State and Medico-Chirurgical societies.

Benjamin M. Failor, M.D., Jefferson Medical College, Philadelphia, 1855, while returning from a night call, September 12, at Newton, Ia., where he had practiced for the past thirty-five years, was assaulted by robbers and died a few hours later as the result of his injuries. He was a native of Bucyrus, Ohio, and was a surgeon in an Ohio regiment during the Civil war. He was 76 years of age, and for a number of years had been Grand Surgeon of the Iowa department of the G. A. R.

R. Berrien Burroughs, M.D., Jefferson Medical College, Philadelphia, 1856, died, after a long illness, at Norfolk, Va., September 11, aged 68. He was born at Savannah, Ga., and educated at the University of Georgia. During the Civil war he served as surgeon in the 63d Georgia Infantry and the 4th Georgia Cavalry; at the time of his death he was chief surgeon of the Florida Division of the United Florida Veterans. At one time he was president and again vice-president of the Florida State Medical Association.

John K. Boude, M.D., University of Pennsylvania, Philadelphia, 1857, who for the past twenty years had been a member of the Board of Pension Appeals, died at Ocean Grove, N. J., September 8, aged 69. He was born and educated in Ohio, graduating from Miami University. He was an assistant surgeon of the 118th Illinois Infantry, having taken up practice at Carthage, Ill., and served through the Civil war with that regiment.

R. Bruce Wallace, M.D., Jefferson Medical College, Philadelphia, 1868, died suddenly at his home in Union, Neb., September 16. He was born in Missouri and moved to Union in 1887, after practicing for a time in Wyoming. He was a member of the Otoe County Medical Society, of which organization he was a number of times president.

Thomas A. Graham, M.D., Medical College of Ohio, Cincinnati, 1871, University of Louisville, 1872, died from Bright's disease at his home in Jeffersonville, Ind., September 14. He was a member of the Jeffersonville Board of Health, and at one time was a member of the Indiana legislature.

James W. Adams, M.D., University of Michigan, Ann Arbor, 1868, died at his home in Des Moines, Ia., September 13. He was born near Danville, Ind., and served with the 7th Indiana Infantry during the Civil war, enlisting as a private and being promoted to lieutenant.

Samuel C. Edmonds, M.D., University of Pennsylvania, Philadelphia, 1851, died at his home in Linwood, N. J., September 18, aged 72. He had practiced medicine along the coast in his county for the last fifty years.

W. T. Eignus, M.D., Rush Medical College, Chicago, 1901, who was a member of the staff of the State Insane Hospital, was drowned, September 19, by the capsizing of his skiff while hunting near Kankakee, Ill.

George W. Delap, M.D., Long Island College Hospital, New York, 1885, a deputy coroner of Brooklyn, N. Y., died at his home in that city, September 13.

Jacob Sell, M.D., Western Pennsylvania Medical College, Pittsburg, 1889, died from typhoid fever, September 10, at his home in Greensburg, Pa., aged 39.

Solomon G. Carpenter, M.D., University of the City of New York, 1845, died at his home in Chester, N. Y., September 13, aged 76.

Samuel W. McMahan, M.D., Medical College of Indiana, Indianapolis, 1879, died, after an illness of three months, at his home in Indianapolis, September 11, aged 55.

Nathaniel S. Cheeseman, M.D., Albany Medical College, 1860, died at his home in Scotia, N. Y., where he had practiced for the past thirty years, September 12, aged 67.

D. E. Newcomb, M.D., Detroit Medical College, 1885, died at his home in Carleton, Mich., September 16, as the result of a stroke of paralysis.

Charles E. Hollenback, M.D., Bellevue Hospital Medical College, New York, 1874, died at his home in Halsey Valley, N. Y., September 13, after a brief illness, aged 51.

Samuel M. Forrest, M.D., Medical Department of Washington University, St. Louis, 1877, died at his home in Renick, Mo., September 3, aged 57.

Henry A. Lamb, M.D., Vanderbilt University, Nashville, 1901, died at his home in Portland, Me., September 16, aged 24.

Book Notices.

THE MEDICAL DIRECTORY OF NEW YORK, NEW JERSEY AND CONNECTICUT. Volume III. Cloth. Pp. 914. Price, $2.50. Published by the New York State Medical Association. 1901.

The third volume of this excellent Directory is not only fully equal to the two preceding issues, but seems to be even better. While the verification of the exactness of such a book is practically impossible, except by long use, the tests we have been able to make of it have shown that it is perfectly reliable. In this issue is incorporated the names of all legally registered physicians, without regard to school of practice, which, as we understand it, has not been the case with the former volumes. This is certainly commendable. One of the functions of the New York State Medical Association is the prosecution of illegal practitioners; hence, it is important to know who have the right to practice. According to the Directory, New York State has 10,112 physicians, New Jersey 1472, and Connecticut 1060. The arrangement of the book is different from that of former issues in that all the information pertaining to each state is grouped by itself and a distinctive colored paper is used for each, so that ready reference is easy. Brooklyn is made distinctive from New York City by yellow paper being used instead of white. This, as well as in everything that the Committee has done, seems to have been with the view of making the Directory not only reliable but practical in every way. A large amount of information is given in regard to societies, hospitals, medical colleges, etc. The medical laws of New York, New Jersey and Connecticut are given in full, as well as the names of the boards of examiners, Board of Regents, etc., and other information of value to all who are now members of the profession of the three states covered. Besides the list of physicians arranged alphabetically there is also a street list, a valuable but a laborious part to arrange, the summer residences of physicians who have them, etc. The book has been well gotten up and is a credit to the Committee of the New York State Medical Association, that must have worked indefatigably to accomplish the task it assumed when it undertook to get up a directory of the Empire State, as well as of the two adjoining smaller states. The Committee should be encouraged in its work in every way possible. Every physician in the states of New York, New Jersey and Connecticut certainly will be interested enough in the Directory to obtain a copy.

EPILEPSY AND OTHER CHRONIC CONVULSIVE DISEASES; Their Causes, Symptoms and Treatment. By Sir William R. Gowers, M.D., F.R.C.P., F.R.S., Consulting Physician to University College Hospital. Second Edition. Cloth. Pp. 320. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1901.

The early edition of Gowers' work on epilepsy was a standard work and the present one will take its place, in all respects. The statistical basis for the more general facts of the disease have been greatly enlarged and a large amount of work has been done in revision and addition to the text. The author's well-known standing as a neurologist gives weight to whatever he may say. Nevertheless, one or two minor points may be mentioned; he repeats the time-honored statement that unconsciousness is an invariable attendant on major attacks, though there is considerable evidence extant that it may not be invariable, and he is guilty of a little inconsistency when he says later that little is known of the sensations that attend severe convulsions since the patient is almost always unconscious. Dr. Gowers considers that the spontaneous cure or cessation of attacks does sometimes occur and is probably of greater frequency than writers on the condition have usually admitted, but it is not sufficiently common to be recognized as a particular element in the prognosis. In this he apparently fails to consider a large number of cases where epilepsy is a merely accidental or temporary episode in the patient's life. There are many people who under certain stress have one or more epileptic attacks, which are never repeated and the number of such is, we think, rather greater than he seems to admit. Sometimes this cessation may be due to treatment, but sometimes it is spontaneous. He also seems to underrate the danger to life from epileptic fits, though he may possibly be correct in estimating the number of such accidents as small when taken in comparison with all cases of epilepsy. If the records of insane hospitals were studied it will be found that epilepsy is a very serious matter as regards the possibility of sudden death, and in all cases it seriously complicates conditions that might not be fatal without it. In the main, however, the work is one that can be safely followed and is perhaps one of the best monographs on this disease or symptom that exists.

LES SOURDS-MUETS EN NORVEGE. La Surdi-Mutité, sa Distribution, ses Causes ses Symptoms. Son Rapport avec les Unions Consanguines, Conditions Sociales des Sourds-Muets; avec Remarques sur la Diagnose, la Prophylaxie et le Traitement de la Surdi-Mutite. Par V. Uchermann, Professeur à l'Université de Christiana. Publie par les soins de L'Etat. Première partie (texte); et 2ième partie (annexe); 116 Tableux, 2 Cartes, 1 Annexe (Cartes). Traduit du Norvegien Par Joahim Nicolaysen et Theophile Chauvin. Cloth. Pp. 550. Christiana: Alb. Cammermeyer, Editeur. 1901.

This is a most exhaustive study of deaf mutism in Norway covering the subject in all its possible relations, and discussing the theme with reference to nearly all the European literature of note on the subject. Norway would appear to afford a specially favorable field for such a study, not particularly on account of the frequency of this defect, but because of the peculiar distribution of a comparatively limited population in isolated communities often remote from routes of transportation and yet with reliable registration. The study is of especial interest therefore as giving a discussion of some questions of the etiology of deaf mutism, idiocy, etc., from data particularly adapted to throw light upon them. Among these are the questions of the effects of consanguinity of parents, which must be frequent in the isolated communities of Norway, and the effects of heredity generally in the production of these degeneracies. All these matters are very thoroughly discussed and the work will be an important one for reference on such facts. Every other etiologic factor seems also to have been taken up and judiciously handled, both as regards the analysis of the special statistics and their comparison with other data gathered elsewhere. Heredity and consanguinity, social conditions, syphilis, leprosy, age of parents, geology and climate, water supply, etc., are all considered and treated of at length. The work contains elaborate charts showing the distribution of deaf mutism, etc., in Norway, and in a supplementary volume what appears to be a complete list of the cases with a number of very interesting family trees showing the effects of heredity and intermarriage, etc. The work in its way is a monumental one that takes an important place in the literature of its subject, and in this French translation will widely extend its usefulness.

HYGIENE AND PUBLIC HEALTH. By Louis Parkes, M.D., D.P.H., Lond. Univ., and Henry Kenwood, M.B., D.P.H., F.C.S., Fellows of the Sanitary Institute and Members of the Board of Examiners. With Illustrations. Cloth. Pp. 732. Price, $3.00 London: H. K. Lewis. Philadelphia: P. Blakiston's Son & Co. 1901.

This work appearing externally under the same title as the well known Parkes Hygiene so long before the profession, is

really a new work under joint authorship in which the older one has been taken for a basis. The book is condensed in style and while specially adapted to English readers is nevertheless one that will be of value to students of hygiene in any part of the world. It has been written especially for English practitioners who are studying for the various public health diplomas, but its convenience as a reference book to others is not lessened thereby. The views of the authors on certain subjects, as for example, the use of alcohol, etc., are those that have been held in the past and not in all respects what modern reformers would advocate, that is to say they do not go to extremes. On the whole, the work will be found to be a very safe guide and a very handy reference book for the physician.

A GUIDE TO THE CLINICAL EXAMINATION OF THE BLOOD for Diagnostic Purposes. By Richard C. Cabot, M.D., with Colored Plates and Engravings. Fourth Revised Edition. Cloth. Pp. 494. Price, $3.25. New York: Wm. Wood & Co. 1901.

This fourth edition of Cabot's work has been almost entirely rewritten. The section on serum diagnosis has been abridged and the table of contents abbreviated so that the book is not greatly increased in size. It has apparently been brought up to date, though some of the very latest researches in regard to blood diagnosis do not appear to be mentioned. Like the former editions, it is handsomely presented to the profession and will undoubtedly retain the favor with which it has heretofore been received.

Societies.

COMING MEETINGS.

Utah State Medical Society, Provo City, Oct. 1-2, 1901.
Idaho State Medical Society, Pocatello, Oct. 3-4, 1901.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.
Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.
Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.
New York State Medical Association, New York City, Oct. 21-24, 1901.
Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.
Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.
Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Huntington County (Ind.) Medical Society.—This Society held its annual meeting at Huntington, September 17. Dr. Charles L. Wright was elected president, and Dr. Erwin Wright, secretary and treasurer, both of Huntington.

Louisville Society of Medicine.—At the annual meeting of this Society, held September 12, Dr. Walker B. Gosset was elected president; Dr. Thomas A. Hays, vice-president; Dr. Waller O. Green, secretary, and Dr. A. Henry Falconer, treasurer.

Knox County (Tenn.) Medical Society.—At the annual meeting of this Society, held at Knoxville, September 5, the following officers were elected: Dr. C. P. McNabb, president; Dr. J. M. Kennedy, vice-president; Dr. A. D. Scruggs, secretary; and Dr. E. R. Zemp, treasurer.

Syracuse (N. Y.) Hospital Association.—At a meeting of this Association, held at Syracuse, September 5, a permanent organization was effected and the following officers elected: President, Dr. Nathan Jacobson; vice-president, Dr. Frederick R. Hazard, and secretary-treasurer, Dr. George M. Price, all of Syracuse.

Douglas County (Minn.) Medical Society.—The annual meeting of this Society was held, August 4, and the following officers elected: Dr. Herbert J. Orchard, West Superior, president; Dr. A. W. James, Solon Springs, vice-president; Dr. Louis Moody, secretary, and Dr. P. G. McGill, treasurer, both of West Superior.

Montour County (Pa.) Medical Society.—At the annual meeting of this Society, held at Danville, September 4, the following officers were elected: President, Dr. T. B. Wintersteen; vice-presidents, Drs. G. A. Stock and E. A. Smith; corresponding secretary, Dr. Ida Ashenhurst; recording secretary, Dr. J. R. Kimerer, and treasurer, Dr. P. C. Newbaker.

International Congress of Nurses.—The week ending September 21 marked a very successful meeting of this Congress at the Pan-American Exposition. Saturday was set apart by the management as Nurses' Day, and the close was the occasion of a reception given at Castle Inn by the local nurses' societies. The attendance was good throughout the meeting and much interest was shown in the papers.

National Association of Hospital Superintendents.—At the meeting of this Association, held in New York City, September 12, the following were elected for the ensuing year: Dr. J. T. Duryea, Kings County Hospital, president; Dr. Charles O'Reilly, Toronto General Hospital, vice-president; A. D. Shaw, Harper Hospital, Detroit (re-elected), treasurer, and Dr. D. T. Test, Pennsylvania Hospital, Philadelphia, secretary.

American Academy of Railway Surgeons.—At the annual business meeting of the Academy, held in Chicago, September 13, the following officers were elected: Dr. August F. Jonas, Omaha, president; Drs. Luther Sexton, New Orleans, and William H. German, Morgan Park, Ill., vice-presidents; Dr. Thomas B. Lacey, Council Bluffs, secretary and treasurer, and Dr. R. Harvey Reed, Rock Springs, Wyo., editor. The Academy meets in 1902, at Kansas City, Mo.

Rockland County (N. Y.) Medical Association.—On September 6, at Hotel St. George, Nyack, N. Y., the members of the Fifth District Branch met and organized this Association, by the adoption of by-laws and the election of the following officers: President, Dr. George Blauvet, Nyack; vice-president, Dr. D. V. Van Wagenen, Suffren; secretary-treasurer, Dr. N. B. Bailey, Haverstraw; fellow, Dr. S. W. Toms, Nyack, and alternate, Dr. Charles D. Kline, New York. Addresses were made by Dr. John A. Wyeth, president of the New York State and the American Medical Associations; Dr. Edmond L. Cocks, secretary of the Fifth District Branch of the New York State Medical Association; Dr. C. E. Dennison, treasurer New York County Medical Association; Dr. J. W. S Gouley, New York City; Dr. Milton C. Conner, Middletown, and Dr. C. S. Payne, Liberty, president of the Sullivan County Medical Association. The enthusiasm of the members of the regular profession in the work of the New York State Medical Association in the county, is shown by the fact that of the twenty-four practicing physicians in the locality, eleven have already become members of the Association and eight of the others have signified their intentions of doing so at an early date.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-seventh Annual Meeting, held at Put-in-Bay Island, Ohio, September 12, 13 and 14, 1901.

President Dr. A. H. Cordier, Kansas City, Mo., in the Chair.

President's Address.

DR. A. H. CORDIER selected for his subject "Some Phases of Nephrolithiasis." He drew the following deductions: 1. Hemorrhage from parenchymatous organs is, in most instances, easily controlled. 2. Nephrolithiasis is more prevalent than is generally supposed. 3. A stone having formed in the pelvis of the kidney, if too large to pass through the ureter, will sooner or later produce symptoms demanding its removal. 4. Suppuration in stone cases is, as a rule, a late process and should be prevented by early surgery. 5. A wound in a healthy kidney heals rapidly. 6. Obscure, persistent pains in the region of the kidneys, in a patient who has had a renal colic years ago, should lead to an exploration of the kidney. 7. The operation of nephrolithotomy has a very low mortality. 8. The kidney should not be removed unless practically destroyed by the disease. 9. There exists a special cause for the development of stones in the right kidney. 10. With a carefully obtained clinical history, the diagnosis of stone in the kidney is usually easy. 11. At the time of operating the ureter should be explored, that its patency can be assured. 12. Post-operative patience and faithful effort on the part of the surgeon will result in the saving of many organs; otherwise removal will be necessary.

Fractures.

DR. E. B. SMITH, Detroit, read a paper on this subject. He gave a résumé of the old and new methods in diagnosing fractures. He said that fractures in each stage presented certain definite pathological surgical conditions. The diagnosis, treatment, prognosis, complications with their medico-legal status were dwelt upon at length, and lesions examined, treated, and met by surgical experience.

DR. A. M. HAYDEN, Evansville, said a joint that has a fracture into it should be kept quiet or immobilized for at least

four or five weeks, so that the fragments may become thoroughly united and healed before resorting to passive motion. Passive motion was used too early.

DR. W. T. STEWART, Chicago, spoke of suturing the fragments in fractures, saying he had been disappointed in using the various methods recommended in text-books and journal literature, and expressed the hope that some member would speak of immobilization of parts in delayed union of fractures, and in fractures of recent occurrence.

DR. S. S. THORN, Toledo, said one cause of delayed union in fractures was malnutrition, the result of enforced anemia, and this anemia was the result of applying bandages too tightly and the use of short splints, thereby causing constriction, which resulted in anemia, starvation, and hence delayed union.

DR. A. J. OCHSNER, Chicago, mentioned the interposition of muscle or fascia between the fragments as another cause of non-union of bone, and cited cases in point.

DR. A. M. PHELPS, New York, spoke of a third reason why union did not take place after a fracture of the thigh—the nutrient artery became ruptured, and thus nutrition was cut off. Treating fracture with coaptation splints was wrong. He favored extension (Buck) and fixation in fractures of the femur. A patient with a fractured femur is put to bed with Buck's extension applied for a week or ten days, until laceration of the soft parts has subsided, after which a brace is applied, the patient gets out of bed, is driven about in a carriage, and fed well.

Floating Liver, with Report of a Case.

DR. J. HENRY CARSTENS, Detroit, said that very few such cases had been reported. The condition was often associated with general ptosis of the abdominal viscera. The patient was a woman, aged 40, quite stout. A gradually developing tumor had been noticed, starting on the right side and growing downwards. It was firm and non-fluctuating. On account of the distressing nervous symptoms, an exploratory celiotomy was done, and the right lobe of the liver found enlarged and hanging down to the pelvis. It could be replaced in the normal position, and was stitched there. Recovery took place, with disappearance of all the distressing symptoms.

DR. WILLIS G. MACDONALD, Albany, had seen a considerable group of such cases. Some years ago he showed the lobe of a floating liver with a gall-bladder and some gallstones. He had seen two cases in which there was general ptosis of the liver, one in which, by change of position of the patient, it was quite possible to have had the liver float down beyond the border-line of the umbilicus, and, changing the position of the patient back again, have it disappear beyond the border of the ribs.

Report on Sterilization of Rubber Gloves by Formaldehyde, and on the Use of Mild Antiseptics Inside the Gloves.

DR. A. GOLDSPOHN, Chicago, has carried on a series of bacteriologic tests to determine the minimum requirements for sterilizing rubber gloves by formalin gas. He used small pieces of surgeon's silk as germ-carriers, because the gas would evaporate from them. With his experiments he determined that, 1, a small connection with a chimney flue to afford a circulation of the gas in the sterilizer appears to be necessary when the gas is generated by a lamp; 2, that three hours was the minimum time needed for certain sterilization in his apparatus of that construction. A cross test was made by pouring culture material into the gloves afterwards, and heating it. Sterilized boric acid powder is used as dusting powder inside the gloves to make them slip on dry and very easily. About one-half ounce of 55 per cent. alcohol is then poured into each glove. The fluid in the gloves after operating one or more hours was tested by culture in many experiments and found sterile with one exception.

Infection from the Bacillus Aerogenes Capsulatus.

DR. JULIUS H. JACOBSON, Toledo, after detailing some experiments and narrating observations, deduced the following conclusions: 1. That infection from the bacillus aerogenes capsulatus occurs much more frequently than is recognized. 2. It dominates the whole field of pneumo-pathology (Welch). 3. Such terms as emphysematous gangrene, air embolism, emphysematous cellulitis, are misleading and vague, and should become obselete. 4. Infection from this germ produces a rapid toxemia; the formation of gas in infected areas resulting in gangrene and death. 5. Its principal habitat is the soil and intestinal tract. 6. Owing to its wide distribution in the soil, the danger of infection in all traumatic cases should not be forgotten. 7. A probable diagnosis can often be made by the history, clinical course, and objective signs of the case. 8. A positive diagnosis can only be made by bacteriologic examinations, cultural and animal inoculations. Simple stained specimens taken from the site of infection will often make the diagnosis.

Features Determining Permanency of Cure in Radical Operations for Hernia.

DR. A. J. OCHSNER, Chicago, said that the permanent success following herniotomy depended upon a comparatively small number of practical points which must be observed in order to secure satisfactory results regularly: 1. The wound must heal primarily because suppuration resulted in an abundance of cicatricial tissue and this was most unstable. 2. The stitches must not be drawn tightly, in order to avoid pressure necrosis. 3. The edges of the wound to be united must be free from fat and other unstable tissues. 4. The wound should be supported by broad rubber adhesive plaster strips until healed. 5. The patient should be kept in bed two or three weeks. 6. After the operation abnormal intra-abdominal pressure should be eliminated by avoiding constipation, etc.

1. In inguinal hernia the entire sac should be removed. It was especially important to remove all the loose tissue between the transversalis and internal oblique muscles on one side and Poupart's ligament on the other. The upper portion of this canal should be closed with especial care. In case of a long omentum this should be resected.

2. In femoral hernia the canal through which the sac protruded was a perfect ring and consequently if the entire sac was removed this ring would invariably close, and there could be no recurrence. All meddlesome operations contemplating the closure of this ring caused a certain percentage of recurrences.

3. In ventral hernia, following laparatomy, the original layers should be laid bare, and then the corresponding layers should be carefully united. The author preferred deep silkworm gut sutures to be tied after each layer had been united separately with chromicized catgut sutures.

4. In umbilical hernia the ingenious operation first described by Dr. W. J. Mayo, consisting of an overlapping of the edges of the hernial ring from above downward or from side to side for a distance of one and one-half inches, had given complete satisfaction.

Severing of the Vas Deferens and Its Relation to the Neuro-psychopathic Constitution.

DR. H. C. SHARP, Jeffersonville, Ind., discussed the subject under three heads: 1. The law of heredity, influencing the formation of the character of intellect and will, and the controlling of the appetites and passions, and all the moral impulses, and the pathological conditions to which the mental and physical life are subject. The chief manifestations of this diathesis are chorea, hysteria, hypochondriasis, inebriety, imbecility, criminality, and insanity; and it includes in its subjects sometimes the most gifted, as Burns, Coleridge, Dr. Quincey, and others. 2. The rapid proportional increase of this diathesis, in the face of the efforts of noted sociologists and penologists. 3. The severing of the vas deferens as the means of stamping out this diathesis. The author outlined the field of the operation, the preparation for and method of operating.

DR. A. J. OCHSNER had removed the vas deferens in a number of tubercular cases since his first operative work on defectives and criminals, and in no case has there been any disturbance of the ability of the patient to enjoy sexual intercourse.

Morbid Conditions of the Upper Respiratory Tract Resulting from Infectious Diseases.

DR. CAROLUS M. COBB, Boston, gave a résumé of the autopsies reported by Wofll, Pearce and Zuckerkandl. These autopsies showed that the involvement of the nasal accessory sinuses during the course of the fatal cases of diphtheria, scarlet fever, measles, and influenza, was the rule rather than the exceeption. He then showed from an analysis of 102 cases of nasal or post-nasal catarrh without nasal obstruction, that 69 per cent. of these cases could be traced directly to one or more attacks of the infectious diseases. He called attention to the danger of treatment to the ears during the height of the primary disease, by means of douches, and drew the following conclusions:

Acute Intestinal Auto-Infection.

DR. JOHN M. BATTEN, Dowingstown, Pa., was called to see professionally W. F. B., 56 years, on Feb. 21, 1898. He had been suffering with exhaustion for several days, although neither his pulse nor his temperature was disturbed. He ordered him to bed, thinking that rest in bed might be beneficial to him. Within forty-eight hours, on his own account, patient took a dose of calomel, which still further prostrated him, so he had to be assisted to bed from the chamber. He noticed that patient had had a gray, leaden complexion for several weeks preceding his first call. That gray or cachetic complexion which was present is usually pathognomonic of intestinal auto-infection, although it may indicate malignant disease of the liver. In fact, it was his opinion it was malignant disease of the liver for several days after his first visit, before he could make a differential diagnosis of intestinal auto-infection from malignant disease of the liver, as there was a congestion or a thickening of the lower end of the stomach and upper end of the duodenum. The patient was corpulent, weighing 220 pounds, and lost 40 pounds during the two months he was confined to bed. Previous to his ailment, patient had been careless in securing a regularity in the movement of his bowels for some months. The usual symptoms presented themselves, constipation, flatulency, borborygmus, urates and the constituents of the bile in the urine, fever, headache, unpleasant dreams, and melancholia.

The treatment consisted of large daily doses of calomel till the bile flowed freely, then antiseptics internally, together with small doses of mercury, till an amelioration of the disease was effected, then the natural mineral waters, followed by vegetable tonics in connection with hot baths. For weak heart, with which he suffered, strychnia was prescribed. Nitrate of silver and small doses of mercury for the congestion of the lower end of the stomach, and upper end of the duodenum, which was thought to exist. The diet was beef essence, but he did not exhibit a disposition to eat. His legs swelled in convalescence, and he suffered acute pain alternately in the knees. Patient in due time fully recovered his health, after a protracted stay at Mount Clemens, Mich., whence he had gone as soon as he had convalesced sufficiently to enable him to do so.

Asthma.

DR. JOHN NORTH, Toledo, Ohio, said that a great many theories have been advanced as to the etiology and pathology of asthma; among them may be mentioned reflex neurosis, contraction of bronchial tubes, nervous spasm, blood disease, irritation of air-tubes, irritating humors, extension of bronchitis, vasomotor bronchitis, diathetic neurosis, neuroses of the pulmonary plexus, uric acid diathesis, oxalic acid dyscrasia, excessive venous blood in the medulla, as a symptom of emphysema and bronchitis, etc. Most of these theories contain a small grain of truth, but no one of them can account for the asthmatic paroxysm. Three factors are required for the production of asthma. These are called the "asthmatic tripod," as follows: 1. A vulnerable area of mucous membrane. 2. An abnormally sensitive nerve center. 3. An external irritant or exciting cause. If all these three factors are present at any one time, we will have an attack of asthma. No two of them can produce an attack; all three are required. Remove one of them, and the attack of asthma will not return. The first factor for the production of asthma may be situated in the nose, naso-pharynx, pharynx, larynx, or bronchial tubes. The various names given to the different varieties of asthma are derived from the locality of the vulnerable area of mucous membrane. The second factor may be either inherited or acquired. The neurotic element in asthma has been observed by all writers. Uric acid, oxalic acid, and the oxalates may produce abnormal nerve centers. The third factor is difficult to determine in some cases, as we may have a number of irritants and exciting causes.

In the treatment of asthma, attention must be given to the three factors necessary to produce asthma. The treatment is divided into that of relieving the paroxysm of dyspnea, and treatment during the interval to prevent their recurrence. The relief of the paroxysm may be accomplished by remedies that relieve either of the three factors mentioned.

(To be continued.)

OMAHA MEDICAL SOCIETY.

Regular Meeting, held Sept. 11, 1901.

First Aid to the Injured.

DR. AUGUST F. JONAS delivered an address on this subject. Dr. Jonas is the surgeon of the Union Pacific Railway and has been most fortunate in being permitted to carry out his ideas with reference to his department unhampered. He said that the proposition to establish classes for instruction in first aid work and to introduce the work over the whole system, was a business one, of advantage both to the company and the men. He was given carte blanche, and has been at liberty to do as he thought best.

It was Dr. Jonas' idea that the men must be instructed systematically, simply, and practically, and that interest in matters in first aid must be kept alive. To this end, classes were formed and models, charts and living subjects were used to teach the rudiments of anatomy. Very simple, plain English terms only were used. The pupils proved to be surprisingly apt. In a later lesson, shock, wounds, hemorrhage, burns and exposure to cold were considered. Still later, fractures, sprains, dislocations, suffocation and drowning were taken up. The next lesson covered fainting, apoplexy, intoxication, heat-stroke, epilepsy, concussion and poisons. Lastly, bandaging and transportation of the injured were taken up. The men were impressed with the idea that this instruction did not make them doctors and that the function of the first-aid man was to render intelligent assistance prior to the coming of the physician and that the uninstructed, though well meaning, who tried to assist the injured, often did things which were both useless and positively harmful. They were taught as strongly what not to do as they were what to do. Esmarch's triangular bandage was shown and used with surprisingly good results. The classes were shown how to use very simple splint material to prevent simple fractures from becoming compound. The use of simple, domestic remedies was taught. Each pupil was required to dress imaginary wounds and burns, to apply splints, bandages and the tourniquet, and to perform artificial respiration. Transportation of the injured, with and without stretchers, was practically taught. The interest manifested by the pupils was most flattering. They very quickly recognized any mistakes made in applying dressings. The pupils were all furnished with a copy of the "Manual of First Aid to the Injured," by Bowditch Morton, M.D. To maintain the interest, a "first-aid fraternity," composed of members who have passed an examination for the emergency corps, will be organized. The fraternity will have a ritual and will be officered by the men themselves. Dr. Jonas said that he was most gratified to know that the mass of the men had already learned not to put their fingers into a wound.

After a great deal of experimentation, he had placed in the various shops and upon all railway trains a tin box of first-aid supplies. These boxes are about 10 by 12 and 4 inches deep. They have four partitions of binder's board which can be used for small splints. The box contains antiseptic tablets, antiseptic pads, cotton, picric acid gauze, adhesive plaster, court

plaster, vaselin, dusting powder, pins, safety pins, assorted roller bandages, a roll of cotton cloth, one of absorbent lint, rubber bandage and a pair of scissors. Simple directions for the use of the material in the box and directions as to how to treat such emergencies as fainting are enclosed within.

ROCKY MOUNTAIN INTERSTATE MEDICAL ASSOCIATION.

Third Annual Meeting, held at Denver, Sept. 3 and 4, 1901.

Retinal Lesions of Chronic Interstitial Nephritis.

DR. EDWARD JACKSON, Denver, divided the lesions into the following, 1, alterations in contour, size, color of the retinal vessels; 2, hemorrhage; 3, retinal edema; 4, degenerative changes in the neural elements of the retina and alterations in the layer of pigment epithelium; 5, deposits of exudate. These retinal changes are closely associated with vascular changes, and are more constant than with albumin in urine, casts of any form or any other clinical evidence of renal disease. They appear when the balance of blood pressure and matter to be eliminated has been lost, and give most positive notice of a state of nutrition that can not very long continue.

Changes Necessary to Secure Interstate Medical Licenses.

Dr. John A. Donovan, Butte, Montana, after reviewing the laws of the ten Western States, arrives at the conclusion that each state should amend its laws so as to accept certificates of certain other states. He does not agree with those who insist on the state making the educational requirements necessary to enter college.

Carcinoma of the Breast.

DR. D. A. RICHARDSON, Denver, analyzing the cases of carcinoma of breasts which he encountered during his twelve years of practice, noticed the following: That etiologically it is always of traumatic origin. He removed a sarcoma from a child 8 years old. If a carcinoma be let alone it becomes localized, and in many cases sacculated.

Conservative Surgery of the Ovary and Tube.

DR. W. W. GRANT, Denver, related a case and concluded that the ordinary benign cysts of the ovary should be treated by resection, and not by complete extirpation of the organ. The small healthy remnant of an ovary with an intact tube will carry on the functions of ovulation and menstruation normally.

Report of a Case of Acute Gangrenous Pancreatitis.

DR. LEONARD FREEMAN, Denver, said that the patient, Italian, 30 years, in good health until very recently, was seized suddenly with severe griping pain in abdomen, vomiting and diarrhea supervened. There were no chills, no headache; the abdomen was greatly distended, mind clear. Liver dulness was diminished, splenic dulness enlarged. There was some jaundice; pulse 100, temperature 101. In the left iliac region a dull resisting, somewhat prominent mass could be felt. An incision in the left iliac region revealed the presence of nearly a pint of bloody, foul-smelling, non-purulent fluid. The condition of the patient precluded further exploration. The autopsy showed a friable, disintegrated, greatly enlarged and gangrenous pancreas.

Report of Seventy Cases of Lobar Pneumonia.

DR. J. N. HALL, Denver, gave the conclusion derived from a study of cases seen between September 1, 1900, and April, 1901. Deaths were 24, or 34.8 per cent. Eight cases died within twenty-four hours after admission to hospital. Of the 3 in the 1st decade of life all recovered; of the 16 in the 2d decade, 5 died; of the 13 in the 4th decade 6 died. Total number of lobes involved were 116. Other diseases associated were tuberculosis, 7; typhoid, 3; erysipelas, 1; general sepsis, 1; acute rheumatism, 1; cerebral thrombosi, 1; traumatic pneumothorax, 1; Bright's disease, 2; advanced empyema, 1; organic mitral regurgitation, 2. Highest temperature was 106. Venesection should be oftener employed. Sinapisms and turpentine stupes were used, as also ice. No medicinal antipyretics were used. Alcohol was freely used. He believes in the usefulness of strychnin.

Chemical Treatment of Traumatism.

DR. R. HARVEY REED, Rock Springs, Wyo., said that peroxid of hydrogen was valuable in this condition: 1, as a hemostatic in oozing wounds; 2, to wash out pus and pathogenic microbes; 3, to diagnosticate and locate the extent of sinuses. He gives preference to moist dressings for the following reasons: Cell proliferation does not take place when the parts are dry. Dusting bodies collect in chunks and become foreign bodies.

Mountain Fever.

DR. W. W. WOODRING, Mt. Pleasant, Utah, takes the stand that there is such a thing as mountain fever. It is mostly confined to the young. He has never seen a case in a man over 50 years of age. It is ushered in with chill and followed by a temperature of from one to four degrees in the first twenty-four hours.

Report of Two Unusual Cases of Multiple Neuritis in Children.

DR. E. DELEHANTY, Denver, reported a case in a boy who developed chorea after an attack of typhoid fever. Sometime after he recovered from the chorea he complained of pains in feet and hands, tingling sensation with feelings of pins and needles, wrist drop, foot drop, anesthesia of fingers and toes, wasting of extensors. Breathing later became difficult and diaphragmatic. Patient died. The other case was a boy of 9 years. After an attack of diphtheria he commenced to complain of numbness and tingling, double vision, wasting, foot drop, paralysis of soft palate. Death occurred.

The Function of the Appendix.

DR. E. P. HERSHEY, Denver, said that the appendix has a secretory function. Whether or not this function is of any importance remains to be ferreted out by further investigation. Impaction occurs in transverse colon, sigmoid and rectum. But as soon as the appendix becomes affected impaction occurs at the cecum. This cul-de-sac is the most inviting place for the accumulation of feces. The mass remains here and would become hardened were it not for the secretions that keep the mass thin and moist. It is fair to presume that inasmuch as the appendix in the vast majority of cases is found pointing upwards, backwards and slightly to the left that this is its normal position. These statements have become facts through observation of a number of cases that have had the appendix removed. Whenever constipation occurs in these cases a sense of heaviness and oppression occurs in the right iliac fossa, invariably relieved by free purgation.

DR. WRIGHT said that he hoped the doctor had weighed the matter thoroughly before presenting a paper of this kind to the Society.

DR. EDSON thought the author had produced in his argument no facts with which to prove his position. It is logical, and a very pretty piece of argument, but he has given us nothing upon which to base it. We have his conclusions but he has produced no facts with which to substantiate his position, and his argument does not take into account the known pathology of appendicitis, and he has advanced a new idea as to the position of the appendix.

DR. BEGGS: The Doctor states that the appendix has a legitimate function in the human being upon its anatomic structure—upon the claim that the appendix has a much larger glandular supply than any other portion of the intestines. Now, with reference to that, we are met in the beginning with a little confusion of ideas. Histologically, the mucous membrane of the appendix is almost the same as that of the large intestine. The structure of the tubular glands in the appendix is the same as that in the large intestine. They are so infinitesimally smaller in man when compared with the rest of the intestine that from a quantitive point of view they can be neglected. When we pass a little lower in the scale of animals we find that the appendix plays a much greater function in the lower animals than in man. The so-called valve of the appendix does not act as an obstruction to foreign bodies in their

passage into the appendix, and we must not offer our ideas that a majority of our cases are due to foreign bodies.

DR. PERKINS' experience had been that quite a large percentage of appendicitis cases begin with diarrhea, and not with a constipation. Another point is that in opening the abdomen for other operations we find the appendix in a normal condition, and it appears to have practically nothing in it, and it is very small as a rule, sometimes appears to be almost obliterated in portions, and it seems if the secretory object of this kind was so great as the writer would lead us to believe that we would find it distended with fluid, and find much more evidence of this sort of thing..

DR. ESKRIDGE moved that Dr. Hershey be requested to give this Association at its next meeting the data on which he bases his conclusions after having pursued his investigations farther. The motion was carried.

Report of a Case of Rapid Respiration in Fatal Organic Diseases of the Brain.

DR. J. T. ESKRIDGE, Denver, reported at length a case of exceedingly rapid and very slow respiration, with pauses in respiration varying from twenty seconds to two minutes in duration, in a patient suffering from tubercular meningitis, syphilitic periarteritis of the pons and medulla, and from hysteria. The most rapid respiration was 140 to 142 per minute; the slowest 2 to 3 per minute, the latter extending over prolonged periods.

An Operation for Spina Bifida.

DR. LEONARD FREEMAN, Denver, reported a case of a baby 7 weeks old who had a spina bifida, a translucent tumor the size of a goose-egg. The sessile sac had steadily increased in size until the integument had become translucent and as thin as tissue paper. An elliptical incision was carried around the tumor near the base and the sac opened. The elongated conus was freed from its ventral attachments to the sac and replaced within the opening. The sac was cut away near its base, neck freed from its attachments to edge of cavity and stuffed into opening on to cord. The operation was whipped over with silver wire, and wound sealed with collodion. Satisfactory recovery took place.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Fourteenth Annual Meeting, held at Cleveland, Sept. 17, 18 and 19, 1901.

FIRST DAY—MORNING SESSION.

President DR. W. E. B. DAVIS, of Birmingham, Alabama, in the chair.

An Address of Welcome was delivered by DR. C. H. HOOVER, of Cleveland, to which a fitting response was made by President Davis.

Tubo-Abdominal Pregnancy.

DR. WILLIAM H. HUMISTON, Cleveland, reported this case. The principal points of interest were: 1. Extreme loss of blood and shock; pulse, 180, barely perceptible over radials; temperature, 95. 2. The prompt result of submammary injections of normal sterile saline solution at the time of beginning anesthesia. These injections were recommended in desperate cases. 3. No attempt was made to remove the large amount of blood filling the abdomen close to the pelvic brim. The large amount of blood gave no trouble, and was taken care of and absorbed by the peritoneum rapidly.

Cornual Pregnancy; Rupture in the Fourth Month; Operation; Recovery.

DR. MILES F. PORTER, Fort Wayne, Ind., saw Mrs. H. sixteen hours after she had been taken sick with severe abdominal pain accompanied by the usual signs of severe hemorrhage. She had had one living child and one miscarriage, and was near the middle of her third pregnancy. Hasty examination revealed nothing abnormal in the vagina save a slight bloody discharge. Celiotomy was immediately done and a ruptured cornual pregnancy of about four and a half months with bicornute uterus found. The belly was filled with blood. The ruptured cornu was amputated and the stump sutured, leaving the ovary and the tube attached to the stump. There was profound depression, which was treated by saline rectal injections, and hypodermic administration of digitalin and strychnin. Recovery was uneventful. A large quantity of warm sterile water was left in the abdomen. The intact cornu was much enlarged and attached to the ruptured cornu with a rather long pedicle. The gestation sac was thick save at the point of rupture and composed of uterine tissue. There was no communication between either the sac and the vagina or the tube and the sac. These communications became occluded subsequent to the impregnation. A decidual membrane was present. The presence of this membrane marks the case as one of ruptured pregnancy in an illy-developed cornu of a bicornute uterus. In tubal and interstitial pregnancy there is no decidual membrane in the sac. An abnormally low implantation of the tube and round ligament accounts for the fact that in this case they were attached to the outer side of the stump left after removal of the sac, and not to the sac itself, as is the rule. As a rule, pregnancy in a bicornute uterus terminates normally. In three of the cases referred to in the author's paper, including the author's, normal pregnancies preceded the rupture four times. In the others, no reference as to the other pregnancies was made. He had been able to find reports of but 18 cases of ruptured cornual pregnancy which, with his own, makes 19 cases reported to date. The symptoms are those of ectopic pregnancy save that the rupture occurs later in cornual pregnancy, and the hemorrhage is usually more profuse. A previous history of sterility or of tubal infection points to tubal rather than cornual pregnancy. These two papers were discussed jointly.

DR. EDWARD J. ILL, Newark, N. J., endorsed the treatment employed by Dr. Humiston in his case, and said the quicker an operation is done in such cases, and the sooner the abdominal cavity is walled off, the better the chances for recovery of the patient. He agreed with Dr. Humiston as to the quantity of normal salt solution that these patients will receive and absorb. Massage assisted materially in the absorption of the fluid.

DR. EDWIN WALKER, Evansville, Ind., referred to the indications for the use of normal salt solution in the abdominal cavity. He could not see what benefit was derived from the use of normal salt solution in the case of Dr. Humiston, for the reason there were well-organized clots, and these could not have been affected by it. Such clots, when organized, became drier and were absorbed, and the salt solution only aided in the absorption of any septic material that might be present. He believed it was a mistake in all cases to wash out the abdominal cavity with salt solution. By wiping out the cavity with dry gauze it could be made clean, if it was not infected.

DR. M. ROSENWASSER, Cleveland, commended the use of subcutaneous saline solution in the case of Dr. Humiston, but expressed doubt as to the value of salt solution in the abdominal cavity. He had not seen any special beneficial change either in the pulse or condition of the patient by leaving saline solution in the abdominal cavity. In packing the extraperitoneal cavity that was left, he used sterile gauze instead of iodoform gauze.

DR. HERMAN E. HAYD, Buffalo, disagreed with Dr. Rosenwasser that the saline fluid was not absorbed. He had filled the peritoneal cavity with normal salt solution, leaving two stitches open, and in an hour and a half the fluid was absorbed, as subsequently verified by postmortem examination.

DR. ROSENWASSER did not wish to be understood as saying that the fluid was not absorbed, but that it was not readily absorbed when the peritoneum was in a pathological state.

DR. J. HENRY CARSTENS, Detroit, stated that the use of normal saline solution in the abdominal cavity prevented, to a large extent, agglutination of the intestines and omentum. This cavity could be cleaned out just as effectively by sponges as by washing it out with salt solution. The drier the cavity was kept, the better the chances for agglutination. He preferred the use of sterile rather than iodoform gauze.

DR. JAMES F. BALDWIN, Columbus, Ohio, said he had been disappointed in the use of normal salt solution, whether in-

jected into the subcutaneous tissue or poured into the abdominal cavity and left there to be absorbed. He had used salt solution again and again, and it seemed to him absolutely inert. He had never seen it produce a particle of benefit.

DR. CHARLES GREENE CUMSTON, Boston, stated that given a condition a patient was in when an operation was undertaken for ruptured tubal pregnancy, he did not think the peritoneal cavity nor the subcutaneous cellular tissue had a sufficient degree of vitality to be able to absorb the salt solution in the majority of cases. Furthermore, in cases where the surgeon injected salt solution into a cavity whose walls were the result of a pathologic change, he did not believe that the walls of that cavity would absorb the liquid. The only value that he could see in the normal salt solution was after a prolonged intra-abdominal operation, where the intestines had been exposed, where the loss of heat had been great and the surgeon desired to introduce a certain amount of heat into the abdominal cavity. On the other hand, the use of gauze sponges in wiping out the debris should be extremely limited because gauze would remove the epithelial covering of the peritoneum of the intestine and of the parietal peritoneum, and he believed was a fertile cause for adhesions after operation.

DR. EDWIN RICKETTS expressed great disappointment in the use of normal salt solution. He believed the results of its subcutaneous use had been overestimated. Wiping out the abdominal cavity vigorously with a sponge was disastrous to the patient. Gauze should be pressed in and out without any marked friction of the peritoneum. No remedy had as yet been found equal to the judicious use of strychnin to overcome shock.

DR. HUMISTON, in reply, said the abdominal cavity in his case was almost completely filled up to the under border of the liver with blood, and if he had attempted to handle the intestines and delay operation for the length of time it would take to cleanse the abdominal cavity of blood, he believed he would have lost his patient. He did not believe in irritating the peritoneal surface with dry gauze, as it injured it, and would often prove disastrous to the patient. He used iodoform gauze wrung out of hot sterile saline solution, thus washing the excess of iodoform out of it.

Transverse Incisions in Abdominal Celiotomy.

DR. CHARLES GREENE CUMSTON, Boston, for the last eighteen months had been opening the abdomen in many of his gynecological cases by a transverse incision, with a view to securing a more solid cicatrix than he believed could be obtained by a through-and-through incision. The first incision, which he had now made 45 times, is made at the upper limit of the pubic hair transversely, following a line parallel to the upper limits of the pubic hair, making it about a centimeter below the base of the hairy triangle. The skin and cellular tissue are cut through until the fascia is reached; the upper border of the wound is then rapidly dissected off the fascia by a few snips of the scissors and is then held up by a retractor. The lower border of the wound is also dissected off and drawn down by a retractor so that the incision becomes elongated, and if proper traction is made on the retractors by the assistant, a rectangular wound can be made sufficiently large to incise the fascia vertically to the extent of 5 or 6 centimeters. When incising the fascia he thought it better to do so over the inner border of one or the other rectus, and when the belly of the muscle has been freely exposed, its inner border is found and the whole muscular mass pushed aside, thus exposing the thin fascia underneath without wounding the fibers of the muscle in the slightest. After the peritoneum has been opened, the retractors holding the skin flaps back can be removed and ordinary abdominal retractors can then be employed. Through this transverse incision he had performed total hysterectomy with ease, and had done most of the ordinary work on the tubes and ovaries through an incision in the fascia not exceeding 6 centimeters in length. He had enucleated an intraligamentous fibroid the size of a fist through this incision without experiencing any difficulty whatsoever. He also described another incision which he had employed during the past two months nine times with great satisfaction.

DR. EDWIN RICKETTS could not agree with the essayist that the incision recommended by him was more advantageous than a median incision, or, in a case of single pus tube, even an opening on one side. In fact, some operators now did not select a median incision, but made an incision either to the right or left.

DR. J. HENRY CARSTENS saw a general surgeon make a transverse incision in performing a gastro-enterostomy for the removal of the gall-bladder, but he had great difficulty in bringing the muscles and fascia together on account of the tendency to retraction. He thought the incision described by the essayist might prove advantageous for the removal of small tumors where an extensive operation was not needed.

Sarcoma of the Breast.

DR. EDWIN RICKETTS, Cincinnati, reported two cases. The first patient was Mrs. McS., aged 64, married, mother of three children. Thirty years before, and at the age of 34 years, she first noticed a hard, round, small lump in her right breast. Eight years after this she called the attention of her family physician to it, exacting a promise from him that he would tell no one. This was twenty-two years before its removal. He advised non-interference. The essayist was called to see the patient in May, 1897; in January before, she had an attack of influenza, and was greatly prostrated from its effects, and from this time the tumor grew rapidly, being nearly the size of a child's head. On his visit he found her with a tumor of the right breast that was about as ugly and vicious looking a growth as he had ever beheld. The cancer was as large as a navel orange, from which a dark sanious fluid was discharging. It was so large that the right arm was forced to project well out from the body. Temperature and pulse were normal. After drying out the cavity it was packed full with 5 per cent. carbolic gauze. The surrounding skin was washed with soap and water, after which pure alcohol was freely applied. No enlarged axillary glands could be felt, especially after the growth was removed. The growth weighed 12 pounds. Although a large woman, he experienced some difficulty in bringing together the edges of the flaps. Axilla was not disturbed. He had two points of suppuration, but barring this her recovery was entirely satisfactory. It was now four and a half years since the operation, and there was no evidence *in loco* or by metastasis. The growth proved to be spindle-celled sarcoma. The essayist then reported his second case.

In the discussion, DR. CUMSTON stated that every neoplasm of the breast should be removed as soon as it was palpable. The limit of three years for malignant disease of the breast as a sign that it would not recur was erroneous. He cited a case in point. He called attention to chronic interstitial mastitis, saying that this affection was more frequent in unmarried than in married women. Its pathology was not clear.

DR. CARSTENS urged the early removal of any kind of tumor of the mammary gland. He narrated cases in which apparently benign tumors had undergone pathological changes and had developed into sarcomata.

DR. HUMISTON held that a great many myomas of the uterus took on sarcomatous degeneration when it was least expected, and detailed an illustrative case.

DR. THOMAS B. EASTMAN, Indianapolis, discussed two points, saying that surgeons were disposed to search for enlarged axillary glands. Recent investigations had shown that a small gland might be full of carcinoma cells, while the larger glands might be free from them. Both small and large glands should be examined.

DR. JOSEPH PRICE, Philadelphia, stated that for many, many years he had removed the axillary gland in cases of cancer of the breast. He saw Knowsley Thornton, of London, England, do the complete operation for carcinoma of the breast long before it was done at the Johns Hopkins Hospital, and that Thornton stated at that time it was invariably his rule in removing tumors of the breast to clean out the axilla, no matter what the suspicion might be.

DR. JOHN C. SEXTON, Rushville, Indiana, was constrained to believe that sarcoma of the breast was not very rare. He had

seen two cases, in one of which there was a rapid recurrence, with metastasis of the ovary of the same side. This was a round-celled sarcoma, which was confirmed by an eminent pathologist. The other case was one of ordinary spindle-celled sarcoma in which recurrence took place promptly.

DR. MILES F. PORTER desired to place himself on record as saying that every tumor of the breast was suspicious, and required operation, and in his judgment any operation which stopped short of complete removal of the breast and cleaning out the axillary gland was not good surgery, and that time would prove it.

DR. HUMISTON said the statement made by the last speaker was too radical. Small benign tumors of the breast in young women could be readily removed by cocainization. Sections could be submitted to a microscopist, and if the tumor was found to be malignant a complete operation should be made.

DR. CUMSTON believed that chronic interstitial mastitis in the majority of cases was the starting-point of malignant neoplasms of the breast. He urged early radical and complete operation.

DR. E. GUSTAV ZINKE, Cincinnati, said it was very difficult to say before a tumor was in one's hand or under the microscope what was the actual nature of it. The physician, therefore, was placed in a very embarrassing position. He illustrated this point by narrating an interesting case.

DR. BALDWIN asked whether it was proper to speak of cases in which secondary growths occurred many years afterwards as recurrences. Also, whether it was proper to speak of growths occurring elsewhere in the body as metastases. He mentioned a case in which he removed a sarcoma of the ovary with a long pedicle, but there were no adhesions. A few years afterwards the woman developed a sarcoma of the kidney. He did not consider this a metastasis, nor a recurrence, but a brand-new sarcoma of the kidney. He narrated other cases.

DR. CARSTENS made an eloquent plea against the removal of the breast in cases of small benign tumors in young girls of 18 or 20. He vigorously contended that it was bad practice to do it, as it blighted their prospects for matrimony, and it was absolutely unnecessary.

DR. RICKETTS, in reply, endorsed the position taken by Dr. Carstens. In his case, if he had the operation to do over again, he should have removed only the tumor, and not a part of the breast with it.

FIRST DAY—AFTERNOON SESSION.

Galvanism as a Remedy for Uterine Hemorrhage.

DR. EDWIN WALKER, Evansville, Ind., stated that galvanism as a remedy in gynecology had been unduly lauded and condemned. Apostoli's method commanded the respect of surgeons, but the results had not been commensurate with claims, and had not been without danger. The minor uses of electricity partook of the character of tinkering, and were objectionable. There still remained a limited field in therapeutics for it, but it did not replace surgery. Its use in uterine hemorrhage was quite satisfactory. It should not be used where the cause of the hemorrhage could be removed by a clean surgical operation. In mild cases, in which the hemorrhage was practically the only symptom, and where no radical operation would be entertained, galvanism was the remedy. In another large class of cases where grave disease in other organs contraindicated operation, relief and often a systematic cure could be effected. Accurate diagnosis of all lesions in each patient was of the highest importance, so that life was not hazarded by an operation in the presence of a serious lesion elsewhere which was overlooked, or the patient, even if she recovered, was not benefited for the same reason.

The method of application was quite simple. The positive pole is attached to a platinum electrode and introduced into the uterus; the negative pole, attached to a copper plate covered with moist absorbent gauze, is placed over the abdomen. The current is gradually turned on until a distinct burning is felt under the negative pole, and continued ten to thirty minutes. Strict asepsis is necessary. The application is not painful. Two to eight applications are required.

DR. C. C. FREDERICK, Buffalo, stated that electricity had to a certain extent been replaced largely by surgical procedures. In the experimental stages the results that had been promised by the use of electricity by a great many who were enthusiasts were not borne out. Practitioners met with poor success with it, and in consequence became disgusted and abandoned it, and were now depending upon massage and surgical procedures to control uterine hemorrhages.

DR. HAYD had used electricity for many years, in fact, for five months he had worked with Apostoli; consequently, he spoke advisedly. When he considered the amount of good that had been done with it in treating pelvic troubles, and compared it with the amount of harm wrought, he felt that it would have been the best thing if practitioners of medicine knew nothing about intrauterine galvanization.

DR. PRICE expressed the belief that the application of electricity had a great deal to do in favoring the growth and development of fibroids rather than preventing or arresting them. He detailed two or three such cases.

DR. CARSTENS referred to the various causes of uterine hemorrhage. In all cases of excessive hemorrhage there was some cause for it. Sometimes the cause was constitutional and required simply constitutional treatment, but no operation. In other cases the hemorrhage was indicative of malignant disease of the uterus. If the use of electricity was advocated in these cases and the information was circulated among general practitioners that this agent was good for uterine hemorrhage, the result would be that a great many cases of beginning cancer of the uterus would be treated for weeks and months and the golden opportunity to remove the disease by early and timely surgical measures would have passed, and a diagnosis would finally be made too late. He argued against the indiscriminate use of electricity for uterine hemorrhages.

Retrodisplacements in Young Girls and Unmarried Women; Frequency and Best Methods of Treatment.

DR. HERMAN E. HAYD, Buffalo, N. Y., drew the following deductions: 1. A plea for the more careful examination of young women by competent and skilled men who can undertake any operative measures that are necessary. 2. Every case of retrodisplaced uterus in the young or unmarried or married woman may not require any treatment. 3. If they produce a definite symptomatology, the Alexander operation should be employed if the case be an operable one, that is, if the uterus is freely movable and the tubes and ovaries are healthy. 4. Retroversions and retroflexions in the young and unmarried should never be treated by pessaries, but by the Alexander operation. Tampons and pessaries have their place in retrodisplacements in married women or women who have been pregnant, but they accomplish practically nothing in the displacements of young women. 5. The Alexander operation is safe and without mortality incident to the operation, and no harm can come from its proper performance; even if the uterus subsequently falls, the patient is no worse off than she was previous to the operation. 6. It does not in any way interfere with pregnancy and future child-bearing, but, on the contrary, materially helps the possibility of pregnancy. 7. No pain or distress follows the operation if the case operated upon be properly selected, and if pain and suffering result, there existed at the time of the operation latent tubal and ovarian trouble, which sooner or later perhaps would have required a radical operation. If it becomes necessary to do a celiotomy on a person who previously had an Alexander operation, the uterus will be found in its normal anteflected position, which is necessary in every case, whether the tubes and ovaries are removed or not, to insure good health and freedom from future suffering.

Method for Suspension of Uterus.

DR. ROBERT T. MORRIS, New York, opens the abdomen in the middle line. An incision two inches long will suffice for most cases. The peritoneum over one round ligament is split and the round ligament is drawn out with a hook for a distance of 3 inches, more or less. Drawing out the round ligament with a hook makes naturally a long loop. The arms of the loop are sutured together with silk or chromic catgut. This

throws the sutured part of the round ligament out of commission, and leaves the ligament 3 inches shorter, more or less. The sutured loop is tucked back into the slit in the peritoneum of the broad ligament, and the opening is closed. The operation shortens the round ligaments, and allows the uterus to ride easily and elastically in a normal position. Its advantage over other ligament shortening operations lies in the securing of union of muscular structures. The surgeon does not have to depend upon peritoneal adhesion, which must be a failure in many cases.

Diseases and Injuries of the Cervix Uteri, and Their Treatment.

DR. J. W. HYDE, Brooklyn, N. Y., presented this paper: 1. In cases where the injury is recent, and the constitution of the patient is so good that no extensive degenerations have occurred—in short, where there is a reasonable probability of being able to restore the cervix to a normal condition, this should be done by Emmet's operation. 2. In old cases, where extensive alterations have taken place, as proved by direct examination, and not less certainly by the unmistakable and intractable reflexes that attend such alterations, the unbearable headaches usually referred to the vertex and the nuchal region, the gastric disturbances, and the endless procession of psychic, neurotic, motor, cardiac, and respiratory aberrations, so familiar to every experienced physician, in such cases trachelorrhaphy is out of the question. To remove all the diseased tissue, and that alone, would call for an unattainable amount of nicety of dissection; and supposing the dissection accomplished, the sewing up of what was left might result in a most interesting thing "of shreds and patches," but it would not be a cervix uteri, which is the only legitimate object of trachelorrhaphy. In such cases, amputation is as effective clinically as it is logical in theory. 3. The operation is not more dangerous than trachelorrhaphy. 4. It is not likely to be followed by stenosis of the canal. 5. There is nothing in the operation that seriously militates against conception, or a normal gestation and delivery.

FIRST DAY—EVENING SESSION.

Mechanical or Combined Plastic and Mechanical Treatment of Retrodeviations of the Womb.

DR. M. ROSENWASSER, Cleveland, Ohio, stated that retrodeviations of the womb were either simple or complicated. The complicated were subdivided into those with movable and fixed womb. Of 116 patients treated for retroversion, 63 of the second and third degrees were selected as proper subjects for mechanical treatment. They were treated by means of the pessary alone, or the plastic operation was supplemented by a pessary. From a table furnishing the details the following summary is obtained: Cured, 11; symptomatically cured, 15; improved, 26; not improved, 11.

In the body of the paper the writer considered each of the divisions, as above classified, and illustrated each by a brief history of typical cases. He maintained that cases of complicated retroversion with movable uterus could be converted into simple ones by plastic operations, and were then subject to treatment by mechanical support. After refuting the objections generally raised against the pessary, he submitted the following conclusions, based upon the present imperfect status of suspension operations: 1. A retroverted womb uncomplicated by disease should be replaced and supported by a pessary. 2. Retroversion complicated by diseased womb, or by impaired pelvic floor, the womb being movable, requires preliminary plastic operation to restore the normal condition before using a mechanical support. 3. Suspension operations should not be done simultaneously with the plastic in face of the probability that a pessary can sustain the uterus in position. 4. Retroversion complicated by aggravated prolapsus requires simultaneous plastic and suspension operations to effect a cure. 5. The treatment of retroversion with fixed womb is that for pelvic inflammation. Whenever the latter requires laparotomy, or colpotomy, the retroversion becomes subject to such surgical treatment as may appear best suited to the particular case. 6. Retroversion, simple or complicated, in which mechanical support and plastic operation have failed to cure or to relieve, and in which the symptoms demand relief, constitutes a proper indication for a suspension operation.

SECOND DAY—MORNING SESSION.

Some Observations on the Surgery of the Spleen.

DR. LEWIS S. MCMURTRY, Louisville, said that knowledge of the physiology and pathology of the spleen is so imperfect that the surgery of this organ has not advanced proportionately with that of the other organs of the abdominal cavity. In view of this fact, every case which may possibly contribute to our knowledge should be studied and recorded. He then reported a case of large cyst of the spleen. The patient was a vigorous woman of 30, well nourished, with a fluctuating abdominal tumor, appearing upon the left side of the abdomen, and readily movable from pelvis to diaphragm. The diagnosis was ovarian cyst with elongated pedicle, or floating cystic kidney. On abdominal section the tumor was found to be a cystic spleen. This was removed without difficulty and without hemorrhage, followed by prompt recovery. A careful microscopic examination showed the cyst to be simple and sterile. Three similar cases were reported. The essayist then considered the technique of splenectomy for cystic tumors of the spleen, commending the median incision and enucleation from below. He stated that it was not the purpose of the paper to consider all varieties of diseases of the spleen, nor to tabulate the statistics of splenectomy for hypertrophy and miscellaneous diseases, but rather to show that cystic degeneration of the spleen is sufficiently common to make a class of tumors deserving recognition as a factor in the diagnosis of cystic tumors of the abdomen. The results of operation in these cases show that the spleen is not essential to life and health.

Is Cesarean Section Justifiable in Placenta Previa?

DR. E. GUSTAV ZINKE, Cincinnati, went rather exhaustively into the history and literature of this subject and considered the cases reported. He referred to the justifiability of the operation, and the class of cases to which it is applicable. He likewise dwelt on the contraindications to the operation, and compared the management of placenta previa with and without Cesarean section. He believed that the Cesarean and the Porro operations were perfectly legitimate and elective procedures in all cases of placenta previa, central and complete, and especially so when the patient was a primipara, when the os was closed and the cervix unabridged; when hemorrhage was profuse and could not be controlled by tampons and separation of the placenta around the internal os. That there were cases of partial previa that might be successfully treated in the old way, he did not doubt. Perhaps a small majority of all the placenta previa cases could be treated successfully, so far as the mothers were concerned, after the manner of Fry and De Lee. But what of the large minority of mothers that succumb and the great majority of children that are sacrificed at once? The question presented was a very serious one, and should be earnestly considered, and when confronted with a case of central or complete placenta previa, or any other variety, where dilatation of the cervix was impossible or difficult, the patient and her immediate friends should be made acquainted with all the facts concerning both methods of treatment. If properly presented, he thought it was doubtful whether the majority of women would select forcible dilatation, version, extraction, etc.

Importance of the American Medical Association.

DR. W. E. B. DAVIS, Birmingham, Ala., delivered the "Presidential Address." After congratulating the Association upon the great work it had accomplished, urged the Fellows to use their influence in the better organization of the sections of the American Medical Association. He said: "The greatest and most influential organization in the United States should be the American Medical Association, the brightest lights in the profession should gather at its annual meetings and be prominent in the work of its sections and committees. Failure to be an active contributor to the work of this general national organization should be a deserved reflection on a prominent physician, whether he be a general practitioner or a specialist. It is not enough that our special societies should succeed, but

they should prove a source of strength to the entire profession, which can be best subserved by strengthening the American Medical Association, making it not only a power in scientific work, but giving it the prestige which will enable scientific medicine to receive due recognition from our national government."

Surgical Treatment of Biliary Calculi, with Special Reference to Hepatotomy.

The remainder of President Davis' address was confined to the principal operative procedures for cholelithiasis. He favored cholecystostomy, as a rule, for gall-bladder and cystic duct calculi. He said: "Much has been claimed within the past five years for cholecystendysis, with or without drainage of the abdominal cavity. While this operation has something to commend it, being simple and obviating the disagreeable discharge of bile, from three to four weeks, from a fistula, yet its field is limited when the etiology and pathology of cholelithiasis are given due consideration. Stagnation of bile with altered epithelium and infection from the typhoid or colon bacillus as found in many cases, where there is no evidence of infection from the character of the fluid in the bladder, would contraindicate its closure. If stones should be found, where an examination of the gall-bladder is conducted through the abdominal incision made for the relief of pelvic disease or other abdominal trouble, cholecystendysis might be performed with advantage." He advised strongly against the operation as performed by Kelly. The primary incision in the abdomen should be closed and the opening made as in the classical cystotomy. Cases in which calculi would be found by this method are not associated with inflammatory changes, and are the ones who go through life without symptoms referable to the gall-bladder being found at the autopsy or in the dissecting room.

Cholecystectomy.

This operation was reserved for stricture of the cystic duct, inflammatory changes which greatly endanger the walls of the bladder, and malignant disease. In discussing stone in the common duct, he said: "Choledochostomy without suture is called for in the large majority of common duct stones. Suture of the duct may be practiced if the patient's condition has not been rendered serious by much suffering and protracted jaundice, and if the duct is enlarged and not markedly inflamed. Gauze drainage should be resorted to in all cases, it matters not how carefully the stitching of the duct has been carried out. The time required for suturing the duct adds very greatly to the gravity of the operation in cholemia of long duration. It would also be contrary to surgical practice elsewhere to suture when offensive infected bile escapes from the duct. Morison's pouch, which will hold nearly a pint of fluid, makes drainage in this location entirely satisfactory. The lumbar stab is preferred by some surgeons, but the entire safety of transperitoneal drainage has been abundantly demonstrated. Kehr, who has done more gall-stone operations than any other surgeon, claims that he first advised the open treatment of the duct, but it is known that he is in error as the operation has been urged for the reasons he gives, in this country, since the early part of 1892, at which time experiments were conducted by me on the lower animals and reported to the American Medical Association. At that time and for some years afterwards it was admitted by surgeons that the operation would succeed on normal organs with normal bile, but not otherwise. I afterwards induced pathologic changes in the biliary passages and demonstrated that the operation was successful in infected and enlarged ducts. Experimental and clinical experience demonstrate conclusively the safety of the operation."

At the Indianapolis meeting, two years ago, Dr. Davis reported two cases in which hepatotomy had been done in obstruction to the biliary passages. The operation is indicated in cases of obstruction with enlarged liver where the gall-bladder or duct can not be isolated, if the patient's condition from exhaustion and cholemia will not permit of a protracted search for the bladder or ducts. After the patient's condition is better, a rapid operation may be done. It will only exceptionally be called for, and the cases will be fewer as the surgeon's experience increases in choledochus operations; for he will then be enabled to better locate the bladder and ducts so much changed by inflammatory processes. In addition to the above indications, he thought the operation should be resorted to in hepatitis before it has reached the stage of pus formation, if the liver does not rapidly become smaller after drainage of the biliary reservoir of the duct. His attention was first attracted to the value of the procedure in a case in which the amount of pus removed was not more than half an ounce, but in which the division of the biliary canals resulted in the escape of large quantities of bile for many weeks. In December, 1898, he had done hepatotomy on one case in which there was a movable stone in the common duct, and in the same month in a case of obstruction of the hepatic ducts by malignant disease.

In July and August of this year he had conducted a number of experiments on dogs to determine the value of incisions in the liver in relieving biliary obstruction. Five dogs were killed and the liver injected with fluid either through the gall-bladder, the common duct having been tied, or through the common duct. Incisions were then made in all parts of the liver, with the result that streams of the fluid would issue from the bile canals and general oozing of the fluid from the wounded surfaces of the organ if much force was used. Six were anesthetized and the liver injected as above, and this fluid with blood would flow, as a rule, freely when much force was used in injecting the fluid. Four had the common duct tied, and after twenty-four hours the same experiment was conducted under anesthesia, with similar results. In nine the common duct was ligated and gauze packed around the field of the gall-bladder and ducts. After from twenty-four hours to a week the liver would be incised in one or more places, and as a rule the bile escaped satisfactorily through the gauze. It would be very dark after prolonged obstruction. Two of the dogs died and the others were killed in from five days to two weeks. Before killing them and while under the anesthetic, fluid was injected through bladder or duct, and would flow from the wounds which had been previously made in the liver and also from incisions made at that time. Five had the gall-bladder removed and the cystic and common ducts ligated, but as gauze was not used at the time of operation to wall off the general cavity, they died in from twenty-four to forty-eight hours from the escape of bile, with shock.

With the advance in choledochus surgery, the field for cholecystenterostomy grows smaller.

Dr. Davis was assisted in his experimental work by Dr. R. E. Hogan, of Birmingham.

SECOND DAY—AFTERNOON SESSION.

Gallstone in the Common Duct: Its Frequency, Symptoms, Diagnosis and Treatment.

DR. L. H. DUNNING, Indianapolis, Ind., quoted from the recent paper of Mosher, whose compilation of the Johns Hopkins Hospital records shows that gallstones are present in 6.94 per cent. of our population, and that in 13 per cent. of all cases of gallstones the calculus is arrested in the common duct. For convenience of description the author adopted the generally accepted classification of gallstone in the common duct, namely, 1. the acute form in which there is acute obstruction, transient jaundice, and the typical gallstone colic; 2. chronic obstruction of the common duct from lodgment of a stone somewhere in the course of the duct. The first division represents the old classical form of bilious colic and the symptoms are so well known that he did not enumerate them in detail. In chronic obstruction from gallstones the jaundice is more or less intermittent and there is pain in the hypochondrium, epigastrium and back. The pain is not so severe as in acute obstruction, and is very irregular. It may be located in the epigastric or lumbar region. As a rule, there is absence of a tumor in the gall-bladder region, but marked soreness. There is marked loss of weight, and frequently chills and intermittent fever. The Carlsbad cure, a sojourn at the French Lick Springs, large draughts of oil, the application of hot fomentations to the hypochondrium, and opiates to relieve pain are all of benefit in

the acute cases. The chronic cases are amenable to surgical treatment alone. The author cited and remarked upon the various methods of surgical procedure. Choledochotomy was shown to be the most approved method when applicable. The middle third of the duct is the point of choice for the incision. When the stone is in the duodenal end of the duct, it can usually be crowded back into the middle portion and removed through an incision in that part. An incision through the cystic duct may be carried onward into and through the common duct if the upper portion be chosen for the line of incision. Duodeno-choledochotomy is applicable to cases of a large fixed stone in the duodenal extremity of the duct. This method yields a higher rate of mortality than simple incision of the choledochus. Only soft stones should be crushed, and needling is unsatisfactory. The writer would reserve cholecystenterostomy in common duct obstruction for those cases in which the patients could not endure the longer operation of choledochotomy. Four cases were reported in detail.

Dr. George S. Peck, Youngstown, Ohio, reported some cases of extrauterine pregnancy, and presented specimens.

Dr. M. Rosenwasser, detailed a case of tubal pregnancy upon which he operated in the eighth week, immediately before the occurrence of rupture.

Acute Pancreatitis and Fat Necrosis.

Dr. Edward J. Ill, Newark, N. J., reported a case because of the rarity of the disease and the interest attached to the operations for this ailment. The patient was a woman, 43 years of age, with the usual history of gallstone colic. She was taken sick suddenly with excruciating pain in the epigastrium, excessive vomiting and obstruction of the bowel. In twelve days after the onset of the disease a tumor was made out. The patient was operated on the twentieth day after the onset of the disease. The diagnosis was perforative inflammation of the gall-bladder, although a pancreatitis and fat necrosis was suggested. The patient's urine contained bile, albumin, and granular casts, with a specific gravity of 1028. It contained no sugar. The operation consisted of a right lateral abdominal section, and an opening between the stomach and the transverse colon through an immensely thickened omentum. Fluid was reached at the head of the pancreas, which was drained through a rubber tube and iodoform gauze. The whole pancreas seemed to be involved in the disease. The omentum upon section showed whitish-gray nodules containing brown roundish spots. For a time the patient seemed to do well, but in about seven weeks she had a relapse from which she died in three weeks. A second operation was done for her relief. At the postmortem it was shown that there were four gallstones in the gall-bladder and only a small mass of substance of the pancreas was left. The author went extensively into the literature of the subject. He mentioned especially the work of Balser, Fitz, Langerhans, Korte, Hildebrand, Robson and others.

Early Operation in Appendicitis and Method.

Dr. Joseph Price, Philadelphia, in the last three months had operated on about one hundred cases of this disease. Seventy-five per cent. had been managed by open treatment. All of them had been explosive cases and none of the operations was done the first or second day. In two ball-players the operations were done on the third day. In both cases he found gangrenous appendicitis with perforations, and general peritonitis. Both were recognized and could have been operated on twenty-four hours early. He was satisfied that there was but one treatment for this disease—early, clean removal of the appendix. The choice of method should not worry operators. A pair of scissors with needles and fine thread was all that was necessary. The appendix should be cut off smooth with the cecum, and the opening closed with fine silk. This summer the operations had been done by him chiefly on children between the ages of 8 and 20. About 75 per cent. were boys—fine, athletic chaps; and about 25 per cent. girls. A large number of the latter were menstruating at the time of the operation. In some instances it complicated the diagnosis. The disease had been quite common and fatal at summer resorts. A large number of operations had been done at Atlantic City, and a few patients were sent home for operations. The interval operation had done much to mislead the general practitioner, and much to complicate operation, in which there should be no complications.

THIRD DAY—MORNING SESSION.

Vaginal Hysterectomy with Four-and-a-Half Months' Pregnancy and Closed Cervix.

Dr. J. Henry Carstens, Detroit, reported a case. The patient was a woman, Mrs. D., only 26 years of age, mother of three children. She was afflicted with some inflammation and ulceration of the womb. Finally a diagnosis of cauliflower growth was made by a practitioner. The cervix was removed in February, 1900. She recovered and improved very much in health; menstruation continued regularly, but during the summer, about six months later, she again had trouble. On examination a recurrent growth was found. This was treated by curetting and strong cauterization, the latter being continuously and vigorously applied. Examination revealed a large uterus such as is found in cases of pregnancy at four and a half months, well marked placental bruit, enlargement of the breasts, etc. The upper end of the vagina was absolutely closed by a cicatrix, as is found after vaginal hysterectomy. There were two nodules, the size of a hazelnut and a bean. By allowing the pregnancy to continue the malignant growth would probably have closed up the vagina and a Cesarean section would be necessary, and the cancer would have so far advanced that there would be little chance for permanent recovery. Hence a prompt operation seemed necessary, but how? If there had been an opening he would have had the physicians insert a catheter and bring on premature labor a week before and then remove the uterus. Having the patient under chloroform he plunged a scissors into the place where he thought the os ought to be. By separating them and stretching the opening with his finger, he tore the sac. By enlarging the opening he had no further trouble in delivering the fetus. By pressing the womb the placenta was soon delivered, although the hemorrhage was profuse for a few minutes, but the uterus contracted firmly, and there was no further trouble. In tearing the opening he fortunately ruptured into the cul de sac. This served as a guide for him to work, and although the uterus was very large, he finished the operation and did a vaginal hysterectomy. Patient recovered and is well to-day.

Indications, Technic, and Remote Results of Salpingostomy and of Resection and Ignipuncture of the Ovaries.

Dr. A. Goldspohn, Chicago, read a paper on this subject, and presented tables of 104 cases. The conclusions of the author are as follows: 1. In patients who are not near the menopause and who are not tainted by tubercular or malignant disease, one or a part of one or both ovaries can frequently be preserved, with or without the retention of the corresponding tube, in the following conditions: (*a*) In follicular cystic degeneration or partially cirrhotic induration due to inflammatory processes or other circulatory disorders; (*b*), in extirpating parovarian cysts, dermoid and fibroid tumors with or without the uterus; (*c*) with great caution, in the extirpation of non-papillary glandular cystomata, that are devoid of surface papillomata and other evidences of malignancy. 2. Necessary for success in the resection of the uterine adnexæ is the exercise of asepsis of the highest degree, and the use of a minimum amount of fine and readily absorbable suture material exclusively and judiciously, as to tension. 3. A generous median ventral incision provides the best access for the conservative treatment of the adnexa in cases where septic accumulations in the parts are not absent, and when extreme fixations of the parts abound. When these more extreme complications are not present and a retroversion of the uterus exists, the resection of the adnexa is most easily effected by way of the dilated internal inguinal rings in conjunction with a thorough Alexander operation. 4. Vaginal celiotomy does not provide a favorable access for conservative surgical treatment of ovaries and tubes. It does frequently admit of ignipuncture, but is not auspicious for resection of ovaries. 5. Resection, with the care and technic alluded to,

is the more ideal and most conservative measure, and should be preferred when the parts are sufficiently accessible without undue traction upon their lateral supports, and when asepsis in the surrounding wound and in the general execution is reasonably assured, otherwise thermo-cauterization is probably better.

DR. C. C. FREDERICK, of Buffalo, N. Y., read a paper in which he narrated some very rare and old cases and experiences in pelvic and abdominal surgery, and the lessons they taught him.

DR. CHARLES GREENE CUMSTON, Boston, reported two cases of hour-glass stomach, and discussed the pathology and treatment.

Personal Experience with Uterine Fibromyomata.

DR. HENRY D. INGRAHAM, Buffalo, mentioned a large number of cases of uterine fibroids which he had treated by various methods during the past sixteen years. Although he had used ergot freely in many cases, it was only in a very few that it had any effect on the hemorrhage, and possibly hydrastis had in some cases. Stypticin had in his experience appeared to check the excessive flow better than any other drug. He had not obtained any special benefit from the use of the thyroid extract or desiccated mammary gland, and considered their use dangerous on account of their effects upon the general health of patients. He had formerly used electricity with benefit, but did not use it now as the results were not satisfactory. He had had seven cases of quite large fibroids complicated with pregnancy. In five, miscarriage occurred spontaneously. In one it was induced, and in the other the growth almost completely filled the pelvic cavity, the four and one-half months' fetus being above it, so that a hysterectomy was necessary. Patient recovered. One case was mentioned of an unmarried woman who was 64 years of age before the fibroid began to show signs of its existence. For some time it was dense and hard and grew slowly, but for the past few months it had become cystic and increased in size rapidly. This patient manifested several cerebral symptoms on three different occasions, which the author believed were due to some particles of the disintegrating tumor becoming detached, and were carried to the brain, producing these symptoms. On one occasion patient lost sense of motion and sensibility of the right side for over two weeks, and did not know the members of her own family for the same length of time. During the height of this attack the temperature was 101 F., and pulse 96. A year later she had a similar attack, and a few months ago another one, but milder, with no rise of pulse or temperature. He believed that fibromyomata, although considered benign in contradistinction to malignant growths, were by no means harmless, but exposed the patient to great and increasing risk. All cases of fibroids should be carefully watched. If they were not giving any trouble or increasing in size, they should be let alone, but the patient should be kept under observation. When they gave rise to trouble, or if the growth increased in size, then the proper thing to do was to remove it before dangerous complications occurred. If there were adhesions or necrosis of the tumor or pyosalpinx, then the danger of the operation was greatly increased. If cardiac disease or hydronephrosis resulted as a complication, the removal of the tumor would not relieve those conditions. Waiting for the menopause to relieve the diseased condition was often like holding out false hopes to the patient, as the trouble might become worse then than before, or it might all develop after that period, as was shown by the recital of the last case reported by the author. If any treatment was necessary and the patient was in a suitable condition, a radical operation should be done. There was no excuse, in his opinion, whatever for palliative or temporizing treatment at the present day.

Officers.

The following officers were elected for the ensuing year: President, Dr. Edwin Ricketts, Cincinnati, Ohio; vice-presidents, Drs. Charles Greene Cumston, Boston, and Miles F. Porter, Fort Wayne, Ind.; secretary, Dr. William Warren Potter, Buffalo, N. Y.; treasurer, Dr. N. O. Werder, Pittsburg, Pa.

Washington, D. C., was selected as the place for holding the next annual meeting in 1902.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of the Breasts During Pregnancy and Lactation.

TO PREVENT SORE NIPPLES.

Beginning five or six weeks before the expected time of confinement and continuing its use daily until confinement, lanolin applied externally with friction every night is of great value. The nipple should be thoroughly washed in the morning with pure soap and water, then rinsed off and well dried. The following may be applied locally during the first week or two of nursing:

℞. Tinct. benzoini comp. ..... ℥ss 2
Olei olivæ ..... ℥ii 8
Lanolini ..... ℥vi 24
M. Sig.: To be applied after nursing, three or four times a day.

FISSURES OF THE NIPPLES.

That fissures of the nipples cause very great pain occasionally it is not necessary to state. These fissures are either located at the apex or base of the nipple and cause the mother great suffering when the infant attempts to nurse.

As has been stated by many authorities, cleanliness is the first thing to be observed. The breasts and nipples should be thoroughly washed with some antiseptic such as boric acid solution. This should be done both before and after nursing; the mouth of the infant should also receive proper attention so as to guarantee against any infection from that source. If only one nipple is involved it should be given a rest for a few days and the breast pump used to relieve the breast. An ointment composed of the following will be of great service to hasten the healing process.

℞. Bismuthi subnit. ..... ℥iii 12
Tinct. benzoini comp. q. s. ad ..... ℥i 32
M. Sig.: To be applied locally night and morning.

Or an ointment composed as follows may be prescribed as used by Hirst:

℞. Iodoformi ..... gr. x 66
Ung. zinci oxidi ..... ℥ss 16
Ichthyol ..... ℥i 4
Lanolini
Glycerini, āā ..... ℥iss 6
Olei olivæ ..... ℥iiss 10
M. Sig.: Apply locally night and morning.

P. Grossman, Omaha, clinic, recommends the following:

℞. Bismuthi subgal. ..... ℥ii 8
Olei ricini ..... ℥ii 8
M. Sig.: Apply locally night and morning.

He states that it is not necessary to thoroughly cleanse the breast before the child receives the nourishment.

Teisseire, as noted in *Cyc. of Pract. Med.*, recommends orthoform dressings in treatment of fissured nipples. He dusts the powdered drug over the wound and covers it with a compressed layer of the remedy. Over it is placed a layer of absorbent cotton and rubber sheeting, the whole being kept in place by a bandage. Before nursing, the breast should be thoroughly cleansed with warm boric acid solution. The orthoform dressing renders an analgesic effect as well as a curative process.

TO PREVENT FISSURES.

The following application used twice daily will render the nipple and breast firm and less tender:

℞. Glycerol tannici
Aq. destil, āā ..... ℥i 32
M. Sig.: Apply locally night and morning.

When the fissures have been formed they may be touched with the following solution:

R.	Argenti nitratis .....gr. x		66
	Aq. destil. .....ʒi	32	

M. Sig.: Apply locally with an applicator once every other day.

The following is of service as a wash:

R.	Hydrarg. iodidi .....gr. i		06
	Alcoholis .....ʒvi	24	
	Glycerin		
	Aq. destil, āā .....ʒviii	256	

M. Sig.: Use as a wash night and morning.

MASTITIS.

Probably the first thing noticed in beginning mastitis is a hard mass, or what is ordinarily called a "cake breast." This may cause, at first, no subjective symptoms except probably when the infant is at the breast. In a short time the hard mass is painful upon pressure, redness may appear superficially, accompanied by swelling. This is followed by fluctuation. As soon as this is detected active procedures should be commenced at once. And at this point we can not speak too strongly against the applications of poultices in any form. On the other hand, when pus is detected it should be evacuated as early as possible. In making an incision it has been dwelt upon by many to make the incision radiating from the nipple toward the periphery as the spokes of a wheel radiate from the hub. In this way the lacteal ducts are not interfered with and the incision is devoid of any great danger. Drainage and thorough cleansing should be subsequently properly carried out.

Puerperal mastitis tends to recur with each confinement. Traumatic lesions also predispose to puerperal mastitis. Infected cracks or fissures of the nipple are by far the most frequent causes of mastitis. Dr. E. P. Davis recommends that the breast and nipple be washed with castile soap and warm water, the nipple drawn out by the thumb and finger and a suitable antiseptic ointment applied. Stasis of milk in the breast must be prevented. He recommends a solution of boracic acid to preserve the nipples in an aseptic condition. He also states that it is better to err on the side of too early incision than to delay too long. Under no circumstances should the child nurse the affected breast. The same germs which infect the breast may infect the gastro-intestinal tract of the infant.

C. S. Bacon, of Chicago, in an article in *New York Med. Jour.*, states that general precautions consist in washing thoroughly the nipple before nursing and bathing thoroughly with a 75 per cent. solution of alcohol, after nursing, to protect the nipple from abrasions and accidental infections from the mouth or skin of the child. He chooses alcohol as a disinfectant, because it is harmless to the child, and at the same time efficient. He also recommends the nipple shield as of great importance in the prevention as well as the cure of nipple wounds. If the nipple wounds do become infected, but no symptoms of general infection or involvement of the deeper breast, the local wound should be treated like wounds in any other part of the body. The application of cotton saturated with alcohol is usually sufficient, but the appearance of chills and fever indicates deeper infection of the breast. When these symptoms appear Dr. Bacon restricts nursing from the affected breast and supports the breast with a proper bandage. With this treatment he states that from 80 to 90 per cent. of the cases will terminate without abscess formation, and if an abscess does form it will be localized to one lobe as a rule. If pus formation is suspected he recommends that the hypodermic needle be used to determine its presence; and if the abscess is present, however small, it should be opened at once. If in doubt, continue the support and ice-bag to the breast. This will limit its formation and the pain. He denounces the treatment by poultices, which allows a considerable portion of the breast to become involved and broken down. He recommends that a few drops of Schleich's solution be injected beneath the skin, making the line of incision anesthetic. The pus should be washed out with sterilized water and small amount of sterilized gauze introduced for drainage. This may be removed in twenty-four hours and the wound kept open for one or two days by irrigation, when it will usually close itself.

Dr. Rubeska, in *Centralblatt f. Gynekologie*, states that in 3152 nursing women he has observed 1244 cases of sore nipples. He recommends, as treatment, the use of compresses moistened with a 3 per cent. solution of boric acid and covered with gutta percha. He states that lactation was continued in almost all the cases, the nipple being simply protected with a shield. In three-fourths of the cases the trouble subsided within ten days, and mastitis developed in less than 2 per cent. of the cases. He further states that when mastitis did develop the breast was thoroughly disinfected, and compresses damp with a solution of bichlorid of mercury, one-half per cent. strength, were constantly applied for three hours; the first milk was drawn artificially with the pump and the ice-bag afterwards applied. If the signs of inflammation first developed with a chill followed by a high temperature accompanied with pain he immediately ordered an injection of a 3 per cent. solution of carbolic acid into the affected breast, as much as two or three Pravaz syringefuls being injected at one time. If the trouble began less severely this was not carried out unless the pain and temperature continued longer than forty-eight hours. He states that suppuration took place in only two cases following this treatment, and no harm was done in any case.

Hirst states that if the abscess is opened early one incision commonly suffices. If the case is neglected every pocket of pus must be opened and every sinus drained to secure a permanent cure. The incision should radiate from the nipple and the area of pigmentation should be avoided as far as possible or the incision should be confined wholly within this area as the pigmentation will follow the cut, disfiguring the breast. The abscess cavities should be compressed, after being opened, by a firm binder and the wound irrigated daily with sterile water.

In threatened mastitis the following ointment may be of benefit in some cases:

R.	Ichthyol .....ʒiv	16	
	Ung. hydrarg. .....ʒiv	16	
	Ung. belladonnæ .....ʒss	16	
	Cerato plumbi subacetat. .....ʒi	32	

M. Sig.: Apply locally three times daily.

Proper attention to elimination in such conditions as the foregoing should not be neglected. Elimination should be promoted by the bowels and kidneys. Salines should be administered until free action of the bowels is produced. The following may be used under the same conditions as the above:

R.	Zinci oxidi		
	Ung. belladonnæ āā .....ʒss	16	
	Ichthyoli .....ʒii	8	

M. Sig: Apply locally twice or three times daily.

GALACTORRHEA.

The following is sometimes applied locally in connection with supporting treatment of the breast:

R.	Ung. belladonnæ		
	Lanolini āā .....ʒiv	16	

M. Sig.: Apply locally twice daily.

Medicolegal.

Non-Expert Witnesses in Inquiries as to Sanity.—The Supreme Court of Alabama holds, in the murder case of Caddell vs. State, that on an inquiry of sanity or not, the rule applicable to non-expert witnesses is that opinions opposed to sanity are admissible only when stated in connection with the facts respecting the conduct, abnormal or otherwise, of the person whose sanity is questioned; but opinions affirming sanity may be based on a mere negation of unnatural or peculiar conduct, without a specification of facts.

No Damages Recoverable for Injuries to Unborn Child.—The Supreme Court of Rhode Island holds, in the case of

Gorman vs. Budlong, that one can not maintain an action for injuries received by him while in his mother's womb; and that, consequently, his next of kin can not maintain an action, after his death, therefor, under the statute of that state, which provides that whenever the death of a person shall be caused by the wrongful act, neglect, or default of another an action may be maintained for damages if he could have maintained one had death not ensued.

The Testimony of Paid Medical Experts.—The Supreme Court of Tennessee holds, in the case of Bateman vs. Ryder, that there was no error in the trial judge charging the jury that "the testimony of experts introduced for the purpose of establishing insanity or mental unsoundness, if paid for, should be received with great caution and carefully weighed by the jury," the judge charging further, upon this feature of the case, that "it was lawful and proper for an expert physician to charge a reasonable compensation or fee for his professional opinion or services."

Not Required to Refund Cost of Medical Treatment.—Without passing upon the question of whether or not it is necessary, as a condition precedent to the commencement of an action in a personal injury case where a release has been signed, that the money paid therefor should be refunded, it being alleged that the party was in such a condition when he signed it as not to understand what he was doing, the Supreme Court of Colorado holds, in Town of Colorado City vs. Liafe, that, no money having been received, the only consideration for the release being the furnishing of surgical and medical treatment and care at a hospital, it is not necessary for the injured party to ascertain the amount paid to third parties therefor in his behalf and to refund same before commencing his action. It thinks it enough, as well as proper, that the jury be instructed that if he is given a verdict the amount shown to have been paid for his benefit under the terms of the release should be charged against him.

Mental Injury from Wilful Wrong.—The first appellate division of the Supreme Court of New York holds, in the case of Williams vs. Underhill, that the rule that damages resulting from fright alone, or for mental suffering disconnected from other injuries, can not be recovered, applies only to actions based on negligence, and not to cases of wilful tort or wrongful acts. The reason for limiting liability in actions for negligence, it says, is founded in the principle of law governing such actions, namely, that the measure of damage shall be confined to the natural and probable consequences of the act or omission constituting the cause of action, while the distinction between such a case and one founded upon a wilful tort, such as an assault, is very clear. So, evidence having been admitted in this case, without objection, which tended to prove the commission of an assault, and that prior to the same the party suing for damages therefor had been a person of unusual mental strength, the court holds that it was error to exclude testimony offered to show the effect of the assault upon her mental condition, and of the medical treatment received by her therefor, even if she had limited her claim to damages for mental injuries resulting from fright alone.

Authority Required for Compulsory Vaccination.—As a question never before raised in that state, the Supreme Court of Michigan takes up, in the case of Mathews vs. Board of Education, that of the validity of compulsory vaccination of school children. It appears that in 1894 this Kalamazoo school-district board enacted the following rule: "No pupil shall be admitted into any public school who can not furnish satisfactory evidence that he or she has been vaccinated or otherwise secured against smallpox, and no pupil affected with any contagious disease, or coming from a house where such a disease exists, shall be allowed to remain in any public school." This rule continuing in force, a Christian Scientist brought this suit, denying its validity. The court, however, does not feel called upon to discuss the question of his religious scruples. It points out that, inasmuch as the law of the state makes it the duty of the child to attend school, and of the parent to send him, under penalty of fine or imprisonment, or both, the effect of the rule referred to would be to compel the vaccination of the child, or subject him and the parents to the penalties of the law, the practical result of which would be to give the board of education the right to compel compulsory vaccination, if the rule could be sustained. Wherefore, the legislature not having undertaken to give the board the power, when no epidemic of contagious disease exists or is imminent in the district, to pass a general, continuing rule which would have the effect of a general law excluding all pupils who will not submit to vaccination, the court, divided three to two on the proposition, holds that the school board exceeded its power. At the same time, it does not mean to intimate that during the prevalence of diphtheria or smallpox, or any other epidemic of contagious disease, in a school district, the board may not, under its general powers, temporarily close the schools, or temporarily say who shall be excluded from the schools until the epidemic has passed. Again, it says that in the absence of any statute authorizing compulsory vaccination, or which requires vaccination as one of the conditions of the right or privilege of attending the public schools, it thinks it can not be maintained that the rule relied upon was a valid exercise of the rightful powers of the State Board of Health. Its powers, though quite general in terms, must be held to be limited to the enforcement of some statute relating to some particular condition or emergency in respect to the public health; and, although they are to be fairly and liberally construed, yet the statute does not, either expressly or by fair implication, authorize the board to enact a rule or regulation which would have the force of a law changing the statute in relation to the admission, and right of pupils of a proper school age to attend the public schools. It is not a question, the court continues, as to what the legislature might do, under the police power, about requiring vaccination as a prerequisite to attending school; nor is it a question of whether the legislature could confer this power upon the school board. To lawfully exclude children from the public schools for the cause relied on requires such a change in the existing law as the legislature alone can make.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, September 14.

1 The Employment of the Recuperative Power of the Heart as an Estimate of Its Functional Ability. Martin Mendelsohn.
2 *The Principles of Treatment of Tuberculous Laryngitis. St. Clair Thomson.
3 *The Treatment of Tuberculosis with Urea. Arthur H. Buch.
4 Undiluted Milk in the Chronic Gastroenteritis of Rachitic Infants. Maurice Ostheimer.
5 Unusual After-Effects of Snake Bite. Lawrence E. Holmes.

Medical Record (N. Y.), September 14.

6 The Origin and Formation of Fibroid Tumors of the Uterus. Mary A. Dixon Jones.
7 Some Observations on Modern Cardio-therapy. Homer Wakefield.
8 *The Functions of the Tonsils, with a Few Suggestions Regarding the Differential Diagnosis of Tonsillar Affections. R. C. Matheny.
9 A Unique Specimen of Vesical Calculi. F. C. Larimore.

American Medicine (Philadelphia), September 14.

10 Wounds of the Thoracic Duct Occurring in the Neck: Report of Two Cases; Résumé of Seventeen Cases. Dudley P. Allen and C. E. Briggs.
11 The Practical and Scientific Value of the Blood Examination to the Medical Man and Surgeon. (To be concluded.) Robert N. Willson.
12 Condition of Epileptics in Pennsylvania. Wharton Sinkler.
13 *Modern Experience vs. Ancient Tradition Concerning Alcohol as a Beverage and Medicine. H. D. Didama.
14 *Atropia as an Efficient Aid in Relieving Acute Pulmonary Edema. Charles O'Donovan.
15 A Note on Bacillus Coli Communis in a Possibly New Rôle as an Inhibitor of HCl in the Stomach. G. W. McCaskey.
16 The Eye Complications in a Case of Ankylostomiasis. Howard F. Hansell.
17 The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

18 Intraspinal Cocainization: A Critical Review of Some of the Most Salient Points in This Method of Analgesia, as It Applies to General Surgical Procedures. Burdett A. Terrett.

New York Medical Journal, September 14.

19 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
20 *Professor Max Schüller's Views on Malignancy. James Eddy Blake.
21 The Clinical Diagnosis of Carcinoma of the Esophagus, and the Technic of Gastrostomy. Charles G. Cumston.

Boston Medical and Surgical Journal, September 12.

22 The Use of Gynecology by the General Practitioner. Edward Reynolds.
23 Some Cases of Cancer Treated by the X-Rays. Francis H. Williams.
24 *General Anesthesia in Operation upon the Nose and Throat —Nitrous Oxid Chloroform and Ether. F. E. Hopkins.
25 *Eosinophile Leucocytes and Nuclein Bases. Edward T. Williams.
26 Discussion upon Climatic Treatment of Pulmonary Tuberculosis versus Home Sanatoria. S. G. Bonney.

Medical News (N. Y.), September 14.

27 A Case of Foreign Body in the Esophagus. Russell S. Fowler.
28 Infantile Atrophy. John Lovett Morse.
29 *The Treatment of Cystitis. Chas. Chassaignac.
30 Medicinal Treatment of Diabetes Mellitus. Archibald Dixon.

Cincinnati Lancet-Clinic, September 14.

31 *Rheumatic Fever in Children. E. W. Mitchell.
32 Small Ovarian Cyst with Rather Unusual After-Complications. Magnus A. Tate.

St. Louis Medical Review, September 14.

33 Open-air Treatment of Pulmonary Tuberculosis in Arizona. R. S. Slusher.

Northwestern Lancet (Minneapolis), September 1.

34 The Advance to Realism in Medicine. A Short History. Franklin Staples.
35 Inflammation of the Ear. L. H. Munger.
36 The Hospitals of Hamburg and Berlin. George G. Eitel.
37 Report of a Case of Acute Transverse Myelitis. E. H. Bayley.

Virginia Medical Semi-Monthly (Richmond), August 9.

38 *Malarial Infection and Its Prevention. Walter Shropshire.
39 The Positive Value of Antidiphtheritic Serum as a Remedial Agent, with Illustrative Cases. G. A. Davis.
40 *Ventral Fixation for Anterior Displacements of Uterus—An Original Operation. Jacob Michaux.

Medical Age (Detroit, Mich.), August 25.

41 *Some Observations on the Treatment of Hypertrophic Rhinitis. Charles M. Robertson.
42 Sarcoma of the Uterus, Involving Broad Ligaments, Mesentery, Intestine, Omentum, and Abdominal Wall, Including Rectus Muscles and Skin; Excisions; Recovery. P. D. Hughes.
43 Some Surgical Cases (Carcinoma of the Pyloric End of the Stomach, Etc.). (Continued.) N. Senn.

Louisville Monthly Journal of Medicine and Surgery, September.

44 *The Importance of Milk Modification for Infant Feeding. Henry E. Tuley.
45 *Stricture of the Male Urethra. Henry H. Koehler.
46 *Tubercular Peritonitis. B. C. Frazier.
47 *Typhoid Fever in Infancy. J. B. Kinnaird.

American Journal of the Medical Sciences (Philadelphia), September.

48 *Filarial Lymphatic Varix. Eugene L. Opie.
49 *Granular Degeneration of the Erythrocyte. C. Y. White and William Pepper.
50 Report of Interesting Case of Aneurysm of Internal Carotid Artery. Walter B. Johnson.
51 *Hydatid Disease of the Breast. Robert G. LeConte.
52 *A Contribution to the Pathological Anatomy of Sporadic Cretinism. Frederick A. Packard and Alfred Hand, Jr.
53 *Pseudomembranous Inflammation of the Mucous Membranes Caused by the Pneumococcus. Charles Cary and Irving P. Lyon.
54 *Acute Splenic Miliary Tuberculosis. D. D. Stewart.
55 Note Upon a Case of Cardia Duplex in a Turkey. Allen J. Smith.

Annals of Surgery (Philadelphia), September.

56 *The Blood Changes Induced by the Administration of Ether as an Anesthetic. John Chalmers DaCosta and Frederick J. Kalteyer.
57 *Studies of Blood in Its Relation to Surgical Diagnosis. Richard C. Cabot, John B. Blake and J. C. Hubbard.
58 *Frequency of Recurrence of Sarcoma. John A. Wyeth.
59 Teratoma of the Testis. William B. Coley and Bertram H. Buxton.
60 Sacculated Aneurysm of the Superior Profunda Humeri Artery. L. J. Hammond
61 *Fracture of the Skull. Walter Lathrop.

Pediatrics (N. Y.), September 1.

62 *The Treatment of Pott's Disease in Childhood by Continuous Over-Extension of the Spine. Royal Whitman.
63 Three Cases Treated with Antistreptococcus Serum. M. Girsdansky.

University of Pennsylvania Medical Bulletin (Philadelphia), September.

64 The Comparative Virulence of the Tubercle Bacillus from Human and Bovine Sources. Mazyck P. Ravenel.
65 *Aneurysm of the Thoracic Aorta of Traumatic Origin: Treatment by Introduction of Wire and Electricity. DeForest Willard.
66 Wax Models—Their Preparation and Uses. Jay F. Schamberg and J. Frank Wallis.
67 *The Case Method of Teaching. Charles H. Frazier.
68 1. On the Diagnosis of Diphtheria; 2. A Double Stain for the Bacillus Diphtheriæ. Robert L. Pitfield.

Buffalo Medical Journal, September.

69 *Tubercular Disease of the Spine and Hip and Early Symptoms of Hip-joint Disease and Treatment. A. M. Phelps.
70 *Local Anesthesia. F. C. Floeckinger.
71 *Cough and Its Treatment in Pulmonary and Laryngeal Tuberculosis. Henry Levien.
72 *On the Frequency of Asthenopia—Especially in America. Lucien Howe.
73 Preliminary Notes on a Case of Abdominal Aneurysm. Marshall Clinton.

Pennsylvania Medical Journal (Pittsburg), August.

74 Address, Berks County Medical Society. E. W. Fraukhauser.
75 Foreign Bodies in the Rectum—Two Cases. L. W. Atlee.
76 How We Should Provide for Our Tubercular Patients; with Report of Cases. Chas. F. Spangler.
77 Hysteria—A Clinical Study of Twenty Cases. Theodore Diller.
78 Eye Strain. P. J. Kress.

Medical and Surgical Monitor (Indianapolis), August 15.

79 *Some Relations of the Profession to Diseases of the Ear. J. F. Barnhill.
80 Report of a Case of Amnesia. Is It Somnambulism? Wm. B. Fletcher.
81 A Few Practical Points on Ether Anesthesia. Thos. B. Eastman.
82 Constipation in Infants. Charles R. Sowder.
83 Report of a Case of Concussion of the Brain Followed by Compression. R. H. Richards.

Quarterly Journal of Inebriety (Hartford, Conn.). July.

84 *Shall We Continue Striving to Improve the Environment of the Poor and Render Sterile by Mutilation, or Electrocute the Degenerates to Preveut Their Propagation of Their Kind? or Shall We More Directly Prevent Both Poverty and Degeneracy by Removing Their Chief Causes? N. S. Davis.
85 Modern Experience vs. Ancient Tradition Concerning Alcohol as a Beverage and Medicine. H. D. Didama.
86 A Recrudescence of Alcohol Worship. John Madden.
87 Some Recent Researches on Alcohol; Their Bearing on Treatment. J. Mackie Whyte.
88 Is Alcohol a True Food? Charles R. Drysdale
89 Hydriatic Substitutes for Alcohol. J. H. Kellogg.
90 Alcohol in High Altitudes. E. Stuver.
91 The Pathology of Chronic Alcoholism. Henry J. Berkeley.
92 The Medical Profession and Total Abstinence. J. J. Ridge.
93 A Statistical Investigation into the Rôle of Alcohol in the Origin of Innate Imbecility. Dom. Bezzola.
94 The Poisonous Action of Alcohol in Some Nervous and Mental Diseases. Wagner V. Jauregg.

Journal of Medical Research (Boston), July.

95 *A Contribution to the Normal Histology and Pathology of the Hemolymph Glands. Aldred Scott Warthin.
96 *On Transplantation of Tumors. Leo Loeb.
97 On Progressive Changes in the Ova in Mammalian Ovaries. Leo Loeb.
98 A Preliminary Report Upon the Examination by Nissl's Method of Four Gasserian Ganglia Removed for Tic Douloureux. Frederick R. Bailey.
99 *Some Observations on the Biology of the Bacillus of the Pest. E. H. Wilson.
100 New Formation of Nerve Cells in a Cerebral Tumor-Neuroglioma. W. L. Worcester.
101 *The Frequency of Trichinosis in the United States. Herbert U. Williams.
102 On Certain Features of the Growth of Bacteria on Media Containing Sugars and Serum, with Remarks upon the Acid Production. E. Libman.
103 Suppurative Pylephlebitis, Associated with Anaerobic Microorganisms. Charles Norris.
104 *The Origin of Gas and Gas Cysts of the Central Nervous System. William Travis Howard, Jr.
105 *The Action of Proteolytic Enzymes on Bacterial Toxines. E. R. Baldwin and P. A. Levine.

106 Blo-chemical Studies on the Bacillus Tuberculosis. P. A. Levine.
107 Cell Proliferation Under Pathological Conditions, with Special Reference to the Etiology of Tumors. Isaac Levin.
108 Streptococcus Mucosus (Nov. Spec.?) Pathogenic for Man and Animals. William T. Howard, Jr., and Roger C. Perkins.
109 Remark on Primary Endothelioma of Lung and Pleura, with Demonstrations. I. Adler.
110 *Studies upon Bacteriolysis and Typhoid Immunity. Mark W. Richardson.
111 *Morphological Varieties of Bacillus Diphtheriæ. Frederic P. Gorham.
112 Classification of Intestinal Bacteria. W. W. Ford.
113 Cholesteatomata of the Brain. John J. Thomas.
114 *Malta Fever: A Report of Four Cases of Malta Fever in the United States Army and Navy General Hospital, Hot Springs, Ark., Among Soldiers and Sailors Returned from Tropical Stations, with Remarks on the Serum Reaction in Malta Fever. Joseph J. Curry.
115 On Some Undescribed Lesions in Lymphosarcomatosis (Hodgkin's Disease). Chas. F. Martin.
116 The Increase of Elastic Tissue in the Lung in Chronic Passive Congestion. Richard M. Pearce.
117 Necroses of the Liver. F. B. Mallory.
118 Report of Nine Cases of Infection with Bacillus Pyocyaneus. Roger G. Perkins.
119 Use of Solid and Liquid Paraffins on the Surface of Culture Media to Insure Anaerobic Conditions. W. H. Park.

St. Paul Medical Journal, August.

120 The Organization of the Profession. William Davis.
121 *Importance of Lacerations of the Pelvic Floor and Their Repair. William E. Ground.
122 A Consideration of Graves' Disease, and the Theories of Its Causation. George E. Senkler.
123 A New Absorbable Suture Material. E. M. Lundholm.
124 Medullary Narcosis. C. P. Thomas.

September.

125 *A Plea for Conservatism in the Treatment of Inflammatory Conditions of the Tubes and Ovaries. J. L. Rothrock.
126 *Is Cholecysto-colostomy a Feasible and Rational Operation? A. Shimonek.
127 Intussusception During the First Year of Infancy. Edward D. Keyes.
128 Report of a Case of Paralysis of Bladder and Rectum from Injury. A. L. Baker.
129 Menthol in the Treatment of Gastritis, with Report of Cases. G. E. Campbell.

Illinois Medical Journal (Springfield), September.

130 *Uric Acid Fallacies. Frank Billings.
131 Surgical Intervention in Intestinal Perforation in Typhoid Fever. George L. Eyster.
132 Doctors' Contribution to Science in the Past 100 Years. James L. Reat.
133 *Angioneurosis. Frank P. Norbury.
134 Potable Water. Arthur W. Palmer.

Inter-State Medical Journal (St. Louis), August.

135 Locomotor Ataxia. D. R. Brower.
136 The General Practitioner and Ophthalmology. John Green, Jr.
137 Erosions of the Stomach. M. D. Schmalhorst.
138 Intestinal Obstruction Following Abdominal Section. Edward W. Lee.
139 A Mildly Inflammatory Condition of the Skin Covered by Green Scales Probably Produced by the Bacillus Pyocyaneus. Martin F. Engman.

St. Louis Courier of Medicine, August.

140 *Congenital Dislocation of the Hip. E. H. Bradford.
141 A Study in Heredity. Alice M. Smith.
142 Etiology of Typhoid Fever, and Treatment in Private Practice. Granville E. Dickinson.
143 Ptosis of the Liver. Augustus A. Eshner.
144 Duodenal Stenosis Due to Gallstones: Report of a Case. Albert E. Taussig.
145 Tetanus Neonatorum: Report of a Case that Recovered. J. C. Falk.

International Medical Magazine (N. Y.), August.

146 Quantitative Determination of Urea. A. Robin.
147 Indications for Trephining the Mastoid Process. E. B. Gleason.
148 The Use of Chloretone in Epilepsy. D. J. McCarthy.
149 Points in Antepartum Hygiene. Wilmer Krusen.
150 Chronic Diarrhea, Due to Rectal Disease. (To be continued.) Samuel G. Gant.
151 The Prognosis and Treatment of Chronic Intestinal Catarrh. Boardman Reed.

Southern Medical Journal (La Grange, N. C.), August.

152 Treatment of Fistula in Ano. James M. Parrott.
153 The Office Treatment of Rectal Diseases. R. D. Mason.
154 Washing the Blood in Acute Uremia. Charles E. Nammac.

Journal of Medicine and Science (Portland, Me.), August.

155 The Woman of the Tenement and Her Three Great Enemies—Ignorance, Alcoholism and Tuberculosis. S. A. Knopf.
156 Mind. F. A. Hanson.

Bulletin of the Johns Hopkins Hospital (Baltimore), August.

157 The Medicine and Doctors of Horace. Eugene F. Cordell.
158 A Historical Note Upon Diphtheria as Carriers of Diseases—Pare-Declat. Howard A. Kelly.
159 The Fiftieth Anniversary of the Invention of the Ophthalmoscope. Harry Friedenwald.
160 The First Nephrectomy and the First Cholecystotomy, with a Sketch of the Lives of Drs. Erastus B. Wolcott and John S. Bobbs. Martin B. Tinker.
161 Measurement of the External Urethral Orifice. G. Brown Miller.
162 Tendon Transplantation. Sydney M. Cone.

The Physician and Surgeon (Detroit and Ann Arbor), July.

163 *The Etiology of Gallstones. Victor C. Vaughan.
164 *Clinical History and Diagnosis of Gallstones. William F. Metcalf.
165 A Symposium on Genito-urinary Diseases; Etiologic Factors in Gonorrhea. Thomas S. Burr.
166 Gonorrhea in Women. James G. Lynds.
167 Syphilitic Onychia. Frederic W. Robbins.
168 Bacteriologic Findings in Cystitis. Conrad George, Jr.
169 Sequelæ of Gonorrhea. Cyrenus G. Darling.
170 Treatment of Acute Specific Urethritis. Ralph H. Spencer.
171 Repair of the Vaginal Outlet at the Time of Labor. Richard R. Smith.

Indiana Medical Journal (Indianapolis), September.

172 *The Dry Method of Surgery. Edwin Walker.
173 Report of a Case of Pistol-Shot Perforation of the Intestines—Laparotomy and Recovery. John C. Sexton.
174 Aneurysm of the Cervical Portion of the Vertebral Artery. I. N. Trent.
175 Foreign Bodies in the Lungs. Theodore Potter.
176 Corning's Anesthesia Among the Insane. S. R. Cunningham.

New Orleans Medical and Surgical Journal, September.

177 *The Mosquitoes and Their Relation to Disease. Geo. E. Beyer.
178 *Some Observations on the Varieties and Habits of the Mosquitoes of New Orleans, and the Remedies. H. A. Veazie.
179 Intra-peritoneal Abscess of the Abdomen, Containing Pure Culture of Bacillus Typhosus—A Sequel of Typhoid Fever—Recovery. L. G. LeBeuf.

AMERICAN.

2. **Tuberculous Laryngitis.**—Thomson recapitulates the principles to be borne in mind in tuberculosis of the larynx, as follows: Pathology and clinical experience show that in the majority of cases the focus of infection is near or in the crico-arytenoid joint. Many cases present themselves only at the stage when local treatment is incapable of producing cure and we should keep the principle of doing no harm constantly before us in this affection. The most rational principle, according to our present knowledge, is to make an early diagnosis in its incipiency. Any suspicious laryngeal catarrh should be treated seriously on even a presumptive diagnosis. Once diagnosed, the patient should be treated on the principles laid down in modern sanatoria. Symptomatic treatment should be directed to any irritative, catarrhal or obstructive condition of the air passages. Silence should also be enjoined, the disuse of the voice being in proportion to the degree in which the focus of infiltration approaches or interferes with the arytenoid joint. Where the situation or extent of disease does not warrant an expectation of complete arrest of the process, treatment should be symptomatic, and sanatorium methods are unnecessary.

3. **Urea in Tuberculosis.**—After mentioning the general dissemination of tubercle bacilli and the universal exposure to it, Buch remarks that most of us must have some vito-From the observation that the kidneys are practically immune to any ordinary infection, and it must be a substance or element that is not harmful or foreign to the human organism. From the observation that the kidneys are practically immune to phthisis, Harper of Nottingham concluded to prescribe pure urea with a view of increasing the amount of urea and uric acid, and Buch follows this suggestion in his present paper, holding that urea is probably a substance which has something to do with this immunity. While it is impossible to understand precisely why and how it causes beneficial effects, he thinks there is sufficient clinical evidence already to show that it is beneficial, and he reports seven cases of tubercle infection that were treated with good results: either cured or with more or less disappearance of symptoms. In all the other cases in which he has used the treatment he had had similar good results.

8. **Functions of the Tonsils.**—Matheny pleads for the preservation of the tonsils, holding that these are really protective organs, ranged around the pharynx to protect the system against infections which may enter by that route. He does not admit that simply because a tonsil projects into the pharynx beyond the level of the faucial pillars, it is hypertrophied, or even if it is hypertrophied that it is dangerously pathologic. The question is whether it has lost its function and is inimical to life, and he lays down the conditions under which excision is justified, including mechanical obstruction produced either of the pharynx or Eustachian tube, and specially liability to recurring attacks of tonsillitis, where the function of the organs has been destroyed and degeneration has taken place, a condition in which the crypts have become filled with caseous matter, cases where lacunar ulcerations are present, when a quinsy habit has been acquired, cases of malignant disease of lupus or tuberculosis of the tonsils and where enlarged tonsils interfere with voice production. Also in some cases after the age of puberty there sometimes remains more or less fibrous tissue, occupying the tonsillar space which has lost its lymphoid characteristics, and partakes of the nature of a foreign growth inimical to comfort. The differential diagnoses of several of the different disorders given, such as acute follicular tonsillitis, herpetic tonsillitis, and ulcerative lacunar tonsillitis.

13. **Alcohol.**—Didama's article argues against the use of alcohol even in moderate doses, not only as a beverage, but also in medical treatment. He finds from his own personal experience that the non-alcoholic treatment of any disease is far more satisfactory than the alcoholic management formerly employed.

14. **Atropia in Pulmonary Edema.**—O'Donovan finds that atropia is a remedy that rapidly contracts the vessels, powerfully stimulates the sympathetic system, increases the force of the heart's beat, raises arterial tension, stimulates the respiratory centers, and dries up the secretions of the skin and mucous membrane. Its physiologic action can be easily gauged by watching the amount of dilatation of the pupil. It is well to supplement it with some drug that acts promptly and surely as a direct stimulant to the heart, strychnia preferably. In cases of acute pulmonary edema he has seen relief from the hypodermic injection of 1/100 of a grain of atropia with 1/50 of a grain of strychnin sulphate so immediate and complete that it seemed like magic. The pulse should be watched to see that the effect is not merely transitory. Time should not be wasted on remedies given through the stomach, but the hypodermic should be used at once.

19.—See also title 17.

20. **Malignancy.**—Blake gives an abstract of the recent work by Professor Schüller of Berlin, entitled "Die Parasiten in Krebs und Sarkom," in which he holds that he has found a parasite which can be grown in pure culture, readily identified, occurs invariably in tumors and is reproduced by inoculation. It certainly can not be identified with blastomycetes, but apparently belongs to a class of animal parasites of which practically nothing is known. Certain researches of the author tend to show that the non-malignant tumors are produced by somewhat similar parasites belonging to the same class, but under certain conditions they are transformed into the malignant form, or assume malignant qualities which result in the same proliferation of cells. The researches of Schüller tend to prove the infectious nature of the disease, but how it is propagated is absolutely unknown. Analogy would suggest that some form of the organism must exist outside of the body and many histories tend to confirm this view, but it remains for future study to settle this point. The parasite seems very sensitive to cold and ordinary antiseptics, therefore, the danger of infection during an operation must be slight, though the continued association with an infected person is more open to question.

25. **Eosinophilia.**—Williams calls attention to the association between eosinophile leucocytes and the spermine crystals first noted by Charcot and Leyden, and suggests that this may have a pathologic importance as indicating the decomposition of nuclein in the body. As to what cells are being decomposed it is not always easy to say.

29. **Cystitis.**—The treatment of cystitis depends upon the forms of inflammation, and Chassaignac, before taking these up seriatim, mentions certain general methods, such as rest, which is the more important the more acute the case; diet, which should be non-irritative, alcohol being excluded, the use of laxatives and baths; hot applications over the bladder, and intravesical irrigations and alkalines to diminish the normal acidity of the urine; anodynes and urinary antiseptics are also useful in the majority of cases, and the above measures are applicable in all stages and in all forms of cystitis. In gonorrheal cystitis, specific remedies such as salol, sandalwood oil, local treatment with potassium permanganate, etc., are advised. In the tuberculous form the prognosis is not good. He thinks that if ulceration is present, the patient's general condition being fair, a suprapubic cystotomy which will facilitate curettage and topical applications is advisable. The cystitis of stricture, prostatitis, calculus and tumor should be treated in addition to the general measures by the treatment of the local lesion. In traumatic cystitis the special indication is to keep the organ well drained in order to avoid complications due to leakage. Cystitis from direct infection is usually due to lack of care in the treatment and the precautions should be prophylactic. When the inflammation travels downward from the kidneys or ureter, only temporary results will follow local treatment of the bladder. Healing of the ureter or kidney and removal of these organs if necessary, are the only means of producing a cure. In cases of cystitis from irritants taken internally, their stoppage usually ends the disease.

31. **Rheumatism in Children.**—Several patients suffering from rheumatism in the same family are noticed by Mitchell who thinks that these indicate the infectious character of the disease. Three of the cases were children. He points out the special characters of the disorder in young patients and emphasizes the importance of protection of the heart and of guarding patients from relapses and recurrences after the first attack.

38. **Malaria.**—The treatment suggested for malaria by Shropshire is, first, "Stop every case of malaria at once by adequate doses of quinin, for the longer it runs the greater the number of gametocytes formed in the blood, and the greater danger is the patient as an infector. By adequate doses I mean not less than two grams of quinin, and that either in an acid medium, or followed by an acid that will make the medium acid after it is taken; for quinin will not absorb in an alkaline medium. When the paroxysms are broken the patient should be required to take one gram at bedtime and half a gram the next morning on every sixth day for two months or more, and to sleep under mosquito netting or in well-screened houses the remainder of the warm season in our country. Urge the drainage of all places calculated to afford larval development of the mosquito, and if drainage is impractical, treat them once a week with petroleum, even Beaumont oil would do." In addition, he says educate your patients up to these requirements and teach them that curing each case promptly lessens the danger to other members of the family and community.

40. **Ventral Fixation.**—The operation here claimed as original by Michaux is as follows: The abdomen was opened in the median line, the uterus taken out and carried somewhat back, the cervix was then dilated by an assistant, the organ was then put in the usual position for ventral fixation and stitched with two sutures to the lower end of the abdominal wound, but a little higher up than is done when the operation is undertaken for the relief of posterior displacements, with a view of straightening out the bend in the canal.

41. **Hyperthropic Rhinitis.**—The special points deduced from Robertson's consideration of the newer methods of treating this condition are: The uselessness of sprays, galvanocauteries, etc. 2. Where growths exist they should be treated as growths which appear elsewhere. 3. The saving of all the

mucous sinus tissue possible, still securing breathing space. 4. The advantages of the use of suprarenal capsule. 5. The absence of danger of synechiæ, due to cautery, etc. 6. The use of dry pledgets of cotton and the disuse of all others. 7. The great advantage of the greased gauze as a surgical dressing in the nose over old methods. 8. The danger in the use of cocain lessened by the use of suprarenal extract. 9. The disappearance of nasopharyngitis after the nose becomes ventilated.

44.—See abstract in THE JOURNAL, xxxvi, p. 1726.

45.—Ibid.

46.—Ibid., p. 1727.

47.—Ibid., p. 1726.

48. **Filarial Lymphatic Varix.**—There seems to be little doubt but that this disease prevails to a limited extent in the Southern States, and may be acquired in this country. It has also been observed even as far north as Pennsylvania. Opie reports a case at length with postmortem findings. He calls attention to the fact that the lymphatic vessels throughout the varix were filled with blood and not with lymph, suggesting regurgitation at some point of connection between the venous and lymph systems.

49. **Glandular Degeneration of the Erythrocyte.**—The conclusions arrived at by White and Pepper are: "1. The granules are a constant finding in cases of lead-poisoning, and appear very early in cases under the influence of lead salts long before subjective or other objective symptoms can be demonstrated. 2. The granules disappear in cases of chronic lead-poisoning as the convalescence is established. 3. Apparently lead does not produce an immunity, as one of the cases worked for twenty-four years, another for twenty years, without having pronounced symptoms of lead-poisoning, and in both of these cases the granules were present in moderate numbers. 4. The granules may be produced experimentally in dogs, appearing in a very few days after the beginning of the experiment, and increasing as the intoxication becomes severe. 5. The granules in the experimental cases are rather fine, and show a tendency to clump at first; later, all varieties appear. 6. We believe these granules to be a true degeneration of the erythrocyte and having no relation to nuclear fragmentation or to polychromatophilia."

51. **Hydatid Disease of the Breast.**—Leconte reports a case occurring in a mulatto girl, aged 27, which was apparently the first of its kind in this country. He tabulates the published cases and finds that the disease is confined to women usually in early maturity or from the age of puberty to the climacteric. It is characterized by the appearance of a small, hard, painless tumor situated in any part of the surrounding tissue of the breast, freely movable and slow in growth. The firmness continues until it attains considerable size and even then its cystic nature is not apparent. The enlargement of the axillary glands, pain, irregular outline, and adhesions to the skin are characteristic of inflammation outside the sac and degenerative change leading ultimately to the death of the organism and spontaneous cure. The diagnosis is difficult and malignant growth often seems probable. The treatment should be always operative.

52. **Sporadic Cretinism.**—After reporting a case Packard and Hand call attention to certain points which seem to them of interest, namely, the rapid improvement under the use of specific drugs, thyroid extract, though the patient finally succumbed to acute disease, the system seeming unresistant. Besides the thyroid changes there was also an abnormally large hypophysis, a condition which has not been very frequent in such cases. Another point of special interest is the calcareous infiltration of the blood vessels of the thyroid which seems not to have been mentioned in the literature of similar cases.

53. **Pneumococcal Mucous Inflammation.**—The points of interest in the case reported by Carey and Lyon are the occurrence during the course of an attack of lobar pneumonia in a boy of 11 years, of a profuse pseudomembranous exudation of nearly all the mucous surfaces of the body open to inspection, caused by the pneumococcus. The case also showed signs of excessive adhesive pleuritis and marked and continued tympanites with discharge of membranous shreds in the stools, suggesting that the fibrinous process involved also the pleura and gastro-intestinal tract. In other respects the case was not remarkable, terminating by gradual lysis with recovery.

54. **Splenic Miliary Tuberculosis.**—Stewart reports the second case on record of splenic miliary tuberculosis apparently due to contagion. The patient had nursed a consumptive while suffering from the after-effects of la grippe, with reduction of bodily resistance. The patient's room was damp and cold. The nurse was constantly in attendance, lost much sleep and was poorly fed.

56. **Blood Changes from Ether.**—The assertion made many years ago that anesthesia has a destructive influence upon the blood has been the cause of experiments by various investigators and Da Costa and Kalteyer report the results of their own examinations in 50 cases, also of experiments on animals. The conclusions to which they arrive are given in substance as follows: 1. The number of red corpuscles is influenced by many factors associated with and accompanying the anesthetic state. The character of the change is, as a rule, polycythemia, rarely, an oligocythemia. These factors may be grouped into three classes. In each class when analyzed separately is found cause capable of producing an increase in the number of colored corpuscles. 2. The nature of this polycythemia seems best explained by a lessening of the watery element of the plasma, thereby reducing the total volume of liquor sanguinis, and causing concentration of the blood. They think it reasonable to infer that the polycythemia is not specially influenced by excessive proliferative changes which probably occur in the hematopoietic tissues. The increased blood production is an effort of Nature to rapidly restore the destroyed cells. 3. The three important factors incident to the polycythemia are (a) The period of preparatory operative treatment; (b) the anesthetic state; (c) the post-operative stage. 4. The blood inspissation is, as a rule, most pronounced immediately after the termination of the anesthetic stage. In some cases the anhydremia may be increased by each succeeding factor, or one of these factors may exceed the other. The variation existing between the plasma and corpuscles, though temporary, should be regarded as too pronounced to be within the physiologic limits. The relative increase in the number of erythrocytes is generally still present sometime after the operation, but not infrequently the readjustment occurs before this, and an oligocythemia may be present. 5. The hemoglobin is always reduced absolutely; in some instances there is an apparent increase, but this is never parallel with the rise in the number of red-blood cells. The individual corpuscular hemoglobin value is therefore reduced. This reduction in the color value of the chromocytes is most striking when compared with the blood decimal, determined sometime after the operation. We must conclude that etherization produces increased hemolysis, and in Nature's effort to rapidly replace the destroyed corpuscles, the regenerated cells are imperfectly supplied with hemoglobin. 6. The duration of the anesthetic state and the amount of ether may influence the blood changes; but the extent of the disturbances could not be determined on account of the many modifying factors. 7. The amount of blood loss, as encountered in this series of cases, does not seem to affect the blood. 8. Whenever possible, one or more blood examinations should be made before giving the general anesthetic, and these before preparatory treatment has been instituted. On account of the hemolysis which is shown by the fall in the corpuscular hemoglobin after operation, a very low percentage of hemoglobin must be regarded as a contra-indication to general anesthesia. The amount which should be regarded as a positive contra-indication is uncertain, and the authors think that below 50 per cent. is a dangerous level. In malignant disease and in cases where surgery might prolong life briefly, but can not cure, operation should not be performed under general anesthesia when the hemoglobin is below 50 per cent. They operated in two cases where it was below 40 per cent.,

but in each case a vital emergency existed, and in each case death on the table was narrowly averted. Mikuliez gives 30 per cent. as the lowest level at which operation should be attempted, but the authors give 40, excepting under stress or absolute necessity. In case of low percentage of hemoglobin local anesthesia should be employed whenever possible and in any case where the percentage is low, the ordinary preparatory measures should be employed in every way to avoid creating undue drain upon the blood. The anesthesia should be entrusted to an experienced hand and as little anesthetic used as possible. The operation should be performed rapidly, the proper measures taken to bring about reaction after it is completed, and oxygen should be inhaled to remove the ether quickly from the lungs and blood.

57.—See abstract in THE JOURNAL, XXXVI, p. 1490.

58. **Sarcoma.**—Wyeth calls attention to the malignancy of sarcomas and suggests that in his own practice he can recall but two cases that could in the strictest sense be called cured. He has collected the statistics of a considerable number of cases, including those reported by Chavasse, and finds comparatively few in which recurrence did not take place. The two cases mentioned by him as cured are reported at length.

61. **Fracture of the Skull.**—In concluding, Lathrop says that fracture, whether compound, depressed, or comminuted, should be treated by operation. In all simple tractures where the slightest indication of intracranial pressure or hemorrhage is present, operate. Even simple fractures followed by no symptoms need watching, and especial care to the general system. The prognosis in fractured skull is to be guarded, and to be guided by subsequent development. An abnormally low temperature followed by rapid rise is a bad sign, and coma, paralysis, deep, irregular breathing, and dilatation of the pupil are nearly always of fatal significance. A temperature at or above normal rising one or two degrees with regular respiration and full or slightly accelerated pulse is usually favorable.

62. **Pott's Disease.**—The object of Whitman's paper is to advance the proposition that horizontal fixation should be the routine treatment during the destructive stage of Pott's disease in early childhood, a doctrine which is not generally taught nor accepted.

65. **Aortic Aneurysm.**—After reporting a case in which, nine weeks after the operation, the man was well enough to leave the hospital with good consolidation of the anterior portion of the aneurysmal sac after the introduction of wire by the Corradi-Stewart method, Willard discusses the subject and analyzes the reported cases. He thinks while the operation produces few permanent cures, it at least lengthens life, and in all of those who survive the immediate effects relieves the individual symptoms. Considering that these cases are fatal if left alone, these results are certainly satisfactory. To conclude, he says that, in his opinion, it offers a more reasonable hope of success in bad cases of thoracic aortic aneurysm than any other method yet devised.

67.—See editorial in THE JOURNAL of September 21, p. 777.

69. **Tuberculous Disease of the Spine and Hip.**—Phelps describes the condition in detail and points out the approved methods of treatment, illustrating the orthopedic apparatus. The importance of symptoms is given by him in the following order: 1. Limit of motion. 2. Deformity with apparent or real shortening. 3. Limp. 4. Atrophy and bone disease. 5. Pain in the knee with absence of local disease. 6. Pain on joint pressure. 7. Night cries. 8. Flattening of buttock. 9. Heat. 10. Swelling. He opposes the use of the long traction splint and favors the use of the plaster-of-Paris without passive motion. We have outgrown the idea that fixation will produce anchylosis, but he also gives descriptions and illustrations of perineal crutches used by himself, which meet the indications of fixation and traction in the line of the neck without absolutely confining the patient. We should operate in case of tuberculous abscess whenever the capsule is ruptured, in rapid osteomyelitis, in all tense abscesses and wherever necrosed and carious bone is present; also in rapidly increasing abscess of the joint filled with tuberculous purulent material, when the abscesses are repeated in occurrence and in any case with rise of temperature; also whenever there is doubt as regards the diagnosis.

70. **Local Anesthesia.**—Floeckinger credits Corning with the first discovery of the method of local anesthesia, it having been subsequently developed by Oberst, Schleich, Braun and others, and describes his method of applying it in various conditions.

71. **Cough.**—The conclusions of Levien's article are that: "1. Cough, though one of many features in the make-up of tuberculous affections of the lungs and larynx should, however, receive special attention at the hands of the physician, because it is the most distressing and exhausting factor. 2. Of all the remedies and drugs in our experience, which would tend to ameliorate and suppress cough, we find in glyco-heroin an agent which to all appearances is a remedy par excellence, and we recommend its further trial."

72. **Asthenopia.**—According to Howe, asthenopia is more frequent in this country than abroad, which he attributes to the prevalent carelessness in the use of the eyes, overstrain in business, indigestion, etc. He also finds that a larger number of persons are relieved in this country; the American seeks relief in glasses earlier than do foreigners. The average American practitioner is better fitted to detect and meet the conditions and American ophthalmologists and opticians are better supplied with diagnostic appliances and stock for such cases.

79. **Ear Disease.**—The neglect of aural affections by the general practitioner is deplored by Barnhill, who pleads for a better natural understanding between him and the aural specialist. The common indifference of the public to these disorders, careless statements by physicians to patients, and the comparative lack of aggressiveness of otologists in presenting the importance of their work are, he thinks, responsible for the present state of things. Careless dismissal of a case with an ear-drops prescription and promise that a child will outgrow it, are causes of much later trouble. Morris' remark that if the graves of those who died of neglected appendicitis were marked with lights, graveyards would be well lighted, is applied by Barnhill to ear disease. He insists on the importance of attention to the patency of the Eustachian tube, and of early incision of the drum when needed in cases of acute aural disease. In chronic otorrhea the family physician is justified in attempting to treat it for a time, but after a few weeks' ineffectual trial he should call in the aurist.

81. **Ether Anesthesia.**—Eastman advises warning the patient that he will experience unusual sensations, choking, etc., but he must pay no attention to them. The best inhaler is that with the largest evaporating surface. Ether should never be used except from a freshly opened can, the room must be quiet, and the anesthetizing is best done in the patient's room. The more rapidly anesthesia is produced the better. A competent anesthetizer can do it safely in eight minutes. Lower the inhaler gradually on to the face, thus avoiding shock to the mucous membrane. Do not test reflexes by jabbing finger into the eye; the respiration will, if watched, give sufficient information. After a short time the respiration will apparently stop, but if the pulse continues good, this ought not to alarm. The administration may be continued quietly and all will be well.

84.—This article appeared in THE JOURNAL of July 6, p. 1

95. **Hemolymph Glands.**—The anatomy and histology of these glands is described by Warthin, who recognizes two types which he classes as the splenolymph glands and the marrowlymph glands, though all sorts of transition forms are found between the two. He notices the pathologic conditions which may affect these, such as pyemia, anemia in the various forms, etc. Under normal conditions they are most probably concerned in hemolysis and leucocyte formation and play but little part, if any, in formation of red blood cells. Study of these glands he thinks points to a new and important line of

investigation as regards the solution of problems relative to blood formation, and pathologic conditions of the blood and blood-forming organs.

96. **Tumor Transplantation.**—Loeb details experiments which he has performed in an attempt to transplant cystic sarcoma from the thyroid of a white rat into some 150 other animals and describes at length the changes observed. All the successful cases were in rats; the experiments on guinea-pigs failed. The probability is that in every case tumor cells were transplanted and started a new growth. The possibility, however, of transplantation of micro-organisms as the cause of tumor growth can not, he thinks, be overlooked.

99. **Pest Bacillus.**—From experiments in the Hoagland Laboratory, Wilson concludes that probably the most important points in suspected cases of pest bacillus are the stalactite test, its behavior on salt agar, and the vaccination of rats and guinea-pigs with suspected material. Though there is no positive characteristic by which the bacilli of the pest can be hurriedly identified, one can, by these means, be reasonably certain of its identity.

101. **Trichinosis.**—According to Williams' investigations, it seems probable that many cases of old trichinosis escape detection at autopsies. In 27 cases out of 505 unselected autopsies in the adult human subject, trichinosis was present, all having died of other disease than trichinosis. In some of the cases the infection was extensive, in others very slight. The birth-places of the subjects included almost all the important countries of North America and Europe. A very large percentage of the cases occurred in subjects that had been insane.

104. **Gas Cysts.**—Howard believes that there should be more frequent and careful examination of the brain at autopsies; especially in cases of general gaseous emphysema it would probably show that gas cysts are more common than generally supposed.

105. **Proteolytic Enzymes on Bacterial Toxins.**—Baldwin and Levene have experimented on cases of proteolytic enzymes and neutralizing bacterial toxins, it being well known that many bacterial toxins ingested by the mouth lose their toxicity. They find that the diphtheria and tetanus toxins are both digested and not simply neutralized by the three proteolytic enzymes. In regard to tuberculin it may be stated in a general way that trypsin and pepsin digestion weaken its specific activity. Trypsin on prolonged digestion is able to destroy all the activity of tuberculin, while this could not be achieved by pepsin. He therefore thinks that tuberculin is a specific substance of the nature of a nucleo-proteid, the latter being the reason for its being more easily destroyed by trypsin than by pepsin.

110. **Bacteriolysis and Typhoid Immunity.**—While he does not claim his studies are complete, Richardson thinks the following conclusions may be made or suggested: "1. In typhoid fever Nature produces a cure through bactericidal agents acting upon the specific bacilli. These agents are produced by body cells, especially those of the lymphatic apparatus, and are found in varying amounts in the blood. 2. These protective agents are at least two in number, a specific immune element and a non-specific normal element or ferment. 3. It is the function of the immune element to bind the complement or ferment to the bacterial cell, which is then destroyed. 4. In the earlier and middle stages of the disease the immune body may apparently be present in large amount, and yet be of little value because of the absence of the complement. 5. In the stage of convalescence or falling temperature the normal element returns apparently to the blood, and a corresponding destruction of bacilli takes place. Further, inasmuch as this marked destruction of bacilli must set free an excess of typhoid toxin contained in the bacterial cells, we have in this fact a possible explanation of the marked remissions of temperature seen clinically in the fourth week of the disease. 6. Inasmuch as the addition of normal serum to the inactive serum of the sick typhoid patient will, in most instances, make that serum more powerful, in fact, make it very similar to the serum found in the fourth week, we should be justified, theoretically, in treating such patients with normal serum. 7. It will probably be found, however, that in certain cases the blood of the patient will lack both immune and normal elements, both of which will have to be supplied. Just what elements will be necessary can be determined probably by submitting the patient's blood to tests similar to those just described. 8. The blood of a normal individual may, under conditions described above, have very marked destructive power upon typhoid bacilli. This power is due, undoubtedly, to substances very similar to those found in typhoid serum. Their relation to the subject of natural immunity is, of course, of the greatest importance, and needs much further study. 9. The principles set forth above may apply to infection other than typhoid. This question should be investigated."

111. **Bacillus Diphtheria.**—The morphologic varieties of bacillus diphtheriæ have been studied by Gorham, who finds that his results agree with those of Westbrook that "(*a*) Granular types are usually the most predominant forms at the outset of the disease. (*b*) The granular types usually give place wholly or in part to barred and solid types shortly before the disappearance of diphtheria-like organisms. (*c*) Solid types may sometimes be replaced by granular types when convalescence is established, just before the throat is cleared of diphtheria-like bacilli." He also adds the following: "1. That diphtheria-like bacilli are more frequent in the nose than in the throat. 2. That there are diphtheria-like bacilli in the noses and throats of a large percentage of apparently healthy persons. 3. That by a careful study and classification of the various forms of bacillus diphtheriæ, many morphologic varieties may be recognized. 4. That the change from the granular or barred type to the solid staining types seems to take place under the influence of the body fluids of a person immune or becoming so. 5. That the virulence of the bacillus diphtheriæ seems to be correlated with its microscopic form. 6. That the so-called xerosis, pseudo-diphtheria, or Hoffman's bacillus are morphological varieties of the bacillus diphtheriæ, sometimes capable of producing clinical diphtheria, but usually non-pathogenic for guinea-pigs. 7. That we do not know whether the solid staining types regain their virulence when once they have lost it, though this seems probable. 8. That Neisser's stain is of no value in differentiating the barred or solid types of bacillus diphtheriæ.

114. **Malta Fever.**—Curry reports four cases of Malta fever occurring in soldiers or sailors returning from tropical stations and calls attention to the value of the serum test in this condition. He concludes that Malta fever is a very widespread disease in tropical and subtropical communities. He suggests that the sedimentation test with micrococcus melitensis be added to the list of common routine blood examinations, especially in cases of persistent recurring rheumatism. It is possible that many of the fevers occurring in the South that are not typical malarial or typhoid, may be Malta fever.

121.—See abstract in The Journal of July 13, p. 135.

125. **Tubal and Ovarian Disease.**—Rothrock has been led from his own experience to believe that the radical operative treatment for removal of affected tubes is in most instances unnecessary if the infection is observed early and properly treated. A large number of the patients suffering from infection in these organs are highly neurotic and the reflex pain and hyperæsthesia are all out of proportion to the local lesion, the removal of which does not cure the patient. He has, therefore, for some years followed the treatment published by him in the *Northwestern Lancet*, in January, 1900, consisting essentially in local treatment to the uterine cavity and daily observations of the same after-disinfection with corrosive sublimate, 1 to 5000 or of potassium permanganate 1 to 1000, following which an application of ichthyol, 50 per cent. in glycerin, formalin 25 per cent., of Grammatikati's mixture (alumnol gm. 2.5, tinc. iodin 25 c.c., alcohol 90 per cent. 25 c.c.). In case the infection is confined to the cervix that portion of the cavity alone receives attention. Dilatation of the os is done, if neces-

sary, by sea-tangle tents. It is important that it should be patulous to secure drainage. When the tubes are involved the treatment is modified somewhat. The patient in the acute stage is treated with rest in bed and cold applications. Later local treatment directed to the tubes as well as the uterine cavity is advised.

126. **Cholecysto-Colostomy.**—The question implied in the title of this article is answered by Shimonek as follows: 1. That in all cases of malignant obstruction of the bile-ducts, the safest, easiest and quickest operation is advisable. The diversion of the bile into the colon alone can not cause enough physiologic distress in the time such a patient will live to be at all objectionable and its beneficial effects in relieving the jaundice and its toxic effects will materially lighten the sufferings of the individual. 2. He would advise anastomosis in all cases where the gall-bladder or duodenum or both are so adherent that approximation would be difficult, requiring extensive dissection often involving profuse hemorrhage. 3. He would make the union with the smallest button and as far away from the flexure of the colon as possible, and to avoid any possible forcing of bile contents into the gall-bladder, thus bringing on a possibly dangerous infection. 4. That the rationality of diverting the bile into the colon is so far sustained in all the operations reported.

130. **Uric Acid Fallacy.**—The theories of uric acid and its pathologic action in the system are reviewed by Billings, who quotes from Croftan as to its non-toxicity and that the alloxuric bases are the real cause of the toxic affections usually attributed to uric acid. Although we find no positive knowledge in regard to this subject, we are better able at present to throw aside a lot of theories and absurdities that have been too much enforced in the past and are still largely advocated by certain authorities.

133. This article has appeared elsewhere. See THE JOURNAL of September 14, title 58, p. 717.

140. **Congenital Dislocation of the Hip.**—The opinions of various authorities are first noticed by Bradford who finds from experience that a small number of cases of unilateral congenital dislocation of the hip may be permanently cured by the bloodless method with the exercise of ordinary skill, but that not more than one-half can be cured by even exceptional skill; that the percentage of skill is less in bilateral cases, but that some improvement in the gait can be expected in all. He also shows that by operative reduction with incision three-fourths of the unilateral cases can be cured between the ages of 3 and 8 years, and one-half of the bilateral ones, if treated with best skill. That in children of these ages stiffening is not to be expected unless suppuration follows; this complication can be avoided with care. The question whether the acetabulum should be deepened in order to prevent relaxation is noticed and in certain cases he has employed this method.

163. **Gallstones.**—Vaughan describes the different types of gallstones and their method of occurrence. He sums up in the following statement: "1. Chlosterin and a compound of bile-pigment and lime, generally designated as bilirubin chalk, either singly or together, make up the essential part of gallstones. 2. The cholesterin, which forms gallstones, is not that brought to the gall-bladder from the liver as a constituent of the bile, but has its origin in the mucous membrane of the bladder. 3. While both bilirubin and salts of lime are normal constituents of the bile, the chemical compound formed by the union of these substances and which enters so largely into the composition of gallstones, is not formed by the condensation of bile, but is formed, so far as we now know, only as the result of bacterial infection of the bile. 4. Gallstones are formed in the bladder or gall-ducts only when the mucous membrane of these organs is infected. 5. The infecting bacterium which leads to the formation of gallstones is in the majority of instances the bacterium coli commune, but it is probable that other micro-organisms may have a like effect."

164. **Gallstones.**—The diagnosis of gallstones and their clinical history is discussed by Metcalf who concludes that, though many signs and symptoms are usually present, the only positive sign is the discovery of the stone in the feces. When symptoms of disease affecting the bile passages are persistent, exploratory incision should be made to complete the diagnosis and at the same time to give relief.

172.—This article has appeared elsewhere. See THE JOURNAL of September 14, 89, p. 723.

177-178. **Mosquitoes in Their Relation to Disease.**—Beyer's article is a very thorough description of the characteristics of the pathogenic mosquitoes, with illustrations. Veazie describes the species found near New Orleans. He makes the interesting practical note that the mosquitoes are very fond of sucking amongst soiled clothing, the culex especially, and he thinks this fact may account for the dissemination of disease by fomites. He has also seen them imbibing the vomited and excreted matter from patients. In this case the male will suck up the blood as well as the female and he suggests that Drs. Reed, Carroll and Agramonte will be interested in this observation.

FOREIGN.

British Medical Journal, September 7.

What Is Intussusception? How Should It Be Dealt With? EDMUND OWEN.—Owen is of the opinion that intussusception is surgical from the very beginning and the medical treatment can afford no trustworthy means of managing the cases, that prompt abdominal section is the only scientific and practical way of giving relief. In conclusion, he maintains, "that whether a strangulation of the intestine is by an ensheathing piece of bowel or by the neck of a hernial sac, the effects are very much the same, and that delay in affording relief is likely to be fatal. Lastly, that the best way of affording prompt and certain relief is by the surgeon cutting down to the seat of strangulation and putting it right in a proper surgical way."

Discussion on the Treatment of Intussusception in Children. BERNARD PITTS.—This author thinks inflation may be employed sometimes when the intussuseeption is along the transverse or descending colon, as a useful preliminary operation and will often limit the field of operation and enable the incision to be made directly through the swelling. Even if complete reduction should apparently take place it is generally best to make sure of this by a small incision, otherwise one must remain in doubt, as it is very probable that reduction is not quite complete and that it will recur or else give rise later to a condition of chronic stenosis. He remarks that it is essential in young children that the shock should be minimized by placing the child on a hot-water cushion and by having the extremities covered with cotton wool and bandage. The operation must be a rapid one. When the abdomen is much distended and the position of the tumor has not manifested itself it is best to make an incision in the middle line and take special precautions against prolapse of the small bowel. A distended coil may with advantage be withdrawn and air and intestinal contents allowed to escape through a small incision, this being afterwards closed; examination is thus rendered comparatively easy. This is much better than allowing the coils of distended and unmanageable gut to remain outside the abdomen during exploration. He dwells especially also on the importance of suturing the exploratory wound and the use of the buried suture and leaving superficial sutures as long as possible. While deep buried sutures add a little to the length of operation, they are better in young children, and he adds the following modifications of the conclusions offered by him in 1897: "1. Try inflation only when the case is seen within a few hours of onset, and is not of a very acute character. In the great majority of hospital cases it is better to open the abdomen at once. 2. Inflation may be tried in certain other cases for the purpose of reducing the main portion of the intussusception and enabling the incision to be made directly over the cecum. 3. When reduction is found impossible in chronic cases a resection may be generally done through an incision in the ensheathing bowel. 4. In acute cases, and especially if gangrene is present or the condition of the bowel

requires its removal, a wide resection should be undertaken as rapidly as possible, and the ends brought outside the abdomen; continuity should be restored at a subsequent operation. 5. In exceptional cases of enteric intussusception resection and immediate restoration of continuity gives the only chance."

Essential or Toxemic Dropsy; Dropsy Without Albuminuria. W. P. Herringham.—The cases of general anasarca occasionally met with, chiefly in children, but sometimes also in adults, which resemble Bright's disease but without albumin in the urine, are discussed by Herringham, who describes the condition, lack of constant lesions, apparently normal kidneys, etc., and asks whether it is a real nephritis. He says that both in the symptoms and in the etiology from exposure to cold and after scarlatina it closely resembles nephritis. There are also many cases of scarlatinal nephritis without albumin in which the kidneys show atypical lesions. There are, it is true, some cases of edema from anemia and occasionally cases of pernicious anemia will terminate with great general dropsy. Bristowe, Ashby and Wright apparently take the view that dropsy is dependent upon anemia, but in some cases anemia is not present, and in others it is by no means of that degree that should naturally account for the severe anasarca. It is not to be supposed that a grown-up man in full work and after getting wet through suddenly falls a prey to anemia such as to produce anasarca as sometimes happens in the adult cases of this condition. He holds rather to the view that the condition here is of microbic infection which may in some cases produce anasarca and nephritis and in other cases cause a form without disease of the kidneys. It is the toxic condition of the blood which is the common cause of both these conditions and nephritis.

Results of Tendon Grafting in Infantile and Spastic Paralysis. A. H. Tubby.—This author reports his experience with 11 cases of tendon grafting for paralytic talipes. In 6 there were good results and in 5 fair, meaning by the latter a partial improvement. In no case has failure resulted. Of the 4 operations in the forearm for spastic trouble, they had good results in 3 and partial in 1, and he says: "Tendon grafting is an operation with a future before it, and it has great possibilities, but it must not be employed indiscriminately. It is useless in cases of flail-like joints, where all the muscles are badly affected, and it should not be employed in slight cases of paralytic valgus or varus or in slight equinus, the last being easily remedied by section of the tendo Achillis. It is not an operation for the display of anatomical knowledge nor of mechanical skill in operating, but one requiring the nicest care in the selection of cases and of the muscles to be employed, and careful watching of the results of the operation for several years afterwards."

Discussion on the Early Diagnosis of the Acute Specific Fevers. F. Foord Caiger.—The symptoms and differential diagnosis of measles, scarlatina and roseola are noted by Caiger, who points out the conditions that may resemble these and the difficulties attending the bacteriologic test of diphtheria. He believes the Neisser stain is the most trustworthy criterion for the true bacilli diphtheriæ that we have, excepting, of course, the inoculation test. The question of the "fourth disease" that has been suggested as existing by Dr. Clement Dukes, he holds as still *sub judice*, but says it offers a legitimate field for discussion and investigation.

The Value of Widal's Serum Reaction in the Diagnosis of Typhoid Fever in Children. J. H. Thursfield.—The author has employed the Widal reaction in 100 different cases, in 42 of which it was positive; the remainder were negative, including examples of almost every febrile disease to which children are liable. In the 42 cases with the positive reaction, several were those in which the diagnosis would have been difficult without the test at the stage when it was made. Only one of these 42 gave a negative result later than the first week of illness. Allowing for the smallness of the figures he would claim that in children this positive Widal reaction is trustworthy evidence of the presence of typhoid and that negative reaction later than the tenth day of illness is strong but not absolute proof of its absence, while repeated negative reactions are trustworthy evidence that the case is not typhoid at all. The test is just as reliable in children as in adults.

Radical Cure of Inguinal Hernia in Children. Harold J. Stiles.—The operation preferred by Stiles in case of inguinal hernia in children is practically the Mitchell Banks operation. While he has no doubt of the value of Bassini's operation in adults, in children he advises as little interference as possible with the anterior wall of the canal. He speaks with commendation of the advantages of the Cleveland needle over the MacEwan needle in passing the sutures.

Two Cases of Chronic Hydrocephalus in Infants Treated by Tapping and by Introduction of Aseptic Air in the Place of the Fluid. Wm. Ewart and W. Lee Dickinson.—The provisional conclusions which the authors consider warranted from their observations here reported are: "1. With due precautions the fluid of chronic hydrocephalus may be completely evacuated from the yet unclosed skull of infants, and aseptic air may be allowed to take its place. This operation may be repeated without detriment and with scarcely more risk than belongs to the usual method of paracentesis. 2. In favorable cases of moderate effusion a single operation may suffice. Continued oozing from the puncture for a few days after the removal of the tubes is not unfavorable. 3. In cases of considerable effusion an obvious indication is to relieve the brain from the weight and from the pressure of the fluid. The evacuation is facilitated by the introduction of aseptic air. By a timely repetition of the operation a hydrocephalic infant might be enabled to carry the weight of the head, and, if the treatment were begun sufficiently early, permanent damage to the brain tissue might be averted and a normal development might perhaps ensue. 4. In large heads, whilst hydropneumocephalus persists a considerable splashing sound is readily obtained. There is obvious risk in eliciting this sound by forcible succussion and for the same reason any abrupt movement of the head should be avoided."

Diagnosis of Suppurative Pericarditis in Children. Frederick E. Batten.—While the diagnosis of suppurative pericarditis in children is a matter of considerable difficulty and the cases are commonly mistaken for tuberculosis and empyema, the special points are given by Batten as follows: "One may say that a fairly definite date can be fixed for the onset of the disease, the condition of the child generally bears a striking resemblance to that of a child suffering from empyema; the child is pale but not sallow, the limbs are wasted and the muscles flabby, and the skin is generally moist, and has not the dry and scaly conditions so often seen in tuberculosis. The children are extremely liable to severe and sudden attacks of syncope. The temperature has a generally irregular character, with rather sudden rises and sharp falls. The rapidity of the heart's beat is always great, and seemingly out of all proportion to the general condition of the child, who does not seem especially distressed. On physical examination of the chest the signs suggest either an effusion into the pleural cavity or tuberculous consolidation of the lung, but, as a rule, no increase of the area of cardiac dulness can be mapped out, although epigastric pulsation may be present. It might be suggested that the diagnosis might be assisted by the introduction of an exploring needle, but given symptoms or signs that would suggest pericardial effusion it would be much safer to make an incision in an intercostal interspace or resect a rib if necessary rather than pass an exploring needle toward the heart." Until diagnosis becomes more accurate, rational treatment, viz., the opening of the pericardium and draining the cavity is impossible. Even where it is possible the percentage of recoveries would be slight.

Observations on Suppurative Pericarditis in Children. George F. Still.—This author, discussing the same subject, believes that we can do something in the way of prophylaxis and in the majority of cases we have a pneumococcal exudation in the pleural cavity producing secondary infection, and early diagnosis with speedy evacuation of this infective matter may reduce the risk of pericardial infection.

The Lancet, August 31.

Recent Inquiries and Researches into the Poisonous Properties of Naphthalene and Aromatic Compounds. R. P. WHITE AND JOHN HAY.—The poisonous properties of naphthalene and benzene compounds have been investigated by Hay and White, who find that probably the naphthalene group is much less dangerous than the benzene and toluene groups. Of the naphthalene compounds it is probable that the dinitro-benzene naphthalene is more poisonous than the mono-nitro preparation. The mono-nitro-benzene does not seem poisonous to cats, which appear to thrive upon it, but dinitro-benzene is exceedingly poisonous to both man and animals. The smallest lethal dose of dinitro-benzene for a cat of six pounds is 0.08 gram, given by the mouth in one dose: probably less than 1.82 gram would be fatal to man. Mono-nitro-toluene is quite inert when administered to cats, but nitro-toluene is too dangerous to work with, while the trinitro compound of toluene appears less dangerous than its dinitro-benzene equivalent. All these facts imply the administration either by the mouth or hypodermically, but the question has arisen whether dinitro-benzene or some of these other compounds can be absorbed through the skin in dangerous quantities. In manufactories where men work in these materials it has been suspected that they are dangerous by inhalation, and a German manufacturer who supplied fresh air entirely to his workmen so that they inhaled no vapor from the substances had, nevertheless, a certain amount of sickness amongst the employes and the only way in which the poison could get to the blood was through the skin. Hay has experimented on cats, shaving off the fur and insuring that there were no abrasions or cuts and applying dinitro-benzene ointment, carefully covering it with collodion. In three experiments the cats died within two or three days, or within a week. He also applied a small portion of a 25 per cent. dinitro-benzene ointment on his own skin and it produced decidedly uncomfortable symptoms lasting for over 48 hours, headache, tremor, high pulse, lividity of lips and nails, a feeling of fulness in the head, metallic taste, etc. The experiments prove conclusively that with dinitro-benzene within close contact with the skin it becomes absorbed. He points out the dangers of handling, grinding, heating and otherwise manipulating this material. Pure dinitro-benzene consists of colorless crystals, but the commercial substance is often darkened in color from impurities. In the working of these substances the workmen should avoid anything in the way of greasy appliances, unnecessary exposure of the skin, the hair of the head should be cut close and the face have as little hair as possible and caps close fitting, covering as much surface as possible. There is also a suggestion that the numerous oxidizing ingredients associated with dinitro-benzene in the manufacture of high explosives may also have some influence on absorption.

On the Prophylaxis of Carcinoma. C. B. KEETLEY.—Almost all primary carcinomas are situated in the breast, alimentary canal, skin, uterus or in the canals, ducts and glands subsidiary to these parts or directly opening into them. The medium which can carry cancer is, therefore, one which is liable to reach such situations, and Keetley has sought for this in water, which he thinks, however, is not likely to be a carrier. He considers milk much more dangerous in this respect, especially in producing cancer in the alimentary tract. He suggests also that flannel underwear may have something to do with the occurrence of mammary cancer, as it is handled more gently in the laundry than other fabrics and the germs are less likely to be destroyed. He asks for information as regards the possibility of guilt or innocence of butter, milk and cheese in the etiology of carcinoma and suggests the following rules for the prophylaxis of cancer: "1. Chronic inflammation, suppurations and especially ulcerations, should not be neglected or allowed to drift. Still better, commencing troubles of the kind should be treated promptly and not allowed to become chronic. With regard to ulcerations, especially of the alimentary canal, and with regard, also, to suppurations, especially of the breast, it is to be remembered that the cicatrices left by their cure are liable to become the seat of malignant infection. It is, therefore, doubly desirable to cure such ulcerations and suppurations in their earliest stage, so that little or no cicatricial tissue may remain, and in cases where the arguments for and against the removal, as opposed to the simple healing of an ulcer, are otherwise evenly balanced, the indication to remove a place especially liable to cancer should prompt one to excision. 2. Well-known sources of irritation of mucous membranes and of skin should be avoided, e. g., smoking when any trace of soreness is discovered in the mouth, on the tongue, or on the lips, and the habitual use of strong condiments and spices. Workers in special trades, such as chimney-sweeping, should lose no time in having the smallest cutaneous rashes or other trouble promptly cured. Among milk-products cheese is itself an irritant to mucous membranes. Some syphilities with a tendency to ulceration of the tongue, notice that a fresh attack frequently follows eating cheese. 3. A woman should allow nothing to come in contact with her nipples except smooth clean linen, cotton or silk, and the soap and warm water with which she washes herself. After being washed the nipples should be gently and thoroughly dried. She should not touch them with her hands or fingers at all. During lactation the nipple should be cleansed and gently dried after each act of sucking and then protected with a dry and clean covering. The nipple should be not merely withdrawn from the infant's mouth and pushed back under the mother's clothes. If wool be worn it should be sterilized by heat. 4. Whoever takes as food uncooked and unsterilized milk, butter and cheese should recognize that he does so at the risk of introducing into his system the germs of disease, and that among these disease essences, so to call them, may be that of carcinoma."

On the Behavior of Oxy-Hemoglobin, Carbonic-Oxid-Hemoglobin, Methemoglobin, and Certain of Their Derivatives, in the Magnetic Field. ARTHUR GAMGREE.—The diamagnetism of blood was first observed by Faraday in 1845, and has since been remarked upon by other investigators. Gamgree has investigated the reaction to magnetism of oxy-hemoglobin and comes to the following conclusions from his experiments: "1. The blood-coloring matter, oxy-hemoglobin, as well as carbonic-oxid hemoglobin and methemoglobin, are decidedly diamagnetic bodies. 2. The iron-containing derivatives hematin and acethemin are powerfully magnetic bodies. The differences in magnetic behavior between the blood-coloring matter and acethemin and hematin point to the profound transformation which occurs in the hemoglobin molecule when it is decomposed in the presence of oxygen. 3. The preliminary study of the electrolysis of oxy-hemoglobin and CO-hemoglobin renders it probable that in the blood-coloring matter the iron-containing group, on which its physiologic properties depend, is (or is contained in) an electro-negative radical; according to analogy the iron in such a compound would possess diamagnetic and not magnetic properties."

Indian Medical Gazette, August.

A Suggestion for the Surgical Treatment of Chyluria and Other Forms of Filarial Lymphatic Varix. PATRICK MANSON.—The following suggestion, which was offered by Manson in a case of persistent chyluria, is here given by him to the public. The disease was evidently slowly killing the patient and had resisted all treatment. As not infrequently happens the patient had varicose groin glands. It occurred to him that tension in the lymphatic varix, the rupture of which into the urinary tract was the source of the chyluria, might be relieved and the rupture healed, could the varix by surgical means be induced to empty into a vein. He therefore suggested to the patient to have one of the dilated lymphatics dissected out under asepsis, cut across, and telescoped into some neighboring and convenient vein which would have to be slit up for a short distance for this purpose. In this way he thought that by short circuiting the path of the regurgitating chyle the chyluria might be cured and the patient's life saved. He offers this suggestion to Indian surgeons who have better opportunities for following it up than he has in Great Britain.

Relation of the Entero-Coccus to the Etiology of Tropical Dysentery. E. D. W. GREIG.—The entero-coccus de-

scribed by Thiercelin in 1899 as found in normal stools in which it appears to lead a saprophytic existence, is here described. Two observers have recently been working on the relation of this organism to the etiology of non-tropical dysentery. Simonin found its presence in a large number of cases occurring in Paris, and Lewkowicz describes the microbe and considers it possibly the organism of some cases of non-tropical, and even of tropical dysentery. He investigated several cases and in two of them he got the entero-coccus in the stools in great abundance, and in the third, which was complicated with meningitis, he obtained the organism in pure culture by lumbar puncture. He considers it related to the pneumococcus and found it in the stools partly enclosed by phagocytes in the form of diplococci or short chains of four to eight. In the latter the cocci are arranged in pairs and the opposing surfaces are broad and close to one another. On agar they grow as single cocci, sometimes as pairs. A certain amount of point at the free ends resembling the pneumococci is sometimes seen; most possess a broad delicate capsule. In broth they grow out in long chains; the capsule is well developed, and encloses single cocci, pairs of cocci, or certain sections of the chains. In the animal organism the entero-coccus occurs as a diplococcus with well-marked capsule, and sometimes it takes the form of streptococcus. It stains by Gram's method. It differs from the pneumococcus in its more rounded form and breadth, and forms longer chains in the broth. On artificial media it resembles the pneumococcus, the colonies are longer and more slimy, very transparent and tend to run together. In milk, after a time, coagulation takes place. It is pathogenic to mice and rabbits, producing local inflammatory lesions with slight toxic or septic action, agreeing well with the clinical picture of dysentery. In Greig's preliminary observations, he reports finding in tropical cases organisms that seem to him identical with those of Lewkowicz, associated with other bacilli, however, and he considers the constant occurrence of this organism in acute dysentery and in the production of phagocytes, lends support to the proposition that it is causally connected with the acute dysentery of the tropics. In simple diarrhea, personal examinations with a view to determining the presence of this organism were negative. He thinks it quite likely that it may exist as a saprophyte under normal conditions, but from any cause that lowers the local resistance or increases its virulence, a pathologic condition of dysentery is produced.

Presse Medicale (Paris), August 24 and 31.

Surgical Treatment of Hydatid Cysts in the Kidney. E. Albarran.—Of the seven patients treated by trans-peritoneal nephrectomy which Albarran has collected only two survived. On the other hand, all the three patients treated by nephrectomy by the lumbar route, have recovered. Consequently, nephrectomy by the latter route does not deserve the discredit into which nephrectomy in general has fallen. Albarran describes his personal case in detail, and summarizes the indications as follows: If a laparotomy has been done on a dubious diagnosis, conclude with nephrostomy unless under exceptional circumstances. Houzel's fourteen and Albarran's twenty-three patients all recovered. If the intervention is by the lumbar route, with or without an established diagnosis, open the cyst, evacuate, and determine the possibility of exterminating the germinative membrane in order to proceed to capitonnage. If this is impossible, examine the kidney, and if it is still useful and it is possible to extirpate the cyst in toto, proceed to a resection of the kidney. If the organ is still useful and the above operations are impossible, continue with nephrostomy after partial resection of the cyst. But if the kidney is so damaged that it is totally incapable of future functional activity, try to detach it and, if possible, conclude with nephrectomy. If the adhesions are too solid and numerous for this without too much destruction of tissue, and especially if the patient is not in a condition to bear such an extensive operative traumatism, restrict the intervention to nephrostomy.

Cacodylic Medication. A. Martinet.—Both experimental and clinical research and experience confirm the general stimulation of the organism and of its functions that follows administration of arsenic. Experience has also demonstrated the correctness of Gautier's assertions in respect to the remarkable non-toxicity of one of its derivatives, cacodylic acid. As long ago as 1841, Bunsen announced that a large amount of this acid could be injected into a rabbit's ear without intoxication, and he consequently classed it as a non-poisonous substance. Only two cases of disturbance following its administration have been reported, one was in a patient with cancer of the liver, and consequently, hepatic insufficiency for the present must be accepted as a contra-indication. The other was a tuberculous patient who took 20 cg. of sodium cacodylate by the mouth during the day in three pills. Symptoms of arsenical poisoning were evident after the eleventh pill. Normal conditions were restored after suspension for three days. (*Brit. Med. Jour.*, 1900, ii, p. 1823.) The chemical and biologic properties of arsenic are so altered in cacodylic acid that it is impossible to detect it by the usual reagents for arsenic. Impurities must be guarded against. The absence of poisonous arsenites and arseniates in sodium cacodylate is indicated by the lack of precipitation when an excess of lime water mixed with baryta water is added. The most important test for the presence of arsenites and arseniates is the addition of hydrochloric acid to an aqueous solution. There should be no yellow precipitate from the formation of arsenic sulphide by the action of hydrosulphuric acid. These impurities may have been the cause of the intoxication mentioned above. It is prudent to commence with small doses—2.5 to 5 cg. of sodium cacodylate—and gradually increase to 10 cg., which is a good average dose. There does not seem to be any particular advantage from using larger doses. The subcutaneous method is preferable. Administration by the mouth or rectum should be reserved for cases in which the former is impossible owing to the distance from the physician, or the timidity of the patient. Gautier absolutely rejects any but the subcutaneous route, but this is a little too sweeping. Comparative case-reports show that the best results have been attained by suspending the medication for a week between each series of eight to twelve injections, without waiting for symptoms of intolerance. A good prescription for subcutaneous injection is Gautier's: 6.4 gm. of pure sodium cacodylate, and ten drops of a 10 per cent. alcoholic solution of carbolic acid, in 100 c.c. of distilled water. When necessary to administer it by the mouth, Martinet prescribes 50 cg. of sodium cacodylate in 100 gm. distilled water. A teaspoonful contains 2.5 cg. of sodium cacodylate. One or two teaspoonfuls should be taken in the middle of the two principal meals in a glass of some beverage. It can be made into a pill by the following formula: sodium cacodylate 2 cg.; benzoin and licorice powder each 1 cg., and one drop of 90 per cent. alcohol. For rectal injection, one or two teaspoonfuls of an aqueous .5 to 1 per cent. solution of the sodium cacodylate. This is equivalent to 2.5 to 5 cg. of the active substance. One or two tablespoonfuls of boiled water are added, and, if needed, two or three drops of laudanum. The onion odor of the breath is particularly frequent in children, and often in those who are deriving great benefit from the medication. Gautier considers it an indication of the formation of cacodyl oxid and other toxic substances, but clinical experience does not sustain this view. The onion odor was not mentioned in the case of intoxication mentioned above. (See The Journal of August 24, p. 539.) Rocaz lauds this cacodylic medication especially for children. He prescribes 1 cg. a day at 3 years of age, 2 at 6, 3 at 9; 4 at 12, etc. Martinet has found doses of 3 to 10 cg. very beneficial for children between 6 and 12, with no indications of intolerance, except the onion odor. Josias is accustomed to give the children in his service as much as 10 to 15 cg. a day.

Berliner Klin. Wochenschrift, August 19.

Association of Tetany and Epilepsy. A. Westphal.—A woman of 42 with chronic epileptic idiocy exhibited a permanent tonic contracture of the muscles. Another patient exhibited symptoms of tetany the second day after a partial strumectomy. It was followed by cachexia strumipriva and double cataract. Six months after the operation, epileptic seizures appeared, preceded and outlasted by typical tetanic

convulsions. The seizure was a mixture of tetany and epilepsy. There were no further attacks after six days of thyroiodin treatment until dismissal, six months later. On suspension of the thyroiodin, however, the seizures recurred, requiring the continuance of the treatment, which had cured the apathy and other psychic disturbances at the same time as the other troubles. Both the tetany and the cataract formation are probably nutritional disorders, due to the action of toxins, similar to the trophic disturbances observed in certain nervous affections. The toxins probably originate in the products of morbid metabolism.

Centralblatt f. Bakteriologie (Jena), July 12 and 18.

The Autosterilization of the Intestines. J. H. F. KOHLBRUGGE.—Many scientists have noticed that in animals the small intestine is sterile, but Kohlbrugge is the first to explain this phenomenon as due to a process of autosterilization. The intestinal secretions are bactericidal, he states, and all bacteria coming in contact with the secreting wall are destroyed under normal conditions. The benefits derived from saline purgatives, etc., are probably due to the augmented secretion which they induce. The bactericidal properties of the intestinal juices are, of course, derived from the blood. Experiments on isolated loops of the intestines showed that the bacteria increased enormously in numbers if the circulation was arrested, while they were rapidly destroyed if the circulation was maintained. Readers of THE JOURNAL are familiar with Kohlbrugge's assertions that every intestine has its individual colon bacillus, and that the appendix may be the nesting-ground for these specific bacilli. The colon bacilli taken in the food are probably killed in the stomach, the same as the home-grown colon bacilli, if they happen to find their way into the stomach. Rabbits eat their feces and they become sterilized in the stomach. With sterile food and sterilization of the mouth, all the wild, imported bacteria may be killed, but one's own colon bacilli are not influenced, and sterile feces should not be expected. In health, the intestinal putrefactions depend exclusively upon one's own bacilli of putrefaction in the large intestine. The bactericidal power of any substance ingested should not be calculated on the basis of the bacteria in the stools, as the numbers vary widely even in health, and a few millions more or less are of little consequence. The ordinary microbes in the feces are harmless and the clinical importance of putrefaction in the intestines has been exaggerated. It is also to be borne in mind that intestinal disinfectants do not affect the products of the metabolism of the bacteria. Purgatives and a milk diet are the only sure means of diminishing putrefactive processes. When the intestinal wall is an actively secreting membrane, it is impermeable for bacteria, but all processes which interfere with its secreting power are liable to render it permeable for micro-organisms, both wild and home-grown. Bacteria pass more readily from without into the intestine than from within outward. Injected under the skin or into the blood, they may soon be detected in the intestines. The walls of the latter seem to be powerless against them, possibly because the vital functions in general have already become depressed by infection from them. The chemical, fermenting action of the home-grown bacilli in the intestines might possibly be dispensed with, but they evidently are useful in stimulating peristalsis and in checking the development of other more harmful bacteria by their acid reaction. Their gaseous products may also influence the statics of the intestines and, indirectly, the movements of the diaphragm. The antagonism between the home-grown and the wild bacteria is probably their most important function. The small intestine has no home-grown bacteria or, if any, they are of the colon bacillus group. The cecum is the shelter of the typical, individual, colon bacillus and the rectum, of the putrefaction bacteria, like the putrificus, proteus and subtilis and also the acidophilus group, which are probably akin to diphtheria bacilli. The individual colon bacilli are only to be found elsewhere in the lower portion of the ileum. Those found in the jejunum are a branch variety and those in the colon are modified by contact with the putrefaction germs. The pancreatic juice and the bile have little if any bactericidal power. The autosterilization of the intestines occurs only *in vivo* and can not be studied on the isolated secretions. This communication is based on extensive personal research and study of the works of others, who have discovered many of the facts but have failed to interpret them from this point of view.

Centralblatt f. Gynekologie (Leipsic), July 27.

Treatment of Chronic Exudates in the Pelvis with Hot Air. O. POLANO.—This rapid and powerful stimulant of resorption has proved extremely effective in Polano's experience applied to the pelvis for the treatment of chronic exudates. In one of his numerous cases the patient was cured of a hard exudate, palpable from the ilium to the umbilicus, which vanished entirely in the course of twenty applications of the hot-air apparatus. He found it particularly valuable in promoting resorption after evacuation of a pus pocket. It always relieved the pain immediately. Advanced pregnancy in one of his patients was not affected by the hot-air treatment which was applied in this case to relieve edema of the labia.

August 10.

The Mercury-Air Colpeurynter and Colpeurynter Massage. L. PINCUS.—The long-sought means of effective ambulant treatment of various chronic gynecologic affections is obtained by means of the vaginal colpeurynter filled with mercury or air, which Pincus recommends after three years of thorough trial in both dispensary and private practice. It is the perfection of the weighting-down treatment which he has long advocated, as it allows the weighting-down to be done so gradually, and removed in the same way by fractions of a millimeter, while it is simple and inexpensive. In pelvic lesions located near the pelvic floor, this measure is the chief factor in treatment and compression of the abdomen by bandages the adjuvant, but in lesions above, the latter is the main factor and the vaginal weighting-down and massage the adjuvant. The apparatus consists of two balloon-shaped colpeurynters, connected by tubes with a central, graduated, glass ball-shaped vessel. Two other tubes are also attached to the glass vessel, one connecting with an air bulb and the other admitting filtered air. The four tubes—each with its stopcock—form an X, with the glass ball in the center. One of the colpeurynters is empty and one is filled with mercury. The empty one is inserted in the vagina, then, by raising the colpeurynter filled with mercury, the latter flows into the graduated glass vessel in the center, from which it is gradually allowed to flow into the colpeurynter in the vagina until it holds 1000 to 1500 gm. of mercury. In cases of parametritic exudates and in all processes with effusions located on or near the floor of the pelvis, chronic in character, this intravaginal treatment with the mercury colpeurynter is a most valuable measure. It must be supplemented by compression of the abdomen. In case of lesions near or above the pelvic inlet, intravaginal massage is the adjuvant to compression of the abdomen. For massage purposes, the vaginal colpeurynter is filled with air instead of mercury; the tube is closed with the stopcock, the rest of the apparatus removed, and the end of the tube is turned up and fastened to the patient's clothing above. She is then dismissed for two or three days. If the pressure is too great the wearer can release a little of the air by turning the stopcock. This treatment has proved exceptionally useful in case of vaginismus, as the empty colpeurynter can be introduced through the smallest aperture, and after it has accomplished the dilation of the vagina, local treatment of the underlying gonorrhea or other cause can be instituted without delay. It has also cured many inflammatory conditions of the pelvic muscles, numerous so-called neuralgic affections of the region, weakness of the muscles entailing chronic constipation, and hemorrhoids. It is a much more effective stimulant of labor pains than the water colpeurynter. Pincus has waited before publishing his experience until thoroughly convinced of the exceptional benefits to be derived from the mercury and the air colpeurynters and recommends them now with confidence. This preliminary communication is soon to be followed by the detailed report of his experiences in the *Sammlung Klinischer Vorträge*.

Berliner Klin. Wochenschrift, August 26.

Hydatid Cyst Simulating Acute Pleuropneumonia. P. K. PEL.—The clinical picture was that of acute pneumonia of the middle lobe of the right lung and extensive pleuritis without effusion, complicated by a pleural effusion on the left side. The only missing symptoms were the pneumonia-sputum and facial herpes. The protracted course was attributed to the general debility from a vagabond life and alcoholism. An operation confirmed by autopsy soon afterward, revealed a hydatid cyst in the upper lobe of the right lung and the remains of a similar cyst in the left, surrounded by inflamed lung tissue. The first cyst was isolated, but the other communicated with a bronchus, and the acute symptoms had probably been caused by infection by this route. The physical signs on the left side were thus explained by the empty cyst and the compressed and inflamed lung tissue; on the right, by the crowding of the lung tissue by the deep-seated cyst.

Treatment of Heart Disease by Compression. M. MENDELSOHN.—The painful sensations in heart disease are frequently located in the thoracic wall rather than in the heart itself. The pressure of an abnormally movable, hypertrophied heart pounding against the wall is almost sure to be painful. Elastic compression of the heart—which Mendelsohn has been advocating for some time, abolishes all these painful sensations while it relieves and favors the functional activity of the organ.

Deutsche Med. Wochenschrift (Leipsic), August 22.

Accidents and Diabetes. F. HIRSCHFELD.—The direct influence of trauma on the origin of diabetes is unmistakable in many instances. They are usually cases of nervous diabetes and a direct action on the nervous system can be assumed, as in the traumatic glycosuria described by Claude Bernard. It is possible, also, that the development of diabetes in case of an existing affection of the pancreas may be traced to the trauma. It may likewise induce an affection of the pancreas, such as cysts or hemorrhage or possibly a chronic inflammation. An already existing diabetes may take an unfavorable turn in consequence of a trauma. Coma is the most important of the aggravations from this source. In severe cases of diabetes a very slight cause may suffice to induce coma—so slight that it is difficult to decide whether it may not have been the natural consequence of the disease. Occasionally the accident may induce coma even in a mild case of diabetes. Death in such a case can be unconditionally ascribed to the accident, as coma very rarely appears in mild cases. Death under these circumstances does not occur for ten days after the accident, while in the severe forms of diabetes it follows in one or two or, at latest, four days afterward. It is probable that an accident may transform a mild and insignificant vascular affection into conditions that favor gangrene in the cases in which it appears consecutive to trauma. Hirschfeld concludes by calling attention to the inadvisability of much muscular exertion in the case of diabetics in general. Their capacity for muscular exertion is much diminished as a rule, and they should select occupations which do not call for severe physical efforts.

Scrofulosis and Tuberculosis. H. NEUMANN.—Investigations of Berlin school children undertaken by Neumann and several specialists, showed that 89 per cent. were scrofulous. He considers that they are all tuberculous and that the tuberculosis is the primary affection, causing the scrofulous manifestations by its toxins.

August 29.

Abscesses in the Rectus Muscles in Typhoid Fever. L. BOLLACK.—In abscess-formation in typhoid fever, the bacilli always seem to have lost their virulence to a great extent. The abscesses usually appear during convalescence and are symmetrical. A degenerative process seems to occur constantly in the rectus muscles, probably a granular or waxy degeneration, which renders the tissues very fragile. During some effort to cough they are liable to rupture, with consequent hemorrhage, and, in rare cases, to suppurate, by the action of the typhoid bacillus alone. Pyogenic properties are probably acquired by the bacilli only as they become attenuated. The discovery of typhoid bacilli in an abscess or empyema is therefore an indication not to be hasty in operating. In a case described, an abscess in the rectus was evacuated and pure cultures of the typhoid bacillus derived. In the course of a week a symmetrical abscess formed which was not interfered with, and it was spontaneously resorbed in the course of a month.

Deutsche Zift. f. Nervenheilkunde, xix, 2 to 4.

Pathologic Changes Induced by Lumbar Puncture. V. P. OSSIPOW.—The withdrawal of the cerebrospinal fluid in dogs by lumbar puncture causes a persistent hyperemia in the vessels of the meninges and even of the brain and cord. Repetition of the puncture leads to the production of numerous punctated hemorrhages. When the urine is aspirated, the hemorrhages are still more pronounced. The nerve cells are likewise affected, not only by lesions of the cells from the hemorrhages, but by the altered relations between the circulation and the nutrition of the cell.

Muenchener Med. Wochenschrift, August 27.

Etiology of Erysipelas. JORDAN.—Acute osteomyelitis is usually the result of staphylococcus infection, but it has been proved that it may be produced by streptococci, pneumococci and typhoid bacilli. In the same way, erysipelas may be the work of the staphylococcus aureus or possibly of the pneumococcus or colon bacillus, but in general, it is the result of infection with the streptococcus. It has been produced on rabbits' ears by all these various micro-organisms. The parallelism with acute osteomyelitis is rendered more striking by the fact that the latter is usually a suppurative, but may be occasionally a serous or hemorrhagic-septic inflammation, while erysipelas is usually a serous inflammation, but may be accompanied by suppuration and even by gangrene. Both affections vary in intensity and either may terminate in pyemia and sepsis induced by the same causal agent.

Neurologisches Centralblatt (Leipsic), August 16.

Regeneration of Spinal Cord. A. FICKLER.—In 1899 Fickler published two cases of compression of the spinal cord from caries of the vertebræ, in which he found a number of delicate, well-constructed nerve fibers emerging above the point where the compression had been located, and returning into the cord below. As no such fibers occur normally at these points, and as one case had showed marked improvement in the symptoms after the affection had persisted a certain length of time, he accepted them as newly-formed fibers, evidences of a regenerative process on the part of the spinal cord. Bielschowsky has recently published a similar discovery in a case of compression of the spinal cord. The fibers emerged from the region of the anterior commissure, in the sheath of the pia just above, and returned into the spinal cord just below the compressed region. He considers them a split-off portion of the pyramidal tract. No improvement had been noticed in the symptoms in the case. He also asserts that the fibers observed by Fickler must have been of the same nature. The latter points out that such fibers have never been discovered except at the compressed point, and he claims Bielschowsky's case as a typical instance of the regeneration of the spinal cord. The circumstances were unusually favorable for such an occurrence, as the compressing exostosis did not seem to have increased in size during the latter portion of the time. The first symptoms had been noted two and one-half years before death. The conditions of cure, he states, are the possibility of the restoration of normal circulation of lymph and of the development of new myelin sheaths around the axis cylinders which have remained uninjured, although their sheaths may have degenerated, and thirdly, the regeneration of nerve fibers. The first factor alone may be sufficient in many cases, others may require the co-operation of another or of all.

Pflueger's Archiv (Bonn), August.

Physiology of the Suprarenals. H. STREHL.—The removal of one suprarenal from an animal does not cause disturbance, but ablation of both was inevitably fatal in the experiments on 114 animals described. All attempts to transplant a suprarenal met with failure. Severing or compressing the vein of

the remaining suprarenal, after removal of the other, always entailed the same result as the extirpation of the organ—that is, the blood pressure invariably fell. After cessation of the compression the blood pressure rose again. No substance could be discovered in any other organ that has this power of increasing the blood pressure.

Therapie der Gegenwart (Berlin), August.

Subarachnoid Antitoxin Treatment of Tetanus. E. v. LEYDEN.—It has been established that tetanus antitoxin will neutralize the tetanus toxin in the blood, but the persistence of the convulsions, after this has occurred, indicates that they are due to the localization of the toxin on the large motor ganglion cells of the anterior horns. An emulsion of these cells from a patient who had died in spite of the subcutaneous injection of antitoxin, induced experimental tetanus while tests with the blood were negative. Injecting the antitoxin directly into the brain has saved only 6 out of the 24 thus treated to date, according to the records. Kocher has obtained slightly better results by slowly instilling it after trephining, introducing the canula for 4 or 5 cm. Jacob and Sicard first tried subarachnoid injection, or dural infusion as they call it, after finding it very successful in tests on dogs, although it always failed on goats. This method has been tried eleven times on man. Six patients could not be saved, but the last five—although very severe cases—have all recovered, including a new case described by Leyden in this communication. The patient was a young hostler with temperature of 105.8 F. Duration of incubation not known, but symptoms of tetanus for three days. The temperature dropped to 101 F. in an hour after 10 c.c. of cerebrospinal fluid had been withdrawn and 5 c.c. of Behring's tetanus antitoxin infused in its place. The improvement was marked the next day, but the day after, the muscular rigidity becoming more pronounced, the infusion was repeated under the same conditions. By the end of the month the patient was completely restored except for persisting rigidity of the abdominal muscles which gradually subsided. The amount of antitoxin injected was equivalent to .5 gm. of the solid form. In Leyden's first case, two years ago, a young woman with tetanus of ten days' incubation, after a three months' abortion, recovered after dural infusion of the equivalent of 2.5 gm. of the solid antitoxin. The technique is the same as for lumbar puncture, but the patient must be kept under the influence of narcotics, and the food must be supervised as the patients are liable to choke. [Pfaundler has recently reported three cases of tetanus neonatorum treated in this way at Escherich's clinic, in which the beneficial influence of the dural infusion of antitoxin was unmistakable. McCaw has also published a recovery from tetanus neonatorum, with temperature of over 106 F., after subcutaneous injection of 5 c.c. of antitetanus serum from the Institut Pasteur. Pure cultures of the tetanus bacillus were derived from the navel secretions. Half the amount was injected again the third day, six days after the first symptoms had appeared.—ED.]

Test of the Permeability of the Nose. GLATZEL.—A small metal mirror is held against the lip just below the nose and the patient breathes on it. The moisture from the breath spreads out on it like a butterfly's wings and gives an accurate picture of the amount of breath passing through the nose. In case of unilateral obstruction, the disproportion is striking between the two sides of the picture. A few concentric arcs are engraved on the mirror for convenience. It is cut to fit close against the lip and to be used on the four sides.

Wiener Klin. Rundschau, August 25.

Treatment of Vertigo. R. SPIRA.—A concussion is liable to separate the terminal fibrils of the neurons innervating the labyrinth, and thus induce disturbances in hearing and in equilibrium. With repetition of the external excitation the vestibular nerve becomes deadened and less sensitive and the clinical disturbances in equilibrium become proportionately less and less pronounced. Spira therefore advocates as a treatment for vertigo, the systematic repetition of the external stimulation. This can be accomplished by daily gymnastic exercises, swinging the head up and down, to and fro and from side to side, and turning in circles around a chair or table, proceeding very gradually. This will cure the tendency to symptoms suggesting seasickness which many persons experience when they ride backward, swing or waltz. It has proved particularly efficacious in cases of vertigo consecutive to concussion of the labyrinth.

September 1.

Fixation Abscess in Puerperal Septicemia. JANSEN.—A febrile parametritis following a spontaneous birth resulted in two abscesses in the gluteal region on each side of the sacrum. Fever persisted after evacuation and the spleen and liver remained hypertrophied, although the parametritis was almost cured. The temperature was not affected by quinin. The pulse increased to 145 and the patient became delirious, with chills. Two grams of oil of turpentine were injected under the left deltoid muscle, producing a fixation abscess. As it developed, the symptoms vanished and the patient rapidly and completely recovered. The case is described more fully in the *Nederlandischen Med. Wochenschrift.*

Nasal Therapy of Neuroses. L. KUERT.—While holding a 9-year-old boy who was having convulsions in the course of severe whooping cough, Kuert tested the corneal reflex and noticed that the cramp in the larynx unmistakably moderated as the cornea was touched. The whoop diminished in intensity, and as the eyelid was pressed against the eyeball, it became less and less, and ceased entirely when the conjunctiva was gently rubbed with the finger. This discovery of the close connection between the throat organs and the terminals of the trigeminus nerve was confirmed by further tests. The spasm of the glottis was completely arrested by tickling the mucous membrane of the nose with a feather. Further tests and experiences with other patients completed the demonstration of the inhibiting influence on spasms of the glottis, larynx and neighboring muscles of mechanical irritation of the terminals of the trigeminus. He has utilized this discovery during the last ten years in the treatment of spasm of the larynx, pharynx, lids, yawning spells, facial spasms, spasmus nutans and even in the uncontrollable vomiting of pregnancy, with almost invariable success. In very few of these cases was the nasal membrane pathologically altered. Besides the simple measures above mentioned, rubbing the cornea with the finger, tickling or holding the nose, he has used a snuff of quinin and sugar, or a 1 or 3 per cent. mentholized salve. A more energetic measure is a snuff containing a little veratrum album and Venetian talc. He uses quinin or a very small amount of the first snuff in the case of infants. Two cases of spasmus nutans were thus cured, also a number of obstinate cases of blepharospasm in older children. He prefers for the latter a salve of 30 cg. of mercur. precip. flav. in 15 gm. of vaselin. A pledget of cotton impregnated with this salve is inserted in each nostril alternately. The result was like magic in several instances. In one case the little patient, a boy of 5, suffered also from enuresis nocturna which vanished with the blepharospasm. Two mild cases of facial spasm were cured with a mentholized salve, and several of tic convulsif with the snuff. Yawning spasms which had resisted months of other treatment, ceased completely after a few days of the snuff. Laryngeal spasms on a basis of hysteria promptly yielded to the snuff. A severe and obstinate case of vomiting in pregnancy was controlled by it. It even had a perceptible inhibitory influence in a few cases of epilepsy. One young man found himself able to abort a seizure by introducing a crab's-eye into his own conjunctival sac whenever he felt the approach of an aura. In this way he was able to abort all seizures for several months, after which the reflex seemed to lose its inhibiting power. This treatment had no effect in nervous cough or nervous asthma. In fact they could be induced by it, but never inhibited. A patient with chronically recurring hay fever took the snuff as a preventive measure a fortnight before the usual date of its appearance and passed through the summer without the usual symptoms.

Wiener Med. Wochenschrift, June 22 and 29.

Etiology and Signs of Enteroptosis. J. CSERI.—Many assert that nervous dyspepsia and enteroptosis are identical,

that is, the cause and the symptoms are the same in each. Stiller has called attention to the mobility of the tenth rib as a sign of a congenital tendency to enteroptosis. He calls it the stigma of enteroptotic neurasthenia as it not only accompanies every case of pronounced enteroptosis, but is an index of the extent of the morbid process. Cseri states that he has noticed that patients of this category always present pronounced lordosis. The pelvis projects, the lumbar region hollows inward and the buttocks project upward and backward more in a horizontal plane. This deprives the abdominal organs of the natural supports supplied by the normal, more vertical position of the lower portion of the trunk. He adds this tendency to lordosis to the other stigmata of enteroptotic neurasthenia—the loose tenth rib and the long thorax. [Zweig reports in the *Archiv. f. Verdauungs.* vii, 3, that the loose tenth rib is not exclusively limited to nervous dyspepsia, as he has observed it in a few patients who have never had any symptoms of this particular form of dyspepsia.—Ed.]

Puerperal Gangrene of the Legs. E. Mandl.—In the twenty-two cases of puerperal gangrene which Mandl has collected, the gangrene made its appearance during pregnancy in four, and great compression of the pelvic veins during the course of the pregnancy was noticed in several others, especially his own personal case and Wormser's. In both of the latter the physician was sued for damages by the family, but the courts dismissed the suit. In his case, a healthy, vigorous primipara, after a spontaneous birth with complete laceration of the perineum, exhibited signs of phlebothrombosis with indications of gangrene, affecting both legs, on the seventh day. When the right leg was amputated all the vessels, both veins and arteries, were thrombosed from the foot to the lower third of the thigh, so that circulation was completely suspended. In the cases on record only 2 were bilateral. Heart disease was evident in 2 and suspected in 1. All recovered except 2, one of whom succumbed to pneumonia after amputation. Physicians should be on the lookout during pregnancy for conditions suggesting possible future gangrene.

Treatment of Tuberculosis by Mechanically Induced Hyperemia. A. Schenk.—Persons with a tendency to tuberculosis usually have large lungs and a small heart. The heart is unable to keep the lungs adequately supplied with blood, and the apices, where the circulation is most deficient, are the points usually first affected by the bacillus. Schenk combats these conditions by mechanically inducing hyperemia throughout the lungs, most intense at the apices. He accomplishes this by having the patients recline on an inclined plane, the feet higher than the head, all day long, out of doors in dry weather. He supplements this position-treatment by a hollow, rubber jacket allowing circulation of hot water at 113 F., which is worn for several hours morning and evening. An attendant sponges off the feet, hands and abdomen every five minutes with cold water. At the slightest indication of cardiac insufficiency, he has an interposed coil of tubing in which cold water circulates, placed over the heart. The effect of these measures on the expectoration and other symptoms is surprisingly favorable, especially after sleeping with the head low all night.

Gazzetta Degli Ospedali (Milan), August 25.

The Mosquito Theory of Yellow Fever. G. Sanarelli.—Since Sanarelli returned to the chair of hygiene at Bologna he has continued his studies of the icteroid bacillus, and remarks now that it would be far better for the cause of science to have this bacillus studied in laboratories at home, rather than to send susceptible and inexperienced men to study the disease in its haunts to die like young Meyers. The icteroid bacillus has been isolated for four years according to the strictest rules of bacteriology; it is at the disposal of any who wish to test it; it reproduces in animals exactly the same symptoms and lesions as yellow fever in man—according to the testimony of every one who has seriously investigated it—and it thus responds to all the conditions and requisites which should characterize the specific agent of yellow fever. One experience on man or, better still, one auto-experience would be worth more than all the theories and discussions in the world. He cites history to show that contagion has occurred in Philadelphia, Baltimore and other places where yellow fever is unknown, from contagion by means of garments formerly worn by a yellow-fever subject, but which had been packed away in trunks for two, five and even seven years. He states that yellow fever has appeared at Cuzco, Caracas and other South American points thousands of feet above the level of the sea, far above all mosquito-breeding swamps. It even crossed the Andes and infected mountainous regions in Peru, at altitudes of 13,500 feet in the epidemic of 1855-56. He devotes pages to citations of various instances of contagion in which the intermediation of mosquitoes seems impossible or superfluous. Most of them are taken from the reports at the Geneva Congress of 1882, or the publications of the French authority on tropical diseases, Berenger Feraud. He states that the mosquito bites which are assumed to have been the means of infecting Dr. Carroll, lose their significance when we read that he was all the time attending patients in the Las Animas hospital, "where yellow fever patients were admitted in large numbers." Also that he had been occupied three days before in the dissecting-room where Agramonte had dissected a yellow-fever cadaver a few days previously, and which was very dirty. It seems very natural that he should have contracted yellow fever under these circumstances. Sanarelli himself had a light attack of yellow fever during his first researches at Rio, although he spent his nights in a remote, healthy suburb. It did not require much effort of the imagination, he observes, to attribute the infection to hospital contagion. He also criticises the case of the young soldier who showed symptoms of yellow fever after having been bitten by mosquitoes known to have sucked the blood of yellow-fever patients. He points out that the fact is stated in the report that the young man had made a surreptitious visit to the seashore fourteen days previously without leave, and he might have afterwards stolen away for a brief trip to some infected point without the knowledge of his superiors. Sanarelli does not deny that the mosquito may be casually the bearer of infection, as flies and other insects may accidentally transmit any infectious disease. Lazear was bitten by a mosquito while he was visiting a yellow-fever patient and drawing blood from him. It was assumed that the mosquito must previously have sucked the patient's blood, as Lazear developed the fever and died in consequence. Sanarelli exclaims, "Was it worth while to make such a fuss and call the attention of the world to a theory which the most superficial investigation shows to have no serious foundation, but which leads its authors to proclaim absurd deductions, such as the uselessness of disinfection in the prophylaxis of a disease that from remotest times has always shown itself one of the most highly contagious in human pathology!"

New Patents.

682,050. Apparatus for separating solvent vapor from air. Walter Erben, Philadelphia.
681,882. Coagulant and making same. Ira H. Jewell, Chicago.
682,084. Electric temperature indicator. Frank L. Jobson, Richmond, Va.
682,089. Medicinal electrode. Orville L. Leach, Providence, R. I.
682,090. Surgical dressing packer. John E. Lee, Conshohocken, Pa.
682,103. Making substitutes for mother's milk. John Meyenberg, Kent, Wash.
681,806. Lung-protector. Armand Mignault, Salem, Mass.
682,110. Syringe. James Murray, New Haven, Conn.
681,975. Surgical Instrument. John N. Ranger, Evansville, Ind.
681,741. Medicament device. Gustav Schirmer, Chicago.
681,758. Atomizer. Charles L. Turner, Malden, Mass.
682,123. Hay-fever disk. Wm. R. Wilson, Denver, Colo.
682,522. Sterilizer case. Wm. and J. Bockel, Philadelphia, Pa.
682,235. Herniai truss. Charles E. Brooks, Marshall, Mich.
682,171. Sterilizer. Richard W. Cartter, West Springfield, Mass.
682,455. Respiratory hood. George A. Cooper, Pittston, Pa.
682,181. Producing albumoses. Georg Eichelbaum, Berlin, Germany.
682,547. Diffusion apparatus. Ludwig Hirt, Grevenbroich, Germany.
682,549. Casein powder. John A. Just, Syracuse, N. Y.
682,269. Syringe attachment. James G. Poe, Dallas, Texas.
682,270. Abdominal supporter. Fanny Portugal-Hirschberg, Chicago.
682,344. Medicated fabric. Claude A. O. Rosell, New York City.
682,503. Abdominal supporter. Rachel Strasburger, Butte, Mont.

Queries and Minor Notes.

STATES NOT REQUIRING EXAMINATION.

ST. LOUIS, Sept. 18, 1901.

To the Editor:—Please let me know where a graduate in medicine could practice without passing the State Board examination.

M. S.

ANS.—The laws of the following states admit graduates to practice medicine without examination, under varying conditions: Arkansas, Colorado, Kentucky, Michigan, Nevada, Nebraska, Oklahoma, Rhode Island, South Dakota and Wyoming. In some of the states only diplomas from certain schools are recognized; thus in Michigan the diplomas of some forty or fifty schools only are accepted and in Rhode Island similar scrutiny is exercised. In nearly all, more or less discrimination is made in regard to certain schools, but in these states more particularly than others.

SCOPOLAMIN-MORPHIN ANESTHESIA.

CORSICANA, TEXAS, Sept. 14, 1901.

To the Editor:—In the issue of Aug. 17, 1901, on page 480, in article "Scopolamin-Morphin Anesthesia," the amount of scopolamin used is first given as .4 mg.: the second time as 4 mg. Kindly advise me which is correct, and is the article obtainable in English?

L. H. R.

ANS.—The former is correct. Instead of being .4 mg., it is given in the original .0004 of a gram. The total dosage advised by Korff in the article in his proposed anesthesia is 12 decimilligrams, or .0012 of a gram, in three doses of 4 decimilligrams each. The mistake is obvious and we think that no one will be misled by it. So far as we know there is no English translation of the article.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A HANDBOOK OF PATHOLOGICAL ANATOMY AND HISTOLOGY, with an Introductory Section on Postmortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M.D., LL.D., Professor of Pathology and Director of the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York. Sixth Edition with 13 Full-page Plates and 453 Illustrations in the Text in Black and Colors. Cloth. Pp. 819. Price, $5.00. New York: Wm. Wood & Co. 1901.

THE OFFICE TREATMENT OF RECTAL DISEASES Explained and Simplified. Being an Exposition of the Treatment of All Those Diseases, Both Medical and Surgical, of the Rectum, Anus and Sigmoid Flexure, the Cure of Which May be Accomplished Without Surgical Anesthesia. Illustrated. By Rufus D. Mason, M.D., Omaha, Neb., Professor of Rectal and Pelvic Surgery in the John A. Creighton Medical College. Cloth. Pp. 83. Price, $1.50. Omaha: F. B. Festner. 1901.

THE MICROSCOPE AND ITS REVELATIONS. By the late William B. Carpenter, C.B., M.D., LL.D., F.R.S. Eighth Edition, in which the first seven and the twenty-third chapters have been entirely rewritten, and the text throughout reconstructed, enlarged, and revised by the Rev. W. H. Dallinger, D. Sc., D.C.L., LL.D., F.R.S., etc. With 22 Plates and nearly Nine Hundred Wood Engravings. Cloth. Pp. 1181. Price, $8.00. Philadelphia: P. Blakiston's Son & Co. 1901.

THE HEALTH RESORTS OF EUROPE. A Medical Guide to the Mineral Springs, Climatic, Mountain and Seaside Health Resorts: Milk, Whey, Grape, Earth, Mud, Sand and Air Cures of Europe. By Thomas Linn, M.D., Doctor of Medicine, Faculty of Paris. Cloth. Pp. 281. Price, 2 s. 6 d. net. London: Henry Kimpton. Hirschfeld Bros. 1901.

SCHOOLBOY'S SPECIAL IMMORALITY: Addressed Especially to Those Who Have the Charge of Boys. By Maurice C. Hime, M.A., LL.D., Sometime Head-Master of Foyle College, Derry. Third Edition, Revised and Enlarged. Cloth. Pp. 115. Price, $0.35. Philadelphia: P. Blakiston's Son & Co. 1901.

PHOTOGRAPHIC ATLAS OF THE DISEASES OF THE SKIN. By George Henry Fox, A.M., M.D., Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, N. Y. Part 1. Paper. Philadelphia and London: J. B. Lippincott Co. 1901.

TWENTY-SEVENTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN for the Fiscal year ending June 30, 1899. Cloth. Pp. 241. Lansing, Mich.: Robert Smith Printing Co. 1900.

TRANSACTIONS OF THE INDIANA STATE MEDICAL SOCIETY, 1901. Fifty-second Annual Session, held in South Bend, Ind., May 15, 16 and 17, 1901. Cloth. Pp. 646. Logansport, Ind.: Wilson, Humphreys & Co. 1901.

BIENNIAL REPORT OF THE BOARD OF HEALTH OF THE STATE OF WEST VIRGINIA, and Report of Vital and Mortuary Statistics for the Years 1898-99. Paper. Pp. 183. Charleston, W. Va.: The Tribune Co. 1901.

TRANSACTIONS OF THE SIXTY-EIGHTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF TENNESSEE, NASHVILLE, 1901. Cloth. Pp. 416. Nashville: Marshall & Bruce Co. 1901.

TRANSACTIONS OF THE VERMONT STATE MEDICAL SOCIETY, 1900. Published by the Society. D. C. Hawley, M.D., Secretary. Cloth. Pp. 195. Burlington: Free Press Association. 1901.

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY FOR THE YEARS 1899 and 1900. Cloth. Pp. 347. Printed for the Society. 1901.

The Public Service.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy, week ending Sept. 14, 1901:

Medical Inspector H. Wells, ordered to the Boston Navy Yard, September 14.

Medical Inspector W. E. Taylor, retired, ordered to the Honolulu Naval Station.

Medical Inspector R. C. Persons, ordered to duty at the marine recruiting rendezvous, New York City, September 9, and to other special duty.

Surgeon M. H. Crawford, detached from duty at the marine recruiting rendezvous, New York City, September 9, and ordered to duty in connection with fitting out the *Illinois*, and to duty on that vessel when put in commission.

P. A. Surgeon D. N. Carpenter, detached from the naval hospital, Norfolk, Va., and ordered to duty in connection with fitting out the *Illinois*, and to duty on that vessel when put into commission.

P. A. Surgeon G. D. Costigan, resignation accepted, to taken effect September 16.

Pharmacist J. Cowan, detached from the naval hospital, Mare Island, Cal., ordered home and granted sick leave for one month.

P. A. Surgeon C. E. Riggs, detached from the New York Navy Yard and ordered to the Port Royal Naval Station.

Asst.-Surgeon J. C. Thompson, detached from the Port Royal Naval Station and ordered to the *Columbia*.

Asst.-Surgeon R. M. Young detached from the naval hospital, New York, September 14, and ordered to the New York Navy Yard, same day.

Asst.-Surgeon A. G. Grunwell, detached from the *Brooklyn* and ordered home.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Sept. 14, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Aug. 25-Sept. 1, 2 cases.
Massachusetts: Aug. 31-Sept. 7, Boston, 13 cases; Medford, 1 case.
Minnesota: Minneapolis, Aug. 31-Sept. 7, 2 cases.
New Jersey: Newark, Aug. 31-Sept. 7, 9 cases, 2 deaths.
New York: New York, Aug. 31-Sept. 7, 6 cases, 4 deaths.
Pennsylvania: Philadelphia, Aug. 31-Sept. 7, 12 cases, 4 deaths.
Utah: Salt Lake City, Aug. 24-Sept. 7, 5 cases.
Wisconsin: Green Bay, Sept. 1-8, 1 case; Milwaukee, Aug. 31-Sept. 7, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Aug. 17-24, 1 case.
Brazil: Pernambuco, July 17-31, 44 deaths.
British Columbia: Vancouver, Aug. 1-31, 1 suspect.
Colombia: Panama, Aug. 26-Sept. 2, 12 cases.
Ecuador: Guayaquil: June 22-Aug. 7, 1 death.
France: Paris, Aug. 17-24, 9 deaths.
Great Britain: Leeds, Aug. 24-31, 1 case: London, Aug. 17-24, 41 cases.
India: Calcutta, Aug. 3-10, 2 deaths; Madras, Aug. 3-9, 7 deaths.
Italy: Messina, Aug. 16-24, 8 cases; Naples, Aug. 17-24, 115 cases, 22 deaths; Palermo, Aug. 19-24, 1 death.
Russia: Moscow, Aug. 10-17, 2 cases; St. Petersburg, Aug. 4-11, 12 cases.
Uruguay: Montevideo, July 18-25, 10 cases.

YELLOW FEVER.

Costa Rica: Liberia, Aug. 25, prevalent: Port Limon, Aug. 18-24, 8 cases, 1 death.
Cuba: Havana, Aug. 24-31, 7 cases, 2 deaths: Inoculation Station, Aug. 24-31, 1 case.
Mexico: Merida, Aug. 16-24, 2 deaths: Vera Cruz, Aug. 24-31, 3 cases, 2 deaths.

CHOLERA.

India: Bombay, Aug. 6-13, 9 deaths; Calcutta, Aug. 3-10, 6 deaths; Madras, Aug. 3-9, 45 deaths.
Japan: Island of Shikohu, Aug. 6, 3 cases; Yokohama, Aug. 3-10, 1 case.

PLAGUE—INSULAR.

Philippines: Camp Stotzenberg, July 13-20, 2 cases; Manila, July 13-Aug. 3, 26 cases, 21 deaths.

PLAGUE—FOREIGN.

India: Bombay, Aug. 6-13, 197 deaths: Calcutta, Aug. 3-10, 17 deaths; Karachi, July 24-Aug. 1, 17 cases, 13 deaths.
Japan: Formosa, Aug. 6, epidemic.
Straits Settlements: Singapore, July 20-27, 1 death.
China: Hongkong, July 27-Aug. 3, 13 cases, 11 deaths.

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Original Articles.

THE ETIOLOGY AND CLASSIFICATION OF CIRRHOSES OF THE LIVER.*

VICTOR C. VAUGHAN, M.D., LL.D.

ANN ARBOR, MICH.

The term cirrhosis was first applied to a pathologic condition of the liver, in 1819, by Laennec, who was led to select this name on account of the color of the liver—reddish-yellow or tawny. This term is an unfortunate one, inasmuch as the color of the liver in this disease varies with the relative amounts of fatty matter and biliary pigment in the tissue, and furthermore, it gives no indication of either the etiology or the pathology of the disease. Before Laennec, Fernel had written concerning the action of wine in causing seirrhus —induration—of the liver; Vesale had also discussed atrophy of the liver observed in alcoholics; Morgagni had spoken of ascites due to compression or occlusion of the intra-hepatic branches of the portal vein, and Baillie, in 1803, had recognized the relationship between dropsy and atrophy of the liver. However, credit should be given to the great teacher, Laennec, for bringing prominently to the attention of the profession one form of the diseases of the liver which is still designated by the name that he coined. The term selerosis is also objectionable, because, while the hardening due to a cicatricial contraction may occur in the later stages, it is not a primary and essential feature of the pathologic process. Generally, members of the profession now understand by the term cirrhosis an abnormal proliferation of the connective tissue of the liver. The designation, interstitial hepatitis, is more suitable than either of the names already mentioned, but even this is not free from objection, because it is more than probable that in one form of the disease, or, more properly speaking, in one of the diseases designated by the term cirrhosis, the degenerative changes begin in the parenchyma of the organ and the involvement of the connective tissue is a secondary process. At first it was believed that the liver is always enlarged in the early stages and that the marked atrophy observed at autopsy is due to cicatricial contraction of the overgrowth of connective tissue.

In 1846, Requin called attention to the fact that hypertrophy of the liver is not always followed by atrophy, and three years later one of his students, Mesnet, reported a case of cirrhosis with extensive hypertrophy and reached the following conclusion: "Cirrhosis is not necessarily followed by atrophy. The two diseases, hypertrophy of the liver and cirrhosis can exist in the same individual. I can not agree with Cruveilhier, who holds that cirrhosis always consists of atrophy of the majority of the liver granulations and leads to diminution in the size of the organ, because at least two cases of cirrhosis with hypertrophy have been observed."[1]

In 1857, Todd, in a clinical lecture, contrasted the atrophic and hypertrophic forms of cirrhosis and stated: "The disease (atrophy), which no doubt is most frequently the result of intemperate habits in drinking, is very common, and all the cases resemble each other to a remarkable extent. It can not be discerned with certainty in its early stages, although no doubt a practiced eye would seldom be wrong, for the chronic changes which terminate in this shrunken and contracted state of the organ are, as I have already stated, most stealthy and insidious in their approach. A similar group of symptoms accompanies an enlarged and sometimes very much enlarged, condition of the liver, and systematic authors, especially those of late years, regard these two conditions as one and the same disease—cirrhosis. Indeed, they lay it down that the enlarged liver is an early stage of the contracted liver, and that the former by the gradual diminution of its size passes into the latter. I find it impossible to accede to this view, and I am anxious to call your special attention to the two cases that you may, as opportunities offer, direct your attention to their clinical phenomena, and watch whether the one can be traced into the other."

In 1871, Ollivier reported a case of hypertrophic cirrhosis, but it was the thesis of Hanot, in 1876, with the subsequent investigation of the same author and of others stimulated by his work, that has led to the recognition of hypertrophic cirrhosis as a distinct disease, and, for this reason, this form of cirrhosis is often designated as the cirrhosis of Hanot, in contradistinction to that of Laennec—the atrophic form. Fortunately another great French clinical teacher, Charcot, took up the subject and gave great impetus to the study. Charcot divided cirrhoses of the liver into the following:

1. An insular, monolobular, intralobular and interlobular form of biliary origin—the cirrhosis of Hanot.
2. An annular, multilobular, perilobular form of venous origin—the cirrhosis of Laennec.
3. A rare monocellular form observed in congenital syphilis.

Experimental research, clinical observation and the study of the pathologic conditions have confirmed the views of Todd, Hanot and others just mentioned, and we no longer recognize hypertrophic and atrophic cirrhoses as different stages of the same disease, but as distinct conditions, unlike in origin, in etiology, in symptomatology and in pathology. I will, therefore, proceed to discuss these separately, then compare and

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Drs. Frank Billings, George Dock and J. M. Anders.

1. Similar cases were reported by Monnert (1852) and Gubler (1857), but I have not seen these reports.

contrast them, and finally will speak of the mixed forms which are not infrequently seen.

ATROPHIC CIRRHOSIS.

Gross Appearance.—The liver is reduced both in size and weight. It varies in color and may be brownish, reddish-brown, reddish-yellow, gray or grayish-brown. The surface is covered with nodules which vary in size from those barely discernible to those as large as a filbert. The border of the liver is thickened, blunt and indented by fibrinous bands. On removing the strongly adherent capsule, the nodules stand out more prominently, and the appropriateness of the term, "hob-nailed liver," becomes evident. On section, the organ is found to be more or less hardened and the cut surface shows nodules of varying size surrounded by connective tissue.

Etiology.—As has been stated, the influence of the abuse of alcoholic drinks in the causation of this condition has long been recognized, and among the etiologic factors alcohol holds the first place. The more concentrated the alcoholic beverage, the more marked is the effect; consequently, brandy and whisky drinkers are more likely to develop this disease than are those who confine themselves to fermented and malted drinks. For like reason, those who take these alcoholic drinks on an empty stomach are in greater danger than are those who limit their potations to their meals. It has been stated that the more fusel oil there is in the beverage the more injurious is it in its effects on the liver. All alcoholics do not develop cirrhosis, and it is believed that a sedentary life contributes to the ill effects of the poison. De Giovanni thinks that a scrofulous taint favors the development of cirrhosis and that there is a congenital predisposition to this disease. However, this opinion is altogether theoretical and has, as yet, no scientific basis.

The positive evidence from clinical observation that alcohol is the most common cause of atrophic cirrhosis in man, has led many investigators to attempt to induce this condition in the lower animals by the use of this agent. It would require too much space and time to even enumerate all the investigations that have been made with this object in view. Most of these studies, some of which have been made in the most careful and painstaking manner, have given apparently only negative results, and it can be said that no one has succeeded in inducing well-marked interstitial hepatitis in the lower animals by administering alcohol to them. Notwithstanding this fact, these studies have been of much value in the extension of our knowledge of the etiology and pathology of atrophic cirrhosis, and it will be of service to us to briefly state here the effects produced in the liver by the experimental employment of alcohol.

The findings of Afanassijew may be summarized as follows: In dogs the continued administration of alcohol, either with or without amylic spirit, causes a degeneration of the hepatic cells, which swell, become more rounded and are easily detached from the stroma. The nuclei of many of these cells contract and fail to react normally to stains. In rabbits these changes are more marked and sometimes whitish maculæ may be seen macroscopically. These spots contain in their centers branches of the portal vein and sometimes continue along the peripheral parts of the lobules. The hepatic cells in the region of these maculæ show a more or less marked condition of coagulation necrosis. The cells near the center of the maculæ are more markedly affected, while in those at the periphery the destructive changes are less evident. In addition to the parenchymatous and fatty degeneration in chronic alcoholic poisoning there is observed a tendency to lymph stasis. This is especially observable in the liver, brain, stomach and intestines. Whether this is due to the retarded circulation from weakened heart action or to effects on the central nervous system can not be determined. The degenerative changes in the liver are in direct proportion to the severity of the intoxication. The addition of amylic alcohol intensifies, but does not alter, the character of the destructive changes.

The same investigator injected diluted alcohol directly into the portal circulation. The animals thus treated survived the operation and were killed from seven hours to eight days afterward; one dog was not killed until four months after the injection. The action on the tissues of the liver was found to be more pronounced when the alcohol was administered in this way. The liver cells along the branches of the portal vein showed the following changes: The nuclei were shrunken and individual chromatin granules could not be recognized. The cell protoplasm appeared cloudy and finely granular. The cells themselves were contracted; the hepatic capillaries were dilated and filled with blood. These changes were not uniform throughout the lobules, but were distributed in patches, resembling the parenchymatous fatty degeneration observed as a result of the indirect action of alcohol. Similar appearances have been seen after long-continued administration by the mouth. With larger doses—from 2.5 to 5 c.c. of 48 per cent. alcohol—injected into the portal circulation, necrotic changes were obtained. Macroscopically the necrosis was observed as whitish spots of varying size on the surface of the liver. The necrotic cells were found to be surrounded by a zone of cells showing fatty degeneration and beyond these were seen normal cells. When the animal lived three or four days after the operation, the connective tissue cells of the stroma were found to be increased in number and numerous giant cells were observed. After a time true cicatricial tissue replaced the necrotic areas.

Afanassijew concludes his observations as follows: We have obtained by the injection of alcohol into the liver, also by continued administration by the mouth in rabbits, necrotic areas in the liver similar to those induced by phosphorous and arsenic. These necrotic areas stimulate the surrounding normal tissue and this stimulation leads to proliferation of the cells of the stroma and the development of giant cells. In short, this investigator believes that alcoholic cirrhosis begins by inducing changes in the liver cells, leads to fatty degeneration and necrosis, and that the proliferation of the connective tissue is subsequent to and consequent upon the changes in the hepatic cells.

Ackermann concludes his researches upon this subject with the following statement: "The proliferation of the connective tissue is not a result of the direct action of alcohol, but is due to the stimulating effect of the liver cells, altered by the action of the poison, on the connective tissue."

Practically all who have studied experimentally the action of alcohol on the liver of animals, have concluded that this poison causes granular and fatty degeneration in the liver cells. Some have reported slight proliferation of connective tissue, and the most reasonable conclusion is that which makes the connective tissue changes subsequent to and dependent upon alterations in the hepatic cells. When we remember that men often abuse alcohol for years before they develop a typical

atrophy of the liver, we need not be surprised when we fail to induce a like condition in animals even after the administration of this poison for months, and it seems to me that with the clinical and experimental evidence before us, we are justified in coming to the conclusion that in alcoholic cirrhosis the pathologic changes begin in the hepatic cells.

Chronic phosphorous poisoning also has been long recognized clinically as a cause of atrophic cirrhosis, and a typical form of this disease, with ascites, has been developed experimentally in animals by the administration of this agent. In these experiments it has also been shown beyond doubt that the pathologic changes begin in the hepatic cells and that the proliferation of connective tissue is secondary. Aufrecht, after experimenting with phosphorus, reaches the following conclusion: "The parenchymatous inflammation is the primary process; in those cases in which the harmful agent acts long enough or powerfully enough to prevent speedy disappearance of the parenchymatous inflammation, secondary changes in the interstitial tissue develop as a consequence of the diseased condition of the parenchymatous parts."

Clinicians have frequently observed atrophic cirrhosis in cases of chronic poisoning with certain metallic compounds, and the experimental study of the effects of these agents on the lower animals has contributed valuable additions to our knowledge of the histogenesis of this disease.

The researches of Ziegler and Oblonsky, so far as they pertain to the action of arsenic on the liver, may be condensed into the following brief statements: Fatty change in the hepatic cells is always apparent and evidently is one of the early effects of chronic arsenical poisoning; indeed, in acute poisoning, when the animal dies in a few hours after the administration of a single dose, some of the hepatic cells can be seen on microscopical examination to be filled with minute droplets of fat. In some instances the degenerative changes in the hepatic cells are quite as marked as they are in the milder forms of phosphorus poisoning. In many animals fatty change in hepatic cells is the only change detectable. That some of the cells involved are still capable of multiplication is shown by the observation of typical karyokinetic figures. As a secondary stage in the progressive effects of arsenic, there appear necrotic areas; then, the periportal connective tissue is often found to be in a state of proliferation, which is indicated partially by the presence of more or less abundant karyokinetic figures and partially by the increase of cellular elements, and by the presence of numerous large cells with large nuclei and rich in protoplasm. It will be seen that in the order of development these changes correspond with those observed after alcohol and phosphorus poisoning. In some cases of chronic arsenic poisoning the fatty changes in the liver are more extensive than they are even after death from phosphorus, and when death is delayed for two or three weeks the hepatic cells show marked atrophic changes.

While chronic poisoning with the soluble compounds of aluminum is not known to occur in man, the researches of Siem and Dölken on animals show that these salts have much the same effect upon the hepatic cells of animals as those observed after poisoning with other metallic compounds. The liver is dark-red and the surface may be marked with prominent yellow blotches. The substance of the organ is somewhat friable and microscopic examination shows the hepatic cells undergoing granular and fatty degeneration.

Among the etiologic factors of atrophic cirrhosis, chronic lead poisoning has long been recognized, and Lafitte has induced a typical cirrhosis of the liver in rabbits by the long-continued administration of soluble salts of this metal. This author suggests that the presence of small quantities of lead in wine may be partially responsible for the cirrhosis observed in drinkers of this beverage. Atrophic cirrhosis is also likely to occur among smelters of copper, even when these men have been total abstainers from the use of alcohol. The effects of lead and copper on the tissues of the liver are practically the same as those of the other poisonous salts and of phosphorus and alcohol.

It seems to me that it must be admitted, from the evidence already presented, that in the development of atrophic cirrhosis the primary changes occur in the parenchyma of the liver and that the involvement of the connective tissue and the proliferation of the same is secondary to and consequent upon the necrotic changes in the hepatic cells.

There are believed to be other etiologic factors possibly concerned in the development of atrophic cirrhosis. Frerichs gave syphilis a prominent place in this list, and Thierfelder thinks that syphilitic cirrhosis differs from that induced by alcohol in the more uneven distribution of the pathologic changes in the hepatic tissue. However, since syphilitics are so frequently given to alcoholic excesses, some caution is necessary in reaching conclusions on this point. Cirrhosis sometimes accompanies amyloid disease and it is possible that both may be due to the same cause, especially to syphilis. Many English clinicians with large experience in India believe that the use of irritating spices and other condiments contributes to the production of cirrhosis of the liver so frequently observed in that country. The toxins of some of the acute infectious diseases, such as cholera, typhoid fever and the plague, are believed to be capable of inciting changes in the liver leading to atrophic cirrhosis. Semmola says, "Infective processes play a great part in the causation of cirrhosis." The same author assigns a prominent place to malaria among the causative agents of this pathologic state. It is quite the fashion at present to attribute most of the ills of life to autointoxication, and this much-abused and frequently misapplied term is found in many of the lists of the etiologic factors of cirrhosis. It is frequently said that it is not alcohol that causes cirrhosis of the liver, but that the drink so alters the digestive tract and its secretions that the products of an abnormal and imperfect digestion acting on the liver cause the histologic changes that result in this disease. Even were this a demonstrated fact, which it is not, the disease should not be termed one of the autointoxications, but should be said to result indirectly from the abuse of alcohol. In either case alcohol is the causative agent, whether it acts directly on the hepatic cells, or indirectly by altering the chemism of digestion. In either case the alcohol is the toxic agent and since it is introduced from without and is not generated within the body, it is not an autotoxin. As we have seen, alcohol, phosphorus and the metallic poisons, possibly also syphilis, malaria and other infectious diseases, are the most common factors in the causation of atrophic cirrhosis, and none of these are autotoxins.

Pathology.—Is the liver in the early stages of this form of cirrhosis enlarged? This question has met with

conflicting answers. Laennec believed that hypertrophy always precedes atrophy and this view is probably the one most generally held to-day. On the other hand, Todd taught that when uncomplicated with other diseases, the liver in this form of cirrhosis is never larger than normal, and that from the first it begins to decrease in size. Rosenstein says: "Es giebt eine genuine Schrumpfleber, das ist die atrophische Form. Kein Stadium der Vergrösserung geht hier voraus." However, it is difficult to answer those who believe in primary hypertrophy. They say that hospital cases are not seen until contraction of the proliferated connective tissue begins and circulation in the branches of the portal vein is more or less interrupted, and they admit that even in private practice this disease can not be diagnosed with any certainty until atrophy begins, and yet they contend that there is hypertrophy primarily. It will be seen that an argument of this kind can not easily be refuted. However, we may safely say that there is no marked hypertrophy; if there be any, atrophy comes soon, and, as has been stated above, before a positive diagnosis can be made. We have seen in experimental atrophic cirrhosis that destructive changes begin in the parenchyma before any proliferation of the connective tissue and that there is no stage of hypertrophy. There is probably no absolute, mathematical relation between the rates at which destruction of hepatic cells and proliferation and contraction of connective tissue take place; however, as the latter results from the former, it is safe to assume that the effect is in proportion to the cause.

The character and localization of the proliferation of connective tissue are interesting questions in the study of this disease. Charcot designates the disease as annular, because the larger bands of connective tissue encircle the parenchyma and smaller bands divide these areas into segments. He also characterized it as multilobular, because the encircled areas embrace many acini. Charcot believed that the disease is essentially a phlebitis or a periphlebitis of the intra-hepatic branches of the portal vein—a view which has been disproved by more exact observations.

Aufrecht holds that there is in reality no true proliferation of connective tissue and this view seems to be in all probability the correct one. His statements on this point are so important that I shall take the liberty of condensing them into the following: In order to explain the pathogenesis of this disease it is desirable to mention the fact that simultaneously with the extension of the interacinous tissue, there is invariably contraction of the acini. The one does not occur without the other. The degeneration of the hepatic cells, which is the primary phenomenon in the development of the disease, begins always in the periphery of the acini and extends towards the center, and the altered hepatic cells themselves constitute the greater portion of the interacinous tissue. If sections of a liver in this disease be prepared with the Biondi-Heidenhain triple stain the cells in the periphery of the contracted acini will be found reduced in size. Reduction in size is not the only change observable in these cells. They have become spindle-shaped and their nuclei have undergone an analogous alteration in form. The latter are stained blue, while the protoplasm has a reddish appearance. In many cells, the nuclei are no longer detected and the reddish cells can be seen matted together in the interacinous tissue. This author concludes from these findings that the increase in the interacinous tissue is not due to the proliferation of the connective tissue elements, but to its augmentation by the altered hepatic cells. He says furthermore: We have to do here with a process similar to that by which the cells of the rete Malpighii of the skin are converted into the scales of the epidermis. "In atrophic cirrhosis the contraction is not due to proliferation of connective tissue, but to the shrinkage of acini and groups of acini. The small, non-nucleated spindles, into which the peripheral hepatic cells are converted, occupy much less space than the normal cells." He adds: This picture is not infrequently clouded by the marked fatty degeneration of the remaining cells of the reduced acini or by an acute atrophy of the same. The first is relatively frequent, then there appears to be a sharp line of demarcation between the remaining hepatic cells and the interacinous tissue, when unstained sections, or those colored with other reagents than that above mentioned are examined. In these cases the transitional forms are not recognized. Acute atrophy of the remaining hepatic cells is relatively infrequent, but that it does occasionally occur may be recognized clinically, by the terminal icterus accompanied by marked ascites and prolonged coma, and microscopically, by the total disappearance of hepatic cells of normal shape. The so-called newly-formed biliary capillaries are observed very rarely in atrophic cirrhosis, but Charcot is in error, as Ackermann has pointed out, when he states that the absence of these is pathognomonic of this disease, and their actual appearance excludes the possibility of a true cicatricial process in this disease.

It will be seen from the statements already made, and the evidence might be multiplied several times, that recent investigations have established the essential identity of the changes observed in the cirrhotic atrophy of the liver seen at autopsy and the changes induced in animals experimentally by alcohol, phosphorus and the metallic poisons. The differences are those of degree and not of kind, and when we take into consideration the length of time that is required to induce this disease in alcoholics, the differences in degree are easily understood.

Symptomatology.—This disease advances at first insidiously and generally manifests itself by ascites, which is an early and constant condition. Subjective symptoms may be wholly wanting, and in any case are by no means characteristic. The ascites is due to obstruction to the flow of blood in one or more of the intrahepatic branches of the portal vein. When the umbilical vein is not completely obliterated, and Baumgarten has shown that it frequently remains partially open, a collateral circulation may be established, and this leads to the appearance about the navel of what is known as the *caput Medusæ;* or anastomoses may be opened up between the portal vein and the inferior vena cava.[2]

In discussing the methods by which Nature attempts to establish a collateral circulation, Bamber says, "This is accomplished through the communication of the internal hemorrhoidal with the hemorrhoidal branches of the hypogastric vein, or by anastomoses between the vessels of Glisson's capsule and the diaphragmatic vein, also through the superior gastric and the esophageal, and through this with the azygos." Edema of the lower extremities may appear, but seldom does so until late in the course of the disease.

2. It might be noted that in very rare instances the inferior vena cava has been found to be strangulated by bands of connective tissue in the liver.

The spleen is generally enlarged. Whether this is due wholly to obstructed flow of blood through the liver or to coincident disease of the spleen can not always be determined.

Structural disease of the kidney is not a frequent accompaniment of atrophic cirrhosis, although albumin and casts may appear in the urine, and Semmola has reported the presence of peptone. In cases in which the ascitic accumulation is great the volume of urine is diminished, but according to Aufrecht this condition is attributable to weakened action of the heart. Semmola very properly, it seems to me, emphasized the desirability of making frequent quantitative determinations of the amount of urea, which is eliminated in reduced amount on account of the destructive changes in the hepatic cells, since these are concerned in its formation. However, such determinations are of no value unless strict account is kept at the same time of the amount of nitrogenous food ingested. With the decrease in the amount of urea eliminated in the urine there should be a corresponding increase in the amount of ammonia, and this condition has been reported by Halevoorden and Stadelmann, but I know of no exact scientific research on this point. It is believed by physiologists that one of the antecedents of urea is the carbamate of ammonia which normally is converted in the liver into urea; consequently, when a large proportion of the heptatic cells is diseased the amount of urea eliminated should be decreased and that of ammonia correspondingly increased.

There is generally a catarrhal condition of the digestive tract. Indeed, in most cases of atrophic cirrhosis, this disturbance of the stomach and intestines precedes the development of the changes in the liver, and is due to the same cause, i. e., alcohol. Hematemesis is not unusual, especially in alcoholic cirrhosis. The causes of frequent hemorrhages from the stomach may be stated as follows: 1. as has been stated, the digestive organs are already diseased from the local action of the alcohol; and 2, interruption of the flow of blood through the portal vein leads to distension of the gastro-intestinal radicles of this system. Not infrequently the hemorrhage is esophageal, and this is explained by the dilatation of the veins of the esophagus, through Nature's attempt to establish collateral circulation after the manner already mentioned.

Icterus is an unusual manifestation of this disease in uncomplicated form. The hepatic cells being diseased, it is probable that there is diminished formation of bile pigment, and the gall ducts being usually unaffected, there is free escape *per vias naturales* for all that is formed. During the later stages of the disease jaundice may appear and possibly be quite marked. This is supposed by some clinicians to indicate acute atrophy and it is often accompanied by coma.

HYPERTROPHIC CIRRHOSIS.

Gross Appearance.—The liver is always enlarged and may be enormously so, weighing in some rare instances as much as nine or ten pounds. The surface is finely granular and brownish or reddish in color. Adhesions to adjacent organs are frequently seen. In consistency the tissue of the liver is firm and may be very hard. Freshly cut surfaces are granular and of varying color, depending upon the proportion of bile pigment staining the organ.

Etiology.—There has been practically no scientific investigation into the causative agents concerned in the production of this disease; however, most clinicians now agree that it is of infectious origin, which view was, so far as I know, first suggested by Senator. I know of no thorough bacteriologic study of this condition; but the colon and typhoid bacilli are regarded as the most frequent infections, although a coccus, not yet well studied, has been found in some instances. Frequently both the bile and the liver tissue have been reported sterile, but since Adami has shown that it often requires many days for the development of germs actually existing in tissues, such evidence is not of value. Moreover, the bile may be actually sterile at a time when the tissue surrounding the ducts is undergoing most destructive changes through the agency of bacteria. The possible avenues of infection are from the intestines, through the gall passages and through the blood and lymph. The probabilities are that infection generally, if not invariably, comes from the intestines and is due to the extension of catarrhal conditions or to the passages of specific organism up the biliary tract. The frequency with which the typhoid bacillus finds its way into the gall bladder and its persistent growth in this viscus, has been attested by more than one observer.

Clinicians agree that alcohol is not a direct causative agent in this disease. Certainly hypertrophic cirrhosis may be developed in alcoholics, but quite as frequently it appears among those who have not abused this beverage. Indirectly, by causing irritation of the mucous membranes of the stomach and intestines and by converting this tissue into suitable culture beds for the growth of bacteria, alcohol may sometimes be a factor in the causation of this disease, just as it may play a similar rôle in the development of many other infectious diseases.

There is no sufficient reason for believing that any chemical poison, except bacterial toxins, are concerned in the causation of this form of cirrhosis. With our present knowledge it must be attributed in all cases to infection. While, as has been stated, the experimental proof of the bacterial origin of hypertrophic cirrhosis is largely wanting, the conclusion that it is due to infection is so well founded that much contrary evidence of the most positive character would be required to cast doubt upon this view. The evidence on this point may be briefly summarized as follows: 1. It frequently begins like an ordinary catarrhal jaundice, which seemingly becomes chronic. 2. It is often, if not invariably, accompanied by cholecystitis. 3. It is essentially a febrile disease with periods of remission and exacerbation. 4. It is accompanied by enlargement of the spleen and many of the lymphatics, as is the case in some of the infectious diseases, and, moreover, the enlargement of the spleen is not that due to obstructed blood flow, as is the case in atrophic cirrhosis, but appears to be similar to, if not identical with, that observed in other infectious diseases. 5. The primary changes occur in the epithelium of the gall ducts, where they would naturally be found by extension of the disease process from the intestines up through the biliary tract.

Pathology.—While there have been some differences of statement among those who have studied microscopically the changes in the liver in this disease, there seems now to be reasonable agreement on the essential points, which may be condensed as follows: 1. There are no destructive changes in the hepatic cells. According to Hanot, the integrity of the parenchyma is an absolute characteristic of hypertrophic cirrhosis. Some observers find no destructive changes in the hepatic cells,

but do find evidence of unusual growth in this tissue. Ziegler says, "The size of many of the nuclei and their richness in chromatin, together with the size of the cells themselves, make it probable that in this disease there is proliferation of the hepatic cells and that the colossal size reached by the liver is not solely due to the proliferation of the connective tissue." Heineke states: "In the cirrhosis of Hanot the hepatic cells remain intact, neither shrunken nor fatty; the nuclei are normal and stain well; indeed, actual proliferation of these cells may be observed." Aufrecht makes the following statement: "It is an evident characteristic of hypertrophic cirrhosis that all the hepatic cells are enlarged and contain a larger number of nuclei than under normal conditions. In these changes lies the criterion of hypertrophic cirrhosis." While all agree that the primary changes do not occur in the hepatic cells, there are those who think that destructive changes may result secondarily in the parenchyma. This opinion is held by Heineke, who states, "Primary degeneration of hepatic cells is with certainty excluded in Hanot's cirrhosis; indeed, the first proliferation processes do not occur in the vicinity of the lobules, but in Glisson's capsule and in the region of the larger gall ducts. The hepatic cells in most cases remain unaltered, and it is so constantly the case that Hanot and Schachmann insist that integrity of the parenchyma is an essential condition in hypertrophic cirrhosis with icterus. However, because primary degeneration of the hepatic cells does not occur is no guarantee that these cells always escape secondary effects. Conditions influencing the parenchyma may co-exist with those resulting in hypertrophy, and, indeed, may affect the part most highly involved in the hypertrophic process, but when the parenchyma does undergo destructive changes atrophy, or at least a decrease of the hypertrophy, must result." If I understand Heineke aright, he believes that the two processes (that of hypertrophy of the connective tissue and that of atrophy of the parenchyma may co-exist in the same liver; this amounts to mixed cirrhosis, to which I shall return later.

2. The primary changes in the development of this disease occur in the epithelial cells of the gall ducts. On this point there is some diversity of statement; certain observers have reported most extensive and destructive changes in the epithelium, while others have found evidence of pericholangitis, with the epithelium of the ducts intact; but when we remember that this disease may continue from one to eight or ten years before it causes death and that during its course it shows marked exacerbations and remissions, it is no longer a matter of surprise that the condition of the epithelium in microscopic sections is by no means constant. Hanot generally, not invariably, has found characteristic lesions in the gall ducts, with proliferation and desquamation of the epithelium causing obliteration of the lumen. The fact that icterus is one of the earliest manifestations of this disease and that this symptom continues to the end *pari passu* with the exacerbations and remissions, is strong proof of the early and constant involvement of the epithelium of the ducts in the inflammatory changes, because the icterus is best explained by the occlusion of the ducts. On this point Hanot remarks, "The lesions of the bile ducts and their more or less extensive obliteration by the young proliferating cells, together with the chronic inflammation of the surrounding tissue, by obstructing the flow of the bile, must be considered as the causes of the icterus." Heineke, after quoting the above from Hanot, adds, "I have found similar destructive changes in the epithelium in most of my cases. Besides occlusion of the ducts by desquamation of the cells, another hindrance to the flow of bile may be found in the formation of deposits in this fluid and consequent thickening of the same by inflammatory processes. Actual compression of the ducts by contraction of the connective tissue may occur in the later stages of the disease." It is a fact established by observation and experiment that certain bacteria multiply in the bile of the gall bladder, causing the formation of deposits, and that gall-stones originate in this manner has been quite conclusively demonstrated by Naunyn.

3. The tissue about the branches of the portal vein largely escape involvement in this disease, or are affected only late in its course. This explains the infrequency of ascites in hypertrophic cirrhosis.

Symptomatology.—This disease most frequently appears in persons under 40 years of age. Enlargement of the liver and icterus are the first prominent symptoms. Ascites is rare and is not marked when present. The causes of the presence of icterus and the absence of ascites I have already discussed. The disease generally runs a chronic course, with periods of exacerbation and remission which are accompanied by a rise and fall of temperature. As the disease progresses anemia and emaciation are marked and disturbances of the digestive organs become more prominent. The spleen and many of the lymph glands are enlarged. The urine is stained with bile, and the feces are generally normal in color, but may be colorless. Toward the close the patient may pass into a typhoid condition with marked fever and delirium.

CONTRAST AND COMPARISON OF THE TWO DISEASES.

Atrophic cirrhosis is sometimes designated as the cirrhosis of Lænnec and the hypertrophic disease as the cirrhosis of Hanot. The former is known as atrophic cirrhosis because from its earliest possible recognition the liver is less than normal in size; while the hypertrophic is known as such because at every stage of the disease the liver is larger than normal.

The atrophic is known as venous cirrhosis because of the early and constant involvement of the intra-hepatic branches of the portal vein; the hypertrophic is known as biliary cirrhosis because of the early appearance and constancy of icterus. The former might be known as toxic, and the latter as infectious cirrhosis.

In the atrophic disease, ascites is an early manifestation and is often marked; in the hypertrophic, ascites is frequently absent and is never great. In the atrophic, icterus appears late, if at all; in the hypertrophic, icterus appears early and is constant.

Finally, in atrophic cirrhosis the primary destructive changes are in the hepatic cells; in hypertrophic cirrhosis the epithelium of the gall ducts is the site of the primary involvement.

MIXED CIRRHOSES.

From what has been said concerning the etiology and pathology of these diseases, it must be evident that their co-existence in the same individual may be seen. As has been stated, alcohol is the most frequent cause of atrophic cirrhosis and indirectly it may contribute to the causation of the hypertrophic disease. If all cases seen clinically were well-marked, typical forms of either disease, diagnosis would not be difficult, but

unfortunately this does not always occur. There are many well-marked cases of each disease and there are others which confound alike the clinician and the pathologist; many of these are undoubtedly due to the coexistence of the two diseases in the same individual. An infection may follow or precede an intoxication.

ADDENDUM.

While it was not my intention to say anything concerning the treatment of either of these diseases, I must be pardoned for adding just a few words on this subject. In atrophic cirrhosis the first thing to do is to discontinue the cause of the trouble, which, as we have seen, is most frequently alcohol. I will say nothing concerning the treatment of symptoms, but I do want to state that the pathologist has abundantly shown that when the cause is removed hepatic cells, even though undergoing marked fatty degeneration, may recover themselves. In my opinion the only scientific treatment for atrophic cirrhosis that has been proposed is that of Semmola, who reduces the amount of food to a minimum and administers this in a form least likely to tax the hepatic cells. He confines his patients to the use of milk, or when this is impossible, to milk and eggs. Digestion may be aided by the administration of dilute hydrochloric acid, and the action of the stomach may be improved by giving bitter tonics. The bowels should be kept in good condition, and this is best accomplished in this disease by the use of mineral waters. The heart must be watched and the administration of digitalis is often indicated.

In the treatment of hypertrophic cirrhosis small doses of calomel administered according to the method of Nothnagel have probably given the best results. When there is obstruction of the common duct, or when there is stone in the gall-bladder, surgical operation is clearly indicated, and I am inclined to the opinion that the time will come when surgery will be relied upon in the treatment of all cases of hypertrophic cirrhosis, inasmuch as it is possible only by operation to reach and disinfect the biliary passages.

For the purpose of saving space, I have refrained from giving the literature on cirrhosis of the liver, and I will refer those interested in the subject to the 13th volume of the "Real-Encyclopädie der gesammten Heilkunde," in which will be found an article by Aufrecht, followed by a fairly complete list of references up to the time of writing—1897.

ON THE TREATMENT OF CIRRHOSIS OF THE LIVER.*

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Cirrhosis of the liver—often called alcoholic cirrhosis—is seen under the following circumstances: 1, without symptoms, the patient having died from other causes; 2, without symptoms until a climax is reached in the sudden outbreak of gastric or intestinal hemorrhage, terminating the life of the patient; 3, with symptoms due to obstruction of the portal vessels; 4, with those due to catarrh and obstruction of the bile ducts; 5, with combined portal and duct symptoms; 6, in very rare instances, a certain ill-defined cachexia, symptoms of auto-intoxication and the physical signs of a contracted liver, may suggest in a patient of alcoholic habits the presence of this form of cirrhosis. We will defer the consideration of the symptomatic treatment until a later portion of the paper.

The morbid process in alcoholic cirrhosis is clearly defined and if the diagnosis of the first stage, so-called, could be positively determined indications for treatment to combat this process are manifest. Knowledge of such process would lead us at once to suggest control or removal of the cause; regulation of the duty to remove undue stress of work of the organ; proper clothing to prevent congestions of viscera; climatic influences for a similar purpose; regulated exercise and an outdoor life after the more acute congestion has subsided, again to prevent internal congestions. In the more acute periods, absolute rest, hot baths, hot fomentations or douches, alternating hot and cold fomentations, or, if perihepatitis, ice to the surface. Blisters are often not amiss; dry cups are of the greatest advantage, relieving pain and the sense of fulness the large organ gives rise to. Depletion of the intestinal tract by means of purgatives can aid wonderfully and must be resorted to, the salines being preferable. Many therapeutists are fond of flushing the liver by draughts of hot water taken in the fasting stomach. Finally the enlarged organ should be supported by a properly fitted abdominal bandage.

The character of the process of the next stage does not give encouragement for direct treatment. It is doubtful if any method of medication can arrest or mitigate the process. The lines of hygienic, dietetic and climatic treatment suggested above may measurably lessen the rate of growth of the exuberant tissue and lessen the tendency to catarrh of the ducts. That nature sidetracks the organ is seen in the cases which have proceeded to great length without any symptoms. It is reasonable to suppose the efforts carried out as described above contribute to this end and make an environment of the economy, compatible with the presence of a diseased organ.

But no treatment of a process can be thought of that does not include the oft-called etiological treatment. This has been hinted at in considering the management of alcoholic cirrhosis. Similarly, if we suspect a sclerotic process secondary to organic heart disease, the treatment of the antecedent condition is essential. Indeed, even though the symptoms are not patent, in organic heart disease all management looking to the prevention of sclerosis must be conducted. If we find again syphilis can be invoked as causal, we have other plans of medication to take up, which in time arrest or assuage the process.

The Symptomatic Treatment.—It is evident cases of the first score can not be included in any scheme of treatment; cases of the second score, if they survive the outbursting symptom of the process, must be managed according as they fall into the remaining classes. Cases belonging to the third class fall to our lot for medical treatment more frequently than any other class.

Portal Obstruction.—It will not be necessary to outline to an audience of the practical and scientific acumen of this Section, the methods of treatment, either of the gastritis and the enteritis or the secondary effects thereof. Such treatment is based on such general and established lines that methods are beyond cavil. A word of caution is not unnecessary regarding the treatment of hemorrhoids. This venous condition is frequently a result of cirrhosis, and it is well known is attended by such state of tissues that invite infection. I have seen disastrous results follow a more or less rash, and, perhaps,

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

septic operation. Of course, a cure is not so readily obtained as in other forms of hemorrhoids.

Ascites.—Again it is not necessary to rehearse the broad methods of treatment by diuretics, diaphoretics and purgatives, which are the common property of us all, the principles guiding us in their use as well as the hygienic management being well known. I wish by permission, however, to make record of some drugs which have been of service in my experience and some methods which must be resorted to before we dare cry "quits." Of the drugs, I would mention calomel. Small doses, frequently repeated, act well as a diuretic and can be relied on in many instances in which the stimulating diuretics, as caffein, strophanthus and other forms have failed. One-tenth of a grain every three hours is a dose which in four or five days brings on diuresis and gradual reduction by this means, and perhaps by absorption of the fluid.

Apocynum cannabinum, in doses of fifteen, twenty or thirty drops, four times daily, has in my hands proved valuable in reducing the ascites. It will often act as a purgative, a not necessarily desirable effect, which can, however, be controlled by regulating the doses. The oleoresin of copaiba, in capsules of ten minims every four hours, has also proved efficient in my hands. If not contraindicated by gastric or intestinal conditions it is often the most satisfactory.

Often medication will not relieve the ascites so that the fluid must be removed. We must not postpone the operation. A too great faith in medication, when kept up too long, permits pressure effects of the ascites which are not desirable, and also invites chronic peritonitis. Delays are dangerous. Tapping, to remove the fluid, should be resorted to early; and it should be done as frequently as the fluid forms. Nature taps often by allowing the water to break the thin umbilical bounds and ooze from the wound. Who has not seen the aspiration hole leak and leak until all fluid is drained, and perhaps remains away? I have seen ascites cured and the cirrhotic process arrested after the one hundred and fiftieth tapping. A cure is recorded of a case which was tapped more than 200 times. If tapping becomes impracticable, as sometimes occurs from thickening of the peritoneum, abdominal drainage must be resorted to. The cures are not as brilliant as in tuberculous peritonitis treated in this manner. Nevertheless, great danger lies in harboring an unusual amount of fluid. Again, if relief is not afforded, laparotomy and stitching the omentum to the anterior abdominal wall, establishing a collateral circulation, must be resorted to. The brilliant results of Frazier and other recent operators establish the feasibility of the operation.

Obstruction of the Biliary Passages.—Here again for reasons previously outlined, it is not necessary to dilate upon methods of treatment. I would call attention to the necessity of resorting to surgical relief in cases of obstruction with cholangitis and cholecystitis. A private patient, age 54, with alcoholic cirrhosis of the liver, cholangitis and cholecystitis, suffered from rigors and fever every week, the violent and most prostrating paroxysm, bringing him almost to death's door each time. Professor Martin drained the gall-bladder, giving entire relief to the symptoms and prolonging life nine or ten months. A large experience with these cases leads me to advise such operation early in the disease.

DISCUSSION ON SYMPOSIUM ON SOME CIRRHOSES OF THE LIVER.

DR. FRANK BILLINGS, Chicago—There is no doubt but that in hepatic cirrhoses prominent symptoms may occur from what Dr. Stockton has indicated, first of all, from the obstruction to the circulation which manifests itself in ascites, or in dilatation of the veins, forming a collateral circulation, the ascites not appearing, but the intoxication occurring, especially in the atrophic form. Dr. Stockton has fully brought out this point. There are, however, points for discussion upon the cirrhoses considered from a clinical point of view. I have been surprised in the ordinary practice of medicine to find how frequently one discovers cirrhosis of the liver that is not advanced enough to produce either an ascites, nor, probably, a classic intoxication such as Dr. Stockton has indicated. There is a cirrhosis of the liver which can be detected by palpation; ordinarily one can not feel the liver and recognize it in the healthy state, everything else being equal; but when that liver becomes cirrhotic we may detect its edge. I have been surprised to find a large number of ambulatory cases in which the liver was palpable.

Dr. Musser has referred to congestion of the rectum being present in cirrhoses of the liver without there being visible hemorrhoids; in this the cirrhosis of the liver is sufficient to produce a slight mechanical effect upon the circulation, producing a proctitis, or, at least, producing enough congestion to cause bearing-down pains and pressure. This I have frequently seen, and I have frequently prevented surgical operation by medical treatment directed to the liver, which caused the hemorrhoids to disappear.

There is a form of cirrhosis of the liver that has passed the beginning stage, which has some relation to intestinal intoxication; it certainly has some relation to intestinal disturbances. For, if one places a case of that kind under good hygienic surroundings, with a proper selection of food, with attention to the excretions of the body, and especially to the unloading of the portal circulation by some simple means, the palpable liver will soon cease to be palpable. Years ago —nearly twenty years ago, I think—I read an interesting paper by Kussmaul upon muriate of ammonia; he administered this in the early stages of hepatic cirrhoses, claiming that it prevented proliferation of the connective tissue cells and so cured the cirrhoses in the early stages. Since then I have used muriate of ammonia in many cases of liver cirrhosis with the result that the induration has diminished and even disappeared. Perhaps the hygienic measures coincidently practiced may have produced the good effect ascribed to the drug.

Associated with mild cirrhosis of the liver there are symptoms of intoxication differing somewhat from those mentioned by Dr. Stockton. Many patients complain of lumbago-like symptoms; others of sciatic pain; others of musculo-spiral pain. They have this autointoxication, but it is not associated with drowsiness and hebetude, such as appears in true intoxication due to cirrhosis of the liver. In many of these cases I have found a hard, palpable liver, and, under the treatment mentioned, the symptoms have disappeared.

DR. JAMES B. HERRICK, Chicago—We have heard much from Dr. Musser and from Dr. Stockton regarding the treatment of cirrhoses of the liver and they have dwelt upon the treatment of the milder cases of this disease, or the treatment of the disease in its incipiency. It is an extremely hazardous thing to venture a diagnosis upon symptoms of "biliousness," and yet the more one studies these cases the more one is inclined to view "biliousness" as an important diagnostic aid. A patient with coated tongue, headache, who is drowsy, with alimentary disturbances, with a sense of weight or pain in the right hypochondriac region, with a palpable liver, who is alcoholic, perhaps with hemorrhoids, can be suspected of having an incipient cirrhosis of the liver; and if there is any time in the history of this disease when we can do any good it is in the beginning. It has been my experience to see a few of these cases that have improved under treatment and I have ventured to place upon the history sheet, with an interrogation point after it, "beginning cirrhosis of the liver." Proper diet, with attention to the alimentary canal, and the giving of laxatives seem to do the most good. I have used, empirically, muriate of ammonia, because Dr. Billings had told me of his experience with it, and I wish to confirm what he has said in regard to its efficaciousness in these cases. Another remedy

that I have used, in a measure empirically, is the salicylate of sodium.

Musser has referred to several cases in which operation has been successful. I have never been convinced of its advisibility in all cases and I would not advocate an operation save in exceptional instances. Not long ago I had a very instructive case occurring in a patient with atrophic cirrhosis of the liver. He was about the wards of the hospital for months. He had an ascites which was repeatedly tapped but it as often recurred. This patient was bothered a great deal by a large umbilical hernia which one day became strangulated. He was removed to the surgical wards and an operation was performed successfully. At the time of the operation a large amount of ascitic fluid was released. The liver was examined by touch and sight and found to be a typical one of atrophic cirrhosis. After the operation that man never had a recurrence of the ascites. One year later he died of pulmonary tuberculosis.

Dr. Musser has referred to chills and fevers. The most typical case of chills and fever ever seen by me was in a patient in whom there were daily paroxysms, and these paroxysms lasted for many months; this was a case in which I believed there was a hypertrophic cirrhosis of the liver with jaundice. The patient died from hepatic intoxication. An operation had been advised but was refused by the patient. Punctures of the liver revealed no pus and no micro-organisms. There was no reason to suppose the patient had gallstones. There was no malaria present. That chills and fever do occur in cirrhosis of the liver has been shown by quite a number of writers. Riva, for example, has dwelt at length upon the occurrence of chills and fever in cirrhosis of the liver and in syphilis of the liver.

Dr. Futcher's paper was very complete and it deserves discussion, but I do not feel competent to discuss it because I have never seen a case of hemochromatosis, except one—perhaps the case he referred to—shown by Dr. Osler at another Association. The thought has occurred to me whether or not there could be any connection between the purpura and the cirrhosis of the liver. Is the purpura the result of a toxemia or it it possible, on the other hand, that the repeated extravasation and disintegration of the blood can give rise to pigment and secondarily to the cirrhosis?

There is a cirrhosis of the liver called by the French a "mixed cirrhosis." We have cirrhoses of the liver that are clearly recognized, clinically and postmortem, as atrophic cirrhoses; on the other hand, we have cases that are just as clearly hypertrophic cirrhoses. I know that in practice I am frequently in doubt as to what name I am to apply to a given case of cirrhosis of the liver, for, in many cases, some features are those of the atrophic form and, in others, of the hypertrophic form. I have found that, in many cases, even the pathologist is in doubt, even when he has made a microscopic examination, because certain pathological findings are found that fit in with the atrophic form, and others that fit in with the hypertrophic form of cirrhoses. The French have described a "mixed cirrhosis" and it seems to me not only a convenient term to apply but one that is justified on clinical and pathological grounds. Patients who are jaundiced for three or four years, having frequent attacks of "biliousness," who become weak and lose weight, whose livers and spleens are enlarged with symptoms that denote obstruction to the portal circulation, we say are subjects of hepatic cirrhosis, and they die of hepatic intoxication. Such cases present some features of both forms of the disease; they are really "mixed" forms of cirrhosis.

Dr. Musser has also referred to the importance of hemorrhoids in cases of cirrhosis of the liver. I should also like to say, aside from the subject, that one should never forget to make a rectal examination for carcinoma of the rectum in cases of hemorrhoids.

Dr. William E. Quine, Chicago—The feature which has directed my attention more frequently than any other in this connection is one concerning the early identification of cirrhosis of the liver before ascites has made its appearance. Those of us who have been long engaged in the practice of medicine were taught that the identification of cirrhosis of the liver could not be made with any degree of certainty before ascites had made its appearance, but increasing experiences of this kind have taught us that an array of phenomena ordinarily makes its appearance pointing to its possibility and the diagnosis of chronic interstitial hepatitis may be safely predicated; there are evidences of auto-intoxication connected with the establishment of the collateral circulation which permits the blood from the gastro-intestinal canal to gain an entrance to the systemic circulation without passing through the liver; this furnishes by far the most important and striking of these phenomena. The symptoms have already been dwelt upon with a sufficient degree of minuteness which obviates the necessity of referring to them again. Dr. Stockton has directed attention to the liability of gastrorrhagia, associated with evidences of diminution in the size of the liver and more or less enlargement of the superficial veins of the abdomen. In the absence of ascites and the presence of these other phenomena he was able to predicate with some precision the liability of the occurrence of gastrorrhagia. This is a point in the early diagnosis of chronic interstitial hepatitis that is entirely new to me, but I am now ready to expect it and I have no doubt whatever, as I ruminate upon my own experience, that it is a point of value.

In relation to the treatment of cirrhosis of the liver, and particularly to the early treatment of it, my experience has been similar in kind to that of some of the gentlemen who have spoken and to some of the essayists who have introduced a consideration of the subject. I have never known any diuretic to make any impression whatever upon the ascites of cirrhosis of the liver. So far as I know the administration of such diuretics as digitalis, squills, calomel, or blue-mass, or any of those mentioned, uniformly fails to make any impression whatever upon the clinical course of the disorder. I have used the chlorid of ammonia. During the whole of my professional career, until quite recently, I have treated these patients exclusively upon the basis recommended by German writers. Unlike my esteemed colleagues I have never found any remedy which was of value in the early treatment of cirrhosis of the liver such as they claim for chlorid of ammonia. It is a medicine of very small utility. So far as any medicinal treatment of this disease is concerned the most efficacious consists, in my opinion, in the administration of moderate doses of hydragogue purgatives with a view of depleting directly and persistently the portal circulation. An auxiliary is to be found in the application of a firm bandage to the abdomen.

In my experience the omission of the application of a firm bandage immediately after the abstraction of the ascitic fluid by tapping or aspiration is a step that no practitioner can well afford to omit. The systematic and thorough bandaging, I do not hesitate to say, lessens the rapidity with which the ascitic fluid returns and, I have thought, increased the rapidity with which the collateral circulation is established.

I have had no experience with the establishment of permanent drainage, but it is a procedure which commends itself to me. I have had but little experience with the operative treatment of ascites due to cirrhosis of the liver. The case referred to by the speaker who just preceded me came under my notice after it had been operated on; it was one in which an operation was demanded in the course of a cirrhosis of the liver by reason of the occurrence of a strangulated umbilical hernia. In one other case that came within my knowledge the operative treatment for cirrhosis of the liver was promptly successful. If I was asked to choose now between these methods of operative treatment I should have recourse to permanent drainage before undertaking to establish vascular connections between the omentum and the parietal peritoneum, or between the omentum and the peritoneum lining the under-surface of the diaphragm.

Dr. William Bailey, Louisville, Ky.—In most of these forms we have gastro-intestinal disturbances which must be controlled by abstaining from alcohol, by proper dietetic regime, etc., and I am sure that by the administration of such remedies as phosphate of sodium, muriate of ammonia, etc., we shall

accomplish some good. Where there is auto-intoxication, instead of giving the mild chlorid, I believe in the use of the bichlorid on account of its disinfecting influence upon the gastro-intestinal canal. That canal should be drained by means of saline cathartics, such as phosphate of sodium. I have had no experience with the surgical features, except by tapping. The circulation in the liver is better after tapping and drainage; therefore, I do not think we should allow the pressure to exist which comes from the increased accumulation of the fluid.

DR. O. T. OSBORNE, New Haven, Conn.—I think we should be somewhat chary in making a diagnosis of beginning cirrhosis of the liver with simply the so-called bilious symptoms; we may have conditions of biliousness in intestinal indigestion, with headaches, etc., in which there may be some congestion of the liver which will give a slight enlargement that is not at all a beginning cirrhosis of that organ. Many cases that are treated as a gastritis are really trouble in the duodenum, and I think inflammation of the duodenum is of frequent occurrence. For a long time ammonium chlorid has been supposed to be almost a specific in inflammations of the mucous membranes of the air passages, but I believe that it is just as specific for inflammations of mucous membranes anywhere. If there is a catarrhal inflammation of the gall ducts giving symptoms of biliousness it is certainly well treated by this drug; it improves the condition here in the same way that it betters a bronchial catarrh. The congestion in the duodenum, or in the ducts, give a diminution in the amount of bile which should be thrown out into the intestine; therefore, we must get intestinal fermentation and an intoxication causing the bilious condition. Now, we know that salicylic acid is one of the best antiseptics that we have; hence, this drug would be a correct treatment.

I can not help but ask a question in connection with the treatment by anastomosis. We know that, in cases of tuberculosis of the peritoneum with a large amount of ascitic fluid, simply opening up the abdominal cavity is productive of great good. I should like to ask how much the opening of the abdomen and how much the anastomosis had to do with the good results obtained in the case reported by Dr. Herrick?

DR. ROBERT B. PREBLE, Chicago—I should like to speak of a limited experience with the Talma operation. I have found in the past four years but two cases of atrophic cirrhosis in which operation seemed to be justifiable; one of these died immediately from the effects of the operation, and in the other, the operation did not produce any beneficial effect. Since the operation the second case has been tapped at intervals of ten to fourteen days and, so far as can be seen, there has been no effect except that upon the abdominal wall there is now developing a fairly well-marked collateral circulation which was not present before the operation. I have seen but one case in which the operation was followed by brilliant results.

I wish to question a statement that has been made in reference to the presence of hemorrhoids. Lécorché has stated that hemorrhoids are not more common in cases of atrophic cirrhoses than in patients in general. When I first read this statement I was very much surprised, but since then I have particularly inquired into this question and I must confess that it is a correct statement. Hemorrhoids are not more common in atrophic cirrhosis of the liver than in patients in general.

Gastric hemorrhages due to atrophic cirrhosis are more common than formerly supposed, although strictly speaking these hemorrhages are not gastric; a better term would be "esophageal." A very small portion only of the hemorrhages are from the stomach, but it comes from the veins above the cardiac end of the stomach. The lower end of the esophagus bears somewhat the same relation to the portal circulation as does the rectum; the blood there fuses in somewhat the same way with the systemic circulation as it does about the rectum, although the physical conditions are different. The veins of the lower end of the esophagus are within the thorax, and the abdominal are not. With each inspiration a negative pressure is created within the thorax and in a way aspirates the blood directly from the portal veins into those above the diaphragm. This would favor the development of anastomoses between the veins of the stomach and those of the esophagus, so much so that we would expect the varices to be more common in the esophagus than they are. It is easy to see how the veins of the esophagus could be injured by the passage of a rough bit of food or some instrument and hemorrhage result.

It is extremely difficult to differentiate these hemorrhages from those occurring in ulcer of the stomach. I have had a personal experience in five cases in which such hemorrhage occurred and all had these points in common: all were beyond 40 years of age, one being 55; all were addicted to the use of alcohol; all were taken with hematemesis when at work and there were none of the ordinary symptoms of gastric ulcer present. After the occurrence of the hemorrhages they all died, and it was then found that the source of the hemorrhage was an ulcer of the stomach.

DR. G. W. MCCASKEY, Fort Wayne, Ind.—I wish to mention a case which, according to the facts stated by Dr. Musser, comes close to the "high-water mark" with reference to the number of tappings for ascites. The patient was under the care of my colleague, the late Dr. James S. Gregg of Fort Wayne, and during my association with him in the case about one hundred and twenty aspirations were made. The patient then removed to Chicago where frequent tappings were kept up until his death two or three years later and it is probable that he was tapped one hundred and fifty times.

Concerning the etiology of cirrhosis of the liver, I wish to emphasize the importance which I attach to clinical observation of primary disease of the gastro-intestinal tract. There is a large group of cases which I believe, as stated by one gentleman in this discussion, have their origin in these conditions. While the statement is not susceptible of demonstration, I believe it is a fact that in the majority and perhaps in all cases of chronic gastro-intestinal disease we have at least an initial cirrhotic condition of the liver. Boix, in his little brochure on the liver of dyspeptics, says, if I remember correctly, that it is not so much the result of the alcohol as of the gastritis and enteritis due to the alcohol. My own observations in dealing with a large number of chronic cases of this character leads me to practically the same conclusion. Of course, there are other causes for cirrhosis of the liver which I will not consider.

DR. CLARKE GAPEN, Madison, Wis.—I do not believe that anyone can fail to be interested when he takes up the subject of ptomains and notes the enormous number of new clinical combinations that are produced as the result of decompositions occurring in the intestinal tract, some innocuous and others exceedingly poisonous. In investigating this question I have come to the conclusion that, in nine out of ten cases, the true explanation of the so-called liver of intoxication is the development of some of these poisonous substances which are absorbed into the blood and so find their way to the nervous system and liver tissue and so produce their effects. Therefore, as the result of my own experience, I have, for some time past, pursued a treatment that was directed towards the prevention of such decompositions and the elimination of their products. One gentleman has alluded to the salicylate of sodium as being of value in these cases and I have no doubt of his correctness, but I have found that this agent is exceedingly irritating and decomposes in the upper alimentary tract and so is liable to aggravate the condition. I remember a case occurring two years ago which had resisted almost everything; it was characterized by alternating constipation and diarrhea with offensive stools, etc. In this case I used guaiquin, which is a combination of guiacol and quinin, and within three days all the symptoms disappeared. I think that of all remedies pure water in large quantities is the most effective. This idea was suggested to me by the methods in vogue at one of the noted mineral springs of this country. The patient there is directed to drink two glasses of water; then walk a mile; then drink two more glasses, and walk a mile; and this is kept up until the alimentary canal is washed out and the toxemic symptoms disappear. I give water in these cases with the

principle in view that if water is poured in at the top of an open tube it will run out at the bottom. I have had, recently, two cases in women who were profoundly bilious subjects and who presented symptoms of so-called liver toxemia whom I treated in this way with great benefit. The relief of the constipation was not sufficient in either of these cases. in both, however, I gave benzozol, which breaks up in the lower part of the alimentary tract well down in the small intestine; guaiquin will also do this and is an excellent tonic remedy as well as an intestinal antiseptic.

Dr. George W. Webster, Chicago—I wish to call attention to one or two symptoms occurring in those cases where there is a considerable collateral circulation established, and in which ascites develops suddenly. If the belly be tapped the fluid rapidly refills and the patient goes on to a rather speedy death in spite of the treatment. During the past two years I have seen two cases which came to autopsy. In one there was no ascites at first but there was a large collateral circulation established; later ascites occurred very suddenly; the patient was tapped, but within thirty-six hours the enlargement of the abdomen was as great as it was before; the fluid re-accumulated in spite of frequent tappings, and the patient died within six weeks.

In another case, there was a fair amount of fluid in the abdomen, but very little collateral circulation. In this case, too, there was a very rapid re-accumulation of fluid, the abdomen refilling within thirty-six hours after tapping. A thrombus of the portal vein was found at the postmortem in both these cases. I think it was Welsh who first called attention to this point.

It has been my experience to find that the inferior hemorrhoidal veins are enlarged; but more often there is an enlargement of the veins in the lower end of the esophagus. All of these cases have gastro-intestinal symptoms and many times patients come to the physician for treatment of some stomach trouble and it is very common for them to receive such routine measures as the Ewald test breakfast with washing out of the stomach; the introduction of the stomach tube has often been followed by fatal hemorrhage. Therefore, one should be very careful not to permit instrumentation of the esophagus in cases where we suspect varicose veins.

Dr. W. H. Neilson, Milwaukee—I am disappointed in the fewness of allusions made to the treatment of hypertrophic cirrhosis because our patients certainly suffer greatly from the nervous phenomena, the itching, and the other symptoms that are produced by the presence of bile, and yet we are not able to find any treatment for their relief. I merely rise to ask if there are any gentlemen present who can relieve these symptoms of this particular form of cirrhosis?

Dr. Charles G. Stockton, in reply—I should like to get a little better understanding of Dr. Preble's views in the matter of the dilatation of the hemorrhoidal veins. I think that the Doctor will agree that the hemorrhoidal veins are very greatly enlarged, as a rule, in atrophic cirrhosis of the liver; but it does not always follow that there is a development of hemorrhoidal tumors with large descending hemorrhoidal veins. I fully agree with the statement that enlargement of the hemorrhoidal veins is constant in the atrophic form of cirrhosis of the liver. The criticism of the term "gastrorrhagia" when the hemorrhage occurs in the lower part of the esophagus is well taken by Dr. Preble; it is often esophageal in origin, but not always so.

Dr. Futcher, in reply—I had hoped there would be more discussion on the subject of pigmentation in association with cirrhosis of the liver. I attribute the lack of discussion to the fact that this disease is undoubtedly very uncommon, as shown by the fact that only four cases have been reported in this country. I should like to utter a word of warning against the possibility of these cases being mistaken for Addison's disease. In the particular case of which I read brief notes a provisional diagnosis of Addison's disease was made when he first came under observation, but the existence of an enlarged liver and spleen and the presence of hemosiderin in the cells of the sweat glands and rete malpighii.

I am glad that Dr. Herrick referred to the possibility of purpura being a cause of cirrhosis of the liver. I might say that in Anchütz's series of 24 cases evidence of a hemorrhagic diathesis was present in only 6 cases. Purpura was present in moderate degree in 3 cases; in 1 case there was epistaxis; in another hematemesis and the sixth had hematuria. It will thus be seen that purpura did not play a very important part, either primarily or secondarily, in this series.

I should like to refer to a case at present in Dr. Osler's service at the Johns Hopkins Hospital. It is a case of purpura, of seven years' standing, occurring in a man 33 years old. During this time he had almost persistent purpura and he now has a diffuse purpura eruption below the level of the waist. An interesting feature of the case is the markedly enlarged liver and spleen. Dr. Herrick's suggestion that there may be an absorption of blood pigment in such cases, with consequent enlargement of the liver and spleen, is quite apropos in this case. It is possible that this case may be an anomalous form of hemochromatosis.

In regard to the experience with the surgical treatment of ascites at the Johns Hopkins Hospital, I may say there have been six cases operated upon by Dr. Bloodgood and Dr. Mitchell with, I think, results that have justified the operation. The first case was operated on by Dr. Bloodgood four years ago. He gave a marked alcoholic history. The usual operation of stitching the omentum to the abdominal wall was performed, and the patient was cured of his ascites, which has never returned. It is four years since the operation and this man has continued taking alcohol in large quantities and whenever he reports to Dr. Bloodgood he is in an intoxicated condition.

This satisfactory result under such unfavorable conditions is very encouraging. In the second case operated upon there was but a temporary improvement. Two cases were not improved by the surgical interference. One case died twenty-four hours after the operation. There is now one case under observation in the hospital who was operated upon two or three weeks ago and up to the present time has been markedly improved. Nature had already set up an anastomosis between the omentum and the abdominal wall to which it was quite adherent. The transverse colon was also adherent to the anterior abdominal wall and in the adhesions large blood vessels were found.

A CASE OF ACROMEGALY PRESENTING CERTAIN FEATURES OF UNUSUAL INTEREST.*

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In 1886 acromegaly was first introduced to the medical world, through the report of Marie, the name having been applied by him to a disease characterized by a progressive enlargement or overgrowth of certain portions of the body, all tissue being more or less involved, and the hands, feet and face being the earlier and chief seats of the morbid change. There can be no doubt concerning the close relation of acromegaly to giantism; indeed, it may be regarded as a sort of localized giantism, due to certain limitations in the pathologic seat and process, or to the age at which the disease begins. Acromegaly is so strikingly objective in its symptomatology that one finds it difficult to explain how it could have been disregarded for so many centuries. Up to 1891 only 37 cases had been reported, yet in 1893 the number had reached 83; in 1898, 218 had been reported, and at the present time nearly 300

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

cases are on record. Even this number does not rob it of its claim to rank as one of the rarest of diseases, nor has it in any way lost its interest for the clinician and pathologist.

Souza Leite, in 1890, first pointed out the fact that in nearly every case it was possible to demonstrate an enlargement of the pituitary gland. This curious gland, normally weighing but half a gram, has been found the size of a hen's egg or even larger, and by its peculiar structure suggests the possession of a double function. In its development its relation to both glandular and nervous structures is evident as its anterior portion is developed from the ectoderm of the buccal cavity, its posterior lobe from the fourth ventricle. The anterior portion is glandular in structure; the posterior contains nervous tissue and a close analogy to the thyroid gland is suggested. It is supposed to possess receptive, selective and elaborative functions. The possible connection between diseases of these two



Author's case of Acromegaly.



Normal hand, same exposure and focal distance.

bodies, and hence between myxedema and acromegaly, is suggested by the fact that in myxedema the pituitary body is often enlarged, while in acromegaly the thyroid is frequently the seat of a sclerotic process.

A. Hymanson reported a case in the *Medical Record* of July 1, 1899, in which the close relationship or coincidence of these two diseases was distinctly suggested, and one of the most interesting features in the case reported below is found in the apparent combination or coincidence of the two diseases. In my patient there are also certain divergences from the type, which make the case one of peculiar interest. Exceptional opportunities have been offered for close observation, extending over a period of three years.

CASE REPORT.

The young man, Girard, is 25 years of age, has had no fixed occupation, but for some years prior to the development of the disease had spent the winter months on the ice, being employed as an ice-cutter, a point of some importance, inasmuch as the history of many of these cases has strongly suggested the influence of prolonged exposure to cold and dampness as a predisposing or exciting cause. The family history is negative. Lues venerea is denied, and there is no history of past illnesses of any importance. Three years ago he suffered from swelling of the knee-joints, which he naturally associated with his winter occupation; he also suffered from lassitude and a certain amount of general weakness, which prevented any steady work. Two years before this time, that is, five years ago, or at the age of 20, he noticed a rapid enlargement of the hands and feet, and the members of his family noticed and commented on the change in his physiognomy.

The enlargement of the hands and feet steadily continued and progressed quite rapidly up to the time that he presented himself in the writer's clinic, three years ago. At that time the following description of his appearance was placed upon the case record:

The hands and feet are enormous, the wrist and ankles free from inflammation but bulky, thick and in strong contrast with the forearms and legs, which in the upper four-fifths of their length are quite normal. The patient complains of langour and weakness but has had none of the severer vertical pains so common in acromegaly, nor does he complain of pain in the lumbar region or limbs. There are no signs of disturbance of the special senses nor of the nervous system. The skin throughout the larger portion of the body is nearly normal and lacks the harshness of myxedema. The appearance of the face is especially interesting; there the skin is thickened and hypertrophied, though not rough. Deep furrows have formed over the frontal region, both upper and lower eyelids are thickened and the ears appear clumsy and tumid. The superciliary ridges project, the nose is large and tumid, the nasal arch is prominent, the malar bones project markedly and the lower jaw, while not distinctly prognathic, is apparently enlarged both from the angle to the symphysis and vertically. The upper jaw is enlarged and the patient's attention has been called

to that fact by the gradual separation of certain of the teeth and by the marked forward projection of the superior dental arch. The enlargement of the upper jaw has no doubt masked the changes in the lower jaw, depriving the case of one of the so-called typical signs of the disease. Both the upper and lower lids are thickened and clumsy, the tongue is large but not excessively so, the larynx is enlarged as well, and its cartilages are apparently the seat of hypertrophy. No deformity of the spine or chest exists, nor are there any marked changes in the clavicles or the scapulæ. The fundis oculi is normal and the hands present the usual spade-like appearance with the sausage-like fingers and square, flat nails showing longitudinal striation. The radiograph demonstrates the remarkable enlargement of the bones both in length and thickness. The process seems to involve the lower fifth of the adjacent long bones, and of their overlying tissues, which present the same typical characteristics as the hands. There is no marked enlargement of the great toe, such as has been described in several instances; neither the hands nor the feet are the seat of pain, nor are their movements much restricted. A feature of especial importance, however, is the marked increase in the



Author's case of Acromegaly.

bulk of the overlaying tissues, which present the appearance and the sensation of a hard œdema exactly like that of myxœdema. Aside from the presence of dulness over the manubrium the internal organs seem to be normal. This dulness is supposed to be related to persistence of the thymus gland, a condition to which some writers would ascribe a great deal of importance and which some late investigators have shown to be present in a remarkably large proportion of these cases. The condition of the knees is simply indicative of chronic synovitis, the synovial sacs being tightly distended by the contained fluid. This description applies well to the present condition, save that the bony enlargement seems to have progressed, while the soft parts have shrunken to a marked degree.

The case seems to the writer to present several features of marked interest. It is sufficiently typical to make the diagnosis absolute; at the same time it lacks the marked prominence of the lower jaw and in certain respects strongly suggests myxœdematous change. For the past five or six months the patient has suffered from cystitis due to a neglected specific urethritis. This is slowly subsiding and it does not appear to influence the original disease in any way. The examination of the blood reveals nothing abnormal. The treatment has been solely by thyroid extract, the result being an immediate and marked amelioration of the myxœdematous condition.

DIAGNOSIS OF ACROMEGALY.

Difficulties in connection with the diagnosis of acromegaly can rarely arise. The late symptoms are so striking that they offer an excellent opportunity for street-car diagnosis, and when fully developed the disease would seem to be quite unmistakable. It is customary, however, to point out the differences between acromegaly, osteitis deformans, myxœdema and pulmonary osteo-arthropathy, though no one can hardly confound these diseases when they are fully developed. In the earlier stages myxœdema and pulmonary osteo-arthropathy may offer some difficulty, and the following facts should be borne in mind:



Author's case of Acromegaly. It will be noticed that a decided change is taking place in the great toe, though simple inspection does not reveal it.

Myxœdema.—The hands and feet appear to be the seat of a hard œdema—this symptom is present in this case—but the bones remain unchanged and the face is full and round, rather than ovoid, as in acromegaly. There is also well marked involvement of the soft tissues, falling of the hair, very often extreme tenderness over various portions of the body, and marked mental depression, apathy or irritability. In certain cases of

acromegaly, as in this, it seems certain that myxedematous change is present, and pathologic research and the fact that some patients improve for a time under thyroid would indicate that the two conditions may coexist in the same individual.



Author's case of Acromegaly.

Osteitis Deformans.—The hands and feet are here unaffected and the cranium and shafts of the large bones are chiefly involved.



Author's case of Acromegaly.

Gianiism.—This is symmetrical excessive growth and need not be confounded with acromegaly, though it is probably almost identical in etiology. Curious examples of localized enlargement affecting a single member have been noted, and in a case of acromegaly reported by Dr. Kanthack, the second toe of one of the enlarged feet was enormously hypertrophied.

Pulmonary Osteo-arthropathy.—In this disease the bones only are involved and the face is usually normal; the joints are often swollen and painful and there is usually a chronic pulmonary lesion. Moreover, the appearance of the hand is wholly unlike that presented by acromegaly, the changes being chiefly in the distal phalanges, which are clubbed and carry an elongated, curved nail.

PROGNOSIS.

These cases progress slowly, often lasting twenty to thirty years, tending to death by exhaustion, syncope or intercurrent disease.

TREATMENT.

The treatment of acromegaly has not kept pace with its pathology. Thyroid is sometimes of temporary benefit, and the pituitary body has been administered without marked effect. The conjoint administration of both remedies would seem to be indicated in my case. Marie has advocated the iodids, and others have spoken well of arsenic. Until we know more of this strange disease all treatment is at best a "forlorn hope," and our patient can hope for little aid or comfort at our hands.

NOTE: The clavicles and ribs now show marked enlargement.

THE INCREASING STERILITY OF AMERICAN WOMEN.*

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This investigation is based upon 1700 cases in private and dispensary practice in St. Louis: 1146 American-born, 357 Irish and Germans, 197 negroes. The Americans are grouped into the laboring class from dispensary practice, and the higher class from private practice; amongst these I have distinguished the native American, the American of American parentage, and the American of German and of Irish parentage; in addition, there are 2038 women taken from the genealogical records of Massachusetts.

The results obtained indicate that at the present time *20 per cent. and over of married women are childless,* whilst in the preceding centuries, in the earlier days of the country, only 2 per cent. were sterile; and when we compare these figures with the generally accepted rate of sterility, 11 per cent., found by Simpson and so generally accepted as to be called "Simpson's law," the difference is so great that it would appear that proof is needed before these facts can be accepted; it seemed impossible that sterility should have increased to such an extent in this country and that it should here be so much more common than in Europe.

To secure this proof I add the study of other records and of other of the phases of woman's functional life which are closely correlated: fecundity, intimately associated with sterility, varying in an inverse ratio, and miscarriage and divorce, which are directly parallel with childlessness.

This was necessary, too, because statistical and reliable data with regard to sterility are not numerous. Such as can be found I have here presented, mainly culled from gynecological writers; facts

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from other sources also were necessary to corroborate my results; valuable for this purpose have been the unpublished records from the dispensary of Dr. Chadwick in Boston, which he has kindly placed at my disposal, 1374 Americans, likewise grouped as Americans or American parentage and of Irish parentage, and 754 Irish. The vital statistics of Michigan, by Dr. Cressy L. Wilbur, afford valuable data as to fecundity among Americans and foreigners as in that state nationality of parents is noted. Similar data I have for Massachusetts from the unpublished manuscript of Dr. Kuczynski, elaborated from the state census, and this, in addition, presents statistics of sterility as well as fecundity. A proof more conclusive than any other one fact is the identity of my results with those deduced from the census of these two great states by the able statisticians who have presented them. The United States census gives only a very general estimate.

Definition.—It may be well to define the terms as here used, as they are not always applied in the same sense. By sterility I shall understand the condition of the woman who has been married three years without giving birth to a full-term child: by absolute sterility I hold to mean that she has never conceived; by relative sterility that she has conceived and miscarried, but has never given birth to a living full-term child;[1] abortion and miscarriage I shall use indiscriminately as indicating the expulsion of the ovum before the time of viability.

Sterility among the laboring classes in St. Louis is 21 per cent., varying in different groups 20.4 to 23.7 per cent.; in Boston 23.7 per cent., and 20 per cent. for all American born throughout the entire state, according to the Massachusetts census of 1898. My own records in private practice in St. Louis show 23.6 per cent. of native Americans barren and Americans of German parentage 26.3 per cent., an unusually high rate, which harmonizes, however, with the condition in Boston among Americans of Irish parentage, 27.2 per cent. An equally high sterility, in fact higher than among any other group, is attained by the college graduates, of whom comparatively few marry, and a large proportion of those who do marry are barren, 33.7 per cent. as reported in the investigation of 1885, and 20.5 per cent. in 1900, averaging 27.3 per cent. See Table 1.

TABLE 1.—STERILITY.

Number.	Observer.	Sterility. Natural and artificial barrenness. Class.	Sterility. Natural and artificial barrenness. Nationality and Nativity.	Locality.	Total number of married women.	Per cent. of married women without children. Sterility. Absolute.	Relative.	Total.	Fecundity. No. of children to each married woman.
						Per ct.	Per ct.	Per ct.	
1	. . . . .	Genealogical Record, 1600 to 1850.	. . . . .	American Colonies.	2038	. . . .	. . . .	2.0	6.0
2	Engelmann	Laboring class.	All American born	St Louis	804	12.8	8 5	21.2	2.1
3	Chadwick.	" "	" " "	Boston	1,374	. .	. . .	23.72	1.77
4	Engelmann	Higher class	Americans of American parents. . .	St. Louis	228	9.2	14.4	23.6	1.8
5	Chadwick	Laboring class.	" " " . . .	Boston	874	.	. . .	23.2	1.7
6	Engelmann.	Higher class	Americans of German parents. . .	St. Louis	114	17.5	8.8	26.3	1.9
7	Chadwick. . . .	Laboring class	Americans of Irish parents	Boston	334	. . . .	. . . .	27.2	1.9
8	"	" "	Americans of mixed parents. . . .	"	57	. . . .	. . . .	28.0	1.9
9	Engelmann	" "	Germans	St. Louis	188	10 3	6 5	17.0	3.5
10	"	" "	Irish	"	118	11 0	6 0	17.0	4.2
11	"	" "	All American born	"	1,146	13 2	10 6	23.7	2.0
12	Kuczynski	All classes	" " "	Massachusetts census, 1898.	. . .	. .	. .	20.2	2.7
13	Engelmann . . .	Laboring class..	All foreign born	St Louis	306	10 6	6 3	17.0	4.0
14	Kuczynski.. . . .	All classes	" " "	Massachusetts census, 1898.	. . .	. . .	. .	11.2	4.5
15	Wright and Smith . .	College alumnæ	American born	United States . . .	559	. . .	. . .	25.3	1.6
16	Smith	Higher class—non-college.. .	" "	" " . . .	331	. . .	. . .	15.7	2.1
17	Sidgwick	College alumnæ	English..	England	58	. . .	. . .	27.6	1.5
18	" . . .	Higher class—non-college.. .	"	"	87	. . .	. . .	36.0	2.4
19	Simpson and Gatton .	British peerage	"	"	495	. . .	. . .	16.4	. .
20	" " . . .	Villagers	"	"	675	. . .	. .	9.6	4.5
21	Engelmann . . .	Laboring class..	Negro..	St. Louis	197	14.8	9.5	24.3	1.9
22	Vogt.	" "	Norwegian.	Norway.	351	.	. .	2.5	5.8
23	de Ott.	Peasant.	Russia	Kalnga district. .	175	. . . .	. . .	2.8	7.2
24	Beigel.	Laborer and peasant. . . .	Alsatian.	Alsatia	40,510	. . . .	. . .	3.5	. .
25	Szukits	Laboring class	Austrian.	Austria . . .	863	. .	. .	7.4	4.5
26	Hannover.	" "	Danes.	Denmark	243	. . . .	. . . .	10.3	4.7
27	Turquam..	All classes.	French	1774	. .	. . . .	. . .	27.3	1.7
28	"	" "	"	1886	. .	. . . .	. . .	20.0	2.0
29	"	" "	"	Paris, Lyon, Rouen. .	5,283	. . .	. . .	27.3	1.5
30	Leudet	" "	"	Rouen.	1,207	. . .	. .	23.6	2.6
31	Mayer.	" "	German..	Berlin	5,195	17 2	3 2	20.4	3.5
32	"	Middle class	"	"	2,532	21.7	4.0	25.7	3.0
33	"	Laboring class..	"	"	2,763	12.7	2 4	15.1	4.0
34	Leudet	Higher class	French	Rouen.	134	. .	. . . .	18.7	2.0
35	"	Peasant	"	"	153	. . . .	. . . .	15.7	2.5
36	"	Laboring class—city.. . . .	"	"	920	. . . .	. . . .	25.7	2.7

For the end of the eighteenth century valuable investigations as to fecundity in Massachusetts are to be found in the "Transactions of the American Academy of Arts and Sciences." Beigel, Mayer, Leudet, De Ott, Vogt, Szukits, Simpson and Mathews Duncan give important data for Germany, France, Russia, Norway, Austria and England, and Nathan Allen with regard to the New England states, Kuczynski for Massachusetts, and Wilbur for Michigan. Finally, for college women, Carroll D. Wright and Mrs. Mary Robert Smith in the United States, with Mrs. Henry Sidgwick in England, is our authority.

The facts presented corroborate my results in every detail and confirm the high sterility and low fecundity in the United States, conditions worse than in any European country save France, and for the native American population worse than that of France.

My own records of Irish and German give only 17 per cent. among negroes, where invariably I find unfavorable functional conditions, 24 per cent. In Massachusetts 20.2 per cent. of Americans are childless, and

1. Properly speaking, this should include all those whose sterility is intentional, due to means of prevention; but these can never be all ascertained, not even can we determine with certainty all those who have miscarried. The result depends entirely upon the confidence of patient in physician, and the physician's skill in securing the history.

only 13.3 per cent. of foreigners; Germans 11.2, French and Irish 11.6, English 14.4 and English-Canadians 19.5 per cent., closely approximating the American, which I have likewise found in all other functional relations, whilst the French-Canadians differ greatly, with a lower sterility and higher fecundity—in other words, with a more normal and healthy functional life.

Foreign records show a great variation from the lowest sterility in Norway, 2.5 per cent., and in one of the districts near Moscow, 2.8 per cent., to 27.3 per cent. in Paris, Lyons and Rouen, in some of the departments of France only 16.8; in Alsace, whose inhabitants differ functionally as well as racially with a later puberty, sterility is very low, being only 3.5 per cent.[2]

Greater luxury and wealth invariably go hand in hand with higher sterility. Mayer of Berlin finds 25.7 per cent. among the higher and middle classes, and only 15 per cent. among the laboring classes. Sir James Y. Simpson found 16.4 per cent. among British peeresses, no observations exist; he himself believes the numbers too few to merit attention. My investigation shows that in this country this group of relatively sterile, or as they are erroneously termed by some, secondarily sterile, is over 8 per cent. of all married women; that is, 8 per cent. admit the fact; the actual number is undoubtedly larger, as some conceal the truth and others who are willing to admit have not distinguished between an early miscarriage and a free flow. In my dispensary practice the absolutely sterile are 11.6 per cent. and the relatively sterile 8.8 per cent., and this number remains about the same, whilst the number of the absolutely sterile varies far more in the different classes; among Irish and Germans the relatively sterile are only 6 and 6.5 per cent., with 11 and 10.5 per cent. for the absolutely sterile. The absolutely sterile I find to be about 12 per cent. among Americans, and this practically corresponds with the so-called "law of Simpson," that is, one sterile woman in eight and four-sevenths marriages, or 11 per cent.;

TABLE 2.—FECUNDITY AND MISCARRIAGE.

Observer.	Locality.	Class.	Number of married women.	Sterility. Per ct.	Fecundity. No. of children born to each marriage. Per ct.	No. of miscarriages to each married couple. Per ct.	Total conceptions. Per ct.	Proportion of abortions to labor at term. Per ct.	Proportion of children born to the adult marriageable female. Per ct.
Americans.									
Engelmann, 1880-90.	St. Louis	Laboring class	648	20 4	2.08	.74	[illegible]	2.8	2.8
" 1890-92.	"	" "	804	21.2	2.1	.73	[illegible]	2.8	2.9
" 1880-90.	"	Higher class Americans, American parents	228	23.6	1.8	.65	[illegible]	2.5	2.77
" "	"	Higher class Americans, German parents	114	26 3	1.9	.63	[illegible]	2.5	3 03
Chadwick	Boston	Laboring class, American-Irish parents	334	27 2	1.9	.63	[illegible]	2.5	3 06
"	"	Americans, American parents	874	23 2	1.7	.64	[illegible] 38	2 38	2.7
Wilbur	Michigan, 1894	All.	Census		1.8				
"	" " 1870-94.	"	"		2.1				
Wright	1885	College women	705	33.7	1.3				
Smith.	1900	" "	343	20.5	1.8				
"	"	Non-college women.	313	15.7	2.1				
Irish.									
Engelmann	St. Louis	Laboring class.	118	17 0	4.2	.96	5 1		4 3
Chadwick	Boston		754		3.0	.77	3 8		4 1
Wilbur	Michigan	Census			5.1				
Kuczynski	Massachusetts	"		11 7	3.2				
German.									
Engelmann	St. Louis	Laboring class.	188	17 0	3.5	.95	4.4		3 6
Wilbur	Michigan	Census			6.7				
Kuczynski	Massachusetts	"		11 2	3.0				
Mayer	Berlin		5,195	17 2	3.2				
English.									
Chadwick.	Boston	Laboring class.	113		2.6	.84	3.5		3.3
Engelmann	St Louis	" "	51	41 0	2.5	1.13	3.7		2.1
Wilbur	Michigan	Census			4.5				
Kuczynski	Massachusetts	"		14 4	2.7				
Whitehead*	Manchester, 2000.				4.34	.61	4 95		
Negro.									
Engelmann	St. Louis	Laboring class	197	24 3	1.9	.7	2 6		2.7

* These figures should be somewhat less, as they indicate the number of children and miscarriages to the childbearing women and not to all married women: the number of miscarriages seems too small; on the contrary, as I am convinced that correct answers were not given, and for these records we must rely on the veracity of the patient.

only 9.6 per cent. among a similar number of English villagers, but among English college women and alumnæ it is 27.6 per cent., as it is among their American sisters. In Austria 7.4 per cent. is given.

The number of the absolutely sterile is greater than that of the relatively sterile, that is, the number of those who have never conceived, natural or artificial causes preventing, is greater than that of those who have borne no full-term child, but admit having miscarried one or more times. This deserves attention because it is a condition never before investigated, and barely referred to even by Mathews Duncan in his well-known work on sterility and fecundity. He says that but I am convinced that he had reference to all sterile, as he makes no such distinction, and the classification has never before been made; moreover, it corresponds with the total figures for sterility which he gives—16 per cent. for the higher and 9 for the lower classes.

It is evident that the extremes of sterility are reached in this country, although the rate does not exceed, in fact, does not quite come up to that of France, which in large cities is greater, in the country less.

Miscarriage.—Few estimates exist as to the frequency of abortion, but the generally accepted proportion has been that of 1 miscarriage to 5.5 labors at term. Hegar is often quoted with his estimate of one miscarriage in the earlier months to 10 labors at term, which is about the same. I find one miscarriage to 2.8 labors at term, a little more in private practice, most among the native American, 1 to 2.77, and somewhat less, 1 to 3.03, among the American of German parentage; less still among foreigners, among the Irish only one miscarriage to 4.3 labors and among the Germans 1 to 3.6. (See Table 2.)

2. This is the average of four years, 1872 to 1875, of 40,510 families in which either father or mother have died; hence, family life was cut short and many are noted as barren who in time might have borne children; on the other hand, these are the first years of German occupation during the option of migration, of which many availed themselves and these of course were in a great measure the more mobile childless families, so that an undue proportion of families with children remained; all in all the rate of sterility may be 1 per cent. or so below the correct average.

These figures are fully corroborated by the Boston records of Dr. Chadwick, who finds one miscarriage to 2.8 labors among all American-born in his dispensary, precisely as I do in St. Louis, namely, one miscarriage to 2.7 labors among Americans of American parentage and a trifle less, 1 to 3.06, among those of Irish parentage; among the Irish in Boston he finds 1 to 4. The actual number of abortions is 0.6 to 0.7 to each American-born wife and 0.96 for the Irish, 0.95 for the German, but the number of living children for foreigners is so much greater that the proportion of miscarriage to labors is reduced to less than it is among Americans.

Other available data I could discover none, save one German investigation which from 100 miscarriages deduces a proportion of one in 3.3 labors; this is likewise indicative of greater frequency than the accepted teaching of one miscarriage to 5.5 labors.[3] Although frequency of miscarriage is evidently greater in this country, it is not possible that it should be so much more frequent than it is in Europe; I am inclined to believe that the formerly accepted standard of 5.5:1 is vague and never was based on carefully studied facts, or that it is now antiquated and that the records of the higher classes in the larger cities of Europe would show a similar condition, yet I find but meager facts pro or contra.

We have found barrenness in the large cities of France greater than it is in this country, and I believe that the same would be true of miscarriage were the investigation to be made, but no data exist as to European conditions.

Fecundity.—Among the laboring classes in St. Louis I find 2.1 children to the married couple, and I here follow the universal custom of estimating the number of children to all marriages, i. e., to the number of married women, inclusive of the sterile, not only to the number of child-bearing women or mothers.

This is the highest fecundity which is found among the American born in this country (See Table 2), and I believe it due to the large admixture of the German element; it corresponds perfectly with the results found elsewhere; in Boston it is 1.7; in the state of Michigan in the last years 1.8, and for the twenty-five years from 1870 to 1895, it is 2.1, owing to the somewhat higher fecundity in the earlier years; it has there been slowly decreasing, as it has in every state in the Union. My private practice shows a fecundity of 1.7 among Americans of American parentage, less than in the dispensary, and a better condition, 1.9, among Americans of German parentage, precisely the same as among the Americans of Irish parentage in the Boston dispensary, whilst the Americans of American parentage there show 1.74, like the native American in St. Louis, a lower fecundity than anywhere recorded, unless it be in the French metropolis and among college women, English and American.

Very instructive and indicative are the observations made in regard to the effect on the reproductive function by one of the phases of modern female life, by overpressure in schools as shown in the study of fecundity among college graduates, by Carroll D. Wright, and later by one of their number, Professor Smith; there we find the very lowest fecundity, 1.3 and 1.8 (not 1.6 as Mrs. Smith figures it)[4] children to the marriage, an average of 1.6, which is corroborated by a similar group of women who have continued their studies longer, who have taken the advanced degrees, mostly Ph. D., with 1.6 and by English college women with 1.5. With this group of college graduates Mrs. Smith compares their relatives and friends of the same social class, whom she finds more prolific, with a higher fertility of 1.89 (really 2.1), which is precisely what we should expect from that class of American women, and harmonizes perfectly with the general average shown by my tables.

These figures clearly show the influence of college work and nerve exhaustion; among no group is fertility so low as among the college alumnæ; and this is corroborated by reports from England, where we find among female college graduates only 1.53 children to the marriage, whilst the average fertility of English women, as shown by the "Victorian Yearbook," is much greater, 4.2 children to the marriage. A comparison of these figures offers food for serious thought. The Michigan census and Boston dispensary give a trifle less than my own St. Louis records, but the same that I find among the higher class from which the group of sisters or non-college women is also taken.

TABLE 3. FECUNDITY IN THE AMERICAN COLONIES AND THE UNITED STATES IN THE 17TH AND 18TH CENTURIES.

Observer.	Locality.	Date.	Number of children to the married couple.	Number of marriages.
Engelmann. . .	From genealogical records. . . .	1600–1650	6.7	146
" . .	" " "	1650–1700	6.1	392
" . .	" " "	1700–1750	6.6	503
" . .	" " "	1750–1800	6.1	784
" . .	" " "	1800–1850	4.6	213
" . .	Portsmouth	1804–1811	4.27	
" . .	Hingham	1726–1779	4.32	321
" . .	Salem	1727–1781	4.55	
Sadler. . . .	United States	1750–1780	5.22	
"	New York State	" "	5.22	
Holyoke. . . .	Hingham.	1782	4.5	Sickly year
" . . .	"	1783	4.6	Healthy year
Franklin. . . .	United States	. . . . .	8.0	Vague.

These facts very fully establish the low rate of fertility of the American woman at the beginning of the twentieth century. My genealogical records show that from 1600 to 1750, each marriage produced on the average at least 6 children, which, at the beginning of the nineteenth century, was reduced to 4.5, and these figures are corroborated from Salem by Dr. Holyoke, president of Harvard, and by Dr. Wigglesworth from Hingham, by a fertility of respectively 4.3 and 4.5 children to the marriage in the latter half of the eighteenth century.

Benjamin Franklin stated that "one and all considered, each married couple in this country produced 8 children." Whilst this is based upon no positive figures, the opinion of that great statesman is worthy of record, and it is to some extent corroborated when I state that the number of children given in my genealogical tables are only those who have reached maturity, so that the total number of children born must have been greater. Then again, it is well known that in the writings of Malthus, at the end of the last century, the great fecundity of the United States was used, together with that of China, as

3. My records clearly show that all the old obstetrical standards are in need of revision. The hitherto accepted standards as to sterility and miscarriage may never have been based on extended statistical investigation, may never have been precise, and at the present day, for this country, they are certainly far from the truth.

4. The figures given by the writer are incomparable as being the number of children living, after a lapse of years. The number of children born living—the essential result—is not calculated, but proves to be 1.8.

the basis for his theories of superfecundation, and in the table he gives the United States stands at the head of the list with a fecundity of 5.2, second only to New South Wales with 5.4 children to the marriage.

Surprising as may be to us, with the figures of the present at hand, the fecundity of the American colonies of the eighteenth century, yet this is not excessive, as it is exceeded at the present day by the French-Canadian with a fecundity of 9.2 (facts based upon the study of 1000 families, kindly placed at my disposal by Dr. Pellitier, secretary of the Board of Health of the Province of Quebec, 9.3 for the rural and 9.0 for the urban population, but this is the fecundity of the child-bearing woman, not the number of children to the marriage). Then we must remember that at present in a Russian district it is 7.2, and in Norway 5.8 children to the family.

Divorce.—I mention divorce, as it is correlated with sterility and closely connected with the moral causes of childlessness. It has increased in frequency, particularly of late years, in Europe 67 per cent. from 1876 to 1886, and in the United States 72.5 per cent.

For the United States the census of 1890 shows 540 divorces to 100,000 married couples, which is approxi-

TABLE 4. DIVORCE.

Country.	Period.	Number of divorces to 100,000 marriages.	Number of marriages to one divorce.
Quoted from Official Statements by Dr. Samuel W. Dike.			
Rhode Island	1899	12,200	8.2
Vermont	"	5,555	18.0
Massachusetts	"	5,347	18.7
From State and United States Census Returns.			
Michigan	1874	306	326
"	1894	418	240
United States	1880	203	490
" "	1890	540	185
Switzerland	—Mostly for 1885.	195	513
Denmark		184	543
France		80	1,250
Germany		77	1,300
Sweden-Norway		27	3,704
New South Wales		26	3,846
Russia in Europe		11	9,090
Italy		10.6	9,434
South Australia		10.4	9,615
United Kingdom		8.6	11,600
Canada		1.6	63,000

mated only in Switzerland by 195, in France 80, Germany 77, Russia in Europe 11, England 8.6 and Canada 1.6 to 100,000 marriages.

In Rhode Island for 1898, if I may rely upon so able and accurate an observer as the Rev. Samuel W. Dike, it is one in every 8.2 marriages, which would mean 12,500 divorces to the 100,000 married couples, and for Massachusetts in the same year, 1 to 18.7; startling figures when we recall that in 1880 Rhode Island, by the United States census, is recorded with 1 to 190, and Massachusetts with 1 to 566.

Throughout the state of Ohio there is one divorce to 20 marriages, and in the Western Reserve, those counties settled almost altogether from Connecticut, the conditions are much the same as in the home state, 1 to 11.8; and in Lake and Ashtabula counties, settled by New England farmers, it is respectively 1 to 7.4 and 1 to 8.5, whilst in Callio county, settled by Welchmen and Southerners, it is only 1 to 50.

I myself have made no investigation whatsoever in this direction, but present the figures of Dr. Nathan Allen, figures originally collected by Rev. Samuel W. Dike and referred to in the paper of Dr. Allen, in which he shows the deterioration of the New England family; even if we disregarded these figures, correct though they be, and accept the figures of the United States census, it is apparent how much worse conditions in the United States are than in any European country.

The census corroborates in reference to divorce the relative condition which I have shown to exist in the matter of fecundity and miscarriage between the American of American parentage and the American of foreign parentage, with an average rate of divorce throughout the country of 0.54 per cent. of all marriages; among native Americans it is highest, 0.61 per cent., less among Americans of foreign parentage 0.5 per cent., still lower among foreigners, 0.3 per cent., and highest among negroes, 0.67 per cent., precisely the relation which these groups bear to each other in sterility and in an inverse ratio in fecundity.

The causes of the excessive increase of sterility and its concomitants are both moral and physical. Figures I have none, but all the facts point in this direction; so the frequency of relative sterility, the sterility which admits of conception but terminates in miscarriage, seems to me strong proof that causes other than uterine disease prevail; so also the fact that sterility is greater as luxury and comfort increases; that fecundity is less and miscarriage more frequent.

The causes of divorce we know to be purely moral, and the fact that the relative frequency of divorce, miscarriage, sterility and fecundity among the native American, the American of foreign parentage, the foreigner and the negro are so nearly parallel, would indicate that similar causes influence each; the prevailing causes must be the same, and these must be of a moral nature.

That barrenness, in the large majority of instances, is independent of physical causes, seems to be conclusively proven by the astonishing increase of sterility in this country coincident with the progress of gynecology, and with the same giant strides which have marked the development of the very science which should control sterility were it due to disease and physical causes.

All facts here presented indicate the prevalence of moral causes; moreover, the studies of Goodell, Nathan Allen, Charles Fayette Taylor and Edward J. Ill force upon us the belief in the frequency of methods for the prevention of conception, that "too often the young wife enters the sacred bonds with the distinct understanding that she desires no offspring, and does so because of the inconvenience it would give her." As methods of prevention are common so is the resulting barrenness, moral or wilful, so are intentional abortions frequent which lead to the same result; and for this fact, too, I rely on the statements of those who have studied the subject.

A committee appointed by the American Medical Association in vain sought methods by which to stay the progress of criminal abortion, which clearly indicates that there are causes for sterility altogether too frequent that are not referable to malformation or disease of the reproductive organs.

Treatment.—However numerous may be those who willingly avoid conception, and who by early indiscretions have brought upon themselves a sterility they now deplore, there is still a certain number absolutely, or primarily, sterile who seek relief, and these are women who deserve the deepest sympathy of the man and the best skill of the physician; for not one of the many ailments of woman is so distressing as the misery of a barren, childless life

to the true womanly woman; she must never be condemned to a hopeless existence, and above all, no treatment of the woman for sterility must be inaugurated until we are thoroughly satisfied that the husband is not at fault, as proven by an examination of the semen.

Male sterility has been too much ignored, and is far more prevalent than is generally accepted. The studies of Gross have placed it as one in every six barren marriages, 16 per cent., and it has been variously estimated by those who have studied the subject from 3 to 57 per cent.

A valuable study by Brothers of New York, which has recently appeared, based upon an examination of 72 men, estimates 1 sterile man in every 5 childless marriages, but from his own figures, and in this he agrees with me, I am more inclined to place it as 1 in 4. Accepting this with the fact that impregnation is known to take place under the most adverse circumstances, as I have seen it after the removal of both ovaries; one tube totally and one in part, with but a shred of ovarian tissue remaining, as it has been found in the abdominal cavity through a slight fistulous aperture after the uterus had been removed (Koeberle); also after removal of both ovaries, with ovarian tissue from another woman transplanted upon the broad ligament (Robert J. Morris),[5] and after fixation of a bit of healthy ovarian tissue in the uterus (Palmer Dudley), it is evident that the condition must be serious which prevents impregnation.

Physical causes of sterility can not well be determined with certainty; first one, then another, has been supposed to be mainly at fault; uterine displacements have been accused; then uterine catarrh, and now we know that salpingitis is a frequent cause. Atresia, the absolute closing of the canals, gonorrhea and salpingitis I take to be the most frequent causes of sterility, and in addition, those forms of endometritis which change the secretions and render them destructive to the spermatozoa.

Treatment of physical causes only is within the province of the gynecologist, and this means a correction of the various pathological conditions which may exist; as we must always remember before inaugurating treatment to establish the potency of the husband, so we must bear in mind that frequently general conditions are at fault, such as anemia, depression, mental or physical; a change of surroundings and climate may bring relief, but whatever the cause, our efforts must never flag in behalf of these unfortunate women, as many cases are recorded where even after long years of sterility a cure has been accomplished and conception resulted.

Not only is the physician called upon to treat the absolutely and primarily sterile, but he is liable to be consulted by those who later in life relent of the nefarious practices of their early married years, and he is then confronted with the pathologic conditions produced by artificial sterility, nervous and physical, local and general, neurasthenia, prostration, impaired functional activity of circulatory and digestive apparatus, with pelvic congestion, uterine and ovarian symptoms.

These cases are tedious and trying, but it is the duty of the physician to persist, not alone for the sake of the innocent sufferer, but equally for her who, suffering from self-inflicted sterility and its sequences, has relented of her selfish life of egotism, and with the best instincts of woman aroused now longs for the joys of motherhood.

5. For this I can not vouch; it is my recollection of a most remarkable case, but the authority is not in my hands.

Whilst the moral phases of the question do not concern the physician, it is yet his duty to point out to his patient the causes of her sterility and her suffering, and the broadest field is here presented for preventive gynecology.

Two and five-tenths per cent. is probably the normal proportion of barren marriages, for this is the condition existing among the simple, healthy, hard-working people in Norway and in the interior of Russia, and a small percentage of this number is due to the male, not 25 per cent. as in civilized and infected communities; in this country nearly ten times this number of marriages are barren and women childless. This must be due, in a large measure, to methods of prevention, i. e., to artificial controllable causes. If these can be eradicated, preventive gynecology will have accomplished far more than can ever be hoped for from its most splendid therapeutic or surgical achievements.

RESUME.

This investigation is based upon numbers which, as I have emphasized, may seem small to admit of deductions as to conditions existing throughout a great country, but I feel justified in doing so, as the data are exact and cases carefully sifted. In addition, all the facts presented are corroborated in various ways; some directly by independent observers; first and foremost by the census records of two great states, namely, by the census of Michigan and that of Massachusetts; by the Boston dispensary and the records of the college alumnæ; others indirectly by correlated facts, a corresponding decrease of fecundity and increase of miscarriage and divorce. Table 5 forcibly presents the conditions with which we are now confronted in this country.

TABLE 5. MEANS AND EXTREMES OF STERILITY, FECUNDITY, MISCARRIAGE AND DIVORCE.

	Generally accepted average.	Most favorable condition now existing.	American Colonies, 18th century.	United States at the close of the 19th century.
Sterility . . . . . Per cent. of childless marriages.	11%	2.5% Norway. . . .	2%	Gen. average, 20% 23% College graduates, 25%.
Fecundity. . . . . Number of children to the marriage.	4.5:1 Europe .	7.5:1 Canadian French. 7.2:1 Kaluga department. 6.4:1 Christiania.	4.5—6:1	1.8 College graduates, 1.6.
Miscarriage . . . . . Ratio of abortion to full-term labors.	1:5.5	. . . . .	. . . . .	1:2.8
Divorce. . . . . Ratio of divorce to marriage.	. . . . .	1:63,000 Canada. 1:11,000 England.	. . . .	1:185 United States. 1:18.7 Massachusetts 1:8.2 Rhode Island.

Sterility is fully 21 per cent. among the laboring class of St. Louis, 20 per cent. throughout the state of Massachusetts, 23 per cent. among the better situated in St. Louis, the same in the city of Boston among the laboring class even; it increases with the increase of comfort and luxury, highest among college graduates, 33 per cent. (or 25 per cent. if we take the total average), higher among American born than among foreigners in this country. Especially is the difference marked in that large and hitherto entirely ignored class of relatively sterile women, those who have conceived but who never have carried a child to full term, which is from 9 to 12 per cent. among Americans and from 3 to 6 per cent. among foreigners.

Sterility has increased hand in hand with the much discussed decrease of fecundity; everywhere to some extent: in the United States it has increased to an excessive degree, just as fecundity has diminished more rapidly than in other countries. From a sterility of 2 per cent. in the eighteenth century, and a fecundity of five children to the marriage, conditions better than in any other country, and such as led to the Malthusian theory of super-fecundation, to the fear of over populating the earth's surface, after a lapse of one century, we have attained over 20 per cent., from first we have passed to last, and the other extreme is now presented—sterility greater and fecundity less than that of the women of any other nation, unless it be of France, where the question of the last decade has been one of most serious national importance.

These conditions, while not as yet menacing in any way the future of the country, as is at present the case in our sister republic, are sufficiently serious to indicate an imperative necessity for farther and more extended investigation.

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DISCUSSION.

DR. J. M. DUFF, Pittsburg—From my experience during the past two years I feel that I am more than ever qualified to repeat what I said at Columbus, that we are fast becoming a nation of accidents. In investigating this subject I have been astonished when I come to talk with women and have accumulated evidence. The number of children who are the result of accident is enormous. It has certainly been the experience of every one in general practice to be called by a woman who will tell you that she is very sorry that this happened at this particular time because they were not ready or could not support a child. Of course, there are many fathers and mothers who are anxious to have children, and there are many more who say they are. They all believe in the sixteen-day story and as a result there are more children born conceived sixteen days after menstruation than at any other time. Fathers and mothers should be prepared physically and mentally for the production of their offspring, and there should not be accidental results. This question may appear trifling to some, but it is one of the most important and most serious questions before the American people to-day.

DR. WILLIAM H. WATHEN, Louisville—We find that the prevention of conception is common throughout this country and is not regarded, by even the most religious people, as an evil; hence, few children are born to a family. Again, it is almost universally believed by the laity that there is no moral or religious wrong committed by performing an abortion up to a certain time. When there is a desire to produce an abortion, a means will always be found to accomplish this result, and unfortunately a physician, who is in good standing in the community in which he is living, will sometimes lend himself to that purpose. It is important to impress upon the laity that an abortion at the end of the first month is just as criminal as an abortion at the end of the fifth month, because if there is ever any spirituality in the child it must be at the beginning. Induced abortion is a moral, religious and physical evil. Induced abortions are followed by diseases much more severe than if they occurred naturally.

DR. A. MCDERMID, Chicago—The field of operative obstetrics and gynecology is exceedingly attractive to all of us, but that a man should devote his time and attention to the subject in hand is beyond all praise. This work is of value not only to the profession, but to the laity and the state. I am proud of the statistics of my native country. I would ask you to take up the leading journals of the large cities of Canada and see whether you find in their advertising columns that class of advertisements which you find in the leading, respectable journals of the great cities of this country. In the matter of abortion, it occurs to me that the profession has a great work to perform in directing those who come under their care. I recall two instances of young married women who were both frantic

when they found themselves pregnant shortly after marriage. By talking to them kindly and by showing them the terrible results following abortion, I succeeded in keeping them from doing anything rash. They are now enthusiastic over the prospect of maternity.

Dr. E. D. Ferguson, Troy, N. Y.—The essayist has put this subject forth in all prominence, but he has said nothing specific as to causation and nothing as to what can be done. National investigations may go on indefinitely; we may talk of the matter here, but there is no way of getting at it except through the 100,000 medical men of this country who will carry their own individual teaching into their own parochial work. The social conditions which have arisen during the century of our existence have made possible the thing which now exists. Our forefathers were not familiar with condums and other things resorted to for that worst of all vices, marital fornication. Neither were there in those days so many instances of double epididymitis. It is not the woman who is always at fault, nor is it a fact that women have graduated from schools of learning that has made them sterile. I do not believe that for one moment. It may be the case in statistics, but it is not in fact. Very likely a double epididymitis of the consort may have been the cause. Each one of you should consider himself a mentor and give out the warning words and point out the proper thing to be done. Every one of us can recall instances in which we have been confided in that the menstrual period had stopped soon after marriage and that we should do something to bring it about. We have then the golden opportunity, but only by our own efforts can we stem the tide of vile publications that appear as advertisements in our newspapers. It must be missionary work done by the physicians of this country and carried into the homes of their families.

Dr. M. F. Porter, Fort Wayne, Ind.—I agree with Dr. Ferguson when he says that it is not because these girls have graduated from Vassar that they are sterile, but that it is in large part the result of an epididymitis. Men contaminate their wives and make them sterile because, unfortunately, instead of becoming impotent they render their wives sterile through infection of the tubes. I believe that this is largely due to the current belief that an ordinary urethral infection in a young man amounts to nothing. Take gonorrhea out of this country and you have robbed the abdominal surgeons of their vocations. We should talk about the fitness of men with a chronic gonorrhea to marry, rather than the fitness of men who have syphilis. The syphilitic men are not killing our women, nor are they increasing the number of divorces; they are not depopulating our country nor making invalids of our daughters to one-half the extent that the men are doing who are the subjects of chronic gonorrhea.

Dr. George N. Jack, Depew, N. Y.—We ought to understand this subject better than we do. As a matter of fact our courses of education are not what they should be. We see evolution being taught in our schools, and we see religion in the decline. New principles are advancing to take the place of it. All people are sustained by a selfish purpose. It is my custom when patients come to me and tell me their troubles, to try and convince them that it is to their own selfish interest to bring forth children. I advance an argument, after which very few of them apply to me for assistance a second time. The matter is not so difficult of control if physicians will take the time and trouble to talk quietly and convincingly to their patients.

Dr. Hannah M. Graham, Indianapolis—The abuse of the physiological law of creation, as his statistics have well shown. weakens morality, murders the unborn, and makes physical wrecks of its followers. I recognize the fact that I am not a voter, but I speak to a body of men, each of whom enjoy the privilege of stamping the law with their individual approval or disapproval, and the question of who shall and who shall not marry has been discussed in our land until you are all familiar with the various objections given.

Dr. M. K. McCoy, Duluth, Minn.—I am very glad that the fault has not all been cast upon the women. However, the women of America have no encouragement to become mothers. What protection has she or her children? Confronting gonorrhea, the saloon on one side, the brothel on the other, and back of it all the abortionist, it is a wonder that any children are born. It is time that the protection of the family and the woman should be considered. The college graduates should not be held responsible for the decreasing family. In many instances these women also have dependent mothers, brothers and sisters, and they can not take upon themselves married life with its accompanying duties.

Dr. Englemann, in reply—It has been correctly stated that nothing was said in regard to the cause of these conditions. Neither did I say anything of the treatment; this was for want of time. The idea has been correctly expressed, as I myself put it, that the treatment is in the hands of every one of us; it is the influence the physician exerts, or should exert, in the home. I have endeavored to show that the causes of sterility and childlessness are moral causes. By far the largest percentage is statistically proven to be due to moral causes. Some few physical causes exist, such as atresia, endometritis, especially that due to a germ of some kind. However, they are not many. That endometritis is the cause of absolute sterility is shown by the breeder; abortion in animals occurs in some 12 per cent. of all cases; 5 per cent. in well-kept herds, but sometimes epidemics of abortion occur of such violence that the breeders speak of an abortion germ which is very likely nothing more than a streptococcus. It is an endometritis which leads to abortion in animals and at all the experiment stations antisepsis is now being practiced. They are guarding against abortion by antiseptic precautions. Inflammation of the mucous membranes is a common cause of sterility in the human being.

It has been rightly said that the male is at fault in a great many cases, but to arrive at a fair estimate of barrenness I believe that we may accept as a normal status in a healthy people the showing made in Russia and Norway where artificial means do not cause sterility, and there is childlessness in only 2 or 3 per cent., of which probably 5 per cent. is due to the male. That sterility of the male is far more common than is generally accepted has been shown in a very admirable manner by Dr. Brothers, of New York; it is so frequent that I must emphasize this precaution. Before treating the woman who comes to you because of sterility, examine carefully the male. It has also been rightly said that if the proper care were taken and an honest course pursued, there would be very little gynecology. The proper advising and guiding of these mothers in health will do more to help women than all gynecology and surgery. Sterility has gone from worse to worse in the face of gynecologic progress. To this astonishing fact I neglected to call your attention, and you may well ponder on the increase of sterility in the face of progress and development of gynecology, showing that sterility has practically nothing to do with physical causes. There are few physical causes; the main causes are moral; therefore, the treatment does not fall strictly within the sphere of the gynecologist. You may rightly ask why I bring this matter before this Section; it is because I do not know where to place it, and in a measure it is gynecological because it deals with pathological conditions of women.

Conception takes place so easily and under the most adverse circumstances that the physical causes which prevent conception must be serious indeed. Women will conceive when there is only a bit of ovarian tissue left, even when the uterus is removed, as in the case of Koeberle; impregnation took place and the ovum developed in the abdomen.

The interesting remarks of Dr. Duff are in the line which must be followed. He clearly pointed out the efforts made to prevent conception with that sixteen-day story, and it would be well to bring prominently before the profession the fact he imparts, i. e., that the mass of children are conceived after that time—after the sixteen days from the cessation of the menses. It is true that the majority of conceptions are mistakes. This is an important subject, for the lack of fertility has invariably been the precursor of national decline.

THE MORTALITY OF APPENDICITIS.*

JOHN B. DEAVER, M.D., AND GEORGE G. ROSS, M.D.
PHILADELPHIA.

During the year 1900 there were operated upon at the German Hospital, Philadelphia, 268 cases of appendicitis, of which number 144 were acute attacks of the disease and 124 were chronic. Of those operated upon during the acute stage of the disease, 26, or 17.8 per cent., died, either from the disease or from some intercurrent trouble arising during the illness, or existing prior to the time of operation. One of the patients who had diabetes mellitus, and in whom the existing abscess was simply drained under local anesthesia, died of diabetic coma three days after operation. Another case had advanced phthisis at the time of the operation and died of peritonitis. Still another case developed a post-operative pneumonia, from which he died on the second day following operation. If we deduct these three cases, the mortality of this series of cases is 15.9 per cent. for acute appendicitis without intercurrent disease.

In the 26 fatal cases the following conditions were noted:

Seven cases had general purulent peritonitis at the time of operation. In 7 others a general purulent peritonitis occurred subsequent to operation; in 8 cases septicemia was the cause of death; 1 case died of shock, and 1 died of shock following a second operation for the relief of an intestinal obstruction due to bands of adhesions. The remaining 2 were the cases of phthisis and diabetes referred to above.

In the 7 cases of post-operative peritonitis the appendix was removed in every instance. In 3 of the cases the appendix was post-cecal, and, by its removal, an unsuspected collection of pus was discovered. In 1 other the appendix occupied the center of a collection of pus and was complicated by a gangrenous cecum. In another the appendix was behind and to the outer side of the cecum, and lay in a mass of infected exudate, and there was also an abscess in the muscular layers of the abdominal walls. In the sixth case an abscess was encountered immediately on opening the abdomen, the contents of which escaped, both externally and into the general peritoneal cavity, before anything could be done to arrest it. In the seventh case the appendix lay to the cecal side of the abscess wall and was not a portion of it. This was the phthisical case, and death was due to septic peritonitis.

The time which had elapsed between the onset of attack and the time of operation was as follows: In 7 cases with purulent peritonitis at time of operation, in Case 1, it was less than 12 hours; in Case 7, 20 hours; in Case 18, 24 hours; in Case 15, 2½ days; in Case 5, 3 days, in Case 9, 10 days; in Case 16, 21 days.

In 7 cases of post-operative peritonitis it appeared as follows: Case 21, 24 hours; Case 13, 5 days; Case 20, 7 days; Case 25, 8 days; Case 8, 14 days; Case 27, 50 days; Case 10, not noted.

In 8 cases of septicemia it was as follows: Case 12, 2 days; Case 2, 2 days; Case 9, 7 days; Case 23, 10 days; Case 19, 10 days; Case 4, 14 days; Case 3, 17 days, and Case 22, 49 days.

Shock was observed in Case 17. There was no history, but there was found an intraligamentary cyst, cystic ovaries and numerous inflammatory cysts. Intestinal obstruction occurred in Case 24 in 24 hours.

As regards the number of attacks, they were as follows: It was the first attack in 13 cases; the second attack in 5 cases; fourth in 2 cases; sixth in 1 case, and it was not noted in 6 cases.

The character and severity of the attack was shown, with classical symptoms, to be severe in 20 cases, and with classical symptoms, to be mild in 6. It was not noted in 1.

The position of the appendix and its relation to other organs was as follows: Post-cecal, in 12 cases; in or toward pelvis, 12; toward spleen, 1; not noted in 1, and not looked for in 1.

The complicating diseases were: Diabetes, 1 case; phthisis, 1; pneumonia, 1; ovarian cyst, 1, and intraligamentary cyst, 1. Nearly every case showed evidence of nephritis after operation, except the case operated under local anesthesia.

The extent of the inflammatory process in appendix was as follows: Intense inflammation in 7 cases; gangrenous in 10; perforation in 3; gangrene and perforation in 5; chronic inflammation in 1, and not sought for in 1.

Secondary collections of pus were encountered in 11 cases; 7 in the pelvis, 3 post-cecal, 1 to the median-line side of right iliac fossa, and 1 in the abdominal walls.

Gangrene of the cecum and colon was encountered in 7 cases. In 5 it existed at the time of operation, and in 2 cases it developed subsequently. It is probable, however, that the damage to the bowel had occurred before the abdomen was opened.

The one death in chronic appendicitis was in a case where an ovarian cyst, which was adherent to the appendix, complicated the appendiceal operation. In addition to the ovarian cyst there were numerous inflammatory cysts. The patient did well until the third day, when the drainage tube was removed, after which she promptly developed a septic peritonitis and died on the sixth day following the operation. Whether the sepsis was introduced from without at this time or whether a latent sepsis in the peritoneal cavity was liberated by the manipulation is a matter of surmise. Yet it is the opinion of the authors that this was a case of post-operative infection.

The fatal cases of appendicitis that I have reported do not by any means cover the subject of the mortality of appendicitis. In consequence of this I will digress a little from these cases for a short discussion of the

MORTALITY IN GENERAL.

In the cases not subjected to surgical treatment, by far the largest factor is septic peritonitis. This arises in one of several ways: 1, transmigration of micro-organisms from an ulcerative or interstitial appendicitis, without rupture of the appendix; 2, gangrenous appendicitis or rupture of the appendix by ulceration, without peritoneal adhesions localizing the septic area, and 3, internal rupture of a peri-appendiceal abscess.

Another quite common termination is an obstruction of the bowel, either by adhesions of the appendix to neighboring small intestines, or by the bands of adhesions thrown out in nature's efforts to localize a septic area.

The factors mentioned above are responsible for by far the greater number of deaths in non-operative cases of appendicitis. Yet there are other complications that are seen quite frequently, for instance, the deposit of septic material in distant parts of the body, as the liver, lungs, brain, heart, etc.

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Rarely an abscess rupturing into the bladder will causes a fatal cystitis or pyelitis. In regard to the number of attacks, it is to be remembered that the fatal attack may be the solitary severe one, and during it the proper diagnosis is made for the first time. Severe attacks without fatal issue subside to varying degrees, but commonly render the internal symptoms more aggravated.

As we are firm believers in the operative treatment of this affection, our main interest is in the causes of a fatal termination in those cases submitted to surgical treatment. In cases of chronic appendicitis without adhesions, or in acute cases operated during the attack in which the lesions do not spread beyond the peritoneal coat of the appendix, the mortality is confined entirely to those causes that are inseparable from any celiotomy. Septic peritonitis due to errors of aseptic technique, hemorrhage from the slipping of ligatures, nephritis and pneumonia coming on during convalescence, and the unavoidable dangers of anesthesia.

In those cases complicated with adhesions, but without septic infections, the mortality is also very low, yet there are certain operative factors that greatly increase the mortality in these cases over the class just described. The necessity of a large incision, greater liability to hemorrhage from the adhesions, and the danger of tearing the peritoneal coat from the bowel in freeing adhesions, which latter accident is very likely to result in a fatal necrosis of the bowel, all add to the gravity of the operation. In addition, in a certain proportion of these cases, gauze must be packed into the bed of the appendix to control hemorrhage not accessible to ligature, thus adding to the case the dangers connected with gauze drainage. The principal dangers are, infection from without carried to the peritoneal cavity along the gauze, and obstruction of the bowels, either by the disposition of the gauze, or by the adhesions necessarily remaining after its removal.

In the series of cases reported, there is one death belonging to this class of cases. This case was complicated with an ovarian cyst and has been discussed above.

The two classes of cases described above comprise those in which the operation of election was done, and in which the mortality is very low. Of these cases, 124 were operated upon at the German Hospital in 1900, with only one death, or 8 per cent. Contrasting this record with those operated upon in the presence of pus or gangrene, of which there were 144, with 26 deaths, the grounds for my belief in the early operation are clearly seen.

There is one class of cases of appendicitis, however, in which, in the great majority, a lethal termination is reached in spite of any plan of treatment. These cases can be appropriately called fulminating. Several of the fatal cases reported illustrate this type. In them, operation even in the first hours, is too often unavailing, as the first symptoms are those of general purulent peritonitis. In one case of this series, I operated twelve hours after the onset of the attack and found an advanced general purulent peritonitis, a condition from which I have never seen a recovery.

Many cases are reported in the literature as recoveries from general purulent peritonitis, but from my experience I am led to think that there was probably some error in the diagnosis, and that the cases were probably a very extensive, but nevertheless localized peritonitis. In cases in which the first attack is of this type, it is hard to see how a fatal termination can be avoided, but if there have been other attacks previous to the fulminating one, some one is responsible.

In cases of appendicitis with localized collections of pus, the success of the operation to a great measure depends on our success in emptying and thoroughly draining every pocket of pus. Merely opening and draining the main abscess will not do, for there are frequently secondary collections of pus in the pelvis, or among the small bowels, which, if left unevacuated, will render our operation unavailing. The great problem in this operation is how to drain all these collections without infecting the general peritoneal cavity. Irrigation is a frequent cause of this and should only be used with the greatest caution.

Of the four main localities of appendiceal abscesses, that situated to the outside of the cecum gives, perhaps, the most favorable prognosis, as we can keep to the outer side of the general peritoneal cavity, and, by a counter opening in the loin space, secure free drainage. The next most favorable variety is that situated anterior to the cecum and directly under the abdominal wall. Next in order comes collections of pus in the pelvis, and then, most dangerous of all, local collections, one to the median line side whose walls are made up principally by small intestines. Post-cecal collections of pus offer a serious problem to the operator, for it is in this locality that we have post-peritoneal infection and necrosis of the bowel. If the pus be not localized, but free in the peritoneal cavity, there is no hope of recovery, unless perhaps by operation in the first hour or two, when only the serum is infected and peritonitis has not actually begun. The reason for the varying degrees of danger in the different varieties of appendiceal abscesses, lies in their adaptability to evacuation without contamination of the general peritoneal cavity.

The advisability of removing the appendix in the presence of pus has been the subject of much discussion. In the opinion of the author the appendix should be removed except under very exceptional circumstances, for by so doing we render less likely the following possibilities, which are active factors in appendiceal mortality: Fecal fistula; an undiscovered secondary collection of pus; subsequent attacks of the disease, and the danger of subsequent necrosis and obstruction of the bowel. With these objects to be attained and with the surety of freedom from spread of infection by the use of a proper technique, it seems advisable to remove the organ. There are, however, a few cases in which from the depressed condition of the patient we must be content with draining the abscess, leaving the removal of the appendix to a subsequent operation.

Another very common cause of death in these cases is necrosis of the bowel, probably due to septic emboli in the veins of the mesentery, or pressure from the plastic exudates. Metastatic abscesses, septic endocarditis and obstruction of the bowel also account for the death of some of these cases.

Ether for some unexplained reason is especially badly borne by these patients and adds greatly to the anxiety of the operator.

In the 118 cases operated upon during the acute stage of the disease and followed by recovery, it is interesting to note the following facts: In 61 cases pus was present. Of this number, the appendix was perforated and gangrenous in 21 cases; 2 cases had perforation without gangrene; in 25 cases infection occurred by migration of micro-organisms through the walls of the appendix, and in 13 cases the records fail to show the con-

dition of the appendix. In the remaining 57 cases, the inflammation was confined to the appendix. In 6 cases there occurred fecal fistulæ, 4 of which closed spontaneously, 2 requiring a subsequent operation. There were 56 cases operated upon in the first attack, and in the remaining 62 cases there was an average of 4 attacks.

During the year there were in the hospital 11 cases of acute appendicitis that were not operated upon, 3 of these died. Of the remaining 8, who refused operation, 5 left with a mass in the right iliac fossa, and in 3 the lesions were apparently confined to the appendix.

One thing seems certain, one attack predisposes to other attacks, and, barring the rare cases of obliterating appendicitis, each attack renders the operation more difficult on account of adhesions, their multiplication and tendency to denseness and contraction, thus detracting from a favorable prognosis. It is very common, however, to elicit by careful questioning a history of attacks of abdominal pain, which at the time of their occurrence were ascribed to other causes, e. g., bellyache, cholera morbus, "bilious attacks," typhoid fever, cholecystitis, nephritic colic, neuralgia of the stomach or bowel, or to entero-colitis, hepatic colic, etc. In giving a prognosis the possibilities of these being appendiceal in origin must be taken into consideration.

The character and severity of attacks is of great moment and must be duly considered in the question of appendiceal mortality. Certain cases begin with an attack, which, from its incipiency, is of the greatest severity, both as to symptoms and pathologic changes as well. These cases are known as the fulminating variety, and the destructive changes in the appendix take place in a few hours. I have operated within twelve hours after the onset of the first attack and have found a gangrenous and perforated appendix, with abscess and gangrene of the cecum, as shown by Case 1.

In another patient, Case 21, operated upon within twenty-four hours after the onset of the sixth attack, we found the appendix gangrenous, perforated and bound up in a mass of dense adhesions which involved the cecum, small intestine and parietal peritoneum. This patient died of general purulent peritonitis sixty hours after operation.

In still another, Case 7, which was operated upon twenty hours after the onset, we found a gangrenous, perforated appendix with forming adhesions and general purulent peritonitis. Here nature was attempting to protect the peritoneum, but was too slow to encompass the ravages of the diseased process in the appendix.

I might go on and report many cases of this frightfully-rapid type of the disease, where even the earliest operative procedure may be of little avail. Where this has occurred in the first recognized attack, it is difficult to see how matters can be mended, but where it arises in an attack after the original one, some one is at fault, for many such deaths could have been prevented by operation at an expedient time.

In most fatal cases which can not be classed as fulminating, the attacks are of varying severity, although many of them are severe and progressive. However, one must be on the watch for those cases, mild as far as symptoms indicate, but in which, nevertheless, the pathologic changes are progressively destructive. Such a case was found in A. H., who was operated on in the second week of her first attack. The appendix was gangrenous, and, together with the cecum and small intestine, formed the abscess cavity wall. In this case the pelvis was full of pus, and she died of septic peritonitis.

It has been my experience that recurrent attacks of appendicitis are generally progressive in severity, each one adding fuel to the flame. Adhesions grow more numerous and dense. The blood supply of the adherent organs becomes altered. Post-operative necrosis is rendered more probable, and the stripping off of the peritoneal coat of the cecum or bowel is aided, thus favoring post-operative necrosis of the intestine.

POSITION OF APPENDIX.

Its position and relation to other intra-abdominal organs, as illustrated in this series of cases, is as follows: In 12 cases the appendix was found behind the cecum; in 12 others it occupied a position pointing toward the pelvis; in 1 toward the spleen; in 1 the position was not noted, and in the other the organ was not looked for. This series would seem to point to an equal division of severity so far as the position goes, but nevertheless an appendix pointing toward the pelvis is rather more favorably located than one behind the cecum.

The position of the appendix is of the utmost importance in a conideration of the subject before us. An appendix which occupies a position behind the cecum, pointing upward toward the liver, is a favorable locality for fatal attacks of appendicitis. An acute inflammation of an appendix in this position favors post-peritoneal infection, either by the route of the lymphatic or venous circulation. Collections of pus dissect up the posterior layer of the peritoneum; by the burrowing pus, the blood supply of the cecum is interfered with, and necrosis of the gut is apt to follow. This location of a septic collection favors abscess of the liver, a condition, however, which is rarely met with as a complication of appendicitis. Then, too, in this class of cases septicemiæ plays an important rôle.

The appendix, holding a position in the pelvis or in the direction of the pelvis, offers a slightly better prognosis than when it is behind the cecum. This is, however, far from being a favorable locality; for in a fair percentage of the fatal cases the appendix occupies this position, and the pelvis contains a large amount of pus.

In the female, a collection of pus in the pelvis is not only unfavorable to the life of the patient, but the disastrous effects upon the uterine adnexa are marked even in those cases which recover, and such patients are condemned to lives of invalidism. Pyosalpinx, uterine and bladder adhesion, and adhesions between the uterus and sigmoid or rectum, are common events in this class of cases.

In the male a sloughing of the pelvic fascia is not uncommonly met with, and is a condition of great seriousness, not only as to life, but also as to the health of the patient who does not succumb in the acute stage of the disease.

In connection with the subject of the locality of the appendix, a point which has been very forcibly brought to my notice is the frequency with which collections of pus have been found in the pelvis. I make it a routine practice to pass a glass drainage tube into the pelvis in every acute case of appendicitis, and have with astonishing frequency discovered pus.

When the appendix points toward the spleen, general peritonitis is of common occurrence, and this position must therefore be considered a dangerous one. It is with this direction of the appendix that secondary abscesses occupying an area to the median line side of the

right iliac fossa so commonly occur and are frequently overlooked. Other positions, such as in the ileo-cecal, ileo-colic or sub-cecal fossa, are associated with destructive phenomena.

DISEASES COMPLICATING.

Diabetes as an associated trouble enters into the consideration of our subject, for recently I had a case of an acute attack where the abscess was opened under local anesthesia, but the patient succumbed to diabetic coma.

Nephritis is far more common, and its relationship and true value as a factor is not as entirely established as one would wish or could expect. Nearly all my cases, both the fatal ones and those which recover, show albumin and hyaline and granular casts after operation. Is this due to the ether? In those which recover, the symptoms of the nephritis gradually subside without any evidence of permanent injury to the kidneys. It does seem probable, however, that, other things duly considered, in the fatal cases the nephritic condition must play an important part in lowering the patient's resistance by the retention of constitutional poisons and the alteration of the blood pressure.

A septic condition of the heart and its membranes is a serious complication and is invariably fatal. Endocarditis is not uncommon, and although the fatal issue may be deferred, it is none the less sure. The same can be said of myocarditis and pericarditis.

Septic pneumonias are common, but not necessarily fatal, as a fair percentage of these cases do get well. It is, however, a serious matter, and may determine the end.

Appendicitis in a phthisical patient offers a problem which is difficult of solution. I operate on them when pus is present, but only as a last resource, and then do as little surgery as will meet the indications.

Infection of the appendix by the typhoid bacillus is far more common than is usually accepted by our medical brothers. The active stage of the enteric fever does not, *per se,* offer a contra-indication to operation in the presence of acute suppurative appendiceal disease. I have on several occasions operated under these circumstances with a happy result.

TIME BETWEEN ONSET AND OPERATION.

This brings up the often-debated point as to the time for operation, and I would like to state here, with all the emphasis at my command, that delay in operation is responsible for more deaths in appendicitis than are all the other factors which have to do with the disease. Barring some cases of the fulminating variety, where nothing that man can do avails, there are no cases which, if operated upon within the early hours (preferably the first 12 hours, and at the latest 18 to 24 hours), that can not be saved, not only to live useful lives, but to live them minus fecal fistulæ, tugging adhesions, danger of intestinal obstruction, and chronic or subchronic invalidism. Also allow me to emphasize the ever-increasing difficulties of operation with a directly corresponding decrease of a favorable prognosis, which attends each succeeding attack of appendicitis. I am sure that those of you who are constantly seeing and meeting this disease in its various phases will agree that early operation stands without a peer as the method of choice.

EXTENT OF INFLAMMATION.

The various degrees of inflammation are all attended with a mortality; the acute catarrhal being the lowest in the scale. Interstitial appendicitis is very commonly attended with peri-appendicular infection from migration of organisms through the diseased walls, and has a higher percentage of mortality than the catarrhal. Gangrenous and perforative conditions, which can be properly classed together, are attended with the largest death rate of all varieties of appendicitis. There we have a direct outpouring of the highly septic contents of the organ into the surrounding tissues, which, from the inflammatory process set up by nature to protect it against the coming invasion, has become a fertile soil for the growth of the infecting organisms.

The location of the perforation and the relation it bears to surrounding tissues and organs is a very important point. An appendix pointing into the pelvis which perforates at its tip will offer a better chance for localization of the subsequent abscess to the pelvis and insure a better prognosis than if the perforation takes place at or near the proximal end, for here the chances of general peritoneal infection are increased.

An appendix situated behind the cecum, pointing toward the liver, will be followed by serious results, no matter where the perforation occurs, although a perforation at the distal end will increase the danger on account of the proximity of the liver and kidney. A perforation at the base of an appendix located behind the cecum, and particularly if it be on the posterior wall, will favor retroperitoneal infection.

It may be laid down as an axiom that the danger of death in acute appendicitis increases in direct ratio to the area of peritoneum involved in the septic process.

When the process is limited to the right iliac fossa, the lowest percentage of mortality is accomplished with the spread of the septic process to the pelvis, and thence becoming diffused, we have an ever-increasing fatality until we arrive at the infection of the general peritoneum, when the apex of the scale of mortality is reached. I can say truthfully that I have never seen a patient recover in which the general peritoneal cavity was infected throughout its entirety.

With all due deference to my professional brethren who report cures of general septic peritonitis, I must nevertheless say that their cases were extensive, no doubt, but just as surely were they cases of localized infection in which there remained some healthy, uninfected peritoneum.

ANESTHESIA.

This plays but a minor part in the mortality of the cases upon which this paper is based. Ether is used almost invariably and we have had but few accidents, and rarely a death which could be ascribed to the anesthetic. We have used spinal cocainization, but do not see that it offers any advantages or decreased risks over ether narcosis and it has certain decided objections. It does not secure muscular relaxation and therefore interferes with the operator and increases the risk of infection by the forcing of a knuckle of gut into the area of infection.

Occasionally a patient will inspire mucus, calling for tracheotomy, and this may be followed by an inspiration pneumonia. These accidents are to be laid to the condition of the patient rather than to the anesthetic. A patient with a septic condition in his abdomen will frequently take ether very badly and have respiratory failure or clogging of the trachea and larynx with mucus.

DIFFICULT CONDITIONS.

The position of the appendix, as has been said, in its relationship to contiguous organs, influences the

difficulties of operation and the prognosis. It is far more difficult to remove an appendix which forms part of the wall of the abscess cavity or infected area, or one which is behind the cecum, than one which springs into view as soon as the peritoneum is opened, and undoubtedly the removal of an appendix under such circumstances increases the risk unless it is performed by one whose technique is highly developed, and who fully realizes the dangers to the patient. I believe, and to my own satisfaction have demonstrated, that the removal of the appendix, except in rare instances, will give the lowest percentage of mortality.

Adhesions always mean increased operative difficulties and both directly and indirectly are responsible for appendiceal mortality. Directly, by the danger of dissominating infection, by the concealment of secondary collections of pus, and by hemorrhage; and indirectly, by intestinal obstruction, by stripping off of the serous coat of the bowel and subsequent necrosis, and by tearing the mesentery with the same result. And yet adhesions are of use to those unfortunates who are denied, by their own or their physician's prejudices, the benefits of early operation. The post-operative pains of patients who have had abdominal adhesions are so common that one dreads to meet with them at the time of operation. The pain is due to tugging and pressure on the adherent organs.

Perforation of the appendix is not necessarily a fatal accident, yet it is of common occurrence in fatal cases. As has been said, the danger of perforation lies in the locality of the perforation and its relation to the position of the appendix. When perforation occurs in the early hours of an attack, before the confining wall of lymph has become sufficiently organized to protect the peritoneum, the danger of a fatal peritonitis is increased. Perforation is always indicative of an extensive pathologic change, those leading to the rupture and those which follow as a result of the free outflow of infectious material. What has been said of the perforative type is to a great extent true of the gangrenous, for the two are usually found to co-exist. It is in these two varieties that the secondary septic complications arise that are responsible for so many deaths.

There are the following five varieties of appendiceal abscess dependent upon the location of the collection:

1. This is the most common in my experience, and is the one in which the collection is located post-cecal, or between the layers of the ascending meso-colon. This variety is attended by a high rate of mortality. Here it is that we find post-peritoneal infection, lymphadenitis, phlebitis and pyelo-phlebitis. I have come to dread the consequences of this last variety of abscess on account of the tendency to gangrene of the cecum and colon, as a result of the disturbance of the circulation of the bowel by the dissecting process of the pus, to pressure necrosis and to septic thrombosis of the mesenteric arteries. This has occurred in a large percentage of my fatal cases of post-cecal abscess. The gangrenous condition of the bowel may occur prior to and subsequent to the time of operation, coming on as late as two or four days after operation: and when it does occur is apt to be rapidly fatal.

2. This variety is that in which the collection is immediately beneath the parietal peritoneum, being confined by the cecum, coils of small intestine, the omentum, the appendix, parietal peritoneum and masses of inflammatory lymph. In this variety the mortality is much lower than in the previous one, for the general peritoneum and lymph channels are shut off from infection. It is here that the question of the removal of the appendix comes up. Every case must be judged by itself, and a procedure decided upon which will best suit the case in point. However, in the vast majority of these cases the appendix can be and should be removed. Simply draining the abscess will allow your patient to recover from that particular attack, but does not offer a cure of the disease, for the likelihood of recurrence is not removed, and with each subsequent return the difficulties of operation and the dangers of an unsuccessful termination are distinctly increased.

In the cases of several of my patients who died of peritonitis subsequent to removal of the appendix, under the above-mentioned circumstances, the infection may have occurred as a result of this procedure. Nevertheless, more cases will get permanently well by removal of the appendix than would do so by allowing the gangrenous and perforated mass to remain.

3. In this variety the collection occupies the pelvis, and it is very common. It is, however, frequently unsuspected and undiscovered. Of all the varieties of appendiceal abscess, this is the most favorable for recovery, although it is frequently attended by involvement of the pelvic organs, especially in the female. The favorable prognosis of this variety is due to the isolation of the pus, owing to the dependent position of the pelvic collection.

4. This variety in which the collection is located near the median line of the abdomen and to the median line of the cecum renders a fatal issue exceedingly likely. It is this variety that is most apt to be associated with secondary collections. The difficulty of treating such an abscess, without infecting the general peritoneum, is extreme and frequently impossible.

5. Here the collection is free in the general peritoneal cavity, and in this variety the cases are practically all fatal unless operated upon very early.

CASE. 1.—W. C., aged 21 years, single; American; machinist. Admitted July 4, 1900.

Not feeling well for two days before admission. Complained of diarrhea and slight pain in abdomen. Twelve hours before admission was taken suddenly ill with severe pains in abdomen, vomiting several times. On admission abdomen distended, tympanitic and exquisitely tender. No movement of bowels or passage of flatus for 12 hours. Pulse wiry, rapid.

Operation immediately after admission: incision about four inches long, through right rectus muscle: as soon as the peritoneum was opened a large quantity of cloudy, brownish fluid escaped; intestines were red, injected, lusterless, and covered in places with a grayish-white exudate, as was cecum around the attachment of appendix. Appendix was ligated and cut off. Pelvis was drained with a glass tube, and one piece of iodoform gauze. Incision closed with silkworm-gut sutures.

Died 36 hours after operation, with symptoms of general peritonitis.

Urine after operation was scanty, albuminous and contained hyaline and granular casts.

This case belongs to the fulminating class in which operation must be performed in the first hours of the attack if the life is to be saved, for although the patient was operated upon within 12 hours from the beginning of the attack, the pathologic conditions found at operation would make recovery very exceptional.

CASE 2.—W. C., aged 32 years; married; American; machinist. Admitted to German Hospital Nov. 1, 1900, and the following history was obtained:

His father died of old age; mother living and well; 1 brother died of an accident, and 1 sister died in infancy; 3 brothers

are living and well. Has used tobacco and malt liquors habitually. Denies venereal diseases. He had measles in childhood, but has been in good health since then. He had a slight attack of abdominal pain two weeks ago, but no other history of appendicitis. His present condition began two days ago. The onset was sudden, with pain in right side of abdomen and tenderness. Bowels were regular before attack; during attack he took castor oil, from which he had two or three bowel movements. The pain was cramp-like, and became steadily worse hour by hour. He had no digestive disturbances; there was rigidity of the right rectus muscle, but no distension.

Operation one hour after admission. Ether was used, which he took badly, becoming markedly cyanosed, with dilated pupils and rapid pulse, while his abdominal walls were not relaxed. An incision five inches long was made through the right rectus muscle. The omentum was red, inflamed and adherent to the intestines. The appendix and bowel around it were densely adherent; appendix was behind the cecum, gangrenous and adherent, and surrounded by a collection of pus. Appendix was freed and removed and cavity drained. Wound partly closed with through-and-through sutures of silkworm gut.

Nov. 4, 1900. Abdomen is flat; passes flatus; stomach retentive; is extremely restless and can not sleep. Has an anxious expression; cold, clammy hands; leaky skin; rapid weak pulse. He is mentally clear. Died at 8 p. m.

Partial postmortem through incision showed partially gangrenous condition of colon, and cecum with a plastic peritonitis; right-sided chronic pleurisy; a severe parenchymatous nephritis.

In this case, as in the previous one, earlier operation was almost essential to a favorable outcome. From the conditions found, there must have been previous attacks, as the adhesions were too dense to have formed entirely in two days. Another of the disadvantages of late operation was here shown, in the large amount of ether he required and a subsequent ether nephritis.

Death was directly due to a septic absorption from a gangrenous bowel, caused either by pressure of exudate, or more likely septic thrombus in the mesenteric vessels. This is probably a commoner cause of death in cases like this than is general septic peritonitis.

Case 3.—H. L., aged 45 years; married; Irish. Was admitted to German Hospital, Jan. 12, 1900, with the following history:

Parents died of old age; does not remember having any of the diseases of childhood; was never sick until present time; smokes moderately; denies venereal disease.

Was first taken sick on Christmas day, 1899, with pain in the right iliac region. The pain came on suddenly and was associated with tenderness and constipation, but no vomiting. Does not think anything that he ate caused the trouble. Has been subject to bellyache for two years, but has had no attacks as severe as the present one. The pain has persisted ever since it began, being a little better for a day or so, and then again worse.

On admission, has pain and tenderness in right iliac region; there is rigidity of right rectus. Blood count: Hemoglobin, 75 per cent.; 4,550,000 reds and 16,000 whites.

Operation, Jan. 18, 1900. The patient was etherized and a long incision made through the rectus muscle. The cecum and appendix were bound down by dense adhesions; when the bowel was finally freed, it was bleeding from numerous points.

An attempt was made to cover the bleeding points with folds from the contiguous peritoneal coat of the cecum. In doing this it was found that the serous coat of the bowel was soft and friable. The appendix was cut out of the cecum, and the wound closed with Lembert sutures. Two large pieces of iodoform gauze were left in for drainage, and the wound partially closed.

Patient died five days after operation, with symptoms pointing to septic absorption from gangrenous bowel, although no postmortem examination was made.

This case was probably one of subacute appendix of two years' standing, and ought to have been operated upon long before.

Case 4.—A. H., aged 18 years, single. Admitted May 13, 1900, to German Hospital, with the following history:

Parents are in good health; 2 brothers died in childhood; 2 brothers and 3 sisters living and well. Except for the diseases of childhood has always been well. Menstruation normal, began at 16 years.

Present illness began two weeks ago with a sharp pain in the right side, accompanied by tenderness and vomiting. The pain continued three days, then gradually subsided, only to return in two days, and was again associated with vomiting. Yesterday—May 12—was the last attack of sharp pain; it lasted several hours, during which she vomited twice.

On admission there is no pain, no tenderness, no rigidity, no nausea or vomiting. No mass palpable through the abdominal wall, but a distinct mass, tender to the touch, is felt through the rectum.

Operation, May 14, 1900; Incision made through the right rectus. The cecum and coils of small bowel in the right iliac fossa were adherent, and when separated a small abscess behind the cecum was ruptured liberating about 50 c.c. of offensive pus. Gauze had been packed about the region to wall off the general peritoneal cavity. The appendix was part of the wall of the abscess referred to, and as it was not sufficient to account for the mass felt in the pelvis per rectum, the pelvis was explored, and an abscess was found containing about 160 c.c. of very malodorous pus. This was evacuated, and a glass drainage tube was inserted. A counter opening was made in the flank, and rubber drainage introduced. One piece of gauze was lightly packed about the rubber tube, to control some bleeding, and two pieces of gauze were placed about the glass drainage. The wound was partially closed with through-and-through sutures.

May 15. Fecal material is coming through the glass drainage. Glass drainage tube removed.

Patient died on the seventh day, May 21, with symptoms of general sepsis.

Urine albuminous with hyaline and granular casts.

This case illustrates what serious conditions may be present, and yet show very few symptoms. Of course, operation should have been done two weeks earlier.

Case 5.—R. J., aged 14, single, schoolboy. Admitted May 19, 1900, and the following history obtained:

Has been sick for three days. The attack came on suddenly with severe pains in abdomen, nausea and vomiting. On admission abdomen distended and painful to touch. Operation as soon as admitted.

An incision was made through the right rectus muscle. On opening the peritoneum a large quantity of yellowish fluid containing white flakes escaped. The appendix was found in the pelvis, surrounded by a large quantity of very offensive pus. The appendix was ligated and excised. Glass drainage tube placed in pelvis. The general abdominal cavity was then thoroughly washed with saline solution. Iodoform gauze placed in for drainage. Part of incision closed with silkworm-gut.

The patient died two days later of general purulent peritonitis.

Case 6.—S. J. N.. Acute appendicitis. Admitted May 28, 1900.

Was sick for ten days before admission; complained of nausea, constipation, pains in abdomen, and tenderness in right side. Two days before admission symptoms became severe.

On admission: Abdomen distended, tympanitic and very painful. Pulse rapid and wiry.

Operation: Incision about 6 inches long made through right rectus muscle. On opening peritoneum about one gallon of cloudy, yellowish serum escaped. Intestines red, covered with exudate, lusterless. The appendix was bound down by adhesions and was gangrenous and contained pus. Appendix was removed; large quantity of offensive pus found in pelvis.

Glass drainage put in pelvis, and three pieces of iodoform gauze packed in, ends being brought out lower part incision. Balance of incision closed with silkworm-gut sutures. Urine albuminous with hyaline and granular casts.

Patient died on third day after operation of septic peritonitis.

CASE 7.—M. M., 13 years. Admitted Nov. 15, 1900. Has never had an attack of acute abdominal pain. Has had several bilious attacks in which he had headache and vomiting.

Two days before admission he began to feel sick, nausea and vomiting. The night before admission he was suddenly taken with acute abdominal pain—very severe cramp colic—and vomiting. His bowels moved on day of admission. He had no chill.

When admitted had temperature 102. Pulse 124 and rather weak. He was cyanosed, hands were cold, complained of much pain and tenderness in abdomen. Passed no flatus. Abdomen was very rigid, tender, slightly distended, and tympanitic.

Under ether, the abdomen was opened through the right rectus. Upon opening the peritoneum the pus gushed forth. The abdomen everywhere was filled with foul-smelling, yellowish, thin pus. The intestines were very much inflamed, and in some places covered with lymph and plastic exudate. The appendix, which was behind the cecum, was slightly adherent, gangrenous, perforated in the middle. It was ligated and removed. The abdominal cavity was flushed very thoroughly with saline solution. A glass drainage put in pelvis, and five pieces of iodoform gauze.

During the operation he had a poor pulse, so rapid that it could not be counted. After the operation it was very weak. He vomited, became delirious and very restless. Morphin was given, but it did not act and he suddenly died 21 hours after operation of purulent peritonitis.

CASE 8.—B. W. S., age 22 years. Admitted May 31, 1900.

First attack two weeks ago after riding wheel very fast. Was taken suddenly sick with severe pain in abdomen, which became localized on right side. He was treated for a sprain; has been getting progressively worse. Pain not so severe.

On admission: Very tender right side; a fluctuating mass can be felt in the right iliac fossa.

Operation: Incision about 6 inches long made through right rectus muscle; after walling off general cavity with sterile gauze, abscess opened, contained 500 or 600 c.c. offensive pus. Appendix behind cecum and perforated. Second incision was then made in flank to secure free drainage. Abscess cavity packed with iodoform gauze, and incision closed with silkworm-gut.

Patient died 12 hours after operation of shock and peritonitis.

CASE 9.—P. B. J., age 26 years. Acute appendicitis. Admission Feb. 5, 1900.

Patient was too ill to get a history. Only a few questions were asked. It was his first attack. Had been taken ill suddenly one week before coming to the hospital. Thought he had an ordinary bellyache and did not send for the doctor until two days later. There was at first great abdominal pain and tenderness all over the abdomen, accompanied by vomiting. The pain gradually localized in the right iliac fossa, and became more severe.

On admission: Patient was having considerable pain, and was exquisitely tender. The rectus was rigid, and there was a mass in the right iliac fossa.

February 6, operation: Patient etherized and a long incision made through the rectus. The cecum and a part of the ilium gangrenous. There were numerous adhesions. In the effort to free the appendix a large abscess below the cecum was ruptured, and a quantity of foul pus liberated.

Blood count: Hemoglobin, 78 per cent.; erythrocytes, 5,020,000; leucocytes, 41,600.

Died 36 hours after operation. Temperature 104 degrees.

CASE 10.—Miss M. S., age 27 years. Admitted June 10, 1900.

On admission the patient had pain in the right iliac fossa. There was rigidity, tenderness and dulness in the right iliac fossa. Vaginal examination revealed a tender mass to the fossa of the cervix.

June 10, operation: Incision through the right rectus. Cecal region walled off with gauze. Appendix found turned on itself and behind the cecum. In the attempt to release it an abscess was evacuated. Appendix ligated and cut off. Two pieces of iodoform gauze and a rubber tube were put in as drainage.

Urine albuminous, granular casts.

Patient died on the third day with symptoms of general purulent peritonitis. If organ had not been searched for the abscess would not have been discovered.

CASE 11.—W. B., age 52 years. Acute appendicitis. Admitted July 7, 1900.

Family history negative. Always in good health until 50 years of age. Complained then of malaise. Appetite good; bowels constipated; throat felt dry; drank large quantities of water. Passed large quantities of urine. One year ago had right leg bruised. Broke down and had open sore for two or three months. Six months ago noticed left big toe black and stiff. Small sore under toe which was discharging. This went on until had an ulcer along tendon leading to big toe; three months later toe came off; no pain. Now complains of dryness of mouth and throat. Drinking does not satisfy. Is beginning to lose appetite; some nausea and vomiting; lost weight; 12 days ago had an attack of cramp-like pains in abdomen; came on suddenly; nausea and vomiting. Three days later had fly blisters put on right side. This raised blister which instead of healing left two running ulcers.

On admission: An exquisitely tender and very hard mass can be felt in the right flank and iliac fossa. No fluctuation at this time. Later the mass broke down and showed fluctuation. Not so tender.

Operation: Incision about 2 inches long made transversely above crest of ilium under local anesthesia. Large quantity, 500 c.c. E, dark vile-smelling pus evacuated. Abscess cavity washed out and three pieces rubber tubing inserted for drainage. Wound then dressed antiseptically.

While pus was being evacuated a piece of rotten tissue came out, was about 4 inches long and ¼-inch wide. Could not tell what kind of tissue. Supposed to be appendix. Died on third day after operation in diabetic coma.

CASE 12.—H. K., age 17 years. Acute appendicitis. Admitted June 8, 1900.

Always in very good health until two months ago, when had an attack of appendicitis. Was then sick for several days. Attack came on suddenly with cramp-like pains in abdomen, very severe. These pains lasted for several hours, then had pain in lower part of abdomen, particularly in right side. Was then up working on delivery wagon, noticing at times slight pains in right side when jumping off wagon. Two weeks later had another attack lasting three or five days. Few days later had third attack, was sick for two days, but did not have to go to bed. Present trouble began two days before admission; had cramps in abdomen for short time, since then had continuous pain in lower part of abdomen and right side. Has vomited twice. Examination shows tenderness on pressure in left and right inguinal regions. Rectus muscles, both sides, more rigid than normal, especially right.

Operation: Incision about 3 inches long made through right rectus muscle; appendix found in pelvis bound down by adhesions. After protecting general peritoneal cavity by packing with gauze, adhesions broken up, finding several c.c. of purulent, bad-smelling pus.

Death due to general septic infection.

Did not have a general peritonitis; in this case the abscess was not discovered until the appendix was searched for.

CASE 13.—C. C., age 22 years. Acute appendicitis. Admitted Dec. 24, 1900.

Patient has always been in good health with the exception of slight colds and an attack of influenza. His habits good. Does not use tobacco or alcohol. Denies venereal diseases. Has never had an attack of appendicitis before. Bowels regular. Appetite and digestion good.

Five days before admission he complained of feeling unwell. He had pain under the lower border of ribs on the right side. He had no appetite. Bowels moved regularly.

The pain became worse and more general, but more marked on right side, from the level of the umbilicus to the lower border of ribs. The pain was constant and cramp-like, and two days later there was marked tenderness all over right side, high up, near gall bladder, but pressure over the appendix caused the pain to become worse. Appendicitis with the appendix pointing up toward the liver was diagnosed. There was no marked distension or dulness.

Under ether an incision was made at McBurney's point. The abdominal walls were not thoroughly relaxed. The appendix was very long, and ran under the cecum up to the liver, and was gangrenous in three places. It could not be delivered in the usual manner, so the proximal end was ligated and then pulled out without ligating the appendicular artery, which was so deep that it could not be reached. There was pus present behind cecum. Drainage by rubber tube in loin and six pieces of iodoform gauze.

After operation his pulse became very rapid and there was a marked hemorrhage through the loin incision, which was controlled by packing with gauze.

His abdomen became distended on second day; pulse was very weak. He received streptococcic serum, but it had no effect. He was transfused four times the last 36 hours before death, receiving 8500 c.c. salines. He became restless, delirious, and on receiving hyoscin and morphin, he slept until the end without being conscious.

Incision was not opened for postmortem.

December 25: Hemoglobin, 95 per cent.; erythrocytes, 4,110,000; leucocytes, 14,200.

December 26: Hemoglobin, 90 per cent.; erythrocytes, 4,150,000; leucocytes, 20,400.

Probable post-operative gangrene of cecum. The hemorrhage after operation was an important factor in this man's death, as it lowered his powers of resistance.

Case 14.—J. D. Acute appendicitis. Admitted May 7, 1900.

Had been sick for three days; was taken suddenly sick with acute pains in abdomen, which became localized in right side; bowels constipated. On admission found exquisite tenderness, right side. Rigidity of right rectus muscle. Mass can be felt in right flank.

May 8, operation: Incision through right rectus muscle. Appendix behind cecum bound down firmly by adhesions. Abscess behind cecum extending upward and backward. Appendix perforated at distal end. Abscess evacuated and appendix removed and hole in cecum closed. Incision made in flank, rubber drainage tube inserted. Abscess cavity packed with six pieces of iodoform gauze.

May 9, 7 a. m; few râles noticed over right side of chest; 10:20 a. m., crepitant râles; increased fremitus and resonance, right base; slight cough.

Died on second day after operation of pneumonia.

Urine contained albumin and casts.

Case 15.—J. S., age 52 years. Acute appendicitis. Admitted March 24, 1900.

Patient was suddenly taken ill two and one-half days before admission, with pain, nausea and rigidity. Pain became localized to right iliac fossa. Operation advised, and took place 20 minutes after arrival in hospital, so that little history was obtained.

Much pain, distension, and shock on admission. No flatus or feces passed for 12 hours. Probably due to a paresis of bowel.

March 24, operation: Incision 5 inches long in right rectus. Peritoneum opened; bowels red, injected, and much distended. Appendix behind cecum, bound down by adhesions and gangrenous. Patient died on operating table.

Case 16.—C. H., age 21 years. Acute appendicitis. Admitted May 28, 1900.

Sick four days. Attack came on suddenly with severe pain in abdomen, nausea, vomiting and constipation. No passage of gas. Abdomen distended, muscles rigid and exquisitely tender.

Operation: Found general purulent peritonitis. Appendix bound down by dense adhesions, and surrounded by inflammatory lymph. Appendix, which pointed toward pelvis, was gangrenous, as was cecum near attachment of appendix. Appendix ligated and excised. Glass drainage with four pieces of iodoform gauze packed around.

Patient did not come out of ether, and died four hours after operation.

Case 17.—E. A. G., age 28 years. Acute appendicitis. Admitted May 19, 1900.

Has had trouble for several years.

Operation: Incision made parallel to Poupart's ligament, opening up abscess which extended down into the pelvis. Second incision then made through right rectus muscle, intestines bound together with firm adhesions, and between the coils numerous small cysts filled with dark, cloudy fluid. Appendix, which was gangrenous, was found in pelvis, was ligated and removed. Large cyst of right broad ligament, both ovaries cystic.

Glass drainage tube and two pieces of iodoform gauze put in place, and incision partly closed with silkworm-gut sutures. First incision packed with iodoform gauze.

During operation patient's lungs and trachea became full of mucus. Pulse weak and rapid. Face blue. Inability to breathe. Tracheotomy then done and patient revived after artificial respiration kept up for several minutes.

10 p. m., patient transfused 3000 c.c. saline solution. Died at 6 a. m., 12 hours after operation, from shock.

Case 18.—J. B., age 19. Acute appendicitis. Admitted Nov. 20, 1900.

Has never been sick in bed. Had several slight colds. Denies gonorrhea and syphilis. Had an attack of abdominal pain which lasted four days in August.

Had an attack of acute abdominal pain at 10:30 last night. Came on gradually with acute pain all over the abdomen, localized near umbilicus. No localized pain at McBurney's point. Bowels moved soon after attack began. Was nauseated and vomited. Could not sleep on account of pain, which was dull in character with occasional paroxysms. Had eaten nothing unusual before the attack.

When admitted had pulse of 116. Temperature 101 4/5. Had received a hypodermic of morphia before he was admitted, from effects of which he was drowsy. Had no pain and was not tender on gentle touch over the appendix or on the left side. The abdomen was markedly rigid on both sides. No dulness noted. Did not vomit. Lungs clear; heart normal; liver dulness, not enlarged; spleen normal.

Operation: Under ether, an incision was made through the right rectus muscle. On opening the peritoneum, pus escaped. There was pus all over the abdomen. The bowels were injected. Large pieces of gauze were put into abdomen to wall of the bowels, and the appendix, which occupied the pelvis, was then delivered, ligated, cut off, and the stump washed with bichlorid and carbolic solution. A glass drainage tube was introduced into pelvis, and there was a great discharge of pus. The most of the purulent matter, which was creamy in color, and of not very foul odor, was in the pelvis. A large piece of iodoform gauze was put down into the pelvis, one along the cecum, and one over the intestines. Three pieces of gauze and a glass drainage tube left in. The wound was partially closed with silkworm-gut sutures through and through.

Second day after operation, began to have distension of abdomen, passed no flatus. Pulse became weaker. The distension soon became marked. He began to vomit and was restless. The gauze was removed on the fourth day, when he showed all the symptoms of a general peritonitis. He was transfused with 2000 c.c. salines. He was conscious to the end. The pulse was better after the transfusion for six hours only. He died while vomiting; the vomit seemed to get into his larynx and strangle him. Urine scanty and albuminous, with granular casts. General peritonitis.

CASE 19.—M. K., age 25 years. Acute appendicitis. Admitted Aug. 19, 1900.

Had had several well-defined attacks of appendicitis during the past four years, none of which, however, were very severe.

Present illness began suddenly 10 days before admission, with severe cramp-like pains in the abdomen accompanied by diarrhea and vomiting. Later the pain localized itself to the right iliac fossa, where he was very tender and a mass could be distinctly palpated.

Operation: Performed immediately after admission. Incision 5 inches long through right rectus muscle. Bowels packed away with sterile gauze. Abscess found behind the cecum, with the appendix, which was inflamed, bound down in the pelvis by adhesions. Adhesions broken up and appendix ligated and removed.

Patient reacted from the ether, but during the second twenty-four hours after operation vomited a few times. Passed gas freely and bowels moved on the second day and stomach became retentive. Patient was excessively nervous and at times became delirious.

Tube became perfectly dry on the 4th day, and was removed along with the gauze and replaced by two rubber tubes. Patient's nervousness and restlessness increased every hour, in spite of all that could be done to control it, and he died finally of exhaustion on the 7th day after operation, due to septic infection.

Urine scanty and albuminous, containing hyaline and granular casts.

CASE 20.—J. K., age 29 years. Acute appendicitis. Admitted Dec. 7, 1900.

Father, mother, two brothers and two sisters living and well. No family history of phthisis. Had the milder diseases of childhood. Enteric fever in summer of 1899. Has not been well since. Always complained of pain in chest and abdomen.

Nov. 5, 1900, was taken suddenly sick with abdominal pain, which was very severe for a few hours, and came on again from time to time. December 1, he was again taken with severe pain, vomiting, tenderness in right iliac fossa which gradually grew worse. Had history of phthisis. When admitted he had a mass in right iliac fossa, prominence of wh could be seen. He was very tender, there was dulness present and marked rigidity. He was operated upon as soon as admitted.

Under ether, incision was made through right semilunar line; there was a large mass on right side walled off by small bowels and omentum. The abscess cavity was between the parietal peritoneum and the cecum. This was opened and thoroughly cleansed by biehlorid solution. Part of the omentum was indurated; this was tied and cut off. The appendix was on the cecal side of the abscess. It was gangrenous, very large and fragile. It was tied off and removed.

Five pieces of iodoform gauze and a glass drainage tube was put into abscess cavity and part of wound closed with silkworm-gut sutures.

After the operation his pulse was better than before. He was restless, vomited and hiccoughed a great deal. Tube was cleaned, and contained pus and blood. He did not cough. Stomach was not retentive. Twelve hours before death he became very restless, pulse became very weak. He was conscious to the end. Vomited fecal matter, bowels became very loose, and died with symptoms of peritonitis.

Blood count: Hemoglobin, 68 per cent.; erythrocytes, 4,470,000; leucocytes, 19,000. Urine albuminous and casts. General purulent peritonitis.

CASE 21.—M. S. M., aged 30 years. Acute appendicitis. admitted Sept. 25, 1900.

Has had six attacks of appendicitis of varied intensity and duration, from a few hours up to 10 days. Usually vomited with the attacks.

Present attack began 24 hours before admission; had had diarrhea for a day or two before. Was suddenly seized with general abdominal pain and vomiting, after a few hours pain became localized to right iliac fossa, where it became very severe, and was accompanied by exquisite tenderness. Pain was so severe that he had taken 2½ grains of morphia in the twenty-four hours before admission, without entirely controlling it.

On admission: Temperature 102, pulse 96 and soft. Abdomen slightly distended; right rectus very rigid; exquisitely tender in right iliac fossa, where there is a sense of fulness on palpation, although no distinct mass can be made out.

Incision 6 inches long through right rectus muscle. Appendix found to be perforated and gangrenous, and to be tied up with the cecum. and small bowel in mass of adhesions. A small quantity of pus around the appendix. Pus evacuated and appendix freed, but on tightening it, tissues so friable that it cut through. Hole in cecum closed as well as possible, but owing to its devitalized condition stitches cut out very often. Meso-cecum brought over the place and fastened there; omentum too gangrenous to serve. Lower part of omentum ligated and cut off. Three pieces of iodoform gauze packed around the infected area separating it from the general abdominal cavity. Upper and lower parts of wound closed.

Patient came out of ether all right, but after a few hours general peritonitis set in, and patient died about 60 hours after operation.

CASE 22.—Mrs. R. O'B. Acute appendicitis. Admitted Jan. 19, 1900. Has always had good health. No previous attack of appendicitis.

The patient was taken ill with fever, slight abdominal pain, some diarrhea, headache, pains in back and legs, and marked malaise. This was about seven weeks before she was brought to the hospital. For some time she was treated on the supposition that she had influenza of the gastro-intestinal type, or a mild enteric fever, although there were no spots or nose bleeding. Then the diarrhea was followed by constipation, the abdominal pain became much more severe, and was cramp-like, the right iliac fossa began to be markedly tender on the slightest palpation, and on careful examination a slight localized mass could be made out in the appendiceal region. There was no vomiting. The patient and family were advised that an operation was necessary, but refused to follow the advice. Patient gradually lost flesh and strength, and attained a septic appearance. At times she would perspire freely, and at other times have chilly sensations. The pain gradually disappeared to a large extent. The mass was easily palpable. The fever persisted and was decidedly septic in character. Finally an operation was consented to.

Operation: January 21, an incision about 4 inches in length was made through the right rectus muscle. An abscess about the size of a goose egg lay back of the cecum, and in this lay the gangrenous appendix, running up to the posterior aspect of the cecum so that the tip almost reached the lower border of the liver. The pus was evacuated, and the appendix, with the neighboring necrosed structures and indurated masses of tissue, was removed. The weakened and in places slightly ruptured portions of the posterior aspect of the cecum were sutured with fine black silk. A counter incision was made in the flank to permit through-and-through drainage.

Urine albuminous. Hyaline and granular casts.

Died on the 12th day after operation. Bowels very loose from operation to time of death. Pulse rapid and weak.

Symptoms pointed to death from septic absorption from gangrenous bowel.

CASE 23.—J. E. V., age 36. Acute appendicitis. Admitted Nov. 23, 1900.

Has never been sick in bed except with appendicitis. Two years ago had an attack of appendicitis. Was sick six weeks. Bowels inclined to be constipated. Had an irritable stomach.

Present attack began about 10 days before admission; had pain in his abdomen, which became very severe a few days before admission. Vomited very often. Pain and tenderness were much worse on right side. When admitted he had temperature 101, pulse 112. Had a large mass in right iliac fossa.

Under ether an incision was made on the right side, going through the rectus muscle. The appendix, which pointed towards the pelvis, was bound down by many adhesions. The large and small bowel were adherent. The adhesions were

separated in freeing the appendix, which was markedly inflamed and surrounded by pus. The appendix was ligated and removed.

Developed a fecal fistula a few days after operation. Patient was never strong after operation. Stomach was irritable. An abscess developed in right buttock. Several days before his death there was pus in his stools, and after it made its appearance he began to sink. It was caused by the rupture of a deep abscess in his buttock, rupturing into the rectum. This wound was opened after death. The intestines were in good shape. The kidneys were enlarged, and the seat of parenchymatous inflammation. Underneath the peritoneum and traveling along the psoas muscle was an abscess which pointed in the buttock, and ruptured into the rectum. This so weakened him that he finally became delirious and died.

Urine albuminous with hyaline and granular casts.

On admission, blood count: Hemoglobin, 75 per cent.; erythrocytes, 4,970,000; leucocytes, 14,800.

Case 24.—C. L., aged 17 years. Acute appendicitis. Admitted Jan. 29, 1900.

One week before admission the patient was suddenly seized with a pain in the right iliac fossa. While there was some general abdominal pain, it was most acute in the lower right quadrant. Bowels had been sluggish for some time before this. Vomiting started the second day. These symptoms, with great tenderness, persisted until the third day, when all the symptoms diminished in severity. On the day before admission to the hospital an exacerbation of the symptoms occurred, the patient suffering more than in the beginning of the attack. On admission it was found that there was exquisite tenderness and a mass in the right iliac fossa. The right rectus was markedly rigid.

Operation: A long incision was made through the right rectus muscle. Immediately upon opening the peritoneum a large quantity of malodorous pus escaped. The intestines in the lower right quadrant were matted together by adhesions, and there was an abundance of organized lymph gluing everything together. After considerable work separating the bowel, the head of the colon was freed sufficiently to locate the appendix. It was in such a position to the inner side of the cecum as to point toward the spleen. There was a small perforation near the distal end, and the entire organ was encased in organized lymph. As the cecum could not be brought out of the wound, the appendix was ligated and cut off the cecum. Glass drainage.

February 22. Intestinal obstruction: The patient has been having severe pains off and on for a week or two, and they have been growing worse, coming oftener, and lasting longer. Yesterday he began to vomit. To-day vomiting, no flatus and the outline of the bowels showing on the surface of the abdomen. Great pain. In a fit of coughing broke the wound partly open, and the intestines protrude.

Old incision opened; numerous adhesions found, and at one point the ileum was caught in such a way as to be an obstruction to the lumen of the bowel. Below this point it was collapsed, above inflated. The bowel was freed and all adhesions broken up, and the wound closed as usual.

Patient died within 12 hours after the second operation. Intestinal obstruction from adhesions.

Case 25.—A. B., aged 50 years. Acute appendicitis with abscess. Admitted Aug. 23, 1900.

Patient was admitted on the eighth day of an attack of acute appendicitis. Could speak Italian only, and no history was obtainable. On admission temperature was 100 degrees, pulse 96. Has a large tender mass occupying the right iliac fossa.

An incision 7 inches long was made through the right rectus muscle. Immediately on opening the peritoneum a large collection of pus was encountered; this escaped both externally and into the general peritoneal cavity.

The abscess wall was found to consist of thickened mesentery and coils of small bowel, glued together by inflammatory exudate. Appendix, which pointed toward the cecum, was ligated and removed.

The patient came out of ether nicely, and was comfortable all night, but on the next day general peritonitis began, and the patient died 48 hours later.

Case 26.—J. S., age 20. Appendicitis; chronic ovarian cyst. Admitted Aug. 7, 1900.

One year ago had an attack of appendicitis, was sick six weeks. Since then complained of a feeling of fulness and some pain in the right iliac fossa. No nausea or vomiting. Menses normal.

Examination shows tenderness on pressure in the region of appendix.

Operation: Incision made through right rectus muscle. General peritoneal cavity walled off with gauze; found ovarian cyst about size of an orange. Appendix in pelvis, and bound to cyst by numerous adhesions; many small cysts between knuckles of bowels, filled with yellowish, muddy fluid. Adhesions broken up and right tube and ovary removed. Cyst was filled with dark-yellowish, cloudy serum. Appendix, which showed chronic inflammation changes, was ligated and removed. Great omentum was adherent to cyst. These adhesions broken up, omentum ligated and about 1½ inches excised. Glass drainage tube put in place and wound closed.

Patient was apparently doing well after operation, bowels moving freely on the second day. On the third day glass drainage was removed, and wound closed completely, by tying the previously introduced stitches.

Twenty-four hours later symptoms of general septic peritonitis began, with pulse of 132. Vomiting was practically continuous, and in a few hours became the typical black vomit of septic peritonitis. Abdomen became tympanitic and was extremely tender. Twenty-four hours after onset of peritonitis, the lower part of the incision was opened, and the abdomen flushed out and drainage again introduced. This, however, failed to arrest the progress of the disease, and the patient died on the sixth day after operation.

Infected at the time of removal of the drainage tube.

Case 27.—E. D., aged 38 years. Acute appendicitis. Admitted April 2, 1900. Had congestion of brain and spine three years ago. Present trouble began February 10, complained of general abdominal pain, cramp-like in character; later pain localized, right side. Bowels regular. Vomited for 3 or 4 hours.

On admission find mass in right side about 4 inches long by 2 wide, very hard, and painful to touch. Can not straighten out right leg. History of having passed pus from bowels four times.

First incision 3½ inches long, made just inside anterior superior spine of ileum, near mass, at angle of about 45 degrees to Poupart's ligament and running up and outward above anterior superior spine. On reaching external oblique muscle, found it hard and indurated from inflammatory infiltration. On cutting deeper, knife entered mass soft broken down anterior. This was washed out with carbolic and bichlorid. Lightly packed with two pieces of iodoform gauze.

Second incision made to right median line through right rectus muscle into peritoneal cavity. On elevating abdominal wall, found ileum and cecum adherent to parietal peritoneum; cecum separated from peritoneum with difficulty. This done, the appendix was found behind and to the outer side of cecum, encased in considerable amount of organized lymph.

Blood count; Hemoglobin, 79 per cent.; erythrocytes, 3,840,000; leucocytes, 21,580. Urine normal. Died on third day after operation of general purulent peritonitis.

This case is probably one which was infected at the time of operation, although every precaution to protect the peritoneum was taken. Abscess of the abdominal wall.

Early Sign of Measles.—Two French writers have recently called attention to the sore throat, studded with white dots, which they have observed in a large number of cases of measles. This sore throat precedes the other symptoms of measles by several days, and the diphtheria bacillus was found in the throat in several instances, leading to an erroneous diagnosis.

SYMPTOMATOLOGY OF CEREBRAL HEMORRHAGE.*

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PHILADELPHIA.

The symptoms of cerebral hemorrhage, in unison with many other of the acute affections of the central nervous system, are so frequently aberrant and simulated by different diseases producing a sudden insult to that vital organ of the body, the brain, that rehearsing the subject as a whole seems timely before this representative body. We shall dwell upon the cardinal symptoms in due measure, we trust, and yet hope to point out the more unusual signs resulting from rupture of the cerebral vessels. Coming under the head of cerebral hemorrhage, not only an extravasation of blood in or about the brain, but thrombosis or embolism producing acute softening, which latter is indeed difficult to distinguish from a slow exudation of blood within the encephalon. This latter condition was shown recently in consultation with Dr. Küsel in a man, aged 63, visited on March 7, 1901. There was no history of alcoholism or specific disease. He had had, five years ago, an "attack" in which vertigo was a prominent symptom, there being no paralysis resultant, but he was left with difficulty of speech (motor aphasia) and acute asthenia following the injury to the brain, which confined him to bed for three weeks. The man had never been well since; he complained of feebleness but no paralysis, the speech defect remaining up to the day of his present illness, which occurred Feb. 1, 1901. His speech first becoming worse as to the aphasia, he was taken to his bed with what was pronounced a complicating attack of influenza. About a week after he had been confined to the bed, it was noticed there was some weakness of the right upper and lower extremities, and of the body. There was never conjugate deviation of the eyes. When I saw him on March 7 he was moribund; there was no pupillary response, nor could reflexes be detected anywhere. The temperature in the right axilla was 105.8 F.; in the left axilla, 105. The bladder was distended with urine which, when drawn, proved negative; this in all probability eliminated nephritis as an etiological factor.

The particular symptom occurring for three or four days before death perhaps has some weight in the diagnosis of these cases from hemorrhage *per se*, i. e., the symptom of decided mental excitement, still somewhat under the control of the individual. This was shown by the fact that this man, during the spells of hallooing at the top of his voice, could be quieted for the time being by his wife's forcibly correcting him, the patient relapsing again into excitement; he could not explain why he had cried out so. As said before, it seems to me that this symptom deserves some stress laid upon it as a sign of acute softening of the brain rather than massive hemorrhage, where, as in this case, it is difficult to determine the extent of the motor paralysis.

At necropsy, we found an area of softening in the left parietal lobe extending down to the lateral ventricle, the size of a silver dollar at its base on the cortex, due to arteriosclerosis of the cerebral arteries, especially of the posterior cerebral artery.

Symptoms of a typical case of cerebral hemorrhage are divided into those of the acute stage and those of the later or chronic stage. While the patient may have been feeling some premonitory signs, such as dizziness, headache and dulness of mentality for some days or weeks before the onset of the attack, still it is the rule that he is feeling particularly well immediately preceding the apoplexy, which in the majority of instances occurs during the sleeping hours of the night. This fact has always interested me from a psychological point of view, and is probably explained by the fact that inhibition generally is lessened during the early hours of the morning and very likely there is much less resistance within the encephalon, thus allowing overdistension of the cerebral vessels which produces the "breaking strain" in sclerosed cerebral arteries. This does seem somewhat paradoxical when considered in relation to physics, since increase of vascular area and therefore capacity to bring lessened arterial tension at any given point; but as inferred above, the greatly reduced "force de résistance" at the vulnerable point occurring at the site of a patch of sclerosis and fatty degeneration, will permit overdistension of the media and thus rupture. The patient, therefore, in 50 per cent. of instances on awakening, discovers that he is paretic or totally paralyzed in one side of the body. There may be little or no sensory phenomena so-called; the effort to move alone attracts his attention; or it may be that a motor aphasia is the only symptom the patient complains of, which in itself produces a mental excitement from apprehension as well as, no doubt, from disturbing the proper co-relation of neuronic force—the so-called nervous energy. This leads me to the suggestion to apply this same theory of disturbed nerve currents (somewhat identical with the ultimate result of disturbance of nerve energy due to the coaptation or retraction of the protoplasm of the neuron—the so-called neuronic theory) in explanation of the peculiar emotional state of the person suffering from cerebral hemorrhage. This manifestation of the psychology of apoplexy very likely may be produced by the abrupt severance of the proper association of other concept centers with the center of ideation.

If the hemorrhage has been massive, the patient will, of course, be found comatose. The conjugate deviation of the eyes will occur towards the affected side, the pupils will be dilated generally one more than the other and will be only slightly responsive to light stimuli. The reflexes will be found abolished on the affected side at this stage. At the end of a few hours, the knee-jerk and other reflexes which have been abolished now return and become increased from day to day due to irritation of the motor tract from the cerebral lesion whether it be a hemorrhage, embolus or thrombus. The patient will breathe heavily; perhaps the Cheyne-Stokes style of respiration will prevail. The temperature will be found increased both on the surface, where the affected side of the body shows an increase of 2/5 or 3/5 above the opposite side, the degree of caloric developed being 102 to 103 in the axilla and slightly above this when taken under the tongue or in the rectum. The patient generally lies supine, the paralyzed extremities may be hyperesthetic and within an hour or so when consciousness partially returns, if the case progresses favorably, the patient will frequently brush away the clothing or any irritating body, as a house fly, which may light on the paretic member. If the patient is to recover, the temperature drops at the end of four or six hours; the pulse which had been slow and full will become softer and will increase in frequency to slightly above the normal. Flushing and cyanosis of

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

the face will then disappear and the mentality be restored gradually, although the mental anxiety and lacrymoses may be shown at once in the physiognomy of the patient, aside from any paralysis in the face or vocal apparatus which may maintain. This sudden change of expression of the individual is an interesting and sad indicator of the havoc played by extensive organic rupture in the brain mass. There usually is a secondary rise of temperature even in a favorable case, due no doubt to irritation of the heat regulating mechanism; finally, after six or seven days, the temperature will remain irregular and hovering about the normal line. Within ten days or two weeks in the average case, the patient may be able to move about with the assistance of crutches if his previous condition of health has been fair; if he has been in a low stage of health, the ability to use the musculature will be proportionately lessened, all depending therefore on the idiosynerasy and reserve nerve force. As a rule, it is safe to say that the patient's nervous system is insulted enough by any sort of hemorrhage to warrant absolute quiet for a fortnight, which should be carried out religiously by the physician if relapse is to be prevented.

The diagnosis of pachymeningitis interna hæmorrhagic might at first seem unnecessary to mention in a paper on symptomatology of cerebral hemorrhage, but the condition is most difficult to diagnose. Two cases recently coming under my observation will uphold this view.

In my own case, that of J. McM., white, age 38, admitted to the Philadelphia Hospital on March 4, 1901, gave a history of previous venereal infection and that he had always been a heavy drinker. He had lately been intoxicated for three weeks, had mental stupor when first examined with hallucinations of hearing and sight. For the past three years he has been more or less a sufferer from shooting pains in the legs which he says were slightly rigid; this rigidity did not grow worse, although there was no lessening of the symptom. About two months before admission, the patient complained of incontinence of urine; and about a week previous to admission, of incontinence of the rectal muscle. On examination, the pupils were equal and slightly irregular in outline, the right pupil being smaller, both reacting sluggishly to light. The tongue was protruded straight; the speech was slow but not tremulous; the pulse was slow, intermittent, irregular. There was marked arteriosclerosis. The patient lay heavily in the bed in log-like inactivity, moving the arms and legs but slightly. The right leg was markedly spastic, the knee-jerk being very much exaggerated but the spasticity so great as to prevent the development of ankle clonus. There was no local atrophy; there was hyperesthesia of the plantar surface of the right foot; there was no Babinski reflex; there was but slight spasticity of the left leg and foot. Knee-jerk was greatly exaggerated and feeble ankle clonus was present. Sensation of pain and touch seemed absent over left foot and leg to the level of the knee; there was feeble plantar reflex on the left; sensation was retarded over the remaining portion of the left lower limb. There was much spasticity of the arms, the patient being lifted from the bed while lying supine, when there was forcible extension of the forearms of the right side, evidently caused by the contraction of the scapular and trapezius muscles. The spasticity was of lead-pipe quality, more marked on the right side, but also present as stated on the left. Sensation to pain was present, not localized as to point of pressure, but referred downward in the course of the periphery of the nerve.

Examined March 8, it was noted that the left pupil was twice as large as the right; the man was in a semi-conscious condition; answered questions only in monosyllables; there was marked tremor of the lips; the right elbow could not be extended to a right angle, the right arm being held pronated. The patient had a fair grasp in the right hand; but there was no grasp in the left hand, though the spasticity in the left arm seems almost as great as that in the right; the right leg was very spastic and a large tremor grew as it was raised from the bed. There was no clonus on the right side nor on the left to-day; there was no evidence of ecchymosis anywhere. There was flexion of ankle on irritating the sole of right foot, although the toes themselves did not extend as is usual in the Babinski reflex; in the left foot, the toes did extend on irritating the sole, although there was not as much extension as of ankle flexion as compared to the right side. The skin was reddened in the sacral region. Hearing was much obtunded, although he could appreciate the watch tick on contact. There was some slight retraction of the neck. Patient lies supine. There is no form of aphasia present to account for the difficulty of expressing himself; this being entirely mental. There is no astereognosis in the right hand, but the left hand seems to be anesthetic in the palm and up to the forearm to the elbow, making absence of ability to appreciate objects in shape and size.

March 9, the patient is more stuporous, although he will answer questions in monosyllables.

March 10, patient seems somewhat brighter, complains of general pain in the head. Pupils are almost equal in size. Right arm can be moved quite freely; left arm is spastic and can not be moved by the patient. He can move right leg freely, and left leg not at all. Both legs are slightly spastic, but much less so than two days ago.

March 11, patient is perspiring freely. Seems rational, although he talks in a very low voice. Complains of pain in chest. A few sonorous râles. Resonance clear.

March 13, patient is incoherent; will obey commands, however; opens and shuts his eyes.

March 16, pulse soft and rapid. Respiration rapid and shallow, not stertorous. Temperature gradually rose to 103 degrees. Death supervened.

Autopsy.—Upon opening skull cap, considerable blood escaped and a large hemorrhage was found. This proved to be subdural, and on the right side. It extended from the occipital to the frontal lobe and downward to the Sylvian fissure, extending into the latter so as to separate the temporal and opercular convolutions from the island of Reil. A glass held below the skull as the brain was removed, collected 50 c.c. of blood and cerebrospinal fluid. When the dura mater, containing a large clot, was removed, the surface of the brain was considerably flattened; therefore must have been under considerable pressure. Vessels of pia were deeply congested. On opening left lateral ventricle, it was distended with cerebrospinal fluid, lateral ventricle of right side compressed so as to be almost occluded. Choroid plexus of left side terminated in a soft tumor the size of a soap bean.

Case 11.—Through the kindness of Dr. James Tyson, I am permitted to report a case of similar nature though the lesion is on the left side of the brain. The man was admitted to the medical wards of the Philadelphia Hospital, and died of chronic nephritis.

Male, white, aged 71, semiconscious on admission, due to the uremia. He was able to walk about at the end of a week, with spastic hemiplegia, right side. How long, as in my own case (3 years), he had been afflicted with the dural disease, does not appear from his vague statements; although he was likely afflicted many months.

Autopsy.—Dura mater quite adherent to skull over left hemisphere; and pachymeningitis interna hæmorrhagica was found. Hemisphere below this was somewhat compressed; and the lateral ventricle below it was collapsed. Brain itself was normal. Hemorrhagic area extends over the whole superior and external portion of the left hemisphere, descending to the level of the fissure of Sylvius.

Paralysis is never so complete in the hemiplegia from pachymeningitis interna hemorrhagica, for if complete, death would supervene. Therefore, in a given case of hemiplegia, a positive sign that it is not due to dural hemorrhage, would be in the occurrence of complete pachymeningitis. Fifty per cent. of cases are unilateral in pachymeningitis hæmorrhagica.

Ingravescent hemorrhage and pachymeningitis interna hæmorrhagica have some points in common which are confusing in diagnosis. In both there is apt to be no loss of consciousness; although in the former there is less likelihood of rise of temperature, while in the latter there is elevation of the temperature curve to 102 or 103 or more degrees F., but of irregular type and associated with rather severe pain in the head. Then the spasticity which would occur from cortical irritation from pachymeningitis, would be the positive point as against hemorrhage in the external capsule.

Another differential point in diagnosis between ingravescent hemorrhage and subcortical tumor in the motor area, is to be made in some cases. The history of the case would be important as bearing upon this subject, as well as the examination of the eye grounds where optic neuritis would be present and of high grade in the case of tumor; it almost never being present in the slow hemorrhage, since the neuritis would not have time to develop at the moment of examination.

Hemorrhage into the crus cerebri would be told by the irregularity of symptoms in the first place, and secondly from the alternate hemiplegia following and generally associated with some sensory loss on the hemiplegia side and accompanied by paralysis of the oculomotor nerve on the same side.

Hemorrhage into the pons is very difficult of determination but would be told by critical examination for a crossed paralysis affecting the face on the same side, as hemiplegia in the case of hemorrhage into the upper portion of the oblongata; or secondly, of the face on the same side, if the hemorrhage were situated in the lower portion of the pons. The association of urgent cardiac and respiratory symptoms would be indicative of hemorrhage into the pons. I presented the rare specimen of a case of hemorrhage bilaterally into the pons and into one crus cerebri, this winter before the Pathological Society of Philadelphia, and which I will have the pleasure of showing to the Section. The mixed symptoms resultant from such a lesion, it would seem to me, make diagnosis quite impossible.

Hemorrhage into the spinal cord high up, would be apt to occur in specific cases and the Brown-Séquard syndrome would follow. Hemorrhage into the membranes into the cord would be associated with large paresthesia or pain distributed to the periphery of the nerves from the segment of the cord encroached upon, and in my experience, not the most difficult for diagnosis; as shown in the case seen with Professor Rodman, this winter, where diagnosis has been confirmed, I take it, by the constant improvement in the case through electric treatment, massage and rest, to quite complete restoration of the paraplegia sequent upon pressure in the lumbar cord, due to a fall down an elevator shaft. Trauma, too, is apt to be a point gotten in the history of such cases. But it is not my province to go in for discussion of disease of the spinal cord.

In the above cursory way, the writer has attempted to give the salient features that have come to his observation for actual determination of one of the most difficult neural affections within the cranium or spinal canal to positively differentiate.

DISCUSSION.

DR. HUGH T. PATRICK, Chicago—I simply wish to say a word in reference to the mystery as to why hemorrhage of the brain comes with peculiar frequency at night, while the patient is asleep and there is no increase of arterial tension. Like the old question, why is it that a vessel nearly filled with water into which a fish is introduced weighs just the same as it did before, the explanation is, that it does not. Cerebral hemorrhage does not occur with peculiar frequency during the night or while people are asleep. That was a theory which was asserted prematurely and it has been disproven a number of times. The statistics gathered by Dana and others show that cerebral hemorrhage does not occur with especial frequency at night. Thrombosis, on the other hand, occurs more frequently at night. I will not take up any more time by discussing the theory of neuron contraction, to which Dr. Pearce referred, as it would be a pure waste of cerebral activity. The theory of neuron contraction never had a single solitary basis upon which to rest.

DR. F. W. LANGDON, Cincinnati—I indorse what Dr. Patrick has said about the infrequency of cerebral hemorrhage at night. It has been my custom, in the course of my teaching, to refer to this as one of the differential points between cerebral hemorrhage and thrombosis. The latter occurs with diseased blood vessels and low blood pressure, while the hemorrhage occurs with weak blood vessels and high pressure. Gowers has also called attention to the fact that the state of the pulse, as indicating low blood pressure, points to thrombosis, while a high tension pulse—not necessarily a high rate—indicates hemorrhage.

I regard this as an exceedingly important point to take note of—both in diagnosis and treatment.

DR. JOHN PUNTON, Kansas City—Dr. Pearce, in his paper, failed to mention coma as an important symptom of cerebral hemorrhage. The longer the coma lasts, the less are the patient's chances of recovery. A study of this symptom has also an important bearing upon the surgical aspect of cerebral hemorrhage. The symptoms of cerebral hemorrhage vary considerably, depending upon the seat of the lesion; the diagnosis in some cases being very difficult, while in others quite easy. Another point to which I desire to call attention is that cerebral hemorrhage now occurs much earlier in life than formerly. The text-books teach that it is a disease of beyond middle life, usually coming on between 50 and 60. I am rather inclined to think that nowadays it not infrequently is seen during the active period of life. I can recall several cases in patients between the age of 30 and 35 years.

DR. W. A. JONES, Minneapolis—I had hoped that Dr. Pearce would enter more into detail regarding the differential diagnosis between the three conditions of cerebral hemorrhage, embolism and thrombosis. The most puzzling cases to me are those of diseased arteries, without hemorrhage. In many such I have been led to suspect hemorrhage, only to find a hardened, thick blood vessel or an obstructed blood vessel. I agree with Dr. Punton that cerebral hemorrhage is now observed more frequently early in life. Thrombosis, on the contrary, is more common in later life. The treatment of the three conditions is decidedly different, and for that reason we should endeavor to make the differential diagnosis.

DR. E. G. CARPENTER, Columbus—A number of cases of ingravescent hemorrhage have come under my observation during the past year, and I hoped to hear more on that subject. I have in mind particularly one case where the postmortem revealed a very interesting state of affairs: The patient was a young man, about 30, in excellent circumstances. He grew dissipated in his habits and in the course of a debauch he fell, receiving a severe injury of the head. He was brought to our institution, in Columbus, for inebriety, and kept under careful observation. He developed no particular symptoms at first, but on the tenth day after the receipt of his injury he died suddenly with all the characteristic symptoms of apoplexy. During the three days preceding his death it had been noticed that he was apathetic and drowsy. At the autopsy the entire right hemisphere was found covered with a large thick clot. This case illustrates the fact that in some instances of the ingravescent form of cerebral hemorrhage the tissues may become very tolerant to the presence of a foreign body, and the hemorrhage may grow to large dimensions without causing many or severe symptoms.

DR. PEARCE, in reply—Most of the cases of cerebral hemorrhage that have come under my observation have occurred

at night. In the general symptomatology in which I made the statement of the nocturnal attack prevailing, I included both thrombosis and embolism, which no one will doubt occur more frequently at night. As regards the neuronic theory, I agree with Dr. Patrick that it has not been proven. On the other hand, neither has it been disproven, and I am still inclined to cling to a theory which is fascinating and which explains, in an apparently reasonable manner, the mechanism of some normal and abnormal brain functions.

DANGEROUS HEMORRHAGE AFTER REMOVAL OF ENLARGED TONSILS AND ADENOIDS WITH THE REPORT OF A CASE.

A. C. GETCHELL, M.D.

WORCESTER, MASS.

April 30, 1901, at 5 p.m., I operated, at the Worcester City Hospital, upon Josephine H., a child of 5 years, removing large tonsils and an adenoid growth. The operation was done under ether anesthesia, which at no time was profound, but, on the other hand, just enough was given to keep her beyond the border line of consciousness. The tonsils were removed first and when the hemorrhage, which was rather profuse, but not alarming, had ceased the adenoid growth was removed. The tonsils were removed with a guillotine and the adenoid with forceps and curette. The bleeding promptly stopped, the recovery from the anesthesia was satisfactory and I left the hospital with a sense of relief that an operation that had caused me some anxiety was successfully completed.

At 7 o'clock I received an urgent call to come to the hospital. Much nausea had followed the ether, and previous to my coming the child had vomited a fluid resembling fresh blood at five different times, and about two ounces each time. She had been very thirsty and begged for ice constantly. She had also been very restless and tossed from one part of the bed to another, throwing her arms about and kicking off the bedcloths. The loss of blood, great thirst, restlessness, sighing respiration and failing pulse alarmed the attendants and I was called.

When I saw her bleeding had stopped. The throat had been examined, but no bleeding points were found, and I did not disturb her for further examination. She was greatly bleached, her lips were colorless, ears waxy and pulse very rapid and thready. To insure freedom from disturbing influences, she was put into a separate room under the care of a special nurse. At 8.30, from two to three ounces of dark-brown vomitus, mixed with much blood-clot, was emitted. This did not have the bright character of the former vomitus. The thirst was now intense. At 9, the pulse was 160, the restlessness had increased and delirium had developed, the hallucination being a glass of water on the floor. At 10 o'clock, no radial pulse could be felt, but, with the stethoscope, the heart-beats were found to be 192 per minute. The panting respiration was often interrupted by sighs and the child had lost all interest in her surroundings, although the restlessness was as marked as ever. At this time an enema was given, consisting of the following:

R. Albumin water ..... ℥ss
Bovinine 3 3/4
Peptonized milk ..... ℥i
Pinch of salt,
Dover's powder ..... gr. iiss

This was retained.

At 11, the pulse was 180 and a faint flickering could be felt at the wrist. At midnight, however, the pulse had not continued to improve, it being 184, and it was decided to administer a salt solution subcutaneously. The solution was made of common salt and water by adding to a pint of water, made sterile by boiling, a dram of salt. This was reboiled to prevent the deposit of a sediment. The solution was then placed in a glass bottle, with a cotton stopper, and again sterilized in the oven. The apparatus for administration consisted of a glass cylinder holding eight ounces, drawn to a tube at its lower end, to which was attached a rubber tube; to the distal end of this was attached the hypodermic needle. To keep the fluid at the proper temperature the rubber tube was run through a glass tube around which was laid a water-bag filled with hot water. The fluid was forced into the tissues by gravity.

Six ounces of the salt solution were injected under the skin, inside the inferior angle of the scapula, and in half an hour it was entirely absorbed. The effect on the pulse was striking. At 1 a.m. it was plainly counted at the wrist, beating at 160. Besides this injection, Jacobi's mixture was started at midnight. This was given by mouth and consisted of

R. Barley water ..... ℥iv
Brandy ..... ℥ii
White of one egg.
Salt and sugar.

It was given in doses of ℥ii every fifteen minutes, which meant a teaspoonful of brandy every two hours.

At 1 o'clock, twenty minims of elixir of chloralimid was given by mouth. At 2, the pulse was 160 and the nutrient enema was repeated. At 3, she vomited two ounces of a bright-red fluid mixed with blood-clots. The pulse was 160. Four and one half ounces of salt solution was injected below the other scapula. At 4, the pulse was 176. At 5, the pulse was 160, and the nutrient enema was repeated. This was followed by undisturbed sleep for twenty minutes. She made no objection to the enemata. At 6, the pulse was 160. At 7, it was 152. Ten and one-half ounces of salt solution was given, and at 8 o'clock the pulse had fallen to 140. At this time Jacobi's mixture, which had been given during the night every fifteen minutes, or as near that as possible, without awakening the child, was omitted, and brandy 20 minims, with sulphate of strychnia, 1/120 gr., was administered every two hours.

The child was kept in the hospital for about a week. She was fed with great care and very closely watched and made steady progress to recovery.

This patient I had not seen previous to the time set for the operation, the arrangements having been made over the telephone, by her father, who said a physician had seen the child and advised operation. She was a delicate-looking child, frail, with transparent skin and large eyes, and when I saw her I was quite taken aback, and for some minutes tried to find with myself some excuse for postponing or modifying the operation.

In such a case four courses suggest themselves: 1. Postpone operation and endeavor to get the child in better condition. 2. Remove the tonsils without anesthetic, paying no attention to the adenoid. 3. Remove the tonsils under an anesthetic and if the bleeding is slight and an adenoid is present remove it also. 4. Do the whole operation, even if a considerable amount of blood is lost in the tonsillotomy.

The last course, the one contrary to my usual practice and against my judgment, is the one I pursued.

I did it because the child was there and the parents expected the operation to be done, and, furthermore, because it was evident that the child needed the help that would come from the removal of very large tonsils. The adenoid was removed because I felt that the child might not be brought for a subsequent operation, and, therefore, this operation would be incomplete; to her disadvantage and my discredit.

However, I followed the operation through with much caution, both as to the use of the anesthetic and the removal of the growths. The hemorrhage from the tonsillotomies was profuse, but did not alarm me. I had seen much severer ones with no untoward after-effect and I did not feel that the risk was great; but I reckoned without my host.

The operative hemorrhage alone probably would not have produced alarming symptoms, neither would the poor recovery from ether, but she was of such a frail constitution that the weakness brought about by both these causes induced the post-operative hemorrhage, which was serious and bade fair to be fatal. One or two of the obstacles to recovery she might have overcome, but the three were too much for her, and it seems she surely would have died but for the prompt and skilful treatment she received. She had all the advantages of a well-equipped institution, and particularly of the services of a peculiarly capable house physician, Dr. W. W. McKibben, to whom I am indebted for many of these notes.

This experience confirms me in the conviction—that under the age of 5 years one should do the complete operation for removal of tonsils and adenoids with a great deal of caution, and where the tonsils are very large and the child is delicate and anemic, the complete operation under ether should not be attempted. The tonsils can and should be removed, but this can be done with no anesthesia or with a few whiffs of chloroform. The incompleteness of the operation should be explained to the parents and a future removal of the adenoid growth, under an anesthetic, should be considered and planned. Indeed, after the gain in health that usually follows the removal of the tonsils this becomes a safe proceeding.

In the consideration of this topic it would be proper to discuss the methods of operating that have been proposed to minimize hemorrhage. Some of them I have tried, others have promised such slight advantages that I have not tried them, and I will not take time for other enumeration.

For young children, I find no instrument is so generally useful as the tonsillotome for the tonsils, and the forceps, curette and finger-nail for the removal of adenoid growths. The choice is to be exercised not so much in the selection of instruments and methods, as in careful observation of the patient and the selection of proper time and conditions for the operation.

NOTES ON ONE HUNDRED AND FIFTY CASES OF SMALLPOX IN PRIVATE PRACTICE.

ALBERT SOILAND, M.D.
LONG LEAF, LA.

There exists some diversity of opinion among members of our profession regarding the true nature of the disease which has been rather epidemic in some sections of our country during the last few years, and which has been termed by the various writers variola, modified smallpox, pseudo-smallpox, varicella, Cuban itch, elephant itch, Philippine rash, etc. It is true that the great majority of physicians recognize this disease as genuine smallpox; yet there are a number of careful observers who will not admit that such is the case, but who insist that this is a new unclassified disease; others again hold that it is an unusually severe type of chicken-pox.

During the past twelve months I have had the opportunity to observe and treat 150 cases of this disease, as they occurred in private practice, principally among the negroes, in Central Louisiana, and I do not hesitate to state that these cases were genuine smallpox and could not be confounded with any other disease. I also saw a number of cases of variola in Northern Mexico three years ago, just before the disease became general throughout the United States, and these cases were identical in type with my recent ones.

Clinically, the course of my cases followed that laid down in the text-books to a large extent, with the exception that the secondary fever was low in most of the patients. It was, however, high in a number and altogether absent in a few of the extremely mild cases.

The onset was usually sudden, with high temperature, gastric disturbances and pains in the back. This last symptom proved to be quite a diagnostic point in my cases, as it would not yield to medication before the eruption appeared. The period of eruption followed also the typical course, papule, vesicle, pustule and crust, the vesicles becoming distinctly umbilicated in nearly every case, and the four stages occurring in cyclic order; not as in varicella where all stages of eruption may be found at one time. In 34 of my cases the eruption was confluent, no part of the body being exempt from attack. Here the pustules coalesced, forming large patches over the entire body, making a picture horrible to behold, and a condition almost unbearable for the poor sufferers, who can not be comfortable in any position.

During desquamation, which is prolonged here owing to the deepest structures of skin being involved, large casts are thrown off from the four extremities. This is a condition which never exists in varicella as far as I can learn and I have never heard of the eruption in varicella appearing upon the plantar surface of the feet and the palmar surface of the hands. There was delirium present in all these severe cases.

The course of the disease ranged from three to eight weeks, according to the intensity of eruption and the amount of constitutional disturbance accompanying the case. It is true that a number of the discrete cases suffered no further inconvenience than that occasioned by the amount of eruption present, and felt fairly at ease after eruption appeared. In all of the confluent and in a few of the discrete cases, the prostration was very marked, and as stated, the disease followed the typical orthodox course. It was impossible to determine by the prodomal symptoms whether a discrete or confluent case would follow, as in a number of instances the most severe prodromes would be followed by a mild eruption and vice versa. The disease seemed to have a selective preference for the negroes, probably on account of their careless personal hygiene, although a number of whites were also attacked.

One of my cases proved fatal and that was the only one with a hemorrhagic type of the disease I have seen. This was a young mulatto about 25 years old who had

suffered from arrhythmia and a cardiac neurosis for several years. He contracted smallpox a few days after arriving in our settlement, and died on the fourth morning after onset. In his case the hemorrhage took place in the papules before they were mature, the skin resembling that of erysipelas, being tense and shiny.

As long as our knowledge of the specific poison of smallpox is lacking, we can only direct our attention to the treatment of symptoms, and prophylaxis. In my cases I practiced isolation as much as possible, used the coal tar derivative, acetanilid, citrophen, thermol, etc., for the early symptoms with varying success. For the constitutional disturbances a morning saline and quinia and strychnia t. i. d., together with milk and soft-food diet were given. Calcium sulphid, which has been lately recommended as a specific, yielded very indifferent results, although faithfully used in about one-half of the cases. In fact, the only two cases of general furunculosis which developed after patients had recovered from the effects of the smallpox eruption occurred where this drug had been exhibited.

For the eruption various washes and ointments were applied, as carbolic acid and bichlorid solutions, boric acid, glycerin and ichthyol in different proportions. That which gave most satisfaction was a 5 per cent. lotion of liquor carbonis detergens in water; the skin surface was kept moist with it continually. This seemed to control the secondary fever and render the eruption less irritating.

The so-called characteristic odor of variola becomes very marked as pustulation advances, and is, of course, due to the necrotic processes in the skin. This unpleasant odor is masked by keeping body moistened with the detergent solution named or carbolic acid.

The one point which I wish to emphasize, however, and which I think of paramount importance, is the fact that not one of the cases in my district had been vaccinated, and that not one person who was successfully vaccinated contracted the disease. The significance of this statement will be realized when we consider that these people were very careless about exposing themselves, and would mingle daily with those who were already stricken, and when not actually watched, would spend some time visiting houses where probably five or six patients were in bed with smallpox. About 350 persons in all were vaccinated, and not a single one of these contracted the disease, although they were all exposed at different times.

In this connection one peculiarity was noticed which happened altogether too frequently to be due to mere chance. When one member of a family came down with smallpox I would immediately vaccinate the other members, one or two of whom would not react, and these would subsequently develop smallpox, but at a comparatively late period. Often in a family of five or six the father would take sick first. If the others had not already been vaccinated they would then submit to it—usually under protest—and within a week two or three would respond favorably, but one or two would fail to take. I would then revaccinate these as often as practicable, but would get no reaction. Now, after several weeks, and when the other members of the family had recovered, those who had failed to react to the several vaccinations would invariably come down with smallpox. I can not say whether the vaccinations in these instances retarded the outbreak of the disease, or whether the personal resistance against it was the factor.

A SATISFACTORY OPERATION FOR CERTAIN CASES OF RETROVERSION OF THE UTERUS.

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CHICAGO.

During the past year I have carried out the following procedure in a number of cases where operative interference has been deemed advisable for retroversion of the uterus.

The patient being in the Trendelenburg position, the abdomen is opened, adhesions are separated and other pathologic conditions, which may be present, attended to. The fundus of the uterus is elevated and pushed forward. A small hole is then made through the broad ligament on one side under the utero-ovarian ligament near the uterus. Through it a pair of forceps is passed from behind in order to grasp the round ligament about an inch from its uterine end. The latter is then pulled through the broad ligament in a double fold. It is carried across the back of the uterus a short distance above the utero-sacral ligaments and is then stitched in this

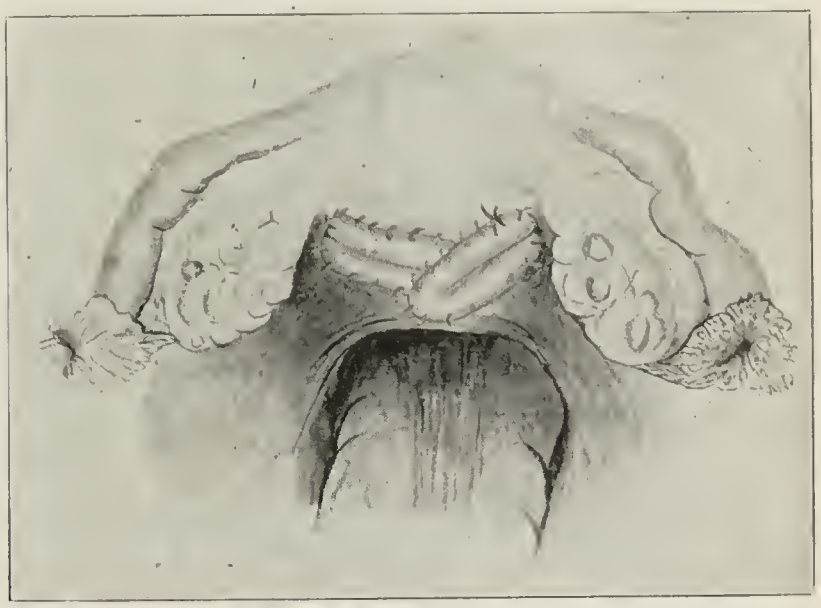


Diagram representing the round ligaments doubled up, drawn through the broad ligaments and stitched to the posterior surface of the uterus above the utero-sacral ligaments.

position with chromic catgut. A similar proeedure is carried out on the other side, the second round ligament being stitched to the back of the uterus above or below the first one or crossing it. The amount of overlapping of the round ligaments depends upon their length and laxity.

Each ligament is also stitched to the edge of the hole in the broad ligament. As a result of this operation, the round ligaments are much shortened and through their new attachment to the posterior and lower part of the uterus, act both in elevating the uterus as a whole and in preventing it from returning to its retroverted position. The ovaries are also elevated. No raw surface is produced on which adhesions can form. No new ligament is formed to act as a possible cause of intestinal obstruction and of trouble in pregnancy and labor. The normal range of uterine movements is not materially altered. There is no possibility of any interference with pregnancy and labor.

The operation can be performed equally well by vaginal section. It seems, therefore, to me to be more advantageous than the other operative procedures commonly employed in the treatment of retroversion of the uterus.

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ARE ATOMS REAL ENTITIES?

At the opening of the 71st annual session of the British Association for the Advancement of Science, which met in Glasgow last September, President Rücker of the University of London devoted his address to an interesting discussion of the present atomic theory of the constitution of matter. Through the century just ended, a century of wonderful progress in chemical and physical knowledge, three grand conceptions have dominated the so-called physical sciences as distinct from the biological, 1, that matter is made up of separate particles—Dalton's fruitful and comprehensive theory of the existence of atoms; 2, that heat is due to movement among these particles, and 3, that there is an all-pervading subtle medium called ether. While these conceptions have grown in strength with each succeeding decade, they have not been blindly accepted without question. Especially during recent years have voices been raised against their universal acceptance, and the opinion has been expressed that the atomic theory and the theory of the existence of ether have served their purpose. It may be freely admitted that the view that matter is consituted by aggregations of separate particles has been useful in helping us to get some sort of understanding of the properties of matter in the past, but we are urged not to forget that these units are simply speculative and not objective and real. The terms "atoms" and "ether," useful and convenient fictions, answer the purpose of working drawings which though different from material reality yet help us to gain an insight into its arrangement and its properties, and to codify observed facts and laws. But the working model is probably very much unlike the real thing.

At the present time chemistry teaches the existence of about 100 different elemental forms of matter. Their weight-relationships to one another are, however, suggestively near multiples of the same number, and this resemblance in relative weight coincides with other resemblances, so that chemistry is pervaded by an indistinct belief that there is a common element which is the substratum of all kinds of matter. This dream that matter of all kinds will some day prove to be fundamentally the same has survived many shocks. Atmospheric air, carbonic dioxid and other mixtures and compounds may be broken up into several distinct, tangible entities, and the question is, can these gases be broken up further into molecules and atoms whose very motion we may be able to trace by actual, tangible proof? Of course, matter in bulk appears continuous, but how are we to explain the phenomena of diffusion and expansion and heat if all substances are perfectly uniform in all their parts? Air diffuses into water, and water penetrates into air, and the rights of way for the one through the other apparently exist. Rücker cites a recent classical experiment by Sir W. Roberts Austen, who placed pieces of gold and lead in contact at a temperature of 18 C. "After four years the gold had traveled into the lead to such an extent that not only were the two metals united, but, on analysis, appreciable quantities of the gold were detected even at a distance of more than 5 millimeters from the common surface, while within a distance of three-quarters of a millimeter from the surface gold had penetrated into the lead to the extent of 1 oz. 6 dwt. per ton." A simple, satisfactory explanation of such phenomena is found in the conception that matter consists of separate particles in motion, "which can penetrate into the spaces between the corresponding parts of surrounding bodies." There seems to be no limit to the expansion of matter, such as a gas, but it is certainly inconceivable that a continous material present in every part of a space can also be present in every part of a space a million times as great. Different kinds of light all travel at the same speed in interplanetary space, but at different rates in matter—a fact also explained by the coarse-grainedness of matter. Being forced to accept the particulate nature of matter what if anything do we know of the properties of these particles! What we do know of the properties of matter we have learned through the forces acting on our organism. These properties are of the aggregate of particles composing matter and as long as we are unable to detach a molecule or an atom we are not able to learn anything of its properties in isolation. Emerson has said in his essay on farming that "you can not detach an atom from its holdings, or strip off from it the electricity, gravitation, chemic affinity, or the relation to heat and light, and leave the atom bare," and such seems to be the case even to-day.

The question of the existence of molecules and atoms may be regarded as settled, the outstanding difficulties relating wholly to the nature and constitution of the granules. It has been said that every great advance in chemistry in the last 90 years finds its interpretation in Dalton's theory of atoms, and Rücker emphasizes strongly the fact that the atomic theory imparts a unity to all physical science. He likens a crowd of molecules to a fog and recounts the experiments of Wilson and J. J. Thomson in causing vapor to condense upon the molecules of highly rarefied gas until they become magnified into a visible mist. Fine dust facilitates greatly the production of fog, and these investigators show that electrified particles may act in a similar manner as nuclei for the condensation of vapor. Such electrified particles result from the breaking up of molecules into

ions. Indeed, the atomic theory has received strong support from the recent studies of electrolytic dissociation. J. J. Thomson's recent work on cathode-ray phenomena has led him to results that indicate even the divisibility of atoms into negatively electrified corpuscles.[1]

PROGNOSIS.

The soothsayers of old were looked upon with awe when by flight of birds, by falling star or by weird incantations they foretold the future. When to-day by examination of the tongue or pulse, by throwing a light into the eye so that he may inspect the eye-grounds, by listening to the working of the lung or heart, or by the study of secretions in the test-tube and under the microscope, the physician pronounces upon the fate of his patient, the same feeling of mystery comes over the listener, and the same unconscious homage is done the superior being who can peer into the future as was accorded the soothsayer. Much more credit is often given to a physician for a correct prognosis than for the acute diagnosis or skilled treatment that underlies his statement as to the course of the disease and its termination. He predicts that on a certain day the crisis will occur or the rash will disappear, or convulsions may take place. With wonder the laity see what was foretold come to pass and their amazement is great and the physician is credited with insight almost supernatural. Even though the doctor in his helpless ignorance may say that he can not tell what the result will be, that the patient may recover and live to a ripe old age or may die within twenty-four hours, he is accorded, perhaps unmerited, praise for his ability and the question is discussed as to how the doctor could tell such and such would happen.

The ability to make a prognosis depends on no mysterious or occult power, on no supernatural gift, but on study and experience. The natural history of disease, the effect of treatment, and an accurate knowledge of the existing conditions present in the given case must be known. This enables the physician to take a comprehensive view of the case and to hazard something more than a shrewd guess. A prognosis may be based largely upon an accurate knowledge of statistics, yet each case has to be considered by itself, the surroundings of the patient, the virulence of the disease process, the resisting power of the invalid, his individual peculiarities, and the condition of all the vital organs. It is here that the physician of broad education, of wide experience and of shrewd observation is often enabled to foretell the future to the upsetting of statistical tables and the amazement of the friends of the patient, and often of other physicians.

While the ability to make an accurate prognosis depends to a large extent upon actual experience, it must be remembered that this power is not entirely a natural gift, or a mysterious power granted to the few, but that it is just as much the result of reading, study, observation at the bedside and in the deadhouse, and of logical reasoning as is a scientific diagnosis or rational therapy.

1. See Journal, June 8, 1901, p. 1630.

VACCINATION AND SMALLPOX.

The *Popular Science Monthly* for October contains an article by Professor J. Nevins Hyde on the late or still-present smallpox epidemic in this country. He shows first how massing together of people, who thus lose their customary adaptation to environment, creates a peril and that this is especially accentuated when the assemblage is the form of camps and in time of war. War and pestilence are twin brothers, but they do not always appear side by side. More often pestilence follows war, and he illustrates this from our own history—the skin diseases so abundant after the Revolution, the cholera epidemic following the Mexican war, and the prevalence of typho-malarial fevers after the Civil war. Our late Spanish war is no exception; it has introduced into our country an epidemic of smallpox sweeping from the Eastern and Southern portion to the Pacific and involving all sorts and conditions of men. It came also in a form that has troubled the diagnostician and for this reason its range has been the more extended, the mildness of the malady in most cases leading to neglect of precautions and consequent spread of the contagion.

The cause of the mildness of the disease is explained by Hyde by the immunity conferred by vaccination through generations, an immunity conferred even in unvaccinated by inheritance, which he thinks must be admitted, not merely as a logical sequence of laboratory experiments, but from clinical facts. "Not the sins alone of the fathers, but some of the safeguards, are visited upon the children." The germs were brought from the Spanish hotbeds of smallpox by our vaccinated soldiers and were thus attenuated in virulence. It has been largely an epidemic of modified varioloid, but capable of producing in virgin soil the typical variola, as has been shown in many instances. Vaccination, however, while probably as near perfection as a preventive of smallpox as any human means can be, is still not absolutely perfect, and its failures show most plainly in epidemics when those ordinarily resistant to vaccinia become amenable and vaccination may even apparently succeed after or during the developed smallpox itself.

These exceptional facts, however, prove nothing against the rule, and the anti-vaccinationists overlook the signal victories over smallpox of which the general character of the present epidemic is itself an evidence. Hyde shows that, were it necessary to appeal to statistics at this late day to prove the value of vaccination, the experience of Porto Rico alone, where smallpox has been practically stamped out in two years, would be sufficient. She "bombarded us with a filth germ and in revenge we made her clean." His article concludes with the demand that "vaccination should be the seal on the passport of entrance to the public schools, to the voter's

booth, to the box of the juryman and to every position of duty, privilege, profit or honor in the gift of either the State or the Nation.

ASTONISHING IF TRUE.

In an editorial notice of an article by Kretzner on the pathology of the Jew, the *British Medical Journal* makes the following astonishing quotation, apparently from Benedikt: "At the present day among orthodox Jews every female is condemned from nativity till the menopause to an uninterrupted series of pregnancies, parturitions and lactations." This is important if true. We have heard much of the remarkable qualities of the Jewish race, but its precocity has never so impressed us before. It is so common for us to see in British publications remarks on our own deficiencies in the use of the English language that we can not think they do not know how to use it over there at its source, or we would believe the editor of our contemporary had made a mistake.

THE TEACHING OF PHYSICAL THERAPEUTICS.

The time is past when the treatment of disease is comprised in the administration of drugs, and to-day more than ever it is recognized that other forces of nature may be so employed as to render valuable therapeutic aid. If evidence of this fact were wanting it could be found in the circumstances that there are at present being published in English and in German, systems of therapeutics in which physical agents especially are discussed, such as heat, light, water, air, electricity, massage, rest, diet, etc. These are subjects, however, to which scant attention has been given in the past in the medical schools and by reason of their great importance it would seem that the time is now ripe for their inclusion in the medical curriculum.

YELLOW FEVER INVESTIGATION BY THE MARINE-HOSPITAL SERVICE.

In a letter to the Secretary of the Treasury, Surgeon General Wyman of the Marine-Hospital Service proposes a plan for the organization of a yellow fever institute under the auspices of his bureau. The members are to be the officers of the Marine-Hospital Service and others specially qualified, who may be invited to assist. The plan includes four sections, each having special topics for its consideration, and each section will be under the direction of one of the bureau medical officers who, with the surgeon general, the director of the hygienic laboratory and a secretary, will constitute a supervising body. There will be bulletins published from time to time as material is afforded by the investigations and "it is believed that the organization will meet with a degree of success warranting its existence." The prime motive for the proposed organization appears to be the demands by commercial interests for the modification of the quarantine laws. The necessity of the regulations heretofore in force against yellow fever infection has been questioned since the publication of the results of the studies of the army surgeons, and the bureau wishes to make a complete study of the subject. Medical men generally are inclined to accept the findings of Drs. Reed and Carroll and their co-workers as final, but there may be a few questions still open as regards the limits of usefulness of quarantine measures. We do not understand that the proposed studies are intended in any way to conflict with the work of other investigators, but rather to confirm them and to definitely establish the practical measures needed to exclude yellow fever from our shores. There is also a broad field of inquiry in regard to yellow fever that is yet to be satisfactorily worked. It is to be hoped that the proposed institute will occupy it profitably.

THE DISPENSARY EVIL.

The Pennsylvania State Medical Society proposes to attack the dispensary abuse in a new way. It asks the state legislature to pass a law requiring all persons seeking aid at dispensaries and other charitable institutions to record their names and addresses over their own signatures, or marks if unable to write, in a book kept for the purpose which shall be open for inspection, and to inflict a penalty upon those who fraudulently receive aid. The plan is certainly simple enough and if made universal by legislative act ought to be effective. Of course, everything would depend upon its faithful execution, and we fear that in the competition for clinical material there may be some chances of failure in this respect. Everything really depends upon the dispensary authorities and to check any possible laches on their part it should be the business of the medical societies on behalf of the profession to inspect the books and see that they do their duty. If this were done by some responsible agent and a sufficient penalty enforced, the charities could do better work and not be, as they sometimes now are, an imposition on the long-suffering general practitioners of our great centers of population. The medical colleges, especially those that might well be spared, would probably have some of their clinics diminished, but the profession as a whole would be better off. It is not the altruism of us as a whole, but the egoism of a few that keeps up these abuses.

LAXITY IN PENSION EXAMINERS.

The Commissioner of Pensions recently sent out to all examining pension boards a circular-letter calling attention to certain abuses. He sent his letters broadcast to avoid laying open to personal attacks those particular boards he had in mind. It appears that there has been in some quarters a serious carelessness, to say the least; twenty applications for example made at once from one section of the country were all certified as cases of heart disease. This aroused suspicion and special examinations by disinterested physicians ordered by the commissioner revealed no heart disease in any of the cases. Other similar experiences led to the dismissal of certain boards and the issuance of this letter. The public generally has a conviction that there is a vast amount of fraud in the pension business, and the publication of such facts as these confirm it. It seems that there are members of our profession who, through mistaken sentimentality or something else, will return a false report or acquiesce without personal attention to the cases in an erroneous diagnosis of another physician or even to

the mere statement of the claimant. It is not pleasant to have official evidence of such a fact, but there is no doubt such things have been done. The medical pension examiner who does not realize the fact that he is charged as a public officer to act honorably and honestly in his work, is, to use an expression that means much more than it says, no better than he should be. In short, he is aiding and abetting fraud. There has been either a laxity of professional honor and good morals in his case, or, what is nearly as bad, of competency to perform the work he swears to do.

VOLUNTEER HEALTH INSPECTORS.

The Chicago Health Department has utilized, during the past five years, the services of volunteer health inspectors whose duty was chiefly or largely to go out in the sections occupied by the poorer classes and give instructions as to hygienic needs. Their work was done especially in the hot midsummer months when the sanitary shortcomings are most serious in their effects, particularly to infants and young children. The results are best shown by the fact that the deaths of children under five years of age, since these inspections have been made, are 14,000 less in number than during the preceding five years. Over 10,000 homes have been inspected and many cases of contagious disease without medical attendance were found; a vast amount of insanitary conditions was corrected, largely by the householders themselves at the suggestion of the inspectors. So far as possible, anything like harsh police methods was avoided; the inspectors sought to win the confidence of the people, and generally with success. The inspections have been of special value during the past summer; they have insured better supplies of milk and ice, and have located the origin of many cases of typhoid and prevented other cases from the same. While the call for volunteers was instigated by a reduction of the working force of the department, it seems to have been readily responded to by the physicians of the city, and the results above stated are proofs that the efficiency of the city sanitary service has not been in any way impaired, but rather the contrary. To the physicians who volunteer it has the advantage of bringing them in contact with the people, of extending their acquaintance, and of serving to a certain extent as a clinical course in practical hygiene. What was at first an experiment has passed beyond the experimental stage and proven its value as a health-securing and life-saving procedure. The success in Chicago is a suggestion to other places that have as yet not adopted the plan.

CARELESS REPORTING.

As an example of careless reporting of experiments the following is worthy of mention. In the *British Medical Journal* of September 14 there appears an article giving some interesting observations on the penetration of the skin by the larva of the ankylostoma. The author says: "The experiment upon Dr. Looss is not convincing because he had, as I have said, previously suffered from the presence of ankylostoma in his intestines. He next experimented on a piece of skin removed from a fresh human corpse, and warmed to 99 F.; but this did not show any entry of embryos, possibly because the skin at once became too shriveled up. The next attempt was more successful. It was made upon the leg of a boy, aged 13 years, one hour before the limb was amputated. The leg was thoroughly washed with soap, nail brush, and water, then dried; and then one drop of water containing many larvæ was dropped on the skin and left to itself without being rubbed in. The drop spread out and dried up in ten minutes, and produced no redness of skin. The patient was not asked whether he felt a burning sensation. One hour after the drop came in contact with the leg the limb was amputated, and the suspected skin was at once removed from it and spread out with pins, gradually hardened in alcohol, and then embedde for section cutting, etc." There is nothing out of the way in this to a physician, because he would at once understand that there was some valid cause for the amputation and the opportunity was only utilized for an experiment that caused no suffering. But it should have been so stated. It is just such a report as would be taken up by our friends, the anti-vivisectionists, as evidence that this physician amputated the boy's leg to determine the pathologic question he was investigating. Even if they were aware that the amputation was for reasons not given, it would still probably come under their condemnation; but as it stands we expect to see it added to the list of horrible human vivisections in some future pamphlet attacking the inhuman doctors. One must be most particular how he writes in view of such possibilities.

POLITICS IN STATE INSTITUTIONS.

A beautiful example of the effects of political management of public charitable institutions was afforded recently at the Arkansas State Insane Hospital. The managing board passed a resolution ordering the superintendent to discharge all "alien" employes (non-voters?) within ninety days and fill their places with Arkansans. The attendants thereupon joined in signing a memorial to the Governor asking for assurances as to the security of their positions. He replied that it was in the discretion of the superintendent to keep them till he could fill their places as directed. The result of this was that they quit work in a body and the Governor was obliged to make a personal visit to the institution and give them the desired assurance before they would return to their duties. It is not surprising that, with the examples about them, the strike should come to be the recourse of hospital attendants, and the serious consequences that might follow are readily imaginable by anyone familiar with asylums. Under the political management existing in many of our state institutions this may come to be one of the possible abuses. When the ideals of the governing authorities are no higher than to make these public charities simply a portion of the political spoil system, the lower officials will also be likely to neglect the humanitarian aspects of their work and we may have strikes for any possible cause, such as the discharge for cause of a popular fellow attendant or the engagement or retention of an unpopular one. When the state officers and managers look on these institutions simply as a means for their own political advancement, the subordinates are not likely to be very altruistic

in their ideals or conduct. Hence, this gives rise to the scandals that are so frequent and that afford such welcome material for the sensational newspaper press. The medical profession owes it to itself to start a reform in this matter, to make politicians as well as soldiers respect the neutrality of hospitals. This is needed for our own credit, which has suffered and is still suffering from conditions as they have existed in the past and to a too great extent still exist. We can not begin the work of reform too soon.

LIMIT OSTEOPATHS TO WHAT THEY PROFESS.

Osteopathy, according to its founders and its advocates, is a system of treatment of disease without drugs, and they have had special laws passed in several states for their benefit embodying this idea. In these it is particularly specified that they are not authorized to administer drugs or to perform surgical operations. It has been urged in objection to these laws that they were only a subterfuge to evade the medical practice laws of the state and that the osteopaths would not confine themselves to the methods they profess to exclusively follow. That this is the case is revealed by the evidence in a recent suit in Denver, Colo., where a female professor of osteopathy sued for services rendered and it came out in the trial that she had not confined herself to osteopathic manipulations, but had prescribed medicines and administered treatment which only licensed physicians are entitled to give. The judge, while favoring osteopathy to the extent that he would not allow a non-suit on account of the plaintiff's lack of license, instructed the jury to find for the defendant if it believed she had been prescribing drugs. The case was decided for the defense and appealed by the plaintiff. Our confrères in Denver are, it is understood, taking up the matter vigorously, and a determined fight will be made to prevent this form of quackery from thriving on its illegitimate methods in the state. There is no doubt whatever that osteopathy laws are designed as entering wedges to open up a way to unlimited irregular practice. Consistency is not likely to be regarded by their advocates and beneficiaries; they care little as to the difference between their practice and their professions as long as they can successfully fool the public. While their use of drugs is practically self-stultification, it matters nothing to them provided the money comes in. The outcome of the fight in Colorado will be watched for with interest as the same matter will probably have to be fought over elsewhere. It is well to call the attention of the medical profession generally to the subject and to see that the osteopaths and others of their kind are not permitted to exceed their legal limitations. Every law that has been enacted for their benefit was passed through most positive assurances on their part that only manipulative procedures would be practiced by them in their treatment. Now let us be on guard to keep them to what they profess. If their treatment is limited to manipulation, osteopathy so-called will soon be a thing of the past, or exist only under its true designation, massage.

ENGLISH COMMENT ON THE M'KINLEY CASE.

While it has been a cause of satisfaction that the foreign newspapers, reflecting the sentiments of their readers, have spoken so highly of our late President, there is none the less gratification to us as medical men to read in the foreign medical journals so far received endorsements of the treatment of the case. The *Lancet* says:

> The favorable prognosis which was put forth at first was so far justified that in some cases recovery might have followed, but the issue hardly comes as a surprise. The injuries were terrible, the patient was no longer young, and the circumstances were such as to produce, even in a man of iron courage, the maximum of shock. If we may venture to criticise any portion of the treatment we feel inclined to suggest that the feeding by the mouth was somewhat in excess of that which is usually considered advisable. But while we say this we know that to the brilliant surgeons and experienced physicians around President McKinley's bed there may have been indications for the bolder treatment impossible to be disregarded. In short, on a careful review of the whole case we feel justified in saying that surgery did its best; the sad result is to be ascribed to the lack of vitality of the tissues themselves.

The *British Medical Journal's* comments do not contain even a hint at criticism, and the last part of the quotation below is certainly more pleasing reading than the harsh and uncalled-for criticism in an American medical weekly, referred to last week:

> A large bullet was discharged, with low velocity; instead of a clean wound the result of cleavage, there was a wide channel, with much surrounding bruising and laceration, and sloughing followed. There is no need to assign any influence to a supposed escape of pancreatic secretion or to a poisoned bullet. The mechanical conditions are ample to account for all the disturbance found. Much also seems to have been made in comment by the lay papers of the absence of healing described in the record of the necropsy. Such a lethargy on the part of wounds is, unfortunately, not an infrequent experience in abdominal surgery. In gastro-enterostomy for malignant disease of the pylorus, or in any short-circuiting operations performed in conditions of acute obstruction or of exhaustion resulting from malignant disease, complete absence of reparative power may be observed. One hears the pathologist say that the serous surfaces of the wound "fell apart" when examined, or that there was "no attempt at healing," and so forth. If the bruising of the stomach spread widely from the perforations made by the bullet, it is not idle to suppose that a local and coextensive "stunning," a complete cessation of activity, was also present. In such a condition healing is impossible.
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> We can only repeat, though perhaps with greater emphasis, as more is now known of the facts, what was said last week as to the conduct of the case. In such a catastrophe operation affords the only hope of relief, and the earlier it is performed the greater the chance of success. Whether a resection of the bruised portion of the stomach would have affected the result we can not, in the absence of exact details, determine; but this we may with confidence assert, that American surgery ranks as high as that of any country in the world, and that in the medical men chosen to attend the late President, America was worthily represented. Success in such a case would have been a triumph, but defeat is not disgrace.

Medical News.

CALIFORNIA.

Street Cuspidors.—Dr. T. J. McCoy, Los Angeles, favors the placing of cuspidors on street corners and in office buildings, with sewer connections and constantly flushed with running water. This, he believes, would do away with a very potent source of tuberculosis infection.

Los Angeles County Hospital.—An additional tax levy has been ordered which will provide $150,000 for a new county hospital for Los Angeles. The institution is to consist of fifteen two-story wards with accommodations for nurses and attendants, fire-proof and equipped with all modern conveniences.

COLORADO.

Dr. John W. O'Connor, chief surgeon of the Denver and Rio Grande Railway, has been appointed chief surgeon of the Rio Grande Western Railway, vice Dr. Frederick J. Bancroft, resigned.

New Teller County Hospital.—The plans for a new county hospital, to be located at Cripple Creek, have been approved by the State Board of Charities and Corrections, and the building will be speedily erected. It is to cost $15,000.

GEORGIA.

Personal.—Dr. Everett Daniel, Boston, has located in Moultrie.——Dr. W. C. Kellogg, who has been in service at the National Soldiers' Home, Washington, D. C., has opened an office in Augusta, with Dr. Theodore E. Oertel.——Dr. Craig Barrow has returned from his studies in Germany and will practice in Savannah.

Memorial to Dr. Holt.—The Macon Medical Association, at its meeting, September 20, passed the following resolutions: "That this Association recognizes an irreparable loss in the death of Dr. William Flewellen Holt. That his high tone, dignified courtesy and beautiful character commend him to the whole profession as one of its worthiest members, whose example is deserving of closest imitation."

Whisky Prescriptions.—Four Forsyth physicians who are also proprietors of drug stores and have furnished whisky on prescription to patients, have been indicted by the grand jury for failing to register as dealers and to pay the state tax of $200. The first called was found guilty and fined $400. When the cases against the others were called, they, believing that the indictments against them were illegal, refused to appear in court and their bonds were forfeited. The physicians say that when they pay their State professional tax they have a right to prescribe any medicine they may deem necessary.

ILLINOIS.

St. Mary's Hospital, Quincy.—The new addition to St. Mary's Hospital, Quincy, was formally dedicated, September 17.

Smallpox at Quincy.—A new case of smallpox was discovered at Quincy, September 23, and the patient taken to the City Hospital.

The Board Enjoined.—Dr. James A. Marshall, Pontiac, who claims that the Board of Managers of the State Reformatory are endeavoring to remove him for political reasons, has secured an injunction restraining the board from removing him.

Consumptives' Hospital.—The cornerstone of St. Anne's Hospital, Austin, a home for consumptives, which is being erected by the Sisters of St. Elizabeth Hospital, will be laid October 20. The building will cost $150,000 and will occupy grounds of ten acres.

Personal.—Dr. Henry T. Schildroth, Belleville, has been appointed medical examiner to the Civil Service Commission and has gone to Washington, D. C.——Dr. Thomas J. O'Malley has moved from Joliet to Chicago.——Dr. Edgar Thompson, U. S. Navy, has been visiting friends in Lebanon. He has been on duty in the Orient for two years.——Dr. Louis Ostrom has returned to Rock Island from Kansas.——Dr. William Wood, Cairo, is seriously ill at his home, Woodside.——Dr. Paul Healy has purchased the practice and property of Dr. William K. Farley, Waterman.

Chicago.

The College of Physicians and Surgeons held its opening exercises, October 1, Dr. Sanger Brown delivering the address.

Bequest to Presbyterian Hospital.—By the will of the late Henry C. Durand, Lake Forest, $10.000 is bequeathed to the Presbyterian Hospital.

Personal.—Dr. Alexander Hugh Ferguson has returned from Europe.——Dr. Ludvig Hektoen returned, last week, from his summer of study in Europe.

The Woman's Medical School of Northwestern University held its thirty-second annual opening exercises, October 1. The annual address was given by Dr. Martha Foote Crowe.

Rush Medical College graduated a class of 16, September 30. The address was delivered by Dr. Ferdinand C. Hotz. On October 1 the fall term opened with a large increase in the number of students.

Scarlet fever is said to have taken a strong hold in Austin; 17 cases have been reported. In Rogers Park the epidemic is thought to be under control and the school which had been closed was opened this week.

Chicago Medical Society.—The first meeting of this Society after the summer vacation was held in the new meeting-place, Schiller Hall, October 2, President Fenger in the chair. Dr. N. S. Davis, Sr., delivered an address on "The Origin and Progress of the Chicago Medical Society," and Dr. W. A. Evans presented a paper on "Fat Necrosis."

Illinois Medical College held its annual commencement exercises, September 26, graduating a class of fourteen. Dr. Henry Sewall, of Denver, delivered the doctorate address on "The Physician's Ideal." The new college buildings at Halsted Street and Washington Boulevard will be ready for occupancy January 1, 1902. In the evening a banquet was given at the Auditorium Hotel, at which Dr. Seth S. Bishop was toastmaster.

Northwestern University Medical School.—At the opening exercises of this school, October 1, a handsome portrait of Dr. N. S. Davis, Sr., was unveiled. The presentation speech was made by Dr. Winfield S. Hall, who spoke of the connection of Dr. Davis with the school for many years, and the portrait was accepted on behalf of the faculty by Dr. John E. Owens. Dr. N. S. Davis, Jr., who now occupies the position as dean of the school, formerly held by his father, presided and introduced James H. Eckels, who delivered the address of the evening. Rev. Robert D. Sheppard, D.D., spoke on behalf of the university and told of the advantages the occupancy of the Tremont House property would give to the medical students. Dr. Arthur R. Edwards, secretary of the medical faculty, spoke briefly. The enrolment in the medical school is 450, which is 100 more than in former years.

Diminishing Infant Mortality.—A satisfactory disclosure of steadily diminishing infant mortality was made during the week just ended, through a compilation of the records for the summer months of 1899, 1900 and 1901, made by the Department of Health, in response to a request from an eastern sanitarium for infants and children, and the figures are as follows for the months of June, July and August in the respective years: In 1899, total deaths under 1 year of age, 1819; in 1900, total 1551; in 1901, total 1545. These figures give annual death rates per 1000 of population of 4.43, 3.65 and 3.51, respectively; and of total mortality at all ages, 28.4 per cent., 26.2 per cent. and 24.5 per cent., respectively. Thus, in the last three years the mortality of infants has diminished 13 per cent. in proportion to total mortality at all ages and 20 per cent. in proportion to actual population, and there were 274 fewer infant deaths this year out of a population of 1,758,000 than in 1899 out of a population of 1,639,000.

IOWA.

Personal.—Dr. Paul Gardner, West Union, has located in New Hampton.——Dr. Addison J. Beebe has moved from Greeley to Hudson.

Hospital Fair.—The women of the Ottumwa Hospital Association are to conduct a county fair, October 10 and 11, for the benefit of the hospital.

Communicable Diseases.—Diphtheria is reported to be on the increase at Rowley, where schools and churches have been closed. Smallpox has reappeared in Des Moines, and three light cases of the disease are reported from Red Oak.

KANSAS.

Dr. Thomas Blakeslee, Neodesha, has been removed from his position as deputy internal revenue collector for Southeastern Kansas.

Hospital for Negroes.—The management of Douglas Hospital and Training School, Kansas City, has arranged for the purchase of a site for a hospital and training school in that city for the negro people of Kansas City, Kas., and Kansas City, Mo. An effort is being made to raise a fund for the work and $1000 is now on hand to make the first payment.

To Test Medical Law.—A requisition has been issued by the Governor for Horace L. Wilson, who is now supposed to be in Oklahoma. Wilson is a physician who formerly practiced in Ellis. It is charged that since September 1, when the law went into effect, he has violated its provisions by practicing without a certificate from the State Board of Medical Registration and Examination. It is also claimed that he is not a graduate of a regular medical college or a practicing physician of seven years' standing in the state. By this trial the constitutionality of the medical law will doubtless be brought into question.

Board Serves Free.—From August on the members of the State Board of Medical Registration and Examination serve

without pay. The appropriation of $1200 passed by the last Legislature to pay salaries and expenses for the two years ending June 30, 1903, has been exhausted. After the first of September the board will hold meetings but once in three months and the members will pay their own expenses. The expenditures of the board were greater than expected on account of the great amount of work resulting from the issuance to physicians of certificates to practice in the state, as required by the new medical law.

MARYLAND.

Scarlet fever and diphtheria are prevailing in Montgomery County and several of the public schools have been closed in consequence.

Personal.—Dr. C. P. Gowman has moved from Odentown to Crumption.——Dr. Frank Dorsey, of Green Spring Valley, is in Boise City, Idaho.

Smallpox and Typhoid.—Maryland Health Officer Noble reports 16 cases of smallpox near Federalsburg, Caroline County, near the Deleware line and an epidemic of typhoid fever at Burrsville in the same county.

Baltimore.

The University of Maryland opened its year in the medical department without formal exercises.

Baltimore University School of Medicine opened September 30 with an introductory lecture by Dr. B. S. Hayden.

The Woman's Medical College opened its session October 1, with addresses on "The Medicine and Doctors of Juvenal," by Dr. Cordell, and on "The International Congress of Tuberculosis," by Dr. R. H. Thomas.

Maryland Medical College.—At the opening of Maryland Medical College Dr. William H. Pearce delivered the introductory address on "The Evolution of the Medical Profession." Baltimore Medical College began its year with an introductory address by Dr. S. K. Merrick, on September 26.

Care of the Insane.—The Board of Estimates approved the request of the Supervisors of City Charities for an additional $15,000 appropriation for the care of the insane in order to relieve the overcrowded condition of Bayview Hospital, making the total appropriation for the insane $119,400.

Infectious Disease Hospital.—A site has been selected for the infectious disease hospital on the Reisterstown Road, not far from Druid Hill Park. A tract of 10 acres has been bought for $20,000; $25,000 was appropriated some time ago for the purpose. The old quarantine grounds on the Patapsco opposite Fort McHenry, embracing 100 acres, will be sold. It is expected that $50,000 to $75,000 can be gotten for it which will help to put up a new building.

Personal.—Dr. Samuel C. Chew returned from Europe September 25.——Dr. James E. Willing has returned from a visit to the New England coast.——Dr. Marie E. Thalwitzer has returned from Europe.——Dr. John N. Mackenzie has returned from Narragansett Pier.——Dr. William Lee Howard has returned from his yachting excursion to the Azores.——Drs. Harvey Cushing and Mactier Warfield have returned from Europe.——Dr. W. G. MacCallum of Johns Hopkins Hospital has returned from his vacation.——Dr. Robert W. Johnson has returned from Europe.——Dr. F. M. Owens has been appointed resident physician at the City Hospital.——Dr. Melvin Rosenthal, who has recently returned from Europe, has been appointed associate professor of diseases of the skin at the College of Physicians and Surgeons.——Dr. Ira Remsen returned on September 23 to Baltimore after spending the summer in Maine and Massachusetts, but left again two days later to deliver the address at the dedication of the new laboratory of chemistry at Oberlin College, Ohio. While away Dr. Remsen finished another of his series of text-books on chemistry which is now ready for publication.

MICHIGAN.

Ann Arbor Medical Students, registered up to September 27, numbered 432, a decrease of 37 as compared with 1900. This falling-off is probably due to the changes in the requirements for admission.

Lying-in Hospitals.—The Detroit Board of Health has appointed Drs. Kennedy, Guy L. Kiefer and John L. Irwin a committee to investigate applications for licenses under the new law regulating lying-in hospitals.

No Spitting in Grand Rapids.—The Grand Rapids Board of Health has authorized signs to be made reading "No Spitting on the Sidewalks. By Order of the Board of Health," which are to be placed in prominent positions throughout the city.

Personal.—Dr. Murdock Kerr, health officer of Laurium, has resigned.——Dr. K. G. Brandes, Owosso, has moved to Quincy, Ill., where he has a hospital appointment.——Dr. James W. McMeekin, Saginaw, is recovering from a severe illness caused by septic infection.

August Mortality.—There were only 2672 deaths returned to the Secretary of State for the month of August, corresponding to an annual death rate of 13.1 per 1000. This is an unusually low mortality for August, the number of deaths returned being nearly 300 less than for August, 1900.

MINNESOTA.

St. Luke's Hospital.—The new St. Luke's Hospital, Duluth, is so well under way that it is now expected that it will be completed by Feb. 1, 1902.

Smallpox is spreading among the Indians in the state. It has appeared in virulent form on the Fond du Lac reservation, but has been apparently checked on the Mille Lacs reservation.

Diphtheria in virulent form has broken out at Friber, Otter Tail County, where six cases are reported. The disease is unusually prevalent in Minneapolis and the health commissioner is using his utmost efforts to enforce quarantine.

Personal.—Dr. Elbert E. Persons, U. S. Army, has been ordered to Fort Snelling to relieve Contract Surgeon Herbert J. Harris, who has been transferred to the Department of Cuba.——Dr. Louis B. Rennick, Glenwood, has moved to Lidgerwood, N. Dak.——Dr. James W. Robertson, Litchfield, has been appointed pension examining surgeon.

The Medical Department of the University of Minnesota held its opening exercises, September 23, in the old medical building, Minneapolis. Addresses were delivered by President Northrop, Dr. Parks Ritchie, Dr. Jacob E. Schadle and the Governor of the state. Dr. Schadle in his address reviewed the history of medicine from 500 B. C. to the present time.

NEW JERSEY.

Overbrook Asylum.—The new wing at Overbrook Asylum is now ready and 80 female patients have been transferred to their new quarters.

Did Not Report Disease.—An Orange and a Jersey City physician have been arraigned for failing to report cases of contagious disease, as required by law.

Personal.—Dr. Charles Waters has opened an office in Trenton.——Dr. Henry R. Baldwin, New Brunswick, was stricken with paralysis at Trenton, September 26.

Authority of Board of Medical Examiners.—A Newark applicant for a license to practice medicine, who was refused examination by the Examining Board on the ground that he had been convicted of malpractice, proposes to test the legality of the medical act. His attorney claimed that as his client had pursued a medical course in a reputable medical institution and had a certificate to that effect, had deposited the required fee and complied with all other legal preliminary requirements, the Board had exceeded its authority in refusing to allow him to take the Examination. He holds that the Board's province is to pass on the medical skill of applicants and not on their moral fitness. The Board, however, did not change its ruling.

NEW YORK.

Mystery Solved.—The mysterious disappearance of Dr. Charles W. Hoyt, Corning, has been cleared up by the finding of his body in Lake Erie, near Geneva, Ohio.

Personal.—Dr. Harold L. Baldwin, Syracuse, has entered into partnership with Dr. Henry C. Baum.——Upon the expiration of his term of office as Assemblyman, Dr. Nelson H. Henry, New York City, is to become Adjutant-General of this state.

School Children Examined.—The bureau of health of Syracuse has decided that the pupils of the public schools must be examined as to the condition of their health, twice a month. The principal object is to guard against contagious disease, but the physicians will also try to detect and remedy other physical defects. Defects in eyesight especially will be remedied as far as possible.

Sues State Hospital.—Dr. Marie L. Benoit, New York City, has brought suit against the board of managers of the New York State Custodial Asylum for Feeble-Minded Women.

Newark, and seeks to obtain reinstatement on the civil service list and salary, with value of maintenance as provided by law, for the months of July, August and September of this year. The plaintiff accuses the managers and the superintendent of breaking their contract with her, the terms of which, she claims, guaranteed her the position of resident physician at the institution until October 1. She claims her removal was ordered because she criticised the quality of the food supplied to the patients.

Albany Medical College opened for the session of 1901-1902 on September 24. Dr. Howard Van Rensselaer delivered the opening address. The following changes in faculty have been made: Dr. Willis G. Tucker, suceessor to the late Dr. Maurice Perkins, as professor of chemical philosophy and organic chemistry. Dr. Howard Van Rensselaer will be professor of materia medica, vice Dr. John V. Hennessy, resigned. The following appointments have been made as clinical professors: Dr. Leo Haendel Neuman, theory and practice of medicine and gastro-enteric diseases; Dr. Jesse Montgomery Mosher, insanity, neurology and electro-therapeutics; lecturers: Dr. William Olin Stillman, history of medicine; Dr. Harry Judson Lipes, obstetrics; Dr. Charles Harper Richardson, minor surgery; Dr. Arthur Wells Elting, surgical pathology; Dr. George Emory Lochner, gynecology, and Dr. Arthur Turner Laird, clinical microscopy.

Buffalo.

Professor Czerny, Heidelberg, Germany, has been a guest of Dr. Roswell Park.

Dr. C. A. Haman, Cleveland, read a paper on "Spasmodic Torticollis and Its Surgical Treatment" before the Surgical Section of the Buffalo Academy of Medicine, Tuesday, October 1, 1901.

The Experts Who Examined Czolgosz as to his sanity will be allowed fees by Erie County, at the rate of, approximately, $100 per examination. It will cost Erie County in the neighborhood of $2000 for their services.

The Medical Department of the University of Buffalo opened its fifty-sixth annual session, Sept. 30, 1901. Dr. F. C. Busch, professor of physiology, delivered the address of welcome, a review of the advances in medicine and surgery.

Emergency Hospital.—The throng of sightseers which daily has besieged the emergency hospital at the Pan-American Exposition since the wounded President was treated there, has become so great that the hospital staff found it almost impossible to perform the regular duties. A sign has been displayed that non-professional visitors are requested not to take up the time or attention of the hospital staff. Up to the time of the shooting the hospital was looked upon as a sort of exhibit and was open to the public at all hours of the day.

OHIO.

Dr. Lansing's Estate.—The estate of the late Dr. R. H. Lansing, Chillicothe, is valued at from $35,000 to $40,000.

Diphtheria is prevalent in Coshocton. Two Zanesville physicians have been arrested on the charge of failure to report cases of the disease.

Toledo Medical College held its twenty-first annual opening exercises, September 26. Addresses were made by Rev. Dr. Belsey, Dr. John S. Pyle and other members of the faculty.

The College of Physicians and Surgeons, Cleveland, for its forty-first term, opened September 18, without formal exercises. Dr. Charles B. Parker made a short address of welcome to the students.

Osteopath Arrested.—On complaint of Health Officer Beardsley, of Findlay, an osteopath of that place was arrested, September 24, charged with practicing medicine and with prescribing drugs for the cure of physical ailments, without complying with the state laws governing physicians.

Personal.—Dr. John F. Hesse had a second attack of paralysis at his office in Cincinnati, September 16, and is in a critical condition.——Dr. John E. Brown, Columbus, has returned from a three months' trip to Europe.——Dr. Edward Vail, Newark, the oldest practitioner in Licking County, was stricken with paralysis, September 21.

PENNSYLVANIA.

Measles is epidemic in South Williamsport.

A correspondence school of personal magnetism, magnetic healing and hypnotism is the latest Philadelphia novelty.

Woman's Medical College, Philadelphia, opened its fifty-second annual session, September 25. The address was delivered by Dr. Caroline M. Burnell.

A reception was tendered by the trustees and the faculty of the Medico-Chirurgical College, Philadelphia, to the members of the State Medical Society, guests and visiting ladies, at the college building, September 26, from 5 to 7 p. m.

Protest Against Isolation Hospital.—As vigorous protests were made to the mayor of Philadelphia against the establishment of an emergency hospital for contagious diseases in the twenty-eighth ward, he has directed that all work be stopped and to abandon the proposed location. He has ordered temporary pavilions to be constructed within the hospital enclosure.

Personal.—Dr. A. E. Stoits, Philadelphia, has located in Williamsburg.——Dr. J. A. Trexler, Macungie, has purchased the practice of Dr. Wagner, of Pikesville, and will locate in that place.——Dr. Edwin R. Rasely, Vanderbilt, has moved to Uniontown. He is to be resident physician for the Rainey Coke Company.——Dr. Judson Daland has returned to Philadelphia after his summer vacation, which was spent in European travel. ——Drs. Thomas C. Buchanan, Honeybrook, and W. E. Fisher, have opened offices in Reading.

TEXAS.

Smallpox is reported to be epidemic in Ellis County.

Southern Pacific Hospital.—A hospital building is to be erected at El Paso by the Southern Pacific Railroad Company, which will accommodate fifty patients.

Fort Worth University Medical Department opened October 1, with appropriate exercises. The only notable change in the faculty is in the chair of anatomy, which is now held by Dr. Gardiner, who succeeds Dr. William R. Thompson, resigned.

Mosquito Warfare.—Galveston has arranged for a large supply of crude oil from the Beaumont wells, which will be sprinkled on all stagnant pools and gutters in the city and will be given to owners of open cisterns for use in destroying mosquitoes.

Personal.—Dr. John D. McMillan has sold his residence in Biardstown to Dr. Jefferson D. Skidmore, and will move to Paris.——Dr. E. C. Barham, Duffon, has moved to Hico.——Dr. T. J. Hubbert, Hico, has moved to Fort Worth.——Dr. E. D. Capps, Fort Worth, who has been in Europe the greater part of the summer, has returned to New York and will soon return to Texas.

WISCONSIN.

Milwaukee Medical College opened for its eighth annual session, September 17. Dr. John J. McGovern is the new professor of anatomy. More than 500 students have matriculated.

Smallpox has been reported at North Fond du Lac, imported from Colby, and is among the Winnebago Indians, at Brockway, where 100 cases are said to exist. It has also been reported at Sheboygan, said to have been brought from Sturgeon Bay, and at Newton.

To Enforce Smallpox Law.—Dr. G. O. Switzer, Stanley, has been appointed special medical inspector and agent of the State Board of Health for Chippewa and Taylor counties. Dr. Frank B. Hicks, city health officer of Washburn, has been named as the special representative of the State Board of Health to look after the work of suppressing smallpox in Bayfield county.

Personal.—Dr. L. W. Zochert, Hingham, has settled in Fond du Lac.——Dr. J. Johnson Heeren, Marinette, is located on a fruit ranch near Mimbres, N. M., and is regaining his health and strength.——Dr. Cora A. Turner-Saxe, Delavan, has sold her practice to Dr. Rebecca Rhodes, and will go to Everett, Wash., early in October.——Dr. Albert G. Jenner, Milwaukee, sailed September 19 for Europe on the *Spartan Prince.*——Dr. George H. McCallister, Elkhorn, has sold his practice to Dr. T. H. McCarthy, Stoughton.

GENERAL.

Surgeon General George M. Sternberg, U. S. A., arrived at San Francisco, October 1, from Manila.

Gift to Manila Hospital.—Mr. Whitelaw Reid, New York, has made a second gift of $5000 to the Woman's Hospital, Manila.

Plague at Rio Janeiro.—President Roca has signed a decree declaring that the port of Rio Janeiro is infected with the plague.

Examination for Physicians for Indian Service.—An examination will be held on October 22, for the position of physician in the Indian service, at White Earth Agency, Minnesota, at a salary of $900 a year.

American Hospital in Paris.—The project of erecting an American hospital in a suburb of Paris, which was about to be abandoned, has been revived by a donation from the Duchess of Marlborough of $10,000, and by the promise of a similar amount from her father, Mr. W. K. Vanderbilt.

Records of International Congress of Medicine.—The General Secretary of the 13th International Congress announces that the general volume and the seventeen records of the sections are ready for delivery. Any member who has not received the volumes and is entitled to them is requested to address the Editors of the Congress, Mrt. Masson et Cie., 120 Boulevard Saint Germain, Paris, not later than December 15, 1901.

Egypt's International Medical Congress.—An International Congress of Medicine will be held under the patronage of the Khedive of Egypt, at Cairo, in December, 1902. It will be the first great gathering of scientific men ever held in an oriental country. The subjects to be considered more particularly will be the diseases that come from the East, cholera and the bubonic plague, as well as forms of dysentery and ophthalmia prevalent in eastern lands. Among the medical men who are promoting the congress are Abbate Pasha, Tomanos Pasha, physician to the khedive; Ibrahim Pasha Hassan, dean of the Cairo Medical School; Mol Eloui Bey, the ophthalmologist, and the chief Egyptian physicians, native and foreign. Dr. Varonoff is secretary general of the committee in charge of arrangements.

An examination for colored doctors will be held October 29 and 30 by the United States Civil Service Commission, at Washington, D. C., for the position of assistant surgeon of the Freedman's Hospital. The examination is open to all citizens of the United States, and full information can be obtained by applying to the Commission Board. No one under 20 years of age is eligible. The subjects upon which the questions will be asked are: Letter writing, anatomy and physiology, surgery and surgical pathology, chemistry, materia medica, therapeutics, bacteriology and hygiene, theory and practice of medicine and general pathology, obstetrics and gynecology. The Freedman's Hospital is an institution established at Washington, D. C., for the free care and treatment of colored patients. It is understood that it is the custom of the department to appoint only colored people to positions. From the number of those who successfully pass the coming examinations, appointments will be made. The position carries a salary of $1000 to $1500 a year.

CANADA.

Asylum Staff Changes.—Dr. Harvey Clare, assistant physician at the Asylum for Idiots, Orillia, has been promoted to the position of assistant physician at the Asylum for the Insane, Brockville, to succeed Dr. Wilson, who has been transferred to the London Asylum.

Dowieite Convicted.—On the 26th inst. Mr. Justice Walker, of the British Columbia courts, found a member of the "christian catholic church in zion" guilty of manslaughter, on the charge of failing to provide proper medical attention for his two children who died from diphtheria.

Death of a Centenarian.—In the village of Troy, which is situated a short distance from the city of Hamilton, Ontario, there died the other day a man who had reached a ripe old age, Adam Misener, aged 103 years and seven months. There is no doubt about the authenticity of this man's great age. He was well known to the writer.

Annual Report: Provincial Board of Health, Ontario.—The nineteenth annual report of the Department of Public Health in Ontario has just been issued, and it deals with the year 1900. In a population set down at 2,302,705, there occurred 25,382 deaths, or 11.9 per 1000, the average population reporting being 93 per cent. The deaths occurring from consumption are set down at 2360.

Trinity Medical College Opening.—On the afternoon of the 25th inst. the opening lecture of the session of 1901-1902 was delivered by Professor Charles Sheard. Dr. Brennan, an old graduate, who was President Kruger's physician when the South African war broke out, but who immediately left him and joined the British forces, was present, and was welcomed by a number of old friends.

Quebec Medical Council.—At a meeting of the Board of Governors of the College of Physicians and Surgeons of Quebec, held on the afternoon of September 25, the following officers were elected: President, Dr. Lachapelle, Montreal; vice-presidents, Dr. Vallee, Quebec, and Dr. Craik, Montreal; registrar, Dr. Marsolais; treasurer, Dr. Jobin, Quebec; secretaries, Dr. McDonald, Montreal and Dr. Paquin, Quebec.

Something About the Birth Rate in Canada.—After all, it would appear that the largest families are not in the province of Quebec, but in Prince Edward Island, where five persons and four-fifths of a person constitute a family, according to the Toronto *Globe*. The Quebec family is said to consist of five and one-half; New Brunswick has the same record, while Nova Scotia has one-tenth of a person less. In Manitoba, British Columbia and the Territories the family is less than five.

The Outbreak of Anthrax in the Northwest.—Much alarm is experienced among cattlemen in Toronto and Montreal lest anthrax, which has been so widely prevalent in the Canadian Northwest, be introduced into Ontario, generally, one or two districts now being already infected. Over 4000 sheep belonging to one company in the Northwest are dead and considerable loss among cattle and horses is also reported. The disease was brought into that part of the Dominion by Australian sheep-shearers. It is understood that owing to the general quarantine immediately set on foot the outbreak is being held in check.

Smallpox.—Smallpox has reappeared in the Island of Manitoulin, but in a very mild form. The Provincial Health Department has ordered that all cases and suspects be quarantined and that vaccination be generally enforced. The outbreak at Ottawa begins to assume a serious aspect. It is understood that Dr. Robillard, who has been health officer of the city for over twenty years, has resigned on account of being hampered and criticised in his work. An employe of the census bureau has contracted the disease and Dr. Montizambert, the Director-General, has had to vaccinate the entire staff of that department. Toronto has been declared free of the disease by the medical health officer.

FOREIGN.

Hospital at Port Arthur.—The Russian government is erecting a sanitarium at Port Arthur at an expense of 200,000 roubles.

Dresden school children show, as the results of the medical inspection of all school children, that 50 per cent. deviate from the normal standard.

Women Excluded.—The professors of anatomy, chemistry and physics at the University of Königsberg have excluded women students from their lectures.

The German Balneologie Association has published an appeal for subscriptions to erect a memorial in honor of H. Brehmer, the father of the tuberculosis sanatorium.

International Exposition of Photography.—Dr. A. E. Stein, Berlin, assistant at Bergmann's clinic, obtained the prize for medico-scientific photography at the recent exposition in Weimar.

Prize Founded in Honor of Tokarski.—The patients and admirers of the recently deceased Moscow professor, A. Tokarski, are collecting subscriptions to establish a quadrennial prize to bear his name, to be awarded for the best work on the application of hypnotism to the treatment of nervous diseases.

Country Homes for the Convaleseents of the Paris Hospitals.—The Paris authorities are seriously considering the proposition of sending convalescents dismissed from the hospitals to board in families in the country. The expense is less than to establish sanitariums, while the physical and moral advantages are considered superior.

Jockey Hospitals.—It is not generally known that Newmarket, England, and Chantilly, France, have each a hospital for jockeys only, where those injured in the races or suffering from any except contagious diseases are admitted and cared for in a princely manner. The *Gaz. Méd. de Paris* states that the Chantilly hospital has two permanent inmates, pensioned and retired on account of age.

Free Post-Graduate Medical Courses in Berlin.—The central committee organized to "promote the perfecting of the art of medicine in Prussia," by holding post-graduate courses, reports that 1140 physicians have made application in Berlin

this year, against 797 in 1900. There are now nineteen courses, and a series of conferences on military surgery and medicine, and also on industrial accidents from the medico-legal point of view.

Hirschberg's Library.—The famous ophthalmologist of Berlin, J. Hirschberg, has compiled a catalogue of the works in his library on his specialty, with a brief descriptive outline of the contents. It forms a volume of 434 pages, and as the collection is destined for the library of the Berlin Medical Society, ophthalmologists are rejoicing. The *Deutsche Med. Wochenschrift* remarks that the Hirschberg ophthalmologic collection is the most extensive and complete in the world.

Virchow's Birthday Festivities.—The official celebration commences on the day before the birthday, October 12, with the inspection of the newly-installed collections of the Pathological Museum, to which Virchow himself issues the invitation. At six p. m. a banquet is tendered to Virchow and his family, the delegates from abroad and his most intimate friends. It will be held in the Prussian Abgeordnetenhaus or House of Deputies, and afterwards the party will adjourn to the assembly hall, where the delegates and others will present their greetings and contributions to the famous Virchow Fund, with a souvenir pamphlet containing the names of the contributors. The city of Berlin has voted to contribute 100,000 marks—about $25,000—to the fund. The medical societies of Moscow are to hold a joint session on that day in honor of Virchow, and, besides sending a deputation to Berlin, have commenced collecting funds to establish a Virchow scholarship at the university. The Paris Society of Anthropology sends a gold medal in his honor.

French War on Consumption.—Since the congress in London, all the individual leagues founded to combat tuberculosis have consolidated into a single gigantic "union for struggle against consumption." Delegates representing all the mutual aid and mutual insurance societies met in the hall of the Sorbonne and agreed to contribute a fund of $10,000 yearly for the support of 100 beds in the hospitals of each large city in France, besides supporting 300 free consulting-rooms in public sanatoriums throughout the country for the coming year. Moreover, the members of the new union purpose publishing a periodical devoted solely to fighting the disease, which annually destroys so many lives in France. This periodical will be edited principally by Dr. Calmitte, head of the Pasteur Institute at Lille. The organizers of the present movement, which is the largest yet established, hope that a similar move will be made in the United States and Great Britain. A beginning in this line has already been made in Germany.

LONDON LETTER.

Tuberculosis in Animals.

The Local Government Board has issued to the Borough Councils a letter dealing with the tuberculosis question in which it is pointed out that the views of Professor Koch have not received the assent of scientific men and that pending the Report of the Royal Commission there should be no relaxation in the measures dealing with milk from tuberculous cows and with tuberculous meat. As the action of the local authorities is not uniform the Board calls attention to the report of the Royal Commission on Tuberculosis held in 1898 as to the degree of tuberculous disease which should cause a carcass, or a part thereof, to be seized. This commission was of opinion that the entire carcass and all the organs of cattle might be seized, 1, when there is miliary tuberculosis of both lungs; 2, when tubercular lesions are present on the pleura and peritoneum; 3, when tubercular lesions are present in the muscular system or in the lymphatic glands embedded in or between the muscles; and that the carcass if otherwise healthy should not be condemned, but every part containing lesions destroyed when the lesions are confined to the lungs and thoracic lymphatic glands, when the lesions are confined to the liver, when the lesions are confined to the pharyngeal lymphatic glands, and when the lesions are confined to any combination of the foregoing, but are collectively small in extent. In pigs, in view of the greater tendency of tuberculosis to generalization, the Commission considered that tubercular deposits in any degree should involve seizure of the whole carcass and of the organs. In respect of foreign dead meat, seizure was recommended in every case in which the pleura had been "stripped." The Local Government Board now strongly urge the Borough Councils to enforce these regulations.

Major Ross' Anti-Malarial Campaign.

A letter has been received by the Chairman of the Liverpool School of Tropical Medicine from Major Ronald Ross, giving information of the results of his visit to the Gold Coast and of the work of the fifth expedition of the school. He first refers to the admirable measures of Sir William Macgregor at Lagos, which have been already described in THE JOURNAL. At Accra, arrangements have been made to improve the condition of the Europeans by buying up several poor locations planted in their midst. An admirable plan has been formed for laying out the town of Sekondi in accordance with scientific requirements by buying out the poor locations on the foreshore, extending the European quarters along the bluff to the east, and placing the native town apart—behind the railway. Major Ross informed the governor that he did not think that the housing question would in itself put a stop to the fever and that the measures adopted at Freetown and Lagos should be extended as soon as possible, and that considering the importance of the matter the Liverpool School of Tropical Medicine would consider the advisability of sending a delegate to direct operations. At Sierra Leone he found a gang of men employed in clearing the larvæ of mosquitoes out of the houses. In 34 days they had cleared 2473 houses and removed 358 cartloads of empty tins, broken bottles and such like in Freetown. It is calculated that one in three empty tins is a breeding-place for mosquitoes. A serious blow has, therefore, been struck at the prevalence of the culex mosquito in the town. Major Ross calculates that an annual expenditure of only £100 would keep the town free from mosquitoes. Already their numbers are greatly reduced. These culex mosquitoes, besides causing annoyance, carry the germs of yellow fever, elephantiasis, and other diseases. Operations against the anopheles mosquito, which breeds in puddles, are also being pushed. Hollows in the ground are everywhere being drained or filled with earth. Others are being filled with the empty bottles and tins found in the houses. Many of the worst streets, which were practically marshes, have been reclaimed. The unhealthfulness of the Gold Coast, Major Ross believes, has been much exaggerated. True, there is a considerable amount of malaria among Europeans, but there is little or no typhoid. Everywhere men are met who have lived on the coast for years in good health. It is the young, reckless, improvident and sometimes intemperate newcomer who generally falls a victim to disease. If a man contracts malarial fever now in 9 cases out of 10 it is his own fault. The scrupulous use of a mosquito net is necessary.

Lunacy in 1900.

The report of the Commissioners in Lunacy for 1900 has just been issued. The total number of lunatics of whom they had notice in 1900 was 107,944—an increase of 1333 for the year as against increases of 1525 in 1899 and 3114 in 1898. As the average annual increase for the last five years has been 2300, the increase for 1900 must be considered small.

The Gelatin Treatment of Aortic Aneurism: Fatal Tetanus Produced.

At Guy's Hospital a very unfortunate result has followed in the case of two patients undergoing this treatment. Three patients—a carter, aged 37, an engineer's laborer, aged 33, and a third one—underwent the gelatin treatment about the same time. The latter was discharged, according to the opinion expressed at the inquest, thoroughly cured. But the two former have died from tetanus. What the weak links in the chain of antiseptic precautions were is not known. It is difficult to believe that the spores could have been in the original gelatin and resisted the prolonged sterilizing processes to which it was subjected.

The Outbreak of Smallpox in London.

The outbreak of smallpox, which has been previously described in THE JOURNAL, appears to be on the decline. In eight weeks, ending Sept. 7, 135 cases were admitted to the hospital, and of these, 113 were admitted during the last three weeks of that period. For the week ending August 24 there were 30 cases; August 31, 52 cases, and September 7, 31. The cases have not come from one quarter of London, but from all over the metropolis. A source of anxiety is the large number of unvaccinated children in London, the result of the recent vaccination act which practically abolishes compulsion. It is estimated that a third of the children who attend elementary schools are unvaccinated. The difficulty of diagnosis which the ordinary physician experiences has been previously mentioned in THE JOURNAL. Vaccination acts in two ways in producing

this difficulty—by rendering cases so rare that most doctors have never seen the disease and by modifying the eruption. Suspected cases are first removed to shelters where they remain under observation until the diagnosis is definite; in case the patients are suffering from smallpox they are then removed to hospital ships in the Thames, which are specially reserved for the disease.

Correspondence.

Aim of Medical Edueation, and Its Relation to Researeh Work by Medical Students.

CHICAGO, Sept. 23, 1901.

To the Editor:—The editorial in your issue of Sept. 21st, commenting upon my paper on "The Aim of Medical Education, and Its Relation to Research Work by Medical Students," which appeared in the same issue, shows such a lack of understanding of the points of the paper that I beg the privilege of reply.

The writer of the editorial has distinctly misunderstood my use of the expression: "Original research has for its object the determining of new truths of a more or less general character." I do not blame him for this, as the language is imperfect, and I felt it at the time of writing. The language would have been better had I omitted the limiting phrase, "of a more or less general character." What I had in mind, however, which gave rise to the phrase was this: Every truth in one of the basic sciences which bears upon "clinicism," has in the latter numerous applications; it is, therefore, to the latter "more or less general." The point, however, is not important, and to discuss it further would lead to a mere tangle of words, something I wish to avoid. To further clear the way for true discussion, I grant at once that all knowledge is relative and that speculations as to the "absolute" have no place here. Furthermore, I can not see how anything I said could have led to his very true, but wholly irrelevant statement: "Only occasionally does that master mind appear which is capable of new generalizations, justifiably far-reaching." He asks: "Again, is it fair to consider that work unworthy of the name of research which, though it fail to say the last word upon the problem upon which it is engaged, gathers all the data at the time available, reflects upon them and draws legitimate inferences from them, even when the result is only an approximation to the whole truth?" He thinks not; so do I. But the whole question is irrelevant. The question has probably arisen from the following in my paper: "As Huxley says: 'There is one guiding rule by which a man may always find this path [to truth] and keep himself from straying when he has found it. This golden rule is—give unqualified assent to no proposition but those the truth of which is so clear and distinct that they can not be doubted.' Any so-called research less critical is unworthy of the name." If by "legitimate inferences" he means inferences which meet the requirements of Huxley's rule, then we are in accord. My objection is not to the research or its incompleteness, but to tentative conclusions. The problem actually solved is the one formulated by just conclusions. The question which the editor asks appears, however, unfair in that it implies a criticism (erroneous as has been shown) of a portion of an argument away from its context, and entirely overlooks the point of the argument. I am sure that upon sober second thought the editor will lose the fears which he expresses as to the ultimate outcome of the "medical mode of thought." The matter is too extensive for proper exposition in a letter, but in a paper to be presented later, I shall show that it requires no less accuracy of observation nor less of logical reflection than characterizes all scientific methodology, but on the contrary rather more than most scientific procedures, and that its great characteristic is that it is on the whole much more difficult than most work in the basic sciences, because of the inherent peculiarities of the subject matter, with which it deals.

Upon the question of the relation of medical students to research work, he agrees that the majority of medical students are unfitted, especially during their undergraduate years, for original research; and gives reasons for it with which I fully concur. The reason which I give for this same position he does not agree with and in stating it does not state it exactly as given. He further says: "But has he any evidence which would indicate that such an assumption is true? Surely, every-day experience points to the opposite view, and certainly the statements made in his paper can scarcely be regarded as convincing." The alleged assumption relates to the differences which exist in the process of diagnosis and in that of research. I feel quite sure that the assumption will be granted by medical men who are in the habit of making thoughtful and careful diagnoses daily. He also presumably includes in the assumption my statement that research in the basic sciences is capable of being harmful to the young medical man. He offers no evidence to support his own view; the evidence by which I support mine will be presented in my subsequent paper.

Very respectfully, W. S. CHRISTOPHER, M.D.

The Function of the Appendix.

NEW YORK, Sept. 20, 1901.

To the Editor:—On page 852 of THE JOURNAL for Sept. 28, 1901, I find a report of a paper read by Dr. E. P. Hershey, Denver, dealing with the question of the function of the appendix. Dr. Hershey apparently believes that the secretions of the appendix are important in their influence on bowel contents, but we know that such secretions are trifling in amount and not different from those of the cecum. Most of the appendices upon which I have operated have had their function already destroyed by bacteria. Further than that, we know that during middle life the appendix is prone to undergo normal involution changes, so that in later life there is little if any secreting surface left. Dr. Hershey says of the cecum: "This cul-de-sac is the most inviting place for the accumulations of feces. The mass remains here and would become hardened were it not for the secretions that keep the mass thin and moist." I would like to have a record of actual observations made upon this point. Those of us who see the cecum a good many times in the course of a month, note the fact that it is about the emptiest part of the bowel, and might well have been named the jejunum. I have seen several hardened cecums, and have operated many times in cases in which some one had made the diagnosis of cecal impaction, that never yet, so far as I remember, has the cecum contained any palpable fecal matter. The "fecal impaction" was regularly peritoneal exudate, and usually abscess. I make these points because there are many physicians who are anxious to be right, but who are too busy to become properly informed on the subject of the appendix. They gladly seize upon such data as those furnished by Dr. Hershey in order to escape, if possible, from the dictum of authorities who advise operation in appendicitis as soon as the diagnosis is made. Consequently, it seems no more than fair in the interests of science and humanity if we ask Dr. Hershey to give us the result of carefully recorded, accurate observation. In the East we have learned to look at Denver as a city containing representatives of all that is best in modern medical knowledge, and it is unfortunate to have a false note sounded from a section of the country that has gained so well-merited a reputation.

ROBERT T. MORRIS.

Why Withhold Tobacco?

TOLEDO, Sept. 25, 1901.

To the Editor:—This question, whether he should be permitted to smoke or not, came up in the treatment of our late President, and possibly has in it a lesson which should be considered on account of the applicability which it may have to the treatment of surgical cases generally. Does the sudden stopping of the habitual use of tobacco make the bodily functions more resistant to the processes of disease, and more efficient in the healing of wounds? Does the nervous system suffer and lose its balance by withholding its accustomed sedative? Are the secretory system, the excretory system, in fact all of the systems of the body, by the sudden taking from them

of the load to which they have learned to adapt themselves, made stronger, or are they left stagnated because the stimulus which has been prompting them to their abnormal action has been removed?

To smoke three or four cigars in one day would probably kill a man who was not accustomed to its use, but the system of the habitual user of tobacco has become so gradually saturated that it, like the system of the arsenicophagy is able to stand the strain. In the case of the arsenic eater instant withdrawal of the poison is sudden death.

Just why the desire for the narcotic stops during sickness, and immediately upon the receipt of injury, is unexplainable. May it not be the fact that the abnormal sedation which the tobacco has been producing gives way to unbalance, irregularity in functions, and destructive action, upon the withdrawal of the narcotics? Is it just possible that in sickness and injuries where desire for tobacco has been lost, that some preparation of tobacco should be regularly administered hypodermically?

J. L. Tracy.

Regarding Christian Science.

Chicago, Sept. 12, 1901.

To the Editor:—In The Journal of July 27 was published what was supposed to be "a sample of Christian Science," "a prayer for a dyspeptic, drawn up by Mr. Hazzard, president of the New York School of Primitive and Practical Christian Science." Please permit me to state through your columns that the gentleman mentioned is not a Christian Scientist, his school is not a Christian Science school, the prayer attributed to him is not a Christian Science prayer, and the publication to which it is credited is not a Christian Science publication. Any deductions, therefore, which might be drawn as to the teachings of Christian Science from the "prayer for a dyspeptic" must be erroneous.

Archibald McLellan.

Book Notices.

La Peste Bubonique dans la Republique Argentine et au Paraguay Epidémies de 1899-1900. Rapport Présenté au Département National D'Hygiène par les Docteurs Luis Agote et A. J. Medina, Inspecteurs délégués du Gouvernement Argentin. Paper. Pp. 298. Buenos Aires: Felix Lajouane. 1901.

This report of the National Department of Hygiene of Argentina is an evidence of the thorough appreciation of sanitary questions in that South American Republic. The authors give the history of the introduction and course of the disease in succession into Asuncion, Rosario and Buenos Aires, discuss the local conditions in each place that favored its development, devote chapters to treatment and prophylaxis and conclude with an appendix giving reports of cases. They endorse serum therapy as giving better results in the cases in which it has been employed than other methods of treatment, and the accidents or inconveniences following its use slight. They do not, however, unreservedly hold with Haffkine that serum immunization renders needless other prophylactic measures. Where the serum treatment was impossible in these cities the treatment was largely symptomatic—balneotherapy, cardiac tonics, anti-spasmodics, intestinal disinfectants, etc. Incision of the buboes was practiced, and bleeding was found occasionally of value. The work is a valuable contribution to the not yet too ample scientific literature of this recently recrudescing pest of former times.

Transactions of the Vermont State Medical Society, 1900. Published by the Society. Cloth. Pp. 195. Free Press Association, Burlington. 1901.

The Secretary calls attention to the fact that while 15 or 20 new members are added each year, the total enrolment remains practically the same on account of those who are dropped for non-payment of dues. The membership is given as 219, although how many are back in their dues three years is not stated. There are about 600 regular physicians in the State, hence only about one-third are active members of their State Society. The report of the committee on reorganization is an excellent one and contains recommendations, which, if adopted, can not but be a benefit to the profession of Vermont. In the report of the delegates to examine the graduates of the medical department of Dartmouth College, we are informed that the temperature of that day was 143 degrees below zero—rather cool certainly. The volume contains twelve papers, besides the reports, obituaries, etc.

The Office Treatment of Rectal Diseases Explained and Simplified. Being an Exposition of the Treatment of all Those Diseases, Both Medical and Surgical, of the Rectum, Anus and Sigmoid Flexure, the Cure of which May Be Accomplished Without Surgical Anesthesia. Illustrated. By Rufus D. Mason, M.D., Omaha, Neb., Professor of Rectal and Pelvic Surgery in the John A. Creighton Medical College. Cloth. Pp. 83. Price, $1.50. Omaha: E. B. Festner. 1901.

The author does not attempt to cover the field of rectal diseases, but only those conditions that are liable to be met by the general practitioner. As such the book is to be commended.

A Hand-Book of Genito-Urinary Surgery and Venereal Diseases. By G. M. Phillips, M.D., Professor of Genito-Urinary Surgery and Venereal Diseases, Barnes Medical College. Illustrated by Half-tone Cuts and Special Drawings by L. Crusius, M.D. Cloth. Pp. 313. Price, $2.00. St. Louis, Mo.; Lewis S. Matthews & Co. 1900.

The subjects are treated clearly and concisely. The half tones and drawings are unusually good and instructive. For the student and practitioner it will be found a convenient reference book.

Miscellany.

San Francisco Plague Report, Fortieth Verified Death.

Lee Mon Chong, male, aged 40 years, a cigarmaker by occupation, died on Aug. 30, 1901.

Autopsy.—Body of a Chinese male, fairly well nourished; rigor mortis not present; body still warm, pupils moderately dilated, scleræ not injected. Glandular enlargement well marked in left inguinal region, slight enlargement in right axilla; no local lesion to account for enlargement. Two small ecchymotic spots over bubo in the groin, lividity not marked, slight on dependent parts. Upon incising the bubo, a bloody hemorrhagic fluid exuded; the glands were seen to be enlarged, injected, and surrounding tissues edematous. Smears from the gland, stained with carbol-thionin, showed numerous bipolar staining bacilli.

Abdominal Incision.—Subcutaneous fat was moderately abundant; subcutaneous vessels injected; left abdominal muscles infiltrated. Intestines were slightly distended, moist and glistening, showing a number of dark areas, probably submucous hemorrhages. Little or no fluid was in the abdominal cavity; appendix normal.

Diaphragm, attachment, right, 5th rib. Left, 4th interspace. Lungs met in median line but collapsed anteriorly. Left slightly adherent at apex.

Pericardium.—Area was about normal in extent, contains about 10 c.c. of clear yellowish fluid.

Heart.—Surface was covered with fat; vessels slightly injected; heart muscle soft and flabby. Ventricles full of fluid blood; valves normal. Numerous plaques on surface of aorta; coronary openings free. Heart muscle was pale and in some places evidence of fatty change.

Lungs.—Left lung pits on pressure and crepitates throughout. Pressure causes serum and air to exude from cut surface. No nodules. Lung appears normal except for edema. In the right lung, middle and upper lobes pit and crepitate throughout except at the site of an old tubercular scar at apex. The upper and anterior part of the lower lobe is somewhat firmer than normal, but crepitates, especially about the border. The pleura still glistens, color purplish, interspaced with dark

bluish green. The lower posterior portion of the lobe was completely consolidated; pleura, of a light pinkish color, had lost its luster and contained subpleural hemorrhages. Cut surface of the consolidated portion is rich in blood, light pinkish color. Pressure caused blood, but no air or serum to exude. The appearance does not bear any resemblance to any stage of croupous pneumonia. No tubercles present.

Spleen.—Enlarged to about one and a half times normal size; capsule wrinkled, moderately firm in consistence; color not very red; no white nodules subcapsular, cuts a little firmer than normal. Connective tissue increased; cut surface moderately rich in blood; pulp slightly bulging.

Liver.—Gall-bladder moderately distended, contained no stones. Liver about normal or slightly smaller in size, surface smooth and glistening, of a light chocolate color. Normal in consistence, cut surface moderately rich in blood.

Kidneys.—Left: smaller than normal, soft, fatty capsule well preserved; capsule stripped readily, exposing a light yellowish surface, mottled with red, which was not granular, in which the venæ stellatæ showed prominently. Cut surface rich in blood. Contrast between cortex and pyramids well preserved. Cortical margin normal in breadth; same color or a little deeper than described on surface. Left kidney same as right.

Stomach.—Mucous membrane showed a few submucous hemorrhages. Smears from the spleen and blood did not show any organisms.

Animals inoculated from the glands of the bubo died of typical plague infection.

NEW CASES.

Ng Chon was seen at 821 Washington Street, September 11, by Dr. Kellogg, the city bacteriologist. According to the representations of inmates of the house, he had been sick one week. The Doctor found him with a temperature of 104, pulse 120, with a dry mouth and coated tongue. There was a large bubo in the right femoral region. No evidence of venery. No microscopical examination of fluid from the bubo nor blood allowed. He was removed to the plague hospital and is recovering.

Alexander Winters, a sailor, came from a ship in the harbor. He was taken sick on September 11, on board ship, with vomiting and chills; a bubo developed at the same time in the right femoral region. He came ashore and entered a lodging-house at 812 Third Street, where he remained for two days. He then applied at the Marine-Hospital where he was admitted and where he now is. There was no evidence of venereal disease in his case. Blood taken from the bubo gave a pure culture of the bacillus pestis. The results of animal inoculation are not completed.

Association News.

Nicholas Senn Prize Medal.

The committee on the Senn Medal beg leave to call attention to the following conditions governing the competition for this medal for 1902:

1. A gold medal of suitable design is to be conferred upon the member of the AMERICAN MEDICAL ASSOCIATION who shall present the best essay upon some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award will be made under the following conditions: *a.* The name of the author of each competing essay shall be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. *b.* All successful essays become the property of the ASSOCIATION. *c.* The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the ASSOCIATION. *d.* The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the AMERICAN MEDICAL ASSOCIATION. *e.* The competition for the medal will be closed three months before the next annual meeting of the AMERICAN MEDICAL ASSOCIATION, and no essays will be received after March 1, 1902.

Communications may be addressed to any member of the committee, consisting of the following: Dr. Herbert L. Burrell, 22 Newbury Street, Boston, Mass.; Dr. Edward Martin, 415 S. 15th Street, Philadelphia, Pa.; Dr. Charles H. Mayo, Rochester, Minn.

Married.

THOMAS J. O'MALLEY, M.D., to Miss Helen M. Ahern, both of Joliet, Ill., July 10.

T. A. HUDSON, M.D., Olive, Tex., to Miss Mattie De Arman, Hico, Tex., September 10.

JAMES PATRICK MOORE, M.D., to Miss Elizabeth Taylor, both of Yazoo City, Miss., October 2.

JOSEPH E. GARDNER, M.D., Fort Worth, Tex., to Miss Rose Montague, at Bandera, Tex., September 11.

A. E. MYERS, M.D., Jamestown, N. Y., to Miss Jessie E. Beacon, Randolph, N. Y., September 18, at the home of the bride.

HENRY BLANKENHORN, M.D., Orrville, Ohio, to Miss Mabel Buckley, Marshallville, Ohio, September 26, at the home of the bride.

Deaths and Obituaries.

Charles H. Guibor, M.D., Rush Medical College, Chicago, 1871, died at his home in Topeka, Kan., September 22, from intestinal obstruction following an operation for carcinoma, aged 59. He was born in St. Louis, Mo., and first practiced in Iowa Falls, Iowa, moving to Kansas in 1875, where he took up his practice at Beloit, remaining there until 1889, when he removed to Topeka. He was a member of the Kansas Board of Medical Examiners for a number of years.

Albrecht H. Trapp, M.D., University of Zurich, Switzerland, died at Lincoln, Ill., September 23, aged 88. He was born in Germany and came to this country in 1837, owing to political differences. For forty years he was an active practitioner at Springfield, Ill., and was elected to the State Legislature in 1854. He always took an active interest in educational affairs.

Enoch Callaway, A.M., M.D., Jefferson Medical College, Philadelphia, 1876, A.B., and A.M., Mercer University, Macon, Ga., died at his home in LaGrange, Ga., of Bright's disease, September 2, aged 48. He was a member of the Medical Association of Georgia, held the position of mayor for two terms and was a prominent physician of Western Georgia.

Albert H. Frederick, M.D., New York University, 1856, died suddenly at his home in Ocala, Fla., September 23, aged 66. He was born at Cusseta, Ala., and served through the Civil war as a surgeon of the 47th Alabama Infantry. He had practiced at Ocala since 1890.

Chauncey H. Hunt, M.D., University of Vermont, Burlington, 1875, died at his home in Montpelier, Vt., September 18, after a long illness, aged 60. He practiced until ten years ago at Worcester, and in 1880 was a representative from that place to the State Legislature.

Harvey L. Cokenower, M.D., College of Physicians and Surgeons, Keokuk, 1877, died at his home in Clarinda, Iowa, September 19, from Bright's disease, aged 46. He was born in Shelby County, Illinois, and had practiced at Clarinda since 1880.

James McJames, M.D., South Carolina Medical College, Charleston, died at a hospital in Charleston, September 24, aged 27. He was a pitcher of note on the Brooklyn baseball

team, although for a time he practiced medicine at Cheraw, S. C.

Simon Schoonmaker, M.D., University of Toronto, 1857, York, died at his home at Pine Hill, N. Y., September 18, aged 64. He practiced for twenty years at Rosendale, but of late years he had not been in active practice.

Thomas W. McCoy, M.D., University of Nashville, Nashville, 1855, died at his home in Laurens, S. C., September 25, after a short illness, aged 70. He served as a surgeon in the confederate army during the Civil war.

Jeremiah S. Trexler, M.D., University of Pennsylvania, Philadelphia, 1853, died at his home in Kutztown, Pa., September 24, aged 74. During the Civil war he was surgeon in the 73d Pennsylvania Volunteers.

Hiram M. Winn, M.D., College of Physicians and Surgeons, Keokuk, 1892, died at Lawton, Oklahoma, September 20, from typhoid fever, aged 50. At one time he practiced in Louisville, Ky.

George M. Morse, M.D., Harvard University Medical School, Boston, 1843, died at his home in Clinton, Mass., where he had practiced for the past fifty-five years, September 23, aged 80.

William B. Harper, M.D., Tulane University, New Orleans, 1885, died at his home in Minden, La., as the result of an apoplectic stroke, September 23, aged 50.

David McKinney, M.D., Jefferson Medical College, Philadelphia, 1860, died at his home in New Brighton, Pa., September 20, after a long illness, aged 72.

George C. Shannon, M.D., University of Toronto, 1857, died at his home in Goderich, Ont., September 8, aged 68. He practiced in Goderich for forty years.

William F. Pratt, M.D., Medical Department Queen's University, Kingston, Ont., 1888, died at his home in Ottawa, Ont., September 19.

Franklin A. Handrick, M.D., Jefferson Medical College, Philadelphia, 1894, died suddenly at his home in Cleveland, Ohio, September 20.

Charles C. Weamer, M.D., Western Pennsylvania Medical College, Pittsburg, 1897, died at Plumville, Pa., September 12, aged 31.

Societies

COMING MEETINGS.

Tri-State Medical Society of Alabama, Georgia and Tennessee. Nashville, Tenn., Oct. 8-10, 1901.
Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.
Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.
New York State Medical Association, New York City, Oct. 21-24, 1901.
Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.
Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.
Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Medical Club of Philadelphia.—A reception was given at the Hotel Stratford by this Club, September 26, in honor of the president and members of the Medical Society of the State of Pennsylvania.

Kern County (Cal.) Medical Society.—At Bakersfield, September 12, this Society was organized, and officers were elected as follows: Dr. Thaddeus W. Helm, president; Dr. D. J. Prather, vice-president, and Dr. W. S. Fowler, secretary-treasurer.

Claiborne County (Tenn.) Medical Society.—This Society was organized at Tazewell, September 10, and the following officers elected: President, Dr. George P. Miller; vice-president, Dr. M. G. Walker, and secretary-treasurer, Dr. George P. Lynch.

Northern Berkshire Medical Society.—At the annual meeting of this Society, held at North Adams, Mass., September 24, the following officers were elected: Dr. John H. Riley, president; Dr. Edward E. Russell, vice-president, and Dr. Lyman A. Jones, secretary and treasurer.

American Electro-Therapeutic Association.—The eleventh annual session of this Association was held in Buffalo, September 24, 25 and 26. There were fifty-five delegates in attendance and an excellent meeting was enjoyed. Besides many interesting papers by members, the superintendent of electricity at the Exposition delivered an address.

Philadelphia County (Pa.) Medical Society.—A special meeting of this Society was held in Philadelphia, September 19, for the purpose of organizing a branch society. A permanent organization was effected, to cover the northern portion of the city, the idea being to make more accessible the society meetings to those living some distance from the meeting place to the main body. Dr. H. Brooker Mills was elected permanent chairman, and Dr. Robert L. Pitfield, secretary.

Missouri State and County Board of Health.—The State Board of Health organized with about twenty County Boards at a meeting held in Sedalia, September 10, by the election of the following officers: President, Dr. A. W. McAllister, Columbia; vice-president, Dr. W. F. Morrow, Kansas City, and corresponding secretary, Dr. J. R. Graham, St. Joseph. The object of the organization is to encourage a harmonious working of the State and County Boards, especially in the matter of controlling contagious diseases.

The Fifth International Congress of Zoology.—The principal features of this Congress which convened at Berlin, August 19, were Grassi's detailed report of the Italian Society for the study of malaria and what it has accomplished, and Schenk's communication on the results of his method of sex determination. He claims that time is confirming the correctness of his views, and that his array of cases in which sex was determined by his method of preliminary treatment, is so long and so extensive that the idea of mere coincidence must be definitely abandoned. The profession abroad not only refuse to accept his premises, but state that even if they were true their promulgation would be a social calamity.

Medical Society of the Missouri Valley.—The fourteenth annual meeting of this Society was held in St. Joseph, Mo., September 19, with President Treynor in the chair. After passing resolutions on the death of the President, the Society adjourned to permit its members to attend the McKinley memorial services. On the evening of September 19 an adjournment to Eureka Springs, Ark., was taken, where the annual outing was enjoyed and the regular program carried over from St. Joseph was continued. Following is the list of officers elected for the coming year: President, Dr. Richard C. Moore, Omaha; vice-presidents, Drs. A. D. Wilkinson, Lincoln, and M. F. Weymann, St. Joseph; treasurer, Dr. Donald Macrae, Council Bluffs, and secretary, Dr. Charles Wood Fassett, St. Joseph. The next meeting will be held in Lincoln, Neb., March, 1902.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-first Annual Meeting, held in Philadelphia, September 24-26, 1901.

FIRST DAY.—MORNING SESSION.

President, Dr. Thomas D. Davis, Pittsburg, in the Chair.

DR. GEORGE ERETY SHOEMAKER, on behalf of the Philadelphia County Medical Society as its President, extended a welcome to the Society. He compared the position of the various societies to that of brothers annually welcoming to their homes in turn the other members of a family. In this city there is much to link us to the past in the history of medicine. Here was the life work of many of the leaders who have molded medical thought for generations. From their traditional or direct influence a strong stimulus is yet felt. The hope was expressed that in the development of library systems some means would be found to distribute medical books widely from the central institutions, so that practitioners at a distance might be in touch with the treasures of medical literature. The President extended the thanks of the Society for the warm welcome and remarked that in coming to Philadelphia the Society felt that it was coming to a medical atmosphere.

MAYOR ASHBRIDGE extended a welcome on behalf of the city, which, he said, enjoyed not only a national but an international reputation for its skill in medicine and surgery. So far as the administration of public affairs was concerned, he said

there had been an endeavor to do the best to enlarge the opportunity of the medical student; the hospital for contagious diseases had been opened to the graduates of the colleges. The staff of the Philadelphia Hospital had been enlarged, and to medical gentlemen had been given the selection of those appointed.

DR. JOHN H. MUSSER, Chairman of the Committee on Arrangements and Credentials, presented the program, and announced that arrangements had been made for the holding of clinics.

DR. JOHN V. SHOEMAKER, Philadelphia, offered a resolution that the Society testify to the profound grief of its members at the loss of the Chief Executive of the United States, and that such resolutions be placed in the records of the Society.

Representation in the House of Delegates, A. M. A.

The Secretary, DR. C. L. STEVENS, reported a total membership of 3460. This was a net increase of 110. This membership entitled the Society to seven delegates in the House of Delegates in the American Medical Association, lacking only 41 members of the number entitling the Society to a representation of eight delegates; this number he hoped would be realized by June, 1902.

DR. E. E. MONTGOMERY, Philadelphia, moved that the Nominating Committee be directed to select and nominate seven delegates from the Society to the House of Delegates of the American Medical Association, four for two years and three for one; also sixteen alternates; it to be understood that the first alternate take the office of the eighth delegate if by June, 1902, the Society should be entitled, as there was reason to hope, to the eighth delegate. The resolution was seconded and adopted.

The report of the Board of Trustees showed that the financial affairs of the Society had been prosperous and that no unusual expense had been incurred.

It was with sincere regret that the Board reported the death of Dr. John Curwen, long a most respected and useful member of the Society; once the President, and at the time of his death a member of the Board of Trustees.

The Committee on Publication reported that 4000 copies of THE JOURNAL of the State Medical Society had been published each month, of which about 2500 were distributed monthly to the members of the auxiliary county societies. The advertising pages had been made to conform strictly to the requirements of the Code of Ethics.

Reports of Committees.

The Committee on Pharmacy called attention to the prevalent abuse of hospital and dispensary clinics by patients able to pay for professional services, and recommended that the legislature be asked to pass an act requiring all persons seeking such aid to record their names and addresses, and when unable to write, make their marks, as is customary in legal documents, in a book kept for the purpose, which shall be open to inspection by proper persons, and if possible inflict a penalty upon those who fraudulently receive aid. The use of tablets in set formula was also deprecated.

The Committee on the Rush Monument Fund regretted to report that nothing had been done by the Committee since the meeting at Lancaster.

The Committee on Increase of Membership and Polyclinic Teaching reported an increase of 110 members in the Society. Thirty-one societies have a larger membership than last year and 14 had lost in membership during the year. The Committee suggested that personal visitation is needed in societies lacking vitality. This had proven of value in some individual societies.

The Committee on Archives announced the death of Dr. J. Augustus Ehler of Lancaster, Pa. Dr. Ehler had taken an active interest in the Society from its inception, having been one of the founders. He was particularly energetic in the committee work and most anxious that all matters pertaining to the history of the organization be placed in a convenient locality for consultation by members. The Committee further reported that the cataloguing of volumes deposited in the Library of the University of Pennsylvania had been continued.

The Committee on Examination of School Text-Books reported progress. Two members of the Committee, Dr. Israel Cleaver of Reading, and Dr. John Fay of Allegheny, asked to be discharged. The names of Dr. G. A. Parker of Southampton, and Dr. W. A. N. Dorland of Philadelphia, were suggested to take their places.

DR. HENRY BEATES, JR., Chairman of the State Board of Medical Examiners, gave the number of graduates from the respective medical colleges who had applied for examination during the year with the percentage of success and failure. He called the attention of the Society to the fact that while great advances had been made during the period in which the law governing medical practice has been operative, yet the conditions of medical education to-day are deplorable. He expressed the hope that the Society, standing as it does as the exponent of the highest type of medical education, would assert itself in no uncertain manner in demanding the ideal.

DR. JOHN B. ROBERTS, Philadelphia, Delegate to the Conference on National Legislation of the American Medical Association, reported that the annual conference was held on February 20, 1901, in Washington, and read a brief report of the results of the meeting.

The President contributed a Minute concerning the late Dr. Samuel S. Towler. Dr. Towler was widely known and very successful in his practice. As a matter of conscience he answered all calls, no matter how wearisome or unremunerative. He was the soul of generosity, always having a cordial greeting for all. As a citizen and a business man he had the confidence of all who knew him, and was prominent in Christian work.

Directory of Physicians for the State.

DR. JOHN B. ROBERTS offered a resolution that the Committee on Publication, in conjunction with the Board of Trustees, consider the propriety of publishing a Directory of the physicians of Pennsylvania similar to the Directory published by the New York Medical Association; and, that if the said Committee and the Board of Trustees deem it wise to publish such a Directory, that authority is hereby given for such publication. The resolution was approved and referred to the proper committee.

FIRST DAY.—AFTERNOON SESSION.

Address in Otology.

DR. E. U. BUCKMAN, Wilkesbarre, noted some changes that have taken place in the progress of otology in the last six years. In the beginning of Dr. Buckman's practice of otology mastoiditis was looked upon with considerable dread, but the present methods of radical operation are so successful, and in skilful hands attended with so little danger that now abortive treatment is not continued for any length of time. The treatment of this disease is now one of the most satisfactory procedures in the whole realm of otology. Tinnitus auriun was referred to as one of the least satisfactory conditions to treat and one in which there probably has been the least progress in the last five to twenty years. The use of electrolysis in cases of obstinate tinnitus and increasing deafness he had found beneficial. Success in the treatment of these conditions depends more upon how medicines or instruments are used than upon what is used.

Some Aural Complications of Influenza.

DR. S. MACCUEN SMITH, Philadelphia, stated that influenza has been recognized and treated as such for ages, the epidemics having always been characterized by intervening periods during which the disease seems to have been banished. Brief mention was made of mastoid complications, counseling their early recognition and the adoption of energetic measures for relief of local symptoms and the prevention of additional complication of even more serious import.

DR. CHARLES H. BURNETT, Philadelphia, in discussion, said that when the so-called epidemics of grip or influenza broke out in 1889 he had been practicing otology seventeen years and he had never seen any case of so-called grip presenting symptoms which he had not seen previous to the spread of this affection. The hemorrhagic form he did not think any more

prevalent in grip than in measles. He believed there was no specific excitant in the attacks of grip or influenza.

Incudectomy in Progressive Hardness of Hearing, Tinnitus Aurium and Ear Vertigo.

Dr. Charles H. Burnett, Philadelphia, stated that in this disease the surgeon encountered a trophoneurosis of the muscular structures of the middle ear, and not simply a chronic catarrhal process. The chronic catarrnal process often accompanies symptoms of progressive hardness of hearing and tympanic vertigo. The aural symptoms, however, often remain unchanged when the catarrhal symptoms have been relieved. The aural symptoms were outlined. Progressive hardness of hearing is apt to pass from one ear to the other. The treatment advised by Dr. Burnett is the removal of the incus from the worse ear, leaving the remaining conductors in place. The difficulty of the operation necessitates the etherization of the patient. Dr. Burnett's cases show the efficiency of the operation in checking the progress of deafness and in the total and permanent arrest of ear vertigo.

Reasons for Early Operation in Acute Mastoiditis.

Dr. William H. Dudley, Easton, stated that there is a variety of acute mastoiditis, usually a sequel to chronic purulent otitis media, which at no time presents any serious local symptoms. In some of these cases the swelling may be moderate in amount, the tinnitus not great and at no time is there great pain or other general disturbance; yet, when given sufficient time, so extensive may the disease become as to seriously threaten the patient's life. Cases illustrative of this condition were cited. Aside from the intractable chronic otitis media purulenta which may follow these cases, if the condition is allowed to continue, there may ensue extradural abscess, meningitis, cerebral abscess or septic thrombosis of the lateral sinus with their attendant fatalities. He believed that the dangers attending mastoiditis not operated upon in the early stages have not been sufficiently impressed upon the mind of the profession.

Dr. B. Alexander Randall, Philadelphia, believed that many of the mastoid inflammations were not purulent and do not need operative intervention; at least four out of five cases of redness, swelling and tenderness of the mastoid, in his experience, did not require operation, but would clear up under proper medication and rest.

Dr. Burnett stated his belief that operation was indicated in the presence of one or more of the three symptoms: pain, pyrexia or prolapse in the posterior upper portion of the auditory canal. He referred to the paper of Dr. Shepherd, of Brooklyn, on "Acute Mastoiditis following Acute Otitis Media," which he considered one of the best he had ever read.

Ocular Affections of Childhood Associated with Impaired General Nutrition.

Dr. S. D. Risley, Philadelphia, gave briefly the clinical history of two cases to illustrate the form of ocular disease frequently occurring during adolescence, but not necessarily dependent upon the peculiar conditions of vitality at that age. He gave a graphic picture of the general conditions. In conclusion he called attention to the important influence the trials of school life when associated with headache and painful hot eyes due to eye strain from abnormal refraction may have over the general health of the child.

Gumma of the Ciliary Body.

Dr. Edward Stieren, Pittsburg, in this paper remarked that syphilitic invasion of the deeper parts of the eye, especially the acquired form, usually calls for a guarded prognosis. A detailed report of an apparently hopeless case was given. When the patient was first seen in 1899 the diagnosis of tertiary syphilis was made. When last seen, on July 19, 1901, the only evidence of the gumma was a slaty discoloration of the sclera and the misplaced pupil.

Contagious Diseases of the Eye and Their Treatment.

Dr. S. Lewis Ziegler, Philadelphia, said that the successful treatment of contagious disease of the eye presupposed an early recognition of the symptoms and the prompt application of active measures for relief. The contagious diseases were classified under catarrhal ophthalmia, and purulent ophthalmia. He spoke briefly of acute catarrhal and granular conjunctivitis. In these prophylaxis should play an important part. If one eye alone is affected a separate handkerchief should be used for each eye. The local treatment for both conditions was described. The purulent inflammations were detailed with their symptoms. The discharges of the purulent inflammations are usually septic in character and extremely virulent in action. Instructions which should be given the attendant are outlined. The most successful local prophylactic measures in the treatment of ophthalmia neonatorum he said were limited to three: 1, Credé's ointment; 2, the irrigation of the eyes with a solution of mercuric bichlorid, 1 to 4000; 3, a solution of protargol in strength of from 10 to 25 per cent.

Address in Mental Disorders.

Dr. Robert H. Chase, Superintendent of the Friends' Asylum for the Insane at Frankford, Philadelphia, took for his subject, "Paresis from the Standpoint of the General Practitioner." Its importance was brought to the attention of the general physician and his responsibility pointed out. The initial stage should be intelligently studied for speedy recognition of the disease, and because it is often the only time when treatment is successful. The history of the disease was given, and the following prominent theories respecting its nature briefly stated: 1, as a complication of insanity; 2, as a distinct form of insanity; 3, if not as a group of cerebral or cerebrospinal affections, at least as a paralytic dementia, to which is associated more or less frequently, and under various conditions, insanity.

Progressive Muscular Dystrophy in Brother and Sister.

Dr. A. A. Eshner, Philadelphia, reported these cases in a brother and sister, aged respectively 13 and 32. The cases were interesting particularly because of their occurrence in two members of the same family, of the history of another dystrophy in the collateral ancestry, and of the presence of a traumatic cerebral disorder in the father. The most plausible explanation of the lesions, the author said, was that attributing them to some developmental defect, resulting in the replacement of muscular by fatty and fibrous tissue, with secondary motor disability and the consequent deformities. The disorder is usually progressive, with unfavorable prognosis. Massage and electricity were mentioned as possible aids in the preservation of undestroyed muscular tissue and in the prevention of deformities. Surgical treatment may be indicated, and mechanical measures may be employed to aid locomotion.

Prognosis in Neuritis.

Dr. F. Savary Pearce, Philadelphia, said that in summing up scientific clinical facts of carefully studied cases of neuritis there would be found to exist signs and symptoms indicating the ultimate results in different classes of cases depending upon the pathogenic findings, the variety of cases, etc. The etiology of the case is so closely interwoven with symptomatology and with true foresight or prognosis, indeed, that not anything like definite results can be prognosticated until the cause is determined. Examples of needle prick and gunshot wounds, as affecting nerve tissue badly, were stated. The prognosis in such traumatic cases is usually very grave. Cases were referred to exemplifying this. It was pointed out that pressure neuritis should be differentiated from the palsies of occupation neuritis in which latter there is usually a central cortical asthenia; the local disability will depend upon the cure of the primary. In the ordinary pressure neuritis the prognosis is good. Predisposition by alcoholism should be borne in mind in these cases. Degeneration of peripheral nerve trunks after severance was spoken of; also diathetic causes of neuritis. Reference was made to the gastro-intestinal tract as of importance in the correction of disorder in this part of the body.

Some Cases of Hysteria.

Dr. Edward E. Mayer, Pittsburg, emphasized the statement that hysteria is always a psychic disease; and, that the various symptoms are but the result of this primary mental con-

dition. The treatment advised is a psychic one, mental or suggestive therapeutics being necessary. A number of cases were described.

President's Address.

DR. THOMAS D. DAVIS delivered the address on the evening of the first day of the meeting, followed by a reception tendered to the Society by the Philadelphia County Medical Society. The title of the address was "Pioneer Physicians of Western Pennsylvania." Dr. Davis gave an interesting account of the perils and privations experienced by the physicians who crossed the Alleghenies in the latter part of the eighteenth century and ministered there to the sick and wounded. Many suffered death at the hands of the Indians. "The pioneer doctor," said Dr. Davis, "was often also a farmer, a minister or a school teacher. He traveled over several counties, and often made long and perilous journeys alone. But he did his duty, danger or no danger, as his successors do now."

(To be continued.)

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-ninth Annual Meeting, held in Buffalo, Sept. 17-20, 1901.

President Dr. Benjamin Lee, Philadelphia, in the Chair.

There were many representatives present from the United States, Porto Rico, Canada and Mexico.

Opening Address.

DR. STEPHEN SMITH, New York, one of the ex-presidents of the Association, made the "Opening Address." He referred to the havoc which death had wrought in the ranks of the Association during the past decade, and in giving a history of the public health system of the United States said in part: "Thirty years ago there were not more than three or four well-organized municipal boards of health in this country, but to-day there is scarcely a civil organization without its department of health. Within a single decade this Association has been largely instrumental in the development of a complete system of public health administration in this country, namely, municipal, state and national. A national board of health, which was at one time established by Congress, existed but four years, and for twenty years we have been without such a body chiefly because of a want of harmony among those who approach Congress on the subject."

Dr. Smith then referred to the early history of the Marine-Hospital Service, saying that it was originally created at the close of the eighteenth century in imitation of the English system, when the sailor's home was on the sea, but since the steamship has supplanted the sailing vessel, the sailor's home is at the port. All great advances, he said, in health legislation result from the devastation of epidemic pestilences.

DR. A. L. GUYON, in moving a vote of thanks to Dr. Smith for his paper, drew attention to the fact that while on his right sat the Director General of Public Health of Canada, and while on his left sat the supreme head of the sanitary department of Mexico, the United States had no such officer, and said that a demand should be made on the government to make such an appointment.

Out of respect to the memory of President McKinley, and in accordance with the national and state proclamations relating thereto, it was decided to hold no meeting on Thursday, September 19.

Dr. Frederick Montizambert, of Ottawa, Canada, and Dr. Eduardo Liceaga, of Mexico, feelingly referred to the sad event which had just culminated in this city, and extended the sympathy of themselves and their countrymen.

Some Results of the Army Canteen or Post Exchange From the Standpoint of Discipline and Hygiene.

CAPTAIN EDWARD L. MUNSON, assistant surgeon in the United States Army, read statistics he had compiled from the official records of the War Department, comparing the figures of two periods. The first period, which he called the pre-canteen period, consisted of the seven years from 1885 to 1891, inclusive. Though the canteen was first introduced in the army in 1889, it was not thoroughly established until 1892. The second period began with that year and ended with 1897. He did not quote figures after 1897, because he did not believe the figures of the last three years of active service in the army could fairly be compared with the figures for a period in the time of peace, although he commented that, as a matter of fact, the figures for 1898, 1899 and 1900, show even a more marked improvement in those conditions of the army that were affected by the canteen than the figures for the six years immediately preceding 1892 showed over the precanteen period from 1885 to 1891. The paper showed that for the ten years from 1878 to 1887 the ratio of soldiers entered upon the sick reports for alcoholism was as 64.28 to 1000; that this rate was diminished as the canteen was gradually introduced, and that comparing the period of 1885-91 to the period of 1892-97, the statistics showed a reduction of 23.6 per cent. in the entries for alcoholism on the sick list, in favor of the latter period. That, whereas, in 1890, before the canteen was fairly established, the number of posts at which the alcoholism entries on the sick list exceeded 10 per cent. of the total strength of the garrison, in the following year the number of such posts was 11, and each succeeding year the number was reduced until, in 1897, there were only two posts throughout the army which showed a greater rate of alcoholic sick cases than 10 per cent. of their total strength. The author showed that the gravity of the cases of alcoholism also was reduced through the influence of the canteen, and that the number of cases of insanity diminished during the period in which the canteen was thoroughly established.

The profits of the canteen each year were returned to the men for the purpose of buying better food, reading matter, gymnasium and athletic equipment, and in other ways to make their lives more comfortable and the military service more attractive. The writer showed that during the period of 1892-1897 there was an increase of 13.3 per cent. in the number of soldiers making deposits with the army paymaster over the number for the precanteen period, 1886-91. Also that the average number of convictions by court marshals for drunkenness during the precanteen period was 372 a year, whereas the average number after the canteen was established was but 160.

Much might be said to show the remarkable influence which the canteen, with its restricted sale of beer and light wines, has had in preserving the health of troops, maintaining discipline and promoting temperance; but in view of the figures given further argument on the subject would seem unnecessary. The canteen, as formerly operated, was a positive element for good, and so regarded by 95 per cent. of the more than 600 officers of the army who have made reports concerning its influence to the Secretary of War.

At the conclusion of Dr. Munson's paper, the following resolution was offered by Dr. Charles A. Lindsley, of New Haven, Conn., which was adopted:

Resolved, That this body deplores any action in curtailing the operation of the army canteens or post exchanges, and in the interest of general and military sanitation and temperance recommends their establishment as formerly existing in the United States.

DR. CHARLES R. GREENLEAF, army surgeon, described the sanitary conditions in the Philippine Islands since the United States came into occupancy of them.

Tuberculosis.

DR. FELIX FORMENTO, New Orleans, stated that the discovery of the tubercle bacillus was one of the greatest events of modern medicine, unifying into one classification many affections considered as being of a different character; also making diagnosis perfectly certain; it was shown that the disease was communicable from man to man; that the sputum of consumptives was the great carrier of infection; but was it not going too far to affirm that tuberculosis was only transmissible by contagion, and that heredity played no part in this transmission? The observation of sanitarians had shown that heredity, as in cancer and other affections, was a powerful agent of transmission. Some cases of direct transmission to

the fetus in utero had been observed. Without hereditary predisposition local infection would remain sterile in the great majority of cases. The air swarmed with microbes, and those who were predisposed succumbed. In order that a seed might develop two conditions were required, an active seed, and a proper soil. The same is true of a disease germ. All debilitating causes by lowering the powers of resistance furnished a favorable nidus for the development of the tubercle bacillus. War should be waged on the bacillus, and we should try to exterminate it by all possible means, as well as destroy the sputum; the disinfection of rooms occupied by consumptives was important, and a rigid inspection of milk and meat in spite of the claims of Professor Koch. Marriage of consumptives should be prevented. All places where numbers congregate should receive special attention, and the general public, when once informed, would become a most powerful auxiliary in the crusade against tuberculosis.

Dr. Jesus Chico, of Mexico, read a paper in which he detailed some observations tending to prove that the meat and internal organs of tuberculous animals brought about the appearance of tuberculosis in the persons who ate them.

The British Congress on Tuberculosis.

Dr. Frederick Montizambert, Director General of Public Health of Canada, read a paper on this subject, in which he laid great stress on the curability of the disease, if taken in time, and all agreed in regarding human sputum as the chief medium of infection. He stated that the feature of the Congress was the address by Dr. Koch, more particularly that part dealing with the alleged non-identity of bovine and human tuberculosis, and the non-transmissibility of the disease. The feeling throughout the Congress seemed to be that the statements of Koch were made prematurely and upon insufficient data. The position of eminent authorities who criticised Dr. Koch's announcement was essentially uniform.

After the reading of Dr. Montizambert's paper, there was a general discussion on the subject of tuberculosis, which was participated in by several members of the Association.

Dr. Chico, of Mexico, read the paper of Dr. Francisco Berbaldez, on "Remarks Intended to Show the Character of Human Vaccine as a Preventive of Smallpox."

At the Tuesday evening meeting, Mr. Ansley Wilcox, Buffalo, delivered an address of welcome, in which he paid a glowing tribute of affection and respect to President McKinley.

President's Address.

Dr. Benjamin Lee said that among the problems with which the Association had to deal was that of the protection, safety and welfare of the community against the possible infection of leprosy; that the moral leper was sometimes infinitely more dangerous than the physical leper. The anarchist was the moral leper, and it was high time that we undertook to limit the spread of this, the most horrid of all infections.

The next meeting was held on Wednesday, September 18, at which time reports were read of the Committee on Pollution of Public Water Supplies, Etiology of Yellow Fever, and cases of yellow fever observed on the two coasts of the Mexican Republic, from September 17, 1900, to August 31, 1901.

Yellow Fever.

Dr. Walter Reed, Washington, D. C., said in part as follows: "We were able under strict rules of isolation to bring about an attack of yellow fever in 10 non-immune individuals out of a total of 13 by means of the bites of mosquitoes—the stagomyia fasciata—that had previously been fed with the blood of yellow fever patients during the first, second and third days of their attacks. We were thus able to establish in the most practical manner that the mosquitoes serve as the intermediate host for the parasite of yellow fever. At the same experimental station we were able to demonstrate that yellow fever can not be induced through contact with the clothing and bedding of yellow fever patients, even though these articles had been previously thoroughly soiled with the excreta of such patients."

Dr. Reed then described in detail the mosquito which carried the infection of yellow fever, as to its history, method of propagation, habitat, breeding-places, method of generation, and measures that should be taken to prevent them from infecting healthy individuals and guarding the sick against bites of these insects. He said the life of this mosquito was about five days, if deprived of water, and if a voyage at sea had consumed more than that time, the mosquitoes contained in the hold of the vessel would have perished unless they had access to water, or moisture, and the danger of infection lay not in the cargo or personal baggage, but in the individual sick with the disease. In 1901 there was a reduction of 83 per cent. in yellow fever in the City of Havana.

A paper was presented by Dr. A. H. Doty, Health Officer of the Port of New York, dealing with the practical methods of quarantine necessary in view of the changes in our belief in regard to the necessity of disinfection in yellow fever.

A recess was then taken until 3 p. m., at which time resolutions were adopted to the effect that every effort should be made by sanitarians to diminish the mortality of tuberculosis; that sufficient facts have not been offered by Professor Koch to prove that human and bovine tuberculosis are different diseases; that municipalities regulate against expectoration; that they should compel notification by physicians of cases of tuberculosis; that they should establish municipal sanatoria for the benefit of persons in families of limited means; that tenements, factories, workshops, schools and other public institutions should be inspected in order to promote cleanliness, ventilation and other sanitary conditions.

A paper was read by Dr. Georgas, covering about the same ground as the one submitted by Dr. Reed.

A general discussion of the subject of yellow fever was then indulged in by the members of the Association, and some of the members, among them Dr. Formento and Dr. Wasdin, dissented from the views expressed in the paper of Dr. Reed. They maintained that yellow fever was probably transmissible by fomites. However, Dr. Reed in his closing remarks on the subject was very sanguine of the position he had taken, and claimed that the experiments conducted in Havana were absolutely conclusive.

Several reports were submitted during the afternoon, among which was the report of the Committee on the Relation of Forestry to the Public Health, by Professor William H. Brewer, New Haven, Conn.; also a report on Bacterial Purification of Water by Freezing, by Mr. H. W. Clark, Boston, Mass. Professor S. H. Woodbridge, Boston, submitted the report of the Committee on Car Sanitation.

Dr. A. Walter Suiter, Herkimer, N. Y., read the report of the "Committee on the Cause, Prevention and Duration of Infectious Diseases." This was followed by the report of the Committee on Disinfectants and Disinfection, by Dr. Hibbert W. Hill, of Boston, Mass., after which there was a short discussion on them.

On Thursday, the third day of the meeting, there was no business transacted, but the President called the meeting to order at 10 o'clock as usual, at which time resolutions of sympathy and regret in regard to the death of the late President McKinley were passed unanimously by a rising vote.

Drs. William Bailey, of Louisville, and C. P. Wilkinson, of New Orleans, made short speeches on the resolutions, which were very appropriate and much appreciated, after which the Association adjourned until Friday morning at 10 o'clock.

Dr. Juan Brena, of Zacatecas, Mexico, read a paper on "Notes on the Necessity of Attending to the Hygiene of the Mouths of Pupils of Schools." The author stated that the bacillus of Koch had a predilection for the buccal cavity of the mouth, which favored greatly its multiplication. He said it had been demonstrated that whatever the form might be of oral sepsis, it was susceptible of causing all the phlegmoses connected with the local organism. Many cases of septic diseases of the mouth were due to the dental caries and to that alone.

DR. FRANK W. WRIGHT, New Haven, Conn., read a paper on "The Influence of School-Life Over Health." The author said, in part, that the first principles of school hygiene were embodied in the sites for the building, construction and furniture. With proper care natural ventilation was superior to artificial ventilation. Some of the diseases affecting children were near-sightedness, diseases of the spine, disorders of the digestive system, tonsillitis, consumption and contagious diseases. Nervous diseases were not at all infrequent and affected the teachers as well as the pupils. Impure air, defective light and mental strain were the principal causes of these troubles. Many failures were due to the long hours. The exercise and refreshment taken during intermission were not of the right nature and the lunches were sometimes made up of sweets and other indigestible food.

DR. GUZMAN, of Mexico, followed with a paper along the same lines, entitled "Hygiene in Its Relation to the Primary School," and among other things he said that aid to the physician must come from the teacher. In his belief teachers should be trained to help the inspecting physician so as to be able to discover diseases produced by ill-directed school-work, contagious diseases in the school, examination of the physical condition of pupils at the time of their entrance to school, and at regular intervals thereafter.

DR. LUIS G. ESPINOZA, of Vera Cruz, Mexico, read a paper on "Cremation in Its Relation to Sanitary Legislation." He divided the subject into three parts: 1, the merits and demerits of cremation; 2, the establishment of hygienic regulations in cemeteries, and a discussion of their respective value; 3, he concluded in favor of compulsory cremation in contagious diseases.

There were several reports of committees and a few papers which were not read, owing to lack of time, as there were no sessions held on Thursday, but these papers and reports will appear in the official proceedings of the Association.

The following officers were elected for the ensuing year: President, Dr. Henry D. Holton, Brattleboro, Vt.; first vice-president, Dr. Walter Reed, U. S. Army; second vice-president, Dr. Jesus Chico, Guanajuato, Mexico; secretary, Dr. Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn. New Orleans, La., was selected as the place for holding the next annual meeting, but the exact date was not determined.

SAN FRANCISCO MEDICAL SOCIETY.

Regular Meeting, held Sept. 10, 1901.

The President, DR. GEORGE H. EVANS, in the Chair.

Cardio-Vascular System in Diabetes.

DR. GEORGE E. EBRIGHT presented a paper on this subject. The alkalinity was said to be much diminished, especially during coma; fat was frequently increased in the blood. The red corpuscles may be broken down into a granular material and glycogen may be demonstrated in them. The number of red cells is diminished at first, because sugar in the blood draws water from the tissues into the vessels, thereby diluting the blood. Increased diuresis soon frees the blood from an excess of sugar and water and so causes concentration. Thus the blood counts will differ within wide limits.

Pericarditis occurs sometimes and the myocardium is often pale and soft, often hypertrophied and in advanced cases marked fatty degeneration is present; glycogen is present, being found between the muscular bundles. Endocarditis with valvular changes is rare.

Arteriosclerosis is seen in long-standing mild cases, but if the sugar is not constant in the urine the vessels seem to suffer less. In the train of these arterial changes follow a number of important secondary conditions. In the brain may occur apoplexies or cerebral softening. There may be transient hemiplegia, monoplegia, aphasia, vertigo of a simple form or associated with a slow pulse and syncopal or epileptiform attacks. The condition of the vessels and kidneys are likely to account for the failure of the heart and the attacks of asthma and angina pectoris. Diabetic gangrene is due to arteriosclerosis or to nerve changes, the former being the most potent cause. Intimately associated with the sclerosis of the vessels are the changes in the liver, pancreas and the kidneys. There are seen in these organs in the severe cases, deposits of iron pigment about the vessels due to the destruction of the red blood corpuscles. This hemochromatosis is assigned as a cause of cirrhosis of the liver and the pancreas resulting in diabetes. Cirrhosis is either of the atrophic or hypertrophic type, is particularly apt to occur in those cases in which there is passive congestion from cardiac failure. On account of such changes in the liver and pancreas atheroma has been called a cause of diabetes.

In conclusion, it may be stated that the subjects of arteriosclerosis should be viewed as possible victims of diabetes, especially if they present any of the usual symptoms of the disease. In the event of failing to discover sugar in the urine 30 grams of glucose may be administered. Failing then to obtain a temporary glycosuria one should feel content that there was little likelihood of being subjected to the humiliation of having some more fortunate observer arrive at a proper diagnosis which in an intermission a single test had failed to reveal.

Dietetic Treatment of Diabetes.

DR. E. O. JELLINEK drew attention to the latest conclusions concerning the circulation of sugar in the blood, according to the recent investigations by Kolisch and others. These investigators have proven that by far the largest part of sugar circulating in the normal, as well as in the diabetic blood, is not pure dextrose, but is a combination with lecithin, forming probably jecorin, and as such is not excreted by the kidneys, sugar appearing in the urine only when either the increase of sugar in the blood is too great to be combined with the available lecithin or if from any reason a decomposition of the jecorin occurs, which results in the liberation of sugar. The work of these investigators would seem to show that diabetes is not a lower assimilative power of the cells, but a pathologic state, in which the protoplasm of the cells separates its own sugar, and the ingestion of food under such pathologic conditions causes an irritation of the cell, in consequence of which sugar is separated, the amount depending upon the intensity of the irritation.

In the grave form of diabetes meat should be interdicted, and the patient placed on an absolute vegetable diet; green vegetables are best adapted for this purpose, and should be boiled with large quantities of water, as they lose part of their sugar through boiling; after this they can be prepared with large quantities of fat. The experience of Kolisch shows that by this form of food carbohydrates can gradually be permitted. In addition, the following is also allowed: Eggs, milk (buttermilk preferred) up to one liter, butter, cheese (cream cheese), fresh fruit, grapes excepted; moderate quantities understood.

If in the milder forms meat be permitted once or twice a week, it is to be boiled, and never more than 200 grams daily be allowed.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-seventh Annual Meeting, held at Put-in-Bay Island, Ohio, September 12, 13 and 14, 1901.

President Dr. A. H. Cordier, Kansas City, Mo., in the Chair.

(Concluded from page 851.)

Address in Medicine.

DR. FRANK BILLINGS, Chicago, selected for his subject, "What Are the Qualifications Necessary for the Success of the Practice of Medicine?" He said that the qualifications of success, in any walk in life, depended upon the meaning of the word success. Not uncommonly success meant to the majority of mankind the acquisition of wealth. Without a living income life was too full of anxieties to allow one to do good work. The average physician, said the speaker, probably received less compensation for his services than any other member of society, when one considered the time and money spent

in preparation, the responsibilities assumed, and the character of the service rendered to the patient. To-day the problems in medicine were so profound that a good preliminary education was necessary to enable the student to pursue the study of medicine rationally and successfully. While a college or university education might not be essential to fully prepare one for the study and comprehension of medicine, still it gave one broad culture, a discipline of mind, which added to the pleasures of life of the practitioner, if it did not bring him material advantage.

Dr. A. M. Phelps, New York, discussed the subject of tubercular disease of the spine, lateral curvature of the spine, and the proper treatment of each.

Congenital Valvular Obstipation.

Dr. Thomas Charles Martin, Cleveland, said this was the result of embryological hyperplasia or overgrowth of the rectal valves, which was characterized by an abnormal depth of the valve, or to such anatomical propinquity of two valves that they overlap and establish under the pressure of the descending force a temporary diaphragm. The symptoms were more or less straining for defecation of solid or semi-solid feces, which developed at an early period and continued.

Varicose Veins and Their Treatment

Dr. J. Lively Johnson, Louisville, Ky., said that varicose veins of the first degree were of little importance, aside from the mental anxiety of the patient, but as the varicosity advanced, the veins assumed a more grave character and were often a source of annoyance to both patient and surgeon. A varicosity might exist in any part of the body. This condition of the veins was found most frequently in certain localities, as the pampiniform plexus and in the veins of the foot, leg and thigh. One of the greatest dangers to the patient suffering from varicose veins was the danger of a sudden rupture, with perhaps fatal loss of blood. Inflammation and thrombosis might frequently occur. The only rational line of treatment to be pursued in the management of varicose veins, in whatever locality, was, as near as possible, to completely remove by extirpation the entire diseased vessels. The surgeon had the choice of a number of operations for the radical cure of varicose veins of the lower extremity. He must be able to adapt the surgical procedure to the case in point.

Use and Limitations of the Elastic Ligature in Intestinal Surgery.

Dr. Theo. A. McGraw, Detroit, said that the elastic ligature was the most advantageous method of making intestinal anastomosis in cases of pyloric stenosis, and of ulcer of the stomach, in chronic partial stenosis of the intestine, and in certain forms of gangrenous hernia. It could rarely be used to advantage where it was necessary to excise any portion of the intestine. Rules were given for its use, and an exhibition of the proper method.

Dr. H. O. Walker, Detroit, reported cases of intestinal resection and approximation by the Connell suture, and contrasted it with other methods of approximation. He spoke highly of this suture, and recommended its use.

Surgical Features of Typhoid Fever and Dysentery.

Dr. Hal. C. Wyman, Detroit, held that early operations for perforation in typhoid fever gave the best results. Physicians should anticipate perforation and intestinal hemorrhage in typhoid fever of a severe type by surgical operation, which promised to heal the ulcerated bowel before it perforated or bled. In severe cases of a threatening type, the author said, why not open the cecum near the ileo-cecal valve, establish a fistula through which a tube might be passed cautiously into the ileum and the ulcerated region daily washed with normal salt solution until it healed, and also the colon to rid it of infecting bacteria? When the patient was convalescent, the fistula would close spontaneously.

Some Indications for Gastro-Enterostomy.

Dr. William J. Mayo, Rochester, Minnesota, based this paper on experience derived from 64 operations. In malignant disease gastro-enterostomy was indicated only if symptoms of obstruction were present. The mortality was high, 25 to 30 per cent. The writer lost 4 out of 16 cases. The reason for this mortality lay in the bad condition of the patient. The early cases in good condition needed radical treatment, and the latter operation (pylorectomy, etc.) on this account had an even lower mortality than gastro-enterostomy, which had no such limitations. For open ulcer, gastro-enterostomy was of the greatest benefit if the ulcer was situated near the pylorus, and it usually was. Under such circumstances, the stomach was of normal or increased size, the latter condition being due either to obstruction or pyloric spasm. If the ulcer be distant from the pylorus and the stomach contracted, gastro-enterostomy had less value and the anastomotic opening might close, although the ulcer was usually healed before this took place. The writer had had 13 gastro-enterostomies for open intractable ulcer, with one death. For benign obstruction without regard to origin gastro-enterostomy was the operation of choice, the cure being immediate and lasting. Pyloroplasty enlarged the outlet, but if the stomach was very large and pouched, the degenerated muscle fiber might fail to elevate the food to the pylorus and relief was not always afforded. Gastro-enterostomy drained from the lowest point, and was superior in every way to the plastic operation. In 35 gastro-enterostomies of this class only one died.

Dr. Wm. J. Gillette, Toledo, read a paper in which he reported 100 cases operated on for appendicitis.

Suture of the Abdominal Wall.

Dr. Charles Davison, Chicago, said the main points are, closure of any laparotomy wound by suturing each layer with continuous silkworm gut suture, the ends of which are left out at the angle of the wound, to be removed when healing has occurred. The suture in the strong fascia is tied in position at each end in the fascia with a knot that can be unlocked by traction on the exposed ends when the stitch is to be removed. The advantages of the method are: 1, certainty that all suture or ligament material placed in the wound has been made sterile by boiling in water; 2, accurate layer approximation of tissue; 3, removal of the buried sutures when healing is complete; 4, capillary drainage from each layer; 5, safety of intestines from injury during the application of the sutures; 6, rapidity of application; 7, minimum line of irritation on the peritoneal surface and consequent adhesion to viscera; 8, slight scar in the skin, there being no perforation of the skin by sutures; 9, all of the advantages of a permanent buried suture without the danger of future irritation and extrusion; 10, the advantages of an absorbable suture without the danger of sepsis from the suture and without producing a nidus for septic germs from the blood current during absorption.

Dr. Truman W. Brophy, Chicago, demonstrated some cases of surgery of the palate by the aid of stereopticon views.

Dr. M. L. Heidingsfeld, Cincinnati, discussed some causes of ignored syphilis and their remedies, and gave clinical examples.

Hematology.

Dr. L. H. Warner, New York City, spoke of the imperfect methods of obtaining blood from patients for microscopic examination, and said that the subsequent incorrect methods of fixing and staining specimens had frequently caused errors, the results being of no value as an aid to diagnosis. The incorrect understanding as to the physiologic action of the electro-saline halogen derivatives (iodin, bromin, chlorin), especially as to the amount resorbed (chemical uranalysis), had caused leucocytosis to be wrongfully attributed to other causes. The blood in infectious diseases, if properly obtained and examined in the hot stage, showed certain histologic changes in the red cells, also certain staining affinities which enabled the hematologist to arrive at an early diagnosis in cases of syphilis, carcinoma, etc.

Hay Fever.

Dr. A. D. Murphy, Cincinnati, said three conditions were necessary to produce the complaint, namely, depleted nerve centers abnormally sensitive to uric acid: abnormal condition of the nasal cavities, and atmospheric and climatic conditions.

Consequently, to effect a cure it was necessary to eliminate the uric acid, restore the depleted nerve cells to their normal condition, and relieve the effects. Hot baths and exercise and the careful selection of food were all of importance. As regards medication, he relied principally on a combination of arsenic and solution of gold, supplementing it with local applications of the suprarenal extract, or its active principle, adrenalin.

Scientific Aids to Diagnosis.

Dr. Henry D. Holton, Brattleboro, Vt., passed over percussion and auscultation as means of examining the heart and lungs, and simply mentioning the importance of making chemical and microscopic examinations of the urine in cases where the symptoms indicated an abnormal condition of the kidneys, and also those in which the symptoms were vague and uncertain. He proceeded to refer at length to an aid that had not found general favor with the profession, to wit, the use of the ophthalmoscope in many affections of the brain and spinal cord, in which he contended it had been proved to be of great value. He also spoke of the help to be derived from the examination of the blood.

Dentist's Neck.

Dr. Albert E. Sterne, Indianapolis, portrayed a hitherto undescribed neurosis to which he gave the name of "Dentist's Neck." When it first attracted his attention, he thought the affection was unique, but he had since come to the conclusion that it was by no means rare, and that it sometimes attained the dignity of seriousness to the afflicted individual. As to the pathology of the affection, he admitted that he had to rely largely on conjecture. He believed that it was in many respects analogous to other occupation neuroses, not only in its etiology of regionary overstrain, but also in its cerebral functional character. In all these complaints he considered the peripheral manifestations as secondary to the localized brain-cell fatigue.

Necessity of and Indications for the Bed-Treatment of the Insane.

Dr. F. P. Norbury, Jacksonville, Ill., said insanity, in its incipient stage, responded readily to treatment, hence the importance of early recognition and appropriate treatment.

Dr. Harold N. Moyer, Chicago, discussed the subject of "Puerperal Insanity."

Dr. Jokichi Takamine contributed an account of his discovery of the active principle of the suprarenal gland, to which the name of adrenalin has been given. He also explained the mode of preparing the drug.

Dr. B. T. Whitmore, New York, in a paper on "Indian Contributions to Therapeutics," showed that the modern so-called Indian remedies have no connection with any system of medication practiced by the aboriginal Americans.

The Dyspeptic's Diet.

Dr. George D. Kahlo, Indianapolis, contended that diet was a more important therapeutic agent than medicine. Perfect nutrition was of primal import, and could only be maintained by a mixed diet, in which there must be a proper proportioning of the elementary food substances.

Personal Element of Error in Therapeutics.

Dr. George F. Butler, Alma, Mich., said the personal elements of error are accepted in all the exact sciences, not excluding astronomy. In medicine this element does not receive allowance, except to some slight degree in histology, pathology and neurology. It is practically neglected in therapeutics. This is due to the crude empirical methods employed, and the lack of judicial training. The personal element leads to the eulogy of worthless remedies and the ignoring of unusual effects of beneficial ones. The early but ignored recognition of the uselessness of sarsaparilla by Weir Mitchell illustrates this. Only the recognition of this personal element can render therapeutics scientific. The elements involved are proper diagnosis, not merely of the disease, but of its type, recognition of individual peculiarities of the patient, recognition of the proper preparation of the remedy, recognition of its untoward effects, and, finally, recognition of the fact that pathologic states indicate a new force introduced into the organism which disturbs its balance.

The Acquirement of Nervous Health.

Dr. F. Savary Pearce, Philadelphia, discussed the pathogenesis of nervous and mental diseases, and from the standpoint of salient signs and symptoms of the so-called "nervous breakdown" in the earlier periods of development, detailed medical guidance in prophylaxis. Insistence is made upon the urgent necessity of more serious recognition by the profession of the points elucidated in the paper, if the wear and tear of modern exacting American life is to be forestalled in its baneful influence upon the acquired nervous temperament of many, and of business men in particular, in the temperate zone of the United States. Cases cited and good results given. A short symposium on tuberculosis was introduced by Dr. Charles F. McGahan, Aiken, S. C., who dealt with the treatment of the disease in the patients' homes. He was followed by Dr. Howard, Champaign, Ill., who reported favorably on the treatment of tuberculosis with formaldehyde and its salts. Dr. William A. Dickey, Toledo, Ohio, who read the third paper in the series, spoke on the attitude of the profession toward the public and the individual suffering from tuberculosis.

The evil effects of alcohol were discussed in papers by Dr. T. D. Crothers, Hartford, Conn., and Dr. T. B. Greenley, Meadow Lawn, Ky. Dr. Charles H. Shepard, Brooklyn, in a contribution on "Auto-Intoxication and Its Treatment," entered a plea for the greater use of Turkish baths. Dr. Ernest Gallant, of New York, narrated his observations on a tripartition in the study of the female pelvis. Dr. N. Stone Scott, of Cleveland, showed stereopticon slides from original photographs, illustrating the anatomy, embryology, histology, comparative anatomy and pathology of the appendix.

Dr. Reginald A. Sayre, of New York, delivered the "Address on Surgery." He reviewed the status of surgery during the past and noted the changes that have taken place in men, methods and modes of thought, and speculated on the position which surgery would attain during the next one hundred years.

After election of officers, and the passing of resolutions on the death of President McKinley (see last week's issue, p. 792) the Association adjourned to meet in Kansas City, Mo., in 1902.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

The Treatment of Whitlows.

The following treatment has been recommended for the treatment of felon: The felon should first be incised deeply and aseptic gauze saturated in the following solution introduced into the open wound as deeply as possible, over which a compress of a solution of plumbi acetas is applied:

R.	Iodi (pure) 3iiss	10
	Tinct. iodi	
	Tinct. rhatany āā.....3i	4
	Pot. iodidi 3ss	2
	Glycerini 3i	32

M. Sig.: For external use as indicated above.

It is stated that this treatment will cause suppuration to cease immediately and healing of the wound in a very few days.

Treatment of Purulent Pleurisy (Empyema).

It is recommended by Capitan, in *La Méd. Mod.*, that all fluid possible be removed by aspiration; if the cavity refills, remove the fluid again and inject a few drops of camphor and beta-naphthol, equal parts, or some peroxid of hydrogen. If this does not stop pus formation an opening should be made under cocain anesthesia and drainage established. He thinks

the removal of a rib to be unnecessary. To avoid cardiac and respiratory disturbances resulting from the removal of the pressure in the cavity, he recommends the following in the form of an injection.

R.	Cocainæ hydrochloratis	gr. iss	|09
	Morphinæ hydrochloratis	gr. ¾	|05
	Sparteinæ sulphatis	gr. iii	|18
	Atropinæ sulphatis	gr. 1/3	|02
	Aq. destil.	3iiss 10	|

M. Sig.: Inject fifteen to thirty drops hypodermically as heart stimulant and to allay the cough.

As a substitute the following may be employed as soon as the fluid is removed:

R.	Sparteinæ sulphatis	gr. ¾	|05
	Caffeinæ citratæ	gr. iii	|18
	Sodii benzoatis	gr. iii	|18
	Aq. destil.	m. xv	1|

M. Sig.: Use the entire amount hypodermically.

Treatment of Varicose Ulcer.

A powder composed of the following is of great service in treatment of ulcers as result of broken-down varicose veins:

R.	Iodol.	3iv	16|
	Zinci oxidi	3ii	8|

M. Sig.: Dust freely upon the affected part and apply the dressing, which should be changed every other day.

The following is also recommended under the same circumstances:

R.	Ichthyol	3i	4|
	Gelatini	3ii	8|
	Zinci oxidi	3i	4|
	Glycerini	3iii	12|
	Aq. destil.	℥ss	16|

M. Sig.: Heat the above and paint on the ulcer, first cleansing the ulcer with an antiseptic solution and drying.

Treatment of Rheumatic Synovitis.

R.	Sodii salicylatis	3iv	16|
	Sodii iodidi	3iv	16|
	Aq. menth. pip.	℥vi	192|

M. Sig.: Two teaspoonfuls in water four times daily.

The following applied locally will be absorbed:

R.	Methyl salicylatis	3iv	16|
	Lani	℥ii	64|

M. Sig.: Apply to the affected joint on lint, night and morning.

Proper Method of Bandaging Diseased Breasts.

Harris, in the *Annals of Gyn. and Ped.*, makes the statement that inflammation of the nipple and breast should be regarded as a progressive rather than a self-limited disease, arising in most instances from septic infection of the nipple. Bandaging is regarded by him as advisable after mastitis, stillbirth, and whenever weaning is necessary on account of mammary disorders. It is recommended by him that the bandage be used in cases of infection of both breasts, and where nursing must be entirely stopped. In applying his bandage, when only one breast is involved, he uses a roller bandage two and a half or three inches wide and nine or ten yards in length. Both breasts are protected by absorbent cotton. Beginning beneath the breast affected the bandage is passed twice around the body, then under the affected breast and over the opposite shoulder, then around the body again and underneath the breast and over the same shoulder. It is then brought again under the affected breast and passed around the chest above the sound breast and immediately over the affected breast and above the sound breast and continued until the affected breast is entirely covered, and finally over the shoulder again. It must then be kept in place with safety pins in the back, sides, and front. An opening may be made so that the infant may have access to the sound breast.

Bacon, of Chicago, recommends for supporting the breast and putting it at rest a bandage six or seven inches wide. In applying this bandage the breast must be raised, not compressed; with the patient lying on her back, the bandage under her, the nurse takes hold of one end of the bandage and draws the breast up to the middle of the chest, holding it there with the bandage. The other breast is raised and held in the same way, after which the bandage is fastened by several safety pins, the lower border being drawn more tightly than the upper. Strips of bandage may extend over the shoulders to hold this bandage in place. His method of applying the double Y bandage is more efficient than the one just described. It is made of strong cotton cloth, consisting of a back piece four or five inches wide and from fourteen to twenty inches long. To each end are sewed two diverging strips, each four or five inches wide and thirteen inches long. The lower limbs of the Y's which pass under the breast are fastened together with safety pins; in the same manner the upper and lower limbs of the Y's are fastened in front with safety pins to support the inside of the breasts. With this bandage the nipple of the sound side may be left free for the infant.

Treatment of Pruritus Vulvae.

L. Siebourg, in *Centralblatt f. Gyn.*, states that the removal of causative factors is imperative. An exact uranalysis should be made. The diet should be regulated. Alcohol and highly seasoned foods should be interdicted. Rubbing or scratching of the vulva should be prohibited. The diseased parts should be washed with water and pure soap after each urination. The following should be applied to give relief from the itching:

R.	Cocainæ	gr. xxx	2|
	Orthoformi	gr. xxiv	1|50
	Menthol	gr. viiss	|50
	Acidi carbol.	gr. xv	1|
	Vaselini	3v	20|

M. Sig.: Apply locally to relieve the itching.

Generalized Pruritus.

J. F. Schamberg, in *Ther. Gazette*, recommends the following to be taken internally in cases of chronic pruritus over different parts of the body:

R.	Acidi carbol.	3ss-3i	2-4|
	Glycerini	3i-3ii	4-8|
	Vini xerici, q. s. ad	℥iii	96|

M. Sig.: One teaspoonful after each meal.

Dr. Schamberg states that he employed the above treatment in several cases of general itching which extended over several months, with improvement in all cases and cure in some of them.

Treatment of Locomotor Ataxia.

Dr. S. Leduc, in *Gazette Médicale de Nantes*, stating that in tabes dorsalis, dependent upon a history of syphilis, has injected into the gluteal region of the patient the following:

R.	Hydrarg. chloridi corros.		|
	Sodii chloridi (recrystall.) āā	gr. iii	|20
	Aq. destil.	3v	20|

M. Sig.: Inject about thirty drops daily into the thigh.

Sodium Formate in Pneumonia.

Polenov, as noted in *La Semaine Med.*, recommends the following in modifying the fever and shortening somewhat the duration of the illness:

R.	Pulv. adonis vernalis (folia)	gr. xxx	2|
	Aq. bulientis	℥vi	182|

Ft. infusio. Filter and add:

	Sodii formatis	gr. xxx-3i	2-4|

M. Sig.: One tablespoonful every two hours, day and night.

Sodium formate is a white deliquescent crystalline salt, soluble in water or glycerin.

Pityriasis of Face and Eyebrows.

The following is recommended in treatment of this affection as noted by *New York Med. Jour.*:

R.	Lithii benzoatis	gr. xv	1|
	Tinct. benzoini	3ss	2|
	Glycerini	3ss	2|
	Tinct. eucalypti	3i	4|
	Aq. rosæ	℥i	32|

M. Ft. lotio. Sig.: Apply locally night and morning.

Medicolegal

Skull and Photograph Admissible in Evidence.—The Supreme Court of Nebraska holds, in Savary vs. State, that when physicians called as experts in a criminal trial for murder, in testifying to the manner and cause of death, refer to and use the skull of the deceased and a photograph thereof in explanation and as a part of their testimony, it is not erroneous to admit the exhibits as evidence in the case.

Proof on Insanity to a "Reasonable Certainty."—The Supreme Court of Georgia says, in Minder vs. State, that in order to sustain the independent defense of insanity at the time of the commission of an alleged criminal act, it is incumbent upon the accused to prove that he was insane at that time; and it holds that an instruction that he must prove this to a "reasonable certainty" is not erroneous, when the jury are distinctly informed that a preponderance of the testimony is all that is requisite to establish such reasonable certainty.

Ground for Annulment of Marriage to a Syphilitic.—While the Court of Chancery of New Jersey says, in the case of Crane vs. Crane, that to annul a marriage for a fraudulent representation inducing the contract, it must be shown that the fraud affected an essential of the marital relation, it holds that an explicit statement by a man about to be married that he was not afflicted by the loathsome disease called "syphilis," made when it was his duty to state the truth, and knowingly false, is such a fraudulent representation as affects an essential of the marital relation, and warrants an annulment of the marriage for fraudulent representation.

Court Terminates Lengthy Malpractice Litigation.—In the late appeal from a judgment for the plaintiff in the malpractice case of Margaret Leach Barker vs. Lane, the Supreme Court of Rhode Island says that the verdict was clearly against the evidence. Whether the defendant used proper professional skill and diligence in treating the plaintiff's arm was a question which must be determined by the testimony of experts in medicine and surgery. A number of these were called, some by the plaintiff and some by the defendant, and they all substantially agreed that the method of treatment adopted by the defendant was professional and proper. Taking their testimony in its strongest light in favor of the plaintiff, it only showed an error of judgment on his part in treating the arm; and such an error, merely, the court holds, is not enough to sustain an action of this sort. Continuing, the court says that the treatment of which the plaintiff complained occurred in 1892, but no action therefor was brought until in 1895. The case has now been tried five times, with varying results; and in 1897 a verdict for the plaintiff was set aside by the court for the same reason that the present verdict is set aside. The declaration has been repeatedly amended, and at least four of the original witnesses are now dead. Then the court adds that it is of the opinion that the plaintiff, after the lapse of nearly nine years, must be presumed to have presented all the evidence which is now available in her behalf, and that the interests of justice will not be subserved by a further prolongation of this litigation. "It concerns the state that there be an end of lawsuits." Wherefore, the Supreme Court remands the case with direction to enter judgment for the defendant.

Communications to Volunteer Physician Privileged.—After a boy who had been injured by a street car was taken to a drug store, one of the surgeons employed by the street car company went in to see him, and volunteered his services to stop the flow of blood until the ambulance arrived. He subsequently saw the boy at the hospital 10 days after the accident. The boy was then in bed in the ward, and the doctor asked him to tell the details of his accident, to which the boy made reply. Now, he certainly, while thus attending to the boy to stop the flow of blood, the first appellate division of the Supreme Court of New York holds, case of Griffiths vs. Metropolitan Street Railway Company, occupied to the boy the relation of physician, and when he subsequently went into the hospital, after the amputation of the boy's leg, and asked him questions as to the accident, the boy was justified in treating him as a physician who had attended him. Continuing, the court says that his going to the hospital, having no previous acquaintance with the boy, no interest in the case except in his professional capacity, and attempting to obtain from him declarations as to the accident, was unauthorized and impertinent. Declarations made by the person thus severely injured, made to a physician under such circumstances, would certainly be privileged. Except as a physician, he had no business in the hospital. He did not inform the boy that he came as a representative of the street railway company, and for the purpose of extracting from him an admission which would tend to relieve the company from liability. Under such circumstances, the boy was quite justified in considering a person who thus addressed him as a physician, and in answering his questions freely and frankly, without considering that his answers would be used against him as admissions. Wherefore, the court holds that the testimony of the physician was correctly excluded, on the trial of the action against the company.

Risks Taken by Patient in Charitable Hospital.—The United States Circuit Court of Appeals, First Circuit, has affirmed, in the case of Powers vs. the Massachusetts Homeopathic Hospital, the decision of the Circuit Court reported on page 899 of THE JOURNAL of Oct. 6, 1900. In other words, it holds that a patient admitted to a hospital maintained for charity can not recover judgment against the hospital for injuries caused by the negligence of a nurse employed therein. It considers it immaterial, too, that the patient in this case was what is sometimes called a "paying patient." That the ministrations of a hospital organized as a charitable corporation, that is, exclusively for charity, should be confined exclusively to the indigent, it says, is not usual or desirable. Those of moderate means from necessity, and not a few rich people from choice, resort to great charitable hospitals for treatment, especially in surgical cases. Throughout the world this is the custom in these institutions, whether they are maintained by individual, religious, or municipal charity. From patients who are not indigent, a payment is commonly permitted or required. Commonly, this payment does not make full pecuniary compensation for the services rendered. Those who make a considerable payment not infrequently receive in some respects a more expensive service than do those who make a small payment or none at all; but the payment required is usually calculated upon the patient's ability to pay, rather than upon the whole cost of the treatment he receives. That was plainly the rule of the hospital in this case, and the court is of the opinion that a paying patient in it, as well as a non-paying patient, seeks and receives the services of a public charity. That such a hospital in its treatment of a rich patient should be held to a greater degree of care than in its treatment of a pauper is not to be tolerated. Certain luxuries may be given the former which the latter does not get, and this for various reasons; but the degree of protection from unskilled and careless nurses must be the same in both cases. Again, the court says, it would be absurd to make the hospital's liability for an accident, such as the burning of a patient with a hot water bag, depend upon the payment of that insignificant proportion of the cost of the service rendered which in some cases may properly be required from a poor man or woman. So the court is of the opinion that this case stood as if the patient had been admitted without any payment whatsoever, instead of with an agreed one of $14 a week. Then it holds that one who accepts the benefit either of a public or of a private charity enters into a relation which exempts his benefactor from liability for the negligence of his servants in administrating the charity; at any rate, if the benefactor has used due care in selecting those servants. To paraphrase the illustration used by the Circuit Court, it would be intolerable, it says, that a good Samaritan, who takes to his home a wounded stranger for surgical care, should be held personally liable for the negligence of his servant in caring

for that stranger. Were the heart and means of that Samaritan so large that he was able, not only to provide for one wounded man, but to establish a hospital for the care of a thousand, it would be no less intolerable that he should be held personally liable for the negligence of his servant in caring for any one of those thousand wounded men. And the court can not perceive that the position of the hospital in this case differed from the case supposed. The persons whose money has established it are good Samaritans. The purity of their aims may not justify their torts or wrongful acts, but, if a suffering man avails himself of their charity, he takes the risks of malpractice, if their charitable agents have been carefully selected.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), September 21.

1 *The Significance and Treatment of Floating Kidney in Women. Henry D. Beyea.
2 *Wounds of the Thoracic Duct Occurring in the Neck; Report of Two Cases; Résumé of Seventeen Cases. (Concluded.) Dudley P. Allen and C. E. Briggs.
3 The Practical and Scientific Value of the Blood Examination to the Medical Man and Surgeon. (Concluded.) Robert N. Willson.
4 *The Therapeutic Value of Alcohol. Leon L. Solomon.

New York Medical Journal, September 21.

5 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
6 *The Clinical Diagnosis of Carcinoma of the Esophagus and the Technics of Gastrostomy. (Concluded.) Charles G. Cumston.
7 A Study of the Temperature, Pulse, and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. (Continued.) J. T. Eskridge.
8 Conjunctivitis from X-rays; Incipient Retinitis Apparently Due to the Same Cause; Report of a Case. J. W. Sherer.

Medical Record (N. Y.), September 21.

9 *Pathological Physiology of the Animal Heat Economy and Its Relation to the Modern Theories of Fever. Isaac Levin.
10 Foreign Bodies of the Nose and Ear. Percy Fridenberg.
11 *Some Ultimate Results of Gunshot Wounds Caused by the Mauser Bullets During the Late Spanish-American War. Medwin Leale.
12 *A New Operative Procedure for Treating Inflammation of the Posterior Part of the Eye. S. Busby Allen.
13 *The Disadvantages of Copper Sulphate in Diseases of the Conjunctiva and Cornea. Cornelius Williams.

Philadelphia Medical Journal, September 21.

14 *The Deleterious Results Following Operations in Hypochondriasis, Performed for the Sake of Mental Impression. A. Pick.
15 *Concerning the Treatment of the Apparently Unaffected or at Most but Slightly Involved Eye in Cases of Glaucoma. G. E. de Schweinitz.
16 *An Improved Lantern for Detecting Color-Blindness, to Supplement the Deficiencies of the Wool Tests. William Thomson and Archibald G. Thomson.
17 *Light and Radiance in the Treatment of Disease. George G. Hopkins.
18 *Discussion on the Therapeutic and Diagnostic Value of Tuberculin in Human Tuberculosis. G. A. Heron.

Boston Medical and Surgical Journal, September 19.

19 *The Use of Gynecology by the General Practitioner. (Concluded.) Edward Reynolds.
20 *Movable Kidney; with Special Reference to Its Consequences and Its Etiology; with the Report of Postmortem Observations Made by the Writer in Some Cases of Movable Kidney. Francis S. Watson.
21 *A New Factor in the Etiology of Visceral Ptosis: The Relation of the Modern Corset to This Factor; a Preliminary Communication. Agnes C. Vietor.
22 *The Home (Sanitarium) Treatment Versus the Climatic Treatment of Consumption. Vincent Y. Bowditch.
23 *Eosinophiles as Constituents of Pus. Edward T. Williams.

Medical News (N. Y.), September 21.

24 The Case of the President.
25 *Disappearing Tumors. A. S. Warthin and W. A. Spitzley.
26 *The Dilatation of the Cervix Uteri in Obstetric Practice. Henry J. Garrigues.
27 The Pantherapist and Neotherapeutics. C. H. Kermott.
28 A Case of Double Penis, Combined with Exstrophy of the Bladder and Showing Four Ureteral Orifices. Carl Beck.
29 A Case of Congenital Abscence of Internal Genitals; Fusion of Kidneys; Single Ureter. Allen J. Smith and William Gammon.
30 *A Few Remarks on a Generally Unrecognized Ear Disease (Otitis Media Mucosa). Henry A. Alderton.
31 The Local Treatment of Gonorrhea. E. O. Bardwell.

Cincinnati Lancet-Clinic, September 21.

32 *The Practice of Obstetrics—As It Is and as It Should Be. E. Gustav Zinke.
33 *Position of the Woman During Delivery. Wm. D. Porter.
34 Dermoid Cysts of the Ovary. John A. Grafft.

St. Louis Medical Review, September 21.

35 The Progress of Surgery. Frank L. Lutz.

Medical Fortnightly (St. Louis), September 10.

36 The Anatomy and Function of the Ovary and Some of Its Diseases. Herman E. Pearse.
37 Beri-beri in the Japanese Army. Albert S. Ashmead.
38 Disease of the Stomach. (Continued.) J. M. G. Carter.

Virginia Medical Semi-Monthly (Richmond), September 13.

39 Some Observations Made in Handling Recent Epidemics of Smallpox. J. W. Preston.
40 Suprapubic Cystotomy, with a Report of a Successful Operation Under the Influence of Local Anesthesia with Schleich's Solution. C. G. Cannaday.
41 Report of a Case of Subcutaneous Injection of Paraffin. Junius F. Lyneh.
42 Case of Twin Conception: Almost Painless Miscarriage of One Foetus at Seven Months; Other Child Born at Term; One Placenta. J. Prosser Harrison.
43 Medical Treatment of the Diseases of the Kidney. J. N. Upshur.
44 Surgical Interest of the Sub-peritoneal Tissue. Hugh M Taylor.
45 *Some Obscure Injuries Following the Toxic Use of Alcohol. T. D. Crothers.

American Practitioner and News (Louisville, Ky.), July 15.

46 *The Practical Management of Smallpox. M. K. Allen.
47 *Tuberculosis of the Testicle and Epididymis. Irvin Abell.
48 Report of a Unique Case of the Loss of Beard and Hair J. R. Clarke.
49 Mitral Regurgitation Produced by the Efforts at Resuscitation in a Partially Asphyxiated Newborn Babe: Report of a Case. Leon L. Solomon.

Medical Age (Detroit, Mich.), September 10.

50 Differentiation of Valvular Cardiac Murmurs. Frank C. Wilson.
51 The Relationship Between Ocular Affections and Systemic Diseases. Frank H. Edsall.
52 The Care of the Aged. Ewing Marshall.

Annals of Gynecology and Pediatry (Boston) September.

53 Studies in the Normal and Pathological Structures of the Ovary. Mary Dixon Jones.
54 Tuft's College Medical School. A. J. Paine.
55 Sanitation of Cuba. A. Bustillo Llrola.

Cleveland Journal of Medicine, August.

56 Acute Anterior Poliomyelitis in the Adult. D. I. Wolfstein.
57 Psychoses of Influenza. Henry S. Upson.
58 Psychoses of Influenza. Robert E. Ruedy.
59 The Cardiac Lesions of Influenza. L. W. Ladd.
60 A Case of Traumatic Rupture of the Spleen. A Case of Gunshot Wound of the Spleen. C. A. Hamann.
61 A Case of Traumatic Tetanus. C. F. Douglass.
62 Report of a Case of Paralytic Club-Foot. Walter G. Stern.

Medicine (Chicago), September.

63 *Chorea; Especially in Relation to Rheumatism and Endocarditis. H. B. Favill.
64 Some Functional Manifestations. Edward B. Taylor.
65 *Is Bovine Tubercnlosis Dangerous to Man? E. Fletcher Ingals.
66 Aneurysm of the Recurrent Type. R. B. Preble.

New York State Journal of Medicine (N. Y.), September.

67 The Technic of Aseptic Abdominal Operations. Parker Syms.
68 *Progressive Pernicious Anemia. Alfred Stengel.
69 *Some Remarks on the Pathology and Surgical Treatment of Urinary and Uro-Genital Tuberculosis Samuel Alexander.
70 Tuberculosis of the Bones and Joints. E. H. Nichols.
71 *Puerperal Sepsis; Its Pathology and Treatment. William R. Pryor.
72 Report of Two Cases of Intraspinal Cocainization in Puerperal Eclampsia. Wm. P. Thornton.
73 *Strabismus and Its Management. J. H. Woodward.
74 The Value of Blood Examination in Appendicitis. Albert E. Woehnert.

Brooklyn Medical Journal, September.

75 City Versus Independent Hospitals. Jesse T. Duryea.
76 The Advantage to the Public and the City of the Non-Municipal Hospital. John Harrigan.

77 Church Hospitals. A. C. Bunn.
78 Asthenopia. Heber Nelson Hoople.
79 Interdental Splint for Fractures of the Jaw. J. W. Russell.
80 La Grippe in Children. (To be continued.) W. L. Chapman.
81 Another Plan of State Care for the Insane. W. H. Haynes.

Annals of Ophthalmology (St. Louis), July.

82 *On the Measurement of the Interocular Base Line and the Size of the Meter Angle. Lucien Howe.
83 Carcinomatous Degeneration of a Papilloma of the Conjunctiva with Infiltration of the Eyelids. S. D. Risley and E. A. Shumway.
84 Glioma of the Retina Without Sequelæ. M. W. Zimmermann and Burton K. Chance.
85 *A Case of Tuberculosis of the Conjunctiva. Howard F. Hansell.
86 Clinical Notes on Six Cases of Albuminuric Retinitis. Albert R. Baker.
87 *The Surgical Treatment of Entropion and Trichiasis. Mat thias L. Foster.
88 Three Cases of Alcohol-Tobacco Amblyopia Presenting Retinal Hemorrhages. William Zentmayer.
89 Hemorrhage of the Retina. G. Griffin Lewis.

Medical Bulletin (Philadelphia), September.

90 Lupus Vulgaris and Psoriasis. John V. Shoemaker.
91 Aural Pyemia with Dermatomyositis. Without Apparent Thrombophlebitis of the Sinus. L. Bar.
92 Botanical Nomenclature. T. G. Stephens.

Archives of Pediatrics (N. Y.), September.

93 *Pernicious Anemia in Infants, with a Preliminary Report of a Case. T. M. Rotch and Maynard Ladd.
94 *So-called "Cyclical Albuminuria," with Preliminary Report of Case. Frank S. Churchill.
95 *Probable Etiology of Rectal Polypi in Children. Francis Huber.
96 *Lamellar Desquamation in an Epidemic of German Measles or of "Fourth Disease." Frederick T. Simpson.
97 A Case of Chronic Arsenical Poisoning in an Infant of Seven Months. John L. Morse.
98 Pleural Effusion. James Carmichael.

Kansas City Medical Record, September.

99 Bacteria and the Part They Play in Disease. Jos. Clements.
100 Over-Feeding as an Etiologic Factor in the Production of Diseases of the Liver. John W. Kyger.
101 Alkaloidal Medication. What Is It? J. Robt. Buchanan.

Medical Dial (Minneapolis), September 1.

102 An Investigation of a Pathogenic Microbe as Applied to the Destruction of Rats. M. J. Rosenau.
103 Sterility in Women. Lewis S. McMurtry.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), September.

104 *A Clinical Classification of Insanity. F. X. Dercum.
105 Dislocation of the Seventh Cervical Vertebra: Clinical History of a Case; Remarks. Frank R. Fry.
106 Three Cases of Hereditary Chorea. C. Eugene Riggs.

New Yorker Medicinische Monatsschrift, August.

107 Zur Erkenntniss und Behandlung der Fruhseitigen Berstung bei Eileiterschwangerschaft, mit betrachtlicher Blutung. H. Banga.
108 Ueber die Bekampfung der Tuberculose. Robert Koch.

Medical Summary (Philadelphia), September.

109 Deafness. Edwin W. Pyle.
110 Synovitis. J. L. Wolfe.
111 Little Things That Should Be Observed by the Physician. C. W. Canan.
112 Cancer and Its Cure. Wm. A. Armstrong.

Cleveland Medical Gazette, September.

113 Opinions in Relation to the Questions of the Special Committee of the American Medical Association Regarding the Prognosis and Treatment of Acute Gonorrhea in the Male. Professor Neisser and E. C. Burnett.
114 Two Cases of Syphilis: One with Very Persistent Lesions, the Other Congenital, Without Any Known Lesions in Immediate Family. D. S. Hanson.
115 Remarks on Pelvic Cellulitis. Byron Robinson.
116 Review of Pathological Work at City Hospital for the Past Six Months, with Presentation of Specimens. H. C. Crumrine.
117 Is It Justifiable to Enucleate During the Acute Stage of Panophthalmitis? Edward Lander.

Dominion Medical Monthly (Toronto), August.

118 Medical Inspection of Schools and the Prevention of Spread of Contagious Diseases. D. Forsyth.
119 The Difficulties in the Diagnosis of Variola. E. R. Secord.
120 On the Importance of an Early Recognition of Locomotor Ataxia—Do the Eye Symptoms Assist Us? J. T. Duncan.
121 A Case of Acute Endocarditis. R. D. Rudolf.

Toledo Medical and Surgical Reporter, September.

122 *How Shall We Treat Convulsions in Children? Wm. A. Dickey.
123 Stomach Washing in the Indigestion and Gastritis of Infants. Report of Five Cases. W. H. Emery.

Maryland Medical Journal (Baltimore), September.

124 *Blood Examinations as an Aid to Surgical Diagnosis. Joseph C. Bloodgood.

Medical Council (Philadelphia), September.

125 *Briefs on the Surgery of the Genito-Urinary Organs. G. Frank Lydston.
126 Disorders of the Sexual Function in Man. A. H. P. Leuf.
127 The Treatment of Alcoholism. John L. Howard.
128 *The Use and Abuse of Narcotics and Hypnotics, with a Clinical Study of a New Hypnotic. W. H. Walling.
129 Case of Tetany in Which Autopsy Revealed Dilated Stomach as a Cause. Ira B. Ladd.
130 Intestinal Antiseptics. W. H. Baldwin.

Columbus Medical Journal, August.

131 Constipation in Infancy and Early Childhood. J. M. Dunham
132 Some of the Emergencies of Labor and How to Manage Them. Edward J. Wilson.
133 Scarlet Fever. C. C. Ross.
134 Placenta Previa. H. L. Harris.

Laryngoscope (St. Louis), August.

135 *The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.
136 *Subarachnoid Injection of Cocain as a General Anesthetic for Operations upon the Head. Redmond Payne.
137 A Variation in the Technique of Septum Operations. Stephen H. Lutz.
138 Papillomatous Growths of the Soft Palate. Wm. F. Dudley.
139 Traumatic Dislocation of the Left Arycartilage. Henry L. Wagner.
140 Improved Portable Apparatus for Heating and Sterilizing Compressed Air. Charles L. Enslee.

Carolina Medical Journal, (Charlotte), August.

141 The Physician and the Public. F. Julian Carroll.

Georgia Journal, of Medicine and Surgery (Savannah), August.

142 Acromegalia. T. L. Cornwell.
143 *Otorrhea—"A Rising in the Head." Wm. Lewis Bullard.
144 Subarachnoid Spinal Cocainization as a Means of Inducing Surgical Anesthesia. Edward N. Liell.
145 Report of Case of Compound Fracture of Lower Jaw. P. R. Cortelyou.
146 Sulphate of Quinin as an Ecbolic. O. B. Bush.
147 An Unusual, and Probably Unique, Complication (General Emphysema) of Tracheotomy. E. C. Ellett.

International Journal of Surgery (N.Y.), September.

148 Practical Suggestions upon the Treatment of Rectal Diseases James P. Tuttle.
149 Who Shall Operate? A. C. Helm.
150 Nose and Throat Work for the General Practitioner. (Continued.) Geo. L. Richards.
151 The Operative Treatment of Carcinoma of the Breast—Its Possibilities and Limitations. William F. Campbell.
152 Regional Minor Surgery. (Continued.) George G. Van Schaick.
153 Tubercular Meningitis; Gastro-enterostomy; Benign Tumor of the Breast. William L. Rodman and E. B. Gleason.
154 A Case of Uterine Polypi and Its Treatment. Edmond J. Melville.

Medical Review of Reviews (N. Y.), August 25.

155 The Etiology of Cystitis. William K. Otis.

New England Medical Journal (Danbury, Conn.), September.

156 The Progress and Tendency of Hygiene and Sanitary Science in the Nineteenth Century. (Continued.) George M. Kober.
157 Thialion—Its Therapeutic Indications with Clinical Reports. C. W. Canan.
158 Climate for Health. Paul Paquin.
159 Phospho-therapy and Nerve-exhaustion. S. Green.

Southern Illinois Journal of Medicine and Surgery (Metropolis), August.

160 Malarial Fevers—Their Clinical Aspect and Diagnosis. C. E. Riseling.
161 Nervous Complications in Acute Diseases. H. P. Sights.
162 A Case of Nephritis—One of My Failures. O. B. Ormsby.
163 Puerperal Eclampsia, with Report of Cases. D. W. Grear.

Mississippi Medical Record (Vicksburg), September.

164 Strangulated Hernia: Report of Two Cases. Louis D. Dickerson.
165 The Transmission of Yellow Fever. H. H. Haralson.
166 Edema of the Lower Extremities: Chronic Malaria. Frank C. Wilson.

AMERICAN.

1. **Floating Kidney.**—The operation here described by Beyea is as follows: A longitudinal incision is made in the lumbar region parallel with and about 4 fingers' breadth from the spinous process of the vertebra, thus close to the anterior border of the spine muscles. It begins just below the last rib and extends downward for a distance of 3½ inches. The skin and fat are divided down to the fascia, the fascia incised, the muscles separated in the direction of their fibers, cutting again through the lumbar fascia and separating the quadratus lumborum muscle. The perirenal fat is exposed and is likewise excised, opening the space of Gerrotta. Then by rolling the patient downward on the Edebohls inflated bag, assisted often by traction of the perirenal fascia and the pressure of the assistant's hand opposite to the incision on the anterior abdominal wall, the kidney is delivered out of the wound. The surgeon then selects a position at the hilum of the kidney in the perirenal fascia which is free from blood vessels, and about one centimeter from the ureter and renal vessels, which he perforated with the blunt end of a dissecting forceps. Then an ordinary rubber drainage tube, previously sterilized and of sufficient length to surround the kidney and protrude for some distance out of the wound when the kidney is replaced, is introduced through this opening made with the forceps and clamped. Similarly, a second tube is introduced below the ureter and vessels and surrounding the kidney. The drainage tubes being surrounded by and passing through an opening in the perirenal fascia at the hilum, are prevented from changing their position and slipping over the convex end of the kidney, or in any way from interfering with the ureter or vessels. The kidney is then replaced, the drainage tubes extending through the incision. The muscle incision is sutured, leaving a small opening for the tubes, with continuous catgut suture, often by two layers of such suturing. The skin wound is closed by an intracutaneous suture, again leaving the same opening. An oblong portion of gauze is now placed over the wound, and over this, with gentle traction, are tied the elastic drainage tubes. The tubes, being elastic and tied with little tension, the kidney tissue can not be restricted or its circulation interfered with. The kidney is secured a little below the normal, and in the most favorable position. The usual dressing and binder are placed over the wound. The first dressing is made at the end of ten days, the silk intracutaneous suture being removed at this time. The tubes, which easily slip out, are removed after three weeks. The wound left by them quickly heals, being completely closed within three or four days. The operation was first planned and practiced by C. B. Penrose and has been performed in eight cases. All the patients have been carefully examined and the kidney found fixed in these, and in all but one the symptoms were entirely relieved. In this one case the patient still suffers from gastroptosis, which it is hoped will be relieved by further operation. After two and one-half years Beyer is thoroughly convinced that the operation can have no deleterious influence and is associated with no danger, and, therefore, in the future will be the operation of election in nephropexy. The rubber tubing, if aseptic, acts simply as a foreign body, causing very mild irritation and never producing excessive adhesions to injure the kidney structure, but just enough to hold the kidney in a fixed position, and the tube tracks heal with the smallest cicatrix.

2. **Thoracic Duct.**—In the former portion of this article appearing in the last number of *American Medicine*, Allen and Briggs described some theoretical and practical questions in regard to thoracic duct injuries and report a number of cases. In this article they give a more detailed study of these cases and offer the following as suggestions to which they have been led: 1. The increasing frequency of extensive dissections in the neck makes it desirable to consider means of avoiding injury to the thoracic duct. 2. It is desirable that if wounds of the thoracic duct or its branches occur, they should be recognized at the time of operation. The ingestion of 4 to 6 ounces of cream 3 hours before operation might be especially desirable in secondary operations undertaken for the purpose of locating the point of injury. The desirability of such a procedure may be further studied by observations made upon animals. 3. That suture of the duct with fine silk or catgut be accomplished where possible; that all small discharging lymph radicles be ligated; that the ligating and clamping of lymphatic vessels of considerable size be avoided, unless the integrity of the thoracic duct itself has been demonstrated; that where suture of the duct or large radicles is impossible, gauze packing, firmly and accurately applied, be used; that the head and neck be kept at rest, the use of morphin to a considerable degree being recommended if necessary. 4. That until repair of the duct is thought to be complete, nutrition should be sustained on albuminous material, with possibly a small amount of carbohydrates, but with an absolute exclusion of fats.

4. **The Therapeutic Value of Alcohol.**—Solomon's article considers alcohol as a medicine, not as a beverage, which he says does not concern us in this discussion. The healthy man does not need alcohol any more than he needs any other stimulant or narcotic and Lawson Tait's statement that a moderate use of alcohol is a necessity in modern times is too bold and in bad taste from a medical man, and dangerous since it comes from so high an authority. He thinks it should be given tentatively, never as a routine medicine. Alcohol is of value as a stimulant, as a conservator of vital power, for supporting the vital powers of life in sudden depression and supplying heat to the system where it is needed, in chronic suppuration and wasting diseases, and locally in many affections.

5. **The Lane Lectures.**—In the second lecture Morris gives an interesting account of the discovery of itch mite, and points out, however, that it had been recognized by early writers, even by Rabelais, though its discovery for practical purposes dates from the early part of the 19th century. While it is a trivial affection of the present day, cured by one or two treatments, it has been a scourge in the past when it was not understood and he gives an account of Napoleon's experience and calls attention to the fallacy of the fear of driving in an eruption which is not completely exploded at the present day. As regards lice, he remarks that these seem to have their preference; for instance, the experiment of Crocker of a half a dozen students around a table on the middle of which was placed a hungry pediculus; in whatever direction the insect was headed, it always promptly made for one particular student. The lowered condition of the system favors their development and the most exquisite dandy who goes to war, where the toilet has to be more or less neglected, will find himself a victim. He remarks on the progress of personal cleanliness in modern times, calling attention to Lady Mary Wortley Montagu, who was a beauty as well as a wit, and had lived in the East where the bath was a religious institution. Yet it is told that, on someone venturing to hint that her hands were not quite up to the not very high standard of cleanliness required by society in those days, exclaimed: "Do you call that dirty? What would you say if you saw my feet?" At the present time, he thinks it is possible we carry the cult of bath a little too far. The flesh brush may be overused and an irritable condition of the skin produced, but he does not recommend the maxim attributed to a German professor that "dirt is a natural protection to the skin" as a precept of cutaneous hygiene.

6. **Carcinoma of the Esophagus.**—Cumston's article, which was commenced in an earlier number, discusses the subject of esophageal carcinoma of which he recognizes five principal types: 1. The classical simple type without complication, showing itself largely in difficulty in swallowing. 2. The tracheo-bronchial type, producing compression, dyspnea, ulceration, etc. 3. The laryngeal, where it extends to the mucous membrane, muscle and cartilage of the larynx producing similar symptoms. 4. The pulmonary type of disease extending to the lungs and involving the pneumogastric. The cardiovascular form involving the heart and producing dilatation of the aorta and finally perforation of the large vessels. It may also extend to the pericardium, and the heart itself giving rise to various cardiac symptoms, those of pericarditis and endocarditis. He mentions briefly two symptoms of esophageal carcinoma, viz., the laryngotracheal pulsations, first described by Castellino, and unequal pupils, observed by Hitzig. The

clinical value of this latter symptom is small as it may occur in other conditions. The methods of diagnosis are noted—auscultation, catheterism of the esophagus, esophagoscopy, and the use of the Roentgen rays. In conclusion, he describes at length the operation of gastrostomy.

9. **Animal Heat.**—The conclusions derived from Levin's study of the heat economy and of fever are as follows: Heat economy seems to resemble general metabolism inasmuch as it is a result of the joint work of many organs of the body; and fever, the most important pathological state of heat, is in most instances a special kind of intoxication by some substances not as yet well defined. Further work will have to show the precise nature of these substances, and also decide the question whether there is some central apparatus conducting all the complicated works of the heat economy, and what the nature and office of such an apparatus are, if it does exist. He is inclined to believe that later researches seem to show that fever is not always deleterious; it is sometimes beneficial to the economy, though the question is by no means settled, but the truth must certainly lie somewhere between the two extremes. An ordinary febrile temperature does no harm as a rule, often probably does some good. The doctrine, therefore, that every rise of temperature must be fought against and reduced by all means is wrong, since none of the metabolic and other changes accompanying fever is in any way influenced by antipyretics.

11. **Gunshot Wounds.**—The late results of gunshot wounds are elaborated in some thirteen cases of injury from the Mauser bullet examined by Leale, and who finds that they are far less severe from modern projectiles than from those formerly used, and that the change to the use of the small bore rifle has proven to be a great blessing in modern warfare.

12. **Postero-Ocular Hot Water Injections.**—Allen suggests that in case of neuroretinitis involving the retina and choroid, this might be treated by hot-water injections applied to the posterior portion of the eyeball and optic nerve and by adding sodium chlorate to the water sufficient to raise its specific gravity higher than that of the blood, we have all the conditions for osmosis. He has experimented on rabbits to see whether pathologic changes follow the operation and after performing his operation says it caused no serious traumatism, that no change has taken place in the eye or any of the media in these animals.

13. **Copper Sulphate.**—The use of copper sulphate in diseases of the conjunctiva and cornea is condemned by Williams, who concludes as follows: 1. Copper sulphate in ocular affections is maleficent in its effects. 2. Any good effect following the application of the solid copper sulphate in any disease of the eye may be obtained with the use of safer and practically painless means. 3. Trachoma is most successfully treated with weak solutions of silver nitrate, together with frequent irrigation with a weak bichlorid solution in normal salt. 4. No application to an inflamed conjunctiva which produces a lasting pain should be countenanced. 5. Expression is not absolutely essential, yet much hastens the cure of trachoma. 6. A mydriatic should be used in every disease of the eye involving corneal lesions. 7. Copper has ruined more eyes than it has ever benefited.

14. **Hypochondriasis.**—The evil effect of operations performed on account of the delusion of hypochondriasis to aid the mental condition are pointed out by Pick and he gives several instances illustrating his views. In the first part of the past century such operations were recommended and common, and he thinks that these methods are not as yet entirely discarded. His paper is, therefore, a warning against their repetition.

15. **Glaucoma.**—The method of treatment of the unaffected or slightly affected eye in glaucoma is discussed by de Schweinitz, who offers the following conclusions, as suggested by a consideration of the subject: 1. In cases of acute glaucoma the apparently unaffected eye should be operated upon as soon as the anterior chamber is restored in the opposite eye; that is to say, as soon as the wound is closed, provided the history of the case or an examination of the eye furnishes indications already described that it is likely to suffer a glaucomatous attack like its fellow, especially if the patient is so situated that he or she will pass from observation and from the resources of expert examination. 2. In cases of chronic congestive glaucoma the same line of advice applies, and the operation is to be urged if clear information can be obtained that the apparently unaffected eye has suffered attacks of nebulous or iridescent vision, associated with increased intraocular tension. 3. In cases of chronic simple glaucoma, if any periods, however temporary, of increased intraocular tension can be demonstrated according to the methods already suggested, operation should be performed even if central and peripheral vision are perfectly intact. Even when these are normal, careful perimetric examination may reveal a scotoma of the character already described; if so, operation should not be postponed. 4. In cases of absolute glaucoma the same line of advice expressed under Nos. 1 and 2 is applicable.

16. **Color-Blindness.**—William and Archibald Thomson describe the model of a lantern devised by them for the detection of color-blindness, which they think meets certain needs not entirely met by the ordinary tests, especially by the too great reliance on the wool test, the unreliability of which has been pointed out by Edridge-Green and others. They give reports of several cases which show the defects from dependence upon this method alone. They are now of the opinion that with the use of colored lights, a non-professional examiner can do good work, and the use of the lanterns here described reveals color-blindness without doubt, and with prominence and certainty.

17. **Light Treatment.**—The treatment of pulmonary tuberculosis by light is discussed in this second paper by Hopkins, who has used a 50-ampere electric lamp with a 20-inch condensing lens, and has had this arranged with an adjuster so that at a distance of 15 feet the light could be concentrated on a surface an inch in diameter if it should be desired. In using this lamp, a screen made of strips of blue glass is interposed between the patient to cut off some of the heat rays. The chest of the patient is bared and the light concentrated to a circle from fifteen to twenty inches in diameter, according to the tolerance of the patient. The exposures vary from half an hour to an hour daily. The first effect of the light observed is the diminution of cough and the temperature within forty-eight hours. In most cases the temperature is down to nearly normal within the first week of treatment. The effect is judged largely by the gain in weight. In every case the amount of expectoration is perceptibly diminished and the number of bacteria is reduced in the first week of treatment. The effect on the appetite is always marked from the very first. He has treated eleven cases in all and his success warrants its continuance. He cautions in regard to exposure to cold without careful protection for some hours after taking the treatment, for fear of overtaxing the kidneys, and advises also careful examination of the urine in every case where the treatment is being given.

18. **Tuberculosis.**—Heron is a strong advocate of tuberculin in tuberculosis and reports his experience. He thinks it is as safe as any other potent drug. He, however, reports the case of a girl in whom it seemed to act very badly, though only a very small quantity was given. There is a question as to the case being tuberculosis, which he thinks improbable as there was no reaction, and he believes that the death was not due to tuberculin.

19. **Gynecology by the General Practitioner.**—The history of gynecology in this country is first given by Reynolds in an article appearing in the previous number of the *Boston Journal*, in which he calls attention to the fact that gynecology is not exclusively a surgical subject and to the necessity of correct diagnosis. The physician should look after the physical state of the pelvic organs, investigate the diathesis, uric acid, etc., and pay careful attention to the symptomatology. In this number he calls attention to the psychologic side of the evils due to imperfect methods in investigating the cases, false modesty, and to proper instruction in regard to the dangers of gonorrhea and syphilis in men as an element of pre-

ventive medicine. The evils of corsets for young girls are also mentioned and the necessity of repairing lacerations and other injuries incident to parturition before the climacteric period. The importance of looking after cancerous and irritative symptoms, ovarian and renal troubles in women, especially cystitis, and physical examination of the urinary organs which is too often neglected are emphasized.

20. **Movable Kidneys.**—Watson announces that the object of his paper is first to protest against the view that movable kidney is originally a harmless condition, to determine its essential etiologic factors and to record certain postmortem observations that suggest an explanation of certain severe symptoms. The frequent presence of movable kidney in neurasthenia would indicate that it had a connection with that condition. There are other more serious consequences; among these are: 1. Hydro- and pyonephrosis. 2. Abnormal fixation of the kidney. 3. In rare instances gangrene of the organ caused by occlusion of its blood vessels by twisting. As regards hydro- and pyonephrosis he quotes Gigon, Albarran, Tuffier and others, and reports cases of the second difficulty, abnormal fixation of a previously movable kidney. The etiologic factors are discussed at length and the author considers that movable kidney results from a defect in the perirenal structures, fascia, etc., described by Glantenay and Gossett, with the possible influence of the shape and size of the paravertebral fossa in which the kidneys lie beneath the diaphragm. He reports cases in conclusion where the fibrous tissues from the peritoneum had restricted the movements of the kidney, causing a partial twist of the ureter and accounting for the occasional acute attacks of pain.

21. **Visceral Ptosis.**—The special influence of corsets in the etiology of visceral ptosis are treated of in this preliminary communication of Vietor's, and she recapitulates the essential points of the helpful corset for visceral support: A straight front, made of several sections running from below obliquely upward and backward; hip gores; back gores; fit the abdomen first, and from below upward; then fit the chest; leave the waist as it falls into place. The patients should be specially warned that it is not enough to have a straight front, but that there must be room in the back for an oblique pelvis. She lays stress on leaving the middle lacing absolutely alone, merely tying the ends for tidiness.

22. **The Home Sanatorium Treatment of Tuberculosis.**—Bowditch favors the erection of sanatoriums for the treatment and cure of consumption wherever the disease prevails, and doubts if we are yet in a position to judge fairly as to the relative results obtained by sanatoriums in different climates. He thinks, however, at present, perhaps better results can in all probability be obtained from this form of treatment in the Western rather than the Eastern section of the country.

23. **Eosinophiles.**—Williams has studied the eosinophiles in pus and has found them in every specimen examined. He believes that they are not to be regarded as a specific cell, but purely a pathologic one resulting from a natural, alkaline decomposition of the body of a common leucocyte. The eosinophile is a necrotic cell.

26. **Dilatation of the Cervix.**—The different methods of dilatation and their indications are noticed by Garrigues. He mentions painting the cervical portion with cocain, chloral hydrate, antipyrin, etc., the tamponade and manual dilatation by Harris' method of introducing the index finger and massaging with it and that of Bonnaire; either of which are preferable to the old pressure with the cone-shaped hand, which is likely to cause tears, and by hard dilating instruments, which are even more objectionable. Bags filled with fluid are of indisputable value, but are not without their drawbacks; they are apt to provoke too rapid and violent labor pains, favor prolapse of the cord and may push the presenting part away from the brim. Cervical incisions are also mentioned, but are not to be compared with comparatively bloodless dilatation by the hands or instrument.

30. **Otitis Media Mucosa.**—Alderton calls attention to a generally unrecognized ear disease which seems to occur with relatively more frequency in adults and usually following a severe cold, producing first, sometimes earache yielding quickly to the ordinary remedies, but more often tenderness around the auricle, with hardness of hearing, tinnitus, mental embarrassment and distress and sometimes vertiginous attacks. The aurist, who is generally consulted early, finds but little congestion and no swelling in the external ear. The tympanic membrane is seemingly in about its usual position, possible pushed out a little more than normal, the luster is gone, the surface has a dull gray, leaden appearance. Surrounding this dull gray field is a ring of congestion, and coursing across the field are a number of separate capillary twigs. There is no fluid line discernible, nor can the pressure of fluid be made out by any difference in the appearance of the various sections of the drum membrane. Functionally, the ear is apparently very gravely involved. Examination of the nasopharyngeal cavities shows an active or retrogressing inflammatory process. The pulse and temperature are comparatively normal. Such a condition may endure from a week up to years, with apparent remissions. Incision of the drum gives exit to no secretion or only to a little. The drum membrane is often so thick and fibrous that considerable force is necessarily exercised. But on forcible inflation the picture is changed. Then there appears in the canal a quantity of stringy, tenacious mucus which follows the cotton on the applicator on its withdrawal from the canal as a long, filamentous string. Repeated and forcible inflations are often necessary to evacuate the drum cavity. After the removal of this exudate the hearing is decidedly improved and remains so until the incision heals and more mucus is formed. Douching of the external ear seems never to do anything but harm. Periodical inflation with treatment of the nasopharynx will in some cases bring about a slow recovery, but the patient usually is too impatient to wait for this, and permanent impairment occurs from inspissation of exudates or the formation of adhesions. The treatment he advises is incision and evacuation of the tympanum, repeated if necessary, always accompanied by regular Politzerization and conscientious treatment of the nasopharyngeal condition. Before the incision, the external auditory canal should be made as nearly aseptic as possible and the nasopharyngeal cavities thoroughly cleansed. After the membrane has been removed, the canal is packed with gauze and a mild astringent application made to the post-nasal mucous membrane. The patient must be seen in from twelve to twenty-four hours and the ear again gently inflated and the gauze packing removed. After this, a treatment, once in every two or three days, is usually necessary. Should the exudate persist in reforming, a solution of nitrate of silver .5 to 1 gr. to the ounce of boiled distilled water, acts favorably, both injected into the Eustachian tube and instilled in the tympanum through the incision.

32.—This article appeared in THE JOURNAL of September 7, p. 611.

33.—Ibid., p. 613.

45. **Alcohol.**—Crothers reports several cases where a single intoxication with alcohol seemed to produce permanent effects in persons previously unused to stimulants. He believes that intoxication to the extent of coma with profound relaxation of all the functional activities of the body is often a serious injury to the brain and nerve centers, and is followed by neuroses and organic change. The significance of alcohol intoxication in the study of obscure diseases can not be overestimated. It may be both an active and exciting cause, and should always be considered in neuro-psychopathies or other disorders that follow. The intoxication of puberty or middle life is often the starting of a circle of diseases usually ascribed to other causes. Intoxication always predisposes to the diseases of inebriety from alcohol or opium which may come on suddenly in after-life. Alcoholic poisoning is far more serious than supposed in its effects and the neuroses which follow.

46.—See abstract in THE JOURNAL, xxxvi, p. 1727.

47. **Tuberculosis of the Testicle.**—The following deductions are presented as a result of study of this subject by Abell: 1. The epididymis is the most frequent starting-point of the uro-

genital tuberculosis. 2. It is usually secondary to some other focus, but may be a primary deposition. 3. The testicle is rarely primarily affected, but, as a rule, secondarily so from the epididymis. 4. Primary infection usually occurs by the blood-stream, possibly rarely by coitus. 5. When the epididymis is primarily infected through the blood-supply, the process is probably an intertubular one. 6. When secondary to other foci of the urogenital tract, constituting a descending infection, the process is probably intratubular.

63. **Chorea.**—The etiology and pathology of chorea are discussed by Favill. Its nature has been a subject for wide range of speculation; functional, embolic, toxic, infectious and degenerative causes have all been advocated. The early apparent association of chorea with rheumatism has led to the general belief in the allied nature of the two conditions, some holding that rheumatism in general may be the cause, others in rheumatism with endocarditis as a complication. Favill favors the idea that chorea, arthritis, and endocarditis are related to each other and are related to an infectious cause or causes, though he would not say that these are the only causes. He believes that they are co-ordinate manifestations of disease conditions peculiar to the young in the following order, endocarditis, first; chorea, second; and arthritis last, and that infection is usually an important element of the cause.

65. **Bovine Tuberculosis.**—The question given in the title is discussed by Ingals, who credits Koch's view with a certain amount of validity and his proposition certainly seems reasonable, he says, from evidence, but with him he would withhold conclusions until further research can furnish definite proof. In the meantime many of the profession feel warranted in advising their patients not to worry as much as formerly about milk, though no one wishes the care relaxed that is now being taken to prevent the sale of milk from diseased cows, or to prevent consumption from tuberculous beef. He finishes with the suggestion that condemned criminals might be utilized for experimentation to test this question and has no doubt that many criminals who have forfeited their lives would gladly accept the chance to prolong them even within the walls of the penitentiary.

68.—See abstract in THE JOURNAL, xxxv, p. 1005.

69.—Ibid., p. 1172.

71.—Ibid., p. 1104.

73.—Ibid., p. 1172.

82. **Interocular Base Line.**—The interocular base line, so-called by Helmholtz, meaning by this the line joining the centers of motion of the two eyes, is sometimes of some value and Howe describes the method of its measurement. It may be of use in curing certain cases of asthenopia and in prescribing proper glasses and centering the lenses. Two methods are here described, for the details of which the reader is referred to the original paper.

83. **Tubercuiosis of the Conjunctiva.**—After reporting a case, Hansell gives the data which he has obtained from a perusal of the literature of the subject. He finds that the cause is often self-infection, wiping the eyes with infected articles, metastasis or traumatism. The palpebral conjunctiva is most frequently infected. The tubercles appear in the form of miliary ulcers, of subconjunctival nodules resembling the granules of acute trachoma, hypertrophied papillæ, and pedunculated tumor resembling papilla fibroma. In addition, Sattler mentions lupus as one of the forms. For diagnosis, the evidence of tuberculosis of other organs and the microscopic examination are largely to be depended on, since tubercle bacilli are not often found. Their presence, however, is confirmatory of tuberculosis. Many cases are undoubtedly masked by trachoma and others diagnosed as trachoma are tuberculous. The methods of treatment that have received the strongest endorsement are excision and the galvanocautery. The inflamed section of the conjunctiva and the healthy zone surrounding it should be excised where the case is not inoperable. If the pre-auricular or other glands are involved, they should be included in the operation. If the case has gone beyond the operable stage, the ulcers should be burned by the galvanocautery.

87. **Entropion and Trichiasis.**—Foster's article is largely a review of the literature and the methods of treatment of this condition. He thinks the real progress in surgery of entropion and trichiasis is perhaps embodied in two modifications, of the Celsus operation, the anchorage of the lower flap of the skin to the upper border of the cartilage to secure permanency, and the implantation of a wedge-shaped graft of mucous membrane to prevent the agglutination of the lips of the wound behind the lashes. The popularity of various modern operations, such as Streatfeild-Snellen, and the Jaesche-Arlt, depend largely on the presence of two or more of the principal features of this operation so modified, the shortening of the lid skin, its anchorage to the cartilage, the partial detachment of the ciliary margin and the reformation of the edge of the lid.

93. **Pernicious Anemia in Infants.**—The first part of Roteh and Ladd's paper is largely a discussion of the literature and theories of this condition and a case is reported in detail. The important points emphasized are the insidious onset, with moderate and paroxysmal attacks of indigestion, extreme pallor and loss of strength, absence of any possible demonstrable cause for a secondary anemia, slightly elevated temperature with absence or glandular or splenic enlargement, the presence of pronounced typical characteristics of the blood of pernicious anemia, absence of any considerable degree of leucocytosis, and rapid improvement in the general symptoms and in the character of the blood with apparent complete recovery, which is typical of the remissions which so often occur. While the child may be perfectly healthy to-day as far as can be determined, the fact remains that permanent recovery has never been reported in any well-attested case of pernicious anemia in infants. Several cases of recovery in adults are on record and it is suggested that the great recuperative power in infants' blood may resist the usually fatal tendencies. As regards the treatment of these cases the management of the feeding is of first importance. Arsenic may be tried cautiously and iron in the form of ferratin or similar preparations will do no harm and may be of benefit. Cabot has recently been treating his cases with laxatives or purgatives on the theory that the disorder is due to absorption of toxins from the intestine, but no definite results have as yet been announced. In these cases the inhalation of oxygen was used in large quantities for long periods and immediate and rapid improvement followed its administration. It is difficult, however, to say anything as to the efficiency of special remedies.

94. **Cyclical Albuminuria.**—After noticing the literature and the theories of the disease, Churchill reports a case in detail with urine and blood examinations, etc. He considers that the symptom is a real danger signal not to be slighted and that its cause should be carefully investigated.

95. **Rectal Polypi.**—The etiology of rectal polypi is discussed by Huber who reports the case of an undersized boy, somewhat backward, with pronounced aprosexia due to adenoids. In addition, goiter and moderately enlarged lymph nodes furnished further evidences of the status lymphaticus. The abnormal rectal condition was doubtless a local manifestation of the same nature. He has noticed one feature common in all cases which have come under his observation during the past four or five years, namely, that rectal polypi were found only in patients who at the same time showed other evidences of lymphoid hypertrophies in the nasopharynx, with other manifestations of the status lymphaticus, and he concludes that this can not be a mere coincidence. The reason why they are not more common is, he thinks, possibly because they are unobserved to some extent.

96. **"Fourth Disease."**—Simpson's paper is based on the experience with an epidemic of a peculiar condition of eruptive fever occurring in the School for the Deaf in Hartford. At least five of the patients had a second rash occurring two or three weeks after the first, lasting several days with slight rise of temperature, but no feeling of malaise. Five of the

patients had had previous scarlet fever and 4 of them are said to have had German measles; there had also been a previous occurrence of an epidemic of "pinkeye," mild in character, which he thinks was rubella manifesting itself in this way. The fact of lamellar desquamation in a large proportion of cases which was certainly not scarlet fever, does more than anything else to make credible the existence of another eruptive disease. The form of desquamation is the chief diagnostic point between "fourth disease" of Dukes and rubella.

104. **Classification of Insanity.**—The conclusions of Dercum's article are: 1. All of the mental disorders which result from the infections, the intoxications, the diatheses, the visceral diseases, the diseases of the nervous system, pregnancy, the puerperium, the lactation,—in short, from all of the diseases and morbid physiological states—belong to the symptom group of delirium-confusion-stupor dementia. Delirium, confusion and stupor are largely interchangeable terms possessing a certain degree of equivalence, and it must depend largely upon the activity of the morbid process as well as upon its character as to which of these forms is present in a given case. That secondary differences of symptoms, dependent upon the nature of the infection or the special poison that has been ingested are present, goes without saying, but these differences in no way affect the truth of the general statement. 2. The melancholia-mania syndrome bears no relation to the various infections, intoxications or visceral diseases. Neither mania or melancholia ever results from them. Mania and melancholia are diseases primarily of the nervous system—neuroses so to speak—and are largely hereditary. He thinks that much confusion has resulted from the unscientific use of mania and melancholia and considers that neither of these or paranoia or the neurasthenia-neuropathic insanities bear any relation to internal diseases, but their onset is favored by any causes that are attended by persistent depression of nutrition or by degenerative changes in the nervous system. 3. The delirium-confusion-stupor syndrome may occur at all ages. Melancholia-mania and paranoia, on the other hand, are related to definite periods of life. 4. The delirium-confusion-stupor syndrome usually occurs independently; its forms may, however, occur as complications or episodes in any of the other affections.

113. **Gonorrhea.**—According to Professor Neisser, gonorrhea is curable in all cases that are properly treated. A definite percentage, however, can not be given and cases of posterior urethritis, and prostatic involvement are much more serious, but even here the prospects of rendering the individual non-infectious, though much diminished, are not yet unfavorable. The indications for treatment are to destroy the cause of the disease, the gonococci, by a treatment that must be capable of deep penetrating action, an effective germicide free from astringent qualities and that will not enter into chemical union with albumin, mucin or chlorin of the tissues. Simple astringents are unsuitable in the acute stage and all mechanical and semi-mechanical methods requiring sounds, endoscope, etc., are dangerous. He considers that protargol has a strong germicidal action, and is least irritative, while argonin, oxycyanate of mercury and largin can be used in the later stages. The Janet irrigations where practicable, and prolonged injections are suitable methods of application. The chronic cases should be treated with bactericidal solutions as long as the gonococci are found and sometimes afterwards. The patient should be permitted to marry when, after thorough, complete and often-repeated examinations, the physician is able to state that the gonococci are not found either by provocative mechanical, or chemical measures. This is from a practical rather than from an academical standpoint. Burnett answers also in the affirmative as to the curability of the disease and thinks fully 100 per cent. are curable. He finds local treatment best in the acute cases, giving internal remedies in case of irritating urine or where it is needed to sterilize, and in chronic urethritis. He thinks, however, it is unsafe to depend solely on the disappearance of the gonococcus, and he would make the limit of time before the patient is fit to marry from six weeks to as many months after complete restoration to the normal as far as possible.

122. **Convulsions in Children.**—A convulsion is a symptom, not a disease, often due to inherited nervous conditions. The child is naturally unstable and the symptom may be a reflex from over-stuffing, intestinal poisoning, and disturbed thermogenesis. Acute auto-infection acting on the former produces the eclamptic seizure. According to Dickey the convulsions not infrequently take the place of the rigor in adult life, ushering in the acute infectious diseases and in the hyperpyrexis of such disorders is diphtheria and pneumonia, where it may also occur. In any case he would first use the thermometer, no matter how urgent the symptoms, and if there is a temperature of 103 or more and the extremities are not cold, he believes a hot bath contra-indicated, but that a cold sponge bath should be employed. The stomach tube, an emetic, anema of warm soap suds, should be used, if indigestion is suspected. Under the cold bath, the temperature is lowered, inspiration becomes longer and deeper, more oxygen is taken into the blood and carbonic acid is liberated, the brain centers and nerves are better nourished and the heart is regulated, and the kidneys secrete more urine, carrying off the poisonous products.

124.—See abstract in The Journal of September 14, p. 721.

125. **Suprapubic Lithotomy.**—Lydston remarks that the simplicity of this operation may tempt its performance on the part of surgeons whose technique is faulty and experience small. The statistics of the operation in the hands of one individual constitutes no criterion of the possible mortality rate in the hands of another. There are special dangers of injuring the peritoneum and of extensive laceration of the bladder, as well as of infection, in any case. He thinks, however, there should be no hesitation in choosing this method when stones of considerable size exist, and that with increasing care in the technique, there will be a decrease not only in the mortality rate, but convalescence will be quicker, there will be fewer cases of infection and the danger of hernia will be reduced to a minimum. An improvement in the results, however, can not occur until operators in general have learned that, in spite of the simplicity of the operation from a mechanical standpoint, there are many details of technique to be improved before the ideal operation can be performed. He says there is a question in his mind whether with improved technique it might not come to be the most useful operation of all for stones, not excepting litholopaxy.

128. **Hedonal.**—After discussing the physiology and therapeutic effects and reporting a case in which this drug has been used, Walling comes to the conclusion that the chief disadvantage of hedonal is its disagreeable taste and that its advantages are: "1. Its acceptability to the stomach, as a rule, notwithstanding the above objection. 2. Its positive effect in a majority of cases. 3. It has no injurious after-effects. 4. Its use may be continued indefinitely, with good results, or it may be discontinued at any time without the fear of the formation of a habit."

135. **Nose and Throat in Medicine.**—Wright continues his historical article reviewing the periods of Hippocrates down to Roman medicine and Celsus.

136. **Subarachnoid Cocainization.**—The use of subarachnoid cocainization for operations on the head is discussed by Payne, who goes into the details of the method and reports cases. To produce anesthesia of the upper extremities he says it is simply required when the needle is injected that it be pointed upward and the cocainized solution be forced in quickly. He has had no bad consequences in his cases except headache, which is sometimes severe but is readily relieved. In no case has there been surgical shock and he endorses the method as having no contra-indications. He has used this method for two simple mastoid operations, one Stacke operation, one frontal sinus operation, one ossiculectomy and one enucleation of the eye.

143.—See abstract in The Journal of July 13, title 136, p. 142.

FOREIGN.

British Medical Journal, September 14.

Observations on Blackwater Fever. F. K. KLEINE.—Koch's views as to the quinin origin of blackwater fever are supported here by Kleine, who, at the request of Dr. Koch, reports fifteen cases that appear to support his views. In each of the histories the hemoglobinuria followed more or less immediately the administration of quinin, and the reported instances where it has occurred without quinin are accounted for by him as largely based on the imperfect details of facts. The quinin works on the blood corpuscles already diseased by the malarial infection; a weakened organism is more powerfully acted upon by poisons than a healthy one and other substances than quinin have been reported as causing hemoglobinuria, such as antifebrin and salipyrin. Blackwater fever does not occur in temperate climates, because there we do not have the extensive and unregulated use of the drug as in the tropics, so that we have no idea how the prolonged administration influences the blood composition. Koch's views are not altered from those formerly held; he believes in the majority of cases blackwater fever is the result of quinin poisoning in malarial patients, but at the same time he holds that by means of an appropriate quinin prophylaxis malaria, and with it, in the vast majority of cases, blackwater fever can be stamped out. An imperfect quinin prophylaxis which does not entirely protect against malaria, on the other hand, predisposes to blackwater fever, for in such a case plasmodia and quinin unite to act harmfully on the organism.

Influence of Color Upon Anopheles. GEORGE H. F. NUTTALL.—This author has investigated the preferences of the anopheles to different colors. It was noticed at the beginning that they settled on dark cloth, but rarely do this upon white flannel. Therefore, a number of pasteboard boxes were taken, lined with cloth of different colors and placed in rows, the order being changed each day after the observations had been made. For seventeen days during the month they counted the number of flies that had accumulated in the boxes and found that the boxes lined with navy blue, dark red, reddish brown, scarlet and black contained far the largest number, navy blue being evidently the preference and the others following in the order mentioned. The smallest numbers were found in the green, violet, light blue, pearl gray, ochre, and orange boxes, but none whatever in pure yellow. Pale green, light blue, ochre, orange and yellow, especially the last two, seemed to repel the insects. The practical deductions from these facts are that the khaki uniform now in vogue has advantages besides being invisible to the human enemy; its color is absolutely repellent to this malaria-bearing mosquito.

A Further Note on the Biological Test for Blood and Its Importance in Zoological Classification. GEORGE H. F. NUTTALL.—The same author has experimented on 140 samples of blood derived from all classes of vertebrata to test their antiserum reaction. None, except monkey bloods, gave reactions for human bloods and the blood of the old-world monkeys gave much more powerful reaction than that of the American monkeys, indicating the truth of the Darwinian theory of the closer relationship between man and the old-world apes than with the American monkeys. The antiserum for dog's blood only gave reaction for the blood of the jackal (Canis mesomelas). The antiserum for ox and sheep blood only gave full reaction for homologous bloods, besides the slight reactions previously mentioned in an earlier paper. The ox antiserum produces slight reaction in the blood of the goat and a faint cloudiness in that of the roebuck and Burrhel sheep from the Himalayas. The sheep antiserum furthermore gave a marked reaction with the blood of the Burrhel sheep and of another wild species of sheep, a slight but distinct reaction with the blood of the goat, and a faint clouding with that of the roebuck. He thinks it certain that interesting results from the point of view of the zoological classification will be revealed by these tests thoroughly carried out. From a medicolegal standpoint the tests should be applied to as large a number of bloods as possible. He describes the method, which is simple; just saturate filter paper and dry it, and it makes no difference whether the blood is from a recently dead or living animal.

Inoculation and the Incubation Stage of Plague. W. B. BANNERMAN.—Calmette is reported to have given his opinion that in a person in the incubation stage of a slight attack of plague we should find the disease rendered grave if at this period a preventive inoculation of the Haffkine vaccine was given, and the case would almost certainly end fatally. Bannerman has investigated this subject statistically, taking the facts that he could collect from different Indian stations and finds that this statement is not borne out. In fact, it is manifest, he says, that there is very little difference between the percentage case-mortality in those attacked respectively before and after the first ten days' period subsequent to inoculation. The figures seem in fact to point to a sudden and very considerable measure of protection being secured after the lapse of twenty-four hours only, though this desirable effect increases with lapse of time.

A Discussion on Stone in the Tropics. P. J. FREYER.—In opening the discussion on stone in the tropics, Freyer accounts for the frequency of stone in India by the geological conditions and drinking water. The regions where stone is most frequent are those were lime salts are in solution in the drinking water and find their way into the system, being deposited in the urinary tract in the form of oxalate of lime; or by causing derangements of the digestive system, lead to the formation of uric acid and urates in excess and eventually to deposits of crystals in the urinary passages, resulting in the formation of stone. The climatic condition also favors this. These special regions are characterized by scantiness of rainfall as compared with the rest of India; great alterations in the temperature, scanty rainfall and intense heat promote excessive perspiration, most of the fluids of the body passing off in perspiration and thus leading to concentration of urine which is likely to facilitate the deposition of crystals. Food and feeding, he thinks, have less influence. He believes the Indian experience shows the great advantage of Bigelow's litholopaxy operation over all other methods.

The Lancet, September 14.

Changes Effected by Antityphoid Inoculation in the Bactericidal Power of the Blood. A. E. WRIGHT.—A summary of the facts brought out in Wright's article is given by him in the following practical conclusions: With regard to the sequence of events after an anti-typhoid inoculation it has been shown: 1. That where the quantum of anti-typhoid vaccine employed produces the familiar well-marked constitutional symptoms a decrease in the bactericidal power of the blood and a corresponding increased susceptibility to typhoid infection may supervene in the period immediately subsequent to inoculation. Upon this negative phase of increased susceptibility there may, however, be expected to succeed, probably within a period of three weeks or less, a phase of increased bactericidal power and a greater resistance to typhoid. 2. That when the quantum of anti-typhoid vaccine employed produces very severe constitutional symptoms a negative phase of increased susceptibility will be produced which—and the same would appear to hold true also in case of a negative phase supervening upon an actual attack of typhoid—may never be followed up by a positive phase of increased resistance. 3. That when the quantum of anti-typhoid vaccine employed is reduced to the point at which marked constitutional disturbance is avoided a positive phase of increased resistance may be expected to supervene without the intervention of any negative phase, and in many cases within twenty-four hours. The practical conclusions are, therefore: 1. The employment of primary inoculation of large doses of vaccine—enough to give rise to severe constitutional symptoms, seems inadvisable and would probably be associated with danger in the actual presence of a typhoid epidemic. 2. The employment of a moderate dose of vaccine giving rise to marked, if not unduly severe symptoms would also appear to be inadvisable in the actual presence of a typhoid epidemic, but might be appropriately employed where

an interval of several weeks is to elapse before exposure to infection and where there are difficulties in the way of carrying out two successive inoculations. 3. The employment of small doses of vaccine producing only a slight constitutional disorder appears to be the only form of typhoid inoculation in the actual presence of an epidemic, and seems also in all other cases the most appropriate method. Such primary inoculation, however, ought always to be followed by a second inoculation, with an increased dose of vaccine. Of subordinate importance are the following: 4. Where the blood of a patient who has recovered from typhoid fever is found to possess a bactericidal power inferior to the average, and where re-exposure to typhoid is contemplated, it would seem advisable to secure for the patient the additional protection associated with possession of a high bactericidal power. This additional security can, if it is permissible to generalize from the observation detailed in one of the cases reported, be conferred by the inoculation of an appropriate quantum of anti-typhoid vaccine. 5. On the other hand, where the blood of the patient who has recovered from typhoid is found to possess a bactericidal power considerably above the average, it wound, taken together with certain other data, appear to be impracticable to increase the bactericidal power by the inoculation of sterilized cultures. 6. Wherever a doubt as to the efficiency of a particular anti-typhoid vaccine arises—and such doubts may obviously arise, either in connection with modifications introduced in the methods of preparing the vaccine or in connection with prolonged storage under unfavorable circumstances—it will always be possible to arrive at a decision of the efficiency of the vaccine by observing the effect exerted by the vaccine in question on the bactericidal power of the blood. He concludes that there appears to be a very definite limit beyond which the bactericidal power of the blood can not, it would seem, be increased by inoculation with sterilized cultures of the typhoid bacillus.

The Postoffice and the Prevention of Tuberculosis. Charles H. Garland.—From an investigation of statistics of an insurance society composed entirely of postoffice officials, numbering nearly 20,000, Garland finds that the amount of deaths from tuberculosis between the ages of 15 and 65 years number 45 per cent. Considering that these are selected lives, he thinks they point to a general contamination of postoffice buildings, and he suggests the use of prophylactic measures; the absolute prohibition of spitting, thorough disinfection, if possible, the disuse of dry sweeping, thorough weekly washings of the floors and a rigid exclusion of tuberculous subjects and tuberculous suspects by more rigid examination. The employes should be taught the causes and modes of prevention of tuberculosis; printed notices should be put up. These recommendations are largely quoted from a French report on the subject, which deals with the same conditions in French postoffices.

Presse Medicale (Paris), September 7.

Indications for Phototherapy. Leredde.—The efficacy of light therapy is due to the remarkable penetrating power of the chemical rays, which act on the lower strata of the integument, without destruction of tissue. There is none of the irregular action which renders the Roentgen rays so treacherous at times. The reaction is not painful, the cicatrices are perfect, and the blisters which form in the course of the treatment of lupus contain an alkaline fluid loaded with cosinophile cells. Leredde is convinced that the Lortet apparatus is a great improvement over Finsen's. It was described and illustrated in The Journal of July 20, p. 229. By the discovery of phototherapy, lupus has become an affection which should be regularly and normally cured. It fails in the advanced, intractable cases, but henceforth, no case of lupus should be allowed to reach this intractable stage. The physician should treat it early, and inspire the patient with the energy to complete the cure. Galvano-cauterization and scarification may be tried first, for a limited time, and then suspended to watch the results. If the lupus continues a progressive course, phototherapy should be applied, without waiting for the former measures as their prolonged use causes cicatricial formations which impede the action of the chemical rays. When the lesions are on the limbs or trunk they are usually very extensive and other measures are preferable. In case of erythematous lupus, if it is the aberrant form, salicylic and pyrogallic acid, mercurial plasters, high frequency electricity and scarifications are able to accomplish the cure. Phototherapy is not indicated except in those cases in which the lupus patch recurs year after year at the same point, in spite of these measures. Fixed erythematous lupus offers the same therapeutic problem as ordinary lupus, and consequently phototherapy is equally effective as in the latter. Electricity may also have a curative influence, but superficial applications are useless. Even after apparent cure, the lesions may recur again and again, and it is necessary to continue the phototherapy until complete sclerosis is obtained. All lesions of the face rebellious to other measures, may be cured by phototherapy. Finsen has cured one patient with extensive vascular nevi and improved nine others. Leredde has been much encouraged by his success in a few cases of this kind. One patient with a nevus occupying one entire side of the face, with a few patches on the other, was treated by phototherapy and the small patches were cured, but the other side was not affected. Another patient has been entirely cured of a number of patches on his chin. Phototherapy, therefore, will cure the less extensive nevi, without much thickening of the tissues, but is powerless—as at present applied—against the most pronounced cases. He has cured three cases of acne rosacea which had resisted all other treatments, applying the phototherapy very gradually and tentatively. He has also found it effective in extensive, almost chronic sycosis. He is now studying its action on buccal leucoplasia and alopecia areata. It is only exceptionally indicated for an epithelioma of the face, but may prove very valuable in rare cases. A patient with an old lupus of the temple and upper lid and eight or ten fresh epitheliomatous foci, was completely cured with two months of phototherapy.

September 11.

Regulating Apparatus for the Composition of the Blood. C. Achard.—When the natural emunctories are insufficient from any cause, the blood evacuates its waste products into the depths of the tissues, into the interstitial lymphatic circulation, the intercellular plasma and, possibly, into the protoplasma of the anatomic elements. These substances poured out into the tissues do not remain there permanently, but gradually find their way back into the blood, and are eliminated by the natural emunctories little by little. The molecular concentration changes less than the chemical composition and returns to normal more rapidly. The cycle of circulation in the blood of ingested chlorids, for instance, may have completed its evolution before the cycle in the extravascular circulation has commenced, and this fact aids in the regulation of the blood. The motive power controlling this regulating mechanism must be derived from the nervous system, and consequently therapeutics should aim to influence the latter rather than the blood itself. The assumption of this regulating mechanism explains the contradictory findings in cryoscopy. The blood is only transiently affected by insufficiency of the emunctories, the waste products are poured out into the depths of the tissues, and excite a reflux of fluids. There is a periodical interchange and when the emunctories function normally again, the solid substances are eliminated en masse. This is seen, for instance, in the excessive amount of chlorids voided after the crisis of an infectious disease.

Progres Medical (Paris), September 7.

Ovarian Treatment. E. Vidal.—The ovary of sheep seems to be the best adapted for organ therapy, as it obviates the danger of tuberculosis which is so frequent in cattle. The ideal would be to take the ovaries from rutting animals, but this is seldom practicable at present. Vidal prefers the subcutaneous route to administration by the mouth, and has found ovarian therapy very effective in the natural or artificial menopause and in neurasthenia in women. The injection of the glycerin extract is made in the buttocks on a line passing from the last sacral vertebra to the upper margin of the great trochanter. He applies an air-bulb to facilitate the in-

jection of the fluid from the fused tube which holds only the exact amount to be injected, from .5 to 5 c.c.

Centralblatt f. Chirurgie (Leipsic), September 7.

Automatic, Weighted Retractors. G. De Francisco.—The Journal mentioned at the time the fine results reported by Tansini from the use of gold wire in suturing after herniotomy. He reduces the number of assistants and prevents all digital contact with the tissues by three new instruments illustrated in this communication. One is a broad, curved retractor which is hung like a hook over the spermatic cord, and by its weight of 146 gm. holds it automatically and permanently out of the way. Another rake-shaped retractor, weighing 250 gm., is applied to the edges of the aponeurosis of the external oblique on each side, and holds them firmly in its curved teeth. A long and narrow spade with a long handle bent in the shape of an L, is used by the assistant to press down the parts below the field of operation. Tansini now reports a series of 120 herniotomies in which the gold wire and these instruments were used, and none showed a trace of suppuration or recurrence. The quantity of wire needed is very small and the expense trifling. As it is left in the tissues it obviates all danger of a relapse.

September 14.

Slitting Thrombosed Varicose Veins. W. Kramer.—Instead of extirpating the thrombosed varicose vein in the leg, Kramer merely slits it throughout its entire length and extracts the clots. In fifty patients thus treated, the lips of the wound in the vein closed spontaneously and healed without reaction. The patients were relieved completely of all their former troubles from this source. The lumen of the veins had become obliterated in the thrombotic process and consequently there was no bleeding nor symptom of embolism.

Deutsche Med. Wochenschrift (Leipsic), September 5.

Auto-Intoxication in Epilepsy. Hebold.—After four years of experimental research on dogs and white mice, Hebold announces that he was never able to establish any regular parallel between the toxicity of the organic juices of epileptics and their seizures. The blood and urine of epileptics during and between the seizures were injected subcutaneously into hundreds of animals, but the results fail to confirm the assumption of a morbid metabolism as the cause of epilepsy. The only positive result attained was that in a few cases the tests showed a condition of auto-intoxication, which was apparently the determining factor for a seizure in these patients.

Disinfection of Surgical Instruments with Tincture of Soap. J. H. Polak.—Delicate sharp instruments are injured by being boiled. They can be disinfected without injury by tincture of soap, which Mikulicz recommends for disinfection of the hands. It is bactericidal and rapidly dissolves pus and blood. Straub has been using it for more than six months in his clinic and has found it very convenient and effective, with no disadvantages. After an operation he puts the sharp instruments in the tincture of soap for fifteen minutes and then cleanses them. Before the next operation he soaks them in tincture of soap for fifteen minutes and then rubs them carefully with a sterile linen rag, dipped in the tincture. This combination of the chemical and mechanical action of the tincture has proved extremely satisfactory. The instruments can be wrapped in cotton impregnated with the tincture.

September 12.

Suture of Heart Through Right Side. I. Watten.—The stab-wound in the heart extended into the right pleura and was accompanied by a large pneumo-hemothorax. The third and fourth ribs on the right side were resected close to the sternum and turned back, the flap extending from the lower margin of the second rib into the fourth interspace. The lung was covered with a gauze compress and pulled up out of the way with a long-handled retractor. The wound in the pericardium was enlarged and two stout silk threads passed through its edges. By pulling on these threads the heart was drawn well into view, showing the wound in it, about 2 cm. long, through which dark blood was trickling. The top of the wound was close to the base. The heart was hurled to and fro in the pericardium during its contraction and all efforts to insert the needle failed, until Watten seized the heart with two fingers from behind and pressed it gently against the sternum. This held it a little more quiet and a stitch was passed through the lips of the wound. The pause seemed to be lengthened as the needle was inserted, and the contractions followed at longer intervals when the heart was drawn up against the pericardium by pulling on the thread. As soon as it was released, it began to pulsate more rapidly again. Two other stitches were taken and the threads tied. The bleeding ceased and the pulsations were considerably longer. The entire posterior and anterior surface of the heart, except the apex, could be palpated with the introduced forefinger. Two strips of gauze were left in the wound in the pericardium, one above and one below; the pleural cavity was loosely packed with gauze, the skin and bone flap replaced and sutured except where the gauze emerged. This portion was also lightly sutured to prevent the coughing out of the gauze. When the drain in the pericardium was renewed, about 100 c.c. of a sero-sanguine effusion was evacuated two days in succession, after which recovery proceeded rapidly, and the patient is now completely restored, able to do the severest physical work. Watten was amazed at the ease with which the heart could be drawn up into the wound and sutured from the right side. He thinks that resection of the sternum is absolutely unnecessary in case of wounds of the heart.

Fungus Colonies in the Stomach. M. Einhorn.—In six cases of hyperchlorhydria or gastralgia with normal or diminished secretion of gastric juice, Einhorn discovered large quantities of a fungus in the stomach. It was evidently colonizing there as the mycelium, spores, etc., were found numerous when the stomach was empty as well as after eating. Lavage of the stomach, followed by spraying with a 1 or 2 per 1000 solution of nitrate of silver, evidently improved the patient's condition, and it seems plausible that the morbid process, if not caused by the fungus, was at least aggravated by it.

Muenchener Med. Wochenschrift, September 3.

Surgical Treatment of Strictures of the Lachrymal Ducts. Passow.—By slitting the duct from inside the nose it is possible to cure existing stenosis and stricture without a scar and with very little danger of recurrence. Passow has had occasion to perform this operation only four times, but the success was striking in each. Tests on the cadaver have shown that the operation is practicable even with a very narrow nasal passage. One assistant must hold the speculum absolutely still, while another wipes the blood. In some cases, removal of the lower portion of the inferior turbinate bone will render the duct permeable and avoid the necessity for further intervention. For this reason it may be well to wait for the results of this intervention before proceeding to slit the duct. Passow prefers the chisel and believes that there is less danger of recurrence of the stricture when the incision is carried into the sac. In two of his cases the operation cured the oozing; the others are too recent for a definite conclusion.

Acid Intoxication in Diabetes Mellitus. O. Busse.—Three cases of fatal diabetes mellitus are described, in which the kidneys, heart and liver presented the same "boiled" appearance noticed after intoxication with dilute mineral acids. Acids are generated in diabetes, especially betaoxybutyric acid, to such an extent that the alkalinity of the organs and of the blood is completely neutralized, and the acids circulate freely and uncombined in the organism. It is therefore probable that coma and death in diabetes may be due to the injurious effects on the organs of this excess of acid entailing a fatal acid intoxication.

Paraffin Injections in Facial Atrophy. A. Luxenberger.—The deformity resulting from progressive facial hemiatrophy in two young women was completely cured by the injection of paraffin according to Gersuny's directions. One case was very extensive, requiring fourteen injections of small amounts of the paraffin in the brow, temple, nose and cheeks, with massage afterward to model the parts symmetrical with the other side.

In the second case the atrophy was restricted to the lower jaw and four injections were sufficient to restore the cheek to its normal outlines. There was a slight smarting after each injection, with the sensation of a foreign body in the cheek, but this all passed away in the course of half a day. The mixture of hard and soft paraffin, called in Germany "white American vaselin," which is used for these injections, does not produce irritation even when comparatively large amounts are used. Straume found that animals tolerated three to ten grams per kilo of the body weight. In Luxenberger's two cases the appetite, pulse, temperature, respiration and urine showed no trace of disturbance during the course of the injections.

Malignant Tumors of the Tonsils. Heinleth.—Heinleth describes a case of a round-celled sarcoma, 4 cm. long by 2 wide and 2 thick, removed from the throat of a robust man. It was followed by a recurrence in a month, which was likewise extirpated. Twenty-three months have since passed and there are no suggestions of further recurrence. The patient weighs 172 pounds and a linear scar is the only trace of the operation. He removed the tumor by the Kroenlein-Langenbeck method, the incision starting at the corner of the mouth and curving downward over the horizontal ramus of the lower maxilla to the cornu of the hyoid bone and thence upwards to the rear margin of the mastoid process. The maxilla was divided at the second molar. The glands were enucleated, the arteries exposed and the lingual artery ligated. The maxilla was then twisted still farther out of the way and the mouth entered, after placing the patient with his head pendent over the edge of the table. The anterior and posterior pillars to the base of the tongue, the right half of the posterior pharyngeal wall and a portion of the soft palate and of the uvula were removed with the tumor. The defect was partially closed by drawing the mucous membrane of the cheek and of the pharynx nearly together. The open portion was tamponed, the maxilla sutured with silver wire and the skin with catgut. The patient was encouraged to get up the second or third day and the wound rapidly healed. He was able to swallow liquid food almost from the first. The avoidance of tracheotomy and the simplicity of the after-treatment are the chief advantages of this method of intervention. The recurrence was removed by the cautery through the mouth.

September 10.

Floor Infection of Young Children with Tuberculosis. Dieudonné.—Fifteen children between six months and two and one-half years old, who played on the floor in poverty-stricken homes where one or both of the parents was tuberculous, were examined to see if tubercle bacilli could be discovered on their hands or nasal membrane. Nearly 90 guinea-pigs were inoculated and virulent tubercle bacilli were found on the hands of two of the children and in one in the nose.

Wiener Klin. Wochenschrift, September 5.

Treatment of Hourglass Stomach. K. Buedinger.—A patient exhibited the symptoms of hourglass stomach on a cicatricial basis, and was operated on, but no traces of the supposed hourglass shape were discovered. The pylorus was permeable for the finger and soft. A fibrous adhesion connected the pyloric region with the omentum, and a small T-shaped scar was noted on the anterior surface of the stomach, about 6 cm. from the pylorus. As this was being palpated, the stomach suddenly contracted and assumed under the operator's eyes the typical hourglass shape, the pyloric region forming a tumor, closing its lumen completely. The tumor subsided after five seconds and the phenomenon was repeated twice in five minutes. It demonstrated that spastic pylorus tumors are in fact due to the contracture of the antrum or of the antrum plus the pylorus, and that the apparent hypertrophy is merely the rigidity of the contracture. In this and similar cases, when the hand was placed over the lesser curvature and the greater was pressed with the other hand, it was possible to perceive a trickling of fluids from one into the other as through a very narrow aperture. In cases not adapted for gastroenterostomy, favorable results may be attained by incising the stomach at the edge of the greater curvature, carrying the incision equally high on both the front and rear surfaces of the organ. The edges of the incision are then sutured together which restores the stomach to nearly normal shape. This operation was performed on one practically moribund patient with excessive hematemesis, but she succumbed soon afterward. The operation, however, established the feasibility of this technique.

September 12.

The "Ether Drunk" in Its Practical Application. F. Teweles.—Relaxation and analgesia follow ten or fifteen deep inhalations through the ether mask on which from 10 to 30 c.c. of a mixture of balsamic oil and ether have been poured. The operation can thus be commenced within a minute of the first administration of the ether. In about a third of the 157 cases operated on by this technique at the Vienna Rudolfinerhaus, the patient made some slight repelling movement and then quieted at once. In but very rare cases was it necessary to administer another 10 c.c. One patient who was making vigorous defensive movements with her arms, held the leg on which the operation was being performed, perfectly still. The flask first used holds 30 c.c., the others 10 c.c. each, and it is seldom necessary to use more than one or two of the latter, even in very protracted operations. It is possible to keep patients thus "drunk" for an hour with as little as 110 c.c. of the ether. The operator aims to keep the patient on the narrow borderland between awaking and the manifestation of the stage of excitement. The appearance of the patient is that of a man "dead drunk." This "ether rausch" has nothing in common with ether narcosis except the substance employed. The preparation of the patient consists merely in fastening his attention exclusively on the narcosis. This method of anesthesia is practicable in two-thirds of all operations. If it fails, for any reason, it can be supplemented by ether or chloroform, transforming it into an actual narcosis, and even in this case, it has advantages over the latter alone. As such minute amounts of ether are used, it is absolutely harmless. The disadvantages are that many patients scream and make a disturbance, although they do not experience the slightest pain. Sometimes they make a defensive movement at the first touch of the instrument. Certain nervous patients are too excited to concentrate their attention on the narcosis and this method is liable to fail in their case and also in case of hard drinkers. But these disadvantages are too slight to prevent the general adoption of the "ether rausch," which will certainly follow the recognition of its harmlessness and effectiveness, and a better knowledge of the cases to be excluded.

Gazzetta degli Ospedali (Milan), September 8.

Interrupted Centrifugalization for Sedimentation of Urine. E. U. Fittipaldi.—A simple method of freeing urine from muco-pus cells, which sometimes completely obscure the microscopic field, is to rotate the centrifugal apparatus fifty times and then pour off the supernatant fluid. Physiologic salt solution is added in its place and the centrifugalizer rotated again for about twenty times, and then again for ten, substituting the salt solution each time. By this interrupted centrifugalization all the muco-pus cells are poured off in the supernatant fluid, leaving all the elements needed for the diagnosis of nephritis, etc.

Serodiagnosis in Tuberculosis. F. de Grazia.—The serum of many animals entirely free from tuberculosis proved capable of agglutinating homogeneous cultures of the tubercle bacillus in the research described by De Grazia. He found also that agglutination was produced not only by the serum of tuberculous patients but also by that from normal persons and from patients with various diseases. Serum from tuberculous subjects has also marked agglutinating power on cultures of other bacteria, the staphylococcus, typhoid, diphtheria and other bacilli. The agglutinating reaction is intense in progressing, advanced tuberculosis, and is perceptible even in the incipient stages, although there is no strict parallel between the degree of agglutination and the stage of the disease. It occurs with killed cultures, but very much more slowly. The agglutinating reaction, therefore, has little, if any, specific diagnostic significance.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

HOLDEN'S ANATOMY. A Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital. Seventh Edition. Revised by A. Hewson, M.D., Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. In Two Volumes. Vol. 1. Scalp, Face, Orbit, Neck, Thorax, Upper Extremity. 153 Illustrations. Vol. II. Abdomen, Lower Extremity, Brain, Eye, Organ of Hearing, Mammary Gland, Scrotum and Testis. Illustrations. Cloth. Pp. 843. Price, $1.50 per volume. Philadelphia: P. Blakiston's Son & Co. 1901.

SURGICAL TECHNIC. A Text-book on Operative Surgery. By Fr. von Esmarch, M.D., Professor of Surgery at the University of Kiel, and E. Kowaizig, M.D., Late First Assistant at the Surgical Clinic of the University of Kiel. Translated by Professor Ludwig H Grau, Ph.D., Formerly of Leland Stanford University, and William N. Sullivan, M.D., Formerly Surgeon of U. S. S. *Corwin*. Edited by Nicholas Senn, M.D., Professor of Surgery at Rush Medical College. With 1497 Illustrations and 15 Colored Plates. Cloth. Pp. 866. Price, $7.00. New York: The MacMillan Co. 1901.

MANUAL OF THE DISEASES OF THE EYE, for Students and General Practitioners. With 275 Original Illustrations, Including 36 Colored Figures. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, Eye Department, College of Physicians and Surgeons, N. Y. Second Edition, Revised. Cloth. Pp. 408. Price, $2.00. New York: Wm. Wood & Co. 1901.

DISEASES OF THE STOMACH AND THEIR SURGICAL TREATMENT. By A. W. Mayo Robson, F.R.C.S., Member of Council and Hunterian Professor Royal College of Surgeons of England, and B. G. A. Moynihan, M.S. Lond., F.R.C.S., Assistant Surgeon Leeds General Infirmary. Cloth. Pp. 308. Price, $3.50. New York: William Wood & Co. 1901.

A MANUAL OF DETERMINATIVE BACTERIOLOGY. By Frederick D. Chester, Bacteriologist of the Delaware College Agricultural Experiment Station. Cloth. Pp. 401. Price, $2.60. New York: The MacMillan Co. 1901.

WHAT A YOUNG WIFE OUGHT TO KNOW. Thousand-Dollar Prize Book. By Mrs. Emma F. Angell Drake, M.D., Graduate of Boston University Medical College. Cloth. Pp. 288. Price, $1.00. Philadelphia: The Vir Publishing Co.

CLAUDE HARTLAND. THE STORY OF A LIFE: For the Consideration of the Medical Fraternity. Cloth. Pp. 141. Price, $1.00. St. Louis, Mo.: Lewis S. Matthews & Co.

PHYSICIANS' CLINICAL CHART AND FEE BOOK. By Walter Key, M.D., Piiger, Neb., Member of American Medical Association. Volume I. Leather. Price, $1.00.

Queries and Minor Notes.

MEDICAL LAWS.

CLUTIER, IOWA, Sept. 18, 1901.

To the Editor:—Will you please inform me of the requirements to practice medicine in Colorado? Is a diploma sufficient or is an examination also required? M. B.

ANS.—A diploma or other satisfactory evidence of graduation from a regularly chartered medical school recognized by the Board, or an examination, is required.

RIB LAKE, WIS., Sept. 20, 1901.

To the Editor:—Would you please quote me the medical law of Montana? O. E. W.

ANS.—Montana requires a satisfactory diploma and passing of examination. Write to Secretary of Board of Examiners, Dr. Wm. C. Riddell, Helena.

BRENHAM, TEXAS, Sept. 23, 1901.

To the Editor:—Will you please give in the next issue of THE JOURNAL the law governing the practice of medicine in the State of Louisiana, and the name of the president and secretary of Examining Board? J. B. Y.

ANS.—Louisiana requires a diploma from a medical college in good standing as determined by the State Board, and a satisfactory examination. The secretary of the Board is Dr. F. A. Larue, 624 Gravier St., New Orleans.

SCHLEICH'S LOCAL ANESTHESIA.

MACON, GA., Sept. 16, 1901.

To the Editor:—Will you please state in the next issue of THE JOURNAL the nature of Schleich's local anesthesia?

ANS.—Schleich's method consists in the local injection, into the corium and around the field of operation, of a weak solution of cocain, morphin and chlorid of sodium, producing an edema of the skin. Several solutions of different strength of cocain and morphin are used. The following is Schleich's second solution and most commonly employed, according to the International Text-Book of Surgery: Cocain muriat., .10; morph. muriat., .025; sodii chlorid., .20; aq. destil., ad 100. Sterilize and add gtt. ii of 5 per cent. carbolic acid. The stronger solution No. 1 has twice as much cocain; and No. 3 has only .01 cocain and .005 morphin, the sodium chlorid remaining the same in all three. If other structures than the skin are to be anesthetized the injections are made correspondingly deeper. Eucain has been extensively substituted for cocain, it is claimed, to much advantage.

The Public Service.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Sept. 19, 1901:

P. A. Surgeon J. O. Cobb, granted five days' extension of leave of absence from Sept. 13, 1901.

P. A. Surgeon Rupert Blue, granted five days' extension of leave of absence.

P. A. Surgeon J. A. Nydegger, relieved from duty at Cape Charles Quarantine and directed to proceed to Cairo, Ill., and assume temporary command of Service during absence of P. A. Surgeon J. H. Oakley, on leave. Granted two days' leave of absence from Sept. 10, 1901.

Asst.-Surgeon J. F. Anderson, directed to report to Medical Officer in Command, Immigration Service, New York City, for duty.

Asst.-Surgeon C. W. Wille, directed to assume command of service at Cape Charles Quarantine, relieving P. A. Surgeon J. A. Nydegger.

A. A. Surgeon G. N. Barnesby, granted leave of absence for one month from Sept. 1, 1901.

A. A. Surgeon R. E. Ebersole, granted three days' extension of leave of absence from Sept. 9, 1901.

A. A. Surgeon J. W. Stevenson, granted leave of absence for sixteen days from Sept. 9, 1901.

A. A. Surgeon W. S. Walkley, granted three days' leave of absence from Sept. 12, 1901.

A. A. Surgeon Juan R. Xiques, granted leave of absence for thirty days from Sept. 1, 1901.

Sanitary Inspector J. Y. Porter, directed to visit Key West, Miami, Jacksonville, Fernandina and Mayport, as appraiser.

Hospital Steward L. W. Ryder, directed to report to Director of Hygienic Laboratory for temporary duty.

Surgeon Eugene Wasdin, relieved temporarily from command of the service at Buffalo, N. Y., and assigned to special duty with the President—Sept. 13, 1901. Detailed to represent the service at meeting of American Public Health Association, September 16-20.

Surgeon W. J. Pettus, granted leave of absence for two months from September 15.

Surgeon R. M. Woodward, detailed to represent the service at the meeting of the American Public Health Association, September 16-20.

P. A. Surgeon M. J. Rosenau, detailed to represent service at meeting of the American Public Health Association, September 16-20. Granted leave of absence for one day, September 14.

Asst.-Surgeon Dunlop Moore, relieved from duty at Nome, Alaska, and directed to proceed to the States and await orders.

A. A. Surgeon G. H. Altree, granted leave of absence for fourteen days from September 9.

A. A. Surgeon J. G. Stanton, granted leave of absence for eighteen days from September 13.

A. A. Surgeon W. O. Wetmore, directed to assume temporary command of service at Buffalo, N. Y., during absence of Surgeon Eugene Wasdin on special detail.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Sept. 21, 1901:

SMALLPOX—UNITED STATES.

Illinois: Freeport, Sept. 7-14, 1 case; Peoria, Aug. 1-31, 24 cases.
Maine: Portland, Sept. 7-14, 1 case.
Massachusetts: Boston, Sept. 7-14, 2 cases.
Nebraska: Omaha, Sept. 7-14, 1 case.
New Jersey: Newark, Sept. 7-14, 4 cases, 1 death.
New York: New York, Sept. 7-14, 3 deaths.
Pennsylvania: Sept. 7-14, Erie, 1 case; Philadelphia, 25 cases. 4 deaths.
Utah: Salt Lake City, Sept. 7-14, 4 cases.
Washington: Tacoma, Sept. 1-8, 1 case.
Wisconsin: Green Bay, Sept. 8-15, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 24-31, 1 case.
Belgium: Antwerp, Aug. 24-31, 3 cases, 2 deaths.
Colombia: Panama, Sept. 2-9, 12 cases.
France: Paris, Aug. 24-31, 3 deaths.
Great Britain: London, Aug. 24-31, 74 cases, 7 deaths.
India: Bombay, Aug. 13-20, 1 death; Calcutta, Aug. 10-17, 1 death; Madras, Aug. 10-16, 9 deaths.
Italy: Messina, Aug. 24-31, 3 cases.
Mexico: City of Mexico, Aug. 25-Sept. 1, 1 case.
Russia: Moscow, Aug. 17-24, 2 cases, 1 death; Warsaw, Aug. 17-24, 2 deaths.
Uruguay: Montevideo, July 18-25, 10 cases.

YELLOW FEVER.

Cuba: Matanzas, Aug. 25-31, 2 cases.
Haiti: Port ou Prince, Aug. 19-26, 1 case, 1 death.

CHOLERA.

India: Bombay, Aug. 13-20, 11 deaths; Calcutta, Aug. 10-17, 7 deaths; Madras, Aug. 10-16, 76 deaths.
Japan: Yokohama, Aug. 3-17, 3 cases, 1 death.

PLAGUE.

India: Bombay, Aug. 13-20, 201 deaths; Calcutta, Aug. 10-17, 20 deaths.

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Original Articles.

SOME UNUSUAL FEATURES OF APPENDICITIS AND THEIR TREATMENT.*

ERNEST LAPLACE, M.D.

PHILADELPHIA.

The protean character of various forms of pathological conditions, grouped under the head of appendicitis, offers the surgeon an unusual and often unforeseen group of clinical, as well as pathological, manifestations. The varying size and anatomic appearance of the appendix, the various movements through which it passes in peristaltic action, the various directions in which it might permanently locate itself, from the adhesions it is likely to make during the course of a surrounding inflammation, make the possible resulting pathological lesions almost numberless. Should a case be submitted to operation a very short time after the initial symptoms present themselves, the purpose of this paper would be eliminated, for nothing would be found but a displaced appendix adherent to the colon, ileum or retroperitoneum. Possibly when an anomaly takes place, an adhesion to surrounding organs might be found, and the operation or cure of the condition would consist simply in a careful dissection of the adherent and inflamed appendix. Not until the profession and the laity are convinced of this fact will there disappear from clinical surgery the complicated and distressing cases, which, unfortunately, form the subject of these lines. As on a former occasion, I repeat the following proposition: "In every case of fatal appendicitis, there was a time when, had the operation been performed, the patient would have survived." This is true no matter what complications or unusual phases the peculiar anatomic conditions of the case would likely produce in the eventual course of the disease. Granting, as we know, that the first symptoms of appendicitis are persistent pain, even after evacuation of the bowel, and that, therefore, at that stage, nothing more than a mere adhesive peritonitis or perityphlitis ought to be as yet the pathological lesion. Neither the profession at large nor the laity have yet realized the truth of this proposition, and it follows and possibly will continue to follow, that various anomalies in a case will result from certain unusual complications, some few of which I desire to draw your attention to at present.

CASE 1.—A young man, aged 26, complained of constant pain in the left iliac region, the character of which seemed almost like that in acute intestinal obstruction. A differentiation was made by the attending surgeon, who promptly obtained an evacuation by the administration of salines. After slight relief of the condition, the pain returned with redoubled intensity. Rigidity, however, existed in the right iliac region, the pain being distinctly in the left. This made the diagnosis uncertain, and hence a medical treatment was persisted in, with only an increase of the pain, elevation of temperature and increase of pulse. Three days after the appearance of the pain the patient was taken to the Medico-Chirurgical Hospital, and was immediately submitted to operation. A mass was found adherent to the anterior parietal peritoneum, and, with difficulty, separated. Evidences of radiating peritonitis existed, and, as yet, no pus had formed, although the end of the appendix presented a gangrenous appearance while fastened to the peritoneum. The appendix was dissected away, cut at its base flush with the colon, and the edges inverted, treating the opening as a gunshot wound of the abdomen. The surrounding adhesions were scraped and disinfected with a gauze sponge, dipped in a 1 to 1000 bichlorid of mercury solution, and the surrounding parts carefully packed with iodoform gauze. The patient made an uninterrupted recovery.

The lesson learned in this particular case was the reflex character of the pain, which the patient insisted he felt on the left side, tending to deceive the surgeon. The persistent induration of the abdominal walls on the right side, showing a local reflex contraction, together with a return of the pain after copious evacuation, eliminated any direct intestinal obstruction, and pointed out the existence of a local intraperitoneal irritation directly under the indurated muscle. In this connection we should remember that the law of reflexes is varying and deceptive, whereas, the law by which a muscle that is irritated, contracts and becomes indurated, is positive, constant and unchanging. Hence, rather than be led to the operative procedure by the uncertain character of the pain, it is wiser to base our opinion upon the positive evidence of the induration of the muscle in a certain locality, though the pain be felt at a distance.

CASE 2.—A man, aged 42, was taken to the Medico-Chirurgical Hospital, suffering with what his attending physician supposed was an abdominal tumor on the right side, encroaching upon the right inguinal region. There had been no acute manifestations, though the patient had long complained of obscure pains in that region. The temperature ranged between 99 and 100, while the pulse was about 90, the patient being somewhat emaciated. Physical examination revealed an indurated mass, immovable and not circumscribed. There was a tendency to diarrhea in the case. The blood count was taken, 20,000 white blood corpuscles were found to a cubic millimeter, thereby not giving us much information so far as the relation of leucocytosis to the formation of pus was concerned. The peritoneum was opened by a line of incision, extending from the cos-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

tal cartilage to the crest of the ilium. No adhesions were found and a hard mass, simulating a retroperitoneal sarcoma, was felt. Prolonging the incision to the iliac region, the appendix was found sloughed off at the end and penetrating this large mass. It seemed then that the diagnosis of a retroperitoneal sarcoma was correct. Knowing the uselessness of attempting to remove such a tumor on the one hand, and the advisability of establishing a positive diagnosis on the other, it was determined to explore the nature of the tumor. An incision revealed a wall, thickened to the extent of three-quarters of an inch, leading to a large abscess cavity. The introduction of the finger within the cavity led to a point where the appendix was adherent to the abscess, having caused a retroperitoneal abscess, which grew to an enormous size, developing thickened walls, and subsequently simulating a retroperitoneal sarcoma. The pus was examined and was found to be free from living organisms, though still containing streptococci and staphylococci that had not undergone disintegration. This would explain the comparative freedom from inflammatory symptoms in the patient. The abscess was thoroughly drained, scraped, washed and packed with iodoform gauze. From this case we should be reminded of the uncertainties of a positive diagnosis in abdominal tumors, and should, whenever practicable, give the patient the benefit of a positive opinion, which can only be gotten, without disadvantage, by exploratory incision under modern aseptic precautions.

CASE 3.—A young man, Italian laborer, aged 25, had been convalescent from typhoid fever, and suffered obscure pains in the right hypochondriac region, slight jaundice, but no elevation of temperature. He had often heard of appendicitis, and was convinced, though he spoke very little English, that he was suffering with this condition, explaining that he was assured of this fact. His symptoms were decidedly limited to the region of the gall-bladder. There was slight induration in the right iliac region and constipation. Owing to the persistent jaundice and the pain, a diagnosis of possible gallstones was made, and an exploratory incision was resorted to, over the gall-bladder. This was found somewhat enlarged and containing pus, a cholecystostomy having been performed. While we had made a diagnosis of cholecystitis, and had said nothing about removing the appendix, the patient made us promise that we would explore the region of his appendix. To this we consented. We accordingly made an exploratory incision in this region, and to my great surprise the real seat of his disease was found. The appendix was gangrenous and pus had formed about it. Considerable peritonitis existed, which, if not checked, would have ended fatally. The parts were carefully cleansed, the appendix resected, and both cholecystitis and appendicitis were removed at the same operation. It has often been suggested of late that there may be an intimate connection between the etiology of some forms of these conditions. This case presented a history of typhoid fever, as well as grippe, leaving the system in a reduced condition, unresistant to the invasion of certain organisms and predisposed to the development of metastatic abscesses. There is no wonder that two organs so similarly constructed, histologically, as the gall-bladder and the appendix, should become a prey to the development of organisms from similar causes. Both are connected directly with the intestinal tract, by continuity, only the gall-bladder connecting with the gut from a greater distance and at a point where ferments and organisms have not yet attained great virulence, while the appendix connecting with the gut at a point where practically the intestinal contents have fully served their nutrient purposes, and have become foul refuse matter, ready to enter into the colon as a reservoir. This would explain, in a measure, the greater frequency of the infection of the appendix from the gut than the gall-bladder, but if we presuppose a very much depressed condition of the system where phagocytes are weak and insufficient in number, it does not matter so much whether the organ invaded be the gall-bladder or the appendix, whether the organism of infection be from the duodenum or the ileo-cecal region, both gall-bladder and appendix are weak and receptive, the whole system being also depressed, germs may be of uniform virulence the whole length of the intestinal tract, and would tend, therefore, to produce an inflammation of the same character in the gall-bladder at the origin and in the appendix at the end of the small intestine.

CASE 4.—A man, Italian, aged 40, was admitted to the Medico-Chirurgical Hospital, suffering with symptoms of chronic intestinal obstruction. There had been gradually more and more difficulty in obtaining evacuations in spite of purgation. A distinct tumor was felt, movable, within an area of 3 inches radius around the umbilicus. There was no fever and pulse was rapid, though strong. The gastro-intestinal irritation and symptoms of dyspepsia suggested the possibility of a floating kidney, though it was impossible to return the tumor to the region of the kidney. An exploratory incision was determined upon, and I must acknowledge that I scarcely had any other condition in mind, as a possible explanation of the symptoms, than carcinoma of omentum or intestine, or floating kidney. On opening the abdominal cavity a large kidney-shaped tumor was found, directly under the umbilicus, consisting of omentum, ileum, colon and mesentery. This mass had formed no adhesions with the peritoneum, but was freely movable, as had been discovered on clinical examination. As the tumor was unraveled and dissected out, a foul abscess was opened, the omentum was resected, the ileum separated from the colon, and an appendix about the size of a thumb was found, having become gangrenous from a perforating fecal concretion. There had been a loosening of the caput coli from the ileo-cecal region, an adhesion to the omentum, which probably drew the parts up to the umbilicus, and a chronic appendicitis had developed away from the normal location of the organ. The appendix was resected, the gut scraped thoroughly with a curette, washed with a bichlorid solution of 1 to 1000 and a gauze sponge introduced so as not to allow the rest of the abnormal cavity to become irritated. The ileo-cecal portion of the intestine was pulled back to its normal position and fastened there to the abdominal wall, while the seat of the inflammation was thoroughly packed with iodoform gauze. Here again, owing to the limitation of the infection, granulations immediately set in and the patient recovered without any further complication. This was another instance of the difficulty of making a positive diagnosis. As I can now retrace the course of the affection, I would venture to say that the adhesion of the omentum to the cecum took place first as a result of the inflammation, there being no other adhesions, the violent contraction and thickening of the omentum gradually lifted up the ileum and cecum to its new position near the umbilicus. In this instance, owing to

a lack of adhesions between the inflamed parts and the parietal peritoneum, there was no induration of the abdominal wall, which would lead us to locate an inflammatory condition immediately under it, showing a marked contrast from Case 1, where the inflamed parts were found directly under the indurated portion of the abdominal wall.

It is generally agreed that appendicitis, as such, does not kill, but the peritonitis, incident to the appendicitis, is what proves fatal. The dreaded complication of this widespread affection, therefore, is peritonitis, and he who successfully meets the complicating peritonitis would prove most successful in the treatment of this condition. It behooves us, therefore, to thoroughly understand what we are attempting to achieve before saying that we have succeeded or we have failed in arresting the peritonitis. incident to appendicitis. Therefore, in every case of appendicitis, three different periods should be established:

1. The period of appendicitis, properly so-called; by that I mean such pathological conditions and symptoms resulting therefrom, as are limited to disease, as yet existing in the appendix proper.

2. The stage of peritonitis, resulting therefrom, is limited to a primarily acute or primarily chronic inflammation of the peritoneum, starting from the region of the appendix and spreading thereafter.

3. The stage of septicemia, which means a septic condition of the blood, resulting from poison developing therein, which poison was absorbed from an infectious appendiceal peritonitis.

These three propositions being clearly established, we will say, that for the first, that is, when the inflammation is strictly limited to the appendix proper, the curative measures are medical, when at first successful; operative, when the first medical attempts at relief have failed.

The second condition is the one generally found in its mildest expression, when small adhesions are found about the appendix, and in its most marked expression when an acute abscess, circumscribed or very lately perforated, exists. In this class of cases, while there is a peritonitis, chronic or acute, according to the particular conditions present, the peritonitis is a peritonitis, no more or less, that is, an inflammation of the peritoneum, a condition corresponding to a circumscribed abscess when the condition is chronic, or else if the abscess has broken and has started a general peritonitis, a condition corresponding to a recent perforating gunshot wound of the intestine or a recent perforating ulcer of the stomach or a recent perforating Peyer's patch in typhoid fever. Just as these varying conditions warrant an early operative course to be of a successful issue, so also in these forms of peritonitis from a chronic appendiceal abscess that has perforated or an acute peritonitis set up by the appendicitis, we may hope for success by applying the same principles of rapid operative procedure before the infection becomes generalized and rises from a mere peritonitis to one of septicemia. Upon the treatment of this stage of the condition little need be said. Carefully cleansing the operative field, flushing the abdominal cavity, or if the abscess has partaken of a chronic character, carefully packing with iodoform gauze, so as to isolate the rest of the abdominal cavity, meet the indication and give success.

Not so, however, when we consider the third and most important division of our subject. When the spread of the peritonitis has been such as to have started a septicemia, and both peritonitis and septicemia have joined hands to destroy the patient, what is best to be done? Usually, we simply wash out the abdominal cavity, close to the abdomen, drain with gauze and tube from the most dependent portion and let the infectious elements of the abdomen still develop, furnishing more food for the septicemia that has already started. Shall we continue for a period our attempts at utter destruction of the local peritonitis or local peritoneal infection, preventing further toxins from being absorbed into the general economy, and hoping thereby that the septicemia already set up will be taken care of and destroyed by the still powerful phagocytes? It strikes me that the indication is clear that we must take it for granted that the phagocytes will compete more successfully with a slight amount of septicemia, the sources of which will be shut off, than with a septicemia which is continually increasing by constantly forming toxins taken up from the peritonitis. It would be vain to hope that any form of local peritoneal treatment should destroy the septicemia existing to an utmost degree in the general economy, but it is not vain to hope that local treatment may stop a peritonitis, which, though it be accompanied by the beginning of a septicemia, would ultimately produce a septicemia beyond the control of phagocytic action. Therefore, in the treatment of peritonitis, the two elements to consider are the peritonitis as such and the accompanying amount of septicemia that it has already caused.

This local treatment of peritonitis, whereby the arrest of a progressive septicemia may be hoped for, should consist, I believe, in a constant and persistent flushing of the peritoneal cavity, for at least a few hours after the operation. This should be done, as I described nearly two years ago, by continuous irrigation of the peritoneal cavity with a normal saline solution. It should be applied during the operation at the temperature of 100 Fahrenheit, and maintained after the operation by a system of irrigation, as follows: A glass tube is introduced to the bottom of the pelvis, which is connected with a rubber tube, leading to a basin under the bed. A small tube is introduced at the superior extremity of the wound and is placed in connection with the irrigating apparatus, which latter should be only a few inches higher than the patient. The wound is closed tightly between the two tubes. A continuous irrigation will follow and should be kept up according to the necessities of the case. The immediate effects will be stimulation of the heart action, a general irritation of the peritoneum, promoting phagocytosis, a restraining effect upon the development of local organisms, and a dissolving of the toxins, and draining them away from the abdominal cavity. This, I say, is the direct application of the peritoneum to the principle we have found in general surgery so effective. The indications are the same, just as in general surgery, these local irrigations, though indicated, can not cure the septicemia that has already resulted from an infected limb; so also in a peritonitis, this irrigation can not cure the marked septicemia that has already started, but, just as in an infected limb, this continuous irrigation will restrain the development of organisms, which might otherwise result in a general septicemia; so also the general peritonitis, the continuous irrigation will restrain the development of micro-organisms, which otherwise would intensify the septicemia, rendering it beyond the

control of the body. While this method is strictly based on surgical principles, it must not be expected to exert directly more than a local action upon the peritoneum, destroying the source of infection therefrom. Latterly, saline venous transfusions have been strongly advocated in the treatment of general septicemia. Inasmuch as absorption is very free from the peritoneal cavity, we would be warranted to expect even some general benefit from the continuous peritoneal irrigation. However, the important point to remember is not to discredit the beneficial action of irrigations, on account of its failure to destroy septicemia when it has already invaded the general economy. It would be uninteresting to relate the several cases that I have successfully treated by this method. We are justified, I believe, in concluding that, owing to the general acute nature of the peritonitis, the cases would have progressed otherwise to a fatal termination. In one instance the irrigations were kept up for three days; this, however, is not absolutely necessary, as the formation of fibrin from the irritation of the salt solution may impede the dissemination of the irrigating fluid before this time. At all events, the irrigation should be kept up as long as the fluid freely drains from the abdominal cavity. The essential precaution to be taken is that the flow of fluid be free and continuous, otherwise a hydrostatic pressure is produced within the abdominal cavity, tending to impair, mechanically, the function of the diaphragm in respiration. The hopelessness of many of these cases surely warrants a faithful trial of the above method.

THE KNOT WITHIN THE LUMEN IN INTESTINAL SURGERY;

WITH REPORT OF NINETEEN CASES.*

F. GREGORY CONNELL, M.D.
CHICAGO.

The history of the location of the knot in intestinal surgery might be said to be the history of that branch of surgery itself, for, it would appear, that everything has hinged on the knot and its location. When this was outside of the abdominal wall intestinal surgery was in its infancy. The methods were crude, and the mortality high. As the knot began to make its way inward this branch of surgery advanced as a science. Crudity was replaced by a more perfect technic, and, as a result, the mortality rate was greatly reduced. Literally, the involution of the knot might be looked upon as the evolution of enterorrhaphy.

A brief glance at the various steps may not be out of order. It confirms the above and shows that the trend of surgical thought from the earliest times to the present has been a search for the best location for the knot.

In this quest there was a gradual progression from without inward. This may be divided into five stages, as follows:

1. outside of abdominal wall, artificial anus; 2, outside of the intestinal wall, anchored to the abdominal wall; 3, outside of the intestinal wall, in the free peritoneal cavity; 4, outside the intestinal wall, buried between the opposed serous surfaces, and 5, inside of the intestinal wall, on the mucosa.

Attempts to place the knot within the lumen have been made by Vesein, Bishop, Maunsell, Ullman, Cheatle and Hartigan. Breidenbach's suture has been described as "tying the knot on the inside of the lumen of the bowel." Correctly speaking, the knot is not in the lumen, but between the two inverted and coapted margins. It, therefore, cannot be properly included in this list. Czerny and Wölfler merely add a mucous stitch to the ordinary Lembert.

Maunsell was the first to introduce a suture in such a manner that the knots of all the stitches employed in the enterorrhaphy proper, were within the lumen. But this he accomplished by making a secondary longitudinal incision, which he closed with Lembert stitches.

The method here presented, where the knots of all the stitches are within the lumen, was first employed by the author in October, 1898. The possibility of placing all the knots within the lumen in enterorrhaphy is no longer in doubt, but the advisability of such a procedure is still a disputed question with those who never used it.

The chief objection raised to such a location of the knot, is that it necessitates the perforation of all coats of the bowel wall. But the perforation of all coats when the knot is placed within the lumen, and the perforation of all coats when the knot is in the peritoneal cavity, are not the same. These two conditions differ so widely in practice that they cannot be placed in the same class.

It may be admitted that in both cases a communication is established between the lumen and the serous coat of the bowel wall, with the resultant possible danger of leakage followed by peritonitis, either general or local, depending upon the virulence or quantity of the infective material and the natural resistant power of the peritoneum. However, we are led to believe that even with the knot on the serosa, this danger must be small, as the instances where the needle penetrates into the lumen while endeavoring to take a Lembert stitch must be numerous. The fact that the danger is not great can be seen from the results by T. H. Manley following the method of M. E. Connell.

Yet this danger, no matter how small, can and should be reduced materially by reversing the stitch. Then it will be inserted so that the knot is within the lumen, leaving but little, if any, of the loop on the peritoneal surface. By this simple reversal, the danger of infecting the peritoneum by using a stitch that perforates all coats, is reduced to a minimum and is practically removed.

In support of this position we point to the results obtained by original experimentation, and the nineteen cases on the human being herewith reported, as well as the cases of Maunsell and his followers.

With the knot on the serosa, there are present the following conditions: 1. The major portion of the stitch, the knot and ends, is in the free peritoneal cavity. 2. The size of this portion, the knot and ends, prevents perfect apposition of the serous surfaces external to the knot. 3. The drain, the suture material, is broken on the serous coat at the cut ends, so that if capillary action does convey infective material through the wall, it may siphon from the cut ends on to the peritoneum.

On the other hand, with the knot and ends in the lumen, and the loop perforating the serous coats, the conditions are exactly the opposite. They are in this case as follows: 1. The major portion of the stitch, the knot and ends, is on the mucosa, not in the free peritoneal cavity. 2. A small portion only of the loop can be in the free peritoneal cavity, and, if the square stitch is used, a much smaller portion is there than if the cir-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

cular one is employed. This almost microscopic portion of suture material which passes directly through the two apposed serous surfaces, allows of ample sero-serous apposition distal to it. Thus it is isolated entirely from the free peritoneal cavity. 3. That portion of the stitch between the serosæ of the apposed bowel walls is continuous, not broken, at this point. The natural tendency will then be for the infective material, if it ascends, to pass along the path of least resistance, i.e., from the knot and ends on the mucosa, along the suture material, through all coats of the apposed walls and back again to the knot on the mucosa, there being no knot on the serosa to check and spread it. As Dr. Ferguson[1] has tersely expressed it: "All the knots being on the internal aspect of the bowel, it takes very little sero-lymph to seal up the peritoneal surface, and any drainage that takes place along the suture from the mucosa towards the peritoneum, will be at once returned by capillary attraction to the inside of the bowel." (See Fig. 5.)

From these conditions it may be concluded that the ideal location for the knot is outside and not inside of the peritoneal cavity. As it is impracticable to place it outside of the abdominal wall, it is located in the lumen of the canal, which is still outside of the peritoneal cavity.

Deductions from the above would indicate that stitches which perforate all coats of the bowel wall should be knotted in the lumen. And, conversely, a stitch which is knotted on the serosa should not communicate with the lumen.

That brings up the questions: Is it possible to introduce a firm intestinal suture without communicating with the lumen; and again, if possible, is it practicable?

It is now generally conceded that an intestinal suture to be reliable must include some part of the submucous layer, the one coat of the intestine which has textile strength, and which offers more resistance than will the muscular coats and the serous coat combined. In order to properly introduce an intestinal suture which is knotted on the serosa, the stitch must *penetrate* but *not perforate* the submucous coat. Penetrate to prevent yielding, for "a stitch that includes only the two outer coats yields like putty." But it must not perforate, to prevent infection by capillarity, for, "if the submucosa is perforated the intestine is almost certainly entered."

On the other hand, if all coats are included, and the knot is located in the lumen, no attempt to split the submucosa is necessary.

Halsted,[2] in speaking of this coat, said:

It is remarkable that no one has recognized the important part which this coat should play in operations for intestinal suture. It is still more remarkable that surgeons could have altogether overlooked the existence of the submucosa. And, it is perhaps most remarkable that experimenters and writers should without exception believe that it is possible to take a stitch of the peritoneal coat alone. The crude views of Jobert and Lembert, as to the construction of the wall of the intestine, have been universally accepted by surgeons up to the present time. The peritoneal coat is believed to be thick enough, and sufficiently strong to hold a stitch, and the existence of the submucous coat has been ignored.

Kelly[3] calls attention to this as follows:

Regarding the fibrous coat of the intestine, the most valuable contribution which has yet been made to intestinal surgery is the demonstration by Dr. Halsted, of the fact that the essential feature in any suturing or anastomotic operation is the employment of the submucous intestinal coat.

It may not be out of place to call attention to what appears to be an error that has gained wide circulation. That it was unintentional is not to be doubted, nevertheless it is remarkable that two acknowledged authorities should entirely overlook the researches, experiments, observations and conclusions of a man who might be called the father of American surgery. For it is evident that they are not familiar with that classic on intestinal surgery, published in 1843 by S. D. Gross, then of Louisville, Ky., who made observations on this same coat, as will be seen in his monograph

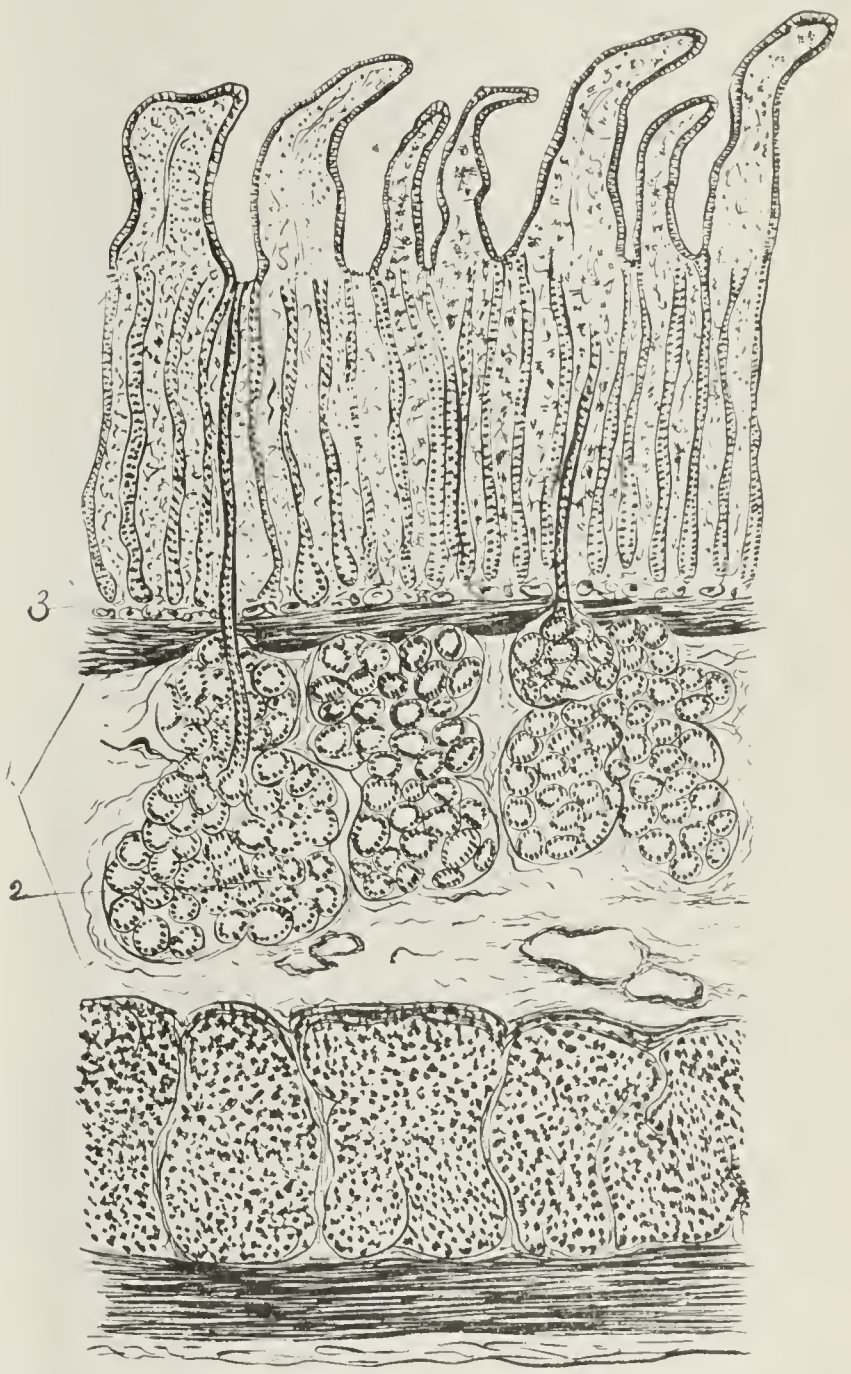


Fig. A.—Section of duodenum (after Piersol). 1. Submucous coat. 2. Glands of Brunner. 3. Duct of gland.

entitled, "An Experimental and Critical Inquiry into the Nature and Treatment of Wounds of the Intestine."

On the structure of the alimentary canal, while speaking of the "outer membrane," he says: "Hence, if, in sewing up a wounded intestine, the ligature be merely carried through the serous investment, it will be almost certain to be torn out." And further, after speaking of the "muscular tunic," he says: "Lying beneath this muscular plane is the celebrated *nervous tunic*, as it was called by the *ancient* writers. Alternately admitted by some, and rejected by others, this layer has been recently described by Monsieur Cruveilhier, under the name of the *fibrous lamella*, in consideration of its structure, which closely assimilates itself to that class of

1. Chicago Med. Rec., December, 1900.
2. Johns Hopkins Hospital Bulletin, 1891.
3. Operative Gynecology, vol. ii, p. 50.

tissues. . . . Strong and resisting, it is semi-transparent and devoid of elasticity. . . .The filaments, of which it consists, interlace with each other in every conceivable manner, forming thus a very close network. . . . It readily reunites when divided, as *I have witnessed in numerous experiments,* and deserves to be attentively studied, *as it is the membrane through which the surgeon should always carry his needle in sewing up wounds of the intestine.*" (Italics are ours.) Thus proving that he not only knew the anatomical peculiarities and properties of this layer, but that at this early date, 1843, he also realized the importance of this layer from an operative standpoint, and emphasized its surgical significance.

In considering the first question above proposed we should bear in mind the location of Brunner's glands.

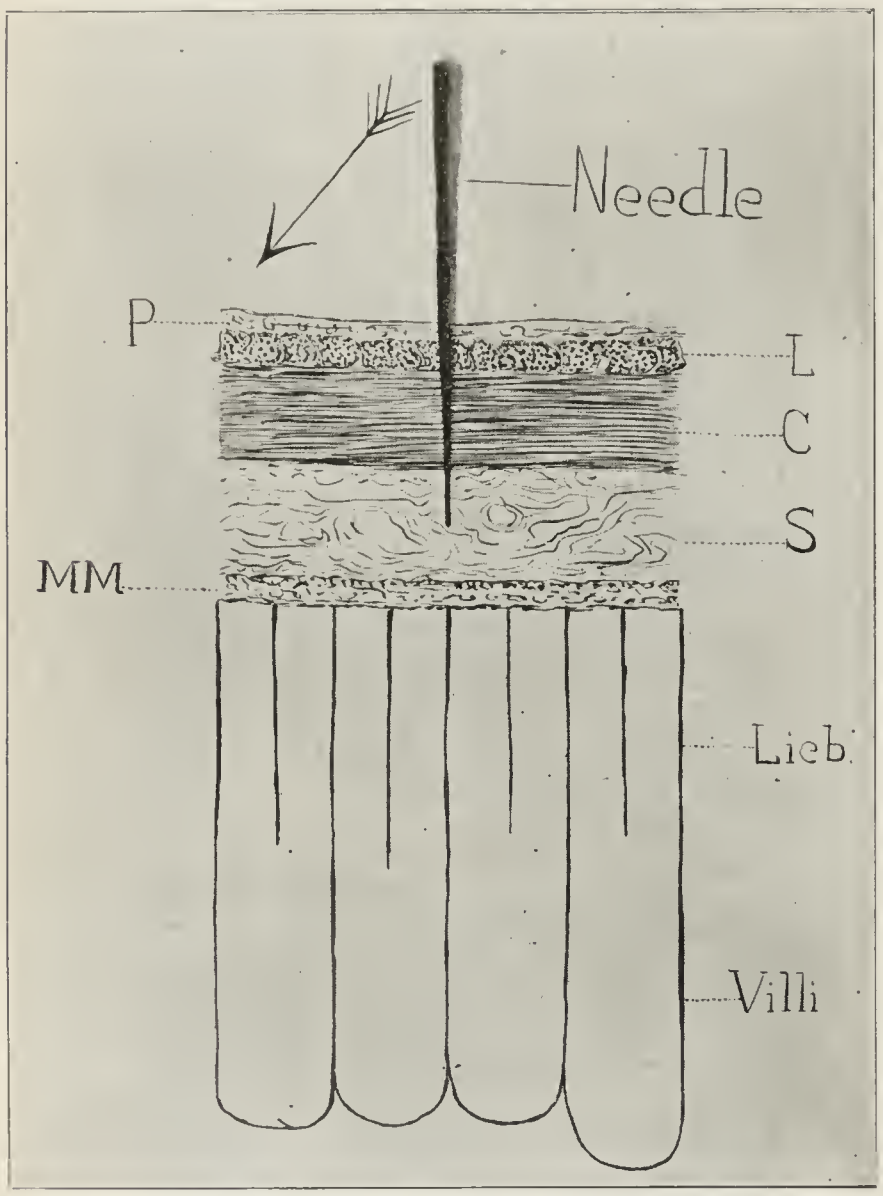


Fig. B.—P, Peritoneum; L, Longitudinal muscle; C, Circular muscle; S, Submucosa; MM, Muscularis mucosa; Lieb, Glands of Lieb. Reproduction of Dr. Halsted's illustration in J. H. H. B., 1891.

These are small, long and sometimes compound, lined with columnar epithelium, the duct of which opens upon the mucosa. These glands are peculiar, in that they are confined to the duodenum, and that the fundus is located in the submucosa. (Fig. A.)

If a stitch enters the serosa of the duodenum, and includes a part of the submucous layer, there is no certainty that it does not pass through one or more of these glands of Brunner. Should this occur the result will be a stitch which penetrates the submucosa, yet communicating with the lumen and knotted on the serosa. Of course, each and every stitch put into the submucosa of the duodenum may not involve the fundus of a Brunner gland. But, not knowing their exact situation, they can not be intentionally avoided. Then as this danger—communication with the lumen—can not be purposely excluded, it is an unsafe procedure to insert in the duodenum stitches which include the submucosa and are knotted on the serosa.

Similarly unsafe, on account of yielding, are stitches which do not include the submucosa. To diminish the first danger—capillarity — and eliminate the second—that of yielding — stitches are used which include all coats and are knotted in the lumen. This will, of course, apply to the operations of pyloroplasty, pylorectomy and gastro-duodenostomy.

Then, to the question—is it possible to introduce a reliable intestinal suture without communicating with the lumen?—the answer must be in the negative, as far as the duodenum is concerned. In the remainder of the intestinal tract there is no objection to the stitch including but a portion of the submucosa, if that be feasible.

Halsted, in his remarks on the importance of the submucous layer, also dwelt upon the fact that for years eminent men had described the Lembert stitch as including but the peritoneal coat. This, he concluded, was impossible, owing to its extreme thinness. The extreme thinness of the submucosa, which is but ten times as thick as the peritoneum (Edmund and Ballance), in turn leads us to doubt the practicability of including but a portion of this coat in a stitch.

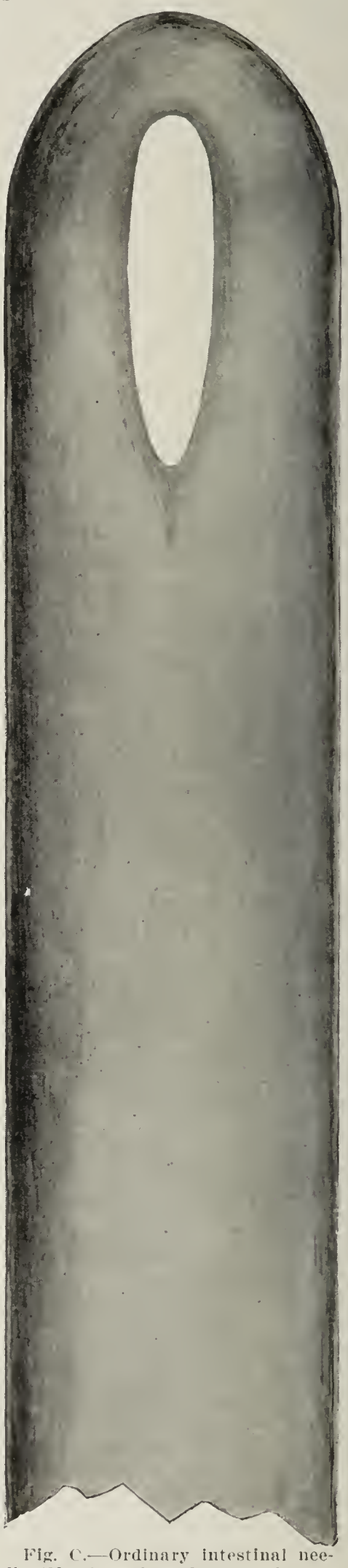


Fig. C.—Ordinary intestinal needle (No. 8), enlarged an equal number of times as is the intestine in Fig. B.

In Dr. Halsted's original article is found a detailed description of the technic employed, which enables one to insert the needle in such a manner that the submucosa is "penetrated, but not perforated."

To elucidate this feat is presented a schematic draw-

ing of the intestinal wall, showing the relative thickness of the various layers, with the needle in the act of picking up a part of the submucosa without going through it. The intestinal wall in this drawing is magnified about 32 times, but the artist neglected to magnify the needle. It thus conveys to the observer an erroneous conception as to the relative proportion between the ordinary intestinal needle and the submucosa.

Figure B is a reproduction of the illustration in Dr. Halsted's article. Figure C represents a No. 8 round sewing needle magnified in diameter an equal number of times as is the intestinal wall of Halsted, and which, if represented at full length, would extend 48 inches, and at its greatest width would be four-fifths of an inch. A comparison of these drawings will give an idea of the difficulty one may anticipate in endeavoring to pick up with a needle that is one-fortieth of an inch in diameter but a part of the submucosa, which, according to Edmunds and Ballance, is 1-250 of an inch thick. There is a proportion of 6 to 1 in favor of the needle.

Finally, in answer to the question as to the possibility of introducing a proper intestinal suture without entering into the lumen, we say that in locations other than the duodenum it may be possible for the most expert, but for the average surgeon such an attempt seems impracticable. Therefore, realizing the importance of the submucous coat, the difficulty of splitting its fibers, and the danger of yielding, on the one hand, if it is not included, and that of capillarity, on the other, if it is perforated, we choose between evils. We decide to run the greatly reduced risk of capillarity, in order to positively exclude yielding with its 25 per cent. mortality, by recommending a suture which includes all coats and is tied on the mucosa. One which can be placed with certainty, and one in which the submucosa is secured in every stitch.

The historical progression of the intestinal suture, with reference to the structures included within the stitch, shows also five stages concomitant with the involution of the knot. They are as follows:

1, the suture including all coats, the knot on the serosa; 2, the suture including peritoneum only; 3, the suture including peritoneum and muscularis; 4, the suture including peritoneum, muscularis and submucosa, and, 5, the suture including all coats; knot in the lumen.

ADVANTAGES.

The chief advantages to be derived by penetrating all coats of the intestinal wall and placing the knots within the lumen are: 1. Less danger of peritonitis, through leakage at stitch hole. 2. No yielding of stitch. And among the other commendable points may also be mentioned: 3. Adhesions diminished. 4. Small diaphragm. 5. Less danger of gangrene. 6. No foreign body; suture material will all pass away. 7. Time decreased.

Leakage.—Clumski, in a recent contribution on the subject of intestinal union, states that in all cases of union by suture alone in which leakage occurred, the seat of the leakage was at the site of the knot.

Yielding.—If the submucous coat is not included in the stitch, yielding is liable to take place. In an effort to avoid penetrating into the lumen, when introducing the ordinary Lembert stitch, one is apt to be overcautious and so fail to include any portion of this layer. That yielding of stitches, from this or other causes, is one of the most frequent factors in failure of enterorrhaphy can be seen from the statistics of Rosenthal, who, in 1892, collected 151 cases of intestinal resection followed by end-to-end union, with a mortality of 42.3 per cent., and 50 per cent. of this rate due to peritonitis. He is reported in the translation by Harris as follows: "The frequency of peritonitis was owing to the escape of feces into the peritoneal cavity, due to the inefficiency of the suture or to fecal accumulation. That perforation peritonitis claimed the most victims is a striking proof of the inefficiency of the present methods of intestinal suture." With a single row of stitches which include all coats instead of two or more rows, each including but a portion of the intestinal wall, the danger of yielding, because of not including the submucosa, is positively excluded.

Adhesions.—Concerning adhesion following an intestinal suture, Halsted says: "The success of any form of intestinal suture is inversely proportionate to the extent of the adhesions which result from the employment of the particular method." The most active cause of these post-operative adhesions are the bulky knots and ends, which irritate the adjacent organs or tissue coming in contact with the site of the union. Such adhesions are quite common when the ordinary suture is used, less so if the mattress suture is employed for the knot is not so prominent as it is when located on the top of the joint, as in the ordinary stitch, and still less common after the use of the Murphy button, Frank coupler, or methods of union in which the knots are in the lumen. It has been said that these adhesions tend to strengthen the joint if they do not form bands, underneath which a loop of intestine could become strangulated. Even if no such grave result follows their formation they may act as a cause of vague, indefinite or perhaps marked uncomfortableness, tenderness or pain, which may do considerable toward producing a condition of chronic invalidism.

Diaphragm.—Diaphragm formation is an absolutely unavoidable result following any method of union which adheres to the Lembert principle, i. e., sero-serous apposition. But the size of this diaphragm may range from one so small as to be practically insignificant, to one of sufficient size to occlude the bowel lumen and cause obstruction. The variation depends entirely upon the methods of union employed and the care with which the technic is carried out. In methods requiring two or three rows of sutures the lumen of the tube will of necessity be encroached upon to a greater extent than it will be by a method in which but one row of stitches is employed. In examining specimens after performing the Maunsell method a marked projecting ridge is to be seen on the mucous surface, at the site of the longitudinal incision, which is closed with Lembert stitches, while at the site of the circular suture it is located with much more difficulty. That this diaphragm is practically the only form of post-operative stricture, and that stricture due to cicatricial contraction rarely, if ever, occurs, has been well brought out by W. A. Evans. That a broad serous approximation is unnecessary has been emphasized by J. B. Murphy in his statment that. "A line of approximation is as good as half an inch."

Less Danger of Gangrene.—The single row of stitches instead of multiple layers is advantageous in that there is no danger of interfering with the blood supply of the inverted cut ends. This fact is emphasized by Maunsell when he says, "A double line of sutures should never be applied in intestinal surgery. It obstructs the circulation too much, interfering with firm plastic peritonitis, and in some cases causing gangrene of the

inverted portion of the gut." And similarly by Senn as follows: "That the second row of sutures in the Czerny-Lembert has often been the cause of gangrene of the inverted margin of the bowel would not be difficult to prove by many postmortem records."

No Foreign Body.—A stitch which penetrates all coats and is knotted on the mucosa will early and invariably pass away. The ordinary intestinal suture including but a portion of the wall and knotted externally, will become encysted and remain as a foreign body or will migrate directly through the intestinal wall into the lumen and pass off with the feces. If it remains encysted, it may give rise to symptoms more or less objectionable, if not dangerous. In this connection Bishop says: "If it is convenient, if not necessary for a stitch to pass away after its mission is completed, it is better that it penetrate all coats of bowel than if it penetrate only peritoneum." Cases are on record in which, at the autopsy six or twelve months after the operation, there has been found the suture, still

results are very encouraging, and it is thought that the method is worthy of consideration.

In the 19 cases on the human being there were 4 deaths, due to the following causes:

In No. 4, pylorectomy for carcinoma, death occurred on the day following the operation, from shock. In No. 9, pylorectomy, with removal of the head of the pancreas, and a portion of the liver, the patient died eight days after the operation. An autopsy in the presence of Drs. Ferguson, Ries and Morgan revealed the line of suturing to be intact. In No. 11, circular enterorrhaphy for strangulated hernia, death followed immediately after the operation, as the result of shock. And in No. 19, pylorectomy, for carcinoma, death occurred from shock within twelve hours after the operation. So it may be said that in none of these four cases can the death be attributed to either the method of suturing employed or the manner of applying it.

Animal experimentation in the original work on this method resulted in 100 per cent. of recoveries. It is

No.	Operator.	Indications.	Operation.	Suture.	Material.	Result.	Remarks.
1	F. H. Martin . .	Fecal fistula	Circular enterorrhaphy.	Continuous . .	Silk.	Recovery .	JOURNAL A. M. A., Nov. 3. 1900.
2	E. W. Andrews .	Benign stricture of pylorus.	Pyloroplasty. . . .	" "	" . . .	"	
3	" "	Fecal fistula	Circular enterorraphy.	" "	" . . .	"	
4	" "	Carcinoma of pylorus	Pylorectomy . . .	" "	" . .	Death. . .	Shock same day.
5	Emil Ries. . . .	Rent in rectum, 4 5 of circumference.	Longitudinal enterorrhaphy.	" "	Catgut . .	Recovery .	
6	W. E. Schroeder	Gunshot wound	Longitudinal enterorrhaphy,	" "	Silk.	"	Eleven perforations: Czerny-Lembert and Murphy button also used.
7	A. H. Ferguson..	Carcinoma of colon. .	Circular enterorrhaphy.	Interrupted . .	" . . .	"	
8	F. G. Connell . .	Fecal fistula	Circular enterorrhaphy.	Continuous . .	" . . .	"	D. A. K. Steele's case.
9	A. H. Ferguson..	Carcinoma; pylorus, pancreas and liver.	Pylorectomy. . . .	Interrupted . .	" . . .	Death. . .	Eighth day; in the afternoon field of operation was perfect.
10	" "	Carcinoma of pylorus	" . . .	" "	" . . .	Recovery .	Smoked pipe on second day.
11	E. W. Andrews..	Strangulated hernia..	Circular enterorrhaphy.	Continuous.. .	" . . .	Death.. . .	Patient in extremis; died one-half hour after leaving table.
12	A. H. Ferguson..	Fistula bimucosa and adhesions to pelvic viscera.	Circular enterorrhaphy.	Interrupted . .	" . . .	Recovery .	
13	E. W. Andrews .	Benign stricture of pylorus.	Pyloroplasty . . .	Continuous.. .	" . . .	"	
14	W. E. Schroeder	Biliary fistula	Longitudinal enterorrhaphy.	" "	Catgut . .	"	
15	H. O. Walker.. .	Chronic invagination of ileum.	Circular enterorrhaphy.	" "	Silk. . . .	"	
16	A. E. Halsted . .	Benign stricture of pylorus.	Pyloroplasty . . .	" "	" . . .	"	
17	F. G. Connell.. .	Fecal fistula	Longitudinal enterorrhaphy.	" "	" . . .	"	Denslow Lewis' case. Tubercular peritonitis and and fistula for one year.
18	W. E. Schroeder	Gunshot wound	Circular enterorrhaphy.	" "	" . . .	"	
19	A. H. Ferguson..	Carcinoma of pylorus.	Pylorectomy . . .	Interrupted . .	" . . .	Death. . .	Shock; twelve hours.

Since this report was presented, this suture has been employed in ten additional cases.

partially attached to the wall, so liable, especially if continuous, to cause obstruction at any time. In the writer's animal experimentation, the suture had always disappeared in all specimens which were removed after the fourth week. In one instance, on removal of a twenty-one days' specimen when flushing out the canal, the continuous suture, entirely free, came away with the débris.

Time Decreased.—In post-graduate work Dr. E. Reavely, Silverton, Colo., has performed an experimental enterorrhaphy in nine minutes. This time including the opening and closing of the abdomen.

At a meeting of the Chicago Medical Society, December, 1900, at which the first case of enterorrhaphy all knots in the lumen was reported by Dr. F. H. Martin, and 4 others mentioned by Dr. E. W. Andrews, it was suggested in discussion "that we be extremely cautious in reaching conclusions on such a small experience." Since that time the number of cases where such method has been employed has increased to 19. This may be a small number upon which to draw conclusions, but the recorded that experimental work in this method by student practitioners at the Post-Graduate School of Chicago yielded but 3 per cent. of deaths. The inexperience of these men in intestinal surgery should be remembered when considering this mortality rate.

The Maunsell method is imperfect in that all knots are not within the lumen. The secondary longitudinal incision is closed with Lembert stitches, and the invagination of the cut ends is many times difficult, dangerous and time consuming. This method is also objectionable in that a circular-loop stitch is employed, which allows a considerable part of the suture material to remain on the peritoneal side of the bowel, and it may not hold the free cut ends in as proper position as will the square-loop stitch.

In order to do away with these disadvantages of the Maunsell method the suture here presented, with all knots on the mucosa, was devised by the author in October, 1898. The technic is described with the aid of the drawings here presented. (Interrupted suture.)

Figure 1 represents the first or mesenteric stitch in place. It is at this mesenteric portion of the bowel that the greatest difficulty is experienced when making an enterorrhaphy by any method. This is owing to the presence of the mesentery, the blood vessels, and, what is of greatest importance, the V-shaped space left by the separation of the two layers of the peritoneum.

This anatomic formation leaves a longitudinal strip of bowel devoid of serosa, over which the peritoneum must be drawn, before a perfect sero-serous union can be secured. This particular manner of passing the mesenteric stitch can be recommended in any enterorrhaphy regardless of the method which may be chosen to close the remainder of the circumference.

To take this stitch the needle is made to enter, from the lumen, the bowel wall of one cut end, perforate all

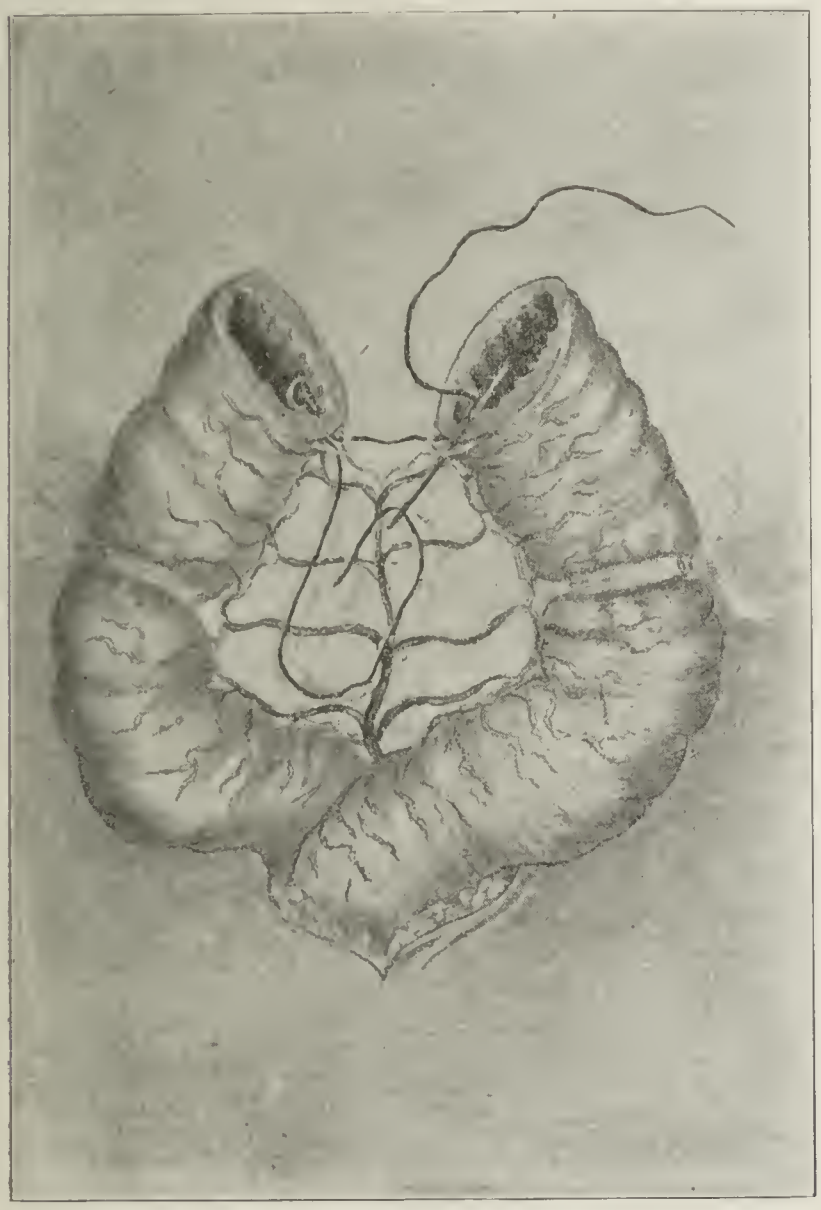


Fig. 1.—Mesenteric stitch.

coats, and pass through the serosa of one side of the triangular space. Then over to and into the serosa of the opposite cut end, at the same relative point—side of the triangular space—then through the wall into the lumen. This completes one-half of the stitch, and is made with one move of the needle. The needle is then reversed, and, at a distance of about one-eighth of an inch, is made to enter the mucosa of the second cut end, pass through all coats of the bowel wall, including the serosa of the triangular space, and then through the serosa of the opposite triangular space of the first cut end, on through the wall into its lumen, where the needle end and the free end of the stitch are tied on the mucosa. This stitch absolutely secures a perfect approximation at this point.

Figure 2 shows the mesenteric stitch as tied. The ends are not cut off at this point, for they can be utilized as a suspending loop, or guy-threads (No. 1). At a point about one-third of the circumference to the right of the mesenteric attachment a similar stitch is inserted, the ends of which are left long to form a suspending loop or guy-threads (No. 2). This stitch is exactly similar in its placing to the first stitch inserted. The needle begins on the mucosa, goes through mucosa and serosa of the first cut end, then enters the serosa of the second cut end and passes through all coats, then returns at a distance of about one-eighth of an inch, passes through the mucosa and serosa of the second cut end, and on through the serosa and mucosa of the first cut end into the lumen, where the knot is then tied on the mucosa.



Fig. 2.—First third sutured. End stitches used as guy threads No. 1 and No. 2.

Guy-threads 1 and 2 are held taut, and the coapted walls are secured by the necessary number of stitches, inserted as the one above described. These loops, or guy-threads, consume no time, as after the ends are cut all that remains is a stitch in its proper place. They hold the intervening portion of the bowel circumference in the proper position, that of sero-serous apposition, so that, in making what we term the square stitch, with one movement of the needle, the mucosa and serosa of one side, with the serosa and mucosa of the opposite side are included. A second movement of the needle includes the same coats in an opposite direction, and completes the stitch to the point of knotting on the mucosa.

Instead of the one-third division of the circumference of the bowel it may be divided into halves. But by dividing it into thirds a full two-thirds can be united by this

easy to-and-fro movement of the needle, while the apposing cut ends are held in coaptation.

There is, then, but one-third to be closed by the final stitches. These are few in number, but they require more movements, and are, therefore, more difficult and time consuming.

If the circumference be divided into halves only one-half will be united while the parts are in the favorable position. Instead of guys of any description the holder of Dr. E. H. Lee may be used. This is a very efficient aid and can be highly recommended.

This rectangular method of suturing, or the square stitch, is to be preferred to the circular. In using a simple circular stitch, as did Maunsell, there is danger of a

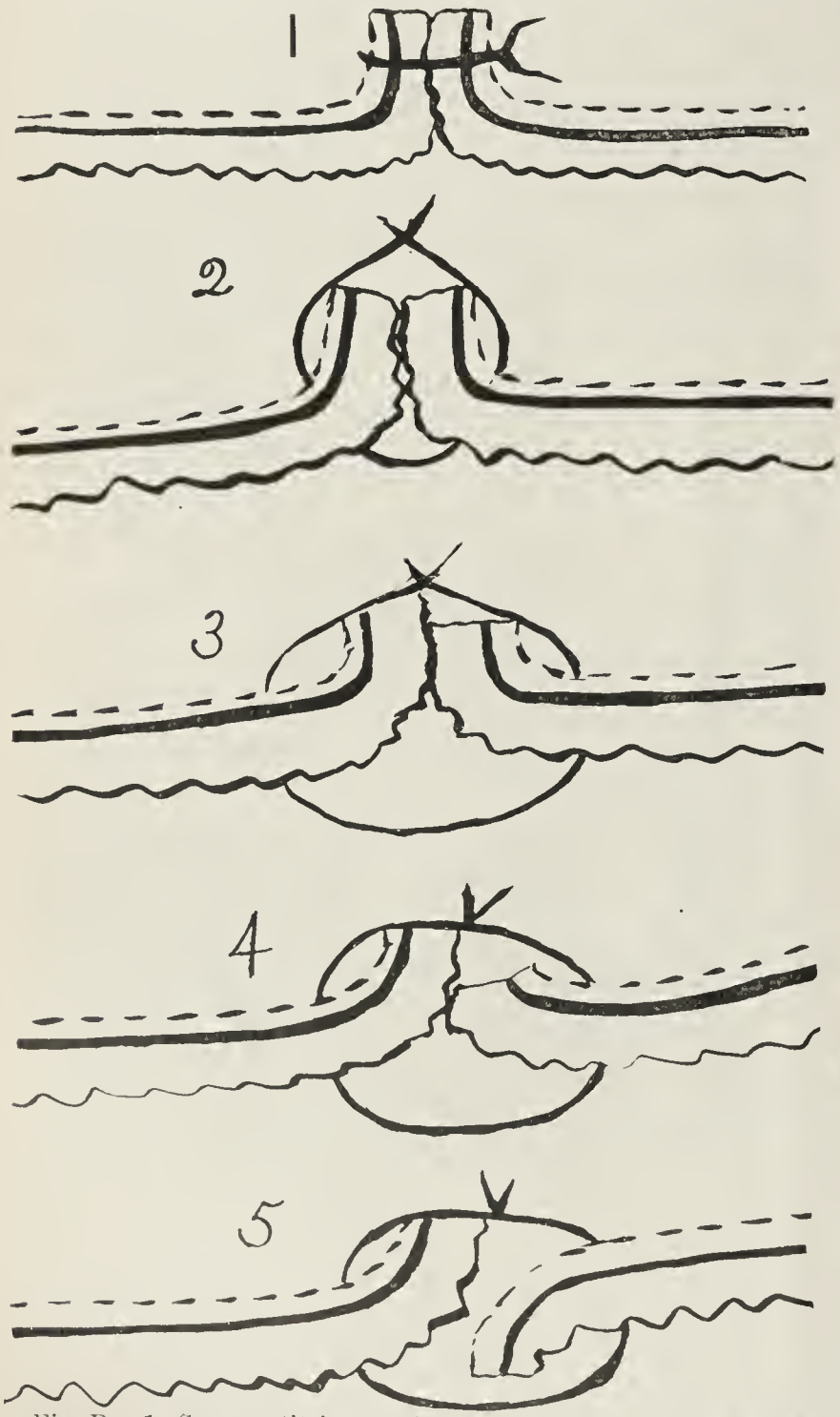


Fig. D.—1. Square stitch, margins can not slip. 2 to 5. Circular stitch, margins can slip.

resulting infection of the peritoneum, because the margins of the gut wall included in the bite of the stitch are liable to slip and lead to fistula, if nothing worse. Or, infection may travel along the suture material to the free cavity, for the external portion of the stitch is not so completely buried between the apposed surfaces as in the square stitch.

The possibility of the cut edges slipping by one another when included in the circular-loop stitch is shown in the accompanying cut (Fig. D).

In Figure D, 2 represents the ordinary circular or Maunsell stitch, including within its grasp the inverted margins of the cut ends; 3 shows the relative position which the suture and bowel ends may assume, owing to pressure or distension; 4 illustrates the condition which may follow if more force be applied to one cut end than to the other; and then if, with a slight aggravation of the cause, the pressure increases, one cut edge slips by the opposite cut edge, and a sero-mucous apposition results, as shown in 5, a sinus connecting the lumen of the bowel and the peritoneal cavity, with a fecal fistula as a very favorable outcome. 1 illustrates that, with the square stitch, such an occurrence can not take place.

Guy-thread No. 2 has been removed; that is, the ends which were left long after tying the stitch at that point have been cut away. And at a point one-third of the circumference to the left of the mesentery a stitch is inserted, tied and the ends left long, as guy-thread



Fig 3.—Second third sutured. Guy threads No. 1 and No. 3.

No. 3. This brings into the proper position for suturing the second one-third of the bowel circumference.

The guy-threads 1 and 3 are now held taut, and the intervening space sutured, as was the first one-third.

The guy-threads 1 and 3 have been cut away, and the intestine will assume its normal position. It will be observed that at this stage a transverse section of the bowel has been transformed into a wound extending but one-third of the circumference, at the convex border.

The most difficult two-thirds of the enterorrhaphy, the mesenteric, has been completed. The remaining convex third must be closed by sutures exactly similar to those used in the first two-thirds. That is, the needle passing through opposite walls in the following order: Mucosa, muscularis and serosa; serosa, muscularis and mucosa, and this same order repeated in the opposite

direction, one-eighth of an inch away. This brings the knot at one side of the union, in the lumen.

Owing to the impossibility of bringing the intestinal walls of this last one-third in the same relative position, that of sero-serous apposition, before the introduction of the stitches, it is necessary to proceed somewhat differently in order to arrive at the same result.

The needle enters the gut wall from the lumen, passes through all coats and emerges from the serosa of one side. It then crosses over to the opposite wound margin and enters the gut wall from the outside; passes through the serosa, the muscularis, then the mucosa and into the lumen. The needle is then turned upon itself and made to retrace its steps at about one-eighth of an inch distant. It passes from the lumen through all coats, emerging on serosa, then over to the opposite

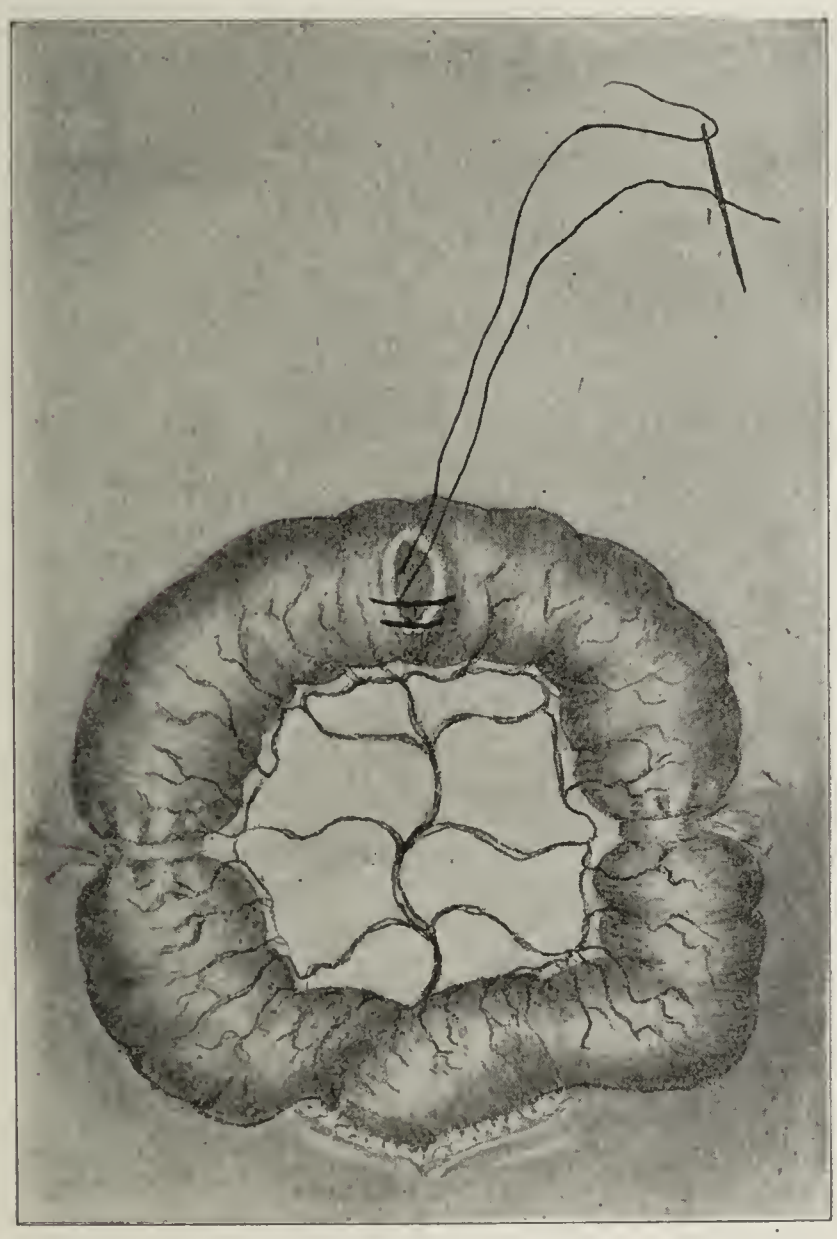


Fig. 4.—Two-thirds completed. First stitch in last third.

side, entering through the serosa, muscularis and the mucosa, into the lumen.

Now after drawing this stitch tense and tying it on the mucosa we have, as a result, the same sero-serous apposition as was effected in the first two-thirds. This step is repeated till the last stitch is to be tied.

On account of the small unsutured space remaining it is impossible to tie this last knot on the mucosa in the ordinary way. This last stitch is inserted in the same manner as were the others in this last third, but its two ends emerge from the mucosa, and out of the lumen through the still unclosed portion of the wound, side by side, ready for tying.

At a point in the line of union about opposite this last stitch a threaded needle is inserted, eye-end first, between two of the previously inserted stitches. The needle eye is passed between the apposed serous surfaces into the lumen, and then out again at the place where the last stitch ends still protrude. At this point we find the two threads which, when tied, will form the last knot. The threaded needle is slightly withdrawn and so forms a loop with its thread. Into this loop are placed the ends of the last stitch. Then, by withdrawing the needle, and in its loop the stitch ends, they will present on the peritoneal coat of the opposite side, at the point where the needle was previously inserted.

Slight traction upon these ends will cause the remaining portion of the line of union to become inverted, and sero-serous approximation will obtain entirely around the bowel. On further traction the bowel will become flattened, bringing the mucous membrane, upon which the last knot is to be located, in

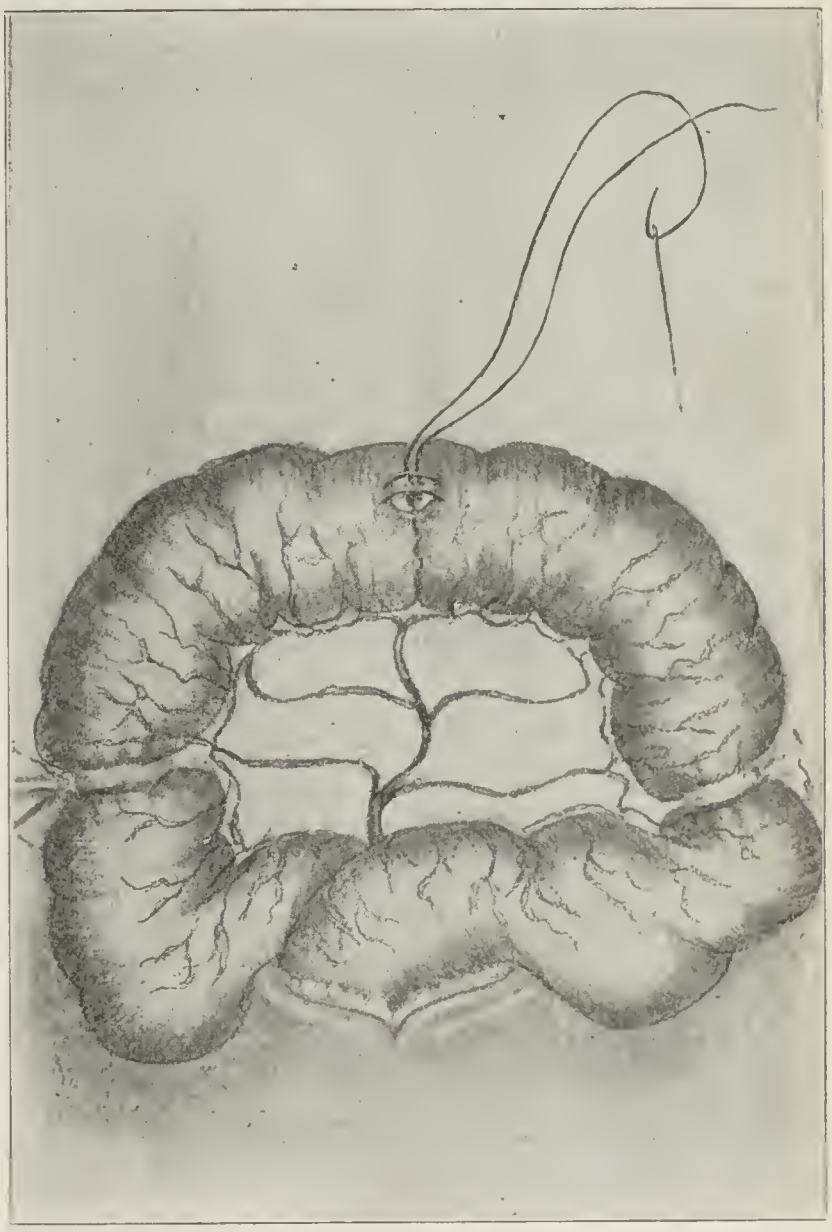


Fig. 5.—Last stitch in last third.

intimate relationship with the line of suture, at the point where the free ends protrude.

The knot is then tied while the bowel wall is in this position, thus not allowing of any slack. While still retaining the tension and the flattened position the ends of the stitch are cut off short, so preventing the dangling of long free ends in the lumen.

Now, upon allowing the bowel to resume its natural contour, that of a cylinder, the knot will slip, between the already tied stitches, into the lumen. And, as it is fastened to the mucosa of the opposite pole of the diameter, it goes with that portion of the bowel wall.

By this procedure the enterorrhaphy is completed, with all knots on the mucosa. The bowel is then washed with hot normal salt solution and replaced in the abdomen.

The drawings here presented demonstrate the use of the interrupted stitch. This was done, because, in all previous descriptions[4] of this method, the continuous suture was illustrated with a view to the time-saving feature. And also, to demonstrate that either the continuous or interrupted suture may be as satisfactorily employed.

This method may be applied equally well in circular enterrorrhaphy, lateral anastomosis, pyloreetomy, pyloroplasty, gastro-enterostomy, and in incised wounds. In fact, under any condition where the ordinary suture may be employed.

CONCLUSIONS.

1. Yielding and leakage are the most frequent causes of failure in enterorrhaphy.

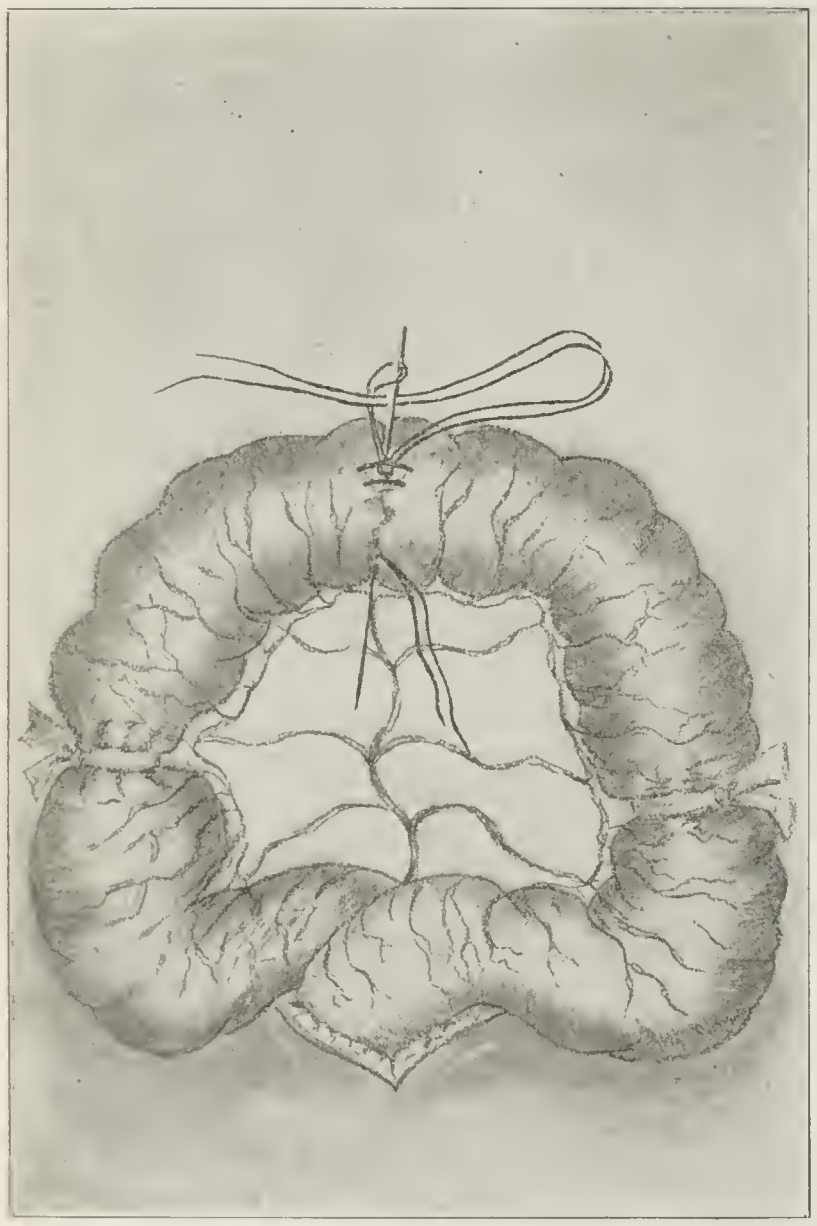


Fig. 6.—Ends of last stitch in loop of threaded needle. Previous to withdrawal.

2. To include all coats of the bowel wall, removes the danger of stitch-yielding.

3. To place the knot within the lumen, diminishes the danger of capillarity.

4. The square-loop stitch is more reliable than the circular-loop stitch of Maunsell.

5. The relative thickness of the needle, and the submucosa, surrounds the procedure of "penetration without perforation" with great uncertainty.

6. To fail to include the submucosa, leaves a weak stitch.

7. To perforate the submucosa is practically to open into the lumen.

8. To penetrate into the submucosa of the duodenum, is practically to perforate the submucosa.

9. It is not only possible, but practical and advantageous, to place all the knots of an enterorrhaphy within the lumen.

10. The ideal location for the knot is outside of the peritoneal cavity.

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4. Connell: Phila. Med. Monthly, January, 1899. F. H. Martin: Journal A. M. A., Nov. 3, 1900. E. H. Lee: Annals of Surgery, January, 1901. Connell: Medicine, April, 1901.

DISCUSSION ON PAPERS OF DRS. DEAVER, LAPLACE AND CONNELL.

Dr. D. A. K. Steele, Chicago—I am glad that there is one hospital in this country where autopsies can be held after each death, even where there are occasional legal complications attending them, because that is the only way in which scientific surgery can make positive advances. All of us have cases of appendicitis that die, and die unexpectedly sometimes, in which it was impossible to obtain the consent of friends to permit

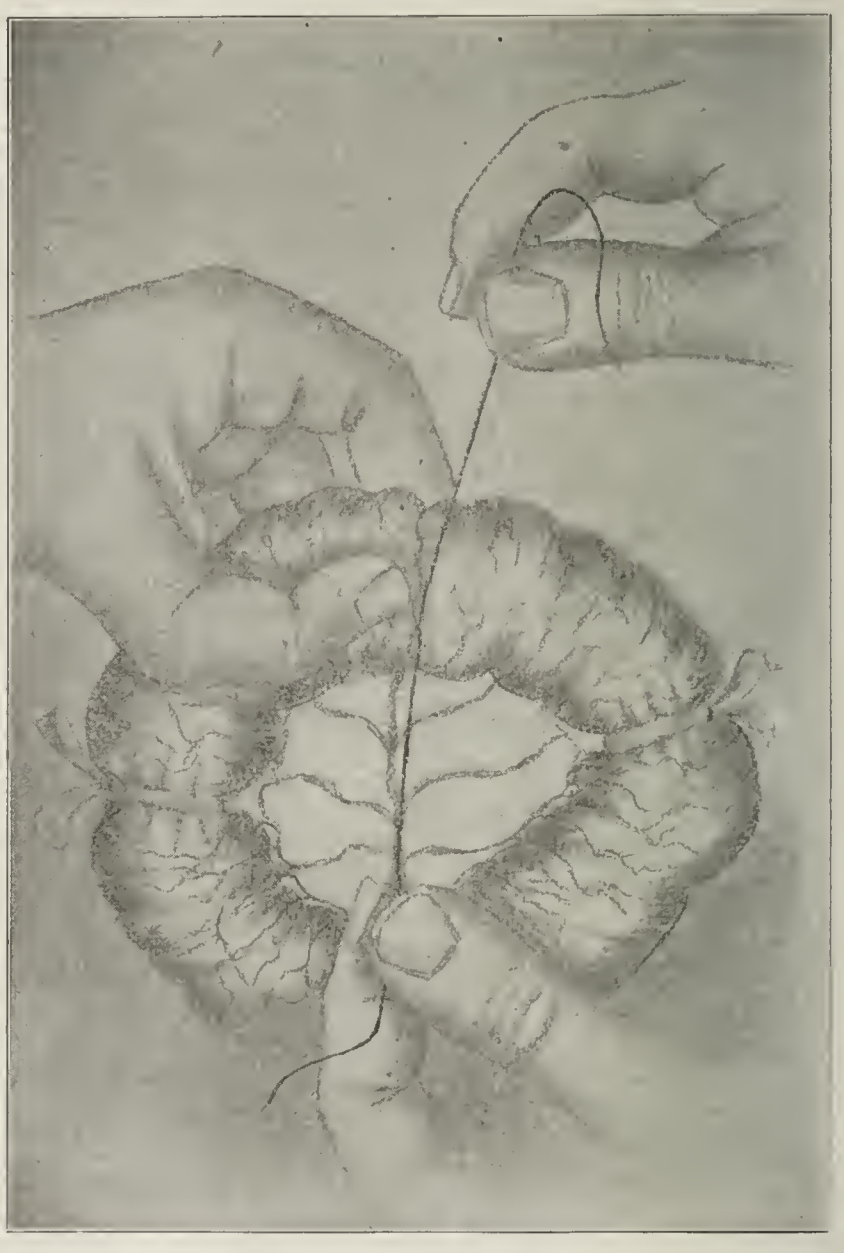


Fig. 7.—Ends of last stitch presenting at opposite side being tied.

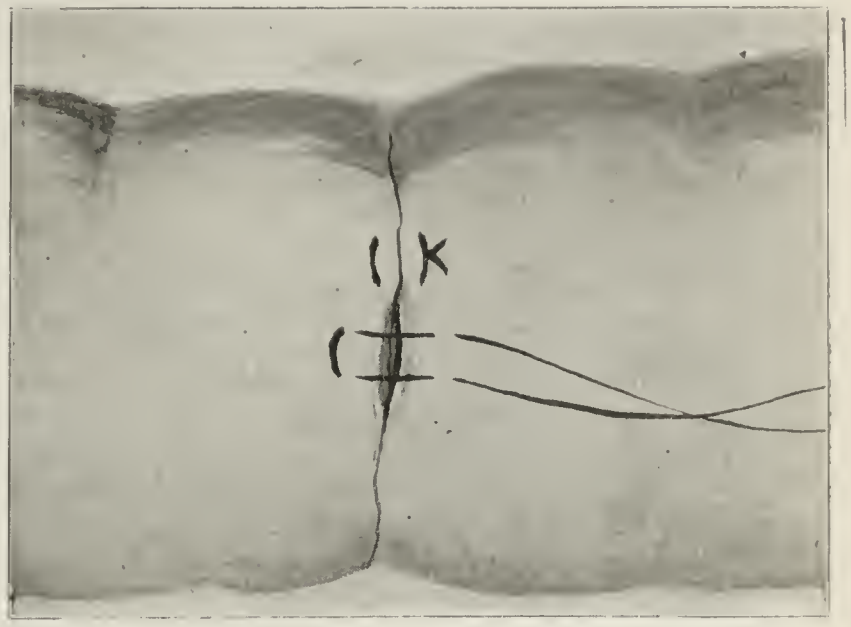
an autopsy, and it places us in the humiliating position of saying, "I do not know why that man died." Dr. Deaver can tell us in all of his cases the "why." I had in my own experience a child of 3 years who was brought to my clinic for the purpose of having an appendectomy done, in the late development of an appendicitis—at the expiration of perhaps a couple of weeks from the time of the pain and tenderness and tumefaction occurred in the region of the appendix, or possibly a little higher, and in which, upon eliciting the history of that child, I learned that the patient had, three months previously, in playing, placed a shawl pin in the mouth and it disappeared. Nothing was heard from it until two weeks before coming into the clinic; pain was located in the appendix, and when the child was brought to me there were the ordinary symptoms of tumefaction, tenderness, temperature and everything to indicate an acute infective appendicitis; but back of this was the history of the disappearance of the shawl pin. Nothing was

discovered and there was doubt as to whether it was in the intestinal tract. The child was so young that the statement had to be taken with some allowance. This was simply opening an abscess, cutting down, slashing into it, putting my finger down and finding the point of the pin projecting into the inflammatory mass. It was a case of perforation of the intestine from the inner side, the pin projecting and an exudate around it. The disappearance of the shawl pin was marked by the disappearance of all the symptoms. I have had no personal experience with continuous irrigation in cases of septic peritonitis. Dr. LaPlace's method is a good one. When we get such good results from normal salt solution in septic joints, why should not the same idea be extended to the abdomen? If we keep continuous salt solution running through, this is the better procedure than leaving the salt solution in and flushing in an upward direction to secure the disappearance of the microbic organisms through the diaphragm. In regard to the paper by Dr. Connell, it is a masterpiece, the reasons he gives for his method of suture, placing knots in the lumen of the intestine where they are harmless, and the correct approximation. The advantage of this method I have had an opportunity of studying in one of my own cases.



Fig. 8.—Last knot has slipped within the lumen. Enterorrhaphy is complete. All knots on the mucosa.

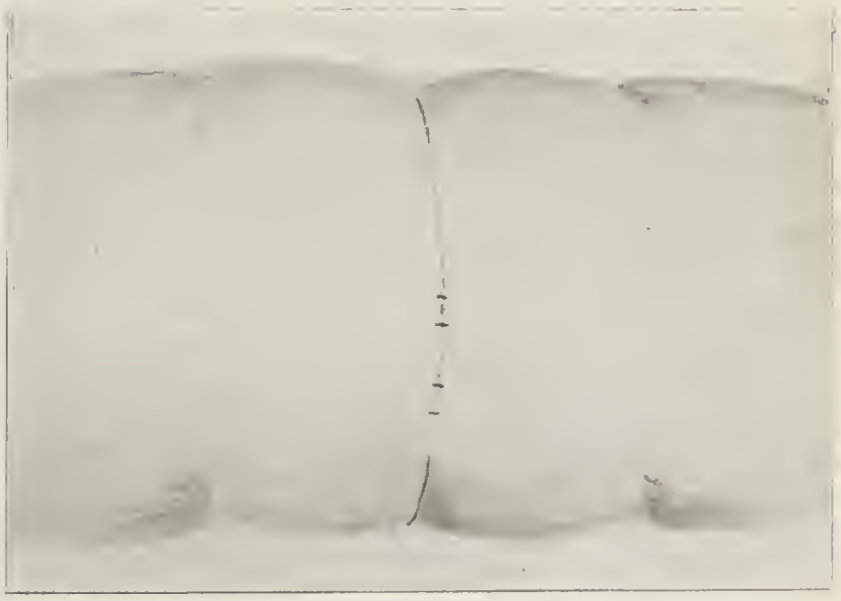
Dr. J. B. Murphy, Chicago—I was very much interested in the paper of Dr. Deaver, and as Dr. Deaver had to omit some parts of his paper, I will ask him some questions concerning the pathologic conditions, not mentioned therein, on which I fear we are not a unit. I wish not only to concur with Dr. Deaver in this particular paper, but also in many which he has read before on this subject. I think the members of the profession owe Dr. Deaver a debt of gratitude that I fear they will never be able to pay, for the work he has done in this line. In the strong stand which he has taken from the beginning as to the relation of the pathologic conditions, with the procedure necessary for their relief and the time in which that procedure should be instituted, Dr. Deaver has been the great leader. Regarding pathologic conditions, I wish to ask Dr. Deaver just what he means by "suppurative peritonitis."



1



2



3

Fig. E.—1. Quilt stitch knot on serosa. 2 and 3. Square stitch knot in lumen.

I am sure that many of the members of this Section who are present do not understand exactly what he means by suppurative peritonitis. I am sure Dr. Deaver does not mean the condition where there is a cream-colored fluid in the peritoneal cavity, with a peritoneum that still retains its luster, for if he did, many men could say, "I have seen many cases of suppurative peritonitis recover." I feel that Dr. Deaver means by an inflammation of the peritoneum that the infection is of the type that invades the serosa. If that is what he means by peritonitis, then I hope we are comparatively a unit; that operations for that type of peritonitis are particularly fatal is known to all. The presence of pus in large or small quantities, with the peritoneum still retaining its gloss, though red and congested, means in this type that the peritoneal surface is not open for absorption of the products any more than an erythematous skin is open to infection. The skin may be congested and the peritoneum congested and still the epithelial and endothelial shingles be intact. If these endothelial cells are intact, I feel that the patient is going to get well, regardless of the quantity of pus in the peritoneal cavity.

There are some other questions that have come to my mind, and I intend to ask the opinion of Dr. Deaver on them, because I am not just satisfied as to what rôle they play. The first is the element of tension in an invaded area. We recognize in general surgery that infection is greatly lessened, the tension is relieved, that is, there is a subsidence of the manifestations of intoxication. Do we relieve all tension by opening the peritoneal cavity and allowing the pus to flow out? Yes, unless the pus is retained in circumscribed pockets. Infection under pressure produces rapid destruction of all tissue by the increased advantage of the biotic and toxic action of the sepsis on tissues depleted by the pressure. The immediate opening and drainage of pus from the peritoneal cavity lessens the liability of destruction of the endothelial cells—the shingles of protection against absorption. Is the drainage always sufficient without irrigation? For my practice I would say, "Yes." The next question is the type of the infection. Do we recognize in peritonitis certain types of infection? Yes. Many times when we open the peritoneal cavity for peritonitis—I mean from the appendix—whether infection occurs through the opening of the wall or through perforation is a matter of indifference if we have the virulent type of infection.

A final question: Is it possible to make a diagnosis of the pathologic conditions within the peritoneal cavity from the symptoms? That is the most vital question from a practical standpoint. I take the stand for myself; I take the stand for our profession; I take the stand for the people, that we can tell from the symptoms neither the extent of the pathologic changes within nor the tendency of these changes. When we assume to do this we put ourselves in the position of judges from the outside, as to whether the pathologic conditions in the peritoneal cavity are going favorably or unfavorably. The greater my experience with acute peritonitis and acute appendicitis, the more certain I am that I am unable to diagnosticate the type and degree from the symptoms and physical signs; the more certain I am that I can not say from the course of appendicitis in the first twenty-four or thirty-six hours, that it will not terminate in that virulent, fulminating appendicitis which every surgeon and practitioner dreads; the more certain I am that I can not say whether it is a staphylococcus, a streptococcus or a virulent type of the bacillus coli communis infection. Many years ago I believed that it was possible for me to say, "This is one type of infection; that is another," but now, with something like 1600 cases of appendicitis operated, I am convinced that it is impossible to say what the type is and what the termination.

When the peritoneal cavity is opened I believe that we can approximately tell from the appearance of the surfaces within, whether the patient will recover. If it is blistered and excoriated to an extensive degree, even with a small quantity of pus, the chances are that the patient will die, drainage or no drainage. While if the peritoneal gloss be retained, no matter what quantity of pus be present, the chances are that the patient will recover with simple drainage. Finally, I feel more strongly the position I took ten or twelve years ago, that all cases of appendicitis are dangerous to life, that in 98 per cent. of cases the infective material is confined within the appendix during the first twenty-four hours, that operative procedures instituted within that time give a mortality of less than 1 per cent., that the percentage of danger from the disease is enormously greater if interference be postponed beyond that period of time, and since my sacred and solemn duty to my patients compels me to treat them by the means which least jeopardizes their lives, therefore—that an operation should be performed within twenty-four hours after the first onset of the symptoms.

Dr. LaPlace's forceps are a matter of no small moment in the technic of enterorraphy. It exactly regulates the degree of inversion of the cutaneous edges of the bowel and gives a firm uniform surface, upon which the suture may be applied. It enables the surgeon to approximate lumens of varying size with an even division of spaces. It can be used for lateral as well as for end-to-end anastomoses. It enables one to control the relative position of the two mesenteric attachments, that is, they are not allowed to come directly opposite each other. When the work is completed the forceps are easily removed and the final stitch placed. Further, it gives assurance that too much of the bowel is not inverted and stenosis will not occur as a sequence of the suture.

Dr. Connell's able presentation of his very ingenious method of suture must attract the attention of every abdominal surgeon. It has in it so many elements that appeal to the thinker on intestinal approximation, and I have found in the use of the suture that his theoretical advantages are sustained in its technical application, as well as the security afforded by it. It gives an exact approximation of the serosa over the entire circumference of the bowel and particularly at the weakest point of all other methods of intestinal approximation, namely, the mesenteric attachment. When the suture is properly applied, and it should never be otherwise, the peritoneal coverings are brought into close contact so as to lessen the liability of leakage at the mesenteric attachment. The suture material is nowhere exposed on the peritoneal side and neither is the final knot. It does not require an additional opening in the bowel as does the Maunsell stitch. The degree of eversion of the edges can be controlled better than with any other, which is an important matter in this work.

The liability of leakage around this suture is very small on account of the manner in which the approximation is produced. The technic of its application is not difficult and I might add that there is no suture of the intestine that can be made without a careful consideration of this method. If suture is to be used at all, I believe that the Connell suture has advantages over any other with which I am conversant. It can be applied to the lateral as well as the end-to-end or the end-to-side. Dr. Connell deserves the sincere thanks of the profession for giving them this accurate method of intestinal approximation.

Dr. E. J. McKnight, Hartford, Conn.—Following in the line of the last speaker, I am a little surprised that nothing has been said about the blood count in cases of appendicitis. In many cases we have in this very positive knowledge. A child 6 years old was taken with vomiting and pain in the abdomen. The case was not considered serious, and when I saw it one week later, at 1 p. m., the vomiting had ceased, the pain had disappeared and there had been several operations of the bowels from salines. The abdomen was distended to some extent, muscles not rigid. There was a case in which I was entirely at sea and relied upon the blood count. There was found to be a leucocytosis of 38,000. I am positive that the methods were accurate. We determined on operating, and the operation was performed at 5 p. m. On opening the abdomen, foul-smelling pus flowed out and the appendix was found to be ruptured and gangrenous; the lower portion of the abdomen was bathed in pus and intestines were congested and red and covered with patches of exudate. The appendix was removed and the abdomen thoroughly flushed, being thoroughly washed out with salt solution, every point of the abdominal cavity

being reached with a glass tube connected with an irrigator. The very slight adhesions that were forming were broken up gently and every part of the abdominal cavity was flushed. There had been a recent case of similar nature, in which a small portion at the back of the meso-colon was not reached for some unaccountable reason. This resulted in abscess, and led me to be more thorough in washing. I saw the patient two days after operation and supposed he would die. I received this morning a telegram from my assistant who said that to all appearances the boy was out of danger. Of course, it is too early to say that positively, but in spite of what has been said about not washing out the abdomen, I feel that the thorough flushing of that abdomen, the positive knowledge I possess that every portion of that cavity was thoroughly washed out, leads me to believe that the patient will recover. As regards continuous irrigation, I do not see how that will accomplish much, for after a short time the fluid may only reach a circumscribed space, adhesions will form and only a small portion of your abdominal cavity is flushed. I relate this case mainly to call attention to the positive information to be obtained from the blood count. Another case occurred in January, in which a young man had had repeated attacks since November, not severe, but which confined him to the house and made him an invalid. The operation in this case was performed when the parts were congested and the adhesions vascular, but there was no pus. On the second day the temperature rose to 100.5 and the next day to 103. I feared that we had infection. There was nothing to account for this. The blood count showed a leucocytosis of 8400. This was taken morning and night and remained the same; the temperature continued about 103 for three days. I feared an infection, but relied upon the blood count and waited. The temperature subsided and the patient made a complete recovery. It was due to an attack of grip. In that case if we had not had positive knowledge from the blood count, we should have been obliged to open the wound with the expectation of finding pus.

Dr. T. J. Maxwell, Keokuk, Iowa—I wish to give my voice for irrigation in general peritonitis and septic peritonitis. I read a paper before the Iowa State Society, four years ago, and one before the American Medical Association, at Denver, three years ago, recommending that plan by introducing a tube under the stomach, and another tube—a discharge tube—from the pelvis, and irrigated continually until all the tendencies to rise of temperature had ceased. I have one case to relate, which I think was saved by that method. This case I operated upon for tumor; the tumor burst during anesthesia, discharging the contents through the abdomen. After three days the temperature began to rise, vomiting commenced, the pulse rose to 130, all symptoms of septicemia were present and I instituted irrigation of normal salt solution, and repeated it every four or five hours for three or four days. With the first irrigation the temperature came down, within an hour, from 104.5 to nearly normal, and the temperature was not allowed to rise above 100 F. after that. The appetite returned, vomiting ceased, the bowels were moved and the patient recovered. The general, thorough irrigation of the abdomen is indicated.

Dr. E. W. Andrews, Chicago—The papers of Drs. Deaver, LaPlace and Connell belong to the type of real contributions to surgery and we are very much indebted to them. Now, this question of irrigation. Dr. Murphy has told us that there was the element of the type of the infection. True enough, but there is one other element, which perhaps he might have added, the element of the length of time of the infection. When we are brought to face this question, why not drain or wash out the peritoneal cavity? Let us see the conditions in this one disease of appendicitis, leaving out of the question the disease we heard discussed yesterday. We have a pus focus on one lower side of the abdominal cavity. We drain. A quantity of pus runs out, fetid or quite clear. How do we know what the conditions are when we find free pus in the intestines without a restraining wall? Can any man say that a collection of pus has invaded all parts of the intestine and smeared the surface of every part of the intestines in that patient? Many times around this area of pus is another zone of sero-pus and serum; I have seen that pus first flows as a milky serum, and finally clear serum flows from a wider zone. If that is true—and certainly on the table we have all demonstrated in these cases where there is no wall—what shall we say about the propriety of flushing out the abdominal cavity? Only this, that as sure as this patient recovers it is because there are one hundred square inches of peritoneal surface which have entirely escaped infection, perhaps entirely escaped the contact with fluid. Pus or extravasated matter may lie in contact with the peritoneum a few hours and not cause fatal peritonitis. We see it in gastric ulcers, where we see operations in extravasation cure 80 per cent. of cases in the first operated upon in the first twenty-four hours and 20 per cent. of the cases operated upon later.

What of the possibilities of recovery after leakage into the peritoneum? All cases which recover in so-called septic, generalized peritonitis are cases in which at least a part of the peritoneal cavity has escaped contact and every case in which all surfaces were inflamed dies. What is the bearing of that on the question of flushing out? We fill the peritoneal cavity with water, and by that means disseminate the infection to every remote part of its surface. I say no. I can cite as many cases on the other side as Dr. McKnight has cited here—recovery under simple drainage the moment the pressure is relieved. Out flows the pus and in spite of the demonstrations of Dr. Clark, the current is towards the drain. I have had many more recoveries since I have used the Fowler position; I have used it in four or five cases since the first of January, after operations in which pus was present without adhesions. Under that treatment recoveries have taken place in my practice in a way totally unexpected to me, and in which I have never seen before under any form of treatment.

Dr. Connell's paper has interested me greatly. I see that the paper deals apologetically with the question of perforation of the mucosa. When you scrutinize this question, think of what it means. Does not the world-wide known device, the Murphy button, do the same thing? What do we have there? We have the button in the mucosa, approximating two serous surfaces. Take, for example, what to my mind is the next best suture in enterorraphy—the Maunsell operation. It is a very satisfactory operation, but one in which absolutely the suture passes cleanly through from serosa to mucosa. The Connell suture passes from one side to another, but it does not leave any portion, not even the final knot outside of the peritoneal cavity. Having done both operations a number of times, I have noticed this distinct difference between the Connell final stitch and the Maunsell—with the latter the stitches are distinctly seen after the knots are tied. At every stitch you see a little danger point, the crossing of the silk thread; in the Connell stitch the enfolding of the serosa hides the stitch. Dr. Connell's paper did not describe his operation, and, therefore, to those who are not familiar with it it is exceedingly unsatisfactory. The Connell stitch has this merit, which it has in common with all the best of modern gastric and intestinal work, namely, it is a continuous stitch. I believe the continuous stitch is the secret of success in suture work in the bowels and intestines; more than that, it has precisely the merit of the Murphy button, in that it is practically a clamp. When the Connell suture is put back and forth, through and through, holding these inverted edges together, it is a clamp. Dr. Connell has kindly reported five of my cases. I had his assistance in the first one or two. I had also been taught to do it upon the gloved finger and upon the dog.

Dr. M. L. Harris, Chicago—I wish to say a few words on the point brought out by Dr. Murphy, namely, are we able to diagnose the condition within the abdomen? I say most emphatically that we are not able to diagnose the condition and that many times it is impossible for us to form any conception of the true condition to be found, either within the appendix or within the peritoneum by our present means and methods of diagnosis. The question of leucocytosis, brought out by Dr. McKnight, is unquestionably one of value, but in the cases where we need it most it fails us and is of little diagnostic importance. In the fulminating cases we find that the system,

for some reason, is so overwhelmed by the intoxication that leucocytosis absolutely fails. There is no increase in the number of leucocytes, in fact, they may even be diminished. Again, in many of the mild cases which are apparently progressing favorably, so favorably that we may be in doubt as to the best course to pursue, there may be no leucocytosis, still we may open the abdomen and find a large appendix distended with pus on the verge of rupturing, or an ulcer which has extended to the peritoneal surface and would unquestionably perforate in a few hours and produce acute infective peritonitis. In these cases leucocytosis fails us; it has not yet taken place, and it is impossible for any one to determine these conditions before the abdomen is opened. As with Dr. Murphy, I have had three such cases recently. Two of the cases were of a mild type, in which perforation was imminent and in which there was scarcely a symptom, except the mild tenderness to indicate that the patient had an appendicitis. Still, perforation would unquestionably have taken place within a few hours and acute infective peritonitis would have been precipitated. It is impossible to determine before opening the abdomen in many of these cases the conditions to be found in the appendix or peritoneum. When one has operated on fifty cases of appendicitis he thinks he knows something about it, when he has operated one hundred cases he doubts, but when he numbers them by several hundreds he knows that he knows little or nothing about the conditions which he will find when he operates. The point then, which we would make is that we can come to no other conclusion except the fact that, as soon as a patient presents symptoms of appendicitis, the safest course is that of immediate operation. We do not question for an instant, nor does any surgeon, that the large proportion of cases of appendicitis would recover from the attack without an operation, but it is those who do not recover that we are trying to save, and those who did not recover without operation if they had come to the surgeon and were operated early, ninety-five out of one hundred would recover.

DR. JAMES E. MOORE, Minneapolis—I differ from my esteemed friends, Drs. Deaver, Murphy and Harris. I agree with Dr. Deaver that when the patients are under his care and in his hospital that they ought to be operated upon just as soon as the diagnosis is made; but I maintain, as a teacher of students and as a practitioner of surgery, who is to-day talking to many general practitioners, that the doctrine that every case with a diagnosis of appendicitis must be operated at once is pernicious and dangerous. If that doctrine is to be taught to our students, laid down as strongly as Dr. Deaver always does lay down everything, he will feel it his imperative duty when he has a patient out in the backwoods to advise operation when he has no skilled surgeon at hand to operate; the consequence will be that country graveyards will be filled with cases of appendicitis that might have recovered had they been let alone. We are all extremists in some things. Dr. Deaver claims to be one, and I understand he prides himself on being an extremist in this matter; but if you will stop to think, you will agree with me that we do not look for the best of anything from extremists. We must have these extremists. They are useful to point out to us that happy middle ground that is always the safest. We can not lay down hard and fast rules of anything in surgery where human life is involved. I maintain, therefore, that these men who assume this extreme position are teaching a dangerous doctrine. You will notice that they are men whose experiences are in the hospitals in the large cities. To those of us who are in cities like Minneapolis, where there are only two hundred thousand people, things are looked upon differently. In the country you are held responsible individually for these things, and you must recognize the right of your patrons to an opinion. You can not lay down hard and fast rules; you must give certain medicines or give the knife. And, while I admit with Dr. Harris and others that you can not tell what is inside of the abdomen, I maintain that if every case is operated on under all conditions and by every man who has a diploma, the percentage will run greatly above 17 per cent., which after all is not so very much lower than the "let-alone" treatment. With reference to the removal of the appendix in every case operated upon, I would draw that same line, making it depend upon the experience of the operator and the environment. I am in the habit of telling my students, "When you begin your work you will probably have to make an opening there big enough to get your hands and feet in to find anything you are after. If you see the appendix and feel it, take it out, but don't go pawing around for it." On the other hand, I am sure that most experienced surgeons will remove the appendix in the vast majority of cases. With reference to the blood count. I was very enthusiastic at first, and I had my internes working on it constantly, but I have got to the point where I only want it in certain few cases, but ordinarily it is a disturbing element. It does not give me positive information when I need it most, and many times it gives me information supposed to be positive that is misleading. In some cases with great pockets of pus we do not get sufficient leucocytosis to demand operation. Many times we get a marked leucocytosis with a simple catarrhal appendicitis.

DR. ROBERT T. MORRIS, New York—It seems to me that we ought to adjudicate the term "extremist." It is a matter of the application of the word. When a visitor in my barn, looking over my Jersey stock, drops a match in the hayseed on the floor and the match is still burning, I am an extremist on the subject of putting out that match and I do not care who calls me one. It is a question of understanding the subject with which we have to deal. With appendicitis we are dealing with an infection; no one can tell the limits of it any more than you can tell the limits of the match in the hay on my barn floor. It may go out. I have seen them go out before I could get to them, and I have been saved the trouble of operating on that match. I agree with Dr. Moore's position on most of the points, but we must make our position more clear by saying that we are to teach our students principles, just as the law class is taught principles. Can we say to the law class: "You men, half of you, are not to be taught principles in law because you will go out and get your clients in trouble. Your clients are going to lose estates and this widow is going to lose all that belongs to her. You are going to get your clients into trouble if I teach you principles!" The law class is to-day taught principles and the medical class is to-day taught principles just as the law class, and we are to explain the reasons why cases of appendicitis are to be operated on as soon as a diagnosis is properly made. I would emphasize one point particularly. I assume the diagnosis is made by men who are qualified to make it and that it is properly made, and then, it seems to me, our line of action can safely be left to the judgment of men who are graduating from the kind of schools in medicine that we believe in to-day.

Another point—Dr. McKnight's leucocytes. This is a matter of much collateral interest—the blood count—but it is not one of determining interest. I will not go over the ground that Dr. Harris covered, except briefly to state that all of his points were those of a practical man, and I agree with all he made. Many of our most violent cases have not had time to develop a leucocytosis. When a concretion is about to perforate the wall of the appendix, we have a marked spasm of the muscularis of the entire bowel, a definite progressive appendicitis, and yet little to stimulate development of the leucocytes, a development of leucocytes which would determine the question as to whether we are to operate or not. We must determine that point from our other sources of knowledge and must look upon the blood count as a scientific, valuable addition to our knowledge of the phenomena occurring in the course of these cases. This keeps me still on the point of leucocytes, and Dr. Deaver's and Dr. LaPlace's papers both bear on this point. It seems to me to-day that our whole plan of action in the treatment of appendicitis consists in forming a strong alliance with the leucocytes. We are dependent upon leucocytes to-day for our help in trouble. Anything which shocks the patient interferes with his development of phagocytes. The thing for us to learn to do in the treatment of appendicitis, with peritonitis—grave septic complications—is to let the patient alone as much as possible when operating and allow him to develop his phagocytes. If we introduce continuous irrigation, I am

afraid that we are taking some of that patient's strength. If we use gauze packing extensively, I am afraid we are taking some of the strength that is required for manufacturing the leucocytes. If we make multiple and extensive incisions, with wide flushing of the peritoneal cavity, we are using up the strength that the patient requires for manufacturing leucocytes. Leave him alone as much as possible; allow him to manufacture his phagocytes. That is the line of treatment today; that is the line of treatment that is to give us our best statistics. It certainly has in the hands of some men. It certainly is a matter to be determined, after all, by statistics. We do not care for this or that man's theory, so long as his statistics show his experiences are right. The matter of blood washing is more important than the matter of peritoneal washing. I believe, in short incisions, rapid washing out of the chief toxin-collection of fluid with hydrogen dioxid washing, without gauze packing, without extensive drainage, leaving some pus often, but giving exit to the chief toxin-bearing collection, and letting the leucocytes manage the rest. Clark's position was the opposite of Fowler's, yet Clark's statistics were the best we had up to the time of the presentation of Fowler's paper. Clark placed the patients with hips up and allowed them to drain through the diaphragm. Fowler drains the other way, but we know that both plans have their good points and have given remarkably good data. Back to the point of blood washing. These patients are loaded with toxins: their sympathetic ganglia are poisoned with toxins circulating in the blood. If we distend the blood-circulating channels with salt solution, fifteen hundred cubic centimeters at a time of physiologic salt solution, many of these patients who are going down, hour by hour, a little worse, worse to-night and worse to-morrow, and to die on the following day, will turn instantly for the better in fifteen minutes after you have distended their blood vessels with physiologic solution, because the toxins are being eliminated by the emunctories. The dull eye and the thirst change, not to-morrow, but in ten minutes after you have done this, and I do not know why it is forgotten by so many who know so well the points in washing out the blood, by the method of injecting salt solution into any available vein; it excites the emunctories to rapid work and causes the elimination of toxins circulating in the blood.

Dr. F. D. Smythe, Memphis—What should concern us most as surgeons should be the consideration of those principles that will save the greatest number of patients suffering from this disease—appendicitis. I do not think that we should be handicapped by the consideration of a procedure that would cause additional delay in according these patients the proper treatment, which treatment is surgical if seen at the outset by a surgeon. No one questions that the ideal treatment in all cases of appendicitis would be immediate operation after diagnosis, if made by a competent man. If this practice could be carried out we would see none of those conditions described, such as peritonitis, extensive suppuration with perforation of the intestines, resulting fistulæ, etc. It is an operation unattended with danger if performed by a man who knows what asepsis and careful technique are, and the resulting mortality could not and would not exist. We can not be held responsible for those cases which are brought to us suffering from septic peritonitis—operation here does no good; they will die with or without an operation when permitted to go this far. Fulminating cases are, as a rule, not benefited by late operation. Here operation must be performed at the very outset if we expect to accomplish anything by it. The successful treatment of appendicitis depends upon its early recognition and prompt surgical intervention. One point with reference to drainage. I am satisfied that a few cases of appendicitis have been saved, with suppuration involving a large area in the right lower quadrant, by making a counter opening in the loin. It is indicated in cases where the appendix points upward, in order to establish more perfect drainage a large rubber tube is drawn through, maintaining thorough drainage; this would not be attained if gauze packing or the mere insertion of the tube were depended upon. This procedure has served me well on all occasions where its employment was indicated.

Dr. John B. Deaver, Philadelphia, in closing—I am delighted with this discussion. It is the best on appendicitis that I have ever heard. I feel that if I should sit down and say nothing more, that this fifty-second session—and especially the surgical section—would go down in history. I feel that I have consumed too much time. Dr. Steele, Chicago, said he was not fortunate in making postmortem examinations. What is wrong in opening your wound and saying nothing to the members of the family? That is part of the operation. Dr. Murphy, Chicago, raises the question of peritonitis where we have an eroded peritoneum reddened and excoriated. It is beyond the aid of mortal man to be of any assistance. Therefore, always at the operating table I class these cases among the fatalities at the time of the operation. I believe much is accomplished in the way of relief from tension. Another question Dr. Murphy asked me was in regard to cases where the pus was creamy yellow—I would call these cases general infective peritonitis. These invariably get well. I have a number that my house doctor in the German Hospital operated on during that stage and all have gotten well. I have never lost one as yet when I have gotten them early. Dr. Murphy also remarks as to the type of infection. That is most important. It is not necessary for me to go into an examination of infection by the colon bacillus, staphylococcus, etc. With Dr. Murphy, too, I am sure no one can tell what is going on inside of the belly cavity and these fulminating cases of appendicitis mislead us if we delay the operation. The only sign, if I would call attention to it at all, that makes me fearful of the condition inside of the belly cavity, is pronounced general rigidity of the belly wall. When I see a patient with the belly walls like that table, on which I can not make any impression, in perfect health, has a normal temperature, but an increased pulse rate, with a history of sudden onset and abdominal pain, I am always apprehensive of that result. Anesthetize those patients, and, if under the effects of ether that muscular rigidity does not entirely disappear, that suffices oftentimes to bespeak the condition we will meet with inside of the belly cavity.

In reply to Dr. McKnight, who raises the question of blood count. There is much to be said on the blood count. I do not believe delay should be permitted on account of it. I believe that we should operate, then make the blood count, if time is of any question. I believe, too, in the presence of gangrene, that leucocytosis is dangerous as a guide, because it is unreliable. Irrigation in general peritonitis, if it is the type that Dr. Murphy referred to, does not mean anything, and, with Dr. Morris, I believe that the less you subject the patients to the resisting power of additional attacks, the better likelihood of the outcome.

The question of Fowler's position—I have used it ever since Dr. Fowler described it and with happy results.

To my friend, Dr. Moore, I will say that we have to be careful in the handling of students, but, at the same time, truth is mighty and must prevail. The teacher that stands before a body of young men, who are going out to meet the responsibilities of a doctor's life, and teaches them the doctrine that Dr. Moore brought forth here, will be the means of erecting many an appendiceal tombstone. Give us teachers who have the courage of their convictions. I feel very strongly upon this point, for I feel that it is absolutely wrong to appear in any but the proper guise. Therefore, I am firmly of the opinion that an early operation is the *sine qua non*.

Success of Sclavo's Anti-Anthrax Serum.—The *Gazetta degli Ospedali* states that eight persons were taken sick after eating meat from a steer that had died from anthrax. All promptly recovered after treatment by injections of Sclavo's anti-anthrax serum at the Siena University Clinic. Fourteen other persons in a similar epidemic at Santa Croce were cured by the same means, and others at Castel and Colle Val. Alberto describes in detail in the issue for September 1 another severe case cured by the serum six months after the date of manufacture. Sclavo offers his serum free of charge to physicians on request.

MODERN ASPECTS OF CONGENITAL OSSEOUS MALFORMATIONS.*

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The most frequent abnormality of the upper extremity is polydactylism. If there is but a rudimentary finger attached loosely by a pedicle which does not contain any phalanges at all, removal is simple.

In Case 1, illustrating a boy of four months, the supernumerary digit, as shown by the skiagraph, contained no bone-tissue. (Fig. 1.) Removal was naturally easy. In the same case there was a partial fusion of the third and fourth metacarpal bones, a condition which would not have been diagnosed without the Roentgen rays.

Case 2 represents the more complicated type of true supernumerary digits articulating with each other. There was also a supernumerary digit attached to the little toe. (Fig. 2.)



Fig. 1.—Non-osseous supernumerary digit and synostosis of third and fourth metacarpus.

Case 3 shows a true supernumerary phalanx attached to the thumb and articulating with the first metacarpal bone. It is nearly as large as the normal phalanx and possesses a well-developed nail. It is held in abduction.

Case 4 illustrates the complicated type of syndactylism in a boy of four months. The parents are in good health and emigrated from Hungary eight years ago. The second, third and fourth digits appear to be fused together, each one of them, however, possessing its own nail. The skiagraph shows fusion of the first and second phalanges of the third and fourth digits, while their third phalanges are free. The little finger is more developed than the slightly deformed thumb. The carpus is not ossified yet, and shows no shadow therefore. Under the guidance of the Roentgen rays it was easy to divide the phalanges. The middle finger was protected by a large longitudinal flap taken from the dorsum manus. The other two fingers were covered by their own integument, longitudinal flaps being formed from the palmar surface for the second finger, and another from the dorsal aspect of the fourth. The final result is good.

In syndactylism the Roentgen rays always prove whether its nature is cutaneous or fibrous or osseous.



Fig. 2.—Supernumerary phalanx of the left little toe.



Fig. 3.—Congenital fracture of radius and ulna.

Case 5 shows congenital exostosis in the second phalanx of the index finger in a boy who was born in Germany nine years ago. The family history showed nothing abnormal. The Roentgen rays demonstrated the benign character of the osseous growth clearly. In view of the presence of functional disturbance removal with the chisel was undertaken.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

Congenital deficiencies are naturally much less amenable to corrections. But that even in desperate cases of this kind surgery is not without resources is made evident by the transplantation of a toe to the hand, successfully undertaken by von Eiselsberg.

It seems to me that this special branch of surgery is too much regarded as a stepchild. Considering that in the lower animal, as long as in the embryonic stage, regeneration of large portions of the head and trunk are possible, it should be expected that the new-born child—in a smaller proportion, of course—also offers more changes for regeneration than the adult. If the germinal layer is only present, further development of tissue can be looked for. If a part of a phalanx is properly severed, its individualization is a matter of great probability, provided the bridge remaining has preserved sufficient vascularity for nutrition, that there is no overextension



Fig. 4.—Congenital absence of the radius and ulna.

of the flap and thorough aseptic precautions are taken.

Fortunately, the Roentgen rays are predestined to give an impetus for a new operative strategy in this much neglected field. Thus, in a case of brachydactylism, combined with electrodactylism, the Roentgen rays proved to be of great value. In Case 6, that of a boy three months, there were five rudimentary fingers. The skiagraph showed the presence of one phalanx of the thumb and of two phalanges each of the other fingers. The child was the first born of German parents, who emigrated five years ago. The mother is healthy. The father was suffering from tubercular knee at the time of the birth of the child, and died from general tuberculosis a year afterward.

Under the guidance of the Roentgen rays I performed a flap operation on the principles set forth in Case 4, between the first and second finger-rudiment. Thus a fairly good thumb was created. The case, however, offers two more points of interest. In the first place there was congenital fracture of the ulna and radius at



Fig. 5.—Skiagraph of Fig. 4.

their lower third. (Fig. 3.) The forearm could be bent easily at the seat of the fractures. After wiring the fragments union became perfect. There was, furthermore, congenital constriction at the region



Fig. 6.—Congenital absence of metacarpi and phalanges of the second, third and fourth fingers.

of the surgical neck of the humerus, where a deep furrow encircled the whole circumference of the arm. Palpation was unable to detect any soft tissues between the integument and bone. An exploratory incision revealed the presence of the fragments of the

biceps, triceps and deltoid muscles. Their edges were refreshed and united with catgut. For relaxation, two deep wire sutures were introduced from without. The result is fair according to the last report, fourteen months after the operation.

It may be added that the otherwise well-developed right hand shows a moderately deep constricting furrow near the metacarpophalangeal junction of the middle finger, which did not seem to demand surgical interference.

Case 7 shows congenital club hand associated with absence of the radius and ulna. That there are only three fingers is shown by the photograph (Fig. 4) and that but three metacarpal bones are present becomes evident by the skiagraph. (Fig. 5.) The patient is a boy of six weeks, born in New York. The family history is good. The parents emigrated from Italy two years ago. The father



Fig. 7.—Congenital scapular asymmetry.

is 66 and the mother 41 years old. Both are in good health. There are three previous children, all of whom are well. The left arm of the boy is normal, with the exception of the thumb, which is partially ectrodactylic, like the thumb reproduced in Fig. 3. The muscles do not show any atrophy. Extension and flexion of the wrist was possible to a moderate extent.

I attempted to improve this deplorable condition by creating a thumb after the principles carried out in Case 6. For this purpose a dorsal incision was made down to the first metacarpal bone, which I divided longitudinally, thus making a kind of bifurcation. The phalangeal end was severed entirely, but the carpal end, after being longitudinally fractured, was left in slight connection with the metacarpal bone. Thus a new bone was obtained, which was surrounded by dorsal as well as palmar flaps. How far this new fourth finger can be utilized can not yet be known, the child still being under treatment. The skiagraph shows its position. The treatment of the club hand by osteotomy and



Fig. 8.—Congenital absence of one metatarsus and corresponding phalanges.



Fig. 9.—Congenital shortening of the right femur.

reversion of the abundant skin to the opposite side will be attempted later on.

Case 8 represents a boy of three weeks, born from healthy German parents, who shows neither carpal nor metacarpal bones. There are three phalanges at the

ulnar and two at the radial side, the latter undoubtedly representing the thumb. (Fig. 6.)

Case 9, which was observed before the discovery of the Roentgen rays, may be added in view of its rarity. It represents congenital absence of the arms and forearms. The clavicle as well as the scapulæ were normally built, but of smaller size. Neither the glenoid



Fig. 10.—Congenital hypertrophy of toes.

cavities nor the coracoid processes could be made out well. Instead of the round shape of the shoulder an angular prominence is noted. Adjoining the ribs a small bone could be felt below them, which might have indicated the rudimentary representations of humerus and antibrachial bones, but their nature could not be clearly defined. To this the rudimentary hand was at-



Fig. 11.—Congenital dislocation of both hips.

tached, which contained five fairly developed fingers, provided with nails. The metacarpal bones could not be made out distinctly.

The patient, a boy, born in New York, was ten months old when the photograph was taken. The parents emigrated from Germany fifteen years before the birth of the child. Both are fairly well, but poorly nourished. One sister died from meningeal tuberculosis. Two brothers and one sister are alive and healthy. The patient died from dysentery when a year old.

Case 10 shows congenital scapular asymmetry in a girl of 11 years. (Fig. 7.)

Case 11 (Fig. 8) shows the presence of four metatarsi and their corresponding phalanges only, in a girl of



Fig. 12.—Congenital absence of nasal bones and insufficient development of nasal processes of supra-maxilla.

seven weeks. The family history revealed nothing abnormal. There is no functional disturbance.



Fig. 13.—Skiagraph of Fig. 12.

Case 12 (Fig. 9) represents the lower extremities of a boy of three weeks. The left extremity is normal, while the right one shows shortening of the femur to the extent of an inch. There is no muscular atrophy. Whether intrauterine fracture of the femur was the cause of the

shortening could not be elicited. From the study of the skiagraph it seems to me to be improbable. Shortening of the healthy femur for the purpose of equalization was considered. The degree of functional disturbance can, of course, not be estimated yet.

Case 13 shows congenital hypertrophy of all toes, especially of the second, in a boy of four months. They appear very thick and puffy like in elephantiasis, but the skiagraphs show normal structures. (Fig. 10.)

Case 14 shows congenital dislocation of both hips in a girl of 9 years. The cartilaginous epiphyses of the femurs are dislocated and the right femoral neck shows extraordinary bending. (Fig. 11.)

Case 15 represents congenital absence of nasal bones and insufficient development of nasal processes of the superior maxilla in a boy of two months. The infant is poorly nourished. The parents came from Russia five years ago and are well. There are four healthy children besides. (Figs. 12 and 13.)

It may be noticed that none of these deformed children were born of American parents and that heredity could not be made responsible in any of them as an etiological factor.

SOME SUGGESTIONS REGARDING A DEPARTMENT OF SCHOOL HYGIENE.*

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Definition.—From Dr. William H. Burnham, professor of school hygiene at Clark University School for Teachers, I have received this very good general definition of school hygiene. "School hygiene has to do with the conditions which favor the normal healthy development of children, so far as determined by school environment—school sanitation—and school programs, sequence of studies, text-books, and methods of study and instruction—hygiene of instruction."

Rationale.—Quoting from a former paper, I will again cite the fact that those nations which have exercised a powerful and elevating influence have been and are those which have exercised a care for the health of their citizens. Within fifty years indisputable evidence has induced nation after nation to recognize the value of sanitary science as the preserver of national health and wealth, as well as elemental to military success.

In a democracy self-preservation demands an educated citizenship. This underlying principle allows the state to say to the prospective citizen: "You shall, for an adequate length of time, be placed under such instruction as will make of you an honest, intelligent and useful citizen." Anything short of this will not insure the stability of the state. An elemental condition of useful citizenship, however, is a fair degree of physical health.

Moreover, there are certain unsurrendered rights of the citizen. Among these is the right to as fair a degree of health as his ancestors, and his right and moral duty to transmit to his offspring as good or better health than he himself enjoyed.

Hence, it is both the interest and the duty of the state to insist, when it places the individual under formative educational processes, that the physical basis in the educational structure be adequately and properly laid. For the most part the state has not assumed to dictate methods to the educator, simply holding him responsible for results. Both opinion and fact testify that the desired improvement in health from grade to grade has not been attained. In America this is the more strikingly true of the children of the cities. These rapidly built wildernesses of incongruous construction express little evidence of any desire to protect and foster child life. Their dark, noisome alleys and tenements contain millions of the miserable offspring of ignorant foreigners—poorly born, poorly housed, fed and clothed, with crooked spines, misshapen skulls and pathological eyes or ears, with little in their environment to produce self-respecting, self-supporting citizens, but with many conditions which tend to convert them into a dependent class.

To thousands of acres of such slumdom, public education alone, in any large sense, stretches out the reclaiming hand. Upon it is thrown the responsibility of converting these children into people who are physically able to compete with the children of protected labor and capital. Either this must be done or we must prepare for a steady increase in the dependent classes. The proposition is a simple one. Shall we put sufficient money into the schools to enable them to produce self-supporting citizens, and then hold them strictly accountable for results, or shall we half support them, paying little attention to the health of the children, and later on spend much larger sums of money for the construction and maintenance of hospitals, dispensaries, police stations, saloons, reform schools, workhouses, etc.?

Fortunately, public sentiment has become so favorable to better school sanitation that even now this can be made an issue in a school election. Not only is this so, but the school official who disregards his pledges in this matter can easily be defeated in a subsequent election. Physicians should combine with good organizations to secure the defeat of all such officials. It is especially appropriate that the city physicians use their combined influence with all civic organizations in this matter, for they, more than any other class of men, are forced to carry the steadily increasing burden of indigency. At the same time they understand better than does any other class of men its causes and appreciate more fully its large extent. Of all men, they realize most keenly how impossible it is for the homes of thousands of these children to evolve an effective type of citizenship.

Content.—Leading authorities place the following within the province of school hygiene:

School Diseases: Those of the respiratory tract, of the spine, of the nervous system, and of the special senses; general infectious diseases; the eruptive fevers.

Hygiene of Instruction: General; school age; amount of study; home study; arrangement of work; number of sessions per day; discipline; punishments; public examinations; number of pupils to a teacher; regularity of attendance; courses of study; individual branches—their comparative effect on health.

Personal Hygiene of Pupils: Food; clothing; sleep; exercise; bathing.

Physical Education: General; history; literature; as a department of science; as a department of hygiene; as a pedagogic discipline; as a practical art.

School Grounds: Soil; area; dimensions; surfaces; planting; school gardens; play grounds.

Buildings: Placing in grounds; foundations; base-

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ments; materials; general dimensions, as affecting school-room construction; heating and ventilating; lighting.

School Rooms: Dimensions; shape; furniture and its placing; floors; blackboards; colors; lighting; heating and ventilating; cloak rooms; supervision of conditions.

Furniture: Adaptability; cardinal points in construction; supervision.

Ventilation: Introduction of good systems; strict supervision of the same.

Heating: Different methods; temperature records; atmospheres; supervision.

Cleaning: School dust; methods and frequency of cleaning; supervision.

Sewerage: Systems; ventilation; supervision of closets, urinals, etc.

Since many of these phases of the subject will be discussed in the papers to be read, this paper will content itself with the mere mention of these important phases of school hygiene.

Introduction.—This may be effected in several different ways.

1. Upon the recommendation of the superintendent of instruction the board of education may consider the matter and arrange for a department. This presupposes a progressive superintendent, backed by an unusually intelligent and progressive board of education. This combination is rather unusual. Where it exists, however, the superintendent and board should feel that they have the moral and political support of the profession, as well as its assistance and counsel. A strong committee from the leading medical society can render services of great value in this connection. The factors most affecting the success or failure of this plan are the school board, the superintendent of instruction and the teaching force. Hence a few comments concerning these will be in place.

During the past six years we have attempted to introduce a department of hygiene into the Cleveland schools, following this plan, and the result is still doubtful. Here the federal-plan law is supposed to dissociate the department of instruction from the distinctively business department and to take the former out of local politics. Perhaps it accomplishes this, year for year, in a larger degree than is the case under the usual forms of school board organization. Notwithstanding, however, the earnest efforts and yearly recommendation of our superintendent, Mr. L. H. Jones, it has been impossible to secure the adequate co-operation of the school council in the establishment of a department of school hygiene. The work has grown with the teaching force and with the public to the proportions of a full-fledged department and is so recognized on all hands, except by this singular body. On the other hand, during the past year there was introduced and favored by certain members of the board, a measure which was calculated to divide the work in school hygiene, placing several medical inspectors directly under political control and so dividing the whole matter as to prevent the possibility of an effective department. It is probable that this measure would have passed but for the vigorous protest of many of the leading physicians of the city. This, together with other acts of a similar nature, leads me to conclude that city school boards, as at present composed, are not competent to introduce and foster adequate measures for the conservation of the health of the school children. Neither are they willing to employ and follow the suggestions of those who make such matters a life study. Hence it is necessary, if this plan is to be successfully carried out, that certain limits of eligibility should be placed upon membership in these bodies, in order that they may contain men who are vitally interested in the health of the children, as well as men of sufficient executive ability to secure sanitary school conditions.

Among other qualifications, they should be men of mature judgment, but an age limit, say 55, should exist. They should have a vital connection with the schools through having children therein. They should be men of assured executive ability through having succeeded in business. They should not be known as local politicians. These matters are emphasized because the school board is the snag on which such reforms usually stick, and because physicians, through combination with other organizations of good citizens, can materially assist in the election of an effective school board.

The average superintendent, supervisor and principal will assert that he is interested in the health of the children. In a general way this is true. But it usually requires a fierce flame of public opinion to secure adequate action on his part. Frequently he is content to foster the traditional subjects, grammar, arithmetic, etc., and let other people look after the health of the children. He has not yet realized that the problems of education in the wretchedly built and governed American city of to-day are quite different from those of the towns and villages either of to-day or of a generation ago. It takes an occasional revolution in school management to awaken him to this fact. Such a revolution the medical fraternity can, if necessary, inaugurate. On the other hand, if the superintendent is a leader in educational matters, he will need the hearty and continuous support of all medical men, in order that he may carry out his plans in conserving the health of teachers and children, in spite of the constant interference of scheming politicians, which he is sure to encounter at every turn.

So evident has been the growth of interest and accomplishment among the rank and file of the teachers, that I am pursuaded that the teaching force does not stand in the way of the introduction of school hygiene into city schools. In Cleveland the great majority of the teachers have given the work suggested fully as much attention as justice to other branches will allow. The instances are very numerous in which teachers, at their own expenditure of time or money, and often both, have taken care of pupils whose parents were unable to do so. Many of the teachers are far more enthusiastic about all such matters than are any other class of people. They deserve the highest praise for their efforts along these lines.

2. Where the superintendent or the board, or both, are inoperative the problem can be solved, if an able man is available, by his election to the executive position—that of director of schools, for instance. To do this the medical fraternity must secure the co-operation of all civic organizations which stand for the public welfare and through their efforts elect an executive, who is at the same time a sanitarian. The difficulty in carrying out this plan arises from the fact that the necessary business qualifications for this office are not easily secured, even without the special qualifications of a sanitarian.

3. This plan is the one which in my estimation covers the larger number of cases and is the more hopeful of immediate success. The committee on state medicine of the leading medical society, or the local pediatric

society, may call to its support in each school district the services of two or three physicians who are well and favorably known. They should be men who are established in practice. As special examiners, these men should give half a day or more to the work of subcommittees. The general committee should place in their hands lists of questions covering the more important phases of school hygiene. To secure such lists, reference may be made to the outline of school hygiene given in this paper. A list recently used in Cleveland is herewith given.

REPORT ON SCHOOL HYGIENE.

..... School.

1. Provided all should use them do you find the play grounds ample for the number of children in the building? .....

2. Are the play grounds in good condition for play? .....

3. Do you find any rooms from which the light is cut off by annex or other buildings? .....

4. Are the buildings so located and is the school yard of sufficient size to prevent the darkening of any of the rooms by the future erection of adjacent buildings of four or five stories? .....

5. Do you find any rooms in which the ratio of window to floor space is less than one square foot of glass to five square feet of floor? .....

6. Do you find that street noises interfere with the instruction in any of the rooms? .....

7. Do you notice a bad odor in any of the rooms?

8. Do you notice a bad odor in connection with the water closets and urinals? .....

9. Upon inquiry and inspection does the heating and ventilating system seem to you to be satisfactory? .....

10. Does the form and arrangement of the school furniture, as you see it in use, appear conducive to eye strain or spinal curvature? .....

11. Do you find the surfaces of the rooms, furniture and halls clean and in good condition? .....

12. How many basement, attic or recitation rooms, relief building rooms and storerooms do you find in use as school rooms? .....

Please add comments. What do you consider of *primary*—of *secondary* importance to the sanitation of this building?

Primary .....

Secondary .....

....., M.D.

....., M.D.

....., M.D.

Sub-Committee at School.

This refers more especially to matters in connection with school property. Questions are asked about conditions which a casual observer might see almost any time upon visiting a building. Here the work of many of the subcommittees has been quite complete and their reports will throw considerable light upon the situation. When they are all collected and tabulated the general committee, appointed by the Cleveland Medical Society a year ago, will have much of the necessary data with which to go before the board of education and, if need be, before the legislature. When it does this, a complete scheme for a department of school hygiene should be placed before one or the other of these bodies, with a strong recommendation for its adoption. In addition, the committee will need to follow up the matter and see to it that its recommendations are really followed. For there are usually enough scheming politicians on a city school board to evade or pervert such measures for their own personal benefit. These should be turned over to a committee of citizens, which, in co-operation with the local papers, will at once inform the public of any deviations from the right path. It will not require many reports, under these circumstances, to secure for the committee a more efficient school board.

Organization.—First of all, a department of school hygiene must have for its head a medical man who is at the same time a school sanitarian. For it is evident that the territory between the practitioner, whose observations are largely of pathologic conditions, and the educationist, whose observation is limited in large measure to mental phenomena, is a broad realm: the realm in which, for the most part, preventive medicine must operate. While it will be noted that it contains much which lies within the fields of actual practice and practical education, it is at the same time evident that there is a vast amount of opinion and a large collection of facts, which, for their advantageous assimilation by a city school system, requires the constant study of men especially trained for this phase of school supervision. On the other hand, that there may be actual accomplishment, rather than mere study of problems, the director of a department of school hygiene should possess the training and the sympathy of his fellow physicians, the skill of the teacher and the organizing ability of the educator. Hence, while he should be familiar with the experiences of the general practitioner, just as should any other specialist, yet his field of operation presents so many problems which neither the general practitioner nor the teacher are called upon to solve that he must be a specialist in this field of preventive medicine if he is to succeed in any large measure. His whole time must be devoted to the subject. Not only this, but he must be both level-headed and at the same time enthusiastic, an organizer, a leader and a worker. This field offers unlimited opportunities to an ambitious, well-educated young physician with plenty of money.

In addition to an efficient head, the department must have assistants. A large amount of office work will accumulate, which can be done by assistants at $50 per month, and which should not be done by a man whose time is worth several thousand dollars a year. To these should be added all special teachers of physical education, physiology and hygiene, etc. In addition, he should have at least one medical assistant to look after special cases and supervise in a general way the work of medical inspectors in the different districts.

Taken altogether, there ought to be sufficient help to enable him at any time to prepare quickly for the superintendent, or for the board of education, an exact statement concerning any condition within the schools which affects the health of teachers or children. Since the larger part of the work in his department lies in supervising the work of teachers, he should have plenty of special teachers, whom he has trained to supervise in an efficient manner the work of the regular teachers. Too much emphasis can not be placed upon this. The regular teacher in the grades needs constant assistance and encouragement. In Cleveland, at least, she receives entirely too little. She has many subjects to teach. Her program is crowded. Wise and constant supervision is required if each hour of the day is to be beneficial.

Medical Inspection.—Without medical inspection of special cases, a department of school hygiene is incomplete. Hence a fund should be available so that the director can call to his assistance physicians in the different school districts to act as his special medical examiners. The fund should be ample to secure the services of a sufficient number of experienced men. At stated intervals they should visit buildings and examine

such cases as the principals may send to them. This inspection is of great value. It should not for a moment be thought that it will take the place of a department of hygiene. For many teachers and principals will not send all the cases needing attention to medical examiners unless they know that their rooms are closely watched by special teachers of the department of hygiene and that they are liable to be summarily called to account for negligence in the matter. I have satisfied myself on this point from investigations in city schools where medical inspection is supposed to cover the ground quite thoroughly.

Status.—The advice and the activities of this department should be entirely unbiased. This means that it should have no connection with school politics and should be entirely free from school traditions. It must be, therefore, under civil service regulations. I have held the position that its head should be an appointee of the superintendent of instruction. This certainly is much better than that any professional man should be hampered in his work through an appointment made by designing politicians. My own experience, however, is inclining me to the view that some position, equal with or above that of any present school official, must be created by the state before the health of school children receives the proper consideration at the hands of the educationist and the politician. These people fight each other, while the teachers go without adequate facilities, the children suffer and the people become distrustful of the efficacy of public education.

DIAGNOSIS OF THE BACKWARD CHILD.*

A. W. WILMARTH, M.D.

CHIPPEWA FALLS, WIS.

To formulate a definition which will describe the term "backwardness" in children is a task of considerable difficulty. It is made still more difficult by the extreme vagueness of the term as used by more recent writers, who use the terms "backward" and "feeble-minded" almost interchangeably. The truth of the matter is simply this, that there is no sharp line of distinction between the normal and the so-called backward child, or between the markedly backward or feebly-endowed child and the high-grade imbecile. No standard of mental activity has ever been fixed by which we can accurately determine these questions. Psychological studies, which are now being actively pushed, both in institutions for normal and abnormal children, promise in the near future to give us some more definite standard on which to base our diagnosis.

The variety of opinion on this subject is well illustrated by comparing the report furnished by Prof. Will S. Monroe, who gathered statistics of 10,000 school children in California by means of circular letters sent to the different teachers of the state, with those of others who have investigated the same subject. The report of this gentleman, compiled from the answers to his letter, shows the teachers considered nearly 10 per cent. of their charges as backward. Dr. Francis Warner, member of the Royal Commission to examine the blind, deaf and other classes requiring exceptional methods of education, out of 100,000 school children reported 7 per cent. dull and backward, while 1.6 per cent. required especial care and training. A report formulated from the examination of 42,000 children in Great Britain of the elementary school class between the ages of 7 and 13, gives 1 per cent. of defective children as the result. Mrs. Esten, supervisor of special schools in Providence, R. I., a city of over 150,000 inhabitants, states, in a recent article, that 50 pupils were then receiving instruction in their special schools, and that a recent canvass had revealed the fact that there were yet about 100 children who ought to be provided for. This is in decided contrast with the first statistics quoted, and shows how badly some standard for comparison is needed. Dr. Shuttleworth, in an article on the treatment of children mentally deficient, laughingly calls attention to the high standard Americans set for their children, and states that he was jocosely warned by an American friend, when he was about to make a tour of the institutions for the feeble-minded in the United States, that "He guessed I would find their feeble-minded children about equal to the average British schoolboy." It is plainly to be seen that in the teachers' returns compiled by Professor Monroe, each teacher must have filled her return according to her own individual judgment as to what should constitute a normal average.

I seriously doubt if it is true that a boy is necessarily dull or backward because he can not follow the curriculum formulated in the schools. However excellent this may be for the average child, there are many boys classified among the dull ones in their classes who turn out to be successful men after their school days are past. What they may lack in the faculty of merely memorizing, they more than make up in their power of reasoning and acuteness of judgment. Certain special faculties may be entirely absent, and while this lack may interfere with a boy's school progress, and may deprive him of much enjoyment, it may not in any degree interfere with his usefulness or affect the public estimate of his mental strength. These include such faculties, for instance, as the musical faculty, the mathematical faculty, discrimination of colors, etc. Our estimate of mental strength must rather be formed from his power of attention, his strength of memory, his efficiency in that method of reasoning which comes to us all instinctively in our early days, and which has been quite extensively treated by Carpenter, under the every-day designation of "common sense." On the other hand, abnormally slow perception, lack of power to fix the attention, distorted judgment, feeble memory, or a decided lack of moral sense are mental symptoms which would tend to place the subject among the backward class, and if different methods are faithfully tried to remedy these defects without marked result in a reasonable time, we may safely conclude that they indicate not only a backward but a feeble mind. Among the physical symptoms which are strongly indicative of lack of normal mental growth, the failure of articulate speech, where defect of the auditory apparatus, or that concerned in articulation does not exist, is the most conspicuous. In the absence of these physical defects, if the appearance of speech is delayed beyond the age of 6 years, it may be safely inferred that cerebral deficiency or lesion exists, and that some mental weakness surely accompanies the child's silence. Gait and posture are of some value, taken in connection with other symptoms. The former is apt to be slow

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and awkward, the latter stooping. The lately published observations of Wiley would tend to show that the sense of touch is generally less sensitive than in the average child. Sensibility to pain, especially in cases of marked dulness, is very frequently found and would tend to indicate a lack of tone in the whole nervous system. Family history will render valuable aid. As all mental action has a physical basis, and as the physical formation of each individual is but the sum total of ancestral traits, we may expect parental weakness to exist, either active or latent, in the offspring. Again, while a fair memory by itself is no indication that mental weakness or delayed mental growth is not present, a failing memory, or one that fails to respond to training by any marked improvement, may be looked on as abnormal.

Much argument has been held whether moral sense should be regarded as a purely mental trait, and whether such a thing as moral imbecility exists. On the minds of those who have daily intercourse with large numbers of defective children, the actual existence of moral imbecility has been impressed as a disagreeable fact. So radical is this defect in many cases and so persistently will a child do evil and not good in spite of all efforts to lead him into right methods of thought and action, that one is forced to regard it as a perversion of normal mental development. Histories of cases have multiplied, following individuals with this affliction through life, and it has been demonstrated that in certain instances favorable environment would invariably bring into action the old evil practices. I have seen cases of this kind where the remaining mental faculties were nearly normal, in which the individuals insisted that when the impulse to do wrong came upon them it was stronger than their will power and beyond their control.

Let us glance for a moment at the normal growth of a child's mind, in order to understand better where failure may occur. After the instinctive acts of early infancy, the first thing that attracts us is the awakening of the power of attention in the child, such as the movement of its eyes as they follow a bright object. This faculty rapidly gains in acuteness and is the basis of mental growth. The failure of the proper development of attention, or we might say, the power of fixing the attention, is fatal to all attempts at education. From this time, as the various sense organs assume functional activity and convey sensory impressions inward to be stored in the proper groups of brain cells, we see the beginning of memory and the child becomes an animated interrogation point, worrying its elders by constant questions in its hunger for information. By this time we will be able to gauge somewhat the child's probable capacity for acquiring information, for on memory depends largely the child's mental capacity. Still a little later and the will power exhibits itself in control of these memories, formulating them into thought. A child learns to connect ideas or impressions which come to it through the sense organs and have been stored as memories, and to draw from them fresh ideas. In other words, the reasoning power develops and the child begins to reason from the known to the unknown. Furthermore, he begins to realize the value of each thought, or idea, and judgment has its birth. This is the most valuable of all mental acquirements. An individual with a rather weak memory may make a poor showing in school, and yet with acute reasoning powers may be able to make most valuable use of what he does remember. Such children ought by no means to be classed among the dull and backward. With the development of reason and judgment is aroused a respect for the rights of others, which forms the basis of moral sense. These faculties comprise, I believe, all the important elements of a normal mind. Their practical value in the mental framework varies much, but the failure of any one of them to appear at the usual age constitutes a backward child. Whether the child be temporarily backward or inherently backward or feeble-minded, is a question that we can decide only by examination and training. From what I have so far presented we may advance the following conclusions:

Delay in mental development may be temporary or permanent. In the former case we should speak of the child as merely backward, in the latter, as feeble-minded.

When this condition is due to a lack of proper training, or to temporary ill health, it may often be entirely overcome by proper treatment.

There has been no definite standard established upon which to decide whether a child is backward or not and we have no other guidance than by comparison with supposed normal children of the same age.

The qualities on whose absence or faulty development we form our judgment are acuteness of perception, power of attention, strength of memory, accuracy in reasoning and judgment and growth of moral sense.

Certain physical conditions are of aid in diagnosis of a backward condition, especially when considered in connection with delayed mental growth. Prominent among these are deformities: defects in or absence of articulate speech, not due to mechanical faults or deafness; defects in co-ordination and an awkward gait; defective physical growth and lack of acuteness in different sense organs. There are none of these absolutely pathognomonic, with the possible exception of lack of speech due to cerebral defect.

I can not close this paper without calling attention to one fact, which is, perhaps, not in direct accordance with its title, but yet is of vast importance from a sociological point of view. The comparatively large number of backward and high-grade imbecile children has led to the opening of schools for the special teaching of this class. It is probable that a large proportion of the children will be high-grade imbeciles, or those in which the mental defect is permanent. This may be largely masked by education and the children be graduated to marry and take a place in our great social life. These schools should be constructed so as to constitute clearing-houses to separate the inherently feeble in mind from those whose mental growth is retarded by circumstances temporary in character. So conducted they may be most useful. Education will not remove in a few years weaknesses which may have been generations in developing, and children thus matured will probably select one of their own mental grade in marriage, possibly a graduate from the same school. Hon. J. D. Alexander, before the National Conference of Charities and Corrections, in Topeka, cites a case where a woman was allowed to leave the Ohio institution and they now have eleven imbeciles, her offspring, to vouch for the success of such practice. Such instances are so common, though perhaps in less degree, as to form a valuable object lesson. If our high-grade imbecile girls and boys follow this course, we shall need many more such special schools than have been now established, and we may feel reasonably sure of pupils enough to fill them.

SPEECH AS A FACTOR IN THE DIAGNOSIS AND PROGNOSIS OF BACKWARDNESS IN CHILDREN.*

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The subject under discussion is one of more than usual importance. It is said that there are, in Philadelphia alone, more than twelve hundred school-children who are unable to keep up with their classes and for whom no adequate provision has been made. This large number does not include the high-grade imbeciles and idiots who never get into the schools, but only those who are said to be "backward in their studies."

Scientific discussions often fail to be of value because of a lack of a definite and uniform nomenclature and therefore it may be well to come to some understanding as to exactly what we mean by the term "backwardness in children." No two children are of exactly the same grade, mentally, but they differ in this respect as they differ in respect to physical characteristics. The backward child, according to the common acceptation of the term, is one who is below the average intelligence of children of the same age; and for our present purposes, this is probably the best definition; but a more scientific one would make the term "backward child" mean one who is not living up to his own possibilities or capabilities. This definition, however, is in advance of the times and it will be applicable only when children receive more individual study and training and when they are not herded together like sheep, regardless of their peculiar characteristics and needs. Moreover, it will be observed that backwardness, in this paper, will be regarded as a disease. This is for the sake of convenience and not because it is in all respects deserving of so much distinction.

The diagnosis of backwardness is not difficult. All children who do not, can not or will not keep up with their classes must be regarded as backward, according to our definition, and they should have our most careful consideration.

The prognosis in these cases is not so simple, for this involves an inquiry into the causes, and some experience in the various methods of special training. We must take into consideration the inherent possibilities of each individual child and determine what his mental capacity and capabilities would be in a suitable environment and under more favorable conditions.

The object of this paper is to consider to what extent a study of the speech of children will aid us in making the diagnosis of backwardness and, more especially, in venturing on a prognosis. It may be said, without fear of contradiction, that freedom of speech is an absolute essential to the normal development of children and that any defect of speech, however slight, must make its impress on the child's mentality and prevent him from doing all that he would otherwise be capable of doing.

Not all children with defective speech, however, are thus prevented from keeping abreast of their fellows in school. Occasionally we find one with sufficient concentration and will-power to succeed, in spite of the handicap which defective speech must entail, but this is the exception and not the rule.

Speech is a tool of the mind and just as the artisan is dependent on good tools for success in his work, so is the child dependent on good speech for the normal development of his mental faculties; and just as a poor tool may be responsible for faulty work, so is defective speech oftentimes the cause of slow development or backwardness in children. Many illustrations of this fact might be given. One or two will be sufficient to emphasize its importance.

In 1895, a young man, 19 years of age, was brought to my office for a prognosis, the diagnosis made by his family physician being imbecility. He had many symptoms of this disease. He was backward in his studies, so much so that school had to be entirely given up. He could not speak, read or write intelligibly, and he was unable to spell the simplest words. His expression was vacant and staring. His lower jaw was receding and his mouth open. He was exceedingly awkward in his movements and unable to express himself in any language. His speech was wholly unintelligible. He could not give his name or his residence, and he was unable to make the conductor of the railway train understand at which station he wished to get off.

The prognosis in this case could not be made offhand. It was of the utmost importance, because on it depended the treatment and the patient's future usefulness. After careful investigation, it was discovered that one great barrier in the way of mental development was the lack of power of expression and it was manifest that until the faculty of speech could be established the man could never become a useful citizen. On the other hand, it was assumed that if the faculty of speech could be acquired, the mere effort necessary to its acquisition would serve to develop some degree of mental power. The question therefore arose as to what was the cause of the tardy development of speech. On examination it was found that the patient had a defective tongue. The genio-hyoglossus muscle was too short and bound the tongue down to the floor of the mouth and thus prevented its normal action in the processes of articulation. A simple operation was performed, which consisted in a division of some of the anterior fibers of this muscle, thereby giving a free tip to the tongue. The operation was followed by a systematic course of training for the purpose of teaching the use of the tongue and the related organs in processes of speech. A little more than a year sufficed to accomplish this result and the boy who, up to 19 years of age, was supposed to be an imbecile, is now one of the most successful real estate brokers in Philadelphia.

This case is illustrative of a large class of children who are backward, not because of any organic mental deficiency, but because they are lacking in the power of an easy and natural expression of their thoughts.

Another case was that of a lad brought to my clinic at the age of 15 because his speech was unintelligible and he was backward in his studies. Unlike the former case, however, he was able to make some progress in certain lines of school work and presented an appearance of one having greater intelligence. He had a distinct vocabulary of sounds of his own unlike any I have ever heard and it was by no means limited. He could talk and read fluently, but it was all a meaningless jumble to everyone but himself and he claimed that the substitutes he used sounded to him the same as the actual words spoken by his fellows. In other words, his ear did not discriminate between his own jargon and the normal speech of other people. He was not a

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robust boy. In early childhood he had some organic heart affection. He was a "blue" baby, had spasms and some difficulty in respiration. He also had web fingers on both hands, indicating arrested prenatal development.

This boy was backward merely because he could not speak intelligibly; because he was unable to command that important tool of the intellect, language. A few years of speech training, however, resulted in a complete change in his mental and physical processes and he is now holding an important office position in one of the departments of the University of Pennsylvania.

Many other similarly interesting cases have come under my observation, but the above two will suffice to illustrate the importance of speech as a factor in the diagnosis and prognosis of backwardness in children, and from the history of their cases we may draw the following conclusions:

1. It is not always possible to determine at a glance the cause of backwardness in children.

2. Backwardness in children is not always due to a central lesion, but may be the result of arrested cerebral development due to some abnormality of structure in the peripheral organs.

3. A very common cause of backwardness in children may be some abnormality of structure in the peripheral organs of speech.

4. So closely are the speech centers related to the ideational centers of the brain that any impairment of the one generally results in a corresponding impairment of the other.

5. The best method of arriving at even a proximately correct prognosis in cases of backward children is to apply the speech test, or, in other words, to ascertain by careful study and experiment to what extent the faculty of speech may be improved, and it will be found that in those who are susceptible to training in what may be called the refinements of speech are the ones for whom we may promise the best results, and that possibilities for general development will be proportional to the capacity for speech development.

A PLEA FOR THE BACKWARD CHILD.*

C. F. WAHRER, M.D.

FORT MADISON, IOWA.

Before treating this subject in any detail, I wish to define the term "backward child." By this I do not mean a defective child, but one whose body, as well as intellectual faculties, are all in existence, and whose parentage is not of a degenerate character, but normal, as we generally understand the term. The line between normal and abnormal may be somewhat hazy, not well defined, nor perhaps capable of exact definition, but we all somehow have a very fair conception of the expression, unless we appear as experts in a will case in court. Yet if we remember our experiences in the school room as teachers or even as fellow pupils, or make observations in schools as visitors, we do not always have this same opinion, as to the brightness or dulness exhibited by various children. Thus many a child, somewhat backward in its studies, has been condemned as a dunce or even defective, by the too hasty observer, and, in the class under discussion, all on account of a lack of perception on the part of the teacher or parent making this unfair and unjust deduction.

The fallacy of observation is due to contrast; this I wish to explain, and show that comparisons in these cases, as the old adage says, are odious. The comparison is with the so-called bright or forward child. By observation we have learned to expect a certain amount of physical and mental development from a child at a given age. If the child is unusually observant, with a good memory and the power of expression, it is called bright or even precocious, and, in comparison with such children, all others seem more or less dull. Where advancement is normal, we call such children normal or average and even recognize good minds. Where, however, the expected progress is slow, comprehension more or less obtuse, and the power of expression limited, we say such children are backward, dull, or even may imagine them defective. All this is a matter of comparison, with the bright child as our model.

The truth is, there is nothing wrong with the child. He has good powers that are latent or of slow development, or is really developing in a direction different from the course intended.

For instance, a morning-glory vine twines around its support from right to left, while the hop vine twines in the opposite direction. Both are correct, and it is just as useless an effort to reverse these directions, and serves as little good purpose, as it is to make these so-called backward children follow the course of the so-called bright child.

An astronomer should not be deceived by a meteor with all its brightness and brilliancy, and make invidious comparison to the disadvantage of the pale, far-distant, fixed star, which upon study proves to be not only a sun but a whole solar system; so in like manner, we should not, after observing a bright child with good memory but of ephemeral mental development, underrate the slower, dull pupil, whose mind powers are latent, not absent and in the process of a splendid development if rightly studied, and when once made manifest, show an intellect as strong and unwavering as the fixed star.

Great men, like Shakespere, Sir Walter Scott, Edison, Beecher, Peter Cooper and many more, were condemned by their teachers and proclaimed hopeless dunces and their parents were beseeched to take them from school, as it was considered a waste of time and money to keep them there. Milton, one of the greatest poets of the theological school, was 63 years of age before he became known; according to his own saying, he appeared late, but when he did appear he was fit to do so.

While these backward children are not favorites with the average educator, it should be a teacher's duty and pride to search for the hidden talents lying dormant among children of most unprepossessing appearance. Examinations, or tests, as they are more recently called, intended for this purpose, are most dismal failures in this direction, for they reveal not the intellect or the slumbering genius, but only what a child with a good memory has stored from recently gathered facts. And let a happy manner of good expression be added and this child shows to splendid advantage over its fellows. So these tests are not tests after all, only deceptive surface phenomena, with their usual exceptions.

Neither are the cumbersome and high-pressure curricula of our schools, with their many anachronistic arrangements, calculated to advance the subjects of our contention, nor to evolve acuteness and dispatch

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out of obtuseness and retarded progression; nor are they in any way the least helpful in developing latent or slumbering powers. The adult life is strenuous enough without introducing this strenuous element into all phases of pre-adolescent childhood. In this line we need revision with a special view to simplification rather than complexity, and the arrangement of studies synchronous to mind capacity. But how can we maintain such a statement? Simply by past experiences, from which there are an endless number to draw.

For instance, these bright boys and girls who were such splendid reciters, and who graduated at the head of their classes, who furnished valedictorians and salutatorians, what has become of them? Did they become the traditional president or governor, the judge on the bench, the bishop or the eminent medical man or surgeon, master mechanic, the great commander? No, they did not! When the evanescent spark of genius first attracted our attention and its meteoric rays dazzled our eyes, we little dreamed that it was only an explosion, a big sound, a flash across the intellectual sky, and all was dark. But the steady glow of a slow but ponderous mind, groping about in the dark, as it were, to get recognition by its own light, to develop by its own evolution, may be long in accomplishing it, but when once known will make its influence felt long after the meteor has passed away and is forgotten.

The brightest diamond in the hands of a bungler becomes a mere mass of useless carbon; in the hands of a master, a diadem fit to adorn the crown of kings. So a really valuable but apparently dull mind in the hands of a superficial educator becomes a useless cumberer in the ranks of life, while under the guidance of a superior intellect, that has discovered under the seemingly unprepossessing exterior a true gem, it is so developed and its course so shaped as to evolve a mind fit to reign among the earth's greatest and best.

The responsibility of educators and parents is immeasurable, viewed in this light. To discover and guide the backward child is the duty of the hour, not to condemn and forever destroy. Our sympathies and warmest endeavors should be invoked by every child that belongs to this category, and every effort should be put forth in behalf of a class, out of whose ranks the earth's greatest geniuses have arisen and led the children of men out of the wilderness of thought into the Canaan of light and bliss.

With Gray we can say:

Perhaps in this neglected spot is laid,
Some heart once pregnant with celestial fire;
Hands that the rod of empire might have swayed,
Or waked to ecstacy the living lyre.

So it is not how early, but how well, a given person develops; not how soon he accomplishes his life work, but how effective are its results, and how great a factor it may be in the sum of existence. In this sense, it is never too late when a great mind makes its appearance. For,

"Nothing is too late
Till the tired heart shall cease to palpitate.
Cato learned Greek at eighty: Sophocles
Wrote his grand Oedipus, and Simonides
Bore off the prize of verse from his compeers,
When each had numbered more than four-score years.
And Theophrastus at four-score and ten
Had but begun his "Characters of Men";
Chaucer at Woodstock with the nightingales,
At sixty wrote the "Canterbury Tales";
Goethe at Weimar toiling to the last
Completed "Faust" when eighty years were past.
These are indeed exceptions, but they show
How far the gulf-stream of our youth may flow
Into the arctic regions of our lives."

I crave a greater sympathy for the "backward child."

This symposium will be completed next week, together with the discussion.

SECTION OF OPHTHALMOLOGY.

ADDRESS OF CHAIRMAN DELIVERED AT THE FIFTY-SECOND ANNUAL MEETING OF THE A. M. A., HELD AT ST. PAUL, MINN., JUNE 4-7, 1901.

J. A. LIPPINCOTT, M.D.
PITTSBURG, PA.

The precedent established by my honored predecessors of dispensing with a review of the progress in ophthalmology is, in my judgment, a wise one. Even were one disposed to think differently, this would not be an opportune time to attempt such a résumé. For, standing as we do on the threshold of a new century, it would be incumbent on the reviewer to take note not only of the changes of a year but of the advances made in our department of medical science during the hundred years which have just passed into history. During that period thousands of distinguished workers have co-operated in building the imposing structure constituted by the ophthalmology of to-day; and of these thousands there are three to whose achievements alone many volumes of addresses might be devoted without doing justice to the theme. The names of Von Graefe, Donders and Helmholtz will be gratefully remembered long after those of their most noted contemporaries in the spheres of war and statesmanship, the favorite avenues to distinction, shall have been relegated to oblivion.

To one of this mighty triumvirate we owe the priceless gift of the ophthalmoscope which has so marvelously enriched our knowledge and added to our power to benefit mankind. This instrument has now seen fifty years of ever-increasing usefulness, a fact which is fittingly emphasized in our program and in the interesting collection of ophthalmoscopes and ophthalmoscopic literature which, through the efforts of the committee appointed for the purpose, is open for your inspection.

Other subjects to engage your attention are the methods of treatment applicable to the abnormal conditions of the extrinsic ocular muscles comprised under the terms strabismus and heterophoria—conditions which, despite all that has been written upon them, are still in many points obscure.

We shall also discuss the important problems presented by the relation of visual acuity to occupation in general and to the railway service in particular. An effort to elucidate these problems may fairly be expected of this Section, which, as a subdivision of the American Medical Association, is peculiarly representative and National in character.

In addition to these subjects we shall have the opportunity of considering a topic on which much light has been thrown by recent investigations, namely, the nature of the pathological changes produced by certain toxic agents in the retinal elements.

I need not refer specifically to other portions of the program, which is replete with variety and interest, notwithstanding the rule adopted for this meeting by the General Committee of the Association restricting the number of papers presented in each Section to thirty-five. Owing to this rule a number of meritorious articles had to be excluded. In this connection it may be

remarked that many of the difficulties of your officers, especially the Secretary, might be obviated if all abstracts were handed in as early as possible. You are aware of the regulation requiring the completed program to be at the office of the general secretary in Chicago not later than May 4. It will be necessary to send it several days earlier if, as seems desirable, the Secretary of the Section is to have an opportunity to examine the proof. As a matter of fact all of the abstracts ought to be in the hands of our Secretary on or before the middle of April.

Inasmuch as the number of papers is now so limited it is highly important that as few as may be shall be "read by title." Those, therefore, who, after sending titles or abstracts, find that they can not attend the meeting should, when they can, notify the Secretary of this fact in time to permit their places on the program to be taken by others.

Allusion has been made to the wonderful development of ophthalmology during the 19th century. This development has in no inconsiderable degree been aided by the labors of our own countrymen, among the most conspicuous of whom was one who has dropped out of the ranks since our last meeting. Henry D. Noyes as a teacher was erudite without dulness, as a writer prolific without being prolix, frank and incisive in debate without ever violating the laws of courtesy—a commanding figure in any assemblage and in private life a charming companion. He and others have made the past century notable. What are we to expect of the present? Let us be stimulated by the hope and belief that the mantles "of the great ones gone forever and forever by" shall fall upon shoulders not unworthy to wear them and that "the glowing pages of the past may be taken as the sibylline leaves of the future."

LATE IMPLANTING OF GLASS BALL IN ORBIT, AND EPITHELIAL LIP GRAFTS TRANSPLANTED TO ORBIT.*

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WASHINGTON, D. C.

The late implanting of a glass ball in the orbit is not a new operation; L. Webster Fox of Philadelphia, and many others in other cities, have succeeded well in this line, but the operation had not been done before in Washington, D. C., and there is a feature in this I do not find in others, namely, the fastening together of the cut ends of the recti muscles over the glass ball. My first case of the kind was this:

W. C., white, aged 50, English birth, a farm laborer, received traumatism to cornea, which became infected. Several cultures were made at different times from the discharge, but were negative in results. Complete destruction of cornea ensued from neglected condition, the patient attending the clinic at intervals of a week or ten days only.

In June, 1899, the atrophied globe was removed from left orbit by Dr. Burnett, no attention being paid to the cut ends of the ocular muscles; they simply collapsed, forming with the other tissues a thick cicatrix in the bottom of the orbit, and a great amount of shrinking left a most unsightly cavity. The patient had asked to have an eye shell furnished to replace the diseased globe, before he would consent to have it removed, as his personal appearance was of great moment to himself. One large enough to in any way fill the lids was most unpleasantly staring and disagreeable in appearance; so he came back several times to repeat his request for "one that would move." That, he was told, could not be done; but still he kept coming, until one day I told him that by putting a glass ball into the orbit, it might possibly move a little. He was delighted with the idea and wished at once to make an appointment for the operation. Dr. Burnett, chief of eye and ear clinic of Emergency Hospital, consented to its being done, and kindly assisted in the work.

My operation was the following: The bottom of the cavity was opened; the conjunctiva was raised all around from the surface; the scar tissue was so far as possible removed. The cut ends of the recti muscles were carefully dissected up, and as each one was found, a suture of black silk was passed through the cut end, and it held to one side; the cavity underneath was made large enough to easily hold a large-sized glass ball. After bleeding had stopped, the opposing muscles were brought together and firmly tied over the ball, first the vertical, then the horizontal, the two knots beside each other, after which the sutures were cut short off and were never removed. The conjunctiva was closed over all with five sutures, and the ordinary enucleation dressing applied.

Reaction was very marked in this case. There was much swelling, discoloration, and oozing of fluid, enough to keep dressings wet for three or four days. The last sutures were removed from the conjunctiva twelve days after operation, and a shell was placed in twenty-four days later. To the delight of the patient, to the surprise of all who saw it, and to my great relief, it did move, making fully one-third of the excursion of the other eye.

After a few months a larger shell was used, as the tissues became shrunken, but still giving satisfactory motion instead of an immovable stare. Patient has been doing farm work of all sorts for fourteen months and ball has caused no discomfort, remaining firmly in place.

EPITHELIAL LIP GRAFTS.

Case No. 2.—K. McG., white, Irish born, aged 38, wife of laborer. In heating a tightly-closed can of coffee for husband's supper at midnight, the overheated can exploded, the stream of boiling fluid striking directly in the eye, scalding whole side of face and neck severely. The cornea sloughed off completely, the lids already badly scarred by old trachoma, contracted so much as to show the hollow behind them, making a most ghastly appearance. After the removal of atrophied globe (which was always painful) in June, 1899, Dr. Burnett did an operation in March of 1900, on the orbit, for replacing mucous membrane with skin taken from the inside of the upper arm, where it is thinnest and most pliant; they adhered only in what had been the upper ocular surface, while the lower lid was still everted, and contraction so great that the smallest shell could not be kept in place.

In September, 1900, with the assistance of Dr. Reeve, I removed the cicatricial tissue as much as possible, made the cavity fit a shell large enough to look well; I replaced the mucous membrane with epithelial lip grafts, taken from the inner side of under lip, by means of a cataract knife, without the clamp. The several strips were placed carefully over the denuded surface of lid and base of orbit, the shell put in place to keep them from moving, the lids drawn over and firmly bound up to prevent all motion possible. The lids came together easily and naturally.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

This was done on Monday; the patient returned on Thursday to have the dressings changed. There was not the slightest discharge of pus from the cavity, the mucous membrane having the appearance of always having lived there; it was redressed the same as before. On Friday the patient, to have her children go to school clean, did some washing of their clothes, which from the motion partly displaced one of the strips, and on Monday the loose end was cut off.

She wore the shell night and day for two months, removing once a day to cleanse the orbit. It was then replaced by a larger one; for she came back with the long axis placed vertically, it having dropped out when left in the correct position. A much larger shell was then used, the lids closing easily over it. She does the housework for a family of seven, and still wears it with comfort. The epithelium from the skin placed in the orbit causes the most of the difficulty of cleanliness.

September 3, 1901.—This patient still wears the same shell with perfect ease at the present time, one year after the operation.

Clinical Report.

CASE OF PRIMARY SYPHILITIC LESION OF THE FAUCIAL TONSIL.

GEORGE C. STOUT, M.D.
PHILADELPHIA.

The patient, a young lady, unmarried, of good family history, and apparently of good moral character, was referred to me on Sept. 18, 1900, by my friend, Dr. E. K. Perrin.

Her physician stated that she had had an obstinate "sore throat," for which he had administered the usual remedies for follicular tonsillitis, during the past week, with the result that the condition was increasing in severity rather than improving.

The patient dated the onset of her trouble five weeks prior to my examination. She said that she had then taken a surf bath while unwell, from which she caught a severe cold, with headache and muscle pains which lasted for about three weeks, when it "all seemed to settle in her throat."

For a week past she had been unable to swallow any solid food, and could take liquid nourishment only with the greatest difficulty, and for the past two days was unable to take any nourishment whatever, on account of the excessive pain during the effort to swallow.

She had been able to sleep but little during the last two weeks, and although she had been a healthy, robust girl a few weeks ago, she was now the picture of physical distress.

Her color was pale and her expression anxious. Examination of the fauces disclosed very large tonsils, which were congested and angry. The right side was the larger; it was ragged and upon its surface was an ulcer extending from pillar to pillar. This ulcer was nearly level with the surface, and was covered with a thick, grayish membrane, for which there was little secretion.

The left tonsil was swollen and its crypts contained the yellowish detritus so often seen in sluggish tonsils. The pain upon pressure seemed to involve the surrounding parts, as well as the tonsils themselves.

For the three days following her first visit her temperature varied from 99.2 to 100 in the mornings, and from 100.2 to 102 in the evenings. At the first visit she was treated tentatively, her throat being thoroughly cleansed, and a 15 per cent. solution of nitrate of silver was applied to the ulcerated surface; there was no improvement from this treatment, or from the home treatment prescribed.

Upon her second visit, a rash, which was but faintly visible at the first visit, was very evident over her forehead, body and limbs, and the specific nature of the disease was suspected, especially as there was some enlargement of the right cervical glands. She was then placed on 40 grs. of potassium iodid daily and a solution of 1 to 1000 bichlorid was applied to her throat. She had great difficulty in swallowing the iodid solution, but there was some improvement in her condition after this treatment.

On September 24, as the diagnosis was fairly certain, she was given ½ gr. of bichlorid of mercury, hypodermically, and 40 grs. of the iodid daily.

Two days later there was a decided improvement in her general condition; the eruption on her body and face had dried up for the most part, and her throat was so much improved that she was able to eat a soft-boiled egg, which was the first food, excepting milk, she had been able to swallow for three weeks.

On September 29, she was given another hypodermic of bichlorid (gr. ¾), and by October 1 the ulceration on the tonsil had disappeared, and while her tonsils were somewhat enlarged her throat no longer annoyed her, and she was able to sleep through the night and take proper nourishment.

On account of the evident innocence of the patient, and in deference to her surroundings, it was thought unwise to question her as to the possible source of contagion. Her physician, who had known her for some years, feared that she might do herself some personal violence if she suspected the true nature of her trouble, therefore, in the absence of a definite history, it was thought well to confirm the diagnosis by the therapeutic test.

When her condition was nearly normal and she was able to sleep and take proper nourishment, the anti-syphilitic treatment was withdrawn (October 10), and she was simply kept under observation.

In two weeks' time, after she had remained away several consecutive days, against our advice, the skin lesions had broken out anew, over her whole body, and two mucous patches were found on her right tonsil, and three on the left; the appearance of the throat, however, being entirely different from that of the first visit. The hypodermic injections were then renewed in large doses (½ gr.), and 30 grs. of the iodid were given daily.

As all visible lesions improved within a week, and have now nearly disappeared, the diagnosis is confirmed, and the future course of treatment is determined. While the cause of the infection could not be positively determined in this case, the circumstantial evidence all pointed to an innocent inoculation, probably from the caresses of one who had secondary lesions in his mouth. The stratified squamous epithelium which lines the mouth and fauces affords excellent protection against germs entering the system at these points. The ragged hypertrophied tonsil in this case rendered the fauces more vulnerable; the cells lining the tonsil crypts were probably soaked by cheesy detritus and desquamated by hawking and "clearing the throat," thus exposing the underlying structures and affording an excellent soil for the virulent specific germs.

The case above related occurred in the right tonsil, which is the more commonly affected in these conditions. There have been more cases reported of chancre of the tonsil in men than in women.

Sex Determination from a New Point of View.—Flammarion has been studying, since 1894, the action of the solar rays on the life of plants and animals. He announced at a recent meeting of the Paris Académie des Sciences that he had found the normal proportion of males born among silk-worms was very much increased if the worms were kept in darkness or under dark-colored glass. Under light-colored glass the normal proportion of 50 per cent. was maintained, but under dark-colored glass the proportion increased to 68 per cent. He also found that the proportion of males was increased still higher if the worms were insufficiently fed. Even under light-colored glass, on insufficient food the males averaged 78 per cent. He queries whether this latter fact may not indicate that the effect of the dark-colored glass is merely to diminish the appetite and thus cause insufficient alimentation.

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THE PREVENTION OF THE SPREAD OF PULMONARY TUBERCULOSIS.

The demonstration by Flügge and his pupils in Breslau, and also by others, that tubercle bacilli are disseminated in fine sputum particles during the talking, coughing and sneezing of phthisical patients and the fact that guinea-pigs may be rendered tuberculous by exposing them to the coughing of the consumptive, have led to the belief that the dissemination and inhalation of droplets of sputum laden with bacilli may be one of the most important methods of spreading pulmonary tuberculosis. Of course the same method undoubtedly obtains in other diseases also, such as leprosy, influenza, the pulmonary form of pest, etc. Recently several new investigations along these lines, but with the special object of teaching us something practical with respect to the prevention of tuberculosis, have been published from Flügge's laboratory.[1] Investigation by Heymann has shown that the dust which results from dried sputum is comparatively coarse, and for that reason endowed with a rather brief infectivity, the most dangerous because lightest and therefore carried the furthest being shreds and threads of handkerchiefs and cloths, especially when moistened with only small quantities of sputum. Naturally handkerchiefs should be disinfected frequently, say after being used twenty-four hours. Paper handkerchiefs, which can be burned when used, are especially recommended. In Cornet's celebrated investigations concerning tubercle bacilli in the dust of rooms occupied by consumptives the material was gathered by means of moist sponges, which would take up adherent masses of sputum that had been deposited directly and not by transport in the air. Heymann's investigations indicate that even in neglected consumptives' quarters the dust that forms is not at all everywhere infective and that when gathered by means of wet sponges a much larger proportion of the guinea-pigs injected become tuberculous than when swept together with a fine dry brush. But in factories, railway carriages and street cars the shaking might set in motion even the larger particles, and new researches are planned to cover the special conditions here found.

The Breslau investigators formulate the rule that during coughing the consumptive should be at least arm's length removed from other persons and he should hold his handkerchief before his mouth. In offices and working rooms the distance between the heads of the occupants should be at least one meter. This rule is based upon actual demonstrations of the dissemination of bacilli-laden particles during coughing. And after coughing it does not seem that the particles settle immediately, but may remain floating for some minutes at least. Plates exposed to the spray from coughing were found sterile after three days when kept in the light, but contained virulent tubercle bacilli even after eighteen days when kept in the dark, thus showing again the bactericidal action of light. While there seems to be no question but that masses of bacteria are hurled out from the mouth especially in coughing, yet it might be doubted that such bacteria are actually inhaled by persons standing about naturally. Nenninger, however, found prodigiosus bacilli in the basal parts of the lungs of guinea-pigs subjected for half an hour to an atmosphere into which a spray of a suspension of this bacillus had been thrown. This demonstration would seem to throw doubt upon the generally accepted statement that the normal lung as a rule is free from bacteria. And the important bearing of these various observations upon autoinfection of consumptives should not be lost sight of.

The points briefly touched upon may serve to indicate that much, very much is to be accomplished for the prevention of tuberculosis by following the indications that are derived from careful, experimental and other studies of the dangers associated with the sputum, both moist and dry. The people in general must be educated and instructed in these facts and their significance. As long as we have such a rich chance to attack the bacillus of tuberculosis directly let us not seek rest from the great responsibility in vague theorizations concerning special disposition of tuberculosis, etc. In the larger cities of this country much is being done to lessen the manifest evils of promiscuous expectoration. Attention must now be paid to what may be called the hygiene of coughing.

1. Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxviii, Hft. 1.

THE INFREQUENCY OF PRIMARY MALIGNANT TUMORS OF MIXED TYPES AND ITS BEARING ON THE CANCER QUESTION.

The many recent and valuable discussions of the cancer question, notably Senn's comprehensive review in a late number of this journal, Park's exposition of the parasitic theory in The Journal,[1] and C. P. White's[2] amplification of Ribbert's theory of tissue tension, omit one important feature in the biology of malignant tumors, namely, the rarity with which the epithelial and mesoblastic types of malignant growths occur together. This fact, however, is of much importance. In his report of a primary tumor in the thyroid gland of a dog, which was composed of an intimate admixture of the two types, H. G. Wells[3] states that his search of the literature revealed but seventeen cases in which it was demonstrated with reasonable accuracy that a single individual presented simultaneously an independent carcinoma and

1. September 14.
2. Jour. Path. and Bact., 1901, vii, 339.
3. Ibid., p. 356.

an independent sarcoma. This does not tend to support the assumption of White that the general condition of the patient is of importance in determining that local disturbance of equilibrium, which he argues would lead to tumor growth; for, if any general condition were responsible it would be reasonable to look for a much greater frequency of multiple malignant tumors. Wells found further only three cases in which it appeared probable that a primary tumor consisted of both sarcomatous and carcinomatous elements, and in all three the site was the thyroid gland. In one of these cases some of the secondary growths were purely sarcomatous, some purely carcinomatous, and some resembled the primary tumor in containing both types of tumor.

From the point of Cohnheim's theory we are justified in the expectation that mixed tumors would be frequent, perhaps the rule, because most of the "embryonal matrices," containing epithelial cells, also have a fibrous framework; yet the stroma of adrenal tumors, arising from misplaced adrenal tissue in the kidney, has not been found to assume sarcomatous appearances. Perhaps the renal tumors of mixed structure, the so-called embryonal adeno-sarcomas of the kidney, which contain not only epithelial and connective tissue elements, but also muscle fibers, might be cited as an exception to this statement. Embryonal adeno-sarcoma of the kidney, however, owes its malignancy wholly to the sarcomatous portions, the epithelium never taking on malignant, infiltrating properties. These tumors demonstrate that all of the structures of the fetal kidney may develop simultaneously into tumor, but epithelium and stroma do not become malignant at the same time.

Turning now to the parasitic theory of tumors, we find that, no matter what the nature of the parasite is thought to be, whether protozoic or vegetable, the ideas vary as to the way in which the parasites operate; because some investigators hold that carcinoma and sarcoma are due to a single organism, which causes a carcinoma when infecting epithelium and a sarcoma when infecting connective tissue, while others think that the organism of sarcoma is different from that of carcinoma though the two may be closely related. Now if the same organism were capable of causing carcinoma and sarcoma it would be reasonable to expect that it would frequently set up proliferation in both tissues at the same time and that mixed sarcoma and carcinoma would be common, which is contrary to fact. If the organism of carcinoma is different from that of sarcoma, single tumors would be the rule. Of course mixed infection with the hypothetic organisms might occur, either from the beginning, or from the implantation of one upon the other as is the usual order of things in mixed infections with ordinary pathogenic parasites. This idea agrees better, therefore, with the comparative rarity of mixed malignant tumors.

The question of cellular speeificity may be referred to also in connection with this matter. If each cell did not produce its own kind mixed tumors of malignant character should be eommon. The infrequeney of such growths bears out the doctrine of the specifieness of the cells. In the case deseribed by Wells he found no evidence of the transformation of epithelium into sareoma cells, or conversely.

MEDICAL ORGANIZATION AND THE PUBLIC.

The objects of organization of the medical profession are not selfish ones. While some of these objeets look to the well-being or the material interests of the profession in many ways, there are others which are for the good of the people also. The fight to be waged against quaekery, charlatanry and pretenders, and for better eduea-tion and higher standards of qualifications for entrance into the profession, itself, is not with the idea of simply bettering that profession, but for the protection of the people as well. Some of the objects to be obtained by organization are of direct advantage to the people and not even indirectly to the profession. Some of these are better sanitary laws, legislation for the prevention of disease, for the eontrol of epidemics, and for the "enlightening and directing publie opinion in regard to the broad problems of state medieine." The profession has nothing to hide or to be ashamed of in this work of organization, but, on the contrary, everything to be proud of and to willingly submit openly, candidly and freely to an intelligent public.

It is most gratifying to find in one of the solid monthly magazines[1] an article in whieh the objects of organization and the plans on which organization is to be effected, are elaborated. It is especially gratifying because the magazine in question admits to its pages only articles of merit and on important topies. It is written by Dr. P. Maxwell Foshay, of Cleveland, who was one of the members of the Committee on Reorganization of the American Medical Association, and who is now Secretary of the Ohio State Medical Society and doing effective work in organizing his state on the plan outlined.

In this article he shows that the attitude of medicine toward the world is very different from that obtained when medicine was encumbered by superstition, ignorance and charlatanry, much of whieh has been swept away by the recent developments of rational medicine. The ideal of modern medicine is the prevention of disease, and it therefore follows that the profession desires to be understood and be aided by an enlightened publie intelligence. He calls attention to the new sehool of medicine as described by Dr. Reed in his presidential address at St. Paul, refers to the report adopted at the last meeting of the American Medical Association, and outlines the general scheme of organization. Such contributions read by an intelligent laity can not but help in the great work. We wish we might see more of such articles and on topics that are now discussed only

1. The Organization of the Medical Profession: The Forum, October, pp. 166-171.

in medical journals, but which, if presented in the lay journals in an intelligent manner and by the right men, would be the means of making the profession less misunderstood than is now the case.

THE TRAINED NURSE AND HER POSITION.

Dr. Malcolm Morris used to call the trained nurse a parasite upon the medical profession. The usual idea conveyed by this term is hardly the one he intended. What he meant was that her position is, what she sometimes forgets, a purely ancillary one and that her useful existence is dependent upon the medical profession. It is hard, however, for any of us to be duly humble; the trained nurse is as liable to have her conceit enlarged as anyone, and, under the adulation she receives, perhaps more than some. A very useful class of persons as a whole may, therefore, produce specimens that remind one of the objectionable kind of parasites that bite their hosts and benefactors. One is reminded of this by a recent address given before a nurses' convention, in which the speaker, a hospital head nurse or superintendent, after reviewing some well-known defects of political hospital management, for which, in spite of what appears to be the implication, the medical profession can not be held to be generally or largely responsible, she indulged in certain disparaging remarks and insinuations against physicians. She expressed, for example, a belief that the objections to the dispensary abuse only comes from men who are incompetent and lazy, and reiterated the venerable chestnut that physicians are by nature and training unfit for administrative duties.

As this is the main argument of those who keep up the real abuses she mentioned, her good judgment or her sincerity seems questionable. Her views, it is said, were shared and endorsed by others of her occupation, and, from the newspaper reports, the general temper of the convention seems to have been reflected by her remarks. It is unfortunate should nurses' organizations breed this sort of thing, and that those who ought to be a valuable assistance in the care of the afflicted should injure their usefulness by self-overvaluation.

Another instance of bumptiousness on the part of nurses, and one or two internes as well, is afforded by the very free criticisms of the medical treatment of our late President as reported in a Chicago paper. If they are not misquoted they were very free in their remarks, criticising the medical attendants of the late President both directly and by implication, the criticisms being such as might be expected from those whose limited knowledge qualified them in their own opinion to pass judgment upon men of national and cosmopolitan reputation. It apparently did not occur to them that as nurses and assistants there might be an impropriety in their expressing opinions from a distance on the surgical or medical treatment and that by leaders in the profession. The usefulness of the nurse is and always will be gauged by her faithfulness as a subordinate intelligently carrying out the directions of the physician, and it will be impaired or lost altogether if she indulges in public or even private criticisms of her professional superiors.

THE QUACKS OF BERLIN.

According to the *Medical Press and Circular,* the official records of the city of Berlin show that 60 per cent. of the quacks there prospering have been ordinary day-laborers before they blossomed out as professed benefactors of the afflicted, that only 40 per cent. have had an elementary common school education, and that of the female contingent about 58 per cent. have been servant girls. Nevertheless, it is probable that they have their share of the practice among the wealthy and *soi disant* cultured classes, and, as the irregulars here claim for themselves, "pull silver doorknobs" perhaps almost as much as better qualified practitioners. We conjecture this because human weakness is not a matter of national boundaries, and Germans are, according to our observations, no more sensible as regards medical impositions than other nationalities. Another interesting fact also related is that about 30 per cent. of the Berlin quacks have criminal records—we suppose this is apart from their medical careers—and yet they thrive.

LAY CONTROL OF CHARITIES.

The beauties of patronage and exclusive lay control are illustrated by a news item that comes to us from over the water. The Duchess of Sutherland it appears has established a home for crippled children, a useful charity over which she evidently retains the supervision. A staff of doctors have until lately given their attention to the medical needs of the inmates, but very recently the titled patroness or proprietor of the establishment has introduced an hereditary bonesetter to treat them. The medical staff naturally have objected, and what the result will be has not thus far been revealed. The Duchess is herself apparently so well satisfied with the bonesetter that she insists upon his retention, and doubtless, after the manner of the laity, considers the physicians altogether in the wrong for refusing to co-operate —if that is the word—with him. It would seem, aside from the professional point of view, that the opinion of some half dozen reputable, educated physicians, giving their services gratuitously, ought to count against that of a single uneducated manipulator, but that is apparently not the case. The medical and surgical treatment of the patients was, therefore, left to the bonesetter, whose skill and success where the doctors fail is vouched for by the Duchess. She will probably in the end come out a wiser woman, but in the meantime somebody is liable to suffer and she and her friends will only blame the doctors.

RELATION OF TAXATION TO TUBERCULOSIS.

A French physician has in a recent paper traced a direct connection between taxation and tuberculosis. He finds that the mortality from this cause is very much higher in France than in England, in spite of the climatic disadvantages of the latter country, which with its

damper and foggier seasons might be supposed to favor the disease. He accounts for the difference by the better nourishment of the Englishman. The Frenchman is handicapped by excessive taxation, which makes the cost of living high and restricts the poor to bad and insufficient food. In Paris the matter is made worse by the "octroi" laws which make living there much more costly than in its immediate suburbs. All this is due to the costly militarism of continental European states; it is a penalty they pay for distrusting and hating each other. When Great Britain in the early part of the last century suffered similarly from unwise and excessive taxation, with its corn laws and its window tax shutting out light and ventilation, its mortality was also high, and the improvement in public health has followed tax reform. While we can not get our statesmen to study medical and sanitary matters we should as a profession see that they do not sin ignorantly in these ways. There is hardly a question that arises in government or politics that has not a possible medical bearing or on which medical science can not throw some light. What we pay for lack of this can not be told, but it is surely often a heavy price and may entail disaster. Public medicine in this wider sense in its relations to economies, legislation, and the like, is a field that is well worth cultivation. At present its importance is too little appreciated by our lawmakers and it is our duty as a profession to do what is in our power to enlighten them.

THE QUESTION OF SPECIALIZATION BY UNDERGRADUATES.

The field of medical practice has grown so large that no ordinary person can successfully traverse it all. Specialization is thus the result of a naturally evolutionary process, tending to greater refinement and precision in knowledge, as well as in diagnosis and in treatment. To be a specialist of the highest type, however, one must have a broad and deep foundation in general knowledge. This, however, does not imply that a tendency to specialization should not be encouraged early, providing this is not done too exclusively or to the detriment of general training. The view of the specialist should be not less broad than that of the generalist, the only excuse for the existence of the former arising from the fact that in addition to his general knowledge and ability he possess some special knowledge and ability. If, therefore, the medical student, by means of personal preference, personal endowment, or personal opportunity, chooses to devote himself in later life to a special field of medical practice, we think he may wisely devote special attention, even during his medical or collegiate course, to studies in and collateral to that department, not neglecting, we repeat, faithful attention to the other departments. In general, however, it may be stated that it were better for the ordinary student to confine himself to the broader and more general education. Medicine is a somewhat indivisible entity, its subdivision into branches being rather factitious, and no person is a secure practitioner in any one of its parts who has not a fundamental familiarity with all of its parts; therefore, he will be the best specialist who has mastered well the general field of medicine.

Medical News.

CALIFORNIA.

Smallpox is still in evidence in Oakland. Three new cases were discovered on September 27.

Santa Ana Hospital.—A movement is well under way for the establishment of a cottage hospital at Santa Ana, to cost $10,000.

Doctors Must Register.—The Los Angeles city council passed an ordinance September 30, requiring all physicians and surgeons to register at the health office and present the certificate previously obtained from the State Board of Health.

French Hospital Training School.—The French Hospital Association, San Francisco, has approved the proposition to maintain a training school for female nurses with a maximum of 35. It also authorized the expenditure of $17,000 for additions and improvements to the hospital building.

GEORGIA.

The Medical College of Georgia, Augusta, held its seventieth annual opening exercises, October 1. Dr. James M. Hull made the introductory address.

Public Schools Closed.—On account of the prevalence of scarlet fever in Eatonton and in Putnam County, the public school has been closed for one month. The public shools of Rome have been ordered closed for two weeks on account of scarlet fever.

Personal.—Dr. Gustavus G. Roy, Atlanta, will spend the winter in Florida on account of ill health.——Dr. Charles H. Hall has been elected Chairman of the Macon Hospital Medical Board, vice Dr. William F. Holt, deceased.——Dr. Evan Park Howell, Atlanta, has been appointed assistant surgeon in the Army with the rank of first lieutenant. He is now in the Philippines.

ILLINOIS.

New Cottage Hospital.—The new addition to the Peoria Cottage Hospital will be opened for patients, November 1. The attending staff for the year consists of Dr. John D. Miller, president; Dr. Thomas M. McIlvaine, vice-president; Dr. Otho B. Will, secretary; Drs. Paul Dombrowski, Emerson M. Sutton, Robert W. Baker, Robert A. Hanna, Elmer M. Eckard, Frank B. Lucas, Oliver J. Roskoten, Sumner M. Miller, John C. Roberts and Harrison Steele.

Personal.—Dr. Frank R. Pitner, Clay City, who is in his ninetieth year and has been practicing medicine since 1839, has gone to California for the winter.—Dr. Samuel Moore, Danville, has moved to Jamesburg.——Dr. Fred W. Carman, Prophetstown, has sold his practice and will locate in Geneseo. ——Dr. Emma Morgan, Aledo, has opened an office in Rock Island.——Dr. E. L. Birch has resigned from the staff of the Illinois Eastern Hospital for the Insane and will locate in Robinson.——Dr. Henri S. Babcock, Jamesburg, has located in Danville.——Dr. Frank W. Goodell, Effingham, has been reappointed lecturer on anatomy at the College of Physicians and Surgeons, St. Louis.——Dr. J. A. Guertin, L'Erable, has moved to Clifton.

Chicago.

Dr. E. C. Dudley has resigned the chair of gynecology at Northwestern University Medical School.

Dr. Albert P. Ohlmacher has returned to Chicago and has succeeded to the chair of pathology in Northwestern University Medical School made vacant by the resignation of Dr. Gustav Fütterer.

St. Ann's Hospital for Consumptives.—The cornerstone of St. Ann's Hospital for the treatment of consumptives at North 48th avenue and Division street, will be laid by Bishop Muldoon, October 20. The fund thus far subscribed amounts to $23,118.

Mortality and Morbidity.—The mortality for the week ended October 5, was 419—an annual death rate of 12.41 per 1000. The Health Department still urges care in the use of hydrant water for drinking purposes, as the typhoid fever mortality continues abnormally high. There is a general increase of contagious diseases, but the type of all—and especially of scarlet fever—is mild and the mortality thus far is unusually low.

Cook County Hospital.—Drs. Arthur R. Edwards and James B. Herrick have resigned from the Executive Committee.

The president, Dr. Denslow Lewis, has appointed Dr. E. Fletcher Ingals to represent Rush Medical College, and Dr. Robert B. Preble to represent the Northwestern University Medical School. The Committee elected as chairman, Dr. William E. Quine, who appointed the following subcommittees: Clinical instruction, Drs. Baldwin and Webster; records, Preble and Lewis; morgue, MacKellar and Kearsley; admission and assignments of patients, Lewis and Swan; internes and nurses, Ingals and MacKellar; laboratory, Kearsley and Baldwin; the chairman, ex-officio member of all committees.

Resolutions in Memory of Dr. Jones.—The medical staff of St. Luke's Hospital, at a meeting held October 3, passed the following resolutions in memory of the late Dr. Samuel J. Jones: Resolved, That the medical staff of St. Luke's Hospital have heard with deep regret of the death of their confrère, Dr. Samuel J. Jones. They especially desire to acknowledge his long and faithful services to the Hospital, both as attending and consulting ophthalmic and aural surgeon, and to place on record their appreciation of his devotion to the best interests of the institution. Be it further resolved, That the members of the staff attend the funeral of Dr. Jones in a body, and that copies of these resolutions be forwarded to his nearest relative and supplied to the medical press.

INDIANA.

Smallpox in virulent form has broken out in Michigan City. Four cases had been reported up to October 3, with one death.

Anti-Expectoration in Logansport.—The city council passed an ordinance October 2, prohibiting expectorating on the sidewalks of the city.

Epworth Hospital.—The new Epworth Hospital, South Bend, was opened for patients October 7. It is a fireproof, three-story brick and stone building and was erected at a cost of about $70,000.

Personal.—Dr. James A. Turner, Martinsville, has moved to Nashville.——Dr. William E. Kessinger, Worthington, has returned to Sandborn.——Dr. Edwin M. Trook, Marion, now serving in the Philippines, has been promoted to captain and assistant surgeon, U. S. Volunteers.

Osteopaths to be Prosecuted.—The State Board of Medical Examination decided September 24 that all osteopaths who have not applied for licenses by November 1, or those who have applied and been refused licenses and are still practicing, will be prosecuted. The board granted licenses to twenty-nine osteopaths and refused five.

MAINE.

Bar Harbor Hospital trustees, at their annual meeting, decided to take steps to enlarge the hospital, and appointed Dr. R. S. Dorsett, pathologist.

Personal.—Dr. E. O. Challis has moved from Woodfords to Gorham.——Dr. Goodspeed has moved to Fairfield and will office with Dr. Ivory P. Tash.——Dr. Charles S. Knight, Bangor, has located in Woodfords.

New Licensees.—At a special session of the State Board of Examination and Registration, held in Portland, August 1, Dr. Robert Abbe, New York, and four other applicants passed their examination and were granted licenses.

MARYLAND.

Baltimore.

The College of Physicians and Surgeons opened September 30 with an introductory lecture by Prof. William F. Lockwood.

The new infectious diseases hospital will have four separate buildings; an administration building, one for scarlet fever, one for measles and the fourth for diphtheria.

Maryland Medical College.—Dr. W. McLean Yost has been appointed associate professor of materia medica and clinical diagnosis and Dr. P. Eugene Craig associate professor of diseases of children. This school is reported to have begun its its session with 106 matriculates.

Class Meetings.—The first weekly meeting of the fourth-year class of the Johns Hopkins Medical School was held at Dr. Osler's residence October 5. At these meetings, which were inaugurated by Dr. Osler, the members of the class report cases seen and studied in the hospital and patient department.

Woman's Medical College Changes.—The following changes have been made in the faculty of Woman's Medical College, Baltimore: Henry P. Hynson, Ph.G., has been elected to the chair of pharmacy, with H. A. B. Dunning, Ph.G., as assistant; Dr. Frances A. Carpenter has been appointed lecturer on embryology; Dr. W. S. Skillman, lecturer on diseases of the stomach; Dr. Louise Erich, lecturer on orthopedics, and Dr. Henry W. Kennard, demonstrator in anatomy.

City Hospital Staff Changes.—Drs. Louis Stick, Louis J. Rosenthal and Albert Conrey of the staff of the Baltimore City Hospital, have resigned on account of disagreement with the faculty of the College of Physicians and Surgeons, regarding the regulation of the hospital. Dr. F. M. Owens has been appointed resident physician; Drs. Frank T. Marr, J. C. Sullivan, H. B. Jester, and E. T. West, have been advanced, and Dr. W. E. Smith has been appointed a member of the house staff.

Personal.—Drs. Francis T. Miles and L. Wardlaw Miles have returned after spending several months in Europe.——Dr. John Ruhrah, who has been spending the last 18 months in special studies in Vienna, Berlin, Paris and London, has returned and will take part in the instruction at the College of Physicians and Surgeons this winter.——Dr. Henry B. Thomas has returned from the Blue Ridge Mountains.——Dr. Henry M. Hurd, Superintendent of the Johns Hopkins Hospital, has returned from a trip to Nova Scotia, Buffalo and the North.——Dr. A. V. Cherbonnier, U. S. Army, is convalescing at the Presbyterian Eye, Ear and Throat Hospital from an operation on his right eye.——Dr. J. A. Gale, Roanoke, Va., is at the Johns Hopkins Hospital with septic poisoning due to infection of the third finger of the left hand, while performing an operation about three months ago.——Dr. Osler during the summer visited Amsterdam and there ordered a large number of books, including some valuable editions of medical classics, for the library of the Medical and Chirurgical Faculty.

MASSACHUSETTS.

Dr. Octavius T. Howe, Lawrence, who has been district medical examiner for seventeen years, has resigned.

Diphtheria is increasing in Lowell to an alarming extent. Seven cases were reported to the health board, October 1.

The Albert Bowman Wood Surgery, which is to be erected at Memorial Hospital, Worcester, by Mrs. Wood, is to be a two-story building, 47 by 60 feet, with two operating rooms and all modern appliances. The building is to cost $20,000.

Personal.—Dr. T. H. Grady, Clinton, is about to locate at Maynard.——Dr. Joel Boyer, Oatdale, has moved to Easthampton.——Dr. J. Frank Hall, Lowell, has passed the Army Medical Board examination and has been commissioned first lieutenant and assistant surgeon, U. S. Army.——Dr. Hiram H. Burns, Athol, has sold his practice to Dr. Oliver A. T. Swain, Washington, D. C.

MICHIGAN.

Smallpox is reported from Shiawassee County. The patient is a school teacher who, although ill, continued to teach for several days.

Dr. Beverly D. Harison, Sault Ste. Marie, has been appointed a member of the State Board of Registration in medicine for a term of four years from October 1.

Personal.—Dr. Henry B. Landon, Bay City, has been reappointed a member of the State Medical Board.——Dr. A. A. Spoor has decided to locate in Bay Rapids.

New Medical Building.—The cornerstone of the new Medical building of the University of Michigan, Ann Arbor, will be laid October 15. Dr. John A. McCorkle, Brooklyn, of the class of 1873, will deliver the address.

MINNESOTA.

State Examination.—At the examination for license to practice medicine in the state, held in St. Paul, October 1, 2 and 3, 26 candidates appeared, 3 of whom were women.

Hospitals to be Built.—Building permits have been issued for the completion of the Swedish Hospital, Minneapolis, to cost $35,000, and for the third story of the contagious disease building at the Minneapolis City Hospital, to cost $5000.

Personal.—Dr. Paul D. Cook has been appointed assistant police surgeon of St. Paul, vice Dr. W. G. Richeson, term expired.——Dr. James P. Davis has moved from Millville to Kellogg.—Dr. H. C. Stuhr, St. Paul, has located in Crookston.

Diphtheria.—Health Commissioner Hall, of Minneapolis, blames the local profession for the fact that there are now 400 cases of diphtheria in the city. He says there are dozens of physicians who never send for culture tubes, and ignore the

law compelling them to report contagious cases. Malignant diphtheria is said to be raging north of Preston.

Smallpox and Vaccination.—At White Earth Reservation, no Indian is allowed to receive his fall payment until he has been vaccinated.——Strict quarantine is maintained at Mille Lacs by the Indian police.——Dr. Henry M. Braeken, Minneapolis, of the State Board of Health, says that it would be easy to stamp out contagious diseases if there were no railways. He has written to the State Superintendent of Public Instruction, remonstrating against his position that school authorities can not exclude from school children that have not been vaccinated unless an epidemic of smallpox is prevalent or threatened. He holds that there is practically an epidemic of smallpox in the state and that vaccination should be compulsory. He cites that 6288 cases of smallpox were reported up to August 12, since the disease appeared in the state, and that 122 new cases were reported during the last fortnight.

MISSOURI.

Personal.—Dr. P. H. Stultz, Cedar Canon, has located in Pawnee, Okla.——Dr. Owen P. Farrington has moved from Springfield to Louisiana.

Leper and Nurse Isolated.—Dong Gong, the Chinese leper, of St. Louis, and Dr. Louis Knapp, his volunteer nurse, have been installed in the isolated house built for them near the isolation hospital.

Scarlet fever is prevalent to an unprecedented extent in Kansas City, and the city physician, George O. Coffin, says physicians aid the spread of the disease by not reporting cases to the Health Department. He promises to have derelictions of this kind severely dealt with in the future.

MONTANA.

State Examination.—The State Board of Medical Examiners met at Helena, October 1 and 2, and examined 27 candidates, including one woman and two Chinamen.

Sanitary Rules.—The Fergus County Board of Health has adopted a sanitary code which provides for location and cleansing of vaults; disposal of offal; prohibition of sale of diseased food; compulsory vaccination of school children; closing and disinfection of schools when cases of infectious disease occur; report to the Board of cases of contagious diseases; prohibition of public funerals in case of contagious disease, and closure of schools during epidemics.

New Hospitals.—The National Croatian Society expects to build a hospital in Anaconda to cost $20,000. The society has 20,000 members in Montana.——St. Luke's Hospital, Livingston, will be opened November 1. The additions to St. John's Hospital, Helena, are nearly completed and it is expected that the institution will be ready to receive patients, November 1.——Helena architects have been invited to submit competitive plans for the new St. Peter's Hospital to be erected at a cost of $45,000.

NEW MEXICO.

St. Joseph's Hospital.—An institution fully equipped for the treatment of tuberculous invalids has been established at Silver City under the care of the Sisters of Mercy. Dr. Earl S. Bullock, formerly pathologist and physical diagnostician, U. S. General Hospital for Tubercuiosis, Fort Bayard, is medical director, and the consulting physicians are Major Daniel M. Appel, Surgeon U. S. A., Commanding U. S. General Hospital, Fort Bayard, N. M., and Drs. Will T. Williams, E. L. Woods, and Samuel M. Lane, Silver City.

NEW JERSEY.

Passaic General Hospital.—Owing to the failure of the citizens of Passaic to come to the aid of the General Hospital Association, the hospital will be obliged to close Jan. 1, 1902. There are now nearly one hundred patients in the hospital, about two-thirds of whom are free.

Endorsement of State Board.—The State Board of Medical Examiners of Maine has recently followed Delaware and other states in endorsing the certificate of license issued by the New Jersey Board. The effort of the New Jersey Board to extend the limits of interstate reciprocity is meeting with appreciation.

September Examination.—At the September examination of the State Board of Medical Examiners 35 candidates were examined, of whom 8 were rejected, making the percentage of rejections 22.8. Dr. Samuel Henry Sulouff, of Christ Hospital, Jersey City, graduate of the University of Pennsylvania, attained the highest average of any during the year.

Medical Inspection of Schools.—The Newark Board of Education has provided for a daily medical inspection of schools. The city has been divided into twelve districts and the medical inspectors appointed are Drs. Rudolph Braun, G. L. Warren, S. Schaeler, Winfield S. De Vausney, Frank S. Gordon, Carl H. Wintsch, M. R. Whitenack, Isabel M. Geddes, G. J. Holmes, Max Feldman, H. A. Scheppaeh and William Bleick.

NEW YORK.

Pest-House Burned.—By order of the local board of health the isolation hospital built at Inwood during the smallpox epidemic has been burned.

The President's Case.—The current number of the *Buffalo Medical Journal* contains a graphic illustrated description of the case of President McKinley. The account of the operation is given by Dr. John Parmenter, who assisted at the operation, and the details of the case are given by Dr. N. W. Wilson, who was the recorder at the operation.

Conference of Sanitary Officers.—The first conference of sanitary officers, including local health inspectors and registrars, will be held October 24 and 25, under the auspices of the State Health Department, of which Dr. Daniel Lewis is the head. The conference, which will hereafter be held annually, will be attended by over 1000 health officers. The object of this gathering is to present subjects of practical interest to health authorities by addresses and discussions.

Examination and Counsel of School Children.—The Board of Health of Syracuse, N. Y., in connection with the school officials, has decided that hereafter every pupil in the city schools shall receive a medical examination monthly, as to general health, with particular reference to defects of eyesight; this is also to prevent the spread of infectious diseases. The pupils are to be counseled and advised as to the protection of their health, and the wisest methods for the maintenance of good health and the acquisition of a proper physical development.

Personal.—Dr. Richard W. Bamber, Kendall, has disposed of his property, but will not locate at present.——Dr. James C. Comstock, Binghamton, is dangerously ill, the result of an attack of paralysis.——Dr. Robert H. Phelps, Norwich, has been elected a member of the governing board of physicians, St. Luke's Hospital, vice Dr. L. J. Brooks, deceased.——Dr. Guy C. Bayley, superintendent of Vassar Brothers' Hospital, Poughkeepsie, is dangerously ill from septic infection during an operation.——Dr. William Stump, Utica, has moved to New York City.

New York City.

Increase in Typhoid.—All hospitals report an increase in the number of cases of typhoid fever, and the Board of Health reports 122 cases for the week, as compared with 82 in the corresponding week of 1900.

A Progressive City.—The tax critics point out that New York, with a population of about one-quarter of what it is now, had a Board of Health which cost $40,000 a year against its present expenditure of $1,000,000.

Hospital Blameless.—The coroner's jury, after considering the circumstances surrounding the death of John Chrystie, who died in the Insane Pavilion at Bellevue Hospital, June 18, decided that he died from natural causes, and that the hospital authorities were in no measure responsible for his death. At the autopsy it was discovered that his body was bruised and that two ribs had been broken.

St. Luke's Hospital Cancels Consumptive Contract.—The Board of Directors of St. Luke's Hospital adopted the report of a special committee, September 30, recommending the cancellation of a contract now existing between the Hospital and the House of Rest for Consumptives, which some years ago transferred to the hospital its resources with the understanding that the hospital would thereafter care for consumptive patients.

Bequests to Hospitals.—The late John Gray has bequeathed $5000 to Seney Hospital to endow a bed, to be known as the "Sarah Gray Bed."——By the will of the late Mrs. Harriet B. Ranney, $6000 is left to establish a bed for adults and $3000 for a bed for children at St. Luke's Hospital.——The late Susan Miln, after certain bequests, left the residue of her estate to various charities, including the General Memorial Hospital for the Treatment of Cancer and Allied Diseases and the Home for Incurables.——St. Luke's Hospital will receive a substantial sum from the estate of the late Daniel T. Hoag.

OHIO.

Ohio Board Sustained.—The State Board of Medical Registration and Examination has been placed on a firm foundation by a decision of the Supreme Court of the state, which establishes its right to pass on the competency of Ohio medical institutions.

Typhoid in Toledo.—The health officer, Dr. Walter W. Brand, asserts that there is more typhoid fever in Toledo than the records show. He has therefore mailed to every physician in the city a copy of the rule requiring the report of such cases to the Health Department.

New Doctors Licensed.—At the regular quarterly meeting of the State Board of Medical Registration and Examination, held at Columbus, October 1, sixteen graduates of recognized medical schools of Ohio, who are entitled to exemption from examination under the state board, were granted certificates to practice.

Western Reserve University Medical Department, Cleveland, opened for its annual session, October 2, with about 130 students, the attendance apparently having not been decreased by the increased requirements for admission. The additions to the faculty are Dr. F. C. Waite, Chicago, assistant to the chair of histology and embryology; Dr. Louis W. Ladd, New Haven, Conn., lecturer on clinical microscopy; Dr. H. B. Parker, Baltimore, demonstrator of pathology, and Dr. Roger G. Perkins, Cleveland, lecturer on bacteriology.

Personal.—Dr. Katherine L. Crawford, Toledo, has returned to her home in Ann Arbor.——Dr. John S. Montgomery, Huntsville, was seriously injured in a runaway accident, October 2.——Dr. Thomas L. Cooksey, Wilmington, has been appointed captain and assistant-surgeon in the National Guard, and assigned to the First Infantry.——Dr. Harry P. Findley has resigned from the staff of the State Hospital, and will practice in Massillon.——Dr. Edward L. Emerich, Wooster, has been appointed on the staff of the State Hospital for the Insane, Massillon.——Dr. George N. Simpson, Warren, has moved to Youngstown.——Captain Jacob R. Welch, assistant-surgeon, O. N. G., Spencerville, has resigned.

Cincinnati.

Dr. Thaddeus A. Reamy entertained the Academy of Medicine at his home in Stockton, October 4.

The annual commencement exercises of the training school for nurses of the Presbyterian Hospital were held October 3. A class of nine was graduated. The annual address was made by Dr. John C. Oliver.

Personal.—Dr. Henry F. Gan, has returned after eighteen months spent in the hospitals of Vienna, Paris and London.——Dr. Mary E. Cadwallader has been appointed on the staff of the State Hospital for the Insane, Dayton.——Dr. Frank L. Ratterman has sailed for Europe to take up an extended course of study in diseases of the stomach and intestines.——Drs. Burnett Weaver and Dudley Webb have been appointed surgeons to the Cincinnati Traction Company, to succeed Dr. C. S. Muscroft, resigned.

PENNSYLVANIA.

Scarlet fever is prevalent in Homestead.——Typhoid fever is reported to be epidemic in Allegheny.——Diphtheria is so prevalent at McKeesport that the closing of the public schools is being considered.

Personal.—Dr. Michael W. Raub has been reappointed health officer of Lancaster.——Dr. Farnham H. Shaw has located in Wellsboro.——Dr. Arthur C. Wheeler, Erie, has moved to Reynoldsville.——Dr. William L. Grim, West Finley, will move to West Washington, November 1.

Free Hospital for Poor Consumptives.—The colony of consumptives, located under the auspices of this institution at White Haven, now numbers seventeen. The present buildings are a barn and a cottage. Beds are spread on the barn floor and the doors are kept open during the day. Weather paper is being placed on the walls in preparation for the snow, and a hot-water heater will soon be installed to keep out dampness and to modify the temperature about the beds. Nothing, however, is done that will tend to impede the circulation of fresh air. The cottage is used as a dining-hall.

Uniontown Hospital.—A recent news item in THE JOURNAL which stated that the Uniontown Hospital Association was building a hospital, and had $5000 subscribed, was partially incorrect, as the State Legislature has appropriated $18,000 for building purposes and $9000 for maintenance for two years. In addition to this, Mr. Josiah V. Thompson has donated two acres of ground, valued at $1000, on which to erect the building, and the citizens of Uniontown and vicinity have already subscribed some $10,000. The trustees are: Hon. Nathaniel Ewing, president; Dr. Thos. N. Eastman, vice-president; Dr. Jacob S. Hackney, secretary; Samuel M. Graham, treasurer, and Hon. Josiah V. Thompson, Hon. A. D. Boyd and O. W. Kennedy.

Philadelphia.

Jefferson Medical College held its opening exercises, October 1. Dr. J. Chalmers Da Costa delivered the opening address.

The Medico-Chirurgical Medical College opened for the session of 1901-1902, October 1. Dr. John C. Heisler delivered an address on the qualities which should be cultivated by the physician.

Contagious Disease.—During September there were 116 cases of smallpox in the city, 234 cases of diphtheria, 152 cases of scarlet fever, 407 cases of typhoid fever and 214 cases of consumption.

Objection to Isolation Hospital.—The plans of the board of directors of the proposed hospital for contagious diseases, for which a site was recently purchased at Narberth, have been abruptly stopped by the authorities of that place.

Registration of Consumptives.—Although six months have passed since the registration of tuberculosis patients was urged by the medical profession and approved by the Board of Health, nothing has been done, because of the Mayor's opposition.

The new medical laboratory building for the University of Pennsylvania will be quadrangular, two stories in height above a high basement, and will measure 340 feet front by nearly 200 feet in depth. The first floor of the building will be devoted to physiology and pharmaco-dynamics, and the second floor will be devoted exclusively to pathology. The equipment will be adequate.

GENERAL.

Dr. Vincenz Czerny, professor of surgery at the University of Heidelberg, is visiting San Francisco, the guest of Dr. Burkan, of that city.

Hospitals in the Philippines.—Surgeon General George M. Sternberg, U. S. Army, in a recent interview, expressed the greatest satisfaction over the condition of the hospitals and medical service as he found them in his visit to the islands.

International Quarantine Congress.—Under the patronage of many eminent men abroad, arrangements have been set on foot for assembling an international quarantine congress. The movement originates with Assistant Surgeon Frank W. Foxworthy, U. S. A., who is at present in Europe. The congress will attempt to formulate a uniform code of quarantine laws, which shall be the standard for the entire world.

Large Number of Women Studying Medicine in Switzerland.—The women students at Berne outnumber the men by 190 to 174. At Geneva, there are 168 women and 183 men following the medical course. The total number of women now studying medicine in Switzerland is 511. Mme. Bornstein was recently admitted to the entire privileges of a registered physician in Berlin after graduating in Switzerland and Prussia; she was admitted at the same time as her son.

Smallpox Report.—According to the last report of the Marine-Hospital Service, the number of cases of smallpox reported between June 20 and September 20 was 9797, as compared with 3818 during the corresponding period of last year. The number of deaths resulting from the cases reported was but 274, showing a smaller death-rate this year from the scourge. Some states have enjoyed greater freedom from the disease than last year, while a few states make distressingly high reports, notably Pennsylvania, which had 10 cases last year and 1205 this, and New York, which had 7 last year as against 521 this year.

The Death of President McKinley.—The *Progrès Médical,* of Paris, speaks with admiration of "the absence of the delays and the distressing indecision, which so often is witnessed at the bedside of persons of prominence. The decision and promptness with which our American confrères complied with the urgent and pressing indication for laparotomy, the clearness and frankness of their bulletins, and also the beautiful fortitude manifested by the unfortunate victim from the moment he was stricken by the assassin to the supreme hour of death." The *Journal de Méd. de Paris* observes: "The only treatment possible was applied in the case of President McKinley, but

the bulletins published were most amazingly optimistic. Not only was infection almost certain after such a traumatism, but the symptoms never ceased to be alarming. How was it possible to speak of being out of danger after a laparotomy under such conditions, when the pulse kept at 120 and the temperature between 38 and 39 C.? Either our American confrères were deceived, or for political reasons they wished to reassure public opinion. The report of the autopsy is equally bizarre and inadequate."

CANADA.

Hamilton Medical Society.—This association has passed a resolution urging that an isolation hospital be established in that city. At the next regular meeting of the Society, Dr. Roswell Park, of Buffalo, will contribute a paper on abdominal surgery.

Toronto Senate Elections.—The following members of the Medical Faculty of Toronto University were elected by acclamation at the recent elections for the senate: Mr. Irving H. Cameron, Dr. W. H. B. Aikins, Dr. James M. McCallum and Dr. Adam H. Wright.

Smallpox.—A serious outbreak of smallpox has again broken out at Copper Cliff, near Sudbury, the scene of the extensive epidemic of last spring. The appearance of the disease in that section of Ontario is causing the Provincial Health Department considerable anxiety.

Medical Inspection of Schools.—Some citizens of Toronto are advocating systematic inspection of the public schools by medical practitioners. The Ontario Board of Health has already endorsed this scheme, and the matter will probably now receive more attention.

Victoria Memorial College Hospital, at Revelstroke, had its cornerstone laid on September 29 by the Countess of Minto, who was one of the party conducting the Duke and Duchess of Cornwall on their trip. This hospital is the fourth of its kind organized in western Canada.

Obituary.—Truman W. Duncombe, M.D., Toronto Medical College, 1882, died suddenly at his home in St. Thomas, Ont., October 2, aged 42. He was a prominent and popular practitioner.——Dr. Hugh Bain, Calgary, N. W. T., died, October 2, at his home, aged 49. He was well-known as a prominent practitioner in the Territories.

Effervescent Sodium Phosphate.—The Inland Revenue Department has just published the result of analyses of sixty-four samples of effervescent sodium phosphate. Of this number only thirteen, or 20 per cent., were found to be genuine. The greater number of the adulterated samples have been so characterized as they do not conform to the B. P.

Montreal General Hospital.—Admissions to the wards of the Montreal General Hospital for the month of September numbered 234. The discharges for the same period were 226; the deaths, 14; the daily average of indoor patients, 180. Consultations in the outdoor department numbered 2565. There have been a considerable number of typhoid fever cases.

Appointment of a Special Inspector.—In view of the repeated outbreaks of smallpox in the unorganized townships of northern Ontario, the Provincial Health Department is considering the advisability of appointing a permanent inspector for those districts. The territory extends from the Ottawa River to Rat Portage, twelve hundred miles, and has a population of 100,000.

Toronto Vital Statistics.—In September there were registered in Toronto 339 births, 229 marriages and 253 deaths. During September, 1900, the registrations were: Births, 328; marriages, 187, and deaths, 290. It is said that the registration of births should be much larger as many physicians fail to register these. London's vital statistics for September were as follows: Births, 60; marriages, 66; deaths, 57.

Medical Examinations.—The fall medical examinations were held at Quebec, September 25 and 26. At a meeting of the Board of Governors of the College of Physicians and Surgeons, September 25, the following officers were elected: President, Dr. Lachapelle; vice-presidents, Dr. Wallee, Quebec, and Dr. Craig, Montreal; registrar, Dr. Marsolais, Montreal; treasurer, Dr. Jobin, Quebec, and secretaries, Dr. McDonald, Montreal, and Dr. Paquin, Quebec.

Toronto Clinical Society.—This Society began its 1901-1902 session on the evening of October 3, with the president-elect, Dr. J. F. W. Ross, in the chair. Dr. Bruce presented a hairy tumor, a report of which has already appeared in the columns of The Journal. Dr. A. A. Small showed two interesting cases: One a woman of 40, with a cystic tumor in the left popliteal space, which Dr. Grasett suggested was probably connected with the sheath of a tendon or an enlarged bursa; and a case of polymastia in a woman of 60, who had borne several children. This supposed supernumerary breast was situated just behind the right posterior axillary line and was quite characteristic of a breast, although lactiferous openings could not be defined. It had never enlarged during nursing. The nipple-like tumor had always been present. The opinion was pretty general that the so-called supernumerary breast was a lipoma. Dr. A. A. Macdonald showed a specimen of cystic-adenoma of the breast. He believes in removing the entire breast in such cases.

Toronto Medical Society.—The first regular meeting of this Society was held on the evening of October 3, with the president-elect, Dr. F. N. G. Starr, in the chair. He delivered a very interesting presidential address on eminent members of the profession in Toronto, in days gone by, illustrating this with canvas photographs. Mr. Cameron showed some very interesting calculi extracted from an old man of 76, by high section, some fourteen of these being found in the cul-de-sac, behind the prostate. Dr. Graham Chambers showed a girl of 13 years who had hydro-vacciniforme for ten years. Dr. Primrose and Dr. Chambers showed a young man of 25 with blastomycosis. The two lantern-slide photos shown, exhibited warty tumors on the right malar bone, one on the neck, one on the shoulder and another at the inner canthus of the right eye, which resembled very much an epithelioma. The fungus was readily found under the microscope. Excision and the actual cautery in the hands of Dr. Primrose is effecting a cure.

Opening of the Medical Schools.—The medical department of the Western University at London opened for the winter session, October 1.——Toronto School of Medicine resumed its work on the same date. Professor J. F. W. Ross delivered the opening lecture, taking for his subject, "The Indian Medicine Man." Before a single lecture had been delivered a larger number of freshmen had been enrolled than for any previous year. A demand will probably be made for additional accommodation from the provincial government.——Queen's, at Kingston, opened October 2. New additions have been completed during the summer, at a cost of $10,000. The Reverend Principal Grant, who is confined with a serious illness, sent a message to the assembled students, exhorting them to take up their studies seriously from the outset. He said that hereafter there would be greater pains taken to prevent the graduation of irreverent and half-taught young doctors from Queen's.——Bishop's Medical College also opened during the week, the dean, Dr. F. W. Campbell, delivering the opening lecture. It is only a few years since the standard for medical matriculation was raised in Ontario, but with the increasing influx into medicine, it would appear as though the B.A. standard of matriculation was in the near future.

FOREIGN.

Professor Virchow has had the largest municipal hospital in Berlin named after him, in honor of his coming eightieth birthday. The city has also voted 100,000 marks to the Virchow House, a charitable institution.

Bubonic Plague Threatens.—A rat caught on board an East India liner was found to contain pest baeilli. It is feared that the plague may thus have been carried into France by the escape of other infected rats at various ports.

Smallpox in London.—There were 128 cases of smallpox in the London hospitals, September 30; there are in all 4885 patients in the hospitals. The medical officers are busy revaccinating, and scarlet fever and diphtheria are also causing the Health Department considerable concern.

Honors to the Memory of Chassaignac and Maisonneuve.—During the French Congress of Gynecology which was held at Nantes, the latter part of September, portrait busts of these two famous sons of Nantes were unveiled with appropriate ceremonies, followed by a banquet of the Chassaignac committee and the members of the congress. The busts are in the grounds of the public hospital.

Deaths Abroad.—Our Brazilian exchanges announce the death of A. R. de Alvarenga, President of the Faculty of Medicine at Rio de Janeiro, from 1889 until last February. The titles of Baron and Viscount had been conferred upon him in token of appreciation of his services to the late Emperor, Pedro II, and the Republic has also conferred signal honors upon him. The medical school was closed for the week following his death as a mark of respect to his memory. He was aged 69.——The death of Dr. Cuneo, chief of the Medical Corps of the Navy of

France, occurred at Vichy, September 4.——Dr. Vaucher, professor of obstetrics and gynecology, at Geneva, is dead.

Prevention of Tuberculosis.—The Minister of Public Works of France has sent a circular letter to all railway companies, pointing out the best manner in which to combat the propagation of tuberculosis among their employes. The companies are already very careful, accepting only applicants shown by medical examination to be free from the malady. The future aim will be to give outdoor positions to those who have contracted it since entering the service.——The Prussian School Inspectors are paying particular attention to the prevention of the disease. The Minister of Public Instruction has recently sent to the Department of School Inspection copies of a pamphlet written by an American physician on this subject, with an order to the inspectors to consult with the teachers regarding preventive measures.

PARIS LETTER.

Cigarette Smoking Compared to Cigars.

The Royal Medical Academy of Belgium has published a report by Dr. Kuborn on the use of tobacco, in which the author lays down some principles as to the conditions needed to avoid the noxious effects observed at a certain age. One should avoid damp tobacco, which allows nicotin to escape with the steam without being decomposed. Use tobacco which contains a small amount of nicotin, and do not smoke before meals. Smoke with the help of a cigar or cigarette holder, throw away the last quarter of a cigar and smoke in a well-ventilated room. Cigarettes are the least dangerous form of tobacco.

The Microbe of Dysentery.

Dr. Lesage, physician of the Paris hospitals, who is a well-known bacteriologist, especially in intestinal affections, has just published in the *Presse Medicale* of August 17 a short notice on a microbe of dysentery. An extract of this will be of use as a means of comparing it with what has been recently discovered in the Philippine Islands, and with Shiga's bacillus. Dr. Lemoine was able to examine a large number of cases of dysentery in the service of Dr. Galliot, at Toulon, and he was able to note the following facts: 1. In cases of dysentery from China, Cochinchina, Algeria or Toulon, there is to be found a micro-organism the number of which increases with the progress of the disease and diminishes when convalescence sets in. 2. This parasite is polymorphous, either a micrococcus or streptococcus, generally seen as a diplococcus with equal or unequal grains. In the latter case the micro-organism has the appearance of a balloon with its basket. 3. This microbe is discolored by Gram's method, does not coagulate milk and does not grow on potatoes. 4. It is to be found in the various intestinal products of dysentery, and after death in the veins of the mesentery and the glands of the same order. 5. Injected into the rabbit and guinea-pig, it produces septicemia without intestinal localization. With the cat, however, there is localization on the large intestine, with lesions identical to those observed in man.

New Treatment of Blennorrhagia.

A new treatment for blennorrhagia has been recommended by Dr. de Brun, professor at the Medical Faculty of Bayreuth. It consists in the use of picric acid. A 1 per cent. solution can be used, but is found to be rather painful, so a solution of 0.5 per cent. is usually employed. Only 5 to 6 cubic centimeters should be injected for a few minutes, and this should be repeated two or three times a day. A cure is obtained after four or five days. In chronic forms Dr. de Brun has obtained good results when the disease only existed in the anterior part of the canal. The result of the injection is shown by the change in the coloration of the flow. A bacteriologic examination shows a rapid diminution of the gonococci.

Treatment of Rectal Stenosis.

Dr. Chaput has obtained in quite a number of cases of medullar cocainization anesthesia of the arm and even of the face. Out of 102 observations there were 31 cases of anesthesia of the arm, 4 of the face and 9 of the head in its entirety. At one of the last meetings of the Society of Surgery, the treatment of rectal stenosis was discussed; two observations furnished by Dr. Souligoux and Dr. Walther showed the advantages derived from performing enterotomy in the iliac region, and in the first of the two cases, dilating from above. Later this opening was closed and the patient is supposed to dilate the rectum with catheters used twice a week.

Electricity in Blennorrhagic Arthritis.

Dr. Mathieu, at a recent meeting of the Society of Therapeutics, described the results obtained by the use of electricity in six cases of blennorrhagic rheumatism. These observations had been furnished by Dr. Delorme, who noted some improvement the day after the first use of the galvanic current. There was diminution of the edema and of the pain. A comparison was established by using on one articulation the galvanic current and on another salicylate of methyl. It was found that articulations treated by salicylate were not affected by the treatment, while those subjected to the electrical treatment were much improved.

Tuffier's Statistics on Appendicitis.

Dr. Tuffier's statistics in the treatment of appendicitis have been recently published in a thesis presented at the Paris Faculty of Medicine. There were 52 cases operated upon during the last eighteen months with the following results:

Six operations for general peritonitis, with 4 deaths; 22 observations of pericecal abscess, 19 immediate operations, with 19 cures; one deferred with subsequent death; another with consequent fistula, and still another was not operated on and died; 8 observations of acute appendicitis, with 7 operations followed by success; in one case the operation was deferred and the patient died before being operated upon; 16 patients were operated on sometime after their attack and all recovered.

According to Dr. Dubarry, who is the author of this thesis, the opinion of Professor Dieulafoy that the only treatment of appendicitis is to be found in surgery, is correct, and peritonitis, abscesses or acute attacks of appendicitis should be operated upon.

Correspondence.

A McKinley Memorial.

NEW YORK, October 7, 1901.

To the Editor:—During the past week some lay and some medical journals announced that it was intended to erect in Washington a McKinley Hospital in honor of our late beloved President.

Beautiful as this idea may be, I believe that a little memorial hospital, located in Washington, is not a great enough tribute to a nation's president such as was William McKinley. Furthermore, while I would not wish to say that there is no room for a hospital for the treatment of general diseases in Washington, I know that there is no urgent need for it. On the other hand, I know, and all physicians and charity workers of our large eastern and western cities will bear me out when I say that there is a crying and urgent need of a sanatorium, or rather several sanatoria where the many little scrofulous and tuberculous children of poor parents could receive treatment, care and the necessary education. France, Germany, Holland, Italy, and the Scandinavian countries, all have numerous seaside sanatoria where the little sufferers afflicted with the above-mentioned diseases receive care. The seacoast climates, combined with proper sanatorium treatment, seem to produce really wonderful results in scrofulous and tubercnlous children. The reports of some of the European seaside sanatoria state an average of 75 per cent. of cures.

We in America have, with the exception of one or two small children's hospitals and a few floating hospitals during the summer months, no such institutions. In an address delivered at the recent Congress on Tuberculosis in London, I said that in our eagerness to take care of the consumptive adult we should not forget the little sufferers afflicted with the same or other tuberculous diseases. To treat the scrofulous or tuberculous child—scrofulosis being only a milder form of tuberculosis—or to prevent a child with a hereditary tendency from developing consumption or any other form of tuberculous disease, means the saving of a life and the preservation of a perhaps very useful future citizen.

To realize the urgent need of seaside sanatoria for children one must have visited the crowded tenement districts of our great cities and seen the large number of scrofulous and tuberculous children there, and the many who bear on their pale little faces the stamp of candidates for consumption—pulmonary tuberculosis.

There are already laws in some states prohibiting the tuberculous child from attending public school; but so far as I know none of these states have provided other places where children suffering from a chronic communicable, but also curable disease, can receive the education to which they are entitled, much less where they could have a chance of being cured from their affliction. The results obtained in some of our American sanatoria for the treatment of tuberculous adults are as good as any of those obtained in European institutions. The preventive measures inaugurated by our New York Board of Health have not only served as models for other American cities, but have been imitated by many European municipalities and found to be the most practical and efficacious. We have already a number of sanatoria for the treatment of the consumptive poor adults, though by no means enough of them. However, in nearly every state of the Union the question of providing institutions for adult tuberculous patients with little or no means is now being agitated. Only for the countless little ones suffering from the same or other tuberculous diseases there is nothing done.

Our martyred President had two children, and these he lost. He dearly loved little children, and the creation of a sanatorium for the treatment and prevention of a disease with which so many American children are afflicted, would surely be a fitting memorial to this great man and lover of children. "McKinley Sanatorium for the Treatment and Prevention of Tuberculous Diseases in Children" should be the name of such an institution.

The meaning of the name William McKinley, written on the portals of these houses of hope for many a suffering mother's heart, will be made clear to these little inmates by their teachers and grown-up friends. The word McKinley will embody to these little sufferers all that is needed to make them good patients, obedient scholars, noble men and women, true American citizens. McKinley's fortitude during the last days of his life must teach them what all patients need: Trust in God, confidence in their physician, patience. His words of forgiveness to the very man who slew him must show these little children the sublimity and nobleness of his character. McKinley's life as a man, citizen, patriot, and president embodied all that is truly American. A better example to teach our children the meaning of true manhood and true patriotism we can not find.

Let all American men and women who can afford it contribute through their children, or through their children friends, toward the realization of this McKinley Sanatorium.

In letting the children of parents of means who are happy and well, bring their mites toward a movement of this kind a lesson of charity and patriotism may be taught to them as well. There will be found in every community responsible and patriotic citizens to take this matter in hand and bring it to a successful issue. Let each state contribute enough to have its own pavilion to which to send its children. Let the Atlantic and Pacific coast be lined with such institutions, one or two pavilions for each state, according to its needs. Let good schools be attached to each sanatorium so that the intellectual development of the children may not suffer.

There exists in the North Sea, or German Ocean, on the island called Norderney, a beautiful flourishing sanatorium for the treatment of tuberculous children. Its name is "Kaiser Friederich Hospiz," and it was erected in memory of that unfortunate emperor, Frederick the Third, whom the German people so fondly call "Frederick the Noble." In the fortitude of this beloved sovereign, in his patience, in his martyrdom, in his love for the people, in his ideas and ideals of what should constitute a free and just nation, there is a great similarity to our beloved McKinley.

We, too, may call our martyred ruler "the Noble," and to his memory erect a memorial of practical utility. Let us build an institution where the lives of American children can be saved, to be sent forth in health and vigor to their respective communities, and to help finish the work for which McKinley lived and died; to make the American nation the greatest, the noblest, the foremost of the world. S. A. Knopf, M.D.

Married.

Arthur Allen Libby, M.D., Boston, Mass., to Miss Florence Hunt, Reading, Mass., October 3.

Martin L. Hindley, M.D., Monroeville, Ohio, to Miss Myrtie Morrow, Martel, Ohio, October 2.

Christian Storz, M.D., to Miss Pauline C. Lotterer, both of Toledo, Ohio, at Delphos, Ohio, September 25.

Dr. Albert S. Horton, M.D., to Miss Josephine Lulu Dwyer, both of Baltimore, at Hampton, Va., September 25.

Cornelius F. McCarthy, M.D., Batavia, N. Y., to Miss Georgiana A. Merrill, Byron, N. Y., at Watkins, N. Y., September 25.

Frederick Allport Dale, M.D., assistant surgeon U. S. Army, Aparri, Philippine Islands, to Miss Caroline Maude Kern, Philadelphia, Pa., September 4.

Deaths and Obituaries.

Samuel J. Jones, M.D., University of Pennsylvania, 1860, a member of the American Medical Association, died from pneumonia, after an illness of less than a week, October 4, aged 65. He was born in Bainbridge, Pa., in 1836, the son of a physician. He received his education at Dickinson College. He served throughout the Civil war as a medical officer in the U. S. Navy. In 1868, he resigned from the navy and settled in Chicago, making a specialty of diseases of the eye and ear. From 1870 to 1897 he was professor of ophthalmology and otology at the Chicago Medical College, and for many years was surgeon to the eye and ear department of St. Luke's Hospital, Mercy Hospital and the South Side Dispensary. For the last two years, since his retirement from active practice, he had been conducting an active propaganda against street noises, to which he had always been particularly sensitive. He was for several years editor of the *Chicago Medical Journal and Examiner*.

Aaron Cornish, M.D., Castleton (Vt.) Medical College, 1855, died at his residence in New Bedford, Mass., after a lingering illness, September 26, aged 68. He was a native of Plymouth, studied medicine first at Albany, completing his course at Castleton. He first practiced in Boonville, N. Y., and, at the outbreak of the Civil war, he became surgeon of the Ninety-Seventh New York Infantry, and served until 1863, when he succeeded to the practice of his uncle, Dr. Aaron Cornish, Sr., New Bedford.

Daniel E. Thayer, M.D., Chicago Medical College, 1871, died at a sanatorium in Winchendon, Mass., September 29, aged 58. His death was due to nervous trouble, the result of injuries received in a runaway accident several months ago. After his graduation he practiced in Virginia for seven years, then at Cheshire, Mass., for ten years and afterward made his home at Adams. He had served in the Legislature and was prominent in the local and state medical societies.

Richard H. Whitfield, M.D., University of Pennsylvania, 1853, a prominent citizen and physician of Meridian, Miss., died at his home in that city after an illness of four months, September 30, aged 71. He represented Lauderdale County in the Legislature and served as surgeon in the Confederate army during the siege of Vicksburg, where he had charge of one of the hospitals.

George Shivel, M.D., Jefferson Medical College, 1851, a retired practitioner of Philadelphia, died in the Municipal Hospital in that city from smallpox, September 29, after an illness of one week. During the Civil war he became well known from his connection with the military hospitals.

Rev. James Bryan Purcell, M.D., University of Maryland, Baltimore, 1866, of St. Barnabas P. E. Church, Sykesville, Carroll County, Md., died there September 24, aged 59. He was a native of Dublin, Ireland, and served for a time as Acting Assistant-Surgeon, U. S. Army.

Robert M. C. Hill, M.D., New York University, 1860, a practitioner of Mount Meigs, Ala., and who was a native of

Montgomery County, died at his home, September 20, aged 63. He was a surgeon in the Confederate service during the Civil war.

Francis E. Hines, M.D., Harvard University, Boston, 1879, a resident of Salem since that time, for 12 years a member of the School Board and at one time a member of the Legislature, died at his home in Salem, September 30.

Preston Fisher, M.D., Jefferson Medical College, Philadelphia, 1851, died at Boston, September 23, aged 72. He practiced for many years at Orono, Foxcroft, Maine, but of late years had resided in Jamaica Plain, Mass.

James W. Graves, M.D., Trinity Medical College, Toronto, 1866, one of the best-known practitioners in the thumb of Michigan, died at his home in Caro, from hemorrhage from the stomach, September 28, aged 68.

Nathaniel P. Wright, M.D., University of Louisville, 1876, a prominent physician of Lowry City, Mo., died at his home in that place from gastric ulcer, after an illness of several months, September 30, aged 53.

Abram Litton, a pioneer chemist and scientist of St. Louis, for half a century professor of chemistry in Washington University, and St. Louis Medical College, died at his home in St. Louis, September 22, aged 87.

Frank C. Cullen, M.D., Rush Medical College, 1887, died at his residence in Chicago, September 29, from typhoid fever, after an illness of two weeks. He was at one time registrar of Cook County Hospital.

Job S. Wallace, M.D., Northwestern Medical College, St. Joseph, Mo., 1889, a member of the American Medical Association, died from the effects of morphin, taken with suicidal intent, September 28.

Andrew J. Rogan, M.D., Albany Medical College, who practiced in South Shaftsbury and North Bennington, Vt., died in Colorado, where he had gone for his health eighteen months ago.

Elisha O. Mannakee, M.D., University of Louisville, Ky., 1866, for nearly thirty years a resident and practitioner of Washington, D. C., died at his home in that city, September 23.

John S. McNutt, M.D., Cincinnati College of Medicine and Surgery, 1867, for thirty years a practitioner of Philadelphia, died at his home in that city, September 28.

James Walter Dunphy, M.D., College of Physicians and Surgeons, New York, 1895, died at the home of his parents in New York City, October 1, aged 26.

Albert V. Benedict, M.D., Rush Medical College, Chicago, 1881, a practitioner of Portal, N. Dak., died from diabetes, at Braidentown, Fla., September 15.

McPherson Barnitz, M.D., Tulane University, New Orleans, La., 1899, died from heart disease at his home in San Antonia, Texas, September 23.

Percy J. Shute, M.D., College of Physicians and Surgeons, New York, 1896, died from nephritis, at his home in Jeffersonville, N. Y., September 29.

Albert L. Wagner, M.D., College of Physicians and Surgeons, Chicago, 1885, died at his home in La Paz, Ind., September 28, aged 41.

Direct Medicinal Injections in Lungs.—The *Union Med. du Nord-Est* of July 30, contains a communication from G. Rosenthal, describing the great benefit to be derived from direct injection of medicinal substances into the trachea, just below the cricoid cartilage, the patient's head being bent slightly forward. There is no coughing nor any kind of spasm, and the fluid can be injected as slowly as is desired. He uses a needle, as for hypodermic injection, connected by a rubber tube, with the receptacle holding the medicated solution. Absorption through the lungs proceeds as rapidly as through the veins, he asserts, and the lung tissue can thus be directly influenced. He sometimes leaves the needle in place for a week at a time, renewing the injection each day, and afterward inserting a stopper and fastening it in place with collodion.

Testimonial Banquet in Honor of Dr. Nathan Smith Davis

A testimonial banquet was given to Dr. N. S. Davis, the Father of the American Medical Association, Nestor of the medical profession, first editor of this journal, and founder of the Mercy Hospital, at the Auditorium Hotel, Oct. 5, 1901, under the auspices of the Chicago Medical Society.

The event was a grand success. Approximately three hundred and fifty physicians from Chicago and various parts of the country attended the feast. The gathering was a representative one and typified in a striking manner the high esteem in which Dr. Davis is held by the profession. Cities outside of Chicago were well represented. The tables were tastefully decorated with flowers. The speeches were timely, replete with good thoughts, characterized by zest, and interspersed with wit and humor. The reminiscences about Dr. Davis were fraught with interest, and their recital by Drs. Andrews, Waxham, Hollister and Bridge created amusement.

Dr. Davis sat between Drs. Fenger and Billings, the one, the highest embodiment of modern surgical pathology, the other, representing all that is progressive and modern in internal medicine. After the banquet Dr. Christian Fenger, president of the Chicago Medical Society, rapped for order, and introduced Dr. James H. Stowell, who said that the members of the profession had assembled to pay their respects to one of the greatest examples of professional honor and dignity in the medical profession. He said it was unnecessary to call attention to the many eminent pupils that had been sent out under the instruction of the distinguished guest. The Deans of three of the largest medical colleges in Chicago were pupils of Dr. Davis. Throughout the country graduates from the Chicago Medical College were occupying positions of eminence, and among them were Drs. Nicholas Senn, Norman Bridge, Frank Billings, Nathan Smith Davis, Jr., Arthur R. Edwards, Roswell Park, John A. Fordyce, and many others, who had in some way or other been honored by their professional brethren.

The toastmaster of the evening, Dr. Frank Billings, said that to preside at a banquet given in honor of Dr. Davis was an honor second only to that which Dr. Davis was receiving. Dr. Davis did not belong to Chicago alone, but to the whole country. Dr. Davis was a New Yorker by birth, was born Jan. 19, 1817, and graduated in medicine in 1837, when he was not quite 21 years of age, from the College of Physicians and Surgeons of the Western District of New York. He then practiced medicine in Binghamton, N. Y., for about ten years, and, seeking wider fields, or people in a better field seeking him, he went to New York City, where he remained about two years. Then Chicago, always looking for something better, found Dr. Davis there, and invited him to Chicago. He came here in 1849 and taught in Rush Medical College for the next ten years. Not satisfied with the method of teaching at that time, and desiring a different method and a longer course, he, with others, severed his connection with that school and founded the Chicago Medical College in 1859. He said that the history of Dr. Davis was known to all, and it was hardly necessary for him to take time in repeating it. He only desired to say that Dr. Davis had become known throughout the whole country as a medical teacher, as a lever to elevate medical education. Practically, it was due to Dr. Davis that the first steps toward a better method of medical education were taken in America, and it was he and his colleagues who instituted the graded method of instruction in medical schools. The speaker said that Dr. Davis and his colleagues had not received the credit that was due them for this, and that Eastern medical schools had taken the credit, although they had adopted the graded method of instruction afterwards. As a teacher he was eminent. Those who had sat at his feet and had listened to his lectures would remember as long as they lived his graphic description of disease, even in a didactic lecture. When it came to the demonstration of a case, he did not think there was any clinician

abroad or in this country who could excel Dr. Davis in the matter of clinical teaching. The work of Dr. Davis was not alone confined to medical teaching, for it was through his efforts that the American Medical Association was founded, and he is called the Father of the American Medical Association. Dr. Davis was the founder of Mercy Hospital. Dr. Davis had been president of the Illinois State Medical Society, of the Chicago Medical Society, of the American Medical Association, and the only American who was ever president of an international medical congress. Dr. Billings then dwelt at length upon some of the chief characteristics of Dr. Davis' life, among which were: "Industry, tenacity of purpose, integrity; progressiveness; liberality, a Christian gentleman."

Dr. Edward F. Wells presented the loving cup to Dr. Davis. He said:

"Honored Sir and Guests: In behalf of the medical profession of Chicago and of the whole country, it is my privilege to present to you this loving cup as a token of the esteem in which you are held by your associates, and as an expression of their appreciation of your valuable labors in the advancement of scientific, practical, academic and social medicine.

"This beautiful cup, of Grecian design, is, in its lines and proportions, a model of simple, vigorous dignity, and was selected as being peculiarly emblematic of your character and career. Engraved upon one side is an excellent likeness of yourself; upon another is the leaf of victory, and beneath it the inscription, *Palmam qui meruit ferat*—let him who has won it bear the palm—and beneath this, 'Pioneer in local and national medical organization, and in graded medical instruction'; and upon the other is this memorial tribute: 'Presented to Nathan Smith Davis, A.M., M.D., LL.D., in recognition of his long and distinguished services to medicine, in its every field of usefulness, by the members of that profession which he has so conspicuously adorned, and to whose shield he has given an added luster.'

"Few possess the creative genius necessary to initiate great forward movements in public affairs, and fewer yet are permitted to see the realization of their lofty conceptions. But you, sir, are singularly fortunate in both these respects; and, now, after these many years, you may stand before the bow of promise, supported, as it is, upon one side by the fathers of medicine, resting upon the adamantine foundations of experience and truth, and upon the other by the moderns, standing upon the broad expanse of experiment and fact, and, looking through, view with satisfaction the fair and boundless plains of the future as they stretch out beyond."

When Dr. Davis arose to make a speech accepting the loving cup, he was greeted with loud and prolonged applause, and three hurrahs were lustily given for the venerable guest. Dr. Davis was visibly affected by the ovation, but spoke in a deliberate manner, as follows: "Mr. Toastmaster, and Fellow Members of the Medical Profession: It is useless for me to say that there are no words at my command by which I can convey my idea of the gratitude that fills my soul at the present time. If there is any particular thing that has guided my course through life, and if I have been able to contribute anything of value that justifies your presence and this most generous exhibition of your kindness and respect to me, it is from a very simple principle of action. At the age of seven years, as a boy who had never been outside of his father's farm, born in a log house, and when still in a log house, I was called to the bedside of my dying mother to receive her last words. I was the youngest of a family of seven children; I was in my seventh year. It made a vivid impression upon my mind. She was a Christian—a reader of the Bible. She said to me that she wished me to be a good boy, to learn to worship God, and to do good to my fellow-men. I promised her I would. Of course, I did not realize the importance or bearing of that promise at that early period of life; but an impression was made upon my mind, and from that day to this the rule of my life has been, that whatever comes up that seems to be important and will improve my fellow-men, my impulse is to do what I can to help it along. (Applause.) That is the whole foundation of it. I refused to undertake anything the results of which would not be beneficial to those around me, whatever it might be. The question was, Would it benefit my fellow-men? If it would, I supported it. I refused, on the other hand, to lay up enmity against any human being, and to-day I stand here and say that I know of no man or woman for whom I have an evil wish, and there is not one to whom I would not extend a helping hand at any moment if they were within my reach and needed it. (Applause.)

"On this principle of action and reading the book that my mother pointed to and taught me to read, there was revealed a habit that in old times the patriarchs often formed a covenant with their God, and in my innocent early boyhood, as I grew on, a proposition was made for me to study medicine. I no sooner began than I formed a covenant with my Creator, that he would guide me, so that I could be qualified to do good to the sick, to alleviate human suffering, and to prolong human life. I dedicated my life to that great leading idea, and from that day to this I have striven to follow in that line.

"It was not long before I stumbled on the fact that the system of medical education was a very ridiculous one, for I went each year to the college and went over the same thing—six lectures a week, and skimmed the whole field in sixteen weeks. I thought that was very queer. I listened to these lectures every day, but studied only three of them. I left the other three for next year to make up. I made my own division. As soon as I graduated and got into practice, in about three years I was a delegate to the New York State Medical Society. The first thing I did was to introduce a series of resolutions that the term of medical education ought to be extended to not less than six months, at least, and the course of instruction should be graded. I was criticised for this, and the resolutions were promptly laid on the table. The gentleman who made the motion to lay the resolutions on the table happened to be a professor in the medical school from which I graduated. There was one man there who seconded the resolutions that were laid on the table. I hunted him out, and had an earnest conversation with him regarding the resolutions, and I said something to the effect that if this was the way they were going to serve any measures that I might bring before the convention, I should not travel by old-fashioned stage coaches from Binghamton to Albany many times to attend an association on such a basis. The professor, who introduced the resolutions, had heard the substance of our conversation, and after he had taken his dinner and the association reconvened, he moved to take the resolutions from off the table. This permitted one hour's discussion, and by means of this discussion we gained time enough to have them referred to a committee and to postpone the resolutions for renewed discussion until the following year. The next year we discussed them again, and the fight was continued until it amounted to this, that we were having a standard of education in New York as high as it was in any other medical college in the United States, and that if we undertook to make a six months' term, graded courses, the only effect would be to send students to Boston on the one hand, and to Philadelphia on the other, and we would benefit nobody. But how were we to get out of this? If one state can not move a peg without the rest, let us have the rest, and a resolution was adopted to have a national meeting of all the institutions for that purpose. The resolution was seconded, and after a minute or two of silence, and a little laughter, it was easy for them to see that Davis did not want to fool away his time, and they said let him work. And so they passed the resolution for a national convention and appointed me chairman of the committee to carry it out. I did carry it out, and the result you know. I do not need to tell you about it; you know it; that is the secret of the story. It was not my planning; it was simply done on the principle of doing right and sticking to the right whenever an opportunity occurs. It is just so in regard to introducing any other thing that I have helped. It is simply the opportunity. I go into it, and I know no other way to accomplish it. I have no contrivance about it. It is simply to do what comes before me, and do it with all my heart. I don't want to make any half-way work of it. Dr. Billings has said that when I took hold

of a thing I never let loose. Why should I? My old friend, A. B. Palmer, said once that I had been harping at the same thing for twenty years. My only answer to him was, If it is right and will benefit mankind, harp on it not only twenty, but forty years, until it is done.

"My friends, I don't want to tire you by reciting details. Please accept my most cordial thanks for this demonstration. It will probably be the last time I shall have an opportunity to address you. But if you want to promote harmony, cordiality, advancement; if you want to build up, stop pulling down anybody. Never pull down, but build up, and if your neighbor does not do as you think he ought to do, talk about his good qualities, and let his bad ones go. You will soon establish harmony; you will soon have cordiality; you will have your own heart free, and your conscience will be right before your God. You will have neither enemies here nor hereafter. I know no enemies to-night; I have no enmities; I am satisfied with life.

"I am sometimes lonesome because I so rarely meet one of my early comrades—lonesome because they are gone. But I am going to join them before long. I do not expect to tarry a great while. But I have no care about that. I live so that I am ready each day to go. I have no settlements to make: I have no great fortune to give away; I have got enough for my comforts, enough to clothe and feed me as long as I live. That is all I want. I would not die worth a hundred millions of dollars; I should be afraid I had not done my duty."

Dr. Charles A. L. Reed, of Cincinnati, was then introduced, and responded to the toast, "The American Physician."

Born to carve his name
Upon the highest pinnacle of fame.

Dr. Reed said in part: "It is appropriate that the American physician should be toasted at this festal board, around which are gathered from all parts of the great republic, American physicians who have come to honor one of their most distinguished and venerable living colleagues. To me has been assigned the pleasant task of responding to this toast. That duty would be easily discharged if I were simply to speak of the ideal characteristics of the American physician; for if I were to thus confine my remarks and speak only of birth, of education, of scientific attainments, of the lofty ideals of character, of the exemplification of Christian virtue, it would be necessary for me only to stand mutely in your presence and point to the distinguished guest of the evening. It may, however, be appropriate for us to consider the American physician from a concrete standpoint. If we were to consider him from his starting point, we must recognize the American physician at the time when the American physician was not an American physician. When, in other words, he was a distinct European product, practicing medicine upon the Western Continent. This was true in our Colonial period, but with the birth of nationality, there was also the birth of the American physician and the establishment of the medical school in the United States was an associated incident of the creation of the American physician. But the primitive medical school of America, like the original physician that stood as the type of the faculty of that institution, was largely of exotic origin. We devoted ourselves at that time to the teaching of science as it had been discovered, taught and amplified in foreign countries. English influence was dominant; French influence was pronounced; German influence had no footing at that time in America. But with the succeeding generations, the American physician became an established fact, a product of our schools, and we found him exemplifying, even in that early day, those attributes which have characterized the practitioner of medicine on this Continent—independence of thought, independence



NATHAN SMITH DAVIS, A.M., M.D., LL.D.

of action, yet always in conformity with the overriding, overpowering influence of law, not statutory law, of which there was none, but of those eternal laws that make for good, that make for truth, that make for happiness. But in the carrying out of these fundamental principles the American physician early dethroned personal authority and became an actor upon a scale of independence that has but rarely characterized the profession in other countries. . . . American medicine has added to the great sum of our knowledge. Science has been evolved by those practitioners in the remoter districts and towns. McDowell, in his little village in Kentucky; Sims, in the little town in Alabama; Batty, in the little village in Georgia; Wells, with his anesthesia in the little town of New Haven—all of them far removed from the influence of the schools—brought to the light of humanity those great truths which have done so much to relieve suffering humanity and to prolong human life." After referring to the struggle of physicians in the early days, Dr. Reed concluded as follows: "But little needs to be said for the American physician; from seaboard to seaboard, from lake to gulf, in every hamlet, he ministers to stricken humanity, and let me venture the belief that the American physician in the aggregate, wherever found, is actuated largely by those same motives, by those same deeply-rooted sentiments that Dr. Davis imbibed at the bedside of his dying mother. Let us, therefore, with all honor speak, not egotistically of ourselves, but of that great, typical character that we are constantly endeavoring to emulate, the American physician, than whom there stands before the American public, there stands before the world, no more distinguished or worthy exemplar than Nathan Smith Davis."

(Loud and prolonged applause.)

Dr. Donald Maclean, of Detroit, Mich., responded to the toast, "International Medicine."

> For the whole world is a stage—
> Let us hear of the acting.

He said he felt it was a great privilege to be present and take part in the exercises of the evening, and to pay his respects to his old and venerable and highly-respected friend, Dr. Davis. (Applause.) The subject of international medicine was one that reminded him of the lines written by one of the profession, Dr. Oliver Wendell Holmes, who said:

> "As Life's unending column pours,
> Two marshaled hosts are seen—
> Two armies on the trampled shores
> That Death flows back between.
>
> One marches to the drum-beat's roll,
> The wide-mouthed clarion's bray,
> And bears upon a crimson scroll,
> 'Our glory is to slay.'
>
> One moves in silence by the stream,
> With sad, yet watchful, eyes,
> Calm as the patient planet's gleam
> That walks the clouded skies.
>
> Along its front no sabres shine,
> No blood-red pennons wave;
> Its banner bears the single line,
> 'Our duty is to save.'"

He thought the above verses represented truly and fairly international medicine. The profession could never repay Dr. Davis, nor individually express their gratitude for what he had done, and we could say with the poet, Burns:

> "The bridegroom may forget the bride whom he's to wed;
> The monarch may forget his crown;
> The mother may forget the child that smiles so sweetly on her knee;
> But I remember thee, Glencairn, and all that thou hast done for me."

Reminiscences of Dr. Davis were related by Drs. John H. Hollister, Frank X. Waxham, Norman Bridge, and Edmund Andrews.

The toast, "Western Medicine," was responded to by Dr. Archibald Church, who, among other things, said: "We do not, for a moment, think of Trousseau as hampered by the walls of Paris; nor Sydenham confined by the geography of London; nor Graves hampered by the purlieus of Dublin; nor Flint cooped up in the Island of Manhattan; nor is Davis limited to the confines of the city of Chicago. It is our privilege to-night: it is the privilege of the profession of America—nay, more, it is the privilege of the profession of the entire world—to read in the galaxy of clinical masters the name of Nathan Smith Davis."

(Loud applause.)

Dr. Victor C. Vaughan, of Ann Arbor, Mich., responded to the toast, "Medical Education."

> "Knowledge comes, but wisdom lingers."
> How, then, can best be told
> "The fairy tales of science, and the long
> Result of time?"

Medical education in this country, even at its best, is in somewhat a chaotic state. He had heard a great deal about the elective system in medical education, by which the student was allowed to select courses and take them in whatever manner he chose. Most of the leading literary colleges in this country had adopted the elective system; some of the medical colleges had also adopted it. He thought it was in consonance with American ways, namely, that every young man should have his choice, and that the man beginning the study of medicine had more wisdom than the man who taught it. After referring to the advantages and disadvantages of the elective system of medical education, the peroration of Dr. Vaughan was as follows: "Honored and most worthy guest: We come together to-night from near and from afar to give to you some outward token of our honor and esteem, and we have for you, who to-night has been fittingly called the Nestor of American Medicine, the greatest of respect. For more than threescore years you have labored diligently, worthily and successfully in our profession. Your life has been to us both an example and inspiration. To many here to-night and to thousands of others scattered over this broad country you have been a beloved teacher and an admired master. To all of us you have been and are still a respected older brother, and an honored friend. Your words have always fallen upon grateful ears; your deeds have ever been witnessed by approving eyes, and your friendship is cherished in many a loving heart. In our busy administrations to the sick; in our ceaseless search for truth in the laboratory, we seldom have the opportunity of expressing our appreciation for one another. But so great and so helpful has been the service that you have rendered to us, your younger brothers, that to-night we have come, laying aside our daily tasks, to offer to you a tribute of our love and admiration. Life is a mystery which it has not been given to man to solve. We know not whence we came, nor can we name the land to which we journey. But we do know, that he who lends a helping hand to his fellow-men, as we travel along life's dusty and stony pathway, is a benefactor of his race.

"There is a Hindu legend which accounts for the origin of our profession in something like the following manner: An intelligent Indian Prince in the time long ago sought one of the most renowned temples of Buddha, and prostrating himself upon the floor he prayed fervently and said, 'How can I best serve my Maker?' As he lay prostrate on the floor he felt a touch upon his shoulder as light as that of a babe, and he heard a silvery voice, saying, 'Arise!' He arose, and there stood before him a beautiful angel, who said: 'Dost thou serve thy God?' And he replied, 'Yes.' Then, go serve thy fellow-man; administer to the sick, heal the afflicted; help those that are in distress.' And thus the medical profession had its origin. Our worthy guest to-night is almost an ideal of that Indian Prince of whom this legend tells. May he have many worthy successors."

Dr. Hobart A. Hare, of Philadelphia, responded to the toast, "Literary Medicine."

> The last discovered fact;
> The winnowed grain of thought,
> Vividly portrayed in undying characters
> By the art Divine.

He said that as he sat at the table this evening he could not help thinking that he, one of the youngest, if not the youngest speaker to-night, should bring from the effete East a graceful tribute of admiration to the honored guest of the evening. He thought it was a triumph for the so-called Western profession, which, after all, was not the Western profession of the United States, for the reason that every portion of this great country had sent by mail or by wire and by personal represen-

tation some one who bore a portion at least of the loving cup to Dr. Davis.

Speaking to the toast, "Literary Medicine," he said that there was far more in it than some thought. It enabled the members of the medical profession to compare notes and ideas. It improved the culture of men who wrote articles, and it improved the culture and learning of those, as a rule, who read those articles, but not always. In THE JOURNAL of the American Medical Association we had a great exemplar of what literary medicine should be. Literary medicine was in close touch with medical education. It taught a large body of medical men to be general practitioners, and not to start out as specialists as soon as they had graduated. A great trouble with the medical profession of to-day is that there are too many men going into specialties because they knew nothing about ordinary medicine. Some one had well said: "I sought Happiness, and she constantly fled before me; weary, I turned to Duty's path, and Happiness sought me." It seemed to the speaker that Dr. Davis was a conspicuous example of that phrase. . . . We honor Dr. Davis because he represents to us professional ethics; because he represents to us duty well done; because he represents to us that greatest of all things, a great teacher; more than this, he carries with him, day by day, the thoughts of the minds and hearts of many more than are assembled here to-night, and he feels in his inner consciousness that he has achieved some things of which not only he is proud, but we are proud, and the American medical profession is proud. And therefore I repeat, as the representative of the so-called effete East, which has gained so much from the brawn and sinew of the mighty West, I come to-night to lay before you in your presence the loving tribute of our Eastern profession.

Dr. Edwin Ricketts, of Cincinnati, after referring to the good qualities of Dr. Davis, expressed the hope that he might yet be spared to see many years.

The last toast was responded to by Dr. Robert H. Babcock, of Chicago, it being, "The Physician in Public Affairs."

"For who is better fitted to study and correct the pathologic body politic?"

The speaker thought it was strange that physicians should be loth to enter politics lest they became defiled thereby, but he held that there was no class of individuals in the community who were so suitable to engage in public affairs as physicians. In the words of the toast, "Who is so suitable to study and correct the pathologic body politic?" Let the physician enter the field of politics, that he may curette away the part that is rotten. There was an ample field for the influence of medical men in a quiet way in political campaigns. We had an example of this in Kentucky, where the physicians throughout the State, by exerting their influence in a quiet way upon the politicians of the State, had rendered it impossible for a quack to practice or to advertise in the State of Kentucky. All honor to the State of Kentucky. He said we had among us some members of the medical profession who were engaged in political matters for the purpose of bringing about proper legislation along the right lines to curtail the so-called practice of medicine by quacks, charlatans, faith-healers, etc. There was ample room for the influence of physicians. But even if the physician had some ambition to hold office, it was right that he should, provided that his motives were pure. Physicians were needed in legislatures, not to support anti-vivisection laws, like Senator Gallinger, but to fight anti-vivisection laws, to fight anti-vaccination laws, and to obtain legislation for the benefit of public health. Perhaps the most brilliant example of the physician in politics is Rudolph Virchow What shall we say of our great American physician, Benjamin Rush? He was not only a great physician, but he was a member of the Continental Congress, and chairman of the committee appointed to consider the expediency of the Declaration of Independence. He had the honor of reporting favorably upon the Declaration, and it is thought that many of the phrases used in the Declaration of Independence emanated from Rush. Had he not won undying renown as a physician, he would have been immortal as a signer of the Declaration of Independence. The speaker said that there had been others and were others to-day who were engaged in public affairs, not only with credit to themselves, but with honor to the medical profession, and to the welfare of their State. Some of these occupied comparatively insignificant positions, perhaps, but they were doing good work.

Dr. Babcock, after referring to the good work that had been done by Dr. Davis in public affairs, concluded by saying: "As an alumnus of the old Chicago Medical College, I call on you to rise, and, in that beverage which Dr. Davis loves and has continued to pledge his life, drink to his health."

At this juncture the entire audience arose, put the glasses to their lips, and, after the following sentiment expressed by Dr. Davis, drank to his health: "Here is to pure water, Nature's universal aseptic; it muddles no brain; it begets no anarchy; it sparkles on the dew-drop; it gives peace to the nation; it flows in the river of life, and it flows by the throne of God. Let us take it, not only as guests here, but for the whole profession of America."

The audience then arose and sang "Auld Lang Syne."

Societies.

COMING MEETINGS.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Mahoning County (Ohio) Medical Association.—At the meeting of this body at Youngstown, September 27, resolutions were passed in memory of Dr. Charles N. Fowler and John Eliot Woodbridge, members of the Society.

American Electro-Therapeutic Association.—This Association, which met at Buffalo, N. Y., September 25 and 26, for its eleventh annual session, elected the following officers: Dr. Frederick H. Morse, Melrose, Mass., president; Drs. Daniel R. Brower, Chicago, and Alfred T. Livingston, Jamestown, N. Y., vice-presidents; Dr. Richard J. Nunn, Savannah, Ga., treasurer, and Dr. George E. Bill, Harrisburg, Pa., secretary.

Muskingum County (Ohio) Medical Society.—This Society held its annual meeting at Zanesville, September 13.—The following officers were elected: Dr. J. C. Crossland, Zanesville, president; Dr. A. Dunn, Stovertown, first vice-president; Dr. G. Warburton, Zanesville, second vice-president; Dr. W. C. Batelman, Zanesville, secretary; Dr. C. E. Drake, Zanesville, treasurer, and Dr. C. U. Hanna, Zanesville, corresponding secretary. The Society voted to give a complimentary banquet, in November, to Dr. Edmund C. Brush, president-elect, Ohio State Medical Society.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-first Annual Meeting, held in Philadelphia, September 24-26, 1901.

President, Dr. Thomas D. Davis, Pittsburg, in the Chair.

(Continued from page 930).

SECOND DAY, MORNING SESSION.

Delegates from the N. Y. State Association.

The second day of the meeting was opened by the President and called to order at 9:30. Drs. Frederick Holme Wiggin and E. Eliot Harris, delegates from the New York Medical Association, were introduced. Dr. Wiggin said that their medical organization was formed by a federation of the county associations. One feature in the association was the divorcement of executive and scientific work; the former occupied usually the first day of their annual meetings, the latter occupying the remaining days. From an observation of the methods of the Medical Society of the State of Pennsylvania they had changed the publication of their Transactions, making it now a monthly journal rather than annual. The matter of giving polyclinic teaching to smaller county societies, as carried

on in the Medical Society of the State of Pennsylvania, was also favorably commented upon. In view of the contemplated publication of a medical directory by the Pennsylvania Society similar to the one issued by the New York Medical Association, Dr. Wiggin said that the Directory had proven to be exceedingly valuable in medical circles, and promised to be successful also financially.

Dr. Harris said that Dr. Wiggin had spoken in accord with his own views, but emphasized the important factor that the county society was the central unit of the organization of the New York State Medical Association.

Dr. Wiggin further expressed the hope that the publication of such directories might suggest to the American Medical Association the publication of a National directory.

The Chairman of the Committee to suggest Changes to the By-laws, Dr. M. Murray Weidman, read the report, which was ordered printed and the Committee continued. Among the proposed changes is the provision for the formation of an executive committee which takes the place of the old Committee on Nominations, and is practically the legislative body of this Society. There is also the proposition for the collection and compilation of a list of all legally classified practitioners within the State.

Address in Medicine.

Dr. John B. Donaldson, of Canonsburg, said the present century's achievements promised to far outstrip the past. Internal scientific medicine with preventive means shall be the work of the medical world. Surgery, the brilliant half sister of Medicine, would go hand in hand with her in the crusade against disease, and that the profession might certainly look for other Jenners to arise who will eliminate many of the fatal but preventable diseases of our day. The hope was expressed that in the great Keystone State of Pennsylvania, the present century might see legislative bodies willing to legislate in the interests of indigent tubercular patients. The relief for these patients was an important field, to his mind, toward which the minds of our philanthropic millionaires might be directed. Ere long he believed that there would be an end to the so-called different schools of medicine, for all would be compelled to practice rational and intelligent medicine.

Dr. J. Dutton Steele, Philadelphia, read a paper on "Gastroptosis and Its Treatment."

Movable Kidneys: Their Effect on the Gastric and Intestinal Functions.

Dr. Boardman Reed, Philadelphia, maintained that nephroptosis was frequently one feature of a general sagging downward of a number of abdominal organs. Movable kidney is confined almost entirely to the female sex and is very prevalent. Prominent symptoms are pain or sensitiveness on pressure over the site of the displaced kidney and certain dyspeptic symptoms and nervous symptoms often result. In the severe cases with much pain complete rest in bed is advised, with later the support of a well-fitting pad and belt with special exercise and cautious massage to the abdominal muscles. Out-of-door air and tonic treatment, etc., are also urged. Where these measures are impracticable, or have failed, nephropexy should be done.

Dr. R. H. Gibbon, Scranton, regarded the application of a pad to a loose kidney a mistake. This had been pointed out by Edebohls, who laid great stress upon the fact of appendicitis having been frequently caused by a loose kidney displaced downward causing interference with the superior mesenteric vein resulting in congestion and inflammation. He believed that surgical treatment was the proper method in the majority of cases. The only external device of value in his opinion was the Cardigan corset, with the lacing reversed, i. e., beginning at the bottom.

Dr. Charles P. Noble said his personal experience had been limited to surgical treatment. When the mobility did not exceed two or three inches he believed the rest cure with general tonic treatment was useful. If the urinary symptoms are negative the case required little attention. Marked symptoms showing congestion of the kidney indicated nephrorrhaphy.

Enteroptosis.

Dr. John G. Clark, Philadelphia, dealt more especially with the mechanical part of the treatment. He felt that in the majority of cases the more conservative plan should be first tried. He had seen cases in which there was a general sagging of the pelvic floor with retrofixation, and in which not infrequently after operation the patient complained of the dragging sensation. He referred to the article by Webster, of Chicago, which he regarded of signal interest. Models were shown illustrative of the abdominal wall muscles looking from the front and from the back and the pathology demonstrated.

Dr. Gibbon, of Scranton, thought the fibrous sheaths of the muscles were at fault rather than the muscle tissue itself.

Report of Cases of Infective or Malignant Endocarditis.

Dr. A. O. J. Kelly, Philadelphia, said that during recent years our ideas concerning the nature of acute endocarditis had undergone considerable modification. Formerly it was customary to distinguish two forms of acute inflammation of the endocardium: one a benign, non-infective process, ending in the recovery of the patient, though usually with permanent damage to the valves affected; the other a malignant destructive infective process running a comparatively short course and ending in the death of the patient. It had long been observed that clinically the differential diagnosis between the two forms is sometimes attended with considerable difficulty. It had been ascertained that all cases of acute endocarditis are associated with, if not due to, bacteria; that the same bacteria are found in cases associated with ulceration as in those that are not, and the necessity for revision and modification of our conception of acute endocarditis became apparent to all. Three factors of diagnostic value were: 1, leucocytosis; 2, bacteriologic examination of the blood; 3, irregular heart murmurs.

Dr. A. E. Roussel referred to three cases of endocarditis occurring in his practice, two of which possessed features resembling those of Dr. Kelly's second case. In a girl of 19 the diagnosis of malignant endocarditis of the ulcerative type was confirmed by death. In many of the cases he thought it might be well to leave off the term "ulcerative" altogether; in many of the cases the tissue changes have gone as far as death without the presence of ulceration. The term "malignant" would seem to cover the ground. On the other hand, this term might be objected to because some of the cases got well; these were a small minority, however. A point of great interest in the second case was the progressive enlargement of the spleen. Leucocytosis was also marked. The third case was of interest in that it followed miscarriage and presented all the symptoms of a profound septicemia. The blood was taken from the vein, and Dr. Roussel emphasized the importance of taking a large amount of blood for examination bacteriologically.

Dr. J. M. Anders spoke of the difficulty in diagnosis in the two forms of endocarditis and emphasized the great importance of studying the cases minutely by the application of the most modern methods. He thought some value should be placed upon the presence of murmurs, even in so-called ulcerative endocarditis. Of more importance was the embolic phenomena. His constant rule was to carefully eliminate all affections simulating ulcerative endocarditis, particularly typhoid fever and the allied diseases.

Dr. James Tyson thought if the process were looked upon as a pyemic one in which the heart valves become the objective point of the bacterial effect the question would be greatly simplified.

A Few Notes on the Salts of Sulpho-Carbolic Acid.

Dr. Edgar Moore Green said that although the sulpho-carbolates are supposed by some to be "inert," a few of them seem to be excellent intestinal antiseptics. The sodium, potassium and ammonium salts are those that have been most used by the author. One of the most satisfactory methods of administering the sulpho-carbolates is in pill form with enteric coating, because the drug then reaches the intestine and does its work at the proper place. He advocates sodium sulpho-carbolate with acetanilid for the relief of headache associated with deranged digestion. Zinc sulpho-carbolate has been used with advantage in diarrhea.

Primary Abdominal Tuberculosis.

DR. LAWRENCE F. FLICK, Philadelphia, defined the condition in question as the primary existence of a tubercular colony in some tissue or organ within the abdominal walls. The general belief that tuberculosis began in the lungs was, he said, based upon the common experience that the first recognition of the disease is in the lungs; not until these organs are affected do the classical symptoms occur. The observations of pathologists and surgeons have proven that tuberculosis does frequently occur primarily within the abdomen; in what percentage is yet undetermined. Diagnosis is often impossible, and in this direction surgeons and gynecologists could aid much. Frequent discussions of the subject were urged. The question of treatment is still unsettled; men of the largest experience recommend early surgical intervention. As an alternative to this the building-up treatment is advocated by others.

DR. JOSEPH PRICE said that if the surgeon could see these cases the treatment would be very simple and, as they often had occasion to think, very fortunate. For a number of years he had never refused to open the abdomen for intraperitoneal tuberculosis, whether ovarian, tubal, general, or whatever nature. He considers iodoform abundantly used of great value. The condition of abdominal tuberculosis he considered one which justifies excessive and undue liberty intraperitoneally, and which could be undertaken in no other condition. Iodoform should be used freely and drainage employed, either pelvic or general.

DR. MORDECAI PRICE expressed his belief that the infection occurred through the lymphatics and the blood, through some disorganization of the digestive tract with the food infected with tuberculosis. He had seen several cases apparently directly traced to the milk product. In diagnosticating intraperitoneal trouble where there was slow emaciation he believed it was the urgent duty of the surgeon to open the patient and investigate.

DR. JAMES TYSON stated that in the difficult diagnosis the tuberculin test presented an infallible test.

DR. S. SOLIS-COHEN said that the use of iodoform in a clinical experience extending over a great many years had convinced him of its value in combating tuberculosis, internal or external. In the internal administration the secret of its efficacy is in the gradually increasing dosage, taking some three or four months to reach a maximum. The question of etiology was important. With the conflicting theories as to the transmission of human and bovine tuberculosis the etiology was unsettled. That human tuberculosis can be transmitted to cattle, or bovine tuberculosis transmitted to man, he thought there was sufficient evidence upon record from careful observations in the clinic and laboratory to make the profession very careful at this time not to give the impression that such transmission is not possible.

Dr. FLICK, in closing, stated that the tubercle bacillus could enter the alimentary canal through other sources than food and milk; the bacilli entering the respiratory tract might lodge in the pharynx and be swallowed; these bacilli might be from a consumptive as easily as from food and milk. In the same way the germs could be carried into the bronchial glands, the thoracic duct and into the circulation. He laid special stress upon the value of iodoform and the preparations belonging to the same group.

Election of Officers.

The Nominating Committee made the following nominations, which were elected: President, Dr. F. P. Ball, Lock Haven; first vice-president, Dr. Walter Lathrop, Hazleton; second vice-president, Dr. A. S. Harshberger, Lewistown; third vice-president, Dr. R. W. Stewart, Pittsburg; fourth vice-president, Dr. J. K. Weaver, Norristown; secretary, Dr. C. L. Stevens, Athens; assistant secretary, Dr. W. B. Erdman, Macungie; treasurer, Dr. G. B. Dunmire, Philadelphia.

Dr. G. W. Guthrie, Dr. W. Murray Weidman, Dr. W. S. Foster, and Dr. A. P. Hull were elected Delegates to the House of Delegates of the American Medical Association, to serve for two years. Dr. W. T. Bishop, Dr. John B. Roberts and Dr. H. S. McConnell were elected Delegates to serve for one year. Sixteen Alternates were elected, and it was recommended by the Committee that Dr. William M. Welch, of Philadelphia, should be selected to serve as the fourth delegate to serve for one year, should the Society be entitled to eight delegates.

SECOND DAY—AFTERNOON SESSION.

Address in Hygiene.

DR. E. B. BORLAND, Pittsburg, called attention to the need of special hospitals for the care of smallpox, diphtheria and scarlatina patients in population centers above 1000. Improperly prepared food was accounted responsible for much disease and intemperance. The advertisements of patent medicines, medical frauds and shams were accredited with the first suggestions to lives of crime and shame. About 20 per cent. of the commonwealth, it was stated, used normal water; 50 per cent. admissible, and 30 per cent. suspicious or dangerous. Preventive medicine was declared to be as exact a science as clinical medicine.

Histories of Three Accidents in Tapping the Chest.

DR. J. C. LANGE, Pittsburg, reported in detail three cases of accident; the first was one of instant death following the entrance of an aspiring needle through the seventh intercostal space at the posterior axillary line on the left side. The second patient was a man, aged 23, with history of croupous pneumonia two years previous, from which he had failed to regain his former excellent health. A cure was effected, and at the present time, two and one-half years after, there is no sign of thoracic disease, except an appreciable lack of fulness in the subscapular region as compared with the other side, and a difference in expansion of one and one-half inches in favor of the latter. The third case was that of a female, aged 58, with biliary cirrhosis, taken with acute pleuritis of the left side. Restoration to amount of health compatible with the liver lesion ensued, and in about a month she returned to her home in California. Death occurred sixteen months later without any complications of liver disease.

Reforms in Medical Education.

DR. H. M. SHALLENBERGER, Rochester, stated that the standard of equipment of the average graduate of medicine in the United States for the practice of his profession, is very low compared with the graduates in other departments of science or the polytechnic schools. A few questions and answers from papers submitted by graduates to the State Board of Examiners were given, which exposed blundering incapacity, lack of intelligent comprehension of the subject, bad construction of sentences, faulty spelling, etc., on the part of the student. Two remedies were suggested: 1, a preliminary examination of students, admitting only those who have had an adequate education; and 2, a change in the curriculum, giving a uniform standard in all colleges, embracing a comprehensive course of study and including all collateral branches, with special stress on clinical and bedside instruction.

DR. E. B. BORLAND, Pittsburg, emphasized his belief in raising the standard of medical requirements. He believed, too, that the individual ought to be examined to ascertain his fitness for the study of medicine before it was undertaken. He thought the idea of examinations might well extend to members of faculties, and to members of the State Board of Medical Examiners. He was in favor of examining "all the way round, beginning with the student asking admission to the medical school."

DR. J. C. BATESON, Scranton, was in favor of higher medical education. He believed that it should be general, that every one should be measured by a certain standard in order to practice the healing art, whether christian scientist, faith curist, osteopath, or of whatever sect.

DR. HENRY BATES, JR., said that the responsibility of the Medical Society of the State of Pennsylvania is great, and not a member should be indifferent to his influence to attain a higher standard of medical education. Commercialism is rife, and permits the admission of men as students who are utterly incapable of comprehending the science of medicine. Defective and chaotic instruction is all too evident.

The Duration of Immunity from Diphtheria Antitoxin.

Dr. Henry D. Jump, Philadelphia, gave as his experience the injection of 500 units when the patient had been exposed. He had thus used the injection of the antitoxin in the cases of twenty children and no accident had occurred. It was his custom to isolate the sick person, disinfect the room, and remove well persons, each being given an immunizing dose. Illustrative cases were cited.

Lay Medical Education.

Dr. E. N. Ritter, Williamsport, believed that the school teachers are sufficiently trained to impart proper instruction to pupils in the lower and intermediate grades, but physicians should be employed to instruct advanced pupils in hygiene, physiology, human anatomy and venereal diseases.

Strength.

Dr. John M. Batten, Downingtown, had reference to a person with healthy organs, consequently a person in perfect health. Such a parent governs the sex of his or her offspring; if the father were strong, the sex of the offspring will be a female; if the strength of the mother prevail, the offspring will be a boy.

The Veriform Appendix.

Dr. Edmund W. Holmes, Philadelphia, presented this paper, with accompanying specimens, which was based mainly upon the examination of 110 adult appendices. He recounted the four varieties of ceca according to Treves, and in the 110 cases, he had found of the first variety; 1 of the second; 96 of the third, and 12 of the fourth. He pointed out the natural tendency of the cecum to swing round the ileo-cecal valve as a pivot, carrying the appendix toward the left. Toward the left, therefore, should search be made for the base; the ileo-cecal valve itself is a valuable landmark in cases of doubt, when the usual band is indistinct, as the appendix may be found close to it or even behind it or without a meso adherent to the post-cecal wall. The appendicular artery, he explained, is usually single, running on the edge of the meso, but there may be two or more branches coming directly from the posterior trunk of the ileo-colic, requiring separate ligation. The length of the displacement of the appendix, or mayhap displacement of the cecum and colon en masse, may account for anomalous symptoms. The palpation of the appendix through the abdominal wall may be fallacious, owing to contact of the fingers with the psoas magnus muscle, or to the displacement of the colon, cecum and appendix to the median line.

The Doctor's Fee; Is It Fixed and Definite?

Dr. L. J. Lautenbach said that the doctor's reputation, skill, time consumed, risk incurred, and responsibility assumed influenced the amount of his fee. It is also controlled by the patient's standing, his obedience and the result of the treatment, as well as the general, social and financial condition of the community and the reputation and skill of his brother doctors. One influence in the reduction of the fees of the family doctor was the fact that fraternal societies supply the doctor and medicines to members at a nominal cost. Fees apparently high are usually determined by elements unobserved by the public. It was said that a lawyer or an architect might get fabulous prices, yet should a doctor charge a man $5,000 for saving him from the grave, but few would gratefully pay it. A fair price should be charged in every case, and such fees, if not paid, should be collected.

Therapeutic Notes.

Dr. Linnaeus Fussel, Media, called attention to a few remedies which appeared to him of great value.

Some Respiratory Conditions Dependent Upon Gout and Obesity.

Dr. J. M. Anders, Philadelphia, stated that the abnormal conditions presented by the lungs in obesity has not received the attention it deserves. The symptom dyspnea, so common in the anemic variety of obesity, he attributed largely to mechanical interference with the respiratory function, though muscular and hematologic changes shared in the causation. In the plethoric form of polysarcia the dyspnea is often surprisingly slight. Pain in the subscapular and intrascapular muscles may be acute, and it deserves attention. One patient had described it as a feeling as though the "flesh had grown fast to the bones." The pain may be localized, but commonly extends across the back. Hyperemic bronchitis, with troublesome cough and copious mucoid expectoration, occurring in over-fatness was described. Closely connected with this bronchitis is asthma, due in great part to transient insufficiency of the heart muscles; there is also an asthma in this connection, due to gastric disturbance, particularly seen in patients of gluttonous habits. His tentative conclusions concerning the relation of asthma to polysarcia were: *a*. That asthma occurs in about 5 per cent. of cases of obesity; *b*. That it only occurs in extreme polysarcia; *c*, that there is a gouty state or history in most cases in which true asthma is secondary to obesity; *d*, that about 50 per cent. of the cases are curable by overcoming the causative condition. In conclusion attention was called to chronic bronchitis, associated with latent gout or a lithemic state. For success in the management of the cases, the prime requisite is to include the recognition of the cause under the head of diagnosis so that the line of conduct may be adapted to it—the lithemic state.

A Medical Examination as a Prerequisite to Marriage.

Dr. J. C. Bateson, Scranton, referred to the many thousands of unhappy marriages contracted every year. Instead of regarding these as the natural result of violated physical law, many good people piously criticise the severity of Providence. Hereditary influence is too lightly considered by society. The question has been agitated by the writer since 1895 and he has much satisfaction in the knowledge that the scientific regulation of marriage has been proposed and acted on in several state legislatures. He believed that the only logical and effectual course to uproot this social evil is in the enactment and enforcement of a law requiring all applicants for marriage to pass a medical examination, before an authorized board composed of men and women and containing at least two physicians.

The Diagnosis of Lesions of the Aortic Orifices, with Special Reference to Functional Aortic Insufficiency—Pseudo-Leukemia, with Enlargement of the Liver and Spleen, Due to Lymphatic Tuberculosis—A Case of Typhoid Fever Complicated by Noma, with the Demonstration of Diphtheria Bacilli in the Necrotic Area.

Dr. Joseph Sailer, Philadelphia, in presenting these papers gave a mere outline of the second case. He referred to General Sternberg's investigations in this condition. He had found in all, fifteen cases in which the lymph glands showed peculiar histologic enlargement and tubercle bacilli could be found by the usual staining method. These investigations were not the first, but the most important, in that, here the first systematic effort had been made to prove that pseudo-leukemia of a certain peculiar type was not a blood disease, but an infectious disease, and that the infection was produced by the tubercle bacillus. The number of cases reported is only about thirty in all. In the short space of six months six such cases had come under Dr. Sailer's observation, in four of which it was possible to confirm the diagnosis before death; in two by the autopsy. The general features of the cases were given. In one case the liver was distinctly enlarged for two years and in nearly all cases it was exquisitely tender. The temperature chart exhibited, showed a singular irregularity occurring nowhere else except in chronic pyemia, the cases being differentiated by the absence of leukocytosis. The pathologic changes were given. He called attention to this group of cases, peculiar, because very few had been recorded, but he thought with those who had written upon the subject that they escape recognition because the pathologic changes are not invariably those indicating the existence of tuberculosis and the clinician is probably satisfied with the diagnosis of leukemia or Hodgin's disease.

(To be continued.)

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Local Treatment in Chronic Prostatitis.

A. H. Lenf, Philadelphia, in *Med. Council*, states that for local treatment of the prostate, those preparations containing iodoform or iodol or ichthyol are efficient pain relievers and reducers of congestion. In diffuse chronic inflammation of the prostate, larger quantities of these drugs may be used per rectum, and, if there is much pain, especially if so severe as to cause loss of sleep, these may be combined with opium and belladonna. The following is recommended by him as giving prompt relief:

R.	Iodoformi		
	Ichthyol. āā 3ii-iv	8-16	
	Ext. opii .....gr. xii		75
	Ext. belladonnæ .....gr. iii		20

M. Ft. suppos. No. xii. Sig.: Insert one into the bowel as often as may be needed to relieve pain.

He further states that counter-irritation may in some cases serve a useful purpose when applied to the perineum and hypogastrium in the form of sinapisms or blisters; however, such procedures should be omitted in the treatment of such conditions in the aged.

Treatment of Malarial Hepatitis.

Lemanski, as noted in *Amer. Med.*, advises the avoidance of alcohol as of prime importance in the treatment of malarial hepatitis. Arsenic, quinin and the alkalies are of great service used as follows:

R.	Sodii cacodylatis .....gr. ⅛		008
	Pulv. cinchonæ		
	Sodii bicarb., āā .....gr. viii		50

M. Ft. cachet No. i. Sig.: One such, three times a day. He recommends at the same time free purgation and prescribes the following for that purpose:

R.	Hydrag. chloridi mitis .....gr. xii		75
	Pulv. cascaræ		
	Pulv. rhei, āā .....gr. ix		55
	Pulv. belladonnæ .....gr. i		06

M. Ft. capsulæ No. iii. Sig.: One capsule every fifteen minutes in the morning.

To Check Gastric Fermentation.

The following is recommended by Ewald to prevent the process of fermentation in the stomach:

R.	Resorcin .....gr. lxxv	5	
	Bismuthi salicylatis		
	Pulv. rhei rad.		
	Sodii sulph., āā 3iiss	10	
	Sacch. lactis 3iv	15	

M. Ft. chart. No. i. Sig.: One half teaspoonful twice daily.

Local Anesthesia in the Ear.

Dr. H. Dupuy, New Orleans, in *Laryngoscope*, recommends the following as an anesthetic for the drumhead in order that a free incision of the membrana tympani may be made:

R.	Cocainæ .....gtt. v-x		30-60
	Alcoholis (pure) 3i	4	
	Olei amlin 3i	4	

M. Sig.: Drop a few drops into the ear. This will produce complete anesthesia in a few moments.

Furunele in the Ear.

Furuncles originating in the aural passage give rise as a rule to excruciating pain and earache. The *Med. Record* publishes the following for local use under such circumstances:

R.	Zinci oxidi 3i	4	
	Acidi carbol. .....gr. x		66
	Vaselini albi 3i	32	

M. Ft. unguentum. Sig.: Insert a cylindrical tampon of cotton wool, covered with the ointment, into the canal.

This tampon should be large enough to produce considerable pressure. The greater the swelling, the greater should be the pressure made by the tampon. The pain is at first severe, but disappears after a few moments; if not, insert smaller tampon. Before tamponing, use antiseptic douche and repeat daily.

The Proper Method of Using Spartein.

S. Solis-Cohen, in *Amer. Med.*, states that spartein occupies a high place among cardiac tonics and diuretics. He states, however, that the general practitioner is disappointed many times in its use because of improper dosage and methods of administration. In his opinion, in order to obtain the full effect of spartein, especially as a diuretic, it is necessary to begin with rather large and oft-repeated doses. For example, grain one-half to grains two may be given hypodermically every second hour, for three or four doses; after that the drug may be given by the mouth in gradually lessened quantities and at increased intervals, until after three or four days the patient is taking grain one-half three times a day by the mouth, and after a week's time ¼ grain three times a day, with now and then an administration of one or two large doses. In following this method of administration the effect upon pulse, in its tension and frequency, as well as the cardiac force, must be watched closely to avoid overdosing or underdosing. When the patient is not bedridden such large doses are not to be advised; one should then begin with ½ grain four times a day and increase or diminish the dose according to the effect, keeping in mind that the point is to get the patient rapidly under the influence of the drug by the maximum dose tolerated and then prolong the effect by the minimum dose effective.

Tannin and Bromin in Treatment of Pruritus.

Joseph, in *Med. Standard*, states that an ointment containing bromin and tannin is of great service in the treatment of all forms of pruritus. The bromin, according to his statement, is used for its anesthetic properties and the tannin for its astringent effects. He prescribes an ointment composed of bromin 20 per cent. and tannin 40 per cent. He states that the action of this ointment is increased by the alkaline secretion of the skin, without producing any irritation. He uses as a base a 10 to 30 per cent. jelly.

Use of Menthol in Gastritis.

G. E. Campbell, in *St. Paul Med. Jour.*, has used menthol in cases of gastrodynia eructations, distension, cardiac distress and vomiting. He states that the object in such conditions is to neutralize the excessive acidity and relieve the hypersensitiveness of the organ. He recommends, to meet these indications, the following combination:

R.	Menthol .....gr. ⅛ to ii		008-12
	Sodii bicarb. .....gr. x-xv		66-1

M. Ft. chart. No. i. Sig.: To be given one-half hour before meals. He recommends the administration of pepsin after meals in some form.

Cocain in Treatment of Pain in Gastric Cancer.

The following combination has been recommended in relieving the pain in cases of carcinoma of the stomach:

R.	Cocainæ hydrochlor. .....gr. ss		03
	Morphinæ hydrochlor. .....gr. 1/6		01
	Aq. calcis .....ʒiii	96	

M. Sig.: One coffeespoonful every hour in a tablespoonful of iced milk.

An ice bag may be placed at the epigastrium to aid in relieving the pain.

Treatment of Croupous Pneumonia.

A. Pitzold, in *Deutsches Arch. f. Klin. Med.* states that he has successfully employed quinin in the form of subcutaneous injections for the past three or four years in the treatment of pneumonia. He is of the opinion that it acts as a sort of antitoxin for the poison, as such marked improvement in the general condition of the patient takes place. He used daily injections of seven and a half grains (.5) of the hydrochlorate of quinin. This is the most soluble salt of quinin, being soluble in 34 parts of water.

Sodium Cacodylate in Chorea.

Lannois, in *Rev. de Ther.*, has used sodium cacodylate instead of arsenic in the treatment of three cases of chorea. He used the drug hypodermically, beginning with grain one-third and increasing to grain two-thirds. He reports that all the cases recovered in from one to three weeks.

Treatment of Chronic Rheumatism.

R.	Acidi arsenosi	gr. iii	12
	Pulv. guaiaci	ʒiii	12
	Pulv. capsici	ʒss	2
	Pil. aloes et myrrhæ	ʒiii	12

M. Ft. pil. No. xx. Sig.: One pill twice daily.

Treatment of Psoriasis.

Morgenstern, as stated in *New York Med. Jour.*, gives the following prescription to be used locally in the treatment of psoriasis:

R.	Acidi salicylici	gr. xii	75
	Sulphuris precip.	ʒi	4
	Zinci oxidi		
	Amyli, āā	ʒii	8
	Vaselini	ʒv	20

M. Ft. ung. Sig.: To be applied locally once or twice daily.

Treatment of the Toxemia of Pregnancy.

To employ intelligent treatment in the foregoing condition, good judgment and a thorough knowledge of the actions of drugs must be had, especially in those cases where organic disease of the heart is present. The elimination and the eliminating organs must be carefully watched and frequent estimations made of the work done by the kidneys. Marx, in *Med. Rec.*, states that the amount of urea should be estimated often as it is always diminished in true toxemia of pregnancy. He further states that progressive diminution of urea elimination with or without albuminuria is an indication for the induction of premature labor. He recommends as diuretics in such conditions the refrigerant diuretics of the sodium class (not the potassium salts which are too depressing) with an infusion of buchu or triticum. Digitalis is contraindicated because of the digitoxin present, which is a renal irritant. The most valuable drugs are the vasodilators, such as nitroglycerin amyl nitrite and sodium nitrite. As true heart tonics, he prefers spartein and the caffein salts and strychnin, to be used when there is a low tension pulse.

J. C. Webster, Chicago, in those cases in which approaching toxemia demands rapid induction of labor and which are complicated by organic heart lesions—such as a double mitral lesion—uses chloroform as an anesthetic, to which is added a small amount of amyl nitrite. In his opinion the great danger to the patient is in the third stage of labor, and in this stage he orders an inhalation of pearls of amyl nitrite in order to secure the most complete dilatation of the peripheral vessels. Under such circumstances lacerations may be a power for good in relieving pressure by bleeding and no measures should be taken to produce contractions of the uterus, consequently the administration of ergot is non-indicated.

The Use of Ergot After Labor.

The *Lancet-clinic* states that the value of this drug has been overestimated, that it has not stood the claims of its adherents. The question is asked, why use ergot in normal labor when viability of the mother is good and the fundus of the uterus can be felt as a hard firm ball over the symphysis? It is stated by the author of the foregoing that he has used ergot about five times in the last one hundred cases and has practically discarded it on account of its disagreeable taste, its tendency to cause nausea and the unreliability of its action. Its effects are not constant. Many authors claim that it limits the danger to postpartum hemorrhage, diminishes the force of after pains and lessens the tendency to accumulation of putrid material in the uterus and thus lessens the tendency to puerperal infection. Putrid material in the uterus after labor generally means infection contracted at the time of delivery and all the ergot at our command could not do the good that a thorough aseptic washing of the uterine canal would produce.

Treatment of Alcoholism.

Dr. J. L. Howard, in *Med. Council*, recommends the following to be substituted for alcohol in habitual drinkers:

R.	Tinct. nucis vomicæ	ʒss	16
	Tinct. capsici	ʒi	32
	Ext. lupulini flu.	ʒiii	96
	Inf. gentianæ comp.	ʒiss	48

M. Sig.: One dessertspoonful three or four times daily, well diluted.

Medicolegal.

Fifteen Thousand Dollars for Death of Physician.—The second appellate division of the Supreme Court of New York holds, in the case of Ericius vs. the Brooklyn Heights Railroad Company, that it can not be said that an award of $15,000 damages is excessive, for causing the death, through negligence, of a physician about 50 years old, who was earning in the practice of his profession, $175 a month.

"Serious Illness" in Contract of Life Insurance.—The Supreme Court of South Carolina accepts, in the case of Drakeford vs. the Supreme Conclave, Knights of Damon, of the construction, in a contract of life insurance, of the term "serious illness," used in the application, as meaning something that injures a person permanently—any permanent impairment or material impairment of health, it being said that a sickness might be very bad and very sad, and yet not serious.

Admissibility of Non-Expert Opinion as to Imbecility.—A non-expert witness who has had adequate means of becoming acquainted with the mental state of a person whose sanity is in issue may, no doubt, the Supreme Court of Louisiana says, in the case of State vs. Smith, give his opinion, based upon facts to be stated by him, as to whether such person was insane at the time of a specific occurrence. And it thinks that such an opinion would be admissible, subject to the limitation mentioned, upon the question whether the person inquired about had been insane or had been an imbecile throughout his life. But, without the limitation, it would not be admissible. In other words, the court holds that the opinions of non-expert witnesses as to the imbecility or insanity of the accused are admissible only in connection with testimony as to the facts upon which such opinions are predicated.

Occurrences at Medical Examination as Evidence.—It does not need the citation of authorities, the fourth appellate division of the Supreme Court of New York says, in the personal injury case of Jones vs. the Niagara Junction Railway Company, to show that evidence as to what takes place upon the medical examination of a party as to the injuries which he has received, so far as they are the natural expression of pain or inability to do certain things, is competent. It is quite true, it adds, that to a certain extent these expressions may be feigned, but it is for the jury to say, upon the testimony in the case, whether they are the usual actions of one who is expressing involuntarily the sensation that he feels, and so far as they are simply that they are competent, and their admission does not violate any well-settled rule.

Summoning of Surgeon by Conductor of Wrecking Crew.—The Appellate Court of Illinois, Third District, says, in the case of the Chicago & Alton Railroad Company vs. Davis, that the rule is well settled in this state that where an accident happens to an employe of a railroad company, the local surgeons of the company are not in the vicinity, and the condition of the injured man requires prompt medical attention, that the representative of the company in authority at the time and place of the injury has the right to employ medical assistance. If a doctor is sent for by such representative of the company, and, at his instance, performs professional services for the injured employe, the company will be liable to pay for such

service. So, where an employe was badly injured and an emergeney for prompt medical aid existed, and the man in supreme authority at the time was the conduetor of a wreeking crew, who direeted another man to eall a doetor, and the latter performed the service in response to sueh eall, the eourt thinks that the physieian had a elear right of reeovery for sueh services in an aetion against the railroad eompany.

Powder Marks and Medical Jurisprudence.—It is eompetent, of eourse, says the Supreme Court of Alabama, in the murder ease of Timothy vs. State, to put in evidenee passages from standard medical works pertinent to wounds and personal physieal eonditions under inquiry. But a passage from a work on medieal jurisprudenee eontaining an aeeount of certain experiments made by two third persons with guns at various distanees to determine how far from the target the weapon would have to be to leave no powder marks, and the eonelusion of the author from sueh experiments, the eourt does not eonsider of that eharaeter. It says that it does not pertain to the scienee of medieine or surgery. Men of those professions are no more competent to make sueh experiments and draw eonelusions therefrom than other men, and their opinions in the premises stand upon the same evidential plane as the opinions of laymen, and are to be reeeived in the same way and under the same circumstanees. Sueh opinions are never admissible unless the persons giving them are shown to be experts, and then by the word of mouth of sueh experts under oath. Wherefore, the court holds that it was error to permit sueh an extract from a work on medieal jurisprudenee to be read in evidence to the jury in this ease. It says that it did not appear that the author was an expert on powder marks, nor that the two experimenters referred to were, and, eoneeding them to have been experts, they were not sworn before the jury. As for the experiments themselves, it is well settled in this eourt, it says, that, had the two experimenters been sworn on this trial, they would not have been allowed to depose to them.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, September 28.

1 A New Rectal Fistula Knife, Tenaculum and Hemorrhoidal Clamp. Dwight H. Murray.
2 *The Technic of Major and Minor Amputations. Robert H. Cowan.
3 *Laceration of the Cervix Uteri. Henry D. Beyea.
4 A Report of Two Cases of Lymphangioma. Vertner Kenerson.
5 Thrombosis of the Cavernous Sinus—Double Panophthalmitis of Septic Origin. Edward Jackson.
6 One Morning's Work with Stomach Cases, etc. Boardman Reed.

Medical News (N. Y.), September 28.

7 *A Contribution to the Surgical Relief of Cancer of the Rectum: Revision of the Statistics to Date, with Special Reference to Sacral Extirpation. Frank Le Moyne Hupp.
8 The Problems of Physiology and Pathology. Martin H. Fischer.
9 *Intratracheal Injections in Bronchial and Pulmonary Affections. Willis S. Anderson.
10 Presbyopia; Accommodation; Astigmatism. Norburne B. Jenkins.

American Medicine (Philadelphia). September 28.

11 *The Technic of Cesarean Section. Matthew D. Mann.
12 *Pervic Indications for the Performance of Cesarean Section. J. Whitridge Williams.
13 *Place of Symphysiotomy as Contrasted with Cesarean Section. Chas. Jewett.
14 *Circumstances Which Render the Elective Section Justifiable in the Interest of the Child Alone. Edward Reynolds.
15 *The Hygienic and Mechanical Treatment of Heart Disease. Boardman Reed.

New York Medical Journal, September 28.

16 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
17 *The Gonococcus and Its Toxin. J. Rilus Eastman.
18 *A Study of the Temperature, Pulse and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. (Concluded.) J. T. Eskridge.
19 Two Cases of Intestinal Obstruction Diagnosticated by the X-rays. J. Rudis-Jicinsky.
20 *The Abstraction of Calcium Salts from the Mother by the Fetus a Cause of Osteomalacia in the Former. Jennie G. Drennan.

Boston Medical and Surgical Journal, September 26.

21 *Problems in Medical Education. Herbert L. Burrell.
22 *Observations on Heart Disease. Robert T. Edes.
23 The Pupil in General Disease. Edwin E. Jack.
24 Report of Cases from the Second Surgical Service of the Children's Hospital, Boston. H. L. Burrell, R. W. Lovett and J. E. Goldthwait.
25 *Spermine Crystals in Pus. Edward T. Williams.

Cincinnati Lancet-Clinic, September 28.

26 Dilatation of the Stomach. William E. Risinger.
27 Types of Successful Physicians I Have Known. George J. Monroe.

Medical Record (N. Y.), September 28.

28 *A Matter of Interest in Blood Structure Study. Woodbridge H. Birchmore.
29 Report of a Case of Intracranial Tumor; Operation; Recovery. William M. Leszynsky and James H. Glass.
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31 *The Prophylaxis of Tuberculosis. Joseph Kucher.
32 *The Home Management of Epilepsy. Robert H. Porter.
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35 *The Progress of Gynecology and Obstetrics. Walter B. Dorsett.

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36 *Empyema of the Antrum of Highmore. M. F. Coomes.
37 The Longevity of People of Seventy Years and Over Living in the Valley Below the City of Louisville, Called the Ponds Settlement, Within the Last Half Century. T. B. Greenley.
38 *Surgical Treatment of Inguinal Hernia. J. T. Dunn.
39 Address, Kentucky School of Medicine. H. E. Hutson.

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40 Stab Wound Followed by Pneumonia; Report of a Case. L. L. Cole.
41 The Better Organization of the Medical Profession in the State of Kentucky. J. Smith.
42 Teething in Infants. R. B. Gilbert.
43 The Diagnosis and Treatment of Typhoid Fever. S. L. Reid.
44 Ergot in Obstetrics. Hugh D. Rodman.

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45 Expert Testimony as Seen by a Newspaper Man. C. S. Bartram.
46 Surgical Anatomy of Fascia. C. A. Erdmann.
47 A Cast of Arthritis Purpura, with Nephritis. Geo. Douglas Head.
48 Early Days of the Hennepin County Medical Society. Edwin Phillips.

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49 *The Woman of the Tenement and Her Three Great Enemies: Ignorance, Alcoholism, and Tuberculosis. S. A. Knopf.
50 *An Intra-uterine Infection Best Treated by Intra-Irrigation. O. D. Fitzgerald.
51 Phenalgin in the Treatment of Neuralgias and Other Painful Affections. A. Campbell White.
52 *Cesarean Section as Method of Treatment for Placenta Previa. Wm. J. Gillette.

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53 Address to the Graduating Class of the Albany Hospital Training School for Nurses. Samuel B. Ward.
54 Acute Ulcerative Endocarditis. Edgar R. Stillman.
55 Notes on Pancreatic Diabetes. Joseph B. Betts.
56 A Case of Diphtheria. Clinical Notes by Charles E. Davis, Bacteriologic Notes by Arthur T. Laird.

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57 *Chronic Nasopharyngeal Bursitis (Thornwald's Disease). Dunbar Roy.
58 *Traumatic Affections of the Uvula. Seymour Oppenheimer.
59 *A Means of Reducing an Overgrowth of the Intermaxillary Frenum, Permitting the Retention of Two Central Incisors in Close Apposition. Hanau W. Loeb.
60 Inflammation of the Mastoid Process. B. F. Church.
61 Varieties of Cholesteatomata. J. Holinger.
62 *Acute Lacunar Inflammation of the Tonsils. Marshall R. Ward.
63 *Non-Syphilitic Mucous Patches of the Throat. O. Joachim.
64 Diseases of the Upper Air-Passages in Relation to Mental Development. LaFayette Page.
65 Etiology of Nasal Deformities. Wendell C. Phillips.

66 A Case of Angina Epiglottidea Anterior. S. E. Allen.
67 Pharyngomycosis. Arthur G. Root.

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68 Medicine in Egypt—Past and Present. R. W. Corwin.
69 *The Physician in Relation to the Dispensing of Medicine. J. Tracy Melvin.
70 Our Duty to Our Obstetric Patients. E. S. Wright.
71 In What Does the Contract Doctor Differ from the Veterinary Surgeon? Will B. Davis.
72 Severe Neurasthenia Dependent upon Anemia. Isaac Mayhugh.
73 An Acute Attack of Tonsillitis Aborted by the Use of a Solution of Adrenalin Chlorid x 1-1500. J. M. Mayhew.

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75 *Connell's Operation of End-to-End Anastomosis of Small Intestine. Franklin H. Martin.
76 A Study of Reflex Sensory and Motor Phenomena, with Reference to the Complete Distribution of a Neural Segment. W. T. Eckley.
77 *Myasthenia Gravis, with Clinical Report of Case. Sanger Brown.
78 Ileus Caused by Neoplasms. A. J. Ochsner.
79 Ileus Due to Mechanical Obstruction to the Fecal Current. D. A. K. Steele.
80 Obstetrical Cases: Adherent Placenta, etc. Rachelle S. Yarros.

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81 *The Advantages and Disadvantages of Drainage After Abdominal Operations. Hunter Robb.
82 On the Treatment of Meningitis with Unguentum Crede. F. Dexenberger.
83 The Medical Treatment During the Adolescent Period. Edwin Rosenthal.

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84 *Mercury- Its Action upon the System. William Henry Porter.
85 *Our Onomatology in Regard to Greek Terms. Achilles Rose.
86 Tuberculous Lymphomata of the Neck. Franz Torek.
87 Examination of the Blood. Hermann Lenhartz.
88 "Medicine" a Science. Joseph Clements.
89 Report of Clinic. Dr. H. D. Chapin.
90 Report of Clinic. Dr. A. Rose.
91 Notes from the Clinics. Dr. Brodhead.

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92 Addison's Disease, with a Report of a Case. Wm. J. Gillette.
93 A Study of Cerebral Function. Hiram A. Wright.
94 Health Resorts of the Southwest. L. B. Lockard.

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95 *Neurasthenia. Sanger Brown.
96 *The Value of Venesection, Followed by the Saline Injection in Acute Lobar Pneumonia. William Porter.
97 A General Consideration of Pulmonary Tuberculosis, with Plea for Its Treatment at Specially Fitted Institutions. Robert M. Ross.
98 Insulation Complicated by Lobar Pneumonia. Floyd Stewart.
99 Report of a Case of Leprosy. Martin F. Engman and A. Faller.

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100 The Need of Broader Views Concerning the Study of Inebriety. (To be continued.) P. C. Remondino.
101 Race Progress. H. D'Arcy Power.
102 Necessity of Dietetic Management of the Famous Mineral Springs of California. Frank H. Payne.

Merck's Archives (N. Y.), September.

103 Treatment of Consumption at Home. J. H. Jackson.
104 An Index of Diseases Alphabetically Arranged, with Their Modern Treatment. G. Bjorkman.

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105 *Mental Therapeutics. Norman Bridge.
106 *Original Investigations of Spider Bites in Southern California. C. C. Browning.

Journal of Medicine and Science (Portland, Me.), September.

107 Heredity and the Transmission of the Insane Diathesis. W. N. Thompson.
108 A Porro-Cesarean Section. D. A. Robinson.
109 Third Report of the Committee of Inspection Appointed by the Executive Committee of the Post-Graduate Medical School to Review the Experiments of Dr. John F. Russell in the Treatment of Pulmonary Tuberculosis, at the Post-Graduate Hospital, New York, February, 1901.

Memphis Medical Monthly, September.

110 Movable Kidney. William D. Haggard.
111 The Routine Clinical Examination of Stomach Contents. Wm. Krauss.
112 *Some General Remarks on Malaria. Wm. Britt Burns.
113 Appendicitis. F. D. Smythe.

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114 Marasmus in Children; A Pediatric Clinic. Isaac A. Abt.
115 Appendicitis and Its Treatment. A. J. Ochsner.
116 Thoracentesis: Its Indications, Technique and Accidents. Aime Paul Heineck.
117 The Diagnosis of Typhoid Fever. J. T. Moore.
118 Light as a Therapeutic Agent. H. L. Mason.
119 Eczema Multiforme Involving the Entire Body. N. E. Aronstam.
120 The Circulation in the Nervous System. Herman Gasser.

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121 Criminal Abortion. J. P. Oliver.
122 *Apomorphia—Its Origin and Therapeutics, as Applied in Asphyxia, Drowning, Lightning Stroke, Emetic in Ejecting Poisons from the Stomach, Labor, Fever, Strangulated Hernia. Thomas J. Pugh.
123 Four Cases of Appendicitis, Illustrating Four Types of the Disease. A. L. Hathcock.
124 *The Age of First Menstruation in the United States. G. J. Engelmann.
125 The Increasing Sterility of American Women. George J. Engelmann.

Oklahoma Medical News (Oklahoma City), September.

126 Differential Diagnosis of Diseases of the Heart. W. T. Salmon.
127 Mosquitoes in Malaria. Ira B. Bartle.
128 Etiology and Treatment of Pelvic Peritonitis. H. C. Fleming.
129 Abortion Resulting in Acute Septicemia. C. Woodward.
130 Jacksonian Epilepsy, with Reports of a Case. E. G. Wood.
131 Uterine Hemorrhage Following Abortion. W. H. Van Doren.
132 Specific Treatment of Typhoid Fever. John Inglis.

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133 The Advantages of the X-ray in the Treatment as Well as the Diagnosis of Certain Surgical Cases. M. F. Carson.
134 The Antiseptic and Eliminative Treatment of Typhoid Fever. T. Virgil Hubbard.
135 Typhoid Fever in Country Practice. J. A. Knight.
136 Report of a Case of Anthrax. Amand Ravold.
137 A Few Points in the Diagnosis of Ulcers—Running Sores. Thomas H. Manley.
138 A Case of Lupus Treated with Oils. N. F. Howard.

Southern Practitioner (Nashville, Tenn.), September.

139 Sprains. Van H. Coles.
140 Opium, and Some of Its Adjuvants and Corrigents. Q. C. Smith.

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141 Cystitis. J. F. Binnie.
142 Woman's Hospital Reports. Emory Lanphear.
143 Ovarian Tumor; Tube and Ovary Removed for Inflammation, Anterior Fixation of the Uterus; Miscarriage; Vaginal Fixation for Pelvic Suppuration; Ovarian Tumor. E. E. Montgomery.
144 Diagnosis of Renal Calculus. F. D. Carpenter.
145 Cyst of Spleen; Splenectomy; Recovery. Lewis S. McMurtry.
146 The Diagnosis of Gallstones. Neil MacPhatter.
147 The Prevention of Complications After Peritoneal Section. Henry T. Byford.
148 Notes on Vaginal Celiotomy, with Report of Cases. Thomas J. Watkins.

AMERICAN.

2. **Amputations.**—The special conditions under which amputations are justifiable are noticed by Cowan, who says that in every case of severe injury there are three questions usually confronting the surgeon: 1. The treatment of shock. 2. When to amputate. 3. Where to amputate. First he would consider the condition of shock as one of anemia and nervous exhaustion and treat it accordingly with nitrate of strychnia hypodermically, or nitrite of amyl and hot saline solution, which is one of the most valuable means we possess for combating shock, possibly the most valuable. In deciding when to amputate, the surgeon must largely be governed by the degree of shock, systemic and local, meaning by the latter the devitalizing or lowering of resistance of tissue in the vicinity of the injury. In profound systemic shock, operation almost invariably results fatally. He is opposed to immediate amputation in the large proportion of cases, always in profound shock, and not infrequently in the absence of systemic shock, and in certain cases where we are in doubt as to the extent of the injury to contiguous tissue. The question where to amputate is a very grave one to the patient and the rule that every inch of tissue should be saved that is possible, is not without its exceptions. The great desideratum, na-

turally, is to produce the most useful possible stump and in injury about the knee it may be better surgery to go just above the point, enabling the patient to wear an artificial limb with more comfort than in case of disarticulation. In dealing with injuries to the hand or fingers, the utmost conservatism should be employed, every finger or part of a finger that can be should be saved. In operations undertaken on account of pathologic conditions, among which he includes infections, gangrene, osteomyelitis, osteosarcoma, etc., amputation may be necessary. He has used local analgesia with cocain in a number of amputations, and recommends it especially where shock is grave and immediate amputation is deemed advisable. The technique of the operation is described at length and in too much detail to be reproduced. He thinks the circular method for amputation superior, as having advantages over the older transfixation operation. A large muscle flap is in no way desirable.

3. **Laceration of the Cervix.**—The special points made by Beyea are the factors of selection in operation, including the proper selection of cases, preparation for operation, attention to certain essential operative details and the selection of the proper operation for the individual cases. The selection of the cases is the most important. The chief contraindication to operation is the presence of pelvic inflammatory trouble outside the uterus, such as tubal and ovarian disease. There are also other lesions that must be recognized and repaired before perfect health can be restored. Treatment should be employed to prepare the parts for the operation. In regard to the details of the technique of trachelorrhaphy he only alludes to a few points. All cicatricial tissue should be thoroughly removed, no portion or part of a Nabothian cyst should be left in the line of denudation. Sutures should be accurately and evenly placed. If good asepsis is practiced union will never fail. The sutures should not be too tight nor too loose, but just enough to secure accurate and firm apposition. If there is the least suspicion of malignant disease the surgeon should not await developments, but the suspected tissue should be thoroughly excised.

7. **Cancer of the Rectum.**—Hupp's article is largely a review of the literature, though he reports several cases of his own. The latter part of the paper is taken up with the revision of the statistics.

9. **Intraeranial Injeetions.**—This method is advocated by Anderson in a number of conditions and he summarizes his personal experience in the following: 1. It is of no advantage in acute bronchitis, at least during the congestive stage. 2. It is of distinct advantage in subacute and chronic bronchitis. 3. It is of positive benefit in bronchiectasis. 4. It is valuable in pulmonary tuberculosis, relieving many of the symptoms, especially those due to secondary infection. 5. It quickly relieves the distressing symptoms of asthma. The amount of relief and the permanency depend largely upon the predisposing and exciting causes. 6. It in no way interferes with other lines of treatment. 7. The writer has never seen harm follow its use, although in a very few instances it excited severe coughing for a short time.

11.—See abstract in The Journal, xxxvi, p. 1652.

12.—Ibid.

13. **Symphysiotomy.**—Jewett concludes as follows: Symphysiotomy is still a useful operation within a limited range of pelvic contraction. It is suited to conditions in which only very little additional space is required for delivery. It is a valuable resource, therefore, in cases in which forceps unexpectedly proves inadequate. Axis traction forceps with the aid of posture should always be tried before resorting to symphysiotomy. Its results would be much improved by restricting it to pelves with a conjugate of not less than 7.5 cm.—3 inches—in simple flattening or 9 cm. in general contraction. Under equally favorable conditions its total mortality should be no greater than that of Cesarean section. When the pelvie spaee permits it should replace the Cesarean operation in the presence of exhaustion. It may be elected primarily as an alternative of Cesarean section when the operator ean be assured that the degree of obstruction is well within its safe limit. Here the choice of operation is a matter of individual preference. Within its proper field symphysiotomy is better than Cesarean section for an operator of little experience in abdominal surgery.

14. **Cesarean Section.**—The conclusions to whieh Reynolds has been led by experience are: 1. That Cesarean section performed late in labor or in the presence of infection of the uterus or other complicating constitutional conditions, has been shown by the experience of almost every one who has tried it to have so high a mortality as to be totally unjustifiable when performed in the interests of the child alone. 2. When Cesarean section is performed on a healthy woman under otherwise favorable circumstances for merely mechanical indications in skilled hands, there is no mortality other than the fractional percentage incident to all considerable operations per se. 3. The inconveniences and high morbidity rate of symphysiotomy make it distinctly inferior to section as the operation of choice, but it is the operation which, as compared with craniotomy or prolonged and forcible high forceps work without it, involves almost no increased risk to life. He therefore believes it to be an operation of choice in a somewhat limited number of neglected cases (those where Cesarean section is ruled out) in which the pelvic contraction is within the range and where the extraction of a living child without symphysiotomy is difficult or impossible, but after symphysiotomy, is safe or easy. 4. The induction of premature labor for contracted pelvis eauses so high a fetal mortality as to be unwarranted, as compared with the performance of Cesarean section at the beginning of labor and in favorable cases. His belief in the safety of early section is based on a personal experience in 19 cases and observation of the literature for nearly ten years. His belief as regards symphysiotomy is largely from the experience of others and a study of the literature. Pelvimetry is our only means of diagnosing the existence of deformity and contraction, and he thinks it will come to the point where it will give us an accurate knowledge of the pelvis. He recommends careful pelvimetry during pregnancy in those multiparas whose previous history is that of difficult labor and in all primiparas, and, in conclusion, urges his personal belief that no man is justified in permitting Cesarean section as a last resort or upon infected or otherwise constitutionally ill women for the sake of the child alone, but that it can be done in the beginning of labor with a healthy woman with even less risk to either mother or child than is involved by unusually high forceps work.

15. **Heart Disease.**—The summary of Reed's paper is given as follows: 1. Cardiac disease is often due to autointoxication, especially to poisoning by the alloxuric bases; 2, cure or amelioration in such cases requires at first, in addition to an appropriate diet, not too nitrogenous, the utmost practicable rest of the crippled organ. This cardiac rest may be further promoted by very gentle exercises which dilate the capillaries without taxing the heart; 3, the Nauheim method of treatment spares the heart by dilating the too contracted arterioles in two ways—(*a*) by stimulating the peripheral circulation through carbonated saline baths; and (*b*) by massage and forms of exercise (*Widerstandgymnastik*) so mild as not to quicken the pulse.

16. **Soeial Aspeets of Dermatology.**—In this third lecture Morris describes certain conditions such as ringworm, which he thinks was possibly imported from India. He goes over the history, pointing out that Gruby had, in 1844, published an article on the organism which was overlooked until it was rediscovered by Sabouraud about fifty years later. The number of organisms producing this is noticed and the author's own results given. His investigations have led him to the conclusion that there are at least two distinct fungi which may eause ringworm, one with small spores and the other with large ones. The large spored fungi attack the root of the hairs and go downward, and also attack the body in the region of the beard and elsewhere. The small spored variety attacks the scalp

chiefly, is in children almost exclusively and produces a very refractory condition indefinite in duration. The prognosis of scalp ringworm is not altogether a satisfactory one, though, as a rule, it comes to a spontaneous end after puberty. He believes that children affected this way should be treated in special schools apart from others, to avoid spreading the disease. Favus is also a disease which has undergone some changes as regards our views of it. It is much more serious than ringworm and exceedingly unpleasant. He thinks it should be restricted by legislation. The immigration of persons bringing it should be checked. Like ringworm it can only be stamped out by properly organized methods of medical and sanitary repression. He concludes by mentioning some unimportant forms of disease caused by vegetable fungi, like tinea versicolor and erythrasma, both of which are trivial.

17. **The Gonococcus.**—Eastman's article is a lengthy and elaborate description of the gonococcus and its toxins and seems to be quite thorough. It is too full to be abstracted. He believes that gonorrheal urethritis, once cured, affords some degree of immunity against subsequent attacks.

18. **Brain Disease.**—Eskridge sums up this series of articles which has been running through several preceding numbers in substance as follows: A careful study of temperature, pulse and respiration will give much valuable information, aiding in the diagnosis and prognosis of certain diseases of the brain. Careful and reliable records are required, needing much time and patience. Nurses are totally incompetent for such detailed work, unless specially trained to it. The change in the character of respiration rather than in its frequency is one of the first positive symptoms of intracranial organic disease, especially of tuberculous meningitis. A respiration that is more frequent while the patient is asleep or unconscious than during the waking or conscious moments, is very strong evidence of organic brain disease interfering with respiratory centers. Apoplexy due to hemorrhage is attended with greater disturbance of the body temperature soon after the stroke than is the case when the apoplexy is due to thrombus or embolus. The temperature disturbances in apoplexy due to hemorrhage, especially if attended with hemiplegia, are a slight fall of the axillary heat within an hour or less after the occurrence of the hemorrhage, the fall being a little greater on the paralyzed side. If reaction has occurred (eight to twelve hours on the average) we see a slight rise of temperature a little greater on the paralyzed than the opposite side, elevation from one-half to 2 or 3 degrees above normal for the next few days, the temperature remaining a little higher on the paralyzed side than the opposite side for a week or more in cases of complete hemiplegia; later, the temperature is slightly lower on the paralyzed side if trophic disturbances occur. In apoplexy from thrombus or embolism there is scarcely any appreciable temperature disturbance before the end of the second day, except in the severer cases, and then slight. In the majority of these cases there is no marked variation of temperature from the normal at any time, so that temperature disturbance the first day points very strongly to hemorrhage. Considerable disturbance of temperature, beginning from the second or fourth day, is significant of thrombus or embolus, and indicates extensive softening and an unfavorable prognosis. If the temperature of the paralyzed side remains higher than on the opposite side for several weeks after the occurrence of apoplexy from any cause, it indicates that softening or inflammation of the brain is progressing and the prognosis is very grave. It is premature to attempt to arrive at any definite conclusions from the study of the temperature, pulse and respiration in brain traumatism. This class of cases deserves a more detailed study of all their symptoms and it is probable that if they were classified and grouped according to the severity of the injury and the character of the symptoms, a careful comparison of the temperature, pulse and respiration would lead to important conclusions. In regard to the traumatic class of cases it seems we are justified in making the following tentative statements: 1. All cases of injury to the head in which the temperature does not reach normal or slightly above a few hours after the receipt of injury will probably prove rapidly fatal. The higher the temperature the greater the probability is that contusion or laceration of the brain and membranes is the more important factor in the case than intracranial hemorrhage. The greater the variation of the temperature from normal, either above or below, the worse the prognosis. 2. A rapid, weak, intermittent and irregular pulse indicates danger. A pulse that is first slow, but soon after becomes quite rapid indicates that the brain power is being overwhelmed by the intracranial lesion, and justifies a bad prognosis. 3. The exceedingly slow and intermittent respiration (8 to 10 to the minute) indicates a lesion at the base in the posterior fossa. The slower and the more pronounced the intermission of respiration the greater the danger of sudden death. A respiration at first nearly normal in frequency but soon after becoming quite rapid, indicates a rapidly fatal case.

20. **Osteomalacia.**—Brennan suggests that osteomalacia of the mother is due to the absorption of calcium salts by the fetus indirectly by taking from her blood the pabulum which she requires to build her own tissue. In the case of a poorly-fed woman, she holds, this would easily occur. We may say then, according to this theory, that osteomalacia is a condition the result of the poverty of calcium salts in the blood of the mother by which the osseous tissues are starved by the fetus assimilating all the valuable salts. If the diet were rich in salts there would be sufficient for both.

21. **Medical Education.**—Burrell calls attention to the value of experience, which, nevertheless, is not the only method of obtaining knowledge and can be supplanted in some measure by the student having a foundation firmly laid by scientific methods in laboratories for research work, hence the value of laboratories. The special practitioner will have his foundation laid in these, and carry the training he has there received to individual patients. The uses of the clinical laboratory are stated by Burrell as follows: 1. The habit which the student will form of examining clinical products in each individual patient as he presents himself. 2. The training of students to apply their abstract scientific knowledge to the concrete example of a patient. 3. The stimulus to acquire knowledge at first hand, which will not alone be felt in his laboratory work. 4. The impetus it will give to research. The writer also says that the compensation and the position of the teacher of medicine at present are not what they ought to be. He is obliged to give his time and attention 1, to his living, 2, to his hospital work, and 3, to his teaching. The matter will not be improved until the medical schools make a teaching position the principal object of a man's life. Burrell considers that the value of lectures, recitation, demonstration, etc., is still undetermined. There are certain subjects that are always best presented by lectures, and clinics will always be of great advantage. Extramural teaching should be carefully tried in all large centers of population. Graduate instruction at the present is not sufficiently scientific. The doctor goes to get therapeutic tips, the latest dodges in operative technique and the reputation of having the latest scientific facts. The graduate instruction should be planned so that real knowledge can be obtained in the shortest possible time. The function of the modern medical school is that of a university of medicine, and should fit the students for the practice of specialties and biologic work as well as for general practice. What the curriculum should be is yet a question. He gives a diagrammatic showing and criticism of the curriculums in four leading schools, not, however, designating the institutions. He summarizes that every school of medicine should establish its curriculum not depending on the wishes of the head of each department, but planned for the good of the student, and should establish in each of its departments the minimum required course for the average student. During the fourth year of instruction the work should be essentially elective and optional in order that students can prepare themselves for the special lines they are to engage in. Improvement in the method of instruction can best be secured by active competition. This can be obtained by the medical schools of the country adopting a standard of minimum required work.

At what period this minimum required work should cease is open to argument.

22. **Heart Disease.**—Edes commences by remarking that the time is not long past when the prognosis was based upon the observation of cardiac murmurs almost exclusively, and the average practitioner is supposed still to be in bondage to the old ideas. He describes the physiologic action of the heart and shows that the line between the healthy acting and inefficiently active heart can not be sharply drawn, but has a varying margin which can only be told with precision by experiment, which may be dangerous. It is only in the increase of muscle power and in regulating it so that it can be economically used that the best results are to be obtained. He dwells on the importance of the trained touch to diagnose the pulse, and, while it is not possible to diagnosticate actual degeneration of the cardiac muscle, it can be done with sufficient probability for practical purposes. He considers the term "heart failure" a proper phrase for the state of things when the margin has been passed in the wrong direction. It is objectionable only because it is so easy to misapply. In conclusion he describes the innervation of the heart and remarks how many points are yet undecided in the physiology, and pathology is still further behind.

25. **Spermine Crystals in Pus.**—Williams reports the results of examination of pus from a case of long continued cervical abscess in which he has found spermine crystals in almost every slide. He also found great numbers of needle-shaped crystals, which, he concludes, must be adenine, guanine or sarcine, with others which he took for xanthine. If his observation is not at fault this finding of spermine in the pus makes the fourth or fifth of the nuclein bases thus far observed and xanthine may also be added as a possible discovery by himself.

28. **Blood Structure Study.**—Birchmore reports observations on the blood of a turkey which had been killed by cutting the carotid artery by way of the mouth. The knife thrust had opened the way into the lymph space and the blood had filled it, and, coagulating superficially, had half-sealed the wound of entry. The head and neck were dissected not less than 120 hours after killing and the findings strongly suggested embryologic conditions of the blood; he thinks that certain developmental changes take place in the body after death. The animal was over-stuffed with food. The blood was peculiarly in a condition to feed the corpuscles, which might be regarded as the only living cells left in the body. The absence of air reproduced to a certain extent embryologic condition, though the absence of heat was different. He asks does this combination of ample food with deficient respiration and heat explain the pertinacious following in the steps of development impressed upon the substance of the cells, the exceeding slowness of metabolic change, the persistence of these shadows, the simulacra of embryonic conditions. If so, he says, one is tempted to ask what would have happened between the condition reached and the moment when the pseudo-embryonic tissue, its growth-impulse exhausted, or no longer protected by environment, was assailed by the agents of decomposition. The question he leaves unanswered.

31. **The Prophylaxis of Tuberculosis.**—Before advising prophylactic measures the question of their practicability is raised by Kueber. He remarks that the laws proposed by certain boards of health are of doubtful utility. The danger of infection is not founded upon indisputable facts. Since 1854 there have been in Gerbersdorf, according to Brehmer, more than 10,000 consumptives and he asks, what quantities of sputum have not been ejected on public highways and streets and what quantities of infected matter have not been breathed by the inhabitants of Gerbersdorf, among whom the percentage of consumptives has decreased during the last twenty years from 0.41 to 0.18 per annum. Pollock says as regards infection that he has investigated the Brompton Hospital from the beginning until now and there has been among the nurses, house physicians, dispensers, floor scrubbers, etc., no more than four cases in fifty years. Out of 4000 cases which he has attended in hospital practice, at least 30 per cent. had the hereditary element. Other facts mentioned are the decrease in consumption in the British barracks since the ventilation has been improved and among the monkeys in the zoologic gardens in Paris. If there were one-half as much danger from infection as some would have us believe, it would be very unwise to send patients suspected of consumption to places full of consumptives. More than one hundred years ago the most stringent measures against the spreading of consumption by infection were enforced in Naples for several years. The result was a great hardship on the population without the least decrease of the mortality from consumption. Anyone who gives attention to the cause must conclude that the danger of infection is of subordinate importance, and, if the boards of health instead of wasting their efforts in impracticable measures would concentrate their efforts on regulations of indisputable merit, a great deal of good could be accomplished. A change for the better may be looked for when the boards of health and public have become convinced of the following: 1. That the tubercle bacillus is ubiquitous and that we can not escape it anywhere. 2. That the bacillus is harmless until it finds a congenial soil. The same is true also of some other bacteria. It was shown at von Leider's clinic in Berlin, some time ago, that ordinary bacteria in the blood circulation of animals affect the heart valves only when these are already injured. 3. That the human body offers a congenial soil when its vitality is undermined by one or the other of the many causes that are deleterious to health. 4. That there is no better and surer and easier preventive against consumption than to keep the body proof against tubercle bacillus. This can be done by avoiding the causes that make the human body susceptible to it. Foremost of these and the one most disregarded is working, living and sleeping in a confined and contaminated air. Few people give attention to the ventilation of their sleeping rooms. Sunshine and air are the last things thought of. The next noteworthy causes that undermine the vitality are certain occupations, such as stone cutting, needle grinding and workers in dust, and instances of prolonged worry, dissipation and irrational feeding.

32. **The Home Management of Epilepsy.**—The treatment of epilepsy is discussed by Porter, who shows the bad effects of even careless words, harsh fault-finding and especially of unfavorable environments. No fixed rules or regulations, however, can be laid down. Each individual must have his own treatment. A few of the patients, especially among children, may show some minor defects in manners; it is best as far as possible to ignore many of their shortcomings. The proper training of the mind, abstinence from stimulants, prudence and temperance in diet and mental diversion are especially advisable. Fear, anxiety and worry are dangerous conditions of the mind, and discussion of the condition or any remarks in regard to the probabilities of the case in presence of the patient are to be condemned.

33. **Retroversioflexio-Uteri.**—In this article Bandler describes the anatomy and physiology of the condition, and the following is a summary of his views, leaving out the question of retroflexio-fixata, and the peritoneal complications of retrodeviations: 1. Retroversioflexio per se is not a pathologic condition. 2. The majority of retrodeviations are of congenital origin. Retroflexioversio is not an obstacle to the cure of pelvic affections. 3. Where retroversioflexio without peritoneal, tubal, or ovarian complications causes symptoms, an hysteroptosis must be taken into consideration, always bearing in mind the possibility of other physical states, especially gastroptosis, enteroptosis, ren mobilis. 4. Prolapsus vaginæ and cystocele, while often associated with retrodeviations, are independent affections. 5. Where retroversioflexio is accompanied by severe local symptoms, these, if not due to peritoneal, tubal, or ovarian complications, may be corrected in the vast majority of cases without surgical treatment.

35. **Progress of Gynecology.**—Dorsett reviews the progress of gynecology and obstetrics, calling attention principally to the surgery and the advance in the matter of perineal operations and in the surgical treatment of fibroids. Since he has





used the angiotribe in the latter, he considers the operation less dangerous than before, as ligatures are dispensed with, the vessel is just as safely disposed of and the time shortened. He says the more one studies the question of the management of fibroids the more convinced he becomes that in the great majority of cases myomectomy should only be performed in cases where the tumor has a pedicle. The ragged bed left after the enucleation, composed as it is of bruised and devitalized tissue, is too fertile a soil for the propagation of pathogenic organisms. He also mentions the importance of early diagnosis of a malignant disease and the abuse of the curette. As regards the advisability of Cesarean section in placenta previa, he says it is difficult to approve of this method, though one feels that it may be possibly justifiable in this most dangerous condition, if in any.

36.—See abstract in The Journal, xxxvi, p. 1726.

38.—Ibid., p. 1727.

49.—This article has appeared elsewhere. See The Journal of September 28, title 155, p. 863.

50. **Uterine Irrigation.**—Fitzgerald advises the use of free intra-uterine irrigations in cases of infection in preference to the curette. He has been making use of the irrigation in all septic and toxic-genetic troubles, but especially in puerperal conditions where he thinks its benefit has been most apparent. He advises irrigation well up to the fundus, flushing of the uterine cavity with carbolized water by reflux irrigator with a fall of two feet, and, while it is still in the uterus, the douche is detached and, by means of a short tube, a small glass funnel is attached which should be held about fourteen inches above the end of the irrigator and a little peroxid of hydrogen introduced at a time, giving time for action of each addition. He would repeat this operation after several hours and has found this method very satisfactory in cases of uterine infection. The curette should be used less frequently and more reliance placed upon the stimulating, unirritating, intra-uterine douche and free drainage, preceded always by thorough removal of all infected matter that can be taken away without injury to the normal structure, with subsequent irrigation, repeated as indicated.

52.—This article has appeared elsewhere. See The Journal of August 24, p. 495.

57. **Chronic Nasopharyngeal Bursitis.**—The bursa pharyngea which occurs in the vault of the pharynx exactly in the median line is not a congenital one, but may occasionally be traced to arrested development. Its existence is doubted by some writers, but Roy has been able to find it almost universally present in this opening in the vault in cases where there are decided objective symptoms of nasopharyngeal catarrh. He reports cases and thinks there must be something more present besides adenoid hypertrophy to account for the condition. The reason why it is not more often recognized is largely due to the fact that it is not frequent and probably not recognized as a distinct condition by many observers. While he believes in it himself he can not agree with Thornwaldt in attributing every case of postnasal catarrh to this condition. The best treatment he has found, in addition to thorough cleansing which the patient can do at home, is the application of a solution of silver nitrate, 60 gr. to the ounce, directly to the sulcus, followed by thorough spraying of the nasopharynx with hot melted vaselin and orthoform. His success with the curette and electro-cautery was not encouraging.

58. **Injuries to the Uvula.**—Oppenheimer reviews the various traumatic injuries to which the uvula is subject, all results of direct violence, excepting those due to extensive strain of the parts sometimes observed in singers, or from violent force to clear the throat as is hawking. In these cases the symptoms are altogether out of proportion to the apparent amount of injury. No special form of treatment is indicated, excepting when the tissues have been lacerated, then the local application of ice is very useful. In extensive edema, multiple incision is indicated, and in any inflammatory condition mild soothing applications are valuable.

59. **Apposition of Simple Incisors.**—The condition when the two middle front teeth are separated by a space is due, according to Loeb, to a small ridge of tissue which passes from the labial frenum downward between the teeth and depends upon the implantation of the frenum upon the gingival surface. When the attachment is high up the fibers are lost before they reach the inner surface of the alveolus, while, when it is low down, the fibers in the vast majority of cases continue between the two central incisors and are spread out in a fan-shaped manner between the palate. These observations were made on the living subject and while the condition has no bad effects, from the cosmetic standpoint it is undesirable. The operation which he advises consists in plunging the galvanic knife in the median line, beginning at the upper and anterior margin or mass of tissue just described and carrying it well into and behind the alveolus even to the fan-shaped prolongation on the palate. One application will sometimes be sufficient, though three or four may often be necessary. The operation may be performed before the retention bands have been applied or during their application and use. Care should be taken not to insert the cautery point too close to the teeth; the reaction from the operation is very slight, not more than from cauterization of the nose.

62. **Acute Laeunar Tonsillitis.**—This condition occurs most frequently between early life and adolescence. It is undoubtedly infectious and to a moderate degree contagious. The cervical lymph and ear complications need only to be mentioned. The treatment is local and constitutional. Ward does not claim to be able to abort the condition. All we can hope to do by local treatment is to modify the severity, as it is self-limited. However, indiscriminate local treatment, digging and probing is productive of more harm than good. He has been in the habit of giving the following as a routine treatment:

℞. Acid. carbolic ..... gtt. x
Acid. boracic
Sod. biborate āā ..... ℥iss
Hydrogen dioxid
Borolyptol, āā ..... ℥i
Aquæ dest. ..... q. s. ad f. ℥viii

He advises also small particles of cracked ice or water and spray in the early stages of the disease. If there is any indication of extensive lymphatic involvement, the ice-coil may be used. The constitutional treatment consists in free purgation with calomel and effervescent sodium phosphate. For fever, headache, and muscular pain he usually combines codein sulphate, salol and phenacetin, in proportion to suit the age and requirements. With a previous history of rheumatism he relies on salicylate of strontium or soda, and tincture of chlorid of iron is a remedy, the value of which can not be overestimated. It has a decidedly beneficial local effect and a selective action on the blood and kidneys, and should be given during the acute stage and continued into convalescence. One attack predisposes to another and the removal of the troublesome organs should be practiced during the quiescent periods, but never in the active stage of the disease.

63. **Non-Syphilitic Mucous Patches.**—The conditions which simulate syphilitic mucous patches are as follows: Aphthous stomatitis, which is usual in children, is inflammatory and has a thick yellowish exudate; herpes buccalis, also painful and otherwise different, and pemphigus, which is more serious and in which anti-syphilitic treatment would be decidedly harmful. Close observation will reveal the remains of an elevated cuticle and in some the lesions are apparently preserved. Leucoplakia, however, is the most frequent cause of error. It is more permanent in its character, the surface is smooth, tough and warty. It is aggravated rather than benefited by anti-syphilitic treatment. The use of nitrate of silver or chlorate of potash may also give trouble, which may cause confusion. Joachim believes what are apparently very much like syphilitic lesions do sometimes appear on non-syphilitic subjects and that the evidence is not always safe for diagnosis and treatment of syphilis.

69.—See abstract in The Journal of July 13, p. 138.

75.—This article appeared in The Journal, xxxv, p. 1151.

77.—See abstract in The Journal, xxxv, p. 1107.

81.—This article appeared in The Journal of July 6, p. 20.

84. **Mercury.**—The much discussed physiologic action of mercury in the system is again reviewed by Porter, who sums up the principal action of the mercurials as follows: "1. Stimulant to the hepatic cells. 2. Cholagogue in action by virtue of exciting hyper-secretions of the bile acids. 3. Sedative due to the two previous actions. 4. That its alterative, antiphlogistic, anti-syphilitic, diuretic actions, etc., are secondary to the above actions. 5. That ptyalism from mercury is due to the inactivity of the hepatic cells, and to the salivary glands attempting to do what should have been done by the hepatic cells."

85. **Onomatology.**—Rose criticises the incorrect Greek of medical nomenclature, calling attention to such words as appendicitis, conjunctivitis, albuminometer, etc., and such incorrect ones as chlorosis, polyclinic, glycosuria, hemophilia, etc. He admits that the question of introducing correct Greek terms in place of the incorrect ones is a rather serious one, but suggests a committee of competent physicians and philologists combined be appointed by some representative medical society.

95. **Neurasthenia.**—Brown coins a word "neurenergen" which he defines as a supposed ultimate form of organic matter contained in the neurons, through which agency it is convertible into waste products and various manifestations of nervous energy. According to this conception, there is in health a current of neurenergen constantly flowing into the neurons, which is no less constantly transformed by them into energy and waste products. This notion is specially applied to neurasthenia in which condition there is a standing deficiency in neurenergen. The causes of neurasthenia are noticed, including age, shock, worry, etc. He recognizes a class of people who are in a state of congenital chronic lack of stamina which he would not include under this head. Motor neurasthenia is best illustrated by the stale athlete; the sensory form has no special diagnostic symptoms. The mental form is characterized by lack of capacity of attention and mental confusion. Involvement of the special senses and the vegetative organs are also mentioned. The rest cure he thinks is somewhat overdone, too many promoters are taking hold of it and administer it without regard to medical advice. Still it is an excellent method under proper supervision, though men will seldom submit to it. Much outdoor life should be required in most cases, regulated exercises, a generous diet, and regular and frequent periods of rest. The neurasthenic business man should shorten his hours, a proper sort of vacation occasionally affords relief. The tact and skill of the physician are particularly taxed in these cases. He never receives compensation at all commensurate with the value of his services.

96. **Pneumonia.**—The utility of venesection followed by saline infusion is argued by Porter, who does not, however, advocate the method to the exclusion of others. The rationale of the treatment is discussed by him and he says he believes the whole treatment of lobar pneumonia may be summed up in a brief formula: conserve the strength, guard the heart and diminish the toxins. It is a self-limiting disease, but should be helped over the severer places. The mortality is at present greater than it should be, and the early routine and reckless use of heart depressants are responsible for disasters at later stages. He reports a case in which he considers venesection and saline solutions saved the patient, where ordinary remedies would have failed.

105. **Mental Therapeutics.**—Bridge believes that we should lessen the emotional attention to infants, which may produce even true neurasthenia in the first year, and not try to be constantly entertaining children or encouraging emotions that may be vicious ones; later in life we should stop trying to make them young ladies and gentlemen. We should lessen, as far as possible, the emotional strain at school, the fear of failure, etc. Some children suffer this way; increase of outdoor life would be better for people in general. Too much indoor life keeps us below par. The desire to shine in society and business is more often the cause of neurasthenia than nervous overwork. We must have less dress parade in our lives. People who are carrying mind and body loads which are too heavy should have them lessened.

106. **Spider Bites.**—The danger from poisonous spider bites is a popular belief. According to Browning there are but two species of spiders in Southern California reputed to be poisonous; one, of the genus "Phidippus," which is hairy, with red spots on the upper surface of the abdomen, belonging to the family of wandering spiders, seeking its prey after the manner of the feline race; the other, of the genus "Lactrodectus," glossy black, with red spots on the under surface of the abdomen and belonging to the family of line-weavers. He does not know of any case where the bite was specifically stated to be due to the former species, though the conditions of the accident and the lack of characteristic symptoms of the other type lead to suspicion in some cases; a number of cases have been reported of the lactrodectus bite, the results of which may be very severe and even fatal in some cases. The animals seem to prefer outhouses and most bites have been received in them. It is not specially aggressive, but probably is dangerous because of its locality, in the seats of outdoor closets, etc. These seats, he thinks, should always be made to swing on hinges to protect against this. The general symptoms are more often severe than the local ones and may take periodical form, occurring at regularly certain periods of the day. General prostration and weakness is occasionally observed, the first symptoms occurring a few minutes after the bite, with severe rigor, nausea, depression of heart action, lowered temperature, cold perspiration, severe pain in the lumbar region, gradually extending towards both the extremities and the precordia and followed sometimes by convulsions and death. Generally, however, the circulatory and respiratory symptoms begin to ameliorate, temperature and pulse becomes normal, but the pain continues however, and also a slight general edema. He reports a fatal case.

112. **Malaria.**—Burns suggests an antagonism between malaria and typhoid infection, giving his experience as proof of this view. In the region from which he writes the conditions of soil, sewage and water supply are just such as would appear conducive to the propagation of the typhoid germ. This, with the advantage of an insalubrious climate, with people generally below par, yet does not produce many cases of typhoid. He does not believe in any form of malaria that is not amenable to quinin. Hemorrhagic malaria is mentioned. He has had a number of cases where there was spitting of blood and other signs of pneumonia without pneumococcic infection, while blood smears have shown the plasmodia. All cases responded in three or four days to a good gland arousement and quinin. Some of these cases he has regarded as prebacillary tuberculosis. Blackwater fever occurs in his region, and, contrary to what Dock says, the condition is not hematuric. It is in all essential particulars the same as, and in fact is, a malignant malaria with a condition of hemoglobinuria and rapidly increasing jaundice. It usually occurs in old residents, rarely in newcomers and more often in males than females. He does not believe in toxic hemoglobinuria other than from quinin, and he does not hesitate to use quinin in this condition.

122. **Apomorphia.**—Pugh recommends the use of apomorphia in cases of asphyxia to stir up respiration, and would give it hypodermically in the arm or over the stomach in .10 gr. doses every ten minutes. He reports a case where he aroused a man in this way who had been reported dead by two physicians after suffocation from coal gas. He would also use it in drowning and lightning stroke and opium poisoning, though its effect as an emetic if given early would be self-evident in this last case. We have in it also one of the valuable remedies in retarded labor, due to rigid os, and in cases of strangulated hernia, where it produces relaxation; this alone with gravitation often relieves the condition. He says he has treated a number of strangulated cases in this way and always with success.

124.—See abstract in The Journal, xxxvi, p. 1650.

FOREIGN.

British Medical Journal, September 21.

A Simple and Rapid Method of Produeing Romanowsky Staining in Malarial and Other Blood Films. W. B. Leishman.—The author describes a simplified method of producing the Romanowsky staining of blood films with a solution prepared as formerly described by him in a previous note. Solution A: Medicinal methylene blue (Grübler). A 1 per cent. solution of this was made in distilled water, and then rendered alkaline by the addition of .5 per cent. of sodium carbonate, then heated to 65 C. in a paraffin oven for twelve hours, and afterwards allowed to stand at room temperature for ten days before using. Solution B: Eosin, extra B. A. (Grübler), 1 to 1000 solution in distilled water. Equal volumes of these two solutions, A. and B., were then mixed in a large open vessel and allowed to stand for from six to twelve hours, stirring from time to time with a glass rod. The abundant flocculent precipitate resulting is then collected in a filter, thoroughly washed with distilled water until the washings are colorless or have only a pale blue tinge, and the insoluble residue carefully collected, dried and powdered. The resulting powder, which has a greenish, metallic luster, constitutes, or at least contains the active staining ingredient in Romanowsky's method. Full directions for the manufacture of this dye has been furnished to the firm of G. Grübler & Co., Leipsig. The best solvent for this dye which he has found is pure methyl alcohol, and, by taking advantage of the powerful fixative properties of this alcohol, Leishman is able to dispense with any separate process of film fixation. The dye prepared as the above should be dissolved in methyl alcohol in the proportion of 0.15 per cent., and the resulting solution kept in stoppered glass bottles until required for use; it does not deteriorate by keeping. It is of a clear dark-blue color, and shows a greenish iridescence when illuminated by reflected light. It is applied directly to a film on a cover glass and no attempt made to check the evaporation. After about half a minute, double the quantity of distilled water, that is 6 or 8 drops, are added and allowed to mix with the alcohol solution of the dye. Intimate mixture is hastened by rotating the forceps, and the films are allowed to stand for five minutes, though ten minutes may be necessary with thick blood films or smears from cellular structures. The stain is gently washed off with distilled water and a few drops of water allowed to rest on the film for a minute. At the end of this time the specimen is ready for examination, either directly in water under a one-sixth or one-eighth inch objective, or, after drying (without heat) and mounting in xylol balsam, under an oil-immersion lens. The whole operation, from the withdrawal of the blood to the mounting of the stained film, can be done within seven or eight minutes and no reagent is needed beyond a few drops of the stain and a little distilled water. Where the latter is unobtainable, rain water or soft hydrant water may be used without greatly affecting the results. The soaking in distilled water for a minute after the staining is important as intensifying the Romanowsky stain; it removes the remains of the deposits and changes the tint of the red blood corpuscle from a greenish blue to a transparent pink, or greenish, and nuclei of the leucoeytes usually a ruby-red. The nucleated red cell is stained almost black with sharp outlines, and the extranuclear portion, gray. The blood plates are deep ruby-red with spiky margins, frequently showing a pale blue peripheral zone surrounding the red center. The bacilli and micrococci generally stain evenly blue, but, by prolonging the period of staining and decolorizing with absolute alcohol, many interesting differences may be noted in the different organisms, bringing out the structural details not generally observed with other methods. The body of the malaria parasite stains blue, and its chromatin, ruby-red. In the case of the tertian parasites Schueffner's dots are well marked in the containing red corpuscles.

The Value of Neisser's Stain in the Diagnosis of Diphtheria. R. M. Beaton, F. Foord Caiger and Walter C. C. Pakes.—The authors have studied the comparative values of the Neisser's stain and the methylene blue stain and find from their investigations that the former is a valuable one in several ways: "1. A positive diagnosis is rendered more certain for those who can not be considered as experts, since it is often easier to diagnose the Klebs-Loeffler bacillus after staining by Neisser than after staining by ordinary methylene blue, as we think that for the inexperienced the bacilli after staining by Neisser's method are much more characteristic than after staining by methylene blue. 2. A trustworthy positive result may be obtained from the microscopic examination of a preparation made direct from the swab, and this method is, we think, not only more reliable when Neisser's stain is used, than when the ordinary methylene blue is employed alone, but is more obvious. 3. The use of Neisser's stain does not appear to introduce any fallacy not found in the application of other methods."

Pneumocoeeus Peritonitis.—Three cases of pneumococcus peritonitis are reported and the condition discussed. Bryant finds that it rarely occurs in adults and when it does, men are more liable to be affected than women. In children, on the contrary, girls are much more frequently attacked. Why the peritoneum should be attacked by the pneumococcus is not clear. The source of infection may be by the alimentary canal. The fact that pneumococci are frequently found in the mouths of healthy people would indicate that they can be easily introduced into the digestive tract. The possible explanation as to the reason that the peritoneum is so rarely affected by this organism are that the ordinary digestive fluids are inimical to its growth and development. If, however, there is a severe gastro-intestinal disturbance of any sort there will be not only a general lowering of bodily resistance and lowered local resistance, but also an altered condition of the secretions. This may predispose to the growth and development of the germ and allow its passage by means of the blood vessels and lymphatics to the peritoneum itself. The large proportion of girls to boys would indicate that there is the possibility of infection taking place through the Fallopian tubes or uterine blood vessels, but the rarity in adults would not agree with this. He is inclined to think from the chemical and pathologic evidences that the primary infection of the peritoneum is probably through the alimentary canal, with a subsequent general blood infection leading to pleural infection. When the peritoneum is infected through the lymphatics, it is nearly always secondary to pneumonia or pleurisy, and the part of the peritoneum most involved is that covering the upper part of the liver and spleen. In some of the cases of local pneumococcus peritonitis the organism may be conveyed from the uterine cavity to the peritoneum by the lymphatics and not by the Fallopian tubes, and he thinks that when the infection is carried in this way the peritonitis is much more likely to be local than general. The skin is another possible channel by means of which the pneumococcus can reach the peritoneum, but thus far he has seen no cases that point to this manner of infection.

The Pathogeny of Exophthalmie Goiter. E. Gley.—The theory of the pathogeny of exophthalmic goiter is discussed by Gley, who says the old idea of its being a cardiac condition or a pure neurosis is generally abandoned. The hyper-thyroidization theory, however, is still held to some extent, but he points out the difficulties, and the fact that thyroid alimentation may even benefit this condition in some cases, is a difficult one to explain by it. The idea of sympathetic excitation has also its difficulties. The phenomenon in its turn needs an explanation; what causes this excitation of the sympathetic is not stated by those who hold this view. The theory of the part played by the parathyroid bodies in this condition is to be considered, and he goes to some length into the physiology of these organs, maintaining that they are functionally associated with the thyroid and that the proteo-iodid substance is not produced in the thyroid without the assistance of the parathyroids. If the latter are altered its production is diminished, hence we come to the theory that exophthalmic goiter is due to alteration in the thyroid apparatus involving in the first place functional disturbance of the parathyroid bodies. He refers to the researches of Oliver, Schaefer, and Haskovec

showing that the extract of the thyroid produces a stimulative action on the sympathetic and a depressant antitoxic action on the heart. In exophthalmic goiter Haskovec concludes that the thyroid gland is diseased and the mechanism by which the symptoms are produced is by entrance into the organism of toxic substances, having a selective action on the sympathetic system. Gley asks, may we believe that the toxic substances result from lowered functional activity of the parathyroid glandules because of the inability of the secondarily diseased thyroid to neutralize them? The question, however, can not be definitely answered.

On the Urine in Tubercuious Infection. Alex. G. Foulerton and William T. Hillier.—The authors have investigated the urine in cases of tuberculous infection by chemical and microscopic examination, and by animal inoculation experiments have tested also for albuminuria, urea, diazo reaction, etc. They summarize their inoculation experiments as follows: Of 18 patients suffering from more or less chronic, tubercular, pulmonary phthisis, the urine contained bacillus tuberculosis in 9; in 6 of these, the absence of tuberculosis of the urinary tract was proven by postmortem examinations and there was no reason to suspect that the condition existed in any of the other 3. So far, therefore, as they can generalize from a series of only 18 cases it can be said that the urine of 50 per cent. of the far advanced cases of tuberculous pulmonary phthisis, contained bacillus tuberculosis, virulent to guinea pigs. In only 1 of these 7 cases examined postmortem was there any evidence of infection of the kidney. While the facts show that general blood infection as evidenced by the presence of the bacillus in the urine is more common in cases of consumption than generally supposed, it also shows that when it invades the blood, it does so usually in extremely small numbers and has but little tendency to multiply there, and that any occasional bacilli that may get into the blood stream are eliminated by the kidneys. These glands show only a slight tendency to become infected in the process. They suggest that it is probable that the patient in many cases of phthisis is undergrowing a gradual process of auto-immunization and that after a time the tissues generally are less susceptible to infection than when the pulmonary infection occurred. Only in this way can we explain the fact that, considering the frequency with which the germs get access to the blood, dissemination of the tuberculosis is comparatively uncommon in chronic, tuberculous, pulmonary phthisis. They do not apparently find much to indicate the value of guinea-pig inoculation in the diagnosis of tuberculosis. In a number of cases 2 c.c. of urine were injected into healthy animals, and careful observations made to ascertain whether such urine showed any difference as regards the immediate toxicity from the urine of healthy individuals, but none was detected.

Bacteriology of Cerebrospinal Meningitis. A. W. Nuthall and W. Hunter.—The following are the authors' conclusions from their studies of the literature and examinations in cases of disease: "1. In 10 cases of meningitis a diplococcus was isolated from the cerebrospinal fluid obtained by a lumbar puncture during life. 2. This diplococcus agreed in its morphologic and biologic characteristics with the diplococcus intracellularis meningitidis of Weichselbaum. 3. The diplococcus occurred in two slightly different forms—types A. and B. 4. In some cases the diplococcus was present in pure culture, in others associated with micro-organisms—for example, bacillus influenzæ and bacillus tuberculosis. 5. The clinical picture and pathologic changes found in these cases were those met with in posterior basal meningitis. 6. In all probability posterior basal meningitis is a sporadic form of cerebrospinal meningitis and is caused by the same micro-organisms—the diplococcus intracellularis meningitidis of Weichselbaum. 7. In the majority of the cases it was impossible, from the clinical aspect alone, to make a correct diagnosis of the variety of meningitis present."

Contribution to the Histo-Pathology of Yaws. J. M. H. Macleod.—The following is a summary of the histologic changes which MacLeod finds suggesting that yaws and syphilis are different histologic entities: "1. Cellular infiltration.—The plasma cells are not so definitely clustered around the vessels in yaws as they are in syphilis, nor do they ever form foci suggesting a tuberculous nodule, as they occasionally do in the latter disease. They are seldom arranged in rows which frequently occurs in syphilis. Large multinuclear cells (chorioplaques) and true giant cells, which may be present in syphilis, are absent. No hyaline degeneration, such as may be found in syphilis, is detected in the plasma cells. 2. Fibrous stroma.—The rarefaction of the collagen is more marked in yaws than in syphilis; organization is not detected, and the colloidal degeneration, such as occurs in a syphilitic gumma, is absent. 3. Blood vessels.—There is no tendency to thickening of the vessel wall or to endothelial proliferation, such as so frequently pertains in syphilis. 4. Epithelium.—The proliferative changes in the epidermis in yaws are only equalled in syphilis in the condylomata, while the marked tendency of the stratum corneum (hyperkeratosis), which is an invariable characteristic in yaws, is unusual in syphilis."

The Lancet, September 21.

The Occurrence of Green or Blue Urine and Its Most Frequent Cause. F. Parkes Weber.—Weber considers that a blue urine, occurring without obvious cause, is generally due to undue eating of sweets colored with methylene blue. The digestive disturbances which sometimes accompany the symptoms are probably due to over-eating of sweets, as they are not produced by much larger quantities of the coloring agent taken by itself. He is skeptical as to the power of other substances to produce the symptom excepting in very rare cases.

Three Points in Practical Midwifery. G. W. Ord.—The three points in practical midwifery mentioned by Ord are as follows: 1. That the catheter is capable of saving life in the course of breech delivery. He had a case where the body was born and cord pulsating; the head, however, stopped and the cord ceased pulsating, and it seemed that the child would be born asphyxiated. He had a catheter in his bag, a silver, male instrument, and feeling his way he passed it into the child's mouth, who cried down the catheter, the chest became inflated and in a few minutes the head was born, and everything was satisfactory. In looking up the literature he found the plan suggested but not specially recommended in Playfair's work, but the case has been a surprise to every medical man to whom he has mentioned it. The catheter did its work perfectly and in such cases where the necessity of delay of three or four minutes occurs in the birth of the head, the value of this method is obvious. 2. Another point to which he calls attention is the matter of hour-glass contraction. He has in his experience found this frequently after experimental delivery and for the last six or eight years he has pursued the method of "expressing" the child after the birth of the head and has had no hour-glass cases when he has been present before the birth of the child. It seems to him that the cause of hour-glass contraction is due to quick delivery by traction of the child and is avoidable if the *vis a tergo* method only is employed. 3. This is that scoliosis is possibly caused by traction on the infant's body during birth, and that we should realize the damage we may be doing to the spine when pulling in the various directions, as we are advised in text-books. Besides the possible scoliosis another danger may occur, the suprarenal capsules may be injured. He quotes from Clifford Allbutt, who says that hemorrhages in these bodies frequently occur as results of traumatism during birth. Such hemorrhages occur more often in difficult labors and are more frequently met with in pelvic and cephalic presentations. He believes in the soundness of the use of the catheter with an after-coming head, if any hitch occurs, as opposed to traction.

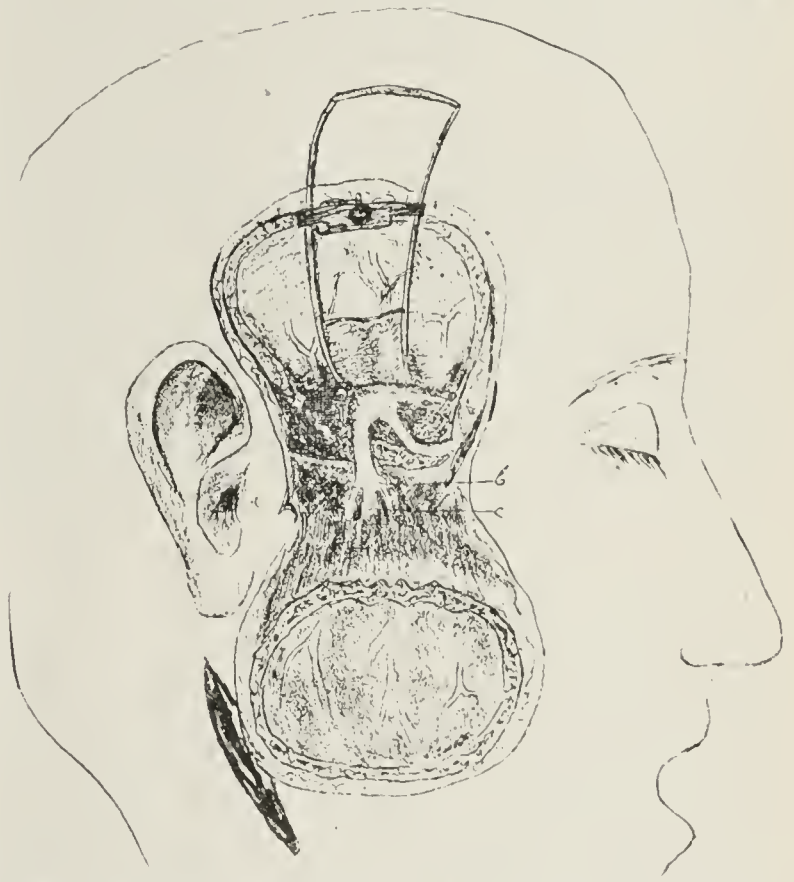
Presse Medicale (Paris), September 14.

Tubercuious Rheumatism. Mailland.—Poncet called attention, in 1890, to the infectious pseudo-rheumatism which may accompany tuberculosis at any stage and in any of its forms. It had hitherto been considered true rheumatism, but the inefficacy of sodium salicylate, the character of the pains and the final localization on a single joint, differentiate it from chronic arthritis deformans or acute polyarticular

rheumatism, although the clinical manifestations at first are strikingly similar. The termination is different, as the lesions are not fungous, suppurating, nor destructive as in ordinary white swelling, but are merely lesions of irritation, with a fibro-plastic tendency, like the pseudo-rheumatism of infectious diseases, and may range from simple arthralgia to complete ankylosis. Mailland describes a few typical cases, including one of a tibio-tarsal osteo-arthritis presenting the clinical signs of osteo-tuberculosis. It had been preceded two months before by manifestations of articular rheumatism, localized in both shoulders. Signs of tuberculosis were found in both apices. In another case, the knee and both ankles had been affected with supposed acute articular rheumatism at intervals during fifteen years. Finally the pain in the knee became chronic and the affection was recognized as a tuberculous arthritis, soon followed by death in tuberculous cachexia. Characteristic tubercular granulations were found in the pleuræ at the autopsy. In a third case, supposed rheumatism of the shoulder, wrist and knee finally localized exclusively in the knee, which became completely ankylosed. Death from pulmonary tuberculosis occurred in eight months. Tuberculous rheumatism is probably due to the action of the toxins generated by the bacteria. The pain in these infectious pseudo-rheumatisms is usually most intense in the center of the articulation. In true rheumatism, the surrounding parts are most sensitive. Laseguë even claims that there is no intra-articular pain in acute articular rheumatism, and that the joint can be worked without much pain, if the surrounding parts are spared, while in infectious pseudo-rheumatism, this is impossible, as the pain is in the very depths of the joint. When in presence of a case of pseudo-rheumatism, with no gonorrheal nor puerperal antecedents nor any infectious disease capable of inducing such disorders in the joints, the possibility of tuberculosis must be borne in mind. The tuberculous pseudo-rheumatism may be the first clinical symptom of incipient tuberculosis. The treatment is the same as that of any established tuberculosis.

Revue de Chirurgie (Paris), September.

Resection of the Gasserian Ganglion. K. Sapejko.—In most cases of neuralgia involving the fifth nerve, when the pains are limited to one or two branches, and when the effect of peripheral section of the nerve persists for at least six months, the neuralgia is evidently of peripheral origin. But when the pains are located in all three branches, even alternately, the neuralgia must be due to an intracranial affection of the trifacial system. If the pain is confined strictly to one side of the face, the Gasserian ganglion or possibly the root of the nerve, is probably the seat of the trouble. If the pains pass from one side of the face to the other, the central nuclei of the trifacial nerve are probably involved. The majority of cases of peripheral neuralgia can be cured by resection of the nerves affected, but when a rebellious neuralgia invades all three branches—thus demonstrating its central origin—the Gasserian ganglion should be resected without causing delay by preliminary operations. The most plausible supposition in this case ascribes the seat of the lesion to the ganglion. In the cases also, in which the neuralgia has persisted after resection of the peripheral nerve, the removal of the ganglion offers a last resort, to destroy the nerve and render regeneration of the peripheral nerves impossible. Instances have been known of recurrence of this neuralgia even after resection of the Gasserian ganglion, and Sapejko reports a case of this kind in detail. He attributes recurrence to the immense anatomical and technical difficulties of the operation. Some fiber must have been left which finally succeeded in closing the circuit, with recurrence of the pains in consequence. In his patient, sensation returned first at the periphery, followed by faint echoes of the previous neuralgic pains. The Quénu and Krause methods do not allow sufficient access to the field of operation, and there is always danger of injury to the brain as the assistant holds it out of the way during the long and tedious operation. Sapejko has simplified it by the following technique which is comparatively simple, practicable and allows ample and effective drainage of the wound. The flap is 4 cm. long, wider at the tip than the base, which extends the entire length of the zygomatic arch. The latter is sawed across and the great wing of the sphenoid is cut to include the round and oval foramina. This allows more ample access than the Krause and Quénu methods together. The brain is held out of the way by an automatic spring retractor which screws to the intact skull above, while the lower portion forms a metal mirror reflecting light on the ganglion. After isolating the ganglion, each of the three branches and the root must be pulled out and resected over as great an extent as possible. The ganglion is lifted out of its bed, and the root and first branch pulled out and torn as far from the ganglion as possible. The ganglion is then pushed to one side, and the capsule examined and scraped to remove every scrap of ganglion tissue, especially in the vicinity of the cavernous sinus, the root and the first branch. The second branch can be resected to its entrance into the infra-orbital canal. The third branch, with the ganglion still attached, is mobilized and pushed down and out through the small wound below, made for the purpose of provisional ligation of the external carotid, which is the first step in the operation. Its branches are loosened and pulled out as far from the periphery as possible before they are broken off. Connection with the otic ganglion



is also destroyed. Drainage is accomplished through the route followed in extracting the third branch. The small incision over the carotid thus serves a triple purpose. If hemorrhage is excessive and interferes with the operation, after the patient is turned with his face to the operator so that the blood can flow out readily, Sapejko advises postponing the resection of the ganglion until two or three days later. In his personal case he operated strictly according to this technique, except that he did not resect the branches, and he attributes the recurrence of the pains to omission of this precaution. He covered the eye with a tight bandage and no inconveniences were observed at any time although there was complete anesthesia of the eye. He points out the necessity of differentiating neuritis from neuralgia, as the former requires treatment directed against the cause—constitutional, infectious, toxic or local inflammation, etc.—while neuralgia never yields to medicinal treatment except in case of mistaken diagnosis or hysteria. In neuralgia the cutaneous sensibility and the reflexes remain normal, while they are diminished in neuritis; the same applies to the strength of the muscles, and no spasmodic contractions are observed as in neuralgia. The pain is also constant and less acute in neuritis. Morphin is the only relief in neuralgia and surgical intervention the only means of cure, and even this may fail unless thoroughly complete. In Garré's case, the Gasserian ganglion was resected, and the maxillary

nerve was subjected to four resections, but after nine of these partial operations, the sensibility of the face was as acute six months later as at first. This case established the possibility of regeneration of the nerves after destruction of the ganglion, of return of sensibility after resection of the ganglion and all the various resections. He found that peripheral irritations were transmitted by the most minute anastomoses of the trifacial nerve through the otic and nasal ganglia, after destruction of the Gasserian ganglion, which is usually considered as the concentrating point of all the conductors.

Malignant Leiomyomata. DEVIC.—Myomata that develop in the unstriped muscles are usually benign, but a few cases have been published in which their malignant character was evident. They are probably more numerous, but have been classed as sarcomata. Devic describes a case in which a leiomyoma developed in the thoracic wall and recurred at the same point five times after as many operations in the course of the same number of years. When extirpated for the sixth time, the microscope showed the same structure, islands of adult fibro-cells, the tumor starting and extending in the arrectores pili. In a second case a leiomyoma in the outer surface of the thigh recurred three times in a year, and amputation failed to save the patient. In his third case a subcutaneous tumor had been noted for several years in the right external iliac fossa. It began suddenly to increase in size until it was as large as two fists. It was not adherent and not ulcerated. Six months later a tumor developed in the left flank, occupying the larger portion of the abdominal cavity, with ascites, and the liver much hypertrophied, irregular and knobby. At the autopsy six months later, multiple visceral generalization of malignant leiomyomata was found in the kidneys, liver, lungs, pancreas and thyroid body. The primary tumor was entirely subcutaneous, close to the gluteal aponeurosis, but not involving the latter. The secondary tumor in the kidneys weighed 8 kilograms. Six cases of malignant leiomyomata of the uterus or pelvis have been published in Europe, and two, of the stomach, all with visceral metastases. Devic was unable to find more than one case of a subcutaneous tumor of this kind, besides the three cases which he relates in detail. In this case a hard, indolent and movable tumor was noted in the postero—external wall of the right elbow for eight years. It suddenly began to increase in size and the arm was amputated. The cachexia continued and at the autopsy a year later, all the organs were invaded by secondary tumors. The primary tumor was diagnosed "a fasciculated sarcoma or spindle-celled fibroma, developed in the periostium of the lower portion of the humerus." The corrected diagnosis at the autopsy was that of malignant leiomyoma. The interlaced fibers are more regularly arranged in the tumors than in normal tissue or benign myomata, the cut surface is more iridescent. The fibro-cells are all adult and connective stroma is conspicuous by its absence, but giant fibers with nuclei 50 to 100 microns in diameter, are observed in some cases.

Deutsche Med. Wochenschrift (Leipsic), September 19.

Outlining the Organs by Transonanee. M. BUCH.—If a stethoscope with a very small funnel is applied for auscultatory percussion, it is possible to determine the outlines of nearly all the viscera with remarkable accuracy. The small funnel fits closer to the skin and locates the outlines much more exactly than the ordinary funnel. Buch applies it within the limits of the organ and carries the percussion to the boundary, which is readily recognized by the altered tone. He then transfers the funnel outside the organ and carries the percussion toward it, closing his eyes, so as not to be influenced by the mark he had placed at the outline first determined. After determining the outlines of the heart and lungs, those of the stomach can be located and also those of the other viscera, even of the spleen, colon, etc. The method is so delicate that the slight constriction, above and below, at the point where the fundus blends into the pylorie portion of the stomach is plainly evident. The percussion must be extremely light over the liver so as not to include the resonance of the stomach. Henschen was the first to call attention to this method of "transonance" as he called it. Rnneberg does not tap, but rubs the skin lightly.

Muenchener Med. Wochenschrift, September 17.

Puerperal Fever. A. HEGAR.—If the temperature does not rise beyond 101 F. after delivery, and if there are no local symptoms, Hegar restricts intervention to removing obstacles to the free flow of the discharge and irrigating the vagina. Temperature of 102 and over indicates drainage, if it persists more than twenty-four hours. Besides the temperature, accelerated pulse, rapid respiration, sleeplessness, tendency to cyanosis and local symptoms are accessory indications for drainage. Hegar thinks that washing out the uterus once or thrice a day is absolutely useless. For several decades he has made a practice of permanent drainage of the uterus, leaving the canula in place and repeating the irrigation every one or two hours. He prefers for the purpose a double glass canula with even the olive divided into two parts, allowing free inlet and outlet to the fluid. He maintains this irrigation and drainage for forty-eight hours, repeating it after suspension for twelve hours, if necessary. He considers chlorin water the best antiseptic for the purpose, and uses it in a 12 to 25 per cent. solution.

Remedy for Seasickness. R. HEINZ.—The vomiting center and the respiration center are closely connected locally and functionally on the floor of the fourth ventricle. Heinz asserts that the desire to vomit can be deadened and abolished by taking deep respirations. He found in experiments on dogs that artificial respiration was able to prevent vomiting, even after the injection of apomorphin, which inevitably induces it in one to three minutes. Apnea reduces the excitability of the vomiting center and the desire to vomit subsides. He has found deep breathing effectual in warding off the vomiting of seasickness, both in himself and others.

Tamponing the Abdominal Cavity with Air to Arrest Threatening Intestinal Hemorrhage. G. KELLING.—In experiments on dogs, Kelling found that a negative pressure of 50 mm. mercury was perfectly tolerated, and that it was possible by this means to arrest serious intestinal hemorrhage. From examination of patients he believes that the pressure in the stomach vessels averages about 40 to 80 mm. Hg., and that this same method of air tamponing is clinically applicable.

Wiener Klin. Wochenschrift, September 19.

Operative Treatment of Double Stenosis of the Stomach. H. SCHLOFFER.—Stenosis of the pylorus was associated with pronounced hour-glass stomach in the case described. The patient was a woman of 54 who had suffered from gastric disturbances for twenty-five years. Finally symptoms of stenosis developed, and Schloffer operated by making a longitudinal incision, 7 cm. long, in the constricted portion of the stomach between the fundus and pyloric region. He then stretched the walls of the stomach apart, until the incision was transformed into a transverse linear wound, which he sutured in this position, perpendicular to the longitudinal axis of the stomach. The organ was adherent to the posterior abdominal wall. He then made an anterior antecolic gastro-enterostomy between the pylorie portion of the stomach and the upper jejunum, concluding with Braun's side-to-side anastomosis 20 cm. below, between the afferent and efferent loop. The patient was dismissed in sixteen days and is in far better health than for years previous to the operation. The only disturbance to date is a sensation of oppression in the stomach when she swallows food without sufficient mastication. The operation was performed at Woelfler's clinic, and the communication states that Braun's anastomosis is adopted there as a routine procedure to complete all gastro-enterostomies.

Myalgia Not Due to Getting Chilled; Its Prevention and Treatment. J. ELGART.—Ruhemann examined 7000 cases of affections of the respiratory organs and 8000 of so-called rheumatic affections, in order to determine the causal significance of becoming chilled. He became convinced that it is far from possessing the importance attributed to it, and that it has no effect except on the predisposed organism, that is, where bacteria are already present. In the absence of

bacteria, getting chilled is unable to determine the most insignificant angina or rhinitis. Knövengal came to similar conclusions from a study of soldiers in barracks, but Chodounsky's recent experiments are still more conclusive. He inoculated 102 animals with cultures after previously chilling them, reducing the temperature by eighteen degrees, and found that the susceptibility to infection was not enhanced but rather diminished. Chilling the animals even as long as eight hours, failed to induce any affection except in a few instances of slight hyperemia of the lungs, which vanished without a trace in three days. He is a man over sixty years of age and not at all robust, but he experimented on himself, exposing himself naked to a current of air of 47 F., or after running till the sweat was pouring from his body, he rapidly undressed and stood in a draft of air at 37.5 F. only quitting in forty minutes because he was so cold. In other tests, after bathing the upper portion of the body with warm water, he exposed it to a current of air of 25 F. He also dipped his shirt in water at a temperature of 41 F. and putting it on at once, remained in a strong draft in damp weather, the thermometer at 39 F., and wore the shirt the remainder of the afternoon. He found that the temperature of the body rose two or three degrees during this chilling process. When the cold acts on a heated, reddened skin, the cutaneous vessels contract and the temperature rises above normal. He formally announces that currents of air under the most extreme conditions have no action on man. They do not induce catarrh of the respiratory organs, nor articular rheumatism nor neuralgia. He attributes the greater prevalence of these affections in winter to the lesser amount of sunshine with its bactericidal potency, and to the less hygienic manner of living, housed indoors. He also points out that we use cold packs, bath, etc., in combating infectious diseases, even in those in which we ascribe getting chilled as the primal cause. (Bohemian Clinical Archives, 1900.) Elgart accepts Ruhemann's view that the presence of bacteria is an indispensable preliminary to the origin of an affection from getting chilled. However, as bacteria can not be present in sound muscles, this explanation does not apply to myalgia or myopathy. He explains them as the result of injury of some muscular fiber which is atrophied from disuse or degenerated from age or from the action of some infectious disease. The muscle is abnormally fragile and the fiber may rupture from over-strain or in consequence of the contraction of the sound fibers, in which the degenerated fiber is unable to participate. The rupture is probably accompanied by some microscopic hemorrhage, with consequent compression of the nerve terminals and pain, the myalgia, and stiffness from the instinctive desire to immobilize the part. As the extravasation is resorbed, the pains disappear. Continuous stretching of sound muscles may induce myalgia as after unusual exertion in climbing, etc., but after the muscles have become habituated to the exertion, the myalgia disappears. Lumbago frequently befalls a person as he is stepping hastily into a carriage. The trunk is bent forward, the head down, and the lumbar muscles are submitted to a sudden strain, which may rupture some fiber. Besides this idiopathic myalgia, there is the symptomatic form, accompanying various infectious diseases. The "rheumatic stiff neck" which occurs so often with a febrile tonsillitis or rhinitis, is usually first noted as the subject is washing in the morning. In bathing his face and neck he twists his head around, and some muscular fiber is ruptured. If he awakes with the stiff neck, he has probably slept with the head in some strained position. These symptomatic myalgias are liable to occur in any infectious disease, and the latter may have been so trifling that the subject never noticed or has forgotten it, but the consequent slight degeneration of the muscular fiber is the cause of the rupture—not getting chilled. The more virulent the toxins in an infectious disease, the more intense the degeneration and the more fragile the muscle fibers. The prophylaxis of idiopathic myalgia consists in not allowing the muscles to become atrophied from disuse, by practicing gymnastics, sports, etc., avoiding overstrain as much as atrophy, combining and individualizing each case, with heed to the ordinary occupation, age, etc. In infections disease, the prophylaxis is completely the reverse—here every effort must be made to avoid stretching the degenerated muscle fibers. Rest in bed protects the muscles from traumatic alterations, and during convalescence the muscles must be spared abrupt strains. Even during slight infections the muscles must be carefully guarded in the same way and gradually accustomed again to ordinary movements and exercises. Treatment of idiopathic myalgia includes diaphoretics, laxatives and massage, but the symptomatic form requires only rest. Elgart ridicules the fear of catching cold, which robs life of many of its joys and is an antiquated superstition. Appropriate nourishment and physical exercise are the true means of protection against myalgia, not precautions against getting chilled. The most warmly protected portion of the body is the lumbar region, and yet it is the chosen seat of myalgia, which is seldom if ever observed in the hands or face.

Queries and Minor Notes.

DISLOCATION OF HIP DURING LABOR.

RICHMOND, VT., Sept. 28, 1901.

To the Editor:—At the next meeting of the Vermont State Medical Society I am down for the discussion of a paper on "Dislocation of Hip During Labor." Can you give me any information on this subject, its cause, frequency, treatment, etc., or direct me to where it can be found? C. S. S.

ANS.—This subject has been extensively discussed. There are a number of abstracts in the last few volumes of THE JOURNAL. The subject was discussed at length in the German Congress of Surgeons, in Berlin, in 1899, and was noticed in THE JOURNAL, May 13, of that year. Other articles are those of Whitman, in the *Medical News* of Oct. 7, 1897, noticed in THE JOURNAL of October 14; of Wirt, in the *Cleveland Medical Gazette,* April, 1900, and abstracted in THE JOURNAL of May 12; of Bradford, in the *Boston Medical and Surgical Journal,* October 25, noticed November 11; of Bade, in the *Centralblatt f. Chirurgie,* July 7, 1900. JOURNAL of August 4; Ducrocquet, *Bulletin Academy de Medicine,* May 29, 1900, in THE JOURNAL of July 7; and Ghillini, in the *Munich. Med. Wochen.* of March 26, 1901, and THE JOURNAL of April 27. There are probably one or two other more recent ones which will be easily found on reference to back numbers.

OKLAHOMA PRACTICE LAWS.

TOLEDO, OHIO, Sept. 28, 1901.

To the Editor:—I see in your last issue an item for granting certificates to the practice of medicine in the Territory of Oklahoma. Would you be so kind as to inform me in regard to the practice of medicine in this territory? W. H. G.

ANS.—In Oklahoma one must be either a graduate in medicine or must pass an examination satisfactory to the Board. If not a graduate, one must give proof of having actually engaged in the practice of medicine for not less than five years. The fee for examination is $30. No person is allowed to practice medicine who is not of good moral character, or who is an habitual drunkard. In case the diploma is lost, proof by affidavit of the fact and the affidavit of two reputable citizens of the county in which the applicant resides, will be necessary. The fee for the registration of the diploma is $2. The secretary of the Board is Dr. E. E. Cowdrick, Enid, Oklahoma.

FRENCH AND GERMAN SCHOOLS.

NEW BEDFORD, MASS., Sept., 23, 1901.

To the Editor:—Please advise me from whom or where I can get information in regard to German and French medical schools and clinics. E. E. F.

ANS.—There is no publication available in our language, so far as we know, that gives a full account of the medical schools and clinics in Germany. A number of years ago Dr. Hun, Albany, published a work on this subject, but it has gone out of print, and would probably not be reliable for the present time. The French periodical, *Le Progrès Médical,* publishes an educational number once a year, giving an account of the French schools, but we do not know of any giving the same information for Germany. The last issue of this kind was Nov. 10, 1900. Another is probably now nearly due.

OVARIAN EXTRACT.

ST. CLAIR, MINN., Sept. 30, 1901.

To the Editor:—Will you kindly state where I can find recorded the latest observations on the use of ovarian extract in the treatment of post-operative menopause? C. J. H.

ANS.—We would refer the inquirer to Krusen's article in the *Johns Hopkins Hospital Bulletin,* of July, 1901.

SUBCUTANEOUS PARAFFIN PROTHESIS.

FINDLAY, OHIO, Sept. 25, 1901.

To the Editor:—In THE JOURNAL of July 27, 1901, p. 292, you gave an article by Gersuny on subcutaneous paraffin prothesis. I have tried to get the unguentum paraffin a number of places, but have failed. Can you tell me where I can get it? Also give me Gersuny's address. F. B. E.

ANS.—The material used by Gersuny is American white vaselin, which is soft at ordinary room-temperature. Gersuny's address is Vienna, in Austria.

The Public Service.

Army Changes.

Movements of the Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 5 to 25, 1901, inclusive:

Harry D. Belt, contract surgeon, from duty at Fort Trumbull, Conn., via New York City, to Havana, Cuba, for assignment in the Department of Cuba.

William Donovan, contract surgeon, now in New York City, awaiting orders, will proceed to Madison Barracks, N. Y., for duty at that post.

Rudolph G. Ebert, major and surgeon, U. S. Army, to report in person to the commanding officer, Vancouver Barracks, Wash., as post surgeon, relieving Lieut.-Col. J. B. Girard, deputy surgeon-general, U. S. Army.

Joseph H. Ford, lieutenant and asst.-surgeon, U. S. Army, leave of absence granted.

William W. Gray, major and surgeon, U. S. Army, leave of absence granted.

Charles R. Greenleaf, colonel and assistant surgeon-general, U. S. Army, leave of absence granted.

Eugene H. Hartnett, lieutenant and asst.-surgeon, U. S. Army, member of a board in New York City, for the examination of officers of the line for transfer to the Ordnance Department.

Luther S. Harvey, captain and asst.-surgeon, Vols., recently appointed and now at Holguin, Cuba, is relieved from duty in the Department of Cuba, and will proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Herbert I. Harris, contract surgeon, from Fort Snelling, Minn., via New York City, to Havana, Cuba, for assignment in the Department of Cuba.

E. P. Howell, contract surgeon, leave of absence from the Department of the Colorado extended.

John F. Leeper, contract surgeon, now at Fort Leavenworth, Kan., will proceed to Jefferson Barracks, Mo., for temporary duty.

John R. McDill, major and surgeon, Vols., resignation accepted, to take effect Sept. 11, 1901.

Marion B. McMillan, contract surgeon, leave of absence from the Department of Cuba extended.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. Army, leave of absence granted.

Elbert E. Persons, lieutenant and asst.-surgeon, U. S. Army, to duty at Fort Snelling, Minn.

Henry du R. Phelan, captain and asst.-surgeon, Vols., recently appointed and now in San Francisco, Cal., will report for transportation to Manila, P. I., for assignment in the Division of the Philippines.

Irving W. Rand, captain and asst.-surgeon, U. S. Army, to duty at Fort Trumbull, Conn.

Henry I. Raymond, major and surgeon, U. S. Army, member of a board at Chicago, Ill., to examine certain persons for appointment as lieutenants in the U. S. Army; member also of an army retiring board.

Walter Reed, major and surgeon, U. S. Army, detailed as an additional officer to represent the Medical Department of the Army, at the annual meeting of the American Public Health Association, to be held at Buffalo, N. Y., Sept. 16 to 20, 1901.

George H. Richardson, contract surgeon, from Plattsburg Barracks, N. Y., to Fort Apache, Arizona, for duty at that post.

David M. Roberts, contract surgeon, now on duty at Fort Howard, Md., to proceed to Fort Sam Houston, Tex., for temporary duty, on the completion of which he will return to his proper station.

Frederick F. Russell, lieutenant and asst.-surgeon, U. S. Army, from Mayaguez, P. R., to New York City, reporting on his arrival by telegraph to the Adjutant-General of the Army for instructions.

H. Eugene Stafford, captain and asst.-surgeon, Vols., resignation accepted by the President, to take effect Sept. 20, 1901.

Richard P. Strong, lieutenant and asst.-surgeon, U. S. Army, former orders assigning him to duty at the Army and Navy General Hospital, Hot Springs, Ark., revoked; he will report in person to the Surgeon-General, U. S. Army, for temporary duty in his office, on the completion of which he will proceed to San Francisco, Cal., en route to Manila, P. I., for duty as Director of the Government Biological Laboratory, Manila, P. I.

Eugene L. Swift, major and surgeon, U. S. Army, now in this city, will proceed to Fort Leavenworth, Kan., for duty at that post.

Fred R. Underwood, contract surgeon, relieved from duty at Fort Leavenworth, Kan., to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Timothy E. Wilcox, lieut.-col., and deputy surgeon-general, U. S. Army, member of a board in Chicago, Ill., to examine certain persons for appointment as lieutenants in the U. S. Army; member also of an army retiring board.

Allie W. Williams, lieutenant and asst.-surgeon, U. S. Army, relieved from further duty at Fort Columbus, N. Y., to proceed to Mayaguez, P. R., for duty at that post.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Sept. 28, 1901:

Asst.-Surgeon F. A. Asserson, Asst.-Surgeon J. W. Backus ordered to the Naval Hospital, Cavite, P. I.

Asst.-Surgeon A. E. Peck, ordered to the *Manila.*

Asst.-Surgeon C. E. Burr, resignation accepted, to take effect September 25.

Asst.-Surgeon D. C. Bebe, detached from the *Marietta,* and ordered home to wait orders, when vessel is put out of commission.

Asst.-Surgeon E. J. Grow, detached from the *Castine,* when put out of commission, and ordered home to wait orders.

P. A. Surgeon E. M. Shipp, detached from the Naval Hospital, Cavite, and ordered to the *Celtic.*

Asst.-Surgeon W. L. Bell, detached from the *Celtic* and ordered to the Naval Hospital, Cavite, P. I.

Asst.-Surgeon J. W. Backus, detached from the Naval Hospital, Cavite, P. I., and ordered to the *Brooklyn.*

Asst.-Surgeon F. A. Asserson, detached from the Naval Hospital, Cavite, and ordered to the *General Alvas.*

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended September 26, 1901:

Surgeon S. D. Brooks, granted leave of absence for fourteen days from September 29.

P. A. Surgeon H. S. Cumming, granted leave of absence for thirty days, on account of sickness, September 26.

Asst.-Surgeon S. B. Grubbs, granted leave of absence for eleven days from September 25.

Asst.-Surgeon H. B. Parker, to proceed to Jacksonville, Fla., for special temporary duty.

Asst.-Surgeon W. C. Hobdy, to proceed to South Atlantic Quarantine as inspector.

Asst.-Surgeon F. J. Thornbury, relieved from duty at Dutch Harbor, Alaska, and directed to return to the States.

A. A. Surgeon L. P. Gibson, granted leave of absence for ten days on account of sickness.

A. A. Surgeon E. B. Hallett, granted leave of absence for three days from September 24.

A. A. Surgeon A. B. McDowell, granted leave of absence for twenty days from October 12.

A. A. Surgeon Henry Owen, granted leave of absence for ten days from September 24.

A. A. Surgeon S. D. Robbins, granted leave of absence for thirty days from September 6, on account of sickness.

Hospital Steward M. R. Mason, relieved from duty at Dutch Harbor, Alaska, and directed to return to the States.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended September 28, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Sept. 1-15, 4 cases.
District of Columbia: Washington, Sept. 14-21, 9 cases.
Massachusetts: Boston, Sept. 14-21, 9 cases.
Michigan: Detroit, Sept. 14-21, 1 case.
New Jersey: Newark, Sept. 14-21, 18 cases.
New York: Sept. 14-21, Elmira, 2 cases; New York, 3 cases, 1 death.
Pennsylvania: Lebanon, Sept. 8-15, 5 cases; Philadelphia, Sept. 14-21, 38 cases, 4 deaths.
Wisconsin: Green Bay, Sept. 15-22, 1 case.

SMALLPOX—FOREIGN.

Belgium: Aug. 31-Sept. 7, Antwerp, 4 cases; Ghent, Aug. 31-Sept. 7, 1 death.
Brazil: Rio de Janeiro, Aug. 4-18, 114 deaths.
Colombia: Panama, Sept. 9-16, 12 cases.
Egypt: Cairo, Aug. 26-Sept. 7, 1 death.
France: Paris, Aug. 24-Sept. 7, 10 deaths.
Great Britain: Aug. 31-Sept. 7, Edinburgh, 1 case; London, 92 cases, 8 deaths.
India: Bombay, Aug. 20-27, 1 death; Calcutta, Aug. 18-24, 2 deaths; Madras, Aug. 10-23, 19 deaths.
Naples, Aug. 24-Sept. 7, 182 cases, 26 deaths.
Nova Scotia: Halifax, Sept. 14-21, 9 cases, 1 death.
Russia: Aug. 24-31, Moscow, 4 cases, 2 deaths; St. Petersburg, 4 cases.
Spain: Madrid, June 17-July 15, 6 deaths; Malaga, Aug. 31-Sept. 7, 5 deaths; Valencia, Sept. 3-10, 7 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Aug. 4-18, 2 deaths.
Costa Rica: Port Limon, Aug. 1-Sept. 14, 12 cases, 6 deaths.
Cuba: Havana, Sept. 7-14, 1 case.
Mexico: Aug. 24-31, Merida, several cases; Progreso, 1 case.

CHOLERA.

India: Bombay, Aug. 1-27, 4 deaths; Calcutta, Aug. 18-24, 10 deaths; Madras, Aug. 10-23, 201 deaths.
Japan: Yokohama, Aug. 18-24, 1 case.
Straits Settlements: Singapore, July 27-Aug. 3, 2 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Aug. 29-Sept. 20, 4 cases, 2 deaths.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 3-10, 10 cases, 12 deaths.
India: Bombay, Aug. 20-27, 203 deaths; Calcutta, Aug. 18-24, 32 deaths; Karachi, Aug. 11-25, 8 cases, 5 deaths.

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Original Articles.

THE TREATMENT OF MALIGNANT DISEASE.*

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The treatment of malignant disease is of paramount importance. The questions of etiology, symptomatology and classification of malignant disease are insignificant as compared with the treatment. This subject can only be appreciated by a recognition of two salient facts: 1, the increase of malignant disease; 2, the universal mortality.

To better appreciate the vital subject under discussion it is pertinent to consider for a few moments the increase of malignant disease in order to better understand the importance of its treatment. Humanity at large seeks for relief from this dreadful scourge, and humanity appeals to the surgeon for help, as he is the only one who can effect a cure.

The increase of cancer is a fact which as it is not understood, can not be explained. Through the kindness of Mr. Frederick L. Hoffman, of the Prudential Life Insurance Company, I am indebted for some information which has never been published, and which is as interesting as it is startling. For example, he has prepared some statistics upon the increase of cancer of the breast in Rhode Island and Connecticut, in Philadelphia, and in the District of Columbia. While these statistics are limited to cancer of the breast, they serve well our purpose, as a general basis of calculation, for cancer affecting other organs. These statistics show that for the past thirty years cancer of the breast has materially increased, and the rates have been calculated on the basis of 1,000,000 of population.

In Rhode Island the increase in the mortality of cancer of the breast has been 115 per cent., if we compare the period from 1876 to 1880 with the period from 1896 to 1900.

In Connecticut unfortunately the data do not go back further than 1882, so that strict comparison is not possible; but an approximate comparison indicates an increase of mortality since that date of 12 per cent.

In the City of Philadelphia the period from 1861 to 1865, compared with that of 1896 to 1900, shows an increase of 179 per cent. in the mortality of cancer of the breast. It is only fair to add that from the period of 1876 to 1880 to the period from 1896 to 1900 the increase was only 12 per cent., the explanation for which will be considered later.

In the District of Columbia there has been an increase in the mortality of cancer of the breast of 50 per cent. from the period of 1876 to 1880 till 1896 to 1900. The chart will enable one to see at a glance the increase in the mortality of cancer of the breast during the past thirty years.

Perhaps an illustration of the increase of cancer in this environment might be pertinent. In the City of Milwaukee in the year 1878 there were 25 deaths from cancer per 100,000 population. Levings assigns as an explanation of this condition the fact of "the increased average age of man, and the necessary and consequent increased prevalence of diseases like cancer, in which hereditary predisposition plays an important part." Whatever theory is accepted as to the cause of increase it matters little. The fact stands out in the foreground, in bold relief, that the disease is increasing, and this behooves the surgeon to continue investigations until he can ascertain the cause, and apply the remedy, to the disease.

The death rate from cancer for the United States in 1890 is 53 per 100,000 of population, for England 67, for Scotland 60, for Austria 52, for Ireland 45, for Prussia 43, for Italy 42.

If now, instead of countries, the different states of the Union are considered, it is found by the census report for 1890: Vermont 75 per 100,000, New Hampshire 69 per 100,000, Massachusetts 66 per 100,000, Connecticut 55 per 100,000; New York 53 per 100,000, District of Columbia 49 per 100,000; New Jersey 47 per 100,000, and Delaware 35 per 100,000.

In all of the calculations by states the age element is ignored. Therefore, in states like Vermont and New Hampshire, where the proportion is so great, allowance must be made for the fact that the emigration of the young people to the Western states especially leaves proportionately to New England a larger number of persons liable to death from cancer.

The increase average age of human life does not altogether account for the increase of cancer. There are no accurate life tables for this country, for a period of thirty years; but there are such tables in England, which may serve as a basis for calculation in this country. In the period from 1838 to 1854 the expectation of females at birth was about 41 years. In the period from 1881 to 1890 it increased to about 47 years. These figures show an increase of about 5 years, which is equal to about 12 per cent. It is upon such a calculation as this that Levings and others have offered an explanation of the increase of cancer to the increase of the average length of life. It is, however, erroneous to reason from this slender basis of facts, because, in the first place, the expectation of life affects the entire period of life, and, in the second place, the actual gain made at birth may, and, as a matter of fact, does, affect only the younger age period. In other words, the expectation of life may

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

have been increased at birth, while the decrease may have taken place at older years, or at the time when the patient has reached the cancer age. This has actually been the case, since for England and Wales the expectation of life at 45 years and over is now somewhat less than it was fifty years ago.

We must look, therefore, to some other cause to explain the increase of cancer than the statement of the increase average length of life.

On the other hand, it is maintained by some that cancer is increased apparently and not in reality. Newsholme claims that this apparent increase is due to greater accuracy in the returns of death certificates, and to the diminution of the number of death certificates in which indefinite headings are employed. He claims that if we follow the statistical method which is adopted to demonstrate the increase of cancer, along similiar lines we can prove that the number of individuals dying from old age has enormously decreased. This is erroneous, because death certificate returns which formerly were made out with old age as the cause of death, now have the real cause assigned to them.

In other words, that the increase in the number of correct death certificates, and the decrease in the number of incorreet certificates, bring out apparently the fact that cancer is on the increase, whereas it may be the reverse. This is in marked contrast to Park's statement that if in the next ten years the increase of cancer mortality is maintained there will be more deaths from cancer in New York State than from tuberculosis, smallpox and typhoid fever combined.

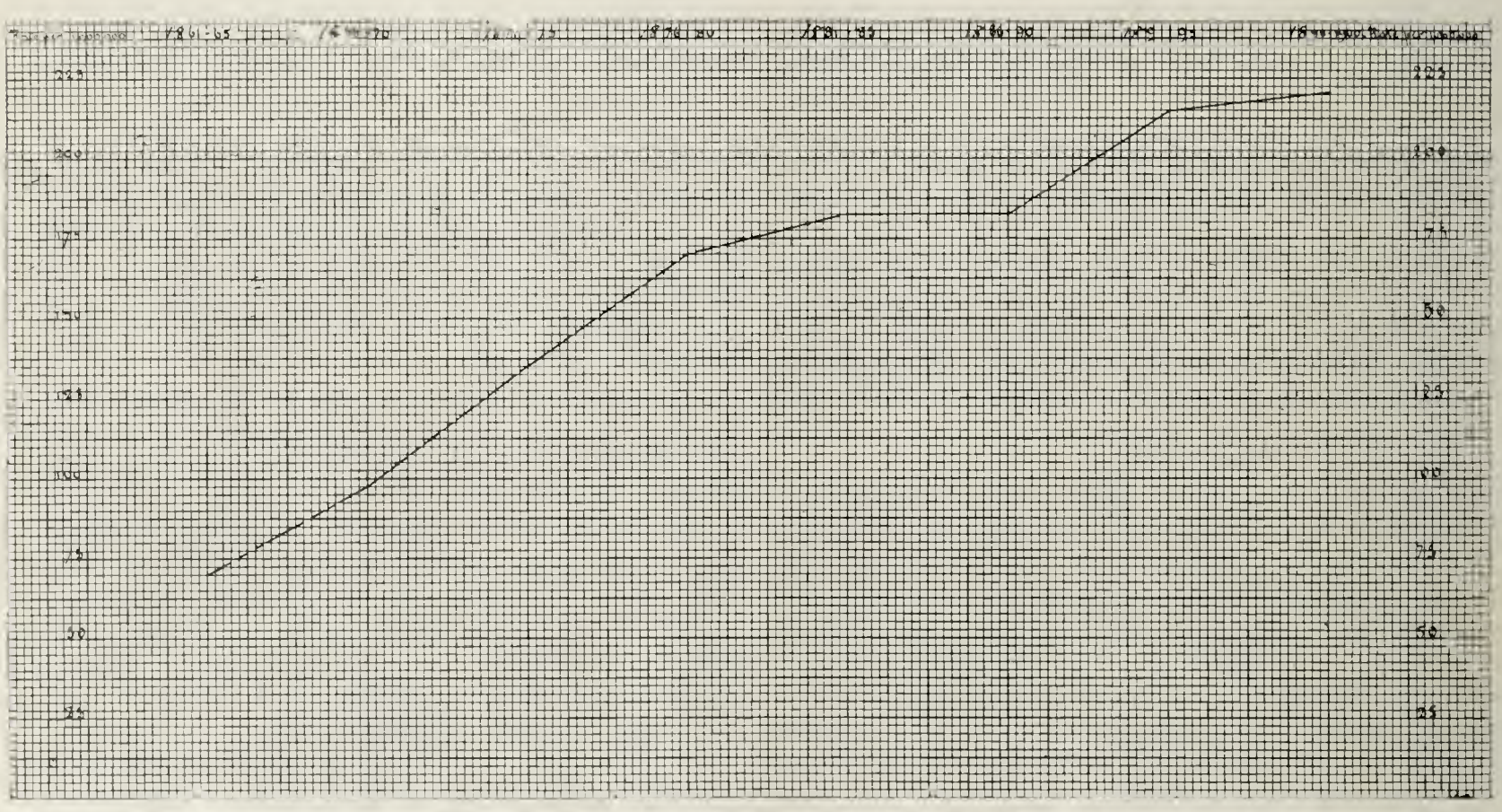
There are some very interesting data which show the increase of cancer of the breast in certain periods, each period consisting of five years. In the City of Philadelphia, if we start with the first period covering the years 1861 to 1865, inclusive, the increase in the mortality of cancer of the breast down to the period of 1896 to 1900 is 179 per cent.; 150 per cent. of the 179 per cent. was gained up to the year 1880. The increase in the mortality of cancer of the breast from the fourth period ending in 1880, to the five years ending in 1900, is only 12 per cent. In other words, the brilliant diminution in the increase of cancer of the breast in Philadelphia is due to the magnificent results of surgical work in that city. If this standard is kept up, in the five years to come the surgery of Philadelphia will reduce the mortality of cancer of the breast to a percentage which will be phenomenal.

In the District of Columbia the mortality of cancer of the breast in the four periods of five years each, beginning with the period of 1876 to 1880, till the period of 1896 to 1900, is 50 per cent.

In Rhode Island the increase of mortality of cancer of the breast for this same extent of time is 115 per cent.

In Connecticut the data do not extend far enough back to make a comparative estimate; but from the sixth to the eighth periods, i. e., from 1882 to 1900, the increase is 12 per cent.

It seems irrelevant to dwell at length upon the actual or apparent increase of cancer, the paramount subject



MORTALITY FROM CANCER OF THE BREAST AMONG FEMALES IN RHODE ISLAND, CONNECTICUT, PHILADELPHIA AND DISTRICT OF COLUMBIA. PREPARED BY MR. FREDERICK L. HOFFMAN.

is the treatment, since in England alone there are 7,000 deaths annually from carcinoma, and 30,000 patients suffering at all times from the disease. In the United States, in 1890, there were over 18,000 deaths from carcinoma; in fact, there were probably more than 18,000, since in many states no registration system provides for accurate mortality returns, and in all probability 25,000 deaths is not too high an estimate.

Cancer causes nearly half as many deaths in the United States in one year as are caused by accidents and injuries of all kinds and descriptions; and it is responsible for more deaths, in one year, in the United States than the sum total due to erysipelas, tetanus, hydrophobia, lightning, appendicitis, gunshot wounds and joint disease, together with other well-known surgical affections. These facts emphasize the importance of the subject under discussion.

Before discussing the treatment of malignant disease by surgical interference, it is necessary to review, in a cursory manner, the principal methods of treatment at

present in vogue. Reference to these methods is made in order to complete the list of recognized plans of treatment. The different methods to be described before discussing the surgical operations are: 1, the *x*-rays; 2, electricity; 3, caustics; 4, drugs, and 5, toxins.

The Roentgen Rays.—Dr. Francis H. Williams reports the use of the *x*-rays in the treatment of cancer. He employed them for five minutes daily, but thinks that it is not necessary to make such frequent exposures. He reports excellent results in those cases where the cancer was superficial. Dr. Williams believes that the *x*-rays will prove of great value in cases of cancer involving the deeper structures.

The conclusions at which Dr. Harvey P. Towle arrived, in reference to the *x*-rays as a therapeutic agent, are so concise and pertinent that I shall quote them verbatim: "1, that the real nature of the *x*-rays is not yet determined definitely, nor is it known whether the therapeutic action following their use is due to the action of the rays themselves, or something of electrical origin accompanying them; 2, that the treatment is not without danger unless the greatest care is used; 3, that the effects of the *x*-rays remain for a long time, and recovery is very slow; 4, that whatever may be the exact origin of the effects produced, a definite reaction is caused in the skin by the use of the *x*-rays; 5, that the changes induced in the skin are similar, histologically, to those seen in ordinary inflammation; 6, that the *x*-rays are not proved to have any bactericidal power; 7, that their therapeutic effect is probably due to the inflammation excited; 8, that hair can be removed by their use, and that lupus and several other diseases can be healed over; 9, that in a few reported cases we may fairly assume that a permanent cure has been effected; but that in a majority of the reported cases, too little time has elapsed to rule out the possibility of a return of the disease; 10, that the effect of exposure to the *x*-rays is so extraordinarily slow in disappearing that months should elapse before an absolute cure is assumed; 11, that while the permanency of the cure effected may perhaps be doubtful as yet it is certainly desirable to experiment further."

The treatment of malignant growth by the *x*-rays is therefore still in embryo, and the time is too short to predict, with any degree of certainty, as to the permanency of the few cures that have been claimed: our knowledge of the modus operandi of the *x*-ray is still shrouded in mystery. The serious objections to the use of the *x*-rays in the treatment of malignant disease can, in a measure, be overcome, by shortening the length, and diminishing the frequency of the exposures, and by more accurate knowledge as to the distance of the tube from the tumor.

How it will cure malignant disease no one knows beyond the fact that the *x*-ray "acts by its electric action or by the electrolytic discharges generated in the integument by a high potential current." All that can be said, at the present time, is, that the results of treatment by the *x*-rays are still *sub judice* and that more data must be forthcoming before any opinion can be expressed as to their value.

Electricity.—The use of electricity in treatment of malignant disease is only mentioned for the purposes of condemnation. In this field of surgery it has no place as a therapeutic agent, and while its use is of value in certain diseases, in this special department it is worse than useless.

Caustics.—The use of caustics is limited to those forms of epithelial ulcers which are situated upon the skin and are very superficial. In this variety of epithelioma, as well as in myxomata, situated upon the surface of the integument, the employment of caustics has been attended by a certain amount of success. There are no statistics as to the permanency of the cure that I have been able to find, with the exception of here and there an isolated case. I have never seen an epithelial ulcer upon the skin the entire removal of which, by free incision, is not preferable to the application of escharoties. I have had good results in small myxomata treated by fuming nitric acid; but, as a rule, my experience has taught me that the remedy is unsurgical in most cases, and that only in exceptional forms of malignant disease is the use of escharoties to be resorted to as a means of permanent cure.

When it comes to malignant disease, such as sarcoma of the bone, or cancer of the breast, I deem it unsurgical to subject the patient to such treatment. In these cases surgical intervention is the only proper resource. I am aware that there are men in the regular profession who treat the different varieties of malignant disease by caustics; but I have searched the literaure of surgery in vain for any reports of permanently cured cases, and I have been unable to obtain by personal communication any data upon the great question of permanent cure. If these men have their statistics they should publish them for the benefit of the profession, and on behalf of suffering humanity.

The arguments used by the advocates of the caustic treatment appear fallacious in the extreme, since the pain of the caustic is nearly as severe as incision, and lasts much longer. The voidance of an anesthetic is claimed as another argument in favor of caustics; but with Schleich's method of anesthesia in the smaller growths, and by the use of nitrous oxid gas or oxygen, in the larger ones, this objection, so strongly urged, is entirely overcome.

Even in amputation of the breast, in aged patients, I have employed the gas with no pain, but little shock and no disagreeable after-effects of anesthesia. The avoidance of shock and hemorrhage are also claimed by the advocates of the caustic treatment; but the shock of incision in local anesthesia, or under the influence of gas, is not greater than the prolonged agony caused by escharotics, besides the dangers of secondary hemorrhage are obviated, as well as a long period of convalescence incident to the repair of a sloughing wound.

The employment of caustics in the treatment of malignant disease, with but rare exceptions, is therefore to be condemned; because the method is attended by pain, does not effect permanent cures, causes extensive sloughs with the consequent dangers of secondary hemorrhage and septicemia, and requires great loss of substance, which takes a long time to repair and then often in an unsatisfactory manner. In no way can the caustic remove diseased tissue which the scalpel can not better accomplish, and in no way is the healing better or the cure as permanent as by a clean aseptic operation.

Drugs.—Launois, in February, 1901, reported promising results in the subcutaneous injection of chlorohydrate of quinin in inoperable cases of malignant disease. Berger employed the serum of Wlaiev and maintained that the functional symptoms were improved, but that the growth itself was in no way affected. Petrini injected 5 centigrams of this serum according to Gautier's method, and gradually raised it to 12 centigrams in a case of multiple sarcomata, and claims to have cured the case in six weeks. There is no information as to the

permanency of the cure, and therefore no conclusion can be drawn upon this case owing to insufficient data.

Tuffier recommends the use of the drug; but he gives no cases from which any conclusions can be drawn.

Formalin has been hypodermically injected; but this plan of treatment has only proved a failure. In fact, it seems a waste of time to review any more remedies suggested for the cure of cancer. They are all of one class, and they are all followed by failure. They are all injurious because their employment occupies valuable time and only postpones an operation, the only method of treatment worthy of adoption.

Pyoktanin has been suggested as a remedy by Mosetig Moorhof, who employed it with a view to destroying the nuclei of the proliferating cells of cancer. This remedy, like all the others, afforded, in some cases, temporary benefit; but I am unable to find any reports regarding the permanency of the cures.

Thyroid extract has recently been extolled as a curative agent. I have tried this drug in a large number of cases, but in no one as yet have I seen a permanent cure. Thyroid extract will retard the rapid ulceration in cancer; it will relieve the pain in some cases; it will control the hemorrhage; it will dispel in many cases the disagreeable odor arising from the infection; it will prolong life; it will make the patient comfortable, but it will not cure. This is all that can be expected from thyroid extract, and this drug stands as a prominent example of all the drugs that have been introduced into practice as specifics in malignant disease.

Chian turpentine has been extensively employed as a curative remedy in cancer. This medicine was introduced by Clay of Manchester, and his reports are such as to attract attention to its use. Personally, I have been greatly disappointed in the remedy, as I have never seen a case of cancer cured by it; although, in some instances, I have observed a diminution in the pain, ulceration, hemorrhage and odor. This, however, has never been so well marked as in the case with the thyroid extract.

Methylene-blue has been highly extolled by some surgeons. I am frank to confess that notwithstanding its administration in many cases I have never seen a cure effected by it, and only in a few instances any temporary benefit. It decreases the odor to a certain extent, perhaps arrests in a certain degree the ulceration, and in this way controls the secondary hemorrhages. At one time I was quite confident that it would prove of signal value; but a more extended experience has led me to believe that it has failed to accomplish that which was expected of it.

Potassium iodid in very large doses has been employed with a view to curing sarcoma. Some authorities have reported cases of cure following the use of this drug. I must confess that I have never seen a case of sarcoma cured by potassium iodid. I have seen some inflammatory neoplasms disappear, and can recall several cases of absorption of exudations which were large enough to produce pressure symptoms.

In one case of complete hemiplegia 600 grains of the iodid given daily, and continued for several weeks, caused the intracranial exudation to absorb, and complete recovery followed. It is now over ten years since the attack. In still another case I saw a mono-brachial paralysis disappear after using the iodid in several hundred grain doses daily. These cases, however, had without doubt a specific history, and such neoplasms must not be confounded with sarcoma, although the histologic formation may be very similar. It is precisely in this class of cases that errors of diagnosis have been made, and consequently cures reported which were supposed to be sarcoma, when in reality the growths were not malignant.

The *toxins* of the streptococcus erysipelatis and the bacillus prodigiosus mixed is a method as advocated by Fehleisen and Coley. The treatment is carried on by hypodermic injections of small and increasing doses. The best results are obtained in the mesoblastic growths, and the giant-celled sarcomata. It is not to be employed as a substitute for operation and only in cases where the tumors are inoperable. Coley's article on the results of this treatment is worthy of perusal. The writer has personally seen but temporary benefit from this method, but in no case a cure.

The writer referred to Coley's paper,[1] in which he gave the results of 140 cases of inoperable sarcoma treated with the mixed toxins of erysipelas and bacillus prodigiosus. In 24 of these the tumor completely or partially disappeared as a result of the treatment. In 84 of this series the sarcoma was round-celled; in 21 spindle-celled; in 9 melanotic; 2 chondrosarcoma; in 12 the type of cell was not stated, though the diagnosis was confirmed by the microscope; 6 were inoperable sarcoma, the diagnosis resting upon clinical symptoms, combined, in most cases, with a history of repeated recurrence.

In 40 cases of the round-celled, or slightly less than half, more or less improvement was shown by decrease in size or cessation of growth. In only 4 of these was the treatment permanently successful. Of 21 cases of spindle-celled sarcoma 10 disappeared entirely; all the remainder showed marked improvement. In no case of melanotic growth more than temporary improvement was noted. At the time of this report 8 cases had remained well from 3 to 6 years; 9 from 1½ to 3 years.

In addition to these personal results, the paper contained a summary of results in 35 cases successfully treated by other surgeons employing the same method. Of these 35 cases, 10 were round-celled; 10 spindle-celled; in 5 the diagnosis was clinical only; in 5 there was, in addition to the clinical signs of sarcoma, a history of recurrence after operation; in 4 the diagnosis of sarcoma was confirmed to microscopic examination, but the type not stated; 1 was endotheliosarcoma. Of these 35 cases 26 disappeared completely; 2 others decreased so much that only a small node was left, which was easily excised. One of the latter cases was well three years and the other one year at the time of report. Of the 35 cases referred to, 14 were well over two years, and 6 cases over three years. The object of the paper, the author said, was to determine, if possible, from a careful tracing of the successful cases, whether the action of the toxins upon sarcoma is to be regarded as of temporary or permanent value; in other words, whether or not it is entitled to be called curative. At the time of his report in 1898, 8 of his personal cases had remained well from three to six years; he stated that this number had now increased to 16 that had remained well from three to eight years. Of these, 2 recurred, one at the end of three and one-quarter years, and the other after eight years both proving fatal. The diagnosis was confirmed by the microscope in all cases with two exceptions. In these instances the history of the cases with the clinical appearances made the diagnosis of sarcoma unquestionable. The type of tumor in the 16 cases that passed the three-year limit, was as follows: Spindle-celled

1. The Journal A. M. A., Aug. 27, 1898.

sarcoma, 8; spindle-celled (probable), 1; round-celled sarcoma, 2; mixed-celled sarcoma, 2; epithelioma, 1; sarcoma (clinical diagnosis only), 2. It is worthy of special note that two of the successful cases now well—three and three-quarters and four and one-quarter years, respectively, were sarcoma of the parotid gland. Butlin, in his last edition of "Operative Treatment of the Parotid Gland" states that "up to the present time there are very few instances of cure by operation of undoubtedly malignant disease of the parotid." In my two cases treated by the toxins the diagnosis was not only confirmed by a competent pathologist. but further by a history of repeated recurrences after operation.

The results thus far, he stated, seem sufficient to warrant advising the treatment as a routine measure after all operations for primary sarcoma. While the treatment is not recommended in carcinomatous growths, it has been the experience of the writer that in many cases the toxins exert a marked inhibitory influence in carcinoma; although it is rarely curative. The only cases of carcinoma in which the toxins are likely to prove of much value, I think, are those in which they are used after primary or secondary operation, as a prophylaxis against recurrence. Up to the present time sufficient experience is lacking to justify one in making any definite statements as to how much may thus be accomplished.

The writer still believes that the action of the toxins upon malignant tumors can be explained only upon the theory that such tumors are the result of some infectious micro-organism, and this view is strongly supported by the recent expressed opinion of Czerny.

Cancroin, a toxic product obtained from cancerous tissue, has been injected by Adamkiewicz. This remedy has not cured cancer, but in some cases has secured a minimum of benefit. This brief summary of the other methods of treatment has cleared the way for the discussion of the treatment by surgical intervention, which is really the only method that offers any prospect of success.

SURGICAL INTERVENTION.

Surgical intervention is the only resource, since all drugs have proved ineffectual, and all other methods practically of no avail. It is, however, only successful when the disease is taken early in its history, and when the operation is radical in its character. Delay in operating is attended with great mortality. The more radical the operation the more certain its cure. Six months from the beginning of the disease is the utmost limit of time; statistics in my own cases prove that after the expiration of this time results are uncertain. An early, and a radical operation, therefore, are the essential requisites for cure in malignant disease.

Various methods of treatment have been indulged in from time to time; but radical surgical interference is the only method that meets with encouraging results. That surgical operation will permanently save a patient is demonstrated by a study of the cases presently to be reported.

In every instance the names of the physicians who were present at the operation are given for reference, and accompanying each case is the microscopic report of the tumor by an eminent pathologist. The exact date of operation, the situation of the tumor, the main points connected with the clinical history are reported. No case is given in which at least three years have not elapsed since the time of the operation. In many of the cases from 10 to 22 years have transpired without the slightest evidence of return. They are reported to prove the value of surgical intervention over all other methods of treatment, and at the same time to call attention to the conditions essential to success. The report should also offer hope to those who are the victims of malignant disease, since surgical interference is the only salvation for these patients.

Before discussing the subject of statistics in reference to permanent cure in malignant disease by surgical operation, I wish to say frankly, that I consider them of questionable value. They do not afford the accurate information of which the searcher after truth desires. I make this statement after much thought, deliberation and personal experience, and I am fully aware of the opposition it may invoke. My reasons are these: 1. There is no unanimity among surgeons in regard to the elimination of cases for statistical purposes; for example, one surgeon will thrown out a large number of cases on the ground that they were inoperable, which fact was ascertained in the attempt to remove the disease, and therefore they are not to be included in the final list as determining the result. 2. Another surgeon will throw out a large number for the reason that the histories are unknown, or include some cases with the clinical history of cancer without microscopic verification. 3. The types of malignant disease have such a wide variation that tumors of one class which are more rapidly malignant than those of another class are placed in the same category, and such a comparison without doubt is unfair. 4. The causes of death are ascribed in some cases to acute sepsis, while these cases died, in reality, from too prolonged anesthesia, the deferred shock of which rendered the patient less resistant to overcome any sepsis. 5. The number of cases of malignant disease, affecting one organ for example, upon which an estimate is to be based, is too limited to convey by statistics any reliable information as regards mortality or permanent cure. For example, I have had 100 per cent. of permanent cure in certain malignant disease affecting a certain organ; but I had only one case. For these, and many other reasons, I feel convinced that statistics upon this special point are unreliable; in other words, they do not furnish us with the entire truth.

With these remarks as a preface I will give in a brief way some results from my own personal experience. I would add that these statistics have been verified by a learned mathematician and scholar who did not possess a medical degree, and therefore was ignorant of any information bearing upon the subject that the figures might show. I would further add that it is possibly a case may have been reported wrongly, or a clerical error may have occurred in keeping a history of so many hundred cases. As far as I know, however, the reports are accurate.

The two questions of mortality and permanent cure may be stated in the following terms. In the cases reported prior to 1891 at the meeting of the Congress of American Physicians and Surgeons, there was no mortality in amputation of the breast for cancer or sarcoma, or for any other cause with the exception of two cases of hemophilia. There was no mortality in the operation for removal of epitheliomata or sarcomata of the skin. There was no mortality in the operation for removal of sarcoma affecting the glands, and likewise the superior maxilla. There was one death in excision of malignant disease of the intestine, and also one death following

amputation of the hip-joint. In reference to the percentage of permanent cures following the operation for the removal of cancer of the breast there was 45 per cent. of permanent cures up to 1891, and in the last series of 15 cases the percentage was 83 per cent. of permanent cures of over 3 years' standing and 75 per cent. of permanent cures in cancer of the face, including epithelioma of the lip.

In regard to sarcoma there was 85 per cent. of permanent cures in sarcoma of the breast, and 92 per cent. of permanent cures in sarcoma of the glands, 100 per cent. of permanent cures in sarcoma of the superior maxilla, 92 per cent. of permanent cures in sarcoma of the long bones. There was, finally, 100 per cent. of permanent cures in simple sarcoma involving the skin.

In no instance have I used the expression permanent cure when three years have not elapsed since the operation, and in nearly every case the period has been over seven years, and in a few up to twenty-two years to the present time. I have not collected my cases since this last report, but hope to do so at some future time.

Let us now return to the more important question which is: Can any cases be reported that have been entirely cured, and, if so, how many, and of what character was the malignant disease? It seems to the writer that positive information upon this vital point is worth more than all the statistics bearing upon the percentage of curability of malignant disease. It is the absolute fact of permanent cures that interests the surgeon and the laity.

The writer reports 87 cases of malignant tumors in patients upon whom he has operated, and at least three years, and in many of the cases ten, and in some twenty-two years have elapsed without recurrence. The list includes 48 sarcomata and 39 carcinomata, making in all 87. To this list a sufficient number of cases can soon be added, which will make the list at least 100, but a few months are lacking at present to have these cases reach the full three-year limit. These cases place beyond all doubt the question as to the possibilities of a cure in malignant disease.

These cases are reported as an encouragement to surgeons in their attempts to save human life, and also as a ray of hope to the unfortunate victims of malignant disease. It is possible under certain conditions for surgery to offer to patients afflicted with this terrible scourge that destroys annually so many lives, and blights so many homes, a cure for their malady. These tumors are upon exhibition at the Pathological Exhibit, and also the microscopic slides with sections.

Each one of these cases has been carefully watched, and the work necessary to make these statistics complete has been a labor fraught with the greatest difficulty. The satisfaction of knowing that surgery can cure these malignant growths repays the writer for his years of labor in tracing these cases down for a period of a quarter of a century to the present time.

In these 87 cases of malignant tumors operated upon, and cured by the speaker, it may be of advantage to classify them in a general way, so that some idea can be formed of the success which surgical operation can expect in these diseases of such frightful mortality.

1. *Sarcoma of Superior Maxilla.*—I am unable to find any satisfactory reports upon permanent cures in sarcoma of the superior maxilla. My cases of permanent cure number 5, in which the shortest period is eight years, and the longest is eighteen years.

2. *Sarcoma of Glands.*—I am unable to find a satisfactory report of cases of permanent cure in sarcoma of the glands. My cases number 7, in which a permanent cure has taken place, the shortest period being eight years and the longest twenty-one years.

3. *Sarcoma of the Skin.*—I am unable to find any satisfactory reports upon the results of treatment in sarcoma of the skin. My cases number 22 in which a permanent cure has taken place, and in which the shortest period is eight years and the longest is sixteen years. One case is included in the list with an explanation, since, in 1891 I operated on the patient for the first time, and at present she is alive. I have operated upon her over forty times for the relief of multiple sarcomata of the skin during the past eleven years. For eleven years she has been willing to submit to operations, and at the present time is without any new outbreak; since sufficient time has not elapsed from the date of the last operation she can not strictly be as yet in the category of permanent cures. Since the past few years she is comparatively free from any return and there is every prospect of cure in her case. This case is most remarkable as one illustrating the principle that as long as the patient will allow operations they should be performed, because there is a chance of permanent cure even in these cases.

4. *Sarcoma of the Breast.*—I am unable to find any satisfactory reports of sarcoma of the breast as distinguished from carcinoma of the breast. My cases number 6 in which a permanent cure has taken place, the shortest period being seven years, and the longest twenty-two years.

5. *Sarcoma of Bones.*—I am unable to find cases of permanent cure of sarcoma of bones by any other method of treatment than by surgical intervention, with the exception of those reported by Coley. In regard to this method, mention has already been made. Butlin reports 29 cases of sarcoma of the leg with a mortality of 30 per cent. in the operation itself, and only one single case could have been said to have been completely cured, taking three years as the standard of time. This high rate of mortality, in the operation itself, is a most astonishing fact, and is only surpassed by one still more startling, which is that out of this original list of 29 cases only one single case was reported by him as having been completely cured.

My cases of sarcoma of the leg number 8 in which there was a permanent recovery, the shortest period being sixty years and the longest thirteen years.

The treatment of sarcoma of the long bones is simple, because there is but one operation, and that is amputation. From an experience derived from a number of these cases of sarcoma of bone, and from opinions formed after careful study of the cases of others, I am more and more impressed with the fact that amputation is the only operation which should be contemplated. I refer to sarcomata of the long bones. The operation of exsection or enucleation, and an application of caustics are, in my humble judgment, productive of harm; because the disease is not, as a rule, radically removed by these methods, and oftentimes the tumor returns very rapidly, and the operation seems only to add fuel to the fire.

I believe that in all cases of sarcoma of the long bones amputation should be decided upon at the earliest period possible, and the operation performed without delay. At the point of election I would suggest an amputation which would remove the entire bone affected.

whether it be a subperiosteal or central sarcoma. This necessitates an amputation of the lower part of the thigh in case the tibia or fibula is the seat of the neoplasm. It necessitates an amputation of the hip-joint when the tumor is subperiosteal, and involves the shaft of the femur. In view of the great mortality of hip-joint amputation, a possible exception might be made in case of a central sarcoma of the condyle of the femur which was recognized early, and which was small in size. By amputation in the lower third of the femur in sarcoma of one of the bones of the legs, the popliteal glands are thus removed, and while this point would concern us more if the disease were cancer, yet I have seen a case of sarcoma affecting those glands.

The remedy of amputation which is suggested, is a severe one; but the disease for which the amputation is performed is a uniformly fatal one if left to nature, and in view of the great malignancy of sarcoma, I believe the operation should be the most radical one consistent with a due regard for the life of the patient during the immediate performance of the operation. It must be remembered that the patient is suffering from a uniformly fatal disease, and the chances of escape from it are in proportion, within proper limits, of course, to the distance at which the limb is removed from the seat of the malignant tumor. Finally, I trust that I have been sufficiently clear upon the following points:

1. The importance of early recognizing the disease and the necessity of complete removal of the limb, including the entire bone affected, by amputation without delay.

2. The importance of carefully watching the subsequent history of patients upon whom an operation has been performed for the removal of sarcoma.

3. The importance of a microscopic examination of every sarcoma. Surgeons are of one opinion upon this point, that a microscopic examination is a *sine qua non* to insure the tabulation of a case for purposes of study.

4. The importance of a radical operation in these cases of malignant sarcomata affecting the long bones of the extremities, and the condemnation of partial enucleations and the use of caustics and plasters.

5. The importance of encouragement to patients suffering from malignant disease of the long bones, on the ground that early and radical operations, even in the most malignant cases, may result in perfect cure.

6. *Carcinoma of the Skin.*—I am unable to find any satisfactory reports of permanent cures in carcinoma of the skin. My cases number 19 in which there was a permanent cure, the shortest time being five years, and the longest twenty-one years. In this group is included a case of carcinoma of the ileum and cecum with resection of six inches of the bowel and a subsequent anastomosis with a Murphy button. It is now nearly four years since the operation and the patient is well and at work.

7. *Carcinoma of the Breast.*—My cases number 20 in which a permanent cure has taken place; the shortest period is four years and the longest thirteen years. Each one of these 20 cases is alive to-day and with no return, or recurrences, or metastases.

The result of the treatment by surgical interference shows, therefore, that these 20 cases have been permanently cured, and no other method or plan of treatment can furnish 20 cases that have been subjected to the test of so many years of immunity.

If now the 6 cases of sarcoma of the breast, of which mention has been made, be added to the 20 cases of cancer of the breast, there are 26 cases of malignant disease of the breast cured by surgical operation, the shortest period being four years and the longest twenty-two years.

CARCINOMA OF THE CECUM.

WITH REPORT OF CASES IN WHICH THE CECUM WAS REMOVED FOR MALIGNANT DISEASE.*

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Ileocecal carcinoma is not an infrequent malady. Ewald in a collection of 1148 cases of intestinal cancer found 64 in the cecum and 26 in the ileum, and more than half of the latter involved the ileocecal valves. Sutton says that of 100 cases of intestinal carcinoma 75 will involve the rectum, 23 the large intestine and but 2 the small bowel. Frank's table shows that two-thirds of all cancers of the large bowel involve the cecum and sigmoid flexure, and in about equal proportion. From these statistics it can be estimated that 7 per cent. of all malignant diseases of the bowel involve the cecum. Sex does not seem to have much significance. The average age of cases of carcinoma of this organ is somewhat younger than malignant disease in other parts of the body, and while not frequently found in the young it is sufficiently common to warn us against laying too much stress on the years of the patient.

Among the most frequent of the attributed causes is constipation, but if this is an important etiologic factor it would seem that the disease would affect females more often than males; yet this is not the fact. Maylard states that primary carcinoma of the intestine is always of the columnar-cell variety and Furnival points out the frequency of colloidal changes, particularly in the young. Lymphatic infection is found in less than one-half of the cases dying from intestinal carcinoma. Haussman, in 112 collected autopsies, found that 55 were limited to the gut, the remainder showing lymphatic involvement in 36 cases and in 21 cases general infection. More than one growth is seldom discovered, although two or more points of disease have been reported; whether all were primary or from a single source of infection and carried to the situations found by implantation or arterial emboli it is impossible to state.

The disease most frequently originates at the ileocecal juncture and has the usual tendency of all carcinomata of the large bowel to form a ring-like constriction, although a considerable tumor may exist without obstruction. The duration may be very prolonged and its course before active obstruction supervenes is usually slow. Briddon reports a case of twelve years' probable existence. Death usually results from obstruction or perforation, the latter either just above the stricture and close to it, or at some point in the cecum from distension; perforation is somewhat more frequent (7 to 4).

The distension ulcer in the cecum is similar in pathology to the distension ulcers in the small intestine about which Kocker has written so interestingly. The symptoms of malignant disease of the cecum are colicky pains, constipation alternating with diarrhea and progressive wasting. A tumor may be felt in some cases.

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

In the later stage intestinal peristalsis can be plainly seen through the attenuated abdominal walls and is usually accompanied by marked gurgling. Other cases present symptoms of chronic appendicitis with an induration indicating a small inflammatory deposit about the appendix. This was true of two of our cases. As the obstructed material is largely accumulated in the small bowel, symptoms of gastro-intestinal irritation are more marked than if the large bowel only was involved. A few cases are ushered in without premonitory symptoms by an attack of acute obstruction. König, Korte, Barton and others report cases in which an acute intussusception was the first sign of trouble.

The differential diagnosis between malignant stricture of the cecum and simple or tuberculous strictures may be impossible without exploration. In a paper on "Localized Tuberculosis of the Intestine" read before the Minnesota Academy of Medicine, Feb. 1, 1899, I reported three cases of tuberculosis of the cecum, and I have met with one additional case since that time. In these cases the foul discharges from the bowels, slight but constant temperature, tendency of the tuberculous mass to soften, taken into consideration with the previous history made a diagnosis possible, although the obstructive phenomena were essentially the same.

Cases of chronic inflammatory thickening of the cecum have been reported giving much the same signs and are in some cases, at least, syphilitic in origin. Impactation of feces in the cecum is not so very infrequent and may remain months, if not years, without dislodgement. In one case which I examined in an inmate of the Rochester State Hospital for the Insane, some twelve years ago, such an impactation was known to have been present for several years and finally by atrophy necrosis ulcerated to the surface of the body. Dermoid or other tumors of the abdominal muscles on the right side may confuse the diagnosis. In the one case of dermoid which I have seen the differentiation was most difficult. Dermoids are very rare and usually occur in the female following a labor. There is no history of intestinal obstruction.

Acute obstruction of the bowels is a frequent complication of the malignant process and its relief a prerequisite to a successful outcome. Treves, speaking of intestinal obstruction generally, says that he reduced his mortality 50 per cent. by relieving the distended intestine above the obstruction. This has been done by a simple incision or aspiration (Grieg Smith) or the use of Paul's tubes. The common method of relief has been that of forming a temporary artificial anus and in the large intestine necessarily in this manner. In such cases three operations are demanded: 1, relief of the obstruction by the artificial anus; 2, resection of the diseased area, and 3, closure of the anus, and this last has a mortality of its own. Makin collected 39 intestinal resections for the closure of an artificial anus —21 were cured, 3 uncured and 15 died.

From an operative standpoint the ileocecal coil should be independently considered. In cancerous or other obstruction of either the large or small bowel the normal condition above and below the disease is identical, but in this situation the small bowel empties its contents in a fluid state into the large intestine, in which the feces assume solid form. The question is not one of ordinary intestinal union in which two parts of similar bowel are joined, but one in which by reason of the dissimilarity an anastomosis can be effected under very favorable circumstances.

In ileocecal obstruction, the ileum can be readily joined laterally with the transverse colon. The obstructed intestinal contents are fluid and do not endanger the union as is the case with the solid accumulations in the large bowel, and the size of the receiving intestine and its nearness to the anal orifice gives it all of the advantages of an artificial anus on the surface of the body. The union can be effected at a point sufficiently high on the ileum to secure healthy bowel for approximation. There is also the great advantage in that the communication is permanent. The extirpation when performed later is more easily effected, both ends of the intestine being turned in and closed. We have performed ileocolostomy for various causes six times, in this manner, using the Murphy button, and all recovered from the operation. In four of these cases nothing was attempted in a radical way on the diseased part, the discharges draining satisfactorily from either side of the obstruction. Exclusion of a portion of the intestine can be safely accomplished provided there is some exit for the secretions of the excluded part, but, as shown by the studies of Kammerer, if the exclusion is absolute future trouble can be expected.

Resection of the cecum was first performed by Billroth in 1876, and the operation has now been done many times and a large number of cases have been reported. The operative mortality as given by Grieg Smith was between 30 and 40 per cent. Furnival estimates the mortality of the more recent cases as somewhat less, 20 to 25 per cent., perhaps. Butlin, in 95 reported cases involving the cecum and ascending colon, gives an operative mortality of 29 from shock and sepsis, and 66 recoveries.

Excision of the cecum for malignant disease usually requires removal of the ileocecal juncture and if the disease be not too advanced can be readily effected. The arteries are almost all terminal with but few anastomotic loops (Witherspoon) and the ligation of the blood supply does not endanger contiguous portions of the bowel. A lateral incision is most convenient. The peritoneum along the outer wall of the cecum and ascending colon is divided, the malignant portion of the bowel raised and the vessels ligated. The ascending colon is cut across, one and one-half to two inches above the upper limits of the disease, and its distal end turned in by a purse-string suture. The proximal portion, clamped to prevent leakage, is lifted out of the abdomen and when completely separated from its other attachments, the ileum is divided at a healthy point. The anastomosis is best effected, end of the ileum to the side of the ascending colon. If the ileum can not be readily brought to this portion of the colon, it can be attached to the transverse colon either end to side or side to side.

The ultimate results of excision done early are good. Van Bramann in 14 cases had 4 free of recurrence after three years. Macewen two out of five, Wolfler two out of twelve, Czerny three out of eighteen cases. When it is considered that a number of the remaining cases were free from recurrence although less than three years, it is certain that later reports would increase the percentage of permanent cures. We have excised the cecum four times, twice for malignant disease, once for tuberculosis and once for chronic intussusception, all of the patients recovering from the operation. In the past two years we have met with five cases of cancer of the cecum. In two, extirpation of the ileocecal coil resulted in recovery, in two the extent of the disease pre-

vented a radical operation and ileocolostomy was performed for relief and in one advanced case without obstructive symptoms, the exploratory incision was closed. A brief report of the two cases in which a radical operation was performed is appended.

Case 1.—Carcinoma of the Cecum Involving the Ileocecal Juncture. Extirpation. Recovery.

J. E. R., Yankton, S. D., American, 38 years of age. Admitted to St. Mary's Hospital, Rochester, Minn., April 4, 1899. History of colicky pains in the abdomen for four years. While not severe, the pain has been persistent; during the past year it has become located in the right side. For four months a diarrhea has been persistent and he has lost 40 pounds in weight. Family history negative.

Physical Examination.—A moderately emaciated man of cachectic appearance. No evidences of disease of organs outside of the abdomen. Temperature and pulse normal. There is considerable intestinal distension and intestinal peristalsis waves can be seen and are accompanied by marked gurgling. On deep pressure in the right side an induration can be detected, evidently connected with the cecum. It is about the size of a small lemon, firm to the touch and not very sensitive. Upon the history and physical signs the diagnosis of appendicitis seems warranted and it is thought to be tubercular in origin and the obstruction due to adhesions.

On April 6 a lateral incision revealed a nodular tumor of the cecum involving the appendix and ileocecal juncture. A few enlarged glands could be felt behind the bowel. An incision through the peritoneum was made on the outer side and the cecum with the enlarged glands was lifted out of the abdomen. The vessels supplying the part were ligated with catgut. The ascending colon was divided two and one-half inches from the tumor and its distal end closed with a circular suture. The proximal end was clamped. The mesentery was progressively ligated and the ileum divided eight inches above the ileocecal valve. An attempt was made to join the end of the ileum to the side of the ascending colon but there was some tension, the divided end was therefore turned in with a circular suture. The omentum was raised and the side of the ileum six inches above its severed extremity was anastomosed to the transverse colon near the hepatic flexure with a Murphy button. A small drain was introduced into the right side and the incision closed. Recovery was uneventful. The patient was discharged May 3, 1899. He rapidly regained his usual weight and strength and is now pursuing his work in better health than for years before. Microscopic examination showed only inflammatory changes.

Case 2.—Carcinoma of the Cecum, Involving the Ileocecal Juncture. Extirpation. Recovery.

A. C. S., Maiden Rock, Wis., Scandinavian, 30 years of age. By occupation a fisherman on the Mississippi river. Admitted to St. Mary's Hospital, Jan. 6, 1901, with the following history:

For the past six months has suffered from cramps in the abdomen with a feeling of weakness. For the last three months the pain has been nearly constant in the right side, losing weight and strength, constipated. Family history good.

Physical Examination.—A man of good physique, somewhat emaciated, walks with the right thigh drawn up to relax the psoas and iliacus muscles. Temperature and pulse normal. No evidences of disease outside the abdomen. There is some tympanites. On deep pressure in the right side a small mass can be detected which is tender to the touch. A diagnosis of chronic appendicitis was made.

January 8, an intermuscular incision (McBurney) was made and a tumor involving the cecum, appendix and lower ileum was exposed. The incision was lengthened, cross cutting the deeper muscles. The peritoneum was divided outside and the cecum, appendix, ascending colon and fourteen inches of the ileum was excised, a lateral anastomosis between the lower ileum and transverse colon being effected. There was extensive adhesion posteriorly in the mesentery necessitating the extensive resection. A few small glands were found. A small drain was introduced and the incision closed. Patient discharged February 27 in good condition. The microscopic examination of the glands removed showed only inflammatory changes.

In conclusion, I would urge that every operating surgeon be prepared to excise the cecum. The early symptom may be such as to lead to the belief that an appendicitis exists and in this way a timely operation for a malignant process may result in a complete cure.

DISCUSSION IN SYMPOSIUM ON THE SURGICAL ASPECT OF CARCINOMA.*

Dr. A. C. Bernays, St. Louis—From what has been shown here we are to face an endemic of cancer. The exact figures, as Dr. Dennis read them, I do not remember, but there is undoubtedly now an endemic of cancer which we have recognized, because it has increased largely in recent years. This endemic seems to affect all classes. The question is: Will it be possible by united, collective effort to bring help, as we have done in other diseases, which we have attacked collectively in our professional efforts? Dare we hope for a curative remedy? I think not. Let us be modest. We dare to believe that by collective investigation, such as we have made in other pathologic conditions, we may gain accurate knowledge regarding the location, frequency and geographical distribution of cancer, also its mortality and length of life of patients afflicted. Upon that basis we dare hope that we may be able to exercise a sort of prophylaxis, as we now do in tuberculosis; we may confidently expect this much. But even this result will depend largely upon the success of our efforts in discovering the nature of cancer. Many men have worked upon this question. All have failed to solve the problem. I believe that only a few cases will furnish material which will be useful in our research for the parasite. I believe that not all cases of what we call cancer now—and I wish to emphasize that point here—are due to parasitic infection; some cases are undoubtedly degenerative processes, necrobiotic processes of tumors or growths developed on the basis of rudimentary tissues which we have inherited from an infinitely long line of ancestral forms of life. What we call cancer, or what we call malignant disease, consists of many different things, and the investigations, which I think will be pressed and enthusiastically continued, will show that under the head of "cancer" some quite different things are included; some undoubtedly of parasitic nature and others of embryonal or rudimentary and developmental nature. If the discoveries and conclusions of the New York investigators, under the direction of Dr. Park, are based on careful observations, they will soon be corroborated by the researches in laboratories all over the planet.

A few words on resection of the cecum. About two months ago I had an opportunity to resect a cecum in a case of cancer. I will relate it as briefly as I can, and then make a sketch of the operation. The patient was a man aged 54, who had been sent to me for operation by a good physician, with the diagnosis of chronic appendicitis. I felt a hard nodule in the right iliac fossa, but was unable positively to make a diagnosis of chronic appendicitis; nor was I able to come to the positive conclusion that there was a cancer of the caput coli, or ileo-cecal valve, as it proved to be. Deciding to operate, I opened the abdomen and found a large lump, consisting of glands; the meso-colon and the mesentery were normal. There were only a few small glands. I used the Kocher clamp and clamped off the gut and the ileum by clamping at right angles. By closing it tightly I was enabled to cut away this whole mass, and, putting my hand under it, to lift it up from the iliac "shovel." This was accomplished with scarcely any bleeding, perhaps a little from the surface from which I lifted up the mass. There was only one large artery coming down, which was tied. The ileum fortunately had a long mesentery and it was freely movable and the colon also could be turned well out of the wound. I intended to close up this hole by simply inverting the whole thickness of the bowel and closing it with a few catgut sutures, but, at that moment, it struck me

* Papers by Drs. Park and Powers published Sept. 14, 1901; Drs. Weir and Senn, Sept. 28, 1901.

that the better plan would be the Maunsell operation, inasmuch as I had here a large hole in the cecum. So I introduced a pair of forceps, bringing this piece of gut up; at this point I made an incision in the cecum, and by means of a pair of forceps brought this piece of gut together with the cecum. I was then enabled, in the very simplest manner, to sew together, just as Dr. Weir did in the resection of the rectum; I sewed the gut into the cecum by through-and-through sutures, then simply drew it out, and then put on some Lembert sutures on the outside all around, and finally closed this opening here with Lembert stitches. That finished the operation. I think you will have to admit that that method is simpler than any other method, and restores almost to the normal condition after the resection of the cecum.

Dr. G. W. Crile, Cleveland—I wish to briefly describe a method of controlling hemorrhage in operations for malignant disease of the tongue. A small screw clamp with parallel blades, protected by small pieces of rubber tubing, may be placed upon the common carotid arteries and so adjusted by the screw as to close the lumen of the vessel, thus rendering the field bloodless.

Dr. W. L. Rodman, Philadelphia—I think we are all beginning to feel that there is an accumulating amount of evidence that carcinoma is due to parasitic disease. Certain things indicate that it is due to a parasite. The very fact of its encroachment would indicate that it could not be anything but a germ. We know that carcinoma, until recently, was not a disease frequently found among the Indians and negroes, and yet, at the present time, it is practically found in both races; carcinoma of the breast in the negro is probably more common than in the white. This change must be due to a germ, and, once having started, it is likely to continue and increase. Dr. Dennis raised a very important question when he said that he had not seen a case of sarcoma of the jaw recover. In a discussion not long since, in the Philadelphia County Society, rather the opposite position was taken with regard to sarcoma of the jaw. It was held that an operation that is radical and done early is more likely to prove successful than sarcoma in any other part of the body; a very good reason was given for it at that time, viz., the fact that the mouth is a septic cavity and that suppuration results after an operation. This explains why more cures are reported on the upper and lower jaws than sarcoma in other parts of the body. I know of a case of sarcoma of the lower jaw fourteen years after operation and the upper jaw two years after operation. I fully agree with the position taken by Dr. Powers that we should cut into a tumor for diagnostic purposes; it is not only justifiable, but the best course that one can take. The little risk incurred in doing this is more than justified by the fact that it is hardly fair needlessly to remove the mammary gland of a child-bearing woman.

Dr. Gustav Fütterer, Chicago—While I do not intend to discourage research in that direction, I wish to state that I have never been able to believe that parasites are or may be the cause of carcinoma. Probably the strongest reason against a parasitic cause lies in the fact that in carcinomatous metastasis the cells of the organ invaded do not become infected, and do not participate in the building up of the metastasis, which develops from the invading cells. I have first advanced this reason at a meeting of the Chicago Pathological Society, Dec. 14, 1896, and I still consider this fact of the highest importance; it is hard to conceive that such would be the case if the invading cells included parasites.

I have always adhered to Virchow's theory of irritation, and after all that I have seen, I take a firmer stand on this than ever. Friction causes no real inherent malignancy of the epithelial cells, but only an apparent malignancy. It is none other than can be explained by a greater supply of blood that is not regulated with even nearly the almost mathematical correctness which governs the nutrition of the epithelial apparatus under normal conditions. So while I do not believe in an inherent malignancy of carcinoma cells, I do believe that normal epithelial cells, through continued circulatory disturbances, become trained to indure and prosper by a condition of hypernutrition. Hand in hand with sprouting blood vessels surrounding them, the epithelial cells may invade the deeper tissues, the resistance of which has either been lessened by chronic circulatory disturbances, particularly edema, or by a reduction of the volume of blood in old age. Then they may proliferate in the deeper tissues making metastasis and causing cachexia. It may be cachexia of a different kind, as the cells retain their physiologic function more or less, according to local conditions, overloading the circulation with physiologic products. This alone will explain the different forms of cachexia, such as we find them, for instance, with carcinoma of the stomach, primary carcinoma of the liver, etc.

Dr. G. B. Massey, Philadelphia—The last remark made by the speaker seems to me to be capable of being answered by objections against the autocytic theory, which would be evident to the biologist. For to adopt the autocytic theory of cancer we must assume that cells can change their character. We must assume that cells that have been generated as tissue cells, with a benign course or history, can suddenly, for some unknown reason, entirely change their character. No one can watch these growths for any length of time without feeling sure that there is a separate entity in that growth from the entity in the host, that there is an entity there, a separate entity, totally distinct from the man or woman on which it feeds. I wish simply to make the point that the very evident parasitic nature of cancer should attract more attention from the profession to an antiparasitic method which was brought to the attention of the Section on Practice of Medicine of this Association, at its meeting in 1897, by myself. That is a method by which the electric current is used to cause a chemical disintegration of a growth at once under ether, together with the production of a surrounding zone of sterilization; it produces a zone from an inch and a half to two inches in extent beyond where all tissues are destroyed and beyond where the demarcation commences. In this zone the physician may feel assured that a large proportion, if not all of the germs—by improved technic—may be killed without destruction of the normal tissue cells. This method has been tried in my hands in 42 cases, and I maintain that it is time for one or two other men also to try it. These 42 cases were brought mostly by physicians, most of them having been previously operated on by the knife, 23 of them died of metastases in spite of what I did, the metastases originating prior to the application. Nevertheless, 15 out of the 42 cases are living, and the great bulk of the 15 cures are of more than two years' standing; in several 7 years have elapsed since the application, and in others 5 years, without recurrence.

Dr. R. H. M. Dawbarn, New York—I desire to express my cordial approval of Dr. Bloodgood's advice in favor of the most radical insistence upon extirpation of all tumors, all lumps in the breast of whatever kind. In a great many instances our patients will veto the suggestion, but that does not prevent our duty of proper advice in the case. I have been making a special study of malignant work, especially about the mouth, the regions supplied with blood by the external carotid, and next autumn I shall publish a list of about forty personal operations of that nature. Regarding the operation for cancer of the tongue: 1. The chief cause of death is shock. One chief cause of shock, as we all know, is hemorrhage. There is nothing I am more certain of—differing from Dr. Christian Fenger in this regard—than the wisdom of ligating the external carotid in every case, prior to a complete extirpation of one-half or of the whole tongue. This ligation can be done in five minutes; and, thanks to the early work of Dr. Wyeth, we now know that it is done with great safety; it makes the work done subsequently practically bloodless. We do not, then, need to do a preliminary tracheotomy. 2. If the patient does not die then, but later, what will the cause be generally? It will be sepsis, particularly that of a pneumonic nature, and due to entry of septic discharges from the mouth into the air passages. Apropos of that, I think it is wise to rub the raw surfaces in the mouth with aristol at once. If we adopt that plan, we will have surfaces that will not offensively slough. I do not pack the floor of the mouth with gauze; instead of

packing. I use very frequent irrigation with a fountain syringe. We all know that a considerable percentage of cases of tongue excision die of sepsis. I have lost several myself in my early work from septic pneumonia; these I feel sure that I could now save. The chief cause of death was the position of the patient *post operationem*. In the "International Text-Book of Surgery," in an article on this subject, there is a bit of advice which seems really dangerous; it is that as early as possible patients from whom the tongue has been excised shall be allowed to sit up. On the contrary, I know that they should always be put with the head lower than the foot of the bed, and kept there so long as there is a sloughing condition of the mouth, lest the foul saliva gravitating down the air-passages cause a "schluct-pneumonic." When there is a healthy, odorless, granulation surface, and when control of the stump of the tongue in the act of swallowing is regained, so that coughing does not show that food or drink is passing "the wrong way," then, and not before, it is wise to let the patient's head be elevated—even though this require weeks or longer. In conclusion, let me allude to a point heretofore neglected by operators, but as I believe unwisely. When just a little of the base of the tongue can safely be left attached to the hyoid bone, it is most important that this stump gain power to resume its function of closing down the epiglottis over the larynx in the act of deglutition. I do not know of any text-book that advises what I have practiced, namely, to save the long stump of the healthy twelfth (hypoglossal) nerve, making a little slit in the remainder of the intrinsic muscle of the tongue and sewing with fine catgut into this cut the end of the twelfth nerve—so that this motor nerve may, in time, control the muscle. I have felt encouraged to continue this point in the technic of the operation.

Dr. A. H. Levings, Milwaukee—I desire to call attention to one of the conclusions made in the classic paper by Dr. Senn, namely, regarding the development of carcinoma from epithelial cells. It was stated that all carcinomatous growths were the result of an atypical proliferation of epithelial cells from a matrix of embryonic cells, of congenital or post-natal origin. In the discussion, I desire to call attention very briefly to the histology and embryology of the enamel organ of the teeth. The enamel of the tooth is epiblastic in origin and comes from the epithelial structures lining the mucous membrane of the mouth. If we consider the embryology we find that at about the end of the second month of fetal life a proliferation of the epithelial cells in the form of a half circle and situated directly over the maxillary bones takes place. This growth of epithelial cells dips down as a solid wall into the deeper tissues beneath, or into the mesoblast. From this wall numerous pillars are given off, one for each of the deciduous and permanent teeth. The ends of these pillars become bulbous, forming the enamel of the teeth and enclosing the papillæ. During the fourth or fifth month of fetal life the tooth follicle, made up of connective tissue, encloses the enamel, cutting it off from the above-mentioned pillar. We have then within the mesoblast not only a solid wall of epithelial, embryonal cells skirting the entire area of the jaw, but also some twenty-six columns of cells given off from this wall and projecting into the still deeper tissue. This entire mass of embryonal cells has no further function and is either in part absorbed, or remains dormant and sequestered within the tissue as functionless cell nests. There is no other portion of the body in which there are anything like the same number of dormant, useless, embryonal cells sequestered within the tissues, as occurs within the jaws. It is a well-known fact that epithelial tumors, either cystic or solid, taking origin from these sequestered cells are among the rarest of pathologic curiosities. Up to the present time probably less than a half dozen, and as far as I am aware, but four have been reported. It would be a curious fact were the Remak-Cohnheim theory of the production of tumors correct in all cases, that here in the jaws where these embryonal, sequestered cells are so abundant that epithelial tumors are so infrequent. In so far as my investigation extends I am unable to satisfy myself that the Remak-Cohnheim theory of the causation of tumors is applicable to more than a small proportion of the whole.

Dr. K. A. J. MacKenzie, Portland, Oregon—The weight of evidence from the standpoint of the investigator is strongly in favor of the parasitic theory and this evidence is very strongly enforced by the clinical facts. The concurrent testimony of other investigators in foreign countries who have followed up this line of research is very significant, and the recent work of Leopold, Plimmer, and others affords apparent corroboration of the present work of Park and Gaylord. In considering the clinical evidence one is impressed with the frequency with which the disease develops in regions where there are departures from the normal, anatomic, and physiologic standards. Witness the frequency, for instance, with which the disease develops in such exposed points as the lip, tongue, breast, penis, angle of the eye, skin, chronic ulcers and cicatrices, etc., these facts being very strongly suggestive of an infection introduced from without and not acting from within the body. Within the body we find a strong analogy when we consider that the disease develops at points where the local conditions favor first irritation and subsequently infection. The pylorus, the stomach, the hepatic and splenic flexures, the rectum, the gall tracts, the pancreas, the bladder, etc., all bearing testimony to the topical tendencies of this disease and to an infective process. So apparent is the fact that the inference is just, that the development of carcinoma always predicates, 1, a departure from the anatomic or physiologic standards of the parts and 2, an infection. By parity of reasoning the hope of successful treatment must largely rest in prevention, in the early recognition of all disordered physiologic and anatomic states and their timely correction.

Dr. C. A. Powers, Denver—Dr. Bloodgood spoke of the relative frequency of breast tumors at the Johns Hopkins Hospital, giving, as I remember, a proportion of 426 cases out of 12,000 admissions, or over 3 per cent. of all admissions to the hospital. Possibly such a high ratio may be explained by the fact that the work done there on the breast has attracted to that clinic an unusually large number of breast cases. I think 3 per cent. would be much too high for us to expect as an average. Dr. Weir's operation for cancer of the rectum seems to be an admirable one; thorough, permitting an excellent inspection of the parts, with good control of hemorrhage, and offering a better chance of cure than the Kraske operation. Kraske himself says that most cases of carcinoma of the rectum have a high seat. I fail to understand from Dr. Weir whether the upper fragment comes down easily. In the Kraske operation we find a great deal of difficulty in bringing down the distal end of the upper fragment. It has been my fortune to do five Kraskes, and I look upon it, as we all must, as a dangerous operation. I think it one of the severe operations in surgery; certainly in the hands of the best operators it has a mortality of not less than 20 or 25 per cent.

Dr. W. J. Mayo, Rochester, Minn., in closing—My object in preparing this paper was not to present anything new. The frequency with which operations for appendicitis are now being done, and the evidences that would induce us to operate on cases of appendicitis will lead to many early operations for carcinoma of the cecum, and we should be prepared for that. The two cases in which I succeeded—I believe in securing ultimately successful results—were both induced by a diagnosis of appendicitis. All who operate with that diagnosis ought to prepare themselves for excision of the cecum.

The Blind as Masseurs.—E. Eggebrecht of Leipsic has trained four blind women and nine blind men in the science of massage, and describes his methods and the technique in the *Ztft. f. Diät. u. Phys. Therapie*, V, 2. He believes that it is the duty of physicians to encourage this employment for the blind, not on account of pity for their misfortune, but because they are so exceptionally endowed for it by the development of their sense of touch. A writer in the *Wiener Klin. Woch.* states that the majority of physicians in Austria entirely disapprove of massage by the laity, and consider it incumbent on them to refer patients for massage to young colleagues just entering practice and waiting for clients.

ON THE GROWTH OF EPITHELIUM.*

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In the following I intend to report upon some experiments which were undertaken as a continuation of former work published in 1898, in the *Archiv f. Entwickelungsmechanik*. There are reported observations on the growth of epithelium in the coagulated blood during the healing of wounds. I found that epithelium may branch in the blood. I further gave pictures of epithelium surrounding connective tissue structures and even small particles of cartilage. As observed before, mitoses were found in the deepest rows of the epithelium, but besides these I found pictures which could only be explained as amitoses. These were usually situated in the upper rows of the epithelium. The furrows in the nuclei went so far that an entire separation of the different parts of the nuclei could be observed. Without going into the former literature, which was given in my former publication, there appeared since 1898 three papers on this subject, namely, the papers of Kromayer, Branca and Von Bardeleben.

My further investigations were undertaken: 1. To determine the situation of the blood in the growing epithelium. 2. To exclude the possibility that the blood only secondarily raised the epithelium and separated its different parts. 3. To find a means to bring about such separation of the growing epithelium from the underlying connective tissue in an experimental way, so that we might not need to rely upon accidental observations. An occasional observation was made once before by Garré, who saw that in a transplanted piece of skin a few cells were pushed down into the blood, but he did not observe any extended growth of branching epithelium into the blood. 4. To find out in a general way how frequently it was possible to separate growing epithelium from other growing tissues.

My results are the following: If epithelium penetrates into the blood it surrounds small particles of blood and includes it. We then find single blood corpuscles either included inside the epithelial cell, at the side of the nucleus, or we find them between the epithelial cells in small cavities, surrounded by a distinct membrane. Near such places we may occasionally find mitoses of epithelial cells and pictures which speak in favor of amitotic division.

We also find a larger collection of red blood corpuscles inside the epithelium. Blood corpuscles inside the epithelium did not cause the epithelial cells to become pigmented.

To bring about, if possible, a separation of the growing epithelium from the growing connective tissues, I used the following procedure: A small flap of skin was raised in the ear of the animal; at the point of insertion of the flap a second flap with the cartilage and the deeper structures were cut out with a razor and a piece of agar introduced under the cartilage. Then the skin was placed directly over the agar and the cartilage above the whole was fixed with collodium. Under these conditions a variable quantity of leucocytes is found in the agar and the surrounding tissues. The effect of softening the agar and surrounding tissues by the leucocytes makes it easy for the growing epithelium to penetrate agar and tissues.

We thus find frequently the epithelium growing directly into the agar. Not only the deepest layers of the epithelium invade the agar, but also the upper rows of the regenerating cells may grow upwards into it. New branches are frequently given off. Even single rows of cells may branch into different directions. The epithelial cells under these conditions frequently become spindle shaped.

At other places we find particles of agar surrounded by growing epithelium. Sometimes there are very few leucocytes near or inside the agar; sometimes there are a larger number present. We frequently can observe that the epithelium is not accompanied during its growth into agar by a continuous layer of growing connective tissue. One may perhaps occasionally see besides leucocytes a few cells which might be of connective tissue origin, but at other places we see the epithelium distinctly not accompanied by connective tissue. We may find mitoses in cells directly resting on agar, or inside of a mass of epithelial cells, surrounded by agar; epithelium growing into agar did not usually produce any keratohyalin, nor was there a regular formation of the horny layer. I found that with a few exceptions the epithelium began to undergo these normal changes (the formation of typical keratohyalin and of a horny layer) only after it was again in connection with well-developed connective tissue. The newformed keratin separated the agar and epithelial cells in it from the underlying tissue and the agar was thrown off after a short time. The epithelial nuclei could for some time still be seen as dark rods, situated in filaments which were the remains of the epithelial cells. Occasionally we found in epithelium situated in the agar the beginning of the formation of an epithelial pearl. Under such abnormal conditions I also saw in epithelium which had grown between agar for a longer period and which, therefore, was accompanied by connective tissue, a body very much resembling the cell inclusions seen in carcinomatous cells and by some believed to be parasites.

I found pictures of epithelium beginning to grow into the muscle tissue. The cells which are very much elongated surround the muscle fibers. The conditions necessary for that are probably the same as given above in regard to agar, namely, that there has been previously a dissolving action by leucocytes, although these latter may afterwards absolutely disappear and the epithelial cells alone may then surround the muscle fibers or the parts of cartilage. It is impossible at present to state how much the epithelial cells are aiding this process started by the leucocytes. It is also impossible at present to give with certainty an analysis of the different factors which might come into play during the growth of epithelium, which make the epithelium branch in different directions in the blood or in the agar.

Another and perhaps more satisfactory method for extending experimental studies on different tissues, which may give us the means to investigate their growth under variable external conditions, is the following: A piece of the tissue, in this case of epithelium of the skin, is entirely cut off with a razor and pushed into coagulated blood serum as it is used for bacteriological purposes. The blood serum with the included epithelium is transferred afterwards into a living animal.* After 7 or 10 days we may find that at many places the epithelium has grown inside the blood serum; rows of cells grew into different directions, epithelial cells surround particles of the blood serum, cells branched off and extended

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

* Certain necessary precautions will be described in another paper.

further into the culture medium. Frequently individual epithelial cells included some of the blood serum in vacuoles situated near the nucleus. The periphery of such cells showed repeatedly a distinct radiating striation. Occasionally such cells became even detached from the main mass of cells, they assumed a round shape, but showed even then the characteristic striation and included the blood serum near their nucleus.

There were almost no leucocytes visible at this period and over considerable areas the epithelium was not accompanied by connective tissue. Nevertheless, several mitoses could be seen in the epithelium and always in cells directly in contact or near the blood serum, just as in the ordinary epithelium the mitoses are found near the connective tissue.

The cells and nuclei were usually drawn out as if traction had taken place on the protoplasm of many cells. The cells were not massed together as it would have been expected in case the mitotic division and the pressure resulting from the increased number of cells were the only cause of the ingrowth of the epithelium. It is therefore probable that there are other protoplasmic movements at play besides that connected with the mitotic division of the cells.

In conclusion, it might be stated that during its growth the epithelium forms a mass of cells, all layers of which are equally able to grow in different directions. A distinct differentiation between different rows of these cell masses does not exist. Later on the epithelium which comes into contact with connective tissue well supplied with blood vessels forms again regular epithelium, the lowest rows producing new cells, which now undergo the changes leading to the formation of normal keratohyalin and keratin. We see that these growing cell masses do not need connections with either resting or growing connective tissue; although under the usual conditions found during the growth of epithelium, the epithelial cells are found accompanied by connective tissue. The possibility of separating the growing epithelium from other tissues might be used to subject an isolated tissue like epithelium to certain experimental conditions, as for instance, to the influence of different chemical substances and thus study the reaction of isolated tissues, other than connective tissue and leucocytes to different stimuli.

SOME CONSIDERATIONS REGARDING THE HYGIENE OF EARLY SCHOOL LIFE.*

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The medical man's point of view regarding the hygiene and physical regimen of school life often gives rise to misunderstanding and not infrequently to the most unreasonable opposition from the pedagogue. The physician, says the pedagogue, is too materialistic, is too much occupied with the pathologic side of the child and not infrequently is biased, catering to the hysteric dilettante for the mere sake of humoring the misguided parents.

Under the head of "Mental Fatigue in School"[1] appears, among other propositions of a similar character, the following translation, from a paper by Prof. Albert Spitzner, Leipzig:

"The propositions generally advanced, that present methods of public education imperil the health of children, is not only applied to certain evils for which individual teachers or schools are called to account, but directly attack the normal foundation of a school. The censure of physicians does not refer to the harming of already sick or nervously inclined pupils, but to injury done to mentally and physically normal children, by methods and practices considered normal." Dr. Pellmann, tersely expressing himself, says, "Children work too soon, too much and badly; that is to say, under unfavorable hygienic conditions." In interpreting his meaning we are reminded of the long list of studies, the rushing through of courses, the long duration of hourly, daily, and weekly lessons of useless studies, the method of teaching, unscientific in its disregard of the laws of physiology and purely in favor of psychology, the evil of home tasks which rob children of their short periods of recreation, etc. We receive also the practical suggestion of omitting home lessons, instructing by means of observation lessons, instituting a beneficial interchange of physical and mental occupation, etc.

Further on the paper continues: "It may be truthfully said that the judgment of the medical profession on these matters is not based on an actual, exact, and technical examination of the methods employed, but on inference from facts connected with nervous diseases of children." Psychologic pedagogy must protest against such arguments.

Again, this same report says: "In view of what has been said, the doctrinary foundation upon which the medical profession bases its opinion of psychic and in part physiologic conditions and processes, can not be accepted by teachers who must protect their profession against medicine and its encroachments; that is to say, must place psychologic pathology and pedagogic hygiene and therapeutics in so clear a light that the facts connected with the intellect and the development of children be studied in a manner consistent with their real meaning and pedagogical observation."

This represents briefly the case of the routine pedagogue versus the physician, as regards the school curriculum and its influence upon the development of the child. We may, by reason of our purely materialistic tendencies, have some difficulty in grasping the exact meaning of pedagogic therapeutics and hygiene, as well as psychologic pathology, but otherwise there is certainly no ambiguity in stating the case.

It is perhaps true that the physician is often too radical, and that occasionally when in doubt, liable to err on the side of physical well being. Occasionally he may also be guilty of humoring the wishes of an hysterical parent. Errors of this sort are a necessary concomitant of the imperfections and shortcomings of human reason and human nature. When, however, we study the basis of such criticisms as have been offered by Hasse, Pellmann ,Nathan Oppenheim. Francis Warner, Bowditch, J. M. Rice and others, whose reasons are not based upon inference, but upon the data—possibly yet too meager—furnished by physiologic and anthropometric observations. From data already at our disposal, it is clearly evident, 1, that mental and physical abnormalities exist in school children and, 2, that these abnormalities are always aggravated, if indeed they are not actually produced by pedantic, pseudo-educational methods.

As a matter of fact, the physician's capability and wisdom in educational matters has always been acknowl-

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

1. Report of Commissioner of Education, 1895-6, p. 1191.

edged in the most difficult department of education, that of the mentally and physically defective, i. e., idiots, imbeciles, the feeble-minded and the defective classes. When, indeed, reason becomes deranged he is called upon to restore it to its normal balance, which he often succeeds in doing, not by the administration of medicine, but by the adaptation of wise training and the judicious application of the laws of physical and mental hygiene. It appears, therefore, eminently proper for the physician to interfere in matters relating to school hygiene, even though this may involve the criticism of the curriculum and also some of the more absurd conclusions of psychologic pedagogy.

Very briefly and imperfectly epitomized, the general import of the medical protests against the prevailing public educational methods may be summarized as follows:

1. We insist that there is no evidence by which educational values can be determined, except through the study of material manifestations transmitted through the nervous system. Thought and mind are immaterial, but we have no way of measuring, or estimating the value or extent of their action, except through the evidences of material production. For this reason we are forced to study the physical and physiologic changes produced in the body as the result of psychologic activity.

2. Education produces nothing new in the child; it simply unfolds and brings into intelligible activity the latent forces of the nervous system. Most of us agree with Prof. H. H. Donaldson,[2] who says, "Education consists in the modification of the central nervous system."

3. One of the most important and essential prerequisites necessary for a good education is good nutrition. Psychologically, mind is immaterial, but physiologically, we are forced to the conclusion that sane thought and vigorous intellectual activity is possible only through the medium of brain cells that are well nourished and physiologically active. It appears, therefore, entirely reasonable and logical to conclude that all educational methods which ignore the physiologic evolution of the child, are faulty and open to criticism, from the physiologic and hygienic standpoint. As a matter of fact, we not only ignore the most obvious requirement of practical hygiene in our school curriculum, but we insist upon a uniformity of educational training which is physiologically as absurd as it is impossible of practical application. "In fact," says Dr. Nathan Oppenheim,[3] "I know of no harder experience, no more trying ordeals than what a child at this time undergoes. His experiences in the school environment are designed to encourage irritation and waste of nerve and muscle tissue; the circumstance of instruction are useful for deadening, instead of encouraging, a normal standard of intellectual development."

When we consider how variable is the inherent mental capacity of children, in fact so variable and so difficult to determine that we find it almost impossible to draw a line of demarcation between the normal and the abnormal child; when we consider that this constant variability to respond to educational stimuli, so manifest at all the different stages of development, it becomes evidently absurd to attempt to lay out a uniform system of mental training applicable to all alike, exclusive of pronounced idiots and imbeciles. That this method does injury to a great many children is not only the testimony of physicians, but also of a great many progressive educators and thinkers as well.

Regarding the influence of school life upon normal, healthy children, Dr. Francis Warner, London, says:

"I do not think that the boy or girl at the older ages of school life, who is free from developmental defects of any kind and shows no abnormal nerve signs or indications of delicacy, i. e., the normal child, is very likely to fall into ill health or a nervous condition if a wisely conducted training at school is continued. Of the 100,000 children that I have examined at schools, 80 per cent. of the boys and 84.10 per cent. of the girls were normal and not reported as dull mentally. It is, however, far otherwise with the children who have some defect; anemia, nervous disturbances or hysteria may become manifest as adolescence approaches, especially in girls. When such becomes established, particularly if anemia and nerve disturbance occur together, a long period of ill health may result."[4]

His table of statistics shows, of all cases with developmental defects at all ages, 38.4 per cent. of the girls, and 49.9 per cent. of the boys were mentally dull. Of all dull children, at all ages, 57.6 per cent. boys and 52.6 per cent. girls also presented abnormal nerve signs. This appears to indicate that about 18 per cent. of the children examined have some developmental defect, and that of these defectives 44 per cent. are mentally dull.

It is impossible, by reason of insufficient data, to form a reasonable, accurate estimate of the existing number of defective children which imperatively demand special school training. In Germany and England, where special classes are maintained for defective children, they average about 1 per cent. of the school population. Dr. Charles F. Folsom[5] gives the number of pronounced intellectual idiots and imbeciles as 1 to 650 of population. That we have in our public schools a very large percentage of mentally abnormal and physically defective children who require segregation and special training is evident from the physiologic and anthropometric examinations made in many of our cities.

I have briefly referred to this subject of the dull, the backward and the defective child, to emphasize the practical value of regular, periodic, physiologic examination of school children. Such examinations would disclose incipient cases, classified by teachers as dull, stupid, backward, disorderly or incorrigible, when in reality the child is the subject of some developmental abnormality, which makes ordinary school work intolerable to him. The early discovery of these cases and their segregation for special training is one of the important problems of public school life. Pupils of this character are a drag and a danger to the normal child. I am fully aware of the practical difficulties to be met in a solution of this question; but that these are not insurmountable has been shown by the experience in some of the European countries.

The study of the defective, i. e., the idiot, the feeble-minded, and persons afflicted with sensory aphasia resulting from an injury to the central sensory nerve cells, has made it possible for us to understand in a measure how ideas are built up during the developmental period. The fact that these observations are

2. Growth of the Brain, p. 338.
3. Development of the Child.
4. "The Study of Children," Francis Warner, MacMillan & Co., p. 190.
5. Pepper: System of Med., vol. v, p. 140.

based upon changes that may be termed pathologic does not diminish their practical value.

The mentally defective represents arrested brain nutrition, partial or total, at an early period of development. It was early shown by Dr. Sequin and others that a partial restoration of the dormant nerve cells of the idiotic brain could be effected by the application of judicious training along the lines of primitive development. The recognition of this principle has done wonders for the idiot, so that he has not only been improved, but even educated and cured. These well-known facts are referred to because they clearly indicate that the early school training of the child is largely a problem of localization of stimuli at different points in the nerve centers. This stimulation, if it is not prolonged to such an extent as to produce fatigue, promotes nutrition and tends to the reproduction of the action after a period of rest.

That we have vastly overrated the intellectual value of this formal training to the child there can be no doubt. That we have carried it to unreasonable extremes and burdened it with artificial, psychologic, and other incomprehensible nonsense is undeniable.

Returning again to the normal child, it is a mere truism, often enough reiterated, to state that our schools should have the benefit of good hygiene, good light, proper heating, ventilation and seating. Regarding these matters there is general agreement so that improvements in these departments are simply a matter of financial and mechanical detail. When, however, we come to the more vital and difficult problem of the school curriculum and the general methods of training to be adopted in early school life, viz., the number of hours that should be given each day to purely mental tasks, and the age at which school life should begin, there is very general disagreement between the physician and the routine pedagogue.

When we insist upon the fact that well-known physiologic studies show that the child is an exceedingly immature and delicate animal, undergoing important developmental changes having no analogoues in the adult; that his plastic tissues and delicate nerve cells are easily warped and injured by long-continued mental or physical efforts; when we report that children have actually been injured by injudicious school work, and that for this and other reasons, we favor shorter hours, more attention to the physical side of the child, more nature study out of doors in contact with actual natural objects, less of text-books and less of the exhaustive rote drill, which simply burdens the memory; when we insist upon these things as a natural outcome of the observations of the laws of development, we are told that these are questions of psychologic pedagogy, which must be settled by the pedagogues themselves. While it is true that the practical details must be left to the teachers, it does not follow that they are to control absolutely the principles upon which we desire to have our children educated. This would be equivalent to saying that we, as physicians, should have absolute control over the treatment of our patients, irrespective of the consent of the patient and his family. The absurdity of such a proposition is still more apparent when we consider the fact that the pedagogues disagree on both diagnosis and treatment.

As regards the claim that physicians base their criticism upon inference, it can be very easily shown that this is not the fact. As an illustration, I submit the following case:

O. N. is aged nearly 10 years, at the opening of school, September, 1900. Stature, weight and development are normal. There are no physical defects, unless left-handedness can be so called. He has attended public school since 7 years of age. Mental faculties are good, except a little slow to learn to repeat texts from memory. The daily attendance at school from 9 a.m. to 12; and from 1:15 to 4 p.m. At the opening of the school year this boy is in good flesh, with nutrition, sleep, appetite and digestion good, presenting in every way the physical features of a normal, vigorous boy. After some months of school each year he gradually grows thinner, becomes restless, nervous, fidgety and shows dark lines under the eyes. Toward the end of the school year these symptoms increase, the nervousness increases, digestion and nutrition are disturbed. He talks in his sleep, gets out of bed at night, wandering about the room, talking about his examples and his examinations. During the summer vacation, which lasts about three months, the abnormal physical symptoms gradually disappear, physical vigor is restored, the nervousness disappears and sleep becomes quiet and peaceful. This result occurs without medical treatment or change in the environment, except the omission of school work.

Now, is it mere inference when I say that the abnormal physical disturbances in this case are due to the fatigue produced by faulty educational methods? I have at two different periods of three months each taken this boy out of school and placed him under private instruction, with the result that he would accomplish fully as much intellectually in two hours' instruction per day as he did in six hours at school.

That cases of this sort are of common occurrence is well known to every observant practitioner. That injury is done in these cases is undeniable. That these abnormal consequences of pseudo-educational methods can and must be prevented, without detriment or hindrance to the child's intellectual development, is unquestionable.

Granted that our diagnosis is correct, rational preventive treatment would appear to be along lines already indicated, namely, the shortening of hours of the primary school to, say, one hour in the forenoon and one hour in the afternoon. If more time is to be taken up at school, it should be devoted to Slöyd or manual training, together with the study of Nature and natural life and its activities, as it exists in the child's environment.

That this is practically possible, and that the results are exceedingly favorable, has been shown by the experience at Girard College and other similar institutions. The elementary school of the University of Chicago, under Professor John Dewey, is a most excellent demonstration along the same lines.

Regular periodic medical inspection, which should include physiologic and anthropometric examination of the school-children, should be a requirement in all public schools. These examinations would not only furnish valuable physiologic and anthropometric data, but would disclose cases of infections and other communicable diseases. They would also detect mental and physical defects—stigmata—not readily recognized by parents and teachers. These children with marked mental and physical abnormalities, developmental defects, or stigmata, should be segregated for special training. Every town with a school population of from 800 to 1000 will have a sufficient number of children of this sort to fill a room, which should be in charge of a per-

son having the exceptional qualifications necessary for success in this kind of work.

DISCUSSION OF PAPERS IN SYMPOSIUM ON SCHOOL HYGIENE.*

Dr. C. F. Wahrer, Fort Madison, Iowa—The series of papers on backward children showed a difference of opinion as to where the line of demarcation is to be placed between backward and normal children, and again between backward and defective children. In one of the papers appears the suggestion that for these backward children special schools should be maintained. This would be placing upon these unfortunate children a stigma which they do not deserve. To take a child who is pronounced to be backward by a teacher who has not made a special effort to develop the latent mental powers of the child, and place it in such special school seems to me entirely wrong. The best talent of the teacher should be brought to this work of developing the mental powers. A child may be backward only when forced to go in a direction counter to his natural trend, and prove to be a genius when allowed to develop in his proper direction.

Dr. Shelly, of Kansas—It seems that where a child under 10 or 12 years of age in a country school is brought into contact with a child in a city school it is found that the country child surpasses the city child. If anyone else has made this observation I should like to know it.

Dr. Clifton Scott, Des Moines—I do not think that the observation made by the last speaker is correct. I observed in one school that the country boys easily became leaders in their classes but that many of the "town" boys did just as well. It was only the boys from the country who had a special ambition to get a good education, and who were earnest in their work that came to the school, and this in itself would explain the difference, as it is not fair to compare these select few from the country with the city boys as a whole. The reason that Austin Flint was the greatest physiologist in this country was because he had specially good opportunities in early life. Much depends upon these early advantages, though I would not have it understood that I believe in crowding studies upon young children. However, the disadvantages from the loss of good, early opportunities can never be overcome.

Dr. Edwin Rosenthal, Philadelphia—In our city we have a wonderful institution, the Girard College. The plan adopted there is to teach the scholar aged from 6 years upward. Occasionally they meet with children who can not be taught, and all that they have been able to do with these is to make farmers of them.

Dr. James Work, Elkhart, Ind.—We have had papers presented this afternoon from so many different States that it is evident that the subject commands a very general interest. I infer from this that there must be a widespread defect in our school system, or else that we must be a degenerate race. I am of the opinion that the classification in our schools according to intellect is not carried out sufficiently, hence the studies are not well adapted to the individual needs of the pupils. I was much interested in what Dr. Darnall said about the ill effects of closely-fitting clothing, for, I believe it is a factor of considerable importance. In dressing children it is important to secure equal warmth and equal pressure when selecting their clothing. I am satisfied that physicians as a rule are not sufficiently emphatic in impressing upon parents, who have the greatest interest in our schools, the importance of the pupils attending to the organs of elimination. These organs are the bowel, skin, kidneys and lungs. One must expect a child to be dull if it goes to school daily without having had a proper evacuation of the bowel, or if baths are not had two or three times a week. Too, some of us do not understand the first principles of preparing food for children. The great need in most of our schools is that we have trained mothers at home.

Dr. A. W. Wilmarth, Chippewa Falls, Wis.—Mention has been made of the establishment of schools for backward children. Such schools have been already established in Providence and in Philadelphia. It would be well if teachers could give more time to individual pupils, but this is utterly impossible in the present state of our schools. Some provision must be made for these children.

Dr. B. R. Shurly, Detroit—It seems to me that one remedy is to be found in giving medical advice to the school board. Every such board in our larger cities employs legal counsel, yet, so far as I know, medical advice and supervision in our schools are sadly neglected. Along this line we certainly have work to do which will prove of great advantage to children, and particularly to those who are backward.

Dr. W. T. Learned, Fall River, Mass.—I have been interested in this subject since the rearing of my first-born child without his mother. I followed out the plan then in vogue of giving two waters and one milk, but finding that he did not do well I soon increased the proportion until the whole milk was given, and then the improvement was marked. I made the interval three hours, and the quantity that which the child could digest and be hungry by the time of the next feeding. This resulted in natural development. His school work began between the age of 11 and 12, at which time he weighed about 100 pounds. Field work was made a part of his education, and at the age of 18 he weighed 185 pounds. At the age of 21 he entered a university to study law, and passed with honor at the end of one, instead of two years. This picture is presented, not to show that there was anything unusual about the boy, but to emphasize what can be done by an entire freedom from cramming and the maintenance of good health. A moderate amount of brain work and the determination to do something constitute, in my opinion, the best education that we can give our boys and girls. I am totally opposed to the custom of putting a little one of 3 years in a kindergarten and keeping him in school until a diploma is presented as evidence of education. It seems to me that there is no greater defect than that of so drilling and perfecting children in tuition that they can get a living without work.

Dr. J. Noer, Stoughton, Wis.—I wish to emphasize that cases like the one I reported are common. By taking a child out of school and placing him under a private tutor for two hours a day he can accomplish just as much as in six hours at school, while at the same time the nervous symptoms will disappear. I fully concur with Dr. Rosenthal that the method pursued in Girard College is an ideal one. An experiment along the same line is now going on in Chicago, in the Elementary School of the University of Chicago, in charge of Professor John Dewey. It seems to me that this opens up a great field for improvement in the education of young children. I have given this subject considerable attention as a physician and as a member of a school board, and I can not resist the conclusion that there is altogether too much pressure used in conjunction with the early education of the growing child. The physician has a duty to perform in this matter and he ought to use his influence for improvement. He should also be prepared to give an intelligent explanation of the physiologic side of this question to teachers and parents.

* Papers by Drs. Baker, Wilmarth, Makuen and Wahrer published Oct. 12, 1901.

Tuberculosis as a Professional Disease.—The French law on industrial accidents is being revised, and one of the amendments proposed urges that tuberculosis be included in the list of professional affections, and that the latter should be regarded as industrial accidents and entail the same responsibility on the proprietor of the establishment. The *Progrès Médical* observes that if this amendment could be adopted the prophylaxis of tuberculosis in large cities would be immeasurably promoted. The victims of professional affections, it states, are more deserving of interest than the victims of industrial accidents, as the latter are frequently due to some imprudence on the part of the workman, while a professional affection is almost invariably the result of the negligence of the proprietor to provide sanitary conditions or to his insisting upon the use of a poisonous substance, because it is cheaper, when a harmless substitute is available. To include tuberculosis among the professional diseases, it adds, and to enforce the penalties, would do more for actual progress than twenty anti-tuberculosis congresses.

THE OFFICIAL REPORT ON THE CASE OF PRESIDENT M'KINLEY.

SURGICAL HISTORY.

President William McKinley was shot, by Leon F. Czolgosz, in the Temple of Music, at the Pan-American Exposition, Buffalo, N. Y., at about 7 minutes past 4 on the afternoon of Friday, September 6, 1901. Two shots were fired. One bullet struck near the upper part of the sternum, and the other in the left hypochondriac region. The President was immediately conveyed to the Emergency Hospital on the Exposition grounds by the motor ambulance, where he arrived at 4:18. Dr. G. McK. Hall and Mr. Edward C. Mann, medical student, of the house staff, were in charge of the ambulance, Medical Student T. F. Ellis being the driver.

On arriving at the hospital, President McKinley was at once placed upon the table in the operating room and undressed. During the removal of his clothing a bullet fell out and was picked up by Mr. Ellis. Dr. Hall placed a temporary antiseptic dressing over the wounds, and Mr. Mann ordered a nurse to administer 0.01 gm. of morphin and 0.002 gm. of strychnin hypodermically.

Dr. Herman Mynter, who had been telephoned from police headquarters to report immediately at the Exposition hospital, was the first surgeon to arrive, at 4:45 o'clock. At that time Drs. P. W. Van Peyma and Joseph Fowler, of Buffalo, and Dr. Edward Wallace Lee, of St. Louis, were present. Dr. Mynter brought with him Dr. Eugene Wasdin, of the United States Marine-Hospital Service.

Dr. Mynter inspected the President's wounds, and immediately saw their serious nature. He told the President that it would be necessary to operate, and at once set about making preparations, aided by the house staff and nurses and Dr. Nelson W. Wilson, Sanitary Officer of the Exposition, who at that time assumed charge of the hospital in the absence of Dr. Roswell Park, the Medical Director of the Exposition. The President's pulse on the arrival of Dr. Mynter was 84; he had no particular pain in the abdomen, and no apparent loss of liver dulness. He was evidently slightly under the influence of the morphin.

Dr. Matthew D. Mann arrived at the hospital at 5:10 p. m., having been telephoned for by Mr. John C. Milburn. He was followed, five minutes later, by Dr. John Parmenter.

An examination was at once made, followed by a short consultation between Drs. Mann, Mynter and Wasdin, which resulted in the decision to operate at once. The necessity for the operation was explained to President McKinley, and he gave his full consent. Immediate operation was decided upon because of the danger of possible continued internal hemorrhage and of the escape of gastric or intestinal contents into the peritoneal cavity, and because the President's pulse was getting weaker. Moreover, the daylight was rapidly failing. Dr. Roswell Park, who, by virtue of his office, had he been present would have performed the operation, was at Niagara Falls, and although a special train had been sent for him, it was uncertain when he would arrive.

Dr. Mann was selected to do the operation, with Dr. Mynter as his associate, by the common consent of the physicians present and at the request of Mr. Milburn, president of the Pan-American Exposition, who stated that he had been requested by President McKinley to select his medical attendants. Dr. Mann selected Drs. Lee and Parmenter as assistants.

At 5:20 Dr. Mann directed the administration of ether to President McKinley, and requested Dr. Wasdin to administer it. Ether was chosen as being, on the whole, the safer anesthetic. While the anesthetic was being given the surgeons who were to take part in the operation prepared their hands and arms by thoroughly scrubbing with soap and water and immersing them in a solution of bichlorid of mercury.

The operation began at 5:29. Dr. Mann stood upon the right-hand side of the patient, with Dr. Parmenter on his right-hand side. Dr. Mynter stood upon the left-hand side of the patient, and on his right was Dr. Lee. To Drs. Parmenter and Lee were assigned the duties of sponging and the care of the instruments. Dr. P. M. Rixey, U. S. N., President McKinley's family physician, having been detailed by the President to accompany Mrs. McKinley to the Milburn home, did not arrive until 5:30, when he gave very efficient service by guiding the rays of the sun to the seat of the operation by aid of a hand-mirror, and later by arranging an electric light. Dr. Roswell Park arrived just as the operation on the stomach was completed, and gave his aid as consultant. Mr. E. C. Mann had charge of the needles, sutures and ligatures. Mr. Simpson, medical student, was at the instrument tray.

The nurses, under the charge of Miss A. C. Walters, superintendent of the hospital, were Miss M. E. Morris and Miss A. D. Barnes, with hands sterilized; Miss Rose Baron, Miss M. A. Shannon and Miss L. C. Dorchester, assistants, and Miss Katharine Simmons attending the anesthetizer.

Besides those immediately engaged in the operation, there were present Drs. P. W. Van Peyma, Joseph Fowler, D. W. Harrington and Charles G. Stockton, of Buffalo, and Dr. W. D. Storer, of Chicago.

THE OPERATION.

President McKinley took the ether well, and was entirely under its influence in nine minutes after the beginning of the anesthetization. The abdomen was carefully shaved and scrubbed with green soap, and then washed with alcohol and ether and the bichlorid solution.

Inspection showed 2 wounds made by the bullets. The upper one was between the second and third ribs, a little to the right of the sternum. The use of a probe showed that the skin had not been penetrated, but that the bullet had probably struck a button or some object in the clothing which had deflected it. The lower wound made by the other bullet—a 32-caliber—was on a line drawn from the nipple to the umbilicus. It was about half-way between these points, and about 5 cm. to the left of the median line. A probe showed that this wound extended deeply into the abdominal walls, and that the direction was somewhat downward and outward.

An incision was made from the edge of the ribs downward, passing through the bullet wound and nearly parallel with the long axis of the body. A deep layer of fat was opened, and followed by incision of the fascia and muscles to the peritoneum. After cutting through the skin, a piece of cloth, undoubtedly a bit of the President's clothing, was removed from the track of the bullet, a short distance below the skin.

On opening the peritoneum, the finger was introduced and the anterior wall of the stomach palpated. An opening was discovered which would not quite admit the index finger. This opening was located near the greater curvature of the stomach, and about 2 cm. from the attachment of the omentum; its edges were clean-cut and did not appear to be much injured.

The stomach was drawn up into the operation wound, and the perforation very slightly enlarged. The finger was then introduced and the contents of the stomach palpated. This was done to see if the stomach contained food, and also with the hope that possibly the bullet might be in the stomach. The stomach was found to be half-full of liquid food, but no evidence of the ball was discovered. In pulling up the stomach a small amount of liquid contents escaped, together with a good deal of gas. The tissues around the wound were carefully irrigated with hot salt solution and dried with gauze pads. The perforation in the anterior stomach wall was then closed with a double row of silk suture (Czerny-Lembert). The sutures were not interrupted with each stitch, but 4 stitches were introduced before the ends were tied. The loop was then cut off and the suture continued. About 8 stitches were used in each row. The silk used was fine black silk, the needle being a straight, round sewing needle.

In order to examine the posterior wall of the stomach, it was necessary to enlarge the incision, which now reached about 15 cm. in length. The omentum and transverse colon were

pulled well out of the abdomen. The omentum was enormously thickened with fat and very rigid. In order to reach the back wall of the stomach, it was necessary to divide about 4 inches of the gastrocolic omentum, the cut ends being tied with strong black silk in 2 masses on each side. In this way the stomach could be drawn up in the operation wound, and the bullet wound in its posterior wall reached. This opening was somewhat larger than that in the anterior wall of the stomach, and had frayed and blood-infiltrated edges. Its exact location was impossible to determine. but it appeared to be near the larger curvature.

This opening was closed in the same way as the anterior wound, but with great difficulty, as the opening was down at the bottom of a deep pocket. A short curved surgical needle was necessary here. Little or no gastric contents appeared around this opening, but after it had been closed the parts were carefully irrigated with hot salt solution.

The operation on the stomach being now finished, Dr. Mann introduced his arm so as to palpate carefully all the deep structures behind the stomach. No trace of the bullet or of the further track of the bullet could be found. As the introduction of the hand in this way seemed to have a bad influence on the President's pulse, prolonged search for further injury done by the bullet or for the bullet itself was desisted from. The folds of the intestine which had been below the stomach were inspected for injury, but none was found. The entire gut was not removed from the abdomen for inspection, as the location of the wound seemed to exclude its injury. To have made a satisfactory search for wounds in the President's back, it would have been necessary to have entirely eviscerated him. As he was already suffering from shock, this was not considered justifiable, and might have caused his death on the operating table.

Before closing the abdominal wound, Dr. Mann asked each of the surgeons present, whether he was entirely satisfied that everything had been done which should be done, and whether he had any further suggestions to make. Each replied that he was satisfied. The question of drainage was also discussed. Dr. Mynter was in favor of a Mikuliez drain being placed down behind the stomach-wall. Dr. Mann, with the concurrence of the other surgeons, decided against this, as being unnecessary.

As the last step in the operation, the tissues around the bullet track in the abdominal wall were trimmed, in order to remove any tissue which might be infected. The abdominal wound was then closed with 7 through-and-through silkworm-gut sutures, drawn only moderately tight, the superior layer of the fascia of the rectus muscle being joined with buried catgut. The edges of the skin were brought together by fine catgut sutures. Where the bullet had entered there was slight gaping of the tissues, but it was not thought advisable to close this tightly, as it might allow of some drainage. The wound was then washed with hydrogen dioxid and covered with aristol powder and dressed with sterilized gauze and cotton, which were held in place with adhesive straps. Over all was put an abdominal bandage.

The President bore the operation very well. The time from the beginning of the administration of the anesthetic until its discontinuance was exactly an hour and 31 minutes; the operation was completed at 6:50 p. m., having lasted from the time of the first incision, an hour and 21 minutes. At the beginning of the operation President McKinley's pulse was 84. At 5:38, 0.002 gm. of strychnin was administered hypodermically. At 5:55 the respiration was 32 and the pulse 84—both good in character. At 6:09 the pulse was 88. At 6:20 it was 102, fair in character; respiration 39. At 6:22, 1.50 gm. of brandy was administered hypodermically. At 6:48 the pulse was 124, the tension good but quick; respiration 36. At 7:01, after the bandage was applied, the pulse was 122 and the respiration 32. At 7:17, 0.004 gm. of morphin was administered hypodermically.

At 7:32 the patient was removed from the hospital in the ambulance. Dr. Rixey asked Drs. Park and Wasdin to go in the ambulance as his duty called him to go at once to inform Mrs. McKinley of her husband's condition and to prepare a room for his reception. Drs. Mann and Mynter, with friends of the President, followed in carriages immediately after. President McKinley had not then recovered from the anesthetic. He bore the journey to Mr. Milburn's house exceedingly well, but it was found necessary to give him a small hypodermic injection of morphin during the transit, as he was becoming very restless. On arrival at the house of Mr. Milburn, 1168 Delaware Avenue, he was removed from the ambulance on the stretcher, and carried to a room in the northwest corner of the house, where a hospital bed had been prepared for him.

REMARKS ON THE OPERATION, BY MATTHEW D. MANN, M.D.

The difficulties of the operation were very great, owing partly to the want of retractors and to the failing light. The setting sun shone directly into the room, but not into the wound. The windows were low and covered with awnings. After Dr. Rixey aided us with a hand mirror, the light was better. Toward the end of the time a movable electric light with reflector was put in use. The greatest difficulty was the great size of President McKinley's abdomen and the amount of fat present. This necessitated working at the bottom of a deep hole, especially when suturing the posterior wall of the stomach.

The operation was rendered possible and greatly facilitated by a good operating table and the other appliances of a hospital, and by the presence of many trained nurses and assistants. Still, the hospital was only equipped for minor emergency work, and had but a moderate supply of instruments. Unfortunately, when called I was not told what I was wanted for, and went to the Exposition grounds entirely unprepared. Dr. Mynter had his large pocket case, the contents of which were of great use.

As has already been noted, further search for the bullet was rendered inadvisable by the President's condition. The autopsy shows that it could not have been found, and that the injuries inflicted by the bullet after it passed through the stomach were of such a nature as to render impossible and unnecessary any further surgical procedure. A bullet after it ceases to move does little harm. We were often asked why, after the operation, we did not use the *x*-ray to find the bullet. There were several reasons for this. In the first place, there were at no time any signs that the bullet was doing harm. To have used the *x*-ray simply to have satisfied our curiosity would not have been warrantable, as it would have greatly disturbed and annoyed the patient, and would have subjected him also to a certain risk. Had there been signs of abscess-formation, then the rays could and would have been used.

My reason for not draining was that there was nothing to drain. There had been no bleeding nor oozing; there was nothing to make any discharge or secretion; the parts were presumably free from infection, and were carefully washed with salt solution. As there was no peritonitis and the abdomen was found postmortem to be sterile, we may safely conclude that no drainage could have been provided which would have accomplished anything. My experience teaches me never to drain unless there is a very decided indication for it, as a drain may do harm as well as good.

In conclusion, I wish to thank all the gentlemen who so kindly and skilfully assisted me. They were all surgeons of large experience in abdominal surgery, and their aid and advice were most valuable. Especially I wish to acknowledge my great obligation to my associate, Dr. Mynter. Not only was he an assistant, but he was much more, and helped me greatly by his skill and, as a consultant, with his good judgment and extensive knowledge of abdominal work. Although called first, he waived his claim, and generously placed the case in my hands, willingly assuming his share of the responsibility.

The anesthetic was most carefully administered by Dr. Wasdin, and the knowledge that he had charge of this very important duty relieved me of any anxiety on that score.

In the eventful week that followed the operation, Dr. Park and Dr. McBurney were towers of strength in helping to decide the many difficult questions which came up.

Dr. Rixey was in constant charge of the sick-room, aided later by Dr. Wasdin, who was detailed for this special duty. Both were unremitting in their care, and faithful to the end.

Dr. Stockton helped us in the last 3 days with the highest skill and best judgment.

Never, I am sure, under like circumstances, was there a more harmonious or better-agreed band of consultants. That our best endeavors failed was, I believe, no fault of ours; but it must be an ever-living and keen regret to each of us, that we were not allowed the privilege of saving so noble a man, so attractive a patient, and so useful a life.

THE AFTER-TREATMENT.

When put to bed the President was in fair condition: Pulse, 127; temperature, 100.6 degrees; respiration, 30. The nurses on duty were Miss K. R. Simmons and Miss A. D. Barnes, from the Emergency Hospital. Soon after his arrival, at 8:25, he was given morphin, 0.016 gm., hypodermically. There was slight nausea. The pulse soon improved. During the evening the patient slept at intervals, vomiting occasionally, but rallied satisfactorily. A slight discoloration of the dressings was noted at 10:45. There was occasional and slight pain. Ninety cc. of urine was voided, and an enema of salt solution given and retained.

SECOND DAY, SATURDAY, SEPTEMBER 7.

After midnight the patient slept a good deal; he was free from pain and quite comfortable.

At 6 a. m., the temperature was 102; pulse, 110; respiration, 24.

Gas in large quantities was expelled from the bowels. A saline enema was given as before. Miss Simmons and Miss Barnes were replaced by Miss Maud Mohan and Miss Jane Connolly. Miss E. Hunt, of San Francisco, Cal., Mrs. McKinley's nurse, also rendered assistance, and Miss Grace Mackenzie, of Baltimore, Md., arrived September 9, and was detailed for regular duty. P. A. Eliot, J. Hodgins and Ernest Vollmeyer, of the U. S. A. Hospital Corps, were detailed as orderlies.

During the forenoon, 0.01 gm. of morphin was administered hypodermically.

At 1:15 p. m., a saline enema of 500 cc. was given. As the pulse was rising, 0.06 gm. of fluid extract of digitalis was injected hypodermically.

The President rested quietly until 6:30 p. m., when he complained of intense pain in the pit of the stomach, and was given 0.008 gm. morphin sulphate hypodermically. He was very restless, but after being sponged rested again.

At 6:30 p. m., the pulse was 130; temperature, 102.5; respiration, 29.

During the day the digitalis, morphin and saline enemas were kept up at regular intervals; 4 gm. of somatose were added to the water at 10:30 p. m. At 11:15 p. m. the President passed from the bowels 240 cc. of a greenish colored fluid and some particles of fecal matter.

The total amount of urine for 24 hours was 270 cc.

FIRST URINALYSIS, BY DR. H. G. MATZINGER.

Quantity	30 cc.
Color	dark amber
Reaction	strongly acid
Urea	0.028 gm. per 1 cc. of urine
Albumin	a trace
Phosphates and chlorids	normal
Sugar	none
Indican	very small amount

Microscopic Examination.—The sediment obtained by centrifuge shows a large amount of large and small epithelial cells with some leucocytes and occasional red cells. There is a comparatively large number of hyaline casts, principally small, with some finely granular ones; also an occasional fibrinous one. The amount of sediment is large for the quantity of urine submitted. There were no crystals in the sediment.

THIRD DAY, SUNDAY, SEPTEMBER 8.

During the early morning the President slept a good deal, but was restless, and at times confused and a little chilly. On the whole, he passed a fairly good night.

He expelled a little gas and brown fluid from the rectum. The digitalis was continued, and at 7:45 a. m., 0.002 gm. of strychnin was given hypodermically. At 8:20 a. m. he was clear and bright, with the pulse strong and of good character.

The wound was dressed at 8:30, and found in a very satisfactory condition. There was no indication of peritonitis. Pulse, 132; temperature, 102.8; respiration, 24.

The dressing on the wound was changed because there was some exudation. The bullet track was syringed out with hydrogen dioxid. There was very little foaming, and there were no signs of pus.

At 10:40 a. m., following an enema of epsom salts, glycerin and water, he had a small stool with gas, and another at noon. He was less restless and slept a good deal.

At noon Dr. Charles McBurney joined the medical staff in consultation, having been summoned by Dr. Rixey.

Bulletin 14, 12 m.—The improvement in the President's condition has continued since the last bulletin. Pulse, 128; temperature, 101°; respiration, 27.

During the day he continued to improve; he slept 4 or 5 hours and his condition was satisfactory.

At 4:45 p. m. he was given a teaspoonful of water by the mouth; also an enema of sweet oil, soap and water. He passed slightly colored fluid with some little fecal matter and mucus. After this he had a small quantity of water by the mouth, and at 6:20 p. m. a nutritive enema of egg, whiskey and water, which was partly retained. Digitalis and strychnin were both given during the evening.

At 9 p. m. the President was resting comfortably. The pulse was 130; temperature, 101.6; respiration, 30.

Four hundred and twenty c.c. of urine were passed during the day.

SECOND URINALYSIS.

Quantity	450 cc.
Color	amber, slightly turbid
Reaction	strongly acid
Specific gravity	1.026
Urea	0.038 gm. per 1 cc. of urine
Albumin	mere trace
Sugar	none
Indican	abundant
Sulphates	increased
Phosphates	somewhat increased
Chlorids	somewhat increased

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows fewer organic elements. Some large and small epithelial cells and some leucocytes. Casts are not so abundant as yesterday and are *principally* of the small finely granular variety. There is a marked diminution in small renal epithelial cells.

Quite a quantity of large crystals of uric acid and bacteria are present.

FOURTH DAY, MONDAY, SEPTEMBER 9.

The bulletins tell the story of the fourth day.

Bulletin 17, 6 a. m.—The President passed a somewhat restless night, sleeping fairly well. General condition unchanged. Pulse, 120; temperature, 101°; respiration, 28.

Bulletin 18, 9:20 a. m.—The President's condition is becoming more and more satisfactory. Untoward incidents are less likely to occur. Pulse, 122; temperature, 100.8°; respiration, 28.

Bulletin 19, 3 p. m.—The President's condition steadily improves and he is comfortable, without pain or unfavorable symptoms. Bowel and kidney functions normally performed. Pulse, 113; temperature, 101°; respiration, 26.

Bulletin 20, 9:30 p. m.—The President's condition continues favorable; Pulse, 112; temperature, 101°; respiration, 27.

Codeia was substituted for morphia, as the pain was less. Digitalis and strychnin were stopped. Nutritive enemas were given at 3:20 a. m., at 4:30 and 10 p. m. Hot water was taken quite freely by the mouth.

Attempts to get a good movement of the bowels were successful at noon, when he had a large, light-brown, partly-formed stool. This followed a small dose of calomel and a high enema of oxgall.

On the whole, the President's condition improved steadily during the day. He slept a good deal and was fairly comfortable. There was no pain on pressure over the abdomen.

THIRD URINALYSIS.

Quantity received	540 cc.
Color	amber, slightly turbid
Specific gravity	1.026
Albumin	a trace
Indican	not so abundant as yesterday
Urea	0.047 gm. per cc. of urine
Chlorids and phosphates	about normal
Sulphates	still somewhat high
Sugar	none

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows a decrease in the amount of organic elements and an increase of amorphous urates, but fewer crystals of uric acid. Casts are fewer and only the small granular and large hyaline varieties. The proportion of casts is greater. There are very few epithelial cells, mostly of renal type. A large number of cylindroids are found.

FIFTH DAY, TUESDAY, SEPTEMBER 10.

Soon after midnight the President had a high enema of soap and water, which was expelled, together with some fecal matter. He took hot water frequently, and slept a good deal.

Bulletin 21, 5:20 a. m.—The President has passed the most comfortable night since the attempt on his life. Pulse, 118; temperature, 100.4°; respiration, 28.

On awaking he felt very comfortable, and his mind was clear and cheerful. The nutritive enemas were kept up, and water given by the mouth. Had 2 small stools during the day. The only medicine given was one hypodermic of codeia phosphate, 0.015 gm.

In the evening the dressings were examined, and as there was considerable staining from the discharge, it was thought best to remove four stitches and separate the edges of the wound. A little slough was observed near the bullet track, covering a space nearly an inch wide, the thickness of the flaps. The separation seemed to extend down to the musele. The surfaces, except those mentioned, looked healthy, but not granulating. It was supposed that the infection of the wound occurred either from the bullet or from the piece of clothing carried into the wound at the time of the shooting. The parts were thoroughly washed with hydrogen dioxid and packed lightly with gauze, and held together with adhesive straps.

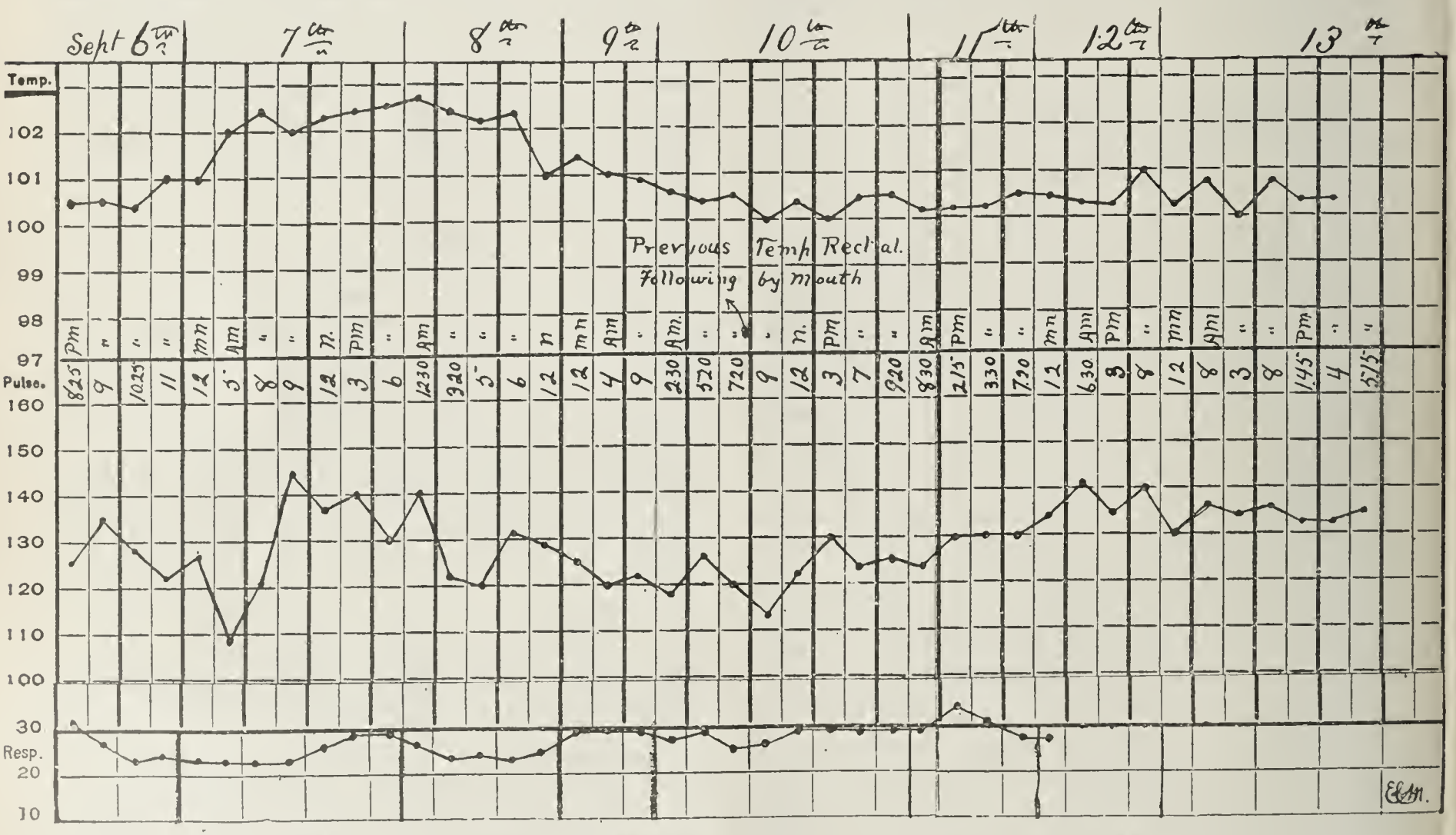


CHART OF PULSE, TEMPERATURE AND RESPIRATIONS. CASE OF PRESIDENT M'KINLEY.

SIXTH DAY, WEDNESDAY, SEPTEMBER 11.

Bulletin 26, 9 a. m.—The President rested comfortably during the night. Decided benefit has followed the dressing of the wound made last night. His stomach tolerates the beef juice well, and it is taken with great satisfaction. His condition this morning is excellent. Pulse, 116; temperature, 100.2°.

Bulletin 27, 3:30 p. m.—The President continues to gain, and the wound is becoming more healthy. The nourishment taken into the stomach is being gradually increased. Pulse, 120; temperature, 100.2°.

Bulletin 28, 10 p. m.—The President's condition continues favorable. Blood count corroborates clinical evidence of the absence of any blood poisoning. He is able to take more nourishment and relish it. Pulse, 120; temperature, 100.4°.

The blood count made by Dr. Wasdin in the evening was as follows:

Leucocytes	6,752
Red cells	3,920,000

A little after midnight, Wednesday morning, the patient was given 4 cc. of beef juice, the first food taken by the stomach. It seemed to be very acceptable. Nutritive enema was given at 2 a. m.; later there was a yellow stool.

From 4 to 8 c.c. of beef juice were given every 1 to 2 hours during the day. The rectum was becoming irritable, and did not retain the nutritive enemas well.

At 10 a. m. the remaining stitches were removed, the wound separated and dressed. It seemed to be doing well. Most of the sloughing tissue had separated.

The patient slept much during the day, and expressed himself as feeling very comfortable. The only medicine administered was 1 hypodermic of strychnin.

In the evening he was changed to a fresh bed. Nutritive enemas were continued.

Urine was passed much more freely—750 cc. in 24 hours.

FOURTH URINALYSIS.

Quantity	82 cc.
Color	amber, clear
Specific gravity	1.027
Reaction	strongly acid
Albumin	a trace
Indican	abundant
Urea	0.04 gm. per 1 cc. of urine
E. phosphates and chlorids	normal
Sulphates	still a little high

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows a marked diminution in amount of organic elements, but a great increase in uric acid crystals.

There are very few epithelial cells—mostly of renal type.

There are fewer casts small and large hyaline—some finely granular.

Cylindroids are more abundant.

SEVENTH DAY, THURSDAY, SEPTEMBER 12.

The President slept a good deal during the night and awoke in the morning feeling better. The beef juice was continued and increased, and a little chicken broth added to the dietary. He also had a little whiskey and water.

At 8:30 a. m. he had chicken broth, a very small piece of toast and a small cup of coffee. He did not care for the toast, and ate scarcely any of it.

The wound was dressed and washed with a weak solution of iodin and then with hydrogen dioxid. He was given 30 cc. of castor oil at 9:20 a. m.

The President now seemed at his best and his condition to warrant the favorable prognosis given out. The time for peritonitis and sepsis had passed. The bowels had moved and gas passed freely, showing that there was no obstruction. The tongue was clear, and the appetite increasing; and he seemed to be able to digest food. There was no pain nor tenderness in the abdomen, and he was able to turn easily and to sleep on his side. The urine was steadily increasing. His spirits were good and his mind clear, while his pulse, though frequent, was strong and of good quality, and the temperature low.

The analysis of the urine gave no uneasiness, as the amount of urea was fair; there was no albumin worth considering, and the casts were rapidly diminishing. There were no more of them than are found in a large percentage of cases following a long operation under ether. The excess of indican was taken to mean merely some intestinal indigestion, and to be of no serious import. The only symptom to cause any uneasiness was the frequency of the pulse. Still, anxiety on this score was relieved by knowing that the President had naturally a rapid pulse, and that it was easily excited. The open wound was not considered important. It looked healthy, and, although it would take a long time to heal, in itself it was evidently causing no harm, nor was it likely to.

Dr. McBurney left Buffalo for his home in the morning, having arranged to return at once if his presence was desired.

Toward noon it was noticed that the character of the pulse was not quite so good. Infusion of digitalis, 8 cc., was ordered, and strychnin, 0.002 gm.

It was thought probable that there was some intestinal toxemia, as there had been no free movement from the bowel since food had been begun, the oil having failed to act. Gradually the pulse went to 130, and grew weaker.

Dr. Charles G. Stockton was added to the medical staff in consultation. At 7 p. m. the President was given 0.20 gm. of calomel.

Bulletin 32, 8:30 p. m.—The President's condition this evening is not quite so good. His food has not agreed with him, and has been stopped. Excretion has not yet been properly established. The kidneys are acting well. His pulse is not satisfactory, but has improved in the last two hours. The wound is doing well. He is resting quietly. Temperature, 100.2°; pulse, 128.

At 9:30 p. m. a second dose of 30 cc. of castor oil was given, followed by a high enema of oxgall. This resulted in a large, dark semifluid stool, which seemed to exhaust him somewhat. Stimulants were given freely. No more beef juice or food was given. The pulse grew rapidly worse, but at midnight there seemed some improvement, as bulletin 33 shows. At 11 p. m. 420 cc. of normal salt solution were given subcutaneously.

Bulletin 33, 12 m.—All unfavorable symptoms in the President's condition have improved since the last bulletin. Pulse, 120; temperature, 100.2°.

FIFTH URINALYSIS.

Quantity	132 cc.
Color	light amber, very turbid
Specific gravity	1.025
Reaction	acid
Albumin	mere trace, if any
Indican	less
Urea	0.044 gm. per 1 cc. of urine
Sulphates	about normal
E. phosphates	much increased
Chlorids	normal

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge shows fewer organic elements than the last examination. There is less uric acid and a large amount of amorphous phosphates. Renal casts, about as in the last examination, with very few cylindroids.

EIGHTH DAY, FRIDAY, SEPTEMBER 13.

At midnight the pulse was fairly good, 132. Strychnin and whiskey were given at intervals, and hypodermics of camphorated oil.

Bulletin 34, 2:50 a. m.—The President's condition is very serious, and gives rise to the gravest apprehension. His bowels have moved well, but his heart does not respond properly to stimulation. He is conscious. The skin is warm, and the pulse small, regular, easily compressible, 126; respiration, 30; temperature, 100°.

The wound had been dressed regularly in the manner described 3 times a day. At 9 a. m. the dressing was changed, and a mixture of balsam of Peru and glycerin put in on gauze after the douching.

Stimulants were continued as before, but more freely. Coffee, 45 cc., and clam broth, 60 cc., were given; also liquid peptonoids.

At 8:30, 1.50 gm. of adrenalin were given hypodermically, and repeated at 9:40.

At 10 a. m., nearly 2 pints of normal salt solution were given under the skin, and a pint containing adrenalin at 6 p. m. Nitroglycerin and camphor were also injected at various times, together with brandy and strychnin.

Stimulants as detailed above were used freely all day.

Three-thirty p. m.: Pulse growing weaker.

Five p. m.: Oxygen given and continued for some hours.

Six-thirty p. m.: Last bulletin, No. 39:

Bulletin 39, 6:30 p. m.—The President's physicians report that his condition is most serious in spite of vigorous stimulation. The depression continues and is profound. Unless it can be relieved, the end is only a question of time.

At 6:35 p. m., and again at 7:40, morphin was given hypodermically, as he was very restless and seemed to be suffering.

Nine p. m.: Heart sounds very feeble.

The President continued to sink, becoming weaker and weaker.

At 10 p. m. the oxygen was discontinued. The heart sounds were very feeble and consciousness lost.

The President died at 2:15 a. m., September 14.

Drs. E. J. Janeway and W. W. Johnston, who at the request of Dr. Rixey had been summoned in consultation, arrived too late, but were present at the autopsy. Dr. McBurney also returned on Friday afternoon.

SIXTH URINALYSIS.

Color	amber, turbid, with phosphates
Quantity	252 cc.
Reaction	acid
Specific gravity	1.023
Albumin	mere trace, if any
Urea	0.047 gm. per 1 cc. urine
Indican	a trace
E. phosphates	increased
Chlorids	normal
Sulphates	a little high

Microscopic Examination.—Microscopic examination of sediment obtained by centrifuge, before and after clearing, shows no change from yesterday's sample. Casts, hyaline and granular, both large and small, comparatively few. Cylindroids, a few. Crystals, large amount of uric acid, some sodium urate, and in the untreated specimen a large amount of amorphous deposit, principally of phosphates. There are a few epithelial cells, small, granular. Occasional red cells and leucocytes.

REPORT ON THE AUTOPSY.[1]

BY

HARVEY R. GAYLORD, M.D.

Pathologist to the New York State Pathological Laboratory.

Ordinary signs of death: ecchymosis in dependent portions of the body. Rigor mortis well marked. Upon the surface of the chest, to the right of the midsternal line, a spot 1 cm. in diameter, dark-red in color, with a slight crust formation covering it, 5.5 cm. from the suprasternal notch; from the right nipple, 10 cm.; from the line of the right nipple, 8.25 cm. Surrounding this spot, at which point there is an evident dissolution of the continuity of the skin, is a discolored area of oval shape exteuding upward and to the right. In its greatest length it is 11 cm.; and in its greatest width, 6 cm. It extends upward in the direction of the right shoulder. The skin within this area is discolored, greenish-yellow and mottled.

The surface of the abdomen is covered with a surgical dressing, which extends down to the umbilicus and upward to just below the nipples. The innermost layer of cotton is covered or stained with balsam of Peru and blood. On removing this dressing, a wound, parallel to, and somewhat to the left of, the median line, is exposed, inserted in which are two layers of gauze, likewise impregnated with balsam of Peru. The wound is 14.5 cm. in length, and is open down to the abdominal muscles. The layer of abdominal fat is 3.75 cm. in thickness. The appearance of the fat is good, a bright yellow in color. No evidence of necrosis or sloughing. In the left margin of the surgical wound, lying 1 cm. to the right of a line drawn from the umbilicus to the left nipple, 15.5 cm. from the nipple and 16.5 cm. from the umbilicus is a partly healed indenta-

1. The autopsy was performed by Drs. Gaylord and Matzinger.

tion of the skin, and an excavation of the fat immediately beneath it (this is the site of the entry of the bullet), extending down to the peritoneal surface. On making the median incision, starting from the suprasternal notch and extending to a point just below the symphysis, the subcutaneous fat is exposed, which is of bright yellow color and normal appearance except in an area which corresponds superficially to the area of discoloration described as surrounding the wound upon the chest wall. This area marks the site of a hemorrhage into the subcutaneous fat. The remainder of the subcutaneous fat is firm, and measures 4.75 cm. in thickness on the abdominal wall. On opening the sheath of the right rectus muscle, it is seen to be of dark-red color. (Culture taken from ecchymotic tissue under the upper bullet hole and from between the folds of the small intestine. Three tubes from each locality on agar and gelatin.)

On opening the abdominal cavity, the parietal surface of the peritoneum is exposed, and is found to be covered with a slight amount of bloody fluid; is perfectly smooth and not injected. The great omentum extends downward to a point midway between the umbilicus and the symphysis. It is thick, firm; its inferior border is discolored by coming in contact with the intestines. Below the umbilicus a few folds of intestines are exposed. These are likewise covered with discolored blood, after the removal of which the peritoneal surface is found to be shiny. On the inner aspect of the abdominal wound the omentum is found to be slightly adherent to the parietal peritoneum, and can be readily separated with the hand from the edge of the wound. At this point the omentum is somewhat injected. This adhesion to the omentum is found to extend entirely around the abdominal wound. The parietal peritoneum immediately adjacent to the inner aspect of the abdominal wound is ecchymotic.

On removing the subcutaneous fat and muscles from the thoracic wall, the point which marks the dissolution of continuity of the skin upon the surface, is found to lie directly over the margin of the sternum and to the right side between the second and third ribs. There is no evidence of ecchymosis or injury to the tissues or muscles beneath the subcutaneous fat. On making an incision through the subcutaneous fat, directly through the wound upon the chest, a small cavity is exposed about the size of a pea just beneath the skin which is filled with fluid blood. The subcutaneous tissue underlying the area of discoloration on the surface of the chest wall shows hemorrhagic infiltration.

On removing the sternum, the lungs are exposed, and do not extend far forward. A large amount of pericardial fat is exposed. Pleural surface on both sides is smooth. There are no adhesions on either side within the pleural cavities. The diaphragm on the right side extends upward to a point opposite the third rib in the mammary line. No perceptible amount of fluid in either pleural cavity. On opening the pericardial cavity, the surface of the pericardium is found to be smooth and pale. The pericardium contains approximately 6 cc. of straw-colored, slightly turbid fluid. (Some taken for examination.)

On exposing the heart, it is found covered with a well-developed panniculus. The heart measures, from the base to the apex, on the superficial aspect, 10.5 cm. The right ventricle is apparently empty. The heart feels soft and flaccid. On opening the left ventricle, a small amount of dark-red blood is found. The muscle of the left ventricular wall is 1.5 cm. in thickness; dark reddish-brown in color; presents a shiny surface. The average thickness of the pericardial fat is 3.5 mm. (Cultures made from the auricle.) The left auricle contains but a small amount of dark currant-colored blood. The mitral valve admits 3 fingers. The right ventricle, when incised in the anterior line, is found to be extremely soft; the muscular structure is 2 mm. in thickness. The panniculus measures 7 mm. The muscle is dark red in color; very shiny, and the pericardial fat invades the muscular wall at many points.

On opening the right auricle it is found to be filled and distended by a large currant-colored clot, which extends into the vessels. The tricuspid orifice admits readily three fingers. The coronary arteries are patulous and soft; no evidence of thickening.

Lungs are gray color, and contain a moderate amount of coal-dust pigment. Slight amount of frothy fluid escapes from the bronchi; but the pulmonary tissue is crepitant and free from exudate.

On unfolding the folds of intestine, there is no evidence of adhesion until a point just beneath the mesocolon is reached, when, on removing a fold of small intestine, a few spoonfuls of greenish-gray thick fluid flows into the peritoneal cavity.

On the anterior gastric wall is an area to which a fold of the gastrocolic omentum is lightly adherent. On breaking the adhesion there is found a wound about midway between the gastric orifices, 3.5 cm. in length, parallel with the greater curvature of the stomach, 1.5 cm. from the line of omental attachment. This wound is held intact by silk sutures. There is no evidence of adhesion at any other point on the anterior wall. The gastric wall surrounding the wound just mentioned for a distance of 2 cm. to 3 cm. is discolored, dark greenish-gray in appearance, and easily torn. On exposing the posterior wall of the stomach from above, along its greater curvature, the omentum is found to be slightly adherent, a line of silk ligatures along the greater curvature of the stomach marking the site where the omentum had been removed. On throwing the omentum downward, the posterior gastric wall is exposed. On the posterior wall, a distance of 2 cm. from the line of omental attachment, is a wound approximately 2 cm. long, held intact by silk sutures. The gastric wall surrounding this wound is discolored. On the surface of the mesocolon, which is posterior to the gastric wall at this point, is a corresponding area of discoloration, the portion coming directly in contact with the wound in the gastric wall being of dull gray color. The remainder of the surface of the posterior wall of the stomach is smooth and shiny. Beyond the surgical wound in the posterior wall of the stomach is found an opening in the retroperitoneal fat, large enough to admit 2 fingers. This opening communicates with a track which extends downward and backward as far as the finger can reach. The tissues surrounding this track are necrotic. On removing the descending portion of the colon, a large irregular cavity is exposed, the walls of which are covered with gray, slimy material, and in which are found fragments of necrotic tissue. Just at the superior margin of the kidney is located a definite opening which forms the bottom of the track traced from the stomach. On stripping the left kidney from its capsule, it is found that the superior portion of the capsule is continuous with the cavity. The weight of the left kidney is 141.82 grams. The kidney is readily stripped from its capsule; is dark red; the stellate veins are prominent, and along its greater curvature are numerous dark red depressions. On the superior aspect of the kidney is a protrusion of the cortex, dark red in color, and in this protrusion is a laceration 2 cm. long, extending across the superior border, approximately at right angles to the periphery of the kidney and from before backward. On incising the kidney, the cortex and medulla are not easily distinguishable from one another; both are of rose-red color, the cortex measuring approximately 6 mm. in thickness. The vessels in the pyramids of Ferrein are very prominent. Beneath the protruding portion of the surface, the cortex is dark red in color. This discoloration extends downward in pyramidal form into the medulla. The laceration of the surface marks the apex of the protrusion of the kidney substance. Between the spleen and the superior aspect of the kidney is a necrotic tract which extends down and backward, and ends in a blind pocket. The tract which included the superior aspect of the kidney can be traced into the perinephritic fat to a point just above the surface of the muscles of the back.

The necrotic cavity which connects the wound on the posterior wall of the stomach and the opening adjacent to the kidney capsule is walled off by the mesocolon, and is found to involve an area of the pancreas, approximately 45 mm. in diameter and extending about half through the organ. This organ at its center forms part of the necrotic cavity. Through its body are found numerous minute hemorrhages and areas of gray softening, the size of a pea or smaller. These are less frequent in the head portion of the pancreas.

A careful examination of the track leading down toward the dorsal muscles fails to reveal the presence of any foreign body. After passing into the fat, the direct character of the track ceases; and its direction can be traced no further. The adjoining fat and the muscles of the back were carefully palpated and incised, without disclosing a wound or the presence of a foreign body. The diaphragm was carefully dissected away, and the posterior portion of the thoracic wall likewise carefully examined. All fat and organs which were removed, including the intestine, were likewise examined and palpated, without result.

The great amount of fat in the abdominal cavity and surrounding the kidney rendered the search extremely difficult.

The right kidney is imbedded in a dense mass of fat; capsule strips freely; it weighs 141.75 grams; measures 11.5 cm.; substance is soft; cortex is 6 mm. in thickness; rose-red in color; cut surface slightly dulled. There are a few depressions of the surface, and the stellate veins are prominent.

The liver is dark-red in color; the gall-bladder distended. The organ was not removed.

The autopsy continued for a longer period than was anticipated by those who had charge of the President's body, and we were requested to desist seeking for the bullet and terminate the autopsy. As we were satisfied that nothing could be gained by locating the bullet, which had apparently set up no reaction, search for it was discontinued.

Anatomic Diagnosis.—Gunshot wound of both walls of the stomach and the superior aspect of the left kidney; extensive necrosis of the substance of the pancreas; necrosis of the gastric wall in the neighborhood of both wounds; fatty degeneration, infiltration and brown atrophy of the heart muscle; slight cloudy swelling of the epithelium of the kidneys.

A matter of no inconsiderable embarrassment to us arose in the objection to our removing sufficient portions of the tissues for examination. We were able to secure only 2 small fragments of the stomach wall; tissue from around the wound upon the chest wall; a portion of fat from the wall of the necrotic cavity; a small piece of each kidney, that of the left kidney including the portion involved by the original wound; and pieces of heart-muscle from the right and left ventricles. The microscopic examination of these tissues follows:

The piece of retroperitoneal fat, where it forms part of the necrotic cavity, is seen on section to be covered with a thick gray deposit, which has an average thickness of from 4 mm. to 6 mm. Beneath this, and separating it from the fat, is a well-defined area of hemorrhage from 1 mm. to 2 mm. in thickness. The appearance of this piece of tissue is characteristic of the fat tissue surrounding the entire cavity. A section made perpendicular to the surface and stained with hematoxylin-eosin, shows the following characteristics: Under low power there is no evi-

dence of round-celled infiltration between the fat cells, or of fat necroses. The surface of the tissue which, in the microscopic specimen was covered by a layer of grayish material, proves, under low power to consist of a partly organized fibrinous deposit. At the base of this deposit is evidence of an extensive hemorrhage, marked by deposits of pigment. The surface of the membrane is of rough and irregular appearance, and contains a large number of round cells with deeply stained nuclei. Under high power the organization of the membrane may be traced from the base toward the surface. The portion immediately adjacent to the fat tissue consists of a network of fibrin enclosing large numbers of partly preserved red blood corpuscles. In many areas the red blood corpuscles are broken down and extensive deposits of pigment are found. Extending into the fibrin structure of the membrane are numerous typical fibroblasts and round cells. In some regions pigment is evidently deposited in the bodies of large branching and spindle cells. Here and there, included in the membrane, are the remains of fat cells, and toward the surface of the membrane a large number of round cells scattered through the interstices of the membrane. There are but few polymorphonuclear leucocytes. Here and there in the membrane are fragments of isolated fibrous connective tissue with irregular contours and an appearance suggesting that they are fragments of tissue which have been displaced by violence and included in the fibrin deposit. The fibrin in the superficial layers of the membrane is formed in hyaline clumps. The organization along the base of the deposit is comparatively uniform.

Sections stained with methylene blue, carbol-thionin and Gram's method were carefully examined for the presence of bacteria, with negative results. Even upon the surface of the membrane there are no evidences of bacteria.

The section of the left kidney including the triangular area of hemorrhage described in the macroscopic specimen, reveals the following appearances. (Section hardened in formalin, stained with hematoxylin-eosin.) Examined macroscopically, section represents a portion of a kidney cortex made perpendicular to the surface of the cortex, and including an area of hemorrhage into the substance of the cortex 1 cm. in length measured from the capsular surface downward, and presenting a width of from 5 mm. to 6 mm. The capsular surface has apparently been torn.

Under low power the margins of the preparation are found to consist of well-preserved kidney structure. There is a slight amount of thickening of the interstitial tissue, and occasional groups of tubules are affected by beginning cloudy swelling. The glomeruli are large and present a perfectly normal appearance. As we approach toward the center of the preparation, occasional glomeruli are met with in which the capillary loops are engorged and the adjacent tubules contain red blood-corpuscles. A short distance further, the kidney structure becomes entirely necrotic. Here and there the remains of tubules may be made out, and these are infiltrated with cells. The necrotic area presents a rough, net-like structure. As we approach toward the surface of the kidney, we find that the necrosis becomes more marked. There is the merest suggestion of kidney structure, its place being taken by disintegrated red blood-cells and leucocytes, embedded in a well-defined fibrinous network. There is great distortion of the kidney structure about the periphery of the necrotic area. In this region a considerable amount of pigment is also found in the necrotic tissues.

Under high power, the characteristics of the necrotic tissues may be better observed. The kidney structure is broken up and torn into irregular fragments, infiltrated by red blood corpuscles and leucocytes. In the portion of the necrotic mass beneath the capsule, the kidney structure is practically obliterated and is replaced by a network of fibrin, which includes large numbers of red blood-cells and leucocytes. Scattered through the entire necrotic area are frequent deposits of pigment. In the deeper portions of the necrotic area, the margins of the fibrin deposit are invaded by fibroblasts from the connective tissue structure of the kidney. The organization in these areas is, however, slight.

Sections stained with methylene-blue and Gram's method and carefully examined under oil immersion, fail to reveal the presence of any organisms. In preparations stained with methylene blue, the deposits of pigment may be readily observed. Section of the same tissue hardened in Hermann's solution and examined for fat, shows the presence of numerous fat droplets within the epithelium of the tubules which are adjacent to the area of necrosis. In the portions of the preparation more widely distant from the area of necrosis, no fat is present.

Section of the right kidney hardened in formalin and stained with hematoxylin-eosin, reveals the presence of areas in which slight parenchymatous degeneration of the epithelium in the uriniferous tubules may be noted. These areas are not extensive, and are confined to single groups of tubules. The interstitial connective tissue of the organ seems to be slightly increased in amount, but there is no well-defined round-celled infiltration. An occasional hyaline glomerulus is to be met with in these cases surrounded by increased connective tissue. The epithelium of the kidney tubules, aside from those in which the parenchymatous degeneration is present, is well preserved. The nuclei are well stained; protoplasm, finely granular.

A fragment of the stomach wall taken from the immediate neighborhood of the anterior wound is in a condition of complete necrosis. The nuclei of the cells are scarcely demonstrable. The epithelial surface is recognized with difficulty. At its base are apparently a few round cells. Examination of the blood-vessels reveals nothing characteristic. There is apparently no evidence of thrombosis. A section made through the gastric wall at some distance from the wound, reveals the well-preserved muscular structure of the gastric wall, which presents no characteristic alterations. Superficial portions of the epithelium have apparently been affected by postmortem digestion. However, in one portion of the preparation, the epithelium is intact, and shows distinct evidence of marked round-celled infiltration between the glandular structures. The blood vessels contained blood-corpuscles with the usual number of leucocytes.

The fragments of heart-muscle which were removed from the right and left ventricular walls, were examined in the fresh state, and exhibited a well-defined fatty degeneration of the muscle fibers, and in the case of the right ventricular wall, an extensive infiltration between the muscle fibers, of fat, was apparent. Sections from these fragments of muscle hardened in Hermann's solution, are taken for examination. A fragment of muscle from the right ventricular wall was removed at a point where the fat penetrated deeply into the muscular structure, the ventricular wall at this point showing an average thickness of 2.5 mm. Under low power, the muscle fibers are separated into bundles by masses and rows of deeply stained fat cells. The muscle fibers are seen to contain groups of dark brown granules lying in the long axes of the cells. Under high power, these are resolved into extensive groups of dark brown pigment arranged around the nuclei. The muscle fibers are slender, the cross and longitudinal striation is well-defined. Examined near the margin of the preparation, where the osmic-acid fixation has been successful, all of the muscle fibers are found to contain minute black spherical bodies, extending diffusely through all the muscle fibers about the entire margin of the preparation. These fine fat droplets are present in sufficient amount to speak of an extensive diffuse fatty degeneration of the muscle fibers. Where the large fat cells have separated the muscle fibers, these are found to be more atrophic than those in the central portions of the larger bundles.

The examination of the section through the healed bullet wound on the chest walls reveals nothing of importance. The dissolution of continuity is filled in by granulation-tissue, and there is evidence of beginning restoration of the epithelium from the margins. Stains for bacteria give negative results.

In summing up the macroscopic and microscopic findings of the autopsy, the following may be stated: The original injuries to the stomach-wall had been repaired by suture, and this repair seems to have been effective. The stitches were in place, and the openings in the stomach-wall effectually closed. Firm adhesions were formed both upon the anterior and posterior walls of the stomach, which reinforced these sutures. The necroses surrounding the wounds in the stomach do not seem to be the result of any well-defined cause. It is highly probable that they were practically terminal in their nature, and that the condition developed as a result of lowered vitality. In this connection there is no evidence to indicate that the removal of the omentum from the greater curvature and the close proximity of both of these wounds to this point, had any effect in bringing about the necrosis of the gastric wall, although circulatory disturbances may have been a factor. The fact that the necrotic tissue had not been affected by digestion strongly indicates that the necrosis was developed but shortly before death. The excavation in the fat behind the stomach must be largely attributed to the action of the missile. This may have been the result of unusual rotation of a nearly-spent ball, or the result of simple concussion from the ball passing into a mass of soft tissues. Such effects are not unknown. The fact that the ball grazed the superior aspect of the left kidney, shown by the microscopic investigation of that organ, indicates the direction of the missile, which passed in a line from the inferior border of the stomach to the tract in the fat immediately superior to the kidney. There was evidence that the left adrenal gland was injured.

The injury to the pancreas must be attributed to indirect, rather than direct, action of the missile. The fact that the wall of the cavity is lined by fibrin, well advanced in organization, indicates that the injury to the tissues was produced at the time of the shooting. The absence of bacteria from the tissues indicates that the wound was not infected at the time of the shooting, and that the closure of the posterior gastric wound was effectual. The necrosis of the pancreas seems to us of great importance. The fact that there were no fat necroses in the neighborhood of this organ indicates that there was no leakage of pancreatic fluid into the surrounding tissues. It is possible that there was a leakage of pancreatic fluid into the cavity behind the stomach, as the contents of this cavity consisted of a thick, grayish fluid, containing fragments of

connective tissue. In this case the wall of fibrin would have been sufficient to prevent the pancreatic fluid from coming in contact with the adjacent fat. The extensive necrosis of the pancreas would seem to be an important factor in the cause of death, although it has never been definitely shown how much destruction of this organ is necessary to produce death. There are experiments upon animals upon record, in which the animals seem to have died as a result of not very extensive lesions of this organ. One experiment of this nature reported by Flexner (*Journal of Experimental Medicine*, Vol. II) is of interest. The fact that concussion and slight injuries of the pancreas may be a factor in the development of necrosis, is indicated by the researches of Chiari (*Zeitschrift fuer Heilkunde*, Vol. xvii. 1896, and *Prager Med. Wochenschr.*, 1900, No. 14), who has observed (although a comparatively rare condition) extensive areas of softening and necrosis of the pancreas, especially of the posterior central portion which lies directly over the bodies of the vertebræ, where the organ is most exposed to pressure or the effects of concussion. The wound in the kidney is of slight importance, except as indicating the direction taken by the missile. The changes in the heart, as shown by the macroscopic inspection and the microscopic examination, indicate that the condition of this organ was an important factor. The extensive brown atrophy and diffuse fatty degeneration of the muscle, but especially the extent to which the pericardial fat had invaded the atrophic muscle fibers of the right ventricular wall, sufficiently explain the rapid pulse and lack of response of this organ to stimulation during life.

REPORT ON THE BACTERIOLOGIC EXAMINATION.

BY

HERMAN G. MATZINGER, M.D.

Bacteriologist to the New York State Pathological Laboratory.

It is obvious that the short space of time which has elapsed since the death of the President has hardly been sufficient to prepare a complete and thorough bacteriologic report. This report contains all the observations which have been made up to this time:

On September 11, during the life of the President, cultures were made by Dr. Wasdin from the base of the abdominal wound and from dressings removed at the same time. These were submitted to me for examination, and showed the presence of the ordinary pus organisms: Staphylococcus pyogenes aureus and S. cereus albus, with a gas-forming bacillus which, in pure anaerobic culture on glucose gelatin, forms small, pearly, translucent colonies, with no liquefaction. In litmus milk it produces acid, but no coagulation. Morphologically, it is apparently a capsulated, short bacillus, which takes stains poorly, and which does not stain by Gram's method. Inoculated into the ear vein of a rabbit, which was killed immediately afterward, it produced, after 24 hours in the body of the rabbit, a marked accumulation of gas in the organs, and again grew out in pure culture. As yet the organism is not fully identified.

None of these cultures showed streptococci. A bacterium which appears to be one of the proteus group was, however, isolated, which does not stain by Gram, and appears in varying forms, sometimes small oval, and again quite rod shaped and in short chains. Sometimes it is surrounded with a slimy covering, which remains clear like a capsule when the organism is stained. On slanting agar, it produces a whitish, slimy growth, which gradually runs to the bottom of the slant and produces an odor of decomposition. On gelatin, it grows very slowly with slight and slow indication of liquefaction. In litmus milk, it produces acid and rapid coagulation.

At the time of the autopsy, September 14, inoculations were made by myself. From the base of the wound, there was again obtained a number of pus organisms, principally a white staphylococcus and the bacterium described above, but no streptococci. Cultures made from the peritoneal surface of the intestines were entirely negative. Cultures made from the under surface of the omentum near the colon, were entirely negative, both with and without oxygen. Cultures from the blood of the right auricle were likewise negative. A very careful and extensive search for micro-organism in the contents of the necrotic cavity, behind the stomach, reveals nothing but a short stumpy bacterium, which, as far as the work has been carried at present, appears to belong to the proteus group, and is very like Proteus hominis capsulatus, described by Bordoni and Uffreduzzi.

Morphologically, it is not uniform, and sometimes appears almost encapsulated, being surrounded by material that does not stain; is quite refractory to Gram, and produces an odor of decomposition as it grows. It does not liquefy gelatin rapidly and grows slowly, as a glistening white elevated surface growth which slowly sinks; but on agar in the thermostat it grows very rapidly, as a moist, grayish-white, translucent mass. Colonies on gelatin plates have a clean circumference, are granular and quite refractive. In litmus milk it produces acid and rapid coagulation. Animal experiments are still incomplete and can not be published at this time.

It must be stated that there is occasion for suspecting that this may be a contamination, either from the outer wound or elsewhere, because, quite unavoidably, the technique of obtaining the material and cultures from the necrotic cavity was not absolutely correct.

Cultures made from the small area of broken-down tissue under the chest wound at the time of the autopsy, grew what appears to be staphylococcus epidermidis albus, described by Dr. Welch.

The slimy, gray, necrotic material from the cavity above the transverse mesocolon behind the stomach, was carefully examined microscopically, with the result that very few micro-organisms were found in the fresh state, and no recognizable tissue elements of any kind, no leucocytes or pus-corpuscles, but an abundance of crystals which appeared more like fatty acid than fat crystals. It contained no free hydrochloric acid, and was alkaline in reaction. Experiments as to its digestive power were negative. About 2 cc. of this material were injected into the space behind the stomach of a dog (still living), with no result except quite an elevated temperature for 3 or 4 days. Other animal experiments are also still incomplete.

It might be well to state here that the bacteriologic examination of the chambers and barrel of the weapon used, as well as the empty shells and cartridges, ordered by the District Attorney, was entirely negative, except that from a loaded cartridge there was grown an ordinary staphylococcus and a mould. The chemical examination of the balance of the loaded cartridges, made by Dr. Hill, chemist, was also negative.

The absence of known pathogenic bacteria, particularly in the necrotic cavity, warrants the conclusion that bacterial infection was not a factor in the production of the conditions found at the autopsy.

This report has received the approval of the consulting staff of the late President, and is issued with our consent.

P. M. RIXEY.
MATTHEW D. MANN.
HERMAN MYNTER.
ROSWELL PARK.
EUGENE WASDIN.
CHARLES MCBURNEY.
CHARLES G. STOCKTON.

Clinical Report.

TRACHEOTOMY IN BREECH PRESENTATION.

AN OLD OPERATION BUT A NEW APPLICATION.

HERBERT MARION STOWE, M.D.

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CHICAGO.

Mrs. E. M. C., German, aged 31, was taken in labor with her second child at 12:30 p. m., Sept. 1, 1901. I was summoned at 10 o'clock on the evening of the same day. Upon my arrival at the house, I found a nervous and delicate woman in the second stage of labor. I diagnosed a breech presentation, S. D. A.; the breech being high up and not engaged. The membranes had ruptured early, and the birth canal was poorly prepared for fetal passage. The fetal heart tones were regular, but numbered 160 beats per minute. The fetus was unusually active. The pains were weak and of short duration. By reason of the danger of fetal asphyxia, I proceeded to extract.

It was impossible to bring down a foot, but I succeeded in placing a finger in the anterior groin and made pressure downward and backward in the usual manner until the posterior groin was within reach. After this point, the first act of extraction was easy and was quickly completed. No further difficulty was experienced until after the arms had been delivered. The head had become fixed in the transverse diameter of the inlet and remained so in spite of the Smellie-Veit's, or, more correctly speaking, the Mauriceau method combined with strong suprapubic pressure in the Walcher posture. After working a short time, however, the head was felt to descend slightly into the pelvis, while the occiput partially rotated anteriorly, but successful extraction of a living child seemed impossible at the time.

Convinced, therefore, that the child's life was practically lost, the writer decided to perform tracheotomy as an experimental operation. The body of the child was lifted up by an assistant, the neck hastily washed with a one-half per cent. lysol solution, and the field of operation rendered as aseptic as the limited amount of time would permit. The perineum was pressed backward and the larynx was then steadied with a tenaculum and a linear incision made through the cricoid cartilage, and two or three rings of the trachea. The thick, venous blood which escaped from the incision gave positive evidence of the grave state of asphyxia present. The tissues were then retracted and a soft rubber, aseptic, tracheal catheter was introduced far enough to snugly fit the trachea and pure air gently forced into the lungs by an air-bag. The lungs immediately expanded and the chest was then compressed by the hands. These movements, alternating, were continued until the respiratory rhythm was voluntarily inaugurated and maintained and the body became pink in color. The hemorrhage now ceased and forceps were applied to the after-coming head; stationary, intermittent tractions were made and every effort taken to preserve the perineum as far as possible. In fourteen and one-half minutes after the delivery of the arms, the head was extracted and the child born without any sign of the asphyxia which was so threatening a short time before. The child's body was wrapped in a warm, moist towel to prevent premature respiration during extraction.

The cord was left uncut until the funic circulation ceased and the loss of blood from the neck was in a measure compensated for. The mouth and throat were cleansed and the blood in the trachea carefully removed. Respiration took place through the laryngeal opening only. The child uttered a few weak cries when slapped, but otherwise appeared healthy. A stitch was taken on each side of the incision and the long end of the threads tied behind the neck. This kept the incision patulous and allowed free access of air when the catheter was withdrawn.

Five hours later, there being no dyspnea when the wound edges were coaptated, sutures of fine catgut were introduced and tied, and thus normal respiration was established for the first time. The wound healed by first intention and the child made an excellent recovery. The temperature was at no time over 102 F. The mother recovered with an intact perineum.

The fetal measurements were as follows: Diameter, bitemporal, 8 cm.: biparietal, 8.5 cm.; suboccipital-bregmatic, 9.5 cm.; occipital-frontal, 11 cm.; occipito-mental, 12 cm.; bis-acromial, 10.5 cm.; bis-iliac, 8.5 cm. The cephalic bones were hard and ossified; the fontanelles small; the sutures closed.

The mother's diameters were: Interspinous, 25 cm.; intercristous, 27.5 cm.; Baudelocque, 18 cm.; bitrochanteric, 31 cm.; circumference, 92 cm.; conjugata vera, 9 cm.

It has long been an established rule in obstetric practice to extract the fetal head as quickly as possible in head last cases. The fetus at this stage of the operation is deprived of its supply of oxygen by the cord being caught between the head and the maternal pelvis, or, as is claimed by some writers, a partial separation of the placenta from the uterine wall. The amount of oxygen already in the body is only sufficient to retain fetal life for four or five minutes, although cases are recorded where children have been resuscitated after fifteen minutes of delay. These cases, however, are exceptional, and their accuracy is sometimes questioned. Time is the greatest element in the safe delivery of the fetus after the cord has come into view. If the head is not delivered within four to six minutes after the extraction of the arms the child will probably be still-born or else deeply asphyxiated.

Attempts have been made to prevent asphyxia by supplying the child with oxygen artificially during extraction. Pugh recommended the method of passing two fingers into the mouth and allowing air to enter along the hollow of the hand. Weidmann conveyed air to the mouth by means of a catheter or a special tube prepared for the purpose called the "rectis aerophorus." When the head is low in the pelvis, the perineum can frequently be pushed behind the mouth and air admitted to the oral cavity directly.

Where, however, the mouth is beyond the reach of the fingers and the catheter becomes useless on account of the difficulty of entering the mouth and the inevitable kink at the bend of the tube, the only chance of saving the child's life has, heretofore, been in a rapid forceps operation with a large fetal mortality resulting. Should the forceps operation prove negative, the child immediately dies, or craniotomy, with a mortality of 100 per cent., follows. Should the forceps deliver the child, it is deeply asphyxiated and frequently, because of premature respiratory efforts, becomes a victim of aspiration pneumonia.

In a given case where the estimated diameters of the fetal head and the determined diameters of the pelvis are such that the accoucheur may expect cephalic impaction; where the usual methods by hand and position have proven fruitless the operation of tracheotomy as described above is recommended. When the child's body is raised to a perpendicular plane, the blood and mucus are prevented from clogging up the bronchi. In a majority of the cases the proximal end of the trachea will be found free of obstruction as the mucus collects principally in the pharynx and upper larynx. The use of an air-bag, such as the Politzer inflation bag, is preferable to blowing in air from the lungs, as expired air is always deficient in oxygen. If one were able to introduce nearly pure oxygen gas, the child would stand the best chance for recovery. The body should be enveloped by a warm, moist towel, to reduce to a minimum the difference between the internal and external atmospheres.

If the labor has been conducted according to established rules of asepsis and antisepsis, little or no time need be lost in cleansing the neck as the fetus is already sterile unless infected from external sources.

With the imminent danger of asphyxia forestalled, the forceps may be applied to the after-coming head and traction be slowly made, giving time for the head to mold and adapt itself to the pelvic canal as well as protecting the perineum as far as possible. This method is to be preferred to the common one of applying forceps, extracting hastily and in 28 to 30 per cent. of cases delivering a dead child, besides in many cases lacerating the perineum. Should the perineum be found to overlap the neck to a moderate extent, an episiotomy may be done immediately, and the tissues retracted sufficiently to expose the field of operation.

The after-treatment is carried out in the usual manner. The obstruction to respiration being removed at birth, the tracheotomy wound may be closed in a few hours.

4433 Lake Avenue.

Diet in Nephritis.—A nephritic must be well nourished, and the old theories of the harmfulness of this or that food are not sustained by actual experience. It may even prove possible that creatin and similar substances may be directly beneficial, on the same principle as we treat heart diseases with heart poisons. O. Reichel publishes in the *Cbl. f. d. Ges. Ther.*, January, a study of the subject, concluding that the nephritic patient should not be restricted in diet, but should be allowed to eat whatever he best digests and assimilates, without regard to theory. He urges closer study of the mild, ambulant cases of albuminuria, partial nephritis and post-nephritic inflammation of the kidneys—regarding them all as actual nephritis and better suited than severer cases for research on the effect of diet on the progress or retrogression of the morbid processes. He also denounces sweat baths as another purely theoretical measure, which in reality fails to accomplish the anticipated results. He has never known a nephritic to be benefited by them in his experience. He attributes the symptoms in nephritis to a toxin in the blood, retained by the insufficiency of the kidneys, and causing the edema and hypertrophy of the heart by the changes it induces in the kidneys, which diminish their power of resorption. Insufficient absorption is a factor in the delay in the test-elimination of methylene blue, as well as the insufficiency of the kidneys. The changes in the walls of the vessels cause increased resistance, and, secondarily, increased blood pressure with consequent hypertrophy of the heart.

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RUDOLPH VIRCHOW.

Professor Rudolph Ludwig Karl Virchow, the distinguished German pathologist, anthropologist and politician, completed his eightieth year on Sunday, October 13, 1901. The event was celebrated in Berlin and in most of the medical centers of the world on Saturday, October 12.

Virchow was born in Schivelbein, a small town in Pomerania, in 1821. He was educated at the Gymnasium in Berlin, and graduated in medicine at the University in that city in 1843. After graduation he undertook the study of pathology and soon became assistant to Froriep and prosector at the Charité. With his friend Reinhardt, he founded in 1847 the *Archiv,* which has become the most important medical periodical in the world and ever since has borne his name. Compelled in 1849, on account of his democratic tendencies, to give up his position and residence in Berlin, Virchow removed to Würzburg, where he continued active work in pathological anatomy, supported the Physikalische-Medicinische Gesellschaft, and made for himself such a name that the faculty and government in Berlin recalled him in 1856 to the Chair of Pathological Anatomy. A new pathological institute was established for him, and he has remained director of this institute and professor of the University ever since.

To understand Virchow's immense influence upon the progress of medicine it is only necessary to compare the conditions of the science before 1850 with those which exist to-day and to recall briefly the various researches undertaken by Virchow during the intervening period. Before the time of Virchow's work, accurate autopsy reports were scarcely known. Clinical histories of patients were reported from memory rather than from notes taken at the time of the examinations, and even when clinical records were made they referred only to the pulse and to a few of the more striking symptoms. Nearly all medical articles were made to conform to some abstract theory, or were arranged according to some one of the "systems" so much in vogue in the eighteenth and the first half of the nineteenth centuries. In the program laid down in the first volume of the *Archiv* (1847), Virchow declared that the time had come for the detailed study of individual cases, pathological and clinical. Only after the accumulation of such data did he believe that it would be possible to construct a true theory of disease—a pathological physiology of real value. General laws were to be arrived at from below rather than from above; hypotheses were to succeed rather than precede the establishment of such general laws; thenceforward the inductive, not the deductive method, was to be the dominant one in medicine. It was necessary, he declared, that in the study of medicine we get at least three hundred times nearer than in the past to the natural processes.

The enemies of the new movement declared that Virchow was not practical; that his ideas were dangerous, and that he and his comrades were doctrinaires and adventurers. The fight started by the *Archiv* against the prevalent mixture of voluntary rationalism and gross empiricism proved, however, rapidly successful, and the introduction by Virchow of the genetic principle of investigation did much to turn pathological studies in an entirely new direction.

Among pathologists Virchow, though revered for his special researches on pyemia, leukemia, thrombosis and embolism, is perhaps best known as the founder of the so-called "cellular pathology." In his now long-famous volume (Die Cellularpathologie in ihrer Begründung auf physiologischer und pathologischer Gewebelehre, Berlin, 1858) he led back pathological processes in greater completeness than had ever been attempted before, to alterations in the elementary constituents of the body—the cells. His great work on tumors (Die Krankhaften Geschwülste, Berlin, 1863-67) remains to-day the most valuable work on the subject for consultation. The technique introduced into the autopsy-room by Virchow and his published account of it became the standard for postmortem work all over the world.

In anthropology and ethnography Virchow is as well and favorably known as in pathology. His investigations of race characteristics, his measurements of skulls and other contributions in the fields are epoch-marking.

Virchow's fame quickly spread beyond his own country; students of higher medicine flocked to him from all parts of the world, and he speedily became the head of the school of pathology known by his name. His power as a teacher has been unrivaled. He knew how to excite in his pupils the spirit of investigation.

No greater compliment has, perhaps, ever been paid to a scientific medical man than that made in honor of his seventieth birthday, when fifty-four of the most prominent medical scientists in the world contributed three large volumes of original research to his Festschrift. [Internationale Beiträge zur wissenschaftlichen Medicin. Festschrift. Rudolph Virchow, gewidmet zur Vollendung seines 70 Lebensjahres. 3 V. roy. 8°. Berlin, 1891]. His international reputation was no doubt largely due to his winning personality and literary power as well as to his investigative talent.

One of the most pleasing of the many praiseworthy features of Virchow's life is the humanitarian side of his work. Beginning with his investigations on famine fever among the poor inhabitants of Upper Silesia, in 1848, Virchow has always given largely of his energies

and his interest to the promotion of the welfare of the masses. His contributions to the science of public hygiene are among the most notable of his works. Among them may be mentioned his articles on the drainage and sewage disposal of the city of Berlin, his various papers on military hygiene, on school hygiene, on the German household, and on disinfection. He made a special study of the best forms of exercise for the development of German youth. He has always been friendly to the higher education of women. For many years he has occupied a seat in the Reichstag and has taken a most active part in the government in connection with medical and veterinary affairs.

In his relations to life in general, as well as in practical politics, he has remained consistently a pronounced democrat. While a loyal German, he is a devotee of the cult of humanity. A citizen of the world, he does not belong to any one country.

Virchow has this year been especially honored by the Emperor of Germany and the King of Italy. The medical men of the civilized world have vied with one another in paying him homage. His life is an illustrious example of what a great man may accomplish by devoting his talents, time and energy to the scientific side of medicine. The results of his work and the remarkable personality of the man have made many others attempt to follow in his footsteps; a public need for workers in pathology has gradually developed until to-day pathology affords a career for many of the best men in our profession. Rich men are giving large sums of money toward medical research and the outlook for the future of pathology is bright. To none other of his age has it been vouchsafed to do more in the reshaping of medical thought and opinion than Rudolph Virchow.

CELLULAR PATHOLOGY IN THE PAST AND IN THE FUTURE.

It will not be amiss, at this time of celebrating the eightieth birthday of Virchow, to call attention to the fact that a new era in medicine began in the middle of the last century when the cellular structure of living organisms and of many pathological products became understood. The era was introduced by the demonstration of the cellular structure of plants by Schleiden, in 1838, and of animals by Schwann, in 1839. The rich fields of investigation thus thrown open for cultivation were soon appropriated by eager German investigators, and pre-eminently by the now so venerable Virchow and his numerous and enthusiastic pupils. Virchow may be said to have begun his work in 1840, and in a remarkably short time he not only made an end to the domination of medicine by the unfounded conceptions of the old humoral pathology, which had held sway for some two thousand years, but he also laid the foundations of a new pathology, the cellular pathology, upon the basis of which a mighty superstructure has been built. This was accomplished partly by destructive criticism of the old doctrines of dyscrasia, partly by showing that cellular proliferation never takes place from unorganized blastema, but only from pre-existing cells. The famous phrase of 1855, *"Omnis cellula e cellula,"* sounded the death-knell of the old humoral pathology and the birth of the new, cellular pathology.

As stated elsewhere, Virchow is the founder of pathological histology. He demonstrated that as all normal tissues consist of cells, so do cells play the essential part in pathological tissues and pathological products, and he traced the processes of disease to cells and to cell families. This is the kernel of the cellular pathology as it is developed in his celebrated lectures in Berlin in 1857 on "Die cellulare Pathologie in ihrer Begründung auf physiologischer und pathologischer Gewebelehre."

Of fundamental importance to the development of cellular pathology and of modern medicine as a whole is Virchow's masterly organization of the teaching and the investigation of pathological anatomy, which resulted in the establishment in Berlin and later in connection with all German universities of the pathological-anatomical institutes, or laboratories, which the whole medical world long ago has come to recognize as indispensably necessary for teaching and research in medical science. His official report setting forth the essential necessity and the scope of such establishments with the various subdivisions, such as the chemical laboratory, the pathological museum, although written in 1846, might well serve as a guide for many institutions in this country that now are beginning to plan in real earnest the foundation of medical departments upon a permanent basis commensurate with their importance. Fortunately this report is within easy reach as it is printed in Virchow's *Archiv,* 1900, clix, pp. 24-39. In this report Virchow can not sufficiently emphasize the weight that should be placed upon pathological physiology.

Under the leadership of cellular pathology many have thought—and probably with good reason—that the study of pathological histology has been carried too far. Because some of its followers seemed to think that they could reach the innermost secrets of disease by morphological methods, they did not hesitate to utilize histologic structure as the principle of classification and subdivision of pathological processes. This one-sided overestimation of the results of microscopic examination valuable and important though they may be; the failure to recognize the greater importance of etiology, which is seen in some of the teachings of the Virchow school in regard to inflammation, e. g., the dualistic doctrine of tuberculosis; as well as the comparatively few directly valuable results in practical therapeutics, have tended to bring a measure of discredit upon cellular pathology. But this tendency to overestimate cellular pathology in the narrow sense is being counterbalanced by the brilliant discoveries in bacteriology and the great progress in the knowledge of the causes of disease of more recent times. Pasteur's demonstration that infectious diseases are

caused by micro-organisms inaugurated a still newer era in medicine with developments of fundamental import for pathological anatomy and all other branches of medical science.

That the cellular hypothesis has helped greatly to elucidate the phenomena of life both under physiological and pathological conditions no one would gainsay, but it must not be forgotten that forms are inseparably connected with and dependent upon questions of force—"every form is force visible"—and cells are, as Huxley has it, not the cause but the results of organization and therefore not the only and ultimate object of biologic investigation. Virchow himself has said that the trained pathological anatomist can not deal with the product without searching for the mechanism through which it has resulted, and for the conditions under which the vital processes have suffered this or that deviation in their course. The essential significance of physico-chemical processes in biological phenomena is becoming daily more manifest. The study of the forces that lie behind structure and form—the rôle in physiological and pathological processes of molecules and ions, of enzymes, of osmotic pressure, of chemical equilibrium, and other factors—is about to erect a molecular pathology by the side if not in the place of the cellular pathology that now so largely governs our conceptions of disease. Indeed, it is along physico-chemical lines that we must look for the explanation of many phenomena, normal and abnormal, phenomena the existence of which may be made known but not explained by morphologic methods. And it is probably in this field that the present century will bring its farthest reaching achievements in physiology and pathology.

OFFICIAL REPORT ON PRESIDENT M'KINLEY'S CASE.

We publish this week the official report on President McKinley's case, signed by all the attending physicians and surgeons. It is very complete even to minor details, and a careful reading must convince the most critical that the case from the beginning was well managed and that no adverse, retrospective criticism is possible. The report shows that the charges as to poor judgment used in the administration of solid food, in failure to find the bullet both during the original operation and at the autopsy, in the non-use of the *x*-ray and of drainage, can not be sustained. The main interest of the report centers in that which pertains to the autopsy and the examination and deductions therefrom. This part of the report is the important part of the document, as it is bound to excite interest not only because of its disclosures, but as well because of what it fails to disclose.

In the case of the wounds of the stomach effective closure had been secured by means of stitches which had become re-enforced by adhesions both anteriorly and posteriorly. Both wounds were found surrounded by areas of discolored and softened tissue which had lost its microscopic structure. The cause of this change is not at all evident. In his summary the pathologist suggests its terminal nature and the cause as lowered vitality. It appears hardly necessary to offer an explanation of so general character as "lowered vitality."

There seems to be no essential reason why these changes may not have resulted from the action of the gastric juice and that they were of the nature of post-mortem digestion. The area of discoloration on the surface of the mesocolon which came directly in contact with the wound on the posterior gastric wall was of a dull gray color, indicating a diffusion into it of the same substance or substances as may have caused the discoloration and softening in the tissues about the wounds in the stomach. There is no statement in the report of the condition of the interior of the stomach; it is not mentioned whether or not the stomach was opened; and it is unfortunate that opportunity was not given to freely examine the areas about the wounds by means of a large number of microscopic sections extending freely across the entire area including the stitches. Bacteriologic examination of the tissue about the wounds, either by culture or by the staining of sections, is not mentioned in the report; hence the influence of bacteria that possibly may have been present can not be excluded altogether. At all events the changes found immediately about the wounds in the stomach do not appear to have had any recognizable influence at all upon the fatal ending.

The pancreas contained "numerous minute hemorrhages and areas of gray softening, the size of a pea or smaller." As stated in the report the absence of fat necrosis shows that there was no diffusion of pancreatic ferments into the surrounding tissues, except possibly into the cavity behind the stomach. It is particularly unfortunate that a more thorough examination could not have been made of the pancreas. The lesions described can not be regarded otherwise than as of significance, but in the absence of both bacteriologic and histologic examination their exact cause and nature remain conjectural. It is very easy to suggest that the foci of softening in the pancreas may have contained bacteria whose products when absorbed gave rise to serious general effects. We lack information also as to the nature of the greenish-gray thick fluid, a few teaspoonfuls of which ran out into the peritoneal cavity from "a point just beneath the mesocolon," and which does not seem to have come from the cavity behind the stomach.

The destructive fatty infiltration of the walls of the right ventricle will be found generally acceptable as explaining at least in part the character of the action of the heart during life. The diffuse fatty changes of the heart muscle fibers proper will most likely be regarded as the result of some form of intoxication.

The bacteriologic examination, though not yet completed, seems to exclude the presence of "known pathogenic agents," at least in the track behind the stomach and in the general peritoneal cavity. But cultures were not made from the spleen, the liver, the kidneys, the

lungs, or the pancreas. Cultures (presumably only aërobic) from the heart's blood remained sterile. Staphylococci and an unidentified anaërobic, gas-forming bacillus were isolated from the abdominal wound, both during life and after death, but the question of their actual general pathogenic influences will probably be open to various interpretations.

The absence of any mention in the report of the actual condition of the adrenals, the interior of the intestines, etc., and the lack of sufficient material for extended further investigations, as well as the failure to find the bullet, are plainly attributable to circumstances over which the pathologists had no control. While the circumstances under which the autopsy was made prevented the thorough, all-embracing examination that would have been necessary to throw the fullest light upon the many and complicated problems in the case, enough was learned to place the surgical treatment above all criticism of even the most censorious scrutinizer.

THE HEALTH OF THE ARMY.

The report of the Surgeon-General of the Army, which has just been received, contains some interesting details. Notwithstanding the fact that the active service of the Army is in the tropical regions, which are generally supposed to be more trying in a sanitary point of view than temperate ones, its general health for the year 1900 has been excellent. The higher rates of mortality were among the volunteers in the Philippines, thus showing that this type of service has its disadvantages from a sanitary as well as from other points of view. In Cuba the mortality ratio for 1900 was little more than one-half that of the preceding year and, but for the occurrence of yellow fever, would have been still further reduced. There were 144 cases of this disease, of which 32 were fatal. In Porto Rico the death-rate was the lowest, 5.05 per 1000, ever recorded in the army. This may perhaps be in part accounted for by the fact that a portion of the troops there belong to the native regiment and, besides being thoroughly acclimated, are probably placed under better sanitary conditions than even before their enlistment. It points, nevertheless, to the fact that Porto Rico has a healthy climate for a tropical possession. The largest death-rate naturally was in the details for Chinese service and most of this from casualties of active service.

Since the close of the calendar year 1900 the health of the troops in the Philippines has been steadily improving, and the decrease has been noted not merely in the non-efficiency from disease, but also in that from injuries. From January to June, 1901, the non-efficiency was less than 7 per cent., which is certainly a fair showing for the tropics. Smallpox, which was a serious matter in the early occupation of the islands, has been almost entirely suppressed; typhoid fever appears now only sporadically, and bubonic plague which has prevailed among the Chinese and Filipinos has given no anxiety whatever to the army medical authorities. Malaria and dysentery have exceeded the average of the past in all sections and have particularly prevailed in the Philippines, especially among the volunteers during 1900.

Venereal diseases were a cause of inefficiency to an increased extent in all sections, Porto Rico taking the lead, where the excessive ratio of 367.88 was recorded; in this it approached the British Indian army figures. In the volunteers in the Philippines the average (79.94) did not very greatly exceed the army average for the decade 1889-1898 before the Spanish war (71.45). Alcoholism, on the other hand, appears to be decreasing, the admission rate from this cause for the whole army during 1900 being 15.34 as compared with 28.67 per 1000 in the pre-Spanish war decade. This is perhaps partly due to a better grade of men in the service; Dr. Sternberg credits it to the establishment of the canteen, which he thinks induces to temperance. Here, also, the volunteers in the Orient showed to advantage with their ratio of only 8.68, as compared with the 12.41 of the regulars; but both are well below the general army average. Our troops in China gave a still lower figure, and the record of troops in insular and foreign service generally does not justify some of the sensational statements that have been sent out by portions of the public press.

The yellow fever investigation in Cuba and the excellent work done by the army in the study of tropical diseases in the Orient are duly mentioned. The former alone is sufficiently important in its results to make the year memorable in the history of medicine as well as in the army records. The researches in regard to dysentery and other diseases of the tropics, while less striking in their results so far, are hardly less important and it is satisfactory to note that our army medical department is doing such good work in these directions. The report gives data in regard to the personnel, and it appears that the medical corps is gradually filling its vacancies, but there has still to be a large force of contract surgeons employed. Many of the successful candidates for commissions were from this class, which seems, therefore, to be, in a way, an army medical school. It is a pity, however, that in times of nominal peace the army medical corps is still so restricted by law as to make the employment of contract surgeons necessary.

CONTROL OF LEPROSY.

The Molokai leper settlement, according to reports, is decreasing in population. Five years ago there were 1300 lepers, while now there are barely 900. The general cleaning out of the lepers from the other islands and their transference to Molokai since the downfall of the Hawaiian monarchy, has affected the source; there are fewer cases of the disease among the general population, and, therefore, less chance of its spread. Last year an even hundred lepers were sent to the settlment: thus far in the present year not much over 50 have been found to recruit its waning membership. Since annexa-

tion still stricter rules have been adopted and it seems probable that we may soon see this famous aggregation of this most loathsome disease become insignificant as compared with its past. There is a chance for another to take its place, however, in the Philippines where the lepers, it is said, number many thousands and where there has been practically no attempt whatever to segregate them thus far. In Hawaii leprosy appears likely to be helped along in its decadence by the dying out of the native race, but this is hardly likely to be the case in the Philippines. Whether, with thorough means of isolation and prevention, it can be altogether eradicated in the tropics is one of the chief medical problems of the future.

NEW YORK STATE MEDICAL ASSOCIATION.

The next meeting of this Association will be held in New York City, October 21 to 24, and promises to be one of the largest in the history of that Association. The program is an excellent one and can not but attract an attendance, not only from Greater New York but from the whole state. This Association now has over 1600 members in good standing. Its rapid growth under the new Constitution can be appreciated when it is understood that over twenty new county associations have been organized during the past year.

LOOKING BACK.

On the fifth of this month our esteemed contemporary, the London *Lancet,* celebrated its seventy-eighth birthday by reprinting the leading editorial in the initial number of that journal. The first issue was dated October 5, 1823, and the present editors propose to reprint each week a selection from the corresponding number of seventy-eight years ago. It seems strange that in the pious city of London a weekly medical journal such as the *Lancet* should have appeared dated Sunday and not Saturday, but such is the fact, and for some months the issuing date was Sunday. If the selections to be made show the vast advance in medical knowledge in the last seventy-eight years they will certainly be interesting, if not instructive. The first editorial is really a preface or announcement, but the editor makes no apology for the appearance of a medical weekly. "It has long been a subject of surprise and regret, that in this extensive and intelligent community there has not hitherto existed a work that would convey to the Public, and to distant Practitioners as well as to Students in Medicine and Surgery, reports of the Metropolitan Hospital Lectures," is the first paragraph. Attention is called to the lectures then being delivered by Sir Astley Cooper of St. Thomas' Hospital, and these are referred to as being the best of the kind delivered in Europe. The first, or introductory lecture, by Sir Astley Cooper, appeared in the first number of the *Lancet.* It was the printing of the metropolitan hospital lectures which, later on, got the *Lancet* into so much trouble, the lecturers protesting at having their private lectures, through which they made money, become public property. Evidently the views held by Mr. Wakly as to the functions of his new weekly were a little vague, for in the concluding paragraph of his editorial he says that, "we shall be indefatigable in our exertions to render the *Lancet* a complete Chronicle of Current Literature." We shall await with curiosity and interest for the forthcoming excerpts from the early numbers of the oldest medical weekly in the world.

MILK SUPPLY IN NEW YORK.

Milk is one of the most important of human foods and also one most liable to contamination between the producer and the user. Hence the complexity of the question as to a pure milk supply and the special interest to the profession of a recent report that has just been given out, by a commission of New York physicians, of which Dr. Henry Dwight Chapin is the head. The method adopted was to establish a bacterial standard of marketable milk, making the bacterial contents per cubic centimeter the index of purity. The leading milk-dealers were invited to co-operate and some of them have apparently aided materially in the investigation, adopting the suggestions made by the commission and showing generally a readiness to carry out what measures were necessary. The need of such was made sufficiently evident by the first test of milk taken directly from the dealers on a mild November day, when the bacterial contents of the samples ranged from 13,000 to 2,800,000. On a warm June day the following summer in six samples taken at random it ranged from 520,000 to 216,000,000. These are mentioned as from the better grades of milk used in New York. Over eight hundred bacteriologic examinations were made and some thirty visits to dairies, some of them a distance of 180 miles from the city. The condition of the barns, the cows, the milkers, the utensils, cooling processes, and transportation and the condition of the cans or vessels when returned from users were all taken up and studied in detail. Each of these was found an important factor, the mere fact of a pile of dry feed left near a cow making in one instance a difference of nearly a million germs in the milk per cubic centimeter. On the other hand, with due care as to all these points, the microbes could be reduced to a few hundreds or thousands and well within the limit of 30,000 per cubic centimeter established as a standard. The commission found that young single men, being less liable to carry infection from home, were preferable as milkers and it was advised that they be clean shaven. Nothing is said about milkmaids, but it would appear that a return to the ways of former times in this regard might furnish the ideal—sanitary as well as esthetic. Much importance is given to the methods of äerating and cooling as well as to the care of bottles or cans after delivery. It is easy to see how one sinner in this respect can destroy much good and neutralize all the care of his predecessors. The work has had its educational value and in every case the dealer has been able to reach the standard of the commission without great expense by following directions. Many who have not before co-operated are now making the required changes and asking for the certification of their product. The commission furnishes a special label for certified milk, which is a guarantee of its purity to the purchaser. Of course, it does not always follow that bacteria in milk are necessarily always

deadly, but they have no business there in great numbers and the given test is probably the best that can be devised for the wholesomeness of the milk. This investigation has demonstrated that with proper care they will be absent, and has shown a way to insure the public against very obvious dangers. It suggests, also, other ways in which our profession can protect the public health and make for sanitary righteousness.

Medical News.

CALIFORNIA.

Huntington House a Hospital.—The San Francisco mansion of the late Collis P. Huntington, on Nob's Hill, is to be converted into a charity hospital by Mrs. Huntington.

To Examine Teachers.—The San Francisco Board of Education has appointed Drs. Henry Gibbons, Jr., and Lois Nelson to make a physical examination of the recently-elected school-teachers.

University Medical Department Changes.—The regents of the State University have appointed Dr. Leo Newmark, now lecturer on neural pathology, professor of neurology, and Dr. Robert Orton M. Moody, assistant in anatomy.

Medical Examiners Sustained.—The application of Dr. J. J. Cowden, a gradnate of the "Pacific Coast Regular College of Medicine," San Francisco, an institution held by the Board of Medical Examiners to be not in good standing, for a writ of mandamus compelling the Board to issue to him a certificate to practice medicine was denied, October 3, by Superior Judge Hunt.

Personal.—Dr. F. J. S. Conlan, Nevada City, has located in San Francisco.——Dr. Elizabeth M. Yates, Woodland, has moved to Santa Rosa.——Dr. Cephas L. Bard, Ventura, who has been critically ill, is improving.——Dr. Theo. C. Rethers, San Francisco, has been appointed chief visiting surgeon at St. Mary's Hospital, vice Dr. Alexander T. Leonard, resigned. Dr. Charles D. McGettigan, has been appointed to the visiting staff of the hospital.——Dr. John E. Purdon, Turlock, has located in Stockton.——Dr. Guy P. Corwin, Santa Monica, has moved to Pomona.

GEORGIA.

Major William D. Crosby, surgeon U. S. Army, has been ordered for duty at Fort McPherson, Atlanta.

Dr. Harry M. Clarke, Atlanta, was injured by falling into an elevator shaft, October 7, spraining his back and his ankle.

An examination for license to practice medicine in Georgia was held by the State Board of Medical Examiners at Atlanta, October 8, 26 applicants, including one woman, being examined.

Georgia Pasteur Institute.—The first annual meeting of the Georgia Pasteur Institute was held in Atlanta, October 4. Twenty-two cases had been treated; fifteen proved to have been bitten by rabid dogs, by inoculation and death of other animals. All improved under treatment and are now well. The institute is now well established and free from debt. The following board of governors and officers were elected: Dr. Henry R. Slack, La Grange, president; Dr. James H. McDuffie, Columbus, vice-president; Dr. Charles D. Hurt, Atlanta, treasurer; Dr. Claude A. Smith, Atlanta, secretary and pathologist; Dr. James N. Brawner, Atlanta, physician in charge, and Dr. Ernest P. Ham, Gainesville; Dr. Madison M. Holland, Statesboro, Mr. Benjamin W. Hunt, Eatonton, and Mr. George C. Waters, Atlanta, governors.

ILLINOIS.

Communicable Diseases.—Typhoid fever is prevalent at Champaign. Smallpox has appeared in Neponset and Venice, Madison County.

New Peoria Hospital.—The new St. Francis Hospital, erected at Peoria, at a cost of $115,000, was thrown open to the public, October 10. The formal dedication will occur next month.

Personal.—Dr. John H. Mannon, Kewanee, returned from a six-weeks' trip to Europe, October 4.——Dr. George S. Henderson, Holcomb, has returned from a visit to Canada.——Dr. James A. Glenn, Ashland, has been appointed a member of the State Board of Charities.

Counties Must Pay Smallpox Bills.—The attorney general has rendered an opinion that counties are liable for all expenses in connection with the care and treatment of smallpox patients, with the exception of the expenses of enforcing quarantine regulations, for which expense the cities are liable.

Chicago.

Rapidly Regained Reason.—Dr. Armstrong, now undergoing sentence in Wheaton jail on account of his connection with the diploma mill frauds, petitioned recently for release from jail on account of rapidly failing mental and physical health. A marked improvement is reported to have followed the suggestion by the district attorney, that if removed from Wheaton he would be sent to the Government Insane Asylum at Washington.

Personal.—Drs. N. Senn, Daniel R. Brower and Jacob Frank landed in San Francisco, October 14, and reached Chicago three days later, from their trip around the world.——Dr. F. M. Adams, interne of Wesley Hospital, has been compelled to seek a change of climate. He has been seriously ill with pleurisy. ——Major Henry I. Raymond, attending surgeon, Headquarters Department of the Lakes, has been ordered to duty in the Philippines. He will be relieved by his brother, Major Thomas N. Raymond.——Dr. G. Frank Lydston has been elected a member of the Kauai Kodak Klub of Koloa Kauia, Hawaiian Islands.——Dr. James M. Phelan, an interne in Cook County Hospital, has passed the Army Medical Board examination.

A Typhoid Fever Year.—The current Bulletin of the Health Department says that this first year of the new century promises to be a typhoid fever year. From all parts of the United States come reports of an unusual increase of the disease; in the large cities "Public Health Reports" all show more than the usual autumnal increase. In this city the record of typhoid mortality for the third quarter of the year (July, August and September) shows an increase of 273 per cent. over that of the first six months; that is, from 0.90 per cent. of the total mortality between January 1 and June 30 to 3.36 per cent. of the total mortality between July 1 and September 30. The average autumnal increase in this region is about 70 per cent., so that Chicago's fall increase this year is very nearly four times greater than usual. This enormous increase is, however, to some extent relative, owing to the fact that the typhoid mortality of the first six months of the year was the lowest on record since records have been kept—only nine-tenths of 1 per cent. of the total mortality, as against a previous average of nearly 1.6 per cent. during the previous five years.

INDIANA.

Communicable Diseases.—Smallpox is reported from Coldwater and Richmond; Vincennes has 40 cases of typhoid fever, and four cases of diphtheria are reported from North Judson.

Personal.—Dr. R. O. Tidrick has moved from Bringhurst to Marion.——Dr. H. E. Phares, Morristown, will locate in Shelbyville.——Dr. Herbert O. Statler, Goshen, has moved to Kalamazoo, Mich.

Smoke for Consumption.—Dr. George R. Peckinpaugh, Mount Vernon, is reported to have discovered that inhalation by the patient of the fumes or smoke from the burning of a mixture of various kinds of forest leaves kills the bacilli in the lungs. The Evansville Board of Health is carrying on experiments with this treatment on the consumptive patients at the County Poor-House.

IOWA.

Diphtheria is so prevalent at Reinbeck that it has been deemed necessary to close schools and churches.

An isolation hospital site at Dubuque has been offered the city by Alphonse Rhomberg, well located and with good drainage.

Bequest to St. Luke's Hospital.—Davenport is to receive a bequest of $3000 from Mrs. M. Dawes, Brooklyn, N. Y., as a tribute of respect and affection to the memory of her aunt, the late Mrs. Frances M. French, Davenport.

Personal.—Dr. W. P. Burke, Iowa Falls, leaves in December for a year's study in Europe.—Dr. F. R. King, Anita, has purchased the practice of Dr. F. C. Mitchell at Kenwood Park, Cedar Rapids, and has moved to that place.——Dr. John W. Hemsted, Carson, who has been in ill health for two years, has so far improved that he will soon resume practice.——Dr. Homer J. Gilfillan, Trenton, has moved to Mount Pleasant.—

Dr. Fred L. Wells, Des Moines, has located in Hartford City, Ind.

KENTUCKY.

Epidemic Diseases.—Smallpox is reported near Preston and at Wasiato; diphtheria in malignant form is prevalent in Covington and in Garrard County; and scarlet fever at Bethel, Burgin, Mount Sterling and Maysville, where the public schools have been closed.

Personal.—Dr. Charles E. Thompson has returned to Covington and resumed active practice.——Dr. H. L. Farris, Kingston, has located in Memphis, Tenn.—Dr. George W. Norman, Uniontown, has moved to Owensboro.——Dr. William R. Thompson, Mount Sterling, sustained serious injuries October 10 in a runaway accident.

Examination of Water.—Dr. J. E. Cashin, Louisville, will receive $500 for his services to the city for the examination of the water supply of the city and the water of the river at the waterworks pump to determine whether the sewage of Lakeland Asylum was contaminating it. It was decided that the sewage was a constant menace, and steps are being taken to erect a plant for the destruction of the sewage and the cleansing of the bed of the creek.

License Required in Louisville.—An ordinance has been introduced into the Louisville Common Council requiring all applicants for license to practice medicine and dentistry in the city to show a certificate from the State Board of Health and requiring a license fee of $10 to be paid in advance. The rule in the case of dentists is modified, requiring them to exhibit a diploma from a reputable college of dentistry. The city attorney explained that the object of the ordinance was to prevent unqualified men from being granted licenses.

MARYLAND.

Dr. T. W. Simmons, former health officer of Hagerstown, has brought suit against that city for $330 alleged to be due for salary.——Dr. J. C. Hummer, on the occasion of his 69th birthday, was tendered a surprise reception by Eureka Lodge, Ind. Order of Good Templars, and was presented with a handsome watch, chain and charm.

Baltimore.

A bazar for free beds in the Franklin Square Hospital of the Maryland Medical College, opened at the Hospital Building on October 14.

The deaths for the week ended October 12 were 160, being a rate of 16.6 per 1000 per annum—white 13.50, colored 30.28. Only 6 deaths were from typhoid fever.

Anti-Mosquito Ordinance Defeated.—Councilman Brown's ordinance appropriating $15,000 for the destruction of mosquitoes was defeated in the city council.

No Smallpox in Baltimore.—There are no cases of smallpox in Baltimore at this time, it being practically the only large Eastern city free of the pest. There are 5 cases in the counties.

Nurses' Home.—Work has been begun on another story and a roof garden on the Nurses' Home at the University of Maryland, owing to an increase in the number of nurses recently from 34 to 40. The work will be completed in six weeks.

Johns Hopkins Hospital Historical Club.—The first session of the Johns Hopkins Hospital Historical Club for the season was held October 14, when the following papers were read: "Jacob Bigelow," by Dr. James G. Mumford, of Boston; "William Hunter's Medical Library," by Dr. William Osler.

Opposition to Isolation Hospital.—Much opposition is manifested to the selection of the site for the Infectious Diseases Hospital in the northern part of the city near Druid Hill Park. The residents of that section are agitating the matter. The city council has threatened to withdraw the appropriation.

Northeastern Dispensary.—The new building of the Northeastern Dispensary is under way. When completed it will cost about $5000, and equipment will cost $1000 additional. Founded in 1853, this institution has occupied the same quarters ever since, although enlarged several times. The structure will be 26 by 60 feet, with brick walls, and two stories high. The first floor will contain four private consultation rooms and a large waiting apartment with seating capacity for 100 persons. On the second floor there will be two consultation rooms and another waiting room. The present staff of three resident and three consulting physicians will be increased to twelve. The institution is supported by voluntary contributions and city appropriation.

Personal.—Dr. J. Frank Crouch has returned from Europe. ——Drs. William Osler and William H. Welch attended the meeting held in New York on October 12 in honor of Professor Virchow's 80th anniversary, the former being the chairman of the meeting. Both responded to toasts, the former on "Virchow as an Archeologist and Hygienist," the latter on "Virchow as a Pathologist."——Dr. Thomas S. Cullen has returned from his wedding trip.——Dr. Albertus Cotton has returned from a visit to friends in Ohio.——Dr. E. Boeninger sailed for Bremen on October 8.——Dr. David A. Medders has returned after a long visit to the Eastern Shore of Maryland.——Dr. Robert Love has returned after several months spent abroad. ——Dr. Malcolm Morris, of England, lectured last week at the Johns Hopkins University, on "Medical Endowment."——Dr. Howard A. Kelly gave a reception to the Hopkins Young Men's Christian Association, at his house on Eutaw Place, October 11. The naval militia practice ship *Sylvia*, with Dr. Edward Geer in command, returned from Hampton Roads, October 7.

Johns Hopkins Report.—According to the annual report of the Johns Hopkins University just out, there were 651 students enrolled, 270 of these being from Maryland and 17 from foreign countries. There were enrolled in the medical school 209, all college graduates. Of the 143 professors and instructors, 58 are in the medical school. Last year 41 received A.B., 53 M.D. and 30 Ph.D. Since the institution began 4089 students have entered, 1617 being from Maryland. The whole number of medical degrees so far conferred is 166. A considerable part of the report is devoted to the proposed change of site. Wealthy citizens have offered 176 acres of most desirable land immediately adjoining the city on the north, provided $1,000,000 in money be raised by subscription. Efforts are to be made to secure this valuable property for a permanent location. Dr. Henry M. Hurd, superintendent of the hospital, contributes a letter describing the work of the commission of four medical men from the university who were sent to the Philippines to study tropical diseases. The Baltimore Association for the Promotion of University Education for Women has presented $800 for a fellowship in the medical school for the coming academic term, and Dr. Florence R. Sabin, a graduate of 1900, has been selected by the medical faculty as the first incumbent. Dr. Joseph R. Ames has been made director of the department of physics, made vacant by the death of Prof. Henry A. Rowland.

MICHIGAN.

"Dr." William F. Winney, Stark, was fined $10 and costs by a Northville justice, October 5, for practicing medicine without a license.

Personal.—Dr. Beverley D. Harison, Sault Ste. Marie, is visiting the Buffalo Exposition.——Dr. A. C. Wood, Glendora, has located in Coloma.——Dr. E. M. Herdman, house surgeon at the General Hospital, Sault Ste. Marie, has gone to Ann Arbor.——Dr. Arthur McGugan, formerly of the staff of the State Hospital for the Insane, Kalamazoo, has moved to Denver, Colo.——Dr. Sumner A. Edmands, Mendon, has purchased a practice in Goshen, Ind.

Mortality of Michigan.—There were 2886 deaths returned to the secretary of state for the month of September, corresponding to an annual death rate of 14.7 per 1000 population. This number is 214 more than the deaths returned for August, but is more than 400 less than the number recorded for September, 1900. There were 714 deaths of infants under one year of age; 262 deaths of children aged from 1 to 4 years, inclusive, and 697 deaths of persons aged 65 years and over. There was a marked increase in the number of deaths returned from typhoid fever and from diphtheria as compared with the preceding month.

Cornerstone Laid.—On October 15 the cornerstone of the new medical building of the University of Michigan, Ann Arbor, was laid with appropriate ceremonies. Dr. John A. McCorkle, Brooklyn, of the class of 1873, gave an address under the auspices of the Students' Medical Society; Hon. Herman Kiefer, chairman of the Committee on the Department of Medicine and Surgery, then introduced Dr. Leartus Connor, president of the Michigan State Medical Society, under the auspices of which the cornerstone was laid, who addressed the assembly. President James B. Angell and Dr. J. George Adami, Montreal, also delivered addresses, and in the evening a reception was given to the invited guests in the rooms of the Alumni Association.

NEW YORK.

The State Board of Health will give a hearing, October 15, at Yonkers, on a complaint that the Yonkers Railway Company is creating a nuisance by the use of soft coal.

Personal.—Dr. Wilhelm H. Keller, Spring Valley, has opened an office in Haverstraw.——Dr. W. F. Cregg, Norwich, has returned to Camillus.——Dr. Oliver A. Brumenthal has been appointed to examine into the physical condition of the school children of Syracuse.

New York State Medical Association.—The eighteenth annual meeting of this Association will be held at the Academy of Medicine, New York City, October 21 to 24 inclusive. In addition to a program containing many papers of merit, symposia on "Malignant Growths" and on "Arterio-Selcrosis" will be held. The annual dinner will be given in the evening of October 23, at the Murray Hill Hotel.

August Mortality.—There were 10,999 deaths in the state during August, according to the monthly bulletin of vital statistics issued by the State Board of Health. The number of deaths this month is 1300 less than July, which was excessive. The only material decrease from that month was, however, in deaths from accident and violence; there were five deaths from lightning. Typhoid fever increased from last month in all the districts, and diphtheria to a small extent; all local diseases have caused fewer deaths. Deaths from acute respiratory diseases have fallen to 500, which is low even for this month, the month of its smallest mortality; 280 of the deaths were from pneumonia. Outside of New York City there were 210 deaths from Bright's disease. Smallpox caused 40 deaths, all in the maritime district, and since August 1, cases have been reported at Scheneous and Tupper Lake, one each, two at Hillburn, three at Ellenville.

Buffalo.

Dr. Jacob Otto has been appointed assistant surgeon to the 74th Regiment, N. G., N. Y.

Dr. Ralph Harris has accepted the position as an instructor in anatomy at Cornell, Ithaca.

Dr. W. W. Carlton, Waterloo, N. Y., has received the appointment of junior house physician at the German Hospital.

Dr. Casey A. Wood, Chicago, read a paper on "Exophthalmic Goiter; Its Symptoms, Diagnosis, Pathology and Treatment," before the Ophthalmological Section of the Buffalo Academy of Medicine, October 14.

Personal.—Dr. Herman Mynter is in New York.——Dr. Herman G. Matzinger has returned to the city.——Dr. J. C. Schrader, Iowa City, Iowa, and Dr. S. W. S. Toms, Nyack, N. Y., were guests of Dr. Thomas G. Allen.——Dr. Max Einhorn, New York, was the guest of Dr. Charles G. Stockton.

New York City.

University Medical School has received a donation of $25,000 from a benefactor, who wishes his name withheld.

Inspectors of Vaccination.—The Brooklyn Board of Health has appointed nineteen physicians as inspectors of vaccination in the public schools.

Medical Institute Plans.—The following tentative working plan has been adopted by the officers of the Institute for Medical Research: To expend $20,000 a year, divided so as to provide for forty scholarships. To make appointments for one year. To have candidates recommended by heads of various laboratories to the Board of Directors. To choose only persons pursuing, or about to pursue, investigations on some important subject in pathology, bacteriology, or hygiene.

Test of Koch's Theory.—Interesting experiments of much importance are being made at the bacteriological laboratory of the Board of Health. They are being held to test Prof. Koch's theory that human tubercle bacilli will not readily infect cows or calves. So far the experiments have shown the theory to be correct, it is said. All the calves reacted to a tuberculin test, but the reaction was very slight, and may have been due to inflammation or other causes considered by the investigators at the laboratory to be of minor importance.

TENNESSEE.

A typhoid epidemic is raging at Jamestown, Fentress County, a place of about 200 inhabitants. There are now 25 cases, with 2 deaths.

Tennessee Medical College, Knoxville, held its thirteenth annual opening exercises, October 1. Dr. Charles P. McNabb, dean of the faculty, delivered the opening address.

Scarlet Fever.—Scarlet fever has been reported during the past month from seventeen counties, to the State Board of Health. Greenfield, West Point, Columbia, Gallatin, Saundersville and Shelbyville, all report cases.

Vanderbilt University Medical Department, Nashville, began its year's work, October 1, with a freshman enrolment of 75. Addresses were delivered by the chancellor of the university, and Dr. William L. Dudley, dean of the medical school.

Personal.—Dr. John Brown has been appointed assistant physician at Lyons View Asylum, Knoxville.——Dr. Douglas Haggard has returned to Nashville, after a stay of three years in New York.——Dr. W. W. Parker, Smithville, has resigned his position as pension examiner.——Dr. William W. Hill, Chattanooga, has moved to Dunlap.——Dr. Garland F. Cummins, Bellwood, is reported to be ill with smallpox.

Smallpox Statistics.—At the semi-annual meeting of the State Board of Health, the secretary reported that between April 1 and September 12, there had occurred a total of 2059 cases of smallpox in the state, with a total of 94 deaths, showing a death-rate of 4.56 per cent. Of these cases, 816 were white and 1210 colored. There were 54 cases of smallpox on hand at the time of the report, located in eleven counties. From the lay local press we learn that smallpox is present in Dalton, Bellwood, Jackson, Hollywood, Chattanooga and Rossville.

WISCONSIN.

Tear Down the Signs.—Much difficulty is being experienced in the vicinity of Kubia, where smallpox exists, by the attitude of the farmers, who object so strongly to the yellow placards that in some cases they have torn them down.

Honor Virchow.—Milwaukee physicians gave a dinner, October 12, at the Republican House, in celebration of the eightieth birthday of Professor Rudolph Virchow. A loving cup and congratulatory address, signed by those taking part, were sent to him.

The State Board of Medical Examiners held its last quarterly examinations at Oshkosh, beginning October 8, and examined twenty-two applicants for certificates to practice. The next examination will be held at the Hotel Pfister, Milwaukee, January 14.

Fire at Insane Hospital.—A fire, supposed to be originated by spontaneous combustion, started in a coal shed at the Northern Hospital for the Insane, at Oshkosh, October 5, and for a time threatened the entire institution. The roof of the morgue, a carpenter shop and 3500 tons of coal were destroyed, but no one was injured.

Scarlet Fever and Diphtheria.—There are 12 cases of scarlet fever at West Superior.——At Oshkosh there have been reported from September 1 to October 4 in all 26 cases of scarlet fever and 34 cases of diphtheria. The spread of these diseases is general in the city and the health officer fears an extensive epidemic of both diseases.

Personal.—Dr. George A. Barker, Shell Lake, will take the practice of Dr. H. M. Read, at Menomonie. Dr. Read will go abroad to study.——Dr. Horace M. Brown, Milwaukee, has returned from Europe.——Dr. E. Y. Arnold, formerly of St. Croix Falls, has located at West Duluth.——Dr. E. C. Jacobs, Durand, has associated with him in his practice Dr. A. D. Smith, formerly of Eau Claire.

Wisconsin College of Physicians and Surgeons held the opening exercises for its ninth session, September 24, Dr. Homer Sylvester delivering the address of the evening. Apparatus to the value of $1000 has been added to the laboratories. New members of the faculty have been added, as follows: Dr. McNaughton, department of surgery; Drs. Joseph Donovan and James Ryan, materia medica and therapeutics; Dr. Bjorkman, Racine, physiology, and John S. Donovan, jurisprudence.

Fumigate the Camps.—The work of fumigating the lumber camps has been begun and the places that proved last winter such excellent breeding ground for smallpox are to be thoroughly disinfected. The occupants of the camps themselves seem to realize their danger and the opposition which was manifested during the attempts on the part of the health authorities last year, is no longer present. Dr. H. J. Connor, who was appointed by the State Board of Health, has charge of the work.

Smallpox.—The alarming report that seventy-one cases of smallpox were discovered October 7, at the government school at Odanah, on the Bad River Reservation, has prompted active steps by the health authorities. The village is quarantined, the three district schools have been closed and the parochial school has been converted into a hospital. The form of the disease seems to be mild, but the sudden and widespread outbreak will make its confinement difficult.——At Stockbridge a case of smallpox was discovered in a tent-covered wagon occupied by a threshing-machine crew.——The health officer of La Crosse investigated the alleged smallpox epidemic at French Island and found the disease in three families. The places infected have been quarantined.——Three cases are reported on South Ridge, south of La Crescent, Minn.——There are now but two cases of the disease in West Superior.

CANADA.

Personal.—Dr. Albright, senior surgeon of the Elder-Dempster line, has been appointed surgeon to the Canadian Pacific Railway steamer, *Empress of India*. Dr. Fitzgerald of Montreal succeeds him.

Victoria Cottage Hospital at Regina.—Last week, while touring the Canadian Northwest with the Royal party, Lady Minto opened the Victoria Cottage Hospital, at Regina, towards the erection of which the Lady Minto Cottage Hospital Fund contributed $1,500.

From Montreal.—Montreal, too, is also threatened with another epidemic of smallpox. Only a few days ago the city was declared free from the disease, but the Provincial Board of Health of Quebec considers that owing to an outbreak at St. Henri, a suburb, and the epidemic at Ottawa, that it is important enough to issue a general call for vaccination. A special hospital is being established to deal with any cases developing.

From Ottawa.—The Capital seems to be face to face with an epidemic of smallpox. Dr. Robillard, the medical health officer, is away on his holidays and the health of the city is in charge of Dr. Law in the interim. The week ending October 6, fifteen new cases developed, and during the past week there were a good many more. The Board of Health has ordered a general vaccination, and Dr. Bryce has been summoned from Toronto to advise on the matter.

Without Tuberculin Test.—The United States Department of Agriculture has issued an order that all Canadian cattle imported into the United States for exhibition purposes during the time the International Live Stock Exposition is being held, at Chicago, may be brought in without being subjected to the tuberculin test, but they must be accompanied by a certificate from the Canadian official veterinarian stating that they are free from contagious and infectious diseases.

Notre Dame Hospital, Montreal.—The annual meeting of this hospital was held last week, and it was decided to build a new hospital in the near future. The medical report stated that during the past year 2200 cases had been treated, an increase of 177 over the previous year. The cost of each case was ninety cents per day, a decrease of eight cents, in comparison with the preceding year. Of the total number of cases treated 1854 left the hospital cured, 155 were not improved and 134 died, making the percentage 6.09. Among the total deaths 69 were in a precarious condition when they reached the hospital. In the outdoor department there were 20,078 consultations, or a decrease of 1740 on the previous year. In this department five cents is charged for consultations for those able to pay. The financial report stated that the expenses were $29,480.54, and the receipts $32,293. Dr. E. P. Lachapelle was re-elected superintendent, and Dr. Benoit, secretary. Next year the annual report will be published in English, as well as in French, owing to the increasing interest taken in the affairs of the hospital by the English-speaking population.

Ontario Board of Health.—The regular quarterly meeting was held in Toronto on October 9 and 10, the chairman, Dr. Vaux, of Hamilton, presiding. Dr. Bryce, the secretary, in his official report, stated that there had been in the province for the first nine months of the year 1064 cases of smallpox, which was the largest outbreak in Ontario in the history of the Board. Only six deaths had occurred, which was less than 1 per cent. It was estimated that over forty cases had occurred since October 1, in places including Ottawa, Oxford County, Manitoulin Island and the District of Algoma. Dr. Bryce believes that the time has arrived in the history of the Dominion of Canada when the government should establish an institute for scientific research, where vaccines and anti-toxins would be prepared. The secretary also presented another report on the question of tuberculosis, and it was recommended that municipalities be advised to stop the people from expectorating in public places, and that physicians be compelled to report all cases of tuberculosis. Further advice was given that tenements, factories, schools and other public buildings be regularly inspected to promote cleanliness, ventilation and other sanitary conditions.

FOREIGN.

Prize for Research on the Invisible Rays.—The Vienna Academy of Science will award the von Baumgartner prize of 2000 kronen at the close of 1903, for the best research work on the invisible rays.

Deaths Abroad.—Adolf Winter, professor of pharmacology at Leipsic, and formerly librarian, died September 18, in his 86th year.——The death is also announced of C. Euler, to whose efforts the Turnwesen, gymnastic athletics, owes much of its success in Germany.——G. Jablonowski, of the Berlin Anatomic Institute, 43 years of age.——H. von Wyss, professor of forensic medicine at Zurich University.——Our Grecian exchanges report the death of Jules Galvanis, professor of surgery at Athens.

Nineteen Physicians in Quarantine.—The steamer *Senegal* left Marseilles for a trip to Palestine, with 174 tourists on board, including 19 physicians and their families. Soon after leaving, a case of bubonic plague was discovered among the crew, and the steamer returned to Marseilles, where the party were quarantined. One other case occurred among the sailors, but the rest of the crew and passengers escaped. Chauffard, Richardière and Bucquoy are among the physicians who have thus been enabled to study at first hand the workings of the quarantine system.

International Congress of Physiology.—This congress convened at Turin, September 17, with about 300 members. Forster, of Cambridge, was elected perpetual honorary president, as a token of gratitude for his efforts in organizing these international congresses of physiology. Bowditch, of Boston, was elected president, and Chauveau, of Paris, second president. The members sent a telegram to Queen Margherita thanking her for the successful initiation of the laboratory of physiology, which has been constructed on top of Monte Rosa. Mosso announced that the Italian government has recently appropriated funds to equip and maintain it. He invited the nations represented at the congress to consider the laboratory an international institution and to send expeditions to it.

LONDON LETTER.

Reform in the Army Medical Corps—Drastic Charges.

At last, under the severe pressure of necessity, the War Office has been driven to grant some very substantial reforms of the Army Medical Corps. The need for such has been repeatedly pointed out in The Journal, and the fact that the so-called "hospital scandals" of the South African war were the result of the domination, and consequent muddling of army medical matters by the military authorities of the War Office. The Commission on Army Medical Department which sat under the presidency of Mr. Broderick, the Secretary for War, has been already described. Its report has just been published. The Committee recommend that the Army Medical Corps be placed under the supervision of an Advisory Board, to be composed of the following: The Director-General of the Corps, chairman; the Deputy Director-General, vice-chairman; one officer of the Corps, with special knowledge of sanitation; one officer, with special knowledge of tropical diseases; two civilian physicians and two civilian surgeons, appointed by the Crown, on the recommendation of the Secretary of State; one representative of the War Office, appointed by the Secretary of State; one representative of the India Office, appointed by the Secretary of State for India, and the Matron-in-Chief, of Queen Alexandra's Imperial Military Nursing Service—for nursing service only. To be eligible for appointment on the Advisory Board, a civilian physician or surgeon must have held a post on the staff of a leading civil hospital, and be not more than 55 years old on appointment. He shall hold office for three years, with renewal upon extirpation, but terminable upon his attaining the age of 60. He shall receive an honorarium of $1000 per annum.

But the most important reform is in the conditions of admission to promotion in the Corps. The rates of pay are considerably increased. The following are proposed: Lieutenant, $1600 per annum; captain (i. e., after three years' service), $1900; captain after seven years' total service, $2000, and after ten years, $2300; major (i. e., after twelve years'

total service), $2900; major, after three years' service as such, $3150; lieutenant-colonel (i. e., after twenty years' service, $3500; lieutenant-colonel, $4000; colonel, $4800; surgeon-general, $7500; director-general, $10,000. In regard to promotion, a most important innovation is the substitution of promotion by examination for promotion by seniority. On the completion of six years' service as captain, an officer can retire with a gratuity of $5000. Should he elect to continue, between his ninth and twelfth year of service he will be attached to a hospital at one of the military centers for six months, so as to be able to study at a modern hospital; then he presents himself for examination. Having passed the examination and completed twelve years of service, he will be promoted to a majority. Three years later he can retire on a gratuity of $12,500. If he continues he will be granted three months' study leave and then be required to qualify by examination for promotion to the rank of lieutenant-colonel. This examination covers ten subjects, including the medical history of modern campaigns and the army services of other powers. If he fail to pass, he will be compulsorily retired on the gratuity last mentioned, or he may by special permission be permitted to complete twenty years' service, and retire on a pension. The committee is strongly of the opinion that the establishment of a military hospital and medical staff college for the training of officers of the Medical Corps would conduce to the efficiency of the service. Taken as a whole, the report is highly satisfactory, and its adoption must greatly improve the personnel of the Medical Corps and remove most of the crying grievances of its officers.

Sir James Paget's Memoirs.

The Memoirs and Letters of Sir James Paget, edited by his son, Mr. Stephen Paget, have just been published. The work, both from the high importance of the subject and the competence of its editor, is one of the most valuable and instructive contributions on medical biography ever published. Sir James Paget, who died nearly two years ago, was for many years regarded as the leader of the profession in England—a position which he attained by the most arduous and unremitting work, in spite of poverty in his early years. The editor of the Memoirs, Mr. Stephen Paget, is himself a surgeon and has made several valuable contributions to surgical literature. Perhaps the most important are his paper on "Inflammation of the Parotid, After Abdominal or Pelvic Lesions," and his life of John Hunter. He is master of a graceful literary style, in which the effects of heredity can be traced. The book is the story of a life full of work. The number of hours which Sir James Paget worked for many years seems almost incredible—sixteen hours a day. He was never regarded as a great operator, but as a diagnostician he was unrivaled and his opinion in a surgical case was relied upon as the highest that could be obtained. The universal feeling of respect with which he was regarded, both by the profession and society generally, was inspired not only by his professional skill, but also by his character as a man, absolutely above the suspicion of ever being actuated by any but the highest motives. His son says of him: "He was very proud of his profession, and proud of his own hard work for it and in it; he never dreamed of being above it, or of going outside the limits of it; and its service was perfect freedom to him."

Smallpox Outbreak.

There are now 160 cases of smallpox in hospitals in London, and 5 new cases were admitted on the last day of the report. Though the number can not be described as alarming a disquieting fact is that cases occur in all parts of the vast metropolis. The local government board has issued circulars to the borough councils and boards of guardians of the poor instructing them to take energetic measures in connection with the cases—to isolate the patients, vaccinate persons exposed to infection and disinfect the premises. The neglect of vaccination, which is partly the result of the recent act abolishing compulsion in response to the clamor of anti-vaccinators, is to some extent responsible for the outbreak. Thus in the Borough of Hackney it is estimated that in a population of 50,000 children under the age of 10, 20,000 are unvaccinated. Here the authorities are exerting themselves to the utmost to prevent the disease obtaining a hold on the parish. The residents of several of the infected houses are being paid $5 a week on condition that they do not leave the building or send their children to school. The total deaths from smallpox, which had been 7, 7 and 9 in the preceding weeks, fell last week to 3.

A nurse in a Paris hospital fatally burned a child by placing it in almost boiling water. She was condemned to 15 days' imprisonment and 2000 francs damages.

THE VIRCHOW ANNIVERSARY IN NEW YORK CITY.

The medical world did honor to Dr. Rudolph Virchow, last week, on the anniversary of this great man's eightieth birthday, by a dinner which was held in New York, at Sherry's last Saturday, to which over 100 representative medical men sat down.

Dr. C. L. Dana had devised an ingenious and handsome menu. It represented a facsimile of Virchow's *Archiv für Pathologische Anatomie*, with its familiar green cover; within there were two portraits of Virchow. One was taken at the age of 38, and had been given to Dr. Andrew H. Smith, of New York, who in 1858-1859 was a student in Berlin. A later portrait of Virchow, at the age of 78, was also included in the menu. Following this was a list of the more important publications of Virchow on matters medical, anthropological, hygienic and social.

Following the dinner, Dr. William Osler, acting as chairman, spoke of Virchow as a scientist, more particularly as an anthropologist and hygienist. He said that they had gathered, this night, for a notable occasion and on a notable night, for, eighty years ago, there had been born into the world of medical science, a genius. Genius, he said, had been defined as a matter of birth and environment. With reference to this last factor, Virchow had been fortunate, since he had had the privilege of being a student under Johannes Müller. What this had meant to the young man was well expressed in Virchow's address, given at the death of his master. At the time of Müller's entrance into the medical arena, vague and mystical conceptions of disease were taught, but he had introduced into the science of pathology the too long forgotten ideas of the old Greek philosophers and teachers. Observation, study and analysis were the fundamental considerations of these early physicians, and it was to the undying credit of Johannes Müller that the processes of exact observation were brought to bear on the problems of disease.

Speaking of his work in the field of archeology, Dr. Osler said that it was not a mere dilettante, but as an ardent and faithful student; that he was not a mere dabbler in skulls and in relics, but a recognized master; and no congress of archeology was ever complete without his presence.

With Pettenkofer, of Munich, he shared the honor of being the foremost authority of Europe in matters connected with public hygiene, and the Prussian Government, and more particularly the city of Berlin, owed much to his genius as a hygienist. The list of his contributions to preventive medicine, as revealed in his "Gesammelte Abhandlungen," bears testimony to his extraordinary fertility of idea and activity in execution.

Dr. Gould, of Philadelphia, then read a telegram of congratulation to Dr. Virchow from his friends and admirers in America.

Dr. W. H. Welch, of Baltimore, spoke of Virchow as a pathologist. It would take, he said, a genius approaching Virchow himself, in attempting to correctly present this many-sided man. As an anthropologist, he was an acknowledged authority, and Dr. Welch related an anecdote, in which an acknowledged authority in anthropology had asked Dr. Welch if Virchow had any reputation in medicine, as he had always thought of him only as a fellow anthropologist.

Virchow, he said, had been an integral part in the great renaissance that had been going on in science, in whose collateral branches such men as Brucke, Myers, DuBois, Raymond, Helmholtz, Schroeder, and others were such notable lights. He had been fortunate in the choice of his early studies, for in the observations that he made on the chemistry and the morphology of the blood; in his later studies on inflammation, and in his work on cellular tissues, he was working with the fundamental problems of pathology. His work on thrombi and emboli constituted an epoch in the study of disease processes, and his "Cellular Pathology," which appeared in 1858, was a classical work, making a step forward for all time. It is true that its foundations have been attacked, but they have never been superseded. Certain details have been modified, but

the fundamental truths are truths for all time. Morgagni had first brought into prominence the importance of *organs*, Bichat had shown the relations of the *tissues*, but Virchow laid the foundations of pathology in the study of the cell. One of the most important precepts to be learned from Virchow's work is the value of method as opposed to doctrine. Disease, for him, was "life under changed conditions," and it is this attitude towards the investigation of vital problems that has placed pathology so high in the sciences.

Dr. Andrew H. Smith, of New York, spoke of Virchow as a teacher and as a man, and gave a number of pleasant reminiscences of his student days of 1858-1859 in Berlin. One of the things that most strikingly appealed to his mind was the method that Virchow had inaugurated in the dead-room. Traube was then active in his teachings and many of his postmortems were associated with the smell of burnt meat, as he used small red-hot irons. The postmortems were then conducted with the view of ascertaining what the patient died of and the affected organ only was examined with any minuteness. Dr. Smith said that he had been electrified to see Virchow open the body from the chin to the pubes with one sweep of his butcher's knife and he would then make the dead man tell his secrets, so searching was the scrutiny. The new point of view of learning everything possible from the dead body was a revelation.

Dr. Smith also spoke of Virchow's early resolve to write in a simple and straightforward style and his written and spoken words were always expressed with a clean-cut straightforwardness, rarely found in medical literature. As a man, Virchow was very democratic and approachable. He was always pleasant and ready to aid his students and above all was a constant stimulus to accurate observation.

Dr. Jacobi then spoke of Dr. Virchow as a citizen. He dwelt particularly on Virchow's public work, from the time when he first lost governmental favor by his honest and enlightened report on the typhus epidemic in Silesia in his early manhood to his latest parliamentary services. Reform in society as well as in science has been his forte; the city of Berlin, with its model administration, owes largely to him the fact that it is a cleanly, healthy, well-governed city, in spite of constant interference. The empire is indebted to him for the organization of the medical care of its soldiers in its later wars, and in this connection Dr. Jacobi quoted Virchow's appreciative acknowledgment of our own country's contributions to the medical



science of war. For nearly fifty years Virchow held a seat in the town council of Berlin, for dozens of years in the representative council of Prussia and the imperial parliament; he has always stood firm for principle and right. While engaged in scientific research, which in universality and importance has been rarely even approached by others, he has never forgotten that his services also belonged to his countrymen; his example should teach young medical men that the pursuit of science and good citizenship are not mutually exclusive. His life is a great lesson that we should learn, no matter how high our scientific position or vast our learning we belong to our fellow-men in duties of reciprocity and good citizenship. But we may never have an opportunity again to thus honor one who has been equally great, alike in science and citizenship. One thing we may say of him, with Goethe: "He has satisfied the best of his era, he has lived for all time."

Miscellany.

Malaria Simulating Hydrophobia.—At the recent Pan-Hellenic Medical Congress, held at Athens, Nicolettis reported a case of apparent acute hydrophobia in a child, who exhibited all the ordinary symptoms, including biting the persons around. He was not known to have been bitten by any animal, but had a history of preceding malaria. Nicolettis diagnosed the case as pernicious malaria, instead of hydrophobia, and injected quinin subcutaneously, with complete cure of all the symptoms in three days. In the treatment of malaria, one member of the congress lauded a mixture of quinin and methylene blue as very effective in his experience, while another ascribed great therapeutic efficacy to a combination of belladonna, quinin and iodoform.

An Accouchement in Dahomey.—Dr. Blin describes, in the French *Annales d'Hyg., etc. Coloniales*, 1901, 1, the peculiar features of an accouchement of a Dahomey high caste woman at which he was allowed to be a spectator. During the last stage, two women massaged the thighs and flanks of the patient continuously, scolding her at any expression of pain. A stopper of herbs rolled into a wad, was inserted in the anus—"a hygienic measure highly to be recommended," he remarks, "for the sake of both the infant, the mother and the accoucheur." A round piece of wood like a broom handle anointed with palm oil and aromatic substances, was introduced into the patient's mouth and pushed down into her throat. The purpose of this was to retain the air in the thorax as one instinctively closes the glottis in straining during defecation. Boiling water was used copiously in cleansing.

Simple Test for Fat in the Blood.—Zaudy, of Ebstein's Clinic, describes in the *Deutsche Archiv f. Klin. Med.* for June, a very simple method of detecting lipemia. A small drop of blood is drawn on the center of a cover glass which is inverted and the hanging drop examined. The serum that collects in a drop of normal blood is perfectly clear, but in case of lipemia it is turbid, of a bluish or grayish white or even milky hue, if examined within the first few hours. The microscope shows the droplets of fat, but the macroscopic aspect of the serum is sufficient to disclose the lipemia. The only source of error is that an excess of fibrin may simulate the fat, but the microscope reveals the difference at a glance. The blood from a large number of patients was examined, all suffering from affections usually considered as associated with lipemia, but no fat was found in the blood except in the diabetic patients. It is possible to trace the course of a fibrinous pneumonia with this hanging-drop method. The blood from lying-in patients always showed a ring of fibrin around the clot.

Treatment of Obesity.—E. Stadelmann describes, in the *Berliner Klin. Wochenschrift* for June 24, a case of obesity in which the weight was reduced 120 pounds in a year. This was accomplished by restricting the diet to the amount of calories which experience showed was just below the amount on which the patient increased in weight. She gained on 1200 and lost on 1000, consequently the diet was restricted to an average of 125 gm. of albumin, representing 514 calories; 32 gm. fat, or 300 calories, and 49 gm. carbohydrates, or 200 calories, a total of 1014 calories a day. No restriction was imposed on the amount of water and green vegetables were allowed in abundance. The ration for one day, for example, was 400 gm. coffee, without milk or sugar, 80 gm. graham bread, 200 gm. roast pork, 80 gm. boiled ham, 500 gm. tea, without milk or sugar, 80 gm. Schweizerkäse and 400 gm. cucumber salad. Stadelmann believes that thyroid treatment of obesity is dangerous and superfluous, as equally good if not superior results can be attained by underfeeding, adapting the number of calories to the individual case, and varying the proportions of fats and carbohydrates from time to time to make the diet more acceptable to the patient. Even at the best, the treatment of obesity is a severe strain on the patience and will-power, and the physician's strict and constant oversight is needed.

Arrhythmia in Fatty Degeneration.—Kisch states that the probable reason why intense arrhythmia is noted in one case of fatty degeneration of the heart, while the heart action is still regular in other cases in which the degeneration of the myocardium is equally pronounced, is that in the former case, the nervous apparatus of the heart is affected, directly or indirectly, by the morbid process. This extreme, persisting arrhythmia is always an ominous sign, he says, indicating heart failure liable to occur at any moment in consequence, possibly, of some very slight exerexertion or increased resistance in the vessels. It may be the first indication of latent fatty degeneration of the heart in persons inclined to fat, and should rouse the physician to energetic measures directed to the relief of the task imposed on the heart, and to aid the recuperation of the degenerated myocardium. Kisch is physician at Marienbad and he states that he has been able to prolong life and relieve the patients in many apparently doomed cases. He illustrates typical tracings, in such cases, in the *Wien. Med. Woch.*, of May 25. They are distinguished by the alternation of a number of regular pulse waves with a few small, rudimentary waves, and, possibly, occasional pauses. Or the regular waves may occur irregularly between abnormally large, protracted waves and the rudimentary. The pulse may be retarded or accelerated.

Correspondence.

American Humane Association.

Toledo, Ohio, Oct. 3, 1901.

To the Editor:—My attention has just been called to your long editorial in The Journal of September 14, wherein, among other things, you question the accuracy of my statements. Your sense of fairness, I doubt not, will permit me to make, through your columns, a brief reply.

Referring to the pamphlet "Concerning Human Viviseetion" issued by The American Humane Association, you say:

"If the Association had really desired to put the matter fairly before the public, why did it not include Dr. Keen's last letter? If it had done this, the anonymous reviewer would have had an opportunity to point out the 'serious misquotations' spoken of by Mr. Brown in his recent communication, if they existed, a possibility of which we have our doubts. A writer who . . . leaves an important term like *'carcinoma disseminc'* in the original rather than put it into intelligible English is not one that inspires faith in his criticisms or the accuracy of his assertions."

1. The answer to your first question is easy enough. The pamphlet "Concerning Human Vivisection" was published at least three weeks before Dr. Keen's "last letter" appeared in your columns; its introduction is distinctly dated July 1, 1901. How could Dr. Keen's letter of August 10 appear in a pamphlet printed and in circulation in the preceding month?

2. The important term "carcinoma dissemine" does not appear in the *Review*, except as embodied in a long letter from the special correspondent of *The British Medical Journal*. Doubtless he will appreciate your criticism: but I fail to see why his language should have been changed, or why his fail-

nre to translate a perfectly intelligible phrase should inspire doubt as to the accuracy of his assertions.

3. You doubt the possibility of my pointing out in Dr. Keen's letter any serious misquotations. Will The Journal grant me the space to prove it? If so, the proof of his garbled quotations shall be furnished. But in his interest, I protest against being called upon to furnish them in your columns.

4. Speaking of Animal Vivisection, you say that "the courageous application of the facts thus gained on human subjects falls fairly within what Mr. Brown . . . would call "human vivisection." Not at all! Evidently, you are entirely ignorant of what The American Humane Association means by the term. It was thus defined on the first page of the original pamphlet: "The phrase 'Human Vivisection' must not be taken as having any reference to the experimental use by physicians of new methods or new remedies, with a view to the benefit of the patient. To such tests, in the vast majority of instances, there can be no objection. But 'human vivisection' is something entirely different. It has been defined as 'the practice of subjecting human beings, men, women, and children, who are patients in hospitals or asylums, to experiments involving pain, mutilation, disease or death, for no object connected with their individual benefit, but entirely for scientific purposes."

5. You state regarding unjustifiable experiments on human subjects, that there have occurred "a few rare instances of the kind, that were promptly condemned by the profession generally, long before The Humane Association ever paid any attention to the subject." I am very glad to know this upon your authority. If now, you will kindly quote from your own periodical, a single case in which an experimenter of this kind has been, by name, condemned or censured in your editorial columns since The Journal came into existence, I shall be glad to give your words that wide publicity which they deserve, as illustrating the attitude of the medical profession towards this atrocious practice. Yours very truly,

James M. Brown,
President American Humane Association.

Ans.—The Journal received the pamphlet in question about five weeks after the publication of Dr. Keen's last letter. We have not been accustomed to consider the date on the introduction as the date of printing of a work, and, supposing we had been promptly furnished with a copy, it was not unjustifiably assumed that its producers had had time to see The Journal of August 10 and include the latest statement of Dr. Keen. Anyone can put any date he pleases on the preface to a pamphlet; it is no evidence of the time of a book's appearance. We repeat that it would have been better for their pretense of fairness if The Humane Association had held back their pamphlet, if necessary, a few days to present also this last letter.

As regards the retaining the term "carcinoma dissemine" instead of putting it into English, it might do in a medical journal, though it looks pedantic, but, whether in a quotation or not, it ought not to be left without explanation in a pamphlet addressed to the laity. It disguises, so to speak, the facts in the case, that the patient suffered from generalized cancerous infection. While not approving of the procedure we can not say that auto-inoculation in such a case had any more effect on the feelings of the patient or the prognosis of the case than there would be in general leprosy, or from the addition of another pustule in a case of discrete variola. That, however, is evidently not the impression intended to be conveyed by The Humane Association's writer and he refrains from any explanation of the term, though, if he is at all familiar with medical terms, he must have been aware of the very possible trifling nature of the operation. The term as used by him can not be said to be "perfectly intelligible" to the average reader.

Dr. Keen, who is now in Europe, is perfectly able to take care of himself and one may reasonably doubt Mr. Brown's word that he has made any serious misquotations or that Mr. Brown is likely to want to spare him any exposure of them if he can do it. We may also be reasonably excused from giving any space to those who garble extracts and excuse deliberate misrepresentations under the plea of "free translation." As regards our alleged misapprehension and ignorance of what is meant by human vivisection, we shall hold our position. In fact, according to the definition given, hardly one of the cases of alleged human vivisection cited could be said to have been done entirely for scientific purposes; there was a therapeutic end in view in nearly every one, if not all. This does not, of course, justify the infliction of needless suffering, or criminal recklessness.

The Journal has editorially condemned human experimentation in the past as it does at the present, but it can not approve of exaggeration and misrepresentations or the attempted inference that it is not condemned by the medical profession. That this is not the case is shown by the fact that The Humane Association's anonymous writer has to quote such condemnation, though he apparently tried to avoid it, as in the case noted by Dr. Keen. The impression conveyed to disinterested laymen by his article is shown by an editorial in the *New York Evening Post* which sees in it "not an answer to Dr. Keen's specifications, but an attempt to hold him responsible for things he has not said or done. It puts him in the attitude of exonerating physicians who have been charged with experiments producing unnecessary pain upon poor and helpless patients in hospitals. No impartial reader will derive such an impression from anything he has said." We do not see the utility of further lending our columns to those whose main object appears to be the libeling of the medical profession, through garbled quotations and direct misrepresentation by an anonymous writer.

The Banquet to Dr. N. S. Davis.

Hartford, Conn., Oct. 12, 1901.

To the Editor:—The testimonial banquet to Dr. Davis, so warm and appreciative in its recognition of his great service to medicine, and to medical men, failed to note the real monument which he has been building for the future.

The recent great advances of science have pointed out the wisdom and prescience of the persistent and insistent efforts of Dr. Davis to make known the dangers from the use of alcohol. For nearly half a century from laboratory and clinical experience he has called attention to the errors and delusions which have invested the alcoholic problem.

Dr. Rush, the great physician of the last century, is more often quoted to-day and is more vividly remembered for his statements of the nature of alcohol and the diseases which follow than for any other work he did.

Condelac, a noted French philosopher of the eighteenth century, is unknown to-day; his name is rarely mentioned except as having urged that inebriety was a disease and curable.

History has many similar examples of prominent men in their day whose memory was only known to the future by what they said regarding some unpopular subject, which later was recognized as a great truth. It is this work of the recognition and defense of great facts which are denied at the time, that make such men the pioneers. These men open up new territory and mark out paths for larger truths in the future. There can be no doubt that the great impending alcoholic problems of this new century will refer back to the efforts of a few men of which Dr. Davis is the great leader, and who, like scouts, far in advance of the army of scientific progress, indicate the direction and line of march.

A host of friends all over the country extend to Dr. Davis their heartiest greetings and confident assurance that his name and reputation is not limited to this day and generation.

T. D. Crothers, M.D.

Laxity in Pension Examiners.

Bloomsburg, Pa., Oct. 10, 1901.

To the Editor:—In an article in The Journal of October 5 on "Laxity in Pension Examiners," the claim is made of "certain abuses" of "serious carelessness," and that the public has "a conviction of a vast amount of fraud in the pension

business," and that the publication of such facts as these confirm it. Let us examine the alleged facts. If they are true, then the above allegations stand. If they are false, then they fall. The "facts" consist of an experience with one board of pension examiners, who examined twenty applicants at once, from one section and found them all suffering from heart disease. These applicants were then examined before disinterested physicians who found no heart disease in any of the cases. Is this probable? Is it possible, that twenty soldiers aged from 55 to 75 years, who have suffered all the privations of army life, and subsequently the most of them the hardships of severe manual labor in attempting to maintain their loved ones, that not *one* had heart disease? I doubt if it is possible to take twenty men with *no* army experience between the ages of 55 and 75 years and not find one with heart trouble.

The sentiments of your article are so similar to others recently published, as to excite the suspicion of a common inspiration. Many of your subscribers are pension examiners. Were you to obtain their experience as to the prevalence of heart disease among pensioners it would go far towards establishing the question as to who is right in the controversy between the Commissioner of Pensions and the Grand Army.

J. J. Brown, M.D.

A Medical Weekly Criticised.

Pawtucket, R. I., Oct. 2, 1901.

To the Editor:—I am glad you noticed the editorial of a certain medical journal reflecting upon the physicians who attended our late lamented President.

It is a deplorable state of affairs when a journal that should be cautious and dignified, rushes into print editorially with a hysterical attack upon the good name of our profession backed by nothing but hearsay. The proceeding was a disgrace to journalism and if I were a subscriber of this weekly I should consider it a duty to myself and my profession to refuse to accept it in the future.

According to certain "yellow newspapers" this medical publication is the "mouthpiece of the profession." Where those poor deluded scribes got the information I can not imagine, but sufficient to say they never heard of the American Medical Association or The Journal, or of a number of other favorably known medical journals, for if they had, reckless as these men are, I believe they would hesitate before writing such a glaring misstatement.

I believe that a medical journal that assumes such an attitude toward the profession is unworthy of support. The editorial not only reflected upon the gentlemen immediately concerned in this case, but upon the whole profession, and while this editorial was inconsistent and absurd to the professional mind, it certainly made the profession ridiculous to the lay mind.

Yours very truly,

Francis M. Harrington.

The Septic Tank.

Chicago, Oct. 9, 1901.

To the Editor:—In The Journal of September 28, the City Clerk of Vancouver, B. C., states in a very positive way that the City of Vancouver was the first to introduce the Septic Tank System into the Dominion. This is an error. The first septic tank system to be introduced in the Dominion of Canada was installed at the Mount Allison University, Sackville, N. B., and was put into practical operation in October, 1900.

I should perhaps explain that, as general agent for the septic tank syndicate at Exeter, England, I secured the introduction of this system, both at Vancouver and Sackville, and on March 12, 1901, I received a letter from Dr. Allison, President of the University, reporting the very satisfactory working of our system. In the interest of your readers, perhaps you would like to get a later report from the Doctor, which I think he would be very glad to give you, but in justice to Dr. Allison I think Dr. McGuigan's statement should be corrected.

Yours very truly, H. D. Wyllie,
General Manager Cameron Septic Tank Co.

A Warning.

Philadelphia, Oct. 12, 1901.

To the Editor:—I desire to warn the profession against the operations of the Merchants' and Physicians' Adjusting Agency, of 346 Broadway, N. Y. Their scheme is to agree by written contract to collect bills for two years for $25, half of the first $50 collected. The doctor must bind himself to send every 20 days for five times, twice as many stamps as the number of debtors to whom letters will be sent. The point here is that if the physician should forget to send the stamps within the time mentioned, such is the wording of the contract, that he must forfeit $25 and risk hearing nothing more about his accounts. Should he refuse to pay, they threaten and demand a promissory note as the only concession. The nefarious trick is quite obvious.

H. S. Anders, M.D.

Gangrene Complicating Pregnancies.

Austin, Texas, Oct. 11, 1901.

To the Editor:—For the benefit of the statistic-pathologist, allow me to report that several years ago, a primipara, of this city, lost one of her feet, and part of the ankle, as a result of gangrene, complicating parturition. The patient fully recovered, and has since borne five healthy children, all of whom are now strong and well. Personal observations lead us to believe that such complications are not so rare, or so fatal, as many writers would have us to believe.

Q. C. Smith, M.D.

New Instrument.

A SIMPLE MECHANICAL DEVICE TO PREVENT THE MISCOUNT OF SPONGES.

Miss Zell Converse, Graduate Nurse.
COLUMBUS, OHIO.

The unfortunate accident in a Columbus hospital a few years ago, and the universal expression of trained nurses as to the responsibility assumed by them in accounting for the sponges used, impresses upon the mind of the writer not only the convenience and value, but the almost absolute necessity of some arrangement which would render a miscount impossible.

The following described simple device then came to mind, and was suggested to one of our leading surgeons, who has since used it both in hospital and private practice; in a published report he speaks of it as devoid of complications and in every way eminently satisfactory. Any ordinary table may be used, but one at least 36 inches in length and a little wider than is necessary to hold two sponge basins, will be found most convenient. To this is attached at the back of the top an upwardly inclined surface about 36x36 inches with three hooks, one at each upper corner and one in the center from which the unfolded package of sponges is suspended.

The sponges are made of surgeon's gauze in two sizes; one size 9x9 inches, and the other, 12x12 inches. Each package is made up of a piece of muslin or cotton flannel, measuring 30x36 inches and divided by colored threads into squares, three of which are 12x12 inches, and the eight remaining, 9x9 inches. Colored thread run in by machine easily marks the squares. Three loops of tape, one at each upper corner and one in the center of the muslin, are for suspending from the hooks on the table. To each square a sponge is lightly caught by a very fine thread at each upper corner—indicated by dots in the diagram. The muslin is then folded upon itself, rolled up and sterilized. At the beginning of the operation the sterilized package is unrolled and suspended by the loops of tape from the hooks upon the inclined surface at the back of the table, where the nurse and everyone present can, at a glance, see that each square is occupied by a sponge. If the unbleached muslin is used the difference in color in the muslin and the sponge would make the absence of a sponge the more quickly detected. The sponges being so lightly attached are then easily removed to the basins. When the time comes for counting, the nurse

quickly wrings out and places each sponge in its space on the muslin. This takes no longer than to count them over and if each space is occupied, as in the beginning, the surgeon, nurse, and others present see that there can be no mistake and there need be no further anxiety.

The inclination of the surface and the sponges now being wet makes them adhere without other attachment. No loose sponges should be allowed in the operating room, and ordinarily, not more than one package will be needed if the sponges are washed and returned as needed to the surgeon by the nurse. A number of these packages, however, should be on hand, and for those cases in which it is not best to return the sponges, as many can be used as necessary by simply hanging a second and third package over the first. In such cases, it is best when counting, to fill the spaces on the last or top piece of muslin, roll them up and remove them from the table, then fill the next and so on. In regard to asepsis there need be no fear of using a sponge after accounting for it, as placing them on the already sterilized muslin keeps them still surgically clean.

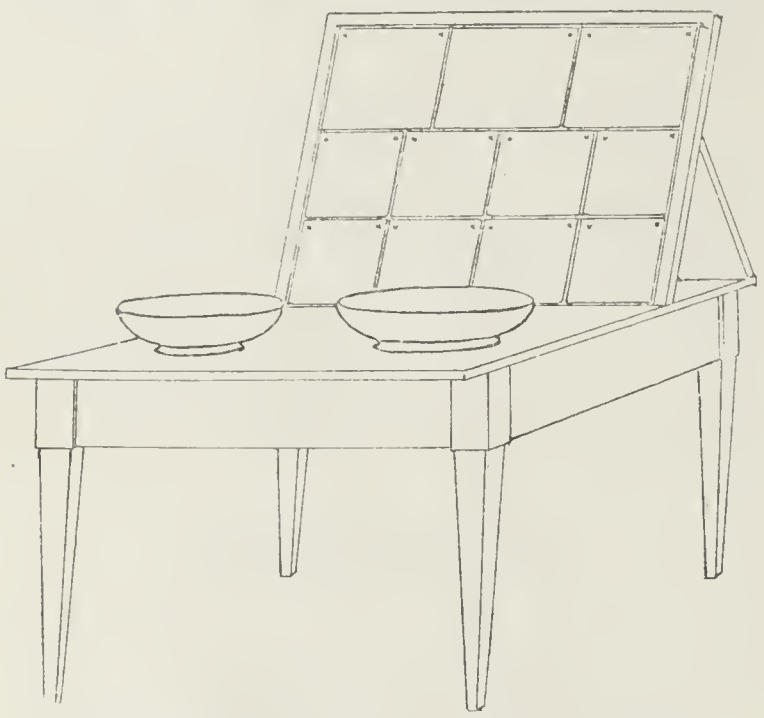


Table with sponges and basins ready to begin operation.

441 East Town Street.

Association News.

New Members.

New members for the month of September, 1901:

ARKANSAS.
Kittrell, T. F., Texarkana.
Connell, W. H., Hot Springs.

CONNECTICUT.
McMaster, G. T., New Haven.

DISTRICT OF COLUMBIA.
Bishop, F. B., Washington.

GEORGIA.
Goodrich, W. H., Augusta.

ILLINOIS.
Schaller, G. J., Chicago.
Shaff, J. N., Alton.
Kercher, J., Chicago.
Bartlett, E. P., Springfield.
Stuttle, A. L., Williamsville.

IOWA.
Dwelle, E. H., Northwood.
Patrick, F. DeW., Burlington.
Miller, W. J., Wilton Junction.
Horton, C. D., Fort Atkinson.
Prlugle, J. A., Bagley.

INDIANA.
Hupe, Chas., Lafayette.
Kennedy, Sam'l, Shelbyville.
Tucker, F. A., Noblesville.

KANSAS.
Milligan, J. A., Garnett.
Whitfield, R. J., Fort Scott.

KENTUCKY.
Dowden, A. P., Eminence.
O'Bannon, J. B., Mt. Carmel.

MASSACHUSETTS.
Whitaker, C. W., Worcester.

MARYLAND.
Lamar, A. A., Middletown.
Johnson, J. A., Easton.

NEW JERSEY.
Mooney, J. J., Jersey City.
Kipp, C. J., Newark.
Hall, W. J., Trenton.

NEW YORK.
Oppenheimer, N., New York City.
Edmister, F., Brooklyn.
Steinke, H. C. O., Brooklyn.
Wahlig, H. G., Sea Cliff, L. I.
Shannon, Wm., New York City.
Jeffries, F. M., New York City.
Welzmiller, L. R., New York City.

PENNSYLVANIA.
Roe, W. J., Philadelphia.
McCulloch, D. C., Allegheny.
Lytle, F. P., Birdsboro.

RHODE ISLAND.
Williams, Pearl, Providence.

TEXAS.
Carroll, R. S., Calvert.
Ward, W. Y., Duplex.
Peters, O. K., Galveston.
Comer, C. C., Carthage.

TENNESSEE.
Bryan, D. H., Monteagle.

WASHINGTON.
Mohrmann, Emil, Roslyn.

WISCONSIN.
Moody, Lewis, West Superior.
Treat, C. R., Sharon.
Wadey, B. J., Belleville.

Married.

JACOB F. BRENCKLE, M.D., Kulm, N. Dak., to Miss A. Boll, at Milwaukee, Wis.

JOHN M. CONLEY, M.D., to Miss Beatrice M. Roche, both of Oshkosh, Wis., October 1.

DANIEL S. HEYN, M.D., to Miss Stella Obendorfer, both of Cincinnati, Ohio, October 7.

WILLIAM D. SUMPTER, M.D., to Miss Tommie Wrenne, both of Nashville, Tenn., October 10.

JAMES EDWARD POORE, M.D., to Miss Lady Pearl Payseur, both of Lancaster, S. C., October 10.

CLAUDIUS W. WEST, M.D., White Rock, Nev., to Miss Ethel M. Egan, Galesburg, Ill., October 7.

JOSEPH W. ANDERSON, M.D., Pittsburg, Pa., to ELIZABETH S. JARRETT, M.D., Norristown, Pa., October 3.

CHARLES H. CLARK, M.D., Washington, D.C., to Miss Cora Esther Taggart, Massillon, Ohio, October 17.

GUSTAVE A. PETERSDORF, M.D., Indianapolis, Ind., to Miss Golda F. Hunter, Memphis, Tenn., October 3.

LOUIS ALBERT ALDRIDGE, M.D., to Miss Amelia Catherine Engel at New Windsor, Carroll Co., Md., September 26.

Deaths and Obituaries.

Richard S. Griswold, M.D., Bellevue Hospital Medical College, New York, major and surgeon, U. S. Volunteers, assigned to the Ninth U. S. infantry, was killed at Samar, Philippine Islands, while on duty with a company of that regiment, aged 31. Dr. Griswold, after his graduation served as assistant to the late Dr. Melancthon Storrs, Hartford. He served as assistant surgeon of the First Connecticut Infantry, U. S. V., during the Spanish-American war, and soon after its close, he passed the examination and was appointed assistant surgeon of Volunteers with the rank of first lieutenant, being assigned to the Twenty-sixth Infantry, U. S. V. While on sick leave he went from Manila to China and was present at the capture of Tien Tsin with the Ninth U. S. Infantry, and was commended in dispatches. In June, 1891, he was appointed major and surgeon of Volunteers, returned to Manila and served with the Ninth U. S. Infantry until his death. He was a member of the Hartford Medical Society.

Frederic C. Winslow, M.D., Northwestern University Medical School, 1874, died suddenly in Chicago, October 10. After his graduation he practiced in Jacksonville, Ill., and was for eighteen years assistant superintendent of the Central Hospital for the Insane at that place. After leaving that position he conducted a private sanatorium until appointed by Governor Tanner superintendent of the State Hospital. Governor Yates recently appointed him superintendent of the Hospital for the Incurable Insane, Bartonville, near Peoria. He was a member of the American Medical Association.

John R. Everhart, M.D., University of Pennsylvania, Philadelphia, 1853, died at his residence in West Chester, Pa., October 8, aged 74. After graduation he studied in Paris, and at the outbreak of the Civil war became surgeon of the Ninety-seventh Pennsylvania Infantry. To his vigorous treatment and extreme care in the enforcement of sanitary regulations was due the control and final conquest of yellow fever among the troops stationed, in 1862, at Hilton Head, S. C. After the close of the war he traveled extensively and wrote several books on travels.

Rezin P. Johnson, M.D., an old resident and practitioner of Canton, Ohio, died in Chicago, where he had resided since his retirement from practice in 1890, October 9, from typhoid fever, aged 62. He was graduated in 1861, and at once entered the United States service, serving throughout the war as assistant surgeon of the One Hundred and Fourth Ohio Volunteer Infantry.

Frank H. Cilley, M.D., University of Vermont, Burlington, 1874, who practiced in Barnet, Vt., for seven years and in Jericho for thirteen years, died, October 3, at the Mary Fletcher Hospital, Burlington, after an illness dating back to an injury received in a railway accident eight years previously, aged 54.

Alexander G. McRae, M.D., Bellevue Hospital Medical College, New York, 1891, was found dead in the basement of his home in Calumet, Mich., October 9. His death was caused by an electric shock. He was 36 years of age, and was resident physician for the Osceola Mining Company.

John S. Bloomington, M.D., Rush Medical College, Chicago, 1870, who practiced medicine for a time and then became interested in life insurance, and founded and edited the *Investigator* in 1874, died at his home in the Hotel Del Prado, Chicago, October 3, from pneumonia, aged 58.

O. Cyrus Kendrick, M.D., Jefferson Medical College, Philadelphia, 1848, formerly in charge of the State Hospital for the Insane, Newburgh, N. Y., and for several years a practitioner in East Cleveland, Ohio, died at his residence in East Cleveland, October 8, aged 79.

Ernest H. Hoffmann, M.D., Washington University, St. Louis, 1861, a pioneer practitioner of Omaha, who served throughout the Civil war as surgeon at Jefferson Barracks, Mo., died from angina pectoris at his home in Omaha, October 8, aged 65.

Ruffin B. Ellis, M.D., University of Pennsylvania, Philadelphia, 1866, one of the oldest and most esteemed practitioners of Raleigh, N. C., died at his home in that place from the effects of a paralytic stroke, October 2, aged 68.

Thomas J. Babb, M.D., Medical College of the State of South Carolina, Charleston, 1848, died at his home, Cherry Creek, Miss., October 8. He had practiced medicine in Pontotue County for more than half a century.

Henry K. Hershiser, M.D., Columbus (Ohio) Medical College, 1881, one of the oldest practitioners in Seneca County, Ohio, died at his home in Tiffin, October 8, from paralysis, after an illness of two weeks, aged 71.

M. Garst, M.D., Jefferson Medical College, Philadelphia, 1837, formerly a practitioner in Dayton, O., and Champaign, Ill., died at his home in Coon Rapids, Iowa, October 5, after a short illness, aged 86.

Joseph E. Barrett, M.D., University of Michigan, 1861, a prominent physician of Wooster, Ohio, and surgeon of the Twenty-third Ohio Infantry in the Civil war, died at his home, October 3, aged 68.

George C. Mathews, M.R.C.S., Ireland, and M.R.C.P., Edinburgh, Scotland, 1871, a prominent physician of Jacksonville, Fla., died at his home in that city, October 1, after an illness of five days, aged 52.

Richard H. Burke, M.D., Rush Medical College, Chicago, 1883, formerly a resident of Watertown, Wis., but of late years a practitioner of San Jose, Cal., died at Los Angeles, Cal., October 4, aged 45.

E. H. Edwards, M.D., Medical College of the State of South Carolina, Charleston, 1856, died at his home in Due West, S. C., October 1, after an illness of two months, from blood poisoning.

Charles W. Petty, M.D., University of Vermont, Burlington, 1871, of Keeler's Bay, Vt., died suddenly from heart disease while making a professional call at Grand Isle, October 5, aged 53.

Everett B. McKinley, M.D., Starling Medical College, Columbus, Ohio, 1883, died from the effects of carbolic acid, taken in error, October 7, at his home in Vaughnsville, Ohio, aged 55.

John F. Gudgel, M.D., Kentucky School of Medicine, Louisville, 1879, died at his home in Hazleton, Ind., where he had lived for 27 years, October 5, after a long illness, aged 51.

Alfred R. Allen, M.D., University of Vermont, Burlington, 1882, was found unconscious near his home in Parishville, N. Y., October 7, and died without regaining consciousness.

Henry Simmons White, M.D., College of Physicians and Surgeons, N. Y., 1866, once an assistant surgeon, U. S. A., died at his home in Red Bank, N. J., September 29, aged 56.

Torrey T. Prestigar, M.D., Keokuk (Iowa) Medical College, 1894, St. Louis College of Physicians and Surgeons, 1895, died at his home in Sioux City, Iowa, October 5.

Alfred C. Lemberger, M.D., Louisville Medical College, 1893, died suddenly in his office in Louisville, on the morning of October 5, from heart disease, aged 34.

William Ullrich, M.D., a retired practitioner, who had been in feeble health for several years, died at his home in Waukesha, Wis., September 26, aged 83.

George W. Christian, M.D., University of Alabama, Mobile, 1873, died in his office in Austin, Texas, October 6, from the effects of chloroform, self-administered.

William A. Hadley, M.D., Meharry Medical College, Nashville, Tenn., 1880, a colored practitioner and teacher, of Nashville, died from apoplexy, October 7.

Alfred T. Cherry, M.D., Bellevue Hospital Medical College, New York City, 1890, of Huntington, W. Va., died suddenly at Oakland, Ky., October 6.

Herbert H. Flagg, M.D., Jefferson Medical College, Philadelphia, 1881, died at his home in Springfield, Mass., from diabetes, October 1, aged 51.

Thomas R. Walker, M.D., College of Physicians and Surgeons, New York, 1853, died at his home in Louisville, Ky., October 1, aged 73.

Hule G. Magee, M.D., Tulane University, New Orleans, La., 1883, was shot and instantly killed in a dispute at Magee, La., September 30.

Herbert J. Hale, M.D., Detroit Medical College, 1875, died at his home in Grass Lake, Mich., from consumption, October 1.

Societies.

COMING MEETINGS.

New York State Medical Association, New York City, Oct. 21-24, 1901.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Jacksonville (Ill.) Medical Club.—This organization held its annual meeting, October 5, and elected Dr. Edward Bowe, president; Dr. William K. McLaughlin, vice-president; Dr. David W. Reid, secretary, and Dr. Henry C. Campbell, treasurer.

Lake County (Ohio) Medical Society.—The physicians of Painesville and surrounding towns met at the former place, September 27, and organized a county society, with Dr. David J. Merriman, Painesville, president, and Dr. H. M. Osborne, secretary.

Minnesota Academy of Medicine.—The fifteenth annual meeting of the Academy was held in Minneapolis, October 2. Dr. John T. Rogers, St. Paul, was elected president; Dr. John W. Little, Minneapolis, vice-president, and Dr. Richard O. Beard, Minneapolis, secretary and treasurer.

Perth Amboy (N. J.) Medical Society.—The physicians of Perth Amboy met September 28 and organized a medical society, with the following officers: Dr. John G. Wilson,

president; Dr. H. Martyn Brace, vice-president, Dr. Frank C. Henry, secretary, and Dr. William E. Ramsey, treasurer.

Montgomery County (Ill.) Medical Society.—The annual meeting of this Society was held in Hillsboro, October 1. Dr. William H. Cook, Coffeen, was elected president; Dr. Jeremiah C. Wilson, Donnellson, vice-president, and Dr. Joseph M. Trigg, Farmersville, was re-elected secretary and treasurer.

Walla Walla Valley (Washington) Medical Society.—At the meeting of this Society at Walla Walla, September 17, a committee was appointed to memorialize the City Council toward passing an anti-expectoration ordinance. Dr. Yancey C. Blalock was elected secretary of the Society, vice Dr. Smith S. Johnson, resigned.

Harrison County (Texas) Medical Society.—The medical men of the county met at Marshall, September 25, and organized this Society with the following officers: Dr. Samuel F. Vaughan, Jonesville, president; Dr. James H. Taylor, Marshall, vice-president; Dr. Holman Taylor, Marshall, secretary, and Dr. Charles E. Heartsill, Marshall, treasurer.

Fulton County (Ill.) Medical Society.—At the fourth annual meeting of this Society, held in Canton, October 2, the following officers were elected: Dr. Perry H. Stoops, Ipava, president; Drs. William R. Roberts, Norris, and William S. Strode, Lewistown, vice-presidents; Dr. David S. Ray, Jr., Cuba, secretary, and Dr. Frank M. Harrison, Bryant, treasurer.

International Congress of Family Assistance.—Casimir-Perier and T. Roussel have organized an international conference to discuss the details of placing convalescents, mild insane subjects, etc., in families, boarding them in healthy communities, instead of housing them in institutions. There are to be four sections in the congress which convenes at Paris, October 27.

San Angelo District (Texas) Medical Society.—Through the efforts of Dr. Robert L. Greene, San Angelo, this Society was organized, September 28, with the following officers: Dr. Samuel L. S. Smith, San Angelo, president; Drs. Boyd Cornick, Knickerbocker, and Fred F. Tucker, San Angelo, vice-presidents; Dr. Robert L. Greene, San Angelo, secretary, and Dr. Bascom Lynn, treasurer.

French-American New England Medical Association.—In connection with the congress of French-Americans at Springfield, Mass., a medical association was organized with about 200 members on its initial roll, and the following officers were elected: Dr. J. Hector Palardy, Fitchburg, president; Dr. George T. Lamarche, Springfield, secretary and treasurer, and Dr. Henry E. Chaput, Holyoke, corresponding secretary.

Southwestern Tri-State Medical Society.—This Society, composed of members from Texas, Oklahoma and Indian Territory, met at Dallas, Texas, October 1 and 2, for its second annual meeting. The following officers were elected: Dr. John S. Turner, Terrell, Texas, president; Drs. George W. West, Enfaula, I. T., Lawrence T. Smith, Lexington, Okla., and William R. Thompson, Fort Worth, Texas, vice-presidents, and Dr. John O. McReynolds, Jr., Dallas, Texas, secretary and treasurer.

Jersey County (Ill.) Medical Society.—This Society, after a disbandment of several years, was reorganized September 26, at Jerseyville, with the following officers: Dr. John S. Williams, Jerseyville, president; Dr. Jasper Tidball, Grafton, vice-president, and Dr. Augustus K. Van Horne, Jerseyville, secretary and treasurer. The Society was organized in 1856, with Dr. E. A. d'Arcy as president. Dr. A. K. Van Horne, the present secretary, is the only surviving physician who was present at the organization in 1856.

Greene County (Ohio) Medical Society.—The regular meeting of this Society was held at Xenia, Ohio, October 3. Pursuant to the circular letter recently sent out by the American Medical Association, the Society, by unanimous vote, endorsed the laudable efforts being made to cement the medical profession into a united whole. Believing that a National Board of Health, whose head is a cabinet officer, should be instituted, resolutions were adopted lending its encouragement and influence toward accomplishing that end.

Thurber Medical Association.—The forty-eighth annual meeting of this Association was held at Milford, Mass., October 3. The president, secretary, and Dr. William L. Johnson, Uxbridge, were chosen as a committee to represent the Association in connection with the proposed Milford hospital. The following officers were re-elected: Dr. Nathaniel C. B. Haviland, Holliston, president; Dr. Ralph C. Fish, Hopedale, vice-president; Dr. John M. French, Milford, secretary; Dr. Le Grand Blake, Milford, treasurer, and Dr. Christopher D. Albro, Milford, librarian.

Wayne County (Mich.) Medical Society.—This Society held its thirty-sixth annual meeting at the Griswold House, Detroit, October 3. After the meeting the members present became the banquet guests of the retiring president, Dr. John J. Mulheron, who also acted as toastmaster. He reviewed the history of this, the oldest medical society in Michigan, and incidentally argued strongly for the benefit accruing to both the individual and the profession as a whole from active participation in society work. He advocated the publication of a quarterly journal by the Society, and the matter was referred to a committee for consideration. The following officers were elected: Dr. Samuel Bell, president; Dr. Charles C. Yarborough, vice-president; Dr. C. Henri Leonard, treasurer, and Dr. Hugh Mulheron, secretary.

Oregon State Medical Society.—The twenty-eighth annual meeting of this Society was held in Portland, September 25, 26 and 27. The attendance was large, and several prominent physicians from San Francisco, Chicago and Baltimore were present and read papers. The committee appointed to consider the resolution offered by Dr. George F. Wilson providing for the reorganization of the state society on the lines of the American Medical Association, reported that an amendment to the constitution of the state society was necessary to accomplish that end, and that such an amendment had to be offered one week prior to the meeting of the society. It was recommended, however, that a delegate and alternate to the National Association be elected. The report was adopted and Dr. Andrew C. Smith, Portland, was elected delegate and Dr. Edward P. Geary, alternate. The election of officers resulted as follows: Dr. Charles J. Smith, Pendleton, president; Dr. Walter T. Williamson, Salem, vice-president; Dr. Alexander D. Mackenzie, Portland, secretary, and Dr. William F. Amos, Portland, member of executive committee.

Utah State Medical Society.—The seventh annual meeting of this Society was held in Provo, October 1 and 2. President John W. Aird, Heber, in his address recommended that the State Society co-operate with the American Medical Association in an effort to unite more closely the medical profession of the United States. He stated that it would be necessary for the State Society to reorganize, so as to make it possible to amalgamate with the national society, and he recommended the election of three members as a committee on reorganization. Drs. John W. Aird, Heber; Andrew J. Hosmer, Salt Lake, and J. C. Elliot King, Salt Lake, were appointed as this committee, and the secretary was instructed to notify the county societies of the contemplated change in organization. A resolution presented favored the establishment of a psycho-physical laboratory by the Department of the Interior. Salt Lake City will be the place of meeting, and the date was changed from the first Tuesday in October to the second Tuesday in May, to conform to the time of meeting of the American Medical Association. The election of officers resulted as follows: Dr. Ira A. E. Lyons, Salt Lake, president; Drs. Philo E. Jones, Salt Lake, and Robert E. Steele, Lehi, vice-presidents; Dr. James N. Harrison, Salt Lake, treasurer, and Dr. George E. Robison, Provo, secretary.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held September 30.

President Dr. N. P. Dandridge, in the Chair.

DR. M. L. HEIDINGSFELD presented two patients of advanced age, who had been suffering from facial epithelioma, but who were now entirely well under local applications of arsenic. He also gave a lantern-slide exhibition showing numerous cases of ignored syphilis.

Excision of the Ileo-Cecal Valve; Tubercular Peritonitis.

DR. B. MERRILL RICKETTS presented a patient, a male, aged 28, who had been suffering from partial obstruction of the bowels for eight months. The abdomen was opened on the right side. The ileum was seen to be enormously distended, being fully the size of the cecum; a diverticulum also existed, extending from the cecum, about five inches long and an inch in diameter. The occlusion evidently existed in the valve and the most expedient thing seemed to be the excision of this valve, which was done and an end-to-end anastomosis made with silk sutures. Death occurred ten hours later from ex-

haustion. Examination of the specimen showed enormous thickening and infiltration of the intestinal membranes constituting the so-called ileo-cecal valve, while both the mucous and serous membranes were studded with small miliary tubercles. Specimen exhibited. Dr. Ricketts also presented a case of multilocular ovarian cyst in a woman of 70, four cases of hematoma of the ovary, a case of purulent salpingitis, and twelve appendectomies, the latter all recovering.

Congenital Elevation of the Scapula.

Dr. Albert Freiberg reported this case: Patient aged ten months. From birth the mother had noted a protrusion over the left collar-bone and that the left side of the child's neck seemed to be much shorter than the right. On examination the neck contours were found to be altogether asymmetrical, but there was no scoliosis. The left scapula was much smaller than the right and evidently elevated. The inferior angle appeared to be about four cm. above the right; the superior angle projected well above the clavicle, indeed was practically subcutaneous. The coracoid process was felt below it and was on a higher plane than the corresponding process of the right side. Passively the scapula was easily moved with the arm, and both actively and passively all movements of the shoulder other than abduction were normal; abduction was limited to ninety degrees. The scapula did not appear to possess any abnormal attachment to the spine, but appeared to be tilted upon its vertical axis in such a way that the superior angle approached more nearly the median line. The thumb of the right hand was unusually small and was not moved to any great extent. Otherwise the child was well developed and nourished. He proposed to watch the child's development and at some future time to remove the superior angle of the scapula. The speaker then stated that in 1899 he had reported another case of elevation or misplacement of the scapula, congenital, in a child, in whom there was in addition a congenital scoliosis and imperfect development of the lower extremity on the affected side. As to etiology he thought it was due entirely to the maintenance that the shoulder holds during fetal life.

Intrauterine Fracture of the Tibia.

The patient, a male, aged four months, in whom from birth there had been noted a deformity of the left leg. There was no family history of deformity. The mother's labor was normal. At about the sixth month of her pregnancy, however, she remembered striking her abdomen against the stair banister, but as no symptoms appeared other than a momentary discomfort, she thought nothing more about it. The child was well developed and nourished, showing absolutely no abnormality except in the left leg. At the middle third of the leg was a hard, angular bend of almost ninety degrees, the apex of the angle presenting forward and inward, and the bone could be easily felt just beneath the skin. The left foot was five to eight inches shorter than the right, but as far as could be ascertained the foot was otherwise normally developed. The left limb was everywhere equal in circumference to the right. The diagnosis of intrauterine fracture of the tibia was made. There was no motion between fragments. Skiagraph showed a fracture of the lower fourth of the tibia. The upper fragment appears to be rounded off, the lower jagged. In May, 1900, an osteotomy was made and the correction of the deformity easily performed. Union did not begin for months, and when finally established the deformity had returned, the patient in the meantime having escaped observation. In September the child was again seen. Although he could bear his weight upon the limb the angular deformity was still very great. At this time two radiographs were made of the leg, one lying on its outer side, the other an antero-posterior view. The first of these shows that while the bones have developed in length and diameter there is no real bony union between the fragments of the tibia. It is also shown that only five tarsal bones are present, the os calcis, astragalus and three of the smaller bones, and articulation was very imperfect. The front view showed that the fibula was present in its entire length, but there seemed to have been a fracture just above the external malleolus. The lower epiphysis of both tibia and fibula seemed to be smaller than they should. The lower fragment of the tibia was seen to be bent not only forward but also outward toward the fibula. The relative size of both bones was otherwise normal. It seemed to the speaker that the case was one of intrauterine fracture of the tibia without defect of the fibula; the case was unusual in that in almost all of the hundred cases reported there was a coincident defect of the fibula as well as an absence of some of the toes or metatarsal and tarsal bones.

Dr. C. A. L. Reed presented a specimen of a large fibroid tumor of the uterus with very marked varicosity of the veins of the broad ligament so that in removing the tumor very severe hemorrhage was encountered.

Rupture of Kidney.

Dr. Joseph Ransohoff showed a radiograph of stone in the bladder of a boy 5 years of age. Not only the size and shape but the lamellæ and nucleus as well could be plainly outlined. Dr. Ransohoff also exhibited a specimen of dermoid tumor, unilocular, weighing twenty-five pounds, removed from a woman 64 years of age. The same speaker also presented two specimens of rupture of the kidney, both removed by lumbar nephrectomy. In the first case the operation had not been performed until the ninth day after injury, the man at the time apparently suffering from intestinal obstruction. In the second case hematuria appeared shortly after injury. By the third day the fever was a prominent symptom and by the fifth day the temperature had risen to 103, with a pulse of 110 to 120. In making the nephrectomy little or no hemorrhage was encountered until the kidney itself was reached, though previous to the operation there was marked swelling in the region of the kidney. The reason for this was found to be because the blood had exuded between the surface of the kidney and its capsule. The upper portion of the kidney was almost completely torn away and from the appearance of the parts it might be very readily surmised that the force of the original injury had shoved the kidney against one of the transverse vertebral processes. The first case had died very promptly after operation but the second was convalescent; during the previous twelve hours, eight days after operation, he had passed 23 ounces of urine.

Painful Stump Following Amputation.

Dr. J. C. Oliver presented this case: The original operation was at the middle third of the thigh, made about ten months ago for a railroad crush. Ten days after amputation he had commenced to suffer severe pain in the stump; often referred to the heel and toes. On operation a false neuroma was found in the cicatrix and pressed against the bone. Several inches of nerve were removed and another false neuroma was discovered and removed a little to one side. He thought that here was also represented a good example of high division of the sciatic nerve.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-first Annual Meeting, held in Philadelphia, September 24-26, 1901.

(Concluded from page 997.)

THIRD DAY—MORNING SESSION.

Encouragement of County Societies.

Dr. McConnell, New Brighton, offered a resolution recommending the personal visitation to county societies, in which there was evident lack of interest.

Dr. Koenig, Pittsburg, offered a resolution favoring the establishment of a psycho-physical laboratory in the Department of the Interior at Washington for the practical application of physiologic psychology to sociologic and abnormal or pathologic data. The resolution was accepted as read.

Dr. George Erety Shoemaker offered a resolution recommending the compulsory vaccination in schools.

Governor Stone addressed the Society, saying, "The doctors are the great levelers of society in the community. The village doctor, the 'country doctor' if you will call him, has a

stronger hold on the pulse of this country than any other man in it."

President McKinley's Case.

DR. JOHN V. SHOEMAKER offered a resolution that it was the sense of the Medical Society of the State of Pennsylvania that the physicians and surgeons in attendance upon our late Chief Executive, William McKinley, acted in accordance with the dictates of the best medical and surgical science and that they had the full confidence of the Society.

Address in Surgery—Torsion of Arteries.

DR. JAMES W. MACFARLANE considered the arrest of hemorrhage, particularly that by torsion. He divided torsion into two forms: limited, and free. In so far as the general public is concerned, he said, free torsion is the rule, as limited is not so advantageous. When free torsion fails primarily in a large artery, it is not limited torsion that is required, but the ligature, acupressure and perhaps the complete hemostatic armamentarium of the surgeon. In the matter of time, and the absence of danger of introduction of a foreign body into the wound, torsion is also superior. Another advantage is that an assistant is not required. Torsion in amputations was introduced into the Western Pennsylvania Hospital, Pittsburg, about 1870. Even atheromatous arteries are no bar to its use. The most probable cases in which torsion would not answer are in amputations contiguous to tissues changed by chronic inflammations. Torsion will not prevent secondary hemorrhage and the speaker cited a case in which infection occurred as the cause of secondary hemorrhage; after amputation torsion was again employed and recovery ensued. Exceptional cases were cited in which acupressure was superior to ligature or torsion.

The Operative Treatment of Bladder, Descent and Sacculation.

DR. GEORGE ERETY SHOEMAKER, Philadelphia, said that displacements of the bladder in the female may take place upward, backward, laterally, forward, or downward. Only in the downward direction is sacculation and imperfect evacuation liable to occur frequently, but its secondary effects are very important. He has seen but one case of pathologic forward dislocation. The various displacements with their symptoms were described. Operations above the pubis have little effect upon the bladder position if unsupported by other measures. The plan adopted by the writer was given in detail. Special attention was called to the method of taking up the redundant anterior vaginal wall and supporting the bladder.

The Present Status of the Bottini Operation as a Method of Treatment in Obstructive Hypertrophy of the Prostate Gland, Derived from a Summary of 834 Operations by 48 Operators.

DR. ORVILLE HORWITZ said that contrary to the accepted view that prostatic hypertrophy usually began in individuals over 50 years of age, he believes that the morbid condition commences much earlier, and quotes Dr. L. Bolton Bangs, who agrees with him. Regarding the objection to the Bottini operation held by some, he thought the recorded experience of trustworthy surgeons gave sufficient refutation of the charges that this operation is "uncertain, dangerous and the results obtained are temporary in character." The operation of complete prostatectomy is considered a much more formidable undertaking than that of the Bottini; it is fraught with greater danger, and only to be attempted in rare instances. He thought it worthy of note that the writers objecting to the Bottini operation on the theoretical grounds, had the least practice with the method. In none of the cases under Dr. Horwitz's care has contraction of the vesical outlet, a complication suggested by some, occurred. Pyelitis, though adding to the danger, is not a contra-indication. Four such cases have been operated. Age is not a bar, though the mortality is lower when the resisting power is strong. Statistics of the 843 Bottini operations were given, with a series of conclusions.

Surgery and Its Relation to Neurasthenia.

DR. G. D. NUTT, Williamsport, stated that in a large number of patients, prominent symptoms of a neurotic character, caused by disease, displaced or irregular muscular action of some organ, can be cured by surgical means. Examples of this class are diseases of the sexual organs, movable kidney, errors of refraction and muscular insufficiency of the recti muscles of the eye. In many cases of neurasthenia correction of abnormal conditions affecting the nervous system must precede the medical treatment. Since pathologic conditions cause nervous symptoms not directly connected with the affected organs, the question was raised, might there not be other diseased organs causing reflex disturbance yet unknown, to account for the large and increasing number of neurasthenics?

Rare Complications in Appendicitis with Their Treatment.

DR. ERNEST LAPLACE, Philadelphia, presented cases in which these complications had existed. They had a history of a previous acute attack, cured by medical measures, with, however, remaining obscure abdominal pain. Such cases had been erroneously diagnosed as affections of nearly every organ in the abdomen. In view of the difficulty in absolute diagnosis, the necessity of proper surgical intervention was pointed out. Particularly is this necessity apparent when it is realized that pain may be absent in acute appendicitis, or felt at a totally different spot; that fever may be absent, or range to 104 or 105; that a general disturbance and local rigidity are perhaps the only constantly present symptoms of the disease. In every case of appendicitis it should be borne in mind that there was a time when operation would have saved life.

DR. JOSEPH PRICE made the statement that "more people are dying to-day of appendicitis than from an epidemic of smallpox." Chronic cases ought never to occur. Well-marked symptoms, late in the cases, evidenced the fact that the early symptoms should have been detected by a good clinician. He believed the public would come to hold the clinicians thrice responsible for early diagnoses. The complications mentioned in Dr. Laplace's paper should have been prevented by proper recognition of the early conditions.

DR. ADOLPH KOENIG, Pittsburg, said that he was a general practitioner and as such believed that the general practitioner should use good judgment. He had been in practice twenty-two years and had never yet lost a case of appendicitis which he had had from the beginning. If he saw that a case was not improving under medication he would call in a surgeon, but asserted that a surgeon had no right to operate in a mild inflammatory condition mistaken for appendicitis.

DR. MORDECAI PRICE reinforced the sentiments of the paper and the expressions of Dr. Joseph Price. His common experience of meeting physicians who had never seen a case of appendicitis, he thought, was explained by the fact that the condition was not recognized. In almost any intraperitoneal inflammation you can safely operate for appendicitis.

DR. LAPLACE, in closing, said that inasmuch as the complications are numberless and the diagnosis is often difficult, the patient should be given the benefit of the doubt and the chance of recovery from immediate operation. If the appendix could be purged of its offensive material by drastic measures this should be done. Should the pain reappear after having disappeared, nothing could do justice but the knife. If everybody were rightly treated we would not hear of a case of appendicitis. An "unsuccessful operation" meant that somebody had blundered; the medical man had treated too long, or the surgeon has been a "dirty" surgeon. With the present understanding of appendicitis, the patient should live.

A Case of Perforating Typhoid Ulcer; Laparotomy; Recovery.

DR. W. L. RODMAN, Philadelphia, reported a case of perforating typhoid ulcer in the fifth week, followed by extensive general peritonitis, with an operation thirty-seven hours after the accident. The perforation was found directly under the incision. It was as large as the end of a finger and there was considerable extravasation into the cavity. The opening was rapidly closed with Lembert sutures, and the cavity was flushed with hot saline solution. A large amount of iodoform gauze was introduced at the upper end of the incision, and carried carefully down to and around the perforation, so as to

protect the cavity from further possible infection, and also to facilitate drainage. A drainage tube was introduced at the lower end of the wound. Although the case was *in extremis*, with a pulse that could not be counted, the abdomen being like a tightly distended drum, the patient made an unexpected recovery, that is, to-day is perfectly well. The gauze was removed on the tenth day, portions of it having been withdrawn several days earlier. The drainage tube was removed at the end of the sixth day. Time of operation from beginning to end was sixteen minutes. Ether was used as an anesthetic. Dr. Rodman's impressions from this case were: 1. That a case of perforation, even though general peritonitis had begun, should be given the benefit of a laparotomy, if in a hospital where such work can be done with reasonable dispatch. This operation was done at least thirty-seven hours after the perforation. There have been, according to Keen in his monograph, but two successful cases reported where so great a time had elapsed between the accident and the operation, and one of these is doubtful, inasmuch as the perforation was not found. There could be few seemingly more desperate cases than this one, and this, together with a case of general peritonitis following a gunshot wound of the intestine and operated upon successfully fifty-one hours after the accident, has shown that it is rarely too late to give such cases the benefit of surgery. 2. That general anesthesia can be borne even in as grave a condition as this patient was in at the time of operation; she was practically pulseless. Cocain was considered at the time, but the patient was too young to give intelligent co-operation, so necessary for the performance of a laparotomy in the shortest possible time. A third question which might be raised is, how frequently will pathologic perforations of the gut in typhoid fever repair themselves without surgical intervention? Recovery does occasionally take place; the percentage has been estimated to be between 3 and 10 per cent. A much larger number will recover from operation and intervention is indicated. While it may be undoubtedly proper to decline interference in military practice on account of the limited facilities in field hospitals, the rule of action should be just the opposite in civil practice. There is an analogy between traumatic and pathologic perforations of the intestines, not complete, but involving the same general principles, and their treatment should be similar, namely, perform laparotomy as early as is consistent with the existing shock. It is as much a duty to operate in both conditions as it is to tie a bleeding vessel in hemorrhage.

Dr. Joseph Price considered the operation in this case the acme of good surgery.

Dr. Ella B. Everitt, Physician-in-Charge at the Woman's Hospital, said that it had been with the greatest interest that she had watched the case. Drainage from the tube was continued for a week after the operation and drainage from gauze a day or two later. Pus cells were present, but no active organisms were found. She thought the lesson was evident that such patients were entitled to operative interference even though, as was this child, almost moribund. The severity of the attack was so great that it seemed that the child could hardly have lived even without this grave operation. The result was doubly gratifying. The occurrence of a small hemorrhage after the operation was also noted as a second complication. The child rallied well from this and went on to a satisfactory recovery.

Dr. Elizabeth Bundy said the point of interest to her was the range of the persistent temperature. The condition of the child had begun to improve within an hour from the time of the accident.

A Case of Ascites Due to Syphilitic Cirrhosis of the Liver.

Dr. W. J. Roe, Philadelphia, presented the report of this case. Seventeen months after the beginning of ascites, and fourteen months after the first paracentesis, he transplanted the omentum between the parietal peritoneum and the abdominal wall, suturing the omental border of the stomach and colon to the margins of the artificial pocket. Previous to operation, paracentesis was performed 31 times, with an average of 760 ounces and of 14 days' interval. Subsequent to operation, it was performed 21 times; the average was 218 ounces and 12 days' interval. Marked improvement in her general health ensued. After six months her general condition reverted to that at the time of operation and death occurred at the end of eight months. Autopsy showed extensive vascular adhesions, a horseshoe kidney and syphilitic cirrhosis of the liver.

THIRD DAY—AFTERNOON SESSION.

Address in Obstetrics.

Dr. David Funk, Harrisburg, presented the status of several of the more serious obstetric complications and operative procedures. From the standpoint of the general practitioner it was stated that placenta previa would probably remain one of the most disquieting and alarming complications, because there can be no prophylaxis and because of the appalling rapidity with which it destroys life. Symphysiotomy as an operation of election would appear to be gradually displaced by Cesarean section, where the high forceps operation is dangerous. Puerperal septicemia and ectopic gestation were considered in detail. The responsibility of the general practitioner in making an early diagnosis in ectopic gestation, is emphasized. Points of differential diagnosis are as follows: Previous history of sterility; cessation of previously regular menstrual periods; irregular bleeding; colicky pains, and nausea and vomiting. Puerperal eclampsia with its etiology and treatment was considered. As to the etiology, writers are agreed upon a single point—toxemia; in the treatment, serum therapy is regarded as a problem of the future.

The Ultimate Results of Operation for Cancer of the Uterus.

Dr. Charles P. Noble, Philadelphia, emphasized the fact that the greatest problem confronting the medical world is the causation and cure of cancer. In a review of the recent American, French and German literature, it was shown that hysterectomy for cancer of the cervix cures about 10 per cent. of cases; based upon the standpoint of freedom from recurrence at the end of five years, the figures of different surgeons varying from a percentage of zero to twenty of cures. Hysterectomy for cancer of the body of the uterus gives better results, at least 75 per cent. being cured. The writer reports 32 cases of hysterectomy for cancer. Of these 10 have died of recurrence and 1 of pneumonia; 6 cases have been lost sight of, and 2 cases of cancer of the cervix are known to have recurred. The remaining 13 are free from recurrence at the present time. The hope for improvement in results lies in early diagnosis. The fallacy of the doctrine of climacteric hemorrhages is insisted upon, and it is strongly urged that all cases with irregular discharges would be promptly investigated.

Instrumental Perforation of the Uterus.

Dr. Wilmer Krusen, Philadelphia, discussed the conditions which soften the uterus and render the accident liable—carcinoma, anemia, tuberculosis and subinvolution. The different perforations are enumerated with the results. He reported a case of perforation of the uterus at the fundus, in which the omentum had been caught by the curette and drawn through the uterus into the vagina. He saw the case within two hours after the accident and immediately performed celiotomy, with an interrupted recovery. He emphasized the necessity for care, cleanliness and special training in all intrauterine manipulations.

Some Surprises in the Practice of Obstetrics.

Dr. R. B. Ewing, West Grove, reported a series of obstetric cases interesting from the fact that the unexpected occurred. They were illustrative of the terse expression of one of the most gifted medical authors and teachers of America, who after a lifetime of active service as an obstetrician said: "The practice of obstetrics is full of surprises."

A Parasitic Skin Disease.

Dr. John V. Shoemaker, Philadelphia, exhibited a patient with a peculiar parasitic disease of the skin. Some of its characteristics are its appearance between the ages of 20 and 40,

being found by preference upon the anterior portion of the chest, appearing as somewhat irregular patches. It differs from liver spots in that the cause is from without the body, the parasite is conveyed from water or from decayed vegetable material. Sometimes clean linen will contain the germs. He recommended the use of the ordinary corrosive sublimate, the copper salts whether in sulphate or the oleate, and mercury in the form of ointment as the oleate of mercury. He especially emphasized the fact that water should not be used; alcohol, or alcohol in the water should be applied.

A Remarkable Case of Infantile Typhoid of Fetal Origin with Recovery.

DR. HARRY C. WESTERVELT, Pittsburg, reported the case of a woman seven months pregnant with the third child, who had typhoid fever. The child was delivered at seven months and the mother had a severe course of the fever, but made a good recovery. The child presented the characteristic "old man" appearance of the prematurely born, and weighed 9 pounds, 14 ounces. A temperature of 103.4 F. soon appeared. The fever ran the regular course; the child recovered and presents every appearance of a healthy babyhood.

The Effects of Typhoid Fever on the Nervous System.

DR. C. C. HERSMAN, Pittsburg, considered impure air, food, and water the most frequent causes of typhoid fever. In the majority of cases the nervous system is the first attacked by the poison. Not infrequently is the cardiac ganglion and nerve supply of the heart in general supercharged with the poison. The resulting symptoms were given in detail and the convalescence described. Meningitis was mentioned as a grave complication. Two such cases had been treated by the writer within the past two years, one of which recovered. Friedlander, Berlin, was quoted as giving 80 per cent. mortality in typhoid meningitis. Tubercular predisposition in children was mentioned as a fruitful source of typhoid meningitis.

The Value and Importance of Teaching the Fundamental Branches of Medicine from the Standpoint of Their Practical Application.

DR. GWILYM G. DAVIS emphasized the fact that teaching should be conducted so that the student understands his subject instead of simply knowing isolated facts. Medicine, it was said, requires too much of a man to enable him to qualify by simply memorizing his subject. Text-books are too statistical and not sufficiently explanatory. Examiners should avoid catch questions and give such that require an understanding of the subject for their answer.

To teach the student to think, not summarize, is the object. The day of the true pedagogue, though long delayed, is at last dawning.

Ruptured Tubal Gestation and the Physician.

DR. JOHN M. FISHER, Philadelphia, stated that no form of acute supravaginal pelvic disorder is fraught with more immediate danger to the life of the individual, and yet none in the vast majority of cases is more readily diagnosticated by the experienced gynecologist, and none can be more satisfactorily dealt with by the surgeon than that of ectopic pregnancy. The diagnosis being made, prompt surgery, with but few exceptions, saves the patient. With comparatively few exceptions Dr. Fisher stated that the condition is tubal. The causes are enumerated and the symptoms described. In the light of the perfected methods in surgical technic of the present day the author declares that so-called conservative plans are not to be considered, save in so far as they add to the ever-increasing number of unfortunates to our mortality statistics.

The Kidney Complications of Typhoid Fever.

DR. JAMES ELY TALLEY, Philadelphia, in this paper enumerated these complications as albuminuria, acute parenchymatous nephritis, hemorrhagic nephritis and suppurative nephritis. In a series of over 15,000 cases albuminuria occurred in 29 per cent. of cases. Acute parenchymatous nephritis occurred in 3 per cent. of a series of over 18,000 cases with a mortality of from 30 to 50 per cent. Edema is rarely produced, and, if the patient lives, the nephritis almost never becomes chronic; only two such cases are recorded in over 37,000 cases of typhoid. Hemorrhagic nephritis is defined as but an aggravated form of the acute parenchymatous nephritis. It tends strongly toward uremia and has a very large mortality. Suppurative nephritis occurs occasionally, and in these cases typhoid bacilli have been found frequently in the pus or kidney substance at postmortem. If chronic nephritis exists and typhoid intervenes the mortality is very high, over 90 per cent. Albuminuris and acute nephritis occur in the typhoid fever of children with about the same frequency as in adults.

New Method of Performing Nephropexy.

DR. HENRY D. BEYEA, Philadelphia, described in full the surgical treatment. The operation is indicated only in those cases where the pathologically mobile kidney produces a complex of symptoms inducing persistent ill-health, and the prescribed medical and mechanical treatment either fails to give relief, or, in the judgment of the physician, is impracticable from the beginning.

Statistics of Typhoid Fever at the Philadelphia Hospital from Jan. 1, to Dec. 1, 1899.

DR. HERMAN B. ALLYN gave the following statistics: Whole number of cases 184; 135 were males and 49 females; 146 were white and 38 black or mulattoes. The fatal cases numbered 31, a mortality of 16.84 per cent., accounted for largely by the character of the patients and stage of the disease at the time that they were admitted. The patients were made up of the homeless, neglected, dissipated and outcast. Half the fatal cases occurred in negroes, although they constituted only about one-fifth of the whole number of cases. Moreover, only one-fifth of the fatal cases—6—were admitted during the first week, and 23 after the disease had lasted two weeks or more. The causes of death, following Osler's classification, were: Asthenia, 14; intercurrent affections, 9; accidents of the lesion, 8. The Gruber-Widal serum reaction was in accord with the final clinical diagnosis in 88 per cent. of the last 113 cases.

Fracture of the Neck of the Femur—Report of a Case, X-Ray and Specimen.

DR. CHARLES E. THOMSON, Scranton, reported the case of a patient, aged 62, who sustained a fracture in August, 1899. The patient was bedridden for three months. The shortening amounted to two and one-half inches and the hip was very painful. The operation was described. A solid silver nail, three-sixteenths of an inch in diameter and two and one-half inches long, was driven through the neck and into the head of the femur. The bone flap was replaced and retained by a small silver nail. One year after operation the patient had three-quarters of an inch shortening with 90 degrees free and painless motion. Death occurred from intercurrent disease six months later. The specimen showed firm bony union.

The Pathology, Symptomatology and Treatment of Uremia.

DR. DAVID RIESMAN, Philadelphia, presented a very valuable paper devoted to a portrayal of certain less common forms of uremia, namely, uremia associated with hemiplegia, aphasia, mental confusion and insanity. Two points in the treatment were emphasized: bleeding, and sweating. The patient is put into a hot bath of 110 F. for ten minutes, taken out and then put into a hot pack for twenty minutes.

The Etiology of Acute Dysentery.

DR. SIMON FLEXNER, Philadelphia, said that reports of bacteriologic work in the tropics, Japan, Germany and this country on the etiology of acute dysentery, agree that there is present a septic organism quite peculiar and not found in the body under normal conditions, which seems to be present uniformly when cases of acute dysentery arise. The fact is a matter of importance in respect to the causation of this serious disease and to its prevention. It would appear that the sporadic cases have the same origin as the acute dysentery, and this is of particular importance in the consideration of epi-

demics. The micro-organism that has been discovered is the organism bearing more or less resemblance to the bacillus of typhoid fever. It occurs in the intestines and can be obtained from the dejecta. It does not occur in health or in other diseases; moreover, the blood serum will give a reaction similar to the Widal reaction. It seems probable, therefore, that, as a result of this work, the septic organism of acute dysentery has been observed. It does not exclude the amoeba. It is possible by the use of this organ to produce serum that may be curative.

In Closing.

Dr. F. B. Ball, the new president, was introduced by Dr. Davis, who welcomed him in a few graceful words. After a short address by Dr. Ball, and a resolution of thanks to all those who had participated in the arrangements for the pleasure of the Society and the success of the meeting, offered by Dr. Alexander Craig, Columbia, the meeting was declared adjourned. The next meeting will be held at Allentown.

CHICAGO ACADEMY OF MEDICINE.

Regular Meeting, held September 13, 1901.

Dr. W. X. Sudduth in the Chair.

Forensic Eye Aspect of Locomotor Ataxia.

Dr. James G. Kiernan presented a paper on this subject. A recent suit against the Chicago Union Traction Company was based upon a diagnosis, made of locomotor ataxia, chargeable to an alleged traumatism occurring fourteen days previous to examination, from an alleged condition of the pupils of which no clear description was given. The diagnostician (a member of the family) had observed the pupils under disadvantageous conditions. From his testimony it would appear that this physician had a crude notion that there was reflex iridoplegia or the Argyll-Robertson pupil. He did not use this term, nor did he describe the procedures he adopted in testing the pupil. No other symptoms of locomotor ataxia were described. The Argyll-Robertson pupil is reflex iridoplegia associated with preserved accommodative mobility, that is, where the pupil is as immovable as a frozen opening, no matter how brightly illuminated or how deeply shaded, but contracts when the finger is approached to the nose. It is found early in locomotor ataxia, but it is also found in paretic dementia, and, as might be expected, in constitutional syphilis. It has even been claimed that it is a diagnostic mark of this last condition. Cases of constitutional syphilis, however, occur quite frequently in which reflex iridoplegia is absent. The position taken by Spitzka, fourteen years ago, that this condition is rarely found in constitutional syphilis, can not now be maintained. A temporary iridoplegia has been noted after railroad accidents and other shocks. Exceptionally, the same pupillary condition has occurred in alcoholism and after diphtheria in the adult. For forensic diagnostic purposes this pupil is not pathognomonic of locomotor ataxia. In the case in which the question was raised, the patient had died before trial. The jury gave less than one-tenth of the statutory limit. If the litigant really had locomotor ataxia, this condition, in Dr. Kiernan's opinion, had preceded the accident and was in all probability then contributory thereto. The man had driven a United States mail wagon on the tracks in front of a street-car. Locomotor ataxia under such conditions could prevent him turning in time.

Dr. Casey A. Wood was of opinion that due care was not always exercised by general practitioners, forensic physicians, or even ophthalmologists in the diagnosis of the Argyll-Robertson pupil. There were so many conditions in which similar states occurred that the diagnosis of locomotor ataxia on this symptom alone was not justified.

Dr. William L. Baum could not agree with certain syphilographers as to the pathognomonic diagnostic value of the Argyll-Robertson pupil in constitutional syphilis. In his experience it was too frequently absent to be regarded as pathognomonic of constitutional syphilis. The fact that it occurred in para-syphiloses, like locomotor ataxia and paretic dementia, did not necessarily demonstrate its value as a symptom of constitutional syphilis.

Dr. Kiernan, in closing, agreed with both Dr. Wood and Dr. Baum, that the pathognomonic value of the Argyll-Robertson pupil in constitutional disease was doubtful.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Bronchitis.

Just at this time of year the physician comes in contact with a great number of patients complaining of colds in the head and bronchial catarrh. In the larger cities this is due in a great many instances to the steam-heated apartments. People emerging from a warmer atmosphere are exposed to the cold air and the body becomes chilled, the circulation of the skin is greatly disturbed and the bronchial mucous membrane congested. Those patients suffering from organic heart lesions—especially where mitral lesions are present, producing a congested condition of the pulmonary circuit—are more susceptible to the changes in the atmosphere and the weather. Such conditions in the extremes of life make the prognosis in attack of bronchitis more unfavorable. The treatment must be directed to the different phases of the disease and to the special symptoms which may arise in each individual case. In this connection we wish to emphasize one point in the management of such cases, just as in all cases of infection, and that is—watch the elimination. Elimination should be promoted, not alone by the kidneys but also by the skin, bowels and respiratory tract. In this way the catarrhal turgescence of the mucous membrane is lessened and the process of free secretion is established. The patient should be cautiously and well fed with most digestible food, having warm clothing for the body and proper protection for the chest. In the milder forms of acute bronchitis the following is of service as an expectorant:

R.	Ammon. carb.	3iss	6
	Ammon. bromidi	3ii	8
	Vini ipecacuanhæ	3iv	16
	Aq. menthæ piperitæ q. s. ad	℥iii	96

M. Sig.: One teaspoonful every four hours in water; or:

R.	Ammon. chloridi		
	Sodii salicylatis, āā	3ii	8
	Tinct. hyoscyami	3v	20
	Mist. glycyrrhizæ co. q. s. ad	℥iii	96

M. Sig.: One teaspoonful every four hours.

If the patient is strong and of a well-marked sthenic type, according to Sir T. Granger Stewart, antimony is a drug of great efficacy, as follows:

R.	Vini antimonialis		
	Vini ipecacuanhæ, āā	3iii	12
	Spts. chloroformi	℥iss	48
	Liq. ammon. citratis q. s. ad	℥vi	192

M. Sig.: One tablespoonful in water every six hours; or:

R.	Vini antimonialis	3ii	8
	Spts. etheris nitrosi	℥ss	12
	Liq. ammon. acetatis q. s. ad	℥vi	42

M. Sig.: One tablespoonful in water every six hours. Discontinue when there are symptoms of depression or when free expectoration is established.

In patients presenting signs of feebleness or general weakness, expectorants must be combined with cardiac stimulants, as follows:

R.	Ammon. carb.	gr. xl	2 66
	Spts. ammon. arom.	3vi	24
	Aq. chloroformi q. s. ad	℥iv	128

M. Sig.: One tablespoonful every five or six hours; or:

R.	Tinct. strophanthi	m. xl	2 66
	Spts. ammon. arom.	3vi	24
	Aq. chloroformi q. s. ad	℥iv	128

M. Sig.: One tablespoonful every six hours.

When the cough is dry and very troublesome at night, so that the patient is unable to sleep, the following containing codein is valuable, which should, however, never be given so long as the cough brings up phlegm, but to quiet an aggravating cough, is useful.

℞. Ammon. carb. .....3ss 2|
Codeinæ .....gr. iv |25
Tinct. hyoscyami .....℥i 32|
Syr. pruni virg. .....℥iss 48|
Aq. camphoræ q. s. ad .....℥iv 128|

M. Sig.: One dessertspoonful every two or three hours.

The free use of expectorants is of advantage in getting rid of particles of dust and foreign substance, which have lodged upon the mucous membrane and act as irritants to the respiratory passages. But we wish to suggest care in the use of anodynes as in the foregoing prescriptions, for too free use of opiates and anodynes impair digestion, produce anorexia, cause constipation and quiet the cough, through which nature is attempting to remove causative factors.

Organic heart lesions, such as mitral regurgitation or obstructive lesions, producing marked congestion and distension of the bronchial vessels, cause a cough and sometimes an acute inflammation. In these cases measures must be taken to support and remove the load by proper cardiac stimulation and free elimination. The patient should be put to bed, so as to reduce the work of the heart, and the following is recommended in such conditions:

℞. Ammon. carb. .....gr. xl 2|66
Infusi digitalis q. s. ad.....℥iv 128|

M. Sig.: One tablespoonful in water every five or six hours.

Acting as indirect heart stimulants by dilating the peripheral blood vessels and thus relieving the pulmonary congestion and at the same time promoting diuresis, the nitrites are valuable:

℞. Spts. glonoini (1 per cent.) .....m. vi |36
Spts. etheris nitrosi .....℥iss 6|
Spts. chloroformi .....m. vi |36
Alcoholis .....℥i 4|
Aquæ q. s. ad.....℥iii 96|

M. Sig.: One tablespoonful every four hours.

Cases of bronchitis, with a history of rheumatism, are best treated by the use of the salicylates in some form, combined, perhaps, with alkalies, as follows:

℞. Sodii salicylatis |
Sodii bicarb., āā .....℥ii 8|
Syr. glycyrrhizæ co.....℥ss 2|
Aq. foeniculi q. s. ad.....℥iv 128|

M. Sig.: One tablespoonful in water every four hours.

And in gouty bronchitis colchicum is very valuable, if a proper preparation of this drug can be obtained. But as is the case in a few other drugs the value of this drug is uncertain, because of the unreliability of the crude drug used in making the medicinal preparation. The following combination is advised:

℞. Vini colchici (sem.) |
Vini antimonialis, āā .....℥iiss-iv 10-16|
Pot. bicarb. .....℥ss 16|
Aq. gaultheriæ q. s. ad.....℥vi 192|

M. Sig.: One tablespoonful four times a day in water.

CHRONIC BRONCHITIS.

The chronic forms of bronchitis require special attention in their treatment, because the degree of activity is not so great as in the acute, but the condition may go on for months or years, being kept up by constant irritation from some source, and this should be sought for and removed if possible. Even greater care must be observed in the clothing, the occupation, the food and the climate. However, in no disease, as Loomis states, is a careful study of each individual case more important. This form of bronchitis occurs in connection with emphysema and diseases of the heart and kidneys in elderly people, and, under such circumstances, the particular cause should be discovered and treated in each case.

Potassium iodid is very often used to good advantage, and has been found very efficient in the majority of cases. The following formula is recommended:

℞. Potassii iodidi .....℥ii 8|
Syr. picis liq. .....℥iii 12|
Syr. acidi hydriodici .....℥v 20|
Syr. tolutani q. s. ad .....℥iii 96|

M. Sig.: One teaspoonful four times a day in water.

The aromatic balsams, combined with a mild anodyne, are serviceable if the cough becomes troublesome:

℞. Balsami copaibæ |
Pulv. camphoræ, āā.....℥i
Pulv. acaciæ, q. s. |

M. Ft. capsulæ No. xv. Sig.: One capsule four times a day; or:

℞. Copaibæ .....℥ii 8|
Spts. chloroformi .....℥ss 2|
Mucilag. acaciæ .....℥vi 24|
Aq. camphoræ q. s. ad.....℥vi 128|

M. Ft. mistura. Sig.: Two tablespoonfuls three times daily.

Turpentine is sometimes very efficacious, and it may be given in capsule or in the form of an emulsion according to Yeo:

℞. Olei terebinthinæ .....℥ii 8|
Mucilag. acaciæ .....℥i 32|
Mist. amygdalæ q. s. ad.....℥vi 192|

M. Ft. mistura. Sig.: Two tablespoonfuls at each dose, every six hours.

Creosote is a valuable preparation in chronic bronchitis, and may be given in capsules or in the liquid form as follows:

℞. Creosoti .....3ss 2|
Aq. chloroformi q. s. ad .....℥ii 64|

M. Sig.: One teaspoonful four times daily.

As a good stimulating expectorant in cases of chronic bronchial catarrh with profuse, stringy, adhesive mucus, such as is often met with in the aged, the following is recommended by Yeo:

℞. Ammon. carbonatis |
Sodii bicarb., āā.....gr. xl 2|66
Tinct. camph. comp. .....3iv 16|
Spts. chloroformi .....3iss 6|
Infusi senegæ q. s. ad.....℥viii 192|

M. Ft. mistura. Sig.: Two tablespoonfuls every five or six hours, administered in hot water.

Medicolegal.

Period of Gestation.—The Supreme Court of Nebraska says, in the case of Erickson vs. Schmill, that, while there is no absolute rule upon the subject, by general consent, based on extended observation, the usual period of gestation is considered to be about 280 days. This is common knowledge, which courts may be assumed to possess. But that the possible period of embryonic existence is more than 300 days is a fact which courts are not bound to know and act on in the trial of causes. That is to say, courts do not take judicial notice of the fact that the possible period of gestation exceeds ten calendar months.

By Whom Existence of Blood May Be Proved.—It is not necessary, the Supreme Court of Idaho holds, in the murder case of State vs. Rice, that an expert witness, or one skilled in chemistry, be called to prove the existence of blood. The experience of man "from the cradle to the grave" so familiarizes him with the appearance of blood that every witness possessing the full use of his senses, who is competent to testify to other matters, is competent to testify to the existence of blood, or presence of blood stains. It is only where there is doubt as to whether the blood is that of a human being or that

of some inferior animal that the aid of chemistry or expert witnesses is necessary.

Physician Calling Wife as Witness to Contract.—The statutes of the State of Washington provide that in an action or proceeding where the adverse party sues or defends as executor, administrator or legal representative of any deceased person, a party in interest or to the record shall not be admitted to testify in his own behalf as to any transaction had by him with, or any statement made to him by, any such deceased person. The case of Whitney vs. Priest was an action by a physician against an administrator for compensation for professional services rendered to the decedent, the wife of the administrator, during her last illness. At the trial, the physician's wife was permitted to testify that she was present with her husband, and that he and the decedent agreed upon the terms of the contract for his surgical treatment of her. This was objected to, as being inhibited by the statute, and the Supreme Court of the State of Washington holds that it was error on account of which the judgment obtained for services must be reversed. It says that the plaintiff and the witness were, as before stated, husband and wife. The professional services which were the subject of contract between the plaintiff and the deceased involved the community interest. The compensation for such services belonged to the community. The physician's wife was interested equally with her husband. She was equally interested in the result of this action. She must necessarily be said, therefore, to be a party in interest, and the transaction and the statements made to the plaintiff physician must equally involve his wife. Hence, the witness fell within the disability of the above provision of the statute, and it was error to admit her testimony as to the transaction and statements made by the deceased to the plaintiff.

Skill Required; Consultation; Diagnosis; Harshness.—The Appellate Court of Illinois, First District, in the malpractice case of McKee vs. Allen, holds that a difference of judgment among medical men as to the best course and method of treatment does not by any means tend to prove that either party is wholly wrong or wholly right. A physician who has given a patient the benefit of his best judgment is not liable for negligence even if his judgment is erroneous, unless the error is so gross as to be inconsistent with reasonable and ordinary skill and care. Again, the court holds that it is the duty of physicians and surgeons to exercise reasonable and ordinary care, skill and diligence in the practice of their profession. To this extent they are liable and no further. They are not required to possess the highest, but reasonable skill. The burden of proof is upon the plaintiff in an action for malpractice to show the want of such care, skill and diligence, and also to show that the injury complained of resulted from failure to exercise these requisites. It can not be said as a matter of law, where a physician recommends a method of treatment recognized and approved by the standard authorities upon medicine and surgery as appropriate to the case in hand, and consults another physician or surgeon who has had experience in the use of such method, and who, after examination of the patient, concurs in his judgment, and the patient submits to the treatment upon such advice, that he has failed to exercise ordinary care, skill or diligence in making such recommendation. If he has not so failed he is not liable. The physician or surgeon is not an insurer of a successful result. Furthermore, the court holds, in this case, that if the diagnosis in question be considered erroneous in calling the disease, which was sciatic rheumatism, chronic, instead of acute, it must still appear that his error in judgment in this respect was not consistent with reasonable and ordinary skill and care; and it must further appear that surgical treatment of acute sciatica was so clearly unwarranted, and such a violation of sound rules of professional practice, as to be also inconsistent with ordinary and reasonable medical skill and care. Then, there was some evidence in this case tending to show that the physician, in the effort to manipulate and straighten the patient's leg, several times resorted to what in her sensitive condition was very painful treatment. But it was apparent that it was employed as a curative measure, and it was not shown to have been injurious. This being all that the court has to say about it is that if his methods in this respect were harsh, the patient was not obliged to retain him in attendance, but was at liberty to employ other medical aid.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, October 3.

1 *A Case of Myeloma of the Spine, with Compression of the Cord. John Jenks Thomas.
2 Hydrotherapy in Chronic Disease. (To be concluded.) Simon Baruch.
3 *Association of Anemia with Chronic Enlargement of Spleen. Arthur H. Wentworth.
4 Infantile Scurvy. Edward L. Peirson.
5 Rhachitis. Arthur R. Crandell.

Medical Record (N. Y.), October 5.

6 *The Use and Limitations of the Elastic Ligature in Intestinal Surgery. Theodore A. McGraw.
7 *The Proper Method of Teaching the Anatomy of the Nervous System. L. Harrison Mettler.
8 *Pre-medical Education. Stanley Coulter.
9 *The Chest Pantagraph and the Manometer—Their Clinical Use and Value. C. B. Van Zant.
10 *Pistol-shot Wounds. Thomas Hayes Curtin.

Philadelphia Medical Journal, October 5.

11 *A Lecture on Strangulated Hernia. Carl Pfister.
12 *The Sanatorium Treatment of Tuberculosis. Arthur J. Richer.
13 Orthopedic Treatment of Deformities and Disabilities Resulting from Diseases of the Nervous System—Special Reference to Tendon Transposition. B. E. McKenzie.
14 Melancholia and Its Treatment. George Stockton.
15 The Treatment of Acute Otitis Media. Frederick L. Jack.
16 *The Close Relationship Existing Between Epilepsy and Dyspepsia. Charles D. Aaron.

New York Medical Journal, October 5.

17 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
18 Laryngology and Its Place in Medical Education. (To be concluded.) Henry L. Swain.
19 *The Influence of Climate upon Nervous Diseases, Considered from a Physiological Standpoint. F. Savary Pearce.
20 Was the Epidemic that Raged in Athens, B. C. 430, Genuine Bubonic Plague? Henry M. Fisher.
21 *Acute Amygdalitis: Its Treatment by the Local Application of Tincture of Iodin. Samuel Floersheim.
22 Review of a Few Cases of Wounds Caused by Bullets from Revolvers of Moderately Large Caliber. J. Hobart Egbert.

American Medicine (Philadelphia), October 5.

23 *Primary Cancer of the Gall-bladder and Bile-ducts. W. P. Manton.
24 *The Heredity of Appendicitis. F. Forchheimer.
25 *Cleft Palate and Its Relation to Speech G. Hudson Makuen.
26 A Case of Endocarditis Developed During Typhoid Fever. J. A. Scott.
27 *The Efficacy of Quarantine and Fumigation in the Prevention of the Spread of Yellow Fever Without Molesting the Mosquito. Jos. Waldaner.
28 On the Agency of Parasitic Vermin and Other Insect Pests in the Spread of Disease. George Homan.

Medical News (N. Y.), October 5.

29 Acute Rheumatism.. Wm. Watt Kerr.
30 *Anesthesia and Analgesia; A Study of Drug Action and Modern Methods. William Seagrove Magill.
31 Lager Beer in Acute Vomiting. Louis Kolipinski.
32 Conservative Operations upon the Uterine Adnexa. Henry T. Byford.
33 *Acute Edema of the Uvula, Palate, Pharynx, and Epiglottis, Following the Excessive Application of Adrenal Solution Preserved with Chloretone. Solomon Solis Cohen.

Cincinnati Lancet-Clinic, October 5.

34 Occipito-posterior Positions of the Vertex. William Gillespie.

St. Louis Medical Review, October.

35 *A Means of Reducing an Overgrowth of the Inter-maxillary Frenum, Permitting the Retention of Two Central Incisors in Close Apposition. Hanau W. Loeb.

Virginia Medical Semi-Monthly (Richmond), September 27.

36 *A Case of Movable Liver—Hepatopexy. J. H. Carstens.
37 Anchylostomum Duodenale in Virginia. Wm. B. Gray.

Iowa Medical Journal (Des Moines), September 15.

38 President's Address, Sioux Valley Medical Association. J. N. Warren.
39 Cancer of the Breast. Frank S. Hough.
40 The Influence of Impaired Hearing upon the Development of the Child. F. A. Powell.

41 What Can We Do to Mitigate the Horrors of Quarantine to the Laity? E. D. Frear.
42 The Toxemia of Pregnancy. Chas M. Wade.
43 Arthritis. P. L. Brick.
44 The Care of the Consumptive. J. W. Kime.
45 Raynaud's Disease, with Report of a Case. M. E. Silver.
46 Baby Feeding. J. G. Biller.

Archives of Ophthalmology (New Rochelle, N. Y.), September.

47 Determination of the Presumable Refraction of the Eye, With and Without Its Crystalline Lens. Edmund Landolt.
48 Transplantation of a Large Wolff Graft, Forming a New Lining of the Orbit, and Permitting the Wearing of an Artificial Eye. Charles H. May.
49 Ocular Affections in Cases of Xeroderma Pigmentosum (Epibulbar Carcinoma) in a Boy of Six Years. R. Greeff.
50 *Thrombosis of the Central Artery of the Retina, Presenting the Picture of So-called Embolism, With the Pathological Examination. Leonore Welt.
51 *On Embolism of the Central Artery of the Retina. C. Schweigger.
52 *On Bell's Phenomenon. Wilibald A. Nagel.
53 The Use of a Glass Lachrymal Pipette. W. H. Bates.
54 Perforating Wound of Upper Lid and Eyeball. Reduction of Prolapsed Iris; Recovery. S. J. McLennan.
55 Periscopic Lenses. A. S. Percival.

Occidental Medical Times (San Francisco), September.

56 Hypochondriasis and Hypochondriacal Ideas—A Case of Self-mutilation. A. W. Hoisholt.
57 Suggestions Bearing upon the Diagnosis and Treatment of Fractures at the Lower End of the Humerus. Thos. W. Huntington.
58 Technic of General Anesthesia. E. M. Bixbey.
59 The Surgical Treatment of Tuberculosis of the Glands of the Neck. S. J. Hunkin.

American Journal of Obstetrics (N. Y.), September.

60 *The Complications and Degenerations of Fibroid Tumors of the Uterus as Bearing upon the Treatment of These Growths. Charles P. Noble.
61 *A Contribution to Experimental Uretero-cystostomy. Clarence A. Smith.
62 *The Conservation or Preservation of the Ovaries and Functionating Uterine Tissue in the Operation of Hysteromyomectomy. Henry D. Beyea.
63 Partial Hysterectomy (?) for Puerperal Sepsis. Hiram N. Vineberg.
64 A Case of Congenital Malformation Leading to Error in Diagnosis of Tubercular Peritonitis. William F. Metcalf.
65 A Rare Case of Exfoliative Vaginitis. George Gellhorn.
66 Hyperplastic Glandular Endometritis. Palmer Findley.

Medical Examiner and Practitioner (N. Y.), September.

67 Address of Chairman of the Medical Section, National Fraternal Congress. T. Millman.
68 The Medical Examiner in Fraternal Insurance. Moreau R. Brown.
69 Tuberculosis in Relation to Life Insurance. C. A. McCollum.
70 How May We Reduce the Death-Rate from Cancer and Consumption? Emma Cook.
71 Heredity and Its Value as a Factor in Life Insurance. F. A. Smith.
72 The Modern Medical Director. James T. Craig.
73 Location in Its Bearing upon Life Insurance. Ira W. Porter.

American Gynecological and Obstetrical Journal (N.Y.), September.

74 Obstructive Diseases of the Lower Bowel. Henry O. Marcy.
75 *Hydatids of the Uterus. Frederick G. Smith.
76 A Case of Deciduoma Malignum. William McDonald.
77 Five Gynecological Cases of Special Interest. Edgar D. Smith.
78 *Operation for Radical Cure of Cystocele in Woman by Temporary Suspension of Bladder. J. B. Taulbee.
79 Puerperal Fever. I. A. McSwain.
80 *Infection as an Etiologic Factor in Abortion. Miles F. Porter.
81 Symphysiotomy on a Generally Contracted Pelvis. M. Ravin.
82 Case of Multiple Fibroids of the Uterus and Broad Ligament Cyst Filled with Altered Blood; Removed by Kelly's Method; Recovery. Lapthorn Smith.

Oklahoma Medical Journal (Guthrie), September.

83 Ataxic Paraplegia. John W. Dukf.
84 Tuberculosis of Bone. J. Garland Sherrill.

Western Medical Review (Lincoln, Neb.), September 16.

85 *Round Ulcer of the Stomach. N. S. Davis, Jr.
86 Pelvic Injuries. R. Harvey Reed.
87 *Some Recent Conclusions in Regard to Appendicitis. Byron B. Davis.
88 *Hypospadias. C. H. Mayo.
89 A Case of Abscess of the kidney. W. O. Wisner.

Woman's Medical Journal (Toledo, Ohio), July.

90 For the Good of the Order. Azuba D. King.
91 Prophylaxis in Obstetrics. Agnes Eichelberger.
92 Placenta Previa. Sophie H. Scott.
93 Women Physicians in Care of the State Insane. Mary A. Coveny.

Medical and Surgical Monitor (Indianapolis), September 16.

94 Treatment of Acute, Anterior Urethritis. W. A. Hackett.
95 *The Use of Sulphide of Calcium as a Remedy, including the Opinions of Drs. H. A. Hare, Davis M. R. Culbreth and George F. Butler, Expressed to the Writer. Samuel E. Earp.
96 Health in the State of Indiana During August, and Statement in Regard to the Deaths in that Month. John N. Hurty.

Louisville Monthly Journal of Medicine and Surgery, October.

97 *The Ophthalmoscopic Diagnosis of Bright's Disease. Dudley S. Reynolds.
98 A Gunshot Wound of the Right Lung with Complications. A. M. Morrison.
99 Hypno-magnetism and Suggestive Therapeutics. J. Glahn.
100 Vaccination. A. D. Price.
101 Ununited Fractures. J. Lively Johnson.
102 The Early Operation for Appendicitis from a Pathologic Standpoint. J. G. Carpenter.
103 The Symptoms and Treatment of Diarrheas of Children. C. L. Venable.
104 Chloretone. Walter P. Ellis.

Maryland Medical Journal (Baltimore), October.

105 *The Significance of Apex Pneumonia. Eugene F. Cordell.
106 Pregnancy at the Age of Eleven Years, Terminating in Natural Delivery. L. M. Allen.

Toledo Medical and Surgical Reporter, October.

107 Multiple Gynecic Operations; Report of a Case. William H. Fisher.
108 A Postmortem Recollection. J. T. Woods.
109 Lysol. J. D. Ely.
110 Rectal Feeding. Robert Peter.

Dominion Medical Monthly (Toronto), September.

111 *Presidential Address, Canadian Medical Association. H. H. Chown.
112 Address, Executive Health Officers' Association of Ontario. W. T. Connell.
113 Practical Solution of the Question of Dealing with the Consumptive Poor. E. J. Barrick.

Southern Illinois Journal of Medicine and Surgery (Metropolis), September.

114 History of the Massac County Medical Society. C. E. Trovillion.
115 The Differential Diagnostic Points in Varlola and Varicella. A. C. Ragsdale.

Therapeutic Gazette (Detroit, Mich.), September 15.

116 Lessons of a Decade in Hydrotherapy. Simon Baruch.
117 A Case of Carbolic Acid Poisoning. Walter R. Grless.
118 *The Cure of Enuresis. Philip F. Barbour.
119 *Use of Hydrotherapy in Neurasthenia and Other Nervous Affections. Wharton Sinkler.
120 Serous Extravasation Cyst of Both Sides of the Nasal Septum. Nathan G. Ward.
121 The Diagnosis and Treatment of Nasopharyngeal Syphilis. P. S. Donnellan.

Clinical Review (Chicago), October.

122 The General Toxemias and Their Treatment. L. L. Skelton.
123 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.
124 Cases of Insanity. Daniel R. Brower.

Medical Sentinel (Portland, Ore.), September.

125 *Hydraulic Pressure—A Means Used to Open the Common Gall Duct, Which Remained Closed, or Reclosed After the Removal of Impacted Stones. L. P. McCalla.
126 Some Facts Bearing on the Question of Leprous Japanese and Salmon Canning. Albert S. Ashmead.

Canadian Practitioner and Review (Toronto), September.

127 On the Importance of an Early Recognition of Locomotor Ataxia—Do the Eye Symptoms Assist Us? J. T. Duncan.
128 Syphilitic Fever Occurring as a Complication in a Maternity Case. Helen MacMurchy.
129 Hernia Ten Years After Abdominal Section. A.Gibson.

Detroit Medical Journal, September.

130 *Tuberculosis. Heneage Gibbes.
131 Recent Epoch Making in Medicine. Samuel Bell.

Mississippi Medical Record (Vicksburg), October.

132 Venereal Diseases. R. Franklin Nimocks.
133 Clinical Lecture. (Ureteral Catheterization, etc.) Howard Kelly.
134 Thrush. C. R. Henderson.

Southern California Practitioner (Los Angeles), September.

135 Refraction Errors in Their Medical Relation. George J. Lund.
136 Endometritis. F. R. Burnham.

137 Can Injuries to the Parturient Canal Be Avoided During Normal Labor? If Unavoidable, What Is the Duty of the Obstetrician? Marie B. Werner.
138 Pelvimetry. Melvin L. Moore.
139 Darwinism and the Doctor. Cephas L. Bard.

Alabama Medical Journal (Birmingham), September.

140 *Some Sociologic Problems in Relation to Marriage, Crime, Insanity, etc. R. R. Kime.
141 The Treatment of Scarlatina. W. H. Wilder.
142 Maternal Impressions. R. C. Bankston.
143 *A Plea for the Broader Treatment of Epilepsy. William P. Spratling.

Southern Practitioner (Nashville, Tenn.), October.

144 Gunshot Wounds of the Stomach. Richard Douglas.
145 Nerve Reflexes Due to Abdominal and Pelvic Pathology. W. A. Bryan.
146 Practical Ideas on the Treatment of Pneumonia, Pericarditis, and Tubercular Pleurisy. Edmond J. Melville.

Charlotte Medical Journal, September.

147 *Pulmonary Tuberculosis and the Trades. C. P. Ambler.
148 Rheumatism and the Salicylates. F. R. Millard.
149 The Treatment of Some Chronic Conditions of the Intestinal Tract. David E. Bowman.
150 The Care of Breasts in Nursing Mothers. George Barksdale.
151 American Therapeutic Contribution to Medicine. B. T. Whitmore.

Southern Medical Journal (La Grange, N. C.), September.

152 Treatment of Infantile Eczema. J. W. P. Smithwick.
153 Some Notes on the Medical Treatment of Cancer. H. B. Esmond.
154 A Therapeutic Study of the Epsom Water of Vade Mecum Spring. J. W. P. Smithwick.

Nashville Journal of Medicine and Surgery, September.

155 Report of Surgical Operations in the Private Surgical Infirmary of Drs. C. S. and Samuel S. Briggs During Its Tenth Season, from Sept. 10, 1900, to Aug. 1, 1901. (Concluded.) Samuel S. Briggs.

AMERICAN.

1. **Spinal Myeloma.**—After reporting a case operated upon by resection of the first four dorsal laminæ and removal of the growth, with microscopic examination of the same, Thomas goes at length into the literature of the subject. The specially interesting feature in his case was the very complete relief of the paraplegia by the operation, the presence also of disassociation of the sensations of temperature, pain and touch such as in syringomyelia in a case of pressure upon the cord from without, as well as the variability in the height of the disturbance of sensation as seen at different examinations and the apparent improvement in the condition of the bones under the use of bone marrow and Coley's toxin treatment. The patient recovered enough to go out and tend to his business, but within a few months he had a return of the pain and swelling in the region of the 6th, 7th and 11th ribs, tenderness to pressure, with rigid spine and difficulty in moving. The further progress of the case is not reported. The reflexes were normal.

4. **Infantile Scurvy.**—Two cases of this condition are briefly reported by Pierson, who uses them as a text for his discussion of the disease. The etiology is doubtful. The most that can be said is that it follows the prolonged use of some unsuitable diet. It generally occurs in children under 2 years, usually from 6 to 15 months of age, and as far as the pathology is concerned from the general practitioner's standpoint, it is simply a hemorrhage with which we have to deal. The earliest and most common symptoms are swelling of the lower end of the diaphysis of the femur; that is an important point in the diagnosis from rhachitis or rheumatism. The swelling is neither hot nor red, as in rheumatism. The diaphysis is tender, which is not the case in rhachitis. The rest of the pathology of the disease consists in anemia, which is probably secondary, due to hemorrhage, and ulcerative stomatitis. Swelling of the gums is not usual in his experience and will not appear with prompt treatment. Hemorrhage may occur from bowels, nose, into the skin or into any of the internal organs. The first symptom noticed in the child is pain, terror of being touched, pain first in the legs, then the arms and back; next swellings appear, but there is no fever. The diagnosis should be easy, the most common error is to call the case rheumatism or to attribute it to a fall or injury. In rhachitis the swelling is epiphyseal, chronic and painless, and there will be a well-marked rosary when it is well developed as in scurvy. Stomatitis and hemorrhages do not occur in rhachitis. Pott's disease is rare under 2 years, and has no swelling of the extremities. Acute anterior poliomyelitis has a febrile onset with later paralysis. Purpura has no swelling of the extremities or stomatitis. Syphilis is more chronic and the swellings less tender. When anyone is called to a child lying with legs drawn up, dreading to be touched, with swelling of the lower end of the diaphyses of the long bones and where there is anemia, with swollen gums, there is no other diagnosis possible than scorbutus. The treatment is simple. Modified, uncooked milk with orange or lemon juice should be given, one-half to one lemon or orange being used daily with fresh beef juice. He usually gives iron, etc., for the debility and anemia. In severe cases the child must be kept quiet on a frame, but he has not had to resort to this.

6.—See abstract in The Journal of October 5, p. 933.

7. **Teaching of Anatomy of the Nervous System.**—Mettler criticises the former methods of teaching nervous anatomy and suggests biologic methods, showing the evolution of the organs from the lower types and uses the spinal cord as an illustration. He shows how this is evolved from the ganglion system of the invertebrate, and that certain portions recognized as belonging to it, are so only by grace of position, but really are parts of the cerebral anatomy. The importance of putting the function and development of the parts before their mere anatomic location enables the student to grasp more intelligently the relations and conditions than would otherwise be the case.

8. **Pre-Medical Education.**—Coulter describes the pre-medical course adopted in Purdue University, which was devised to furnish a broad and liberal education and give special and extensive training in subjects which underlie primary professional studies, and, by this co-relation of work, to shorten the time required to obtain a university and medical education. The needs of the student beginning a medical course are considered, but he thinks if the professional school and college can make satisfactory allotment of courses common to both, that time, money and strength would be saved.

9.—See abstract in The Journal of July 13, p. 138.

10. **Pistol-Shot Wounds.**—The characteristics of wounds from pistol bullets are described by Curtin, who speaks of the importance of knowing the distance at which the pistol was held from the victim, which can be most accurately determined in most instances. When the pistol is held tightly against the skin, the entrance wound is large as compared to the caliber of the pistol, the edges of the wound are burned and lacerated and there is no surrounding area of blackening, burning or powder stain. If only one or two inches away, the wound is small, but there is a blackened and scorched area around it and the hair is burned. The farther away the pistol is held, up to a certain limit, the more distinct are the imbedded powder stains. The burning of the skin is present up to a range of six inches; it is variable, however, from three to six inches. The presence of powder grains shows that the range has not exceeded five feet, while smoke stains are constant up to a distance of eight inches. If the pistol has been held at some distance, say ten or twenty feet, the entrance wound is small or rounded. There is no blackening around it or any mark of powder stain. The caliber, the length of the barrel, the amount of powder used and its age are all to be considered. In head cases there is very little bleeding at the entrance wound; oozing of brain matter is present in 50 per cent., but both these may be lacking. One should notice the shape of the entrance wound, whether it is distinctly rounded or whether tunneled or grooved. This is important as determining the relative position of the parties. The entrance wound is smaller than the caliber of the bullet, except when the pistol has been fired in direct contact. This is due to the elasticity of the skin. He has rarely seen an exit wound of pistol-shot wounds

of the head. A 22-caliber bullet fractures the skull, it may or may not lacerate the meninges, and rarely enters the cranial cavity. The 32-caliber penetrates the brain, and if it passes through the squamous portion of the temporal bone, it usually produces a comminuted fracture of the bone opposite. It can be best detected by careful external palpation, and sometimes the extraction of the bullet and bone fragments are effected. The bullets of from 38 to 42-caliber penetrate, and in some cases perforate. Accurate anatomic description of the wound of entrance and exit should be made. It is important in giving legal testimony to know the caliber of the bullet. This is determined by accurately weighing the leaden mass and comparing it with standard weights of the different calibers. The caliber sought for will be that one which corresponds with the weight, exceeding by a few grains the weight of the leaden mass. The pistol should always be examined to see if it had recently been discharged. If so the barrel is lined with a black deposit of sulphid of potassium and charcoal, which, when diluted with water, gives a strong alkaline reaction, has the odor of sulphureted hydrogen and a deep brown precipitate forms on the addition of acetate of lead. If the pistol has not been fired for hours or days, this black precipitate changes from the sulphid to the sulphate of potassium, which gives a neutral reaction in a watery solution, and a white precipitate on the addition of acetate of lead. If the time which has elapsed amounts to weeks or months, traces of the oxid of iron as well as of the sulphate of iron will be found. He calls attention to the wounds made by blank cartilages and it is well to remember that they have been known to penetrate to the depth of two inches. From their action in carrying germs and the frequency of tetanus, attention to their removal and treatment of the wound is imperative.

11. **Strangulated Hernia.**—The condition of strangulated hernia, as considered by Pfister, is entirely within the scope of those conditions which the general practitioner can treat, and no more than a fair modern surgical education is required. No rarely-used instruments are needed, and it is so frequent that every physician should inform himself on the technique of the operation, and, with the simple procedures, have successful results in the vast majority of cases. He goes at length into the description of the operation and says in conclusion that there are many conditions, such as advanced age, where a well-adapted truss will suffice, and therefore not all cases of hernia, aside from severe strangulation, should be operated upon.

12. **Tuberculosis.**—The details of the sanatorium treatment of tuberculosis are given by Richer, who lays stress on the importance of rest, including under this term not only the recumbent position, but quiet and the use of bandages to insure long rest to any injured parts, outdoor life, over-feeding, of which he gives the details, and general medical supervision. This last is the most important. He finds that strychnia in 1/30 gr. doses is very useful and creosote is the most reliable internal antiseptic, except where contraindicated by recent hemoptysis. Cough is easily controlled and night sweats disappear with increased nutrition.

16. **Epilepsy and Dyspepsia.**—The close relation between epilepsy and dyspepsia are insisted upon by Aaron, who believes that gastro-intestinal irritation seems to be the cause to which many cases of epilepsy are traceable. The digestive troubles are frequently latent. It is to be recommended in all cases of epilepsy and suspected stomach disorders, that an analysis of the stomach contents and urine should be made. The examination of the patient is not complete unless the digestive organs are also examined.

17. **Social Aspects of Dermatology.**—The subjects considered in Morris' fourth lecture are the pus bacteria of the skin with their consequences, impetigo contagiosa, boils, carbuncles, etc.; anthrax, sycosis, premature grayness, alopecia, acne, vaccination rashes, and tropical parasites; chigos, guinea worm, elephantiasis, etc. Morris believes in the hygiene of the barber shop. He points out that nearly all hair dyes are injurious.

19. **Climate in Nervous Diseases.**—Pearce finds that neurasthenia, chorea and other diseases are badly affected by high altitudes and high winds. He thinks therapeutic climatic results are dependent upon the states of atmospheric pressure and consequent nutritional modifications. High altitudes favor circulation in the periphery and assist nutrition; the trophic functions may advance too rapidly with too great ascents. The neurasthenic, therefore, who must appropriate nutriment slowly on account of the weakened central nervous system, is not suited to high altitudes. Insomnia is benefited by lower altitudes, as are also chorea, hysteria and most of the functional diseases. Melancholia and depression are helped by high winds with moderate heat to aid in general bodily metabolism. The organic diseases dependent on the central or peripheral lesions, perverted function, as pain and sluggish circulation, will be helped by altitude. A greater altitude is desirable for diseases of the central nervous system, and a lesser altitude the desideratum in the cases of peripheral diseases, as in neuritis and vasomotor palsies, exophthalmic goiter, etc.

21. **Acute Amygdalitis.**—The conclusions of Floersheim's article are: 1. The tincture of iodin is the most powerful antiphlogistic in inflammations of the throat. 2. Its action is very rapid, relief being often experienced within five minutes. 3. It has relieved the intense inflammation completely when all other throat remedies had absolutely failed to benefit. 4. Its use in sixty-eight cases of acute amygdalitis has been followed by marked benefit in every case. 5. The method of application is simple.

23. **Cancer of the Gall-Bladder.**—According to Manton very little advance has been made in our ability to distinguish the morbid conditions in gall-bladder and bile duct. Cancer of the gall-bladder is not nearly so uncommon as generally supposed, and in many cases where adjoining organs have become secondarily affected, the secondary growth has been credited as primary. The etiology is the most important question, however, and we know at present but one incontestable factor, viz., gallstones, hence the value of early treatment of this condition. Manton reports a case of villous cancer of the gall-bladder with secondary invasion of the adjoining structures, which was operated upon, but died shortly after the operation. The interesting points of the case are the long-continued gastric disorder and secondary infection long before symptoms pointing to the original condition were developed, the sudden appearance of the gall-bladder tumor and the extraordinary size of the stones. When we consider the frequency of gallstones and the fact that they may be promotive of malignancy, their importance must not be overlooked. He also reports a case of cancer of the common bile duct and secondary infection of the common gall-bladder, illustrating the peculiarities of the case. His conclusions are: Although primary cancer of the gall-bladder and bile ducts is rare, recent investigations go to show that it is not so uncommon as generally supposed. As a rule, the onset of the condition is insidious; there are no symptoms developed at an early stage of the disease in either locality, with which we are at present acquainted, which will permit of a positive diagnosis being made. When this is possible the disease has already advanced beyond the helpful intervention of surgery. Fever, having been observed in so many other conditions of the liver and adjacent organs, it is of little or no value as an aid to diagnosis. This same may be said of blood examination. Emaciation is frequently absent, and the patient may remain in apparently good health until toward the termination of the disease. The absence of malignant disease elsewhere has no diagnostic significance. The only symptom which may perhaps prove of service in forming a provisional diagnosis of gall-bladder and bile duct malignancy seems to be of gastric origin. In two of the cases reported, and in many cases found recorded in the literature of the subject, disorder of the stomach preceded the local symptoms of cancer. Further investigation along this line is desirable, and all protracted disorders of the stomach which can not be positively referred to other causes should be

viewed with suspicion as a possible indication of beginning malignance in the gall-bladder or bile ducts.

24.—See abstract in The Journal, xxxvi, p. 1416.

25. **Cleft Palate.**—The importance of the palate rather than the tongue in the production of speech is insisted upon by Makuen, who shows that the function of the former is twofold, and in all voice sounds in which it does not share in the formation of the stop position, it serves as an obturator between the nose and the pharynx, completing the partition between these two cavities, and compelling the outgoing breath to pass through the required particular stop position required for sound. Thus in labials, labiodentals and linguodentals, the sounding breath must pass through the anterior stop position—that is the place where the anterior stop position is made by impeding the moving column of breath in producing the sound; the middle stop position is used in certain articulations and the sound breath must pass through this constricted aperture. The function of the palate is to prevent its passing upward through the nostrils. In the use of the posterior stop position, which is formed by the junction of the velum palati and the dorsum of the tongue, the soft palate serves a double purpose. Its free border rises against the posterior pharyngeal wall, closing the avenue to the nostrils, and its anterior surface, acting in conjunction with the tongue, forms the stop position for the sound. The palate may be defective by perforation of the cleft or paralysis of the muscle. Perforation must be posterior to the stop position in use, to affect speech, though its importance largely depends upon the size. The characteristic speech of cleft palate is well known and the physiology is explainable by the points already elucidated in regard to stop positions. He calls attention to the importance of treating defects of speech early, and if cleft palate is only operated upon after the speech has been acquired the habit will be retained to a greater or less extent, hence the importance of training and education in such cases.

27. **Yellow Fever.**—Waldauer reports experiences which point out to him the probability of transmission of yellow fever by fomites, and, therefore, insists on the importance of continuing the precautions that have formerly been used as regards the transmission of this disease.

30. **Anesthesia and Analgesia.**—The different actions of general anesthetics are here discussed. Local anesthesia is passed by as being rather analgesic than anesthetic. What we understand by anesthesia is producing general intoxication of the body and suspension of consciousness, leaving untouched the vital reflexes of organic life. It is rapid in induction and recovery, and affecting to the least possible degree the tissue, life and function outside of the desired period of suspended sensibility. Search is never ending for the best means of producing such conditions. Magill goes into the physiology of anesthetics to some extent, showing that toxic action increases in the direct ratio to concentration of carbon in the radical of the agent, as does also the rapidity with which anesthesia can be induced. The addition of oxygen to the hydrocarbon molecule probably renders the anesthesia no more toxic, but slower to be induced. The compound formed by a halogen with the organic radical shows greatly increased toxicity, and this toxic factor multiplies directly with the number of elements of the halogen introduced into the molecule, and likewise directly with the relative density or weight of the halogen in question. By reason of the hyperchlorination of its molecule, chloroform is justly proclaimed more toxic than its rival, but an offset compensation is constituted by its correspondingly increased anesthetic energy. The substitution of bromin instead of chlorin in equal numbers of atoms, determines a greater toxicity for the resultant bromid. The halogens of greater atomic weight should increase the toxicity of the molecule so as to render them dangerous in even the minutest doses. The use, however, of monobromid of ethyl is harmless for short administration, but must not be continued; the author gives particular points in regard to the use of this drug. He finds that there is a growing consensus of belief that if chloroform could be relieved from the accidents of primary syncope it would be the best anesthetic. To avoid the point of danger, the cerebral cortex excitement, the English surgeons are employing nitrous oxid to induce the anesthesia. Drs. Hartman and Bourbon and the writer suggested ethyl bromid, and have extensively used this remarkable agent of short narcosis since 1892. The advantages of this method of beginning the anesthesia with ethyl bromid and continuing with chloroform are insisted upon, the importance of perfectly pure ethyl bromid being specially emphasized. For prolongation of unconsciousness, the narcosis induced by this bromid is easily and safely continued with chloroform in very small quantities.

33. **Adrenal Solution.**—Cohen reports a case in which the use of adrenal extract given for asthma seemed to cause excessive edema of the uvula and palate and adjoining regions, inducing also slight edema of the epiglottis. The patient had sprayed the pharynx and nasopharynx vigorously for a prolonged period with suprarenal-chloretone solution. The uvula and palate were scarified, the patient was put at rest, had a drastic purge given, and was advised to use a gargle with lukewarm water aromatized with toilet vinegar. In about an hour the edema began to subside, breathing became easier, and still later the patient became quite comfortable. Traces of edema of the uvula were visible for three or four days. The preparation used was not the one now usually available, but the extract of suprarenal substance with chloretone, which was previously placed upon the market. He has used the adrenal chlorid solution as now prepared with much satisfaction and without any ill effects.

35.—See abstract in The Journal of October 12, ¶59, p. 1005.

36.—See abstract in The Journal of September 28, p. 850.

50. **Thrombosis of Central Artery of Retina.**—From a study of a case and the literature, Welt finds that the ophthalmoscopic picture of so-called embolism of the central artery of the retina may be produced by thrombosis of the artery, and that this may take place from the following: 1, endoarteritic changes as in von Michel's case; 2, as a symptom of thrombosis of an entire arterial tract as in Siegrist's case; 3, independently of endarteritic changes, when the blood pressure is reduced and there is a tendency to coagulation of the blood and fatty degeneration of the intima, as in his own case.

51. **Embolism of the Central Artery of the Retina.**—Schweigger questions the frequency of embolism of the central artery, doubt as to which was expressed by him more than thirty years ago, but only in recent years has the anatomic basis been given for these cases of sudden blindness by the demonstration of endarteritis with narrowing of the lumen, which accompanies various forms of retinal diseases. The view that sudden blindness with cloudiness of the disc and retina depends upon embolism arose only because the appearance that was previously termed infiltration, later was termed embolism. Graefe's case teaches that embolism is not immediately followed by cloudiness. On the contrary, the narrowing of the retinal arteries from endarteritis must needs cause slowing of the blood count, which may produce infiltration. This peculiar cloudiness of the retina may develop without circulatory disturbance, as he shows by a case of his own, which he thinks was probably caused by a shot striking the optic nerve.

52. **Bell's Phenomenon.**—This phenomenon, discovered by Sir Charles Bell in 1823, consists in associated movement of the eyeball, cornea turning up and in and then up and out, where it remains while the lids are held closed. It is not a pathologic phenomenon, though it was originally held as such from experience in cases of facial paralysis. The cause of it has not been fully cleared up. Nagel has investigated the matter himself and gives the opinion that the phenomenon is really a normal reflex. Whether we must not concede a simultaneous innervation of the orbicularis and the elevators of the eye dependent upon cortical associations, as has been assumed by Mendel and Negro, is not definitely decided. He thinks it is not impossible that Bell's movement in ordinary closure of the

lids is a reflex, depending upon the closure, but in spasmodically intentional closure of the lids the excitation may reach some higher point of the central nervous system, possibly the cortex.

60. **Uterine Fibroids.**—Noble gives an analysis of 218 cases of fibroids tabulating their complications, which are numerous; some of them fatal, some threatening the life of the patient and some leading to permanent invalidism. He has not seen any similar tables of complications to offer a basis of comparison, therefore he is not sure whether his experience is the same as that of others. Accounts are given of some notable cases; his experience does not support the doctrine that fibroids disappear with the menopause, and he thinks this is not to be expected. In the tables no mention is made of adhesions which were present in numerous cases. The most characteristic symptom of patients suffering from these tumors is anemia, which in some exists in the highest degree. In one case in which hysterectomy was performed the anemia was high—hemoglobin 10 per cent. and red cells 2,325,000. The results were favorable, and, comparing the mortality of fibroids and complications—33 per cent.—with the mortality of the operation—with less than 10 per cent.—he thinks the results very much in favor of operation. The proper treatment of fibroid tumors is their early removal; there may be exceptions to the rule, and each case must be decided upon its own merits. According to his own experience, small multinodular, subperitoneal fibroids in women over 40 are less apt to grow and cause trouble; submucous, and intramural growths in younger women are more apt to develop and need operation. He has met with but few fibroids that do not produce symptoms. Therefore he thinks the percentage of cases is small in which operation is not indicated.

61. **Ureterocystotomy.**—Smith has experimented with the lesions of the urinary bladder and the ureters under tension as would be the case from the resection of a ureter with a loss of length. He has experimented on the cadaver and living dogs. The oblique operation referred to below is as follows: "An incision of an inch long is made, in an antero-posterior direction, through the bladder peritoneum; this is dissected to each side, exposing the underlying musculosa. At the distal end an opening of sufficient size to receive the ureter is made into the bladder. A fine silk ligature is now passed through the muscular wall of the bladder, from one-quarter to three-eighths of an inch above the opening; this also grasps the ureteral wall, penetrating the lumen, at such a distance from the end of the ureter as to permit it later to enter the bladder. Before tying this a second suture is passed in a similar manner just above the bladder opening. After these are tied the end of the ureter is inserted into the bladder, and two additional sutures are applied in a like manner at the edge of the bladder opening, firmly grasping the bladder wall and penetrating the ureteral lumen. The reflected peritoneum is now drawn over the ureter by interrupted silk sutures, placing the ureteral sutures extraperitoneal." The conclusions which he reaches are as follows: "1. It is practicable to anastomose the ureter to the bladder under tension, if the two are securely held in apposition till firm adhesions form. 2. This relation can be attained by the above-described method of oblique implantation. 3. An additional length of one-half to one inch can be safely obtained by traction on the ureter. 4. The presence of a ligature in the lumen of the ureter is not injurious, because Nature conceals it behind new epithelium."

62. **Conservation of Ovaries.**—Beyea reports a case in which conservative operation was performed, leaving the lower portion of the uterus, perhaps 1 or 2 centimeters, in the patient, who had been suffering from large myoma; he also notices other cases in the literature. He suggested the following questions as regards the practicability of this conservative hysteromyomectomy: 1. Of what value are ovulation and menstruation when the possibility of conception is destroyed? He believes that this function of the ovaries is a very important matter whether the uterus exists or not. 2. In what frequency will pathologic changes develop if the ovaries are left in position? He has not seen much to indicate their probability and considers they will be extremely rare. Secondary atrophic changes may take place, but he thinks will probably not occur. In the four cases reported by Abel there was a gradual atrophy or diminution in size, but there were no symptoms of menopause, and the molimina menstrualia were normal. There is, he thinks, no sufficient technical reason why the operation should not be performed nor any cause why it will be more dangerous than an early hysteromyomectomy.

75. **Uterine Hydatids.**—A case of this rare condition is reported by Smith, who defines it as a pathologic condition of the chorion characterized by the existence in the uterine cavity of a large number of translucent vesicles, containing a clear limpid liquid, which closely resembles the liquor amnii. A peculiarity is its proneness to penetrate the uterine walls. The causes are noticed; it begins usually in the multiparæ at the close of the child-bearing period, and is characterized by symptoms indicating the mechanical pressure of the growth, hemorrhage, etc. The prognosis is determined by the frequency and violence of the attending hemorrhage. Immediate evacuation of the uterine contents is always advisable if the diagnosis is established before the appearance of labor.

78. **Cystocele.**—The operation here described by Taulbee is that of dissecting or stripping of the perineum from the bladder by a vaginal operation, packing with gauze, then opening the abdomen and suspending the bladder to the abdominal wall by sutures passing into the muscular tissue but avoiding the mucosa. The difficult feature of the operation consists in the properly divesting the bladder of its peritoneal covering and reapproximation of the same, properly inserting the ligatures and denuding the area which it is desired should adhere to the pelvic or abdominal fascia. Care should be taken to avoid all arteries and veins and not to injure the mucous or submucous layers of the bladder. The ligatures must be so adjusted that tension will be uniform and the denuded surface hold the peritoneum to the abdominal wall. The ureters must not be disturbed. The point of entrance and exit of the needle must conform to the size of the distended bladder, which will vary in different subjects. In another operation which he promises to report in the future the vaginal vault was not opened, the uterus and bladder were suspended through the abdominal opening and drainage carried on through this wound; the result, however, was not so satisfactory. He claims priority in his operation, as he has not found anything in regard to it in the literature.

80. **Infection in Abortion.**—From a review of the literature Porter holds the evidence warrants the following conclusions: "1. That acute infections of the genitalia frequently cause abortion. 2. That many attempts to produce abortion criminally, succeed only because of the infection introduced in the attempt. 3. That habitual abortion is usually the result of chronic infection. 4. That, other reasons aside, examinations of pregnant women should be conducted with careful attention to asepsis for fear of inducing abortion. 5. That aborting women should be regarded by the physician as infected women and that he should as carefully disinfect himself after administering to them as he would after attending cases of puerperal infection, etc., before undertaking other obstetric or surgical cases."

85. **Gastric Ulcer.**—Davis describes the symptoms of gastric ulcer, calling attention to the necessity of examination of the stomach contents, and the recognized need of greater care in studying the urine in these cases, paying attention to the reduced acidity and well-marked alkalinity wave after meals. Also the blood examination; the rare cases where there is a hyperchlorhydria may create difficulties, and, when the tumor can not be felt, a diagnosis may be impossible. He goes into the dietetic and medicinal treatment of these cases, making the rest and milk diet the essentials; a guarded prognosis should always be given. In conclusion he suggests the need of laboratories and the advisability of medical societies organizing and supporting these, so that their advantages can be obtained by the practitioner in general.

87. **Appendicitis.**—Davis ends his paper as follows: "In all cases of chronic appendicitis and those who have had one or more severe attacks, or two or more light attacks, an operation is indicated. 2. In simple cases of appendiceal colic without severe pain, no vomiting, no fever and no rise of pulse rate, immediate operation is not imperative, though the appendix should be removed at the earliest convenience after the attack is over. 3. In acute attacks seen during the first forty-eight hours, accompanied by persistent vomiting, severe pain and rigidity of the right rectus abdominis, immediate operation should be done whether there be much fever or rise of pulse rate or not. 4. In patients seen after the third day of the attack (*a*), if distinctly convalescent, operation may be postponed until the acute symptoms fully subside; (*b*), if not distinctly convalescent, but with an amelioration of all the acute symptoms, immediate operation should be done; the operation may be delayed if the patient can be closely watched and is in suitable surroundings for an immediate operation should there be an exacerbation of the symptoms; (*c*), in patients becoming progressively worse, but not yet moribund or nearly so, operation done at once will save more patients than can be saved by other means; (*d*), moribund patients should be allowed to die without operation."

88.—This article appeared in The Journal, xxxvi, p. 1157.

95. **Sulphid of Calcium.**—Earp finds that this is a valuable remedy in scrofulous cases and in the treatment of boils, felons and acne, and is an adjuvant to mercury and iodid of potassium in specific cases. He quotes letters from Dr. H. A. Hare, who endorses the remedy, and thinks it does good where there is a tendency to the development of pustular conditions of the skin; he also quotes from Dr. D. M. R. Culbreth, who speaks highly of it in scrofulous or glandular conditions when used with discretion and judgment. It should not be used too generally. He thinks it a valuable agent in knowing hands. Dr. G. F. Butler has had but little personal experience, but is convinced that it is an efficient remedy in the class of cases in which it has been recommended by Earp.

97.—See abstract in The Journal, xxxvi, p. 1726.

105. **Apex Pneumonia.**—From a study of cases, including the statistics of Pye Smith and others, Cordell concludes that: "Acute lobar pneumonia affecting the apex is about one-third as frequent as that affecting the base, and of the two apices, the right is affected about three times as often as the left. Involvement of one apex and the opposite base is very rare, and that of the two apices still rarer. Apex pneumonia is not rare in early life, and the relative involvement of the upper and lower lobe corresponds with that in the adult. The general mortality of the apex and basal forms is about the same. Involvement of one apex and the other base does not appear to be a fatal form of double pneumonia, apart from complications. The mortality of uncomplicated apical disease in the child is almost nil. Delirium is not an infrequent prognostic symptom at any age. Intemperance and hyperpyrexia do not increase the relative mortality at the apex. Pericarditis is a fatal complication, and Bright's disease and bronchitis render the prognosis much graver. Delirium is not a more frequent or marked symptom in apex cases in the adult, and seems to occur more often in cases with complications than in the basal form. Intemperance, which is the chief cause of this symptom, does not seem to increase its relative frequency at the apex. There is no positive evidence that delirium is more frequent or prominent in the young with apical pneumonia. Pericarditis is relatively more frequent in apex cases. The same appears to be the case with otitis media. It is not evident in the case of icterus, hyperpyrexia, endocarditis, meningitis, pleurisy, diabetes, or empyema. Gangrene is doubtful. There is no reason (other than site) why apex pneumonia in the adult should be more readily overlooked. Phthisis is rare in connection with acute lobar pneumonia, and the apex form involves no tendency to eventuate in it. Cases of apex pneumonia, even in the adult, sometimes assume the mildest symptomatology."

111.—See abstract in The Journal of September 14, p. 711.

118. **Enuresis.**—Barbour recommends the use of boracic acid in enuresis. He was led to employ it from his desire to render the urine less alkaline and more antiseptic. Later he added salol to the boric acid and the results have been most gratifying, so that it has become his routine treatment for enuresis. Abnormally contracted bladder and conditions like malnutrition, etc., can not be thus benefited. He does not give the dosage in which he has employed the drugs in these cases.

119. **Hydrotherapy in Neurasthenia.**—The method here advocated by Sinkler is as follows: The patient is placed in a hot-water cabinet until perspiration begins, then given the circular or so-called needle bath for one minute, beginning with a temperature of 95, gradually reducing it to 85 with pressure of 20 pounds. The Scotch douche is then applied to the spine, alternating hot and cold water, at a temperature of 105 and 80, under the same pressure. The treatment usually first lasts only 25 or 30 seconds. After a few days the pressure is increased to 25 or 30 pounds, and the extremes of temperature used are much greater, alternating from between 110 and 70. After about two weeks' treatment, in addition to the circular and Scotch douche, the fan douche may be used for the body, abdomen and extremities. The patient's condition should be carefully watched, and if reaction is not good, go slowly in reducing the temperature and increasing the pressure. It is his custom to have the pulse, temperature and respiration taken before and after the treatment, and have the patient weighed also before and after. After the bath, brisk friction is applied with a warm, dry towel, and a few minutes' general surface massage is given; then the patient is sent out for a walk. Taking exercise after the bath is a point which Dr. Baruch insists upon as it promotes reaction. Hydrotherapy does not agree with all neurasthenics and each case should be treated individually and carefully watched. But if the different baths produce an unsatisfactory result it is best to begin with the wet pack and sponging of the spine witth warm and cold water at home. In some cases the drip sheet does more good than either the wet pack or hot bath. Insomnia is a condition greatly benefited by this treatment, also melancholia and other conditions.

125. **Gallstones.**—McCalla reports a case in which after cholecystotomy followed by fistula and apparent obstruction of the gall duct from inflammation due to impacted stones which were removed, he waited until after the peritoneal cavity was sufficiently isolated from the drainage wound and used hot water, temperature 130 F., at a pressure of several feet for some seconds to force an opening in the duct, with success. Later he carried the water pressure as high as twelve feet. The result was that the bile escaped into the intestines, the drainage wound healed up, and the patient recovered her health.

130. **Tuberculosis.**—Gibbes says that he would not be surprised if Koch had a still more startling statement yet, and the one in regard to human and bovine tuberculosis was somewhat of a pioneer balloon. It must be remembered that he has never gone so far as some of his disciples, and that years ago he admitted having seen cases where no tubercle bacilli could be found. Gibbes himself believes that there are two conditions which go under the name of consumption and which should have entirely different treatment. The first is purely inflammatory, beginning as a bronchitis, extending into the lungs as bronchial pneumonia and forming a consolidation varying according to the intensity of the inflammation and the number of infected bronchioles. If the vitality of the patient is low or the intensity of the inflammatory process great, so as to overcome the natural resistance of the part, necrosis results, and after a while a cavity is formed. Careful study of these facts has proven that they are purely inflammatory from first to last and bacteriologic examination fails to reveal the tubercle bacilli in sections of any consolidation of the lungs until these organs begin to break down; then they are usually pres-

ent in large numbers. He asks when these cases become tubercular; he feels sure that it is the stage when the tubercle bacilli appeared and that was when the diseased process had destroyed so much lung that the patient would have died anyway. He maintains that over 50 per cent. of lung cavities are due to bronchial pneumonia. The other form is an entirely different process. The patient commences with stooping and rounding of the shoulders, lassitude and fatigue, dulness of the apex, generally the left. There may be no cough at this early stage, the dulness constantly extends downward and then gradually all the familiar symptoms develop. There is no expectoration in the early stages as the bronchi are not affected. There is no acute inflammatory process extending into the lungs, the diseased process is going on in the lung itself and consists of a new growth, which starting in one apex gradually substitutes itself for the normal lung tissue. We have, therefore, two disease processes, differing in everything but their results, viz., cavitation of the lungs, and they must not be treated in the same manner. The difference should be recognized at once on examining the case. The principal perceptible difference appears to be the existence of moist râles between the edge of consolidation and the functionating lung, indicating a positive bronchial pneumonia instead of a tubercular growth of abnormal tissue.

140. **Medico-Sociologic Problems.**—The evils from vices and mistakes in the raising of children are noticed by Kime, who advocates the sterilization of criminals and the prohibition or restriction of marriage of idiots, insane, tuberculous, epileptics, dypsomaniacs and syphilities, also the raising of the age of consent and the regulation of child labor. These are a few things which he thinks would favorably affect the development of the race; others will be considered later.

143. **Epilepsy.**—Spratling's article considers the subject of epilepsy, particularly its causation, and finds that nearly 85 per cent. of epileptics became so before they reached the age of 20 and that the four factors of heredity—epilepsy, alcoholism, insanity and tuberculosis—in addition to the cerebral palsy cases of early life, produce 67 per cent. of all cases we meet. The time to treat the epileptic, therefore, is while he is young, and the disease but recently developed. As regards surgical work, he thinks much that has been done ought not to have been done. The great principle of doing no harm should be observed in these cases. Before any operation is undertaken to relieve the epilepsy the case should be studied from all sides, taking into account the hereditary factors, character, duration, etc., of the seizures, and especially the mental condition of the patient at the time. If this has been impaired he doubts the propriety of any operation as a means of cure. He does not wish to create the impression that epilepsy is incurable, for some can be cured and fully 75 per cent. of all cases can be greatly benefited.

147. **Tuberculosis and Trades.**—The question as to what business had best be carried on by tuberculous patients is treated of by Ambler, who thinks that tuberculous patients should not have charge of public halls or places where people assemble. He calls attention particularly to clerks and others that handle food stuffs. The butcher, he thinks, generally possesses an immunity, at least that has been his experience, but bakers are particularly susceptible. While the baking of bread may destroy the tubercle bacillus that has gone into the material before, and in this respect diminishes the danger, this is not the case with green vegetables or those that are eaten in the same condition in which they are purchased. Tuberculous individuals, therefore, should not be employed in market places or in stores generally, and yet there are few physicians who can not cite cases where such are employed in just these occupations.

FOREIGN.

British Medical Journal, September 28.

The Action of Arsenic on the Healthy Tissues of the Skin. Leslie Roberts.—The action of arsenic on the skin is, to some extent, veiled in uncertainty. It is astonishing how readily it can gain access to the body, food, garments, wall paper, etc. In fact whenever chemists wish to test its presence in any body they require previously to satisfy themselves that it is absent in the reagents and all apparatus to be employed. Starting from the scientifically established fact that arsenic possesses like hemoglobin a respiratory property, as shown by Binz and others, we must seek the answer to the question, whether the development of active oxygen within the tissues of the skin is actually the direct cause of morbid changes in these tissues and of the whole train of symptoms which accompany arsenical poisoning? In other words, is the cause dynamic rather than simple and direct and are the extraordinary effects which it produces of a nutritive rather than of an inflammatory order? After these introductory remarks Roberts notes the presence of arsenic in the human tissues and shows that the thyroid gland contains by far the largest proportion. It is also found in very small quantities in the mammary glands, thymus, with traces in the hair, horns, skin, milk and bones, with not a trace to be discovered in the blood or urine, and but a very minute one in the feces. Arsenic is, therefore, with one variable exception found in the areas of quiet oxidation, while all those in rapid oxidation are free from all traces of it. Normal physiologic arsenic is also removed from the body chiefly by keratinized cells of the cutaneous epithelium and in very minute quantities by the feces. It seems possible that the health of the body, as well as the maintenance of healthy metabolism of the skin, is dependent upon the chemical partnership of mercury, iodids, phosphorus, and arsenic, largely in the thyroid gland. The effects of arsenic on the skin are, 1, pigmentation; 2, hyperkeratinization; 3, desquamation; 4, atrophy, and 5, fatty degeneration. The pigment is melanin, which appears to be developed within the germinal epithelium as the result of arsenical stimulation. Hyperkeratinization is the most important sign of arsenical poisoning. It involves the strata above the cones and the tendency is toward complete arrest of inward growth. Desquamation is another highly characteristic symptom, especially in its chronic manifestation. Atrophy and fatty degeneration are later phenomena. Gautier infers, and it may be proven possible in the future, that there exist in the body certain functional elements. Only a few of these have as yet been discovered, but he assumes them to be essential for certain specific functions. Thus manganese is said to be essential to the oxidizing ferment; iodin to the thyroid; phosphorus to nucleins; fluorin to the bone cells. Some of these functional elements appear to play the principal part, others may be styled substitution elements; thus arsenic may take the place of phosphorus in relation to nucleins; selenium act for sulphur; copper, zinc or manganese may replace iron and so on. But one thing we have to learn, viz., that arsenic is not merely a drug possessing curative powers, and that it is not necessarily an irritant poison; that it is not a poison in itself, but that its action is initiated and determined by the tissues themselves; that its effects are essentially of a nutritive order brought about by the agency of active oxygen, and that these effects are beneficent to the organism when the oxidation is slow, and injurious when too rapid. The more highly organized the cell and unstable its protoplasm and the more rapid its metabolic processes, the more rapidly does it feel and manifest the action of arsenic.

A Note on the Morbid Conditions Simulating Adenoids. Wyatt Wingrave.—The conditions that simulate adenoids are, according to Wingrave, as follows: 1. Diminutive choanæ and nostrils, which are frequent; usually associated with a low pharyngeal vault and imperfect maxillary development; immobile velum palati, and a gothic arched palate. The nostrils may be uniformly diminutive, or may be normal, while the turbinals are disproportionately large. The former condition seems to be associated with development of the maxilla while the turbinal disproportion is especially associated with puberty and the balance may not be restored for several years. 2. The low pharyngeal vault which occurs in rickety children, and often accompanies the former conditions. 3. Paresis of the soft palate and pharyngeal muscles, which may be the result of any form of nasal obstruction and due to various forms of

paralysis or neglect, or bad breathing habits. 4. Prominent crest of the vomer or backward prolongation of the nasal septum, which is not rare. This is often associated with other abnormalities. 5. Forward projection of the vertebral column, in which the arch of the atlas is the chief offender, though the second and even the third cervical bodies may often be involved. 6. Retropharyngeal abscess, and here Wingrave calls special attention to the retropharyngeal lymphatic gland, supposed to be only present in early life, and which may be the seat of acute or chronic inflammation, giving rise to swellings that seriously encroach upon the upper passages. 7. Undue prominence of the soft parts covering the internal pterygoid plate and the tuberosity of the palate is not rare, and is associated with general thickening of the mucous membrane. 8. Finally, the postnasal space may be obstructed by webs and neoplasms which can not be described in this communication. These here enumerated include the commonest only of these morbid conditions that simulate or are responsible for the existence and persistence of "adenoid" symptoms.

On the Removal of Tonsils in Adults. H. Lambert Lack.—The removal of tonsils in adults is not such a simple matter as it is in children: 1, on account of the danger of hemorrhage, which is much more common in patients over 15 years of age; and 2, the effect it may have upon the voice. The methods of removal are noticed by Lack, who remarks first on the electric cautery, which is suitable for much enlarged tonsils where removal is not necessitated by recurring tonsillitis and complete removal is undesirable. Tonsillotomy should never be performed in adults with very large tonsils, but in some cases where repeated attacks of tonsillitis occur and the tonsils are too small to be snared, they may be cut away to some extent. Removal with the cautery snare leaves a large charred wound in the throat with increased danger of infection, and is not favorably mentioned. The cold-wire snare is the only method applicable to cases of much enlarged tonsils and seems to have more advantages here than any other method. Enucleation by incision through the mucous membrane between the anterior pillar of the fauces and the anterior border of the tonsils, shelling out the tonsils, is not difficult to perform if care is taken to keep outside the tonsil capsule. General anesthesia, however, is advisable. There is little risk of hemorrhage; the tonsil is completely removed and in some cases of flat tonsil there is no other applicable method. Each case, however, must be judged by itself; there should be no routine method for all.

The Lancet, September 28.

The Diagnosis of Cancer of the Stomach. John C. Hemmeter.—The early diagnosis of cancer of the stomach is rare in the literature; the patients do not usually present themselves in time and decline to be submitted to methods most promising for early diagnosis. Hemmeter says: "The most important information from all the physical signs and symptoms and from the chemical and microscopic investigations may be arranged in the order of their diagnostic value as follows, but I do not desire to be dogmatic in this statement: 1. Chronic gastritis or nervous dyspepsia with progressive aggravation in spite of four weeks' proper treatment. 2. Progressive weakening of the peristaltic power. This can only be confused with the benign stenosis of the pylorus, but in the latter case—the benign stenosis—there is, as a rule, a normal or an excessive amount of hydrochloric acid. In malignant stenosis there is absence of hydrochloric acid and formation of lactic acid. The diagnosis between benign and malignant stenosis may be difficult at the beginning of the clinical observation of any case, but after two to four weeks of observation it should present no difficulties. 3. Progressive diminution in the amount of free hydrochloric acid with steady loss of peristaltic power. 4. The presence of large numbers of atypical and asymmetrical mitoses after gastric curettage, together with characteristic histologic changes in the glands previously described—especially in cases of motor insufficiency. With such clinical indications exploratory laparotomy should be undertaken, and where this step proved the diagnosis to be wrong, in my experience, it was discovered that conditions were present which necessitated operative interference anyway, such as, for instance, motor insufficiency from cicatrices, indurated ulcers, or adhesions. In this schema the diagnostic value of the Oppler-Boas bacilli, tumor, and lactic acid are not referred to because they are late signs. I do not wish to be understood to say, however, that a surgical operation should not be undertaken when these late signs are present. Many times even the presence of a tumor is not a contra-indication to an operation, because a malignant tumor in the stomach may be present, as I have noted on three occasions, and no signs of metastases of infection of the lymph glands were discoverable by a careful search at the necropsy." The diagnosis of carcinoma of the stomach is still in its rudimentary stage. The further development of the subject, the author thinks, does not depend so much upon the bacteriologic investigation as upon the pathologic and physiologic chemistry of the cell.

Syphilitic Affections of the Stomach. W. Soltau Fenwick.—It is thought that while the mouth and rectum commonly suffer from syphilitic lesions the stomach escapes, notwithstanding the evidence to the contrary. Syphilis may affect the stomach in three ways: 1. By the formation of gummata; 2, by producing endoarteritis; 3, by exciting chronic inflammation of the mucosa. Gummata of any size are rarely found. The tumor, which is often multiple, is usually in the submucous tissue of the pyloric region near the lesser curvature. It increases in size and its substance undergoes softening, which usually becomes destroyed and an ulcer is produced which has certain features distinguishing it from the simple variety. It is often irregular, scalloped or triangular. Its edges are thickened and undermined, while its wall and base are shaggy, cheesy, hemorrhagic or covered with firmly-adherent yellow slough. It is usually surrounded by an area of some degree of chronic inflammation and syphilitic manifestations occur in other portions of the abdominal viscera; perforation of the stomach has not been observed in these cases. Obliterative endarteritis affecting the gastric vessels must not be regarded as necessarily an indication of syphilis as it may be observed with chronic simple ulcer and other conditions. The syphilitic variety is rarely a primary complaint, and as far as Fenwick has observed is always associated with gummata in the liver, spleen, pancreas and elsewhere. It chiefly affects the smaller branches of the pyloric vessels and causes inflammatory thickening of the mucous membrane, interstitial hemorrhages and ulcerations. It may produce symptoms of chronic ulceration of the stomach or of dyspepsia followed by hematemesis. Chronic gastritis may be the direct or indirect result of syphilis. The latter is most common, and is due either to embarrassment of the gastric circulation from disease of the liver or spleen or to lardaceous degeneration of the vessels of the stomach, to secondary disease of the kidneys or to the specific cachexia. It does not differ histologically from the usual forms, and like them, usually subsides when the exciting cause has been removed. We should not fall into the mistake of many that every gastric ulcer occurring in syphilities is due to syphilis. About 5 per cent. of all the population suffer from gastric ulcer from other causes and gastric irritation in a syphilitic subject may possibly be due to injudicious medication. Chronic syphilitic ulcer of the stomach is most common in men between 25 and 40, and in cases where secondary symptoms have been slight or rapidly removed by treatment. Pain is invariably present and nocturnal pain has been considered especially characteristic; this is also true of attacks of emesis during the night, though they may occur with simple ulceration. Anemia is invariably present, and the peculiar sallow complexion of many of the patients is suggestive of specific cachexia. As a rule the complaint fails to respond to ordinary means and may show a tendency to relapse even with anti-syphilitic remedies. Gastritis occurs both in hereditary and acquired syphilis, and is chiefly characterized by its chronicity and intractibility to ordinary treatment. The loss of flesh, anemia and debility are out of all proportion to local symptoms. The mild forms of gastritis occurring in adult life are practically undistinguishable from the alcoholic varieties, but in severe cases the anemia, debility,

etc., are suggestive of malignant growths. He has seen a number of cases where cancer has been diagnosed that were relieved by specific treatment, which is a great point of distinction in these cases. The subjects of gastric cancer are very intolerant of mercury and the iodids, which is the reverse with the syphilitic form. The gastric crises of locomotor ataxia occur at irregular intervals and are seldom excited by the ingestion of food. A few days' trial of iodid of potassium will usually clear up any doubt. Rest, of course, and other methods given for ordinary gastric disorders are advisable, but mercury should always be combined with the iodids as the latter are less effective without it. The patient should be warned as to the dangers of a relapse.

Bulletin Medical (Paris), August 17.

Medical Injections of Quinin into the Cerebrospinal Fluid. Jaboulay.—The subarachnoid injection of cocain produces extensive but transient analgesia; when quinin is thus injected, the analgesia is less in extent, but it lasts for two weeks. Jaboulay has found the latter an effective measure for the relief and possibly cure of painful, purulent cystitis: cancers of the rectum; sciatica, arthralgia of the pelvis and hip; neuritis of the leg; pelvic neuralgia; incontinence of urine, and inveterate onanism. He uses the quinin in a concentrated solution, .5 cg. to the cubic centimeter. He has found 5 cg., or even 2.5 cg. sufficient for the curative effect, while this amount is not large enough to cause neuritis or destructive lesions of the cauda equina. He makes the injection in the lumbar subarachnoid space. The analgesia induced includes the genital organs, bladder and rectum. It is accompanied by paresis of the corresponding muscles. With a larger dose it is possible to induce anesthesia of the foot and lower portion of the leg, suggesting that this measure may prove useful in the treatment of Little's disease. He points out that the varying results obtained by various surgeons in spinal cocainization is largely due to the temperature of the solution of cocain. When it is heated to 99.5 F. its diffusion is more rapid. If not warmed, it stays at the bottom of the subarachnoid cavity, and it loses .005 of its density when heated to 104 F. Both cocain and quinin should be used only for medical and not for surgical purposes, as surgical anesthesia can be obtained by simpler measures.

September 4.

Aid to Prognosis of Diphtheria. Rabot.—The subcutaneous injection of saline solution in a child with diphtheria may throw light on the prognosis. If the child voids more urine after it, without vomiting or diarrhea, the diphtheria will run a mild course, no matter how stormy the onset. But if the amount of urine is not increased, and the little patient vomits or has diarrhea, the prognosis is grave, even in apparently benign cases. The latter phenomena indicate that the toxins have affected the heart fibers, and the organ is thus unable to respond to the action of the saline solution.

Presse Medicale (Paris), September 21.

Some Experimental Experiences with Phototherapy. R. Romme.—Borissoff reports tests with dogs and rabbits which showed that the growth and development was retarded in young animals kept in dark rooms. Even when the largest and strongest animals were transferred to the dark rooms, by the end of the second week their growth was less in proportion than that of the control animals in ordinary light rooms. He compares the stimulus exerted by the light to that of exercise on a muscle. Drigalski found that the electric rays, far from possessing any bactericidal power, predisposed the animal organism to infection, and enhanced its gravity. This fact can not be due to the heat alone, as other animals kept at the same temperature, but not exposed to the electric light, proved much more resistant in all the tests. Strebel has found electric light baths applied as a therapeutic measure, effectual in curing soft chancres, leg ulcers, acne, and, in general, all ulcerating cutaneous lesions; he eliminates the heat rays by passing the light through a vessel containing copper sulphate solution. In rheumatic affections the results were inferior to those obtained by hot air, but the treatment proved more efficacious in arteriosclerosis, in fatty degeneration of the heart, in a few cases of bronchial catarrh, and occasionally in neuralgia. The effect was negative in nephritis.

Curable Gangrene of the Lids. H. Roger.—A robust man with no pathologic antecedents, was suddenly affected with spontaneous gangrene of the lids of one eye. It commenced with a simple patch of inflammatory edema, followed by fever for four days, the entire process developing to complete restitution in twenty-one days. The eye was not involved. Only one similar case could be found in the literature. A large aërobic micrococcus was cultivated from the serum, pathogenic for rabbits and guinea-pigs, but harmless for rats. The micrococci discovered in the lesions of gangrenous mammitis are also aërobic.

Treatment of "Thin Diabetes." P. Maucquaire.—Lancereaux applies the term "diabète maigre" to the glycosuria connected with an affection of the pancreas, in opposition to the "fat diabetes" of arthritic and gouty subjects. The pancreatic juice may be produced in excess in this variety of diabetes, or it may be deficient. Several comparative tests on rabbits are described, which suggest that the sugar produced in the organism by the transformation of starchy food, and the sugar generated in the tissues by autodigestion, pass into the liver. Here, in normal conditions, they are transformed into glycogen and deposited. The liver ferment, whose formation is dependent on the pancreatic zymases and the pancreatic juice itself, dissolves this stored glycogen as needed, and the sugar is transformed in the circulation into water and carbon dioxid. Absence of the pancreatic juice in an affection of the pancreas, entails the absence of the liver ferment. The glycogen in the liver is not dissolved, and the sugar which constantly arrives from the food or autodigestion, finding no room in the liver, continues to circulate in the blood until the kidneys separate it and eliminate it in the urine. The practical conclusions from this hypothesis are that the physician should not hesitate to administer pancreatin in cases of "thin diabetes" in a dosage as high as three to eight grams a day, if necessary.

Painless Application of Sublimate to Mucous Membranes. De Pierris.—The smarting produced by the application of water to the nasal mucous membrane is due to the lack of isotonicity between the molecular concentration of the blood and of the fluid employed. The smarting can be prevented by adding about 9 per cent. of salt, which renders the fluid isotonic with the blood. When this is done, sublimate can also be added, 1 to 10,000, or even 1 to 4000. It does not induce the slightest pain in this isotonic combination with saline solution, but otherwise it does.

Revue de Medecine (Paris), September.

Cerebellar Hereditary Ataxy. A. Thoma.—The Haud family, of Paris, is distinguished by the fact that five members of the family in two generations have presented the same curious ataxy with other cerebellar symptoms. The various cases were carefully studied. The autopsy findings in the case of Amelia, who succumbed last, at the age of 47, show the same anatomic foundation as all the others—a lesion in the cerebellum or cerebellar tracts. The cerebrospinal axis was exceptionally small in every case, but the lesion itself differed in nature and exact site in each. The cerebellum was small, but the spinal cord was still smaller in proportion. Actual degeneration was noted only at a few points, especially and invariably in the cerebellar tracts. Aside from this Haud family, Sanger Brown's is the only other instance known of family hereditary ataxy, and in his case the lesion extended through the cerebellar system in the cord while the involvement of the cerebellum itself was doubtful.

Two Cases of Sciatic Neuritis Caused by Mercurial Injections. Dopter.—After the unfortunate experience indicated in the title, Dopter made a study of the danger zone for these injections. He has established that the course of the sciatic nerve follows a line starting two fingers' breadth outside of the postero-superior iliac spine and terminating in the median axis of the posterior surface of the thigh. The danger zone extends 3 cm. each side of this line, from the sacro-sciatic foramen, where the nerve emerges, to the center of the dividing line of the buttocks below.

Revue Mensuelle des Mal. des Enfants (Paris), September.

Cocain Cause of Idiocy in Offspring. A. B. Marfan.—A healthy couple had two healthy children, when the father became addicted to the use of cocain. For years he was in the habit of taking as much as three grams a day, exclusively by the nose. Two children have since been born, both typical specimens of microcephalous idiocy.

Revue de Therapeutique (Paris), August 15 and September 1.

Influence of Certain Foods on the Gastric Juice. Potapow-Pracaitis.—In Schiff's experiments on dogs, he found that a marked peptogenic power was possessed by dextrin, bouillon, raw meat, bread, cheese, peptones, gelatin and black coffee. Pawlow found that Liebig's extract, bouillon, water, milk, gelatin and raw meat possess the property of increasing the secretion of gastric juice. In the research described in the present article, it was established that the results obtained by Schiff and Pawlow supplement and confirm each other. Certain substances, such as bouillon and raw meat, are both peptogenic and gastric juice-producing, or succagogue. The influence on the secretion of gastric juice is completely abolished when the substances are administered by the rectum, showing that the direct intervention of the nervous system is required for this sympathetic reflex secretion. On the other hand, the peptogenic effect is fully as marked when the substance is absorbed by the rectum as when absorbed by the stomach. The peptogenic effect is, therefore, transmitted by the intermediation of the blood.

Semaine Medicale (Paris), September 18.

Nodular Tuberculosis of the Prepuce. J. Sabrazés.—A lump the size and shape of an olive developed in the under surface of the prepuce, about 1.5 cm. above its free edge, in a man of 26. It simulated a sebaceous cyst, but it appeared about a year after the patient had noted dull pains in the renal and hypogastric regions and displayed other symptoms of slowly developing tuberculous lesions of the urogenital organs. Koch's bacillus was discovered in the urine, and also in the caseous masses which formed a large portion of the tumor. It was readily excised, and the patient was thus relieved of his most troublesome symptoms, and was able to resume his occupation.

Treatment of Malaria with Iodin. Regnault.—During an attack of malaria assuming the gastro-bilious form and rebellious to quinin, Regnault took a teaspoonful of a mixture of tincture of iodin and potassium iodid, 4 gm. of each, in 100 gm. of water. This was equivalent to 2 cg. of pure iodin, and he found that the chill was arrested in fifteen minutes and the skin resumed its functions. He has administered it to numbers of patients since, and always with the same result, the prompt subsidence of the attack. A second dose is rarely necessary. Quinin has to be taken before the attack; if it fails to prevent it, the iodin treatment is indicated during or, better still, at the commencement of the attack. On account of the incompatibility of iodin and quinin, the two should not be taken together.

Berliner Klin. Wochenschrift, September 2.

Relations Between Human and Bovine Tuberculosis. P. Baumgarten.—Twenty years ago Rokitansky conceived the idea that it might be possible to arrest or even to cure malignant tumors by the antagonistic action of the tubercle bacillus which was an article of belief at that day. He consequently considered himself justified in taking advantage of this possibility in the treatment of otherwise hopelessly doomed patients with inoperable carcinoma or sarcoma. As the tubercle bacilli of human and of bovine tuberculosis were considered identical, the latter were used for the purpose, and more than half a dozen patients were thus inoculated with considerable amounts of bacilli taken from cattle, and which had proved their extreme virulence in tests on rabbits. Most of the patients survived from several months to over a year, but, after the healing of the pustule induced by the injections, none of them exhibited any signs of tuberculosis, and neither macroscopic nor microscopic tuberculous lesions were discovered at any autopsy, although Baumgarten was himself prosector at the time and all passed through his hands. The inoculations had no noticeable effect on the patients, and the attempted treatment was abandoned. In 1893 one of Baumgarten's pupils inoculated two calves with tubercle bacilli, one in the eye with bacilli from the ox, and the other in the eye and flank with bacilli from tuberculous patients. One calf died in six weeks with all the symptoms and anatomic lesions of diffuse miliary tuberculosis, such as is seen in man. The second calf, inoculated with human tuberculosis, remained healthy, and, when killed several months later, no traces of either human or bovine tuberculosis could be discovered. The control rabbit died of generalized tubercular lesions in about five months. Baumgarten adds that he has not been able to find in the literature a single authentic instance of the transmission of human tuberculosis to cattle. He agrees with Koch that practically there is very little danger to man from bovine tuberculosis, but he is convinced of the identity of the bacilli and that external circumstances are responsible for their differences. The classic picture of human miliary tuberculosis was induced in the calf mentioned, and Tangl and Troje have also demonstrated that certain external factors, such as the fumes of iodoform, may modify the pathogenic properties of human tubercle bacilli to such an extent that they induce the bovine form of tuberculosis when inoculated into animals. The histologic identity of both forms is confirmed by the fact that the caseous process so characteristic of human tuberculosis, occurs likewise in the bovine tubercles, only it is frequently disguised by the rapidly succeeding calcification of the caseous masses. This has nothing to do with the essential disease process, and is often observed in the caseous masses in man. The extent of the calcification in animals is probably due to their larger proportion of calcium salts. The variability in the pathogenic properties of bacteria is a familiar fact. It is more than probable that the bacilli have adapted themselves to their habitat in the course of time, and lost their pathogenic properties for others. But until this is definitely established he observes that there should be no relaxation in the prophylactic measures employed, as further research may lead to opposite conclusions.

Treatment After Operation of Diffuse Purulent Peritonitis. T. Gluck.—The principles on which Gluck bases his after-treatment are exemplified in the smooth and rapid recovery of a man who had been gored by an ox. When he recovered consciousness he found his intestines lying between his knees, covered with blood, ditch water, fecal matters, dirt and sawdust, and exposed to the glare of the direct sunlight for hours. Gluck believes that warmth, moisture and the action of light, favor the healing of peritonitis or any intestinal lesion after an operation. After much experimental research on animals, applying the results to man, he constructed an apparatus in which the intestines are eventrated and received in a warm, moist, glass case, which allows the action of electric light and frequent irrigation. Cardiac insufficiency or paralysis frequently follows the reposition of the intestines after a laparotomy; this danger is entirely obviated, as the intestines are not replaced until all danger of shock is past. He mentions Fenton B. Turck's views with especial approval. After the operation the patient is placed on a water mattress on a frame, to which the box for the intestines is fastened. The whole is then placed in an empty bathtub, and Schäfer's warm water regulator is attached. Gluck has thus treated cases of gangrenous hernia, volvulus after perforation of the appendix, and peritoneal tuberculosis, besides the ordinary diffuse purulent peritonitis. His results have been so favorable that he considers this method as a brilliant progress in surgery, although he claims no priority for it, as it is merely the legitimate outcome of the general trend of abdominal surgery, and as the technique is still far from perfect. In certain uncomplicated cases of diffuse peritonitis, a small laparotomy with lavage of the peritoneum may be sufficient, using a 3 per cent. solution of salt and boric acid or of 1 per cent. salicylic acid, and glass drainage or tamponing. The continuous bath is liable to infect the wound. The abdominal wound should not be sutured at all, but should be left wide open. By this

means the peritoneum can be thoroughly cleansed and the organism relieved of the task of resorbing, eliminating and overcoming the infection. *Restitutio ad integrum* becomes possible, especially in case of tuberculous processes. Gluck uses the apparatus alone or in combination with a loose tampon over which is drawn a gauze bag. When the strings of the bag are drawn up like those of a tobacco pouch, the enclosed intestines are protected. Another method is to pass long silk threads through the fascia and muscles of the wound and tie them, after loosely piling up a mound of gauze in the wound, over which the threads are tied. The box for the intestines might be modified so as to be used even during the operation.

Balancing Extension. F. Cramer.—The foot of the patient is attached to a weight suspended from a pulley at the head of the bed. The rope passes over the pulley on a frame above; under a pulley fastened to his ankle; over a second pulley above, and finally under a second pulley on the tip of the foot; it then fastens to a hook in the frame above close to the foot of the bed. The rope above the patient's leg thus outlines a W. Another weight is suspended from a pulley at the foot of the bed, not far above the plane on which he lies, and this rope is attached to his heel. The limb is thus in continual extension, but at the same time considerable movement is possible.

Centralblatt f. Innere Medizin (Leipsic), August 24.

Leucocytosis in an Outbreak of Sweat. W. Hames.—The leucocytes increased by 3000 and 5000, and in some cases to double the previous amount in all the children examined, except those in cachexia, fifteen minutes after either natural or induced sweating. Half an hour after the children were wiped, dressed and transferred to a freshly made bed, the leucocytes had returned to the normal number. About twenty-nine children were tested and the results confirm the function of positive chemotaxis exerted by the hydrotics, and antipyretics in febrile conditions, as well as by the spontaneous or induced sweats in both health and disease.

September 7.

Gymnastics on the Sickbed. H. Zeehuisen.—During convalescence from infectious disease, and in conditions requiring rest in bed, great benefit may be derived from systematic gymnastics under the physician's instructions. Convalescence is shortened, and recovery is more complete than without these gymnastics. As a typical example is described the case of an elderly woman, with fatty degeneration, arrythmia and edema of the legs. Medical treatment and rest had not alleviated any of the symptoms. Zeehuisen instituted a series of gymnastic movements as she lay in bed; each were performed but once, and with first one leg and then the other, three for the thigh and one for the knee. At first the movements were passive, then active and then against slight resistance, always in the morning. After two weeks each movement was repeated twice. The success of these measures in the course of two months was remarkable. Pulse, respiration and skin were normal; after a course of treatment at Bad Nauheim the patient has been completely cured for years and to date. These bed exercises are especially beneficial for bedridden obese patients, in certain gynecologic affections, in gout and particularly in traumatic neuroses.

Dermatologische Centralblatt (Berlin), September.

The Bottini Operation for Hypertrophied Prostate. C. Stern.—With chronic, complete retention and a hard prostate, the Bottini operation with Freudenberg's modification of Bottini's original galvanocautery, is a more effective procedure than any other known to date. All it claims to accomplish is to make an opening in the dam which is holding back the urine. It is safer than continual catheterization in the hands of the ordinary patient, but as in the case of a colleague who catheterized himself with ease and absolute asepsis, circumstances may render it superfluous. It should be reserved for cases which are persistently rebellious to ordinary measures.

Deutsche Med. Wochenschrift (Leipsic), September 26.

Treatment of Dysentery with Calomel. A. Plehn.—The method of treating dysentery by small doses of calomel, inaugurated by Plehn, has abundantly proved its efficacy in his experience during the last three years at Cameroon, and also in South America, where it has been introduced. He orders first two tablespoonfuls of castor oil, which clears up the diagnosis and cleanses the intestines. The next morning he gives a tablet of 3 eg. of calomel every hour for twelve hours, continuing this treatment the next and the following day, suspending it at night. After each tablet the patient must rinse his mouth thoroughly with a solution of tincture of krameria or of salicylic acid. After three days of the calomel he substitutes a tablet of .5 gm. of bismuth every hour for twelve hours, continues this for three days and then reduces the amount to 6 gm. a day, until all pathologic symptoms have vanished, when he continues with 3 gm. a day for a time longer. A number of cases are described in detail showing the efficacy of this method of treatment. The calomel probably acts as a disinfectant. The germs causing the dysentery develop throughout the large intestine, but it is the products of their metabolism which cause the pain, the increased secretion, the disturbance in the intestinal resorption and the intense irritation of the intestinal walls. Under the action of these chemical toxins the mucous lining is destroyed, ulcerative processes develop and secondary infection is liable to occur, frequently due to the amoebæ. Calomel given continuously as described, kills the germs and the production of their toxins is arrested. The acute irritation of the intact mucous membrane rapidly subsides. If the ulcerations are already in progress, they may require some time to heal, but healing is promoted by a strictly fluid diet and the bismuth. Certain liver affections subsequent to slight intestinal infections, may likewise be due to the toxins secreted, as they rapidly recover under this calomel treatment of the primary intestinal infection. He is inclined to believe that the same treatment might prove effective in early cases of typhoid fever and in cholera, but he has had no opportunity to test it in these diseases. He recommends others to try six or eight doses of calomel every two hours in mild cases of dysentery.

A Case of Tuberculosis of the Knee Benefited by Koch's New Tuberculin. Brunzlow.—The patient was a lad of 14, who had suffered from a tubercular affection of the knee since 1897. After surgical treatment of the joint, the conditions became aggravated, and the general condition grew rapidly worse. He was then treated with tuberculin (T. R.), commencing with 1/1000 mg., and the beneficial effect was rapidly apparent, as the lad gained four and one-half pounds in the first week. He was treated with four separate courses of tuberculin, in two years, gradually increasing the dose from .0005 mg. to 2 mg. each time, carefully avoiding reaction and waiting until every trace of induced elevation of temperature had vanished before injecting the tuberculin again. The benefit was apparent in the rapid increase in weight and the disappearance of all local symptoms. At present, the joint is normally movable and free from pain, but the muscles are a little weaker than in the other knee, and a faint grating sound can be heard on movement. There is still a slight reaction to a test-injection of old tuberculin, and consequently the case is not a cure. However, the results show such improvement in every respect, with constant gain in weight, that they should encourage others to try tuberculin as a therapeutic measure in rebellious cases of surgical tuberculosis.

Treatment of Exudates. E. Homberger.—The fluids of the body always seek to maintain an osmotic balance. If we assume that the blood and an exudate or transudate have the same osmotic tension, dilution of the blood will be followed by the passage of the excess of water into the exudate, reducing the osmotic tension of the latter, while the concentration of the blood increases in proportion. As the blood becomes more concentrated, the exudate is reabsorbed under the action of the same laws of osmosis. Homberger states that by utilizing these principles we have an effective means at our disposal of promoting reabsorption of exudates and transudates. The blood can be diluted by the administration of water. It is absorbed more readily if taken in small amounts in an empty

stomach, and most rapidly of all, when the water is slightly acid and weak in salts. Nature demands water in infectious fevers and lemonade not only relieves the thirst, but has a directly curative influence on the disease by promoting osmosis. The benefit of saline infusion is directly due to the water. In diabetes, the sugar in the blood causes absorption of water from the tissues, in Nature's attempt to restore the balance of osmotic pressure. The overfilled vascular system empties the excess of water into the kidneys, while Nature calls for more water to supply the demand, thus explaining the polyuria and thirst in diabetes. Homberger concludes by stating his belief that in therapeutics the internal use of water is as important as its external use, and that it can be harmful only in exceptional cases. Simmonds announced last year that in none of the autopsies which he has conducted was he able to detect any indications that the infusion of saline solution had been responsible for dilatation of the right ventricle. The great objection, that a weak heart is not able to stand it, is thus shown to be unfounded.

Lamp for Photography on a New Principle. Sophus Bang.—All the lamps hitherto used for phototherapy were originally constructed for optical purposes. None of them aimed to produce a cold light, rich in ultra-violet rays. Bang announces that he has devised a lamp in which the materials were selected for their properties in the spectrum. He finds iron most suitable for the electrodes, instead of carbon tips, and keeps it cool by a circulation of water inside. The iron tips do not generate rays, and the light is actually an arc light, as the rays are generated in the space between the tips. Its bactericidal power is sixty times greater than that of the ordinary arc light. Its effect on the skin is likewise much more intense. Five minutes' exposure at a distance of one yard will induce a severe erythema of several days' duration. For local treatment, he has designed a small lamp, which, with the compressor, is not much larger than an ordinary tablespoon. The whole is placed directly on the skin, as there is so little heat that a distance of 1 to 1.5 cm. is ample. With 5 amperes and 40 volts, it is possible to obtain in five minutes as strong a reaction over 10 sq. c., as has hitherto been obtained with an apparatus of 60 amperes and 50 volts in one and one-quarter hours. As the light is so powerful, neither concentration nor automatic regulation is required, and it can thus be very cheaply constructed.

Three Cases of Pure Hereditary Ataxia. E. Weber.—A family is described in which three children present the typical clinical picture of Friedreich's disease. The parents are healthy and well-to-do, and have two other healthy children. The affection commenced about the sixth year in each, and can be observed in the three patients in the incipient, established and advanced stages. The youngest is 7, and the oldest 18 and bedridden. The ataxia in his case is more pronounced than Weber has ever witnessed in any tabetic subject.

Value of Colchicin in Gout. K. Kuester.—Since restricting himself to a more vegetable diet and avoiding meat, Kuester has found that he suffers less with gout, to which he is naturally and hereditarily predisposed. An occasional attack still occurs, and he finds relief in colchicin alone. He takes it in pills, .5 cg. colchicin to 1.5 gm. each of licorice extract and powder, to make 20 pills. Two of these will frequently abort a mild attack, and four pills in the course of two days reduce the symptoms very materially and shorten the course of the attack. Thus, after reclining for one day, he is soon able to attend to his practice, and is agile again in eight to ten days, with all the gouty deposits absorbed. Without the colchicin, he has to recline for two weeks and is stiff and aching for three weeks longer. His personal experience has been confirmed by that of gouty patients for whom he has prescribed the colchicin.

Treatment of Meniere's Symptom-Complex. G. Heermann.—Certain symptoms in this affection can be traced to the ears, others to the nerves, and others to a general cause. In order to differentiate and apply appropriate treatment, Heermann has been appealing to his colleagues to report their experiences. He sends a blank circular on demand and gratefully receives all communications addressed to him at Kiel. During the acute attacks he states that a position in which the vertigo is attenuated can almost always be found, but the patient is unable to find it for himself. He must be made to recline, with the upper part of the body slightly raised and the head turned toward the sound side. Both the nausea and the vertigo become much attenuated when the correct position is found. The bromids are the only internal remedies of any value. In case of syphilitic antecedents specific treatment is indicated. If there is a history of a preceding chronic, suppurating otitis media, the semi-circular canal must be opened up, and a cholesteatoma is sometimes found. The Ménière symptoms may appear during the course of a dry catarrh of the middle ear. Besides the usual treatment of this condition, Heermann advocates pilocarpin. He commences with one-tenth of a Pravaz syringeful of a 2 per cent. solution, increasing by one-tenth daily until copious sweating is induced; usually less than seven-tenths are required. The patient must stay in bed while sweating. The pilocarpin banishes the vertigo, and frequently improves the hearing, but is contraindicated in case of elderly or corpulent persons. In apoplectiform deafness it has worked wonders in his experience. He also found thyroid treatment beneficial in two cases with goiter. The patient may have forgotten his old ear affection when the Ménière symptoms appear. The vertigo in such a case is liable to be attributed to the stomach. There is frequently pronounced stagnation in the vascular system and constipation. Appropriate local treatment and out-of-door exercise may improve the hearing with the general health, and the vertigo vanishes. He describes several instructive examples. One patient, for instance, with bilateral chronic catarrh of the middle ear, exhibited the Ménière symptoms and deafness during and after a pregnancy. Treatment of the ear and twenty-one injections of pilocarpin, with exercise, resulted in the cure of all the symptoms including the deafness. They all returned during another pregnancy, but yielded as before. When the Ménière symptoms develop on a neuropathic basis, operation on the ear is liable to be distinctly injurious. It is in these cases that quinin, electricity and similar measures score their triumphs. Quinin should be completely avoided by the aurist, as well as the salicylates, as they expose the functions of a diseased ear to the most serious dangers.

To Test the Permeability of the Nose. F. Bruck.—The Journal described Glatzel's mirror, in the issue for September 28, p. 874. Bruck points out that it tests the permeability of the nose during expiration only, while it affords no information in regard to inspiration. The latter may be hindered by a floating polyp, sucking in of the nostrils or other impediment affecting inspiration alone.

Therapeutische Monatshefte (Berlin), August.

Treatment of Scrofulosis and Tuberculosis by Inunctions of Cod-Liver Oil. B. Rohden.—For five years Rohden has been using a mixture of 50 per cent. deodorized cod-liver oil, balsam of Peru, and oil of cinnamon, lemon and thyme, combined with lanolin, glycerin and an alkali, to rub into the skin of scrofulous and tuberculous children. He reports extremely satisfactory results from this inunction with "dermosapol," as he calls the mixture. It is a stable, aromatic preparation, of which every particle is absorbed. It is rubbed into the chest and back in the morning, and into the abdomen, buttocks and limbs at night. About 100 gm. are required for ten or twelve days. The cells and tissues are influenced by the cod-liver oil and the lymph becomes saturated with the ethereal oils and the balsam. Tuberculosis on a scrofulous basis is exceptionally benefited by this treatment, especially glandular and joint affections and lupous lesions.

Artificial Respiration in Treatment of Bronchitis. Heermann.—An apparently moribund, six-months' infant in progressing bronchitis was saved by artificial respiration, including Schultze's swinging and pressure on the false ribs, maintained for two hours. Since then Heermann has ordered artifical respiration in every severe case of bronchitis in a child. The nurse or the parents are instructed to apply slight pressure with one hand on the false ribs during expiration,

changing the hand frequently. Expectoration is promoted, respiration deepened, the rapid breathing becomes slower and the pulse stronger. The expulsion of accumulated secretions is promoted by this measure, and the threatening paralysis of the muscles of respiration averted. The procedure is repeated several times a day for half an hour at a time.

Suturing the Tissues Without Foreign Material. F. Schultze.—The conditions of success with the method of suturing which Schultze has been using with great satisfaction for two years, are complete hemostasis, and normal elasticity of the skin. The lips of the wound are coaptated and a row of Roser's torsion forceps is applied .5 to 1 cm. apart to hold the lips together. Cotton-collodion dressings are then applied in the interspaces. As soon as the collodion is dry, the forceps are removed, and a protecting bandage applied over the whole.

September.

Dietetic Treatment of Pregnancy. Prochownik.—Delivery can be almost certainly much facilitated in women with a small conjugata vera, not less than 8 cm. in diameter, by restricting the fluids to 500 c.c. a day, with 130 to 160 albumin, 80 to 130 fats and 100 carbohydrates, the total averaging 1800 to 2000 calories. Prochownik has now a record of 17 personal cases, and 31 collected in the literature, with a total of 62 births, all the children being alive at the date of publication. The previous births had been extremely difficult and tedious, and many of the children had died. On the above diet for the last ten or twelve weeks all the deliveries were much easier. With a conjugata of less than 8 cm. artificial premature delivery is the only resource and the precautionary diet is unnecessary. In women with normal pelves, but debilitated from any cause, congenital chlorosis, hemorrhages, etc., he commences dieting treatment early in the pregnancy, with repose in bed or reclining out of doors, for several weeks, better away from the home environment. The patients are encouraged to take as much albumin, fats, cream and fluids as possible, with frictions, gentle massage and small amounts of iron. To develop the lacteal secretion in women whose mothers and grandmothers had been unable to nurse their children, he orders a diet rich in carbohydrates, with massage of breasts, and reports 7 cases in detail, showing benefit in 2. He also tabulates 5 cases of obesity in which he forbade soups, sweets, etc., and ordered exercise, massage of the entire body, except the stomach, and restricted the fluids to 500 or 600 c.c., with 120 to 130 gm. bread and other food to taste, but not in large amounts nor much at a time. He commences this dieting treatment of pregnant women with a tendency to obesity, as early as possible. He pleads for a more general study of this subject. The possibility of its efficacy is now demonstrated beyond question. It only remains to work out the details. He states that women in tropical climates, with their vegetable and fruit diet, usually bear children more easily than the women of the north, although the pelvis averages smaller in tropical races.

Wiener Med. Wochenschrift, August 31.

Serum Treatment of Erysipelas. V. Jez.—The serum is derived from the same patient on whom it is used. It always induces a reaction, evidenced by a rise of temperature after one or two hours, and rapid improvement of all the symptoms. The number of leucocytes in the blood increases while the toxic substances are eliminated in the urine, as shown by its increased toxicity. No after-effects were noted in the ten cases in which Jez tried this serum treatment. If 5 to 10 gm. are not enough to induce the reaction, he increases the amount. The serum is taken from a blister artificially produced for the purpose.

Epilepsy Cured by an Intercurrent Disease. M. Turnowsky.—The three cases related all occurred under Turnowsky's personal observation, continued for many years. The first was a man of 38; who had from fifteen to twenty seizures on some days, the epilepsy dating from his seventeenth year, until 1887, when it was completely cured by an attack of croupous pneumonia. The second was a woman of 34, with five or six seizures during the month, between the age of 20 and 25. At this time she contracted pneumonia, and has had no seizure since. The third patient was a boy of 12, who used to have ten to fifteen seizures a day between the age of 2 and 6. At the latter age he contracted scarlet fever, and since then has been completely cured of his epilepsy. The cure in these cases has persisted respectively fourteen, ten and six years. He concludes with the suggestion that it would not be such a great risk to send an epileptic to a locality where pneumonia was endemic, or to expose an epileptic child to scarlet fever, as these cases, carefully observed, in addition to those on record in the literature, would fully establish the possibility of the disappearance of epilepsy after an intercurrent infectious disease.

Janus (Amsterdam), September.

Progress in the History of Medicine. H. F. A. Peypers.—"The universities in France and Germany are now discussing measures to give the history of medicine a larger place in the curriculum. In America many of the principal medical schools have a chair for the instruction of history of medicine. Dr. Sarah Hackett Stevenson, who is professor of obstetrics, ethics and the history of medicine at the Woman's Medical School, at Chicago, interests us particularly, as the combination of ethics with the history of medicine is such an excellent idea. This association is as rare in medical curricula up to the present time, as the presence of a woman in the faculty." Havana has a professor for the history of medicine and another for the history of pharmacy. From Australia comes an important work by Dr. W. J. Stewart McKay, entitled "History of Gynecology Among the Ancients." It seems remarkable to receive a serious work on the history of medicine from such a remote point as Sydney, so far from the universities and reference libraries of the old world.

Extragenital Endemics of Syphilis in Hungary. E. Weyner.—Three of these endemics are on record; one was traced to a drinking cup used by the children of a school in which one of the teachers was syphilitic. In both the others, the infection occurred by arm to arm vaccination. In the latest endemic, 270 persons were infected by this means.

Gazzetta Degli Ospedali (Milan), September 22.

Koch's Views of Tuberculosis. E. Maragliano.—The destructive action of the gastric juice and the auto-sterilization of the intestines recently promulgated by Kohlbruegge, explain the rarity of tuberculosis of the intestines from food infected by the tubercle bacillus, as well as from the bacilli in the sputa swallowed by tuberculous patients. This argument has therefore little value as cited by Koch to sustain his theory of the non-transmissibility of bovine tuberculosis to man. Maragliano has established that killed cultures of human tubercle bacilli cause intense toxic phenomena in cows and goats, showing that these animals are susceptible to the toxins of human tuberculosis, and, therefore, necessarily to its bacilli. Michelazzi has recently published the results of study of the prolonged use of sterilized milk from tuberculous cows. He demonstrates that the milk from a tuberculous animal, even if the teats are intact, and no bacilli pass into the milk, is yet extremely injurious, as the serum of the milk is toxic, even more toxic than that of the blood. The amount of toxin in the milk varies with the severity of the tuberculous process, but its toxic properties are unaltered, and are not affected by sterilizing the milk by heat. A chronic intoxication of the organism ingesting the milk is determined in time. His experiments at Pisa indicate that the profound marasmus accompanying tuberculosis in man and animals, is the result of the action of the toxins resulting from the presence of the tubercle bacilli, thus confirming Maragliano's assertions that tuberculosis is preeminently a toxicosis.

Serotherapy of Whooping Cough. T. Silvestri.—About 120 c.c. of blood were drawn from the arms of two children recovering from whooping cough. It was mixed with equal parts of saline solution and shaken up with 1 per cent. of chloroform and set aside to settle for twenty-four hours. It was then filtered and from 15 to 22 c.c. were injected into five other children with whooping cough. In two very severe cases the injection was repeated after five days. The effect of the serum treatment was evident at once. The general symptoms rapidly

vanished and the cough and broncho-pneumonic phenomena also subsided completely in from eight to eleven days.

Giornale Delle Accad. di Med. di Torino, July.

Severe Hemorrhage from the Ear. G. GRADENIGO.—Rohrer has recently related a case of severe hemorrhage from the ear, due to varices or bluish dilatations of the veins on both tympanic membranes. In Gradenigo's case the hemorrhage occurred during a paracentesis of the membrane on suspicion of acute otitis from the symptoms observed. There was no inflammation, but the incision opened an angiomatous tumor, with threatening arterial hemorrhage. The tumor was located just inside the membrane and may have been an aneurysmal dilatation of some abnormally diverging artery, but was more probably an angiomatous tumor with extensive dilatation of the vessels.

Hot Baths in Pneumonia. A. BORMANS.—When the fever goes above 39.5 C. (103 F.), Bormans places the patient in a bath tub of water at 40 C. (104 F.), first applying an ice-cap to his head and cooling the face with ice. As soon as the patient is immersed, water is added to raise the temperature of the bath to 44 C. (111 F.) and the temperature is maintained at this point for fifteen minutes, when the patient is returned to bed. The effect is extremely beneficial; the relief is almost immediate. The patient sweats profusely and his agitated delirium is quieted. In 12 cases thus treated, the crisis occurred on the fourth day in 3, the fifth day in 1, the sixth day in 4, the seventh day in 3, and the eighth day in 1. One patient died the eighth day with cerebrospinal meningitis. The afflux of blood to the periphery relieves the circulation in the lungs and the sweat eliminates a large proportion of the toxins. These hot baths are contra-indicated, of course, in case of heart disease or arteriosclerosis, but in all other conditions the benefit derived should cause them to be generally adopted. Bosc recommends hot baths in all the acute infectious diseases of children, but Giappone was the first to advocate baths of this temperature. Ortner reports excellent results from them in his "Manual of Therapeutics," published at Vienna last year. He orders them in bronchitis and pneumonia. The blood pressure usually drops slightly during the bath, but rises later, and surpasses what it was before the bath. The temperature may rise a fraction of a degree, and the pulse is slightly increased. In a few cases the blood pressure remained slightly below what it was before the baths, but the patient's euphoria and sweat were pronounced in every case.

New Patents.

Patents of Interest to Physicians, issued September 17 and 24:

683,012. Optical instrument. Henry H. Hill, St. Louis, Mo.
682,936. Hernial truss. George V. House, Mount Vernon, N. Y.
682,854. Stopper for water-bags. Charles E. Longden, Hampden, Conn.
682,832. Speculum. J. Gordon McPherson, Toronto, Canada.
682,638. Eye-tester. Henry D. Reese, Abbeville, S. C.
682,650. Bed-pan. George Thornton, F. D. Freeborn and W. Hiller, Randolph, N. Y.
35,087. Design, suppository. Henry H. Foringer, Eria, Pa.
683,099. Syringe. Arthur E. Bonesteel, Central City, Colo.
683,380. Obstetrical appliance. Patrick F. Cassidy, Boston, Mass.
683,044. Bed-pan. Richard E. Holder, Columbus, Ind.
683,216. Therapeutic battery. Joseph A. Miuturn, Indianapolis, Ind.
683,192. Apparatus for assisting the hearing. Alfred F. Watch. Philadelphia, Pa.

Books Received

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DICTIONARY OF PHILOSOPHY AND PSYCHOLOGY, Including Many of the Principal Conceptions of Ethics, Logic, Aesthetics, Philosophy of Religion, Mental Pathology, Authropology, Biology, Neurology, Physiology, Economics, Political and Social Philosophy, Philology, Physical Science, and Education, and Giving a Terminology in English, French, German and Italian. Written by Many Hands and Edited by James Mark Baldwin, Ph.D. (Princeton), Hon. D.Sc. (Oxon.), Hon. LL.D. (Glasgow), Stuart Professor in Princeton University. With the Co-operation and Assistance of an International Board of Consulting Editors. In Three Volumes, with Illustrations and Extensive Bibliographies. Vol. I. Cloth. Pp. 644. Price, $5.00. New York: The MacMillan Co. 1901.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. For Practitioners and Students. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry and Kindred Branches, Including Much Collateral Information of an Encyclopedic Character, Together with New and Elaborate Tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Micrococci, Streptococci; Eponymic Tables, Diseases, Operations, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc. By W. A. Newman Dorland, A.M., M.D., editor of the "American Pocket Medical Dictionary." Second Edition, Revised. Leather. Pp. 770. Price, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

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AN INTERNATIONAL SYSTEM OF ELECTRO-THERAPEUTICS. For Students, General Practitioners, and Specialists. By Numerous Associated Authors. Edited by Horatio R. Bigelow, M.D., Permanent Member of the American Medical Association. Second Edition. Revised and brought up to date, with several New Departments, Embodying the Most Recent Developments of the Science. Edited by G. Betton Massey, M.D., Ex-President and Fellow of the American Electro-Therapeutic Association. Thoroughly Illustrated. Royal Octavo. Pp. x-1147. Price, $6.00. Philadelphia: F. A. Davis Company. 1901.

PATHOLOGICAL TECHNIQUE. A Practical Manual for Workers in Pathological Histology and Bacteriology, Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank B. Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard University Medical School; and James H. Wright, A.M., M.D., Instructor in Pathology, Harvard University Medical School. Second Edition, Revised and Enlarged. With 137 Illustrations. Cloth. Pp. 432. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

A TREATISE ON THE ACUTE, INFECTIOUS EXANTHEMATA. Including Variola, Rubeola, Scarlatina, Rubella, Varicella, and Vaccinia, with especial reference to Diagnosis and Treatment. By William Thomas Corlett, M.D., L.R.C.P. Lond. Professor of Dermatology and Syphilology in Western Reserve University. Illustrated by 12 Colored Plates, 28 Half-tone Plates from Life, and 2 Engravings. Pages viii-392. Sold only by Subscription. Price, Extra Cloth, $4.00 net, Delivered. Philadelphia: F. A. Davis Company. 1901.

MANUAL OF CHEMISTRY. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-Book Specially Adapted for Students of Medicine, Pharmacy, and Dentistry. By W. Simon, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore. Seventh Edition, Thoroughly Revised. With 66 Illustrations, 1 Colored Spectra Plate, and 8 Colored Plates, Representing 64 Chemical Reactions. Cloth. Pp. 613. Price, $3.00. Philadelphia and New York: Lea Brothers & Co. 1901.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M.D., Professor of Nervous and Mental Diseases, and Head of Neurological Department, Northwestern University Medical School, and Frederick Peterson, M.D., Chief of Clinic, Department of Nervous and Mental Diseases, and Clinical Lecturer on Psychiatry, Columbia University. Third Edition, Revised and Enlarged. Cloth. Pp. 870. Price, $5.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

HUMAN PHYSIOLOGY. Prepared with Special Reference to Students of Medicine. By Joseph Howard Raymond, A.M., M.D., Professor of Physiology and Hygiene in the Long Island College Hospital, New York City. Second Edition, Entirely Rewritten and Greatly Enlarged. 443 Illustrations, 12 of them in Colors, and 4 Full-page Lithographic Plates. Cloth. Pp. 668. Price, $3.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

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A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By John V. Shoemaker, M.D., LL.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia.

Fourth Edition, Revised and Enlarged with Chromogravure Plates and Other Illustrations. Cloth. Pp. 892. Price, $5.00. New York: D. Appleton & Co. 1901.

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TWENTIETH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF NEW YORK. For the Year ending December 31, 1899. Transmitted to the Legislature February 15, 1900. Cloth. Pp. 555. Albany: James B. Lyon. 1901.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA. The State Board of Health, Organized 1847—Meeting of 1901. Selma, Aviil 16-19. Cloth. Pp. 508. Montgomery, Ala.: Brown Printing Co. 1901.

THE PATHOLOGY AND TREATMENT OF SEXUAL IMPOTENCE. By Victor G. Vecki, M.D. Third Edition, Revised and Enlarged. 12mo. Cloth. Pp. 329. Price, $2.00. Philadelphia and London: W. B. Saunders & Co. 1901.

TRANSACTIONS OF THE MASSACHUSETTS MEDICO-LEGAL SOCIETY. Volume III—Number 3; 1901. Paper. Pp. 44. Boston: Published by the Society. 1901.

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY. April, 1901. Paper. Pp. 44. Published by the Society.

MAPS ACCOMPANYING STATE BOARD OF HEALTH OF NEW YORK. Twentieth Annual Report for the Year 1899.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 26 to Oct. 2, 1901, inclusive:

Joseph L. Bell, contract surgeon, from Fort Morgan, Ala., to his home, Richmond, Ind., for annulment of contract.

Henry D. Belt, contract surgeon, leave of absence granted.

James Carroll, contract surgeon, former orders amended so as to direct him to return from Havana, Cuba, to his proper station in Washington, D. C., not later than Nov. 1, 1901.

Max F. Clausius, contract surgeon, on his arrival at Fort Douglas, Utah, to proceed to Fort Grant, Ariz., for post duty; but this order was revoked, and he was directed to proceed to his home, Burrington, Ill., for annulment of contract.

Marshall M. Cloud, lieutenant and asst.-surgeon, U. S. A., sick leave of absence extended.

Frederick A. Dale, lieutenant and asst.-surgeon, U. S. A., to proceed to San Francisco, Cal., for return transportation to Manila, P. I., in compliance with orders from the Division of the Philippines.

Robert C. Eve, contract surgeon, from Fort Freemont, S. C., to Augusta, Ga., for annulment of contract.

Samuel A. Greenwell, contract surgeon, from duty at Fort Clark, Tex., to his home, Cleburn, Tex., for annulment of contract.

Eugeue H. Hartnet, lieutenant and asst.-surgeon, U. S. A., member of examining boards at Goveruor's Island, N. Y., Sept. 27 and 28.

T. G. Holmes, contract surgeon, leave of absence granted on the expiration of which he will proceed to San Francisco, Cal., for duty on the transport *Grant*.

Frederick E. Jenkins, contract surgeou, on his arrival at Fort Riley, Kan, with troops, will proceed to Fort Morgan, Ala., for post duty.

William P. Kendall, major and surgeon, U. S. A., member of a board at Buffalo, N. Y., to determine the physical fitness of certain persons for appointment as lieutenants in the Army.

William C. LeCompte, contract surgeon, member of a board at Buffalo, N. Y., to determine the physical fitness of certain persons for appointmeut as lieutenants in the army.

Frederick H. Morhart, captain and asst.-surgeou, Vols., honorably discharged from the service on account of disability.

Edward L. Munson, captain and asst.-surgeon, U. S. A., member of a board at Buffalo, N. Y., to determine the physical fitness of certain persons for appointment as lieutenants in the Army.

Paul Shillock, major and surgeon, U. S. A., now at San Francisco, Cal., to proceed to Fort Riley, Kan., for duty at that post.

J. Samuel White, contract surgeon, having arrived at Seattle, Wash., will proceed to Fort Assinniboine, Mont., for post duty.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 5, 1901:

Surgeon P. Leach, ordered to recruiting duty at Port Royal, S. C.

Surgeou P. Leach, order to recruiting duty at Port Royal, S. C., revoked.

Asst.-Surgeon E. J. Grow, order to proceed home, upon detachment from the *Castine*, modified; ordered to the New York Navy Yard.

Medical Director J. C. Ayers, detached from the Naval Hospital, Chelsea, Mass., October 15, and ordered home and to wait orders.

Medical Director D. Dickinson, detached from duty on medical examining board at Washington, D. C., October 10, and ordered to duty in charge of the Naval Hospital, Chelsea, Mass., October 13.

Surgeon S. H. Griffith, detached from duty at the Pan-American Exposition, Buffalo, N. Y., October 9, and ordered to duty as a member of the medical examining board, Washington, October 10.

Surgeon H. L. Law, retired, ordered to duty at Buffalo, N. Y., in charge of the exhibit of the Bureau of Medicine and Surgery, at the Pan-American Expositiou, and as atteuding medical officer at the naval recruiting reudezvous, October 9.

Asst.-Surgeon D. B. Kerr, detached from the *Culgoa*, when put out of commission, and ordered home and to wait orders.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeou-General, U. S. Marine-Hospital Service, duriug the week ended Sept. 28, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Sept. 14-21, 1 case.
Indiana: Michigan City, Sept. 24-Oct. 1, 4 cases.
Kentucky, Lexington, Sept. 21-28, 1 case.
Massachusetts: Boston, Sept. 21-28, 2 cases, 1 death.
Michigan: Detroit, Sept. 22-29, 1 case.
Nebraska: Omaha, Sept. 14-21, 1 case.
New Jersey: Newark, Sept. 21-28, 6 cases, 5 deaths.
New York: Sept. 21-28, Elmira, 4 cases; New York, 5 cases, 2 deaths.
Pennsylvania: Philadelphia, Sept. 21-28, 29 cases, 3 deaths.
Ohio: Youngstowu, Sept. 21-28, 1 case.
Utah: Salt Lake City, Sept. 14-28, 2 cases.
Washington: Tacoma, Sept. 15-22, 1 case.

SMALLPOX—INSULAR.

Phillppine Islands: Manila, Aug. 3-10, 1 case.

SMALLPOX—FOREIGN.

Austria: Budapest, Sept. 2-9, 2 cases.
Belgium: Antwerp, Sept. 7-14, 1 case, 1 death.
Brazil: Pernambuco, Aug. 8-15, 56 deaths; Rio de Janeiro, Aug. 4-18, 114 deaths.
Colombia: Panama, Sept. 16-23, 15 cases.
Great Britain: London, Aug. 24-Sept. 7, 166 cases, 15 deaths.
Italy: Naples, Sept. 7-14, 57 cases, 6 deaths.
Russia: Moscow, Sept. 7-14, 2 cases, 1 death.
Spain: Madrid, June 17-July 15, 6 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, Aug. 3-10, 6 cases, 3 deaths.

PLAGUE—FOREIGN.

Australia: Brisbane, June 1-30, 3 deaths.
Brazil: Rio de Janeiro, Aug. 4-18, 5 deaths.
China: Canton, Aug. 5, diminishing.
Italy: Naples, Sept. 7-30, 15 cases, 4 deaths.

YELLOW FEVER.

Brazil: Pernambuco, Aug. 8-15, 1 death; Rio de Janeiro, Aug. 4-18, 2 deaths.
Cuba: Havana, Sept. 4-21, 3 cases, 2 deaths; Santiago, Sept. 20, 6 cases, 1 death.
Mexico: Vera Cruz, Sept. 14-21, 5 cases, 2 deaths.

CHOLERA.

Java: Batavia, Aug. 3-17, 5 cases, 3 deaths.

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Original Articles.

REMOVAL OF FOREIGN BODIES FROM THE AIR PASSAGES.*

DE FOREST WILLARD, M.D.

PHILADELPHIA.

The entrance of a foreign body into the larynx is at once the signal for violent expulsive efforts, and in the majority of instances voluntary extrusion is accomplished. Should the object, however, pass the vocal cords, the route to the bifurcation of the trachea is free and unobstructed. At the bifurcation, as the right bronchus is larger and turns at a less abrupt angle to reach the root of the lung, the body is more likely to fall into its lumen, although this result is by no means positive.† If the object is of irregular shape it will not closely fit, and violent efforts at coughing may still loosen it. It may, however, be arrested in its reverse course at the vocal cords. The violence of the efforts, and the interference with the air supply, unfortunately make inspiratory suction as sudden and nearly as intense as expiration, and the offending object may be sucked further into the air passages. The position of final fixation will depend upon these efforts and upon the size and character of the foreign body. The degree of air hunger will depend upon the amount of blockade. Should the entire main bronchus be obstructed, one-half the respiratory tract will be shut off and the dyspnea becomes extreme. Unfortunately, the physician is rarely at hand and immediate professional measures of relief can not be instituted. The majority of these accidents occur in children; consequently, it is well to instruct parents as to the procedures that should be adopted. The rule as ordinarily taught is to the effect that inversion of the child is unsafe, since the object may become blocked within the larynx. As the body has, however, entered by this route, and as it is the one that must be taken in any voluntary expulsion, it is probably the safest domestic practice that can be instituted and may prevent the object from being sucked still lower in the bronchus. An exaggerated prone Trendelenburg position may be maintained until the arrival of the surgeon. Succussion of the individual and vomiting have occasionally dislodged the body. Coughing should be encouraged, but the violence of inspiratory movements should be restricted as far as possible. Brodie reports the case of an adult in whom a half sovereign had reached the bifurcation of the trachea. By inversion of his body in the prone position, and succussion, he was able, after six weeks, to dislodge the offender by coughing, and full recovery ensued.

If the arrest has taken place at the vocal cords, a laryngoscopic examination will probably reveal it, and it may be extracted by forceps or by laryngotomy. In splitting the thyroid cartilage and opening the larynx, care should be taken to keep directly in the median line and to avoid injury of the arytenoid cartilages and muscles. Cocain should be applied to the mucous membrane both before and during the operation, to prevent reflex inhibitory influences upon the heart.

If an *x*-ray apparatus is at hand, and the foreign body is one which is impenetrable to these rays, as coins, nails, etc., the location may sometimes be accurately determined by making shadowgraphs at different angles. Unfortunately, the distress is so urgent and extreme that it is difficult to induce the child to remain quiet long enough to obtain such a shadow unless ether is administered; still, the *x*-ray representation fills a most important place in both acute and chronic blockades of the air passages.

With children, beads, beans, portions of whistles and toys are common intruders.[1] Hard bodies will probably imbed themselves and do not offer much opportunity of being seized by forceps. Vegetable substances are likely to swell from the moisture if they remain long *in situ*, and are, therefore, difficult to dislodge. In one of my fatal cases one-half of the brown shell of a chestnut was drawn far down into the subdivision of a bronchus.

It is important that the history should be reliable, and when a body has been swallowed, close investigation is necessary to determine whether the object has entered the air passages, and secondly, its location. Of course, there are many cases where the symptoms are unmistakable, but when in doubt a most careful diagnosis should be made. A young child not infrequently has a foreign body in its mouth; is seized with violent coughing as the body attempts to enter the larynx, and yet it passes into the stomach. Not a few tracheotomies have been performed in the search for such objects which have later been passed per rectum; consequently, it is unwise to operate in the absence of definite symptoms. Moreover, many a child has been apparently choked with a toy which was supposed to have been swallowed and which has ultimately been found in the corner of the nursery. I have myself witnessed in the practice of one of our most prominent surgeons, a tracheotomy with prolonged search, in which case the article which had supposedly been swallowed was later found in the pocket of the child, and an examination of the lungs (which should have been made previous to the operation, but which was instituted afterwards) developed the fact that the dyspneic symptoms were due to double pneumonia from ordinary causes.

Following impaction, the pain and the absence of respiratory movements will usually be found upon one

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

† Crile: Surgery, Respiratory System, 2d Edition, p. 92.

1. Poulet: Foreign Bodies, 1880, vol. ii, p. 22.

side of the chest. The absence of vesicular murmur shows the interference to entrance of air, which will be followed later by dulness and signs of consolidation. In partial occlusion the respiration will be stridulous. The interpretation of these signs, taken in connection with other symptoms, must rest with the surgeon, but he must not be deceived by the lull in symptoms that not infrequently follows the initial blockade.

Tracheotomy.—The opening of the trachea is naturally the most frequent method for reaching an impacted foreign body, an operation that was advocated as early as 1644 by Frederic Manavius. Speedy relief is usually demanded, and ether or chloroform may be employed, or better, local anesthesia in order to retain the use of the extraordinary muscles of respiration. In doing this operation it is better to remove a considerable circle, excising one or two cartilaginous rings, since a simple slit may interfere with the expulsion of the body. If a slit only is made, lateral stitches holding it open are better than a tube. Not infrequently the foreign body is ejected by the primary cough induced by the operation; consequently it should be the duty of an assistant to watch carefully for its appearance. Fortunately, expulsion occurs in about one-half the cases operated upon. This result may be hastened by irritation with a feather. The opening should be as nearly as possible to the top of the sternum, and the forceps must be used with extreme care. The difficulties in locating the body with tracheotomy forceps depend largely upon its character. A bean or kernel is of the same consistency and feeling as the cartilaginous bifurcation of the trachea. If the object is known to be a soft vegetable one, ordinary serrated forceps will not hold. Very short needle-like teeth which will sink into and hold the substance are better. With beads, buttons, tin whistles, etc., successful removal becomes difficult, even when they can be grasped.

One familiar with the use of the cystoscope may, by throwing the head far back and to one side, obtain a view of the foreign body through an inserted tube with electric light. For hard objects a large soft-rubber tube attached to a Bigelow litholapaxy evacuator may be carried down the trachea, and strong suction made upon it, or an aspirating pump or rubber ball may be attached. The evacuator is better, however, lest the body once extracted be again sucked back into position. In case of tacks, nails, etc., a small magnet or an electrical probe may be inserted through the trachea. Blunt curettes, wire hooks, scoops, loops, etc., are occasionally useful. The dangers to the trachea and bronchi by prolonged instrumentation are very great and should never be continued more than a few minutes. The risks of pneumonia are so greatly increased by instrumentation that Weist,[2] in an analysis of 1674 cases, found that the dangers of death from this cause in unsuccessful cases fully counterbalanced the benefits obtained by the number of extractions by tracheotomy. The proportions are one death in three and one-half cases without operation; one in four with tracheotomy. His conclusions in regard to this subject will probably not be materially changed by our present methods, since, although the pneumonia is septic in its origin, yet the sepsis even in former cases was probably not due in large measure simply to the instruments, but to the traumatism to the bronchi. Experiments show that the entering air is septic in the larger bronchi, but aseptic in the smaller divisions.

2. Trans. Amer. Surg. Assoc., vol. 1, 1883, p. 121.

Failing to secure the intruding object through the tracheal opening, the surgeon is compelled to face two problems, either of which means serious risk to life. Shall he abandon the case to the expulsive efforts of Nature? Shall he rely upon the fact that many such offending bodies have been coughed out even after many years of suffering, and even when the diagnosis of tuberculosis of the lung has seemed positive? In determining the question the surgeon will consider both the character of the foreign body and the amount of interference that it is giving to the air supply. In the case of seeds, etc., voluntary expulsion with subsequent recovery occurs in nearly 74 per cent. of cases.

The other alternative is to reach the bronchus by a direct route. Should the surgeon decide to invade the chest wall in an heroic effort to reach the bronchi, he has before him a series of manipulations, perils, and difficulties that will put to the extreme test his skill, coolness and judgment. Before the introduction of the artificial respiration apparatus, the profound and deadly collapse that immediately followed any invasion of a healthy chest, was sufficient to deter most operators from undertaking such a course. Quenu lost twelve out of fifteen dogs, and while my own experiments have not been quite so serious, they have been very discouraging. In these animals and in rabbits and goats, the communication between the two pleural cavities which exists just above the tendinous center of the diaphragm renders the entrance of air doubly dangerous. Fortunately, we are now better equipped and can confidently rely upon our artificial respiration methods, but without such accessories the conditions are appalling. The exceptional cases in which atelectasis does not occur are so few in number and are so unexplainable that they can not be depended upon. The surgeon must also consider the fact that even when the bronchus is reached by any route, the rigid walls prevent the easy recognition of the foreign body either by sight or touch. Again, as in Curtis' case, even when found in a secondary bronchus, it could not be reached or extracted. In experiments upon dogs I have repeatedly failed to find in the bronchi, pebbles that I had introduced through tracheotomy wounds.

Unfortunately, practice upon the cadaver yields but a slight realization of the conditions found in the living subject. I have at autopsy seen the bronchus of a dog apparently within easy reach, which same bronchus I had seen ten minutes before surrounded by huge pulmonary and azygos veins, with aorta, pneumogastric nerve, root of lung, and every structure in the neighborhood being violently dragged by the wide excursions of the lung in the frightful air hunger of the collapse from acute pneumothorax.

When an opening of any considerable size is made in the pleura and air rushes in, the sudden symptoms of collapse are usually instantaneous. The sudden shifting of the oxygenation of air upon one-half the ordinary circuit; the violent efforts of both inspiration and expiration; the enormous movement of the lung in the effort to produce a vacuum in the chest; the flapping of the pleura and mediastinum; the huge swelling veins filling and emptying and covering the area of operation; the great peril of the patient; the cyanosis and deficient oxygenation are such complications as will greatly delay and often entirely prevent all safe manipulative measures.

I have called attention to these difficulties, not to exaggerate them, nor to deter any surgeon from invading

the chest wall, but only to warn him against rash work without proper apparatus, since failure will necessarily bring discredit upon the surgeon and disaster to the individual. A somewhat extended but still incomplete examination of the literature on the subject fails to reveal a recovery after opening of the bronchus. My object is only to urge that unless an artificial respiration apparatus is at hand, and oxygen obtainable, it will be wiser to cease one's operative methods, after short manipulations through a large tracheal opening. With full appliances, however, and a full knowledge of the dangers, one may calmly proceed to enter the chest by a selected route. The conditions are entirely different from those encountered in a diseased lung or pleura, and preliminary injection of air or liquid will avail but little. A small dose of atropia will be helpful.

The oft-tried expedient of plugging the hole in the pleura, or of dragging the lung into the opening, or grasping the base of the lung, is here of no avail, since the search for the bronchus is absolutely prevented by any of these procedures. Air hunger being then the most serious of the complications, some reliable means of artificial respiration must be at hand, or the patient must die in a few moments. Fortunately, the Fell-O'Dwyer[3] apparatus gives us the much-needed help. The apparatus consists of intubation tubes of various sizes attached to a handle, by means of which one of them of proper size can be held permanently within the chink of the glottis, while air is pumped directly into the lungs by bellows worked by hand or foot pressure. Insufflation is accomplished by moderate pressure about fifteen times in the minute, while expiration is accomplished by the resiliency of the chest walls

Matas has improved upon this apparatus by using a double pneumatic pump, by means of which the exact amount of air introduced can be measured. He has also attached a manometer to regulate the degree of pressure, and has added a branch tube through which anesthetization can be kept up. The entering air is also filtered through a cylinder filled with cotton. The pump can also be employed for forcible aspiration of air from the lung. Bloom, Doyen and others have altered these instruments, but the principle of forcibly supplying air is the same.

After tracheotomy the intubation tip can be introduced through the opening so as to fit the trachea, or it can be carried into the glottis and the wound closed.

A pressure equal to 6 mm. mercury has been found sufficient to dilate the lung, while too great pressure, as 33 mm., will interfere with respiration. If too great force is used, emphysema or air vesicle rupture may take place. The artificial movements should correspond as closely as possible to the normal respirations.

By the employment of such an appliance for carrying on respiration, the chest wall may be opened either anteriorly, posteriorly, or at the side. A large opening while much more dangerous as regards atelectasis, yet greatly facilitates the operation. The employment of a tiny electric bulb within the chest also adds greatly to the rapidity and safety of the manipulations.

Anterior Thoracotomy.—Milton, of Cairo,[4] has recommended an operation of entrance which he calls the normal thoracic invasion, and has successfully practiced it upon a living patient. In young children with flexible bones it would be feasible for reaching the bronchus.

With a saw he splits the sternum longitudinally throughout its entire length, and forcibly retracts the halves, thus separating the two pleural layers, and reaching the anterior mediastinum. In attempting this operation it should be remembered that the pleuræ come together not in the median line, but at a line nearly at the left border of the sternum. In this, as in all other routes of entrance to the thorax, it is absolutely essential that an efficient artificial respiration apparatus shall be constantly employed in the prevention of collapse.

Gaston's[5] anterior opening is made as follows: A quadrilateral trap-door flap is made to include the third, fourth, fifth and sixth ribs, and turned back upon its base at the costal cartilages, thus avoiding the internal mammary. The outer end of the square flap is at the mid-axillary line, and the entire chest walls are cut through with knife and saw.

In making an anterior thoracotomy[6] I have tried various forms of incision. The bronchus of the second lobe can be readily reached anteriorly, can be incised and afterwards stitched with a staphylorraphy needle. In another operation upon the right side, with excision of the fifth rib, I was easily able to expose the bronchus of the right upper lobe. The bronchial, pulmonary and a very high azygos vein were pushed aside and the bronchus incised for a third of an inch without wounding any other structure. Whenever the wound in the bronchus was not subsequently stitched, and the chest wall was closed at the end of the operation, each inspiratory act caused an increase of the pneumothorax by entrance of air through this slit, as was evidenced by the bulging of the wound and the increased dyspnea, ending in death.

The same thing occurred in another dog after an excision of the fifth rib, and an opening of the right bronchus. The pneumothorax steadily increased after the closure of the wound, with bulging and escape of air from within outward at each respiration until death occurred. It is easily seen that while air can pass from the interior of the bronchus outwardly, the rounded shape of the tube prevents return from pleural cavity to bronchus. This air from the large bronchi is septic.

Posterior Thoracotomy.—Nesiloff, Bryant and others have proposed to reach the root of the lung posteriorly. Bryant's operation is as follows:[7] In order to give room for the flap, the scapula is carried far outward by raising the arm and carrying the shoulder forward. A square flap three inches in size is made, with its base toward the spinal column, and three ribs, the third, fourth and fifth, are sawed through as far out as their angles, near the posterior border of the axilla. The pleura is then separated from the anterior surface of the ribs by the fingers, and the flap is turned backward upon its base as a hinge, the ribs being separately turned out. The intercostal arteries were ligated before opening the pleura. The presence of the vena azygos and the pulmonary vein will greatly interfere with manipulations, and these, as well as the pneumogastric, must be carefully avoided. If the foreign body can be located, a long incision (long enough to permit removal without laceration) is made in the bronchus. The bronchus is not closed, but packed and drained, as there will be discharge of mucus and inflammatory products. The flap with the ribs should be replaced, but the middle rib may be removed entirely for drainage, if advisable. Any

3. Northrop: N. Y. Pres. Hosp. Reports, 1896, p. 132.
4. The Lancet, London, March 27, 1897.
5. Trans. Amer. Surg. Assoc., vol. xiv, 1896, p. 465.
6. Trans. Amer. Surg. Assoc., 1891, p. 345, vol. ix. Trans. Coll. Phys., Phila., 1891. Amer. Jr. Med. Sciences, Dec., 1891. Univ. Med. Mag., Feb., 1892.
7. Bryant: Posterior Mediastinum. Trans. Amer. Surg. Assoc., vol. xiii, p. 443.

given spinous process indicates the situation of the vertebral extremity of the rib immediately below. Bryant places the division line between the posterior mediastinum proper and the posterior part of the superior mediastinum at the lower portion of the fourth dorsal vertebra. The separation of the pleura is accomplished with the finger, and also by a sawing motion of a strong silk thread carried beneath the rib. The same ligature may be used to draw beneath the rib a chain saw, so as to operate from within outward and avoid premature wounding of the pleura. This opening is probably more favorable for reaching the esophagus than the bronchus. The bronchus in a man will be distant about one and one-half inches from the opening. The operation is one requiring careful manipulation, cool judgment, speedy recognition and skilful treatment of each danger as quickly as it arises.

Curtis,[8] in a posterior thoracotomy for an impacted seed vessel of a plant in the right bronchus, tried to extract it with a forceps through the trachea, but failed. At a second operation the boy was placed face downward, with one shoulder raised. A quadrangular flap was raised from the posterior portion of the chest and turned outwardly toward the scapula. Its free edge was near the vertebral spine. The fourth, fifth and sixth ribs were then stripped. The lower layer of the periosteum and intercostal muscles were divided without opening the pleura. The ribs being lifted up, the pleura was carefully detached from the posterior mediastinum and from the posterior chest wall. The bronchus was easily reached, but the azygos vein covering it prevented incision. He encountered the same difficulties that I have always experienced, the violent action of the lung and of the flapping pleura, which interfered most seriously with all manipulations, and he was finally obliged to pack the wound and suspend his efforts. The next day he renewed the attack. The pleura had now become adherent to the lung, and the action was less violent. The bronchus was opened through its posterior wall without hemorrhage, but search with forceps failed to find the body; neither could it be found in the trachea. It was finally discovered by the fingers through the lung substance. The pleura was sewed to the lung and the lung held by a silk stitch. The thermocautery was used directly through the lung substance, but failed to reach the object. The operation was finally suspended on account of the patient's collapse. A drainage tube was inserted with packing, but pneumonia developed on the following day and the patient died in forty-eight hours. At the autopsy the foreign body was found in the secondary bronchus near the end of the drainage tube. The object had been swallowed three days before the first operation. Rushmore[9] in a similar attempt anteriorly was compelled to abandon the operation, and the patient died.

Anyone interested in the subject of intralaryngeal insufflation will be abundantly repaid by perusing Matas' able articles.[10] In these papers he shows that insufflation through a deliberately introduced laryngeal tube was in common practice for the resuscitation of the drowned as far back as the War of the Revolution; that William Hunter used both bellows and intralaryngeal tubes; that Matas' present pump was forestalled by the double pump of Courtois attached to a tracheotomy canula, more than a century ago; that in the earliest years of the last century such a tube was a part of the regular obstetrical outfit for the resuscitation of new-born infants;[11] that Ribemont in 1877 used an intubation canula almost precisely like the one of O'Dwyer; that Truehead of Texas again in 1869 brought out an instrument upon the same plan as the Fell-O'Dwyer instrument.

The Bloom modification of attaching an ordinary rubber syringe bulb to the laryngeal tube is excellent, and the Doyen[12] double bellows and tubes are also good.

The work of Tuffier[13] and Hallion, Quenu and Longuet, Matas, Parham and others, has added greatly to the practical application of artificial forcible insufflation through an intralaryngeal tube. It is now the best known assistant, not only in the performance of lung surgery, but also in the resuscitation of the asphyxiated, the drowned and the new-born. It is also most serviceable in opium poisoning, and in the arrested respiration of anesthetization. (I always keep the Fell-O'Dwyer apparatus alongside the oxygen jar, close outside my clinic door.)

When the foreign body remains permanently fixed in the bronchus, septic pneumonia is a frequent result. In many cases this process leads on to septic abscess, or, if the blockade is complete, gangrene may result. Expulsion of the foreign body and of the purulent surrounding material sometimes occurs, often after months of delay. More frequently, however, death ensues. In the chronic cases the hemorrhage, emaciation and septic conditions often simulate tuberculosis. The proper treatment for all such abscesses or gangrenous areas of lung is a surgical one. The diseased area having been carefully located, a rib should be excised subperiosteally, and contamination of the pleural cavity prevented by suturing of the lung to the chest wall in the form of a parallelogram, before opening. A sharply curved perineal needle with handle is convenient for this purpose. Incision of the abscess and free drainage will offer the best hope for cure.

CONCLUSIONS.

1. Coughing should be encouraged; forcible inspiration restrained.
2. Inversion in the prone position as a domestic practice is advisable.
3. Laryngoscopy is helpful if the body is lodged at the vocal cords. It may be extracted by forceps or by laryngotomy.
4. If time permits, the *x*-ray may be brought into serviceable use for diagnosis.
5. Careful diagnostic investigation is important to determine the actual presence of an impacted body, and its location.
6. Tracheotomy under local anesthesia should be the rule if the object is lodged at the bifurcation or in the bronchi. Tracheoscopy, suction and forceps' manipulation must be cautiously employed. Prolonged instrumentation adds greatly to the danger of pneumonia.
7. If extraction is not secured through the tracheotomy wound the chest wall should not be invaded unless an artificial respiratory apparatus like the Fell-O'Dwyer is at hand, and oxygen available. With the assistance of these appliances, however, the bronchus may be reached, anteriorly or posteriorly, since, by their use, rhythmical movements can be maintained.
8. Resultant abscess of the lung should be treated by incision and drainage.

8. Curtis: Annals of Surgery, 1898, vol. xxviii, p. 605.
9. Rushmore: N. Y. Med. Jour., 1891, liv, 85.
10. Trans. Louisiana State Med. Soc., 1898. Trans. South. Surg. and Gynaec. Assoc., Nov., 1899. Annals of Surgery, 1899, p. 409.
11. Depaul: Jour. de Chirurgie, 1845.
12. Doyen: Technique Chirurgicale, pp. 129-133. Revue de Therapeut. Med.-Chirurg., Jan. 15, '98, vol. xlv.
13. Tuffier: Société de Biologie, Nov. 21, 1896. Bull. et Mem. Soc. Chirurgie, Feb., 1897.

THE TREATMENT OF EMPYEMA.*

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The average treatment of empyema is still far from satisfactory and decidedly behind the present state of surgical science. Tardy diagnosis, inefficient drainage and slovenly after-treatment are the most frequent causes of failure, retarded convalescence and great deformity, results which, though much less frequent than formerly, are not seldom encountered at this late day. The operative treatment of the disease is too often undertaken by those unfamiliar with modern surgical methods. It is high time that a greater respect for the chest should be impressed upon practitioners who appear to regard the treatment of pleural suppurations lightly, and as a fair field for any one able to insert a tube and diligently use a syringe.

The rational treatment of suppurating pleurisies is simple and well known to competent surgeons. Early diagnosis, prompt and efficient drainage, and aseptic after-treatment summarize the whole matter. It is only in the details of technique that discussion is likely to arise and further improvement in methods is to be sought.

EARLY DIAGNOSIS.

Prompt recognition and adequate drainage of the purulent effusion minimizes ruptures into bronchi, systemic infection, loss of lung expansion and pleural thickening. The degree to which the collapsed lung recovers itself depends largely upon the density of the visceral pleura and upon the length of time during which the lung has been compressed. Pulmonic sclerosis and pleural thickening are the chief causes of difficulty in obliterating these cavities. Hence, while there are other causes of tardy or imperfect lung expansion, late diagnosis is one of the most serious and frequent, and one which very moderate skill and diligence ought to almost wholly remove. Perhaps the most excusable delay occurs in certain empyemas developing with or closely following pneumonia, but the abnormal course of events should sufficiently arouse the attendant's suspicions to lead to the use of the exploring needle before many days have passed, even in the most deceptive cases. In any case of thoracic dulness open to doubt, so safe, certain and easy a means of diagnosis as aseptic needling should not long be delayed.

Having early recognized the presence of a suppurating pleurisy, by the needle, a bacterial diagnosis of the variety of the infection is exceedingly desirable. However, pleural suppurations are in practice so generally due to mixed or virulent infections, that serious errors in treatment are not likely to follow its omission in the hands of experienced clinicians to whom the physical properties of the exudate are ordinarily sufficiently characteristic for practical purposes.

EFFICIENT DRAINAGE.

A pleural suppuration being recognized, all the world has agreed that it should be removed; but how and where, have been much discussed. Before the era of aseptic surgery and bacteriology a great variety of methods were alternately used, abandoned and resumed. Puncture with the trochar, aspiration, intercostal incision, puncture and injection of antiseptics, continuous irrigation, etc., were alternately lauded and rejected. Ingenious tubes, complicated instruments and theoretical appliances were proposed. Indeed, the practical surgeon must still be astounded at the antiquated assertions and loose advice still prevalent in many textbooks. At present we know there are empyemas and empyemas. Certain benign infections are easily cured by means wholly inefficient in others. In our present light the indications for rational treatment appear to be clear and fairly definitely established. A very few yield to paracentesis, and a certain other few are, perhaps, best treated expectantly so far as operation is concerned. It is also well known that certain benign effusions may be successfully drained by simple intercostal incision without rib resection, especially in children, and yet this operation is rarely advisable. Thus, the normal procedure for acute empyema is thoracotomy with resection of a rib. This should be the rule, because it alone is adequate to the best treatment of the vast majority of cases, and because skilfully done it is scarcely more difficult or dangerous *per se* than the less efficient drainage of simple intercostal incision.

The drainage opening should be large enough to allow of the removal of all clots and débris, to admit of careful examination of the cavity, even in some cases to allow of inspection by reflected light, and to remain thoroughly open until the cavity under ordinary circumstances may be expected to close. To these ends it is well to resect 6 centimeters of a rib, which admits of the introduction of three fingers. Personally, in certain cases where the conditions found indicate that a very prolonged drainage will be necessary, I occasionally resect two ribs, simply with the idea of establishing a lasting free drainage and keeping the cavity under inspection during its closure. This is, of course, unnecessary in simple acute cases. In my experience, especially in the past, the drainage opening is made too small ten times where it is once made unnecessarily large. The difference in traumatism between making a small opening and one admitting three fingers and giving full command of the cavity is little, but the difference in efficiency is great. I would make three exceptions to this rule of rib resection as the normal procedure in acute empyemas:

1. In pure pneumococcic pleurisies, thoracentesis may be tried, and it not rarely succeeds. This variety is more frequent in childhood—hence, the frequently reported cases by aspiration and small drainage in children. This fact, together with the greater intercostal space in these subjects, has led to a disposition to view the indications for treatment of empyema in children as differing from that of adults, a contention without much foundation, and unless it be in very young infants, rib resection should be the rule. I have met with only two cases of pure pneumococcic pleurisy in adults. In one, a young man, a single aspiration of three pints of a light white pus was followed by prompt and complete cure. When the history of the case and the appearance of the exudate point to a probable pure pneumococcic infection, drainage should be delayed, and if bacterial examination confirms the suspicion, even a second, possibly a third evacuation by the aspirator may be tried before opening the chest.

2. There are certain pure tuberculous pleurisies in which drainage should be delayed until the advent of mixed infection. Tuberculous pleurisies are for the most part serous, until mixed infection occurs, when, as a rule, they are more or less benefited by free drainage. However, there are several varieties of tubercu-

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lous pleurisies as well as suppurating pleurisies in tuberculous patients, and it is a matter of good judgment rather than of set rules when to operate and when not. Briefly stated, I think the rule should be when the exudate withdrawn by the exploring needle is apparently sterile, or when there is little rise of temperature or evidence of sepsis, it should be left alone, or at most reduced somewhat from time to time by aspiration in case subjective symptoms arise, or the accumulation is increasing. This is especially the case in hemorrhagic tubercular effusions.

3. In large and double effusions, gradual evacuation by paracentesis is advisable as a preliminary measure, the rib resection being delayed a few hours. Or in double empyemas the rib resection may be made on one side and the siphon drainage of Bülau may be simultaneously instituted on the other.

ANESTHESIA.

In most cases the brief and light chloroform narcosis required for a rib resection is well borne, but if the general or cardiac conditions seem to contra-indicate chloroform, the operation, if dexterously performed, may be made with but little discomfort under local anesthesia (Schleich). Ether should not be used.

In operating under general anesthesia, the position on the table is of importance. In large effusions, and in cases which have already ruptured into a bronchus, the patient ought not to be placed upon the sound side; hence, a high table with the involved side drawn well over the edge, aids greatly in making a well-placed drainage.

As to the technique of the very simple operation of rib resection, there is but one point that occurs to me worth mentioning. Good bone forceps are undoubtedly the most handy instruments for section of the bone, but they sometimes disagreeably crush and fissure the rib. A much neater and smoother section is made by a Gigli's wire saw. Possibly the occasional neuralgias and some other rare sequelæ of rib resection might be avoided by this certainly more elegant method of resection.

LOCATION OF THE DRAINAGE.

In draining the pleural cavity the opening should be placed at the lower and posterior part of the collection, or rather at the point which is to become such as the cavity shrinks. Leaving out of consideration interlobular and supra-diaphragmatic collections, intra-pleural effusions vary considerably in their location in different cases, hence to place the drainage opening at any set place on the chest is manifestly absurd. It is doubtless a fact that purulent effusions most frequently occupy the lower and posterior portion of the pleural cavity; hence, in the majority of cases of empyema, the eighth rib, well back, just outside the angle of the scapula, is best chosen.

In the mid-axillary line and anterior to it the muscular covering is less thick than upon the latero-posterior aspect of the chest, and this naturally inclines the operator to choose a location which is often ill-placed. The usual dorsal position of the patient on the operating table further increases the difficulty of operating posterior to the mid-axillary line. An opening in this plane is quite sufficient for certain empyemas, but if the case is a bad one, i. e., a virulent infection, and the cavity large, I have often observed that the residual cavity, after a few days or weeks of drainage, is most often found to be upward and backward from openings placed low and forward. Hence, in most cases, a drainage placed moderately low and well posteriorly upon the unevacuated cavity proves most satisfactory during the latter course of the treatment. Indeed, in certain cases, the rib is best resected as far back as the angle. In at least three cases I have observed moderate-sized cavities located upwards and backwards under the scapula which could only be drained by such posterior-lateral incisions. In many cases drained by others or by myself, I have found after a short time that the opening came to be situated below and in front of the cavity, leading to the necessity of reopening further backward and upward. The rule ought to be to place the opening moderately low and well posteriorly upon the cavity. If it be too low, the diaphragm in certain cases soon rises over it and the drainage is soon imperfect and troublesome. I have never seen it placed too far backwards for the best results, but many times too far forwards. However, as a high posterior rib resection is a rather more formidable operation in certain cases, it is well to resect the eighth rib in the mid-axillary line as a primary measure, and some weeks later, if necessary, make a second higher and more posterior resection if required.

OF IRRIGATIONS.

After resecting the rib, the first opening through the pleura should be small so that a large part of the effusion may drain away slowly. When this has taken place the pleural incision is increased correspondingly to the piece of rib removed. Through this copious opening the cavity may be thoroughly cleansed by wiping out with bits of gauze on a long forceps. In case the condition of the patient demands it, this may be deferred to a subsequent time. Immediate irrigation of the cavity is often objectionable and always less efficacious than wiping out with gauze. In my opinion lavage of these cavities has a very limited field of usefulness. Two things are quite clear: 1, with the chest opened as freely as here indicated, frequent irrigations are not necessary; 2, the injection of empyemic cavities through small openings is decidedly dangerous. Sudden deaths, syncope, embolism, paralysis, various nervous phenomena, etc., which have been long observed and much discussed, are undoubtedly the most striking, but not the most frequent accidents of irrigation. Rises of temperature and various septic phenomena and complications very frequently follow too diligent lavage of these cavities. The smaller the opening and the more forcible the injection, the greater the liability to these various accidents. I have never seen any serious accident follow the gentle lavage of freely opened cavities, but I have come to believe that they do better with a minimum of irrigating. The idea of stamping out infection by the use of antiseptic washes is no longer rational. A few days after the free opening of a cavity peroxid may occasionally be poured over its walls or applied with a swab of cotton, or it may be washed out with warm bland solution if desired. The indications usually given for lavage are: 1, abundant purulent secretion; 2, fetid secretion; 3, if the fever persists or reappears after a period of apyrexia. It may surely be debated whether lavage avails anything against either of these indications. I am certain that it is a frequent cause of the latter condition, i. e., persistence or reappearance of the fever, and I have repeatedly known the temperature to subside when lavage was stopped. When a cavity can not be kept clean without much lavage, it usually needs to be reopened more freely. It is better to devote greater

care to external cleansing of the wound and skin, and to the occlusion dressing and less to the diligent squirting of quarts of fluid into these cavities. When the secretions increase or become foul, the cavity ceases to shrink, and the opening has become small, free reopening is usually followed by general and local improvement, whereas the most diligent syringing shows little if any beneficial results.

DRAINAGE TUBES.

With a large opening of the chest the chief object of the drain is to keep the wound from closing. When the bottom has been taken out of the reservoir, draining away of the secretion can scarcely be prevented. With a small hole entering the cavity at some point on its external wall, often with clots and débris retained, it can scarcely be kept clean with an irritating drainage tube. For the purpose of keeping the wound open and its lips in a good healthy condition, copious gauze drainage is preferable in most cases, at least in the early after-treatment. When the amount of secretion is great, rubber tubes surrounded by gauze may be preferable. There are many objections to exclusively tube drainage in these cases: 1. The wound is encouraged to close down rapidly and the command over the cavity by direct inspection is lost. 2. The pressure of the tube exercises a bad influence on the soft tissues. The tract occupied by a tube is usually in an unhealthy condition, in marked contrast to that of a large wound held open by sterile and iodoform gauze. There are doubtless stages and conditions in the course of the treatment of empyemas in which tubes are very useful, but I find myself using them less and less. When desirable, two large soft-rubber tubes placed side by side may be used. They should be of the size of the thumb, short, and not press upon the pleura. Great care is necessary in their daily sterilization, and some contrivance to secure against their loss in the chest must be instituted. When small openings were in vogue, nearly half the cases coming under my observation were found to have lost tubes in the chest. The many ingeniously devised drainage tubes are absolutely superfluous, to say the least. Valvular drainage tubes, as proposed by Williams and others, with the idea of expanding the lung during inspiration, are certainly not necessary and of doubtful efficiency. In empyema when the chest is opened the collapsed organ is expanded by air from the sound lung during expiration and in coughing. And this force is apparently much more effective than inspiratory efforts with the chest closed by a valve. If tubes are to be used for chest drainage none are better than those manufactured on the spot from sterile pure soft-rubber tubing, but personally I prefer gauze drainage for the most part and use tube drainage only in stages and cases where it seems more expedient. Many cases may be drained all through by gauze. More frequently after a time, when the cavity has become small, tubes are substituted with advantage. At times it is necessary to drain a considerable cavity through a small opening on account of the condition of the patient, in which case tubes are quite indispensable, but as a rule such a cavity needs a freer opening.

DRESSINGS AND AFTER-CARE.

The dressing of empyema cases is often very careless. These patients being ambulant most of the time, are often allowed to shift for themselves, and the after-treatment is anything but aseptic. Strictly speaking, a careful aseptic occlusion dressing ought to be maintained throughout the treatment from the first opening to the closure of the cavity. How rarely this is achieved we all know. While the dangers of seriously reinfecting an old granulating cavity are not great, such accidents may often be observed in the most chronic cases and doubtless sometimes occur in the early stages of acute cases, when a comparatively benign infection is rendered more virulent by the entrance of infection from without. Patients and attendants should be more impressed with the necessity for a rigid aseptic after-treatment of these cases. While the discharge is free the dressings should be changed as often as they become saturated, and during the whole after-treatment at least once a day.

Besides the general attention directed to the constitution and the local care of the wound, a third matter ought to receive constant consideration, viz., the progress of the expansion of the collapsed lung. During the early days of the after-treatment, cough tends to this end; hence, it should not be too far subdued by narcotics. If, after the patient has had time to recuperate, it is found that the lung is slow in expanding, means should be instituted to assist it. Until the cavity has nearly closed, forced expiration is the most efficient and practical means at our disposal, and the patient should be instructed in methodical forced expiratory movements with closed glottis. The suggestion of Koenig to require such patients to blow up air pillows several times daily is practical.

THE PROGNOSIS.

The prognosis as regards life naturally depends upon the nature and extent of the infection, and the resistance of the individual. As regards closure of the cavity, it may be said, I think, that acute empyemas, promptly recognized, freely and adequately drained, and aseptically treated, as a rule close in from three to twelve weeks. As the treatment of empyema becomes more rational, thorough and scientific, incurable fistulæ and cavities become more rare; in fact, the exception.

CHRONIC EMPYEMA.

However, some cases for various reasons become chronic, and the cavities are closed only with difficulty and after months of invalidism, and the performance of more or less extensive plastic operations. In a few, owing to feeble general health or tuberculosis, the final closure of a small sinus may be indefinitely postponed. Plastic operations should not be undertaken until the cavity has been reduced as far as possible by free drainage, general improvement of health and respiratory gymnastics. It is usually several months from the time of the primary opening before shrinkage of the cavity comes to an absolute standstill, when, if the general state warrants, thoracoplasty may be undertaken. When after long drainage the lung has expanded to the fullest extent possible, the mediastinum has been displaced, the diaphragm has risen, and the chest wall has fallen in until the ribs are in contact and a cavity or sinus still remains, it is evident that some other principle than drainage must be called into action if the cavity is to be finally closed. The idea of the surgeons who first attempted to close these chronic cavities seems to have been that closure is chiefly prevented by the rigidity of the ribs; hence, Estlander in 1877 proposed to mobilize the thoracic wall by resecting that portion of the ribs covering the cavity. In practice the cause of failure of most of these cavities to close is to be found rather in the pleura than in the ribs. The walls of these persistent cavities and fistulæ become indolent and quite

analogous to the edges of certain old indolent ulcers, and removal of the superimposed ribs alone rarely proves entirely successful in their complete closure. Hence, this type of thoracoplasty has been superseded by the Schede type of operation, in which the whole chest wall, save the skin, is removed over the cavity. Of late years cases requiring extensive plastic operations are much less frequent than ten or fifteen years ago, but in five cases during the past six years I have found it necessary to remove more or less extensive portions of the chest wall, and secured complete and prompt closure in such instance, whereas ten or fifteen years ago a much larger number of operations of the Estlander type were observed, in the majority of which sinuses remained as long as the cases were followed. Thus, with prompt and efficient treatment of acute empyemas, chronic cavities and fistulæ are rare, and these may with few exceptions be closed fairly promptly by thoracoplasty. When the general state is very feeble, when amyloid disease is advanced, when the cavity is enormous, failure is probable, but there are few absolute contra-indications to a well-timed attempt to close these chronic cavities. Tuberculosis is unfavorable, but by no means an absolute contra-indication.

DISCUSSION ON PAPERS OF DRS. WILLARD AND DUNN.

DR. A. C. BERNAYS, St. Louis—Pneumotomy and pneumectomy are the operations which deal with tuberculosis—first and last and all the time with tuberculosis, excepting, perhaps, a few cases where a surgeon would be called early enough to render aid in a traumatism from a gunshot wound or a stab in the chest. We are gradually encroaching on the domain of the medical men so much that soon our fellows may not have their lungs left. I really believe the time is at hand when we are going to attack the ravages of tuberculosis in the lungs with our surgical technic, and I believe we are going to do it successfully in many cases. In order not to discourage our efforts, we should carefully select suitable cases. It is a fact that pure infection by tubercle can recover spontaneously or by means of dietetic and climatic treatment. We all know that to be a fact, because we have all examined the sputa of tubercular patients and have seen them recover from dietetic and climatic treatment. In those cases prognosis is favorable as long as there is no mixed infection. As long as the patient has only the growth of tubercular bacilli in his lungs he may recover spontaneously, but in most cases there will soon be a mixed infection; that is what kills and that is what I think we can attack surgically. When there has been a secondary infection of the tuberculous patient by staphylococcus, streptococcus, colon bacillus, and other pathogenic microbes, or some of the saprophytic microbes, then our treatment must aim at their exclusion. Cavities in the lung are the points of attack. In considering their treatment, the question is simply this: Is the danger of the operation less than the expected benefit? Then the procedure is justified even if it is not a radical treatment. We must select cases that are not beyond the stage where recuperation is possible, just as we do in carcinoma. Cases in which a cavity in the lungs is the most prominent danger are rare, but if we can only bring one in a hundred of these unfortunates back to health, the operation of pneumotomy must appear as a justifiable operation. Just before I came here I had the superintendent of a public hospital send for me to see ten cases of death from consumption and in those ten cases I, with the aid of my assistants, went to the dead house and removed all of the soft parts over the top of the lungs on both sides, removing the whole clavicle, the first, second, and third ribs and then examined the tops of both lungs; the most interesting thing I found was that I could peel out with an elevator and with my fingers, the apices of the lung on both sides in eight out of ten cases without causing the pneumothorax. It was possible, by a blunt instrument, and with the fingers to peel out the upper part of the lung, in eight out of ten cases so that the lower part of the pleural cavity was not opened and there was no chance of producing a pneumothorax. While I was doing that post-mortem work, of course I had in view an operation which I could do upon a living patient and I believe that the best operation to be done in a case of that kind will be the following: Make an incision, beginning at the margin of the sternum and running through the pectoralis major muscle 5½ inches laterally in a straight line down to the second rib. Some French surgeons have advised making an incision over the first rib, but I think that is a mistake. The incision over the second rib gives much more room and is easier done. By means of the finger or a blunt instrument the pectoralis major muscle and soft parts are scraped off the ribs upwards and downwards. Then, by putting in a broad retractor, such as we use in the abdominal cavity in each side, the edges can be spread out and the second rib exposed for 5 inches. Another retractor placed into the lateral edge of the wound, will rest upon the axillary vessels and brachial plexus, but it will completely protect them so that, with the greatest ease, the second rib can be resected. I note that whenever I made a cut through the cartilage, the rib would stand out and then it is only necessary to use the wire saw or bone forceps, or even only to pull upon the medial end until it breaks off near its angle. All you have to do is to take hold of the second rib and break it off; it will break at its weakest point near the axillary line. It is not necessary to use bone forceps, but the second rib is taken hold of firmly and broken off, leaving not a ragged, but always a transverse break. You will have before you the white, almost bloodless, cicatricial-looking fibrous layer of tissue, the two layers of pleura having adhered, and you will find it not only difficult but requiring force with your fingers to loosen the cupola—the apex of the lung—out of its adhesions. Having loosened it clear around behind, on the sides and in front, then the finger will easily detect the fluctuation of the cavity; this cavity I would not open with the Paequelin cautery, but with a knife. There is little danger of hemorrhage in the peripheral part of the lung. The top part particularly is not supplied with large arteries. The blood in them is under a low pressure and you can push your knife, or if you please, if you are in the tentative stage of surgery, you can push a thick trocar in there until you find the pus cavity. Having found the pus cavity, it should be opened by the method of Mr. Hilton. You remember he gave a method for the general practitioner to open abscesses, a method which avoids hemorrhage. After making the cut, press the dressing forceps into the cut, and enlarge the opening by separating the handles of the dressing forceps. In that way the abscess cavity can be widely opened and can be treated in any way that the operator may choose. In these cases that I examined very carefully I found that on the inside of the cavity you could see large blood vessels covered merely by a little pyogenic membrane, ready to burst. I found this in all the cavities I opened. Whether it would be well to tie those vessels with catgut or silk, I do not know. In this department of surgery we depend largely upon our theoretical studies. It would be a perfectly safe operation if in such a case as that you did not produce a pneumothorax but succeeded in getting into a cavity, to treat that part of the human body exactly as you would treat a case of pyonephrosis, appendiceal abscess, or abscess of the liver. The fever is caused by the pus, not by the tubercle bacilli, but by the secondary infection with pyogenic bacteria. You can drain the cavities and the patient's temperature will become normal rapidly. If he has a cavity also on the other side, it will not become normal until you open the other side. Dr. Willard covered the ground of treatment of foreign bodies in the air passages completely.

The first and important statement Dr. Dunn made was that the treatment of empyema depends upon microscopic findings in the fluid that have been brought out by the exploring needle. The condition demands that a microscopic examination must be made and the treatment must be governed by the findings of what is withdrawn with the exploring needle. One point that I never heard before was the use of the wire saw for the

purpose of cutting out the ribs. I shall undoubtedly adopt that plan, for that will prevent ragged and jagged edges. In regard to irrigation, I find myself absolutely in agreement and will only mention it in order to emphasize my position. I used to be a great irrigator, but I have absolutely abandoned irrigation, both in empyema cases and abscess of the liver, or in appendiceal or pelvic abscesses of any kind. It is a principle of surgery that where we have complete and free drainage we don't need irrigation. After drainage of an abscess, if fever arises, you can not cure that fever permanently by irrigation. What is indicated is to make the hole larger or make another hole in another place.

Dr. J. H. Barbat, San Francisco—I have been experimenting on dogs during the past year in the endeavor to solve some of the problems in thoracic surgery. I was unable to obtain any of the insufflation apparatus, and so had one constructed, which worked very successfully. It consists of a bellows with a spring, which can be adjusted so as to regulate the amount of air in each insufflation. The air is passed through a wash bottle containing hot water, so as to remove all dust and also warm it, thereby lessening the possibility of irritating the bronchial mucous membrane. A second bottle is provided with a two-way cock, which allows us to pass the air from the bellows either direct to the lungs, or to pass it through chloroform or ether, thus regulating the amount of anesthetic perfectly. I found in my experiments that it was easier in the dog to use a tracheotomy tube than an O Dwyer tube. By anesthetizing the dog first, the tracheotomy tube was easily introduced, and then the insufflation and anesthetic could be kept up during the operation with comparative ease. To enter the chest cavity I make an osteoplastic flap by cutting through the requisite number of ribs near their attachment to the costal cartilages with a modified gardener's pruning shear, the cutting blade of which is thin and sharp, thus avoiding crushing the ribs. The next step consists in passing a full curved needle armed with heavy silk through the skin and around the rib, being careful to avoid including the intercostal vessels and nerve, at a point three or four inches back of the first cut. A Gigli-Haertel saw is then pulled through by means of the silk, and with two or three strokes of the saw the rib is weakened. All the ribs previously cut being treated in the same way, it is easy to turn back a large flap, without having seriously interfered with the circulation, which allows us to work with freedom on the contents of the chest cavity. In resecting the lung the electrohemostatic forceps of Skene may be used instead of the angiotribe, the only disadvantage being that it is necessary to carry the electrical apparatus with you while the angiotribe is complete in itself. In resecting a rib for empyema, time is an important factor, and I have found that the operation may be expedited by using Doyen's periosteotome, which consists of a piece of narrow half-round steel, one end of which is bent in the shape of the letter C and set at right angles to the shank. After cutting through the soft parts and periosteum with one stroke of the knife, the free end of the periosteotome is passed under the periosteum and worked up over the top of the rib, then down behind, avoiding the vessels and nerve, then out in front of the lower border of the rib. The shape of the instrument is such that when it is in position it fits the rib closely and all that is necessary to do is to move it back and forth a few times to loosen the periosteum perfectly, then with the sharp cutting shears the rib is divided, and the whole operation completed in from three to five minutes.

Dr. W. Jepson, Sioux City—In connection with the subject presented by Dr. Willard, I believe that there are few subjects in the whole domain of surgery where it is so essential that a clear conception should exist regarding what to do and how to do it, as when treating foreign bodies in the air passages. The statistics as collected by Gross, Weist and others, indicate that about 24 per cent. die when not operated upon. This is certainly a large mortality and must place this condition among the graver accidents; however, the saddest fact revealed by statistics covering a large number of cases is that more die when operated on than when not. Thus, of 1000 cases collected by Weist in 1878 or 1880, it is shown that the mortality was increased 4 per cent. by the employment of operative measures for the removal of the foreign body. Notwithstanding the sad results of operative interference in these cases, I say that Gross uttered an axiom when he, some forty-five years ago, stated that when a foreign body existed in the air passages, the trachea should be opened to facilitate its removal. This opinion was based upon his own personal experience, which showed that 17 per cent. more recovered when operated upon than when left alone. From a personal experience of 16 cases, 15 of which were operated upon with recovery in each instance, I advocate that, with few exceptions, where a foreign body has gained access to the trachea or bronchi, the trachea should be opened as soon as possible to facilitate its removal. It was said that the symptoms were often indefinite and vague. How true this is we quickly learn after even a limited experience with these cases; the phenomena occasioned by their presence may simulate those occasioned by any of the various affections of the respiratory tract, and it therefore behooves us not to overlook their presence. I seriously doubt if the employment of emetics, sternutaments, or inverting the patient and slapping upon the back, or other measures calculated to increase the expiratory force with a view of dislodging and expelling the body, are proper measures to employ. I recognize that now and then it may possibly be fruitful of the object aimed at, yet how often does it not fail and possibly with dire results. The upper third of the larynx is supplied by the superior laryngeal nerve, irritation of which may, through its relationship with vagus, lead to cardiac and respiratory inhibition, which may be most serious. We see this fact unconsciously recognized on the part of parents of children having seeds of corn, etc., in their air passages, by maintaining them in an upright posture so that the gravity of the foreign body keeps it out of the larynx, thus avoiding those violent attacks of coughing and choking.

The question of greatest importance pertains to the procedure of removing the foreign body after the trachea is opened. Foreign bodies in the air passages may be divided into two classes: 1, those which are movable within the lumen of the trachea or bronchi, bodies which are generally possessed of a more or less smooth surface, as seeds of corn, beans, coffee beans, etc.; 2, those which have become fixed in some part of the air passages, bodies which are generally irregular in shape, as tacks, pins, sand-burs, etc. Of course, a smooth body may become impacted in the larynx or either of the bronchi. After opening the trachea we readily recognize by the character of the breathing as to whether the body is distal or proximal, and are thus guided. If in the larynx, its removal can generally readily be accomplished by a suitable pair of forceps. If the body is located in the lower part of the trachea or a bronchus, especially if the same be hard and smooth as in the instance of many seeds, I doubt if we are warranted in making any attempt to grasp such a body with any forceps which we now possess. We would be much more likely to force it on down into the constantly diminishing lumen of a bronchi and thus impact it, making its subsequent removal very difficult if not impossible. The resistance offered by the trachea or bronchus to smooth bodies is not great until they are impacted, but it is necessary to grasp these bodies. All that it is necessary to do is to loosen them if impacted, when the expiratory current of air will carry them to the tracheal opening, and, if the trachea be slightly angulated by means of a pair of catch forceps or a loop of thread in each edge of the tracheal wound, the body will be ejected, or brought to the wound where it may be readily grasped. To loosen such bodies when fixed or impacted, no more efficient means can be employed, with possibly few exceptions, than that simple expedient of taking two or three strands of fine steel wire and twisting them together, leaving loops which may be passed beyond the object to loosen it on the withdrawal of the loops. A wire with a hook on its end and a half-circle higher up to keep the hook in the lumen of the passage, may at times be used to much advantage. No doubt the coughing excited

by the passing of the wire loops is a potent factor in many instances in loosening the foreign body. I concur in the view expressed by Dr. Willard that the simple opening of the trachea can not add to the risks of the patient; therefore, the large mortality in these cases, as shown by statistics quoted, must be due to other causes; probably because operative procedures were instituted too late or unwarranted instrumentation was employed and injury resulted.

DR. JACOB FRANK, Chicago—I have had considerable experience with two unpublished cases of lung surgery, and I have found from these and from experiments on dogs, that lung surgery is not so easy as most speakers would lead us to believe, with the exception of Dr. Willard. The first case was that of an abscess in the upper part of the right lung. I should say that it was an abscess of the lung, because the patient under anesthesia had frothy blood coming from his mouth. That is one of the signs and also one of the dangers in operations on the lung which has not been mentioned here, that is, drowning of the patient in his own blood. I worked my way down to it by resecting the clavicle and part of the first rib before coming to the abscess. This patient made a recovery. We introduced a syringe with a catheter, made suction, and the patient recovered. The second case that I had was that of a little boy who periodically would vomit from a quarter to a half a glass of pus. It could be distinctly determined on percussion when the abscess cavity was full and when it was empty. I thought it best to operate when the abscess cavity was full, but unfortunately when he was taking the anesthesia he vomited the pus. I resected the ribs and poked around with a needle twenty or thirty times until the blood came out of the boy's mouth and he was almost suffocated. I had the cavity soon cleared of the blood, and then worked my way with an artery forceps to find the cavity, and I failed. I am sure that I made enough laceration of the lung to find it, and can not say why I failed. The boy died. In lung surgery we stand to-day where surgery did twenty years ago in tuberculosis of the joints, first the resections and then afterwards getting to the curettement. I can not see the benefit of resection or excising any portion of a tubercular lung, unless we are sure there are not any tubercles a quarter or an eighth of an inch just beyond the border of the removed part, and I do not think that surgery of the lungs will ever become prominent—that is, excision for tuberculosis—unless we have some means to determine that there are no tubercles in any other part of the lungs. There is a difference whether we have a deep abscess of the lung to operate on without any adhesions of the pleura and the chest walls, or whether it is superficial. Merely an abscess, where there are adhesions already, is not more difficult to open than any other abscess.

DR. LEMOYNE WILLS, Los Angeles—There is much opposition to anything in the way of draining superficial cavities, or any operating on the chest until it is too late to do good. It is for the profession to overcome that opposition and not to allow their patients to go on in a septic, dying condition and then send them away to Arizona and New Mexico and Southern California, allowing the responsibility to be shifted to other men's shoulders and obliging the latter to sign the death certificate. That is the condition in which we get them. If you would diagnose your cases properly, treat them properly, as in operations on the brain and abdominal cavity, there would be more cases cured and fewer suffering consumptives in the last stages sent West to die. I am agreed with Dr. Frank that this is a matter of diagnosis. It is a matter of great care in the selection of your cases, but if you have a case almost moribund, with tubercle bacilli in sputum and a single large cavity in the posterior lower lobe, and can drain it, and if the man gets well and goes back to active life at his trade and puts on 75 pounds of flesh, that is certainly hopeful for the future of such operative treatment. If your patient is willing to submit to operation, knowing the dangers, the surgeon should be willing to take the risk even if as low a percentage as one in a hundred is cured.

DR. C. H. NORRED, Minneapolis—I simply want to relate a case, not operated upon, that made a brilliant recovery. In 1869 a child between 2 and 3 years of age, in running, drew a peanut kernel into the bifurcation. At that time we were not operating upon the lungs, and I treated the case expectantly. The patient, however, developed a typhoid pneumonia, and I called to my assistance Drs. Burrough and Henry, of Springfield, Ill. They assured me that my patient was beyond help. I noticed that in the paroxysms of coughing the child would get the peanut kernel up just so far and a spasmodic contraction would take place, everything would stop and cease and a desperate strangulation would result. I suggested that we relax the patient most completely, then give the child an emetic. The child was given morphia; we provoked vomiting and secured in a bowl the peanut. We finally succeeded in handling the complications and the child recovered.

DR. W. W. KEEN, Philadelphia—Some time since I had occasion to attempt to reach a cavity in the lung that was filled with pus, and I made the incision at the point that was indicated by my medical colleague after percussion of the lung, between the second and third ribs on the right side. I made my incision parallel to the ribs for about two inches; then carefully dissecting the muscles, separating them as I went down, with a cut and separation, I reached the pleura, which was very easily recognized. The muscles were very easily separated from the pleura. I could see the excursion of the lung up and down as it fell away to a certain extent from the surface. As there were no adhesions it was clear that it would be unsafe to puncture the lungs if there was any pus there. Accordingly, when the lung was at the moment of rest between inspiration and expiration, I took a Hagedorn needle and passed it quickly through the lung itself. Two stitches secured the lung in position. I then packed the wound lightly with iodoform gauze and closed it with two stitches. After three days I reopened the wound, removed the packing and had the gratification of finding a perfectly adherent lung.

This led me still further some time since, in a case that I reported at the American Surgical Association. It was the case of a woman who had sarcoma of the chest wall, reaching from the outer border of the breast nearly all the way back to the vertebral column, and I was obliged to remove a portion of the chest wall, into which my hand would precisely fit. When this was removed the lung collapsed. I had the Fell-O'Dwyer apparatus ready for use, but fortunately in this case there was very little embarrassment of the respiration as a result of the collapse of the lung. I then introduced my left hand and seized the lung bodily—it was not invaded by the tumor—drew it forward and with a long thread of catgut and a Hagedorn needle, sutured the lung completely around the opening by a continuous suture, with a view of preventing, as far as possible, pneumothorax. Then, I replaced the flap of skin and sutured it and sealed with iodoform and collodion. The patient made a fair recovery from the operation, but had a continued fever, which led me to have a blood examination made, and I found the staphylococcus infection in the blood. This was met by the use of the antistreptococcus serum, and the patient made a complete and very satisfactory recovery. The point I wish to emphasize is the means of obtaining adhesions where none exist so that we can carry out later in a punctured lung that which may be necessary, and secondly the safety even of a very large suture of the lung tissue to the chest wall, either as in the first case locally, or, as in the second, where there is a very large area in its surface.

DR. W. J. MEANS, Columbus—In the last two years I have had several cases of chest and lung troubles on which I operated. One of these cases demonstrated the possibility of recovery after a fearful gunshot wound penetrating the chest and producing extensive laceration of the lung. A boy, 16 years old, was out hunting with an old-fashioned muzzle-loading shotgun. It was accidentally discharged and the charge entered the chest below the axilla. The sixth and seventh ribs were broken, and the middle and lower lobes of the lung lacerated. The pleural cavity, when I saw him, was largely distended with blood clots. The opening was enlarged so that I could introduce my hand. When the débris was removed there was a very decided collapse. For a few minutes it looked

as though death was imminent. To control the hemorrhage I packed the cavity with iodoform gauze; several yards were used. The heart soon became stronger and the respirations more rhythmical and full. The packing was removed forty-eight hours later, when the same alarming symptoms appeared, and disappeared on repacking the cavity. This phenomenon was present at every removal of the packing for some two weeks. This seems to have been a practical demonstration of the physiologic principle of the effects of destroying the equilibrium in the viscera of the chest. I recall another case illustrating the difficulty in the way of reaching an abscess cavity in the lung. The location of the abscess had been defined by an expert diagnostician. An opening was made in the chest wall corresponding with the supposed abscess. The pleural surfaces were found adherent, but no cavity. The patient had been expectorating an offensive pus for some time. The lung was explored in different directions, but no cavity could be located. The lung tissue at the point of opening was diseased and undergoing degeneration. A large opening was made through the chest wall and drainage established into the diseased lung substance. At intervals of forty-eight hours the diseased area was injected with iodoform emulsion. The patient recovered from the operation, but died four or five months later. I mention this to illustrate the difficulty in locating a cavity, and the fact that local treatment of tubercular areas of the lung will not always control the disease.

Dr. De Forest Willard, in reply—When the foreign body is not removed septic pneumonia frequently results with the formation of an abscess. Such an abscess should be opened and drained. Adhesions can be speedily produced between the two walls of the pleura so as to close off the pleural cavity before opening an abscess. With a strongly curved perineal needle with handle, a parallelogram of sutures can be carried around the area and the abscess opened at once, or twenty-four hours later. The same method may be employed in opening abscesses in the liver through the chest wall. A rib should first be resected subperiosteally, then a small amount of air should be allowed to enter the pleural cavity so as to permit the lung to recede slightly. The outer surface of the pleura and the diaphragmatic layer should then be sutured as above described, after which the liver can be reached across the pleural space, and pus evacuated without infecting the pleural cavity.

In regard to resection of the ribs, which has been alluded to this afternoon, I never use the bone forceps, since they are clumsy and are very likely to wound the pleura. With an extra-heavy flat-bladed rongeur forceps a rib can be cut through in a moment, turned back, and lifted out for any distance desired for resection, the second section of the bone being made with the same rongeurs.

THE TREATMENT OF STRABISMUS OTHER THAN OPERATIVE.*

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Important as is the operative treatment of squint, it is less widely applicable than the non-operative treatment. A large proportion of cases may be cured without operation. The number so cured will increase, as it becomes customary to resort to the proper measures, as soon as the deviation is noticed. But in all cases some non-operative treatment is essential to effect a perfect cure. It may not be required only in that small class of operative cases in which binocular vision and normal ocular movements are not hoped for; but in which by operation we may lessen a deformity that we can not wholly remove.

The non-operative treatment for strabismus includes the entire treatment of many cases, and the earliest treatment for all. The indications to be met by it are: 1, to bring about normal innervation of the muscles concerned in ocular movements, by the removal and exclusion of abnormal requirements, and abnormal overflow impulses; 2, to place and keep the eyes, so far as possible, upon the best plane of visual acuteness and an equality of required effort; 3, to eradicate abnormal methods of using the eyes, especially dependence upon one eye to the practical exclusion of the other; 4, to develop normal binocular vision—the method of combining the visual sensations produced by the two eyes; and the habit of employing them both in all ordinary seeing.

For the majority of cases, the time for this treatment begins as soon as the squint is first noticed. The problem of controlling the activities of a young child, and directing them along certain lines, is indeed a difficult one. But since the nerve-muscle apparatus that we are endeavoring to perfect is thoroughly plastic only during the earliest years, these difficulties must be grappled with. In the main, what I have to say in this paper deals with this most important phase of the subject. The modifications advisable for more developed patients can be very briefly indicated.

The aim of the non-operative treatment, as it is the highest aim of the operative treatment of strabismus, is the establishment of binocular vision. Of this there are many grades, beginning with consciousness of impressions made on the two eyes, and extending up to the most perfect appreciation of relative distance and relief. Probably something like binocular vision, something more than mere extension of the field by the squinting eye, exists in many cases of strabismus and may constitute an obstacle to the cure of squint. It is certain that binocular vision is possible even when the vision in one eye is extremely imperfect.

In a patient suffering from high myopia, whose vision with correcting lenses was 4/80 in the right eye and 4/9 partly in the left, were recently encountered all the difficulties of adaptation that one would expect when prescribing lenses of unequal strength for eyes with perfect vision. In a young woman whose vision in the right eye was reduced to counting fingers at 8 feet, while in the left eye it was 4/4 mostly, repeated trials of lenses correcting a part of her anisometropia ended in failure. The disturbances of binocular vision were so marked that she would not wear them. In cases of this kind, the usual tests for binocular vision may bring no response. But we can not doubt that binocular vision of a kind is thoroughly established.

The things to be accomplished in the treatment of strabismus may be classified thus: 1. The removal so far as possible of all obstacles to binocular vision. Under this head falls the operative, with a very important part of the non-operative treatment. 2. The establishment of binocular vision. 3. The perfecting of binocular vision. The latter two are to be effected wholly by the non-operative treatment.

When the patient is able to perceive simultaneously impressions made on the two eyes, binocular vision of some kind exists. The efficiency of the function is at first to be estimated by the ability to keep fused the images, under varied conditions of accommodation and convergence. Mr. C. Worth makes the ability to do

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this the second stage in the development of binocular vision. But I think that some power of maintaining fusion with altered accommodation or convergence begins as soon as there is ability to accomplish real fusion, although at first this power of maintaining fusion is very slight.

The development of the higher grades of binocular visual ability requires almost infinite practice. It may be compared in this respect with the higher grades of ability to play the piano or violin, or the mastery of the most delicate modulations of the voice. It must be acquired through the habitual use of the eyes in daily life, with such aid from glasses or suggested methods as we can give. It will not be reached merely through prescribed special exercises. With such exercises and the apparatus they require, we can only aim to bring about the rudest kind of binocular vision, and start it on the proper lines of development; although, in spite of the limitations of their usefulness, we must consider the most valuable of these appliances and prescribed methods.

Lenses.—In practical importance correcting lenses far outweigh all other measures for the non-operative treatment of squint. They remove the most common and serious obstacles to binocular vision that are removable. Their determination and use is the first step in the treatment of all cases. We can not in this discussion consider all the special indications to be met by lenses. But in every case the lenses should accurately correct all of the ametropia. Such lenses should be worn until the complete cure of the squint, or complete failure to benefit, shows them to be no longer necessary. Failure to rightly employ lenses is the most common cause of failure to cure strabismus. A very large proportion of the failures of glasses to cure strabismus in the earlier years of life must be ascribed to the fact that the glasses do not correct the ametropia. In many of these cases the glasses have been fitted by opticians. But even when prescribed by ophthalmologists of reputation and experience, one can not be sure that they are "correcting" lenses.

Case 1.—I. A., aged 6, was seen in consultation with a careful surgeon of large experience in ophthalmic work, who had prescribed R. and L. +2.75 spherical. These had been worn about five months without any marked diminution of a high convergent squint, which had during that time changed from intermittent to constant. The correcting lenses required were really

R. +4.50 ⌒ +0.50Cy. ax. 90°.
L. +5.50 ⌒ +0.50Cy. ax. 90°.

The wearing of these promptly checked the squint.

Case 2.—E. L. H., a girl aged 7, had been noticed to squint when less than 2 years old, and had been promptly placed under the care of an ophthalmologist. She had worn glasses for three or four years. Those she was wearing had been prescribed by an ophthalmologist who had seen her within a few months. After repeated examinations, he had given the opinion that glasses would do nothing more for her. That an operation was necessary; and unless he were allowed to do an operation he would not continue in charge of the case.

The child was wearing
R. +3 S. ⌒ +0.50Cy. ax. 90°.
L. +3 S.
What she really required was
R. +6.50 S. ⌒ +0.50Cy. ax. 105°.
L. +6 S.

These were prescribed and the deviation which had been 30 to 60 centrads promptly disappeared. At the end of six weeks there remained not over 5 centrads of esophoria; and in six months the muscle balance with the lenses on was perfect.

The accurate correction of ametropia being the most important single measure in the treatment of squint, and this being most effective in the earliest stage, it follows that no one who can not measure refraction objectively, no one who can not apply skiascopy with sufficient accuracy to obtain by it the data for prescribing lenses, is competent to treat strabismus.

This sounds like an extreme statement. Judging by old standards of attainment and old methods of treatment it is unduly so. But the experience of the last five years has established a new standard of success in the treatment of convergent strabismus in children, to be attained only by a method of which the foundation is the accurate correction of the refraction, at an age when the patient can give no assistance as to its measurement. In view of this, any milder statement simply falls short of the truth. The total hyperopia must be corrected. Astigmatism or anisometropia of 1 D. or less may constitute a complete bar to the re-establishment, or the renewed development of binocular vision, when the tendency to give up binocular vision has once become manifest. A fault of this kind, that would very rarely cause squint, may have to be corrected before the squint can be cured.

It may seem tedious to dwell so much on this subject of correcting refraction, but to have devoted more than three-fourths of this paper to it would only have been to give it space proportioned to its relative importance; and the cases I have cited illustrate a failure to recognize that importance which I believe is still very common among us.

Use of the Previously Deviating Eye.—In the great majority of cases this is the first point to be effected. Even though both eyes may to some extent be used, if one is distinctly preferred to the other for accurate seeing, the difference in the facility with which they are employed becomes a positive obstacle to the re-establishment of binocular vision. In general, it must be assumed that the fixing eye had originally some advantage over the deviating eye. To this advantage is added the facility acquired by habitual use for weeks, months or years. The advantage that the fixing eye now has is thus very much increased. It will not be removed by a few brief attempts to use the eye that has heretofore deviated. Weeks, months or years of continuous dependence upon the previously deviating eye might fairly be expected to be necessary to overcome such a disadvantage. In view of this, it is surprising what may be gained in this direction by a very moderate use of the poorer eye. But it should be understood that in most cases this using of the worse eye can not possibly be overdone.

The occlusion pad or bandage, which completely excludes the better eye, is the only thing that will serve the purpose, if the vision of the squinting eye is very much reduced. For older persons, it can often be used but a small part of the time, but for very young children it may be kept on almost constantly, removing it only often enough and long enough to ensure the health of the covered eye.

The essentials of such a pad are, that it shall absolutely prevent vision with the covered eye; and that it shall act as little as possible like a poultice. The ordin-

ary roller bandage may be used, but generally some special form arranged with tapes will be found more available. If the child can be watched, a mass of absorbent cotton stuffed behind the correcting lens of the better eye will answer. But usually I find it better to hold the cotton in place by one or two strips of adhesive plaster, as with the simple dressing used after cataract extraction. To avoid the pulling on the skin when the plaster is removed, it may be applied to a piece that is left in contact with the skin continuously. The use of the occlusive pad should be continued until, if this be possible, the vision of the worse eye has so improved that it will be used for fixation when the other eye is kept under a cycloplegic.

The Use of Cycloplegics.—The so-called mydriatics are to be used in this connection for their power to produce cycloplegia, not merely to dilate the pupil. An enlarged pupil is not sufficient evidence that the drug is being used effectively. The slightest reaction of the pupil to light proves that the eye is not completely under the influence of the drug. It is necessary from time to time to test objectively the power of accommodation, or the absence of accommodation, to make sure that the cycloplegia is properly kept up.

In all cases, cycloplegia is required for the determination of the ametropia. It may then be continued in both eyes to prevent the abnormal innervation associated with accommodative effort. In cases of alternating squint, this is sometimes of particular value.

In monolateral squint, however, after the correction of the ametropia, the cycloplegia should more frequently be confined to the better eye. It thus serves as a means of compelling the use of the previously deviating eye. As above indicated, it can only be thus applied for those cases in which the paralysis of accommodation of the fixing eye, the other retaining its accommodation, causes the transfer of the squint. If cycloplegia of the better eye does not accomplish this, we must use the pad. But if it does cause the transfer of fixation, it is a measure superior to the pad, because it is constant in its influence, requires less attention, does not interfere with the health of the eye, and leaves binocular vision possible, under favorable circumstances, if there be a tendency to establish it.

When employed in this way, cycloplegia should be continued until fixation, even at a distance with correcting lenses, is most of the time done with the previously deviating eye, or until all gain in this direction has entirely ceased. The length of time that the mydriatics should be thus employed is somewhat proportioned to the age of the patient, or at least, to the duration of the strabismus. But it will usually extend to several months and may go on to years.

The use of a mydriatic formerly advocated, as a substitute for correcting lenses in children too young to wear glasses, is now a very limited one. Nearly all children old enough to have a decided strabismus, as distinguished from the irregular uncoördinated eye movements of infancy, are old enough to wear glasses. They will wear them without objection if the ametropia be high enough to be of much importance, and the eyes are kept under a mydriatic for a few days after the glasses are put on.

But the mydriatic can not fully replace correcting lenses. It may remove the tendencies associated with excessive effort of accommodation, but it does not bring up the vision of the poorer eye, or place it more nearly on a plane with its fellow, as regards effort necessary for use. It removes an important cause of squint, but it does not, like the correcting lenses, bring about the conditions most favorable to the development of binocular vision.

Exercises for the Development of Binocular Vision.—The first thing aimed at, is to induce the patient to see with both eyes at once. This is first to be effected by using most striking objects. The light used for the subjective measurement of squint or heterophoria is a good object to begin with. The bringing about of diplopia, measuring the separation of the images, varying their relative position with prisms, and their relative strength by the use of dark glasses before the better eye, are excellent exercises of this kind. For young children such exercises must be of the simplest character, and on this account the fusion tubes of Priestly Smith are of especial value. They are two entirely separate tubes to be held by the child, one in each hand. This giving of something for the hands to do, and the freedom of movement, and the variety of movements which may be made, aid in keeping up the child's interest in the exercises. Sometimes it may be necessary to enfeeble the image of the better eye by use of a dark glass, or of a piece of paper of the proper thickness and translucently pasted over the tube used for this eye. But generally if the two streaks can be seen no such modification is necessary.

The Reflecting Stereoscope.—Next to the fusion tubes may be placed Worth's modification of the reflecting stereoscope. It is more adaptable and more rudimentary than the ordinary stereoscope. It can be used for lateral deviations in the same way as the fusion tubes; and in the main it offers the exercises of a stereoscope. It furnishes employment for the child's hands, and the figures used with it may be indefinitely multiplied.

The Ordinary Stereoscope.—This is of service for certain very valuable exercises and its range of usefulness may be extended by employing specially prepared pictures. The ordinary stereoscopic lenses are so decentered that they act as prisms with the base out. The distance between the optical centers of the two lenses is about 85 mm. With an ordinary pupillary distance of 61 mm., this gives a decentering of 12 mm. for each lens; or with the 5 D. lenses usually employed gives a prismatic effect of 6 centrads for each eye. For children with a small distance between pupils, the decentering is still greater. For 55 mm. it would be 7.5 centrads prismatic effect. The pictures ordinarily used in the stereoscope are so broad, 85 mm., that the prismatic effect is required to render parallel the rays which enter the two eyes from corresponding points of the two pictures. If we make the pictures narrower, and bring them correspondingly closer together, the same prismatic effect will allow them to be seen with convergence. Thus, for a child with a distance between the pupils of 51 mm., pictures 51 mm. wide, placed in close contact, will have their corresponding points fused with a convergence of 34 centrads—almost 20°. These narrower pictures are very readily made by cutting down larger pictures, or in drawing the rude diagrams that often prove serviceable in the orthoptic training of young children.

The stereoscopes arranged for the adjustment of the width of the glasses, or the positions of the pictures, or both, are capable of the same service, and of other uses. But I shall here dwell only on the more common form of the instrument; because its simplicity gives it a much wider range of application. That instrument

is of the most value which can be trusted to the child under the supervision of the parent or caretaker, rather than one to be used for a brief time in the office of the surgeon.

As has been indicated above, these exercises must be practiced a considerable portion of the time to be of great service. The object of the first exercises with the stereoscope is to cultivate the ability to see with both eyes at once. For this purpose a series of pictures is required, the two halves of which differ, but are so related that they may be appropriately superimposed. The picture of the bird presented to one eye, and its cage to the other, is typical of this sort. The stimulus to co-ordinate action is given, when the child is induced to try to get the bird into the cage, or into the center of the cage. Exercises of this character prepare the way for more advanced efforts. They also remain of great use throughout the treatment. Even when normal binocular vision has become habitual, it is worth while to recur to them.

If the child has previously had some practice with fusion tubes, the second class of pictures may soon be brought into use. In these, some portion is common to both pictures. This portion must be fused to avoid diplopia, while the completeness of the picture proves that single vision is not obtained by excluding one eye. Pictures of this sort are less interesting to the child, because their component parts have a single fixed relation; and do not offer the same opportunity of conscious adjustment. On this account one should have a large series of them and should supply them a few at a time. They may be made out of ordinary stereoscope pictures by cutting off different corners from each, or by placing a dot on one, and a cross on the other, and making sure that the whole picture, or both dot and cross are seen.

When binocular fusion is well advanced, the distance between the pictures and the lenses may be varied. If the pictures be wider than the pupillary distance of the patient, variation of the distance from the eye will cause slight variations in the actual amount of convergence. If the width between corresponding points of the pictures equals the pupillary distance, pushing them nearer to or farther from the lenses will make no difference in the convergence required. But it will alter the necessary state of accommodation; and a change of relative accommodation is an exercise of very much the same value as change in relative convergence.

The Reading Bar.—One other practical device remains to be noticed—the reading bar. It provides a highly specialized exercise, depending for its value on the fact that our printing arranges words in long lines, each of which must be followed throughout its whole extent in rapid succession. The bar excludes the habitually seeing eye from seeing some portion of each line, compelling the use of the deviating eye for that part of the time. It has the advantage that it can be employed while pursuing a customary occupation. This is a great advantage within its somewhat narrow sphere of usefulness. I have found it of most value in the preparation of older patients for operation; and in establishing a new co-ordination of eye movements after operation.

Increase in Population in France.—The latest census shows that France has gained 412,364 inhabitants during the last four years. The *Sem. Méd.* adds that this is three times the gain of the preceding four years.

THE STRABISMUS OPERATION.*

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Though a somewhat hackneyed subject, the last word has not yet been spoken upon the strabismus operation, nor will it be for many years to come. While without doubt it is true that excellent results may be obtained in the correction of strabismus by a variety of operative procedures, it is also true, as I think every operator present will acknowledge, that there is a diversity in the results of this operation which plainly indicates that perfection has not yet been obtained. I offer no apology for occupying your time with the consideration of a department of ophthalmic surgery on which such diverse opinions are expressed as we may find in the text-books and articles which appear from time to time on the various phases of this subject.

An analysis of the opinions expressed by a limited number of operators of national and even international reputation will show a divergence of views not only as to details, but on such important points as the following: 1, as to the degree of deviation and the character of the cases which they consider proper subjects for operation; 2, as to the age at which an operation should be performed; 3, as to the choice between tenotomy and advancement; 4, as to the amount of deviation that may be safely corrected by tenotomy; 5, as to whether the operation should be confined to the eye which most constantly deviates or its effect distributed between the two eyes so as to preserve the ocular balance; 6, as to full correction of the error in the first operation or delaying a portion of the operative procedure until the effect of the first division may be properly estimated; 7, as to the practicability of partial, or graduated tenotomy or advancement; 8, as to the value of orthoptic exercises before and after operation; 9, as to the value of tests made with prisms and otherwise during the progress of an operation; 10, as to the importance of the subconjunctival method of Snellen and of suturing the conjunctival wound; 11, as to the necessity of bandaging one or both eyes after an operation for tenotomy or advancement; 12, as to the relative importance of operations upon the superior and inferior recti muscles in cases of hyperphoria and hypertrophia associated with lateral deviations, and 13, as to the most approved form of operation for tenotomy and advancement.

I fully realize that different methods will always have their advocates and it is no part of my intention to undertake to harmonize the views of the members of this Section, but in view of the divergence of theories and methods of procedure which now prevail, is it not proper that each of us should study the plan pursued by his associates and assure himself that he has not been committing that common error of successful surgeons of being too well satisfied with his own methods and results? I am persuaded that when the last word has been spoken on this subject we will have greater consistency in methods and far greater uniformity in results than now prevail.

Dr. Herman Knapp in his excellent chapter on operations,[1] makes the following statements: "1. After a tenotomy of the internal rectus the primary effect is apt to diminish for several days, but then, as a rule, it increases gradually for weeks, months and years. In

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

1. Norris and Oliver's "System of Diseases of the Eye," vol. iii.

many cases we rejoice at having obtained a perfect cosmetic result, but when we see our patient again in later years his eyes diverge more or less. 2. The immediate effect of a tenotomy of the external rectus increases the next three or four days, then it diminishes very gradually, so that the ultimate result is frequently not more than two or three millimeters, and at times it disappears altogether."

An over-correction after division of the internal, and an under-correction after division of the external rectus is then of not infrequent occurrence after a tenotomy even when performed by so careful an operator as Dr. Knapp, and I think every operator of wide experience will agree with me that, in spite of the most painstaking observance of every rule which prudence may dictate, in the correction of high degrees of convergence, we are often disappointed in our final results.

In contrast with this note the following statement made by Landolt,[2] who for a number of years past has been advocating the substitution of advancement for tenotomy as a routine measure: "In twenty years' practice we have never had an over-correction after advancement, which is frequent after tenotomy. We have never produced a strabismus, which can hardly be avoided after tenotomy, at least in the secondary position. The advancement has also the cosmetic advantage of not causing annoying protrusion of the eyeball, sinking of the caruncle, or exposure of the sclera."

If one of these plans of procedure is correct the other is certainly questionable, and yet there are many advocates of each. By far the majority seem, at least in their practice, to still prefer tenotomy when it can be made to serve their present purpose. It is more in keeping with our traditions and is less tedious; but it is a significant fact that, while even approximately perfect equilibrium of the ocular muscles after well-marked strabismus is, as we all realize, most difficult of attainment, such a result is claimed in many instances by those who advocate Landolt's method, and are willing to take infinite pains to obtain it.

A few years ago there was, as will be remembered, a strong reaction against those extremists who claimed to be able to work miracles in all nervous diseases by slight-of-hand performances upon the ocular muscles. This reaction was timely and proper, but we should not be led so far in the direction of conservatism as to prevent our accepting and adopting every improvement in method and technique which has a rational basis.

A careful review of the subject and what personal experience I have had in this direction, leads me to make the prediction that within a few years many of those who have heretofore depended mainly upon tenotomy for the correction of strabismus will find themselves adopting the more tedious but far more conservative operation of advancement, or resection almost as a routine practice.

While, for the purposes of this paper, it is not practicable to consider fully the anatomy of the ocular muscles, there are a few practical points which it will be well to review before passing on to the subject of operations. The oculo-orbital fascia, in the descriptions of which great variations are found, should be dealt with as a mass of more or less condensed connective-tissue fibers, differentiated into a dense membrane in certain portions, while in others it is made up of somewhat loose connective tissue joining the conjunctiva to the eyeball and to the sheaths of the tendons of the recti muscles and also uniting the sheaths of these muscles somewhat loosely to the sclera. The lateral or restraining fibers connect the sheaths of the muscles with the more condensed portions known as Tenon's capsule. The effect of this anatomical arrangement is that a division of the tendon at its insertion, provided the lateral fibers remain intact, results in a limited retraction of the tendon and its secondary insertion at a point only a short distance posterior to its former point of union with the sclera. The passing of a hook beneath the tendon and breaking up of the loose fibers which unite its sheath with the sclera, adds very little to this retraction. The division of the fibers which unite the sheath of the muscle with the conjunctiva, adds more to the power of retraction, but if we wish to obtain free retraction of the muscle we must divide the lateral fibers connecting it with the more dense portions of Tenon's capsule which lies between the muscles, or what in fact amounts to the same thing, separate this capsule from the sclera above and below the point of insertion of the tendon. The foundation of all theories which deal with the subject of tenotomy and advancement lies in the relations of the tendons and muscles to this oculo-orbital fascia, or to be more exact, that portion of it which is termed Tenon's capsule. The tendons of the recti muscles are inserted at points varying somewhat in distance from the margin of the cornea: The internal rectus at a distance of 5.5 mm., the inferior 6.5 mm., the external 6.9 mm., and the superior 7.7 mm. The widths of the tendons also differ in the following order: internal 10.3 mm., inferior 9.8 mm., external 9.2 mm., superior 10.6 mm.—Fuchs. In length the tendon of the internal is 8.8 mm., the inferior 5.5 mm., the external 3.7 mm., and the superior 5.8 mm.—Merkel.

It is well in operating to remember also the peculiar insertion of the superior rectus muscle. It is quite wide, and at the nasal side is inserted much farther forward than at the temporal. It is so set that the bulk of its insertion is on the outer half of the eyeball. The inferior rectus on the other hand is so inserted that its temporal border is slightly in advance of the nasal. The measurement (3.7 mm.) given above by Merkel as the average length of the tendon of the external rectus muscle, does not conform to the impression I have obtained in the advancements and tenotomies which I have made.

In a number of resections of this tendon I have removed more than 3.7 mm., and obtained excellent results. It is possible that in doing so I may have included some of the muscular fibers.

For our purpose the various operations resorted to for the correction of strabismus may be classified under the following heads:

Tenotomy.—1. Partial division of the tendon (graduated tenotomy). 2. Complete division of the tendon. 3. Complete division of the tendon, with division of the lateral fibers of the capsule.

Advancement.—1. Partial advancement of the tendon (graduated advancement). 2. Complete advancement of the tendon. 3. Complete advancement of the tendon with advancement of the capsule. 4. Resection of the tendon. 5. Resection of the tendon and capsule.

In all of our operations for the correction of strabismus, the following general rule should be observed and exceptions to it are seldom justifiable: Whether we operate by tenotomy or adopt the more conservative method of advancement, the effect of the operation must be so distributed between the various muscles as to preserve the control of the eye in all ordinary movements.

2. Archives of Ophthalmology, vol. xxvi. p. 8.

A simple tenotomy will, according to Fuchs, correct about 3 or 4 mm. of convergence. In divergent strabismus, he has found that a simple tenotomy will not correct more than 2 mm. as an average. In view of the effects which we have all obtained in some of our earlier operations, this rule seems extremely conservative, but if we confine our division to the tendon at its point of insertion and avoid division of its lateral attachments, I do not believe it is safe to expect a much greater result than he has indicated, and in my own operations where I have depended upon tenotomy, I have seldom gone far beyond this limit without having reason to regret it.

Many rules have been laid down to enable the operator to avoid the excessive effects which often follow as a late result of tenotomy, but in difficult cases it not infrequently happens that, in order to obtain even a moderate degree of correction, these rules are violated. When more than 3 mm. of convergence, or 2 mm. of divergence is present, if tenotomy is relied upon, the effect should be divided between the two eyes rather than by operating upon one alone to obtain a correction at the expense of a free division of the lateral attachments.

Knapp lays down the following rules to govern the operator in tenotomy: "A. As a rule no squint operation should weaken the muscle beyond its physiological limit of power. B. After a tenotomy of the internal rectus, the result of the immediate examination should be as follows: 1. In adduction the medial margin of the cornea should readily reach the caruncle. 2. The near point of binocular fixation should not be less than 5 centimeters—two and one-half inches. 3. The eyeball should not protrude. 4. There should be some convergence left."

If these rules are strictly adhered to and the lateral fibers are left undisturbed, we may undoubtedly avoid an—immediate—over-correction, but the weak point in such a system of rules is that, if strictly adhered to, only a slight correction of 3 or 4 mm. is obtained and, even if the operation is divided between the two eyes, a careful examination of the field of fixation will almost certainly reveal some limitation of motion.

How often it has happened in the experience of each of us that after such a tenotomy the immediate result has been not only insufficient but almost nil and to save ourselves and the patient from the chagrin of a sense of failure, we have divided first a few and then a few more of the lateral fibers and then wondered whether we would not at some future time discover that we had slightly over-corrected the error.

Now it is a fact that even the setting back of the tendon alone, if it is sufficient to give us 3 or 4 mm. of correction must, to a limited degree, restrict motion and violate the spirit of the first of these general rules.

The very essence of such an operation consists in the fact that the control which the muscle exercises over the eye is made less effective, whereas it should be our object not to lessen but to increase this control. The movement of an eye, in a given direction, depends not alone upon the contraction of the single muscle which turns it in that direction but also, and only to a less degree, upon the co-ordinated movement of its antagonist, while both of these must again act in harmony with the corresponding muscles of the other eye. In any squint not dependent upon paralysis or traumatism, surgical or otherwise, of one of the muscles the squinting eye, while having an improper direction, still moves in harmony with its fellow and its excursions are usually of the same amplitude. If we wish to preserve the harmonious relation of the four muscles which take part in this somewhat complicated act of co-ordination is it reasonable to begin by an avowed attempt to cripple one of them?

It is a mistake, as Landolt has pointed out, to suppose that the antagonist gains in strength what the tenotomized muscle loses and, even if it did, it is not proven that the muscle we divide has more strength or more power to move the eye than it should have. It is a question not of power but of direction with which we are dealing and the choice between tenotomy and advancement reduces itself to this: Is it better that the group of four muscles acting to produce harmonious movements of the two eyes, should have the aggregate of control which they exercise over the eyes increased by giving one of its members a more advantageous attachment, or diminished by setting another back and thereby lessening its control?

In the latter case we gain the proper direction, but in so doing we make a distinct sacrifice of a portion of the control which the group exercised over the eye, while in the former we also gain the proper direction but increase the aggregate of control by giving to one of the members an advantage in moving the eye which may be exercised or not as circumstances may demand.

I do not wish to be understood as advocating so radical a change in the accepted method of dealing with squint as the entire substitution of advancement for tenotomy, though that would seem to be the logical outcome of the above reasoning.

Advancement is so tedious and tenotomy so simple an operation that the latter will probably always be preferred in slight deviations, but whenever a deviation exceeds 5 mm. it is proper to raise the question whether an advancement should not be substituted for tenotomy: and whenever in any case of tenotomy it is found that the proper effect can not be produced without considerable division of the lateral attachments of the tendons an advancement should be substituted or should supplement the tenotomy.

As to the best method of performing a tenotomy or advancement, it is my opinion that equally good results may be obtained in a variety of ways, provided certain general principles are observed, and it is with general principles that we are here dealing rather than with the details of special methods of operating.
these principles the most important relates to the division of the effect between the various muscles and the preservation of as complete control of the eye by each muscle as may be practicable. If the deviation is slight and a tenotomy is decided upon I greatly prefer the method of Snellen as modified by Stevens—a sub-conjunctival operation—buttonholing the conjunctiva and tendon and cutting both ways. But in those relatively frequent cases in which, after the first incision, there is well-marked hemorrhage beneath the conjunctiva, I at once convert the small incision into a large open wound in order to avoid a troublesome sub-conjunctival thrombus.

Careful measurements, linear, angular and by prisms, before, during and after the operation, I consider of the utmost importance, but in cases in which there is marked amblyopia we must judge mainly by inspection and for this purpose there is a great advantage in operating in a dental or other reclining chair and in having the patient in the upright position while testing so that the operator may stand off at a distance of eight or ten feet

and observe the movements of the eyes. An examination made at the near point is often very misleading. If the operation is divided between the various muscles of the affected group and, in case the deviation is marked, is corrected mainly by a well-performed advancement or resection, measurements are of great value, but in the old method of operating in which the tendon was divided at one cut and what deviation remained was corrected by free division of the lateral attachments, the eye became so unstable that measurements made at the time of operation afforded very little information as to what the final position of the eyes would be.

It is not infrequently the case after a carefully performed operation for convergent strabismus as a result of which the eyes occupy approximately the proper position, to have, owing to the presence of what is sometimes termed a false macula, a well-marked heteronymous diplopia with the images widely separated.

This is probably due to what Dr. Berens has well termed "neuro-muscular memory," and should not disconcert us as it seldom causes serious disturbance, though it may make it more difficult to judge of the accuracy of the result obtained. We are, in fact, forced in such cases to depend entirely upon objective tests. It must, of course, be borne in mind that the more extensive the traumatism inflicted during the operation the more unreliable are the results of measurements made immediately after operating, and this is an additional argument in favor of advancement in its various forms, as by this means we seldom have an over-correction and by allowing a portion of the deviation to remain, we may at a subsequent operation gauge the result accurately in a supplemental tenotomy, correcting the slight remaining defect.

In tenotomy we should, so far as may be practicable, let the capsular attachments alone if we wish to avoid crippling the combined movements of the eyes, but in advancement or resection it is desirable, in our attempts to increase the control exercised by a given muscle, to bring forward or shorten the capsule with the tendon. In so doing we gain another advantage which is of great importance, in obtaining a firm hold for our sutures. In fact, in the resections which I have performed of late, I have made free use of sutures, practically quilting the tendon and capsule together, and have thus avoided a very annoying feature of some of my former advancements in which the effect would be in part lost within a few days owing to the insufficient and uncertain hold obtained by sutures introduced in the usual manner in the tendon alone.

While it has been greatly improved within a few years, there is room for still greater improvement in the operation for advancement. Before the days of asepsis advancement was indeed a formidable operation, often being followed by decided reaction, and even as now practiced when we compare it with tenotomy it is not strange that a beginner in ophthalmic surgery should, when in doubt, prefer the latter. But the question of a little more or less annoying detail in the operation should not be allowed to weigh against any advantage we may gain for our patients, and advancement should be unhesitatingly performed when it is apparent that it will produce a better final result.

The old operation, by which the tendon is split in its center and one portion drawn forward above and the other below the cornea, while certainly effective, has seemed to the writer unnecessarily complicated. Any method which, with a freely exposed field of operation, succeeds in securing and evenly mooring the tendon and capsule of Tenon to the sclera at a point well in advance of its former point of attachment will accomplish the desired end and, in cases of less marked deviation, a method which resects a sufficient amount of the tendon and capsule and firmly sutures the distal to the proximal portion will also yield an excellent result.

Because of the thorough manner in which the field of operation is exposed, probably no method is a greater favorite with those who have tried it than that devised by Dr. Savage of Nashville, by which an L-shaped primary incision is made, one side of which is parallel with the line of insertion, and the other parallel with one border of the tendon and the flap turned well back and held out of the way by a suture while the tendon is advanced or resected.

The method of capsular advancement advocated by Dr. Fox of Philadelphia for cases in which there is extreme deviation certainly has the advantage of simplicity and the results he reported to this Section last year were excellent, but I have been thus far deterred from adopting it owing to the amount of traumatism inflicted and a feeling that I would prefer to see the tissue with which I am dealing in an operation of such delicacy.

With the exception of those cases in which the degree of deviation is excessive, resection affords excellent results and for several years I have been endeavoring to discover some method by which I could simplify the ordinary procedure and substitute it, so far as is practicable, for tenotomy. I found that by introducing a tenotomy hook in the ordinary manner and then seizing the fold of tendon beneath the hook with Prince's advancement forceps, I could gauge the amount of tendon removed by the point at which the forceps' blades were applied and suture it thoroughly and evenly at my leisure.

This led me to devise the small double hook which is figured in the report of this Section for last year and which in a number of instances has since served an excellent purpose.

After making a vertical conjunctival incision as long as, and one or two millimeters behind the insertion of the tendon, I make in Tenon's capsule two short cuts with the scissors parallel with and a short distance above and below the tendon and extending from its point of insertion backward to a distance equal to the amount of shortening desired. The central blade of the hook is now inserted below and made to include the tendon and that portion of Tenon's capsule which covers it and by turning the milled head this central hook with the tendon and overlying capsule is drawn up between the other two blades to such a distance as may be desired. Interwoven sutures are then inserted, firmly stitching the two surfaces of the folded tendon together, after which the hook is removed, the apex of the fold cut away with the scissors and the conjunctival wound closed with fine silk sutures.

A comparison of the writings of various acknowledged authorities on strabismus reveals in the after-treatment the same diversity of opinion as is observed in other departments of this subject. While Dr. Duane of New York prefers after tenotomy to keep the eyes open and practice orthoptic exercises before the wound is firmly united in order to obtain binocular fixation, Dr. Landolt, on the other hand, keeps both eyes bandaged during the healing process, often insisting upon the patient remaining in bed for six days. Between these extremes we may find every variety of directions given to patients as to

their conduct after operation, which only proves that, as in other departments of surgery, fair results may be obtained in a variety of ways. And, while I have obtained good results by the course I have pursued, which may be said to be midway between these extremes, I am free to admit that it would give me the greatest pleasure to be able to observe minutely the progress from day to day of the patients treated by both the methods described, as certainly Dr. Landolt's reports indicate a higher standard of final results than is claimed by many operators, and under such circumstances it is becoming that we should at least hold our minds open to conviction.

In conclusion, I would state as my conviction that, in the correction of strabismus, advancement, or resection combined with a very limited tenotomy, should, as a rule, be substituted for simple tenotomy.

ARTIFICIALLY PREPARED FOODS, THEIR NUTRITIVE VALUE AND DIETETIC APPLICATION.

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DETROIT, MICH.

The history of the scientific production of artificially prepared foods, like that of the subjects of digestion, nutrition and metabolism, is nothing more than a summary of the achievements of the experimental sciences relating to general biology and the science of medicine.

Investigation of the various empiric dietetic systems, from the time of Aristotle up to the end of the eighteenth and the beginning of the nineteenth century, shows that, while various grain decoctions, ptisan, almond, egg and sugar-water and probably a few other dietetic preparations were used for invalids, no preparation existed which might lay claim to being an artificially prepared food in the sense that the term is used to-day. Far reaching and revolutionary were the discoveries which ushered in the birth of the exact knowledge of nutrition and dietetics![1] On the one hand we had the discovery of oxygen by Priestly and Scheele in 1774, and the subsequent development of the theory of oxidation by Lavoisier in 1780; on the other hand was the investigation of Spallanzani and Reaumer, in 1752, on the subject of digestion.

Let us here rapidly sketch the outlines of the growth of our subject and review the fundamental principles by which the nutritive value of foods may be judged and the nutritive demands of the human individual adjusted. In this manner we shall be able to appreciate the status of our subject and to determine the applicability of artificially prepared foods to the diet of man in health and disease.

Although from the time when Lavoisier defined the processes of oxidation, up to, and even beyond, the first quarter of the nineteenth century, considerable work had been done on the subject of nutrition, little was really accomplished until the theories of Liebig, the greatest chemist of that century, were shown to be incorrect. As late as 1842 very little was known of the nutritive and physiologic significance of albumin, fat and carbohydrates. It was during this period that Liebig believed that the destruction of albumin served the purpose of furnishing the organism with energy for the execution of mechanical work, while the oxidation of fats and carbohydrates was supposed to furnish heat to the body and protect the albumin from unnecessary oxidation. It was very soon shown, however, that this explanation was incorrect, for experimental evidence was brought forward which proved that the increased ingestion of albumin by an animal at rest was accompanied by a corresponding increase of nitrogen excretion. Important as was the demonstration of this fact, its exact significance was unfortunately misconstrued, and, in consequence, gave rise to much controversy and years of laborious experimentation. It was now taught that the minimum quantity of albumin necessary to the animal organism was expressed by the quantity of albumin disintegrated during inanition. Finally, during the years 1857-60, Bischoff, Voit and Pettenkofer published the results of their experimental work, and it was at this time really that the cornerstone of nutrition, as an exact science, was laid.

For the continued normal expressions of the functions of an organism, the ingestion of a certain and definite quantity of food is requisite. This general biologic law manifests itself, irrespective of theoretical speculation or scientific observation, in the expression of the instinctive impulse which guides every organic entity in its selection of the requisite quantity and quality of food. However, not until Helmholtz and Meyer formulated the theory of the conservation of energy, did we fully appreciate the philosophy of this law.

Every organic function is accompanied by the production of heat, which finds its origin in the oxidation of definite chemical combinations, the absorbed and assimilated products resulting from the digestion of substances termed foodstuffs. The amount of heat which an organism gives off is equivalent to the calorimetric value of the food which it requires in a given period of time. The food which the system requires is represented by the nutrient principles, albumin, carbohydrates and fat, each one of which may substitute or replace the other, but only, as we shall point out later, within the limit of their minimum nutritive or physiologic quantity. Irrespective of the relative proportions of each one of these food principles, the total heat requirement of the organism remains the same.

Every foodstuff possesses a certain caloric value, which is expressed by the term caloric, and each represents that quantity of heat necessary to raise one kilogram of water from 0 to 1 C. It is customary to express the total quantity of nutriment necessary to maintain the nutritive demands of an organism by the caloric value of the food introduced into the system. Instead of simply stating that the system requires so much each of fat, albumin and carbohydrates, we express it by the number of calories which the system requires in a given period of time under definite circumstances, presupposing always that these three foodstuffs be contained in certain proportions and in definite relationship to each other. Although this is a very convenient method and the one now generally followed, it is not strictly logical, because it neither embraces the valuation of the nutriment required to rebuild the wasted tissue of the body, nor, in the organism at rest, the amount of energy expended in the carrying on of circulation, heart beat, respiration, gastro-intestinal and glandular activity.

Expressing, therefore, only partly the metabolic significance of a given food, the caloric method is, nevertheless, the most convenient we have at our disposal at the present time. This method is founded upon the fact, to

1. Breisacher: The Principles of Metabolism and Nutrition.

which we have already alluded, that the amount of heat given off by an organism is practically equivalent to the calorimetric value of the food which has been introduced into it. When fat, albumin, carbohydrates or gelatin is subjected to calorimetric estimation it is found that each has a definite caloric value, thus one gram each of these foods equals the following: Albumin, 5.7 calories; gelatin, 5.5; fat, 9.3; starch, 4.1; cane sugar, 4.0, and glucose, 3.7 calories.

The method of calorimetric estimation of foodstuffs consists in introducing a given quantity of food material into a specially constructed bomb, which is filled with oxygen under a pressure of from fifteen to twenty-five atmospheres. After the bomb has been submerged in water, the substance under examination is ignited by means of electricity and an estimation made of the heat imparted to the water.

It has been shown that fats and carbohydrates when introduced into the system are oxidized into carbonic acid gas and water, and further, that when subjected to the action of a calorimeter they undergo a like change. With albumins, however, the matter is somewhat more complicated, for, while they are oxidized into nitrogen, carbonic acid gas, water and a small quantity of sulphuric acid in the calorimeter, in the animal organism they are split up into urea, uric acid, kreatin, kreatinin, hippuric acid, etc. To determine, therefore, the caloric value of albumin to the system it is necessary to subtract the caloric value of these organic oxidation products.

By this method of calculation we find that the physiologic nutritive value of albumin is 4.1, compared with its calorimetric value of 5.7. The physiologic heat or caloric value of fat and carbohydrates is identical with the calorimetric value. The physiologic or nutritive caloric value, therefore, of one gram of fat is 9.3, of one gram of carbohydrates, 4.1, and of one gram of albumin it is also 4.1. Fat, albumin and carbohydrates form the three chief nutrient principles which enter into the diet of a human individual. The necessary quantity of each one of these separate nutrient principles required by the system, and the relationship of one to the other, is dependent upon varying circumstances. The relationship of fat, carbohydrates and albumin in the diet of an infant is not identical with that in the diet of an adult, neither is the required relative quantity of these nutrient principles, estimated per kilogram body weight, the same in the mature as in the immature organism. Further, the demands of a weakly developed inactive organism are different from those of a laborer or an athlete. In accordance with the law of substitution, each nutrient principle may be substituted for the other, within its minimum physiologic limit, as recent experiments have conclusively shown.[2]

A thorough comprehension of these laws, which I shall define more particularly later on, is absolutely necessary in the rational feeding of both healthy individuals and invalids. The fundamental principles, upon which our entire knowledge of the subject of nutrition is founded, are the result of experiments made upon human individuals and animals. Among the most important are those experiments made upon fasting individuals. When food is absolutely withheld from a man weighing about 70 kilograms—154 pounds—for a period lasting from twenty-four hours to a number of weeks, it is found that the system loses from 50 to 80 grams of albumin and from 200 to 250 grams of fat, each day. In a single twenty-four-hour period the loss of water is from 800 to 1000 c. cm.; in longer periods, the subject of the experiment is usually given a sufficient amount of water to cover this loss.

The execution of a certain amount of mechanical labor during a period of fasting increases the fat consumption and water exhalation while the albumin waste remains the same as in the fasting individual at rest. It has further been shown that persons provided with an abundant supply of adipose tissue withstand the influence of fasting more effectually than lean individuals, for the reason that in the former the adipose tissue furnishes the major percentage of caloric demand of the organism, thus protecting the albumin supply from excessive waste.

The size or bulk of an individual also determines the total fat and albumin consumption of the system, and it has been demonstrated that, while the absolute quantity of albumin and fat may be greater in the larger individual than in the smaller one, the relative quantity of both of these foodstuffs, estimated per kilogram body weight, is greatly in excess in the smaller or less bulky individual, than in the larger one. This law is equally invariable, irrespective of whether the food consumption refers to a fasting or normally fed individual, or whether it be applied to an infant or an abnormally large or small adult. The nutritive demand per kilogram body weight, therefore, is in an inverse proportion to the size or bulk of the organism.

If an animal from which food has been withheld for a certain period of time, i. e., a number of days or weeks, be fed meat it will be found that the nitrogen excretion, as expressed by the nitrogen in the urine, is increased, and, with each additional increase of albumin (meat) to the diet, the excretion of nitrogen is increased proportionately. This increase of nitrogen excretion continues until sufficient amount of albumin (meat) has been added to the diet to effect a nitrogen balance, that is, a nutritive condition in which the nitrogen income is equal to the nitrogen outgo. It was taught by Voit that the quantity of albumin necessary to cover the albumin loss of the system was two and one-half times greater than the loss resulting during a period of fasting. This, however, is not strictly correct, as the writer and several other investigators showed in a series of nutrition experiments.[3]

In addition to the loss of albumin, the fasting individual suffers a distinct loss of fat from his organism, and it has been found that, by insuring the absorption of fat equivalent to the loss of adipose tissue during fasting, the fat consumption may be checked while the albumin destruction remains unchanged. It follows from this that the ingestion of fat by a fasting animal may prolong life, but not prevent ultimate death from starvation. The exclusive feeding of carbohydrates, like that of fat, does not prevent the occurrence of death by starvation, although they protect the system from albumin destruction more effectually than fat.

If a definite quantity of fat and albumin is given to an individual who has been subjected to a period of fasting, it will be noticed that the loss of organic or body albumin is arrested. This does not occur when simply fat or carbohydrates are given and which can not be practically achieved in the human being by an exclusively albumin diet. Fat, whether existing in the system as adipose tissue or introduced into the system as food, protects the organic albumin from undue waste.

2. Breisacher: (*a*). Eiweissbedarf beim Menschen: (*b*). Principles of Metabolism and Nutrition.

3. Breisacher: Eiweissbedarf beim Menschen.

When along with a requisite amount of albumin, more fat is introduced into the system than the total caloric demand requires, an increase in the supply of adipose tissue is achieved. When carbohydrates, in the form of sugar, starch or dextrin, are added to a diet composed simply of albumin, the destruction of the latter is lessened, and, as in the case of fat and albumin, if a sufficient quantity of carbohydrates be added to a requisite amount of albumin, the loss of organic albumin is arrested. Likewise, when carbohydrates are added to a combined fat and albumin diet, the total consumption of both of the latter is lessened. The effect, however, of like quantities each of fats and carbohydrates, in retarding albumin consumption, is not identical. Notwithstanding the fact that a gram of fat represents a caloric value, which is 5.2 greater than a gram of carbohydrates, it has less influence in checking albumin waste than the latter. As we have already pointed out, when an excess of fat is fed to an individual, a deposit of fat, in the form of adipose tissue, is effected; when an excess of carbohydrates is fed, an elaboration of fat, with a resulting increase of adipose tissue, takes place.

Gelatin is a nitrogenous substance resembling albumin in its atomic arrangement, in its conversion into peptone by the gastric and pancreatic secretions, and in its final oxidation into urea. When gelatin is added to an albumin diet, it has an influence in lessening organic albumin and fat dissipation similar to that possessed by both fat and carbohydrates. It is of interest to note that while gelatin has a more pronounced effect in lessening organic albumin destruction than both fats and carbohydrates, in reducing the organic fat dissipation it is less effectual than either fat or carbohydrates. Despite the chemical resemblance of gelatin to albumin it can not replace that substance, nor are we acquainted with any substance which can substitute the minimum physiologic nutritive quantity of albumin necessary to an animal organism.

These then are, in brief, the primary fundamental principles by which we must be guided in nourishing individuals, both in health and in disease. These principles emphasize the fact that of the three chief nutrients—albumin, fat and carbohydrates, to which a fourth, gelatin, may be added—albumin is the substance which requires the foremost consideration in the selection of a diet. This is true because it can not be replaced by any other known nutrient, irrespective of whether it belongs to the nitrogenous or non-nitrogenous group of chemicals or foodstuffs.

These principles further teach us that one or preferably both of the non-nitrogenous food principles, carbohydrates and fats, should be added to an albumin diet for the maintenance of the healthy functions of the organism. To these two non-nitrogenous nutrients we may add gelatin, which, as we have seen, has an influence similar to that of both fat and carbohydrates.

Let us here consider the exact quantity in which each one of these nutrient principles must be contained in the daily diet, and the circumstances which determine a variation in the quantitative demands of the system upon these substances. The nutritive demands of the human organism, from the period of infancy to that of adolescence and from the latter to that of maturity and decline, are subject to varying fluctuations. Again, different degrees of bodily activity, both physical and psychical, during sleep and the waking state, thermic and climatic influences, body weight and size, and finally various pathologic conditions, all make definite nutritive demands upon the system. For instance, in infancy there is more nutriment required, estimated per kilogram body weight, than during the period of maturity; the body weight and size has an influence, as we have already pointed out, in so far that a smaller organism requires relatively more nutriment than a larger one; during sleep or absolute rest, compared with the waking state, the albumin metabolism remains unchanged, while the fat and carbohydrate consumption is reduced; bodily exercise is accompanied by an increased carbohydrate and fat consumption, while the albumin metabolism remains uninfluenced. Heat and cold affect the organism differently—increased body temperature raises the total carbohydrate and fat consumption, while the reduction of external temperature increases, and an increase of external temperature reduces, both the fat and carbohydrate metabolism.

Finally, in pathologic conditions, such as fever, dyspnea, anemia, diabetes, Bright's disease, icterus uric acid diathesis, etc., various nutritive abnormalities are discernible, and it behooves us at this point to determine the normal nutritive mean of the organism and its practical application to pathologic conditions. In this way we shall be enabled to logically appreciate the dietetic demands in pathologic conditions and estimate the applicability of artificially digested foods to the dietary of invalids. We indicated in our foregoing remarks that the preferable diet for a normal individual is one consisting of certain quantities of albumin, fat and carbohydrates.

Determined by methods which consisted in estimating the nitrogen and carbon output in individuals subsisting upon an ordinary indefinite diet, it was originally estimated that the average individual of 70 kilograms—154 pounds—body weight, at rest and during moderate and severe physical labor requires for every twenty-four hours, 100 to 140 grams of albumin, 50 to 100 grams of fat and 400 to 500 grams of carbohydrates. Practical observation has shown that some individuals subsist upon as little as 75 to 80 grams of albumin in twenty-four hours, and experimentally these figures can be materially reduced for a considerable length of time, as the writer showed in a series of experiments covering a period of 33 days.[3] In ordinary cases, however, unless prompted by some particular reason to materially reduce the albumin quantity, it will be preferable to adhere to the 90 to 100 grams of albumin ration for the average individual at rest or during light exercise. Figured in calories, the average individual requires during absolute rest from 30 to 34 calories per kilogram body weight, during light exercise 34 to 40, for a medium amount of work 40 to 45, and during severe labor 45 to 60 per kilogram body weight, for every twenty-four hours.

A diet consisting of 100 grams of albumin, 50 grams of fat and 400 grams of carbohydrates would equal: Albumin 100 grams × 4.1 = 410 calories; fat 50 grams × 9.3 = 465 calories; carbohydrates 400 grams × 4.1 = 1640 calories—a total of 2515 calories. This number of calories represents a sufficient amount of heat or food, for an individual weighing about 74 kilograms, or 163 pounds, at rest. To further elucidate this method of estimation I append a diet list, which I used in a series of experiments made upon myself[2].

Materials.	Quantity	Albumin. (Nitrogen 6.25.)	Carbohydrates.	Fat.
Meat	75 grams	15.40	....	1.33
Rice	200 "	12.36	149.60	0.66
Potatoes	225 "	5.49	45.00	....
Bread	200 "	17.92	120.00	....

Materials.	Quantity		Albumin. (Nitrogen 6.25)	Carbohydrates.	Fat.
Starch	70	grams.	0.28	69.72	....
Eggs	50	"	6.27	....	6.05
Milk	150	"	5.60	7.39	6.75
Sugar	40	"	....	40.00	....
Butter	50	"	0.43	....	....
Beer	700	"	3.67	62.51	....
Tea	760	"	0.58	....	....
			67.80	494.22	60.49

Albumin 67.80 × 4.1 = 277.98 calories; carbohydrates 494.22 × 4.1 = 20.26 calories; fats 60.49 × 9.3 = 562.56 calories—a total of 2866.84 calories.

In the foregoing table the quantity of fat, albumin and carbohydrates is accurately accounted for as is also the total caloric value. The number of heat units, 50.22 per kilogram body weight, is greater than was really necessary, but I chose this number for the reason that I was reducing my albumin ration far below the usual quantity, as I determined by a great number of total nitrogen estimations while on an indefinte diet.

ARTIFICIALLY PREPARED OR PREDIGESTED FOODS.

This brings us then to the actual consideration of the subject of artificially digested foods, and their application to the diet of invalids.

Until 1843, when Graves published his observations upon the diet of fever patients, there existed a dictum in the practice of medicine, which read, that to successfully treat fever patients the diet must needs be reduced to a minimum quantity, and this was successfully accomplished by resorting to cereal water and various broths, which were practically destitute of nutritive value. Following the writings of Graves, in which it was urged that "fevers be fed," the observations of Chossat on the effect of inanition were published, and these two writings then, in conjunction with the experimental observations of Liebig, Voit, Pettenkofer, et al, acted as an incentive to the research upon which our present knowledge of invalid feeding is founded.

Although as early as 1752 Reaumer and Spallanzani discovered the digestive action of gastric juice, it was not until 1824 that Prout discovered the gastric hydrochloric acid, and 1850 that Lehman first applied the term of peptone to the products of albumin digestion. The diastatic action of saliva was not discovered until 1831, although Payen had discovered grain diastase thirty-six years previous to this time.

We have evidence that in ancient times grain water was added to milk to render it more easily digested, and other methods were resorted to in attempting to make food more acceptable to invalids, yet the first important attempt to produce artificially prepared foods was made subsequent to the discoveries which we summarized in the preceding pages. As in other matters pertaining to nutrition, Liebig was a pioneer in the department of artificially prepared foods. Liebig's efforts resulted in the production of these two foods which bear his name: 1, Liebig's extract of beef,[4] known, we dare say, to every civilized race; 2, Liebig's infant soup, which while it is remembered by but few to-day nevertheless deserves the distinction of being the preparation which has given rise to the almost countless numbers of so-called baby foods.

When one considers the havoc which many of these improperly prepared invalid and baby foods have occasioned and the misuse to which numerous really praiseworthy preparations have been subjected, the thought involuntarily arises as to whether it would not perhaps have been far better had the idea of artificially preparing foods for invalids and babies never occurred to any one. The subject of the feeding of artificially prepared foods is in the same deplorable condition as that of nutrition in general, but whereas ignorance and neglect of the subject of nutrition, as applied to feeding the average individual and using the term in a general sense, affects simply healthy or somewhat indisposed individuals, lack of proper knowledge to correctly adjust the administrations of artificially prepared foods affects both the helpless infant and the invalid, who really are in need of proper nourishment.

The medical world is justified in insisting that the manufacturer produce an artificially prepared food which answers the requirements of the nutritive demands of invalids. Further, the manufacturer should be compelled to print upon the package of each preparation of artificially prepared food an exact quantitative and qualitative analysis. This is a duty which the manufacturer owes to the medical world, and the duty which the latter owes to the manufacturer is that it sufficiently comprehend the principles of nutrition, thereby insuring the rational application of reliable preparations to the dietary of invalids. With these points observed it simply remains to be determined, in selecting an artificially prepared food, whether it be palatable to the patient and whether it possess the nutritive and therapeutic value required of it.

In selecting an artificially prepared food for an invalid, we are guided by the same principles of nutrition and metabolism as in feeding an individual in health. An invalid, like a healthy individual, requires a definite quantity each of albumin, fat and carbohydrates to furnish the necessary total caloric demand of the organism. We find a deviation from the above statement in certain pathologic conditions, in which it is necessary to reduce the quantity of one nutrient principle and substitute in its place another. I have reference to the reduction or entire withdrawal of carbohydrates in diabetes, the reduction of albumin in uric acid diathesis, etc. Irrespective of a reduction of particular food principles, the total caloric supply must remain unaltered or at least as little changed as is compatible with the condition of the patient. The dream of the medical profession, from the very dawn of the science of nutrition, has been to prepare an artificially digested food which would relieve the gastro-intestinal tract of its usual digestive labor, but, like the illusion of an elixir of everlasting youth, it has resulted only in idle and futile search.

With the newly acquired knowledge of some of the more pronounced phases of digestion, it is comprehensible why the trend of scientific aim should have led experimenters and clinicians in this direction. The artificial conversion of albumin, fat and carbohydrates into their respective end products has, it is true, been accomplished, but, despite this, the subject of the feeding of artificially digested foods is still far from being solved. While the artificial preparation and dietetic application of fats and carbohydrates have given fairly satisfactory results, the same can not be said of predigested albumin, since peptones and albumoses have proved to be stubborn and unyielding in the extreme.

It is not so many years ago that Voit, along with Bruecke and other celebrated physiologists, supported the old view of Tiedeman and Gmelin, according to which peptone was considered to be a decomposition

4. Proust as early as 1821 produced meat extract, but the credit of the practical manufacturer of it really belongs to Liebig.

product and one that could not be regenerated into albumin. It was thought that the peptone resulting from the digestion of albumin in the gastro-intestinal tract was absorbed by the circulation as such, and was oxidized in the system in a similar manner to carbohydrates and fats, while the albumin necessary to rebuild the wasted tissues of the organism was thought to be dependent upon the absorption of unaltered albumin from the gastro-intestinal tract. Lehman, on the other hand, contended that the conversion of albumin into peptone was a definite physiologic process, which served the purpose of rendering the latter more easily absorbed, to again be converted into albumin in the circulation. The great authority of Bruecke, however, had its influence, and as late as 1877 peptone was looked upon as being a product of decomposition. Further exact experimental research has indeed proved that many albumins, such as serum albumin, egg albumin, acid albumin and globulin, may reach the circulation without first undergoing peptonization, but it has also been demonstrated that the end products of albumin digestion, instead of being products of decomposition, are reconverted into albumin in the mucous membrane of the gastro-intestinal tract to circulate as such in the system, which fact definitely disposes of the older contention of Voit, Brueeke and others. Two or three years previous to this period the first peptone feeding experiments were instituted, and, while the results of several experimenters made it appear very probable that peptone, so-called, did possess nutritive worth, the proof was not sufficiently conclusive to prevent Voit, as late as 1881, from offering experimental data in support of his earlier contention. Up to this time peptone was considered a simple or elementary compound, but the famous investigations of Kuehne and Chittenden and other of his pupils proved that peptone was really a mixture of many different substances and that the so-called peptone—preparations of manufacturers—consisted principally of albumoses, bodies intermediate between albumin and true peptone.

Several experiments instituted with albumoses and pure peptone apparently proved that the former could serve as a substitute for albumin, while peptone usually acted as a violent irritant, causing vomition and diarrhea. Following these preliminary observations it was then finally proved that a number of preparations, consisting chiefly of albumoses, together with varying quantities of true peptone and insoluble albumin, could be substituted for the ordinary unaltered albumin, such as is contained in the daily food ration. Still more convincing and decisive are the experiments made with pure albumoses, which prove that their nutritive worth is equivalent to unaltered albumin, while anti-peptone, resulting from pancreas digestion at least, seems to be destitute of this power of substitution.

With this problem of the nutritive role of peptone and albumoses fairly well decided, the question arises whether artificially digested albumin is really applicable to the diet of invalids. We have seen that true peptones have not given satisfactory results as dietetic agents, and, if we bear in mind the comparatively recent discovery that true peptones are formed only in very small quantities in the stomach and that albumoses very likely represent the digestive products which enter the circulation, it becomes evident why concentrated quantities of peptone disagree with patients in the manner noted above. Dismissing, therefore, the idea of utilizing pure peptone as a dietetic agent, and recognizing the clinical and experimental evidence of the nutritive worth of albumoses, we must further ask ourselves what advantage we hope to obtain and what effect we really produce by the feeding of artificially digested albumin. To begin with, most of these preparations have rather a disagreeable taste, which is a disadvantage in a food, making the addition of either meat extract or some other taste-disguising agent necessary. Further, contrary to the general belief, predigested albumin does not possess a higher nutritive worth than ordinary native albumin.

A claim which is often emphasized by manufacturers and accepted by many as being true, is that artificially digested albumin is more easily absorbed than native albumin. But here also abundant experimental and clinical data disprove these claims. The worth of an artificially digested food like that of an ordinary foodstuff is estimated by the manner and degree in which it is utilized in the gastro-intestinal tract.

Let us begin with the stomach. We are in possession of data which prove that the rate of peptone absorption from the stomach is extremely slow and considerably slower than either alcohol or the different forms of sugar. Further, it has been shown that a solution of artificially digested albumin is not absorbed more rapidly from the stomach than a nutritive equivalent of powdered meat measured in calories. The absorptive maximum of the stomach, as one would expect, bears a relation to its degree of digestive activity, and, beyond this degree, the absorption can not be forced. In regard to the intestinal absorption of artificially digested albumin, our experience is as unsatisfactory as in regard to the gastric absorption. Ellinger, for instance, has shown in some comparative tests with meat and somatose that, when each was separately given in quantities representing 8.92 grams of nitrogen, with meat the excreta contained but one gram of nitrogen, while with somatose they contained 10.6 grams of nitrogen. By still another method, that of estimating the degree of intestinal decomposition as expressed by the urinary sulphuric acids, it has been shown that somatose, a representative artificial albumin product, possesses no advantage as a nutrient over native albumin.

It will be seen, therefore, that the supposition that peptones and albumoses are more readily and more perfectly utilized than native albumin does not bear the test of careful investigation. Closely linked to this idea is the supposition that predigested albumin taxes the digestive functions less severely than unaltered albumin. This, like the other statements, is erroneous, for it is clear that the expenditure of energy lies in the secretion of the digestive fluid, not in the digestion of food after the digestive fluid has been secreted.

One might be led to contend that artificially digested albumin does not excite the glandular activity to the same degree as does native albumin. But here again we are confronted with investigations which show that the gastric acid secretions, as determined by exact chemical analysis, may be as great as and even much greater in the case of albumoses and peptones than in the case of unaltered or native albumin.

The second pronounced expenditure of energy of the digestive organs, that of motility, by which food is propelled onward from the stomach into the intestines, is as great, as we have already seen, in the case of predigested as in the case of native albumin. In particular pathologic conditions of the gastro-intestinal tract the results of the application of artificially digested albumin are not materially different from those which have been already mentioned. If we group the distinctive chemical fea-

tures of the stomach cases, we find that in one class we may have an absolute absence of acid, and in another class a normal or excessive quantity of acid. Between these two extremes we find cases with varying degrees of acidity, which we need not here define more particularly. In addition to the acidity of the stomach, the motility is of the greatest importance, for it is this muscular mechanism which determines the onward propulsion of food from the stomach into the intestines. Irrespective of the acid condition of the stomach the motility may be abnormally accelerated, slowed or entirely inhibited. It is clear that in cases of absolute cessation of motility, resulting, for instance, from a dilatation, dislocation or a pyloric stenosis, it is as useless to introduce artificially digested albumin into the stomach as it is to resort to native albumin. So also, when the motility and acidity are normal it is unnecessary to resort to artificially digested albumin. Even when the hydrochloric acid and peptone digestion is much reduced, or entirely absent, as in acute and chronic fevers, true gastritis, etc., the unaltered albumins may be perfectly utilized, as is clinically seen every day, and which both the clinical and experimental cases of total gastric extirpation have conclusively proved. It may be remarked, however, that certain particularly selected cases of an acidity with normal motility do not offer any direct objection to the use of artificially digested albumin, provided it does not prove too irritating to the gastro-intestinal canal.

Large quantities of many of the artificially digested albumins usually act as a laxative, and it is this action which recommends its moderate use in some cases or absolutely condemns its use in others. The great majority of artificially digested albumins are to be looked upon as gastro-intestinal stimulants, rather than nutrients which can be substituted for the maximum requisite quantity of albumin for any great period of time. Peptones and albumoses may be temporarily employed alone or as adjuncts to other foods in cases where there exists either a repugnance to ordinary food, where the mastication of food is difficult or impossible, or where there exists an incomplete mechanical obstruction in the esophagus, and where it is necessary to relieve the stomach entirely from mechanical irritation. In gastric ulcer, hyperacidity and in all cases where an over-production of the gastric secretion and hydrochloric acid is to be avoided, irrespective of the condition of motility, the artificial albumin preparations are not to be used. The other contraindications have already been referred to and need not be gone over again.

The subject of the feeding of artificially prepared fats and carbohydrates, while not exactly identical with that of predigested albumin, is nevertheless very similar to it, and many of the difficulties encountered in connection with the predigested albumins are also common to both the carbohydrates and fats. Various attempts have been made to increase the ordinary rate of fat absorption by mixing it with foodstuffs and chemicals and by emulsifying it in various ways. It has been found, however, that when the motility of the stomach is unimpaired and the pancreatic and biliary secretions are normal, the absorption of unaltered, native fat, such as is contained in milk, cream, eggs, butter, etc. is very satisfactory indeed. It has been shown that as high as 300 grams (about 10 ounces) of fat, representing 2790 calories, may be absorbed from the intestinal canal in twenty-four hours.

Practically no progress has been made in the direction of fat alimentation and this subject is now generally looked upon as belonging to impenetrable territory. However unpromising as the present outlook may appear for an advance in this problem, especially in conditions of general marasmus and in hepatic and pancreatic difficulties, the future may, nevertheless, offer a means for the eventual solution of the difficulty.

The logical, artificial conversion of starch into sugar for specific, dietetic purposes dates from the time when Liebig first prepared his infant's soup, although the empirical dextrinization and saccharification of starch has been practiced from time immemorial. When native starch is introduced into the mouth it undergoes a chemical conversion into maltose. Usually, however, this conversion is not completed until it reaches the stomach, and not even then if the contents of the stomach are decidedly acid. In the latter case the conversion is not completed until it reaches the small intestine. To insure the complete conversion of unaltered starch into sugar and the absorption of the latter into the circulation, it is necessary to prepare it in a very finely powdered form. Various preparations in which this precaution has been taken are to be found on the market and give very satisfactory results. The starch contained in these preparations may either be converted into dextrin by heat during their special preparation for the invalid, or into maltose by some particular malt solution or diastase. Investigation shows that from 500 to 700 grams of unaltered starch, representing 2050-2870 calories, may be almost completely converted into sugar and absorbed by the gastro-intestinal canal in twenty-four hours.

In infants in whom, as is now generally recognized, the diastatic functions of the salivary and pancreatic glands are but imperfectly developed, it is necessary to first convert the starch into dextrin and maltose, or preferably entirely into maltose in cases where it is thought advisable to feed with artificially digested foods of this variety. In adults good results are obtained from these foods in various salivary, gastric and intestinal disturbances in which unaltered starch is not properly utilized in the organism. Both dextrin and sugar are absorbed by the stomach as well as by the intestines, and, as one would expect, the diffusibility and absorptive rate of sugar is considerably greater than that of dextrin.

Just as in the case of the ingestion of predigested albumin, much depends upon the motility and absorptive condition of the stomach as to whether or not the converted starch or native sugar is properly utilized. Large quantities of converted starch or native albumin induce very decided gastro-intestinal irritation with fermentation and diarrhea. Although the ingestion of enormous quantities of starch never induces in the healthy individual an appearance of sugar in the urine, quantities of dextrose ranging from 100 to 250 grams are sufficient to induce a decided transient glycosuria. In the rational application, however, of dietetic preparations containing native sugar or converted starch, this undesirable effect is hardly to be feared. I simply wish to emphasize these circumstances to show the physiologic limitations of forced carbohydrate alimentation.

At times cases may arise in which it is desirable to substitute honey, cane sugar, milk sugar, glucose or fruit sugar for either native or predigested starch, and, when properly selected and carefully applied, these aid very materially in increasing the total caloric value of the diet of the invalid. To this class we may add the various malt preparations, which, in connection with their diastatic properties, possess a certain nutritive value.

On the whole, artificially prepared starches given alone or mixed with specially prepared milk foods have given good results in my hands. They offer a convenient form in which to exhibit this class of dietetic preparations, and, as a change from the various other foodstuffs, are generally very much relished by patients.

It is not my object, nor would it here be in place, to attempt a criticism on the value of these and other especially prepared foods in infant feeding. When used with judgment and discretion they undoubtedly often render valuable service; when they are indiscriminately prescribed, however, they give correspondingly bad results. From all this it will be seen with what difficulty every attempt is beset which strives to lessen the labor of the gastro-intestinal canal by the exhibition of artificially digested foods.

Unfavorable as this criticism may appear to the subject of artificially prepared albumins, I trust that it will not be construed as being intended as a reflection upon the efforts of manufacturers of artificially prepared foods. There are many who are honestly and sincerely interested in the production of a superior dietetic preparation and to them this is offered as a friendly criticism, which I hope may act as a stimulus to further efforts to produce a perfect artificially digested food—one free from the untoward secondary actions we have discussed. Much remains to be said on this subject, and it might have been of interest to have included a careful analysis of every class of artificially prepared foods in our discussion. Lack of time and space did not, however, admit of this, and I dwelt upon the albumins particularly, for the reason that they are so difficult of application and so universally misunderstood.

THE SOMATIC SIGNS OF BRAIN SYPHILIS.*

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This paper takes no cognizance of inherited syphilis or of the degenerative diseases in some way caused by specific infection, but is limited to the signs of histologically definable specific invasion of the brain.

Before entering upon the details of my subject, I beg indulgence while I enunciate half a dozen postulates relating to the clinical history and more general symptomatology of cerebral lues, which seem to me so important as to be inevitable as a preface.

1. Brain syphilis is most frequent in the first year after infection, next most frequent in the second year, less frequent in the third year and so on, about 50 per cent. of all cases occurring within three years after the primary sore. After ten years of quiescence, therefore, the appearance of cerebral syphilis is exceptional.

2. In reaching a diagnosis of a brain case, absence of a history of specific infection should have no weight in the case of women, and in the case of men relatively slight importance.

3. Syphilis of the brain is not synonymous with gumma. I do not know how the myth became current in the profession, but the average practitioner works in the obscurity of the tenet that brain syphilis means gumma and is utterly oblivious of the fact that this is the least frequent form of cerebral specific lesion.

4. Most frequently brain syphilis means syphilitic arteritis. Next in frequence come syphilitic meningitis and syphilitic infiltration of the cranial nerves, while a gumma comparable to a brain tumor is least frequent.[1]

5. Paralysis from brain syphilis (excluding paralysis of the cranial nerves) is most frequently caused neither by the pressure of a gumma nor by hemorrhage, but by thrombosis due to syphilitic arteritis.

6. Consequently, many cases of syphilitic paralysis are no more amenable to treatment than are those of cerebral thrombosis due to ordinary arteriosclerosis and atheroma (influence of age excepted), which means that the important symptomatology is that which precedes and presages paralysis, because it is at such time that prompt treatment obtains brilliant, almost miraculous, results.

7. Syphilis is never a "system disease." As the Anglican sage, Sir William Gowers, puts it: "As a general rule, if we find certain structures of common function selected for isolated impairment from among others of different function, we may be sure that we have not to deal with a true specific process."

In what follows mention is made only of those symptoms deemed by the writer to be most important by reason of their frequence or diagnostic importance or because, having been overlooked or forgotten by the average practitioner, they need to be called to his attention. No categorical enumeration of symptoms is possible in compass less than a brochure and a concise groping of them is impracticable because the only systematic thing in the symptomatology of brain syphilis is the utter want of system, which suggests the first trait.

1. *Lack of Type.*—So strikingly consistent is brain syphilis in the production of apparent inconsistencies, that any brain case having an odd mixture of psychic and somatic disorder, a sequence of signs illogical as regards either time or localization, or a bizarre appearance, disappearance, reappearance, amelioration and aggravation of symptoms, should at once awaken suspicion of lues. For cerebral syphilis nothing is impossible. Insomnia, somnolence or an alternation of them; pain without anesthesia, anesthesia without pain or painful anesthesia; spasm without paralysis, paralysis without spasm or the two combined; monoplegia, paraplegia, hemiplegia, crossed paralysis, single or multiple cranial nerve paralysis, and any imaginable grouping of them; focal signs rivaling in neatness the most dexterous work of experimental pathology or a hodge-podge of symptoms carrying only confusion to the brain anatomist and physiologist; half-way manifestations, scarcely inflammatory, more than neoplastic; these are a few of the tricks of specific lesions within the cranium. A few years ago, when the London police found the remains of a mysterious murder, the body showing inexplicable mutilations, they said "Jack the Ripper." When the neurologist meets a brain case comformable to no rule, abounding in inconsistencies, ignoring anatomy, a clinical outlaw, he is very apt to say "brain syphilis."[2]

2. *Headache.*—In about 75 per cent. of all cases of cerebral syphilis headache is present. Notoriously nocturnal in its exacerbations, it may be vesperal, or even

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

1. The foregoing is not to be understood as an attempt to controvert the fact that nearly all syphilitic lesions are histologically almost identical, i. e., granulomata—cellular accumulations—but merely as a protest against the baseless popular impression that brain syphilis simply means syphilitic tumor of the brain, and that the symptomatology of brain syphilis is simply the symptomatology of brain tumor.

2. The only organic disease which can compete with syphilis in polymorphism, fluctuation and melange of types is multiple sclerosis.

diurnal and allow the patient to sleep all night. It is usually severe. The location is unimportant. In the beginning, although the lesion is constant, the headache is not; it may remain away for days or even weeks at a time and thus be mistaken for migraine or for malarial, infectious or stomachic cephalalgia. As the case advances, however, it becomes more continuous and may finally keep the patient in agony day and night. If occipital, the pain not infrequently radiates down one or both arms, even to the fingers, and may be accompanied by rigidity of the neck. Most frequently, but not always by any means, some part of the head is tender to percussion or pressure.

3. *Transient Attacks.*—These include every sort of fit, from the slightest to the most severe. They may be: 1. Attacks of dizziness, trifling or tumultuous. 2. Attacks scarcely to be distinguished from syncope. 3. Momentary losses of consciousness, exactly like petit mal. 4. Localized numbness or tingling—one side of face, one hand, etc. 5. Spasms, from the most trivial and restricted twitching to generalized violent convulsions. Typical Jacksonian fits are far from rare. Oppenheim says that the convulsions of syphilis are distinguished by their violence and frequency. My own experience is that while they are apt to be frequent and at times prolonged, the spasm is more often slight, not violent.

Some of these fits are apoplectoid rather than epileptoid. The patient suddenly has a seizure, with or without loss of consciousness, with or without spasm, but attended with loss of power more or less marked, more or less transient. Later, of course, such an attack may be more grave and the paralysis permanent. Epilepsy or apoplexy between 20 and 40 should always awaken suspicion of specific disease.

4. *Cranial Nerve Paralysis.*—Frequent, striking, imperative in their indications are palsies of the various cranial nerves, and of these oftener involved than any others are those pertaining to the eye. I need only mention that Alexander's statistics showed 72 per cent. of unilateral paralyses of the third nerve to be due to syphilis, and Uhthoff concludes from his observations that only 15 per cent. of all cases of cerebral lues are without eye symptoms. I should say that, in the absence of traumatism, at least 90 per cent. of all cases of ocular paralysis in adults are caused by brain syphilis, locomotor ataxia, general paresis, and brain tumor, and of these by far the most frequent causes are locomotor ataxia and syphilis—diseases that may usually be distinguished at a glance. Of primary optic atrophies more than 90 per cent. are certainly due to tabes, syphilis and general paresis. Tabes causes the most. Choked disc and optic neuritis may be mentioned here. They are not so very frequent. When present they are almost pathognomonic of intracranial organic disease, but serve in no way to distinguish luetic from other changes.

In this connection, too, I may speak of disturbances of the visual field. The long course of the visual tracts, almost from pole to pole of the brain, makes them liable to injury by lesions of various location and, besides, the exposed position of the optic nerves and optic tracts at the base causes them to be involved with frequency. Currently, the visual field is examined far too infrequently. Alterations in the field may be quite unknown to or erroneously interpreted by the patient and thus escape knowledge of the physician unless systematically looked for. Besides affording indubitable evidence of organic disease they may, alone or in conection with other signs make the localization easy.

All of these ocular signs are apt to have the inconsiderate disregard for anatomical facts and established types before spoken of. There is no necessary correspondence of pathological findings to clinical picture. The whole third nerve may be embedded in a gummatous meningitis and yet only part of the fibers suffer, while complete paralysis in all its branches may depend upon almost undiscoverable changes. Unaccountable alterations in the visual field, blindness without changes in the fundus, appearance and disappearance of symptoms so sudden as to suggest only functional disease are some of the many manifestations showing the capricious character of brain syphilis.

Less frequently than the ocular nerves, but still quite often, are the fifth and seventh attacked, and with the latter the auditory is very apt to be involved. The first sign of involvement of the fifth is paresthesia or pain in the distribution of one of its branches. As the disease progresses these irritation symptoms spread to other branches. With the pain, maybe shortly preceding or following it, comes impairment of the tactile sense, the patient then presenting anesthesia dolorosa—a complex almost invariably due to organic disease of the nerve trunk. The fifth is affected on one side only. Paralysis of the seventh is, of course, of the peripheral type, and may affect both nerves, either alternately or simultaneously, although unilateral trouble is the rule. Lesion of the auditory, causing tinnitus, deafness, aural vertigo, or all three, is rare without implication of the facial as well.

Cranial nerves below the eighth are affected with less frequency, but none are exempt. Dysphagia, partial paralysis of the tongue, alteration in the pulse rate, laryngeal paresis, partial paralysis of the sterno-mastoid and trapezius muscles and cerebellar symptoms, alone or in combination, are produced when syphilis invades the posterior fossa of the skull. In case the basilar artery and its branches bear the brunt of the attack, materially interfering with the bulbar and pontine circulation, the grouping of cranial nerve signs will be that of bulbar paralysis—the glossolabio-laryngeal complex.

Before leaving the subject of cranial nerves, I can not refrain from again calling attention to the extreme irregularity of the voicings of syphilis and to the value of this lack of system as a diagnostic pointer. While cerebral lues may affect the cranial nerves as would any basilar disease, invading those close together and causing gradually increasing symptoms as the disease progresses, it more frequently acts in a more erratic way. One nerve on one side and quite a different nerve on the other; one anterior and one posterior nerve on the same side; paralysis of one nerve, disappearance of this paralysis and then paralysis of another, nearby or at a distance; paralysis of some fibers of one nerve and then serious involvement of another without the first growing any worse; these are some characteristic vagaries.

5. *Addition of Spinal-Cord Symptoms.*—This is perhaps as good a place as any to speak of the complications of cerebral with spinal syphilis. While it savors of Erin to speak of spinal symptoms as part of the signs of brain disease, it is a fact that syphilitic disease of the cerebral meninges does often spread to the spinal membranes. When, therefore, to the characteristic signs of cerebral disease are added symptoms pointing to disease of the cord or its membranes, the diagnostician is materially aided in coming to a conclusion.

6. *Impending or Accomplished Thrombosis.*—As be-

fore stated, arteritis or arterial cellular infiltration is the most frequent form of brain syphilis. Syphilitic meningitis must inevitably compromise arteries and veins and even a gumma may disclose itself principally by the invasion of adjacent vessels. Obviously, then, many of the signs of cerebral lues will be those caused by local abnormalities of circulation, and they resolve themselves almost entirely into the signs of impeded circulation and arterial occlusion. Most of these signs have already been mentioned, but it seems advisable to review them from the standpoint of arterial lesions. Indeed, it is well to frequently remind ourselves that although the symptoms of cerebral syphilis are due entirely to injury of nerve cells and fibers, the disease is not primarily one of the nerve elements at all, but of extra-neural tissues—arteries, veins, membranes, nerve sheaths. To involvement of arteries at the base of the brain, Heubner attributed most of the intellectual and mental symptoms of brain syphilis; a great many of the early and late somatic signs are directly attributable to partial or complete occlusion of arteries. Among the earlier, besides headache, are transient attacks of dizziness, of numbness of one hand, one foot, one side of the face or tongue; transient aphasia or paraphasia, alalia or dysphagia; temporary diplopia, ptosis, or dilatation of one pupil; sudden weakness of one hand or leg, or partial hemiplegia which rapidly disappears; localized clonic spasm or twitching—all of the foregoing without loss of consciousness. As the disease is never confined to one arterial twig and very often affects the nutrient vessels of parts differing widely in function, these early, so-called premonitory signs may present peculiar associations. Dilatation of one pupil and paresthesia of a hand, numbness of the left face and clumsiness of the right hand, partial aphasia and slight dysphagia, diplopia and weakness of one leg, may be noted as illustrations.

Then there may be a general neurasthenic and myasthenic condition with insomnia or moderate somnolence without focal signs. Later come more pronounced symptoms: the dizzy spells become brief losses of consciousness, the pareses are less transient and disorders of speech more enduring. It is only one step more to a grave apoplectic attack from thrombosis of a considerable artery. If the vessel belong to the cortical circulation and be not too large, such an attack may be rapidly recovered from, but if such considerable vessel supplies the basal ganglia or cranial nuclei, the disability is permanent, and if the artery be a very large one of any part the result is permanent disability or death. As in thrombosis from lesions other than specific, a complete hemiplegia may occur without loss of consciousness, or with only moderate confusion or somnolence. This is not true of hemorrhage. In many cases the hemiplegia comes on in such a way as to clearly indicate either temporary arrest of circulation or partial occlusion of an artery followed by its complete closure or, what I believe to be more frequent, thrombosis of a small branch followed by occlusion of adjoining branches or of the main artery by extension of the intra-arterial clot. Such a course of intracranial proceedings is evidenced by restricted or very slight paralysis, followed in some hours or days by more extended or complete disability.

I believe that largely to arterial invasion is to be attributed another of the frequently observed features of brain syphilis, viz., progress by separate steps or increments. Without appropriate treatment, cerebral syphilis progresses more or less rapidly for the worse, but never uniformly, always by fits and starts, often with intercurrent improvement. Not rarely these increments affect different parts. A small artery becomes so badly damaged that circulation in it is stopped. Before a second calamity takes place in that immediate vicinity, another arterial twig at some distance suddenly goes out of commission, adding one more sign to the clinical picture, while that caused by the first stoppage may be improving.

Of material assistance in some of the earlier cases are increase of the deep reflexes and incoördination. The patient may make complaints such as indicate merely functional disease and the physician may detect neither anesthesia nor motor impairment, but careful examination may show increased deep reflexes on one side, as compared with the other, or slight incoördination in finer movements.

7. *Peculiar Stupor.*—While not wishing to trench upon the topic of Dr. Dewey, which none can handle so well as he, I would slight my own subject were I not to mention the somnolent, semi-stuporous condition which occurs more frequently in cerebral lues than in any other brain disease. Combined with one or more of the foregoing somatic signs it is well-nigh pathognomonic and even alone is strongly suggestive. In this condition the patient seems to be almost comatose, but can be roused and when once awake is practically rational, although he may be decidedly irritable, not to say bellicose. The condition was long ago likened to a drunken state; after being roused and responding to enquiries, the patient at once lapses into his previous stupor. Without fever and preceded by or combined with severe headache, the symptom means grave organic brain disease, in numerous instances, syphilis.

8. *Fever.*—Cerebral syphilis may be considered to be an afebrile disease. Fever is exceptional unless pons or medulla oblongata be involved, when rise of temperature may be slight or considerable. In some cases the fever has seemed to me to be caused by bad condition of the gastro-intestinal tract and absorption therefrom.

9. *Vomiting.*—This occurs in many cases, more frequently when the posterior fossa is invaded and when a large gumma or extensive meningitis is present. Such emesis, although of cerebral causation, may take place only when the stomach is full and may be determined more by one sort of food than another. Nor should it be forgotten that cerebral vomiting is not necessarily projectile.

10. *Polydipsia, polyuria* and *polyphagia* are not unusual results of brain syphilis, the last being the least frequent.

11. *Insomnia* is not rare, aside from the inability to sleep on account of headache, and besides vertiginous attacks, constant dizziness may be present.

THE PSYCHOSIS IN CEREBRAL SYPHILIS.*

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When I came recently to consider attentively the subject assigned me in this discussion, I was so doubtful as to the production of anything of value that I asked the chairman to excuse me, but as both the present chairman and the chairman of last year renewed their request, I have complied with their wishes as well as possible.

When one attempts to lay down the lines upon which

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

the subject should be treated, several questions arise which require to be first taken into consideration. One is the evidence of syphilis. Another, the very frequent existence in these cases of causes other than syphilis which have their share in determining the mental state—such as alcoholism; senile changes; arterial disease; kidney and heart disease and tumors, of non-specific origin.

If the rule were made and followed of first catching your specific lesion and then excluding alcoholism and non-specific vascular changes, etc., a portion of the foundation for much writing on this subject would crumble away. On the other hand, syphilis is not and can not be excluded, even when neither history of it nor somatic signs are attainable. Fournier states that syphilitic disease of the nervous system is found more frequently than are the external signs of syphilis. Berkely attributes to syphilis all cases under 40 of hemiplegia or monoplegia and mental disturbance, where cardiac and renal disease were not found; also obscure dementias between the years of 25 and 40. This method of reaching a diagnosis must have an element of uncertainty, though doubtless in a general way the deductions are correct. There are probably as many cases in which syphilis is concealed or remains undiscovered as there are incorrectly diagnosed, but striking a balance by this method is not satisfactory for our present purpose.

It would seem that the reasoning adopted in many cases was something like this: "Here is a case of organic brain disease, coarse or fine, paresis, hemiplegia, monoplegia, suspected tumor or vascular lesion. It is antecedentally and consequentially probable the patient has had syphilis; therefore this is cerebral syphilis." Then the mental manifestations are sometimes taken up and treated as due to syphilis without positive evidence either before death or postmortem, and perhaps without considering whether the same mental states are not closely paralleled by cases certainly non-specific, or whether the findings may not be due to general and not specific causes, even though syphilis be present.

One instance of syphilitic psychosis that may be mentioned here is the mental state found in syphilitic tumor of the brain; but can any one distinguish between the psychopathic effects of a specific and a non-specific tumor? Again, how are the arterial disease due to syphilis and that due to other causes to be differentiated in their mental phenomena? Consider in the same way the effects of edema and intra-cranial pressure, with interruption or irritation of tangential tracts; also those of the various toxins. These morbific agents must destroy or derange the "cytopsyche" and the "histopsyche," assumed by some German writers to preside over the cell and tissue life (and I believe countenanced even by Haeckel); but the relation, if any, between the unconscious soul ascribed to the units of structure and the conscious soul that has for its instrument the entire brain, is something as yet beyond scrutiny. The cœnesthetic sense which is essential to soundness of mind is impaired in all psychoses. The association tracts belonging to the various brain centers are interrupted by syphilitic connective tissue overgrowth, or by poison or malnutrition, from primary degeneration of neurons, but how does this differ from the disease or destruction of association tracts from other brain changes, or from neuron degeneration from other poisons?

Berkely[1] in his recent work states: "Lues never directly affects nervous tissues." Moebius, as quoted by Bannister,[2] treating paresis as a syphilitic toxin disease, asserts: "There is only one kind of general paralysis and only those have it who have previously had syphilis." Is general paralysis a psychosis of syphilis simply? If so, we have at least one syphilitic form of insanity, but Moebius' claim is by no means fully substantiated. Probably as many pathologists would be found to deny as there are to affirm that tabes and general paralysis are exclusively syphilitic in their origin. Assuming that these diseases may be due to other causes than syphilis, can any one draw a clinical picture of these diseases when caused and when not caused by syphilis? It seems to me that if no one can distinguish between specific and non-specific paresis or tabes, where the pathology is comparatively well defined, it is all the more impossible to define the part syphilis may play in the forms of mental malady where the pathogenesis is more obscure. Consider further, syphilitic hypochondriasis, so-called "syphiliophobia," and insanity occurring with the very onset of constitutional syphilis. In all such cases lowered brain nutrition, perhaps purely functional, is capable of accounting for the conditions, and it is not necessary to call in syphilis to explain them. High authorities affirm and deny that soft chancre or suppurating buboes are followed by constitutional syphilis. The views of Fournier—as good an authority as any—have changed from one extreme to another, and of late a new perplexity is introduced by affirming that hereditary syphilis plays an important part in the development of psychoses, especially in the adolescent period. Here again an obstacle to the full understanding of the case arises, because the proof of hereditary syphilis is not always convincing, since dementia, praecox, paranoia, and hebephrenia have not as yet been studied so that those of specific and non-specific origin can be differentiated, neither are writers agreed as to the adolescent form of paresis.

In a recent paper by A. W. Hurd[3] it is stated that syphilis may cause, 1, any simple psychosis; 2, paresis; 3, pseudo-paresis. By a simple psychosis I take it is meant one which has nothing characteristic of syphilis. Paresis is the same thing, whether caused by syphilis or not. Finally, in "pseudo-paresis" it is claimed to be characteristic to find a confused mental picture, as of paresis "toned down," or cerebral syphilis "heightened"; to find that motor disorders or cranial nerve symptoms precede; that hypochondria or acute delirium may appear early; that paralysis rather than ataxia plays the leading rôle; that mental dulness and a "vacant expression" are more noticeable, while we find that a gradual change in disposition, grandiose ideas and a sense of well-being are more marked in paresis. It is noted that motor symptoms, cranial nerve symptoms and ataxia are utilized to aid in diagnosis, but these I am not able to take into account in treating of purely mental phenomena, as my subject requires.

In a paper by J. H. McBride,[4] read in this Section one year ago, it is stated: "Syphilitic insanity may mimic every known form of mental derangement;" he also says that there is "nothing characteristic in the mania" or the depression due to syphilis, but that, if the entire history be considered, irregular features will be found; that in mania there will be the earlier appearance of confusion or weakness, with intervals of quiet

1. H. J. Berkely: "Mental Disease," p. 210.

2. H. M. Bannister: General Paralysis a Toxin Disease, Am. Jour. Insanity, vol. l, p. 477.

3. "Paresis and Cerebral Syphilis," Buffalo Medical Journal, April, 1901, p. 631.

4. Mental Symptoms of Cerebral Syphilis. THE JOURNAL A. M. A., Feb. 2, 1901, p. 297.

and semi-lucidity: in melancholia, brief depression, much confusion, outbursts of excitement, periods of stupor and early dementia. "These," he says, "may be regarded often as circumstantial evidence of a specific origin." The writer also mentions "loss of mental power, of self-control, of the self-regarding virtues, of moral sense, the detachment of life from the delusions," and many other morbid mental phenomena as "prominent characteristics." There is scarcely one of these phenomena or any combination of them which may not appear in an equally irregular manner in cases where there is no question of syphilis. A "confused mental picture," a "toning down" or "heightening" of various symptoms, an irregularity in the order they assume, predominance of paralysis or of ataxia or of cranial nerve symptoms, "hypochondria," "acute delirium," "vacant expression," etc., are symptoms that purely non-specific psychoses or those arising from alcoholism or non-specific arterial changes may present. So with the peculiarity of seeming to mimic other forms of insanity; and of irregular and atypical features or succession of symptoms.

The arguments in favor of syphilis from the "bizarre" and irregular character can have but small weight since "bizarrerie" is something we constantly see in cases where the question of syphilis is known not to enter, and certainly "loss of mental power" or of "moral sense" and of "the self-regarding virtues" have in them nothing that would aid in the diagnosis of a syphilitic psychosis.

If these two able observers find nothing in the mental phenomena more distinctive, one is inclined to think that it is because there is possibly nothing that is distinctive.

The tendency to "remissions" and to periods of return to apparent sanity does seem to mark syphilitic cases especially, though also known in those that are not syphilitic. In this matter again there is a difference of opinion as to whether the return to sanity is complete. Some writers, and among them Mott, claim that a certain dementia or weakening always remains; but I have known of cases where the return to normal condition was so complete that no expert could tell the difference, and such are reported by others. Mott explains these fluctuations by the fact that when the remissions occur, the disease is external to the nerve cell and functional in its nature.

It is doubtless true that the permanency of insanity and the failure to recover in simple acquired psychoses, may be due to the complication of syphilis, either hereditary or acquired. Some writers have given failure to recover as an indication or presumption of syphilis, but this fact itself helps not at all in the diagnosis of syphilis. Failure to recover is unhappily too frequent in all forms of insanity.

A correspondence may exist between the difference and variable nature of psychic symptoms and the irregularity of the pathologic changes of syphilis—so largely vascular in their origin. The irregular and temporary attacks of aphasia are somewhat characteristic, but are also found in other cases.

Some writers who claim lacunæ in the memory as characteristic, fail to note that lapses and gaps of memory are common in other forms, particularly alcoholic and epileptic forms, and yet these latter will be apt to be associated with acute attacks or other accompanying signs. It is perhaps questionable whether systematized delusions are ever found in syphilitic brain disease, unless there be a background of paranoia or degeneracy.

It is agreed that the anterior portions of the brain, frontal and central, are more open to syphilitic infection and this gives some characteristic significance to the frequent dulness and stupor. Again, the admitted correspondence between senility and syphilitic insanity speaks only for lack of characteristic features. Spitzka[5] gives the figures of Snell, who found that 75 per cent. of the cases of paretic dementia were due to syphilis; of Erb, who found a similar proportion of cases of tabes due to syphilis; of Mendel, who found 117 out of 291 such patients were syphilitic, while on the other hand Ripping found only 12 per cent. with a syphilitic history. Spitzka himself found syphilis in 33 per cent. of the pauper insane of New York. Clouston, in over 3000 cases, found but 16 of syphilitic insanity. Spitzka remarks that the attempt to test the question of syphilis by specific treatment fails, because in several cases spontaneous remissions occurred and in others the most energetic treatment gave no results. Then, too, specific treatment has been found useful where infection could be positively excluded. Finally, Ripping claims to have found syphilitic patients recover from insanity where no specific treatment was applied.

These statements, as well as innumerable others to be found in the literature, tend to throw doubt on claims that any given psychopathic condition is syphilitic, and yet as was remarked by Kraft-Ebing and agreed to by Mott: "The more we study paresis the more we find it associated with syphilis;" and the former declares with a measure of truth that civilization and "syphilization" go together, however discreditable this fact may be to the former.

The recent report of the Pathologic Laboratory of the London County Asylums by F. W. Mott[6] contains valuable information concerning the pathology of syphilis, the structural changes and to some extent the mental symptoms. That which seems most pertinent to the present inquiry in Mott's work is the placing in clearer light the fact that syphilitic brain disease, as distinguished from paresis, affects, primarily, vessels, lymphatics and membranes—mesoblastic structures—and the degeneration of neurons is secondary. Paresis, on the other hand, is a primary decay of the neuron itself, but it is not clear that the mental symptoms of the two processes can be differentiated. Indeed, Mott gives the phenomena of irritation and other psychic symptoms as characteristic of early changes in both. The primary progressive degeneration of neurons starts at the highest and latest developed structures, speech and association centers, and attacks by preference the frontal and central regions. Mott describes stupor, dementia, weakening or loss of memory and intellect, and many other symptoms, but does not give any distinctive characteristic of different syphilitic processes; neither can we distinguish these as being different according as syphilis is or is not found. Mott considers "stress" to be the important proximate factor in the development of brain disease, in one affected with syphilis. Stress is, however, perhaps equally the proximate cause in psychoses where syphilis is not concerned.

Since as yet we have in psychiatry so little in the nature of known definite psychopathic symptoms which can be associated with molecular or even coarse changes in the brain; since as yet we know nothing of the *modus operandi* of mental changes as associated with pathologic findings, and since our classifications of mental

5. E. C. Spitzka: Manual of Insanity, p. 244.

6. Annual report of the Pathologic Laboratory of the London County Asylums, 1900. Abstracted by J. H. McBride, Southern Cal. Pract., April, 1901.

disease are in a purely tentative and conjectural condition, it seems premature to attempt to formulate syphilitic psychoses. The very inconsistency and lack of type in symptoms taken by some to be indications of syphilis, are interpreted by Kraepelin to be characteristic of chronic and permanent mental deterioration—Verbloedung's processe. We all meet with cases for which there seems to be no place by any method of classification as yet devised.

Clinical psychiatry must unite psychical events in the course of each recognized psychosis, with a negative or positive report from the autopsy table, before the influence of syphilis on mental operations can be determined. We can not doubt but that psychic life is intimately associated with matter, i. e., with brain cells, but we are as yet without data which would enable us to connect objectively the functionating of those cells, either in health or disease, with any changes in their form or substance. Even the pathology of general paralysis, the best known of all, is only indefinite as to mental changes and their relation to physical changes.

I am aware that I have only touched the borders of this far-reaching subject, and that most of what I have written is only of negative value, if of any at all.

I have sought something more tangible in reviewing my records of the past six years, covering over 1200 cases of all forms of nervous and mental disease. I found among these 45 cases of well-substantiated, constitutional syphilis. Doubtless an equal or greater number which I rejected for want of definite knowledge might have been included without serious error, but considering only these 45 cases, they were made up as follows: 17 were diagnosed as paresis; 12 as syphilitic brain disease with symptoms of organic lesion; 7 were cases of psychoses with marked delusional characteristics and without symptoms of brain syphilis, the mental symptoms taking the form of delirium, stupor, extremes of exaltation and depression, aphasic attacks and mild dementia; 4 having ophthalmoplegia and optic neuritis; 4 were cases of hypochondriacal melancholia, and of these, 3 temporarily improved, the other was a morphin case; 2 were cases of tabes with emotional weakening as the only mental failure, and there was one case each of slight dementia, melancholia and dementia paralytica of senile form. The type of mental disorder in the 17 cases of paresis was expansive in all except 2; marked confusional condition was present in the two depressed cases, and in 9 of the expansive cases confusion was also a very prominent feature.

These cases were gone over and tabulated with reference to the following points: The type of hallucinations and delusions, where present; the cranial nerve symptoms; the evidence in each case of syphilis; the habits and occupation; the outcome as to the history of marked stress as a factor producing the mental disease, and the time of infection prior to appearance of psychopathic symptoms.

I found, however, that these tables possessed but little significance, partly because no useful deductions could be made from such small numbers, and partly because the exclusion of so large a number of probable cases for want of a positive diagnosis seemed to me in a measure to vitiate the result.

Progress in Peru.—The Lima medical papers are rejoicing over the accession of a portable disinfecting oven, and the bacteriologic laboratory recently installed in the public hospital, which, by the way, bears the unique name of the Second of May Hospital—"Dos de Mayo."

SYPHILIS OF THE NERVOUS SYSTEM—ITS GENERAL PATHOLOGY, WITH REMARKS ON TREATMENT.*

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The initial lesion of syphilis must be viewed, in the light of our present knowledge, as a wound plus infection, the infecting material being probably of bacterial origin.

The first nervous changes following such infection are localized at the sight of the initial lesion, and have been well described by Berkley.[1] Briefly, these changes consist of a combined interstitial and parenchymatous neuritis, due, in the investigator's opinion, to, 1, compression by the round-celled exudate; 2, endarteritis, interfering with nutrition; 3, local effect of a "virus."

The conditions found in the nerves are described as, 1, obliteration of lymph spaces; 2, disappearance of axons; 3, a "glassy" degenerated appearance of the myelin.

These changes were limited to the nerves imbedded in the round-celled exudate; those nerves not so surrounded being normal, or approximately so. Root-neuritis, cranial and spinal, and peripheral mono-neuritis may occur as secondary lesions.

Syphilitic multiple neuritis has also been reported, one case by Fry,[2] a year after the initial lesion; and a case by Cestan,[3] who notes three others with more or less doubt. The extreme rarity of the affection and the possibility of other causes in any given case tend to render the diagnosis problematic.

The second evidence we have of invasion of the nervous system by the disease or its products, is in the production of fever—"syphilitic fever"—often overlooked and sometimes misinterpreted.

The actual pathologic process at work here is unknown. Presumably, in the proliferation of the microbes of the disease, a toxin is set free in the tissues, which, carried by the blood stream to the cerebrospinal axis, irritates certain hypothetical thermo-genetic centers, or depresses certain other centers equally hypothetical, which are assumed to control or direct thermolysis. Another explanation to be considered leaves out of account any such "centers" and attributes the febrile process to alterations in the chemical constitution of the tissues generally, by the toxin of the disease. These alterations giving rise to perversions of metabolism with increased heat production or diminished heat dissipation.[4]

The third group of processes to be considered, that which is by far the most important to us, in a practical sense, is the inflammatory group whose characteristic lesion we call a "gumma."

The great fact of importance in this group, as regards nervous syphilis, is that gummatous syphilis in its beginning is a vascular syphilis.

Since all vascular organs are, in their developmental nature, of connective tissue (mesoblastic) type, it follows, as a corollary, that vascular syphilis is necessarily connective tissue syphilis. Hence to the tissues of this type (blood, dermis, basement membrane, areolar tissue, bone and cartilage), must we look for the initiation of the pathologic processes which invade the nervous, as well as the other anatomical systems.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

Nervous tissue proper, therefore, owing to its non-vascularity, is never the primary seat of inflammatory processes, whether these be due to syphilis or to other causes.

While it may be said to be an accepted axiom therefore, that gummatous syphilis is primarily vascular syphilis, it does not follow that it must be an arteritis or a phlebitis. It is often a lymphangitis, using this term in its broad sense, to cover involvement of the lymph-channels generally of the nerve centers. Thus the so-called peri-arteritis is often a lymphangitis in its inception, beginning in the peri-arterial lymph sheath. There are reasons for the belief that gummatous meningitis of the diffuse form may be also of lymphangitic type. As regards the best known vascular lesion, arteritis, the discussion as to whether a "peri-arteritis" (Baumgarten), or an endarteritis (Heubner), is the more characteristic vascular lesion of syphilis, would seem to be a superfluous refinement in localization from either a diagnostic or a therapeutic view-point, since in either event the exudate is within the wall (not within the lumen) of the vessel, and eventually involves its entire thickness.

The important event in syphilitic arteritis is the impairment of the nutritional integrity of the endothelial lining, whereby thrombosis with its resulting necrotic softening is directly produced.

It is customary to picture the changes in the vessel wall as a heaping up of proliferated cells, presumably derived from the deep endothelial layers of the inner coat. It is not probable, however, that the closure of the vessel is ever due merely to mechanical effects of this accumulation. Long before closure would occur from this cause, the inner lining, which must be continually shed, molecule by molecule, has been replaced by the rapidly reproduced and hence imperfect cells of the deeper layers. These again are being gradually deprived of their nutrition—from the vasa vasorum via the intramural lymph spaces—by reason of the increasing pressure of the exudate in the middle and other layers of the vessel wall, and possibly in addition are directly affected by the toxin of the disease. Hence, it is only a question of time that the inner wall of the vessel at the affected area comes to be lined by an endothelium defective in nutrition, possibly actually necrotic in places. Thrombosis, then, is the inevitable result.

As regards the direct local cause of the endarteritis, we must assume that the active agents in its production, which are at present supposed to be bacteria, are carried to the points of inflammatory reaction by the vasa vasorum.

We reject the main blood stream (of the lumen) as a source of the infection of the wall, by reason of the fact that inflammation presupposes stasis followed by exudation. Stasis, however, is not likely to occur in a large or moderate-sized artery. It is only in the capillary plexuses of the vasa vasorum and their nutritive successors, the intramural lymph spaces; or again, in the terminal capillary plexuses of the ordinary artery, that conditions favorable to stasis occur.

Pathologically, therefore, syphilis of the central nervous system is primarily a lymphangitis, phlebitis or arteritis, or any combination of these. The product of the inflammation is an exudate consisting chiefly of small round cells with a tendency to, 1, central necrosis, when in massive collections—gummatous tumor—or, 2, a tendency to fibroid organization when spread out in thin layers—gummatous meningitis, diffuse arteritis, etc.

In accordance, therefore, with the stage and progress of the process we may have, 1, a gummatous thickening, plaque or tumor; 2, a caseous abscess; 3, a cicatrix. In either event the nervous manifestations are secondary and due to, 1, thrombotic occlusion of nutrient vessels causing necrotic softening in their areas of distribution; 2, mechanical pressure causing secondary degeneration of neurons or their processes; 3, interference with the return circulation in lymph channels, causing local toxic states; 4, arteriosclerosis of varying type, probably responsible for various nerve degenerations of chronic character, e. g., nuclear palsies, locomotor ataxia, paresis, etc.

The question naturally arises: Is all inflammatory syphilis essentially alike, i. e., due to gummatous deposits of varying shape, in and around arterial, venous or lymphatic channels? This must probably be answered in the affirmative; the differing "types" of gummatous disease, meningitis, massive gumma, and arteritis "obliterans" being variations due to differences in size, number and distribution of foci. The possibility of a "mixed" infection in some cases must be conceded; to this abscesses proper may be due at times.

Hereditary syphilis as it affects the nervous system, may develop as a gummatous arteritis or meningitis, pathologically identical with the acquired form in adults. Many of the infantile hemiplegias and spastic paraplegias are probably of this type. Defects of a developmental nature, however, also occur in children, showing themselves in the various forms of idiocy and imbecility, which probably rest in great part on a foundation of vascular degeneration. It is quite probable that the proportion of children showing distinct syphilitic lesions of hereditary origin is commonly overestimated, as compared with the non-syphilitic from the same class of parents. Almost every practitioner can recall numerous cases where the children of syphilitic parents have all escaped; and other cases where one child is marked with, and others free from, syphilis. Statistics bearing on this point would be desirable.

We must not lose sight of the fact that gross lesions, i. e., meningitis, gumma, arteritis followed by softening, are not the only results of syphilitic infection of the nerve centers. Encephalitis, in multiple and minute foci, situated about the terminal capillary plexuses of the cortex, may probably occur, damaging various association tracts and operating as an important factor in the production of syphilitic epilepsy, some of the psychoses, etc. Accurate observations on this form of encephalitis would be desirable.

What is the most frequent site of the gummatous process in the nerve centers? This question is evidently a difficult one to answer, since many cases present multiple lesions. Most authors state that, 1, basilar meningitis is the most frequent cerebral lesion. Next follow in order, 2, meningo-encephalitis of the convexity; 3, arteritis with thrombosis and softening. In the cord, the most frequent lesion is said to be a meningo-myelitis; next to that arteritis with local softening. The writer's experience is at variance with this statement as shown by the following analysis: In 100 consecutive cases, about equally distributed between hospital and private practice, the preponderating lesion was diagnosed as follows:

Thrombosis with softening (hemiplegia)	41
Meningo-encephalitis of vertex	23

Basal meningitis	11
Cerebrospinal disseminated lesions	10
Focal myelitis (including also "transverse")	12
Meningo-myelitis	3

Excluded from the enumeration, but in serial connection with it are:

Massive gumma	1
Psychoses (probably of meningitic or encephalitic origin)	2

Another question of importance is: Has chronic diffuse syphilitic arteritis any distinguishing features by which it may be recognized from arteriosclerosis due to other causes (chronic uremia, gout, alcohol, etc.)? To this most competent observers reply in the negative.

It has been assumed[5] that, in the localized softening following a syphilitic thrombosis, we have an "ordinary" or non-specific lesion to combat. Is this true? Probably it is, for a short time, of the softened area itself. But what follows this softening? In the surrounding tissue, hyperemia, exudation, proliferation; in short, secondary inflammation. Is this non-specific? It would be remarkable to think it was when we reflect upon the proximity of the original infected vessel. We all know the tendency of ordinary external wounds in a syphilitic to take on the "specific" inflammation; and how often they heal slowly or refuse to heal, until treated with anti-syphilitic remedies.

NATURAL HISTORY OF SYPHILIS.

During the early or "primary" period of the disease, following immediately upon the infection, we must assume the local proliferation of the microbes (bacteria?) and the collateral production of a toxin which produces a localized degenerative neuritis as well as the "general" symptoms, fever, malaise, muscular pains, etc. This period probably terminates, as does the febrile stage of the ordinary exanthemata, by reason of the production of an antitoxin which terminates the life or activity of the micro-organisms in great part, leaving, however, a few, possibly in a "sporule" stage for the future development of foci of gummatous inflammation in various situations. This is probably the natural course of the disease when uninfluenced by treatment of any kind.

The writer has seen such a case, untreated for thirty years, in a man of 55, who had received internal medicine (nature unknown) for only a couple of weeks at the time of the initial lesion. All these years he had been subject to repeated crops of subcutaneous and intramuscular gummata which had caseated and cicatrized, with little or no interference with his general health, and which he ascribed to hereditary "scrofula" in his system, of which there was, in my opinion, no evidence. When he consulted me for a paraphasia verbalis without paralysis due to slight thrombotic softening, he had two of these caseating gummata on the back, each as large as a pigeon's egg, of which he made no mention, so accustomed had he been to the presence of similar lesions for thirty years. On stripping him for examination these were discovered, and in addition, dozens of characteristic cicatrices, and intra-muscular indurations, situated on trunk and extremities, marking the sites of former gummata. He made a fair recovery from the aphasic symptoms and was kept upon mercury and iodids at intervals for about two years, during which time he enjoyed fair health. He had all his life an especial liking and capacity for mathematics, and this was apparently not diminished. As he lived at a distance he became somewhat irregular in his visits and when he consulted me again, after an absence of some months, he presented a marked motor aphasia, with slight right hemiplegia and a mild degree of dementia, probably all due to multiple foci of softening. Death followed in a few months.

The gummatous process is, therefore, in a measure self-limited. It is also in its inception to be viewed as a conservative process; like all inflammation it is evidence of resistance to an invader. When this disappears the gummatous process, like other inflammatory actions, ceases. What checks it? Three things:

1. The insufficient blood supply at its center, leading to necrotic softening and caseation.

2. The possible (even probable) development of an antitoxin which checks the local proliferation of microbes.

3. Removal of the necrotic tissue in part, by the leucocytes of the surrounding exudate, or, in the nerve centers, possibly by the mossy glia cells (scavenger cells of Bevan Lewis).

4. Organization into cicatricial tissue of the remaining elements of the inflammatory exudate.

Pathology is certainly of greatest value when it points the way to a rational therapy. May we hasten in any manner the more desirable of these processes? This, it seems to me, is the therapeutic problem to be solved.

While the limits assigned to the present paper forbid any extended or detailed remarks on treatment, some general considerations of the subject may be permissible.

We have come to speak so confidently of treatment by mercurials and iodids as "specific" treatment, that it does some violence to our therapeutic optimism to question their "specific" attribute. And yet it seems that we must logically admit this to be a fragile idol, likely to be shattered by the cold logic of the laboratory. Do these remedies destroy the germs of the disease? Few will claim this at the present day. The hypothesis of Gowers and others, that they may destroy the germs but not the "spores," is an attempt to explain the obtrusive fact that they do not, as a rule, prevent future gummatous developments. How then may mercurials and iodids act in gummatous disease? They are erroneously called 'absorbents," but we know that no drug is an absorbent. The very term absorbent, as applied to drugs, is almost as objectionable as that other absurdity, "keeping the bowels in a soluble condition."

What useful purposes may these remedies subserve in promoting the disappearance of syphilitic exudates? Simply and solely to destroy the already feeble vitality in the newly developed cells of the gumma, to poison them in fact, after which fatty degeneration, necrosis and liquefaction naturally follow. The lymph spaces, the real absorbents, do the rest. Thus the available material for future cicatricial tissue is reduced to a minimum, with corresponding lessening of future pressure and nerve degeneration.

How may these remedies act in the florid stage of the disease? Simply in the same way, so far as we know, namely, by promoting disappearance of inflammatory accumulations. Few will claim that they actually destroy the germs.

It is conceivable, however, that by stimulating excretion generally by the bowels, kidneys, and skin, they may also promote elimination of a considerable portion of the toxin proper. We should not lose sight of the fact, moreover, that these agents used within proper

limits may stimulate the activity of the hemopoetic system, producing a degree of leucocytosis which may be useful in combating the microbes proper. Thus are we relieved of any necessity for a therapeutic nihilism.

In some cases the natural vigor of the patient, assisted by remedies judiciously used and hygienic measures, may apparently exhaust the stock of microbes and the patient remain well of active syphilis at least.

Does this render him secure from degenerative changes? Statistics appear to show that it does not—(Collins[10]). What then may be the cause of such degenerative diseases as locomotor ataxia, paresis, etc.? The hypothesis most in favor at the present day, is that of Strümpell that it is a post-syphilitic toxin, a by-product, so to speak, of the vanished syphilis, which, circulating in the blood, poisons the neuron, but does not excite inflammation. This hypothesis is untenable in the cases, well attested, of locomotor ataxia and paresis, without preceding syphilis. A more plausible explanation, to the present writer at least, lies in the fact of extensive fibroid and hyaline vascular changes, which affect the arteries both in syphilitic and non-syphilitic subjects. (*Vide* Berkley.[7]) The syphilitic toxin, while it must be conceded a frequent cause, is certainly not the only cause of vascular degeneration.

A long-standing and widespread arterioselerosis or hyaline degeneration is a sufficient factor for the production of degenerative nervous disease, without the intervention, at the time, of any toxin. Thus we may account for many cases of degenerative nervous disease without necessarily invoking the aid of a post-syphilitic toxin, or of syphilis in any form.

Are mercurials and iodids of value in these degenerative nervous diseases? Modern neurological opinion tends to the view that they are not. From what has been said of the modus operandi of these remedies, it is difficult to ascribe to them any virtue in non-inflammatory nervous lesions, where the neurons are undergoing a molecular death from starvation. What good effects are observed from them are in all probability due to collateral influences on secretion and exeretion, apart from the nervous degeneration proper.

As collateral at least to the present topic, we may ask, should we withhold mercurials and iodids in a central softening from non-syphilitic thrombosis or hemorrhage? I think not. The fact that these remedies are obnoxious to all newly formed tissue elements, may render them useful in the secondary exudation which always surrounds a gross vascular lesion in the nerve centers. Hence, judiciously used they may limit the amount of organizable material and thus lessen the consequent area of irritation or degeneration in adjoining nerve elements.

It sometimes happens that a patient with extensive cerebral softening, under mercurial treatment, develops a marked rise of temperature. This is not necessarily or even probably mercurial fever in most cases. It would appear to the writer to be due to the rapid breaking down of the necrotic area and the cellular exudate, with the absorption of the debris into the general circulation too rapidly to admit of complete oxidation and excretion. Hence, the pyrexia is more or less septic in origin. It is wise in these cases to omit mercury for a few days and then resume it when the fever subsides.

May vascular disease, widely spread, without foci of gummatous growth, exist as a result of syphilis and give rise to marked nervous manifestations?

The probability is that it may. Berkley[6] has reported two such cases; one with autopsy, in which the chief vascular findings were an extensive and widespread infiltration of the media of the arteries with a hyaline-fibrous material which materially narrowed and in some places even occluded the caliber.

This degenerative change was present in the arteries of the gray matter of the cord, more particularly in those of "Clarke's columns," and in the medulla oblongata; it was also present in the spinal root arteries and in the skin tissues. The writer has under observation a case presenting similar clinical features, in which, however, syphilis can not be traced.

The importance of recognition of this condition when possible lies in the fact that no therapeutic measure known to us has any favorable influence on hyaline vascular degeneration. We may do well to remember, however, that combination of degenerative lesions and inflammation are frequent (Berkley[7]) and that remedies may exert a favorable influence on the inflammatory element.

One more reference to therapy in the light of modern pathology. What have we to look forward to as an improvement upon present modes of treatment? The discovery of an antitoxin serum treatment, similar to that of diphtheria, must be conceded as possible. The arrest, and caseation or cicatrization of gummatous exudates in cases untreated by medicines, as in the one before cited, furnishes us a basis for hope in this direction. The difficulty of transmitting syphilis to the lower animals, which has heretofore hindered experimentation in this direction, will not necessarily always remain unsurmountable.

Neviorovsky[8] has reported favorable results in recent syphilis, from injections of human serum taken from subjects of tertiary syphilis.

Again, remarkable results in two cases have attended the use of Hayem's artificial serum (sodium chlorid 7 gm., crystallized disodic phosphate 2 gm., water 1000 gm.). Half of this was injected every five or six days in addition to mercury and iodids, in cases, which had obstinately resisted the latter remedies alone. The lesions yielded rapidly to the combined treatment.[9]

SUMMARY.

The pathological processes concerned in syphilis of the nervous system comprise:

1. A localized parenchymatous and interstitial neuritis at the site of the initial lesion, due to endarteritis, compression and local toxic action.

2. A localized root neuritis (cranial or spinal), and a peripheral mono-neuritis, both of gummatous type, may occur in the "secondary" stage. A generalized or "multiple" neuritis has been reported, but is so rare as to be a pathological curiosity and open to doubt as to origin.

3. A generalized toxemia affecting the nerve centers directly or metabolism in general and producing febrile reaction of a "specific" type, i. e., "secondary" fever.

4. Inflammatory ("gummatous") lesions, due to disseminated or localized vascular infections. The arterial walls are the chief seat of these gummatous exudations, and the exudate may begin as a "periarteritis," a mesarteritis or an endarteritis, eventually in most cases becoming a "panarteritis"—Berkley. The exudate is always intra-mural—not intra-lumenal—the narrowing of the lumen being due to concentric or nodular thickening of the walls, and heaping up (proliferation) of the deep endothelial layers of the intima. Necrotic changes in the inner layer probably precede thrombosis.

The infecting material (bacteria?) probably reaches the vessel wall via the vasavasorum, from which a portion of the exudate at least is derived. Direct infection of the lining endothelium, by the main blood stream, is unknown and probably does not occur, excepting in the terminal capillary plexuses.

The materials constituting the inflammatory exudate in all forms of gummatous syphilis, whether arteritis, meningitis or tumor are biologically identical, the differences which exist anatomically being due to location and distribution of the exudate. The characteristics of gummatous syphilis of the nervous system are: (*a*), the lesions are primarily vascular; (*b*), the lesions are usually multiple; (*c*), the lesions are usually non-systematized in a neurological sense, though they show a predilection for certain localities—namely, the basal meninges, and the arteries of the basal ganglia and motor area; in the cord, the meninges and the ventral horns.

5. Gummatous lesions are, in a measure, self-limited. their growth being checked by: (*a*), central necrosis, due to deficient vascularity; (*b*), the probable development of an antitoxin which checks the local proliferation of microbes; (*c*), fatty degeneration and absorption of the fluid portions with caseation or cicatrization of the remainder.

6. Degenerative nervous processes, due directly to syphilitic exudations, are of two types: (*a*), "compression" degeneration due to prolonged pressure by gummatous masses or their cicatricial sequelæ which separates various neuron processes from the influence of corresponding "trophic centers" (neuron bodies); (*b*) secondary degeneration consequent upon destruction of these same neuron bodies by softening, of thrombotic or hemorrhagic origin. The preceding two types are classed as "non-systematized" degenerations, in contradistinction to:

7. Degenerative diseases, of "systematized" type, such as locomotor ataxia and paresis. These should probably be looked upon as malnutritional affections due in part to arterial degeneration (fibrous or hyaline or both) which may or may not be of syphilitic origin; and in part to inherent individual predisposition to early dissolution of certain physiological systems. These degenerations are not benefited and may be made worse by vigorous anti-syphilitic medication.

8. Remedies of value in syphilis may act in three ways: (*a*), the most usual, by promoting necrosis in the embryonic cells of the exudate, thus permitting their removal in large part by the lymph channels; (*b*), by stimulating the excretory organs generally, thus favoring removal of "toxins" produced by the disease; (*c*), possibly by the promotion of leucocytosis and other tissue changes, which set free an increase of the natural amount of (hypothetical) antitoxin. In no case do these remedies act as "absorbents" or "stimulate the absorbents," nor have we reason to believe that they destroy the microbes of the disease.

9. Any lesion of the nerve centers, attended or followed by inflammatory exudate, whether syphilitic or non-syphilitic, may be favorably influenced by the judicious administration of mercurials and iodids; and subsequent amount of damage by cicatricial compression or irritation be materially lessened.

10. The discovery of a means of producing artificially an antitoxin which shall arrest the disease in an early stage, must be conceded as a possibility.

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DISCUSSION ON SYMPOSIUM ON SYPHILIS OF THE BRAIN.

Dr. C. B. Burr, Flint, Mich.—The fact which Dr. Patrick alluded to, in connection with the case mentioned, namely, that the history of infection so many years before caused him to doubt whether syphilis was at the bottom of the symptoms presented, would have led me to the opposite conclusion, inasmuch as in my experience ten or fifteen or more years may elapse after infection before the development of cerebral syphilis. My practice, however, is largely among patients presenting mental disturbance with brain syphilis.

Of cerebral syphilis accompanied by marked disturbances of the mental operations there are two interesting varieties: one in which motor symptoms predominate; the other in which the symptoms are altogether psychical. They are both characterized by reduction. This is their most conspicuous quality. In the one the symptoms are clinically difficult to distinguish from those of paretic dementia. However, there is less apt to be expansive delusions, remissions are more frequent and the disease is of longer duration. In the second variety there is psychical reduction, manifested in dementia, the symptom of lack of memory being the most prominent. There is also hebetude and the patient is dull and unresponsive.

Dr. H. D. Valin, St. Peter, Minn.—I would like to say something about the bacteriology of syphilis. About 1896 an investigator in Baden, Germany, thought he had discovered the bacillus, and he published a pamphlet on the subject. An insane asylum is not a very good place in which to study the bacteriology of syphilis, as in my experience, cases of recent syphilis are rarely encountered there, but I thought I could get some outside cases, and through the courtesy of our late commissioner of lunacy I secured some pus which he assured me came from a syphilitic bubo. This remained for two or three weeks without undergoing any putrefactive changes, which agrees with the statement that has been made that syphilitic pus contains some element which retards putrefaction. Upon examining this pus, I found a small bacillus, staining by Gram's method, which had the characteristics of the bacillus that has been described by Van Niessen. After the pus had been kept for several weeks, increased numbers of this bacillus were found. With this pus I also undertook some inoculation experiments upon animals, and in one of the animals I found three growths in the liver which had the gross appearance of gumma and appeared so upon section.

In another case I was called upon to make a blood analysis by a surgeon not far from St. Peter. This patient had been operated on by another surgeon, who saved the man's life, but the operation left a biliary fistula. In the blood and bile of that patient I found a few small bacilli which were similar to those described by Van Niessen. I found it very difficult to cultivate these bacilli. The work must be done on gelatin. The characteristic changes observed in the gelatin are these: After seven or eight days the upper layer will begin to liquefy, and this will continue until the gelatin is completely liquefied, and at the bottom is a mass of detritus which on staining shows the bacillus. This process of liquefaction also takes place when streptococci are present. Van Niessen states that he found the bacillus even in chronic cases of syphilis of the

florid type. In a case of syphilis which came under my observation an examination failed to show any of these bacilli.

DR. E. G. CARPENTER, Columbus, Ohio—There are two points that I have observed in syphilis of the cord and brain. In the first place, in syphilis of the cord, and particularly in those cases where the disease has involved both the brain and the cord, I have noticed atypical reflexes, that is, they were active on one side and absent on the other, with more or less spasticity accompanied by ankle clonus. Another symptom which I have observed, is a slight loss of memory and some degree of dementia, with an accompanying depression sometimes amounting to melancholia. This, in my experience, is rather a common symptom in these cases, and it is in keeping with what we find in other diseases resulting from infection. For example, I have noticed this same symptom of depression in la grippe and typhoid fever.

DR. JOHN PUNTON, Kansas City—If the postulate laid down by Dr. Patrick in his paper is true, namely, that the symptoms in connection with cerebral syphilis are apt to present themselves within the first year and gradually decrease in frequency and severity as time goes on, then we must revolutionize our teachings in regard to the symptomatology of cerebral syphilis. From what the Doctor says, however, it would seem that he bases his claims on clinical knowledge. There are one or two points in connection with this subject that have not received sufficient emphasis. One is the temporary remission of symptoms that is not infrequently observed in cerebral syphilis. The patient may apparently be seriously ill on one day, and markedly improved the next.

DR. EDWARD E. MAYER, Pittsburg—The postulates set forth by Dr. Patrick may perhaps be a trifle too emphatic, and yet they certainly have a good deal of truth in them. Certainly, his statement regarding the onset of cerebral syphilis and the presence of the initial symptoms agrees with what I tried to say yesterday in the discussion of Dr. Norbury's paper upon paretic dementia. Because syphilis has occurred ten or twenty years before, we should not ascribe to it the cause of the dementia, and the same is true here. In the symposium on syphilis of the brain to which we have listened, the essayists very rightly separated the somatic from the psychical conditions. One symptom to which I desire to call attention is the partial psychic defect. Dr. Patrick ably presented the characteristic features—the bizarre coming and going of symptoms, the progressive dementia; the coma, and the remissions and exacerbations which are so characteristic of brain syphilis.

DR. SYDNEY KUH, Chicago—If there is one thing that is peculiar to the syphilitic psychoses, it is the intermittent and irregular character of the symptoms. One of these intermittent symptoms is perhaps especially characteristic, although it was described nearly fifty years ago; it is almost forgotten to-day. I refer to the symptom which went under the name of the intermittent aphasia of Mauriac. As far as I know, the character of this intermittent aphasia is almost invariably motor. The first attack, which is incomplete and temporary, is followed by a second and more severe attack and the condition finally becomes permanent. Often it is the only symptom. I do not think such a recurrent motor aphasia occurs in any disease excepting in syphilis of nervous system and paralytic dementia.

Perhaps the importance of nocturnal headaches as a symptom of cerebral syphilis is somewhat overestimated. My experience in the last few years has brought under my observation several cases with distinct and severe nocturnal headaches which I had good reason to believe were not of syphilitic origin. In one, the postmortem showed an immense abscess of the lobes of the brain. Very little has been said about the treatment of syphilis, and perhaps it might not be amiss to call attention to one method which in very severe cases has given me most satisfactory results. I refer to the intra-venous injection of corrosive sublimate, as recommended by an Italian writer. The method seems more dangerous than it really is. A local thrombosis may follow the injection, and occasionally there is ulceration; this has occurred in two out of the twelve cases where I have resorted to this method.

DR. FRANK P. NORBURY, Jacksonville, Ill.—Dr. Langdon, in his paper, spoke of the fever in syphilis. Some few years ago I observed a case of cerebral syphilis, or rather a case of acute insanity, the victim of syphilis in its secondary stage. During the first six weeks of the patient's stay in the hospital, I noticed a daily elevation of temperature. Whether this was due primarily to the syphilis or not I do not know, but I am inclined to believe that it was, and that the action of syphilitic poison in this case was the direct cause of the acute insanity. Melancholia was the form of mental disease, and I took it that the toxemia was so profound as to disturb nutrition, just as is noticed in typhoid fever, rheumatism and other infectious fevers. He recovered from his insanity and went to Iowa, where he subsequently resided. One day, eighteen months after leaving the hospital, he fell while walking along the street, and was picked up unconscious. He died in the course of a few days, and his death was attributed to some acute brain trouble.

DR. DEWEY, in reply—I do not know that I have anything more to say, unless it may be to give the periods of time that elapsed in my cases between the syphilitic infection and the onset of the insanity. In one case the insanity followed the infection within two years; in two, within three years; in three, within six years; in four, within seven years; in three, within eight years; in two, within nine years; in one, within ten years; in one, within twelve years; in four, within fifteen years, and in one, within sixteen years. In one, where nineteen years had elapsed since the syphilitic infection, the possibility of a second infection was thought of. This was the case of a religious brother who had been engaged in his priestly work for twenty years. He frankly acknowledged that he had been infected previous to that time, but the circumstances were such that a second infection could scarcely have occurred.

The symptom of loss of memory, to which one of the speakers referred, can not always be regarded as diagnostic of cerebral syphilis. It may be due to other causes. With reference to the intra-muscular use of bichlorid solution, I had a patient upon whom this method of treatment was employed. He thought the hypodermic injection was given to him for sedative purposes, and regularly fell asleep soon after administration.

DR. LANGDON, in reply—The suggestions made by Dr. Kuh were referred to in that portion of my paper which I did not get an opportunity to read. I mentioned the fact there that in the treatment of syphilis several improvements upon our present methods have been suggested by various writers. Among these is a Russian who in two or three very obstinate cases has employed an antitoxin with very favorable results. The antitoxin is obtained from the serum of old syphilitic patients, and is given by hypodermic injection.

PREVENTABLE DISEASE IN THE ARMY OF THE UNITED STATES—CAUSE, EFFECT AND REMEDY.*

MAJOR W. O. OWEN, M.D.
FORT THOMAS, KY.

Owing to the fact that my ideas, as expressed in a pamphlet that I had printed for private circulation, have appeared in part in the public press; and fearing that some one may be misled as to my intention and thought, I have concluded that it were better to express myself as fully as I can to the Academy of Medicine of Cincinnati and through it to the profession at large. I had no thought of making an attack upon any individual and therefore carefully abstained from using the name of any officer where possible offense might be taken. My aim was to call the attention of my professional brothers to a state of affairs which appeared to me was costing the Government large sums of money and the soldier great and unnecessary suffering from preventable disease, to call attention to the fact that the Red Cross of the Geneva Convention, which was intended to protect the surgeon, was actually a menace to his personal safety, for he was unwittingly using it

* Read before the Cincinnati Academy of Medicine, Oct. 7. For discussion, see p. 1130.

to protect property which belonged to the fighting force and was only loaned to the hospitals for temporary use. To ask you if you felt that you could agree with the position which I have taken that you put your shoulder to the wheel and help me to see if we could not as a body be able to create a public sentiment which in the future would lead to the correction of this, which I believe to be a wrong inflicted on the soldiers of all armies. I have seen in print that many medical men were sacrificed to save the military officer in the Crimea from the public clamor. Has not similar matter happened in the United States?

There occurred from May, 1898, to June, 1899, in the armies of the United States, deaths from: diarrhea and dysentery, 342; typhoid fever, 2774; homicide, suicide, and gunshot wounds, 1020. Out of a total death of 6619: diarrhea, dysentery, and typhoid fever, 3116; homicide, suicide, and gunshot wounds, 1020. This is slightly more than three deaths from these well-known preventable diseases to one of homicide, suicide, and gunshot wounds. (See Table VII, page 349, Report of the Surgeon-General United States Army to the Secretary of War, 1899). It will be noticed that this includes the battle casualties of Cuba, Porto Rico and the Philippines to June, 1899. Was this loss an imperative military necessity?

I believe that the day has come when all sanitary matters of the army should be placed under the control of the Army Medical Department for the reasons:

1. That by so doing very large economies may be made in the maintenance of the army, both in money to the United States and in suffering to the individual soldier.

2. To enable the Army Medical Department to obtain the immunity guaranteed by international treaty, which at present is not fully done.

Under the first head I would call attention to the fact that nowhere in statute law are the duties of the army medical man laid down except in one place, which says that he shall attend to the families of officers and men free; and in one other, that the Secretary of War may assign him to such duties as he may deem for the best interests of the service: *"Provided,* that the medical officers of the army and contract surgeons shall, whenever practicable, attend the families of officers and soldiers free of charge." (Supplement Revised Statutes United States, Chapter 217, Paragraph 6, Vol. I, p. 457.) "That medical officers of the army may be assigned by the Secretary of War to such duties as the interests of the service may demand." (Supplement Revised Statutes United States, Vol. II, Chapter 270, Section 3, p. 53.) The opinion expressed by a medical officer that a man has defects that disqualify him for service as a soldier is not final; it is a common thing for these men to be accepted by special authority, the defects being noted on the enlistment papers.

There is no regulation, so far as I know, and I think that I know, which requires an officer in charge of construction to submit the plans of construction to the Medical Department for an expression of an opinion as to the sanitary results before beginning the construction. The result is that every post at which I have served, even the most modern, is full of sanitary error that has cost much money to correct, when it has been corrected. Much disease has been the result.

In the annual reports of the Surgeon-General will be found each year accounts of many faults of sanitation which have been reported in the preceding twelve months. Each of these faults could have been prevented by proper medical advice at the time when the original construction was being made. When examining these reports it should be borne in mind that attention is only called to the more glaring instances which have been brought before the office and that the mass is too great to be placed in an annual report.

All that the Medical Department can do is for its individual members to report errors and recommend their correction. It is only a courtesy when the commanding officer listens to his medical officer. He is compelled by regulation to listen, but he is given the expressed right not to carry out the recommendation made by his medical officer for the prevention of disease amongst his men. In other words, he is given, by regulation, control over matter of which he has no adequate knowledge, as witness the following:

1392. The Medical Department, under the direction of the Secretary of War, is charged with the duty of investigating the sanitary condition of the army and making recommendations in reference thereto, with the duty of caring for the sick and wounded, making physical examination of officers and enlisted men, and furnishing all medical and hospital supplies, except for public animals.

1393. The surgeon, under the direction of the commanding officer, will supervise the hygiene of the post or command, and recommend such measures as he may deem necessary to prevent or diminish disease. He will examine, at least once a month, and note in the medical history of the post the sanitary condition of all public buildings, the drainage, the sewerage, amount and quality of the water supply, the clothing and habits of the men, and character and cooking of the food, and immediately after such examination will report thereon in writing to the commanding officer, with such recommendations as he may deem proper. The commanding officer will return the report, with his views and action indorsed thereon, and if he deem the action recommended impracticable or undesirable, will state fully his objections. The indorsement will be recorded in the medical history of the post, and the report and indorsement will be forwarded by the surgeon, through military channels, to the Surgeon-General. (Army Regulations, 1895, 1392-93.)

Constant changes are being made in posts by the quartermaster affecting sanitation. The surgeon, supposedly in charge of sanitation, finds or may not find them out before some one is dangerously ill or dead. If not before the disease has arisen, a search is then made, and reveals new and dangerous changes made in work previously inspected and found to be in good shape. Should he ask about it, he will be informed that these changes were made by the quartermaster whose business it is to look after construction.

At Fort ———— each company has ten wash basins, arranged in two gangs of five each, one gang on each side of the common trap and vent. This is a violation of the rules for plumbing issued from the Quartermaster's Department in Washington, D. C. It is also a violation of the plumbing rules of all of the large cities.

In time of war military necessity must control, but every precaution both in peace and war, but particularly in war, should be taken to put the soldier upon the highest plane of physical and mental excellence, so that he may be able to reach the highest efficiency as a fighting machine. Yet I have seen men drilled morning after morning in dew-laden grass until they were wet to the knee; have seen them living in overcrowded barracks, making a large sick report without actual necessity, etc., and the medical officer powerless to do aught but recommend.

Take the report of Lieut.-Col. A. S. Kimball, Quartermaster's Department, on the water supply of the Presidio, Cal. (See Report Surgeon-General United States Army to the Secretary of War, 1896, pp. 137-38). His report shows a water of undoubted high quality. He has based his report on the analysis made by Thomas Price & Son.

It is evident that these chemists were not informed as to the character of the water-shed from which this water is obtained. Mountain Lake, from borings around which this water is obtained, has a water-shed of two and one-half to three square miles; it is composed of seashore sand resting on a bed of rock. In this water-shed are three of the largest cemeteries of the city of San Francisco. A very large part of this water-shed is a closely-built city, with sewered streets, which sewers have uncemented brick bottoms. There are many animals stabled in it; all of the fecal matters of these animals and of this population is stored in this water-shed; all of the products of the decomposition of the bodies buried in these three graveyards drain into it; all of the excrement and kitchen waste of old Camp Merritt were buried in it. (There were some 18,000 men camped in this camp.) So long as the sand retains its ability to filter properly the water will be safe; when it becomes saturated with filth the health of the soldier at the Presidio will suffer. The water level of this lake has been lowered some twenty feet since the pumps have been at work. The officers of the Marine-Hospital Service tell me that they are afraid to use this lake water without first subjecting it to sixty pounds of steam. I made a careful chemical analysis of this water in 1899, and a careful personal inspection of this water-shed; it was self-evident that there must be contamination from animal source.

I believe that the analysis of Price & Son was correct when made; that the differences that exist between us are due to changes which have taken place from the increased number of bodies in the water-shed, from the increase in the population within the water-shed; that with these two causes that the sand is more soiled, and therefore no longer filters so well as formerly. It is a well-known fact that when sand is well aërated and not overloaded that it will filter out from 98 to 99.5 per cent. of all the germinal matter present.

Point Lobos Creek is the natural drainage channel of this water-shed. I was informed in the office of the Spring Valley Water Company that it had been formerly in use as a water supply for the city of San Francisco but that it had been abandoned for such use as it was too polluted.

The Presidio, with a water supply from this water-shed, was especially chosen as a model camp in which to assemble the troops for Philippine service, and the muster out of the returning volunteers.

Gen. ————, in his testimony before the war investigating commission, says in effect that he did not listen to his chief surgeon as to the medical needs of those commands that were to be detached from him; that he took from others and gave to his personal corps medical material on requisition that his chief surgeon had disapproved; that he compelled his chief surgeon to personally look after a division hospital instead of allowing him to look after the larger duties of his position; that he himself, in his own person, set the example of defying the recommendation of his Medical Department in drinking from a well that he was informed that the Medical Department had said was unsafe to use, and that he permitted the broken pump to be repaired so that the well might still be used. (See pp. 3080-81-85-86, Commission's Report, War with Spain.)

The general in a letter dated Nov. 12, 1898, uses the following language concerning his chief surgeon: "In the matter of the location of the troops in the camp, Col. ———— was not consulted, so far as my recollection goes, nor did I deem it necessary to consult him: there was no need of it. Any 'protest' he made received such attention as the importance of it required."

The report of Reed, Vaughn, and Shakespeare says:

> Some regiments at ————, as we have shown, were so located that they received the drainage of other regimental camps. There was certainly no sufficient excuse for this. . . . The —th Indiana was forced to contract its lines to half the regulation distance, and it was then only 30 feet distant from the —th Ohio. The sinks of the last-mentioned regiment and the kitchens of the —st West Virginia were only 12 or 15 feet apart." . . . (The —th Penn.). This command reached —— May 20, and was unfortunately located on low ground. Requests for a change of location were repeatedly made in June and July. The soil became muddy; the camp received the washings from the other camps above; the sinks rapidly filled with water and overflowed, and still requests for a change in location were unheeded until August 12.
>
> As we have already seen, some regiments were improperly located from a sanitary standpoint. This was done by superior line officers, and sometimes in the face of protests from the medical officers. We have also seen that requests for a change in location were disregarded and regiments were allowed to occupy one site for too long a time. In general the camps became very filthy. It must be therefore admitted, it appears to us, that line officers were to some extent responsible for the conditions of the camps under their command. The medical officer can only recommend; the line officer can command.

Again the letter of the general continues: "Col. ————'s impression of the water was not borne out by the analysis of it." Of this command 21.56 per cent. suffered with typhoid fever, and 714 men died of this disease in this camp.

What opportunity have sanitary officers to have their recommendations carried out; what opportunity to prevent disease, when the general in command treats his chief surgeon with disrespect both as to his person and as to his recommendation; when the general himself drinks a water that he is informed has been condemned by the sanitary officer? In another place, when the general has read to him a report made by a sanitary officer concerning this camp, he requested that he might be given a copy of the report, so that he might bring the reporter to trial before a general court martial. He was informed that it was not protected testimony, and where a copy could be had. His further action is not known.

The mortality of the Spanish-American war was 28 per 1000 living. The mortality of men in civil life, including the lame, halt, and the blind, is about 8 per 1000 living between 20 and 35, the age limit of the armies of the United States. The enlisted soldier of the army of the United States is selected carefully from the flower of young American manhood. Young men physically sound between 20 and 35, with proper sanitary care, should not have a mortality of more than 1 or 2 per 1000 per annum; excess over this means careless sanitary work, and 28 per 1000, which was the average of the Spanish-American war, means that the work was badly done in these camps, and that more than four-fifths of these diseases and deaths should have been prevented; they were not a military necessity, for no enemy was near. These lives should not have been

taken; their mothers, wives and sisters should not have been thus grieved; the Government should have been spared this loss of life, and the loss of money needed to replace the dead and disabled, to pension the widows and dependents of the dead and to pension the disabled.

So far there has been allowed 6000 pension claims for the Spanish-American war; 44,000 claims are still to be adjusted. One to seven so far has been the average allowed; if these receive $100 per annum (the average for June, 1900, was $169.10) and the ratio holds, it means that the annual pensions for this war at present amount to $1,200,000, or the interest at 3 per cent. on $40,000,000.

Fully two-thirds of this list should have been saved by avoiding pensions to men disabled by preventable disease. These men are now disabled or dead; they, their widows and dependents, are to be cared for by the Government. How much better to have so cared for them that they had been returned to the bread-winners of the country! The normal death-rate of times of peace is largely increased in war times, not from injury, as many suppose, but from disease. These diseases are not so much from marching and maneuvering for battle position, but to the insanitary conditions of the camps, which, under a proper responsibility before the law of the land, can be easily corrected.

Look at the testimony given before the commission to investigate the Spanish-American war concerning Camp Alger, Fall's Church, Va.; concerning Camp Thomas, Chickamauga, Ga., with their pollutions of every possible class. The loss of life in these camps was more than forty times the corresponding loss in the city of Cincinnati, and one hundred times that of the City of New York (see "Purification of Public Water Supplies," J. W. Hill, p. 268).

The law should be so drawn that, without depriving the line officers of their proper military authority, yet it should fix definitely on whom this responsibility for the death and disability of the soldier by preventable disease rested; should fix when and under what conditions the Medical Department or the Line is responsible, or to fix it permanently on the one or the other. The law should fix the responsibility in order that some one man may be punished for the violation of established sanitary law.

No man, seeing before him the absolute certainty of having to account to the law, with his own body and reputation, for the loss of life, and for disease arising from his carelessness, lack of knowledge, lack of what not, will hesitate to apply the legal remedy and thus keep from his own shoulders the responsibility.

The saving to an army in suffering, to its individual men, to the Government in money paid in pensions, to the dependents of the dead, the disabled, and to men to replace the dead and disabled on the active lists is simply incalculable.

The cost to the individual soldier in suffering has been great from a lack of proper sanitary care. A careful examination of the medical histories of wars will show any man, who has made sanitation a study, what huge costs governments pay for a lack of sanitary law for their armies, and a fixing therein of the individual upon whom shall rest the responsibility for a breach of the sanitary law. Any military commander committing a military blunder which sacrifices his army is punished, but they are allowed to sacrifice men without number to insanitary conditions without question, without a word of condemnation, or even a thought of so doing.

TRANSPORTATION.

The other point to which I wish to call attention is the International Treaty, the so-called Geneva Convention, to which the United States is a party. This provides that all of the transportation and supplies of the Medical Department which go with the moving army, under its terms called "ambulances" (See Additional Articles, Article III, Geneva Convention), are exempt from capture and from being fired upon.

The greater part of these are under the control of the Line, and belong to the Quartermaster's Department, and are accounted for to this department. This condition makes all of this transportation liable to capture, and to be fired upon by the enemy, for they are unable to distinguish the transportation of the Medical Department (exempt) from that of the Quartermaster (non-exempt). This leaves medical transportation exposed to capture, etc., because unprotected by the International Treaty. (The Act of March 11, 1864, gives strict orders about ambulances, etc. The United States became a party to the Geneva Convention in 1882.)

The transportation of the Medical Department and many medical supplies were left at Tampa, Fla., by orders of the line officer when the army went to Cuba in 1898. The Surgeon-General should have had authority, and then he would have had the proper ship on hand, and would have moved all of his supplies and transportation on his own ship at the same time that the troops moved, and he would have had his material and transportation ready to disembark at the same time that the troops disembarked, and would have prevented the suffering that took place for the lack of this material and transportation when the fights took place. As it was, the comparatively small amount of material which the chief surgeon was able to take with the expedition was scattered throughout all of the ships of the expedition; he was compelled to devote much of his own time and that of other officers to try to get such portions of this medical property as was possible from the mixed mass of quartermaster, ordinance, commissary, and medical stores on board of these ships, instead of being able to attend to the proper distribution of both officers and supplies of his department.

The report of Captain E. L. Munson, Assistant-Surgeon, U. S. A., shows the exceeding difficulty which the medical department encountered in getting proper transportation for their supplies, showing that after much worry he obtained a four-oared boat, which was taken away from him after a few hours.

Should a field hospital be captured under present conditions, the first question by the enemy would be: "To what department does this material belong? Can the Line of your army take any of this material from the Medical Department and convert it to its own use, or is it exclusively for the use of the Medical Department?" The answer by our medical officer of necessity must be that "the axes, stoves, cooking utensils, hospital tents and all other tents, hospital flags and guidons, horse equipments, wagons, ambulances, mules, and horses, one and all belong to the Quartermaster's Department; that they were liable at any time to be taken by the Line, used by them for fighting purposes, and that the Line was the sole judge of when and for what reason this was to be done."

The enemy will very properly say that "you are sailing under false colors. We have no time for fine distinctions. We will take the whole outfit." Yet the

medical officer is ordered to go into the field with this transportation, which belongs to the fighting force and to protect it by flying the Red Cross flag of the Geneva Convention over it until such time as the fighting force may need it. It is a clear violation of this treaty to place in the field hospital (ambulance) material belonging to the fighting force. Yet in the armies of the United States the "ambulances" are eomposed of material which the Line is obligated to take from the use of the siek and wounded whenever its needs require that they should do so, for not even the hospital flag or hospital tent is the property of the Medical Department. In fact all the wagons, horses, tents, etc., which go to form an "ambulance" belongs to the fighting force, and it is only loaned to the Medieal Department until such time as the fighting force needs it again.

The word "ambulance" is ordinarily used to express the idea of a wagon so prepared that it will carry a sick or wounded man comfortably. This word, however, when used in the Geneva Convention is given a distinct and very much enlarged meaning. For the 3d Article of the additional artieles gives to it the meaning of a field hospital or other temporary establishment which follows the troops on the field of battle to receive the sick and wounded. Hence, our English cousins and many others say "ambulance wagon," which translates into the vernacular as "hospital wagon."

It was the evident intention of the Geneva Convention to proteet the sick and wounded. The ambulance wagon, the so-called Red Cross wagon or ambulance, because it is marked with the red cross of this convention, should certainly not be the only part of the field hospital which is protected from being fired on and from capture. The four and six horse wagons, the tentage, beds, bedding, and food are just as necessary to the eare of the field hospital, and is, in faet, a part of it. The ambulance brings the patient to the hospital, the wagons move the tentage, etc., from place to place; as the command moves the ambulance wagon moves the patient, the wagons move the hospital. So long as the transportation of the Medical Department belongs to the Quartermaster and is only loaned for temporary use to the Medical Department, will the Line have the right—in fact, the obligation—to take it from the use of the disabled and convert it to the use of the fighting force, when they deem it necessary. What line officer will hesitate for a moment to take the mules from the Red Cross ambulance itself and send them for ammunition, should he be hard pressed and others not available. They do not bear the Red Cross. Certainly they will not hesitate to use a wagon marked Q. M. D., U. S. Army. This will enable the enemy to comply with the Geneva Convention and strip the hospital of everything that is likely to afterward be of use to the fighting force. The Line can at its own volition take quartermaster's property away from the Medical Department.

GENEVA CONVENTION—ORIGINAL ARTICLES.

Article I.—Ambulanees and military hospitals shall be aeknowledged to be neuter, and as sueh shall be proteeted and respeeted by belligerents so long as any siek or wounded may be therein. Sueh neutrality shall eease if the ambulances or hospitals should be held by a military force.

Article IV.—As the equipment of military hospitals remains subjeet to the laws of war, persons attaehed to sueh hospitals eannot, in withdrawing, carry away any artieles but such as are their private property. Under the same eireumstances an ambulance shall, on the eontrary, retain its equipment.

ADDITIONAL ARTICLES.

Article III.—Under the conditions provided for in Articles I and IV of the eonvention, the name "ambulance" applies to field hospitals and other temporary establishments, which follow the troops on the field of battle to reeeive the siek and wounded.

What are the laws of war concerning the misuse of this protection?

RESPONSIBILITY.

The appended bill does not take eommand from the Line, but it does compel them to assume the responsibility for insanitary conditions which may arise when they choose to ignore the sanitary recommendations made to them by the Medical Department, when they do so without proper military reason for their action, and it does provide a legal remedy whereby the offieer responsible may be reached by proper legal process. To assume the responsibility with proper military reason is a thing that the Line should at all times have the right to assume. In such camps as Camp Thomas, Ga., there were strong reasons to carry out sanitary law and none to ignore them.

On page 2981-83 of the report of the eommission to investigate the war with Spain, Col. Hartsuff (the chief surgeon at Camp Thomas, Ga.), testified that he personally reported to the General in eommand that one of the camps was "outrageously foul; that it was an imperative necessity that this eamp be broken up at once; that there are large numbers of typhoid fever eases in eaeh regiment." His letter was dated July 11. 1898. On page 2983 he testifies:

Question: "Practically, then, all the reeommendations that you made were simply paper manifestoes?"

Answer: "In most eases; yes, sir."

On page 3080 the General in command testifies:

Question: "Had any of the wells, General, been condemned by the Medical Department prior to your leaving the department?"

Answer: "By alleged Medical Departments? Two of them were erroneous, I believe, after examination into it myself. . . . Another well lying on the road between the Alexander House and Jay's Mill was also condemned. I drank of that well water every time I passed it until somebody broke the pump to pieces. I suppose it was some of our energetie medieal fraternity, who had spent their time in finding that there was a suspieion of these two wells, and then I did not bother further about it."

Either the medical officer or the officer in command was at fault. Unfortunately, there is no fixed responsibility before the law for either the one or the other, and so it is that no one is punished for this most culpable state of affairs, exeept the helpless soldier, whose love of country leads him to an inglorious death and a premature grave by diarrhea or dysentery, a death as useless as it is preventable and expensive to the United States.

The question, plainly put, is, How many men lost their lives in 1898-99 from the incompeteney of the eommanding officer, or of the medical officer? Of the officer who was to judge of the necessity of earrying out the recommendation made or of the officer whose duty it was to recommend? It must perforee lie between the two.

Army Regulations, 1895, paragraphs 1392-93, make the medical officer responsible for recommendations, but gives none to the commanding officer for not earrying out the reeommendations made, but gives him the expressed right not to do so.

No medical man will continue to recommend when he sees his recommendation treated with good-natured indifference, or worse, for by so doing he lessens the influence that he may have; he does, however, continue to talk to the commanding officer and try to influence him in the right direction in spite of the indifference with which he is met. The medical officer is compelled to obtain what he can in a sanitary way by means of placation and persuasion.

In answer to the above there will be many responses, which, when sifted, simply mean that those in command are unwilling to assume responsibilities for matters which they do not understand; that they feel that they must have absolute and entire control of everything in the army, both in peace and war; otherwise the victory is not to be won, etc.; that no man should be allowed to tell them how to take care of the men; that they have done so in the past and that they can do so in the future.

If the medical man in the army is not competent for the responsibilities above sought, the sooner that he is removed and replaced by competent men from civil life the better for all concerned. It is far more important that the medical man should have ability to prevent the ingress of disease into a command than to be able to treat it after it has arisen.

Command has grave responsibilities. In order that it may be effective it must have absolute and unquestioned control of men and material present. Among these responsibilities is that for insanitary conditions that may arise. Line officers are not trained sanitarians, medical officers are. Under the present law neither is responsible. All errors are charged to military necessity, unfortunate, but non-preventable.

The Omniscient has established a law governing the life of the typhoid bacillus as certainly as he has fixed the path for the several planets. The law of germ disease and the law of sanitation, while certain, are delicate and difficult of comprehension and require years of study to comprehend even in degree.

The layman of the highest intelligence does not comprehend the full relation of cause and effect in matters of sanitation, or in the transplantation, growth and destructive effect of the typhoid bacillus without long study. He prefers to call to his own family an expert physician when his wife or child is sick, and he takes expert advice; but when he is an officer of the Line he sometimes—nay, often—regards such advice as an invasion of his superior authority, and disposes of it by writing across the written advice of the expert employed by the Government, the report and recommendation of the medical officer, "Not concurred in," which disposes of the matter.

It is a breach of military discipline to undertake to argue with the commanding officer or to instruct him in sanitary care, or even as to the habits of the typhoid bacillus. Thus soldiers die, are disabled, and huge sums are paid for pensions which could have been avoided. Is it not best to leave sanitary matters in the hands of medical men? Is it wise to leave them in the hands of the Line officer? I have conceived the idea that the purpose of Congress in creating the Medical Department of the United States army was that the Medical Department should direct such measures as would give the General, when he offered or was to receive battle, the greatest number of men in the best physical condition, and to watch over the men that the smallest amount of disease may arise, so that the greatest number may be returned to their homes fit to earn the living for the family when the war is finished, and that the fewest be compelled to accept the provisions of the pension law.

In other words, if the medical officer is to take care solely of the sick and wounded, and the Line officer is to look after the sanitary condition of the camps, barracks and troops, then the most valuable part of the medical officer's knowledge is lost. Certainly his best work is done in preventing disease, and not in caring for it after it has arisen from insanitary conditions imposed by the imperfect knowledge of the Line. To put it another way, there are many medical officers who wish far more strongly for the power to enable them to control disease than for any increased rank that may be given them. Certain it is that the people should dread a war far more for the preventable diseases that may arise than for injuries that may result, and perhaps more still for the taxes for pensions due to such cause.

Compare anywhere the sanitary conditions which exist where the Medical Department controls and where it recommends. Compare the hospitals in the city of Manila with the barracks of the troops of that city. Compare the hospitals where the Medical Department has the command and where it is subjected to the command of a Line officer.

The most important thing to be brought out is, that neither the commanding officer nor the medical officer is responsible under the present law and regulation for insanitary conditions which may arise with the resultant diseases and deaths, that this condition is a great wrong to the soldier and that it should be corrected by law. Neither the commanding officer nor the medical officer can be punished under the present law and regulations. It is my firm conviction that, when a man causes the loss of another man's life, by inattention to his duty, or by faulty judgment of what his duty was, that there should be some legal process by which to punish him for his inattention, or to remove him for his lack of correct judgment. Under the present law and regulation the cry is the same old cry which sacrificed the medical man in the Crimean war. The general saying that the medical officer did not inform him of the conditions, that he did not make the proper recommendations, that he himself had made careful daily inspections, that he did not see the conditions complained of; therefore, he could not issue the orders to prevent things that he did not know of. The medical officer answers that he did report day by day to the general, that he made the recommendations, that he foretold that which happened, that the general thought that it was best to let matters take their course. Both claim that the other is responsible and the public can not know which truly is. This very plea was made before the war investigating commission in 1898, when the question was up as to who was responsible for the great spread of typhoid fever and the unnecessary loss of life therefrom. There should be a code of punishment provided for those actions which lead to the death of men from preventable disease without military necessity.

RESULTS.

The results of such regulation were plainly visible at Camp Thomas, Ga., at Camp Alger, Va., and other camps of assembly in 1898-99. Numbers of men lost their lives through some one's fault. Has the responsibility been fixed? No! It is impossible to fix the

responsibility under the present law and regulation. Such things should not be allowed in this day. The responsibility should be fixed on the medical officer. who is trained for this work, or it should be fixed on the Line, and it should be fixed by law. The principal thing is to fix the responsibility either on the Line or the Medical Department, but fix it so that it may not be evaded by any possible excuse, except that of military necessity in the face of the enemy.

The place *par excellence* to see the effect of this lack of law will be a classified list of the diseases and injuries for which pension has been granted, both for the Civil war and that of 1898-99. and a classified list of the claims yet to be adjusted. Take these lists to any man who is a sanitarian and ask him what percentage of the disease represented on the lists could have been prevented by a proper sanitary care, what percentage with good sanitary care would have left no permanent disability.

There is no man more earnestly in favor of the pension law than I am. but I do feel that it is far better to so treat the soldier that when the war is over he will return home in good physical and mental condition. To so return all but the killed and wounded would be perfection.

I do not wish to imply that the pension rolls have men improperly on them, but I do wish most emphatically to state that had the Medical Department had the power to control in sanitary matters a very large proportion of the deaths and disabilities from disease could have been prevented, and would have been.

The Line officer should have the power of command over his troops, but when he refuses to correct sanitary errors he should have a controlling and imperative strategical reason for his refusal. He should not be allowed to subject his command to insanitary conditions in time of peace, nor in time of war, knowingly, unless there be imperative strategic reason, which he could offer to his superior as a proper defense.

No good business man employs non-experts to supervise experts.

It is my belief that the army medical corps, as a body, cares more for the power to do its full duty to the army than it does for any increased rank or pay. In order to do its full duty to the army it must control in sanitary matters.

At present its sole function is advice and recommendation; its only power the mental strength of its individual officer, who sees the sanitary error, and his ability to persuade commanding officer to correct it.

The following table is taken from an abstract of the report of Reed, Vaughn and Shakespeare, on the origin and spread of typhoid fever in the military camps of the United States in the Spanish war in 1898, p. 193:

Command, Etc.	Number of Regiments.	Mean Strength.	Cases of Typhoid Fever.		Deaths from Typhoid.	Deaths from all Diseases
			Certain.	Certain and prob. able.		
1st Army Corps (Chickamauga)	22	27,380	2,912	5,921	344	397
3d Army Corps (Chickamauga)	17	20,568	1,741	4,418	417	469
4th Army Corps (Chickamauga).	7	7,507	440	1.498	99	112
2d Army Corps (Alger)	18	19,807	1,807	2,226	212	259
2d Army Corps (Meade)	12	13,962	1,799	2,690	150	168
7th Army Corps, 2d Division (Jacksonville)	9	10,759	1,729	2,693	248	281
Total	85	99,983	10,428	19,446	1,460	1,686
7th Army Corps, 3d Division	7	7,990	. . . .	1,292	120	146
Grand total	92	107,973	. . . .	20,738	1,580	1,832

Command. Etc.	Number of Regiments.	Percent. of deaths from Typhoid to all other deaths.	Morbidity of Typhoid Fever in 1,000 Mean Strength		Deaths from Typhoid in 1,000 Mean Strength.
			Certain	Certain and probable.	
1st Army Corps (Chickamauga)	22	84 13	106.35	216 25	12.19
3d Army Corps (Chickamauga)	17	88 91	84 64	214 79	20.27
4th Army Corps (Chickamauga)	7	88.39	58 61	199 54	13.17
2d Army Corps (Alger)	18	81.87	91 23	112 38	10 74
2d Army Corps (Meade)	12	89.28	128.84	192 67	10 74
7th Army Corps, 2d Division (Jacksonville	9	88 25	160.70	250.30	23 05
Total	85	86 59	104.29	194 49	14.60
7th Army Corps, 3d Division	7	82 19	. . . .	161.70	15 01
Grand total	92	86.24	. . . .	192.65	14 63

Command. Etc.	Total Deaths	Typhoid Deaths	Per cent. of Typhoid Deaths to all Other Deaths.
1st Division, 1st Army Corps (p. 13)	283	190	67.49
2d Division, 1st Army Corps (p 14)	135	109	80 70
3d Division, 1st Army Corps (p. 18)	210	180	85.71
Total (p. 21)	628	479	76.27
1st Division, 3d Army Corps (p. 26)	215	174	80 93
2d Division, 3d Army Corps (p. 30)	281	257	91 45
Grand total	1124	910	. . . .

Mean strength 1st Army Corps (p. 22)	27,380
Number of certain and probable typhoid fever cases (p. 22)	5,921
Number of certain typhoid fever cases	2,912
Percentage of death from typhoid fever, 1st Army Corps	1.749
Percentage of death from typhoid fever, 3d Army Corps	2.146
Aggregate strength of the 17 regiments, 3d Army Corps (p. 33)	20,568
Total number of cases of probable typhoid in the 17 regiments of this corps (p. 33)	4,418
Percentage of cases of probable typhoid in the 17 regiments of this corps (p. 33)	21.47
Total number of deaths from typhoid fever in the 17 regiments of this corps (p. 33)	417
Aggregate strength of the 1st and 3d Army Corps, excluding the regiments that went to Porto Rico from the 1st Division, 1st Army Corps, the 1st South Carolina, from the 3d Division of the 1st Army Corps and the 1st District of Columbia Volunteers from 1st Division, 3d Army Corps (p. 57)	44,803
Total number of probable cases of typhoid fever among these troops (p. 57)	9,660
Percentage of probable typhoid fever among these troops (p. 57)	21.56
Total number of deaths from typhoid fever among these troops (p. 57)	714

Mortality per 100,000 living from typhoid fever was as follows: First Army Corps, 1749; Third Army Corps, 2146.

J. W. Hill, "Purification Public Water Supplies," pp. 268-71, gives the following death-rate for typhoid fever: New York, 21; Chicago, 83; Philadelphia, 64; Cincinnati, 67; The Hague, Holland, 3; Cairo, Egypt, 260.

The above is calculated on all living in the cities; those for the army corps are for men in the prime of life, from 21 to 35, selected after a careful physical examination (see enlistment papers in the Adjutant-General's office, Washington, D. C.).

Notter and Firth, "Theory and Practice of Hygiene," published by Blakiston & Son, 1896, p. 772, gives the annual death-rate per 1000 living males for age groups:

Age group.	1871-80	1881-90	1891-93
20-25	7.4	5.7	5.4
25-35	9.4	7.8	7.4

Translating this to 100,000 living makes:

20-25	740	570	540
25-35	940	780	740

Death-rate per 100,000 living from typhoid fever alone in the army, the physical condition of the men vouched for at enlistment as sound, was as follows: First Army Corps, 1749; Third Army Corps, 2146.

On page 779 of Notter and Firth is given the follow-

ing as the death-rate from typhoid fever per 1000 living in England and Wales:

1884	0.236	1889	0.176
1885	0 175	1890	0.179
1886	0 184	1891	0.168
1887	0.185	1892	0 137
1888	0 172	1893	0 229

The following, showing the annual mortality from several sources per million persons living at all ages in successive periods and years, is taken from "Vital Statistics," by Arthur Newsholme, published by Swan, Sonnensehein & Co., London. 1899, p. 320:

	1861-70	1871-80	1881-90	1891-95
Typhus	885	57	14	4
Enteric (typhoid)		322	196	174
Ill defined		103	25	8

The following table ("Vital Statistics," p. 203) shows the attaek-rate and death-rate per 100,000 living from typhoid fever for the entire population of the city of London at each age period in 1896 for the two sexes:

All ages.	Attack rate—Males.	Death rate Males.
20	117	26
25	107	22
35	60	19

The report of Reed, Vaughn and Shakespeare, p. 94, gives the following data for Second Corps:

	Attack rate—Males	Death rate Males.
1st and 3d Army Corps, 1898	21,560	1.947
2d Army Corps, 1898	11,238	1,970

The mortality for the First and Third Corps together is about ninety-two times the corresponding loss in the city of New York, and twenty-eight times that of the city of Cincinnati, Ohio. The entire male population is included in the calculation for the cities. The First and Third Corps were men picked carefully for physical soundness less than six months previously. The attaek-rate was about 184 times that of the city of London for 1896. The General in command of the Second Army Corps, in his testimony before the investigation commission, pp. 233-234, said: "I believe that the water, when it came from the wells, was as pure as when filtered; in other words, I would rather drink the water that came from the wells but I, of course, subordinated my opinions in those matters to my medical officers."

The General in command of the First and Third Corps says in his testimony, p. 3080, speaking of the water at Camp Thomas, Ga.: "Another well lying on the road between the Alexander House and Jay's Mill was also condemned. I drank of that well water every time I passed it until somebody broke the pump to pieces. I suppose it was some of our energetic medical fraternity who had spent their time in finding that there was a suspicion of these two wells."

Among the conclusions of Reed, Vaughn and Shakespeare are the following (pp. 178-188):

13. Typhoid fever is more likely to become epidemic in camps than in civil life, because of the greater difficulty of disposing of the excretions from the human body.

14. A man infected with typhoid fever may scatter the infection in every latrine in a regiment before the disease is recognized in himself.

15. Camp pollution was the greatest sin committed by the troops in 1898.

18. Many commands were allowed to remain on one site too long.

19. Requests for change in location made by medical officers were not always granted.

20. Superior line officers cannot be held altogether blameless for the unsanitary conditions of the camps.

As we have already seen, some of the regiments were improperly located from a sanitary standpoint. This was done by superior line officers, and sometimes in the face of protests from the medical officers. We have also seen that requests for change in location were disregarded, and regiments were allowed to occupy one site for too long a time. In general, the camps became very filthy. It must therefore be admitted, it appears to us, that line officers were to some extent responsible for the condition of the camps under their command. The medical officer can only recommend, the line officer can command.

21. Greater authority should be given medical officers in questions relating to the hygiene of camps.

In our opinion, it is of the greatest importance that more authority be granted medical officers in all matters pertaining to the hygiene of camps.

22. It may be stated in a general way that the number of cases of typhoid fever in the different camps varied with the methods of disposing of the excretions.

42. The continued fever that prevailed among the soldiers in this country in 1898 was typhoid fever.

At the second session of the Fifty-Sixth Congress, December 6, 1900, Mr. Hay introduced in the House of Representatives the following bill, which was referred to the Committee on Military Affairs and ordered to be printed:

A BILL.

To define the duties of the Medical Department of the Army of the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the duties of the Medical Department of the army of the United States shall be as follows:

1. The direction of measures for the prevention of the ingress of disease among the troops of the army and of sanitary faults in location, construction (and management) of posts and camps.

2. The medical and surgical care of diseased and injured officers and soldiers of the army of the United States; the physical examination of all officers and soldiers entering or leaving the army of the United States.

3. The care (of) and accountability for all transportation pertaining to the movement of men and supplies of the Medical Department and (of) the sick and injured of the army.

4. The preparation and preservation of the records of transactions taking place under the three preceding paragraphs.

5. It shall be the duty of the senior medical officer of the (army), corps, division, or brigade (territorial division or department), in which an unusual outbreak of disease shall have arisen to at once take steps to investigate and determine the reasons therefor.

Should this investigation show any carelessness or inattention to duty, either upon the part of the medical officer or of the officer in command at the infected point, he shall at once make report (of the facts) to the officer in command (of the army, corps, division, or brigade, territorial division, or department), whose duty it shall then become to bring the offending officer or officers before a court-martial for such punishment as, upon conviction, the court may deem proper and the reviewing authority concur in.

6. The Secretary of War is hereby authorized and directed to prepare suitable regulations for the enforcement of the provisions of this act.

7. The Medical Department shall also perform such other duties as the President or the Secretary of War may deem for the best interest of the army.

All acts and portions of acts in conflict with the above are hereby repealed.

Should the ideas advanced in this paper meet with your approval, I most earnestly urge that you will take steps to have the public at large thoroughly informed on the subject. My object is and has been to obtain the best possible protection for the American soldier from preventable disease.

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DIAGNOSIS.

When called to a case, the young physician is apt to meditate more on what he shall prescribe rather than on what is the matter. As a student he was, perhaps, more diligently occupied in copying the pet prescriptions of his favorite teachers than in noting the care with which these same teachers sought to impress upon his mind the importance of diagnosis and the fact that a correct knowledge of the disease process, its cause and its natural course, must precede a rational therapy.

What the average practitioner thinks he wants, when, after a decade of practice, he attends a post-graduate school, is a knowledge of the new drugs and the latest method of treatment. He is satisfied with his ability to recognize typhoid fever, but has become discouraged because his last three cases died in spite of the treatment that had been so uniformly successful in scores of cases in years gone by. Had he made autopsies on his three cases perhaps he would have been surprised and shocked, and would have felt that his diagnostic, rather than his therapeutic, ability was at fault when he discovered no evidence whatever of typhoid, but an empyema in the one case, an ulcerative endocarditis in another, a tubercular meningitis in the third. Failure to make autopsies, lack of rigid criticism by consultants who are too prone to agree with the attending physician, and neglect of careful and repeated examinations in all cases that are atypical or in any way obscure, render a physician overconfident in his diagnosis; he often blames therapy where the fault is that he failed to understand rightly the nature of the disease.

The ability to make a correct diagnosis is not entirely the result of native genius. As Cicero said about the making of a poet, the natural ability is of great importance, but the man of surpassing merit is he who joins to his native talent the power that comes from education. The man of quick perception, of logical mind, and with acute special senses may make a rapid and apparently intuitive diagnosis. But in its ultimate analysis such a diagnosis is the result of study of books, and of experience at the bedside and in the laboratory; it implies weighing of probabilities and close logical reasoning; it is far from intuitive. This is the hard lesson to teach the young man who becomes discouraged as he ploddingly works over his case and still is unable to name the malady, or grows careless through his effort to work as rapidly as his preceptor or his superior. But practice in this line brings improvement as it does to the pianist, who soon reads and plays at sight music that was at first entirely beyond his grasp.

Many diagnoses are made with positiveness. When technique is faultless one may at times be able to pronounce a case tuberculous, or to declare the nature of a fragment of tumor, or the presence of fluid is proven by aspiration or a fracture recognized by crepitus, etc. Yet while the learned and trained physician is the most positive in his diagnosis when he is sure of his ground, no one is more cautious and guarded when positive signs are lacking, and no one more candid in saying, "I do not know." It takes some men many years before they attain that mental attitude commanding the wide horizon and giving them the clear vision so that they can look about and declare openly, "I do not know." Some men never reach this high plane; others lack the courage to confess what seems to be ignorance. But the intelligent layman who has tried his physician and not found him wanting, is willing to accept this confession of limitation of human power; he recognizes the feebleness of human insight into the workings of Nature, and he waits patiently until the physician is ready to announce his decision. The physician who is honest in his diagnosis has nothing to retract; he is not obliged to "hedge."

The physician who has had impressed upon him early the importance of diagnosis, who realizes the diagnostic ability is not a gift but an acquirement, and who gives his opinion not prematurely and guessingly, but conscientiously and after full deliberation, may not be brilliant, and may add little to the world's store of knowledge, but he goes about doing good; he commands the respect of his patients and his colleagues, and is free from the stings of conscience that come through mistakes committed through haste and carelessness.

THE DISTRIBUTION OF PHYSICIANS.

The recent census proves the source of not a few surprises in what concerns the distribution of physicians to the number of inhabitants in various parts of the country. It would not be surprising to find that doctors were most numerous in proportion to the population in the long-settled Eastern States. As a matter of fact this is not the case, however. California, Colorado, Kansas, Missouri, Iowa and Arkansas have more physicians to their population than any of the Eastern States except Vermont and Maryland. There are less inhabitants to each physician in Texas with its scattered population and magnificent distances than in Pennsylvania with its dense population, most of which is gathered into a few compact areas. Physicians are said to affect especially crowded centers of population, but some of these statistics would seem to contradict the old tradition and show that there is still a very large number of men who prefer a country life with its long, tiresome journeys to the pent-up city existence with its conveniences and social features, but absence of contact with nature.

With the exception of the District of Columbia, where, of course, many circumstances, such as political reasons, the glamour of fashion and of official life, and especially the presence of the medical headquarters of so many government departments, conspire to increase the number of physicians, California has more doctors to the population than any other part of the United States. The reputation of the State as a health resort is evidently responsible for this preponderance. Next after California in this matter comes Colorado, and for similar reasons. Physicians in delicate health are added to the practitioners who would naturally practice in the State, and, besides, graduates from a distance are attracted by the prospect of the superabundance of patients these States attract. For identical reasons Florida has distinctly a greater proportion of physicians to the population than any other Southern State.

It is evident from the census statistics that we must be rapidly approaching the limit of additions to the medical profession if the individual members are to find the practice of medicine a lucrative occupation. The New England States have an average of less than 600 inhabitants to each physician. New York has 596, while Pennsylvania provides 693 people for every doctor. New Jersey, with many health resorts but no medical school, and a rigorous examining board, has but one physician for every 881 inhabitants. The profession does not fare so well in the Middle Western States, where in Indiana there are but 519 people to each physician, in Ohio 529, in Michigan 575, and in Illinois 583. Meantime there are no special complaints of indigence among the members of the profession in California and the District of Columbia, though the number of inhabitants to each physician is respectively 392 and 389.

Curiously enough the distribution of the dentists of the country follows closely that of the physicians. They are thickest at the National capital, and after that in California. Colorado, for some reason not easy to understand, does not come third but is much lower in the list, the place being taken by Massachusetts. Utah has a very high place in the comparative number of dentists to the population, which would seem to show that the larger proportion of women in the State has led to the inevitable application of the rule of supply and demand. The prospects of making a living soon after graduation would seem to be still good in dentistry, the average number of dentists to the population of the country being only one to more than 4000 inhabitants.

HYPERTROPHY OF THE HEART.

Some new light has been thrown upon the manner in which the heart hypertrophies, and upon the causes that lead to cardiac hypertrophy both under physiological and pathological conditions, by the important work of Carl Hirsch.[1] Hirsch approached the problem in a somewhat different manner than previous observers; he employed more exact methods of study in that he separated the walls of the four cavities and considered each as an entity. This permitted the consideration of the relation of the mass of each cavity to that of the entire heart and of the general musculature of the body in health as well as in various diseases. It appears that the mass of the heart muscle is an expression solely of the work it accomplishes and that in sound individuals there is an intimate and direct relationship between the activity of the heart and the activity of the general musculature independent of conditions of general nutrition. Pregnancy was found to be of influence only in so far as it increased the activity of the muscles of the body as a whole. Glandular and nervous activity causes no direct effect upon the operations of the heart as expressed in its mass with the exception of exophthalmic goiter. Kaehl has demonstrated anatomically that the chief divisions of the heart are in reality quite independent of one another, and Hirsch shows that they are likewise independent functionally. Hypertrophy of one part may occur without any one of the other three parts participating. For example, in sclerosis of the thoracic aorta and splanchnic vessels the wall of the left ventricle is alone affected. On the other hand, in nephritis all sections of the heart are hypertrophied as a rule, a disproportional hypertrophy of the left ventricle being always due to vascular sclerosis according to Hirsch. In nephritis, however, the hypertrophy in incipient cases is limited more or less to the left ventricle, the other parts becoming hypertrophied as the disease progresses. Ewald suggests that in nephritis an increased viscosity of the blood is responsible for the hypertrophy of the heart, and since Hirsch's observations show that the obstruction to circulation must be of such character that the action of the whole heart is increased quite uniformly, Ewald's theory, although generally neglected, is considered by Hirsch to receive some support.

The opinion of Cohnheim that in weakness of the right heart the venous stasis may so increase the work required of the left heart that it may undergo hypertrophy, is widely accepted. But that this is the case Hirsch denies, citing in evidence cases in which there was protracted venous stasis without complicating valvular or arterial lesions and atrophy in place of hypertrophy of the left heart. This he explains by assuming that the accumulation of a large part of the blood in the vein lessens the amount of work that the left heart must do.

Another interesting observation is that in beer drinkers the hypertrophy known as "beer heart" indicates always an interstitial nephritis. Beer drinkers without nephritis have no hypertrophy of the heart.

In connection with these problems the study of the individual fibers in hypertrophied hearts by John Gutch[2] is of interest. He found that the increase in the size of the heart is to be explained by an increase in the size of

1. Deut. Arch. f. Klin. Med., 1899, lxiv, 597; 1900, lxviii, 55 and 321.

2. Jour. of Path. and Bact., 1901, vii, 309.

the individual fibers, and that there is no evidence of new formation of muscle cells. The fibers increase chiefly in breadth, possibly also somewhat in length. He corroborates the statements of Hirsch in regard to hypertrophy of both sides of the heart in nephritis. The fibers in the left side are usually larger than those of the right, and the papillary muscles have smaller fibers than the walls whether the heart is normal or hypertrophied.

JOURNAL OF THE ASSOCIATION OF MILITARY SURGEONS.

The first number (August) of a new medical magazine, the *Journal of the Association of Military Surgeons,* has just come to hand. It forms a volume of 224 pages, much of which in this issue is taken up with the proceedings of the association, lists of members, etc., though there are also several original articles. During the present association year it will be issued quarterly, but it is the intention to ultimately adopt the monthly form, and to devote the space in future issues more fully to original contributed matter. The *Journal* occupies a hitherto unfilled niche in American medical journalism and it has our cordial wishes for its success. The list of the membership of the association it represents shows that it starts with what ought to be a very respectable assured patronage. It is under the able editorial management of Dr. James Evelyn Pilcher, Captain (retired), U. S. A.

THE PATHOLOGICAL INSTITUTE OF THE NEW YORK HOSPITALS.

The Pathological Institute of the New York State Hospitals is being reorganized under the auspices of the state commission in lunacy, which has appointed an advisory board of leading specialists in psychology, general biology, pathology, neurology, psychiatry, etc. The appointees represent the three university medical schools of the city of New York, namely, Cornell, Columbia and Bellevue, and also the asylums. The appointments are permanent, except those from the asylums, which are elective for a term of two years, thus permitting all the institutions to be represented in rotation on the board. It is the idea in the reorganization to utilize the institute for special instruction of the asylum staffs in psychiatry and research methods, as well as to encourage original work in the various sciences having a bearing on insanity. It is, therefore, to have its future location in connection with one of the divisions of the Manhattan State Hospital on Ward's Island until such time as a reception hospital for the insane can be provided. The advisory board includes Professor J. McKeen Cattell of Columbia University, Professor Ewing of Cornell University, Professor Herter of Bellevue, Dr. Henry Hun of Albany, Dr. Hermon C. Bumpus of the American Museum of Natural History to represent the department of general biology, Drs. Pilgrim and Macdonald representing the state hospitals, and Dr. Frederick Peterson ex-officio as president of the lunacy commission. With this advisory board and a competent working staff who will be selected, we shall look for first-class work from the institute. Its success will, we trust, incite other States to follow the example of New York, and it is to be hoped it will cause a marked advance in the appreciation of American psychiatry throughout the world.

A CAUTION TO MEDICAL WRITERS.

We had occasion to call attention editorially not long since to a method of reporting experimental work that seemed objectionable, as affording a chance for certain individuals to misconstrue facts and misrepresent and slander our profession. The special instance was then afforded by one of our English contemporaries; now we have a similar one among our domestic exchanges. A writer in the New York *Medical Record* of October 19, describing some disinfecting experiments, uses the following language: "Then followed a rest of several weeks, our victim going out of town. On his return, culture testing still proved that the staphylococcus pyogenes aureus was present, but guinea-pig inoculations showed it to be of lessened virulence." Here is material for the anonymous writer of the Humane Society, or that section of it that is proving the atrocities of human vivisection, to dilate upon. "Our victim" had, as the report shows, undergone finger scrapings and loss of pieces of skin; he had been scraped and skinned, as the humane individual could say, and this would afford all the text required for any amount of virtuous horror at such an instance of human torture. It would, of course, not be necessary for such purposes to quote the context, and any medical explanation of the facts could be ruled out as coming from those disqualified as being, in sympathy at least, participants in the outrage. Medical writers should be more careful and not expose themselves in this manner when the antivivisection wolf is about searching for such titbits to devour.

LEPROSY AND THE MOSQUITO.

The spread of leprosy in the Hawaiian Islands is attributed to some extent to the mosquito by the local health authorities. There are cases that occur that are otherwise unaccountable, a fact that will hardly increase the mental quietude of those who are mosquito bitten in a country where leprosy exists. Of course, this mode of infection must be extremely rare, for mosquito bites are common, and these unaccountable cases are few in number. It seems probable that the indictment against the mosquito will be, as time elapses, a much heavier one than has been as yet conceived; it is the most efficient little inoculating machine that was ever contrived, and it seems to have a constitution suited to take up and carry about a number of uncomfortable things for the human species. It is said that it did not exist in some at least of the Pacific Islands originally, but was introduced after their discovery by white men. Herman Melville, in one of his works that is not altogether fiction, attributes its introduction to the Society Islands to a whaler, who, out of spite against some natives, landed a cask of larva-breeding fresh water on one of the islands. If this is true it has turned out to be a veritable Pandora's box to the natives, with far greater possibilities of evil than he in his malice designed. At present malaria, leprosy, elephantiasis and probably other mosquito-borne diseases

prevail locally or universally in the islands, and it would be an interesting study to trace up their medical history in all the different groups so as to determine how far the contact with civilization has been their causal factor.

INFECTION OF THE URINARY BLADDER FROM THE INTESTINE.

We have on a previous occasion[1] referred to observations made by Dr. R. Faltin with regard to infection of the urinary bladder in connection with disorders of the rectum. In order to determine whether such infection is a local process that takes place through the intermediation of the lymph stream or is merely part of a general process through the intermediation of the circulation Faltin[2] undertook a further experimental investigation, as a result of which he concludes that coprostasis induced by occlusion of the anus of from thirty-six to forty-eight hours' duration is not sufficient in general to cause an inundation of the body with intestinal bacteria. After artificial coprostasis of sufficiently long duration such changes in the intestine may take place that intestinal bacteria may gain entrance into the circulation either directly or through the intermediation of the peritoneum. Elimination of bacteria through the kidneys is possible under such conditions, but like the bacteremia itself it is to be looked upon as an antemortem process. Transitory bacteremia can not be produced. Following coprostasis of sufficiently long duration, intestinal bacteria may appear in the urinary bladder without first having entered the circulation. Under these circumstances such alterations in the organism have generally taken place that subsequently general infection, probably originating from the injured intestine or the bladder, often results. The bacteria in some cases gain entrance into the bladder by way of the urethra, in other cases probably by a direct route along the lymph paths, but whether through the lesions of the urethral mucous membrane or through injuries in the anal region has not yet been determined. Should retention of urine exist or have existed in consequence of ligature of the urethra, the presence of bacteria in the bladder is more frequent and cystitis may develop. It is pointed out that the foregoing conclusions are applicable only to experiments on rabbits, and it is not maintained that absorption of bacteria from the intestine and elimination of bacteria through the kidneys from any cause are in man always antemortem processes. While probably this is often the case, many clinical observations, as for instance in cases of typhoid fever, indicate clearly that bacteria may be absorbed from the intestine and eliminated through the kidneys without death necessarily following.

1. The Journal A. M. A., Sept. 14, p. 704.
2. Centralblatt für die Krankheiten der Harn- und Sexualorgane, B. xii, H. 9, p. 465.

Medical News.

ALABAMA.

Smallpox.—The Health Officer of Jackson County reports 14 cases of smallpox among negroes at Hollywood.

The Medical College of Alabama, Mobile, opened October 12 with an address by the dean, Dr. George A. Ketchum.

Health of Montgomery.—The report of the Sanitary Department of Montgomery for the fiscal year shows a marked decrease in the cases of diphtheria and smallpox, and an increase in scarlet fever, as compared with the previous year. The total number of scarlet fever cases was 151, all of mild type. During the current year 6 cases of diphtheria and 13 cases of smallpox were reported, the respective figures for the previous year having been 14 and 268.

ARIZONA.

Personal.—Dr. Oscar Brandon, Nogales, has located at Naco.——Dr. F. L. A. Hamilton has moved to Nogales from Wagoner, Ind. Ter.

"Manila Itch" is said to be almost uncontrollable in the Gila Valley, at Solomonsville, Safford and other Mormon settlements. The disease was at first diagnosed as smallpox, and under rigid restriction and quarantine, soon disappeared. When, however, a "health officer" discovered that the disease was not smallpox, the restrictions were relaxed with the usual results.

Restriction of Tuberculosis.—The governor of Arizona intends to recommend the creation, under legislative authority, of a Territorial Board of Health, investing its officers with full power to quarantine and segregate persons coming into the territory afflicted with consumption, precisely along the lines of the power of the boards of health of the various states in quarantining against any dangerous contagious disease, and that a law be passed prohibiting consumptives from living in hotels and boarding-houses with well people, and requiring them to live upon the desert in such places or sanitariums to be provided, and in such localities where the possibility of contagion will be as greatly reduced as circumstances permit.

Campaign Against Tuberculosis.—The city council of Phoenix has passed ordinances to protect the public from tuberculous patients and prevent the spread of tuberculosis. The first of these provides for the placing of cuspidors or proper receptacles at street-crossings and at parks, under the direction of the health officer, which shall contain disinfectants, and the second order that each room in a hotel, lodging-house or private residence, left vacant by a sufferer of consumption, shall be properly disinfected. A charge will be levied against the proprietor, or those who receive invalids, for each consumptive accepted, the sum to be applied to the fumigation of the room when the occupant leaves.

CALIFORNIA.

Smallpox and typhoid fever are reported from Walnut Grove, Sacramento County.

Dr. Thomas Howlett, formerly interne at St. Mary's Hospital, San Francisco, has been appointed resident physician at Dr. Clark's hospital, Gilroy.

University of California Medical School.—The Board of Regents of the State University has decided to take over the entire management of the medical school which heretofore has been only one among several medical and so-called medical colleges of the state.

COLORADO.

Dr. David I. Christopher, Colorado Springs, has been appointed house physician for the National Printers' Home at that place.

A physicians' business league has been organized at Victor, comprising membership from all over the district. It is for the purpose of social and intellectual intercourse and for the special advantage of the medical fraternity in protecting themselves against bad debtors.

Denver Diphtheria Deaths.—In the six years from 1889 to 1894, inclusive, before antitoxin was employed, 2272 cases of diphtheria occurred in Denver, with 827 deaths, a mortality of 36.4 per cent.; during the following six years since antitoxin has been in use, 1641 cases occurred, with 175 deaths, a mortality of 10.66 per cent.

Diphtheria, Scarlet Fever and Smallpox.—During September there were reported to the State Board of Health, 105 cases of diphtheria, 102 of scarlet fever and 15 of smallpox. Compared with August, these figures show an increase of 34 cases of diphtheria, and a decrease of one case of scarlet fever and 37 cases of smallpox.

Crusade Against Unlicensed Practitioners.—The State Board of Medical Examiners has obtained warrants for the arrest of Drs. Albert L. Bennett and J. Sterling Johnson, regulars; John T. Bass, Elizabeth C. Bass and H. Van King, osteopaths, and J. Howard Hiltz, magnetic healer, on the charge of practicing without having presented to the State Board of

Medical Examiners any diploma as a graduate of medicine; without having furnished any other evidence of graduation from a medical school; without having complied with the medical practice acts of 1881 and 1885.

CONNECTICUT.

Hospital Site Vetoed.—The mayor of New Haven has returned without his approval the order establishing a hospital for contagious diseases at Springside on account of its distance from the city.

In Memoriam.—At the semi-annual meeting of the Hartford County Medical Society, held October 16, obituaries on the following deceased members were pronounced: On Dr. George C. Jarvis, Hartford, by Dr. Horace S. Fuller, and on Dr. Sidney R. Burnap, Windsor Locks, by Dr. Joseph A. Coogan.

Dr. Patrick J. Callaghan, Waterbury, arrested on the complaint of the county health officer, on the charge of practicing medicine without a license, and fined $100 and costs, has appealed, and intends to test the validity of the state law. Dr. Callaghan's offense is that he had not registered with the county health officer as required by the medical practice act.

Personal.—Dr. Henry S. Noble has been elected superintendent of the Connecticut Hospital for the Insane, Middletown, vice Dr. Charles W. Page, resigned.——Dr. John E. Martin has succeeded Dr. Lawrence M. Cremin as attending physician at the New Britain General Hospital.——Dr. P. Frederick Metz, New Haven, charged with malpractice, will not appear for trial; he has forfeited his bond and left New Haven.

DISTRICT OF COLUMBIA.

District Diseases.—Diphtheria is on the increase in the District; 60 cases are in isolation in 33 houses. Of scarlet fever there are 23 cases, and of smallpox 9 cases.

Personal.—Drs. John W. Mitchell and William H. Hughes, both of Washington, have been appointed assistant surgeons in the Freedmen's Hospital.——Dr. Benjamin B. Wechsler, Washington, has located in Knoxville, Tenn.——Dr. A. L. Swain, Washington, has moved to Athol, Mass.

Ask Adequate Remuneration.—The Board of Medical Supervisors of the District in its annual report calls the attention of the Commissioners to the fact that no provision is made for the adequate compensation of the various boards of medical examiners, or of the Board of Medical Supervisors. The members of these boards perform their duties solely in the interest of the public, and, under existing law, receive for their services whatever happens to be left over from the fees paid by applicants for licenses after the necessary expenses of the board have been deducted. No member of the board of eclectic medical examiners has received a cent for his services. The average amount received per annum by each member of the board of homeopathic medical examiners has been $1.75; by the lay members of the Board of Medical Supervisors, $20, and by the members of the Board of Medical Examiners, $32.14. The total number of applications is 1559, and the total number of licenses issued is 1411. It therefore requests that provision be made to pay each member of the Board of Medical Supervisors and each member of the Board of Examiners $10 for each meeting attended.

ILLINOIS.

Smallpox.—Springfield now has 31 cases of smallpox, and cases have also been reported from Riverton and Rochester.

The De Witt County Medical Society has passed a resolution that no physician shall be eligible to membership unless he has practiced medicine in the county one year.

Physicians' Club Reception.—Drs. John H. Mannon and Charles W. Hall, who have recently returned from Europe, were given a reception by the Physicians' Club of Kewanee, October 11.

Hospital Addition Postponed.—Although more than $6000 has been subscribed for the addition to the Rockford City Hospital, it has been determined to postpone building until next spring and to devote the winter to the completion of the fund necessary for the erection of the building.

Personal.—Dr. Lewis A. McFadden, Peoria, a member of the board of aldermen, has been appointed Health Commissioner, vice Dr. William T. Sloan, resigned.——Dr. Robert E. Calhoun, Chesterville, is taking post-graduate work in Chicago. ——Dr. Arvid E. Kohler, Moline, is seriously ill at the Baptist Hospital, Chicago.

Moline Hospital Troubles.—The Moline Public Hospital staff has unanimously adopted resolutions asking the mayor to remove the present board at once, and in its place appoint a board of three physicians. Also to appoint an advisory board, to consist of physicians who shall be made regular members of the board as soon as the law can be changed by the legislature, making the board legally consist of seven members, instead of three, as at present.

St. Francis' Hospital Staff.—The medical staff at St. Francis' Hospital, Peoria, consists of Dr. Rufus A. DuMars, president; Dr. Ernest B. Studer, secretary, and Drs. Charles E. Davis, Alvin N. Keith, Frank C. Bourscheidt, Clifford N. Collins, Lewis A. McFadden, William H. Willis, Roland L. Green, Joseph V. Studer and Joseph J. L. Finnell. Dr. Edwin H. Bradley is the oculist, and Drs. Joseph Studer and Leonard H. Spalding comprise the consulting staff.

Chicago.

Medical Examiners Dine.—The medical examiners of the New York Life Insurance Company held a conference and dined together, October 19. Dr. Harry P. Woley presided, and among the topics discussed were family history, venereal disease, albuminuria and appendicitis.

To Avert Smallpox.—With a view to prevent the importation of smallpox, Chief Medical Inspector Dr. Heman Spalding, of the Department of Health, is visiting neighboring towns and aiding the local authorities to check the disease. He has recently visited Harvey and New Holland, Ill., and Michigan City, Ind.

"Passing-up" Prohibited.—President Harper welcomed 275 Rush medical students, both freshmen and sophomores, into the University of Chicago at Kent Theater, October 15, and then officially informed them that hereafter "passing-up" students and other ungentlemanly conduct in the lecture-rooms would not be tolerated.

University of Chicago Medical Club.—The first meeting of this Club, a medical society organized by the University of Chicago, was held at the Hull Physiological Laboratory, October 21. A paper was read by Dr. Jacques Loeb, on "The Influence of the Valency and Possibly the Electrical Charge of Ions Upon Their Antitoxic Effects," and one by Dr. Albert Peacock on "A Case of Myiosis in Man."

St. Gerard's Hospital, established a year ago, is insolvent, and a receiver has been appointed. The liabilities are said to be $8300 with assets of $2400. The plan of the projectors of the hospital was to care for as many charity patients as the patients who pay could support. For several months the charity patients exceeded in numbers those who could afford to pay and the hospital's affairs grew worse constantly. The income was far insufficient and contributions practically stopped.

The Lowest Death Rate.—A total of only 370 deaths from all causes recorded last week establishes the lowest weekly death rate in the annals of the Health Department. The mortality is at the annual rate of 10.95 per thousand. The lowest rates during the previous five years were 11.04 for the week ended Nov. 10, 1900; 11.28, week ended Oct. 29, 1898; 11.72, week ended Nov. 27, 1897; 12.12, week ended Nov. 25, 1899; and 12.20, week ended Nov. 7, 1896—an average of 11.67, or 6.5 per cent. higher than last week's rate. This marvelously low figure is due chiefly to the decrease of deaths from apoplexy, bronchitis, cancer, consumption, convulsions, heart disease, nervous diseases and pneumonia—there being 31 fewer deaths from consumption alone and a total of 71 fewer from the diseases specified than during the previous week.

INDIANA.

Hammond Hospital and Training School has been incorporated at Hammond by Dr. John C. Pannenborg and others, with a capital stock of $10,000.

Diphtheria is so prevalent at New Albany that the Board of Health has ordered the schools to be closed, and all public meetings to be interdicted. The disease has reappeared at Knox.

Typhoid Fever.—There are 16 cases of typhoid fever at the State Reformatory, Jeffersonville, due in the opinion of the secretary of the State Board of Health to infected water supply.

Smallpox.—The situation at Mooerstown is improving rapidly.——Six cases have been reported from School District Number 1, Wabash Township, Adams County, and the public school in that district has been closed.

Medical License Cases.—Drs. W. F. Reinhardt and E. N. Flint, Indianapolis, have appealed from the decision of the

State Board, refusing them licenses.——Dr. George McD. Ober, Indianapolis, was arrested at Madison, October 11, for practicing without a license.——The Appellate court has modified its mandate in the action to revoke the physician's license held by Dr. Jacob B. Oliver, Brazil, so as to direct that a new trial be granted and further proceedings be had not inconsistent with the recent decision of that court reversing a judgment in Dr. Oliver's favor.

Expelled.—At a meeting of the Knox County Medical Society at Vincennes, October 14, Dr. Thomas H. Maxedon was expelled from the Society on the allegation of unprofessional conduct. The charges on which this action is based are that Dr. Maxedon sought notoriety in the newspapers; that he instituted suit against his fellow-practitioners, and that he recently gave improper testimony in a trial. Immediately after the expulsion, Dr. Joseph F. Somes resigned as a member of the Society. Dr. Maxedon claims that the action is summary, and that the charges are due to professional jealousy, and says that he will appeal for redress to the State Board.

Mortality in Indiana.—The reports to the State Board of Health for September show 2825 deaths, a rate of 13.6 per 1000 per annum. This is a decrease of 107 as compared with the preceding month and a decrease of 296 as compared with the corresponding month of 1900. All the cities in the State, with a population of 847,302, report 1052 deaths, which is a rate of 15.1 per 100,000. This exceeds the rate for the whole state by 1.5, and compared with the preceding months is a decrease in the rate of .4. The number of deaths classified according to important ages in the cities, was, under 1 year of age 221, 1 to 5, inclusive, 89, 65 and over 219. The country deaths numbered 1773, a rate of 12.9 per 100,000, which is 2.2 less than the city rate. The death rate from pulmonary tuberculosis in the country was 121.3, and for the cities 141.1 per 100,000. The typhoid rate for the country was 98.6, cities 76.3. The diphtheria rates, rural and urban, were 12.4 and 27.3 respectively. The diarrheal rates were, rural, 177.6; urban, 162.7; puerperal fever shows a rural rate of 2.9 and an urban rate of 4.3. This reverses the usual order. The cancer rate was, rural 46.7, urban, 59. Only in typhoid fever and diarrheal diseases does the rural rate exceed the urban. Tuberculosis caused the greatest number of deaths, 296; of these 264 were from pulmonary tuberculosis. The deaths from typhoid fever numbered 188; diarrheal diseases, 356; diphtheria, 36; scarlet fever, 4; whooping cough, 16; pneumonia, 73; cerebrospinal meningitis, 17; influenza, 4; puerperal fever, 7; cancer, 105, and violence, 113.

MARYLAND.

State Examination.—The State Board of Medical Examiners will hold the semi-annual examinations for license to practice medicine at the Medical Hall, Baltimore, November 6 to 9. The subjects are anatomy, physiology, surgery, hygiene, practice, pathology, chemistry, medical jurisprudence, materia medica, therapeutics, obstetrics and gynecology. A fee of $10 must accompany each application.

Baltimore.

Dr. Edmund G. Waters, while visiting a patient, October 18, fell down a stairway and fractured his left leg.

The mortality for the week ending October 19, was 177, or 17.77 per 1000 per annum. The white rate was exactly one-half of the black.

Yale's Bicentenary.—On October 22, at the bicentennial celebration of Yale University, Professor Wm. H. Welch, of this city, delivered an address on "Yale in Its Relation to Medicine," and Dr. Daniel C. Gilman, one on "Yale in Its Relation to Science and Letters."

Personal.—Dr. Jose L. Hirsh has returned from his wedding trip.——Dr. Charles E. Simon has returned from summering in Nova Scotia.——Dr. Jessie E. Sweet, who has completed a course at the Presbyterian Eye, Ear and Throat Charity Hospital, has returned to her home, Pine Bluff, Ark.

Detention Hospital.—Mr. Jeffrey R. Brackitt, president of the Board of Charities and Corrections, recommends the establishment of a temporary place of detention for emergency insane cases in the central part of the city. Attention was called to such a provision by the death of an insane patient shortly after being committed to jail last July.

St. Joseph's Hospital Annex.—The $30,000 annex to St. Joseph's Hospital will be opened November 5. The fund for its erection was raised by the Ladies' Auxiliary. It will accommodate about 75 patients, bringing the total capacity of the institution to 275. A steam laundry and a crematory for the burning of bandages, dressings, etc., have been installed. The addition will contain two negro wards and ten private rooms. It is in the rear of the main building.

Tablet to Professor Martin.—A large and beautifully framed bronze tablet to the memory of the late Professor Henry Newell Martin has been erected in the corridor of the biological laboratory at Johns Hopkins University. It bears this inscription: "In Commemoration of Henry Newell Martin of Newry, Ireland, A Graduate of the Universities of Cambridge and London, Fellow of the Royal Society, the First Professor of Biology and of Physiology in This University. By his brilliant work as investigator, teacher and author, he advanced knowledge and exerted a wide and enduring influence. Appointed in 1876. Resigned in 1893. Born in 1848. Died in 1898." A memorial meeting to the late Professor Henry A. Rowland, of the same institution, will be held in the physical laboratory, October 26, when Dr. T. C. Mendenhall, former president of the Worcester Polytechnic Institute, will make the address.

MASSACHUSETTS.

School Inspection in Worcester.—Dr. John T. Duggan, Worcester, chairman of the committee appointed to consider the matter of medical inspection in the public schools of that city, has asked for an appropriation of $3000 for that purpose.

West Roxbury Hospital.—Through the liberality of Abby L. A. Faulkner, Jamaica Plain, a hospital is to be erected and devoted to the care of the sick in the section of Boston known as the old town of West Roxbury. The buildings are to cost about $100,000.

Tuft's College Medical School.—The formal opening of the new medical and dental building of Tuft's College, Boston, took place October 3. President Elmer T. Capen, presided; Dr. Frederick W. Hamilton, chairman of the executive committee of the trustees, presented the building to the medical and dental faculties, and Dr. Harold Williams, dean of the schools, made the address of acceptance.

Personal.—Dr. Francis E. Corey, Westboro, has moved to Redlands, Cal.——Dr. Frank A. Foster, Waltham, has disposed of his practice and moved to Newton.——Dr. Leslie H. Hendee, Palmer, has moved to Westfield.——Dr. Homer Connor has opened an office in Haverhill.——Dr. Francis Shaw, Worcester, has located in Somerville.——Dr. and Mrs. Charles Hale Cogswell, Boston, intend to spend the winter in travel.

MICHIGAN.

Virchow.—The Detroit Medical Society has sent a congratulatory cablegram to Dr. Rudolph Virchow.

Smallpox Fees.—The Calhoun County Medical Society has fixed the fee for attending smallpox cases at $10 a visit.

Personal.—Dr. J. W. Toan, Otsego, has moved to Grand Rapids.——Dr. T. Bennett Scott, Vernon, has sold his practice to Dr. Louis Fleckenstein, Port Hope, who is now taking a post-graduate course in Chicago.

Card Catalogue of Graduates.—The secretary of the medical faculty of the University of Michigan, Dr. G. Carl Huber, has prepared a complete card catalogue of the alumni and alumnæ of the medical department.

Hospital Site Accepted.—The Hospital and Home Association of Port Huron has accepted Charles Baer's offer of a hospital site of three lots, and $1000 in cash toward the erection of a new hospital building. It will be necessary to raise $20,000 by popular subscription.

MINNESOTA.

Diphtheria is reported in St. Paul and Sletten.

Licensed to Practice.—The State Board of Medical Examiners, on October 11, issued licenses to practice to 19 candidates.

Swedish Hospital.—The cornerstone of the new Swedish Hospital, Minneapolis, was laid with appropriate ceremonies, October 6. The building is to be three stories high and will cost about $40,000.

Compulsory Vaccination.—Until the Supreme court decides otherwise, not a child will be admitted to the public schools of St. Paul until it has been furnished the required certificate of vaccination. This dictum of Dr. Justus Ohage is being combatted by the local anti-vaccination society. In St. Paul fully 2000 children are not attending school on account of failure to comply with the requirements of the Health Department.

Smallpox.—Smallpox exists at Slayton, Murray County, and at Gary, Norman County.—There have been many deaths

among the Indians in Mille Lacs County.——The disease is reported among the scattering bands of non-reservation Indians who roam about the vicinity of Sandy Lake, north of Aitken and McGregor.—Six cases were reported in Minneapolis in a Polish settlement in one day.——Several cases have been reported at Pelican Rapids and the public schools at that place have been closed.

Owatonna Hospital.—The Owatonna Hospital Board has passed a resolution that each patient shall be furnished by his attending physician with a certificate of his condition, on a form to be furnished by the hospital board, which certificate shall be given to the superintendent upon admission to the said hospital; and that the said certificate shall show that at the time of admission the patient is not suffering from smallpox, diphtheria, measles, scarlet fever, or pulmonary tuberculosis, all which cases are barred from admission to the hospital.

Personal.—Dr. Joseph G. Skaro, Minneapolis, is critically ill with nervous exhaustion in a hospital in that city.——Dr. John R. Petersen, Madison, is taking a post-graduate course in Philadelphia.—Dr. George G. Eitel, Minneapolis, is studying in Berlin.——Dr. James B. White, Montgomery, is about to locate in Faribault.——Dr. Ernest Z. Wanous, Rochester, has returned from a month's trip to the Atlantic seaboard.——Dr. Devereaux, Minneapolis, has located in St. Cloud.——Dr. H. C. Stuhr, Crookston, has opened an office in McIntosh.——Dr. Frank C. Davis, Minneapolis, is taking post-graduate work in Berlin.

MISSOURI.

Epidemic Disease.—Smallpox is reported at Cawood and Kansas City; scarlet fever at Hartville, Springfield, Ozark and Billings, and diphtheria in Springfield.

Marion-Sims-Beaumont Laboratory.—The new laboratory of the Marion-Sims-Beaumont Medical College, St. Louis, is now ready for occupancy. Dr. Meade Bolton, of Johns Hopkins University, has been elected director of the laboratory.

Personal.—Dr. Charles B. Lawrence, Stet, has moved to Woolstock, Iowa.——Dr. John Powers, Urich, has located in Clinton.——Dr. Thomas J. Halsey, Triplett, Chariton County, has moved to Drexel.——Dr. R. S. Bennett, Drexel, will spend the winter in study in New York.

Dr. James A. Manahan, Kansas City, assistant city physician, who was summarily discharged by the mayor, a few days ago, claims that the mayor has no authority in the matter, and that only the city physician, Dr. George O. Coffin, has the right to discharge him. He accordingly reports for duty as usual.

Virchow Banquet.—On October 13, one hundred and ten physicians and scientists met at St. Louis, at a banquet held in honor of the eightieth birthday anniversary of Rudolph Virchow. Dr. Robert Luedeking presided. Addresses were delivered by Dr. Hugo Summa on "Rudolph Virchow"; by Dr. Willard Bartlett on "Virchow the Pathologist"; by Dr. Amand N. Ravold on "What Hygiene Owes to Virchow"; by Dr. Robert Terry on "Virchow's Work in Anthropology"; by Mr. Charles Nagel on "Virchow as a Public Man," and by Mr. Perry Post Taylor on "Medicine as a Cosmopolitan Science."

NEW JERSEY.

Diphtheria is prevalent in Bloomfield, where 18 cases have been reported, and Brookside school has been closed for fumigation.

The Lost Hospital.—Crawford had an isolation hospital last spring. It was a substantial wooden building, 22 by 22 by 10 feet. A few days ago the chairman of the Board of Health went to inspect the hospital and could find no trace of it.

Panic in Hospital.—Fire caused a panic in the Paterson General Hospital, October 8, which might have been attended with serious results but for the coolness displayed by the superintendent and nurses. The patients were promptly removed and the fire extinguished.

Hospital Changes.—Dr. Norman L. Rowe, whose term as house surgeon at Christ Hospital, Jersey City, expires November 18, will be succeeded by Dr. Souloff. Dr. Darling has been appointed ambulance surgeon.——Dr. W. J. Hickson, resident physician of the Atlantic City Hospital, has resigned.

Dr. D. Warren Poor, East Orange, has been appointed medical inspector of the Orange public schools. His duties consist in responding to the call of the superintendent, examining suspects, and if he finds them afflicted with an infectious or a contagious disease to send them home with instructions to consult a physician. It will not be his duty to treat the cases. For more than a year Dr. Edgar C. Seibert, president of the board, has been urging the necessity of inspection, and Dr. M. Herbert Simmons one of the commissioners, and Superintendent William M. Swingle have ably seconded his endeavors.

Endorsement of McKinley's Physicians.—Dr. Charles F. Lehlbach, Newark, secretary of the Practitioners' Club of that city, has transmitted the following preamble and resolutions: "The Practitioners' Club of Newark, N. J., at its regular session, October 7, 1901, desires to express its highest appreciation of the courage, skill and professional ability displayed by the physicians in attendance upon the late President William McKinley: Be it therefore resolved, that the club regrets exceedingly that so unjust, uncalled for, unfair and arrogant a criticism should be made as appeared in the *New York Medical Record* of September 21, and hereby expresses its indignation and disapprobation. The club resolves furthermore, that a copy of this resolution be forwarded to the publishers of the *Medical Record, American Medicine,* and THE JOURNAL of the American Medical Association.

NEW YORK.

Personal.—Dr. Myron W. Hunt, Holland Patent, has located in Canastota.——Dr. Charles B. Sprague, Pottersville, will take a course of post-graduate study in New York City.

Elmira Isolation Hospital.—The health authorities of Elmira are having difficulty in obtaining a site for their isolation hospital. There is urgent need for such an institution, as a few cases of smallpox still exist in the city.

To Enforce the Ordinance.—A crusade against delinquent physicians who fail to make official reports of the cases of pulmonary tuberculosis which they are called to attend has been decided on by the health bureau and law department officials of Rochester.

New Rochelle Hospital Troubles.—The medical staff of the hospital at New Rochelle has resigned because the board of governors has passed a resolution making their terms only one year. The ten leading physicians of that city formed the medical staff. They say it was agreed that once a physician was appointed to the staff he should enjoy a perpetual tenure of office.

New York City.

New Harlem Hospital.—The Board of Estimate has authorized a bond issue of $275,000 for the construction of a hospital in Lenox Avenue between 136th and 137th streets, to be known as the New Harlem Hospital.

Merchant Marine Hospital Service.—Dr. William T. Jenkins, who has been in Europe for six weeks, is organizing a Merchant Marine Hospital Service to afford medical service to foreign merchant seamen in New York and other ports.

New Woman's Hospital.—The new hospital which the trustees of the New York Medical College and Hospital for Women are erecting as an addition to the present building will probably not be completed before the first of next year. The building will cost $45,000, and all but $6,000 of this had been secured before the new hospital was begun. At present over $3,000 more has been collected. The new addition will contain eighty rooms, besides a large operating theater and other necessary offices.

New York School of Clinical Medicine.—A course of clinical lectures with demonstrations will be given at the New York School of Clinical Medicine, 328 West 42d St., on Tuesday evening, commencing October 22. Members of the medical profession are cordially invited. The following subjects will be considered in the autumn course: October 22,—"Various types of chronic endometritis and their treatment," by Dr. Augustin H. Goelet; October 29,—"Scalp wounds and cranial fractures," by Dr. Thomas H. Manley; November 5,—"Some new studies on delirium tremens and alcoholic toxemia, illustrated," by Dr. Thomas D. Crothers; November 12,—"The operative treatment of traumatic and pathological lesions of the joints," by Dr. Robert H. Cowan; November 19,—"Diseases of the naso-pharynx and their treatment," by Dr. Max J. Schwerd; November 26,—"Diseases of the testes and their investments," by Dr. Carl E. Pfister; December 3,—"How to measure, fit and adjust the corset for movable kidney," by Dr. A. E. Gallant; December 10,—"Treatment of chronic gastric catarrh," by Dr. Heinrich Stern, and December 17,—"Trachoma —granulated lids—and its treatment," by Dr. J. Albert Meek.

OHIO.

Cornerstone Laid.—The cornerstone of the addition to St. Elizabeth's Hospital, Dayton, was laid with appropriate ceremonies, October 4.

Isolation Hospital.—The new smallpox hospital at Cleveland, two stories high and with four wards accommodating 80 patients and 8 private rooms, is ready.

Hospital Ward Donated.—Miss Sadie Tod, Youngstown, has notified the trustees of the City Hospital, Warren, that she will donate and equip a ward in the new hospital.

Fountain Park Sanatorium.—Drs. George W. Pickering and Robert Henderson, Urbana, have taken charge of the large hotel building at Fountain Park and will convert it into a sanatorium.

Dr. George W. Crile, Cleveland, has been awarded the Alvarenga Prize for 1901, for his essay entitled "An Experimental and Clinical Research into Certain Problems Relating to Surgical Operations."

Dr. Albert P. Ohlmacher, who recently left Gallipolis for Chicago, has been appointed non-resident director of the pathological laboratory of the Ohio Hospital for Epileptics, Gallipolis, and Dr. Theodore L. Chadbourne, at present assistant physician, was promoted to the position of resident pathologist.

Cleveland City Bacteriologist.—Dr. George C. Ashmun, Cleveland, has introduced an ordinance in the city council providing for the appointment of a city bacteriologist at a salary of $1500 per year, who shall work in conjunction with the health office, and who shall furnish trustworthy information respecting the purity and impurity of air, water, and all food substances, and for the prompt detection and prevention of dangerous infectious diseases.

Communicable Diseases.—Diphtheria is reported at Findlay, Cambridge and Zanesville.——Dresden, McConnelsville, Marietta and Cumberland have quarantined against Zanesville on account of the disease.——Smallpox has appeared at Newark, Zanesville and Chatham, and 12 cases are reported at Clay Lick.——Scarlet fever is increasing in Columbus, and the schools of Amanda have been closed on account of the prevalence of the disease at that place.

Personal.—Dr. Peyton E. Cromer, Piqua, has moved to Emporia, Kan.——Dr. Harry B. Kurtz, Leetonia, has located in Elkhart, Ind.——Dr. Yost, Lorain, has decided to locate in St. Paul, Minn.——Dr. Starling S. Wilcox, acting assistant surgeon, U. S. Army, has resigned and resumed practice in Columbus.——Dr. and Mrs. Thomas M. Sabin, Warren, have returned from a trip to Las Vegas, N. M.——Dr. P. R. Bennett, Urbana, has moved to Daytona, Fla.——Dr. William M. Lottridge, Portsmouth, intends to move to Newport, Ky.——Dr. S. D. Good, Newton Falls, has disposed of his practice and will take post-graduate work in New York and Chicago.——Dr. John R. Pipes, Cleveland, has located in Urbana.——Dr. George N. Simpson, Warren, has opened an office in Youngstown.

Fire at Gallipolis Hospital.—During the night of October 15, the pathological laboratory of the Ohio Hospital for Epileptics, Gallipolis, was totally destroyed by fire of unknown origin. Along with the destruction of a splendid equipment for pathologic research a more deplorable loss was sustained in the material which had been accumulated for four years by Dr. A. P. Ohlmacher, director of the laboratory, a material obtained from 176 thorough postmortem examinations of epileptics and including this number of epileptic brains, representing most if not all the phases of the morbid anatomy of the disease. These brains were all properly preserved and in good condition for future study, and numbered among them a remarkable series representing various types of epileptic idiocy and infantile cerebral paralysis. It is no exaggeration to say that this was the most complete and valuable collection of its kind in America. Dr. Ohlmacher's private collection of specimens of embryology, pathology and comparative anatomy was also destroyed.

Cincinnati.

The Laura Memorial Woman's Medical College has opened with a large initial enrolment of students.

St. Mary's Hospital.—At the October meeting of the staff of St. Mary's Hospital, Dr. Thomas Hays was elected to fill the vacancy occasioned by the death of Dr. T. P. White; Dr. H. Frendenberger was elected to the position of pathologist.

Higher Requirements.—The new state medical law requiring students of medicine to have an academic education before matriculating at the local colleges is causing a falling off in the sale of tickets for the clinics at the City Hospital. Heretofore about 250 tickets were sold annually, but this year only 166 have been taken out to date.

Personal.—Dr. Henry W. Bettman has been elected trustee to the Cincinnati Public Library in place of the late Dr. T. P. White.——Dr. Byron Stanton has been elected president of the State Board of Health, vice Dr. W. T. Gemmill, Forest, retired.——Dr. Daniel S. Young, one of the oldest and most esteemed local practitioners, is critically ill with pneumonia at the City Hospital.

PENNSYLVANIA.

West Penn Medical College, Pittsburg, opened for the year, October 2, with an unusually large attendance.

York Hospital.—The trustees of York Hospital are endeavoring to secure for the institution $4500 provided for in the act of assembly of 1874.

Reading Hospital Election.—On October 12, the managers of the Reading Hospital elected William B. Smith, president; Charles Rick, vice-president; Dr. Israel Cleaver, secretary, and P. R. Stetson, treasurer.

Epidemic Disease.—Diphtheria at Forestville has 12 cases.——Verona reports a dozen cases of typhoid and a large number of cases of diphtheria.——The schools of East Berlin, closed on account of diphtheria, have reopened.——Johnstown has 44 cases of scarlet fever, with 4 deaths.

Personal.—Dr. Benjamin H. Detwiler, Williamsport, was given a banquet by the profession of Williamsport and its vicinity, October 7, in honor of his seventieth birthday anniversary.——Dr. Levi F. Wagner, Pikesville, has moved to Reading.——Dr. Frederick E. Jenkins, Carbondale, has returned from the Philippines and is stationed at Fort Morgan, near Mobile, Ala.—Dr. Isaac Ohlman, Meadville, has decided to locate in Pittsburg.——Dr. John L. Wright, physician for the Pennsylvania Relief Association at Erie, has been transferred to Pittsburg.

Philadelphia.

Five Philadelphia hospitals receive $5000 each by the will of the late Thomas Elkinton of Philadelphia.

Smallpox.—This year there have been 287 cases of smallpox, with 36 deaths. Sixty new cases were reported during the last week and the municipal hospital now has more than 150 patients.

Personal.—Dr. S. Ashton Bonnaffon, of the Pennsylvania Relief Association, has been transferred to Erie.——Dr. Samuel McCullagh has resigned as resident physician of Girard College, and Dr. Henry G. Godfrey has been elected his successor.

Wills Hospital Changes.—Dr. William F. Norris has resigned after thirty years' service, as attending surgeon. Dr. John N. Kirk has been appointed resident physician, Dr. Paul J. Pontius, assistant surgeon, and Dr. George C. Harlan, consulting surgeon. Dr. William Zentmayer has been appointed attending surgeon, vice Dr. Norris, resigned.

CANADA.

G. M. McMicking, M.D., McGill, 1849, died, October 13, at his home in Toronto, aged 76. He practiced in Chippewa until 1867, and afterwards in Goderich for twenty-two years. He was a member of the legislature for twenty-two years.

Protestant Hospital for the Insane at Quebec.—The quarterly report of this hospital shows that 40 patients were admitted during that time, and that 13 had been discharged therefrom; 10 deaths occurred. The number at present undergoing treatment in this institution is 403.

Typhoid Among Troops.—Several of the officers and men of the Duke of York's Hussars, at Montreal, are suffering from attacks of typhoid fever. It is thought that the infection occurred at Quebec City, where the corps was participating in the arrival of the Duke and Duchess of Cornwall and York.

Canadian Nurses' Association.—The annual meeting of this Association was held in Montreal, on Tuesday evening, the 15th inst., Miss Rogers, the President, in the chair. The number of registrations reached 1034. During the present year the Association was incorporated by provincial charter.

Hotel Dieu Hospital, Montreal.—Hotel Dieu, the oldest hospital in the City of Montreal, has decided to establish a training school for nurses, so that hereafter French-Canadians and Catholics will not be dependent upon English institutions for trained nurses. The public will be appealed to for assistance in the project.

Personal.—Dr. Harry W. Spence, of Toronto, who has been taking a post-graduate course in England, has been successful in obtaining the degrees L.R.C.P. London, and M.R.C.S. England, and has been appointed surgeon on the steamer *Mombasa*, one of the British India Steamship Company's passenger steamers from London to Calcutta.

Montreal General Hospital.—The governors of this institution have declined an offer of $25,000 for twenty thousand feet of land adjoining the present site of the General Hospital. Dr. J. B. McConnell presented the report of the management committee. The receipts from May 15 to October 9, amounted to $5015, and the expenditure $5719. The debt remains about the same as at the annual meeting, viz., $7948.

School Children and Vaccination.—The officials of the Health Department of Montreal are making special efforts to ascertain if pupils attending the public schools are being properly vaccinated, owing to the appearance once more in that city of the dread disease, and also on account of there being so many cases of smallpox in the province. As vaccination is not compulsory in the Province of Quebec, an effort will be made when the legislature meets to make it so.

Conference on Smallpox.—Dr. P. H. Bryce, secretary of the Ontario Board of Health, and Dr. Pelletier, secretary of the Quebec Board of Health, held a conference with the local board of health, at Ottawa, on the 14th inst., with regard to the epidemic of smallpox in that city. It is a noteworthy fact that out of the first twenty-four cases of smallpox reported, but one had previously been vaccinated. There have been thirty-four cases in all; the outbreak is now well under control.

Failure of the Physicians' and Surgeons' Supply Company.—Some months ago mention was made in these columns of the formation in Ontario of a supply company of the above description for practitioners in this province. It was thought at the time the association was organized that physicians were not receiving fair treatment at the hands of the drug trade. The organization was perfected in November last; the company began business in March of the present year. A directorate of physicians controlled the affairs of the company, which is now being wound up.

Medical Graduates and the Army.—Cable dispatches record that a Canadian medical graduate has been refused permission to serve on the British Medical Staff in South Africa; and the action of the home authorities in this connection is raising in the minds of military surgeons the question: What has become of the promised imperial legislation to permit duly qualified and certificated graduates of colonial medical colleges to enter the imperial service? Some months ago the Militia Department at Ottawa was notified that an act of this character had been introduced into the imperial parliament, but since that time nothing more has been heard of the matter; and it is not known whether the promised legislation passed into law or was thought to be a too generous concession to colonial medical graduates.

FOREIGN.

Plague at Rio Janeiro.—Two new cases of bubonic plague were found October 19, and three on the 20th, making 52 cases at the present time in the hospital.

Physician Contracts Leprosy.—Dr. Feilberg, city physician of Copenhagen, has contracted anesthetic leprosy. He had recently visited the West Indies.

Leper Hospital in Iceland.—The Order of Odd Fellows in Denmark established the Laugarnoes Hospital for lepers, October, 1898. At the end of 1899, 81 patients had been received, of which 18 are dead, and 2 have been discharged as cured.

The International Congress for Obstetrics and Gynecology will be held in Italy in 1902. The Russians have made great efforts to secure the congress in honor of the completion of the Academy for Obstetrics and Gynecology at St. Petersburg, the only institution of its kind in the world, our foreign exchanges assert. It has been erected under Ott's supervision by funds supplied by the Czar. The congress committee, however, had already made arrangements for the meeting in Italy. The first congress was held in Brussels, the second in Geneva and the third in Amsterdam.

International Congress of Tropical Diseases.—The Egyptian Medical Congress announced to convene at Cairo in December, 1902, will be practically a congress of tropical diseases, and the committee in charge would be glad to enlarge its scope and announce it as an international congress for this purpose. The realization of this project, however, they know depends on the co-operation of those interested in epidemiology and tropical pathology the world over, and they scarcely venture to hope for this. The list of communications already announced includes studies of the diseases, etc., prevalent in Egypt and Ethiopia, divided into three sections, medicine, surgery and ophthalmology.

PARIS LETTER.

President McKinley's death has been the cause of various comments on the part of the medical and political press in France. There has been quite a diversity of opinion shown, and it would seem as if the political newspapers had tried to cast doubts upon the manner in which the treatment was carried out. Certain medical men, hiding behind a pseudonym, and signing themselves with an X., have given forth views which showed their lack of appreciation of the difficulties to be encountered in the treatment of so desperate an injury. On the other hand, in the medical papers of good standing, the quickness with which a decision was come to has been much praised, and it has been repeatedly said that nowhere but in America such ready adaptability to the requirements of the time could have been found. There was, however, one fact, which impressed all medical men having some knowledge of the course observed in penetrating wounds of the abdomen, and that was the highly optimistic tendency of the bulletins issued.

Rabies.

The last statistics of the Pasteur Institute show how beneficial the treatment of rabies by inoculation has become. According to Tardieu, Thamhayn and Bouley, out of 855 cases of people bitten by mad dogs and who were not treated, death took place in 46.6 per cent. of the cases. The physicians of Alfort, Toulouse, Lyons and Berlin consider that about a third of the patients bitten by animals suffering from rabies are affected later with hydrophobia. On the other hand, in 1886, the first year the new treatment was tried, 2671 patients were inoculated at the Pasteur Institute and only 25 died, which makes a percentage of 0.94 per cent. In the last three years, 1898, 1899, 1900, 4499 persons were treated by this method and only 11 died, which makes the very low record of 0.25 per cent. Roux and Nocard's researches have shown that if, after three or four days, the dog suspected of rabies has shown no specific symptoms, the person who has been bitten is running no danger of infection. The disease itself runs a course of 10 days, so this is a means of making the diagnosis.

Epidemic of Smallpox.

Dr. Roger, physician of the Aubervilliers smallpox hospital, has just published the statistics of the cases of smallpox in Paris during the first six months of the year. There were in all 1996 cases with 274 deaths. There were over a hundred cases in the 20th and 23d week. Certain parts of Paris have been singularly free from the epidemic, such as the Champs-Elysées quarter where there were only 23 cases. The neighborhood of hospitals seems to be particularly disadvantageous, the two quarters around the Aubervilliers and the Pasteur Hospital having the greatest number of cases, 258 and 360. The mortality in Dr. Roger's service is 24 per cent., which is rather large. There seems to be at present a smaller number of cases, but Dr. Roger does not consider that the epidemic is over and he recommends vaccination every three years, as numerous facts collected during the recent epidemic show that the immunity is of much shorter duration than was at first imagined.

Congress of Gynecology and Obstetrics.

At the recent Congress of Gynecology and Obstetrics held at Nantes, Dr. Baudron of Paris spoke of the method he used, which consists in simple dilatation, in cases of uterine anteflexion with dysmenorrhea and sterility. He compared it to the other methods used, such as hysterotomy or ventrofixation.

Dr. Varnier made a report on the treatment of uterine rupture and described the results obtained by the old methods, such as extraction of the child and tamponing, and others obtained of recent date by laparotomy. The latter are much better and Dr. Varnier said that it was hard to decide after manual examination per vaginam, if rupture was complete or incomplete. The best course to follow was immediate laparotomy. Professor Pinaud insisted on the dangers of uterine rupture; some cases did not seem at first so alarming. He advocated immediate laparotomy in all cases. Dr. Pinaud also spoke on the use of aniodol as an antiseptic. He has been using it extensively in his service at the Clinique Baudelocque, and has found that it can be used in washing the eyes of the newborn infants.

Artificial Horse Bites.—A French exchange states that a new means of defrauding the public has recently been discovered in Paris. An instrument was made which produced a wound resembling the bite of a horse and damages were claimed from the owner of the horse incriminated as the assailant.

Correspondence.

Regarding Propagation.

Chicago, Oct. 8, 1901.

To the Editor:—In the discussion of Dr. George J. Englemann's interesting paper on the "Increasing Sterility of American Women," reported in The Journal for October 5, there are exhibited a depth of concern and a degree of alarm that do not seem to be warranted by those disclosures in the Doctor's paper which furnished the material for the greater part of the discussion.

The chief facts shown in the paper are, that sterility has increased rapidly during the last century; that the present average percentage of childless marriages in this country is about twenty; that the average number of children per married couple is 1.8, and that the chief causes of this increasing sterility and diminishing fecundity are the intentional prevention of conception and interruption of gestation.

These are intensely interesting facts, and the labor which their accumulation must have cost the author, entitles him to the highest praise. It may also be conceded without argument that the condemnation which the professional abortionist, the advertiser of abortifacients, and the male distributers of Neisser's diplococci, received at the hands of those who discussed the paper, was entirely just. But the mere facts that 20 per cent. of American marriages are childless, and that the number of children per married couple is only 1.8, do not seem to warrant the alarm that was exhibited in their discussion.

If these facts forebode a danger that constitutes sufficient grounds for alarm, this danger must be one which menaces either ourselves and our actual descendants, or those potential individuals of the future whose actual existence is prevented by our increasing infecundity. There can be no danger that threatens any one else.

What danger is there in these facts for us or our descendants? Would the struggle for existence be easier, or the joy of living greater, if there were more people in America or in the world? Is there any profession, trade, or calling that is not already enormously overcrowded? If we need more tillers of the soil, why has the exodus from the country to the town gone so swiftly forward that 47.1 per cent. of our present population is in incorporated towns and cities? If there is, on the other hand, a village, town, or city in America that needs more people than it has, why is it necessary for so great a part of the existing urban population to live in tenements (which, by courtesy, are called flats), and support families on $6.00 a week? Every new child born into the world is a prospective competitor of those already here. It must elbow its unwelcome way into an already overcrowded world, in which it will find no nook or corner fit to live in that is not already occupied, and no vocation from whose representatives it will receive a welcome. Let us be frank and admit that, for us and our descendants, there is encouragement rather than peril in the alleged diminution of our rate of increase.

Taking the other horn of the dilemma, we shall find it equally ridiculous to talk of doing missionary work in the interests of possible children that have never even begun to be. It is here assumed that a child "begins to be" at the moment of conception.

According to Henle's estimate, every woman produces 72,000 ova, each one of which is susceptible of fecundation and capable of development into a mature human being. Every one of these ova that fails to become fecundated becomes a dead human possibility. Should we endeavor to bring about the fecundation of all? If not of all, who shall decide how many?

Let us again be frank and admit that, until we shall have ameliorated the condition of the actually existent, we need not concern ourselves with the fate of these shadowy hosts of the merely potentially existent. We may go still further and insist that it is not necessary to countenance abortion, to be able to say that a marriage which is comparatively barren of children, may still be prolific of happiness, and that to make the propagation of the species the sole aim of marriage, is to degrade that institution to the spiritual level of a breeding farm.

Indeed, in normal cases, it is questionable whether the definite desire for children ever is a motive to marry. Love of the consort certainly long precedes the desire for children, and is a sufficient inducement to insure the perpetuation of the race. Desire for children comes later; for Nature has a way of accomplishing her mysterious purposes by appearing to let us do what pleases us, and then pleasing us with what she has enticed us into doing against our wishes.

A. C. McClanahan, M.D.

Book Notices.

Introduction to the Differential Diagnosis of the Separate Forms of Gallstone Disease, Based upon his own Experience Gained in 433 Laparotomies for Gallstones. By Professor Hans Kehr, Halberstadt. Authorized Translation by William Wotkyns Seymour, A.B. Yale, M.D. Harvard, Formerly Professor of Gynecology in the University of Vermont. With an introduction by Prof. Kehr. Cloth. Pp. 370. Price, $2.50. Philadelphia: P. Blakiston's Sons & Co. 1901.

The literature of gallstone surgery in our language of late years has become quite considerable. Nevertheless, the addition of this translation from a leading German work on the subject will be of value to American readers. There is no question as to the importance of the subject and if the operative treatment of these conditions has not become so extensive in this country as it has in Germany, as hinted in the preface, the book will doubtless serve to bring about this desirable result. Professor Kehr has himself added a preface to this American edition in which he gives his views as revised from his latest experiences. In the selection of operative methods he employs cystectomy with drainage in this condition more and more. In this way he says we avoid more certainly true and false recurrences. Professor Seymour has given us an intelligent translation, but it contains a great many German constructions and can not be said to be quite as elegant English as it might be. Still, it is hard for a person who reads German much or little to avoid such slips occasionally in the translation of a language so difficult as German.

The Estivo-Autumnal (Remittent) Malarial Fevers. By Charles F. Craig, M.D. (Yale), Acting Assistant-Surgeon, U. S. A. Illustrated by 2 Colored Plates and 21 Clinical Charts. Cloth. Pp. 221. Price, $2.50. New York: William Wood & Co. 1901.

The author has given us in detail a description of certain fevers too little understood by the great mass of the profession. The opportunity presented to him while he was connected with military hospitals at home as well as in Cuba and the Philippines, was well utilized in a systematic and scientific study of the malarial diseases in their protean aspects, the result of which is published in this volume. He gives us an account of the estivo-autumnal parasites, describes them, giving their natural history, or life cycle within the mosquito, their varieties, method of staining, examination, etc. The etiology, pathology, diagnosis, prognosis, treatment, methods of infection, etc., of malaria are fully considered. The book is a most interesting addition to the literature on the subject and will be found invaluable to those who are desirous of understanding and thoroughly mastering the facts in regard to malaria. The manner in which the author has presented the subject is commendable in that it is simple yet scientific.

Manual of the Diseases of Children. By John Madison Taylor, A.M., M.D., Professor of Diseases of Children, Philadelphia Polyclinic, and William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic. Second Edition, Thoroughly Revised and Enlarged. Illustrated. Cloth. Pp. 859. Price, $4.50. Philadelphia: P. Blakiston's Son & Co. 1901.

The authors have thoroughly rewritten their work, adding a number of new chapters and special articles. One of the points

in which it will be found up to date is that of infant feeding, and still other matters are also well brought up. Much new matter has been added to the portions on diseases of the nervous system and respiratory disorders. A chapter on ear diseases, which is a very important matter in children, has been added.

Deaths and Obituaries.

J. G. Kerr, M.D., Jefferson Medical College, Philadelphia, 1847, who was one of the best known medical missionaries in China, died at his home in Canton, China, aged 77. He was born in Adams County, Ohio, and for a time practiced in this country, but the past forty-five years he had devoted to his work among the Chinese. He was eminent as an operator for urinary calculi, and in 1898 was called to operate upon the American Minister to China. During the last few years he established and superintended an asylum for the insane, something previously unknown in that country. He also accomplished much in his translations of medical works into Chinese for the use of the students.

Philip Goode Gillett, M.D., for many years superintendent of the Illinois Institution for the Education of Deaf Mutes, died at his home in Jacksonville, Ill., October 2, aged 67. He was connected with the above institution in a minor capacity during his student days and became interested in deaf mute work and devoted all his energies in that direction. He was the first to introduce instruction in articulation and lip reading in a state institution, and he brought about the establishment of the Illinois State Board of Charities.

George W. Burke, M.D., Jefferson Medical College, Philadelphia, 1866, died at his home in New Castle, Ind., October 18, from Bright's disease, aged 59. During the Civil war he was an assistant surgeon in the 46th Pennsylvania and later in the 20th Army Corps, serving until the close of the war. He practiced for a time at Sulphur Springs, Ind., but for the past thirty-five years had practiced at New Castle. He was a member of the American Medical Association.

Charles H. Brown, M.D., University of the City of New York, 1879, died at his home in New York City, October 15, aged 45. He was for many years the managing editor of *The Journal of Nervous and Mental Diseases* and was connected with the New York Dispensary, the Post-Graduate and the Presbyterian hospitals, and the outdoor work of Bellevue Hospital.

Donald R. Hinekley, M.D., Harvard Medical School, Boston, 1896, shot and killed himself, probably accidentally, while visiting his parents at Northampton, Mass., October 14. He was a graduate of Yale University in the class of '92, and had been in active practice at New Haven, Conn., having recently been appointed instructor in the Yale Medical School. He was aged 31.

Joseph H. Wythe, M.D., Philadelphia College of Medicine and Surgery, 1850, died at his home in Oakland, Cal., October 14, after a long illness, aged 79. He was born in Manchester, England, and during the Civil war was assistant surgeon. He remained in the army for a number of years after the close of the war, and, after resigning his commission, studied for the ministry.

Robert Henry Nesbitt, M.D., College of Physicians and Surgeons, New York, 1899, died, October 10, at the New York Hospital of which he was once an interne. He had just returned from Europe when he was seized with his fatal illness, a strangulation of the intestine. His home was at Wheeling, W. Va.

Hiram P. Tuttle, M.D., University of California, 1869, died at Tacoma, Wash., October 9. He retired in 1898 in order to devote his entire time to the perfection of thorite, a high explosive, for the purchase of which Congress had made an appropriation at its last session.

Horace Bigelow, M.D., College of Physicians and Surgeons, New York, 1896, died in Roosevelt Hospital, October 15, from typhoid pneumonia, aged 28. He was born in Fayetteville, N. Y., and at the time of his death was a member of the outdoor staff of the hospital named.

Henry Raymond Rogers, M.D., Jefferson Medical College, Philadelphia, 1851, died at his home in Dunkirk, N. Y., October 19, aged 79. He retired from practice several years ago for scientific and literary work. As a writer he was noted for his original views.

Porter W. Felt, M.D., Detroit College of Medicine, 1882, died at his home in Belleville, Mich., where he had practiced for the past twenty years, October 12, from the result of an overdose of morphin, taken, it is believed, by accident. He was aged 44.

William W. Duval, M.D., University of Maryland, Baltimore, 1843, died at his residence, Gladswood, Prince George County, Md., October 13, aged 80. He was president of the county school board and identified for forty years with public education.

Hannah E. Longshore, M.D., Woman's Medical College, Pennsylvania, 1851, died in Philadelphia, October 18, aged 82. She was the first woman to practice medicine in the city named and served as a demonstrator of anatomy.

William G. Fisher, M.D., Medical Department Washington University, St. Louis, 1866, died at his home in Marshall, Mo., October 9, aged 57. He practiced for a number of years at Napton, Mo., moving to Marshall in 1896.

Herbert J. Hale, M.D., Detroit Medical College, 1875, died at his home in Grass Lake, Mich., October 3. At its recent meeting the Jackson County (Mich.) Medical Society passed resolutions of respect for his memory.

John Semple, M.D., Jefferson Medical College, Philadelphia, 1848, died at his home in Wilkinsburg, Pa., October 9, after an illness of two weeks, aged 80. He was burgess of Wilkinsburg from 1888 to 1890.

Frederick Loeber, M.D., New Orleans School of Medicine, 1866, died at his home in New Orleans, October 18, aged 63. He was for thirty-one years the head of the Touro Infirmary and was a prominent physician.

Samuel Edward Stiles, M.D., Long Island College Hospital, New York, 1870, died in Brooklyn, N. Y., October 9, aged 67. He was a noted genealogist and retired from active practice some years ago.

Wesley A. Vineyard, M.D., Tennessee Medical College, Knoxville, 1890, died at his home in Luttrell, Tenn., October 9, from heart failure, aged 41. He was a representative to the Legislature in 1900.

Edwin T. Edgerton, M.D., Pennsylvania Medical College, Philadelphia, 1851, died at his home in Saline, La., October 14, from the effects of a cancer, aged 75. He was a native of South Carolina.

Chester L. Gross, M.D., Jefferson Medical College, Philadelphia, 1861, died suddenly at his home in Pen Argyl, Pa., October 9, aged 65. He formerly practiced at Freemansburg.

Ernest Schottky, M.D., College of Physicians and Surgeons, New York, died at his home in Passaic, N. J., October 18, aged 56. He at one time resided in New York City.

William L. Harding, M.D., New York University, 1860, died at his home in New York City, October 11. He was a surgeon in the Union army during the Civil war.

Charles W. Lawrence, Jr., M.D., University of Tulane, New Orleans, 1900, died at his home in Longview, Texas, from typhoid fever, October 4.

J. H. Tabler, M.D., University of Tennessee, Nashville, 1892, died at his home in Lawrenceburg, Tenn., October 13, after a brief illness.

Jefferson M. Mason, M.D., University of Arkansas, Little Rock, 1888, died at his in Floresville, Texas, October 12, after a long illness.

W. A. Withers, M.D., Rush Medical College, Chicago, 1898, died at his home in New Orleans, October 14, after a long illness.

Societies.

COMING MEETINGS.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 12-14, 1901.

Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Southern California Medical Society will meet at Los Angeles, December 4 and 5.

Central Medical Association.—At a meeting of this Association, held at Middletown, Conn., October 7, it was voted to retain the same officers for the coming year.

Holyoke (Mass.) Medical Society.—This Society met October 7 and elected Dr. C. A. Allen, president, Dr. D. F. Donoghue, vice-president, and Dr. J. J. McCabe, secretary-treasurer.

Inland Empire Clinical Society.—This Society was recently recognized by and affiliated with the Idaho State Society, thus giving the former the full privileges of a country or district medical association.

Guthrie (Okla.) Medical Society.—At a meeting of this Society, October 7, the following officers were elected: Dr. R. V. Smith, president; Dr. J. L. Melvin, vice-president, and Dr. E. O. Barker, secretary-treasurer.

Idaho State Medical Society.—The ninth annual meeting of this Society was held at Pocatello, October 3 and 4, and Dr. Hubert A. Castle, Pocatello, was elected president, and Dr. Ed. E. Maxey, Caldwell, re-elected secretary-treasurer.

Southern Manitoba Medical Society.—This Society was organized at Napinka, October 9, and the following officers elected: President, Dr. E. J. McConnell, Morden; vice-president, Dr. Frederick L. Schaffner, Boissevan, and secretary-treasurer, Dr. T. J. Lamont, Treherne.

Detroit (Mich.) Academy of Medicine.—The regular meeting of this Academy was held, October 8, and Dr. Arthur D. Holmes was re-elected to the presidency; other officers elected were Dr. Wadsworth Warren, vice-president, and Dr. Harrison D. Jenks, secretary-treasurer.

McKean County (Pa.) Medical Society.—At the meeting of this Society held in Bradford, October 8, the officers elected were as follows: Dr. William P. Burdick, Mt. Jewett, president; Dr. James C. Walker, Bradford, vice-president, and Dr. B. H. Hall, Bradford, secretary-treasurer.

Stafford District (N. H.) Medical Society.—The ninety-fourth annual meeting of this Society was held at Dover, October 9, and the following officers elected: President, Dr. William H. Nute, Exeter; secretary, Dr. Lewis W. Flanders, Dover, and treasurer, Dr. John R. Ham, Dover.

White County (Ill.) Medical Association.—At the regular meeting of this Association, at Grayville, October 15, the following officers were elected: President, Dr. V. H. Parker, Grayville; vice-presidents, Drs. J. N. Hopkins, Burnt Prairie, and I. A. Foster, Herald; secretary-treasurer, Dr. W. A. Steele.

Fergus County (Mont.) Medical Association.—This Association was recently permanently organized with the following officers: President, Dr. J. B. Atchison, Lewiston; vice-president, Dr. W. A. Long, Lewiston; secretary, Dr. Frederick Treacy, Lewiston, and treasurer, Dr. C. A. Tillotson, Gilt Edge.

Jackson County (Mo.) Medical Society.—At the meeting of this Society, held in Kansas City, October 10, the following officers were elected: President, Dr. William Frick; vice-president, Dr. Walter S. Wheeler; secretary, Dr. Edward H. Thrailkill, and treasurer, Dr. Louis W. Luscher, all of Kansas City.

El Paso County (Texas) Medical Society.—At the third annual meeting of this Society, at El Paso, October 12, the following officers were elected: President, Dr. S. T. Turner; vice-president, Dr. W. N. Vilas; secretary, Dr. J. A. Rawlings (re-elected), and treasurer, Dr. H. E. Stevenson (re-elected), all of El Paso.

Corsicana (Texas) District Medical Association.—At the regular meeting of this Association, October 8, the following officers were elected: President, Dr. T. A. Miller; vice-presidents, Drs. T. L. Slater, Re, and M. L. Langford, Corsicana; secretary, Dr. W. D. Fountain, and treasurer, Dr. L. E. Retton, both of Corsicana.

Tennessee Valley Medical Association.—This Association met at Athens, Ala., October 8 and 9, and elected the following officers: President, Dr. Felix E. Baldridge, Huntsville; vice-presidents, Drs. F. P. Pettey, New Decatur, and T. E. Casey, Albertsville; secretary, Dr. Thomas E. Dryer, Huntsville, and treasurer, Dr. Edgar Rand, Huntsville.

Cedar Falls (Iowa) Medical Society.—The annual meeting of this Society was held at Cedar Falls, October 8 and 9, and the following officers were elected: President, Dr. George B. Thompson, Winthrop; vice-president, D. M. Wick, Cedar Falls; secretary, Dr. T. U. McManus, Waterloo, and treasurer, Dr. R. E. Buchanan. The next meeting will be held in Waverly.

Jefferson County (Tenn.) Medical Society.—The physicians of this county met October 8 and reorganized this Society, which has been dormant for the past twenty years. The following officers were elected: Dr. I. M. Tittsworth, Jefferson City, president; Dr. C. L. Cline, White Pine, vice-president; Dr. S. W. Fain, secretary, and Dr. P. A. Tinsley, Dandridge, treasurer.

Medical Association of Northern New York.—At the meeting of this Association held at Plattsburg, October 8, the following officers were elected: President, Dr. Frank Madden, Plattsburg; vice-president, Dr. Walter S. Daly, Ogdensburg; treasurer, Dr. George H. Oliver Dickinson, and secretary, Dr. Alfred G. Wilding, Malone. Dr. Cassius D. Silver, Plattsburg, was elected delegate to the State Medical Association.

Albany County (N. Y.) Medical Association.—The members of the Second District Branch residing in Albany County met, October 9, and organized this Association, electing the following officers: President, Dr. Charles M. Culver, Albany; vice-president, Dr. Adam T. Van Vraken, Watervliet; secretary-treasurer, Dr. William B. Sabin, Watervliet; fellow, Dr. W. R. Lothridge, Verdoy, and alternate, Dr. John U. Haynes, Cohoes.

Tri-State Medical Society.—This Society, representing the states of Alabama, Georgia and Tennessee, met at Nashville, October 8, 9 and 10, and the following officers were elected: President, Dr. John C. LeGrand, Birmingham; vice-presidents, Drs. Pugh U. Brown, Troy, Ala., William P. Harbin, Rome, Ga., and James C. Wilson, Rockwood, Tenn.; secretary, Dr. Frank T. Smith, and treasurer, Dr. George R. West, both of Chattanooga. The next place of meeting is Birmingham, Ala.

San Joaquin Valley Medical Association.—At the annual meeting of this Association, held in Stockton, Cal., October 8, the following officers were elected: President, Dr. Henry Hildreth, Delano; vice-presidents, Drs. B. F. Surrhayne, Modesto, J. L. Carson, Bakersfield, and J. B. Rosson, Tulare; secretary, Dr. W. S. Fowler, Bakersfield; assistant secretary, Dr. D. B. Trowbridge, Fresno, and treasurer, Dr. T. M. Hayden, Fresno. The next meeting will be held in Fresno, the second Tuesday in March, 1902.

Wyoming State Medical Society.—The fifth annual meeting of this Society was held at Evanston, October 8 and 9, and the following officers were elected: President, Dr. G. G. Verbryck, Cambria; vice-presidents, Drs. F. H. Harrison, Evanston, W. C. Burk, Rock Springs, and W. A. Wyman, Cheyenne; secretary, Dr. C. H. Solier, Evanston; treasurer, Dr. J. L. Wicks, Evanston; delegate to the American Medical Association, Dr. R. Harvey Reed, Rock Springs; alternate, Dr. E. E. Lewis, Spring Valley. The next place of meeting was fixed for Cheyenne in joint session with the Rocky Mountain Interstate Medical Association.

Vermont State Medical Association.—The eighty-eighth annual meeting of this Association was held in Montpelier, October 10 and 11, and it was voted unanimously to reorganize on a basis of the county medical societies, that is, to establish in each county a society in affiliation with the State Association; a committee of three, consisting of Drs. D. C. Hawley, Burlington, J. M. Hamilton, Rutland, and W. D. Huntington, Rochester, was appointed to complete the organization throughout the state, and were empowered to employ one of their own number or any other member in good standing as organizer to visit the various counties. The following officers were elected for the coming year: President, Dr. J. B. Wheeler,

Burlington; vice-president, Dr. M. F. McGuire, Montpelier; secretary, Dr. G. H. Gorham, Bellows Falls, and treasurer, Dr. J. W. Avery, Proctor. Burlington was selected as the next place of meeting.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, Oct. 7, 1901.

President Dr. N. P. Dandridge in the Chair.

Discussion on Major Wm. O. Owen's Paper.

DR. P. S. CONNOR (medical member of the commission appointed by President McKinley to investigate the conduct of the Spanish-American War) opened the discussion on Major Wm. O. Owen's paper, "Preventable Disease in the Army of the United States; Cause, Effect and Remedy." He stated that many of the lessons which the Civil war had taught seemed to have been forgotten in the Spanish-American war. It was certainly possible to have prevented many of the diseases, particularly typhoid fever, but unfortunately preventive measures were not instituted in time. He stated that in many instances the seeds of typhoid fever were carried into the camps from the starting points of the troops, and that the soldiers were not infected so much from the camps established later. Then again crowd poisoning was a potent factor in breeding disease. A large part of the medical force was unfamiliar with military matters and camp sanitation. Sinks, in Camp Thomas, for instance, were not dug until ten days after the troops arrived, and when dug were soon allowed to fill up and overflow. Everything that was unsanitary, it seemed, existed at Camp Thomas. And what was true of this camp was true of many others to a greater or less degree. If troops could have been kept in small companies, thoroughly isolated and inspected regularly, nothing like the amount of sickness would have occurred. The morale of the camps was bad, and the country will suffer for many years from the results of the diseases engendered in these camps; pension grants will increase materially from year to year.

The responsibility for disease should be established, but as to how we are to get out of the existing difficulties he did not know. Reform should begin with the Medical Department, and not with a medical officer here and there. Medical officers have not enough authority. Give them authority along the lines of sanitation, inspection of troops, medical supplies, etc., and then hold them responsible for any dereliction of duty along these lines. Nothing in the way of reform can be accomplished unless the movement begins in the Medical Department of the army. Unquestionably the Medical Department should have its own transportation. Many times supplies arrived at their destination but could not be gotten out of the cars without orders; in other instances supplies that were started promptly on their way did not arrive at all. In conclusion, Mr. Connor said that everybody realized the necessity for radical changes in the Army Medical Department, but thought that nothing would ever be accomplished through resolutions passed by different medical societies throughout the country. It was unfortunately true that a word from one of the dozen prominent politicians who could be named would carry more weight and be more liable to accomplish results than the resolutions of all the medical societies of the country. Finally, considering all the circumstances connected with the Spanish-American war, it was wonderful that the Medical Department got along as well as it did, and that there were not more lives sacrificed.

DR. S. P. KRAMER (major and surgeon, U. S. Volunteers, Spanish-American war) stated that sufficient time had not elapsed since the war, for the people to calmly think over the lessons to be learned from experience. Many adverse criticisms had been made of the Medical Department, some of which were no doubt just, but it must be remembered that the causes leading to such criticism were and are just as rife in civil life as in the army. He had listened during the evening to a good deal of criticism of army regulations, but to him army regulations were a necessity, and red-tape an essential part of the system; the regulations of the United States Army were the compilation of the experiences of men who had seen years of service and were therefore fully competent to formulate plans for the guidance of the army. As in civil, so in army life, a great deal depends upon the individual. He himself had had no trouble in obtaining medical supplies, but he knew those who did, and in many such cases the fault was with the medical officer. Some of them wasted supplies; others did not go about obtaining them in the right way. The causation of typhoid fever was due to the unsanitary condition of the camps; the remedy for this was education along the line of sanitation, and if the laws of governing this branch of camp equipment should be violated the offender should be severely punished. He wished to offer the suggestion that many of the so-called laws of sanitary science were by no means thoroughly worked out, and that officers of the line could not be very severely blamed for not following what were to them, at the best, but theories. But he thought that such of the laws of the science as were known should be taught officers of the line at the military academy at West Point. He thought Major Owen was right in bringing this matter before the authorities, and likened him unto a wedge which would be considerably hammered and the edge taken off it, for his temerity in forcing these unwelcome truths upon the army. Contract surgeons, he said, occupied a very anomalous position; they have no responsibility; practically they can resign after giving two weeks' notice; they are exposed to all the risks a regularly appointed medical officer runs; they are not in the line of promotion, and they have not the authority of the regularly appointed medical officer, which is little enough, it is true. Under such disadvantages the service does not get the best there is in these men. In conclusion, Dr. Kramer stated that notwithstanding all the disadvantages under which the army corps labored, the mortality from typhoid fever was but little, if any, greater than that obtained in private practice or in the large public hospitals of civil practice.

DR. BYRON STANTON (late major and surgeon, U. S. Volunteers, 1861-65) said that the paper of Major Owen strongly impressed what has been often said, that it is not the carnage of battle, but the pestilence that lurks in the camps, that is most to be feared. It is a sad commentary on the management of our troops that so large a per cent. of the deaths should have been from typhoid fever, a disease more easily prevented than any other except smallpox. When nearly 22 per cent. of the soldiers, selected, as Dr. Owen has said, from among the flower of young American manhood, suffer from a preventable disease there must be something wrong with those in authority. I am sure that the figures given are not exaggerations. I believe it to be an underestimate, although coming from official sources. The investigations of the commission consisting of Drs. Walter Reed, E. O. Shakespere and Victor C. Vaughan, appointed to study the causes and spread of typhoid fever among the troops at various camps in the United States during the Spanish-American war, show that many of the cases returned under the head of diarrhea, continued fever and malaria, were undoubtedly cases of typhoid fever. The report of Dr. Vaughan, one of the commission, shows that more than 80 per cent. of the deaths from the Spanish-American war were from typhoid fever. That much of the mortality might have been prevented by means known to sanitarians, I fully believe. During the Civil war the per cent. of mortality from the preventable diseases was, no doubt, greater, but at that time much less was known about preventive medicine than was known in 1898 and 1899.

With the advance in sanitary knowledge greater responsibility rests upon those having charge of camps and troops. The application of knowledge now in possession of sanitarians has resulted in a marked diminution in the last decade in the mortality of cities and towns, amounting to 180 in 1,000,000 of population, as shown by the vital statistics published by the U. S. Census Bureau. The application of the same knowledge to camp sanitation would have resulted in a greater saving of life among the soldiers. By means known to sanitarians before the outbreak of the late war, the death-rate should have been greatly lessened. That knowledge was not possessed by other officers though known to and urged upon them by the Medical Corps of the Army, but with the indifference to advice

from medical sources, even in regard to medical matters, that is characteristic of the average commanding officer, the most threatening danger of camp-life—filth—was permitted to exist. Waste was not safely and duly disposed of, consequently there was contamination of water supplies, and the other known means of communicating typhoid fever were present. The spread of typhoid fever is generally attributed to the use of water contaminated by the feces of typhoid patients, and this is, no doubt, the chief cause of its spread, but it is not the only cause. Air-borne typhoid is of more common occurrence than has generally been supposed. This is especially true among soldiers. Other sources of infection than water contaminated with feces, are here more potent than in civil life. The dangers intensified by army life are as follows: Water contamination by the urine of typhoid patients, an undoubted source of danger; contamination of the camp with fecal matter, which permits the carriage of the bacillus by dust; the use of shallow, open sinks by typhoid patients without disinfection of the dejecta, which renders possible the carrying of contagion by flies, an often present and too much overlooked source of danger; hospital contagion, a danger greater than is generally supposed; the sleeping of the ambulant cases in the company tents, through which the bedding, clothing and tentage become contaminated; the use of the same cups and utensils, and lack of cleanliness on the part of cooks. That there are other means of communicating typhoid fever than by the use of polluted water is shown by the result of moving a camp, the water supply remaining the same. A change of camp site, even for a short distance, is followed by a diminution of disease, especially typhoid.

The position taken by Major Owen is the correct one. Sanitary matters should be under the care of the medical officer. The prevention of disease is his first care. He can best make use of sanitary knowledge. The means for the prevention of disease are best known to him. Medical officers have a greater knowledge of all matters relating to camp and personal hygiene, and much should be entrusted to their care in the selection and maintenance of camps, except where the exigencies of war may prescribe the location of the troops. More of preventive medicine should be taught the medical officer and then much more should be required of him. He should be given more authority. To him should be entrusted the prevention or removal of all sources of camp pollution. Filth is a most threatening danger. The health of the army depends largely upon cleanliness, and the success of the campaign may depend upon the health and well-being of the troops. Sickness reduces the strength of an army not only by the loss of those who are sick, but by the detail for hospital duty. Aye, even more than this, the depressing influence of the presence of sickness affects the zeal, spirit and confidence of an army. Even those who are not sick are less efficient as soldiers. The medical officers whose duty it is "to investigate the sanitary condition of the post or command" should have something more than the mere privilege of making recommendations that they have no power to carry out—recommendations that the commanding officer, too often uninformed upon sanitary matters, may accept or reject. It is generally the latter, as instanced in the paper of Major Owen, which I most cordially commend.

Dr. Edwin Ricketts said that in no sense can it be claimed that this paper was a political move. It is to be commended for its teeming facts as to superior line officers' vested authority in matters that should be referred to the army surgeon, as superior medical authority, for advice before final decision. It steps forward and into bold relief and deserves much consideration by way of emphasis. It calls "attention" in no uncertain sound to the importance of preventive medicine in selecting army camp sites and in timely changing them, so soon as the army surgeon, who should be referee, sees the necessity of so doing, except when the camp site is held as a military necessity. Then the army surgeon should waive all other considerations. It is shown how much more deadly were the germs of typhoid fever and dysentery in the camps located in the United States, on account of lack of hygienic considerations, than were the bullets of an opposing army in the enemy's country, there being 3116 deaths from preventable diseases, as compared with 1070 for homicide, suicide and gunshot wounds. The cross-road physician would feel himself disgraced and with a ruined professional reputation if he had a mortality following his treatment of typhoid fever that came anywhere near this. The deplorably high mortality in typhoid fever and dysentery can not in justice be laid at the door of the army surgeon. Their results in treatment show a mortality of 7.60 per cent. of all cases. This mortality represents 86.24 per cent. of the total mortality of all diseases. The pleadings of the medical officers with their superiors of the line for a change in camp site were in vain. For these pleadings and suggestions they were to be chagrined and humiliated on account of the lack of consideration that should have been extended them. The fault of this lies within our own ranks, for we lack independence, dignity and determination in not demanding and seeing that we have extended to our profession due respect and due consideration for the services rendered to the service of the United States. Major Owen has proven to us fully the courage of his convictions and the cause for the faith that is in him, instead of remaining in the usual subordinate, submissive quietude of the average army surgeon. It has been wisely arranged by our government that any soldier, as soon as he is found to be suffering from tubercular infection, should be promptly isolated by being taken to one of the national farms for tuberculosis. These farms are especially located for the arrest and possible cure of the disease. On the other hand, the poor and unfortunate typhoid fever patient has been kept within an already infected hospital camp. It was safer to have been a private in the charge on San Juan Hill than to have been in Camp Meade, Camp Alger, Camp Thomas or even Camp Merritt, California. With the amended bill as suggested by Major Owen for presentation to Congress, could the tears of the 3116 mothers and those of the relatives and friends, be presented, I am sure it would have a hearing. Could the 3116 men have had the opportunity, they would have gladly and gallantly responded to the bugle's blast, calling them to the charge, even though every life of them had to be sacrificed. They would have accepted the inevitable as thousands of American soldiers have already done. The 3116 deaths from typhoid were from sanitary neglect. It was not excusable. It can not be condoned, for there was no enemy to fight, no enemy within a thousand miles. There could have been no military necessity in these places of assembly and instruction.

Dr. Frank W. Hendley (Late Surgeon and Major Ohio Volunteer Infantry), said that his observation, based upon acquaintance and conversation with a considerable number of surgeons of the army, was that they do not so much desire increased rank or pay as authority and power to enforce sanitary and hygienic measures. The possession of such authority and power would necessarily include the exclusive control of all property, and transportation of all hospitals, hospital corps, ambulance companies and other subdivisions of the medical service. The present status of the medical officer is well-nigh intolerable. As he can only recommend or make request, his efficiency depends upon the complacency of the line officer with whom he is associated. The medical officer may recognize a certain source of danger to the command and recommend certain action to obviate it, but unless the line officer in command concurs and acts in accordance with the recommendation the surgeon can do nothing except wait for the disaster that is to come and then cheerfully go to work to repair the damage.

At the outbreak of the Spanish-American war it was well known that smallpox existed in Cuba, where the troops were expected to operate; consequently the surgeons in all the regiments in Ohio and probably in all others, recommended vaccination during the period of mobilization, in order that the wounded arms might heal before the active camp life commenced. Fortunately, we had a colonel who recognized the propriety of the recommendation and concurred heartily, even going so far as to punish severely half a dozen men who refused to comply with the order; but one Ohio colonel assumed to know more on the subject of vaccination than his surgeon, and refused to issue an order requiring the operation, saying that he did not believe in vaccination. When this regiment reached the South, however, the dictum of the colonel was overruled

by higher authority, and the three medical officers were compelled to vaccinate their eleven hundred men under the added disadvantages of the crowded tent life, in the heat and dust of the southern camp, and during the work and constant drills which were necessary there; consequently the cleanliness, asepsis, and the rest for the affected arms which was desirable, could not be obtained, and infected arms were very numerous, thus throwing much unnecessary additional work upon the surgeons, delaying the efficiency of the regiment, and, I doubt not, laying the foundations for numerous pension claims. Many such instances might be narrated of arbitrary overruling of medical recommendations with unfortunate results, but time does not permit. Medical officers protested against the location of certain camps and the continued occupation of the same site for lengthened periods, calling attention to the fact that all authorities fix the limit of safety for continuous occupation at two weeks, but their protests and recommendations were frequently endorsed, "not concurred in," and the world knows the results that followed at Chickamauga, Tampa, Tampa Heights, and elsewhere. Colonel J. D. Griffiths, Chief Surgeon 3d Division First Army Corps at Chickamauga, says, "Our Medical Department should be divorced from the Quartermaster's Department. As a matter of fact the Quartermaster's Department is largely at fault for much of the trouble, and, while satisfactory for a small army in time of peace, when built upon and expanded as required for an army ten times as large, it failed absolutely and went to pieces. During the hot summer months 75 per cent. of the command still wore the heavy woolen clothing. Insufficient tentage was issued, resulting in overcrowding and this was a cause of much of the subsequent sickness." To these remarks I would add that during the first few weeks it was impossible to secure lumber for tent floors, such requisitions being always disapproved, and as for the tent crowding it was frightful at all times. Many of our men were still in the little shelter tents, well named "pup-tents" by them, all through the rainy season at Port Tampa City. Not until August could tent floors be obtained by our regiment. Requests for disinfectants were met by harsh instructions to read the Regulations, which provide as follows: "The routine use of disinfectants is prohibited." Later when public indignation was aroused against the conditions prevailing, all these supplies were issued freely; but at that time it was like locking the stable door after the horse had been stolen. When at Columbus and still under state control, a liberal supply of chlorid of lime was supplied and used in the sinks; but as soon as we were mustered into the service of the United States, this stopped instantly, because, under the Army Regulations, we were required to cover the contents of the sinks three times daily with dry earth, notwithstanding the fact that at that time it was raining every day, the camp was a sea of mud most of the time, and the sinks half full of water. Surgeon-General Sternberg himself, in his Presidential Address before the Association of Military Surgeons of the United States, in 1895, after commenting upon the mortality during the Civil war, predicted that the sickness and mortality from typhoid fever, dysentery and traumatic infectious diseases would be much less in any future war, but made an important qualification of his prediction as follows: "The extent to which this may be accomplished will depend upon the preparations we make in advance and upon the success we have in obtaining the intelligent cooperation of officers in command of troops in carrying out the recommendations we may make."

On the subject of control of all property and transportation, the defects in the present system are most conspicuous, and Major Owen is undoubtedly right when he calls attention to the complications that might arise under the provisions of the Geneva Convention. The distinction between the European and the American meaning of the word "ambulance" must be carefully borne in mind. In our country it means simply the ambulance wagon, whilst abroad it means the entire field hospital. In our army, under the present system, nothing is exempt from capture except the ambulance wagons, the sick men and their medicines, in addition to the surgeons, hospital corps and nurses. The enemy may legally take the tents over their heads, the cots on which they lie, their food and clothing, their cooking outfit, their wagons, horses, mules, and practically all the hospital supplies, except the medicines and ambulance wagons. And all this simply because tentage, cots, wagons, etc., belong to the Quartermaster's Department and nothing of the Quartermaster's property comes under the provisions of the Geneva Convention. The Hospital Department occupies a position of dependency upon the Quartermaster's Department for absolute necessities. Ordinarily these are supplied freely, but just when they will be most urgently needed, then the Quartermaster will be unable to supply them, and there lies the fatal error of the situation. Just at the time when the surgeon may be asking the Quartermaster to give him more tentage, wagons and mules, the Quartermaster, in the exigencies of the occasion, may feel it necessary for the public service to take away what he has already given. If ammunition and other supplies are needed at the front, the Quartermaster will certainly keep his wagons for that purpose or hold the tents to keep supplies in, rather than issue them to the Hospital Department. The preservation of the fighting line will be considered as of more importance than the comfort of the sick. Over in the Philippines the captain of a company marching all day in the rain reprimanded his men when he found they were covering their shoulders with the flannel cloth given them to cover their rifle locks, saying, "keep your rifles dry, the government can get plenty more men in your places, but it can not get Krag rifles in the place of those you spoil here." How many times has it occurred that when the surgeon asked for wagons to haul ice or water for the hospital, he was told by the Quartermaster that all the wagons were engaged in hauling wood! General Sternberg had his supplies ready at Tampa, but under the Regulations he had to depend upon another department for their transportation to Cuba and that transportation he could not get. If General Sternberg had possessed his own means of transportation for his department Clara Barton could not have made the observation she did. Under present conditions if we go to war again, the sad experiences of the Civil war and of the Spanish-American war, the needless suffering and want endured by the sick and wounded, will be repeated and we will have to depend on outside volunteer relief organizations to do the work that the regular Medical Department could and would do if their hands were not tied.

The system is faulty, therefore the results must be bad. It will never do to depend on volunteer civil organizations to do permanent work in a military campaign. The Sanitary Commission did noble work during the Civil war, but that was a generation ago before our knowledge was in any degree perfected. The National Red Cross helped very much during the Spanish-American war, but their aid should have been unnecessary. Their hospital ship was the first vessel to sail into Santiago harbor and its cargo was a literal godsend to the people there. During the Franco-Prussian war the French Red Cross Society undertook to care for the sick and wounded of the army and established numerous ambulances as field hospitals, but those in charge were compelled to admit the system was incorrect. One says: "The sanitary service of the army should have an organization wholly military and in no way civil, especially on the battlefield;" another says, "There can be no place in any well-regulated army for a volunteer health service." If my information is correct, France has recently made the Medical Department of her army an independent, autonomous department well organized for effective service. Our Medical Department should be so complete that outside interference, well meant as assistance, but nevertheless an intermeddling which causes confusion, will not be necessary and therefore will not present itself. Dr. Tripler, in commenting on some of the difficulties arising during the Civil war, says: "Certain persons suddenly smitten with a more intricate knowledge and thorough perception of the duties and administration of the Medical Department than I had been able to acquire in thirty years of experience and study, obtruded their crude suggestions, marring where they could not make, and paralyzing where they attempted to quicken, succeeded by their uninformed zeal. They, inno-

cently enough, perhaps, but none the less unfortunately enough, succeeded in defeating the measures I had much at heart, had carefully contemplated and intended to carry into effect at the proper time." Not only is this outside interference often irritating, troublesome and non-effective for real good, but it certainly is humiliating for a great nation to be obliged to depend on aid societies and charitable persons for ice and other necessary medical supplies. There will always be ample room for the charitable organizations to do good work in the large base hospitals and among the sick and wounded sent to their homes, but in the field hospitals and in the regimental dispensaries the Medical Department should have the exclusive management of affairs.

By the establishment of the Army Medical School and the Naval Medical School, facilities were provided for the complete training of medical officers for their special work; thus by the creation and excellent development of the Hospital Corps, the Medical Department secured a permanent body of trained, intelligent helpers under its exclusive control, and finally, by the adoption of the trained female nurse system, it perfected and completed its facilities to care for the sick so far as the personnel of the working force was concerned. If now the defects pointed out by Major Owen can be remedied, we shall have a Medical Department which will be a model for the nations of the world.

Now just a few words upon the relation of this subject to the National Guard and the State Medical Department. The nation must, of course, depend upon the National Guard to swell the army to effective strength in time of war and will always be the training school of popular military knowledge. In order that the transfer from state to federal control may take place promptly and easily, the National Guard in its organization, equipment, discipline and instruction must be identical, as near as possible, with the regular establishment. The physical examination of recruits must be thorough and rigid, based closely upon the rules laid down in Tripler's Manual. The Medical Department must be removed from the influence of politics or personal favoritism, and detached from local regimental control. That is, medical officers must be members of the state medical department instead of mere regimental staff officers. They must be appointed only after rigid technical examinations before a board of medical officers, re-examined after three years' service for promotion to captaincy, then again examined at the end of five years for promotion to surgeon-major, provided a vacancy exists. The hospital corps likewise should be enlisted as members of a state hospital corps under exclusive control of the Medical Department. The hospital stewards should begin as acting stewards and secure promotion by examination after one year, the same as in the army. The matter of detailing surgeons, assistant surgeons, stewards, and hospital corps men to serve with the various regiments should be very simple. The above plan is in operation in the states of Minnesota, New Jersey and Massachusetts, so far as state laws permit, and it is found to work in a satisfactory manner. What is urgently needed is uniformity in all the states, and this can only be secured by enactment at Washington of laws that will make the National Guard a secondary or reserve part of the army, thus insuring thorough military control and thorough inspections with power to weed out triflers and incompetents and to build up an effective organization that will stand ready to march at short notice from the local armories direct to the field of operation.

But coming back to the Medical Department: with the organization I have suggested and the use in that organization of all blanks, forms, reports, requisitions, etc., precisely as used in the army Medical Department, substituting only the name of the state in place of that of the United States, and with medical supplies of the same nature, obtained and expended under the same regulations, the terrible bugbear of "paper work" will not be a burden and "red-tape" will not be complained of when the guard is suddenly called to active duty, because the forms will be familiar and the great benefits of the much-dreaded red-tape will be known and appreciated. With medical officers and stewards thus made familiar with the forms of paper-work and the details of Regulations, the Volunteer Medical Officers will be ready to at once work hand in hand with their brethren of the regular service and would cease to merit the title of "fool volunteer."

Dr. Charles H. Castle (Late Captain and Assistant Surgeon First Ohio Volunteer Cavalry, Spanish-American war) said: An experience of some seven months with our army hospitals in the field leads me to unqualifiedly endorse Major Owen's demand that the Medical Department shall be taken from its present absurd and disgraceful dependence upon other departments for its supplies and transportation. There is a publication issued by the government called the United States Army Regulations, and during my first two months in the service I studied this assiduously, but notwithstanding the study I do not think that the full hideousness of its absurdity struck me until one day the ordinance officer, mind you, the man who deals in ponderous death-dealing weapons—in shot and shell and tons of smokeless powder, and in seige trains miles long—came around and gave me a knife and fork and spoon and made me receipt for them!

Major Owen refers in particular to the conditions in the large camp at Chickamauga. Thanks to the liberality of the State of Ohio and some personal friends of the regiment, and thanks also to the fact that we were camped on a sunny plain with good natural drainage, the First Ohio Volunteer Cavalry to which I was attached was almost independent of the government it was serving, in the matter of medical and surgical supplies; as late as the month of June, three months after the regular forces had established themselves in this camp, our regimental hospital had to lend to the headquarters hospital of the Commanding Major-General, mentioned in Major Owen's paper, the necessary surgical dressings for an operation for extirpation of the inguinal glands! The only possible way of accounting for this dearth was that the Medical Department had to depend upon the Quartermaster's Department for transportation, and that department had its mind and its box-cars filled with uniforms, and boots and shoes and tents. Speaking of tents allows me to record the manner in which the Medical Department of the United States Army sometimes gets tents for its typhoid fever patients—and sometimes does not. You will perhaps pardon me for quoting from the medical history of the First Ohio Cavalry which I had the honor to read before you some two years ago. During the first ten days at Camp George H. Thomas, the medical officers of the regiment had two difficulties to contend with; one was the delay in furnishing the troops with fresh beef, keeping them on the travel ration known among the soldiers as "canned giraffe" because it seemed to be all neck, until their hitherto untried digestions were thoroughly upset; and the second was the difficulty in procuring hospital tents. The two medical officers were each entitled to a wall tent, but for the sake of the sick we were obliged to bunk together and give up one of our 8x10 tents as a hospital. Repeated requisitions made by Major Bunts failed of response, until one of our majors of the line, an ex-officer of the regular artillery, discovered that he had in the chief quartermaster an old friend, and his personal solicitation accomplished promptly what a requisition "through the regular military channels" was powerless to effect. Two hospital tents were therefore given to us, and never, from that time, the last week in May, until the 20th of September, when I turned them over to the Depot Quartermaster at Tampa, failed to leak whenever it chanced to rain. These tents were inspected at least once at Chickamauga, and condemned, but were never replaced.

The regiment had left Chickamauga just as the violent epidemic of typhoid had begun there, and had proceeded as ordered, to Lakeland, Fla. For the ten days following our arrival at Lakeland we received our daily addition of cases of typhoid, all cases dating back to Chickamauga, and the additions ceasing as we reached the limits for the period of incubation. Thus on the 18th we received 2, on the 19th 2, on the 20th 2, on the 22d 3, on the 23d 2, on the 24th 1, on the 25th 2, and on the 26th 2. By July 22 we had 12 in the hospital, just filling it; by the 23d we had 14 in hospital, overfilling it. The hospital was cleared of all cases but typhoid,

for we knew of typhoids in quarters that needed attention. Requisitions were made on the Quartermaster's Depot at Tampa, and after a delay of a week, we received one more tent. So that on July 27, when, we may say, we harvested the entire crop of the Chickamauga epidemic that we had brought with us, we had 18 in hospital, filling it, and 34 in quarters, 12 of which latter were typhoid. Being in quarters means lying on the sand floor of a tent, with one blanket under you, and one blanket over you, not at all a bad bed in summertime; but it also means getting up and going to the cook tent every time you want a drink of water, and walking one or two hundred yards outside the confines of camp every time you have one of those frequent typhoid stools, and it became my melancholy duty to make a postmortem examination of a private in the First United States Cavalry—our neighbors—who died of exhaustion from this cause. Early one hot, damp morning this patient walked from his quarters to the sink and back again, laid down, and died an absolutely unnecessary death. The postmortem showed the characteristic lesions of typhoid fever in the second week occurring in a man previously suffering from marked inanition.

About this time there came to us, on behalf of the Army and Navy League of Cincinnati, a lady of education, refinement and tact, and one absolutely devoid of the hysteria that unfortunately afflicted so many of the ordinary camp visitors; she was full of sound common sense that she had gathered in sojournings in various parts of the world. This personal inspection on the part of the Army and Navy League made it the most valuable agency of the kind that I know of, not excepting the Red Cross Society. The camps of the brigade were inspected and the situation discussed, and the need of tents, cots, hospital furnishings, milk, eggs, etc., were acknowledged. Hospital tents had been requisitioned for by Major Bunts, but could not be had, as the Quartermaster at Tampa asserted that all available tents had been given to the new West Tampa Fever Hospital and to the depots at Fernandina; cots could not be had presumably for the same reason, and the limited supply of cots in the village of Lakeland had been exhausted; milk and eggs were being bought by the money supplied by Cleveland friends of the regiment. This business-like angel of the Army and Navy League went to Tampa, obtained an interview with the Quartermaster, and a promise of the necessary tents—the second time in our short military history where an unofficial interview of an outsider accomplished promptly what the requisition "through regular military channels" had totally failed to do. I met the lady the next day in Tampa. We went together to the Quartermaster's office. I stated my errand to the assistant temporarily in charge—the procuring of hospital tents. He politely refused my request on the grounds that he had none. I represented the urgency of the case, the large number of our sick, and the character of their illness. Still a refusal. Then the lady interposed; she announced the promise made by his chief the day before, and the gallant assistant went to the telephone, called up the Quartermaster's Depot, asked how many hospital tents they had, and directed that four be sent at once to the First Ohio Cavalry at Lakewood.

Having seen, now, how the Quartermaster's Department aids the medical officer in his daily visits to the sick, let us see how another department discharged its duties toward the dependent Medical Department. The methods of feeding the sick in the hospitals of the armies of the United States are practically as follows: When a soldier is sick or wounded and is transfered to a hospital, the Commissary Department subtracts his rations from the total amount going to his company, troop or battery and is supposed to send the ration to the hospital in which the soldier lies; and as even the United States Government knows that sick men frequently need dissimilar food from well men, provision is made that at the request of the surgeon in charge, the Commissary Department shall buy this ration from the hospital, or, in other words, shall furnish money at the rate approximately of seventeen or eighteen cents a meal, so that sowbelly, onions, hard tack, and coffee can give way to milk and eggs. Notwithstanding this express provision of the Army Regulations, the Chief Quartermaster at Camp Thomas, Chickamauga Park, Ga., flatly refused to purchase these savings made by our hospital, though frequently requested to do so by Surgeon-Major Bunts through our regimental commissary. I do not know his excuse. The better his excuse the more is exhibited the inherent viciousness of this detestable system. Our sick men were fed milk and eggs by the women of Chattanooga, and every morning our ambulance could be seen along with a long line of other medical mendicants outside the door of their commissary depot, where they were performing the functions abandoned by the men of the War Department of the United States. That this most peculiar and roundabout method of supplying hospitals with food has its disadvantages, to say the least, was illustrated again in our hospital at Lakeland, Fla., when the Second Provisional Cavalry Brigade of the Fourth Army Corps moved north and left me under the pines of Florida with seventy sick men in bed. The brigade commissary did all he could for me; he directed the commissary officer to leave rations with me for thirty days for the whole number of sick. These hideous things could not be eaten by typhoid fever patients and must be sold to purchase milk; but every commissary sergeant in the brigade had been trading sowbelly, coffee, flour and baking powder to the neighboring "crackers" for fresh vegetables for six weeks past, and when I came to sell I found the market overstocked and prices ruinously low. During our mad quest for purchasers almost all of our perishable articles, like potatoes, onions, hard-tack, etc., spoiled, for they had no shelter, so that our total realization from these rations was not enough to keep our hospital going one week. It is true that an order was promulgated from the Adjutant-General's office on Aug. 15, 1898, allowing to the hospitals from the funds of the Commissary Department, sixty cents a day per patient. As soon as I discovered this I made application for the allowance. In the interval before its receipt, Dr. Partello, the resident agent of the Red Cross Society at Tampa, visited me and when I told him that I had made application for the sixty cents per day, he deplored the fact, told me that I had better not accept it when it came, and that it would be an almost endless source of annoyance and confusion to me. I regret to be compelled to state that the predictions of the good Doctor have been fully verified. They compelled me to pay back out of the sixty cents the full value of all the rations that had spoiled or been sold at nominal prices, so that really the net result of my application was abundant correspondence, voluminous reports, severe aggravation of the surgeon, and unabated, unappeased hunger of the typhoid convalescents. The regular medical officer in charge of the West Tampa Fever Hospital, having had seven years' experience of Departmental methods, exhibited a degree of skill and tact in his managment of this matter worthy of all admiration. He drew his sixty cents per diem for his patient and lodged it safely in the bank, so that he could say to any inquiring newspaper man or anxious camp visitor: "See, I am abundantly supplied with funds," but as he continued courteously and gratefully to allow the Red Cross Society to purchase all his food and other necessities, his final reports consisted merely in handing the Government money back again practically untouched: and he had gratified the charitable contributors to the Red Cross fund in the knowledge that it was their ministrations that kept his mortality down to 5 per cent.!

The first disease that enters a military camp is diarrhea: in the midst of a campaign, whether the business in hand be fighting, or seige, or only garrison duty, the diarrheal diseases absorb by far the greatest number of "sick and wounded." The story is the same whether the campaign be a tropical one like ours in Cuba, or amidst the ice and snows that confronted the allied armies of the Crimea. Macleod says of the terrible winter of 1854-1855, that the percentage of sick in eight army corps was 73 per cent., and on another page his figures show that 66 per cent. of the sick had typhoid fever. It is then but reasonable to demand that the medical officer, the sanitarium, should designate what food should be furnished to troops, and that he should have a chance to inspect this food before it reaches the hands of the regimental commissary. At this

latter point it is often too late to prevent harm being done. I have frequently had to condemn food in a troop kitchen right under the eyes of hungry soldiers, who, I was sure, felt no gratitude whatever as the poisons were removed, as there was practically very little else that was palatable left to eat. Digestive disorders, then, as we see, sometimes deprive a commanding officer of one-half of the men sent to him by his government as fighting men. Improper food is in nine cases out of ten the cause of digestive disturbances. Should no one else approve, the commanding general should be grateful if the medical man should step in and by a proper supervision of the food supply, keep to the fighting line at least ten, twenty, or thirty more men in every hundred. It is not difficult to fix the status of the beef that was issued as a factor in this indigestion. We never saw any of the canned roast beef that has produced such a controversy. None was ever issued to the regiment at Chickamauga, and at Lakeland our Commissary heard so many complaints of it from the regulars who were our neighbors, that he refused to touch it and always demanded as the meat of his travel ration the canned corn beef or "canned giraffe." As for the refrigerated beef, it was very difficult to keep, and decomposition with the formation of ptomaines sometimes took place in an hour or so; I have condemned in a cook tent at noon, beef that had passed inspection at 10:30 or 11 a. m. I condemned several tons of this refrigerated beef at Lakeland.

The soldier of the republic must not be regarded only in the light as of food for powder. He is not a conscript, but voluntarily puts on a uniform which he has a right to expect will secure to him all the efficiency possible in fighting his country's enemies, and when that duty is over, if unwounded, he should return to his productive activities a healthy man. Suggestions for specific remedies must come from the experts; the medical officers of the regular service are the only ones who are well enough acquainted with the conditions both as they exist and as they should be, to be able to formulate proper plans. We know now that in at least one of our wars, the Spanish-American war, the medical officer had more work to do, and, considering his shamefully inadequate means, did it better than any other officer in the service, not even excepting the innumerable heroes of San Juan Hill. And one other thing: we know that the war against the Spaniard was a puny, miserable affair in comparison with our war against typhoid; for in this latter, those who should have been our allies aided the enemy. There are perhaps two other considerations that should claim our attention, though they may not bear directly upon Major Owen's contention. The first is that while the army Medical Department should be absolutely relieved from its present crippling dependence upon an overburdened Quartermaster's Department and from the Commissary Department, it should at the same time set its own officers free from a childish dependence upon their chief at Washington.

Finally, the strength of a chain is only the strength of its weakest link, and one of the links of the chain we are considering is the private soldier. The private soldier is usually a very verdant individual and in the calf stage of existence. He will go without camp bounds and drink of forbidden water and eat of forbidden and monstrous thinks sold by hucksters, and now that the canteen is abolished, he will get out of the garrison and drink of vile and forbidden whiskey. The private soldier does not know, and I have never heard that any provision has been made to instruct him, until after he gets sick, when his surgeon has the opportunity to give him some bedside instructions. When I was in service, the commanding officer of our regiment requested the medical officers to deliver occasional lectures at the daily Officers' and Non-Commissioned Officers' School, and I do not know of even this being done in any of the organizations camped in our neighborhood. These instructions should be extended to all and should be held to be an extremely important part of the schooling of the soldier, especially when we know that in all armies in all times, more men have perished from disease than from wounds. In fact, the saying of the old prophet that "they who take the sword shall perish by the sword" never has been correct; and the proper rendering of that biblical verse should be "they who take the sword shall perish by diarrhea." This is true, but it is not creditable to the American people and the twentieth century, and it probably can be stopped, but only in the way which Major Owen's paper indicates.

Dr. W. O. Owen (Major and Surgeon, United States Army) in closing the discussion, said: That which I tell you is no new story, for Irving C. Rosse said some years ago, "If the army medical officer were so fully aware of the importance of prevailing disease and the efficacy of judicious sanitary measures in their prevention, how does it happen that a state of affairs so completely opposed to the first principles of hygiene has been permitted to exist? An answer to this question is found in the unsettled relations existing between the military and medical authorities. In former days the military authorities held that the duties of a medical officer were to treat the sick and wounded, and any recommendations bearing on the general management of the men were deemed intrusive and resented as an interference with the province of the commanding officer. 'Medical opinions are very good when called for' was said to the senior medical officer in the Burmese war; and in the Crimean war, Inspector-General Alexander was informed by a general of division that he 'had better keep his suggestions and strictures until asked for.' It was not within the power of the medical officer, as at the present day, to remedy such evils, and if the suggestions were acted upon at all, it was owing to the common sense or the good feeling of the Commanding Officer."

The above is a very bitter statement of a truth existing in the past. That such a condition can exist may to-day be questioned. Yet a friend of mine, a gentleman who was born in the city of Cincinnati and is a friend of many present, informed me that in 1898 he reported to the general in command of the camp in which he was on duty that the camp was in bad condition and that an epidemic of typhoid was threatening. The answer that he received was an order to leave the general's tent and not to return to it unless he was sent for. How well the medical officer was listened to in the Crimean war is shown by the fact that many regiments lost over 10 per cent: of their strength, some 45 per cent., some 75 per cent., and one lost more than its average strength. It was in this war that the inspector-general was told that he "had better keep his suggestions and strictures until called for." It was in this same war that 20,000 pounds of lime juice were held for future use while scurvy was disabling the entire force.

It is not my idea to attack any man for the past, but to tell of the past that we may be enabled to see more clearly what is needed in order that we may be able to so draw a law that the responsibility may be fixed definitely on some one man, so that he may suffer for his carelessness, or that he may be removed for his lack of ability to control matters which he has been appointed to superintend. Have a law so drawn that it fixes definitely the responsibility. The bill I offer will do this, for the sixth paragraph puts in the hands of the Secretary of War to say when and under what conditions the line can take away from the Medical Department the responsibilities placed upon them by this bill. I have offered this only as a thought in the right direction; if any one will better it, I shall be grateful. My belief is that the line should at all times have the right to take upon their shoulders an absolute disregard for all sanitary law, but that when they do, that they should do so with a direct personal responsibility under the law for the accuracy of judgment used as shown by the results attained. I can not think that men should be subjected to unsanitary conditions in camps of assembly, in camps of instruction, or in war time when the approach of the enemy is not to be dreaded. Sanitary dangers like all other dangers must be taken, when in the opinion of the man in command it is necessary to do so for the general good.

I desire to call attention to General Orders 100, 1863, the last part of 116 says, "An honorable belligerent allows himself to be guided by flags or signals of protection as much as the contingencies and the necessities of the fight will permit.

117: It is justly considered an act of bad faith, or infamy or fiendishness, to deceive the enemy by flags of protection. Such act of bad faith may be good cause for refusing to respect such flags." The above was taken from the Army Regulations published the year before the United States became a party to the Geneva Convention. Yet, with a feeling of this sort published to the world, the hospitals do not have their own transportation. The United States, in the face of the Geneva Convention, still supplies the Medical Department with Quartermaster's transportation, tentage, etc., all because of the mistranslation of the French word "ambulance." The French regulation designates what constitutes an ambulance, giving the allowance of men, wagons, etc., which each class of ambulance shall have. Thus it is that the medical officer flying the Red Cross flag of the Geneva deceives the enemy, for the enemy does not know that all of these tents, wagons, horses, etc., which go to form an ambulance in the United States Army belong to the fighting force and that the fighting force is obligated, when their needs require, to take this material from the ambulances for their own use. They have the right to compel the Medical Department to again receive this property and again protect it from capture by flying over it the Red Cross flag of the Geneva Convention, when their necessity has passed. And hence it is that I have said that the Red Cross flag is a menace to the medical officer flying it over Quartermaster's property, which constitutes so large and important part of the ambulance or flying hospital of the United States Army.

So often has the thought been repeated to me that I am advocating a double-headed command, that I again feel called upon to state that I have insisted and still insist that the command continue to rest in the line where it belongs. I do, however, advocate that the Medical Department shall be made responsible for the sanitary condition of the army, and that penalties be attached for failure to avoid unsanitary conditions; that the right shall rest at all times in the line of the army to take this responsibility from the shoulders of the Medical Department to their own, taking with the responsibilities the penalties provided; that a full justification for their action shall always be the presence of the enemy and the dictation of military necessity.

DR. J. C. OLIVER moved that a copy of Mr. Hay's bill be sent to the Committee on National Regulation of the Ohio State Society with the endorsement of the Academy of Medicine of Cincinnati. Carried.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held at San Francisco, September 24.

Dr. D. W. Montgomery in the Chair.

DR. DUDLEY TAIT showed the necropsy specimens from a patient upon whom he had made a gastrostomy for cancer of the esophagus. The method employed (Poirier's operation) was briefly as follows: Incision through the rectus under local anesthesia; withdrawal of a cone of the muscular wall of the stomach and fixation of basis of the cone to the parietal peritoneum. A small opening is made at the summit of the cone, penetrating only the two outer layers of the stomach. This is easily done, for when the stomach wall is held between the thumb and index finger the mucous layer rolls away from the outer layer. The mucous layer is then pushed inwardly by blunt dissection, which is always bloodless. A small opening is made into the dome of mucous layer thus formed and a number fourteen or eighteen French catheter introduced. Stitching the edges of the outer cone to the skin, and closure of the remainder of the wall completes the operation, which seldom requires more than ten or fifteen minutes. The result in Dr. Tait's case was excellent; for eight months there was no leakage, and after that, leakage occurred only during intervals of gastric disturbances as manifested by hypersecretion and hyperacidity. The patient was able to take food—liquid and solid—by mouth shortly after the operation and continued doing so for four and a half months. Death from pulmonary congestion occurred thirteen months after the gastrostomy. The specimen showed the disappearance of everything resembling a canal. It is more than probable that this condition occurred early and that the continence was due to the folds of mucous membrane converging at the orifice in the stomach.

After having made seven gastrostomies by different methods, Dr. Tait gave preference to the valvular methods, among which he mentioned Fontan's and its modification by Poirier. Whatever be the method adopted the stomach opening must be very small, and in the majority of methods the tube should be introduced only at the time of feeding. Operation in two stages was dangerous as a long list of complications had demonstrated. Cocain anesthesia was a great improvement. Dr. Tait advised getting the patient up as early as the third day. Roux, of Lausanne, insisted strongly on this proposition in all of his cases of gastric surgery. The return of permeability of the esophagus after gastrostomy was due to the gradual disappearance of the fibro-stenotic process involving the tissues contiguous to the neoplasm. A similar condition was found in rectal growths after colostomy. Dr. Tait spoke briefly of experimental work he had done in view of permitting the patient to take food by the mouth in cases of stricture of the esophagus. The plan consisted in anastomosing the greater curvature of the stomach to a point on the esophagus situated above the stricture. He found that traction on the cardia invariably caused grave respiratory changes, although it was possible to dissect free and bring down a certain portion of the esophagus. Operation from behind was entirely unsuccessful.

DR. HOWARD MORROW presented a man with a sareoma on his forehead. The growth began two years ago, in the skin, at the root of his nose and was removed by a paste. Two months ago it reappeared and now extends within a half inch of the inner canthus of the left eye. The entire growth is in the subcutaneous tissue and only adherent to the skin at the point of the former scar. The patient was brought before the Academy to get the opinion of the members in regard to the best means of treatment.

DR. H. M. SHERMAN said that he had never had to deal with a tumor of that character, in that location, but it did not seem to him that it would be difficult of removal as all the nodules were movable. It was possible that the growth was deeper than one would expect. He referred to the use of Coley's fluid in the treatment of such growths, and the recent publication of a paper by Coley, which cited a number of cases where satisfactory microscopic diagnoses were made, and under the use of the mixture the tumor disappeared. He thought we could not shrug our shoulders at a paper of that kind. Wyeth has stated that an incision could be made over the tumor and the tumor bathed in the fluid, but he thought it was best to remove these masses, and if some were found in front of the frontal sinus they still would be accessible for the use of Coley's fluid.

DR. H. A. L. RYFKOGEL said he had watched three cases where Coley's fluid had been used, but none of the cases were spindle-cell sarcomas. He thought it was advisable to use it for the prevention of recurrence.

DR. MORROW also presented a man with a chancre on the tip of his tongue, of two months' duration. One week ago a typical roseola appeared on his chest. This patient was presented on account of the unusual position of the primary sore.

DR. DUDLEY TAIT showed photographs of a case of Dupuytren's contraction, in which all the fingers of both hands were involved. The palmar retraction was both longitudinal and transverse and on the plantar surfaces there existed a slight degree of contraction. The latter feature, noted in two former cases, was considered sufficient to eliminate traumatism as an etiologic factor. The difference of opinion in regard to treatment of this lesion could be explained in part by the existence of three distinct stages or forms of the pathologic condition; in the first, the most frequent, the aponeurosis only is involved; in the second, the skin also; in the third, the joints in addition to the aponeurosis and skin. Dr. Tait had talked recently with several European surgeons in reference to the treatment of Dupuytren's contraction, and found most of them advising radical excision, followed by grafts, in the advanced forms. Multiple subcutaneous incisions, as advised by Sir Astley Cooper and subsequently by Adams, demanded long and painful

after-treatment and were frequently followed by recurrence. In the early stage, massage and constitutional treatment—for arthritism and diabetes—give excellent results in this lesion which belonged to the domain of medicine rather than to that of surgery.

Dr. G. Gross read a paper on "Intra-Muscular Mercurial Injections in the Treatment of Syphilis." After going into the history of this form of treatment, his paper took up the technic of the injections. He preferred calomel to other mercurial preparations, and used a glass syringe with a platinum-iridium needle 5 to 6 cm. long, which could be passed through the flame. The author claimed that the injections were not painful in themselves, but by the third day, very often, more or less severe pain and swelling was likely to develop. He thought that in order to pass judgment on this treatment, one must give it a fair trial, with fair warning to patient, and the splendid results obtained would convert those who would persevere.

Dr. G. Caglieri, in discussing Dr. Gross's paper, stated that he did not think the author had shown any advantage in this method, and he thought there were decided objections to it; he thought the injection always produced some pain, and sometimes violent pain. Six weeks ago a man came to him suffering from marked syphilitic manifestations, who had just given up treatment by another physician because he said he could not stand the pain of these intra-muscular injections. Other methods of treatment he thought were equally as good and not so painful. Of these the intra-venous injection method was probably the best. It was more soothing than the former and not such rigid care was required. He described the technic of the injection and claimed that they were very easy of execution. He used the 1 per cent. solution of cyanid of mercury in 20 m. doses daily for ten days, and then increased to a 2 per cent. solution, gradually lengthening the period between these injections until it is used once a week.

Dr. D. W. Montgomery said that he had but little experience with calomel injections, but that little had convinced him that bichlorid injections were not so painful. He did not think that unless the condition was ungovernable he would use calomel. He certainly would not use it in an ordinary case of syphilis, for one could get along very well with inunction or internal treatment. He had never used the cyanid of mercury.

Dr. Gross, in reply, said that he had made a number of intra-venous injections and had always found them painful. One advantage of the intra-muscular injection was that the effect was more lasting. Regarding the pain he said he had used the injections considerably and only remembered one case where the man did not come back. The method should be tried faithfully in order to prove its efficacy.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Cough and Pain in Tuberculosis.

The following is recommended in *Amer. Med.*:

R.	Aq. Aurantii flor.	℥iv	128
	Syr. chloralis		
	Syr. morphinæ, āā	℥i	32
	Aq. laurocerosi	℥iii	12

M. Sig.: One dessertspoonful every hour.

Catarrhal Conditions of the Female Genital Tract.

The following has been highly recommended as a very useful general application to the mucous surfaces:

R.	Ichthyol	℥i	4
	Acidi borici	℥ss	2
	Glycerini	℥i	32

M. Sig.: To be applied locally.

The surfaces having been thoroughly cleansed they should be painted with the foregoing preparation, and when the cervix is involved, a tampon saturated with this solution may be placed *in situ* and allowed to remain for fifteen or twenty hours.

Calcium Chlorid for Menorrhagia.

Lafond, according to the *New York Med. Jour.*, prescribes calcium chlorid in daily amounts of from 20 to 30 grains by the mouth, using the following:

R.	Calcii chloridi	gr. cxx	8	66
	Syrupi simplicis	℥ii	64	
	Aquæ	℥vi	192	

M. Sig.: One soupspoonful twice daily for eight days, beginning one week before the expected period.

M. Dalché recommends the following in the form of a pill:

R.	Ergotin	gr. iss	09
	Quininæ sulph.	gr. 1/3	02
	Pulv. digitalis	gr. 1/6	01
	Pulv. colæ q. s.		

M. Ft. pil. No. i. Sig.: Take one such pill three times a day, beginning three or four days previous to the period and continuing throughout the flow.

Treatment of Neurasthenia.

Lemoine, in *Bul. Gén. de Thér.*, recommends the use of sodium phosphate, administered subcutaneously, stating that it is of service in supplying the phosphoric acid lost by the nervous system. He prescribes it as follows:

R.	Sodii phosphatis	gr. xlv	3
	Sodii chloridi	gr. xxx	2
	Aq. destil.	℥iii	96

M. Sig.: Inject 30 to 60 minims every other day.

Treatment of Gonorrhea.

As an injection the following is recommended:

R.	Bismuthi subgal.		
	Pulv. acaciæ, āā	3ii	8
	Aq. destil.	℥iii	96

M. Sig.: Use as an injection every two hours.

The following is employed by Cabot:

R.	Plumbi acetatis		
	Acidi tannici		
	Zinci sulphatis		
	Cupri sulphatis, āā	gr. ii	12

M. Fiat tabella No. i. Sig.: Dissolve one such tablet in four ounces of water and use as an injection.

Treatment of Diabetic Pruritus Pudendi.

The physician should always look for diabetes, according to the *New York Med. Jour.*, whenever the pruritus is persistent and does not depend upon obvious local causes. In addition to the diet, if sugar is found in the urine, hot boric acid lotions are recommended:

R.	Acidi borici	℥iss	48
	Sodii boratis	gr. lxxv	5
	Aq. destil.	Oii	960

M. Sig.: Apply locally as hot as can be borne.

Specific Iritis.

The following is recommended to be given internally in cases of syphilitic iritis:

R.	Hydrarg. biniodidi	gr. vi	36
	Potass. iodidi	℥iss	6
	Aq. destil	℥ss	16
	Syr. aurantii q. s. ad	℥iii	96

M. Sig.: One teaspoonful three times a day after meals.

Treatment of Appendicitis.

Prof. Bourget, as noted in *Merck's Archives*, outlines the following treatment for appendicitis when once it becomes established: The patient is put on a plain diet, and one-half an ounce of castor oil with 15 grains of salacetol (a salicylic acid derivative) is administered daily. Lavage of the stomach and of the lower bowel is productive of good. A quart of water containing some antiseptic solution may be introduced into the rectum. From three to eight ounces of olive oil may

be injected with this enema. The author uses ichthyol in the above enema in the strength of 4 to 1000. The first two enemas ought to be expelled entirely soon after being injected; later a small quantity should be retained. The enemas may be given morning and evening. During the interval flaxseed poultices are to be supplied over the right iliac region, and if tumor is large five to six leeches are indicated. After two or three days of this treatment the castor oil is replaced by salines as follows:

R.	Sodii bicarb.	3ss	2
	Sodii phos.	3ss	2
	Sodii sulph.	3ss	2
	Aquæ	Oi	192

M. Sig.: Five ounces three or four times a day.

Dr. Bourget is of the opinion that if the foregoing outline of treatment can be properly carried out that a good number of these cases of appendicitis would escape the surgeon's knife.

Treatment of Ulcers with Camphor.

Schulze, in *Clin. Moderna*, advises the following in the form of an ointment:

R.	Pulv. camphoræ	gr. xv	1
	Zinci oxidi	3iiss	10
	Adipis	3i	32

M. Sig.: Apply locally; or:

R.	Pulv. camphoræ	gr. xxx	2
	Zinci oxidi	3i	32
	Olei olivæ	3i	32

M. Ft. unguentum. Sig.: Shake and apply locally; renew three times a day.

Combination of Trional and Paraldehyde as a Hypnotic.

Rapiteau, as noted in *Amer. Med.*, has observed that the combination of trional and paraldehyde gives a new hypnotic which is four or five times more active than trional alone, and which may be employed for a great length of time without the fear of forming a habit or of cumulative effects. He recommends its administration according to the following formulæ: First make a normal solution of the two drugs as follows:

R.	Trional	gr. xv	1
	Paraldehyde	gr. xxx	2
	Olei amygdalis dulcis	3ss	16

Mix the trional and paraldehyde, then add the oil and obtain a solution in a water bath.

As a draught:

R.	Sol. trional et paraldehyde (normal)	3iss	48
	Mucilaginis	3iii	96
	Syr. pruni virg.	3ss	16

M. Sig.: One tablespoonful at bedtime in cases of insomnia.

Each tablespoonful of the foregoing will contain 5 grains of sulphonal and 10 grains of paraldehyde.

The following is serviceable, to be given per rectum:

R.	Sol. trional et paraldehyde	3ii-iv	8-16
	Ovi vitelli uni		
	Lactis	3ivss	144

M. Sig.: At one injection for an adult. In the form of a suppository:

R.	Trional	gr. iii	20
	Paraldehyde	gr. vi	40
	Ol. Theobromæ	3i	4

M. Ft. suppository No. i. Sig.: To be given at night for an adult. For a child these preparations may be given in the following proportions:

R.	Trional	gr. ¾	05
	Paraldehyde	gr. iss	09
	Ol. Theobromæ	gr. x	66

M. Ft. suppos. No. i. Sig.: At bedtime.

To be given in a capsule either to children or adults in the proper-sized doses, the following form of administration is recommended:

R.	Trional	gr. ¾	05
	Paraldehyde	gr. iss	09
	Ol. amyg. dulcis	gr. x	66

M. Ft. cap. No. i. Sig.: One capsule three to six times a day.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), October 12.

1 Uric Acid Fallacies. Frank Billings.
2 A Case of Anthrax of the Face; Operation; Recovery; With Exhibition of Patient. W. B. Platt and H. C. Ohle.
3 *The Diagnosis of Primary Laryngeal Tuberculosis. P. S. Donnelian.
4 Fibrin in the Blood. Robert L. Watkins.
5 *Kidney-Stone Diagnosis and Treatment. Donald Macrae, Jr.
6 A Fatal Case of Tetanus, Treated with Antitoxin. Louis C. Ager.
7 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Medical News (N. Y.), October 12.

8 The Endowment of Medicine. Malcolm Morris.
9 *The Influence of the Colorado Climate upon Pulmonary Hemorrhages. S. G. Bonney.
10 *The Tuberculosis Question. H. Arrowsmith.
11 The Prevalence and Treatment of Tuberculosis Among the Poor. H. L. Fancher.
12 *The Crowding of Consumptives into the Municipal General Hospitals. Wm. Ridgely Stone.
13 Tuberculous Otitis Media, Mastoiditis and Meningitis in an Otherwise Apparently Healthy Adult. Brief Report of a Case. James F. McCaw.
14 *The Tuberculin Test; Cases in Which It Seemed Justified and Decisive. W. E. Casselberry.

St. Louis Medical Review, October 12.

15 *Is Cesarean Section Justifiable in the Treatment of Placenta Previa? E. Gustav Zinke.

Medical Record (N. Y.), October 12.

16 *Panhysterokolpectomy: A New Prolapsus Operation. George M. Edebohls.
17 *Strangulated Hernia in Infants. Charles N. Dowd.
18 *A Study in Heredity in Its Relation to Immunity and Selective Activity in Tuberculosis. Herbert M. King.
19 Epilepsy; Its Etiology and Treatment. J. L. Bowman.

Philadelphia Medical Journal, October 12.

20 *A Case of Gunshot Wound of the Kidney and Stomach. John B. Roberts.
21 *A Case of Gunshot Wound of Stomach, in Which Patient Recovered. G. W. Penn.
22 Partial Gastrectomy for Hemorrhagic Ulcer. L. J. Hammond.
23 A Case of Tubercular Ulcer of the Stomach. Erwin Fischer.
24 Address in Mental Disorders at the Pennsylvania State Medical Society, 1901. Robert H. Chase.
25 *The Progressive Muscular Atrophies. Edward E. Mayer.
26 *Post-diphtheritic Urticaria. Jas. J. Walsh.

New York Medical Journal, October 12.

27 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
28 *The Tonsils. Robert Levy.
29 A Case of Peliosis Rheumatica (Schönlein's Disease). Fairfax Irwin.
30 The Growth of New Bone from Periosteum. J. Herman Branth.
31 Laryngology and Its Place in Medical Education. (Concluded.) Henry L. Swain.
32 On the So-called Gluten and Diabetic Foods of Commerce. H. C. Sherman.

Boston Medical and Surgical Journal, October 10.

33 *A Brief Résumé of the Life and Work of Ambrose Paré. (To be continued.) Charles Greene Cumston.
34 *Cretinism. Charles S. Millet.
35 *Association of Anemia, with Chronic Enlargement of the Spleen. (Continued.) Arthur H. Wentworth.
36 Hernia Reduced "En Bloc;" Operation and Relief of Internal Strangulation. C. A. Porter.
37 A Case of Intussusception: Resection of Fifty-six Inches of Small Intestine; Recovery. F. G. Balch.
38 Two Cases of Intestinal Obstruction Due to Constricting Bands. John W. Elliot.

Cincinnati Lancet-Clinic, October 12.

39 *Fibrinous Bronchitis. James M. French.
40 *Nephrolithiasis: Its Diagnosis and Surgical Treatment. Joseph Ransohoff.

American Practitioner and News (Louisville, Ky.), September 1.

41 *The Puerperium. John G. Cecil.
42 *Hip-joint Amputations; With Report of a Case. William O. Roberts.
43 *Substance or Cell Life, and the Germ Considered from the Standpoint of Natural Phenomena. U. V. Williams.

44 *Instrumental and Operative Obstetrics. Arthur T. McCormack.
45 Foreign Bodies Passed from the Rectum. W. O. Roberts.

Medical Age (Detroit, Mich.), September 25.

46 Pleural and Pericardial Effusions. James B. Brown.
47 Malaria: Its Causation and Prevention. Edward F. Wells.

Medical Fortnightly (St. Louis), September 25.

48 Multiple Pathologic Dislocations: (*a*) Hip, (*b*) Wrist. A. J. Steele.
49 Suprarenal Extract—Its Use in Medicine and Surgery. A. L. Adams.
50 Tuberculosis and Toxemia. T. Blank.

Northwestern Lancet (Minneapolis), October 1.

51 A Dermoid Cyst, with Twisted Pedicle and Hemorrhage Within the Sac, Complicating Pregnancy, with Removal and Recovery. L. A. Nippert and J. E. Moore.
52 Two Cases of Pin Appendicitis. James H. Dunn.
53 The Young Man in Medicine. H. K. Read.
54 Foreign Bodies in the Ear. Frank C. Todd.

Albany Medical Annals, October.

55 The Development of Medicine and Surgery in the Albany Hospital. Albert Vander Veer.
56 *A Case of Accessory Thyroid Tumor at the Base of the Tongue. Clement F. Theisen.
57 Adrenalin Chlorid. Burton S. Booth.
58 The Relation of Bacteriology to Medicine. J. A. Wilder.
59 Clinical and Pathological Notes (Vaccination, Etc.). J. M. Mosher.

Illinois Medical Journal (Springfield), October.

60 Treatment of Abortion. Charles B. Reed.
61 Glioma of the Brain; Recovery from the Operation and Present Status of the Patient. J. F. Percy.
62 Dilating Irrigations in the Treatment of Chronic Gonorrhea, with Exhibition of a New Dilating Irrigator. E. A. Fischkin.
63 Trichinosis. Joseph Brayshaw.
64 Rectal Fistula. J. Rawson Pennington.
65 Report of a Case of Typhoid Fever in a Syphilitic Female. Wm. H. Maley.

American Journal of the Medical Sciences (Philadelphia), October.

66 On the Clinical Aspects of Plague. Lewellys F. Barker.
67 The Pathology of Bubonic Plague. Simon Flexner.
68 The Bacteriology of Bubonic Plague. Frederick G. Novy.
69 *A Case of Malarial Nephritis, with Massing of Parasites in the Kidney. James Ewing.
70 *Influenza as a Causal Factor in Acute Mastoiditis, and the Early Treatment. James F. McCaw.
71 A Method for the Differential Modification of the Proteids in Percentage Milk Mixtures. Thompson S. Westcott.

Pediatrics (N. Y.), October 1.

72 Physical Culture in Children—The Objects to Be Attained. John Madison Taylor.
73 Ringworm and Favus. A. D. Mewborn.
74 Chronic Intestinal Obstruction, with Report of a Case. D. S. Hanson.

Buffalo Medical Journal, October.

75 *A Plea for the Broader Treatment of Epilepsy. William P. Spratling.
76 Removal of the Cecum for Carcinoma: Recovery. W. L. Conklin.
77 *The Choice of an Anesthetic for Children. Edward J. Wynkoop.
78 The Two Glass Test. J. Henry Dowd.
79 Hospitals in the Smaller Towns. A. L. Beahan.
80 *The Therapeutic Value of the X-Ray in Lupus Vulgaris. Clarence A. Greenleaf.
81 A Case of Obstinate Hiccough and Its Successful Treatment. J. A. Durrent.

Canada Lancet (Toronto), September.

82 *The President's Address, Canadian Medical Association. H. H. Chown.
83 The Winnipeg Meeting of the Canadian Medical Association. George Elliott.
84 The Pathology of Gastric Ulcer. H. B. Anderson.
85 Empyema: Its Medical Aspects. R. Ferguson.

Cleveland Journal of Medicine, September.

86 *Infrapubic Opening of Pelvic Appendiceal Abscesses. J. F. Baldwin.
87 Some Facts Regarding One Hundred Consecutive Obstetric Cases. F. S. Clark.

Pennsylvania Medical Journal (Pittsburg), September.

88 Evidences of Insanity. M. S. Guth.
89 *Modern Counter Prescribing. John B. Donaldson.
90 Recent Advances in Rectal Surgery. William M. Beach.
91 Treatment of Typhoid Fever. D. R. Kunkelman.
92 A Case of Pseudo-hermaphrodism. H. F. McDowell and C. H. Hemminger.

Canadian Journal of Medicine and Surgery (Toronto), October.

93 *Address in Medicine. J. R. Jones.
94 Orthopedic Treatment of Deformities and Disabilities Resulting from Diseases of the Nervous System—Special Reference to Tendon Transposition. B. E. McKenzie.
95 Nose and Throat in General Practice. John Hunter.
96 The Sanatorium Treatment of Tuberculosis. Arthur J. Richer.
97 A Trip as Surgeon with the Newfoundland Sealing Fleet. Wm. F. Adams.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), October.

98 *The Cause of the Streaks in Nevus Linearis. Douglas W. Montgomery.
99 A Case of Dermatitis Vegetans. M. B. Hartzell.
100 On the Treatment of Certain Deep-seated or Rebellious Forms of Disease of the Follicles, More Particularly by Intrafollicular Methods. Edward B. Bronson.

Woman's Medical Journal (Toledo, Ohio), August.

101 Marie Josepha Mergler. I. N. Danforth.
102 Dr. Marie J. Mergler as Woman and Physician. Eliza H. Root.
103 Diseases of the Respiratory System in Infancy. Mary E. Phelps.

International Medical Magazine, September.

104 *On the Care and Treatment in Convalescence from Functional Nervous Disease. F. Savary Pearce.
105 Fatal Polypoid Colitis Resulting from Administration of Mercurial Inunctions. Wm. Egbert Robertson.
106 Nephrectomy for the Removal of Calculus of the Ureter. W. Wayne Babcock.
107 The Treatment of Congenital Club-foot. James K. Young.
108 Chronic Diarrhea Due to Rectal Disease. (Continued.) Samuel G. Gant.
109 The Etiology and Symptomatology of Constipation, Including the Differential Diagnosis Between Atonic and Spastic Constipation. Boardman Reed.

Fort Wayne Medical Journal-Magazine, September.

110 Inflammation and Its Treatment. D. J. Loring.
111 Chronic Urethritis: Its Diagnosis and Treatment. H. A. Klussman.
112 What Can We Do for Our Cataract Cases? G. W. Van Benschoten.

The Laryngoscope (St. Louis), September.

113 The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.
114 *Treatment of Certain Purulent Conditions of the Antrum of Highmore Through the Natural Openings. Norval H. Pierce.
115 *Remarks on the Diagnosis of Adenoids in Infancy. Walter F. Chappell.
116 Differential Diagnosis of Affection of the Eustachian Tube and Spongifying of the Labyrinth. J. Holinger.
117 Diseases of Stenson's Duct and the Treatment. Carl E. Munger.

American Medical Compend (Toledo, Ohio), October.

118 *Infection from the Bacillus Aerogenes Capsulatus; Report of a Case. Julius H. Jacobson.
119 Some Points Regarding Renal Tuberculosis. B. Becker.
120 Pharmacologic Action of Drugs. E. M. Houghton.
121 Relation of the Alumni to the College Clinic. C. S. Miller.
122 Urethritis or Gonorrhea. Charles Louy.
123 May a Hospital Steal Cases? A. L. Benedict.

Indiana Medical Journal (Indianapolis), October.

124 *Pernicious Anemia. Wm. Charles White.
125 Dermatitis Universalis; Report of a Case. F. P. Eastman.
126 Hemorrhoids. J. N. Jerome.
127 How the Evolution of Senses Expands the World. John Fiske.
128 *Cold as a Cure for Tetanus. Joseph G. Rogers.
129 Stomach Nine Months in the Thoracic Cavity with Knife Wound of the Diaphragm; Report of Autopsy. F. A. Morrison.
130 Concerning Surgery in Berlin. F. W. Foxworthy.

Hot Springs Medical Journal, September.

131 *Drainage in Abdominal Surgery. J. W. Long.

Carolina Medical Journal (Charlotte), September.

132 Beri-beri. Gideon M. Van Poole.
133 Intestinal Diseases of Children. Howard Thompson.

Medical Dial (Minneapolis), October 1.

134 *A Modified Gastrostomy Operation. F. T. Meriwether.
135 Bacteriological Report on Mississippi River Water. J. Frank Corbett.

Kansas City Medical Index-Lancet, October.

136 Cardiac Therapeutics. A. E. King.
137 Intestinal Diseases of Children. J. F. Aldrich.

138 Physical Life and Perversion of Physical Acts in Relation to the Same, with a Recital of a Few Cases. Stanley Newhouse.
139 Medicolegal Cases. N. A. Drake.
140 The Preventive and Curative Treatment of Tuberculosis. E. C. Underwood.

New Orleans Medical and Surgical Journal, October.

141 *Widal's Reaction in Typhoid Fever. O. L. Pothier.
142 *Spinal Analgesia. Sidney P. Delaup.
143 Vital Statistics in Louisiana. G. Farrar Patton.
144 Boards of Lunacy, with Especial Reference to the Examination of Patients for Commitment in the Insane Asylum. C. D. Simmons.
145 First Help in Cases of Contagious Diseases. C. L. Horton.
146 A Clinical Report of a Case of Spina Bifida. T. E. Schumpert.

Columbus Medical Journal, September.

147 The Cardiac Complications of Rheumatism. Edgar M. Hatton.
148 A Morning in a Peking Clinic. John Inglis.
149 Anodynes in Children. Richard R. Pettit.
150 Carcinoma of the Tongue. W. H. Chambers.

Georgia Journal of Medicine and Surgery (Savannah), September.

151 Pathology and Treatment of Anemia. W. E. Fitch.
152 *Our Recent Epidemic of Smallpox and Vaccination. F. J. Runyon.
153 *Report of Two Cases of Hemoglobinuric Fever. Walter Shropshire.
154 *The Management of Fevers. I. N. Love.

Texas Medical News (Austin), September.

155 The Treatment of Dysentery. E. A. Malsch.
156 A Case of Mycosis. E. P. Daviss.
157 Smallpox. S. S. Watson.
158 Acute Dysentery, with Special Inquiry as to the Use of Magnesium Sulphate. Ira D. Clemons.

Vermont Medical Monthly (Burlington), August 25.

159 Contribution to the Treatment of Tuberculosis by Means of Static Electricity, Inhalations by Compound Ozone and Immediate Absorption of Medicine Through the Skin. F. T. Labadie.
160 The Treatment of Suppuration of the Middle Ear. H. Edwin Lewis.

Medical Standard (Chicago), October.

161 The Commoner Diseases of the Eye: How to Detect and Treat Them. Casey A. Wood and Thomas A. Woodruff.
162 A Surgical Clinic (Intraperitoneal Abscess, Etc.). John B. Murphy.
163 Cataract. J. G. Huizinga.
164 The Eye and the General Practitioner. Edward B. Taylor.
165 The Rhinological Corner. Edwin Pynchon.
166 The Animal Cell and Its Therapeutic Applications. J. Rawson Pennington.

AMERICAN.

3. **Laryngeal Tuberculosis.**—Donnellan concludes that primary laryngeal tuberculosis is hardly as rare as has been generally supposed and is quite explicable from a pathologic standpoint. He reviews the literature briefly, notices special points of diagnosis, etc., and remarks on the importance of baeteriologic and histologic examinations.

5. **Kidney Stone Diagnosis.**—The etiology, symptoms, etc., are first noticed by Macrae, who sums up the following as the principal aids as regards the diagnosis: General symptoms, local and reflex; examination of the urine, chemic, macroscopic and microscopic with the centrifuge; percussion over the affected side; the ureteral catheter and sound; inspection of the bladder and ureteral orifices; the segregator. In spite of the possible exception of the actual finding of a stone in the urine, we are not absolutely convinced that we have to deal with a nephritic calculus. Still another question arises as to whether we have one or more stones, and whether, if present, they are in the ureter, kidney substance, etc. He calls attention particularly to the importance of the *x*-ray, and believes the time has arrived when it becomes our duty to submit each and every case of an affection pointing to a pathologic nephroureteral condition to the *x*-ray. A few exceptions to this rule may be made in cases of nephritis following the exanthems, but even here, if the condition exists, the possibility of secondary calculi must not be overlooked. He does not believe in ureteral catheterization as a routine practice and retrograde sounding of the ureter should, he thinks, be relegated to the past.

7.—See also ¶27.

9. **Pulmonary Hemorrhages.**—Bonney has made a statistical study of his cases and reports his observations with special reference to the influence of Colorado climate on hemorrhagic cases of tuberculosis. His conclusions are: 1. Hemorrhage by itself, save with a few exceptions, furnishes no criterion upon which to base a choice of climate, the indications for high altitude in uncomplicated and in not too-far-advanced cases being highly imperative independent of this single manifestation. 2. An exceedingly small proportion of recurrences may be expected in Colorado, although not necessarily reflecting accurately the degree of ultimate improvement secured. 3. Recurrences are more likely to result, and that quickly, in those cases with hemorrhage immediately preceding arrival, and hence the wisdom of a short delay following the hemorrhage before leaving home and unusual precautions as regards rest upon arrival. 4. Primary hemorrhages are comparatively rare in Colorado and usually take place incident to a rapid, progressive, destructive change in cases already with hopeless prognosis, or as a natural result of some external assignable cause, which under proper régime could be avoided. 5. Hemorrhage, while less likely to occur in Colorado than at sea level, is nevertheless, as a general rule, more severe and associated with greater shock. 6. The avoidance of hemorrhage, particularly in the early months of Colorado life, demands a most rigid compliance with detailed instructions.

10. **The Tuberculosis Question.**—Among the subjects discussed by Arrowsmith are those of the heredity of the disease, which he seems to think is effective to a greater extent than many now suppose; at least this is the case as to hereditary predisposition. The method of infection which is alone capable of adequately explaining all the phenomena is that of ingestion, perhaps, in some cases, or a combination of inhalation and ingestion. Few people breathe continuously through their noses and a large proportion of the matters suspended in the inspired air is naturally deposited on the posterior wall of the pharynx and thence inevitably carried downward in the act of swallowing. The gastric disturbances which almost always antedate tuberculosis furnish the opportunity for the bacillus to enter the system by impairing the protective power of the normal stomach secretions. Infected food stuffs are also mentioned in this connection. The sum of our knowledge relative to the antecedent causes of phthisis now seems to be that, given a favorable soil, however produced, and the proper exposure, tuberculosis will result. Just what this soil is, is hard to say, but predisposition may be either inherited or acquired. The pre-tuberculous state is mentioned and it seems to him that all of us who have not tuberculosis, may be said to be in this condition. He fails to see in what the prodromal stage of phthisis differs from that of any other debilitating illness before the characteristic symptoms have appeared. He does not favor the use of tuberculin for diagnostic purposes, considering it not entirely reliable and possibly risky. The actual symptoms on which we may place reliance in reaching a conclusion as to the existence of tuberculosis are enumerated in the following order: Insidious perversion of general nutrition, with gastric and intestinal disturbance, which does not seem to have any distinctive characteristics. A persistent tachycardia is also an indication of commencing trouble in many cases, but one of the weightiest and most observable diagnostic symptoms in his experience is some abnormal variation of the temperature. He doubts the possibility of afebrile tuberculosis. When there is a persisting abnormal temperature range, there may be a question between tuberculosis and some form of malaria, and external applications of guaiacol will sometimes clear up the doubt by relieving the fever of tuberculosis, or leaving that of malaria uninfluenced. Thoracic inspection is of little account in the early stages, though a misshapen, unnaturally small-sized chest is a presumptive indication along with other signs. The apical involvement in the beginning of tuberculosis being to the basal in the ratio of 1 to 500, careful attention should be given to the condition of apex, and while auscultation of the anterior surface may be entirely negative, yet in the supraspinal fossa and along the inner bor-

der of the scapula we may find what we are in search of. In some cases small doses of iodin 3 to 5 gr. three times a day will help to determine the condition. Physical conditions are sometimes apparent during menstruation which are absent at other periods. Unnaturally clear transmission of heart sounds without consolidation is suggestive. Skiagraphy will be a much more prominent diagnostic measure in the future, he thinks, than at present. Occasionally laryngoscopy will reveal the trouble. He says, to recapitulate, that we are justified in assuming tuberculosis on the evidence of otherwise unexplained gastric and nutritive disturbances with persistent tachycardia and fluctuations of temperature, although slight, especially with an increase after exertion—particularly if the personal history gives a coloring probability. We may be absolutely certain of our diagnosis if in addition the slight physical signs mentioned are discoverable, and notwithstanding a history of cough and possibly hemoptysis, we may presumptively discard the probability of tuberculosis if these phenomena are absent. The prognosis of pulmonary tuberculosis is perhaps the most uncertain thing in medicine. He quotes Trudeau's statistics as showing the favorable prognosis in incipient tuberculosis, but the surest way to cure the disease is to prevent it and that the possibility of this is not Utopian is shown by the decrease where sanitary regulations are now enforced. A very important matter is that a patient should be assured of the protection given by an approximately normal condition of the upper respiratory tract. Catarrhal conditions, while they do not run into consumption, increase the liability to it. He condemns the indiscriminate prescribing of change of climate, notices the great success of outdoor life, and mentions a few remedies and methods, such as serum therapy, urea, etc., and protests against the use of cod-liver oil, heroin or other opium derivatives and cough syrups. He thinks, for the relief of cough, that the laryngeal syringe is a better method than any other that may be had. Antiseptic inhalations are of great additional utility.

12. **Consumption in General Hospitals.**—The dangers of crowding general hospitals with consumptive patients is remarked by Stone, who reports cases where tuberculosis seems to have been contracted from such associations. The patients in these wards are in a low state of vitality, especially susceptible to infection, and such infection has taken place.

14. **The Tuberculin Test.**—Casselberry reports a case which seems to him to indicate the decided value of this test as demonstrating the existence of tuberculosis in its bacillary stage. In cases of positive reaction, however, we must bear in mind syphilis, and also certain cases of sarcoma and carcinoma.

15.—See abstract in THE JOURNAL of September 28, p. 856.

16. **Panhysterokolpectomy.**—Complete prolapsus of the uterus and vagina is best treated, according to Edebohls, by panhysterokolpectomy, of which the essentials consist in complete removal of the uterus and vagina followed by operative obliteration or columnization of the bed of the genital tract. The tubes and ovaries are not disturbed if healthy; if diseased, they are removed. Obliteration and columnization of the bed of the removed uterus and vagina is effected by means of from seven to nine buried purse-string sutures of chromicized catgut placed about two to two and a half centimeters apart, and running parallel to each other. Each suture gathers the raw surfaces from the periphery in circular fashion and draws or purses them together in the median line. It is buried by being pushed upward toward the abdomen, while the next suture is being tied beneath it. The effect of the completed operation is to build a solid pelvic floor ten to fifteen centimeters in depth from peritoneum to perineum, and to establish broad apposition of the base of the bladder and the anterior surface of the rectum, conditions similar to those obtaining in the male pelvis. The patient is kept in bed for a week after operation. Recurrence of prolapse is impossible after a correctly and successfully performed panhysterokolpectomy. The operation is indicated in the severest cases of total prolapse, and more especially where other operative procedures have been tried and failed. The interference with further marital relations must be explained, and accepted by the patient prior to operation. In the case of a married woman the husband must also be consulted. Four cases have thus far been operated upon by the author of the operation, all with perfectly satisfactory results.

17. **Strangulated Hernia in Infants.**—Dowd reports a case of a child three months old in which there had been evidence of hernia with symptoms of strangulation, but the hernia was reduced apparently "en bloc" without relief of symptoms and relief was gained by operation. He calls attention to the difficulties of diagnosis in some of these cases. Babies can not talk, and cry for other things as well, and he analyzes the case to show the importance of different symptoms, which he gives in the following order: 1. Tumor; 2, vomiting; 3, constipation; 4, difficulty of urination; 5, restlessness and apparent pain; 6, constitutional depression. Early operation in all these cases has been apparently the greatest safeguard.

18. **Heredity in Tuberculosis.**—King holds the view that tuberculosis produces a relative immunity in the offspring, and that the heredity of the disease is correspondingly diminished. He thinks also that in his observation the average duration of disease in cases where there have been tuberculous parents has been longer and protection should be greater than in patients with no such ancestry. The conclusions which he offers are: 1. The percentage of consumptives having a tuberculous parentage is actually smaller than that having a non-tuberculous parentage, and much smaller than would be more than accounted for by the additional risk of infection to which the former class is subjected. 2. Tuberculosis in the parents renders to no inconsiderable extent an immunity to the disease in the offspring, an immunity which of course is but relative, and not sufficiently protective, but still demonstrable, as is shown by increased resistance to the progress of the disease and increased tendency to recover among this class.

20. **Gunshot Wounds of the Kidney.**—In a case reported by Roberts there was a self-inflicted pistol-shot wound in the front of the left breast, which passed through the depending mammary gland and then into the thorax. The bullet had missed the heart, perforated the diaphragm and injured the liver as it appeared at the time. There was no excessive shock, the pulse was slow, respiration rapid and temperature subnormal. Later, however, the temperature rose together with the respiration and pulse and the patient died after having been under observation about thirty-two hours. The postmortem revealed no injury to the thoracic viscera or intestines, but a groove-like wound was seen in the lower surface of the stomach, not perforating that viscus but perforating the upper end of the kidney, the bullet being found imbedded in the muscles of the back, opposite the first lumbar vertebra. Death was apparently due to slow bleeding of the wounded kidney and septic conditions of the wounded structures. The kidney wound was not suspected during life and operation was deemed hardly necessary.

21. **Gunshot Wound of the Stomach.**—Penn reports a case of gunshot wound of the stomach which was somewhat lower down than President McKinley's wound and was received when the stomach was full. The patient vomited freely as soon as shot, the vomitus consisting of the meal just eaten, together with quantities of clotted blood. He was fed exclusively on the mucilage of the cactus or prickly pear for fourteen days, which was allowed from the first, gradually returning to a full diet. There was never any decided rise of temperature and no evidence of peritonitis. The case is of interest as showing the unaided curative action of Nature occasionally in such cases.

25. **Muscular Atrophies.**—Mayer reports three cases illustrating the difficulties in the diagnosis of the different forms of this condition. One was apparently a case of fascio-scapular humeral dystrophy of the Landouzy-Dejerine type, but presenting certain peculiar features, it having run an acute course, being associated with pseudo-hypertrophy in the thighs and early appearance of contractures. The other two cases also present similar difficulties. He thinks we still cling to the idea of primary muscle disease in the want of more exact

knowledge as to the nervous involvement, which investigations have not yet satisfactorily demonstrated.

26. **Postdiphtheritic Urticaria.**—Walsh remarks on the occurrence of urticaria following the use of antitoxin to which it is credited, and reports a case in which urticaria followed a mild attack of diphtheria in which no antitoxin was used. He believes that careful study of the conditions produced by diphtheria itself will relieve the diphtheria serum from some of the accusations that have been made against it. It has been too much the custom to attribute every unusual symptom occurring after its administration to its agency, while some of these are undoubtedly due to anomalies in Nature's protective reaction against the toxins of the disease.

27. **Lane Lectures.**—This fifth lecture of Dr. Morris takes up the subject of tuberculous skin affections. He still recognizes the utility of the word scrofula as indicating a special delicacy of tissue, making it vulnerable beyond what is seen in the healthy state. He thinks the inoculation of lupus is a possible accident of vaccination, though it must be very rare. Other forms of skin tuberculosis, such as postmortem warts, the possibility of infection from ritual circumcision, tuberculous ulcers, scrofuloderma, lichen scrofulosorum and the various forms of tuberculides are also noticed.

28. **The Tonsils.**—Levy considers that the local causes of tonsillar disease are more important than the symptomatic causes and that the proper management of local conditions would prevent subsequent diseases. When the tonsils appear enlarged it has been the practice to remove them. He asks how we can preserve the protective functions which so many good authors recognize and how we may overcome the conditions and the etiologic factors for which the tonsils are responsible agents. In the majority of instances, especially in adults, complete enucleation of the diseased tonsil should be performed. The best method for this in adults is, he thinks, the galvanocaustic snare and where this is impracticable complete dissection of the diseased tissues may be accomplished by properly-constructed galvanocautery electrodes. In children amygdalotomy has its uses and advantages, and only in those cases where recurrence after a former amygdalotomy has taken place or where there is a diseased condition without hypertrophy, such as is seen in adults, should the more difficult and radical procedure be undertaken. In conclusion he insists that no operation on the tonsils should be performed simply because the structures are not absolutely normal in appearance, but only when distinct and well-defined symptoms exist, referable to these organs as the obvious cause.

33. **Ambroise Pare.**—Cumston's article is an interesting historical account of the life and times of Ambroise Paré.

34. **Cretinism.**—Millet gives a brief account of the facts in regard to cretinism, and also reports a couple of cases which had been treated with thyroid with benefit, but not with complete relief.

35. **Splenic Anemia.**—As far as it appears in this issue, Wentworth's article is a continuation of the discussion of the literature of the subject.

39. **Fibrinous Bronchitis.**—French reports and illustrates a case occurring in his own practice and reviews the etiology —which is not so characteristic—pathology, symptoms, prognosis and treatment of the condition. He considers the prognosis always grave, especially in the extremes of life, and much more serious when it occurs in the course of other affections than in the presence of fair health. He uses carbonate of creosote, in which he thinks he is the pioneer. He was led to use this by his observation of its action on bronchial secretion in other affections and also by the suspicion that tuberculosis might be present in the case. Improvement began immediately after its administration, and while a single case does not demonstrate much and the dose was small, he mentions it as being of some possible value.

40. **Nephrolithiasis.**—Ransohoff notices the diagnosis, treatment, etc., of nephrolithiasis and considers that the tenderness elicited in renal colic on bimanual examination of the kidney is an almost distinguishing feature, even in cases where enlargement can not be felt. He also thinks that uranalysis will do much in the diagnosis, and that decrease in the urine is sometimes of importance. Hematuria is always present, though rarely profuse. While profuse hematuria may follow acute kidney-stone colic, it more generally points to intermittent hydronephrosis, acute exacerbation of a chronic nephritis, and above all to malignant disease. If the colic has passed, the second symptom-group appears, such as pain spontaneously, or caused by pressure, urine changes, and general symptoms indicating the progressive septic changes in the kidney before it has come to proportional enlargement. While no one of these is pathogenic, their grouping is generally such that a correct diagnosis can be made. Pressure pain is much more important than spontaneous pain. Microscopic hematuria in the urine is also of importance. We should also employ cystoscopy to exclude vesical disease and to observe the changes around the ureteral orifice. He has had little positive results with radiography, and has removed quite large stones in which the method failed, but he thinks that in the future he may be enabled to get some positive results. When the colic fails to be followed by the passage of stones the indications for operation are strong, the case is parallel to that of gallstone, and trouble may ensue at any time. We should not wait for suppurative pyelitis or pyelonephritis to compel an operation as a life-saving measure. Nephrolithotomy should be a routine operation; its mortality is low and he thinks that a longitudinal section made along the convexity of the gland is less likely to wound the large vessels, and it need not be longer than necessary to introduce the exploratory finger, and compression of the pedicle of the kidney may be employed for short periods without any harm to completely control the hemorrhage. Drainage is seldom required. When in consequence of irritation from, and secondary infection due to stone, the kidney is enlarged and sacculated, nephrotomy and drainage are the procedures to be adopted, though the results are not so favorable. Nephrectomy is reserved for extreme cases where the disorganization of the kidney is such that it can not be recovered from.

41.—See abstract in THE JOURNAL, xxxvi, p. 1725.

42.—Ibid., p. 1726.

43.—Ibid.

44.—Ibid., p. 1725.

56. **Accessory Thyroids.**—Theisen reports and illustrates a case where there was a large tumor nearly the size of a hen's egg situated at the base of the tongue in a patient who, when young, had a very well-marked goiter and in whom at the present time there is no thyroid perceptible in its proper place. The troublesome symptoms seemed to be due to the size of the growth, but it did not seriously interfere with respiration. It was considered inadvisable on account of its size to operate, but thyroid medication was tried without bad effects and the tumor seemed to gradually decrease. He reviews a number of cases reported in the literature and remarks on the peculiar fact that all cases of accessory thyroid thus far reported in this situation have occurred in women.

69. **Malarial Nephritis.**—Ewing found in 14 fatal cases of malaria seen mostly in Montauk in 1898, extensive degenerative changes in the kidney, once the lesions of hemaglobinuric malaria, but comparatively few or any parasites in the renal vessels. The case here reported, however, shows the clinical symptoms of hemoglobinuric nephritis, with partial suppression of urine, and gives clear microscopic evidence of extreme massing of parasites in the kidney, apparently contradicting Marchiafava and Bignami's deduction that the lesions are not due to such localization, but to some toxic substance eliminated through the kidneys. In this case there was no doubt that the renal lesions were the principal features and that the case was one of true malaria in which the hemorrhagic character was due to massing of these parasites. The extreme degeneration of the cortical tubules is also a peculiar feature. He concludes as follows from the literature and his own

observations: "Microscopical examination of the kidneys of fatal cases of malaria has, then, yielded evidence of three main types of acute renal lesions occurring in this disease. 1. Acute degeneration of toxic origin, often reaching a degree in which exudation of blood serum into the tubules is added. This lesion is responsible for the vast majority of the cases of albuminuria in malaria. 2. An extreme form of acute degeneration, with focal necroses, numerous hemorrhages, and exudation into the tubules of the blood serum and blood pigments. This lesion is seen in cases of hemoglobinuric malarial fever, and it has not yet been found associated with an excessive number of parasites in the capillary vessels. 3. Massing of parasites in the renal capillaries, with extreme degeneration of parenchyma cells, multiple hemorrhages, and exudation of blood serum into the tubules. It seems certain that this type of lesion can occur only in severe estivo-autumnal infections. There is anatomical evidence that in the pernicious estivo-autumnal cases, the three types of lesions may be variously combined, but no good reason for believing that with the benign tertian infection occurring in this latitude any other than the first type can exist."

70. **Influenzal Mastoiditis.**—McCaw calls attention to the frequency of mastoiditis immediately following epidemics of influenza consequent on tympanic infection, which is, therefore, tympano-mastoiditis. The cases seem to be slow in recovery, the clinical picture being one of a very active suppurative process in a tissue of low vitality. In the severer type of cases he believes that la grippe is responsible for more cases of acute suppurative mastoiditis than either scarlatina, measles or diphtheria. From Perez's experiments he makes the suggestion that we may have one inflammation due to inoculation of Pfeiffer's bacillus alone, whereas in the other variety it may be associated with pyogenic organisms, and the virulence of each may be increased. As regards treatment, his best results have been obtained in the hemorrhagic type by rest in bed, free catharsis, leeching in front of the tragus and over the mastoid, and from douching of the canal every two hours. He is well aware that this method of hot douching has been criticised, but it has not been followed by bad consequences and has given him the largest percentage of recoveries. In the suppurative cases he uses early and free incision of the drum, warm douching every two hours with cleansing processes, catharsis and, if this does not relieve the patient in 36 to 48 hours, the case will be one for surgical interference. The amount of destruction which may take place in a short time is very notable. He has seen the entire mastoid in a purulent and necrotic condition with involvement of the facial nerve and facial paralysis in one week from the first ear symptoms. When we feel satisfied that pyogenic disease of the mastoid exists, our duty is to open the cells and not try to palliate or abort. In conclusion he emphasizes that we have two distinct types: "1. The suppurative, which invades the tympanum, antrum, and cells almost simultaneously in an unusually virulent and destructive process, which calls for early surgical treatment and in which abortive measures are contraindicated. 2. The hemorrhagic, with very pronounced symptoms at first, but which yields readily to abortive measures, and, in the writer's experience, only about 5 per cent. go on to suppuration requiring radical interference."

75.—See abstract in The Journal of October 19, ¶143, p. 1068.

77. **Anesthetics for Children.**—Wynkoop reviews the opinions and facts as regards the action of anesthetics in children and comes to the general conclusion that ether can be used with greater safety than any other anesthetic, while the combination with nitrous oxid is of value. Ether alone has few contraindications if properly administered.

80. **X-Ray in Lupus Vulgaris.**—Four cases of lupus vulgaris treated by the *x*-ray are reported by Greenleaf, who finds that this is the most satisfactory treatment for the condition and that repair begins almost immediately, that the danger attending the treatment is minimal, that the surroundings and general condition of the patient are important elements in the ultimate results, and that cases not subjected to surgical treatment react rapidly and ultimately recover, whereas, cases that have been surgically treated, react in a degree of slowness depending on the extent of the previous surgical interference.

82.—See abstract in The Journal of September 14, p. 711.

86. **Pelvic Appendiceal Abscesses.**—Four cases of pelvic appendiceal abscesses are reported by Baldwin, who thinks their opening per vaginam or per rectum is the simplest and most natural procedure and will lead to temporary recovery. If the appendix continues to make trouble, its removal in an interval operation will be attended with an absolute minimum of risk, while to open such an abscess by abdominal incision and across the open peritoneal cavity causes most serious risk and if peritonitis is obviated by extensive packing there is an almost inevitable chance of hernia.

89. **Counter Prescribing.**—Donaldson finds the druggist is better equipped to do counter prescribing than ever before. He has on his shelf proprietary remedies that save him the trouble not only of compounding, but also of selecting. The patient makes the diagnosis and the druggist has the remedy mixed, labeled and guaranteed. He took the trouble recently to make a list from a druggist's shelves of the diseases treated by modern counter prescribing. He found there 18 sure cures for consumption, 22 for rheumatism, 12 for gonorrhea, and special remedies for other diseases such as diabetes, etc., together with numerous shotgun mixtures, called pain-killers, blood-purifiers, or system-renovators that cure all diseases. He says it would not do to say to our patients "do not use patent medicines" for they would think it selfish in those advising them. The only legislation man can conceive that would mend matters would be one to require manufacturers to put the ingredients on each package. The physician should avoid prescribing proprietary remedies in the original packages as it teaches patients to treat themselves and gives them the little knowledge that is often dangerous. There is no need of telling the patient what drugs he is taking. If you listen in a drug store to the people you can hear them ask for quinin, morphin, ergot, calomel, bromid of potash and dozens of remedies of which they have obtained knowledge through the physician. Poisonous or dangerous remedies should be ordered off the market. Among these he mentions a "female regulator" that is put on the market, which is an ideal abortifacient so far as drugs are capable of acting in that way.

93.—See abstract in The Journal of September 21, p. 742.

98. **Nevus Linearis.**—The cause of the streaks in nevus linearis is discussed by Montgomery, who reviews the various theories and reports a case. The view that seems most nearly to fill the requirements is, that nevus linearis originates at an early stage in the development of the fetus when the embryonic layers are still a plastic mass. The disturbing agent, whatever its nature, usually affects what will later become the papillary layer of the skin and usually falls on one or the other side of the median line. Imagining the affected cells or groups of cells to lie in the plastic cells like currants in dough one can see that such a group lying in the region which later becomes the back of the neck, might be pulled toward the median line when the skin closes over the neural canal, and its individual constituents become scattered along this line as the fetus elongates. Another group situated over the place where the limb will afterward bud out, would be stretched along this line with the budding limb, and the line would tend to follow all the twists and turns of the limb as it grew out, exactly as Kaposi has so graphically described. This view would explain the frequent unilaterality of the affection, and its occurrence along the fissures of the body, as along the branchial clefts. There are some objections to this view, but he concludes that, on the whole, it is the most probable one that can be offered.

104. **Convalescence from Functional Nervous Disorders.**—The management of the convalescent stage of functional nervous troubles is discussed by Pearce, who insists on the importance of mental methods, though not dwelling on this phase of the subject extensively. He thinks the patients must be schooled

or educated into self-control. The physical care, that is, the neeessity of rest and of exercise to a limited degree, is also mentioned as important, and he thinks the most desirable forms of exercise in this stage of neural disorders are to be in a general way different from those of the ordinary routine of the patient's life; that is, keeping him away from his ordinary mode of thought and from thinking about self. If the patient can be kept off his feet to a certain extent it will be advantageous. As for the adjuvants to mental rest we have intestinal antisepsis, colon flushings, diet, hypernutrition, massage, electricity and avoidance of excitement.

114. **Antrum Abscess.**—Pierce thinks that the ostium and accessory openings of the antrum of Highmore have not been utilized sufficiently in the treatment of empyema. After a few remarks on the anatomy he describes his method of treatment by washing out the antrum and reports a number of cases. In conclusion he says: "1. There is a strong evidence to warrant the belief that in diseased antra, accessory openings are more frequently found than in healthy antra. 2. In a certain number of cases the ostium may be used to irrigate the antrum. 3. We should in all cases, whether for diagnosis or treatment, try for the ostium or accessory openings before resorting to surgical puncture, whether through the inferior or middle meatus, the canine fossa or alveolar process. 4. It is of no importance whether the opening through which we irrigate be the ostium or an accessory opening."

115. **Diagnosis of Adenoids.**—A number of conditions that may cause confusion and lead to diagnosis of adenoids in very young children are enumerated by Chappell. He has not, himself, been able to demonstrate to his satisfaction the presence of adenoids in young infants. Among the conditions which he mentions are lymphatism which may cause enlargement of the cervico-bronchial glands in which the mucosa of the trachea and bronchi are principally affected and which may often be present at birth. In all degrees of obstruction beyond the uvula the infant is obliged to remove the nipple from the mouth every few minutes to get air, but when the obstruction is lower down, the nipple may be retained in the mouth during feeding. When stenosis of the tracheo-bronchial tract exists, sonorous and asthmatic chest sounds may be heard while the child is nursing, which cease when the nursing is over. Lithemic infection is usually confined to the superficial tissues, but may spread beneath the pharyngeal aponeurosis, forming a small retropharyngeal abscess. When infants with a family history of gout or rheumatism have recurring attacks of rhinitis, pharyngitis, tracheitis and bronchitis there may be indications that suggest adenoid obstruction. Syphilitic or gonorrheal rhinitis may produce nasal obstruction and congenital atelectasis may cause respiratory symptoms which may sometimes be mistaken for adenoids. Digestive disturbances causing vomiting and regurgitation of milk curds lodging in the nasal passages also give confusing symptoms. Large tongue, though rare, may be a serious cause of respiratory obstruction and Billard claims there is a non-traumatic esophagitis, which may cause considerable pressure on the trachea and larynx. Chappell has had patients in which he could make no other satisfactory diagnosis. Hypertrophic rhinitis is common in children though general among those of more advanced age. Septal spurs, foreign bodies in the nose, etc., should all be looked for in this connection.

118.—See abstract in THE JOURNAL of September 28, p. 850.

124. **Pernicious Anemia.**—From a review of the facts of this condition White concludes that we have in these cases to deal with some agent which increases blood destruction and interferes with blood regeneration both in the marrow and the lymphatic glands, and that it is not of the common order of the infections, from the different responses which the organism makes to it. The resistance of the individual probably plays a very important rôle and he thinks that from the analogous parasitic condition the agent is more likely to be an animal poison or possibly a ptomain than anything else. In short, he holds that we have here a special poison choosing for its seat the whole blood circulation.

128. **Tetanus.**—From the fact that tetanus germs are susceptible to cold and that the reduction of temperature interferes with their vital activity and sporulation, Rogers has employed ice applications in incipient cases where the tetanic conditions had already spread to the trunk, neck and extremities. The arrest of progress in the development of the disease was manifest in a few hours and after four days there was a gradual lessening of the convulsive symptoms which ceased entirely on the fifth day. The patient then suspended of his own accord, the ice treatment. The symptoms returned in thirty-six hours, but with diminished force. On renewal of the treatment the good results followed even more quickly and three days later treatment was permanently suspended. A second case is also mentioned where similar treatment was instituted with like results.

131.—See abstract in THE JOURNAL, XXXV, p. 1425.

134. **Gastrostomy.**—In the patient described by Meriwether there was a carcinomatous tumor of the pylorie end of the stomach and also a cardiac mass obstructing that region. Gastroenterostomy was performed with the Murphy button and gastrostomy as follows: An external opening had been made by an incision of four inches over the inner edge of the left rectus joined by a transverse one from its upper end extending to the left for three inches. A rubber tube was next inserted in about the middle of the anterior surface of the stomach, emerging at the end of the transverse incision through the skin. Two catgut sutures were applied below the opening in the stomach, then six sutures, each one-fourth of an inch further above and below the tube than the preceding one, the sutures being half an inch apart and passing through the peritoneum, then through one-fourth of an inch of the two external coats of the stomach, then over the tube, then through the stomach as before, and then through the peritoneum. A last suture was passed through the two coats of the stomach and then under the tube, making something like a purse-string suture. All these were of catgut. When tied they brought peritoneum to peritoneum and formed a fluid-tight, funnel-shaped canal leading from the skin to the opening in the stomach. The peritoneum was stitched around the portion of the tube where it emerged and the skin and muscle closed by through-and-through sutures of silkworm-gut. One fine catgut suture was placed through the tube where it entered the stomach to anchor it. The patient was fed before leaving the table after the stomach had been washed out. She came out of the operation well, gained in weight and about four months later appeared to be in good condition. Three months after the operation she removed the tube and refused to allow it to be permanently replaced. At one time it was left out thirty-six hours, but there was no difficulty in reintroducing it. Five months after the operation, however, the old difficulty in swallowing returned and she gradually sank, living, however, until November. The button came away on the eighty-first day.

141. **Widal's Reaction.**—Pothier considers the positive Widal reaction of great value and always to be considered as indicating typhoid fever, while a negative result does not mean anything *per se*. While several negative results may strongly point to a non-typhoid case, the clinical course of the disease is a better criterion. He mentions a method of diagnosis used in the New Orleans Charity Hospital, consisting in making cultures from the urine of patients, which is collected in sterile tubes after careful asepsis of the parts and, if necessary, by catheterization. Two or three loopfuls from this urine are planted on an agar-culture tube or in bouillon, incubated for twenty-four hours and then tested with a known typhoid serum as to whether or not it is typhoid. As a rule these cultures are pure.

142. **Spinal Analgesia.**—Delaup briefly reports 22 cases and describes his method of using cocain injections. He has seen but little inconvenience from the operation; perfect analgesia was obtained in 90 per cent. and partial in 9 per cent. In 41 per cent. there were not the slightest subjective or objective symptoms. Nausea occurred in 36 per cent. and there was a slight general malaise for a few minutes. Headache was

the most common symptom, noted in 50 per cent. of the cases, never lasting more than from twelve to twenty-four hours; temperature elevation was of short duration, never above 102 F. Pronounced malaise, chills, depression, and in fact shock, was observed in but one case. Increased pulse-rate is a very unreliable symptom, the nervousness of the patient is liable to account for it. If there is febrile or irregular heart action small doses of strychnin or nitroglycerin may be administered hypodermically. It is a good plan to give a preliminary subcutaneous injection of strychnin with a little morphin. Involuntary defecation took place only once. He is not sure whether the disagreeable symptoms are the result of the drug itself, or the result of disturbance of the nerve centers from increase or decrease of intraspinal pressure. But the method can never be used with a certain class of patients, like children and nervous women, in which the loss of consciousness is essential. While he does not consider it an ideal anesthetic, or that it in any way replaces the general method, it has a special sphere of usefulness in genito-urinary and rectal surgery and surgery of the lower extremities. In many cases of pulmonary, cardiac or renal disease it would be far less dangerous than chloroform or ether.

152. **Vaccination.**—Runyon has little faith in glycerinated virus. He has found it ineffective in many patients and some patients he has known to suffer from subsequent smallpox when exposed. He believes that the humanized virus is best, though it is not certain that its immunity persists longer than that from points. The next best is bovine on bone slips. He thinks that children should be vaccinated in infancy and again in five years, and revaccinated when liable to be exposed to smallpox. In this way they will avoid serious effects from the operation which sometimes occur when it is delayed until ordinary immunity is completely lost.

153. **Hemaglobinuric Fever.**—With the two cases here reported Shropshire remarks in regard to the origin of the condition. He doubts entirely the effect of quinin in producing it, and considers the disease as a primary malignant fever due entirely to the action of the plasmodium. He uses quinin freely in cases with good results.

154.—This article has appeared elsewhere. See THE JOURNAL of September 7, ¶64, p. 663.

FOREIGN.

British Medical Journal, October 5.

Shock in Abdominal Operations. GEORGE A. HAWKINS-AMBLER.—The author does not attempt to give a definition of shock, but quotes a number that have been offered, among the more scientific of which he includes that of Erichson, who describes shock as being due to a general exhaustion of the nervous centers consequent upon extremely violent afferent impulse, and that of Goltz, quoted by Crile, as a vasomotor paralysis resulting from mechanical violence. While we have not a satisfactory definition, we have learned more in regard to the subject and he refers to Sherrington's work, pointing out that operative interference in a healthy animal is followed by a certain degree of apoplasmia or drying up of the blood. The degree of apoplasmia depends to some extent upon the severity of the lesion, but is always considerable and must always be taken into our calculation. With this increase in specific gravity, Sherrington also observes an increase in the hemoglobin content of the blood and increase in the number of chromocytes per unit volume. The ratio of leucocytes to chromocytes was always increased and there were alterations in the proportion of other blood cells. The different nerve cells also give important evidence. Crile quotes Hodge's investigations on microscopic investigations of nerve cells at rest and in fatigue, showing that repeated afferent stimuli exhaust the bulb; the equilibrium of the nervous system is more or less upset. We must differentiate also between shock and acute sepsis, which offers similar symptoms. Some cases of apparent shock are really cases of acute sepsis, and if we look in the mediastinal glands and other organs we shall find evidence of this. Special points, however, here given as important elements in the causation of shock are the matters of time and engorgement and dilatation of the splanchnic area. In abdominal operations in which we are operating in the midst of vasomotor nerves and ganglia which control an immense venous area, the dilatation of which must mean a remarkable difference in the blood pressure throughout the circulation, the effect on the heart might be immediate. The author refers especially here to Crile's work, one of the latest, most practical and suggestive on the subject. Bearing these things in mind, what are we to say about the treatment? The best he thinks is preventive. We should prepare for shock and minimize it by the very best methods. The old-fashioned plan of preparation of patients by a short holiday is an excellent thing in its way. Improvement in the general health should be looked after. We sometimes starve our patients too much before operation and with hot douches, drastic purges, etc., reduce them so that the addition of fear is all that is necessary to bring them to a state of semi-collapse before they get on the table. An empty stomach, desirable as it is in many cases, may be procured at too great a cost. Preliminary injection of saline solution into the rectum before operation may add a great deal to the patient's comfort and improve the chances, or a little brandy with hot water may be of advantage. The question of anesthetics is important also. Any anesthetic may have its action in increasing the shock. Crile finds that he prevents shock by cutting out the afferent impulses, blocking the nerves with cocain, but this is not so easy in abdominal surgery. Hawkins-Ambler's opinion is that the element of time is the most important; Lawson Tait's success he attributes largely to his rapidity in operating. The question of the temperature of the operating room, preliminary preparation, etc., is important, and he says it is a good plan to flood the peritoneum for a time with hot saline solution in protracted operations. The next point is thirst; if we take thickening of the blood as evidence and standard of shock the intense thirst is an indication of it and the practice of starvation in the hope that the thirsty tissues may be compelled to lap up the exudates into the peritoneal cavity to prevent sepsis, and peritonitis may very easily be overdone. Shock should be met by replacing fluids withdrawn from the circulation, by restoring to the dried blood the more spacious circulatory medium in which its cells may move without increasing the friction coefficient. If there is no vomiting, fluids may be given in small quantities by the mouth. Hot water can be sipped, and the very act of slowly sipping has been shown to improve the pulse by antagonizing the inhibitory action of the vagus. Minute doses of brandy and water also sipped at intervals have a very sedative effect. Saline injections given per rectum, or if necessary hypodermically into the veins are advantageous. The difference between shock and hemorrhage is perhaps after all not so great; it is largely the loss of oxygen carriers in the latter case. If the blood is pooled in the splanchnic veins, both plasma and corpuscles are removed from active usefulness. The introduction of saline will largely remedy this. With flushing of the peritoneum to prevent sepsis we shall also promote its resisting powers, and he insists, therefore, on the use of saline solutions. As for drugs, they must be secondary, and as to maintenance of body heat by wrapping the patient, etc., he has but few words to say. Very small doses of strychnia are of value, and also small doses of morphin and atropin given hypodermically before the patient leaves the table at the close of a severe operation.

When and How to Operate on Uterine Fibroids. WILLIAM DUNCAN.—The author believes the following conditions call for interference in uterine fibroids: Hemorrhage, when there is severe menorrhagia or metrorrhagia and the uterus is enlarged by fibroids. The first thing to do is to dilate the cervical canal and explore the uterine cavity for polypi or submucous growths. This should be done before resorting to more radical measures. He does not believe much in operating through the vagina, and removal of the appendages to stop hemorrhage or arrest the growth of tumor. Hysterectomy can, he believes, be best carried out by the intraperitoneal method, which has the advantage of showing whether there are any adhesions of the bowel or omentum to the tumor, or whether

the Fallopian tubes contain pus. The second indication for operation is when the tumor is causing pressure on the bladder, the rectum or cervical nerves. When it can be pushed above the brim of the pelvis and kept there, operation may be avoided, but when it can not, nothing but hysterectomy is of use. When a fibroid tumor takes on a rapid growth this is due either to cystic or mucoid degeneration and always calls for hysterectomy without delay. Lastly, when a fibroid complicates pregnancy the risks are greatly increased, though the position of the growth has much to do with this. If the fibroid is situated at the upper uterine segment or is subperitoneal and not impacted in the pelvis, pregnancy and labor may in many cases proceed naturally and terminate favorably. Such cases should not be interfered with. When it occurs in the lower portion of the pelvic, obstructing the pelvic brim, we have either to empty the uterus, to perform hysterectomy, or allow the case to go on to full term and save the child by Cesarean section and then remove the uterus. He would feel disposed in such cases to try abortion first, and if that failed to resort to hysterectomy. The dangers of shock with heart failure and tympanitis from intestinal paralysis are mentioned. In order to prevent the first it has been his custom to administer hypodermically 3 drops of liquor strychniæ, B. P., three times a day for a week prior to and a week after the operation. A nutritive enema after the operation is administered every four hours, with the addition of one-half an ounce of brandy if the patient is very feeble, and, if the flatus is not freely escaping twenty-four hours after operation, an ounce of spirits of turpentine in a pint of hot water is passed high up in the bowel. This may be repeated in twelve hours. He attaches great importance to this and to the strychnia injections. As regards the operation itself, he ties off both the ovarian and uterine arteries on both sides before cutting down the peritoneal flaps; thus preventing loss of blood to any great extent. After the flaps are reflected down to the level of the tied uterine arteries, the cervix is cut across and the tumor removed. Any oozing points in the cervix are tied with catgut, and then the peritoneal flaps are carefully brought together with fine silk in a continuous Lembert suture. Where the tumor burrows between the layers of the broad ligaments and a large cavity is left after their removal, instead of draining this, he carefully whips the sides together from below upward by a continuous suture after all oozing has been controlled and the cases do perfectly well. The abdominal wall is sewed up by three layers of continuous suture, fine silk for the peritoneum, coarse silk for the sheaths of the recti and coarser for the skin. In this way he feels sure that the occurrence of ventral hernia later on is prevented.

On a New Gynecological Position. F. Jayle.—In this note in the *British Medical Journal*, Jayle points out that Seultetus had recommended what is really the Trendelenburg position before 1645, and there was also a drawing in a still earlier, 13th century publication, showing the position during the operation for hernia. What he specially calls attention to, however, is the combination of the ordinary position of the speculum or of the lithotomy position and of the Trendelenburg position. In order to obtain this it is necessary to have a balancing table with a system of shoulder rests, holding the patient in position without securing the lower members, which remain free. This can be used either for examination or operation. It has the advantage of throwing back the intestine, of determining by the entrance of air the dilatation of the vagina, which becomes almost vertical, and finally of stretching the anterior vaginal wall. It greatly facilitates the exploration of the tubes and ovaries, especially the uterus. The introduction of the speculum is very easy and exploration of the vaginal wall is easy, for it is sufficient to depress the perineum either with the finger or with a valve speculum in order to get a good view of the anterior walls always, and very frequently of the cervix. For operations it must be used combined with the lithotomy position. If the patient be put only in a half declivity, vaginal operation becomes much easier. The anterior wall is stretched out and with a weight valve you can press down the perineum, and no assistant is necessary for holding the valves. He specially calls attention to the utility of this method in vesico-vaginal fistula operations.

Ovarian Pregnancy. Hastings Gilford.—The published cases of ovarian pregnancy are reviewed by Gilford, who finds 16 cases and 12 probable ones, or 28 altogether. He thinks that many have been reported under the names of blood cysts, rupture of the ovary and ovarian apoplexy. He asks how conception within the Graafian follicle can take place. One explanation is that the sperm cell enters through the aperture produced by the bursting of a follicle and impregnates an ovum which has not yet escaped. The opening then heals over and pregnancy goes on in the sealed sac. The other is given by Schroeder, who thinks that the spermatozoa may possibly penetrate through the coat of the follicle at its most attenuated part. The former of these, he thinks, is the more probable, though it does not necessarily follow that the rent in the follicle closes.

Further Report on the New Operation for Prolapsus Uteri, with Notes of Forty Cases. J. Inglis Parsons.—Four years have elapsed since this author first adopted the operation here described. It does not interfere with pregnancy; the general idea is to strengthen the bands within the broad ligaments and enable them to hold the uterus up. The principle of treatment is very simple. It consists of taking advantage of Nature's reparative powers. The idea is simply to furnish a stimulus for the formation of lymph which repairs the ligaments when a joint is dislocated, and after thinking the subject over he decided to try this in uterine prolapse, to help Nature to repair the overstrained broad ligaments. The choice of re-agents requires consideration; it should be aseptic, the effect should be entirely local, and any absorption that takes place should be harmless. Sulphate of quinin most nearly fills all these conditions. When injected into the cellular tissue of the arm it appears to be precipitated and causes an effusion of lymph which remains for some weeks. It is also aseptic, and is a tonic to the general system if absorption occurs. A solution of this is injected into the cellular tissue of the broad ligaments from the vagina. The uterine arteries and veins lying on the inner side of the broad ligament are not in the way if the needle is inserted at the right point, as also holds true of the ureters, while the outer two-thirds of the lower half of the broad ligament contains no veins or arteries of any size or importance, and can be freely laid open from the vagina without having to tie a single vessel. The operation takes only a few minutes, and is not risky if performed with precision, proper care and antiseptic precautions. There is no rise of temperature as a rule. It is essential that the point of the needle should be within the folds of the ligaments and within the cellular tissue. An anesthetic is of advantage, though not absolutely necessary. The patient is placed in the lithotomy position and the parts aseptically prepared, the rectum, of course, having been emptied as well as the bladder. The posterior wall of the vagina is pressed down with a Sim's speculum, while the anterior is held up by a retractor. If they roll together in folds and block the view of the cervix two lateral retractors may be required. The injection is made with a thin, long, straight, rigid nozzle syringe and a needle about one inch in length and rather thicker than a hypodermic, and is passed on each side through the vaginal wall, taking care the direction of the needle is perpendicular to the base of the broad ligament and parallel to the long axis of the uterus. The needle should always be tested as the quinin solution corrodes it and it may then snap off. Some pain is felt after the injection, varying in different individuals. When the patient is lifted into bed the uterus should be well anteverted bimanually. A cup and stem india-rubber pessary secured by bands around the waist is inserted to keep the uterus well up until effusion of lymph has taken place. It will then be removed, as the uterus at the end of four or five days is held up by the effusion. The strength of the solution should be attended to. If too strong it will cause suppuration, or if too weak will not be sufficiently stimulating. For the past twelve months he has used a solution of 1 in 5, and the average amount inserted is 30 to 45 minims on each side. The temperature usually re-

mains normal. There may be a slight aching in the pelvis for a few days. It does not follow that one injection is sufficient, the condition of the parts, weight of the uterus, duration of prolapse and labor afterward will have to be considered. None of his patients have ever had the least signs of cinchonism, though in most instances as much as 12 grains have been injected at one sitting. He tries to keep his patients at rest after the operation for a certain time as much as possible. Of the 40 cases that he has operated on and which he tabulates, only 2 have relapsed, 4 have been only improved, while the other 34 patients have remained well.

Presse Medicale (Paris), September 18.

Ocular Disturbances or Deformities in the Insane. M. De Montyel.—Mignot found that only 19.5 per cent. of 82 insane persons he examined had normal eyes, and that in 41.4 per cent. a deformity of the pupil coincided with some ocular disturbance. In the present communication, the results of the examination of 77 insane subjects showed that only 16.8 per cent. were normal in this respect. The pupils were unequal in 37.7 per cent. In certain subjects the ocular deformity and disturbances were very pronounced, but in the majority they were slight.

Revue Hebd. de Laryngologie (Bordeaux), September 21.

Ozena in Sinusitis. J. E. Torrent.—In five cases of sinusitis, the clinical symptoms of ozena were presented in a pronounced form but they all vanished as the sinusitis yielded to treatment. Torrent believes that true ozena is a morbid entity, rebellious to treatment, but that all the symptoms can accompany an ordinary sinusitis and simulate true ozena, unless the actual cause is discovered in the sinusitis.

Syphilitic Peripheral Paralysis of the Muscles of the Pharynx. Charles.—A hitherto healthy child of 3, with apparently healthy parents, manifested symptoms of pharyngeal paralysis, such as are usually attributed to a known or unnoticed diphtheria. In the absence of any probable source of diphtheritic infection, Charles instituted specific treatment, with the cure of all the symptoms in twelve days. The father confessed later that he had a "disease with pustules" before marriage.

September 28.

Lithiasis of the Submaxillary Gland. Lafarelle.—The pains caused by the presence of calculi in the submaxillary gland are frequently ascribed to the throat and ear, as they radiate in all directions. Two cases are described, one in a woman of 40, the other in a man of 45. Besides the functional and physical signs of salivary lithiasis, the paroxysmal pains, the alternating swelling and subsiding of a submaxillary tumor, the discharge of purulent saliva from the tumor on compression and palpation of a hard substance, the complete permeability of Wharton's duct for the catheter indicated the location of the trouble. The preferable operation is the systematic extirpation of the submaxillary gland, as the acute inflammation caused by the calculi is certain to be followed by sclerosis of the gland. Even if the inflammation is slight, the gland should be removed to prevent recurrence. The operation is simple and easy. The facial vein has to be severed, but the facial artery and the hypoglossus nerve are left intact. The insignificant scar is hidden by the lower jaw.

Varices of the Base of the Tongue as a Sign of Cancer of the Esophagus. Lefrancois.—Painful varices at the base of the tongue were the only lesions discoverable in three patients who complained of dysphagia. Each one died within a year from cancer of the esophagus. Lefrancois queries whether the varices may not have been the first clinical symptom of the cancer below, or whether their presence was a mere coincidence.

Semaine Medicale (Paris), September 25.

Syringomyelia of the Medulla and Pons. Raymond.—In the case described, motor paralysis of all the limbs, with spasmodic paralysis of the legs, dissociated sensibility and kyphoscoliosis coincided with other symptoms which indicated a lesion in the medulla, atrophy of the left half of the tongue, neuro-paralytic keratitis of the left eye, lateral nystagmus and anesthesia of the left trifacial nerve and of the mucosa of the back of the throat. Raymond's pupils have been studying the lesions in the autopsies of cases of syringomyelia during the last six years. They have found that the first lesion occurs in the region around the ependyma, near the central canal of the spinal cord, gradually invading the posterior cornu, the base of the anterior cornu and the adjacent portions of the white tracts. The lesion may range from an insignificant fissure with compact walls to an immense cavity involving all the elements of the cord and medulla. The spinal meninges may or may not be affected. Microscopic sections have fully demonstrated the inconstant relation of the syringomyelic gliosis with the central canal, and its special fissure-forming development. It is evident that certain cases of hypertrophic cervical pachymeningitis, but not all, belong in the domain of syringomyelia. Syringomyelia is, therefore, a definite affection like sclerosis in plaques. Its essence is a specific gliosis, produced independently of any other pre-existing lesion or affection of the spinal cord, such as myelitis or sclerosis, by the proliferation of the neuroglia in response to multiple pathogenic causes. This gliosis is to be distinguished from glioma and from cavity-forming myelitis. The syringomyelic lesion may spread laterally or longitudinally and consequently may affect the most varied anatomic and functional systems, inducing equally variable associations of symptoms. It may simulate more or less deceptively almost any one or all of the affections due to disease of the spinal cord or medulla, from progressive muscular atrophy to tabes and leprosy. But there is always a fourfold group of morbid phenomena more or less evident in syringomyelia: trophic disturbances, dissociated superficial sensibility and a tendency to scoliosis and paralytic motor troubles. The lesions are incurable, but as long as they are restricted to the spinal cord, long survival is possible. When the symptoms indicate that the medulla and pons have been invaded, a rapidly fatal termination is inevitable.

Simultaneous Appearance of Mosquitoes and Malaria. A. Billet.—This communication from Algeria states that a careful watch was kept for the first appearance of anopheles, to determine if it coincided with the first cases of malaria. The mosquitoes began to arrive June 15, and between June 26 and July 10, seven soldiers who had arrived during the winter, were received at the hospital affected with malarial fever, the first malarial patients of the year.

Two Cases of Actinomycosis in the Parametrium. C. Fehmers.—A woman in good health and menstruating normally, noticed pains in the right half of the abdomen and discovered a tumor. Three weeks later she entered the hospital and, with a diagnosis of pelvic peritonitis, the posterior cul-de-sac was incised and drained. The patient was much relieved but returned a month later on account of a lumbar abscess communicating with the initial pelvic focus. Actinomyces were found in the pus, and iodin treatment was commenced. A series of abscesses formed in the lumbar region and abdominal walls, with a stercoral fistula. After eighteen months of treatment, the patient seemed to be practically cured, although the fistula still persisted. She returned a year later with recurrence of severe symptoms, and died in collapse during the laparotomy. The intestines and uterus were found solidly fixed and altered by the lesions and adhesions. The patient had had one pregnancy years before. In the second case, the patient was a multipara, with abundant and prolonged menstruation. During a convalescence from typhoid fever, a sudden pain attracted attention to the right hypogastrium and a tumor was discovered, assumed to be a suppurating ovarian cyst. At the laparotomy the tissues were found much infiltrated and a focus of pus containing actinomyces was discovered. Vigorous local and general iodin treatment was instituted, and the patient seems to be completely recovered. The cases are reported in detail in the *Nederl. Tijdschr. v. Geneesk.* of June 29.

Deutsche Med. Wochenschrift, October 3.

Treatment of Anthrax. F. Schultze.—Strubell described last year a case of malignant pustule just below the eye, which he cured by the application of hot compresses, renewed every ten minutes, night and day, supplemented by injections of 12 c.c. of a 3 per cent. solution of carbolic acid. Schultze relates a similar case of malignant pustule also just below the eye. The treatment was restricted to the application of a sublimate 1 to 1000 dressing, in a 70 per cent. alcoholic solution over the ulcerating portions. Quinin was given in 30 cg. doses every three hours during the febrile period, and 30 cg. of naphthalin were administered occasionally on account of the diarrhea. The patient progressed even more rapidly to recovery than Strubell's patient, although the symptoms were if anything more serious. The intoxication is the chief danger in such cases, and it presents a clinical picture closely resembling that of typhoid fever, aside from the local phenomena. The bronchi and kidneys as well as the intestines were involved and the cerebral symptoms were the same as those observed in typhoid fever.

Electric Light Sweat Baths. Krebs.—As the results of experiences and observation at the hydrotherapeutic institution connected with the University of Berlin, Krebs announces that incandescent light baths induce profuse sweating more rapidly and at a lower temperature than is required for hot-air baths. This effect is probably due to the heat rays in these lights. The arc light is much less effective. Patients with organic heart defects may find these baths injurious.

Prognosis of Diabetes and Tuberculosis. G. Oeder.—It is usually supposed that tuberculosis in a diabetic subject runs an unusually rapid course. Oeder describes the case of a diabetic patient who has exhibited unmistakable symptoms of pulmonary tuberculosis for six years, but both diseases have seemed to be in *statu quo* for several years.

Monatsschrift f. Geb. u. Gyn. (Berlin), July.

Metastases in the Ovaries in Case of Primary Abdominal Malignant Disease Elsewhere. E. Kraus.—The 11 observations collected include 3 in which the primary carcinoma was located in the stomach, and 7 in the gall-bladder or biliary passages. The patients had been operated on for the easily diagnosed tumor in the ovaries, which was merely a metastasis of the small primary tumor elsewhere which had been completely overlooked. The slight symptoms on the part of the alimentary canal had been attributed to reflex irritation. The patients bore the ovariotomy well, but succumbed later to the gradual evolution of the primary tumor, which could easily have been removed at the same time if its presence had been suspected. Kraus urges search for a primary tumor when both ovaries form cancerous, knobby tumors, and section shows the characteristic peripheral arrangement of the tumor masses. If the ovaries are found even slightly enlarged and hard, during the extirpation of a primary neoplasm in any abdominal organ, they should be considered suspicious, especially if nodules are discovered in Douglas' pouch. He reports experiments which demonstrate that cancerous elements are able to penetrate into the intact ovary from its outer surface, even in the case of rabbits' ovaries, which are smaller and less exposed to danger of penetration than the human ovary.

August.

Stimulation of Labor by Intrauterine Rubber Bag. G. Hauffe.—The advantages of the rubber bags used by Hauffe are that when distended with fluid, they are comparatively hard, and prove an energetic stimulus to the contractions of the uterus, much more so than the soft bags ordinarily employed for this purpose.

September.

Diagnosis of a Vesicular Mole. W. Poten.—The diagnosis of a vesicular mole is sustained by the lack of elastic tension in the walls of the uterus, which feel like soft clay on palpation. There are also, in case of a vesicular mole, peculiar contractions of circumscribed portions of the uterine walls, occurring spasmodically and subsiding completely. In one case the uterus seemed to contain a hard myoma, the size of a fist, in an otherwise soft organ. Half an hour later, the supposed myoma had vanished to reappear again in another portion of the organ. The patient is not conscious of these contractions. In three cases described, the patients were in the sixth to the ninth month of pregnancy. In another case, the mole had ceased to proliferate, remained in the uterus like an inert foreign body and was finally expelled. In two other cases the symptoms had some analogy with those described, but a macerated fetus instead of a mole was found in each instance.

Heart Defects and Pregnancy. O. Fillner.—The prognosis of pregnancy in case of cardiac defect is not so serious as has been generally assumed, judging from the experiences at Schauta's clinic since 1892. They include 94 patients with 305 births, out of a total of 30,613 deliveries in the Maternity. Fillner has also collected 140 cases from the literature, with 520 births. The results show that with appropriate treatment the overwhelming majority of the patients pass through the stress of childbirth without any special disturbance or even a suspicion of their cardiac defect. Delivery is frequently longer than usual. In all cases of uncompensated cardiac defect a more or less extensive ring of necrosis is found at the edge of the placenta. The pregnancy was spontaneously interrupted in 20.2 per cent. of the cases, with a mortality of 25.5 per cent. for the children. Only a very small percentage succumbed to the heart trouble; 6.3 per cent. at Schauta's clinic and .9 per cent. of all those systematically investigated. Mitral stenosis alone seems to afford an unfavorable prognosis. In other conditions, it is not the kind, but the extent of the defect which is the decisive element. Only in the rarest cases is any unfavorable influence on the heart defect from the pregnancy to be discovered. In case of compensated defect, premature delivery is not indicated unless the patient was in peril of death in previous childbirths. In case of uncompensated defect premature delivery is noted only when internal treatment has no chance of success; otherwise internal treatment should be applied first and after improvement has been obtained, the pregnancy should be artificially interrupted. Mitral stenosis, and the complication of a cardiac defect by chronic nephritis or tuberculosis, require more vigorous procedures. In case of compensated defect, the bougie alone should be used. If a fatal termination is imminent, the fetal membranes should be ruptured which will give temporary relief, and may prove useful in case of edema of the lungs. It is better not to wait too long before applying the forceps in case of an uncompensated cardiac defect. Marriage need be forbidden only in case of pronounced disturbances in compensation, or mitral stenosis or a defect complicated by tuberculosis and chronic nephritis. If severe disturbances in compensation appear during the course of a pregnancy, future pregnancies should be forbidden, and in case of deadly peril during a pregnancy, the patient should be rendered sterile.

Muenchener Med. Wochenschrift, September 24.

Senile Pruritus of the Tongue. E. Baumgarten.—During the last three years Baumgarten has had occasion to observe two cases of pruritus of the tongue, occurring in elderly women, with all the characteristics of senile pruritus of the skin, and in one case followed later by cutaneous manifestations. A long array of remedies was tried, but without avail, the pruritus persisting unaffected. Some local or general cause can usually be found for tongue troubles and the diagnosis of senile pruritus should not be made until after the exclusion of affections of the stomach or intestines, constipation or other general cause, including the dry catarrh of the throat, which is a frequent companion of the menopause, and usually coincides with dryness, smarting and burning sensations in the tongue. The latter may also occur in cases of disturbed menstruation. Pure neuralgia of the tongue is extremely rare, but neurasthenic disturbances involving the tongue are not infrequent in both men and women. In three cases Baumgarten diagnosed

tabes from the pains in the tongue alone, confirmed by the later course of the disease. Pains and smarting of the tongue, especially when accompanied by ptyalism, are very suspicious of commencing paralysis. In other cases, the symptoms noticed in the tongue were the precursors of some local affection. Varices of the base of the tongue are cauterized by some physicians, but this is useless unless the general cause inducing them is removed.

Lysol Intoxication. G. Burgl.—Two cases are related in which pure lysol was administered to a child by mistake, and eighteen cases of lysol intoxication in the literature are reviewed. They show that prompt use of the stomach pump was followed by the recovery of all the patients thus treated, while the neglect of this measure was almost invariably fatal. The solution should never be stronger than 1 per cent. for external application and .5 per cent. for irrigating internal cavities. It should never be used long at a time. One death has been known from the external application of pure lysol on the intact skin. If it is administered internally, the minimal dose should be taken as the standard, and it should never be given except for a brief period and better not at all, in case of children or feeble patients. In the 18 cases collected, the intoxication occurred in 13 from internal and in 5 from external use of the agent. Nine of the patients died, 5 children and one adult after internal administration, and 2 adults and one child after the application of pure lysol externally, by mistake for the 1 per cent. solution that had been ordered. The largest dose from which the patient recovered was 60 gm., taken by a woman, and 25 gm. by a 4-year-old child. The smallest dose that proved fatal was a teaspoonful, about 4 to 5 gm. of pure lysol, in children from 5 days to 8 years old.

Tamponing the Abdominal Cavity with Air to Arrest Threatening Hemorrhage. G. Kelling.—A series of experiments on dogs and cadavers are described, showing the harmlessness of this measure and its efficacy in arresting threatening internal hemorrhage. The accumulations of ascitic fluid in the abdomen prove that it will tolerate considerable stretching. Tests on seven cadavers of adults between 37 and 87, demonstrated that the abdomen could be thus inflated to a pressure of 150 mm. mercury or 1.5 meter water without laceration of the peritoneum. The apparatus consists of a T-shaped glass tube connected by a rubber tube with the mercury column at one end; with a double rubber air bulb at the other, and with the puncturing needle on the third branch. The tube connecting with the needle is interrupted by two bottle-shaped bottomless glass tubes, connected by a short rubber tube. The broad part of these bottle-shaped tubes is loosely packed with cotton to filter the air. It is injected under close supervision of the respiration and heart action, until a negative pressure of 30 mm. mercury or, better still, of 50 mm. is obtained. The stomach, bladder and rectum are liable to evacuate their contents by the mechanical effect of the pressure, for which preparations must be made. In case of hemorrhage of the stomach, some substance to promote coagulation should be administered by the mouth before injecting the air. After numerous tests, Kelling found pulverized chalk mixed with milk, the most effective local measure for this purpose. It can be administered by the mouth in not too small amounts. He has never had an opportunity to apply this tamponing measure in the clinic, but his tests on large dogs have been so successful that he is confident it will prove extremely useful in practical application to patients. He warns that the subjective sensations are no criterion, but that the circulation and pulse must be carefully watched. The first part of his report was published in The Journal of October 12, p. 1010.

Brazil-Medico (Rio de Janeiro), September 1.

Death After Spinal Tropa Cocainization. D. de Almeida. The patient in the case reported was 80 years of age, and had eaten nothing for three or four days. The operation was undertaken for the relief of incarcerated inguinal hernia, and 2 eg. of tropacocain were injected in the subarachnoid space, in a 2 per cent. solution. A few minutes after the operation had been completed, the pulsations of the heart gradually grew less and less perceptible, and the patient died with no other symptoms except this quiet failing of the heart action.

Proofs in Favor of the Transmission of Yellow Fever by Mosquitoes. E. M. Ribas.—The superintendent of the board of health at Sao Paulo, Dr. Ribas, is convinced of the plausibility of the mosquito theory and suggests that mosquitoes may bite during the hours of early morning, while the subjects are still sleeping, as the culex teniatus is not a night insect. He describes a convincing incident in the outbreak of yellow fever at Sao Paulo in 1900. No cases had been known in town for a long time, when an Italian ship arrived from Rio, January 2, and one of the crew suffering from yellow fever was received in the hospital. Fourteen days later, five other yellow-fever patients were admitted. All were sailors from two vessels moored along the quays near the Italian ship. The culex teniatus is found in the street that fronts the quays, and the row of ships formed as it were, a row of dwellings on the seaward side of the street, where the culex could easily penetrate. Other sailors were affected soon afterward; all being men who had lived a number of months in the town without previous infection. The epidemic was arrested after it had attacked 490 out of the 50,000 inhabitants of the town. The sanitary measures applied in the infected ships and dwellings probably destroyed the infected mosquitoes, and thus contributed to the arrest of the epidemic.

Cirugia Contemporanea (Mexico), September 15.

Intra-Arachnoid Cocainization in Mexico. R. Norma.—Eighty-seven operations have been reported in Mexico, done under spinal cocainization. No threatening by-effects were noted in any case; in 31 no symptoms of any kind were observed, in 32 the usual slight headache, vomiting or nausea. In one case an overdose was used, with the symptoms to be anticipated in such a case. In two other cases, one a hysteric and one a much debilitated hemiplegic, the temperature rose to 104 F. in one, and syncope occurred in the other. Norma considers that the simplicity and prompt efficacy of this method of surgical analgesia commend it particularly for alcoholic subjects.

Cronica Medica Mexicana (Mexico), October 1.

Mercury for Injection Into Vessels for Radiography. D. Garcia.—Mercury answers all the conditions required to render even the most delicate macroscopic capillaries visible in radiography. Garcia has devised an apparatus for the purpose, a glass canula with two stopcocks and graduated receptacle, which enables the injection to proceed without admixture of air. Radiographs of anatomic specimens thus prepared were remarkable for the wealth of details, as even a thickness of one-tenth of a millimeter casts a clear shadow.

Value of Ferric Chlorid in Therapeutics. J. B. Hernandez.—The remarkable anticongestive, antiphlogistic, antisuppurative and anti-exudative action of ferric chlorid is proclaimed by Hernandez. He considers it superior to all other substances for the treatment of superficial inflammatory or catarrhal lesions. It is ineffective in profound inflammation and actually injurious in chronic inflammation. But it has proved remarkably beneficial in his experience in erysipelas, phlegmons, smallpox, eczema, herpes zoster, and catarrh of the vagina, cervix and conjunctiva. It is also valuable in acne rosacea, anthrax, hemorrhoids, gastritis, otitis, rhinitis, rectitis, gonorrhea and catarrhal metritis of the fundus. He uses the chlorid in "Pravaz's solution," and appends to this communication numerous case—reports to substantiate his statements.

Cronica Medica (Lima), xvii, 301 and 302.

Causal Agent of Verrugas Peruana. A. L. Barton.—The researches of three years have been crowned with success, Barton announces, by the discovery of the bacillus derived from the spleen, blood and mesenteric ganglia of patients suffering from verrugas. Inoculated into animals it produces the typical symptoms of the clinical disease. It is extremely motile, stains readily, is not pyogenic, and is more pathogenic for the mule than for the dog, the only animals experimented on.

Queries and Minor Notes.

TEACHING OF PHYSICAL THERAPEUTICS.

PHILADELPHIA, Oct. 8, 1901.

To the Editor:—In an editorial in THE JOURNAL of Oct. 5, 1901, p. 916, you refer to the subject of the "teaching of physical therapeutics," and state that there are at present being published in English and German, systems of therapeutics in which physical agents especially are discussed. I shall be under many obligations to you if you will kindly indicate the publications to which you refer, because I am very much interested in this subject and desire all the information with regard to publications obtainable.

B. H. D.

ANS.—P. Blakiston's Son & Co. are publishing a "System of Physiologic Therapeutics," edited by Dr. S. Solis-Cohen: there is in process of publication a "Handbuch der Physikalischen Therapie," edited by Goldscheider and Jacob (George Thieme, Leipsic). Further, there is a German periodical, *Zeitschrift für diätetische und physikalische Therapie*, edited by Leyden and Goldscheider, and there is also published in Great Britain a *Journal for Physiological* (or Physical) *Therapeutics*.

AKOUPHONE.

CONCORDIA, KAN., Sept. 18, 1901.

To the Editor:—In THE JOURNAL of April 6, 1901, p. 982, is a description of the akouphone and akoulalion by J. R. Hutchinson, before the New York Academy of Medicine. Can you give me the address of the manufacturer? I have a child I desire to try one on.

W. F. S.

ANS.—Address the Akouphone Company, 43 E. 20th St., New York City.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., October 3 to 9, inclusive:

William J. Calvert, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

W. Fitzhugh Carter, major and surgeon, U. S. A., will accompany the Third Battalion of Engineers to Washington Barracks, D. C., and thereafter return to his proper station, Fort Totten, N. Y.

Max F. Clausius, contract surgeon, previous orders directing him to proceed to his home for annulment of contract, revoked.

John Ryan Devereux, lieutenant and asst.-surgeon, U. S. A., from duty at Washington Barracks, D. C., via Tampa, Fla., to Havana, Cuba, for assignment in the Department of Cuba.

Clyde S. Ford, lieutenant and asst-surgeon, U. S. A., former orders directing him to proceed to Fort Morgan, Ala., revoked; he will repair to Washington, D. C., and report to the Surgeon-General for instructions.

Joseph H. Ford, lieutenant and asst.-surgeon, U. S. A., from Fort Washington, Md., to duty at Washington Barracks, D. C.

Myer Herman, captain and asst.-surgeon, Vols., having tendered his resignation, is honorably discharged from the service of the United States, to date from October 8, 1901.

James H. Holloway, contract surgeon, leave of absence extended.

William L. Kneedler, major and surgeon, U. S. A., leave of absence granted.

Conrad E. Koerper, lieutenant and asst.-surgeon, U. S. A., now on duty at the General Hospital, Washington Barracks, D. C., to report for temporary duty to the commanding officer of that post.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. A., leave of absence extended.

Arthur W. Morse, lieutenant and asst.-surgeon, U. S. A., from the U. S. General Hospital, Presidio of San Francisco, Cal., to post duty at Fort Walla Walla, Wash.

Edward L. Munson, captain and asst.-surgeon, U. S. A., will, on the completion of his present duty at the Pan-American Exposition, Buffalo, N. Y., repair to Washington, D. C., for duty in the office of the Surgeon-General.

Junius L. Powell, major and surgeon, U. S. A., is relieved from further duty in the Division of the Philippines and assigned to post duty at Fort Hamilton, N. Y.

Frederick F. Russell, lieutenant and asst.-surgeon, U. S. A., now in New York City, will proceed to Fort Washington, Md., for post duty.

Paul S. Shillock, major and surgeon, U. S. A., leave of absence granted.

Herbert M. Smith, lieutenant and asst.-surgeon, U. S. A., recently appointed, from Salem to Fort Monroe, Va., for temporary duty.

W. Manley Waterhouse, contract surgeon, former orders relieving him from further duty on the transport *Logan*, and from temporary duty at the General Hospital, Presidio of San Francisco, Cal., and directing him to proceed to Fort Grant, Ariz., for post duty, revoked.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 12, 1901:

Surgeon L. L. Von Wedekind, detached from the Puget Sound Naval Station and ordered home and to wait orders.

Surgeon O. D. Norton, detached from the *Monadnock*, on reporting of relief, and ordered home and to wait orders.

P. A. Surgeon D. H. Morgan, ordered to the *Philadelphia*.

P. A. Surgeon A. W. Dunbar, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Puget Sound Naval Station.

P. A. Surgeon S. G. Evans, detached from the *Solace*, upon reporting of relief, and ordered home and to wait orders.

P. A. Surgeon A. R. Alfred, detached from the Marine Barracks, Cavite, P. I., and ordered to the *Monadnock*.

P. A. Surgeon J. M. Moore, detached from the *Franklin*, upon reporting of relief, and ordered to the *Indiana*.

Asst.-Surgeon C. G. Smith, detached from the *Alvarado* and ordered to the *Marietta*.

Asst.-Surgeon F. E. McCullough, detached from the *Philadelphia* and ordered to the Naval Hospital, Mare Island, Cal.

Asst.-Surgeon J. F. Murphy, detached from the *Indiana*, upon reporting of relief, and ordered to the *Solace* for temporary duty, and then to the Marine Barracks, Cavite Naval Station.

Asst.-Surgeon W. H. Bell, ordered to the *Franklin*.

Asst.-Surgeon D. G. Beebe, detached from the *Marietta*, upon reporting of relief, and ordered home to wait orders.

Asst.-Surgeons A. M. Fauntleroy and L. W. Bishop, commissioned assistant-surgeons from Sept. 28, 1901.

Surgeon C. F. Stokes, detached from the *Oregon* and ordered to the *Solace*.

Surgeon G. A. Lung, detached from the Marine Barracks, Cavite Naval Station, on reporting of relief, and ordered home and to wait orders.

Surgeon L. W. Spratling, commissioned surgeon from Sept. 28, 1901; detached from the Naval Hospital, Cavite, P. I., on reporting of relief, and ordered home and to wait orders.

P. A. Surgeon M. S. Guest, detached from the Naval Hospital, Philadelphia, Pa., and ordered to the *Solace*, for temporary duty, and ordered to the Cavite Naval Station, on arrival at the Asiatic Station.

P. A. Surgeon A. Farenholt, ordered to the *Independence*.

P. A. Surgeon M. K. Johnson, detached from duty at Guam, on reporting of relief, and ordered to the Marine Barracks, Cavite Naval Station.

Asst.-Surgeon C. D. Langhorne, ordered to the Naval Hospital, Naval Home, Philadelphia, Pa.

Asst.-Surgeon W. Seaman, detached from the *Independence*, on reporting of relief, and ordered to the *Solace* for temporary duty, and ordered to duty at Guam, on arrival at that place.

Asst.-Surgeon H. M. Tolfree, detached from the *Columbia* and ordered to the *Solace* for temporary duty, and ordered to duty at Guam, on arrival at that place.

Asst.-Surgeon J. B. Dennis, detached from the Naval Academy and ordered to the Naval Hospital, New York.

Asst.-Surgeon R. M. Young, detached from the New York Navy Yard and ordered to the *Columbia*.

Asst.-Surgeon R. M. Fauntleroy, ordered to the Naval Academy.

Asst.-Surgeon J. J. Snyder, detached from duty at Poloc, P. I., and ordered to the Naval Hospital, Cavite, P. I., for treatment.

P. A. Surgeon J. A. Guthrie, detached from the *New York* and ordered to duty at Port Isabella, P. I.

Asst.-Surgeon R. K. McClanahan, detached from duty at Port Isabella, P. I., and ordered to duty at Poloc, P. I.

Asst.-Surgeon F. A. Asserson, detached from the *General Alava* and ordered to the *New York*.

Asst.-Surgeon F. L. Benton, detached from the *Brooklyn* and ordered home.

Health Reports.

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Oct. 5, 1901:

SMALLPOX—UNITED STATES.

Alaska: Dawson, Oct. 1, 6 cases.
District of Columbia: Washington, Sept. 28-Oct. 5, 1 case.
Indiana: Michigan City, Sept. 30-Oct. 7, 1 case.
Massachusetts: Sept. 30-Oct. 5, Boston, 9 cases, 1 death; Newton, 1 case.
Michigan: Detroit, Sept. 30-Oct. 5, 1 case.
Minnesota: Minneapolis, Sept 30-Oct. 5, 1 case.
Nebraska: Omaha, Sept. 30-Oct. 5, 2 cases.
New Jersey: Newark, Sept. 30-Oct. 5, 2 cases, 2 deaths.
New York: Sept. 30-Oct. 5, Elmira, 1 case; New York, 7 cases, 2 deaths.
Ohio: Cleveland, Sept. 30-Oct. 5, 4 cases.
Pennsylvania: Erie, Sept. 21-28, 2 cases; Philadelphia, Sept. 30-Oct. 5, 40 cases, 6 deaths.
Utah: Salt Lake City, Sept. 30-Oct. 5, 2 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Sept. 7-14, 1 case.
Belgium: Sept. 14-21, Antwerp, 5 cases, 1 death; Ghent, 1 death.
Brazil: Pernambuco, Aug. 15-31, 73 deaths; Rio de Janeiro, Aug. 18-Sept. 1, 115 deaths.
Canada: Halifax, Sept. 22-Oct. 5, 20 cases; Winnipeg, Sept. 14-21, 1 case.
Colombia: Colon, Sept. 30, epidemic.
France: Paris, Sept. 7-14, 2 cases.
Great Britain: Dundee, Sept. 14-28, 2 cases; London, Sept. 14-21, 288 cases, 13 deaths.
India: Bombay, Sept. 3-10, 1 death; Calcutta, Aug. 24-Sept. 7, 4 deaths; Madras, Aug. 24-Sept. 6, 8 deaths.
Mexico: City of Mexico, Sept. 15-22, 1 case.

PLAGUE—FOREIGN.

Philippine Islands: Manila, Aug. 10-24, 15 cases.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 5 deaths.
India: Bombay, Sept. 3-10, 275 deaths; Calcutta, Aug. 24-Sept. 7, 34 deaths; Karachi, Aug. 25-Sept. 8, 35 cases, 11 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 3 deaths.
Costa Rica: Port Limon, Sept. 14-28, 9 cases, 7 deaths.
Cuba: Havana, Sept. 21-28, 1 case.
Mexico: Merida, Aug. 31-Sept. 14, 5 deaths; Vera Cruz, Sept. 22-29, 2 cases, 2 deaths.

CHOLERA.

India: Bombay, Sept. 3-10, 4 deaths; Calcutta, Aug. 24-Sept. 7, 9 deaths; Madras, Aug. 24-Sept. 6, 254 deaths.

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Original Articles.

PROSTATECTOMY, THE METHOD OF CHOICE IN THE MANAGEMENT OF PROSTATIC OBSTRUCTION.*

EUGENE FULLER, M.D.

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NEW YORK CITY.

Prostatic hypertrophy, directly or indirectly, is the cause of death in such a large proportion of elderly men that the question of its surgical management is one of the greatest importance. In the case of most individuals who so die at the present time no serious attempt is made to save life. The community at large is not as yet educated beyond the idea of the catheter, and the same, I am sorry to say, can almost be said of the medical profession. A few years ago a person could die of appendicitis in the absence of surgical treatment and no adverse comment would be provoked by the event. Now, however, such a happening is regarded by the sensible portion of the community much as is the death of a person under faith-cure treatment, and no physician who is careful of his reputation fails at least to raise the question of surgical interference in cases of this latter description.

It is not to be expected that resort to radical surgery will ever become as general in the case of prostatic obstruction as in that of appendicitis, since the former disease is consequent to advanced life and the other is not.

The question of senility is the one to be prominently considered in connection with prostatic surgery. Upon it is based the chief and often violent opposition of those related to or standing sponsor for the patient. In weighing opposition of that character I am very apt to recall what a very bright and elderly gentleman once told me in commenting on the proper limit of life. He said: "It is not desirable to live to too great an age. If an old man is without means, those on whom he is dependent after a time grow tired and are then satisfied when he dies. If, on the other hand, he has means, then those waiting to inherit become impatient if life is too long prolonged." Pure love and devotion is without doubt the cause for such opposition in most cases, I am glad to say; still, many times one is compelled to observe the truth of these somewhat cynical remarks. The younger, of course, a patient is the better. The question of operation is, however, rarely raised before the age of 57 to 60. When a patient is under 65 I look upon him as young in connection with prostatic surgery, and when between 65 and 72, as middle-aged. Formerly I was inclined to put 75 as an extreme limit and to rather advise against operation and in favor of a do-nothing policy had a patient passed that age. Finding, however, that my results were good right up to that limit, I have raised it. During the last year I have gotten two strikingly good results, one in a man of 78 and the other in a man of 77. Aside from their ages these individuals were both apparently very bad surgical risks. The man of 78 was bedridden. He had a suprapubic vesical fistula and putrid urine. He was moderately emaciated, the effect of pyrexia occasioned by the absorption of bacterial urine. The fistula was the result of a suprapubic cystotomy undertaken in the vain hope that some relief might follow its establishment. The individual of 77 represented a case of surgical emergency for the relief of extreme and constant vesical tenesmus unrelieved by opiates pushed as far as seemed judicious. The lesion in this case was a large obstructive prostate, which was undergoing peripheral suppuration, and a resulting phosphatic calculus nearly 3 ounces in weight. The individual at the time of operation was mentally excited and somewhat irrational, which I took to be a symptom of uremia, although it is possible that the opium may have been to a greater or less degree a causative factor.

A surgeon should always be influenced by age. A man of 60 or thereabouts is in a different position from a man of 75 or over. The former individual can naturally hope for a much longer lease, not only of life, but also of its attendant enjoyments than can the latter. Men in their sixties are often the most valuable members of society. The surgical question with individuals of that class is not only to prolong life, but to save them from invalidism, keeping them bodily vigorous so that not only can they enjoy their advancing life, but their families and the public can also profit by their wisdom, protection and experience. Consequently with them, even though a surgical emergency has not arisen, operation should be advised. In those of 75 or thereabouts, if sufficient relief attends the use of the catheter so that life is reasonably bearable, radical operation should perhaps only be urged if there be good reason to suppose that the catheter will in the near future fail to relieve suffering and avert death. In a case of emergency a prompt resort to radical surgery should be employed, not only to save life, but to relieve suffering, so that if death must occur it will at least be placid.

Aside from the question of age, the surgeon in considering operation should be guided by the physical and mental condition of the individual. The existence of arterio-fibro-sclerosis can be mentioned as a decidedly unfavorable condition, since chronic interstitial nephritis always coexists. Calcareous infiltration into the walls of the blood vessels is a bad, but not contraindi-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

cating, feature. History of antecedent dissipation, the existence of pulmonary, cardiac and other defects, should be weighed as unfavorable factors, just as before any surgical operation. Putrid urine and the presence of an ascending pyelitis, together with some involvement of the kidney, should not be made to stand in the way of operation, but their existence should strengthen the plea for speedy relief from prostatic obstruction, the direct cause for their presence and continuance. Where such infective processes exist, uremia and death will finally result from their progression, so it may be in a given instance that operation has been too long delayed and that death is thereby to a slight degree hastened. In very many such instances, however, where the infective complication appears extensive and serious, radical operation is followed by a perfect recovery.

The decision having been made to resort to radical relief from prostatic obstruction, the next question that arises is how to accomplish that relief. In the majority of cases that come to my notice there is no occasion for debate on that point, the question of procedure having resolved itself into that of prostatectomy or nothing, unless it be the establishment of a permanent suprapubic vesical fistula, a surgical makeshift that no progressive genito-urinary surgeon at present is apt to employ except in case of malignant disease. Some may take exception to this statement, and to such I explain that many times cases do not come to my notice until an emergency has arisen, an expert opinion being then for the first time sought.

In the minority of cases it may be proper in connection with the question of prostatectomy to consider the advisability of castration or of the Bottini operation as substitute measures.

The cases demanding prostatectomy and in which that operation alone will suffice, can be grouped as follows: 1, those not amenable to urethral instrumentation; 2, those demanding vesical or perineal drainage as well as relief from prostatic obstruction; 3, those in which renal infection exists as a complication; 4, all those complicated by phosphatic calculi in which litholopaxy is impracticable; 5, those in which the prostatic mass causing obstruction is such as to require direct removal, not being amenable to less radical surgical treatment.

By cases not amenable to urethral instrumentation are meant those demanding prompt relief from prostatic obstruction and in which some serious impediment to the passage of an instrument exists. Narrow meatus, soft or linear stricture of the penile urethra, or soft stricture of the deep urethra, are difficulties which can be easily overcome and consequently are not to be reckoned in this connection. Deep unyielding stricture or false passage are the urethral conditions which usually interfere. Not infrequently the anterior face of the prostatic hypertrophy juts so prominently into the urethral space as to make the passage of any catheter, except perhaps a metallic one with an extreme curve, impossible or uncertain. Oftentimes in cases of prostatic retention the membranous urethra is severely lacerated through unskilful and violent attempts at catheterization, a result which may make a subsequent passage of the instrument in competent hands impossible or so difficult as to be very injurious to the patient.

In many instances where a bladder, before it finally succumbs, has struggled successfully for a long period to overcome the resistance offered by an increasing prostatic obstruction, marked vesical lesions are developed, which require for their cure and the restoration of the vesical function not only the removal of the prostatic obstruction, but vesical rest as well, which latter factor can not be obtained except through a combined cystotomy. Severe inflammatory lesions of the bladder, the result of chronic cystitis dependent on prostatic obstruction, often demand direct vesical drainage and rest for their resolution aside from the removal of the existing cause. Periprostatic suppuration and perineal phlegmon due to lesions of the prostatic urethra resulting from constant catheterization require perineal drainage.

Where renal infection exists in this class of cases it is, of course, of an ascending variety. The chief agency in accomplishing its elimination lies in extreme and unobstructive diuresis, which can only be attained by thoroughly draining the bladder.

The reason for the necessity of prostatectomy in cases complicated by prostatic calculi which lie in the postprostatic cul-de-sac, out of the reach of the lithotrite, is evident without further comment.

Cases in which the prostatic mass causing obstruction is such as to require direct removal are those in which the mass is large, in which it projects extensively into the intravesical space, and in which its intravesical contour is decidedly irregular. In other words, it might be said that all cases of prostatic obstruction accompanied by a surgical emergency aside from that of simple retention, and all cases at all complicated or associated by complications are suitable for prostatectomy and that only, while as regards the easier and selected cases other surgical methods might perhaps be tried.

In making mention even of castration as a surgical method for the removal of prostatic obstruction many would be apt to criticise me on the ground that the procedure is now out of date, having been discarded by the profession. I think such criticism very likely justifiable. I do not myself remove the testicles for that purpose. I have seen a few well-authenticated cases wherein relief from the obstruction has followed that operation. Most of the cases which I have seen were, however, not relieved, but subsequently submitted to prostatectomy at my hands. I will not discuss the operation further in this connection. With the sudden subsidence of the operation just mentioned the procedure advocated by Bottini has again been brought to notice through the modification of the original operation adopted by Freudenberg and at the present time is receiving considerable attention. As Freudenberg's procedure is fairly well understood by the profession, no attempt will here be made to describe it. It has one great advantage in common with castration: It is easy of accomplishment, anyone who is at all familiar with the manipulation of urethral instruments being able to properly execute it. In that respect, and in that chiefly, to my mind, has it an advantage over prostatectomy. Owing to its ease of accomplishment many more practice it than attempt prostatectomy. The idea conveyed by the operation is attractive and far more popular than that of castration. The avoidance of cutting appeals to many, as does also electricity, the agency to be employed. Some who practice the operation emphasize the fact in advocating it that the operation itself is in a large measure free from after-discomfort, besides requiring brief confinement in bed. Others advocate a confinement of three weeks or thereabouts, treating the

procedure as one of considerable surgical magnitude. The statistics coming to hand of this operation in its present modified form are certainly attractive, especially those of operators who are very careful in selecting their cases, trying the operation only on subjects to which it is apparently best adapted. Such statistics show a slight majority of cases relieved of symptoms, while in a fair percentage of the minority more or less relief of symptoms is noted. There is a great difference between a relief of symptoms and a radical cure. A relief of symptoms occurs when a patient is again able to urinate with sufficient freedom to no longer require the aid of a catheter or be distressed through the performance of the act. A radical cure signifies a complete restoration of the vesical function, which means a complete emptying of the bladder at the end of every act of urination. In most of the best results after the Bottini operation some, and often considerable, residual urine always remains. After convalescence from prostatectomy, certainly as I perform it, there is no residual urine. The term radical cure should never be applied to a prostatic operation which does not eliminate the element of residual urine. In a good percentage of cases, however, the Bottini operation fails to relieve. The mortality attending it appears to be in the neighborhood of 10 per cent., perhaps somewhat under. Medical statistics concerning a new procedure should always be put on the shelf a while for seasoning before being accepted. The statistics which first appeared in favor of castration for the relief of prostatic obstruction were, I think I am correct in saying, even better than those in favor of the Bottini operation, but subsequent surgeons could never verify them. The cases suited to this operation are those free from the complications already mentioned, in which the prostatic obstruction takes the form of a moderate-sized middle lobe or of an hypertrophy and rigidity of the prostatic fibers encircling the vesical neck. A projecting middle lobe can be to a greater or less degree eliminated by the écraseur, while the constriction of an hypertrophied neck can in like manner be cut through in one or more places, the vesical neck being sufficiently liberated to allow of its resuming its function.

Although a surgeon, by means of the rectal feel, of exploration of the prostatic urethra, and of the cystoscope, can generally decide whether a given case is suited, as far as regards the prostate, to the Bottini operation, yet he can never be certain. On numerous occasions in the performance of prostatectomy on individuals where previous to operation conditions seemed suited to the Bottini operation, the actual state of affairs found to exist have made it evident to me that the Bottini operation, had it been chosen, would have been either a failure or at least unsatisfactory. This in itself is a good reason why one skilled in the performance of prostatectomy is apt to find few occasions wherein the Bottini operation appears to be the one of choice. If an individual is quite elderly, say around 75 or over, and is suffering from the obstruction due to a middle lobe of not great size, it might be, in the absence of contra-indicating complications, that the Bottini operation would then be the one of choice.

In prostatectomy the results obtained are permanent. As regards the Bottini operation there are grave doubts on that point. Weir, in a recent discussion at the New York Academy of Medicine, recalled the fact that twenty-five years ago or thereabouts he and several other New York surgeons made a thorough trial of the original Bottini method and found it unsatisfactory, one of the chief reasons being that in the few cases where improvement followed the operation the betterment was only temporary. The advocates of the Bottini operation generally repeat the operation one or more times in cases where the improvement following the first operation does not appear lasting. It seems to me if a satisfactory result does not follow a primary operation of this description, that a repetition of it should not be employed, but that prostatectomy should then be substituted. To my mind the reason that the results following the Bottini operation may not show lasting qualities is in large measure due to the cicatricial contraction which gradually results from the healing of the burnt area. If the eschar be made through the bladder wall and into a projecting middle lobe lying posteriorly to the vesical neck, then it seems to me that a good result following the operation ought to show a fair and perhaps a satisfactory degree of permanency. If, on the other hand, the one or more eschars be made through the vesical and prostatic fibers at the vesical neck itself, then it seems to me that the immediate good result following the freeing of the contraction must be temporary, the resulting cicatrix leaving the part more contracted and rigid than before operation. In such an instance the fewer number of eschars and the less true destruction of the tissues making up the vesical and urethral wall, the better. In the performance of prostatectomy as I advocate it the vesical and urethral structures are left undestroyed, the prostatic obstruction alone being removed, consequently there can be no resulting contraction. Where prostatectomy has to be performed secondary to the Bottini operation the cicatrix which has resulted from the first operation may increase the difficulty of the second.

The surgeon who does only the Bottini operation, not having perfected himself in the performance of prostatectomy, is usually a dangerous adviser, since he is not equal to the emergency when a case offers itself which is not suited to his operation. Of course, in such a contingency the surgeon doing only the Bottini operation can refer the case to a surgeon who has perfected himself in the performance of prostatectomy; but what is perhaps more probable, the Bottini operation is tried, a failure resulting, or else any attempt at operation is discouraged, the case being allowed to die by default.

The cry of mortality is loudly raised against prostatectomy. It has seemed to me that that cry has originated largely from one of the three following sources: From those who know nothing about the operation; from those who do only the Bottini operation, and from those who have tried the operation and failed. I think I am fair in stating from my own experience in case an individual is otherwise sound in body, is not over 65 years or thereabouts of age, and has not marked urinary infection that the mortality from prostatectomy is not greater than 5 to 8 per cent. From that low level the mortality rises, dependent on the combination of adverse conditions which may be present. One should never hesitate to operate on the most desperate surgical risks through fear of injuring his statistics, for in the bad cases death accompanied by great suffering surely occurs if nothing is done, while if prostatectomy associated with thorough vesical drainage, is performed, death, if not averted, is peaceful, the patient thanking the surgeon for the comfort he has afforded, or—and this happens in a large majority of the worst cases—the patient completely recovers.

I admit that prostatectomy is not an easy operation. As the subjects are old and do not tolerate long continued anesthesia with safety, the operator should work with great rapidity. As a rule I have so far completed my operation that the anesthetic can be discontinued at the end of ten to fifteen minutes, the operation having been commenced the moment the patient becomes fully unconscious, and the last suture tied as consciousness returns. The wound should be so treated and the drainage tubes so adjusted that the patient remains comfortable after operation and free from painful surgical ordeals. Besides surgical, many medical and nursing details should be attended to with great strictness. The technique of the operation as I perform it, together with all the associated details, are fully described in my book of last year, "Diseases of the Genito-Urinary System," and consequently do not require reiteration in this connection. There is no reason why anyone naturally apt as a surgeon, who familiarizes himself with the theory of the subject and then practices it, should not master the operation and attain good results. If a surgeon keeps his patient under an anesthetic for two hours or so in the performance of the operation, and does not attend to all the details which experience has shown to be necessary, most, and perhaps all, of his patients may die. With such an experience blame and condemnation is apt to be unjustly attributed to the operation.

PERINEAL PROSTATECTOMY.*

PARKER SYMS, M.D.

Clinical Professor of Surgery in the New York University and Bellevue Hospital Medical College; Attending Surgeon to Lebanon Hospital; Member of the New York Surgical Society; Fellow of the New York Academy of Medicine; Member of the Society of Alumni, Bellevue Hospital; Member of New York State Medical Association, and American Medical Association.

NEW YORK CITY.

Obstructive hypertrophy of the prostate gland causes so much misery and is productive of death in so large a proportion of aged men, that the profession must welcome every advance that is made in our means of treating this serious disease.

It is only in recent years that anything more than palliative treatment was applied to this condition, but in the last few years a great many new procedures have been devised, aiming at a more or less radical cure. The most prominent of these are prostatotomy by means of an electro-cautery knife which is known as the Bottini operation, and the various forms of prostatectomy. The author has devoted a good deal of effort and thought to the subject of prostatectomy and has devised a modification of one of the principal methods in vogue whereby he believes the operation has been very much simplified, and he also believes the mortality from operation by his method will be found to be much less than that attributed to other similar procedures.

When the prostate gland has become so enlarged as to produce obstruction to the outflow of urine from the bladder, most serious results ensue. The obstruction may be but partial, preventing the patient from completely emptying the bladder; the retained or residual urine in time becomes infected, setting up a cystitis, and from then on the life of the patient is one of torture. In some cases the obstruction is so complete that the patient is unable to pass any urine until the bladder has become fully distended, then the overflow may pass off by constant dribbling. This condition is often mistaken for one of incontinence of urine. The inflammation often extends from the bladder up the ureters to the pelvis of the kidney, resulting in pyelitis. After months or years of suffering these patients finally succumb to exhaustion and find a welcome release in death.

Of course, much may be done for relief of these patients by the judicious and careful use of the catheter and by proper washing of the bladder, but the catheter life is at best one of discomfort and jeopardy, some patients finding no relief whatever thereby, and all of them in constant danger of acute cystitis and all its attendant disasters.

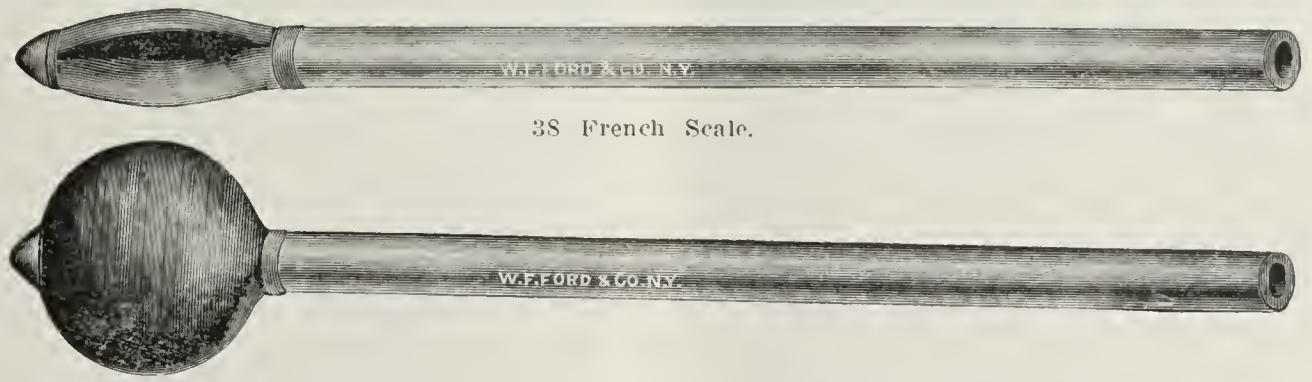
The Bottini operation was introduced about twenty-five years ago. It was at that time very extensively exploited and tested, but was found to be unsatisfactory and was finally abandoned. During the last few years it has been revived and it has to-day many enthusiastic supporters. Its object is to cut a groove through the middle lobe of the prostate so as to lower the urethral canal at that point; it is performed by introducing into the bladder an instrument like a curved urethratome. This instrument has a concealed cautery blade which is exposed when the instrument is in proper position, the electric current is turned on, burning its way through the floor of the urethra and into the surface of the lobe of the prostate. The author has had no personal experience with the Bottini operation and for many reasons it does not appeal to him as a sound surgical procedure. In the first place, it does not remove the hypertrophied prostate and can only partially relieve the obstruction in most cases. In the second place, it leaves a slough to separate and come away through the urethra. There being no other means of drainage than through the urethral canal, and this burned wound being in the presence of infected urine, it seems to the author that it can not be as safe a method as some of its advocates think it is. The only statistics which the author has read show that this operation is not free from danger, and that it does not result in complete cure in the majority of instances. The author believes that prostatectomy will be the favorite operation if the risks can be reduced so as to make it a feasibly safe procedure.

Unfortunately, prostatectomy, by most methods, has shown a large death-rate, though the results when the patient survived have been generally excellent. The author has so far been very fortunate, having lost no patient, and having had a complete cure in all his cases except the second one. In that case he was unable to remove the whole prostate on account of the fact that there had been a suprapubic cystotomy performed a year or two before he saw the patient, and at the time of his attempted prostatectomy there was a suprapubic abscess which had firmly fixed the prostate so that it could not be reached through the perineum. Since entering this field of work the author has been of the opinion that the high mortality rate was in part owing to the fact that the operations were too extensive and too complicated, and his object has been to devise some means whereby the prostate could be removed simply through a median perineal incision. He has felt that suprapubic cystotomy for this class of cases was a dangerous proceeding to be avoided. In an article entitled "Prostatectomy," read before the New York Surgical Society on Nov. 9, 1898, the author sug-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

gested the following modification of Alexander's method of prostatectomy: To make a small incision through the abdominal wall just above the bladder fold through which the operator could pass two fingers and with them push the prostate, bladder and all, toward the perineum, enabling him with a finger of the other hand to reach and enucleate the prostate through a median perineal incision. It will be remembered that Alexander accomplished this same object by making a suprapubic incision in the bladder, through which he passed two fingers of one hand and pushed the prostate down.

The author has never tried the laparotomy as suggested above, because he was able to devise a much simpler means for accomplishing this same object. At the meeting of the American Medical Association, held at Atlantic City, June 5 to 8, 1900, the author presented a bladder retractor which he had invented, which enables one to pull the bladder and prostate down into the perineum so that the lobes can be reached and enucleated with the index finger. This retractor consists of a soft rubber bulb, cemented on to the end of a strong rubber tube of a caliber of 38, French scale. It is introduced into the bladder through an opening in the membranous portion of the urethra, the bulb is then distended till it has a diameter of two and a half to three inches. This distension of the bulb is effected by forcing a definite quantity of water through the tube with a piston syringe. The tube is then clamped, and when pulled upon it will draw down the bladder.



Dilated to 2½ Inches by Water.
Parker Syms' Bladder Retractor, for Perineal Prostatectomy.

The author operates in the following manner: The patient is prepared by a few days' rest in bed, during which time he is kept on a milk diet, and his bladder is carefully catheterized and irrigated if he has cystitis. Ether narcosis is used; the patient is placed in the lithotomy position; the perineum and adjacent parts are properly shaved and scrubbed, and the urethra and bladder are again carefully irrigated with boracic acid solution. A free median incision is made which shall open the perineum from just behind the bulbous portion of the urethra to the vicinity of the anus. The dissection is carefully carried down to the urethra in the median line, and if possible to reach the prostate at once, it is freed as far as may be by blunt dissection, carried on mostly with the index finger of the right hand. From time to time the operator must introduce a finger protected with a rubber cot, into the rectum, so as to be sure that this organ is not wounded. A staff is introduced into the urethra and an incision about an inch long is made in its membranous portion. The staff is removed and a catheter passed through the opening in the membranous urethra and the bladder is again repeatedly washed. The author's retractor collapsed is introduced into the bladder through this opening in the urethra; when it is known to be well inside of the bladder it is dilated in the manner described above, with a quantity of water which is known to give it a diameter of fully two and a half inches. The rubber tube is clamped so that the water will not escape, traction is made on the tube till the prostate comes satisfactorily within reach, then an assistant holds the rubber retractor firmly, bending it up over the perineum and it will not be in the way. Now, with the index finger of the right hand, the operator perforates the capsule of the left lobe of the prostate and begins its enucleation. If the proper line of cleavage is found the lobe will shell out quite readily, and finally it can be grasped with vulsellum forceps and removed. Next, the operator removes the middle lobe in the same manner, and finally, the right lobe, thus completing the operation. Now the retractor is emptied by removing the clamp; it is withdrawn from the bladder and a large perineal drainage tube is introduced through the urethra to drain the bladder. The wound around this tube is thoroughly packed with iodoform gauze, the tube is secured by one suture, a pad is applied with a T-bandage and the patient is ready for bed. When in bed, the patient's bladder must be again irrigated through the drainage tube, and then continuous drainage is carried on by syphonage, a long tube being attached to the drain, the distal end of it being kept submerged in a disinfectant solution. The quantity of this solution must be measured so that one may know the quantity of urine being voided.

The gauze packing is removed on the fourth day and replaced by a much smaller piece. The drainage tube is removed on the fifth or sixth day, and thereafter the bladder is washed by means of a catheter passed through the perineum, until the wound has nearly healed.

These patients are allowed to sit up by the seventh to the tenth day. When the wound is considerably contracted a full-sized steel sound is passed through the entire urethra, at first every third day, then at longer intervals until healing is complete.

To one accustomed to operations on the prostate this particular method will be found to be comparatively simple and not a very difficult one to perform. Of course, one should be thoroughly familiar with work in this region and on these organs in order to use the best judgment as to how much should be done, and in order to be expeditious. When properly performed the operation is not a formidable one, the hemorrhage is very slight and the patients suffer comparatively little shock.

The author feels that prostatectomy will be proven in the future to be a thoroughly sound and proper procedure. He believes the death rate will be no more than is compatible with a condition that is in itself so grave and menacing. He feels, however, that prostatectomy should not be left as a last resort. It should be performed before the patient is in a dying condition, or not at all. Any man who is not physiologically very old, whose arteries are in fair condition and who is not suffering from marked kidney lesion may be expected to undergo this operation with comparative safety, pro-

vided it has not been left till his bladder is badly inflamed and till he is suffering from sepsis. The author feels assured that by his method every hypertrophied prostate may be removed through a simple median incision in the perineum, and after this is accomplished it will be seen that there is not a formidable wound; in his experience it has been found that the patients have been actually better the day after the operation than they were the day before, on account of the relief afforded by the immediate drainage of the bladder.

The author has operated on nine of these patients; the last six were done in the manner just described. His first case was done by the method of Alexander. His second case was incomplete for reasons already stated. His third case was done entirely through the perineum, the prostate being easily reached, an assistant making pressure on the abdominal wall, which was thin and yielding. This was before he had devised his retractor.

His patients have ranged in age between 53 and 75 years. All have had cystitis except one case. Two of his patients had bladder stones—one had a simple large calculus, the other had five of moderate size. The residual urine in his cases varied in amount from 3 to 5? ounces.

The author's patients have all lived. In his second case relief was only partial. In all the other cases cure has been complete, the patients having no obstruction to the passage of urine and no remaining cystitis and no residual urine. In two of his cases there was incontinence of urine for some weeks, but this condition gradually subsided and the patients regained control of the bladder.

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NOTE:—Since presenting this paper the author has learned that one of his patients has had some trouble from incontinence of urine. Otherwise no unfavorable result has been reported.

PROSTATECTOMY VERSUS PROSTATOTOMY IN THE RADICAL TREATMENT OF SENILE HYPERTROPHY OF THE PROSTATE.*

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NEW YORK CITY.

In senile hypertrophy of the prostate there is sometimes obstruction to the outflow of urine, due to an enlargement or deformity of the middle or lateral lobes, giving rise to a series of disagreeable symptoms, such as frequency of urination, pain, tenesmus, burning or acute retention, and resulting in complete or incomplete retention, followed in nearly every case by cystitis, pyelitis, and fatal nephritis or pyelonephritis.

With the object of overcoming this condition the following various procedures have been resorted to: The use of the catheter to relieve the retention by drawing off the urine as frequently as indicated by the amount of residuum; suprapubic fistula, by means of which an artificial urethra is made in the hypogastric region, through which the patient urinates, or draws his urine by a catheter or tube; dilatation of the prostatic urethra with sounds or dilators every few days; galvano-puncture, by means of a platinum needle attached to the negative pole of a galvanic battery, and inserted into the gland; hypodermic injections of iodid of potassium and iodin, or ergot and alcohol into the gland; ligation of the internal iliac arteries; castration; vasectomy; prostatotomy, and prostatectomy.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

Of these various methods none are now employed in this country excepting catheter life, prostatectomy and prostatotomy. The catheter can at present be said to be used only when the patient is in need of an operative procedure for the relief of his urinary symptoms, and when it is considered dangerous to do a prostatectomy or prostatotomy on account of his general condition; it is also used prior to either of the operations, with the object of treating the bladder and reducing prostatic edema or congestion. The catheter is also employed in the after-treatment following prostatotomy and prostatectomy until an accompanying cystitis has been cured and the bladder has regained some of its tone. In many cases drainage by a retained catheter may be necessary. A description of catheter life and the uses of the catheter in prostatic hypertrophy has been given by the writer in a previous article.[1]

PROSTATOTOMY.

This consists in making incisions through the gland by the knife or cautery, with the object of reducing the impediment. During the latter part of the nineteenth century great interest was taken in this procedure, which was considered the coming operation for the relief of senile hypertrophy, and the leading genito-urinary surgeons of the world advocated the operation.

Robinson recommended incising the prostate through the rectum. His method consisted in introducing his left forefinger into the gut as a guide, and then inserting the knife along it and dividing the prostate into two halves.

Harrison, at the International Medical Congress in Copenhagen, in 1887, advocated performing an external perineal urethrotomy, and then inserting the knife into the prostatic urethra, and dividing the prostatic bar on the floor of the gland, after which he stretched the prostatic urethra forcibly with his fingers or a sound. He was personally very much pleased with this method, and many surgeons, both in this country and abroad, followed his footsteps.

Mercier devised the prostatotome for cutting the middle lobe of the gland through the urethra. This resembled the Bottini incisor in that it had a sharp male blade which he drew forcibly through the floor of the prostatic urethra, making an incision through the impediment.

Gouley modified Mercier's operation, inserting the instrument through a perineal incision into the urethra and cutting or punching out segments of the enlarged gland. In this way he often removed large portions of the prostate.

Maisonneuve then devised the sécateur, by means of which he incised the prostate through the floor of the urethra. It was one of the most ingenious instruments ever brought before the public, although not so useful or as lasting as his famous urethrotome. The instrument was shaped like a sound. In the center of the convexity, working on a pivot and lying concealed in the groove, as far back as the end of the instrument, was fastened a cutting blade. After the beak was caught behind the vesical base of the gland the blade was made to move in the arc of a circle, thus making an incision in the gland through the floor of the urethra and landing in a slot in the straight part of the shaft, where it again concealed itself, or else was pushed forward to its former position before the instrument was withdrawn.

In 1877, Bottini of Padua, Italy, invented the galvano-caustic incisor, an instrument very similar to Mercier's in its general form, but differing from it in that

1. N. Y. Med. Jour., March 2, 1901.

the blade was connected with a storage battery, and cauterized instead of simply cutting. He performed many operations with this instrument, and published statistics which seemed too good to be true. Other surgeons in France and England who took up this procedure, did not have such favorable results, and looked upon it as a failure and one of little merit. Some three years ago, however, Freudenberg of Berlin, modified the Bottini instrument in such a way that it is now the most valuable that has yet been devised for the operation of prostatotomy. He used a broader blade made of irido-platinum and utilized the hollow shaft of the instrument on either side of the slot, to allow water to flow through and keep the instrument cool during the operation. The Freudenberg instrument was superior to any of the cutting ones in that it gave rise to less hemorrhage, and there was less danger of infection, for the cauterizing knife

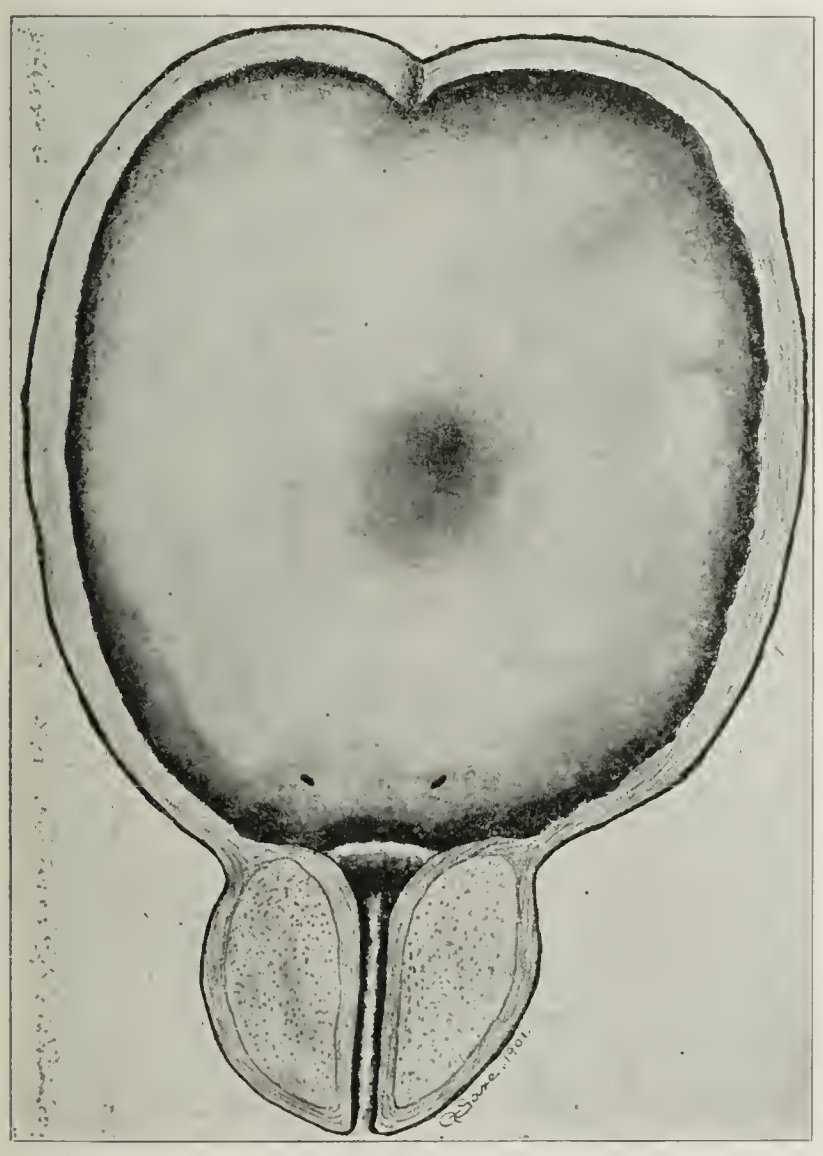


Fig. 1.—Prostatic bar. Bottini's operation.

as it went through the gland sealed up the vessels, preventing bleeding and also closing them against infection. Besides this, the tissues which were burned for some distance on either side of the incision were thrown off as a slough during the three or four weeks following the operation, thus producing a gutter of considerable width. It can therefore be seen that this operation diminished the prostatic impediment, not only by making one or more gutters through it, but by shutting off the blood supply and thus causing atrophy of the gland. Prostatotomy by the Freudenberg-Bottini method is then the sole surviving operation used at the present day, and is one which we must consider under the so-called radical operations for the relief of prostatic hypertrophy. It is employed with a few modifications in the same manner by all surgeons who employ it.

The results of prostatotomy are most favorable, and I will quote from Freudenberg's last article[2] in which he collected 753 cases. Of these there were 622 successes, 44 deaths—12 of which were not positively due to the operation—but the total of deaths was 5.8 per cent., and 17 failures.

The Technique of the Bottini Operation.—The patient should lie on his back on the table. He can be operated on either under local anesthesia by cocain or eucain, or under general anesthesia by ether, chloroform or nitrous oxid gas. Personally I prefer general anesthesia by nitrous oxid gas. On the patient's left should be hung a fountain syringe, which contains water for cooling the instrument, and, on a stool near the patient's waist, the battery should be placed. A soft rubber catheter, lubricated with glycerin, is passed into the bladder, the urine is drawn off and the bladder is washed out with boracic

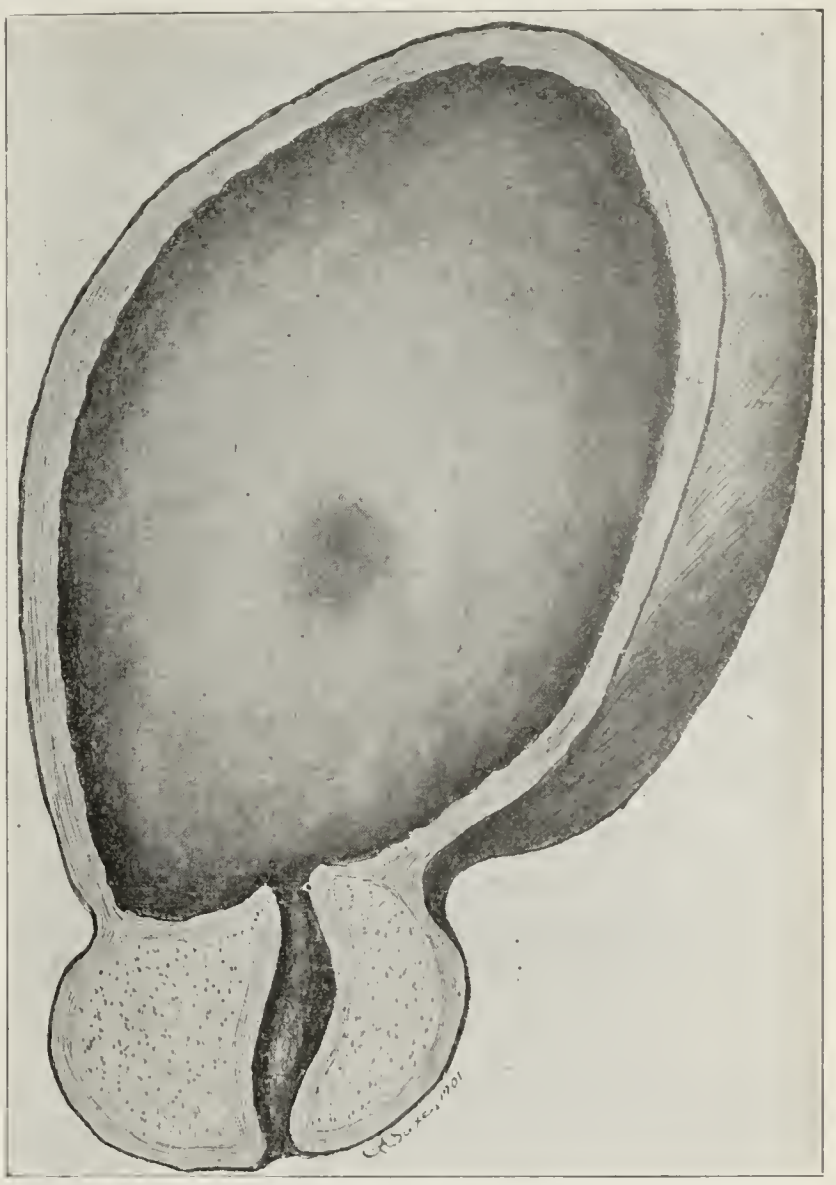


Fig. 2.—Prostatic bar. Side view.

acid solution and 6 ounces of the fluid allowed to remain in, after which the incisor is introduced and the operation performed. If a local anesthetic is to be used the bladder should be emptied, after which, before the catheter is withdrawn, a urethral hand syringe with a 4 per cent. solution of eucain or cocain is injected into the bladder and the posterior and anterior urethra as the catheter is being removed. From this moment the work should be done quickly and accurately, and I have observed that the more quickly the operation is performed after the injection of the anesthetic in cases of local anesthesia, the less painful it is to the patient.

If cystoscopy is performed the time required for it will usually be sufficient to allow the effect of the anesthetic to pass off before the actual operation is begun, and for this reason I think it advisable either to use the cysto-

2. Centralb. f. d. Krankh. d. Harn und Sex. Org., 1900.

scope at an earlier date, or to again inject a local anesthetic after the cystoscopy. It seems to me for this reason that it is advisable to omit the cystoscopy just before the operation, as advised by some, and to consider it as having been performed previously when the patient was examined. Therefore, after the cocain has been introduced into a clean, empty bladder and urethra, the catheter should be quickly pushed back again and six ounces of water injected into the viscus, after which, the catheter being quickly withdrawn, the incisor is introduced. If it catches in the deep urethra, the pelvis should be elevated; this will allow it to enter the bladder if the handle is depressed and a slight upward push is given to the instrument. If it still catches the patient must be anesthetized. In four cases under eucain anesthesia I have failed to pass the instrument. I afterwards operated in three of these under nitrous oxid gas

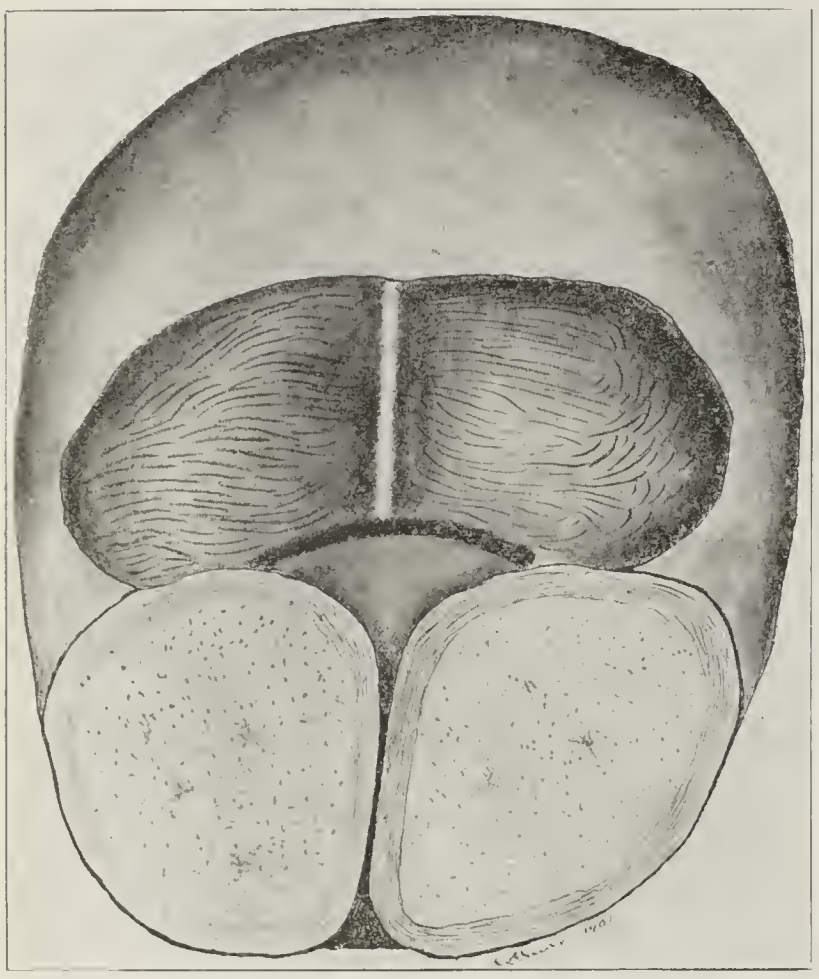


Fig. 3.—Enormous lobes: bar; enucleation by perineal method.

anesthesia and introduced the instrument without difficulty. The obstruction is generally a spasm of the vesical sphincter.

After the instrument is in the bladder its beak is turned downward and drawn forward until it catches against the base of the gland. The left forefinger is then introduced into the rectum to see if the instrument is in place. If so it should be held there, the connection made with the battery and a current of 45 amperes turned on, after which the wheel of the handle on the instrument should be turned, drawing the knife through the gland and burning a furrow in it. The current should then be shut off while the instrument is being rotated to one side at right angles, when it should again be opened and an incision made through one of the lateral lobes, then in a similar way through the other.

After prostatotomy a catheter should be retained for a few days, the patient should be given some urinary antiseptic and a milk diet, and should be instructed to drink large quantities of water. Ten grains of urotropin given three times a day is the best urinary antiseptic.

In cases in which the gland is irregularly enlarged and the posterior urethra distorted by the hypertrophy, it is sometimes advisable to perform a perineal urethrotomy for drainage after the operation. In a number of cases after the operation there was difficulty in introducing the catheter. This was caused by a straight cut having been made from the center, or most dependent part of the vesical base of the gland, down through it, which not only may not have gone into the urethra, but which may have pushed a portion of the gland to one side, thus obstructing the canal more than previous to operation. In these cases I should advocate an immediate perineal urethrotomy, with the introduction of a perineal drainage tube of large size, 34 to 36 French. In an operation under local anesthesia, by a colleague, the patient shrank back and allowed the beak of the instrument to slip forward over the convexity of the gland, thus cut-

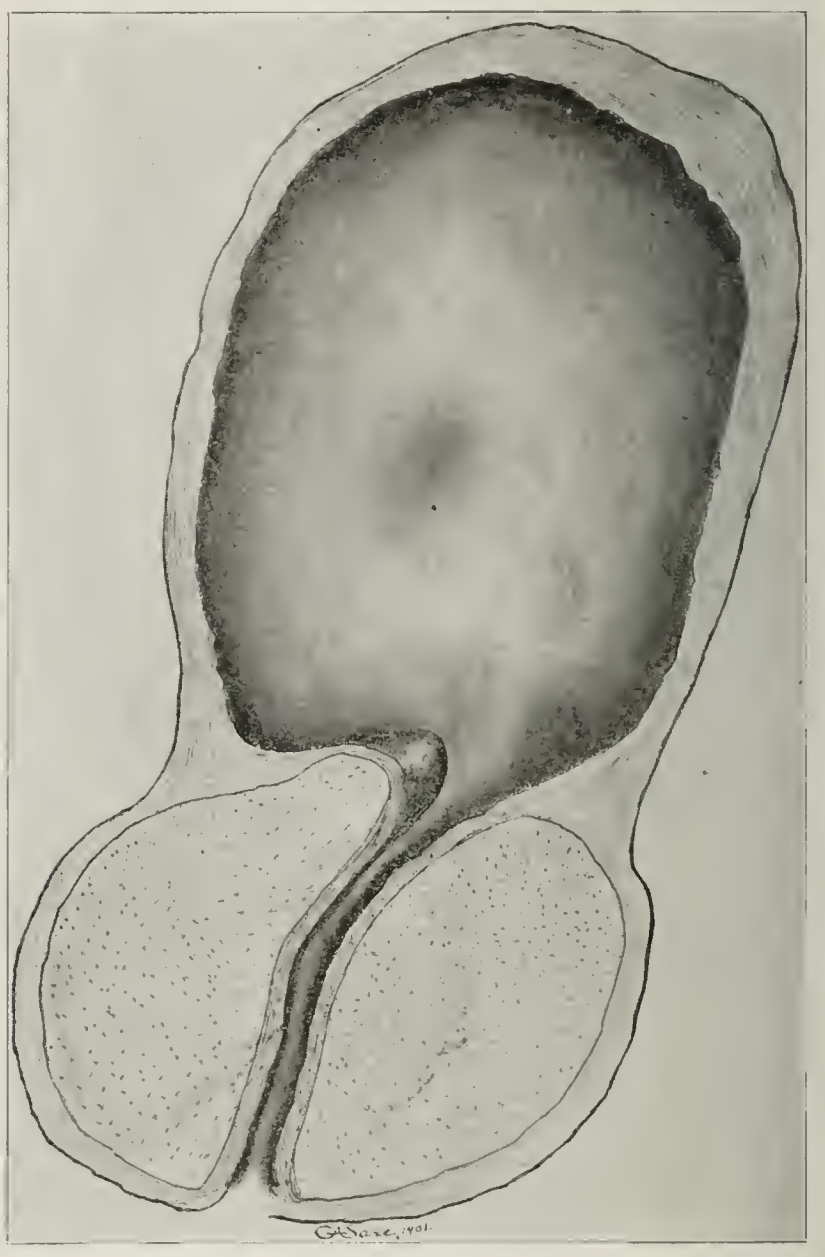


Fig. 4.—Side view. Enormous lobes: bar; perineal prostatectomy.

ting into the membranous urethra and perineum. A perineal urethrotomy was not performed at the time, necessitating a further operation for retention; death from uremia and sepsis followed. This patient would have been saved in all probability had a perineal operation been performed at the time. I have seen other cases in which I am sure that had I performed a perineal section, my patients would have had a better result.

PROSTATECTOMY.

This is the operation by which the gland is removed. For a number of years attempts have been made to remove pieces of it through perineal incisions into the urethra and suprapubic incisions into the bladder. Within the last ten years, however, much advance has

been made in this operation, until we now have operations by the suprapubic, perineal, and the combined methods, as also those by extensive dissections. This last class of operations, namely, those involving extensive dissections between the rectum and the prostate gland, as Zuckerkandl's, Von Dittel's, Rydygier's and others, are now never used.

McGill can be said to be the father of the advanced movement in prostatic surgery. He began by removing small pieces in an unscientific way through the bladder after a suprapubic cystotomy, and improved his technique with experience until he succeeded in performing a fairly satisfactory enucleation. His method was briefly as follows: He performed a suprapubic cystotomy and attached the bladder to the abdominal wall; he then inserted curved scissors through the bladder, cutting away as much as possible of the prostatic protrusion

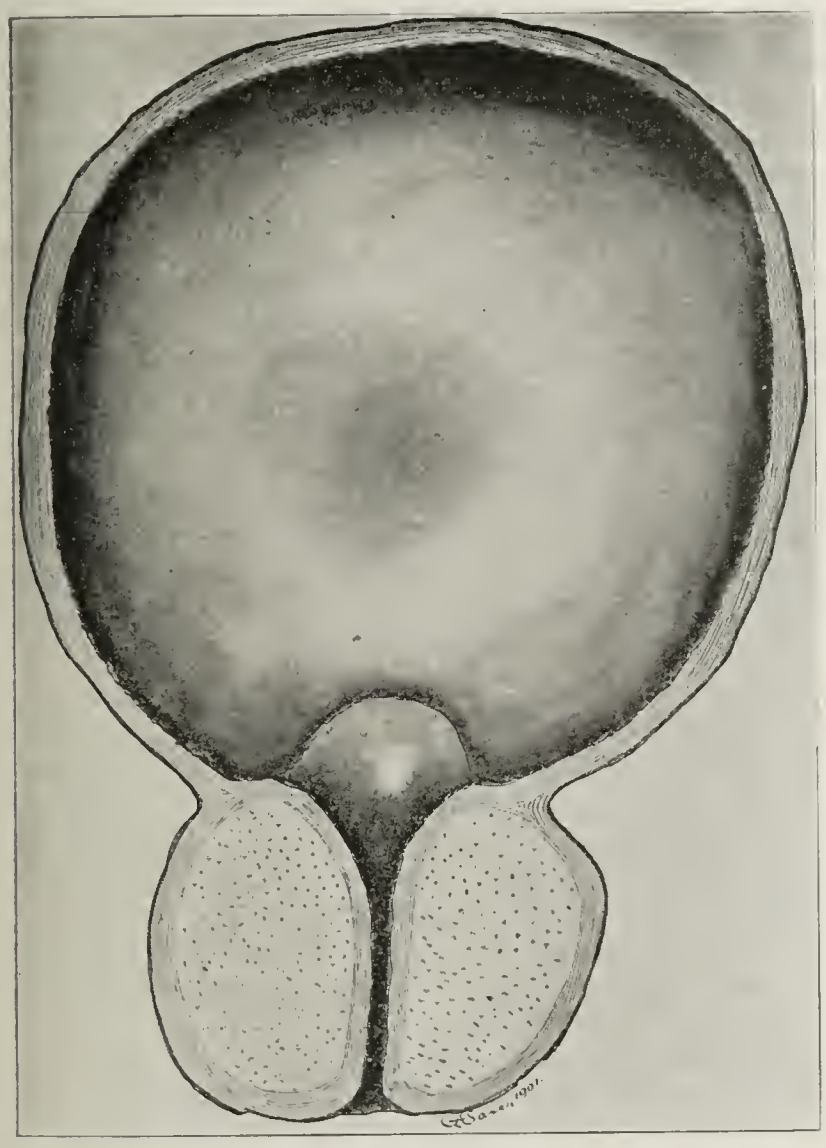


Fig. 5.—Middle lobe hypertrophied; enucleation, suprapubic method.

and helping the process by grasping the growth with the forceps and pulling it up while he cut beneath. In this way he cut through the tissues over the most prominent portion, enabling him to insert his finger and enucleate, aiding himself by means of the forceps. By this means he removed pieces varying in size from a bean to cricket ball, going to prove that in these latter cases he had evidently performed a complete enucleation. After the gland was removed the bladder was drained for a few days.

Bellfield modified McGill's operation by advocating the additional operation of perineal urethrotomy to facilitate drainage. Fuller has since then improved the technique, and advised counter-pressure by the fist against the perineum. This pressure certainly facilitates the removal of the gland. He also drains through the perineum after a boutonnière operation. Other surgeons think it better to enucleate through a perineal incision.

Nicoll was the first to outline a well-defined method of procedure by this route. He performed a suprapubic cystotomy and attached the bladder to the skin; he then made an incision in the perineum as one would for a perineal urethrotomy, and a second incision at right angles to it in front of the anus, forming a T. He then dissected up in the perineum anterior to the rectum as far as the prostate, and having cut through the capsule he inserted his forefinger of the right hand between it and the gland; then, introducing the fingers of the left hand into the bladder suprapubically, he made counter-pressure while he enucleated the gland with the finger of the right hand. Sometimes he used instruments to assist him. He drained through the urethra by means of a retained catheter without performing urethrotomy.

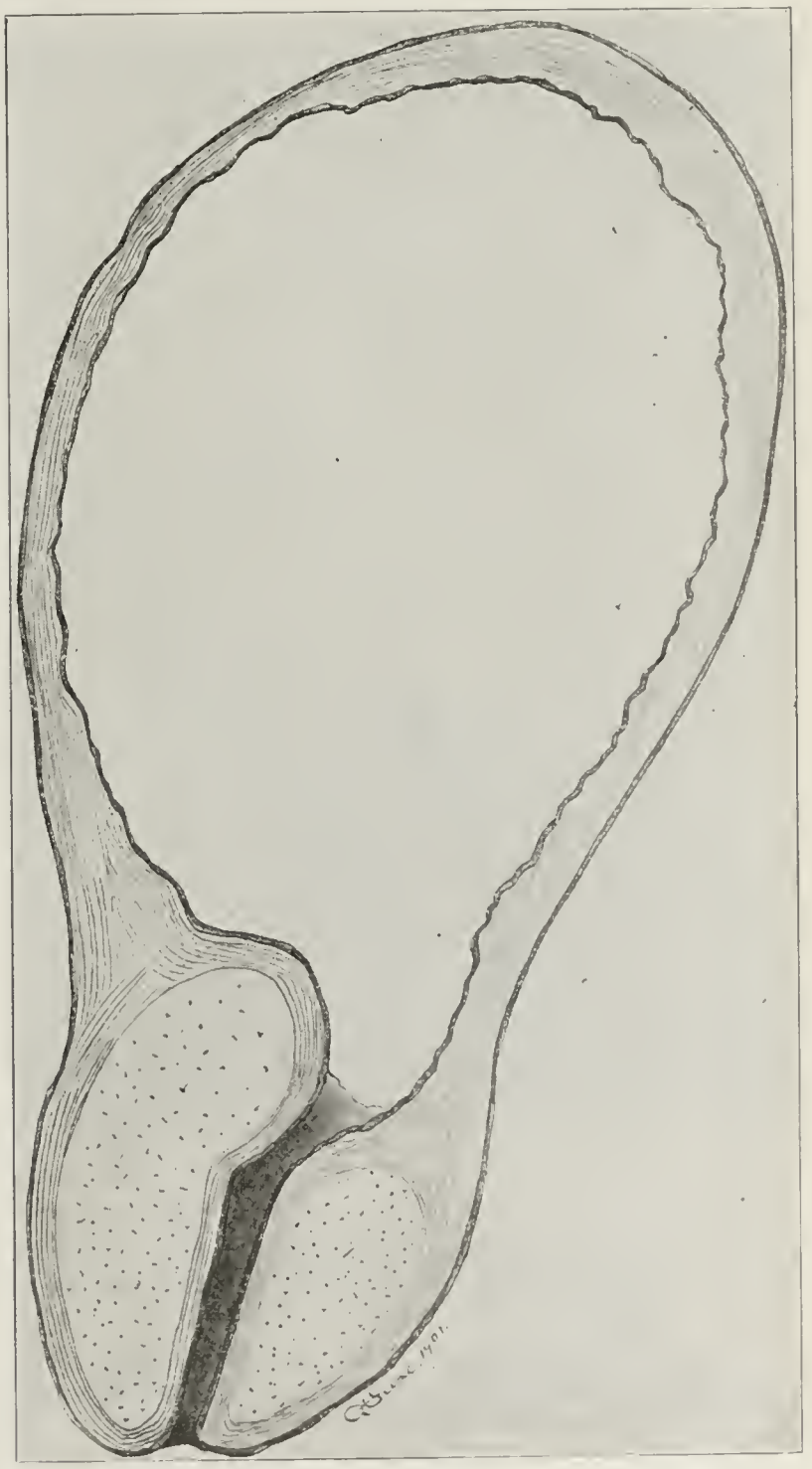


Fig. 6.—Hypertrophied middle lobe. Profile view. Semi diagrammatic.

He packed the perineal wound with gauze, took out the stitches suprapubically, and allowed the bladder to fall back again.

Alexander modified Nicoll's operation by going into the prostate through a perineal incision made into the membranous urethra up to the apex of the gland. He then incised the capsule and inserted his finger in it for

enucleation, making counter-pressure through an opening in the bladder while he enucleated. He drained both suprapubically and through the perineum. In both these methods the bladder had to be opened suprapubically.

Syms of New York endeavored to obviate this necessity by an ingenious device, consisting of a hard rubber tube with a soft rubber balloon at the end. This he inserted into the bladder through a perineal opening, after which he inflated the bag with water, and had an assistant make gentle traction upon it, thus drawing down the base of the gland and steadying it while he enucleated through the perineal incision.

Methods.—Two methods of prostatectomy are employed by the author of this paper: 1, the vesico-rectal method, presented in a paper[3] read before the thirteenth International Medical Congress in Paris; and, 2, the

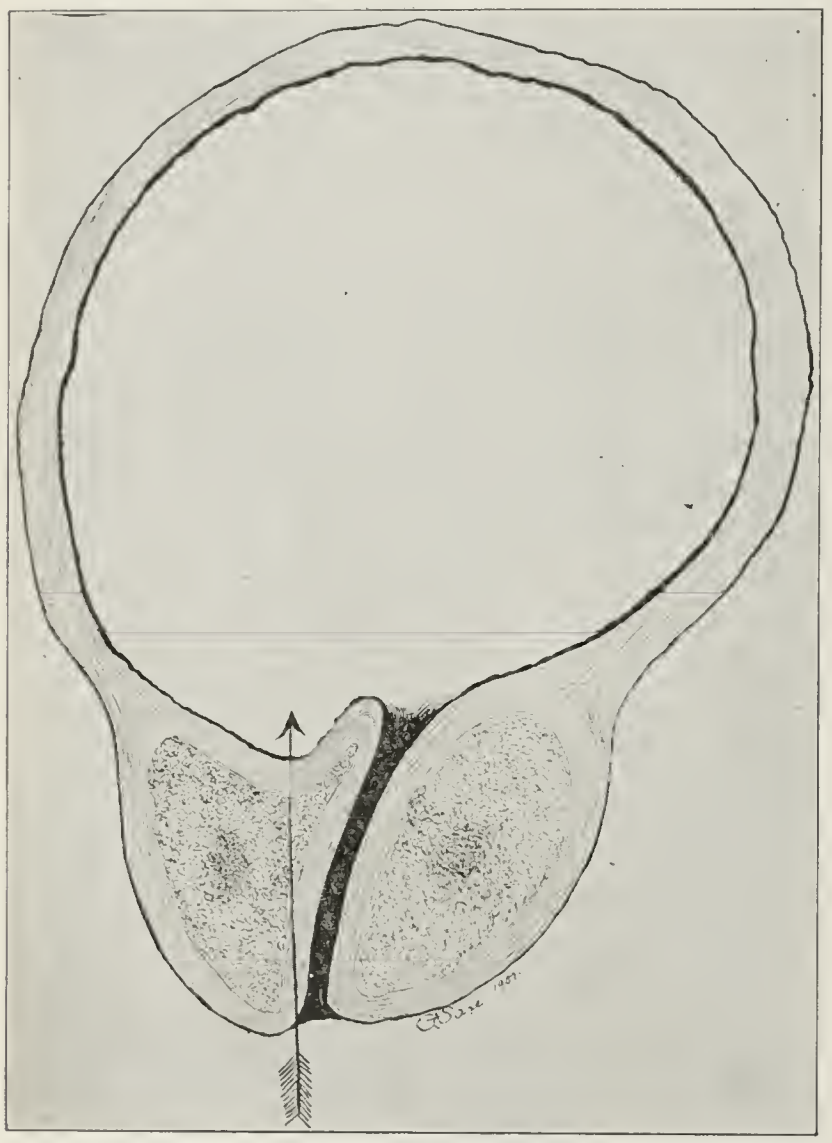


Fig. 7.—Tortuous prostatic urethra. Bottini useless. Semi-diagrammatic.

perineo-prevesical method, using counter-pressure in Retzius' space, presented before the third Pan-American Medical Congress in Havana.[4]

The vesico-rectal method is briefly as follows: After a suprapubic cystotomy, insert the two fingers of the left hand into the rectum, and the index finger of the right hand into the bladder and palpate bimanually; pass a pair of sharp pointed, curved scissors into the bladder and thrust the points through the most prominent part of the gland, or the portion just behind the internal meatus and open the blades, thus tearing the tissues covering the gland; then insert the finger tip into this tear and work it around between the gland and the capsule, making counter-pressure with the two fingers in the rectum. After the gland has been enucleated pass the scissors in again and cut through the floor of the prostatic urethra to prevent the formation of a pocket, then bring the patient into the lithotomy position and do an external perineal urethrotomy and insert a perineal tube for drainage. Insert another tube into the bladder suprapubically and sew the bladder wall tightly up to it. Close the abdominal wall above and below the tube. Leave the suprapubic tube in for one week, and the perineal tube for three or four weeks. This is the quickest method of removing a prostate with which I am familiar.

The perineo-prevesical method consists in first making an incision suprapubically into the prevesical space without going into the bladder; then placing the patient in the lithotomy position and doing an external perineal urethrotomy; next passing a pair of sharp-pointed scissors into the perineal opening, cut through the capsule of the prostate, after which the tip of the right index finger is pushed in between the capsule and the gland and enucleation begun, while counter-pressure is made over the base of the prostate by the finger in the prevesical space. After the gland has been removed a perineal drainage tube is inserted into the bladder, and the skin and superficial perineal fascia sewn up to it. The suprapubic wound can then be closed, or a drain can be left in for a day or so. I consider this the safest method of performing a prostatectomy that has as yet been devised, although not so rapid as by the vesico-rectal method.

After all prostatectomies the patient should have 1/30 of stryehnia hypodermically and a pint of hot saline solution, to be retained. After this stryehnin, hot saline enema, water by the mouth, hot bouillon, or whisky alternately every four hours, so that every hour he receives something. Water should be pushed from the first, and if he vomits, more should be given.

RESULTS.

In reading the literature of the last few years we find 152 well-reported cases of prostatectomy, in which the operation was performed by the suprapubic, the perineal, and the combined methods. Of these 95 were suprapubic, and the remainder were by the perineal and combined methods. There were 25 deaths and 127 recoveries. The recoveries were spoken of as failures in 17 and successes in 27; the remainder as improved, recovered, or good results. It is difficult, therefore, to say what the results are in these cases of recovery, excepting in the ones spoken of as failures, cured or successful, for a recovery means either that the patient did not die, but has recovered from the operation, or that he has recovered his former health.

COMPARISON.

In comparing the results we have obtained from the tables quoted of prostatotomy and prostatectomy we note that in the former, prostatotomy, in 753 cases there were 622 cures, 44 deaths and 87 failures. In the latter, prostatectomy, there were 152 cases, 110 recoveries, including cures, successes, recoveries, good results and improved; 25 deaths and 17 failures. Figuring by the percentage in prostatotomy there were 82.5 per cent. of cures, 5.8 per cent. of deaths, 11.5 per cent. of failures; while in prostatectomy there were 72.3 per cent. of cures or improved, 16.4 per cent. of deaths and 11.2 per cent. of failures. From this it will be seen that the mortality in prostatectomy is three times as great as it is in prostatotomy. In those who survive, the failures are about as frequent as in prostatotomy, but the recoveries are better. It is difficult to say

3. N. Y. Med. Jour., Dec. 8, 1900.
4. Phila. Med. Jour., April 20, 1901.

what a cure is in these cases. It seems to me that if a patient can empty his bladder of all the urine excepting perhaps .5 ounce of residual that the result obtained is first class, especially if he is relieved of his symptoms. Of course, the surgeon and the patient look upon the results in a different way. If the amount of residual urine is very much decreased, and the condition of the urine better, the surgeon considers it a good result; the patient, however, does not consider the result good unless the disagreeable symptoms are removed, such as the frequency of urination, pain, tenesmus and burning. It may be said that in those recovering, the results from prostatectomy are much better and more permanent than in prostatotomy. In prostatectomy we never have to perform the operation but once, whereas in prostatotomy we must often repeat it.

The indications that will decide us as to which operation should be performed are: 1, the age of the patient; 2, the size of the prostate, and, 3, the condition of his kidneys and bladder. It may be said in a general way that middle-aged men with very large prostates as felt through the rectum, having good kidneys and bladder, are cases for enucleation, while very old men with slightly damaged kidneys, and prostates that do not feel very large on rectal examination, yet causing considerable urethral impediment, are cases for prostatotomy.

Age is important, as the older the patient the lower his resisting power, and the more liable he is to death from shock and asthenia, therefore in a very old man, if the prostate is of the right variety, a Bottini operation would be performed, and cases of men over 90 have been reported as having been operated upon by this method successfully. Old age, however, is not an absolute contra-indication to prostatectomy, as men over 75 years of age, having good kidneys, non-infected urine and a very large prostate, may undergo prostatectomy.

Regarding the size and shape of the prostate, it may be said that very large prostates, as felt per rectum, are favorable for enucleation. Smaller ones, that is to say in which there is not much enlargement on rectal touch, but in which there is a distinct impediment in the prostatic urethra on introducing the instrument, together with considerable quantity of residual urine, are best for prostatotomy.

It is impossible to tell how large a prostate is, although one experienced in this class of examinations has a decided advantage over others, for when added to a feeling of enlargement of the gland in the rectum we have that of an impediment in the posterior urethra as imparted to the sound or searcher, and are able to judge of the increased length of the canal by hooking its beak behind the middle lobe, as well as noting the amount of residual urine present and the distance to which we have to introduce the instrument to obtain it, we have a fair idea of the gland.

In cases in which the gland seems very large by rectum, and in which there is a urethral impediment at seven inches or more, and the urethra is lengthened, we can say that hypertrophy of the lateral lobes probably exists, but if the gland is small by rectum and a similar condition exists, we must think of a middle lobe being principally involved.

Cystoscopy tells us something of the contour of the base of the gland, although it is of little value in some cases, on account of not being long enough to enter the bladder, and in others because the surgeon is not able to outline distinctly the irregular vesical base.

Regarding the condition of the kidneys and bladder, it may be said that the bladder is the least important, because it makes no difference how badly inflamed it may be, treatment will do much to benefit it by means of internal urinary antiseptics and irrigations through a catheter. An involved bladder does not count so much against the operations as kidney involvement does. It is surprising to see how often a bladder can empty itself almost entirely after a prostatic operation even if it has been considered atonic before that time, and sometimes when years of catheter life have been passed. Diseased kidneys, however, whether medically or surgically involved, are always contra-indications to surgical interference on the prostate, as in such cases a postoperative renal congestion followed by uremia and death may take place. If then the kidneys are diseased and an operation demanded, a prostatotomy should be the one of choice, as statistics show that the danger is very much less.

I will endeavor to point out the operation which the surgeon should choose in performing a prostatectomy or prostatotomy by means of some illustrations of prostatic specimens. Figure 1.—We have a prostatic bar, acting as a dam against urinating. The gland is not much enlarged. It is a typical case for a Bottini operation, prostatotomy. Figure 2.—This is also a prostatic bar, but the lateral lobes are so enlarged that an enucleation by the perineal route should be performed, as it will be easy to reach them from below, and little could be accomplished by prostatotomy. In Figure 5, the lateral lobes are not much enlarged, but the middle lobe is very much so, and prostatectomy by the suprapubic method through the bladder would be much easier, as it can not be so well reached from below as from above. Figure 7.—Here the gland is not much enlarged, excepting in the left lobe, but the urethral floor of the prostatic urethra is elevated. We would encounter considerable difficulty in performing a prostatotomy, for after the incisor has been inserted in the bladder, the beak turned downward and the instrument drawn down in the median line as far as possible, it will be seen that it would not be over the prostatic urethra, but to one side of it, and the furrow burnt through the gland would leave an island in the center which might be pushed to one side, thus impinging upon the urethra. On the other hand, if the incision were not sufficiently long to meet the urethra below, it would simply result in a blind sac leading off from the bladder into the gland, as a result of which he would not have so good a urethra as before the operation. In such cases it will be necessary to perform a perineal section after a prostatotomy: to explore the prostatic urethra and the bladder neck thoroughly with the finger; stretch the parts, if necessary, and insert a large perineal drainage tube.

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[The remainder of this Symposium, with discussion, will appear next week.]

The Cleansing of Floors.—Dr. Owen recommends a finish on hospital floors of wax, linseed oil, turpentine, floor finish and benzine in the following proportion: Wax, 5 pounds; linseed oil and turpentine, 2 gallons each; floor finish (permanere), 1 gallon, and benzine, 10 gallons. This is applied once a week and laid on with a piece of cotton, brushed and polished with a cotton mop. He believes that too much floor scrubbing is responsible for some of the sickening odors which are due to decomposition taking place both in and on the floors. The danger of fire from the use of this material is very slight if only a small quantity is kept on hand to use at a time.—*Phila. Med. Jour.*

AUTOPLASTIC SUTURE IN HERNIA, AND OTHER DIASTASES.—PRELIMINARY REPORT.*

L. L. McARTHUR, M.D.
CHICAGO.

Without entering into a discussion of the relative merits of suture materials possible or desirable, all of which can be found in our text-books, it shall be the aim of this brief and preliminary communication to show the feasibility as well as the desirability in certain situations of utilizing the patient's own living tissues as the resisting medium to future hernia. While at work with an inguinal hernial operation the idea occurred to me that it would be feasible to utilize a strip of the tendinous portion of the external oblique, which, possessing fibers in the adult from 5 to 6½ inches in length, would have sufficient strength to act as a substitute for the absorbable kangaroo sutures. Experiments on dogs and operations on the human being have proven to me the feasibility of the procedure; it remains for the future to determine the actual value of the suggestion.

Mentioning in passing the more pertinent of the autoplastic hernial procedures that have been recommended by various surgeons, in order that they shall not be confused with the present suggestion. This in nowise is intended (as are all the other methods) as an obturator to the inguinal canal. I would recall McEwen's treatment of the sac, as a pad at the internal ring, or Wölfler's autoplasty with the lower segment of the rectus muscle loosened from its sheath and drawn out to the position of the canal, or Poullet's dissection out of the tendinous insertion of the adductor magnus and grafting it upward into the canal, or Graham's similar treatment of the upper end of the Sartorius. Autopsies held long afterwards have demonstrated the complete absorption of the McEwen treated sac; while atrophy of the muscular structures utilized as obturators to the canal has been observed. The only suggestion similar to mine with which I am familiar is that which was made by Vulliet in cases of nephropexy, he being driven to this expedient when all other methods of suture, absorbable or non-absorbable, had given occasional failures. You will recall that in that position he recommended the dissecting out of a portion of the tendon of the longissimus dorsi, leaving its lower end attached. With this he perforated the capsule of the kidney, bringing the free end then into the wound for fixation. With such a living suture it was possible for him to have a permanent suspensory ligament. His recommendation has not met with the recognition it perhaps deserved, because, 1, in that situation it required an extra three and one-half inch incision above the usual wound, exposing the tendon at the transverse process of the first lumbar vertebra. 2. Simpler, equally successful, procedures came into use. In the case of inguinal hernia, however, the tissues lie immediately at hand; the skin incision need be lengthened but an inch to one and one-half inches, when the living tendons with their fixed bony insertion below can be separated in any desired size. It thus becomes an easy matter to utilize them for the suture of any hernial procedure; requiring, however, a running instead of an interrupted stitch.

Technique.—Any of the accepted operations, the Bassini, or the Andrews-Girard, operation can utilize this material without great variation in the technique. The skin and fat having been cut, exposing the external ring, the latter is prolonged upwards, the line of separation paralleling exactly the tendinous fibers of the external oblique muscle to its commencing muscular insertion. This divides the aponeurosis of the external oblique into an external and an internal flap, the cut edges of which can easily be raised from their contact with the internal oblique. The sac having been treated as the operator may



Fig. 1.—Schematic representation of two strips of tendon of external oblique, ready for suture; canal represented as opened; sac ligated and dropped back.

prefer (Duplay-Cazin) a bundle of those white fibers which enter into the formation of the internal pillar of the ring are then split off from the edge of the internal flap of the external oblique quite up to their insertion in the muscle belly, where they are cut loose from the muscle but left attached to the spine of the pubis. This strip should vary in width from one-eighth to four-sixteenths inch, according to the development

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

of the tendinous fibers, which in children and women are not so strong as in the male adult. In case a Bassini is done, a similar strip is taken from the outer flap, the lower end of which strip terminates in the fibers of the external pillar of the ring. At this stage the opening presents the appearance of a shoe ready to be laced up. The operation is then completed according to the choice of the operator, a Bassini or an Andrews imbrication or a Girard, using these strips as



Fig. 2a.—Schematic representation of suture with "T. S." tendon strip for deep layer; inner flap to inner aspect Poupart's ligament. Artist has included inner flap of external oblique tendon as in Andrews'.

suture material for a running stitch. As an easy means of handling, and for the purpose of avoiding infecting the graft suture, a strand of No. 3 silk is tied (with a single knot) tightly to the free end, this silk threaded in the ordinary needle, and the tendon graft drawn through the tissues to be united, one for the deep row of stitches, the other for the superficial layer. The first stitch is so applied as to give the desired lumen to the new external abdominal ring, using the one terminating in the internal pillar for the first suture, the remaining one for the superficial layer of buried stitches. The end of the suture strip can be fixed by making a simple knot in it: but one or two stitches through and back as the tailor fixes his thread, will also serve the purpose. The treatment of the cord can be by either method that suits the operator's fancy—Bassini or An-

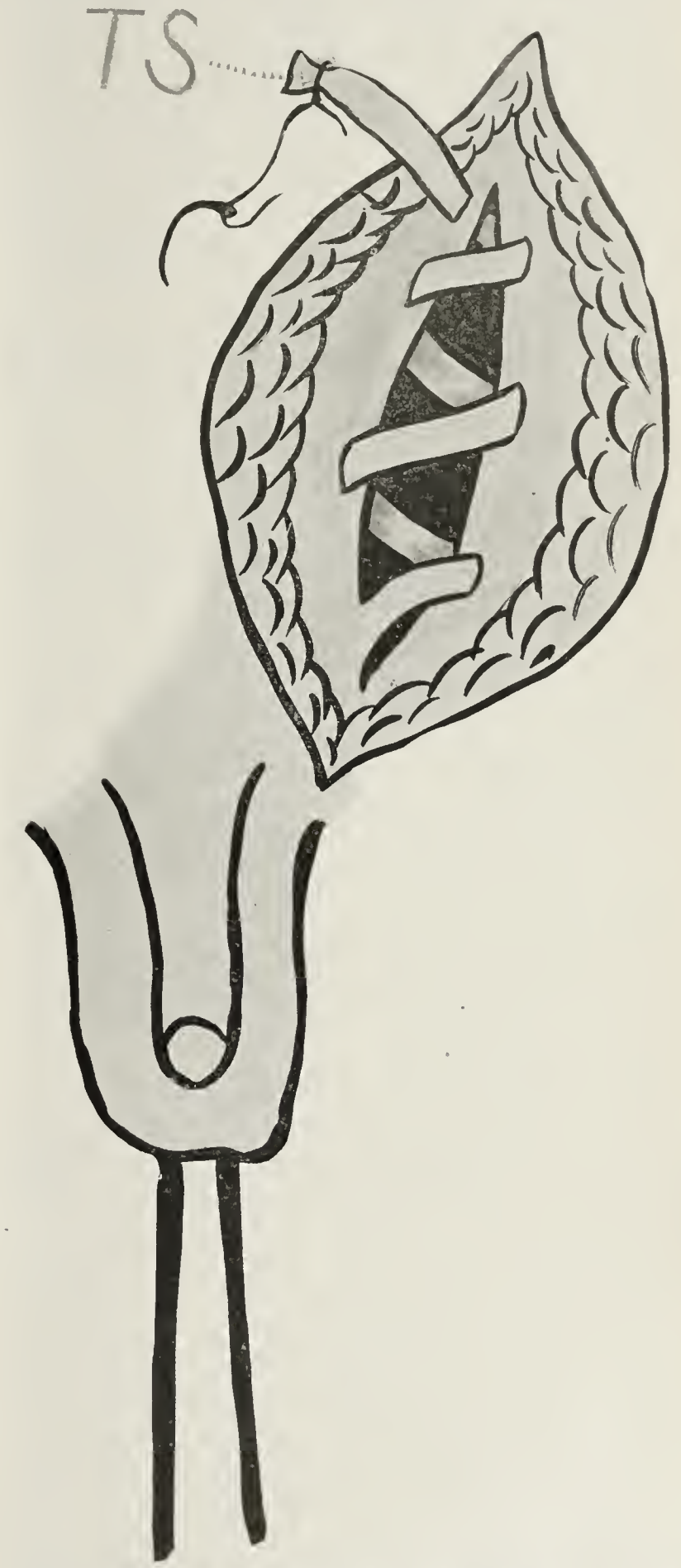


Fig. 2b.—Similar representation of suture with "T. S." outer flap to anterior surface of inner flap, when using Andrews' Edge-to-edge with Bassini.

drews. The skin and fatty layer can likewise be closed with the suture most in vogue with the person operating. The writer's practice usually has been with interrupted silkworngut stitches, no drainage, and sealing with

iodoform collodion. While I have had a large number of hernial operations in the past, since commencing this method of suture I have had twelve[1] cases in which to try it, in all of which a perfect primary union was obtained, with an unusually satisfactory convalescence, the temperature not rising as it usually does during the absorption of the animal sutures, with in these few cases less than usual of the indurated boggy area surrounding the wound. Some of my colleagues have likewise tried the operation, making in all seventeen cases of which I have personal knowledge.

Realizing, as I do, how nearly perfect our absorbable suture material has now become, I should not have the temerity to present this paper did I not believe it to possess undoubted additional merits, viz.: 1, the obtaining of a living suture; 2, lessened chance of failure through avoidance of introduction of dead or foreign tissue; 3, the incorporation in the resisting cicatrix of organized white fibrous tissue; 4, the applicability of the same procedure to other situations.

By similar experiments with aponeurosis of external oblique of the dog, I am able to demonstrate that the tissue heals *in situ*, is not absorbed, does not slough, and I present microscopic specimens thereof in verification. Animal ligatures dissolving in one to two weeks no longer exert a retaining influence, while these grafts living, as white fibrous tissue largely does by imbibition, remain permanent. Indeed, the well-known heteroplastic tendon grafting for loss of portions of tendinous structures should teach that this graft should likewise.

It will at this date be generally accepted as true, I think, that failure of cure in hernial operations by any of the recognized methods is practically always due to associated infection, for the Bassini, the Andrews or the Girard unassociated with infection can be said to be practically always successful. Inasmuch as these accidental infections are usually traceable to the buried sutures, if by any means we can eliminate their use, we lessen chances of failures. In the case of non-absorbable sutures like silk or silver wire, it is not an uncommon experience to have a primary union and yet a year or longer afterwards to have a patient return with the auto-infection of a stitch successfully buried that length of time and requiring removal.

Whatever the method of operation, McEwen, Bassini, Andrews or Girard, the success of the operation is dependent upon the formation of a cicatricial connective tissue between the apposed surfaces retaining them where placed. McBurney's demonstration of the occasional unreliability of this cicatricial material as a resisting medium in hernia teaches us that occasionally we must expect failures because of this very yielding of connective tissue. Could we, however, by any means incorporate in such a cicatrix such white inelastic tissue as these tendons present, especially when interwoven as a running suture is, then we can certainly feel more confident of its permanency and unyielding character.

In very young children, and some women, the tendon of the external oblique is sometimes so poorly developed that I am convinced that this method of suture will not be applicable to every case, and have refrained from trying it under these circumstances. As to the tensile strength of strips of tendon of sufficient size for use as suture material, this can be said, that they withstand a tensile strain of from 11 to 24 pounds without breaking.

1. The number has since increased to twenty.

Sufficient time has not elapsed since any of my operations to state that the method is any more successful than with animal sutures. It is logical to conclude however, that if the identical technique is followed, using these living strips as is followed with aseptic animal tendons, and a primary union with normal convalescence is obtained, that if they die and be absorbed, they accomplish all that the foreign material does, while if they live (as experiment proves) it remains to offer permanent resistance to future stretching.

Experiments are now in progress by means of which, after the lapse of sufficient time, I shall study the histological changes, if any, which grafts of this nature may undergo, and hope to have the honor of presenting to this Section the findings.

DISCUSSION.

Dr. C. A. Powers, Denver—We all know how useful and popular is the modern operation for the radical cure of inguinal hernia, and every addition to our technic is welcome. Dr. McArthur has presented this simple matter in a very plain and modest way, and I personally believe that it is very well worthy of trial. I shall make use of it for I think it promises to be an addition to our methods.

Dr. D. N. Eisendrath, Chicago—I do not know whether the Doctor has had any children among those whom he has operated on. I tried it in a child and was surprised to find, in a boy of 10, the tensile strength of the aponeurosis of the external oblique, which suffices to close the hernial canal. The only trouble I had at that time was the method of closing the suture, which was afterwards explained to me by the Doctor as the splitting of the tendon and then separating the two ends to tie them together. That was the chief difficulty. Everyone is surprised at the great annoyance of having suppuration, and in these cases it is certainly a great addition to our technic, where we have animal tissue.

Dr. J. R. Eastman, Indianapolis—With regard to the suture strip that Dr. McArthur splits off I would like to ask how it happens to be so much longer than the wound in the aponeurosis of the external oblique. I wish to ask further if he has encountered cases in which the aponeurosis was so thin and delicate that the edge was split off where he has applied this tissue as ligature material. The autoplastic suture has considerable breadth and must involve some splitting of the aponeurosis of the external oblique, as it is introduced to close the wound. It appears that there would be some danger in this direction, and I would be glad if the Doctor could throw some light upon this phase of the matter.

Dr. G. F. Shimonek, Milwaukee—It seems to me that since these autoplastic sutures represent a tissue which, histologically, is rather of low vitality, as all white fibrous tissues are, their existence must be very greatly limited. In order to oppose the adjoining edges it is necessary to put these sutures on the stretch, thus devitalizing them more or less completely; the result will be a complete absorption of the sutures, probably in as short a time as it takes to absorb plain catgut. Having had no experience with this method I can only say that I imagine it inferior to silkwormgut, kangaroo tendon or formalized pycktanin catgut, because those tissues upon which the permanency of our results, in hernia, depends, are composed of fibrous tissue which requires to be held much longer in close approximation than do structures of higher vitality.

Dr. McArthur, in reply—The strips have been exaggerated in length in the drawings. One knows the length from the anterior spine up to the external oblique belly. It is a good length, in some, as I said, even six inches. The strips again are represented as flat. That is a representation which is not found as soon as they are loosened. When they are loosened they roll up as catgut does, and therefore pull through as does catgut and do not make a long stitch wound in the edge of the external oblique any more than the catgut or any suture material does. The edge I have not found to tear out more than it does in using any other suture material. I recall one

case in which it did tear out. I want to report a case that was operated on by this method, in which a death occurred on the fourth day from a total suppression of urine. I want to report it, because it presented that rather rare type of hernia —necessitating a prolonged operation—because I did not recognize for some time I had to deal with what is spoken of as the "sacless hernia" *(hernie par glissement)*, made possible by the fact that in certain cases the anterior aspect of the colon is only partially covered by peritoneum; a large portion of its outer posterior aspect is uncovered by peritoneum. This sometimes slips down and presents in a hernial ring. When you cut down on the mass, you look in vain for a peritoneal covering; still you feel the gurgling within, find the contents of the bowel and know that you are close to it—you find no peritoneum; or until you pull it down, you do not find any peritoneum. It was so in this case, a man 62 years of age, who was a peddler, urging that he be operated on, because he had to jump down from his wagon and could not keep this hernia up with the truss. I concluded to operate, and he died, without any doubt from a too prolonged anesthesia for a man of his years; the total suppression of urine proved it, I think. It was not possible to get a postmortem. It was, however, possible in the night for my house surgeon to cut out the segment which had been sewed, showing the tendon *in situ*: microscopical sections of which are being made.

THE COSMETIC AND VISUAL RESULTS IN SQUINT.*

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Since Donders first promulgated the statement that strabismus convergens always depends upon hypermetropia, to the present time, the study of the etiological factor or factors concerned, has been one of ever-increasing interest; yet much still remains unknown and unsettled in our knowledge of this complex condition. A step was taken forward when it was proven beyond question that there must be a something besides hypermetropia to determine a squint. Schweigger, Stilling, Hansen-Grut, Wahlfors and others have attacked the subject, but no one theory explains all the features sometimes encountered.

The early age at which squint usually shows itself adds much to the difficulties of our gaining knowledge of the pre-existing conditions. The best way to approach the subject is by a careful study of cases. In doing this we often encounter phenomena that can not be explained by any of the ideas yet advanced.

Leaving to others a discussion of the theories underlying squint, I have chosen to address myself to a practical consideration of the visual as well as the cosmetic effect gained by the different methods of treatment. In order to do this I have selected 100 cases of convergent strabismus that have been under my personal care in private practice during the past four years. I have excluded all cases where a visible diseased condition such as corneal, lens or vitreous opacities of fundus changes were present. Each case has been under observation for several months, and a careful test of the vision made when possible; and the refraction determined either by subjective or objective tests under the influence of a cycloplegic (usually atropia).

The ideal result from the treatment of squint would be that which, while bringing about parallelism of the visual lines, would at the same time improve the vision in the defective eye, and produce binocular single vision in all portions of the field of fixation. Were these ends obtainable in all cases the chapter on squint could be closed. The studies and writings of Javal, Priestley Smith and others have aroused a fresh interest in the question of improving the vision in the amblyopic eye and lessening the squint by the so-called educative treatment.

Of the 100 cases selected for this study, 76 were cases of monolateral squint, in all of which the squinting eye was defective in visual acuteness; 24 were cases of alternating squint, in which the visual acuteness was practically the same in each eye. Of the 76 cases of monolateral squint, in 21 cases, or 27 per cent., who were old enough to answer to the subjective test, improvement in the acuteness of vision in the amblyopic eye was obtained by correction of the refraction. In these cases the vision was first tested, then a cycloplegic was instilled, and the correction ascertained both by objective and subjective tests. After adaptation of the correcting lens, which was as near as possible a complete correction, a test was again made with the pupil in its normal condition. The following results in the 21 cases were shown: 1 case was improved from excentric fixation to 14/200; 1 from 18/200 to 20/200; 4 from 20/200 to 20/100; 2 from 20/200 to 20/70; 1 from 20/200 to 20/50; 1 from 20/200 to 20/30; 2 from 20/100 to 20/70; 3 from 20/100 to 20/50; 1 from 20/70 to 20/50; 3 from 20/50 to 20/40; 1 from 20/50 to 20/30, and 1 from 20/40 to 20/30.

The amount of hypermetropia present was as follows: 2 cases with 1 D.; 3 with 2 D.; 7 with 3 D.; 5 with 4 D.; 2 with 5 D.; 1 with 6 D., and 1 with 4 D. of simple hypermetropic astigmatism. In 6 cases astigmatism of from 1 to 3 D. was combined with the hypermetropia.

The improvement obtained in these cases was always apparent shortly after the lenses were adjusted, and is, I believe, a result of the lessened eye strain due to the formation of a more distinct image on the retina brought about by an accurate correction of the refraction error, and not to direct improvement in the perceptive powers of the retina. This same improvement is often noted in one-sided amblyopia without squint where the hypermetropia and astigmatism have been corrected.

More recent writers seemingly having taken the cue from the authorities noted, have gone even farther, and now we almost daily read of cases of squint with high amblyopia and excentric fixation in which a correction of the defect in refraction and exclusion of the fixing eye has brought the vision of the defective one up to the normal standard of acuteness. Senn, in a recent article in "Wochenschrift für Therapie und Hygiene des Auges," reports ten cases in each of which the amblyopic eye improved under forced use, while in two of these the good eye deteriorated as a result of the exclusion. That isolated cases of marked improvement in amblyopia are encountered can not be denied. The reported cases of Johnson, Javal and others are conclusive, but in my experience I have not observed such results. One case where the amblyopic eye was forced to do the work of the former fixing eye has been under observation: A boy 16 years of age presented a squint of the right eye with amblyopia. A corneal ulcer produced a large central opacity on the left or fixing eye; the right then became the useful eye, and while under observation for six months the vision did not change from 20/70.

All will admit that when a squint is corrected, of scarcely less importance than improvement in the acuteness of vision in the amblyopic eye, is the attainment of

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binocular single vision. It is a frequent observation that parallelism of the visual axes is obtained so that when distant objects are fixed, pictures of the object are focused on functionally corresponding points of each retina, and yet the power of blending these images into one is absent in the brain. The advocates of the early training of the squinting eye argue that the development of this fusional faculty is the keynote to successful treatment. In a majority of the cases of squint coming under observation the youthfulness of the subject precludes the possibility of such training. In order that this end may be accomplished diplopia must first be produced, and then the two images united; whether one eye be amblyopic, or the visual acuteness equal, the production of double images is difficult and sometimes impossible. Often in those in which it can be brought about it can not be maintained for a sufficient length of time to estimate the separation. The cases of alternating squint seem to keep up a constant shifting from one eye to the other, making it impossible to hold the double images.

The absence of the power of binocular single vision seems not to be influenced by the presence of amblyopia. In a large majority of alternating squints it is absent; on the other hand, in 50 cases of congenital amblyopia without squint observed, binocular fusion was present in 90 per cent. of the cases, but often high degrees of heterophoria were encountered. In only 7 of the 100 cases under consideration was I able to produce binocular blending of the images so as to gain the sense of perspective. Of these 7 cases 4 were alternating squints in which parallelism was produced by operation. This operation consisted in one case of tenotomy of both interni at intervals; in 3 cases tenotomy of one internus with advancement of the externus. The 3 remaining were monolateral squints in which binocular single vision was obtained by correction of the refraction by glasses, the amblyopia in the squinting eye was not extreme. In 5 cases only have I been able to get the patient or their parents to carry out the procedures advised by the advocates of the educative method of excluding the good eye for a number of hours daily. In only one of these was any apparent effect produced. This was a child of 3 years of age; the mother carried out faithfully for two years my instructions. There was present 6 D. of hypermetropia. Under glasses and the exclusion-pad used daily for several hours the vision improved from excentric fixation to 12/200, and the convergence lessened from a squint of 6 mm. to 2 mm. and the fixation has apparently become central. One other case watched carefully was a boy of 9 years, in which the parent insisted that the instructions had been faithfully carried out. After eighteen months the eye with excentric fixation remained in the same condition. The methods used were those advised by Priestley Smith: Exclusion of one eye, bar-reading and the stereoscope. The use of the stereoscope in my experience in children has not accomplished anything; and bar-reading seems to be of no value in alternating squint.

When studied from a purely cosmetic standpoint success in the treatment of strabismus offers much encouragement. In practically all cases we can expect to produce a lessening of the deformity by glasses or tenotomy. Glasses should always be given a thorough trial and no operation resorted to until all the effect possible has been produced thereby. Of the 100 cases under study the following are the results produced in lessening the deformity by accurate correction of the refraction: 43 cases showed a decided lessening of the convergence; in 60 per cent. of these, or 26 per cent. of the entire number of cases, the result was parallelism of the optic axes. Of these 26, 23 were monocular squint; 3 alternating. Therefore, the percentage of cases of monocular squint cured by glasses was 30 per cent., of alternating squint 12 per cent. The result of operative interference is shown as follows: 41 cases were operated upon; 12 cases, or 29 per cent. of parallelism, was obtained; 15 cases, or 36 per cent., were improved; 14 cases, or 34 per cent., were not improved. In 3 of these latter divergence eventually became apparent. Of the 24 alternating cases 15 were operated upon; 7, or 29 per cent., were cures; 5, or 20 per cent., were improved. In 2, divergence was eventually noted. In these cases no perfect cosmetic results were obtained by simple tenotomy of one internus. Division of both interni at intervals, or tenotomy of an internus combined with advancement of an externus was necessary to bring about the desired effect.

It has been my observation that in all cases of alternating squint there is a decided weakening of the power of abduction and that simple tenotomy does not lessen the squint more than 2 mm. Alternating squint seems to present a much more difficult problem to solve than does strabismus with one-sided amblyopia. A smaller percentage are relieved by glasses. Simple tenotomy of an internus produces a much more uncertain result, and fusion of the images of the two eyes is more difficult. If training the amblyopic eye in a monolateral squint, before first accomplishing parallelism of the optic axes, improves its powers of perception, we may transform a monolateral into an alternating squint; and as far as its correction is concerned the last condition of the patient is worse than the first.

From a cosmetic standpoint the ideal squint operation is that which will produce parallelism of the optic axes and leave behind no ugly depression due to the sinking of the caruncle at the inner canthus; nor limited motion of the eyeball when making excursions in different directions.

The statement that binocular vision is necessary to maintain the cosmetic result does not hold true. I recently examined a young man 23 years of age, with the following history: When 7 years of age he was operated upon for convergent strabismus by tenotomy of both internal recti. No glasses were ordered and no measurement of his visual acuteness undertaken. At the age of 12 years he came under my care; tests at that time showed great amblyopia in the right eye. Under atropia I found only 1 D. of hypermetropia in each eye. A few weeks ago I again examined him. There is no binocular vision. He wears +.50 D. S. each in close work. His eyes are parallel. The cosmetic result is good. The excursions of the eye are not restricted, and beyond a slight sinking of the caruncle in the amblyopic eye, no evidences of the former squint are apparent. He has taken a regular college course and is a scholar of recognized ability.

Some of the statements I have made may appear dogmatic and at variance with the opinion of others, but they are based entirely upon my personal observation and the knowledge gained from the cases chosen for study. Many other points were noted that have not been considered: such as heredity, and the frequent encountering of amblyopic individuals in the families of those who squint. Alternating and monolateral squints will be found indiscriminately in squinting families, showing

that there is an unknown something common to both forms. Spontaneous cures in squint are not as uncommon as we might expect. We can find such a history often in cases classed as congenital one-sided amblyopia. The following points, it seems, should be emphasized:

1. The effect gained in the treatment of strabismus, whether parallelism of the visual axes be obtained by a cycloplegic, glasses, orthoptic exercise, or an operation, is largely, or we might say, wholly cosmetic.

2. Glasses should be adjusted to the eyes of squinting children at as early an age as possible, depending upon the ability of the parent to control the child; and they should always be worn for a sufficient length of time to determine their effect upon convergence, before any steps in the way of an operation are undertaken.

3. The use of the exclusion-pad and orthoptic training are advisable, not so much in the hope of increasing the vision in the squinting eye, as to improve the power of co-ordination in the recti muscles, so that when the child reaches the proper age for operation the power of simultaneous muscle action will not have been lost.

4. Binocular single vision is not present in more than 7 per cent. of cases of squint, and its production in a larger percentage uncertain and unsatisfactory. Parallelism of the visual lines does not mean binocular single seeing.

5. Double images are not necessary for a successful issue. Cosmetic results can be obtained and maintained where the fusion power is absent. This is true in monocular squint with great amblyopia as well as in the alternating form.

6. Congenital amblyopia is often found in eyes that do not squint, especially combined with hypermetropia and astigmatism, and often in members of a family where squint in others is present.

7. In alternating squint if the hypermetropia is of a high degree the chances for producing parallelism are better than when the hypermetropia is low. In alternating squint with hypermetropia of a medium degree the necessity for an operation and the difficulties of producing parallelism by tenotomy are greater than in monolateral squint.

8. The effect of a tenotomy is greatly influenced by the amount of abducting power present in the corresponding externus. This should always be especially noted in the alternating variety.

9. Two tenotomies on the same internus is bad surgery, since it invariably leaves a sunken caruncle and later divergence.

10. From a cosmetic standpoint the correction by operation is not as simple as might be supposed. What is gained by straightening the eye, if there is left a noticeable exophthalmos with limited motion of the eye both outward and inward?

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Intermittent Pernicious Anemia.—Foustanos describes in the *Grèce Médicale* for June, a case of intermittent pernicious anemia. The hemolysis occurred for seven to ten days, and then seemed to be arrested for a time, while the tumefied spleen and liver retrogressed nearly to normal size during the intermissions. He accepts this case as evidence that pernicious anemia is not a disease of the blood-forming organs, but is the result of the action of some unknown toxic substance in the blood, occurring principally in the hepatic and splenic regions.

STRABISMUS; ITS TREATMENT.*

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If some one were good enough, or I might better say wise enough, to formulate a uniform set of tests for the detection and accurate measurement of strabismus, to be used by all observers in order to compare the results or the different methods of treatment, we might arrive at some valuable conclusions as to the best treatment of this affection. Again, a better understanding of the physiological action of the ocular muscles and, indeed, of physiology in general than now, as a rule, obtains would help elucidate the intricacies of the subject. The anatomy of the ocular muscles has been gone into thoroughly, but the physiological action of the ocular muscles and their intimate relation and co-relation in the use and movements of the eyes has been overlooked, or at least not kept in mind, it seems to me. In addition to a résumé of the subject of the treatment of strabismus, therefore, I shall call attention to these two points in particular, to-wit: The different tests for strabismus, and the physiology relating to the subject. In addition also I wish to call attention to the Panas operation for strabismus with table of cases.

Physiology.—Of course, this paper is entirely too brief to go into extended observations on the physiology of squint, but there are two or three points of importance I wish to bring before you for consideration. Incidentally, I may say, I include the insufficiency of the ocular muscles under these remarks, because an insufficiency is nothing but a latent squint, which may be easily forced into a manifest squint by the use of prisms—a practice which, I am sorry to say, is followed by some of my American colleagues. If we are to obtain the best results in the treatment of strabismus, either manifest or latent, we must bring to bear a knowledge of the physiology of the muscles and nerves in general, for an insufficiency or weakness of an ocular muscle differs in no particular in a physiological way from an insufficiency or weakness of any other voluntary striated muscle. For it is a well-established fact of physiology that the nerve-cells give out before the muscles. "It is undoubtedly of advantage to the body," says Warren P. Lombard,[1] "that the nerve-cells should fatigue before the muscles, for the muscles are thereby protected from overwork."

Now, in an insufficiency or weakness of any ocular muscle, the specialist—the ocular-muscle specialist, in particular—is prone to forget this general and most important physiological fact, and begins to treat the muscle itself locally by prescribing prisms or performing graduated tenotomies of the opposing muscles, or some other equally absurd procedure; failing to recognize that it is the nerve-cells which are fatigued, weak and at fault and in need of treatment. And this treatment, in the main, should be through increased nutrition, by means of tonics, rest, outdoor exercise, and by local treatment. The local treatment should consist of the proper correction of the error of refraction, and by having the patient turn the eyes forcibly in the direction of the weak muscle or muscles several times a day. Perhaps the local exercise of the weak muscles by means of prisms for a

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1. An American Text-Book of Physiology, 1900, p. 78.

few minutes at a time each day may be a benefit in some cases, especially in cases that have been operated upon. In my own experience, however, this has not been very satisfactory. The practice of prescribing prisms for constant wear, except in paralytic squint, or in case of anatomical insufficiency (due either to faulty development, insertion or enervation of the muscle) should never be followed, because the weak muscle is made weaker and the strong muscle made stronger all the time, until the latent squint is made a manifest one. I have seen this occur more than once. The gentlemen who prescribe prisms for constant wear for insufficiency of the ocular muscles, and do not follow them up with stronger prisms, and, finally, with graduated tenotomies of the opposing stronger muscles, do not follow their treatment to a logical conclusion. For it has been demonstrated innumerable times that prisms, when worn with their bases over weak muscles and their apices over the opposing stronger muscles, make the strong stronger and the weak muscles weaker. In fact, increasing the strength of these prisms every few days or weeks, to bring out the extra strength of the strong muscles is the very method pursued by the men who perform graduated tenotomies. The gentlemen who prescribe prisms for physiological insufficiencies should follow up the first pair with the second, and a third and a fourth, if necessary, and finally perform tenotomies, or abandon the practice altogether, with the exception above noted, that is, in anatomical insufficiency or in paralysis of the ocular muscles.

Neither the constant wearing of prisms nor graduated tenotomies are the correct treatment in insufficiency of the ocular muscles or latent squint, but general treatment as above indicated, together with the correction of the refractive error, is the more rational procedure. This is certainly a common-sense method, and assists in the restoration of normal physiological action to the muscles through increased nutrition to the nerve cells. In weakness of the ocular muscles, just as in weakness of the muscles in general, we should, as Lombard well says, "Always bear in mind that though 'beef' is of use to the athlete the muscles are merely the servants, and can accomplish nothing if the master is sick. The nerve cells always give out before the muscles, and the man preparing for a contest should watch his nervous system more than his muscles."*

If the treatment of latent squint by means of prisms and graduated tenotomies is of little practical value, how much less so is the treatment of manifest squint by these means. In fact, the treatment of manifest squint by means of prisms, or by graduated tenotomies, has been abandoned by most oculists, and, at most, is but a sad memory to those who have tried it.

TESTS FOR STRABISMUS AND THEIR RELATIVE VALUE BEFORE AND AFTER OPERATION.

Perhaps the most important step in the treatment of any disease is finding out the exact nature and extent of the disease; in other words, properly diagnosticating the disease. We have a number of tests for measuring squint, its nature and amount more or less exactly; but unfortunately, many of these tests can not be used in very young subjects, a class in which the majority of squint cases are observed. I shall describe at this point the principal tests for squint and their method of application, and after that give the technique of a routine examination bringing into requisition the different tests in the order of their importance, hoping thereby to establish what might be termed a standard examination for strabismus. Of course, this routine examination should not be made in exactly the same manner in every case, as there will be exceptional cases and individual peculiarities that will demand a modification to a greater or less extent of the method. But this routine examination should be followed as closely as possible in every case if we are to have a standard by which to compare the results of different treatments, and ultimately to select the best method of treatment as found out by this method of comparison. Uniformity of tests in these cases of squint is all important.

1. In latent squint or ocular insufficiency, the most reliable test in my experience is that made with ordinary prisms for adduction, abduction and sursumduction, etc., as follows:

To obtain the power of adduction, have the patient look at a candle-flame 20 feet distant, with both eyes open and any refractive error he may have properly corrected; then begin the test with the one degree prism, apex inward, that is, toward the nose and increase the strength of the prism until the patient sees double. The strongest prism he can overcome without seeing double measures his adduction.

The abduction is obtained by placing the apex of the prism outward toward the temple, and gradually increasing it till the patient sees double; while the sursumduction right and left is obtained by placing the apex of the prism upward in front of the right and left eye respectively, and increasing the strength till the patient sees double.

J. M. Bannister, in testing 100 soldiers with normal eyes, found the average adductive power to be 14.1 degrees, abduction 7 degrees and sursumduction 2 to 4 degrees, the relative strength of adduction to abduction being two to one. Any wide deviation from this relation, especially when asthenopia is complained of, should be considered as an insufficiency and should receive treatment as indicated in the first part of this paper.

2. The Maddox-rod test for muscle insufficiency is practiced by many oculists, but in my experience it is not as reliable as the simple prism test. Besides, it has the same fault as the old Graefe test for muscle insufficiency, that of causing a diplopia as the first step in the test for insufficiency. This is a serious mistake as it takes away from the eye the stimulus for fusion of the images.

There are a number of tests for manifest squint, the principal ones of which I shall now describe:

1. *Perimeter Test.*—This is the best test for squint that we have, but unfortunately it can not be used accurately on patients under 5 or 6 years of age. As the majority of all squints are of a convergent nature and as about 40 per cent. occur in children under 6 years of age, it will be seen what a serious handicap this is. This test is made as follows:

Place the patient at the perimeter with the squinting eye in a line with the center of the arc, which should be in the horizontal position; have the patient look directly in front of him at a light or some small bright object 20 feet distant. Now carry a lighted candle along the arc of the instrument until the image of its flame occupies the center of the cornea of the squinting eye. Read on the arc the number of degree the candle is from the center of the arc. This is the degree of the squint. For example, say the candle is carried to the twenty-degree mark on the arc when the image of its flame occupies the center of the cornea of the squinting

*Loc. cit., p. 76.

eye. Twenty degrees is the amount of the squint, convergent or divergent as the case may be.

In vertical squint the arc of the perimeter should be placed in the vertical meridian, and while the patient looks in the distance the candle should be carried along the arc from its center until the image of its flame occupies the center of the cornea of the deviating eye. The position on the arc at which this happens indicates the amount in degrees of the squint.

To get the amount of the squint for the near point have the patient look at the center of the arc and move the candle along the arc in exactly the same way as before as in testing for the distance. The position on the arc at which the image of the candle flame occupies the center of the cornea of the squinting eye measures the amount of the squint. I have found the amount of the squint for the near point, in convergent squint, as a rule, to be two to five degrees greater than for the distance, due perhaps to an act of the accommodation.

2. *Cover or Screen Test.*—Have the patient look in the distance at some small object, as a candle flame; stand in front of the patient with the head lower than the patient's so as not to obstruct his view, cover the patient's good eye with a card and have the patient fix the candle flame with the squinting eye. Now place the strabometer of Laurence against the lower lid with the zero mark on a line directly under the center of the cornea of the uncovered eye; then remove the card from the good eye, when the patient will fix the candle with it and squint the bad eye as usual with him. Note on the strabometer the number of lines the center of the cornea of the squinting eye has moved from the zero mark. This gives the angle of the squint. The advantage of this test is that it can be applied in very young children.

3. Priestley Smith's *Tape Measure Test.*—This consists of two pieces of tape, one black and one colored, each one meter in length, and attached to a ring which can be slipped over the thumb. The colored tape is divided by lines into twelve parts, and numbered 5, 10, 15, etc., up to sixty degrees, ending in a small weight to keep it taut during measurements. The patient holds the end of the black tape against his face directly under the squinting eye, while the observer stands directly in front of him with the ring attached at the other end of the tape over his thumb or ophthalmoscope which he holds in front of his eye. The patient looks directly into the ophthalmoscope from which a light is reflected into the squinting eye. It will be noted that the image of the light from the ophthalmoscope will be to the other side of the center of the cornea in convergent squint and to the inside of the center of the cornea in divergent squint. The observer now takes hold of the colored tape at the ring, the edge of the hand being held towards the patient for the patient to look at, and lets the tape slide between his fingers, carrying it in a direction opposite to that in which the eye squints. Both eyes should follow the hand, and when the squinting eye has turned sufficiently for the image of the light from the ophthalmoscope to occupy the center of the cornea in that eye, stop the hand and note the distance it has moved along the tape. The number on the tape indicates the degree or angle of the squint.

This test is accurate enough for all practical purposes, and if the angle alpha is taken into account it is quite reliable. Then it has the great advantage that it can be used on very young children.

4. *Hirschberg's Test.*—This test consists in estimating the angle or amount of the squint from the position of the image of the candle flame reflected from the front of the eye. The candle is held about one foot in front of the patient who has both eyes open. The image of the flame in the eye that fixes will be in the center of the cornea, while the image on the squinting eye will be more or less eccentric according to the amount of the squint. With the average-sized pupil, 3.5 millimeters, if the image is half way between the center of the pupil and the pupillary margin the squint is less than 10 degrees; if at the pupillary margin, 12 to 15 degrees; if midway between the margin of the pupil and the corneal limbus about 25 degrees; if at the edge of the cornea 45 to 50 degrees; if out on the sclera 60 to 80 degrees.

Of course the angle alpha should be taken into consideration in this test. This test is not very accurate but sufficiently so for practical work. It has the great advantage of application in very young subjects.

5. *Linear Measurement Test.*—This test is to be recommended only in case of false fixation. Have the patient look directly in front of him with both eyes open at a small object in the distance. Mark on the lower lids with ink a dot on a line with the outer border of the corneæ. Then measure the distance of the dots from the outer angle of the eye on each lid respectively. The difference in millimeters gives the amount of the squint.

6. *Prism Test.*—This test is applicable in those cases only where binocular vision exists. In recent cases where this condition sometimes obtains, and in cases where binocular vision has been brought about by treatment through improvement of the vision in the amblyopic eye and by bringing the images in the two eyes closer together (to get which latter condition this test itself is often employed), the prism test is of much value. It is applied as follows: Have the patient look at a candle flame 20 feet distant. Note the nature of the diplopia, if homonymous, cross or vertical; or if a combined deviation, by placing a red glass in front of one eye—the better one. In fact, it is often necessary to put a colored glass in front of one eye in order to establish a diplopia. Where the diplopia is present without a colored glass in front of the eye, the colored glass should be removed after the nature of the diplopia is established. The strength of the prism that is necessary to bring about single binocular vision divided by two represents the amount of the squint. For example, say we have a horizontal homonymous diplopia and that it requires a 20-degree prism apex inward to produce single binocular vision. This shows a convergent squint of 10 degrees. Again, say we have a horizontal cross diplopia which requires a 20-degree prism apex outward to cause single binocular vision. This shows a divergent squint of 10 degrees.

For establishing the fact whether single binocular vision does or does not exist, the prism test is invaluable. It is not altogether reliable as to the amount of the squint, exaggerated amounts being shown by it as compared with the perimeter test. I have seen the perimeter test show a squint of 10 degrees and the prism test immediately—in the same case—show 25 degrees. The cover or screen test also often gives an exaggerated amount of squint as compared with the perimeter test, especially in those cases where the squint is almost corrected and where binocular vision is present. There is a stimulus and a desire for fusion of the images in these cases, and when the screen is placed in front of one eye it at once eliminates this factor, and the result is the deviation of the eye behind the screen—to an exaggerated degree. With the perimeter test

both eyes are left open and the desire for fusion of the images is not disturbed, and a more correct test is possible. Therefore, in every case where the perimeter test can be made it should be used in preference to any other test.

Hirschberg and Landolt have charts to hang on the wall by which the angle of the squint can be measured, but they are of service chiefly in paralytic squint (which is not under consideration in this paper), and in squint cases where binocular vision exists. In ordinary strabismus these tests are not very satisfactory.

The above tests should be tried in the order given, the perimeter test in all cases where it can be used, the screen test, the tape measure test, prism test, etc. Two or more of them at least should be tried, in order to ascertain accurately the amount of the squint.

NON-OPERATIVE TREATMENT.

This consists in the use of atropin, atropin and glasses, the exclusion pad, the stereoscope, and bar-reading. It should be tried in every case of strasbismus before any operation is undertaken, and should be continued in as long as the squint continues to improve. When improvement ceases by this method then it is time to operate. The different steps of the non-operative treatment are as follows:

1. *The Exclusion Pad.*—This consists in tying a patch over the good eye in order to make the patient look at objects with the squinting eye, which usually has poor vision, especially if the squint is constant, unilateral and of long duration. In this way the patient does not lose the faculty of locating or fixing objects with the squinting eye, and at the same time maintains and develops to a marked degree in some cases, as above quoted, the vision in the squinting eye. In cases of alternating squint, that is, where the patient first uses one eye, then the other, the faculties of vision and fixation are usually good and equal in each eye, being maintained as I believe simply by the use of first one eye and then the other. Therefore, following the plain lesson set by nature in these cases of alternating strabismus, we should, in cases of constant unilateral strabismus, where they can not or will not voluntarily use first one eye and then the other, make them do so by excluding the good eye from vision with a pad a certain number of minutes or hours each day.

2. *Mydriatics.*—A mydriatic, usually atropin, is used in the treatment of strabismus in order to paralyze the accommodation, and indirectly to act on the convergence. For, anything that relaxes the accommodation, relaxes at the same time and within certain limits the converging power of the eyes, the connection between the two functions being intimate.

The strength of the solution of atropin to be used depends on the age of the patient. In young children one-half to one grain to the ounce solution is quite strong enough. In older children (over 4 years of age) two to four grains to the ounce solution may be used. The parents are to be cautioned as to any poisonous symptoms of the drug, as flushed face, dry, hot skin, and dryness of the throat, and instructed to stop its use if these symptoms appear. Where an idiosyncrasy exists for the drug it can not be used at all; then some other mydriatic, as duboisin, must be substituted. One drop of the solution should be instilled into each eye twice a day and this to be kept up for one month, when it should be intermitted for that length of time. This should be repeated two or three or even four or five times according to the progress of the case. In divergent strabismus, atropin is contra-indicated, but may be used to ascertain the refractive error after which it should be discontinued.

3. *Glasses.*—Glasses help to correct convergent strabismus in two ways: 1. They improve the vision by correcting the refractive error, especially if astigmatism is present, if the squint is not of too long duration. This gives a stimulus to use the eyes together. 2. The glasses, by taking the strain off of the ciliary muscle, lessen convergence in exactly the same way as mydriatics do by relaxing the accommodation. Many cases of convergent strabismus are relieved by the use of atropin and glasses alone if taken early. And, if the exclusion pad is used in addition, it greatly increases the chances of recovery without operation.

Usually in fitting glasses I do not use a mydriatic of any kind, but in strabismus cases I always use a mydriatic, because it helps directly to improve the squint and at the same time allows almost full correction to be given the patient to wear; not only this, but as most of these cases are under 6 years of age and can not be tested subjectively, that is, by the trial case and test card, it makes the objective test easier and more accurate.

When divergent strabismus is present in hypermetropic eyes, no glasses should be worn except to correct any astigmatism that may be present, because by relaxing the accommodation they increase the divergence. In myopia and myopic astigmatism the refractive error should be corrected fully, for the minus glasses stimulate the accommodative act, and in this way increase convergence and help overcome the divergence, especially in low degrees of divergence.

4. *Bar-Reading.*—In patients who are old enough, bar-reading is a useful adjunct in making the patient use the eyes together. It consists simply in holding a pencil or some other small object vertically before the eyes, and in front of a page of printed matter which the patient is reading. If the patient is not using the eyes together, but only the good one, when the line of vision in the good eye comes to the pencil the patient will stop reading or skip a word, or part of it, whereas, if the eyes are being used together, no such stop will take place, or missing any letter or part of a word. By persistent practice with this method the patient is often brought to use the eyes together, with effort at first but with facility after practice.

5. *Stereoscope.*—The stereoscope can not be used till the patient is 5 or 6 years of age. Its use gives the greatest stimulus to single binocular vision, that is, true form perception. By using special pictures, especially geometrical figures, as truncated pyramids, the idea of perception of form in three dimensions is given.

There are a number of stereoscopes of special make to be had, but the ordinary stereoscope as bought in the market, if the prisms are removed and plus 6 D. spherical glasses substituted, answers all the purposes for the stereoscopic exercises. Especially is this so if the pictures of Dr. Kroll are used. These can be bought at any good optician's, the whole outfit, stereoscope and pictures, costing but two or three dollars. The patient should be instructed how to use it at the office, then should purchase one to be used at home. There is one sliding picture among Kroll's pictures. For fusing purposes this is admirable. At first the two sides can be brought close together until the eyes are able to fuse them as one; then the distance between them increased until the eyes are brought parallel, or almost so, and still fusing the images. This should be done for

a few minutes at a time several times a day, the muscles not being exercised at any one time to the point of exhaustion.

OPERATIVE TREATMENT.

There is a wide difference of opinion among surgeons as to the best method of operating for strabismus, also as to the proper age to operate. Individually, I think no operation for strabismus, with few exceptions, which I shall presently state, should be performed on children under 4 years of age. I am aware of the fact that not a few operators have operated for a strabismus as early as 2 years of age. This should not be done, but on two conditions: 1, where the squint is congenital, constant and not improved by the exclusion pad and atropin; 2, where false fixation exists. In the first condition I believe the squint is due to fault in the muscle itself, that is, improper development or insertion; and in the second, to marked amblyopia, which is not likely to improve by non-operative measures, but to get worse by delay. After 4 years of age, the proper time to operate is when the non-operative methods cease to improve the condition of the strabismus, but not under six months' time should be considered a fair trial in any case of the non-operative treatment, unless some special reason prevails.

The different operative procedures for the correction of strabismus may, in a general way, be divided into four classes. The technique of individual operators may vary to some extent, but the essential part of the operation remains the same.

1. Simple tenotomy of one muscle in the deviating eye, and later if effect enough is not obtained to perform advancement of the opposing muscle in the same eye.

2. Simple tenotomy of one muscle in the deviating eye, and later, if not enough effect, tenotomy of the like muscle in the opposite eye; if still not enough effect advancement of the opposing muscles first in the deviating eye and then in the opposite.

3. Advancement of the weak muscles in each eye (the external recti in convergent squint and the internal recti in divergent squint), after Landolt's method.

4. Stretching the strong muscles in each eye (internal recti in convergent squint and the external recti in divergent squint) and then tenotomy, after Panas' method.

Various devices for increasing or diminishing the effect of the operation have been recommended, such as a thread extending from one eye to the other and tied across the nose (Gruening) in cases of divergent squint; or a thread extending from the eyeball to the outer canthus in convergent squint after the operation has been performed. But these are only refinements of technique, and may or may not be used according to the desire of the operator.

In the first method of operating, where but one eye is operated upon, the assumption is that squint is a unilateral affection, and, therefore, the operations are confined to but one eye. I believe but a few members only of the profession follow such a procedure now, it being generally conceded that strabismus is a bilateral affection and not a unilateral one. Operations on one eye alone, therefore, should be discouraged, because they are performed under a misconception of the true nature of squint.

The second method of operating is followed by many surgeons, perhaps the majority of operations for strabismus come under this class. The method of performing an ordinary tenotomy is so simple that it needs no description here. Suffice it to say that the effect of a tenotomy may be materially increased or diminished by the extent of the dissection of the capsule of Tenon at the time of the operation. The wider and deeper the separation of the capsule the greater the effect, and vice versa.

The third method of operating was recommended by Landolt many years ago. He advised advancement of the weak muscle in each eye without tenotomy of the opposing muscle.

Of all the different advancement operations, I like best what is known as the straight advancement. It is as follows:

Make a vertical incision about one-half inch in length in the conjunctiva, about one line from the margin of the cornea and just in front of the attachment of the muscle to be advanced; dissect up the conjunctiva from over the tendon of the muscle, then make a small hole in the capsule of Tenon and introduce a hook under the tendon of the muscle, and then a second hook, and expose the tendon of the muscle for about one-half inch by pulling the hooks in opposite directions. Remove one hook while one is left to hold the tendon away from the eyeball so as to introduce three needles with thread attached—in each instance from without inward through the tendon of the muscle about one millimeter or more, according to the effect desired, from the attachment of the tendon—one needle at the upper margin of the tendon, one at the lower, and one through the middle of the tendon. The conjunctiva may be picked up on the needles just before they are inserted into the tendon of the muscle so as to advance it along with the tendon. The tendon is now cut from its attachment. The center needle is inserted into the sclera about two millimeters from the corneal margin, directly forward from the old attachment of the tendon, coming out at the corneal limbus. Then the needles in the lower and upper margins of the tendon are respectively inserted into the sclera below and above and on a vertical line with the central suture. The center suture is tied first, the lower and upper ones at the same time (one by an assistant) so as not to cause torsion of the eye.

Both eyes should be bandaged for fifteen hours; after which time it has been my practice to remove the bandage permanently, putting on iced cloths for one-half hour four times a day to relieve the congestion. In convergent squint if there is an under-effect I instill atropin and have the patient wear glasses; if an over-effect, I leave off the glasses and do not use atropin. Landolt advises to keep the eyes bandaged for a week, the patient in bed and quiet. Dr. Wooton, at the Manhattan Eye and Ear Hospital, who does essentially the same operation as Landolt, follows his plan of keeping the eyes bandaged for a week. Dr. Wooton reports favorable results from fifteen operations, only two being failures. My experience with simple advancement, without tenotomy of the opposing muscle, is limited and unfavorable. In no case was the effect sufficient. In a recent discussion of this subject at the New York Academy of Medicine, Dr. Gruening said he had tried Landolt's method, and had put cases at Dr. Landolt's disposal when he visited this country, but that in none of the cases was the effect of the operation sufficient. The ultimate results by this operation are not satisfactory because of not enough effect.

The fourth method of operating is after Panas' suggestion. He operates on both eyes in every instance. In convergent squint on the internal recti, in divergent

squint on the external recti. The tenotomy is performed in the usual way with this important variation, that the muscle to be operated upon is stretched before cutting. For example, in convergent squint the hook is placed under the tendon of first one internal rectus and then the other, and the eye turned forcibly outward until the cornea is entirely hidden under the external canthus, then the tendon is separated as in ordinary tenotomy. In divergent squint each external rectus is stretched by turning the eye forcibly inward till the cornea is hidden under the internal canthus, then simple tenotomy is performed. Both eyes are bandaged for twelve to fifteen hours, when the bandage is removed and iced cloths applied. In convergent squint, if the effect is insufficient, atropin is instilled and glasses then worn; if over-effect, glasses are left off and no atropin used. In divergent squint, if under-effect, glasses are put on; if over-effect, glasses are left off and atropin instilled.

The immediate result, as a rule, after a Panas operation is an over-effect, varying from five to twenty-five or thirty degrees. This rapidly disappears, however, till within a few days to a few weeks, in exceptional cases months, the eyes become parallel, and in the great majority of cases remain so; many of the cases securing single binocular vision by one operation.

To any one performing Panas' operation for the first time the immediate result is somewhat alarming. I must confess I was reluctant to undertake the operation until I saw the good results obtained by Dr. Roosa in eyes operated upon by this method. Especially was I fearful of over-effect in small degrees of squint. My experience with the operation, however, has taught me, contradictory as it may seem, that in low degrees of squint we are not so apt to get over-effect as in the higher degrees. It was puzzling to me at first to get a satisfactory explanation of this effect—opposite to what was naturally to be expected. After observing a number of cases and investigating the physiology of muscle and nerve stretching the following explanation was suggested: In cases of very marked squint, especially where there is a false fixation, with limitation of motion, where there is contracture and actual shortening of the muscle, the force that it requires to stretch such a muscle until the cornea is hidden in the opposite canthus is considerable, and the nerve fibers and muscle cells may be stretched to such an extent as to cause temporary paralysis, which it may take days, or, in exceptional cases, weeks or months even to recover from. On the other hand, where there is but a small or moderate degree of squint, the stretching does not have the paralyzing effect to near the same extent as in cases with excessive squint.

W. P. Lombard, in speaking upon the irritability of nerves and muscles, has this to say: "The irritability of muscles is likewise increased by moderate stretching and destroyed if it be excessive. Surgically, the stretching of nerves is sometimes employed to destroy their excitability. Slight stretching heightens their excitability, and even quite vigorous stretching has only a temporary depressing effect unless it be carried to the point of doing positive injury to the axis-cylinder and of causing degeneration. As nerves have the power to regenerate, they may recover from even such an injury."*

Again, in relation to the conductivity of the nerves and muscles, Lombard says: "The power of conduction appears to return before irritability, and may be observed first at the end of the third week. Apparently sensation is recovered before the power of making voluntary movements; this difference may well be due, not to any essential difference between sensory and motor fibers, but to the fact that extra time is required for the motor fibers to make connection with the muscles."

It is unnecessary to say that some judgment must be used in determining the amount of force to be used in stretching a muscle. If the cornea can not be hidden in the canthus without causing actual damage to the muscle fibers then it should not be carried so far. Of course, experience here, as in every other operation, counts for much in the successful result. Panas tested the strength of the ocular muscles thoroughly on the dead subject before performing the operation on the living, and found that the muscles could withstand great strain before breaking. Another factor in producing an over-effect in cases where excessive squint exists is the marked amblyopia usually present in such cases. The desire for fusion of the images is not so great in such cases as where the vision is nearer equal in the two eyes, as it often is in lesser degrees of squint. This factor, however, figures in the results obtained after any method of operating for squint, and is not peculiar to Panas' method.

In the cases which have not been successful after Panas' operation, over-effect has not resulted much more frequently than under-effect. Neither has the fear of ultimate over-effect, as predicted by the opponents of the Panas operation, been fulfilled.

There is one other operation of which I have not spoken so far, because I have had no experience with it. This is the knuckling operation of Savage and Valk. In the operation the muscle to be advanced, the weak one, is bared of conjunctiva and capsule of Tenon for some distance back of its attachment. Then a small speculum (Valk's), somewhat like the ordinary lid speculum, is placed under the muscle. A threaded needle is then so introduced that when the thread is drawn taut a knuckle is formed in the tendon, thus shortening the muscle. A longer or shorter knuckle is taken in the tendon according to the effect desired. When the effect is not great enough, Dr. Valk, I believe, performs simple tenotomy of the opposing muscle. Valk claims 100 per cent. of cures by this method, that is, parallelism. I think this too large a percentage to claim for any operation, as no operation yet devised to correct squint has proved entirely satisfactory. Individually, I prefer Panas' method to any other, and believe it will win for itself a permanent place in ophthalmic surgery.

(To be continued.)

* Loc. cit., p. 78.

THE REQUIREMENTS OF MODERN SURGERY.*

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Fifty years ago the surgical operations performed were principally amputations of limbs and operations for hernia and stone, but with the discovery of chloroform and ether and the resulting painlessness of operations, more surgery was practiced. During the next twenty-five years the resulting large mortality in all kinds of operations, even the most simple, prevented patients from submitting to them; yes, even the medical profession would only have recourse to them in extreme cases, and by this very procrastination the mortality

* Read at the Meeting of the Michigan State Medical Society, May 15, 1901.

was larger, to the odium of surgery, and the dread of it was manifoldly increased.

A quarter of a century ago, when Lister called attention to the frequent failures and causes of death after surgical operations and how to prevent them, surgery received a big impetus. When it was clearly demonstrated that wound infection was the trouble in most cases, and preventing wound infection by means of antisepsis, surgical operations could be performed with comparatively little danger. Then the surgeons became bolder and newer fields were opened for surgery; and as we advanced from antiseptic to aseptic surgery, that is to say, instead of killing or destroying the micro-organisms, we prevented them from getting into the wound, another great advance took place. This took another ten or fifteen years to thoroughly understand. So that we might say that modern aseptic surgery has only been practiced for the last ten years, and what a gigantic stride it has made during that time.

If you ask what is modern surgery, I would answer that it is the gospel of cleanliness; that covers the ground. But surgical cleanliness is entirely different from what the laity calls clean; it must be absolutely clean, and some great surgeon has placed in his operating-room a sign which reads: "Nothing is clean that can be made cleaner." Here we have it: Absolutely clean. There must be no dirt or foreign substance come in contact and infect the wound, and here is where the great difficulty lies, the almost impossibility of excluding all kinds of dirt. When we speak of dirt from a surgical standpoint we mean miero-organisms, infection, or the entrance of something into the wound which may cause suppuration, putrefaction, etc.

During the first years following Lister's investigation every effort was made to destroy the micro-organism by chemicals. Then an effort was made to sterilize the air with carbolic sprays, and great attention paid to prevent post-operative infection of the wound by covering the cut extensively with bandages and pads that were impregnated with chemicals. In the course of time, however, it was found that some of these chemicals were injurious and a better way would be to exclude germs instead of destroying them. Thus a gradual change took place, and from the antiseptie surgery we have come to practiee aseptic surgery; that means the prevention of wound infeetion by absolute sterilization of everything coming in contact with the wound.

Here the problem comes and the difficulties, and here also failures are manifested on account of our utter impossibility of absolntely preventing infeetion in every case.

THE PATIENT.

1. The great point in connection with this is the individual to be operated on. In the eourse of time we have found that there are people who are immune against certain diseases; they have a power of resistance. Some person has it, say, against smallpox; others have it against measles. In the southern part of the country many have it against yellow fever. Some have this immunity against certain diseases some time during their life, and then another time they have not. Some seem to have it against one or a number of diseases, and others are so fortunate as to have it against a great many diseases. Yes, everybody has a power of resisting diseases in his own system, but the power is different in each individual. But in the present state of our knowledge, by looking at a person, by feeling his pulse or taking his temperature, we are not able to say in a given case how much power of resistance that individual has. We can to a limited extent judge by the history of the ease and the general condition of the patient, and, in fact, we try in many cases by proper alimentation and treatment to increase the individual power of resistance to infection before we operate on them.

All these are intricate and complicated problems of surgery, and still how much greater is the difficulty in the real operation when we consider, as above stated, the absolute cleanliness. Every layman can see how very difficult it is to carry that out. First the patient himself is very difficult to elean, because the skin, the hair, the nails are swarming with micro-organisms of some kind, and in hundreds of experiments that have been made to elean the skin it has been impossible to do so absolutely, and in the present state of our knowledge comparative eleanliness has been the best we have been able to do. We have minimized the chances of infeetion of the individual himself. There is another point in connection with it; we have found that the danger of infection is in proportion to the amount of infection: in other words, a person is liable to resist the onslaught of a few micro-organisms in the wound; he can take eare of them and destroy them, but when the number is large the powers of the body can not compete. It is like giving a person a teaspoonful of alcohol, which would not affect him very much, but if you give him a half pint, he would be drunk, and if you gave him a quart it would kill him. So that as far as the patient himself is concerned, we are able to get him or her reasonably clean.

THE HOSPITAL.

2. If the patient is elean you can not operate on him that way. The patient must be covered, kept warm, in fact. Some times a great deal of artificial heat is required during the operation to lessen the danger of shock, and, consequently, the patient must have clothing, blankets and covering of all kind. But all these are liable to be dirty. All these may look clean in a household, and the housewife may be the cleanest of women. Everything about the house and clothing, the linen and towels, may be neatness and cleanliness itself, and still all these are liable to be infected and to contain miero-organisms of all kind. That they do has been proven many a time; but this need not frighten anybody. This does not injure or endanger anybody in ordinary everyday life. But with the surgical eye we can see that wound infection can take place, and that it is dangerous to use such clothing, towels and sponges around a surgical case.

We insist on absolute sterilization of everything that the patient has on, of everything that is in the operating-room; this includes tables, chairs, all the basins and bowls and everything that may be used. Everything must be so elean and as elean as the patient is, and as clean clothing as he or she has on. All must be clean: the nurses, who are in attendance, the surgeon and his assistants, and everything that can by the remotest possibility come directly or indirectly in contact with the wound must be elean. The air is liable to carry contagion, although it has been proven that there is comparatively little danger of contamination from the air; but the air can be purified by gases, superheating steam, etc., if necessary, which will seldom be the case.

Considering all these points about the requirements

of modern surgery, anybody can readily see the utter impossibility of carrying out modern aseptic surgery in a private house. Simple little operations where the danger of infection is small, or rather if infection should take place, may delay healing and retard a rapid recovery of the case, but the patient's life is not jeopardized. Thus, simple operations can be performed, of course, in a private house. There will also be severe cases where the patient can not be moved, desperate cases where time is an object and must be subject to immediate operation, which will necessitate their being operated on in their own homes. Certainly, such emergency cases, operated upon at their own homes naturally have their chances for recovery lessened. The mortality in a hundred given cases would be greater than a hundred given kind operated under more favorable surroundings.

If a patient would die in 6, 12 or 24 hours, under all circumstances, he had better be given the benefit of operation at the house, even if the mortality in such cases would be 20 per cent., while in a hospital perhaps only 5 or 10 per cent. No one would think of letting a patient die without trying, simply because all the requirements of modern surgery are not at hand. In fact, even in a private house a great deal can be done in carrying out modern surgery. Clothing can be sterilized in an oven. In other cases micro-organisms can be destroyed by boiling, by soaking them in various chemicals, etc.

Every surgeon understands that what I want to call attention to simply is that the highest and most perfect type of surgery—that is, in the direction of the preliminary preparation of the patient, if that is necessary—the technic, the rapidity of the operation, the lessened danger from shock and the most careful judicious after-treatment of surgical cases can be better carried out in a well-equipped hospital than they can in a private house.

Naturally you will say that there are hospitals and hospitals. This is true, but a hospital need not be large and expensive as long as it is well equipped with the necessary apparatus for sterilizing, well equipped with trained nurses who are enthusiastic in the gospel of cleanliness, and as long as the surgeon is thoroughly competent. I have seen small hospitals in small towns where all the facilities were at hand and the best work was being done.

But here, like everywhere else, the great question of individuality has first place. It depends on the individual who is at the head of it, who manages and who directs it. A good disciplinarian and progressive up-to-date person is required. Otherwise a hospital that should be good may be no better, in fact, not as good as the home of an individual. In a hospital there must be facilities of strictly separating all infectious and contagious diseases from surgical cases.

THE SURGEON.

The third great requirement of modern surgery is the surgeon himself. Although I mention this last, it is not the least; in fact, it is really the principal requirement. The question of individuality always comes to the front, and the power of adaptation to environments of an individual is far greater than the power of environments to shape the course of a person. A patient in perfect health, with the greatest power of resistance, the most beautiful hospital, or the most perfectly arranged operating-rooms, the well-trained nurses and the alert assistants can not compensate for a poor operator.

Before the days of anesthetics there were few great surgeons, because great dexterity and perfect knowledge of anatomy was required. The surgeon in those days was a mechanical genius who had great dexterity, who had to operate very quick; every move had to count; every movement tended to do the operation rapidly; the pain and suffering of the individual was indescribable; it had to be shortened as much as it lay in human power. The slow and slovenly bungling operator did not exist; he soon dropped by the wayside and gave up surgery.

When anesthesia was used and the patient was free from pain, slower and more careful operating was allowable, and, in the course of time, this tendency to slowness and deliberateness has crept into the ranks of surgery more and more. Every slow and slovenly physician who never did any mechanical work in his life, whose hands are like an elephant's foot, whose joints are as stiff as a 30-year-old cow's, considers himself a surgeon, competent to practice surgery. So it has kept on, and to-day with modern clean surgery and the wonderful result and the consequent lessening in mortality, it is still worse.

When it is known how large a number recover after operations, every tyro thinks he can do the same thing. He perhaps sees a surgeon operate from a distance, sees how quick and easy it is done; and thus forthwith he rushes in "where angels fear to tread." He does not see the years of practice and experience that were required; he does not notice a thousand and one details of an operation; he does not see all the preliminary preparations.

In the first place he is a poor diagnostician; he will operate on cases that he should not operate upon; he will operate on them when they should not be. In cases that need operation, he hesitates, he trembles, and the "golden moment has escaped." Many men just out of college rush out to operate, and the more difficult the operation the more anxious they are to do it. They have seen operations from their seats and know a little anatomy; forthwith they are surgeons. Some old practitioners who have practiced a quarter of a century or more, hearing about the wonderful results and the great fees received by surgeons in the medical centers, forthwith buy a new edition of surgery, read up and proceed to operate. Fortunately, some of these, after they have killed a dozen people, see the error of their ways, give up and return to practice. If anyone should hint to these people that they are not competent to practice surgery on account of lack of training, they feel very indignant and they say: "Why, you had to learn. You killed a lot of patients learning this."

What can we say? Those of us who have worked along new lines in the last fifteen or twenty years, who have, so to say, helped to make especially abdominal surgery. We in our ignorance made many a mistake, operating upon many a patient we would not have operated upon to-day; we have had many a patient who died who would not have died to-day, simply because we had to learn and had to do this. The thoughts of this often keep us awake at night.

Because we were obliged to do this in order to open the path for the future, in order to save life, and lessen suffering for coming generations, that does not say that every Tom, Dick and Harry has got to learn this over again, has got to make those same mistakes we have made. We made the mistakes, and we have tried constantly to teach the rising generation of surgeons how

to avoid the mistakes. I do not know of a surgeon in this country who has not constantly tried to show the young man, or the old one, for that matter, who was trying to learn modern surgery, how to do it.

But this takes time, and no one can become a modern surgeon by going to a post-graduate school and seeing a surgeon operate at a distance of 50 or 100 feet. In order to become a modern surgeon he must work directly with the modern surgeon; he must assist him; he must be with him day after day, month after month—yes, year after year, certainly not less than a year. Then he will probably appreciate the difficulties of diagnosis, the difficulty of selecting the right kind of operation, the difficulties of picking out the propitious time and moment for each individual patient. Then he will pick up some of the fine points in the technic, the minutiæ or reason why doing one little thing, or by not doing it, brings success or failure in an operation. Providing also the aspiring surgeon has had the necessary preliminary training.

I once read a paper of what a surgeon should know and it gave all the essentials: That he should be a scholar with a good education, that is to say, he should know Latin, Greek, history and mathematics, and be a good anatomist; know all about signs and symptoms of diseases; know something about chemistry, bacteriology, etc. It was a long story, but the essayist forgot to mention one thing, and that was the principal thing of all. He forgot to say that a surgeon needed a fine Italian hand.

The man who has never done any mechanical work, or who was not raised on a farm, or who was not allowed to make a little sleigh or a baseball bat when he was a boy, or who never worked around in the garden, or played ball or the piano, or who never made pills in a drug store; the man who had never developed a mechanical hand from his earliest childhood, will never be a good surgeon. The man who simply studied all his lifetime and whose father was kind enough to buy him everything from a wagon to a book, who was never taught to draw and to cultivate an artistic eye or develop the sense of symmetry and proportion, that man will never be a surgeon—it is not in the nature of things.

If I read, for instance, in a cheap medical journal, an editorial something like this: "We've quit sending. We do our own surgery, having to provide for our own wife, our own children, ourselves. If we don't know how to do an operation we'll go to the post-graduate schools and learn how, and charge accordingly. If we haven't the skill that comes from experience, we'll get it just as the professor got it, by doing the operation at every opportunity till we become adepts. And who can blame us if we determine to do our own work ourselves? Are we not equally M. D.'s, with equal privileges? This reference of cases to specialists is in many cases unnecessary, anyhow. Very often it is simply because the doctor is too busy to attend to the matter himself. But the real remedy is for him to charge enough to make it worth his while to buy books and apparatus, take special instruction and do the work. Do you have many cases of eye, ear, nose and throat affections? Open your purse-strings. Come to the city and take a post-course; buy the apparatus. It will cost you up to $500, but if you can not make $1,000 a year out of the results you are not much of a business man, and not apt to succeed as a doctor."

It makes me often despair to hear or read such views, but I am consoled with the thought that there are but few members of the profession who would sanction and indorse such ideas.

At the request of many surgeons and physicians from different parts of the state, I emphasize the question of a good surgeon especially, although I object to do it, saying that I can not see the reason why I should always be the objector. But they all insist that I am the very one to do it, as I have passed through all the phases of general practice and surgery, and no one would accuse me of being jealous and envious of the rising rank of surgeons. How much better is an editorial I find in the *International Jour. of Surgery,* which reads as follows:

"We sometimes hear, nowadays, of men who speak of the present rage for rapid operating. Of course, anesthesia has diminished the need for the lightning kind of work and was, in former times, the mark of the good surgeon. The very perfection of our procedures, the care employed in hemostasis, in accurate approximations of divided surfaces, in the application of aseptic dressings that shall also be impermeable to germs coming from surrounding atmosphere, demand an amount of time that would have seemed altogether exaggerated to our ancestors. If there is now a rage for rapid operating, and we can not say that it is very widespread, we must believe that it is a rather favorable indication of progress. Each minute of unnecessary delay increases the possibility of infection, keeps the patient longer under anesthesia, and last, but not least, tends to cultivate in the operator the habit of leisurely, if not idle, operating, that must result unfavorably to his statistics. The most rapid operators we have seen indulge in no unnecessary bustle and hurry. The great secret of their work is that they make no useless movements, that their assistant staffs are thoroughly trained, that every step of an operation is so clear in their minds that each one follows the last with the precision of clockwork. In other words, every operation is studied out and prepared, and every complication that may arise during its performance has been forseen. This sort of work is true, rapid surgery, and if it has become a rage we are only too glad to realize the fact, and to advise all surgeons to cultivate it."

The medical profession is aware how careless the layman is in choosing a physician. They will pick out anybody who has a sign out, who belongs to their church or lodge, who talks most or blows a good deal about himself, without looking up his pedigree, where he graduated, or if he ever graduated, and never inquire about his capacity. If a layman should be careful in selecting his physician, how much more careful should he be in selecting a surgeon. How absurd to let anybody operate who says he can, unless it is known he has had some practice and some experience. The family physician naturally must do some amount of surgery, every doctor has to; but when it comes to special cases, he certainly should not undertake it. Even if he tells the patient that he can do it just as well; that is all nonsense. We all know that he can not, unless he has taken training in a certain direction.

There is not a doctor here that would allow everybody to operate on him for a cataract, or operate on him for appendicitis. There is not a physician here who would let anybody operate on his wife for a papilloma on the vocal cords, nor would any physician present allow anybody to operate on his mother for vaginal hysterectomy, or on his sister for an ovarian tumor. The only fair and honest way is to ask yourself the question, What would you do? Put yourself in his place.

There is another very important point in connection with this, and that is the time to study. A man who is a general praetitioner and has to make many calls can not be a good student and keep up with the progress in all branches. Therefore, when a man gradually emerges from general praetiee to surgery he must devote himself exclusively to the latter. If he attempts to do general practice he will not have time to study; hence, will be a fossil in a short time. In my own experience, where I limit myself exclusively to abdominal surgery, I hardly have time enough to read what is written on this branch of surgery alone and also keep up, to a limited extent, with the general progress of medieine.

Always bear in mind that my remarks refer to special surgery, not simple everyday occurrences, sueh as fractures and injuries of all kind, and the simpler operations; these the general practitioner must attend to. What I am pleading for are so-called cases of special surgery, which generally are not emergency eases, and where there is plenty of time to select the best surgeon for that particular case. I refer to delicate operations on the eye, the most difficult operations in the throat, and the complicated operations in the abdominal cavity.

Finally, you will ask me: "Who could or should be a surgeon?" In answer I will say that he must be a well-educated physician, must have been a general practitioner and a good therapeutician. He must take up surgery early and gradually develop a surgical hand; he must be an assistant of a first-class surgeon for at least a year, where he will see hundreds of operations of various kinds. Such a man may be a good surgeon. He ought to be in some large town, say a county seat, and, as his surgical practice grows, he ought to give up absolutely general practice and devote himself to surgery exclusively, and then his colleagues in the county would support him. Hence the requirements of modern surgery are:

1. A patient brought to the highest state of resistance to microbic infeetion and made as clean as possible.
2. An operating-room, preferably in a hospital, where everything has been made thoroughly sterile. This includes anesthetizer, assistants and nurses.
3. A surgeon who has a mechanical hand and has received a long, thorough training.

A REPORT OF FOUR CASES OF FAT NECROSIS IN CONNECTION WITH GALLSTONES.

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CHICAGO.

The faet that I was able to find fat necrosis in three cases, and to learn of a fourth case in the eourse of two weeks, all of such eases either coming to autopsy or observed during surgical proeedure, would indicate the probability that fat necrosis is not infrequently associated with gallstones, and that there is a necessity for more effort to differentiate gallstones with necrosis from gallstones without it.

So far as our information at the present time would indicate, the only immediate value of such a differentiation would be in the line of prognosis. It is reasonable to eonelude that more accurate and extensive observation would eventually lead to betterment of treatment, either in the matter of improved surgical technique, new surgieal procedure or improved treatment along medicinal lines.

Many authors have written of gallstones as prominent etiologie faetors in fat neerosis, and in lesser measure in pancreatic auto-digestion. The most striking contribution to the literature of the subject is that of Halsted and Opie in the Johns Hopkins Bulletin, for 1901.

The condition is usually unrecognized prior to operation or autopsy. In the case occurring in the serviee of Dr. Herrick, at Cook County Hospital, the elinical diagnosis was cirrhosis of the liver, and the comparatively localized fat necrosis was found at postmortem examination. In the case of Drs. Roehr and O'Byrne the preoperative diagnosis was gallstones, with suppurative choleeytitis. The diagnosis of eomplicating fat necrosis was made by the examination of a speeimen removed at the operation. It was confirmed by postmortem examination. In the case of Drs. Wells, Lewis and Davis, the diagnosis was gallstones, and the complicating fat necrosis was not suspeeted until it was revealed by the operative procedure.

In the case of the Drs. Beck the diagnosis was gallstones, but there was quite a general conviction that there was some morbid entity in the abdomen other than stones. Some of the consultants suggested that there was an appendicitis, and others had noted this vague something without being able to assign a reasonable explanation for it.

At the operation, after the gall-bladder had been drained, the foci in the omentum were observed, while a search was being made for the appendix. The appendix was found to be normal. Some of these foci were removed, and sections of them are shown here. This case proeeeded to a somewhat uneventful reeovery.

It is probable in this case that the presenee of fat necrosis as a eomplication would have been overlooked, both in the diagnosis of the case before operation, and in the diagnosis as made at the time of the operation, had it not been for the fact that it seemed advisable to explore the peritoneal cavity in the direetion of the appendix.

The bearing of this point is this: Is it not possible that a moderate amount of fat necrosis is very frequently overlooked, both in the diagnosis made before the operation and in that made at the time of the operation?

HISTORY OF THE CASES.

CASE of Drs. Davis, Lewis and Wells: A woman, 45 years old, had had several attaeks of gallstone colic during the last eight years; only one of these was assoeiated with jaundice. The last attack of gallstone colie did not seem to differ from the preceding attacks. After the aeute pain had subsided in this ease, there remained a great distress. A feeling that it was diffieult for the patient to deseribe; a painful disagreeable sensation in the upper segment of the abdomen, but impossible of aeeurate localization. After three or four days symptoms of localized peritonitis developed. Five or six days after development of these symptoms the patient was operated. Two hundred and fifty calculi, approximately, were removed from the gall-bladder. The gall duets were explored, but no stones were found therein. There were found adhesions, eomparatively recent, in the upper abdominal segment. The omentum was studded with yellowish-white nodules. These were soft and mealy in consistency. Two were removed for microscopie examination.

The patient seemed to do very well for twenty-four hours subsequent to the operation. Then there eame vomiting and fever, and six hours later, or thirty hours after the first operation, a seeondary one was done, during the eourse of whieh the patient died. Prior to the first operative procedure the pulse ranged from 80 to 100, the temperature was essentially normal, and the only point that attraeted the doetor's attention as out of the ordinary was the general feeling of unrest and the demand for relief from a somewhat illy differentiated something.

Case of Drs. Roehr and O'Byrne: E., age between 30 and 40, large, heavy, florid man, six feet, weighing 240 pounds. For three years he has had often recurring attacks of biliary colic, accompanied by occasional jaundice. The general health between attacks is good. He has been ailing with symptoms of gallstones for the last four to six weeks.

Examination, August 10, gall-bladder was dilated, abdomen tense, stools white. Urine contained bile. Jaundice very marked. Temperature 98; pulse 90. Respiration somewhat irregular, irregularity ascribed to severity of spasms of pain.

On the 11th, condition somewhat improved.

August 12. Stools bile-stained. Vomited less. Vomited matter is bile-stained. Temperature 98; pulse 85. Respiration irregular. Abdomen tense and sensitive. Gall-bladder tense.

August 13 and 14. Condition remained much the same. Abdomen somewhat more tense, temperature going to 100. On the 15th, sent to hospital for operation. Some rise of temperature. Evening of the 15th, passed gallstones with stools. On the 16th, operation was done, and the omentum was found somewhat attached around gall-bladder, and also a generally distributed peritonitis around same. Considerable chocolate-colored fluid in the peritoneal cavity.

Postmortem examination made two hours after death, on the morning of August 18. The wound was found nicely agglutinated. There was two inches of subcutaneous fat. There was no necrosis or hemorrhage in this fat. Just external to the peritoneum was a layer of preperitoneal fat, in which there were a large number of foci of necrosis. The omentum was found glued to the anterior abdominal wall, especially in the region of the incision. It is rolled on itself, and reaches to the level of the umbilicus. It is firmly attached to the intestines. It is greatly thickened, and contains an enormous amount of fat necrosis. Some of the nodules are as large as a quarter of a dollar. There is very little fluid in the abdominal cavity. The intestines are distended with gas, especially the cecum. The appendix is a little external to McBurney's point. There is necrosis in the mesenteric fat. The liver does not come to the free border of the ribs, except at the episternal notch. There is some nutmeg, some fat infiltration. Gall-bladder, surrounded by lesions, comes below the border of the ribs; contains some bile, but is not distended. There are a few gallstones in the gall-bladder, but there are none in any of the ducts. There are a few ounces of bloody fluid in the right hypochondrium—walled off. There is some acute nephritis. There is much necrosis in the perirenal fat. There are fibrous adhesions over the surface of the spleen, which otherwise is normal. The pancreas shows fat necrosis, and hemorrhagic pancreatitis.

The lungs and heart are normal. Microscopically, the liver shows fatty infiltration and bile staining. The kidney cloudy swelling, with hemorrhagic exudation. The pancreas shows extensive extravasation of blood, with fragmentation of cells and loss of staining power.

Cook County Hospital Case: Martin J. P., 59 years old; occupation, laborer. Has been sick ten days. Was admitted to the Cook County Hospital on August 14. Service of Dr. Herrick.

History given on the 15th was: Patient has been sick more or less for last five years. Present trouble: About one week ago he noticed his eyes becoming yellow. Abdomen began to swell, and increased for some days. During this time he had diarrhea; urine contained bile. Has not vomited, but has felt like he wanted to. Is continually regurgitating gas into his mouth. Tenderness over liver. Grows weaker every day. Legs have not swollen up. Has had severe fainting spells. During the last five years the patient has had three attacks like the present. Found no blood in his feces. Has had no great pain, chills or fever. He says he has lost 40 pounds in the last five weeks.

Previous History.—Thinks his father died with same disease he has. Has drank whisky excessively for the last three years; drinking as much as 30 glasses a day.

Physical Examination.—Conjunctiva yellowish, slight superficial hemorrhage. Widening of the walls in the lower portion of the chest. Marked prominence of the abdominal walls. Muscles are tense and dulness in the flanks changes by change of position. The liver is palpable, quite firm and quite irregular, extends four or five fingers below the costal arch. Tenderness on pressure.

Spleen not palpable. Area of splenic dulness increased. Patient died at the end of one day at the hospital.

Notes from Postmortem Examination made five days later.—Lividity moderate, jaundice pronounced, abdomen contains a large quantity of bloody serous fluid, omentum full of fat, found rolled above transverse colon, attached in this situation. Petechial hemorrhages in the parietal peritoneum and occasionally in small intestine. Large intestine displaced downward.

Pleura and pericardium are negative.

Spleen 400 gms. 15x4, surface smooth. Parenchymatous nephritis, bile-stained. Liver 2900 gms., very large left lobe, as large as 28x20x10. Capsule thickened. Subcapsular cysts in dome of left lobe; surface irregularly granular, cut surface same. Gall-bladder 16—7 extends two inches below ribs, large quantity of gallstones and débris escapes. Common duct patulous. Pancreas darker than normal. Small shot-like, yellow, soft masses in substance and vicinity. Stomach shows subacute gastritis.

Microscopic examination of the nodules shows them to be fat necrosis surrounded by a zone of hemorrhagic inflammatory reaction.

Histology.—Microscopic sections were made by me of the cases of Dr. Beck, that of Drs. Roehr and O'Byrne and of the Cook County Hospital. The histologic findings in the nodes in each case were the same.

There was a central zone of necrosis; around this was an area of inflammation, productive and exudative as well as markedly hemorrhagic in character. The changes in the central zone were as follows: The action appears a selective one; that is to say, the connective tissue had been partially spared. The primary changes were in the fat. The fat had been so changed that it was no longer soluble in the agents employed in the hardening, clearing, embedding and mounting of specimens. In ordinary specimens made from an area containing fat, microscopic examination will show no fat, other than the quite characteristic area from which the fat has been dissolved. In this specimen the fat was not dissolved, but appeared as a mealy débris which took the hematoxylin stain with a rather diffuse blue. The appearance is similar to that which is given when an area of early calcareous deposit is stained by hematoxylin. The area around this showed a large proportion of blood free in the tissue, considerable numbers of wandered and locally proliferated cells. In none of the specimens was the process old enough to give us an idea as to what would have been the ultimate fate of these areas.

CASE OF DRS. BECK.

Mrs. M. E. had been confined early in May, 1901, giving birth to a healthy child. During the five weeks that followed she was entirely well. On June 20 she developed some pain in the abdomen, but unattended by jaundice or by fever. Between this date and August 3 she had several attacks, in which there was pain in the abdomen. In one or two of these there was a little temperature, and in one or two there was some jaundice. On June 21 she passed a calculus, having the appearance of the half of a split pea. On July 28 she passed another, of somewhat the same size and shape. The attacks in June were less severe than one which came on July 25. In this one there was greater pain, tenderness, greater restlessness, more fever, and more jaundice. A peculiarity of this attack was that on one day there was pain, a sense of resistance, and some edema in the right iliac fossa. On the next day the pain was greatest in the right hypochondriac region, and on the next day the greatest pain and tenderness was located on the left side of the abdomen, not very far from the region of the spleen, and when pressure was made on the right side, the tenderness was referred to this area on the left side. In this attack there were many of the

symptoms that are spoken of as those of shock; projectile vomiting, greater jaundice, greater pain and tenderness, and more fever. For a more detailed report of this case, I refer you to the article of Dr. Beck.

On August 3 the patient was operated on. The operation being such as to drain the gall-bladder and explore the region of the appendix. All over the peritoneum were seen white paper-like dots and lumps. There were some adhesions around the very markedly changed omentum and a hemorrhagic condition of the pancreas.

The gall-bladder was incised and the stones were removed, and some of the white nodules were removed for microscopic examination. No gallstones were found in the common duct. The patient progressed nicely; there was bile in the stools and very little bile drained from the wound. Several days after the operation the bile ducts seemed to have been obstructed and there was colicky pain in the region of the gall-bladder, followed by a large discharge of bile from the fistulous opening.

On one or two occasions while the gall-bladder was being washed, the amount of fluid was a little in excess, and pains of this character appeared and lasted for a few moments. The patient is now entirely well and free from symptoms.

It is to be noted that in each of these cases gallstones were present, and prominent. In none was there a stone in the common duct, or in the pancreatic duct. In Drs. Beck's case a small stone had evidently been fractured, and one fragment was not found at the operation, and some colic arising a few days after operation was supposed to be due to this stone having located in some of the ducts. This complication was transitory.

In the Roehr-O'Byrne case, the stone was passed by the bowel before operative procedure, but the necrosis was already under way.

In Halsted and Opie's case the stone obstructing was found with great difficulty. In each of the postmortems that I made, the stomach, duodenum, pancreas, liver and ducts were all removed together, and the ducts were opened up while yet attached at both ends, so that I am certain that no obstruction existed at the time of death. All of them, with the exception of the Cook County case, had given a history of gallstone colic as a beginning of their attacks.

Let us consider the anatomy of the bile and pancreatic ducts.

ANATOMY OF THE PANCREATIC AND BILIARY DUCTS.

The hepatic duct and the common duct are approximately three times as large as is the cystic duct; besides, it does not have the transverse folds that are to be found in the cystic duct. Therefore, a stone escaping from the cystic usually passes the common duct.

About three-quarters of an inch from the intestinal wall the common bile duct comes in contact with the pancreatic duct. These run side by side through the outer fibrous coat of the duodenum, through the muscular tunic, passing through these coats quite obliquely and running from three-quarters to one and one-half inches through the submucosa. Commonly in the submucosa the two ducts join, making the enlargement called the "diverticulum of Vater." This pierces the muscularis mucosa again obliquely, pierces the mucosa obliquely, in which layer it is somewhat constricted, and empties on the mucous surface from the summit of a small elevation. This is the rule of arrangement, but there is great variation in it. Occasionally it happens that the two ducts open in the intestines by separate openings. There is a fair amount of variation in the distances from the intestinal opening to the point of fusion of the two ducts. It is to be noted that for over two inches the two ducts are either fused, or else in such close contact as that a stone greatly distending the one would obstruct the other to a greater or less extent.

If we allow the possibility that pancreatitis and fat necrosis can follow an obstruction in the duct common to the pancreas and the liver, or even to the common bile duct, after it has reached the muscular wall of the intestine, and remember the frequency of stones in the gall-bladder, we wonder why it is that fat necrosis is not immeasurably more frequent than it is.

For an explanation of this infrequency we have two anatomical facts. The common bile duct is three times as large as is the cystic duct, and the stones having escaped from the cystic duct are expected to pass down the common duct without further obstruction.

The second anatomical consideration is the very great frequency of accessory pancreatic ducts. In a study of 105 anatomical specimens made by Schirmer, some attempt at a second duct was found in all of the cases but two. A separate duct arising from the main pancreatic duct, the duct of Wirsung, and running into the duodenum about one and one-half inches above the orifice of the main duct, was found 56 times. Or, in other words, in this study of 105 cases, a duct capable of draining the pancreas, and at the same time not subject to stoppage by a gallstone, was found in 53 per cent. of the cases.

We conclude that a gallstone may lodge in the bile duct below the point at which the pancreatic duct empties, and in consequence the pancreatic fluid may be dammed back into the pancreas and in addition bile may regurgitate into the pancreatic ducts. The regurgitation of the bile can depend on the variation in the pressure in the pancreas, in the liver and the gall-bladder, and in this regurgitation assistance may be lent by an accessory pancreatic duct. If the liver continues to secrete and bile can not be emptied into the intestine, and if, at the same time, an accessory pancreatic duct was draining the pancreatic secretion into the intestines, it would only be a little while until the flow of bile would be from the bile ducts through the pancreatic ducts into the substance of the pancreas.

On June 9, I made a postmortem on M. D., in the Cook County morgue. This man had died from syphilis of the liver, lung and some other organs. His prominent symptom was persistent vomiting. The stomach and esophagus were bile-stained and the pancreas was bile-stained right to the tail, and there was a tenacious, gelatinous material in the ducts throughout the pancreatic gland. The process was recent, and no necrosis was found either in the pancreas or in the adjacent fat. The only explanation of the bile-staining in the pancreas was the change in the normal distribution of pressure by reason of the change in the direction of muscular peristalsis. Whether necrosis would have ensued in this case I am not in position to say.

Authorities are fairly well agreed that something more is needed for this process than the simple presence of pancreatic fluid. This something is spoken of as lowered vitality, and is ascribed to arteriosclerosis, spasmodic ischemia, etc. Chiari especially holds to this view. The experiments of Flexner, Opie, Fitz, Katz and Winkler are, if carefully studied, confirmatory of this view. In most of their work they tied the pan-

creatic duct with such care as to avoid injury to the pancreas as much as possible, yet the length of time that the experiment lasted—twenty to thirty days—would mean necessarily lowered vitality in the pancreas.

Chiari believes in the existence of two processes: fat necrosis due to a fat-splitting ferment, steapsin, and pancreas and other proteid digestion caused by trypsin. He believes that these processes can exist alone, or either can exist without the other. Flexner's views are, in the main, confirmatory. He adds a third, though superimposed, bacterial infection. Blume suggests that in auto-digestion of the process the sequence is, 1, necrosis of fat islands in the pancreas; 2, leakage of pancreatic secretion into these islands; 3, digestion of the proteids of these areas, and diffusion to new areas.

The distribution of the lesions is somewhat suggestive. Generally speaking, the digestion is limited to the upper abdominal segment. Frequently it extends well over the abdominal cavity. Occasionally it has been found as far away as the bone marrow.

Benda suggests that fat necrosis is frequently present, but is overlooked. He suggests an infiltration method to distinguish such necrotic zones. I did not get results in these cases with that method.

The localization in my cases was as follows: In the case from Cook County Hospital the necrosis was limited to the immediate vicinity of the pancreas.

In the Wells and Beck cases it was probably quite well distributed. In the Roehr-O'Byrne case the necrosis extended beyond the limits of the peritoneum. It was found in the preperitoneal fat of the anterior abdominal wall, though not in the subcutaneous fat directly over it. It was found in great abundance in the perirenal fat. It is probable that the pancreatic fluid finds its way into the peritoneal cavity, and is spread along the surface of the peritoneum. It passes through the stomata of the lymphatics and traverses the membrane, and appears in the neighboring fat. Opie records a case in which the pancreatic duct was tied off for twenty-eight days before the animal was killed. On postmortem, amongst other necroses was found some in the epicardial fat. Flexner reports a case in which the epicardial fat was involved. It is possible that the ferment traversed the diaphragm, went into the mediastinal nodes, and thence regurgitated into the epicardium. It is more probable that the route was directly through the diaphragm into the pericardium. The ferment seems to be easily decomposed, else considerable concentration is required, for there are very few instances in which there is evidence of blood extension, or even of distant transmission by lymph route.

The diagnosis of this condition presents great difficulties. It has been diagnosed before operation once in Chicago that I know of, and perhaps a dozen times throughout the United States. Let us study the symptoms in these cases.

Temperature.—A study of the range of temperature in these four cases would indicate that the temperature would probably give us but little information on the subject. In two of them there was a fever; in two there was none.

It is to be remembered, however, that the diagnosis has to be made from gallstones, and in each of the cases there was enough temperature to indicate that there was something the matter other than gallstones. In the history of the case of Dr. Beck the temperature is given as high.

In the case of Drs. Roehr and O'Byrne the temperature did not exceed 100 until the time of operation. After the operation it went to 102.5 and 103.5 on one or two occasions, but running generally in the neighborhood of 101, and rising in the last hours of life to 107, and probable higher.

If the temperature comes on during the course of gallstones, we must think of suppuration or other like illnesses, as well as fat necrosis. Usually in these cases the pulse was more rapid than the temperature would indicate; for instance, a temperature of 98.5 or 99, and a pulse of 95, and this at a time when no stones were passing, and the pain was not considerable enough to send the pulse up at all.

When I saw the case of Drs. Roehr and O'Byrne, the pulse was a prominent feature, being not only rapid, but running, and accompanied by profound shock. For example, with a temperature of 102, the pulse was 128.

Pain.—In each of the cases the pain, both as to origin and as to quality, would suggest something besides gallstones. It is difficult to describe it in any of the terms ordinarily used in the description of pain, and so the terms, distress, painful sensation, and something wrong, come to be used. There is generally tenderness that is sometimes acute, but is more frequently covered up. As is seen in the case of Dr. Beck, the tenderness may shift, in this case having been on one day in the right iliac region, and the next day in the left.

Fluid.—It is probable that the amount of extravasated blood would never be large enough to furnish any diagnostic clue. In the Cook County Hospital case the abdomen was filled, but the presence of the obstructive biliary cirrhosis would furnish an explanation for that. In the case of Drs. Roehr and O'Byrne, at the operation, fluid was found in the abdomen, but this had disappeared at the time of the postmortem examination, three hours later, with the exception of a small flocculated mass.

Nervous Unrest.—Halsted and Opie have called attention to the difference in the behavior of a patient with fat necrosis complicating gallstones, from that of simple gallstones. The patients are restless, moving about, having a sense of something impending, and ask to be relieved of a something which they do not themselves understand and can not clearly locate; when the patient is simultaneously suffering from gallstone colic, the sharp cutting pains, and the profound shock of the latter condition would completely mask the milder sensations of the first condition.

Lividity.—In only two of these cases did I see the patient. The Cook County Hospital case was seen five days after death, and at that time it was golden-yellow from jaundice and this masked the lividity considerably.

In the case of Drs. Roehr and O'Byrne, the lividity showed some twelve hours before death, as well as at the postmortem. He was breathing quietly in a well ventilated room, with a heart force amply sufficient, and yet the face was markedly livid. I have no observation on the point of Opie and Halsted as a special turgescence in the epigastrium. The epigastrium in this case was covered by a surgical dressing, which may have prevented duskiness from appearing.

In making a diagnosis of fat necrosis there are two conditions that must be borne prominently in mind. Uncomplicated gallstones or gallstones with suppuration of the cyst and acute intestinal obstruction. In differentiating fat necrosis from gallstones, we find the following points: In fat necrosis the pain is generally located in other regions besides that of the gall-bladder. There may be tenderness and pain in the gall-bladder and over

the liver, but in addition thereto there is tenderness in districts somewhat removed. Occasionally this pain and tenderness in fat necrosis is limited and remains in the same vicinity, but more frequently it either shifts about or is never capable of being definitely located. Quite frequently the sensation is not one of pain, but a general uneasiness and a sense of discomfort most prominent in the epigastric region though spreading to other areas. In fat necrosis there is more liable to be temperature than in uncomplicated gallstones, but the temperature is no more prominent than it is in gallstones with pus infection of the gall-bladder. The pulse is usually more rapid in fat necrosis than it is in gallstones, except it be the pulse of shock, which, in a case of gallstones, is not continued for any length of time. In fat necrosis there is a duskiness that we do not get in gallstones. This duskiness, in some cases, approaches a lividity. Halsted and Opie have called attention to a passive congestion or deficient oxidation in the epigastrium in cases of fat necrosis, and this symptom calls for further in-

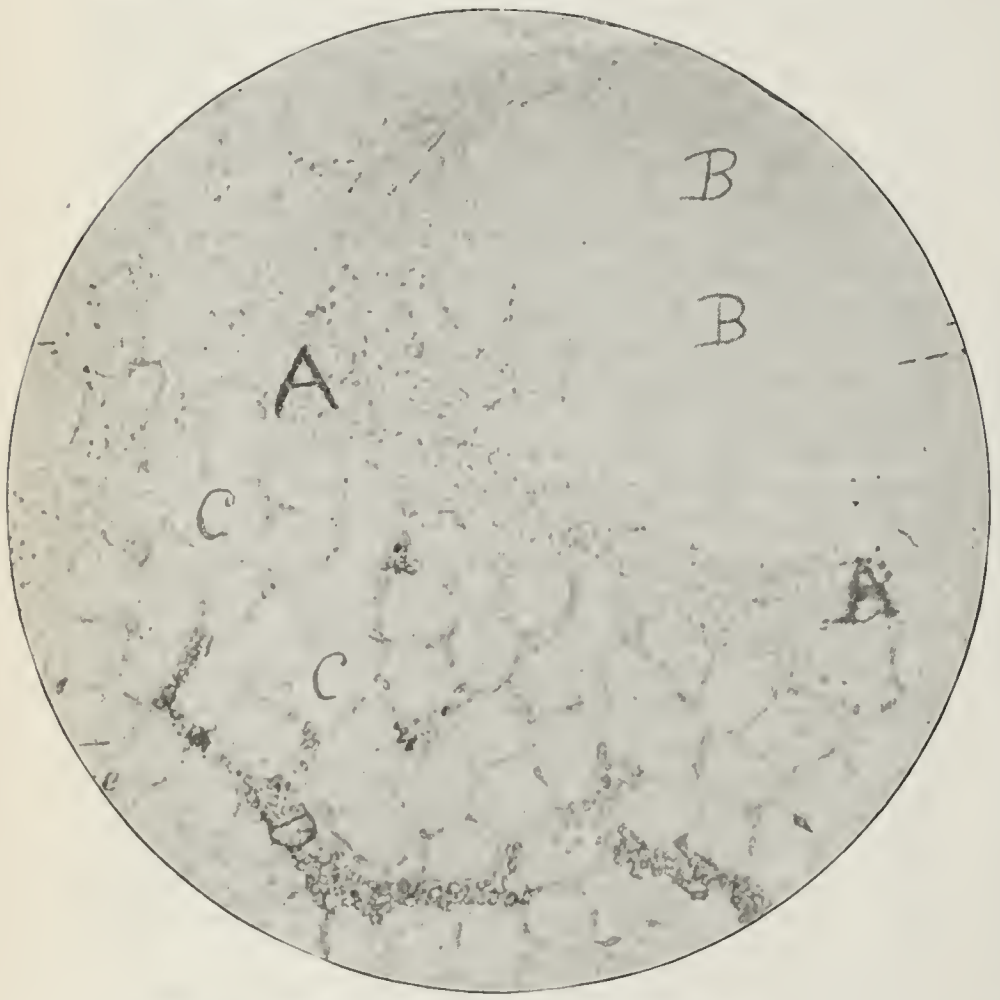


Fig. 1.—Drs. Beck's case. An area of fat necrosis surrounded by an hemorrhagic inflammatory zone.

A. Inflammation. B. Fat necrosis. C. Normal fat. D. Blood.

vestigation, and finally there is in the bearing of the patient, his mental state, the general unrest, an indication that there is something more the matter than gallstones.

We are to bear in mind that very frequently our diagnosis is to be made between fat necrosis and the soreness that remains after an attack of gallstone colic and not between fat necrosis and the acute colicky condition. The persistence of this uneasiness, this pain, this tenderness should be suggestive.

The second condition with which fat necrosis is very frequently confounded, is acute intestinal obstruction. In this diagnosis assistance is lent by the history in the article in *Progressive Medicine*, written by Einhorn; these statements occur: "In most cases (of fat necrosis) described in the literature there was a history of repeated attacks: of a habit of indigestion. The attack which culminates in the disease in question is often one of several not differing in its inception from others already recovered from, except in its severity and persistence. In intestinal obstruction the vomiting is usually more prominent, more persistent and not infrequently is fecal. Occasionally peristalsis can be made out through the abdominal wall. In fat necrosis the vomiting is usually not very prominent, not very persistent and is never fecal. The intestines are quiet rather than otherwise. In each there is liable to be constipation, but the constipation will probably be more marked in intestinal obstruction than in fat necrosis. In each there will be pain, but of an entirely different character. The tenderness of fat necrosis is much more extensive, widespread, less localized than is that of intestinal obstruction. In each there is shock, but shock in fat necrosis does not approximate the shock of intestinal obstruction except the pancreatitis be distinctly of the hemorrhagic variety in which set of cases that feature completely masks the clinical picture. In no one of these cases would intestinal obstruction have been suggested.

FAT NECROSIS FROM A SURGICAL STANDPOINT.

CARL BECK, M.D.

CHICAGO.

The information which we now possess in regard to fat necrosis is principally the result of the study of postmortem findings and extensive experimental work on the lower animals. On the living subject it was discovered but a limited number of times, during operations. The cases usually terminated fatally. Thus far only two cases have been recorded in the literature which recovered from this affection, although a great many cases might have recovered spontaneously without having been discovered.

Having had the good fortune to observe a case which did not terminate fatally, I am prompted to publish my observations, trusting that my remarks will add some to the knowledge of this subject. The history of the case is as follows:

Mrs. M. E., 26 years old, mother of two healthy children, had always been in good health, with the exception of an attack of jaundice six years ago, which followed an ocean trip. The jaundice was very marked, and lasted three weeks, but apparently left no permanent sequelæ. Three weeks after her last confinement, about June 1, 1901, she was attacked with a severe pain in her stomach, which lasted one day, and was relieved by injection of morphin. No jaundice; no temperature. Two weeks later another similar attack followed; pain most severe in the right hypochondriac region, radiating to both shoulders. This time it persisted for nearly thirty-six hours, but gradually disappeared. No jaundice: no temperature.

On June 20 the patient had a severe chill, vomited four times in rapid succession, and had a severe pain in the right hypochondriac region. Morphia gave slight relief. Temperature normal; no jaundice.

June 21, temperature rose to 102.4; pulse, 96.

June 22, temperature, 101; pulse, 90. Pain very much reduced. The patient having had no passage for three days, in spite of cathartics, a high rectal injection, with fair result, was effected, but no stone was discovered in it.

June 23, temperature, 99.4; pulse, 90; bowels moved, but no stone was discovered.

June 24, temperature normal; pulse normal. Another passage was produced, and this time a calculus the size and shape of a split pea was found in it. It was a fragment, however, probably half of the stone, and several facets were distinctly visible on it. From this day on, the patient was apparently well, until a month later, when, on July 25, she

was attacked by a biliary colic. It began at 5 p. m., and before midnight it was so violent that the patient begged for more morphia after three-eighths of a grain had been injected. She had a very restless night, and in the morning for the first time we found the patient slightly jaundiced. Urine contained bile.



Fig. 2.—Case of Drs. Roehr and O'Byrne. A loop of intestine with small nodules of necrosis in the mesentery. Lines show some of the nodules.

Temperature rose to 99.6; pulse, 92.

July 26, the temperature rose to 101.2; pulse, 100; and the patient complained of pain in the entire abdomen, especially,

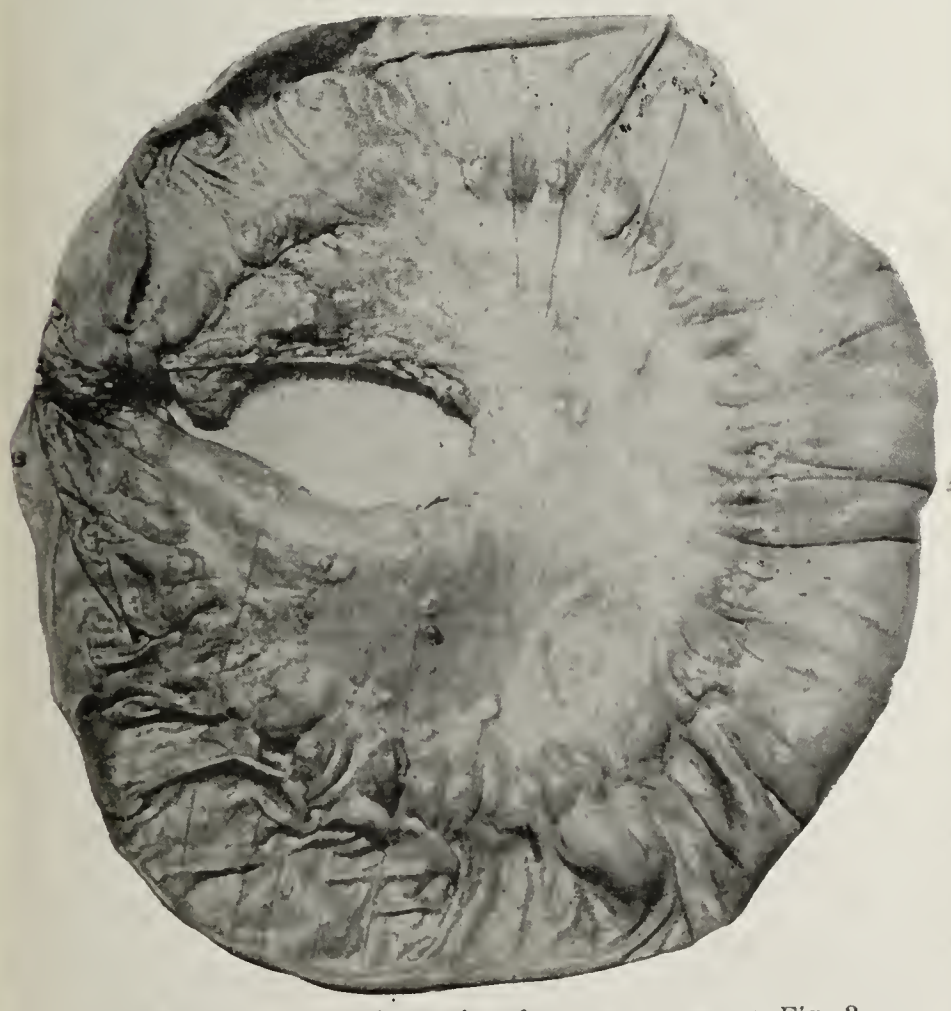


Fig. 3.—Another illustration from same case as Fig. 2.

however, in the right inguinal region. At this time the pain in the region of the gall-bladder, however, was lessened, so that palpation was possible.

July 27, the pain in the appendix territory seemed to increase. There was rigidity and sensitiveness on pressure. Temperature, 101.5; pulse, 104; jaundice very much marked. Urine dark; stools very light color, but contained no stone.

July 28, tenderness still present; temperature, 100; pulse, 96. On straining the stool, another stone, a half like the first time, was found. It would appear that inasmuch as two halves of a calculus were found, that in all probability these two were the parts of one stone, but on close examination it was evident that they could not have been parts of the same stone, and that each had to have its missing half somewhere in the bowel or gall ducts.

July 29, temperature returned to 99; pulse, 88, and the pain was also very much lessened. Jaundice also diminished.

July 30, temperature and pulse became normal; tenderness disappeared, and while we were commenting on the great change for the better, a sudden and most severe pain in the right hypochondriac region seized the patient, projectile vomiting was accompanied with the same, and after one hour the pain increased to such severity that we had to resort to chloroform anesthesia, three-eighths of a grain of morphia hypodermically having failed to produce any appreciable effect on the patient's suffering. The pain in the entire abdomen increased: there was marked tenderness, but the most sensitive point was on the left side, just below the spleen. By pressing in the region of the appendix, the pain was felt on the opposite side a little higher than the umbilicus.

On August 1, condition was not changed; temperature, 100; pulse, 92; patient vomited three times, and was cyanotic, especially around the nares and chin. In this condition she was transferred to St. Joseph's Hospital, a distance of about one mile, for operation.

There was no doubt that we had to deal with a case of gallstones, for stones were found in the stools; but we were certain that some additional pathological condition existed. The infiltration and paroxysmal pain in the right inguinal region suggested appendicitis one day, but it shifted to the opposite side the next day, leaving its former site comparatively free. How was this to be explained? The uterus and adnexa were normal, so that we excluded the pathologic condition from these sources. How is the surgeon to approach a case of this kind? Had I exposed the gall-bladder first and found gallstones in it, in all probability the fat necrosis would have escaped our notice. Having found one lesion which partially accounts for the symptoms, we are inclined to be satisfied and make no further search.

I decided first to explore the abdomen through a median incision. On opening the peritoneum, I was surprised to find the omentum as well as the peritoneum of the intestines and mesentery studded with areas of white spots, from the size of a pinhead to 5 millimeters in diameter. They were not round, like tubercles, but angular, flat, and somewhat depressed. Their color was white, which reminded one of the sprinkling of lime. At first sight I thought I had to deal with tubercular peritonitis, but a portion of the omentum was excised for microscopic examination, and it proved to be fat necrosis (Fig. 1).

In places where these necrotic areas were numerous were adhesions, and this was especially marked in the left hypogastric region and in the region of the appendix, but the appendix itself was normal. The abdomen was now closed and a separate incision was made over the gall-bladder. On opening the same two barrel-shaped stones, the size of large hazelnuts, and several small stones, among them one fractured half, corresponding to the one passed some days previously, were found. The common duct was examined and found free. The region seemed suffused with blood, so that we thought there was some hemorrhage. The gall-bladder was drained in the usual manner.

The after-treatment consisted in absolute rest to the upper digestive organs. No food or medicine was given by mouth for nine days. The entire feeding was done per rectum, and was tolerated admirably, and kept the patient in a comfortable condition. The daily amount of nourishment was 32 ounces of milk, 6 whites of eggs, and 10 grams of somatose. The draining of the gall-bladder was purposely kept open for a long time to relieve the ducts. The patient made a good recovery.

The observation of one case does not permit one to draw conclusions, but it will teach us something.

It has been remarked that gallstones have some causal connection with fat necrosis; at any rate, it is remarkable that they are so often associated. Therefore, it is advisable to watch for cases of fat necrosis and biliary colic. Certainly, the etiology can not be so simple as the hypothesis of some experimenters would indicate. A gunshot wound of the pancreas has caused extensive fat necrosis within thirty-six hours of the accident.

Clinically, diagnosis is at present almost impossible, if one will not include the possibility with every abdominal lesion. The symptoms are so indistinct that the discovery of it will come as a surprise. I thought I would recognize hereafter every case, but only a week ago I made the diagnosis of intestinal obstruction from a large umbilical hernia in a lady 74 years old. Upon opening the abdomen we found gall-bladder and pancreas necrotic, and abscess and fat necrosis. The patient died twenty-four hours after the operation. She had had no symptoms of gallstones. The shifting pain of the abdomen, the severity of the pain, which is not easily subdued by narcotics, and required chloroform in our case, the lividity or cyanosis, seem to be most suggestive in the diagnosis.

Pathological diagnosis is easy for those who have seen the condition once. The color and the shape of the necrotic areas make their recognition positive. The prognosis, according to the statistics, is very bad, but it may be that some recoveries have been overlooked.

As to the treatment, the principal points are these: We must be positive that there is no obstruction left in the gall ducts before closing the abdomen. If we regard the obstruction of the common duct as the cause of fat necrosis, we must remove the obstruction at once, and not be satisfied with simply draining the gall-bladder, or the fat necrosis will progress and kill the patient. Necrosed portions of fat, as my case proves, are likely to heal, so that in the necrosis itself, if not too extensive, there lies not the greatest danger.

Of the after-treatment of such cases, I regard it as essential to put the entire upper digestive organs to rest for at least a week, or longer, if possible.

Very Early Sign of Stenosis of the Pylorus.—Bouveret calls attention to a sign of stenosis of the pylorus which occurs in the very earliest stages, and may reveal the existence of cancer of the pylorus, while anorexia is slight and before vomiting or tumefaction have appeared. Undulation of the epigastrium is noted in the advanced stages, and is due to a clonic spasm of the gastric wall, while the new sign he describes is a tonic spasm. (*Sem. Méd.*, April 3.) If the patient reclines, the upper portion of the epigastrium is more protuberant on the left side, and is resistant on palpation. The phenomenon appears as if a rubber bulb under the skin were inflated for a few moments and then subsides as the air is expelled. This intermittent tension is never so pronounced as the epigastric undulation, and occurs only during the first few hours after eating. The two signs may blend together during the transitional period.

THE TREATMENT OF TYPHOID FEVER IN CHILDREN.

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The writer intends to advance nothing new nor original in the treatment of typhoid fever in infancy, but rather to chronicle those remedies and measures which have, in a somewhat limited experience, proven most valuable in the care of these cases. Some time ago the occurrence of typhoid fever in infancy was denied by many authorities, but numerous cases have been recorded by competent observers in the last few years, in which it has occurred in very young babies and many in children under 10 years of age. Its frequency then in infancy and childhood is generally acknowledged.

In watching the cases of typhoid fever in children coming under the writer's observation, the futility of attempting to care for them without skillful and careful nursing has early been a forcible conclusion. Absolute rest in bed in the recumbent position is the first essential in the treatment of this disease and every one familiar with children knows that this is only obtainable by the closest scrutiny and care. The little patient should be confined in bed and not allowed to be held in the lap, rocked or handled. This frequently is not possible without the assistance of a skilled nurse, to whom must be given the entire charge of the little patient, even to excluding the mother and family from the room if this quiet and rest is not otherwise obtainable. It has been our misfortune to have some spoiled and peevish children under treatment and it has never failed to happen that under the care of a nurse exclusively, the worst would be tractable and obedient. This is difficult of explanation to most mothers but not of demonstration. In such cases the attending physician must be despotic and autocratic, his patient's life depends on it. Where the child is tractable and good, and the mother has other children and other duties, the skilled nurse is more essential, as a child with typhoid needs the undivided attention of one nurse or attendant.

The treatment of this condition in childhood can well be divided, for consideration, into the dietetic, the medicinal, the hydriatic and hygienic. The dietetic treatment is a most important division,—the kind and quantity of food being a difficult problem in many cases. Milk is not suited for every case as an exclusive diet throughout the entire course of the disease; the curds, which form in larger masses than in health may, and most frequently do, act as an irritant to the inflamed area of intestines, doing the same damage that may result from solid food. If milk is the only food which can be given it must be carefully modified, a reduction being made in the percentage of proteids for children even 10 years of age. This can be easily accomplished by any of the many methods of home modification of milk. If the animal broths are given the stools are apt to be more numerous and are always decidedly more offensive than when other diet is given. These broths are not well borne unless, after having been made, they are allowed to cool and the fat is skimmed off before they are reheated and administered. The writer has had excellent results with the administration for a considerable length of time, of some of the many concentrated foods now on the market. The alternation of milk, broth and concentrated food is a

most excellent scheme. To older children butter-milk or kumyss is acceptable, but never will they be taken by young children.

The time of feeding and the quantity to be given are points to be decided only at the bedside of the individual patient. During the active stage of the disease in children, as well as in adults, I have found that but few ask for nourishment, and it is even more necessary to carefully watch the condition of the stomach in the child than the adult. Any undigested food in the action is a danger. If curds appear and milk is the chief article of diet, cut down the quantity, diminish the proteids and lengthen the intervals between feedings. To a child of 5 years, 20 to 30 ounces of milk in twenty-four hours is sufficient and he can get along with much less. Watch carefully the tongue, distension of the bowel, condition of the movements, and regulate by them the kind and quantity of food. Just here it might be well to discuss the importance of a free but proper use of hydriatic measures. The beneficial results from the internal and external use of water are seen more forcibly in children with typhoid than any other condition we have seen. Children take water internally with more freedom and less objection than do adults, and the amount which can be administered should be unstinted; the more the better. However, many patients will not take a sufficient quantity and by a sufficient quantity we mean at least one and a half to two pints in twenty-four hours. The necessary amount can be administered in the form of a saline enema into the sigmoid, the hips being elevated and the anus held to cause its retention. The rectum remains tolerant of this manipulation for many days, even when it is found necessary to repeat these enemas every day.

As to baths, we are firm advocates of their employment throughout the course of a typhoid. It should be put down as one of the axioms in the treatment of this disease that medicinal antipyretics should never be given to control the temperature of a child with typhoid; water is invariably the best antipyretic. It has been impressed upon me, however, that no set rule can be laid down and closely followed as to the frequency of the bath, the temperature for which it is to be given, the temperature of the water, whether a tub or sponge-bath, or its application in the form of a wet-pack. Should the temperature resist a cold immersion bath, a sponge-bath or a wet-pack, it will frequently be found that a cold colonic flushing will bring about the required result. Very frequently we find that warm or tepid sponging or full bath will act much better, with less temporary shock, and control the temperature longer than a cold bath used in any manner. I have on more than one occasion carried a child through a moderately severe attack of typhoid with no internal medication whatever, depending upon hydrotherapeutic measures exclusively.

This brings us to a consideration of the medicinal treatment. No regular routine treatment can be outlined, but one thing is certain, it is not possible to abort typhoid in a child, nor in adults, and the treatment is largely symptomatic. The less medication the better. We have seen but little benefit derived from the so-called antiseptic treatment and the patient is often annoyed by having to take medicine, food, water, etc., at such frequent intervals. Palatable prescriptions are of great importance in treating children and those drugs which are capable of being disguised are best chosen. The mouth should receive careful attention, the teeth being frequently cleansed of the sordes. Oral sepsis may lead to many complications in a child already depressed from the typhotoxins. This may be prevented by the use of mild antiseptics in a menstruum of glycerin acidulated with lemon juice, to which may be added a few drops of myrrh. The mouth should be washed after each feeding, especially when milk has been taken. For the diarrhea which is frequently met, bismuth subnitrate and tannalbin have given satisfactory results in the writer's hands. They are well given with aromatic syrup of rhubarb—6 minims to each teaspoonful. When there is much intestinal distension, and this symptom I have seen occur while intestinal antiseptics were being administered, this condition is best met by the use of turpentine. At best turpentine is difficult to disguise and, when impossible to administer it by the mouth, great good will be derived by the employment of turpentine stupes to the abdomen. These, when renewed frequently and applied as hot as can be borne, will greatly relieve the distension as well as the abdominal pain which may be quite severe. High enemas of normal saline solution, allowed to drain out through the rectal tube *in situ,* give some relief when the gaseous distension is of the lower bowel principally. In the flagging heart so often seen late in the disease, strychnia is the sovereign remedy and it is borne well in large doses by children. It should be given as often as every four hours at least, through the twenty-four. Whisky should be reserved until late and when given it should be with regularity and in a considerable sized dose.

To sum up, then, the treatment of typhoid fever in children: feed carefully; medicate cautiously; nurse vigilantly; bathe frequently; and give plenty of water internally.

The Blood Pressure in the Treatment of La Grippe.—Three diseases are characterized by abnormally high arterial tension—malaria, scarlet fever and cholera, and two by an abnormally low tension—catarrhal icterus and la grippe. The pathognomonic low blood pressure in la grippe seems to be due to the elective action of the infection on the nerves regulating the action of the heart. The symptoms are traceable to the resulting disturbances in the circulation, and improve as the circulation is restored to normal. This can be accomplished by the modern anti-febrile and anti-neuralgic remedies which dilate the peripheral vessels. Federn makes these announcements in the *Wiener Med. Wochenschrift* of June 15, and states that he invariably gives antipyrin or some such remedy in la grippe—both with and without fever—to dilate the peripheral vessels. This reduces their resistance and the heart, weakened by the effect of the infection on its nervous apparatus, is relieved and enabled to restore the circulation approximately to normal. He supervises the blood pressure in chronic heart disease and gives the same remedies for the same reason, watching for indications of atony of the intestines, which he combats with a purgative, fearing that it may enhance the resistance and thus add to the heart's labor. He never gives antipyretics in other febrile affections. He is convinced that high blood pressure is a primary manifestation, the cause or a factor in the production of the arteriosclerosis, and not the reverse, as usually accepted. The excitability of the vasomotor center increases with age, but the blood pressure may be normal even with pronounced arteriosclerosis, while it may be abnormally high with very slight indications of this condition.

Recent Medical Terminology.—Surely it is a work of supererogation to coin "metopantralgia" when frontal headache is all that it means; and "epicondylalgia" seems to be equally unrequired. "Gastralgokenosis" and stomachache are surely nearly synonymous!—*Brit. Med. Journal.*

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THE DIAGNOSIS OF MYOCARDITIS.

In the development of diagnostic skill excellence is judged by the ability of the physician to determine correctly the pathological process or processes. Unfortunately, it often happens that various conditions of disease produce quite similar clinical pictures. To meet this difficulty, medical science was forced to adopt many appellations that acquired great clinical value but failed absolutely to convey any definite ideas of distinct structural alterations or special defects in function. With refinement in methods of diagnosis by the adoption of laborious laboratory investigation, precise physical examination, and detailed anamnesis, greater accuracy has been attained in determining the nature of morbid conditions; names have been introduced that are applicable from both clinical and anatomical standpoints; in short, the designations of the necropsy room have been appropriated by the clinician.

Gradually many familiar and well-worn expressions that served long and faithfully have disappeared and are replaced by more exact terms. But this progress has not ended, nor is it likely that it ever will, and of all subjects those connected with chronic diseases of the myocardium are the best illustrations of this truth.

The hackneyed expressions "cardiac debility," "weak heart," "senile heart," etc., still cover a variety of conditions in the myocardium that bolder clinicians designate collectively as chronic or fibrous myocarditis, but often this diagnosis is not warranted, because there may be no increase in the amount of fibrous tissue in the heart muscle. The symptoms most characteristic of "myocarditis" and those which generally lead the clinician to make this diagnosis, are those of angina pectoris; but when dilatation follows the failure of the heart muscle to compensate for the increased amount of cicatricial tissue in its wall, the agonizing pain, tense anxiety and other features of angina may disappear. Occasional cases of angina pectoris do not show upon postmortem examination either the fibrous myocarditis or the sclerosis of the coronaries that usually precedes it; for such cases the diagnosis of myocarditis would be unwarranted as just stated. In other cases the necropsy reveals a narrowing of the coronaries at their mouths by sclerotic processes in the aorta and perhaps a slight increase of connective tissue that is only discernible with the microscope; for these cases the essential name that the condition deserves should refer rather to the faulty nutrition of the heart muscle than to the increase in fibrous stroma. The symptoms of chronic myocarditis are often simulated by an overgrowth of fat on and about the heart or by degenerative changes in the muscle fibers, or by sundry combinations of these; fatty degeneration or infiltration or both these processes may be associated with fibrous myocarditis.

With these facts before us it is gratifying to observe the broad views adopted by Biggs in his address before the Yale Medical Alumni Association upon "Some of the Clinical Aspects of Disease of the Myocardium."[1] In considering the symptomatology, he admits that there is very little that is characteristic and allows a differentiation of the morbid processes responsible for the cardiac weakness. Among other forms he recognizes an arhythmic type of disease and an asystolic form. The former is often associated with fibrous myocarditis, the latter with disease of the coronaries. Other types are tachycardiac, anginal, asthmatic and bradycardiac. Tachycardia usually accompanies a dilated heart and bradycardia may attend any form of myocardial disease.

If we are to obtain more definite clinical knowledge of the disease of the myocardium thorough co-operation between pathologists and clinicians should be instituted: their combined researches might so correlate the symptomatology of chronic diseases of the myocardium with definite fundamental conditions that in the course of time the various processes now included under "chronic myocarditis" and similar terms may be rendered susceptible of a more definite diagnosis and more intelligent treatment.

DERMOID CYSTS OR EMBRYOMAS OF THE OVARY.

As the outcome of extensive investigations concerning these interesting and important growths, especially by Wilms, it has been shown that teratomas in general and more particularly those of the ovaries and testicle are more or less complicated structures and consist of tissues and rudiments of organs derived from all of the three germinal layers. The arrangement of the tissues and organs is sometimes not unlike that in the fetus. The prominences and protuberances seen upon the cut surface of the cysts contain the various elements referred to, and it is by careful examination by means of serial sections that their complicated structure has been made clear. Not all the tissues of the human body have been demonstrated in these tumors, but careful search is increasing the number of structures found. Thus Katsurada[2] adds to the already large list cardiac muscle. External skin and its appendages; entodermal tubules and cavities corresponding either to the respiratory or to the digestive tract; hyaline cartilage, bone, teeth; glandular tissue such as mucous glands, salivary glands and thyroid gland; parts of the central nervous system, nerves and ganglia; rudimentary eyes and ears have

1. Yale Medical Journal, 1901, viii, 63.
2. Ziegler's Beiträge, 1900, xxx, 179-214.

been found more or less commonly, the ektoderm usually predominating over the entoderm. Often the tissues and parts of organs are arranged as in the human fetus. Rudimentary extremities are not so very uncommon. In one case (ovarian dermoid) Katsurada found the thyroid tissue the seat of marked pathologic changes of a colloid character, and he also found corpora amylacea in the nervous system. It thus seems quite plain that so-called ovarian dermoids really are rudimentary embryos, i. e., embryomas (Wilms).

The cause and genesis are interesting subjects to which much speculation has been given. Any parasitic theory in the ordinary sense is, of course, out of question entirely. Wilms advanced the theory that they arise from the parthenogenetic development of ova, but Bonnet,[1] in a recent critical discussion of this question of parthenogenesis, concludes that in vertebrates, including man, there is in the present state of our knowledge no justification for this hypothesis. Bandler attempted to refer all epithelial formations in ovarian dermoids to misplaced ektodermal cells, but in this way he can not account for the structures of undoubted entodermal origin in dermoids. Testicular tubules have not been found in the vicinity of ovarian embryomas, hence anomalies of that kind can not be made accountable for the growths.

Bonnet suggests the following possibilities: The fecundation by polar globules as observed in invertebrates might lead to further development between the blastomeres of an impregnated egg, and a rudimentary embryo might become included in the inner organs. Furthermore, the experiments of Driesch, Wilson, Morgan and others have shown that small embryos or larvæ may develop from isolated blastomeres of the segmenting egg of various animals. This suggests that embryomas might spring from blastomeres which were dislocated or failed to develop at the proper time and became included in territories in which differentiation had proceeded much further. Bonnet holds that there is no fundamental difference, but merely a relative one, between genuine fetal inclusions and embryomas, and he distinctly favors the idea that the latter may spring from dislocated blastomeres. This does not directly explain the much greater frequency of embryomas in the genital glands, where they may be bilateral and even multiple.

THE IDENTITY OF HUMAN AND BOVINE TUBERCLE BACILLI.

Since Koch's formal announcement of the non-interinoculability of human and bovine tuberculosis the question has naturally been raised whether such non-interinoculability is impregnable evidence of the non-identity of the causative micro-organisms. There is, however, both evidence and analogy that the organisms may, after all, be the same, though differing in pathogenic activity. No fact is better established in bacteriology than the variability in virulence of micro-organisms, which may be increased or diminished by changes in the culture medium, in the temperature to which they are exposed, in their passage through different animals, etc.

There are thus sound reasons for believing that while human tubercle bacilli may be incapable of causing tuberculosis in cattle and bovine tubercle bacilli of causing tuberculosis in human beings, the two micro-organisms may be actually identical, although differing in pathogenic activity; just in the same way as we may accept the identity of smallpox and cowpox, although these are not mutually intertransmissible, while yet reciprocally protective. Some aspects of this most important question are discussed in an interesting and judicial manner by Dr. P. Baumgarten,[1] who cites earlier observations like those recently announced by Koch pointing to the non-transmissibility of human tubercle bacilli to calves and to certain other observations proving the non-transmissibility of bovine bacilli to human beings. On the other hand, it is possible to induce in cattle the classic picture of miliary tuberculosis by means of bovine tubercle bacilli and by modification of the pathogenic activity of tubercle bacilli to induce the anatomic picture of bovine tuberculosis in other animals. Besides, the two morbid processes are identical histologically and in their tendency to caseation and calcification, though perhaps in differing degree.

Finally, bovine tuberculosis exhibits a typical reaction to tuberculin prepared from human tubercle bacilli. It may, therefore, be concluded that the bacilli of human and of bovine tuberculosis are identical, and although the danger of animal infection from human beings and likewise that of human infection from cattle and other lower animals may be slight, it can not be entirely ignored, and the precautions that we have in the past learned to observe should not in the future be relaxed.

1. Ergebnisse der Anat. u. Entwickelungsgeschichte, 1900, Monatsh. f. Gebh., 1901.

THE TREATMENT OF ERYSIPELAS WITH THE SERUM OF ERYSIPELATOUS PATIENTS.

It seems a not unreasonable assumption that the self-limited infectious diseases should be amenable to successful treatment with the antitoxic products of their causative factors. This has been demonstrated on a large scale in the instance of diphtheria, less extensively in that of tetanus and plague, and doubtfully in that of streptococcus infection, pneumonia, typhoid fever and dysentery. Erysipelas is dependent upon a streptococcus, which it is thought is identical with or closely related to the streptococcus pyogenes. Any immunity conferred by an attack of this disease must be brief, as the attack appears to predispose to rather than confer protection against subsequent attacks. It is true that some French observers have reported favorable results in the treatment of erysipelas with antistreptococcic serum, but this experience has not been universal.

1. Berliner Klinische Wochenschrift, Sept. 2, 1901, p. 894; see abstract in THE JOURNAL A. M. A., Oct. 19, 1901, p. 1071.

Believing that the antitoxins of erysipelas are retained for but a short time in the bodies of those suffering from the disease, Valentin Jez[1] was led to employ the serum from such patients in the treatment of the disease. From the median vein he abstracted several grams of blood by means of a syringe, and of the serum obtained after sedimentation in a cool place he injected from 1 to 10 grams in accordance with the severity of the case. The injection was followed within an hour by elevation of temperature, which, however, subsequently declined, until within from twenty-four to thirty-six hours it had become normal. The local condition improved correspondingly. Should improvement not have taken place a larger amount of serum may be injected. In some instances the serum obtained from blisters, induced artificially, was employed in doses of from 5 to 20 grams. As considerable quantities of serum were thus required, an effort was made to increase its potency by oxidation. To this end the serum was mixed with an equal part of hydrogen dioxid and the mixture permitted to stand twelve hours before being used. The results, however, were not so good as followed employment of the native serum; and the same statement is applicable to other modifications that were tried.

The treatment was employed only in ten cases, and it is admitted that this number is too small to base trustworthy conclusions upon. Apart from this fact, the injection into a patient of serum obtained from his own body does not commend itself on general principles, although, as there is no inherent difficulty in or objection to the method, its employment may be sanctioned in order to determine whether it is really capable of effecting the desired result. It is thought that in this way the tissues of the organism are stimulated to increased activity rather than that any antitoxic effect is induced. The number of leucocytes in the blood and the elimination of toxic products in the urine are increased.

1. Wiener Medicin. Wochenschrift, Aug. 31, 1901, p. 1617.

"BURKING" UP TO DATE.

Opie Read, in one of the metropolitan "yellow journals," says that a New Orleans "scientist" has recently visited Chicago for the purpose of establishing a suicide resort. This humanitarian from the crescent city of the South is troubled in mind on account of the unpleasant methods adopted by suicides in getting rid of their mortal belongings, and therefore proposes to open a place where death can be had instantaneously and painlessly amid charming surroundings. The only condition is that the would-be suicide shall sign a paper giving his body to the proprietor of the establishment for the benefit of science. Then, seated in a luxurious chair, he will touch a button "and eternity does the rest." There are, according to the statement of this individual as quoted by Mr. Opie Read, twenty-three suicide clubs in the country, and the New Orleans philanthropist has sent his circulars to each, anticipating a liberal patronage. The publication of such an article by a well-known writer is a queer sign of the times. He offers it as a report of facts, without comment, over his own name and with his picture attached, though it has the appearance of a rather rank fabrication. If there were any truth in it, it would be a good subject for an early police investigation and this applies to the alleged suicide clubs mentioned by the alleged "scientist." The publication seems to infer that assisted suicide is a perfectly permissible performance and that there is even a "scientific" utilization of its results. To call it demoralizing is the very mildest kind of criticism.

HAVANA'S HEALTHFULNESS.

The health department of Havana and its suburbs, under the military government of Cuba, is making records. The report for the month of September just received shows a total of 339 deaths, a death rate for the city of only 15.64, a lower figure than New York or Berlin can show for the same period and a very respectable index of healthfulness for any city. The lowest number of deaths for any previous month was 496 in 1899, and the average since 1889, 875.45. Yellow fever, which has averaged 70 deaths each September for the last eleven years and never before had less than 18 victims in the month, this year had only two. Taking the yellow fever year as commencing April 1, there has been an average of 296 deaths each year between that date and the first of October; this year there were only 5. This year, since March 1, the department has had 100 men constantly employed in killing mosquitoes in every known fashion and the above result is, in its way, another experimental proof of their agency in the transmission of the disease. It is not only yellow fever that these measures have prevented; the mortality from malaria has been also reduced nearly 70 per cent. While yellow fever, malarial fever, and to a less extent tuberculosis, are the three diseases most decreased, there has been a general all-around lessening of the mortality, which is attributed to the generally improved hygienic conditions. Smallpox has apparently been wiped out; there have been no cases for over a year. Typhoid caused only seven deaths and diphtheria three. The military health authorities feel more and more confident each month that the solution of the yellow fever problem has been reached, and have little fear nowadays when a focus develops, of its spreading or becoming epidemic. The anxiety will come when the military government is removed and matters are turned over to the Cubans themselves. They have a special responsibility to this country in sanitary matters, and it is to be hoped they will duly appreciate it.

THE SAN FRANCISCO PLAGUE CASES.

There is a curious state of affairs still existing in California. According to the public health reports issued by the Marine-Hospital bureau, and to those of our correspondent, page 1198, there are still occurring cases and deaths of bubonic plague in San Francisco, the last reported on October 10. The reports of the Government commission have been accepted by the world as evidence of its existence there; the State Medical Society also recognized the fact by resolution, and there would seem to be no better established medical fact. The official report of the State Board of Health to Gov-

ernor Gage, recently published in connection with a report of a special health commission appointed by him, declares that the "evil reports of the presence of that disease in San Francisco were based upon error in diagnosis upon the part of incompetent investigators," and that plague does not exist in that city and never has had lodgment there or elsewhere in California. We have here on the authority of the State Board of Health of California that Drs. Flexner, Novy and Barker and the officials of the Marine-Hospital bureau in California, past and present, the former members of the board of health before its reorganization by the Governor, the San Francisco Health Board and the members of the State Medical Society have all been incompetent investigators. This utterance is given out under the authority of the California State Board of Health by W. P. Mathews, secretary. It would have been more satisfactory if the members of the board had individually signed this remarkable report and let the public and the profession know who they all are. They deserve to be immortalized after a fashion as men who in their self-estimation look down upon experts who are recognized as such by all the rest of the world. The members of the special health commission of Governor Gage, to whose report they added their contribution, were not so modest and we find that it consisted of six newspaper men, business managers or managing editors of San Francisco papers, one corporation lawyer and the president of an iron-works. Their qualifications as sanitary experts are not obvious; hence they obtained the backing of the state board for their report. If all this means the discontinuance of state support hereafter to sanitary measures directed against the plague it is unfortunate, but it has that appearance. The determination of the Governor that "one-sided examinations" will not be permitted, however, will be hard to enforce, if he discontinues state aid or co-operation. The United States' authorities will go on in their own way and according to their best judgment, and the medical profession and the country will indorse them.

GALLSTONES AND PANCREATITIS.

The appearance in this issue—pages 1176 and 1180—of two articles on fat necrosis in its relation to gallstones may serve to attract attention to the close associationship between cholelithiasis and inflammatory diseases of the pancreas in the course of which more or less disseminated fat necrosis may arise. The addition to the classical picture of biliary colic of certain peculiar features to which attention is directed by Dr. Beek and by Dr. Evans is certainly a point sure to interest the clinician and to stimulate him to closer study of diseases involving the region of the duodenal end of the pancreas. The intense abdominal pain and the cyanosis, especially of the abdominal walls, which Halsted found among the most striking clinical features in the now classical case, in which acute hemorrhagic pancreatitis and fat necrosis was shown by Opie to be associated with the impaction of a biliary calculus in the divertieulum of Vater,[1] may be regarded as the beginning towards the building up of the complete clinical picture of acute pancreatitis. This is accomplishable only through the careful and painstaking observation and study of the cases presenting symptoms pointing to the cholelithiasis and other lesions in the pancreatico-duodenal region as well as of acute intra-abdominal disturbances in general. In this field the clinician must endeavor to define, at least in its outlines, the clinical picture of the interesting and often widely spread lesions observed after death in such cases as those recorded by Beek and Evans. It is self-evident that the principles of rational treatment may be applied successfully only in the degree that knowledge of causation and ability to correctly diagnose during life advance. Finally, it should not be forgotten that lesions of the pancreas, mostly of an inflammatory nature, are in the end the conditions that determine fat necrosis. It would be a serious mistake to separate the study of the symptomatology and course of fat necrosis from that of the fundamental pancreatic lesion. As far as we know at the present time fat necrosis may be regarded simply as a sign of more or less severe changes in the pancreas toward the relief of which therapeutic efforts should be directed.

1. See Editorial, The Journal A. M. A., June 22, 1901, p. 1786.

COLD APPLICATIONS IN TETANUS.

The use of cold as a therapeutic measure in tetanus is not new, but it hardly receives a mention in textbooks. Its application in former times has been rather a general than a local one, ice to the spine, for example, from which Carpenter has claimed extraordinary results. Of late years, since we have learned that the disease is in its incipiency a local one, and, therefore, that local measures are important, it has been neglected, notwithstanding the fact that if it can be harmlessly employed in any case it ought to be possible to utilize it as a local remedy. The tetanus germ can not grow or sporulate at even a moderately low temperature, 55 F., and if it develops its toxins apparently at the point of entrance into the system, it would appear that a cooling application below its working temperature would be a rational therapeutic measure. Acting on this presumption Dr. Joseph G. Rogers, a well-known alienist, suggests[1] prompt local injections, deep in and around the wound, of a 20 per cent. carbolic acid solution of glycerin with a 2 per cent. of hydrochloric acid added; and reduction of local temperature of the part by immersions in ice water or ice bags to the part. The first of these measures is based upon well-known intolerance of the germ to these agents, but the latter—the application of cold—is an excellent example of medical reasoning in therapeutics which it is strange has not suggested itself to others. He supports his opinion by reporting two cases, both of pronounced traumatic tetanus to all appearance, spasms involving all the trunk and limbs, which were successfully treated by cold applications to the wounded part. In one case relief was experienced in a few hours and the symptoms ceased entirely on the fifth day of the treatment, when the patient himself removed the ice bladders and a relapse followed. This was again treated as before and in a few days recovery was complete. In neither case were drugs or other local applications employed or apparently required. These cases occurred in the Doctor's practice some years ago, and the treatment was adopted with a view to reducing

1. Indiana Medical Journal, October.

the irritability of the local nerve terminals, and he was at the time satisfied with the theory and practice. In the light of present knowledge he is inclined to ascribe the results to the effect of cold on the microbe, depressing its vitality, preventing sporulation and reducing the evolution and distribution through the blood of the poisons it generated. As a therapeutic suggestion Dr. Rogers' paper, modestly put forth as it is, is worthy of consideration. There is no reason why the treatment should not be tried in every case of traumatic tetanus, not, of course, to the exclusion of other means, but as a possibly valuable and certainly innocuous adjunct.

Medical News.

CALIFORNIA.

Southern California University Medical Department, Los Angeles, held its opening session, October 23.

Los Angeles Infirmary, formerly known as the "Sisters' Hospital," is to be enlarged at an expenditure of from $75,000 to $80,000.

Free Hospital for Consumptives.—After four years of labor, Dr. W. Jarvis Barlow, Los Angeles, has secured subscriptions of $10,500, which will be sufficient to purchase twenty-five acres of land near Los Angeles and to erect at least one cottage for the treatment of poor consumptives.

New German Hospital.—The plans for the new German Hospital, San Francisco, have been passed on by the committee of local architects, and that designed by Kollofrath and Dean has been awarded the first prize. The hospital will consist of a main building and two wings, will be in the medieval style, and will cost $200,000.

Personal.—Dr. Stanley P. Black, Los Angeles, has returned from a six months' course of study in Europe.——Dr. Charles F. Taggart, Los Angeles, the newly appointed chief surgeon of the Salt Lake Railroad, tendered a banquet to the officers of the road, October 15.——Dr. John J. Gallagher, San Francisco, has returned after several years spent in study in the East and in Europe.

GEORGIA.

Examinations.—The State Medical Board met in annual session at Atlanta, October 9, and examined 25 applicants for license to practice medicine.

Scarlet fever is reported to be prevalent in Tallapoosa and throughout Heralson County, and rigid quarantine precautions have been taken to prevent its further spread.

State Sanatorium.—The trustees of the State Sanatorium at Milledgeville met for their annual meeting, October 17. The resignations of Drs. W. A. O'Daniel and Job C. Patterson were accepted. Dr. T. O. Powell was elected superintendent; Dr. James M. Whitaker, first assistant physician, and Drs. Ladrick, M. Jones, John W. Mobley, Middleton L. Perry, N. P. Walker, Augusta, and E. M. Green, Danville, Ky., were elected assistant physicians.

ILLINOIS.

Health Board Enjoined.—The Springfield Board of Health has been enjoined from building an isolation hospital for contagious diseases in Springfield township.

Quincy City Hospital.—The new isolation hospital at Quincy, erected at a cost of $6600, was opened for patients, October 16. In case of emergency, 50 patients could be accommodated in the building.

Personal.——Dr. Mack Jones, Springfield, has moved to Sullivan.——Dr. Farinda J. Shipp, Springfield, is taking a post-graduate course at the Chicago University.——Dr. Francis M. Smiley, Kewanee, is taking post-graduate work in Chicago. ——Dr. Charles Rayburn, Roseville, has located in Kewanee. ——Dr. Samuel A. Graham, Waynesville, has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, Kankakee.——Dr. M. M. Baumgardner, Orangeville, has located in Freeport.——Dr. Charles E. Whiteside, Moline, has returned from Europe.

Barnes Medical College in Good Standing.—In July last, as announced in these columns, Barnes Medical College of St. Louis was declared not in good standing by the Illinois State Board of Health. At the meeting of the Board on October 24 the college was restored to good standing.

Communicable Diseases.—Smallpox is reported at McLeansboro, where 21 cases exist, at Virden 4 cases, at Thayer 3 cases, at Green Ridge 3 cases, Neponset 1 case, Springfield 7 cases, Springfield Junction 10 cases and East Springfield 5 cases.——Diphtheria is reported to be epidemic in Kewanee, where there are more than 100 cases, and at Topeka, where the schools have been closed.——Scarlet fever is reported from Decatur, with 15 cases, from Joliet with 3 new cases, and from Tuscola, where several mild cases have occurred.

Chicago.

Dr. Jesse D. Payne has moved to Blakesburg, Iowa.

Personal.—Dr. Clara Ferguson, for 5 years a physician at the Cook County Asylum and Infirmary, sailed October 26 for a year's study in Vienna.

Dunning Internes Resign.—Four internes at the Cook County Institutions at Dunning have resigned, alleging the following as their reasons: No transfer or rotation of service has been made; attending staff rarely visits the hospitals; the promised laboratory has not been provided; no suitable place to hold autopsies has been provided; attendance at autopsies at other institutions is not permitted; examination of cases at the poorhouse and attendance at operations is not allowed, and because all attempts to get satisfaction have been evaded.

County Hospital Changes.—A new governing body is to be established at Cook County Hospital. An executive cabinet is to be organized, consisting of a physician from each attending staff, a senior interne from each of the different schools of medicine, and the warden. Stricter rules for the assigning of patients in regular numerical order in order that partiality may not be shown to the attending staff will also go into effect. A new rule prohibiting the reception of drunkards afflicted with delirium tremens was passed. Among the powers the committee intends to confer upon the warden is that of removing an interne for cause.

INDIANA.

Dr. Luther M. Irwin, Lafayette, was seriously injured in a runaway accident, October 17.

Scarlet fever has appeared in Jeffersonville, eight cases having been reported during the last week. Clarksville has three cases of the disease.

Vincennes Must Pay.—In the suit of Dr. James N. McCoy against the city of Vincennes for $625, services as smallpox physician during last summer, the jury has found for the plaintiff.

Fined for Illegal Practice.—S. H. Earl, Marion, charged with practicing medicine without a license, was fined $25 and costs, amounting in all to $40.50, on his plea of guilty and agreement to leave the state.

Diphtheria.—The epidemic in New Albany has subsided and it is expected that the public schools will soon be reopened. Three cases of the disease are reported from Princeton. In Stark County, on account of the prevalence of the disease, the health authorities are said to have ordered that all cats in the infected districts be killed.

IOWA.

Des Moines Isolation Hospital.—All differences about the location of the new hospital for contagious diseases have been amicably settled, and the hospital will be erected forthwith at a cost of about $7500.

Iowa Methodist Hospital.—Amended articles of incorporation of the Iowa Methodist Hospital Association have been filed with the Polk County recorder. It was decided to build a new hospital at Des Moines, four stories high, to be constructed of brick, and to accommodate 100 patients.

Personal.—Dr. Tilford L. Putnam, Shenandoah, has been appointed surgeon to the Wabash Railway.——Dr. J. H. Stanton, Harper's Ferry, has gone East to take post-graduate work. ——Dr. Lewis L. Baker, Imogene, is about to locate in Minneapolis, Minn.——Our report of October 19, page 1044, that Dr. Fred. L. Wells, Des Moines, had moved, was unfounded.

KANSAS.

Smallpox.—It is reported that there are 23 cases of smallpox in the Kickapoo Indian reservation in Brown County.

Dr. Alexander Haggart, Ottawa, has been appointed cor-

oner of Franklin County, vice Dr. John G. Van Schoiack, resigned.

Examinations.—On October 1, the State Board of Medical Examination and Registration examined 40 practitioners not graduates of medical colleges and who had not practiced in the state for seven or more years.

Prosecution of the Unregistered.—The days of grace have expired and the State Board of Medical Examination and Registration now announces that it will prosecute all persons not holding certificates from the Board.

Personal.—Dr. H. D. Canfield has returned to Harveyville improved in health and will resume office practice.——Dr. Ludlow, Lindsburg, has gone East to take post-graduate work.——Dr. Ernest W. Minney, assistant physician at the State Insane Hospital, Topeka, has resigned.

Topeka Free Dispensary.—The members of the Kansas Medical College faculty who are interested in the new free dispensary are Dr. Matthew R. Mitchell, diseases of women; Dr. Frank H. Martin, assisted by Drs. Corban E. Judd and O. Portis Davis, surgery; Dr. O. Portis Davis, practice of medicine; Dr. Corban E. Judd, diseases of children, and Dr. Herbert L. Alkire, diseases of the eye, ear, nose and throat.

State Law Evadable.—The State Board of Medical Examination and Registration has discovered that the law under which it was created and under which it operated is defective, and it is doubtful whether the provision prohibiting persons who have not graduated from a reputable medical school from practicing can be enforced. It has been found that quack doctors can evade the provisions of the law which provides that physicians who do not comply with the provisions of the law must cease practicing medicine for pay. In order to convict it will be necessary for the complainant to prove that the physician received pay for his services in the case.

Prevention and Restriction of Smallpox.—In a circular letter, Dr. W. B. Swan, Topeka, secretary of the State Board of Health, says: "Local boards and authorities are strongly advised against the policy of concealment. Smallpox can not be suppressed by denying its existence. It will out more certainly than murder. Official reticence in this is not only useless to protect commercial interests and reputation, but is in the highest degree mischievous, in that it begets false confidence, which may lead the innocent and unwary into such danger as an honest announcement of the facts would have warned them to avoid. Insist upon prompt publicity in every instance."

KENTUCKY.

Typhoid Fever and Diphtheria.—Farmington has an epidemic of typhoid fever from which several deaths have occurred.——About 50 cases of diphtheria are reported from Covington.

No More Smallpox.—Dr. J. N. McCormack, Bowling Green, president of the State Board of Health, reported to the governor that smallpox, which had been so prevalent in the state last winter, had been completely stamped out, so that not a single case remained.

Free Antitoxin.—The health officer of Louisville, Dr. Maverell K. Allen, announces that the Board of Public Safety has arranged for the medical profession to obtain diphtheria antitoxin through the city hospital pharmacist, to be used where the poor are unable to purchase the same.

Sale of McDowell Building.—By order of the Circuit Court at Danville, the historic building on Second Street, known as the McDowell Building, was sold at auction on October 21, in order to effect a division of property interests of the present owners. It was here that Dr. Ephriam McDowell performed the first successful ovariotomy. Efforts have been made in the past by the Central Kentucky Medical Association to purchase the building and alter it as a suitable meeting place for the society, but without success. The growth of the town has left it in an undesirable location.

MARYLAND.

Sanatorium for Consumptives.—At the annual session of the staff of the Endowood Sanatorium for Consumptives, Baltimore, held October 25, Dr. G. Milton Linthicum was elected chairman and Dr. Frank Rich, secretary. Dr. H. Warren Buckler was added to the staff.

Suit Against Sanitary Officer.—Dr. Richard C. Massenburg has instituted suit against R. E. Lee Bosley, sanitary officer of Towson, Baltimore County, for $10,000 damages for alleged slander in stating that the unsanitary condition of his premises in the town is the cause of a case of typhoid fever.

Northeastern Dispensary.—The following have been elected as the staff of the Northeastern Dispensary, Baltimore; Drs. A. D. McConachie, J. Whitridge Williams, S. Rosenheim, S. H. Likes, W. B. Pearce, C. N. Branin, G. C. E. Vogeler, J. C. Beck, Percy E. Lilly, Daniel L. Dunott, T. A. Guier and George E. Starr.

Personal.—Dr. William Osler entertained Professor Wilhelm Waldeyer, of the University of Berlin, October 22. Many of the profession were present.——Dr. Jackson Piper will sail with his family for Europe, November 23, and will spend the winter there.——The Faculty of the Maryland Medical College tendered a reception on October 24 to the ladies who got up the recent bazaar for their hospital. A handsome chair offered to the most popular doctor was awarded to Dr. I William Funk. ——Dr. Robert T. Wilson has been re-elected president of the Hospital Relief Association of Maryland.

MASSACHUSETTS.

Resolutions Regarding Dr. Merchant.—The Hampden Medical Society, at its meeting in Springfield, October 15, passed resolutions of respect to the memory of its late member, Dr. Harry A. Merchant, Monson.

Searlet Fever and Diphtheria.—Scarlet fever is epidemic in Rochdale, where the public schools have been closed.——At South Hadley Falls, diphtheria is decreasing, but it is feared the failure to observe strict quarantine may result in another increase of the disease.

Personal.—Dr. Hiram H. Burns, Athol, has sold his property to Dr. A. L. Swain, Washington, D. C., and will locate in Plymouth.——Dr. Byron W. McKeen, Cochituate, has moved to Saxonville.——Dr. Thomas J. Cronin, Webster, has disposed of his practice to Dr. Arthur D. Bush, Boston, and will study in Vienna.——Dr. Walter N. Sharp, Saxonville, has moved to the west.——Dr. D. B. Sullivan has opened an office in Bondsville.

MICHIGAN.

Diphtheria is reported to be epidemic in Belleville and in Ionia and Ioseo Counties.

The Physicians' Mutual Aid and Protective Association has been organized at Muskegon. The object of the association is to prevent imposition on physicians and to enforce payment of bills.

Bacteriologie Building.—A building is to be constructed at the State Agricultural College, Lansing, to be used exclusively for bacteriologie and research work, the cost to be $50,000, exclusive of equipment.

Conference of Health Officers.—The fifth general conference of the health officers of Michigan will be held at Ann Arbor, November 21 and 22. Secretary Baker, of the State Board of Health, has issued a circular urging the common councils of cities and villages to see that they are represented at the meeting. Representatives of the army and navy medical departments will be present.

MINNESOTA.

Diphtheria.—An excess of diphtheria is reported from St. Paul, and the disease has invaded Roseau County.

Personal.—Dr. Mathias H. Cremer and family, Mazeppa, have returned from a three months' visit to Sparta, Wis.——Dr. Hacking, Wood Lake, has moved to Granite Falls.

For Aged and Consumptives.—An infirmary for the use of tuberculous patients and the aged and infirm will be located at the Workhouse grounds, Minneapolis. The plans call for two buildings to cost not more than $20,000.

Smallpox is reported at Brownton, at Pelican Rapids, where the schools have been closed, and at Spring Valley. The fortnightly report of the State Board of Health shows an increase of more than 100 per cent. in the new cases reported as compared with the previous report. A total of 134 cases were reported, embracing 34 localities in 26 counties.

MONTANA.

St. Luke's Hospital, Livingston, has been incorporated by the Bishop of Montana, Drs. Robert D. Alton, William F. Cogawell, and Byron L. Pampel, and others.

Practitioner Arrested.—One of the pioneer physicians of the state was arrested, October 10, at Butte, charged with "maliciously and knowingly carrying on a business or profes-

sion without first having obtained a license from the county treasurer so to do."

Licenses were granted by the State Board of Medical Examiners to 17 out of 27 applicants who were examined, October 2. One woman passed the examination. Two Chinese applicants appeared, but were not granted licenses. One applicant was refused license because he used notes during the examination.

Personal.—Dr. Edgar A. Brooke, Dillon, has moved to Missoula.——Dr. Joseph Weyerhorst, Butte, has been found guilty of practicing without a license from the county treasurer and fined one dollar and costs.——Dr. R. O. Blades, Pipestone Springs, has returned to Hot Springs, Ark.——A physician of Butte was arrested, October 10, for neglecting to report a case of diphtheria.——Dr. G. Leo Hagen Burger, Helena, has returned from the East and has resumed practice.

NEW YORK.

Personal.—Dr. Arthur M. Whaley, Buffalo, has moved to Sault Ste. Marie, Mich.——Dr. H. I. Van Hoeson, Truxton, has given up practice and moved to Tully.——Dr. Willis C. Cook, Brockport, has sold his home and practice to Dr. Lindsey, of Little Falls.——Dr. Charles W. Southworth, Forestville, has sold his stock, practice and goodwill to Dr. Gleeten, Silver Creek.——Dr. Wilhelm H. Keller, Spring Valley, has opened an office in Haverstraw.

Conferenee of Sanitary Officers.—A hundred sanitary officers of the state met in the Assembly Chamber, Albany, October 24, and began holding a conference regarding sanitary problems. Dr. Daniel Lewis, State Health Commissioner, acted as chairman. Robert C. Taylor made an address on the powers and limitations of local health boards under the public health law. Dr. Herman M. Biggs, New York, read a paper on the attitude of health officers toward tuberculosis in the smaller cities and towns.

Transfer of Insane Patients.—The State Commission in Lunacy has begun the work of transferring the insane patients from the Blackwell Island Insane Hospital to the colony connected with the Manhattan State Hospital at Central Islip, L. I. Accommodations are to be provided within the next few months for 2500 patients. Relief will also be granted to the other New York city asylums, and in addition the commission will transfer New York patients now in the Poughkeepsie and Buffalo State hospitals to the new colony buildings.

New York City.

St. Luke's Hospital, during the fiscal year just ended, treated 2918 patients, gave 90,695 days' treatment and accumulated a deficit of $50,629 51.

Jewish Hospital.—The State Board of Charities has voted to approve the incorporation of the Jewish Hospital which was organized in Brooklyn, October 15.

Hospitals Crowded.—The up-town hospitals are taxed to their limit so that they are daily turning away patients for lack of room and transferring patients by hundreds to the less congested hospitals down town.

Personal.—Dr. Rupert Folger, Whitestone, Borough of Queens, was seriously injured in a runaway accident, October 17.——Dr. William E. Young has been appointed examining physician for the Outdoor Poor Department of Bellevue Hospital, vice Dr. Horace Bigelow, deceased.

City Consumptive Hospital.—The buildings on Blackwells' Island now used in connection with the Manhattan State Hospital, in which are quartered 850 insane patients, will soon be turned over to New York City by the State Commission in Lunacy. It is understood that the city authorities contemplate using these buildings for a city consumptive hospital. The State Board of Health believes that this will be a move in the right direction, as the proportion of deaths from consumption in New York City is greater than in any other part of the state.

NORTH DAKOTA.

The new hospital at Oakes is finished and already has several patients.

Admitted to Practice.—The State Board of Medical Examiners admitted to practice, October 15, ten out of the fifteen who took the examination October 1.

Personal.—Dr. Henry H. Healy, president of the State Board of Health, has decided to move from Michigan City to Fargo.——Dr. George R. Moore, house surgeon of St. John's Hospital, Fargo, has located in Montgomery, Minn.

Fargo Isolation Hospital.—The detention hospital which is being erected near Cass County Hospital is approaching completion so that the city and county will be in position to care for cases which may need to be placed there. There will be accommodation for about thirty patients.

OHIO.

Medical Research.—The directors of the Rockefeller Institute for Medical Research at a meeting held in New York, October 12, appropriated $500 for research to be carried on in the pathological laboratory of Western Reserve Medical College, Cleveland, under the direction of Dr. William T. Howard, Jr., professor of pathology. The research will be prosecuted by Dr. Roger G. Perkins.

Abolishes Pay Wards.—The City Hospital Board of Trustees, Cincinnati, Monday evening decided to abolish the pay ward of the institution, as its maintenance was found to be unconstitutional and proved an extra expense. The number of internes was increased from twelve to thirteen. Dr. John E. Griewe, clinical director, and Dr. David I. Wolfstein, neuropathologist, were given authority to establish post-graduate classes in pathology and bacteriology in the new hospital laboratory.

Illegal Practice.—W. H. Wagner, a herb vendor, of Portsmouth, has been arrested on the charge of practice of medicine without license.——"Dr." Adah S. Horman, Cincinnati, charged with misuse of the mails with intent to defraud, has been sentenced to 18 months' imprisonment in the State Penitentiary and to pay a fine of $500 and costs. The indictment of Dr. Roberts Erskine, Youngstown, for practicing medicine without license has been quashed on the ground that the indictment did not contain the name of the prosecuting witness.

PENNSYLVANIA.

Personal.—Dr. Thomas W. Moran, Stahlstown, has located in Latrobe.——Dr. John W. Denison, Parsons, has gone to Hazleton to take charge of the isolation hospital.

Kensington Hospital for Women, Philadelphia, during the fiscal year just closed, cared for 834 patients, gave 10,514 days of treatment, and 601 operations were performed.

Gift to Hospital.—An operating pavilion, erected at a cost of $16,000, has been presented to St. Luke's Hospital, South Bethlehem, by Samuel Thomas, of Catasauqua, in memory of his wife.

Contagious Diseases.—Diphtheria is ravaging Forrestville and the public schools have been closed. A case has been reported in Charleroi. It is reported as epidemic in Pinerton, Sherett and Adrian, near Red Bank, and at Helm school near Montgomeryville.——Scarlet fever is reported to be epidemic in Erie, Bedminster and Washington, where a public school has been closed.——Measles has caused the public school at Passer to be closed.

TEXAS.

The University of Texas Medical Department, Galveston, held its eleventh annual opening exercises, October 1. The attendance is about 50 per cent. greater than last year.

The University of Dallas Medical Department, Dallas, held its opening exercises, October 1. President, Dr. Samuel H. Stout; Dr. Charles M. Rosser, dean of the faculty; Dr. Thomas D. Wooten, Austin, and President Oscar H. Cooper, of Baylor University, addressed the assembly, and a reception followed.

Smallpox is reported from Austin. At least 20 cases have been reported and quarantine is not strictly enforced.——Work has again been resumed on the All Saints' Charity Hospital building at Fort Worth.——The New Protestant Sanitarium at Fort Worth will soon be opened for the reception of patients. The finishing touches are now being placed on it.

Personal.—Dr. W. F. Blount, state quarantine and health officer, has resigned his position on account of failing health, and has moved to his former home at Flatonia.——Dr. George R. Tabor, of Bryan, has been appointed his successor, and will take charge of the office at once.——Dr. Isaac J. Jones, Austin, has retired from the position of assistant state health officer. ——Dr. Robert H. Harrison, Sr., Columbus, was the recipient of a most beautiful gold-headed ebony cane, October 21, the gift of the East Texas Surgical Society, as a token of its appreciation of his services in behalf of the medical sciences at large.

UTAH.

Dr. Theodore B. Beatty, Salt Lake City, has returned from a five weeks' trip to the Puget Sound country.

Certificates of practice were given by the State Board of Medical Examiners, October 8, to seven applicants.

Salt Lake City's Morbidity.—There were 31 cases of typhoid fever in Salt Lake City, October 13, an increase of 15 during the week; 37 cases of scarlet fever; 6 of diphtheria and 3 of smallpox.

Revocation of License.—The members of the Salt Lake Medical Society have asked the State Board of Medical Examiners to revoke the license of Dr. Edward S. Payne, charged on two counts with performing criminal abortion.

Another Medical College Proposed.—Drs. Harry N. Mayo, Emerson F. Root, Rufus L. McElroy and others held a meeting in Salt Lake City, October 22, to consider the establishment of a medical school in that city. It is proposed to open the school next September.

VIRGINIA.

University College of Medicine, Richmond, opened, October 1, with more than 200 students.

The Medical College of Virginia, Richmond, opened with an attendance of about 150, October 1. Dr. Christopher Tompkins delivered the opening address.

Raise the Standard.—The faculty of the University College of Medicine, Richmond, has passed a regulation providing that in the future this institution will not give credit of one year in the medical course, simply because a student has received an academic degree.

Personal.—Dr. J. Garnet Nelson, Alexandria, has located in Richmond and will be associated with Dr. Charles V. Carrington.——Dr. William R. Jones has returned to Richmond after two months at Rockbridge Alum Springs.——Dr. A. M. Fauntleroy, Staunton, has passed the Naval Medical Board examination in New York.——Dr. Charles L. Siegel, Richmond, has gone to Colorado for his health.——Dr. F. E. Walker has located in Pamplin City.

WASHINGTON.

Quacks Fined.—The "Quaker Doctors" itinerant medicine vendors, were recently fined $120 and costs in North Yakima for violation of the state pharmacy law.

Smallpox, Diphtheria and Scarlet Fever.—Smallpox, in a mild form thus far, is prevalent at Mud Bay; diphtheria is reported in Ravenna Park, a suburb of Seattle, and scarlet fever in Seattle.

Examination.—The State Board of Medical Examiners will hold its next meeting in Tacoma, January 7, 1902, at which time those desiring a license to practice medicine in the state of Washington will have an opportunity to take the examination, which it is necessary to pass before they can practice.

New Hospitals.—The addition to the Everett Hospital, two stories high and with sixteen rooms, will be ready for occupancy early in December.——Sick quarters at the Puget Sound Navy Yard are to be erected at a cost of $6900.——It is rumored that a hospital will be erected in Tacoma for the Northern Pacific Mutual Benefit Association.

Personal.—Dr. Isaac M. Harrison, Seattle, has qualified as a member of the local board of health.——Dr. C. E. Martin, Linden, has moved to South Bend.——Dr. Elmer E. Heg, Seattle, has resigned his position as member of the Board of Health, on the ground that his residence in the city was not sufficient to render him eligible.——Lieut. Frank B. Morse, assistant surgeon, U. S. Army, has been ordered to Fort Walla Walla from the Presidio of San Francisco.

WISCONSIN.

Diphtheria and Scarlet Fever.—The epidemic of diphtheria in Peshtigo is subsiding, but the schools are still closed.——Scarlet fever has caused the closure of the schools of Pleasant Prairie.

Illegal Practice.—Fred L. Mehrtens, "magnetic healer," of Ripon, was convicted of practicing medicine without a license and fined $25 and costs, with the alternative of thirty days' imprisonment.

Fewer Applicants.—The State Board of Medical Examiners found only 22 applicants awaiting it at Oshkosh. The decrease in numbers is due, it is thought, to the rigidity of the examination.

Smallpox.—The epidemic on the Bad River Reservation at Odanah, is increasing. Of the 120 original patients nearly all have recovered, but on October 23 the disease appeared among the adults in virulent form, 15 cases being reported.——At Little Suamico, Spruce and Wequoick, cases have also been reported.

Personal.—Dr. Charles F. Lehukering, Shullsburg, has associated himself with Dr. Charles H. Russell, Darlington.——Dr. G. A. Larson, Westby, has moved to Cashton, where he will be associated with Dr. Cornelius H. Cremer.——Dr. George H. Bacon, Reeseville, is taking charge of the practice of Dr. Robert E. Calhoun, Chesterville, Ill.

GENERAL.

New Electro-Therapeutic Journal.—The *Electro-Therapeutics,* a journal devoted to medical electricity and radiography, has been announced by its publishers, A. L. Chatterton & Co., New York City. Dr. William Benham Snow is to be the editor.

Operation on President McKinley.—The *Gazette Méd. de Paris* concludes an editorial on this subject with the words: "Great praise is due to the American surgeons who accomplished their intervention with the greatest sang-froid and the greatest rapidity. They did their entire duty. Extramedical influences are probably responsible for the optimistic bulletins issued at first."

The Women's Hospital at Manila, P. I.—This hospital is now open and ready to receive patients. It is temporarily located in a 20-room house. The building has been almost reconstructed, painted and thoroughly fitted up as a modern hospital. This was made possible by a series of donations which Mrs. Whitelaw Reid started with $5000. The operating room has been arranged and furnished with modern devices.

Physicians Honored by Yale.—The University of Yale conferred, at its recent bicentennial celebration, the honorary degree of LL.D. upon Dr. John Shaw Billings, director of the New York Public Library; Dr. David White Finlay, professor of the practice of medicine in Aberdeen University; Dr. William Osler, of Johns Hopkins University; Dr. Ira Remsen, president of Johns Hopkins University, and Dr. Wilhelm Waldeyer, professor of anatomy in the University of Berlin.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about $180, will be made on July 14, 1902, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in Medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1902.

Resolutions on Pathophorous Money.—The Minnesota State Board of Health has adopted the following among other resolutions relating to smallpox: Resolved, That all employers of laborers withhold from such employes who may become infected with a contagious disease, and to whom a salary is due at the time of such infection, all monies or wages due him until his discharge from the hospital or place of detention; that monies or wages be withheld from any such employes with suspicious symptoms until the diagnosis of the disease has been determined by a competent physician.

Manila Physicians Organize.—The following announcement was issued by the Manila Board of Health, September 11: "At the request of a number of medical men of this city, the Board of Health cordially invites all registered physicians of Manila and vicinity, including medical officers of the Army, Navy and Marine-Hospital Service, to attend a meeting to be held in the Sessions Hall, Ayuntamiento, at 8:30 p.m., Saturday evening, September 14, for the purpose of organizing a medical society. The co-operation and presence of physicians of all nationalities are earnestly desired."

The Craig Colony Prize for Original Research in Epilepsy.—Dr. Frederick Peterson, 4 West Fiftieth Street, New York City, offers a prize of $200 for the best original unpublished contribution to the pathology and treatment of epilepsy. Originality is the main condition. All manuscript should be submitted in English. The prize is open to universal competition. Each essay must be accompanied by a sealed envelope, containing the name and address of the author and bearing upon the outside a motto or device, which is to be inscribed also upon the essay. All papers received will be submitted to a committee, consisting of three members of the New York Neurological Society, and the award will be made upon its recommendation at the annual meeting of the Board of Managers of the Craig Colony, October 14, 1902.

Health of Army Good.—Surgeon-General Sternberg, in his annual report to the Secretary of War, says that the health of the army has been unusually good during the calendar year 1900. The admission rate to hospitals from all causes, volunteers and regulars, with a mean strength of 100,389 in 1900, was 2,311.8 per thousand of strength as compared with 2,178.1 in the previous year. In the Philippine Islands, with a mean strength of 66,882, the admission rate was 2,621.96, as compared with 2,395.52 in the previous year, this increase being mainly due to disease among the volunteers, the ratio for which rose from 1,859.21 to 2,761.79. The death rate in China was large, 47.76 per thousand of strength, 23.62 from disease and 24.14 from injury. The health of the troops in Cuba during the year was excellent. As a result of American occupation nearly every city and town has had its sanitary condition improved.

The Association of Physicians Speaking French.—The organization of this new medical association, "des Médecins de langue francaise de l'Amerique du Nord" has met with some opposition, but its success seems now to be assured. The first meeting will be held at Quebec in 1902, in honor of the semi-centennial of the founding of Laval University. French-speaking physicians do not feel at home in congresses and associations where English alone is spoken. They are puzzled by the imperfectly understood language and unable to express their own ideas, the *Bulletin Médical de Quebec* editorially observes. In a homogeneous association, where they can speak in their mother tongue as they learned it in the schools of Canada, in the Canadian colleges and universities where only French is spoken, they will enter into scientific emulation with their English-speaking confrères and be able to present their scientific achievements in a favorable light. The association will welcome members of any nationality or tongue, but the addresses and discussions must be in French. There are more than 2000 French-speaking confrères in North America from whom the Association expects to be recruited.

CANADA.

British Columbia's Insane.—A return received at the Census Department gives the total number of inmates of the Provincial Insane Asylum of British Columbia at 263. Twenty-six of these are Chinese, and three, Japanese.

Trinity University.—As a result of the meeting of the Board of Endowment and Finance last week a special appeal will be made to raise a fund of $500,000. Of this sum $60,000 has already been subscribed by five members of the Corporation.

Personal.—Dr. Law, of Ottawa, has been appointed medical health officer of that city, Dr. Robillard, who has been health officer for twenty years, having resigned.——Dr. J. E. Craik, a graduate of McGill, has been appointed resident physician at the Isolation Hospital, Porter's Island, Ottawa.

Toronto General Hospital Nurses.—The graduating exercises of the Training School were held at the Toronto General Hospital on the evening of October 25, when a very large class was graduated. The first class was sent out from the institution in 1883, and was five in number. Since that time a total of 347 had received diplomas from this training school.

Smallpox in Quebec.—The smallpox epidemic in the Province of Quebec continues to spread, and the disease has invaded several schools and colleges. It is said that the country physicians refuse to recognize the diagnosis of the provincial board of health in many cases, and the people rely on them, and as a consequence the contagion continues to spread. The present outbreak appears to be of a very mild order.

Raising Standards at McGill.—The Faculty of Applied Science at McGill has posted the following notice on the college boards: "It has been decided by the Faculty that the number of marks required for pass-standing in any subject shall be 40 per cent.; for second-class honors, 60 per cent.; for first-class honors, 80 per cent." The medical standing will also be raised in the near future, and there is a likelihood of increasing the term from one of four sessions of nine months each, to one of five sessions of nine months each.

Fellows for Medical Research.—The Faculty of Medicine at McGill has appointed Dr. G. A. Charlton, of Montreal, and Dr. P. G. Wooley, of Johns Hopkins University, research fellows in pathology. They will work under Professor Adami of the Pathologic Department, and their special work will be to discover means to combat the spread of infectious diseases. Dr. Ford, who was some time ago appointed to the Rockefeller Research Scholarship at McGill, and who has been studying at the Pasteur Institute, Paris, will commence his work at McGill in the near future. The alterations and additions in the medical department will soon be completed.

Toronto Western Hospital.—The annual meeting of this institution was held recently, and the reports show very satisfactory progress. The Toronto Western Hospital was organized in 1896, as it was felt that there was a distinct field for hospital work in the western section of the city. In 1899 a fine site was secured on Bathurst Street, a handsome residence with four acres of fine lawns. Since that date the capacity of the hospital has grown from 30 to 90 beds. By special act of the legislature, the institution has been incorporated, and liberal powers and privileges conferred upon it. Particularly has great progress been made in the Training School for Nurses. The election of officers resulted in Dr. A. A. Macdonald being chosen dean; Dr. John Ferguson, secretary; Dr. J. B. Gullen, treasurer; Dr. Geo. H. Carveth, chairman of the management committee, and Dr. J. McCullough, medical superintendent.

FOREIGN.

Kaiser Wilhelm Honors His Surgeon-General.—The German emperor has conferred upon Surgeon-General Koch the rank of Major-General.

Plague at Naples Eradicated.—Out of about fifteen to twenty cases only eight died. The last case was reported October 5. The authorities claim that not a trace now exists in the neighborhood.

Plague at Liverpool.—There were two deaths from bubonic plague at Liverpool during October, according to the local government board. Bacteriological tests made after death confirmed the diagnosis.

The Virchow Celebration.—Fifty delegates from foreign medical and other scientific societies were present at the festivities. The list included Lister, Baccilli, Cornil, Hansen and Podwyssotzky. The Virchow Fund was increased by 50,000 marks from general contributions, with an additional 100,000 marks from the City of Berlin, thus swelling the fund by nearly $37,500. The Berlin Medical Society announced its intention to erect a building for scientific reunions to be known as the Virchow-Háus. It presented a souvenir volume of its transaction since its foundation, which showed that Virchow had presented communications or engaged in discussions 587 times, besides serving as president for twenty years. The new public hospital now being constructed in Berlin is to be formally dedicated as the "Rudolf Virchow Krankenhaus." Our French exchanges refer with pride to the similar apotheosis of Pasteur nine years ago, and observe that Virchow's familiarity with several other languages besides his mother tongue renders him at home wherever he goes and has undoubtedly been an important factor in his international reputation.

LONDON LETTER.

The Smallpox Outbreak.

The number of cases of smallpox now under treatment has fallen to 169, but fresh cases occur every day. As many as 10 have been reported in one day, but of late the number has been only about 2. The difficulties of checking the spread of the disease are manifold. Thus in Kent, where it is the custom of a large number of the poorer classes of London to resort yearly for a few weeks' hop picking, the disease has occurred in the temporary huts erected for the workers. The great neglect of vaccination in London, previously referred to in THE JOURNAL, is illustrated by the following occurrence: A girl, aged 12, the daughter of a coal-porter, came home from school ill with headache. On the fourth day the mother observed a rash and called in a doctor, but on his arrival the child was dead. The disease proved to be smallpox. Six other children of the family have since been removed to hospital suffering from the disease. None of them were vaccinated.

Army Medical Reform.

A new building has just been opened in connection with the Post-Graduate College of the West London Hospital. Presiding at the inauguration ceremony, Sir William MacCormac referred to the large number of officers serving in South Africa who had attended the College with advantage. Many had written in grateful acknowledgment of the value of the training. He approved of the recommendations of the committee appointed by the Secretary of State, which have been already published in these columns. When the medical history of the war would be written he was confident that the results would bear comparison with those of any other war. Much of the distress was unavoidable both on account of the state of war

and the vast field of operations, the long and difficult transport, and the undermanned medical service. He trusted that the changes promised would draw into the Army Medical Service sufficient young men of good quality and promise. He wished some means would be devised of removing the Army Medical School from Netley and bringing it to London, where there would be the constant stimulus of competition and criticism, and the benefit of the unrivaled teaching and clinical opportunities that London offered. He advocated a scheme similar to that of the Kaiser Wilhelm Institute in Berlin, which would enable a number of officers to be attached for duty and yet able to spare time for special study.

Tuberculosis Commission.

The work of this commission has already begun, with a view to testing the truth of Prof. Koch's theory as to the non-transmission of bovine tuberculosis. Prominent among those who are making experiments is Prof. Boyce, of Liverpool. Most of the members are working in their laboratories. It is supposed that the government will provide a farm for the experiments and that the question will be settled in about a year.

Displaced Strangulated Hernia.

At the Clinical Society Mr. Thomas Bryant described the following remarkable case. A woman, aged 32, had femoral hernia for five years and did not wear a truss. She often used force in reducing the rupture, and did so particularly two days before her illness. Vomiting began and became stercoraceous in three days, and she was in an extreme state of collapse. The abdomen was distended but not tense, and there was no swelling in the right femoral region—the alleged seat of the hernia, although pressure with the finger over the femoral canal elicited pain. An exploratory operation was, however, performed. The crural sheath, which did not seem expanded, was opened. A small piece of tissue, which looked like omentum, was seen. The femoral ring was quite clear. On passing a director it was slightly enlarged upwards and inwards and a piece of pale intestine which had been collapsed and invisible became distended and visible. It passed downwards through a narrow opening at the apex of the femoral sheath, an inch or an inch and a half below the femoral ring. At this point the bowel was strongly held and strangulated. On dividing this ring 4 or 5 inches of highly congested intestine were drawn out of a space situated below and to the inner side of the opening in the femoral sheath and reduced. The operation was completed, but as was expected, the patient died in a few hours. The necropsy showed that the sac had been forced through a rupture of the femoral sheath at its lowest part into the connective tissue of the thigh on the inner side of Scarpa's triangle. The seat of strangulation was at the orifice through which the intestine was forced.

Mr. Bryant had never seen or heard of a femoral hernia being displaced into the fatty connective tissue of the inner side of the thigh with the seat of strangulation an inch and a half below the femoral ring and at the mouth of the opening in the femoral canal. But for the history of an old femoral hernia there was nothing to enable the surgeon to localize the cause. An abdominal operation might have been performed and would have proved useless. The good old practice was here followed of first examining the hernial region, in every case of intestinal obstruction associated with hernia. The cause of the displacement was probably the forcible attempt at reduction by the patient. This is, therefore, an example of the third variety of displaced femoral hernia. The first is the well-recognized reduction *en masse*, in which the hernia is reduced behind the abdominal walls still strangulated. In the second a large femoral hernia by rupture of its sac shows itself as a tumor in the subcutaneous connective tissue above Poupart's ligament. In all varieties misplaced force is probably the cause. The case illustrates the aphorism: "In every variety of strangulated hernia forcible taxis is the cause of all displacements of inguinal or femoral varieties, as well as rupture of the sac or sac's contents; so forcible taxis should be avoided."

Treatment of Ascites in Hepatic Cirrhosis by Suture of Omentum to Abdominal Wall.

Mr. Mansell Moullin read notes of five cases in which he had performed this operation with a view to establishing a collateral circulation by the Drummond-Morison method. Two patients died, one four weeks after the operation, from pleurisy, the other one week after from exhaustion. In both, the operation had been performed too late. The disease was too far advanced and there was no time for the development of a collateral circulation. The three other patients were discharged relieved. One could not be traced. The other two were alive and at work at the present time, two years after the operation. As far as ascites is mechanical the operation relieves. The mortality had been high, but with better selection of cases there is no reason why it should be higher than that of exploratory laparotomy. A median incision above the umbilicus is the most convenient. Through it the whole upper surface of the liver can be reached and the omentum fixed to the abdominal wall by sutures passed from its peritoneal surface. Drainage is unnecessary and increases the risk of sepsis. If the fluid collects again it may have to be drawn off—many times in a few months—until the anastomotic channels have sufficiently enlarged.

Hemorrhagic Myositis in Typhoid Fever.

At the Pathological Society, Dr. F. W. Andrews described a case of this rare complication. A young man who suffered from double chronic otorrhea died in a relapse on the fifty-second day, of typhoid fever. A day or two before death he complained of pain when turned over. A swelling was discovered in the left thigh and diagnosed as hemorrhagic. At the necropsy the vastus externus muscle was found to be the seat of hemorrhage. Many fibers showed Zenker's degeneration and large numbers of streptococci pyogenes. The infection was thought to be the cause of the hemorrhage.

PARIS LETTER.

Obstetrical Congress at Nantes. Protection of Infants.

At the Congress of Gynecology, Obstetrics and Pediatrics, held last month at Nantes, several interesting reports were made. One of the latter, by Dr. Olivier and Schmitt of Nantes, was on the protection of children. This protection should begin as soon as possible, Dr. Olivier stating that every pregnant woman should have complete rest six weeks before and six weeks after delivery. An indemnity, equal to two-thirds of the woman's salary, should be given her during that period. There is already a law in France, called the Roussel law, which provides for the medical supervision of all infants who are not under the immediate care of their parents.

The essayist declared that it would be well if infants during the first year could be examined and reported on medically every month during the winter season and every fifteen days during the summer. Professor Pinard, the well-known accoucheur, spoke of the desirability of teaching children something of the importance of taking care of their health. They should be made to understand that their own health will have a direct influence upon that of the succeeding generation. Professor Pinard considered that three months were none too long a rest for women before parturition. Premature birth sometimes took place during the seventh and eighth month. He said also that he did not favor "crèches," where children are placed by mothers, who are obliged to work, because he thought it unwise to encourage this partial abandoning of the child. Professor Pozzi deprecated the tendency shown in schools to force the students to learn too much. He advised the examinations being passed at the end of each year, instead of being placed at the end of the university course. The following resolution was passed by the Congress: "All pregnant women should be placed in the best hygienic conditions during the last three months of pregnancy, and the first month following delivery, and the public authorities are called upon to find the best methods for insuring the realization of this measure of public utility.

Surgical Treatment of Uterine Cancer.

Another important subject, the surgical treatment of uterine cancer, was discussed by Monprofit, Potherat and Segond. A radical cure could only be hoped for from an early operation. Monprofit said he did not believe in very extensive operations. He began by removing the infected tissue through the vagina, tamponed with antiseptic gauze, and then removed the uterus in the same "séance." Pozzi said he agreed with Monprofit, and added that caution was necessary in extensive lesions, as the risk run by patients in such cases was out of proportion with the benefit obtained. Dr. Potherat argued that it was well to cut away from below the cancerous tissue a week before removing the uterus. Dr. Segond considered it was useless waiting so long as the vagina might get reinfected. He did not consider it advisable to perform a radical operation when the lesions were extensive. A simple operation in such cases was often of great benefit to the patient.

Discussion of Alexander's Operation.

Alexander's operation was also discussed. According to Potherat, it would seem to be the best treatment for non-

adherent deviations. Dr. Segond highly praised this operation on account of its simplicity and harmlessness. As a rule, methods which prevent the adhesion of the womb to the abdominal wall or to the adjacent organs, are to be preferred to the others. Professor Pinard made some remarks on the vomiting in pregnancy. It was always due to hepatic insufficieney.

Persistent vomiting is not seen in women who have been treated in a logical manner, and an absolute milk diet is the one and only safeguard. The pulse is the best indication as to the advisability of interrupting gestation. When it is over 100, there is danger, and when it reaches 140, the woman is lost. If after several days of absolute milk diet, the pulse remains over 100, the uterus should be emptied of its contents. Eclampsia was also discussed, Hirigoyen and Schmitt advocating in some cases manual dilatation and removal of the child when labor has set in. Dr. Pinard remarked that statistics published nowadays do not contain a sufficient number of cases, the intensity of the illness varying considerably. He did not believe in active measures, trusting more to chloroform, chloral and milk.

Haycraft's Reaction Studied by Chauffard.

Dr. Chauffard, who has succeeded to Hanot as the best known specialist in France on liver diseases, has been carrying out experiments with the help of F. X. Gouraud to test the usefulness of Hayeraft's method in recognizing minute quantities of biliary products in the urine. The urine used should be quite fresh, or at least have been sterilized with a small amount of cyanid of mercury, for instance, 5 to 6 centimeters of a 2 per cent. solution. The urine should be poured into a glass, and a small amount of powdered sulphur deposited very carefully on the surface of the liquid. If there is any trace of bile in the urine, a small amount of sulphur will be precipitated. The test should last, according to Chauffard, about five minutes. This method allows one to detect the presence of biliary salts or bilirubin in a 1 to 50,000 solution, whereas Pettenkofer's test does not go beyond 1 in 1000. Fifty specimens of urine were examined, and a positive result obtained in 20 cases. Salkowski's test and the spectroscope proved the correctness of this reaction.

Bubonic Plague During a Scientific Excursion.

Bubonic plague broke out on the *Senegal*, a steamer which sailed from Marseilles on September 14, with a ship's list of 186 passengers, among whom were about 19 physicians. This steamer had been hired by the *Revue Générale des Sciences*, which had organized a scientific excursion to Asia Minor and Palestine. Two members of the crew were found affected with the plague, and the steamer had to put back to Frioul. All the passengers, with the exception of thirteen, were inoculated. Professor Terrier, Dr. Chauffard and other notable medical men were on board. The plague has since broken out in Naples, and one case of death has already taken place.

Supposed Death from Medulla Cocainization.

A few weeks ago quite a flutter was caused by the political papers publishing the report of a death which would seem to be the outcome of medullar anesthesia. A woman, suffering from a wound of the foot, had been taken to the Beaujon Hospital, subjected to Tuffier's method, and had died shortly after. It was, however, what one calls in French a "canard," showing once more the tendency on the part of the press to incriminate physicians when they can. The surgeon who had operated this patient, Dr. Lyot, wrote to the *Presse Médicale*, and showed by the observation taken of the case that death was due to acute septicemia, which the operation was unable to control. There were no symptoms of poisoning by cocain, and the autopsy revealed no indications of a wound of the spinal cord.

Dr. Crosti, who is surgeon of the Maggiore Hospital at Milan, has been undertaking some operations in Paris in Professor Reclus' service at the Laennec Hospital. Dr. Crosti has remarked that one of the important elements of Bassini's operation is often overlooked. In Bassini's operation a new inguinal canal is established, and to insure a sufficiently strong posterior wall, the fibers of the rectus, transversalis and minor obliquus are sutured to the deep part of Poupart's ligament. These fibers should be well separated from the aponeurosis of the major obliquus and subserous adipose tissue. According to Dr. Crosti silk should be used for these sutures. In some places such as Perouse, Sienna or Rome, some operators use silver wire.

Preparations for 14th International Medical Congress.

The first steps in view of the 14th Medical Congress have already been taken. Professor Julian Calleja-y-Sanchez has been chosen as president. Dr. Angel Fernandez Caro-y-Nouvilas will be secretary and Dr. Jose Gomez-y-Ama, treasurer. The fees for membership will be 30 pesetas. This congress will take place in Madrid April 23 to 30, 1903.

According to the last reports published, there have been no new cases of bubonic plague at Naples, so that the quarantine established against Naples in Rome has been removed.

Marmorek's Serum Spoken of by Bazy.

Marmorek's serum does not seem to acquire much popularity in France. One does not hear of its being used extensively by the surgeons of the hospitals, among house physicians and surgeons, whose opinions reflect and sometimes exaggerate those of their chiefs, it is looked upon with distinct disfavor. Dr. Bazy was speaking about a case which was treated by this serum, and he said he would hardly admit that the cure was due to the latter agent as no proof was given that there was streptococcei infection. The observation, he remarked, proved only what can already be called a success, that the Marmorek serum is not always harmful, a statement which has sometimes been made.

Electricity in Treatment of Constipation.

Muco-membranous colitis is a disease which often enough baffles the skill of the physicians who endeavor to cure it by the routine methods of treatment. Dr. Doumer, a Belgian physician, has recently recommended electricity, the continuous current being used as a means of curing the constipation seen in such cases. One patient had suffered from this latter symptom for quite a long period of time, and clinical investigation showed that there was stenosis of the ascending colon. He was subjected to the application of a 10-milliampere current during 10 minutes. The strength of the latter was increased on the following days to 70 and 80 milliamperes, and constipation, as well as all the other morbid symptoms, disappeared completely. Five other patients treated in like manner, gave the same gratifying results. The technique of the author is as follows: Two large tampons of coal, about 6 centimeters in diameter, are covered with chamois skin, dipped in water and placed over each iliac fossa. During the first minute the current is only put up to 30 milliamperes; it is then reversed and increased sometimes to as much as 150 milliamperes. The treatment should be kept up 10 to 12 days. The conclusions of the author are as follows: Such currents are easily and safely administered and can cure long-standing constipation when seen in mucо-membranous colitis.

Correspondence.

Tokio as Seen by American Physicians.

Tokio, Japan, Sept. 27, 1901.

To the Editor:—We are in this far away country and suppose a few observations might interest your numerous readers. Tokio, the present capital of Japan, is an interesting combination of the ancient and the modern; its foundations were laid before Columbus discovered America, and it was a great city in the beginning of the 17th century. Its population to-day is about two million. Some of its streets are as broad, as well paved and lighted as the boulevards of Chicago, and others as narrow and dark as in medieval days; tall brick and stone buildings that would do credit to any western capital have thatched roofs of a thousand years ago. The new Japan of to-day is a marvel; our own Commodore Perry held the magic wand that gave her the awakening, and her rapid strides to a higher civilization is the wonder of the age.

Our party had been in Tokio but a very short time when Baron Tomatsuri, commander and surgeon in the royal navy, called, in full regimentals, on Prof. Senn, and announced that he was detailed to attend upon him during his stay, and through him we readily gained admission to all the medical institutions of the city. He went with us through the Imperial University of Tokio, one of the products of the new Japan: it came into existence as at present, in 1886 of our calendar, 2559 of the Japanese; it was formed by the consolidation of several schools, two of which were of great antiquity.

It now consists of colleges of law, medicine, engineering, literature, science and agriculture, with a total of 2700 students.

The College of Medicine has twenty-four chairs, including three in surgery, three in medicine, one each in psychiatry, pathology, gynecology, obstetrics, ophthalmology, pediatrics, dermatology and syphilis, otology, rhinology and laryngology.

Prof. Sato, chief of the surgical department, Prof. Aoyma, of medicine, Prof. Katayamo, of psychiatry, and Prof. Mnira, of pathology, were especially courteous in showing us their numerous laboratories, the wards for clinical teaching, the libraries and the excellent facilities generally for teaching. The two surgical amphitheaters surpass anything we have in Chicago for successful asepsis in public teaching. The various wards directly connected with the college contain 520 beds, the Hospital for the Insane has 340 patients, and in easy access to the students there is a hospital for infections and contagious diseases, and one for chronic invalids. The course extends over four years of 282 days each; there are 350 students in attendance, and the last graduating class numbered 24.

The preliminary requirements are those of the entrance examinations to the University, much the same as the entrance examinations to our own universities. Any general hospital with adequate clinical facilities can conduct a medical college, but the degree and license to practice is given only by a board of examiners appointed by the Imperial government. There are nine medical colleges in Japan.



Main street of the Yoshiwara (Naka-no-cho).

Tokio is the home of the world-famed bacteriologist, Prof. Kitasato, doubtless the greatest living exponent of this important handmaid of medicine; his great work with the bubonic plague and tetanus are well known. He is now earnestly engaged with the leprosy problem, and we have reason to anticipate that he will soon give to the world important revelations that may bring relief in this disease. He conducts a laboratory for post-graduate work, maintained by the government.

I visited with great satisfaction Tokio's model prison, the Sugama, with 1800 prisoners. No country has a prison managed upon higher humanitarian principles. The buildings are all new and of ample size, of brick and stone; the approach is by a long avenue ornamented with trees, flowers and well-kept lawns. The cells are commodious, well ventilated and lighted. There is a daily school and numerous priests of the Shinto faith to give religious instruction. The workshops are numerous and well equipped. All are required to work, and every prisoner leaves there with some trade with which he may earn a support. While in the prison he receives a share in the profits of his labor, varying from seven-tenths to one-tenth, depending upon his diligence, good behavior and the number of times he has been committed, so that he may leave with a reasonable sum of money to begin life anew. Among other articles we found in the workshops were packages of umbrella handles, that were to be shipped to the United States. The trades unions at home have closed the workshops of many of our prisons, yet they carry umbrellas the handles of which are made by convicts in Japan.

Near by this prison there is a reform school for wayward children, conducted by a Japanese gentleman and his wife, Kosuka Tomeoku, who prepared himself for this important work by a prolonged residence at the Concord Reformatory, Massachusetts, and the Elmira Reformatory, New York. These noble people, without government aid, are building up an institution for child-saving that will aid in diminishing the increasing crime in their country as similar efforts have done elsewhere.

In the same locality is the City Hospital for the Insane, the great majority of the inmates being chronic and incurable. The proper care of these is a problem for Japan as it is for us. They are as well taken care of as its crowded condition permits. It is in this respect just like many similar ones in our own country. The institutional care of these unfortunates must be modified; the methods of a half a century ago do not suffice for to-day—Japan is not behind us. This hospital is soon to be replaced by another that I have no doubt will have ample ground, and every facility for occupation and amusement that the patients require, and it will be a comfortable home as well as a hospital.

I was much interested in Japan's method of regulating the "social evil;" it is a question always of deep interest to the physician as the guardian of the health of his clientage. It can not be questioned that so long as many men can not control their passions and some women are frail, prostitution will exist, and the wise sociologist will seek some way to minimize its worst effects.

The work of regulation began here in 1573, in the then capital, the city of Kyoto; the city of Tokio began the same



Courtesans in their "cages."

work in 1617; laws with severe penalties were enacted requiring all courtesans to be licensed and sequestered, and in 1867 the work of medical inspection began. The first place selected in Tokio for the purpose was a marsh overgrown with rushes and it was called Yoshiwara, a Japanese word signifying rush marsh, and this is the name by which all such localities are known throughout the empire. There are six such localities in the capital city to-day, but the principal is the Shin Yoshiwara, and this we visited. It is almost four miles from the center of the city, surrounded by a moat and a high fence with two gates of entrance and well guarded by the police, and no prostitute is permitted to pass the gates without permission. In this place there are 153 brothels; nowhere in Japan did we find so many expensive buildings for residences and 394 tea houses used largely as places of assignation, with over 3000 courtesans. These women are divided into three classes, according to the price they can command for services. They are under a contract with the brothel keeper, witnessed by the police authorities, for a term of from three to five years, in consideration of a certain sum that has been paid to the parents or guardians, and a further sum for the necessary outfit of clothing and bedding; the prostitute obliges herself to pay one-half her fees for living expenses, and 15 per cent. of the remainder to reimburse the keeper for money advanced. If her income has not been sufficient to discharge her obligations by the time the contract has expired, then she must remain until she has satisfied the keeper in full, which usually means so long as she lives; the practical result seems to be that the

contract is a sale for life. The women of the second and third classes are exhibited after dark in long, narrow cages, where they sit with powdered faces and rouged lips in garments as elegant as possible, waiting to be selected by some one passing by. To the average American this is most intensely revolting; to the average Japanese not at all so. The women of the first class are not so exhibited, but photograph albums are placed at the entrance to facilitate the business.

The medical inspection is as rigid as possible. Without the microscope the record of 1899 shows over 6 per cent. of inmates were infected; those of 1898, 5.5 per cent. In 1898 the number of inspections were 134,607; number of infected cases, 7506; number of guests entertained, 1,237,885. This inspection does doubtless diminish the aggregate of venereal diseases, but no inspection can be, in my opinion, adequate that is not microscopical and does not include the men as well.

The sequestration removes from the streets of Tokio every appearance of social vice, and the man who seeks it must go a long way to find it. The rigid police inspection at the Yoshiwara requires a written description, in considerable detail, of every man entering, and gives excellent espionage of the criminals. One walks the streets of these Japanese cities at night with a sense of security rarely felt in the cities of other countries. This much at least must be said in favor of it, and if the present method of exhibiting the women was stopped its most objectionable feature would be removed.

One of the most pleasing things connected with our Tokio visit was witnessing the marked attention paid our fellow traveler, Prof. N. Senn. On the day of our arrival, Baron Tomatsuri, a surgeon of the navy, with the rank of Commander, was detailed by the surgeon-general of the navy to attend upon him, and faithfully did he do his duty. Morning and afternoon he was on hand to take the Doctor to some new and interesting place, and the whole party is under deep obligations to him for the facilities he afforded for a study of the medical and surgical aspects of the capital city.

A banquet was given Dr. Senn, at which Dr. J. Frank and myself were present. When Baron Tomatsuri invited Dr. Senn to attend the function, I was present; the time fixed for it interfered with our itinerary; Dr. Senn, with that modesty and consideration for the welfare of others—these are two of his striking characteristics—declined, much to Dr. Tomatsuri's discomfiture. I insisted that he must accept and the itinerary must be changed, but considerable argument was necessary to induce him to do it. Dr. Senn wanted an excuse to avoid the publicity.

There were forty physicians present, all assembled in a room in the Imperial Hotel, and on a table in the center of this room were all the books that Dr. Senn has written, except his "Surgery," which has just been published. The menu would have done credit to any Parisian chef. At the top of it, beautifully printed in colors, were entwined the flags of Japan and the United States. The appetites of all having been satisfied by the generous feeding, Baron Haschineato, the Surgeon-General of the Army, acting as toastmaster, arose and proposed the health of each of the guests who were present. On the right of Dr. Senn sat Baron Ishiguro, Surgeon-General of the Army, retired, resplendent with decorations, some of which were won by his achievements in the war between Japan and China. On the left of Dr. Senn sat Prof. Sato, the senior professor of surgery in the University of Tokio. Prof. Kitasato made the first speech. In it he eulogized Prof. Senn for the great work he had done in the advancement of surgery, and emphasized the numerous and valuable contributions he made to the literaure of the profession. Dr. Suzuki, the senior commander of the navy, then arose, talked to the sentiment that the relations between the two countries should be more intimate, spoke of the important factor of Commodore Perry's visits in the beginning of the awakening of Japan, and of the deep obligation they were under to that distinguished American, and of the pleasure it gave them to do honor to another eminent American, and expressed the hope that two countries so close together geographically might be closer together scientifically. Baron Tomatsuri spoke of his pleasant associations with Dr. Senn in Cuba and Porto Rico during the Spanish-and American conflict, whither he had gone to study the surgery of the war, the important work that Dr. Senn had done in military surgery, and of the pleasure he had in his attendance upon him in Tokio.

Dr. Senn replied to these several speeches with more than his usual eloquence, reviewed the wonderful progress of Japan in medicine and surgery, gracefully thanked them for the great honor they had done him, and hoped it might be the beginning of a more intimate medical association between the two great countries.

The function closed in time for us to take a late train to Yokohama, and we were escorted to the train by five of the distinguished physicians, led by Baron Tomatsuri.

Yours very truly, D. R. BROWER, M.D.

Pension Examiners.

MILWAUKEE, Oct. 21, 1901.

To the Editor:—The article appearing in THE JOURNAL under date of October 5, reflecting on pension examiners, is entirely unwarranted, and the department that furnished you with such data is either incompetent or malicious.

It is far more probable that all of these twenty soldiers, aged between 50 and 70 years, should have heart disease than that none of the scarred and rheumatic veterans should have an organic heart lesion. Your comments, you will observe, carries their own refutation. I make small doubt that a far greater percentage of old soldiers have some organic heart lesion than the pension records show. Members of pension boards, through their frequent consultations and large experience, become very proficient in detecting heart murmurs, while many of your "disinterested physicians," I regret to say, can not detect a fairly loud murmur. There is no professional restraint on the pension board; every "suspicious heart" is fully discussed, and you may rest assured that the final dictum of six consulting ears is more trustworthy than the separate finding of a score of your disinterested physicians.

RALPH ELMERGREEN, M.D.

Association News.

Section on Ophthalmology.

To Members of the American Medical Association who are Members of the Section on Ophthalmology:—During the past few years the growth of our Section has been so rapid and the number of valuable and interesting papers volunteered for our annual program has become so large that at the meeting in Columbus, two years ago, the executive committee offered certain resolutions concerning our work which were unanimously adopted. The recommendations of these resolutions having been employed with such satisfactory results at our last two meetings, they will continue in force at our next meeting at Saratoga Springs, and are as follows:

It is the decision of the executive committee that the number of papers to be read at the meeting to be held in 1902 be limited to 40. They are to be limited to 15 minutes each. Papers are to be accepted in the order of their reception and at the discretion of the executive committee.

Abstracts of all papers must be sent to the secretary before May 1, 1902.

Discussions are to be limited to 5 minutes each, and no person shall speak more than once in the same debate. The member selected to open the discussion on each paper will be allowed 10 minutes.

The officers of the Section earnestly request that abstracts of papers be sent in by April 1, instead of May 1, as the extra time is necessary in order to properly arrange the program.

It is anticipated that a large number of papers will be offered to the Section as heretofore, all of which would be gratefully received if the time at our disposal permitted of their presentation and discussion. But as the number has to be limited the officers of the Section would respectfully request those desiring to submit papers to send in their subjects at once. The exact titles and papers can be worked out later.

The officers of the Section, while not desiring to control the choice of subjects, would respectfully suggest that through letters received from members, the following general topics have been proposed for discussion: 1. Intraocular foreign bodies. 2. Indication for removal of the globe. 3. Diseases and injuries to the anterior segment of the globe. 4. Refraction and muscular troubles. 5. Punctate keratitis. 6. Vernal conjunctivitis. 7. Ocular anesthetics. 8. The connection between hepatic functions and the eye. 9. The microscopic subdivisions of conjunctival inflammations. 10. The theories of color perception, normal and subnormal, from a 20th century standpoint. 11. The newest and most rational methods of asepsis in surgical procedures, in and about the eye. 12. The passing of the so-called amblyopias and amauroses. 13. The true position of electricity in ocular therapeutics. 14. The best methods of teaching ophthalmology, with exhibition of instruments, appliances, etc.

If any of the subjects thus indicated in a general way please those desiring to write, be kind enough to so designate. If not, others may be chosen. These subjects are not intended to be exact; they are merely indicative. The Section officers hope to hear from the members as soon as possible.

It is earnestly requested that only those members intending to be personally present at the Saratoga meeting will apply for place upon the program. The officers of the Section desire especially to emphasize this point, as its observance or non-observance will have much to do with making the meeting of a satisfactory or unsatisfactory character.

Respectfully submitted, FRANK ALLPORT, Chairman, 92 State St., Chicago; C. A. VEASEY, Secretary, 116 S. 19th St., Philadelphia.

Married.

JOSE L. HIRSH, M.D., to Miss Amelia Moss, both of Baltimore, October 6.

STANLEY C. BABCOCK, M.D., to Miss Ida H. Herger, both of Buffalo, October 22.

JOHN T. MANIERRE, M.D., to Miss Mary Susan Foster, both of Chicago, October 15.

GEORGE W. WYLIE, M.D., to Miss Alma Belmore, both of Granite, O. T., October 16.

JOHN A. WESSINGER, M.D., to Miss Alice B. Walker, both of Ann Arbor, Mich., October 14.

FRANCIS CARTER WOOD, M.D., to Miss Edith Warren Sterling, both of New York, October 15.

WILLIAM E. BEASON, M.D., to Miss Lily Philips, both of Chattanooga, Tenn., October 30.

CLAUDE B. PARKER, M.D., Gallipolis, Ohio, to Miss Grace Gist, Athens, Ohio, October 16.

GILBERT E. SEAMAN, M.D., to Miss Elizabeth Sivyer, both of Milwaukee, Wis., October 29.

D. J. JENKINS, M.D., Broadway, Ohio, to Miss Ethel Colver, Summerville, Ohio, at Ohio City.

JOHN A. KILBOURN LAPP, M.D., to Miss Dorathy Sara Nice, both of Clarence, N. Y., October 23.

WILLIAM BATTLE MALONE, M.D., Memphis, Tenn., to Miss Jeane Hyde, Nashville, October 17.

CLAUDE BRADBURY PARKER, M.D., Athens, Ohio, to Miss Grace Gist, Gallipolis, Ohio, October 16.

SAMUEL W. SCHENCK, M.D., to Miss Lena Collins, both of Solomon, Kas., October 16, at Lyons, Kas.

ARMFIELD F. VAN BIBBER, M.D., Belair, Md., to Miss Rebecca Michael, at Perryman, October 16.

CHARLES A. HALL, M.D., to Miss Ethel Maud Curry, both of Cleveland, Ohio, October 9, at Richmond, Va.

HENRY MILLER BENNETT, M.D., Cheyenne, Wyo., to Miss Emily Wadhill, at Pikesville, Md., October 8.

CHARLES EDWARD HOOD, M.D., Cavalier, N. Dak., to Miss Barbara Vivian Anderson, Leyden, October 15.

JOHN F. BOYD, M.D., Paducah, Ky., to Miss Flora Steyer, Goleonda, Ill., October 30, at the home of the bride.

HARRY CHENEY DYER, M.D., Gulch, Colo., to Miss Florence Whedon, Cincinnati, October 9, at the home of the bride.

EUGENE METCALF, M.D., Fennimore, Wis., to Miss Grace Lura Kightlinger, Yates City, Ill., October 9, at Chicago.

FRANK ALLHANDS, M.D., Wingate, Ind., to Miss Georgia Godwin, Sellersburg, October 8, at the home of the bride.

ALBERT M. COLE, M.D., Indianapolis, Ind., to Miss Ruth Schuyler, Pana, Ill., October 23, at the home of the bride.

ALBERT H. TAYLOR, M.D., to Elizabeth E. Grotefend, M.D., both of San Francisco, Cal., October 1, in London, England.

GEORGE H. GILMORE, M.D., Stanberry, Mo., to Miss Bessie Walker, Murray, Neb., October 13, at the home of the bride.

JOHN W. ADAMS, M.D., Walkerville, Ill., to Miss Stella Wood, Carrollton, Ill., October 10, at the home of the bride.

GAILY BARR DUNKLE, M.D., Washington, Pa., to Miss Lillie McCoy, Salt Lake, Utah, October 15, at the home of the bride.

CHARLES HERMAN CLARK, M.D., Washington, D. C., to Miss Cora Taggart, Massillon, Ohio, October 17, at the home of the bride.

CHARLES WINTHROP WILLIAMS, M.D., Minneapolis, Minn., to Miss Minnie Lyon Benham, Woodmont-on-the-Sound, Conn., October 16, at the home of the bride.

Deaths and Obituaries.

Gustavus G. Roy, M.D., Jefferson Medical College, 1857, died at his home in Atlanta, Ga., October 18, after a short illness, aged 65. He was born in Virginia, and practiced his profession in that state until 1875, when he made Atlanta his home. In the early part of the Civil war he was a captain and then a major in the line, but resigned the latter commission to become an assistant surgeon; he was acting post surgeon in charge of the hospitals at Atlanta when that city was destroyed by Sherman. He was a prominent man in his section, having served as a member of the city council for years, and having assisted in the organization of the Southern Medical College.

Benjamin H. Bradshaw, M.D., Rush Medical College, Chicago, 1861, died at his home in Salem, Oregon, following an operation for tumor growth, October 14, aged 67. He was born in Belmont County, Ohio, and served as assistant surgeon and then surgeon of the 46th Illinois Infantry, during the Civil war, being mustered out of service in 1866. He practiced at Orangeville, Ill., for a number of years and then removed to Oregon.

Charles E. Stoner, M.D., College of Physicians and Surgeons, Keokuk, 1882, died at his home in Des Moines, October 25, from typhoid fever, aged 43. He was professor of principles of surgery in the Iowa College of Physicians and Surgeons, and a member of the American Medical Association.

Charles H. Voorhees, M.D., Jefferson Medical College, Philadelphia, 1850, died at the Presbyterian Hospital, Philadelphia, October 19, as the result of an apoplectic stroke. For the past few years he has not practiced, but he was once a prominent physician of Flushing, Ohio.

Joseph Sanders, M.D., Bellevue Hospital Medical College, New York, 1892, died at Oil City, Pa., while on a visit, October 20, from typhoid fever, aged 34. After studying in Germany, he had practiced in New York since 1895, devoting himself to work on the eye, ear and throat.

Derrell B. Darby, M.D., South Carolina Medical College, Charleston, 1873, died at his home in Walhalla, S. C., after a brief illness, October 8, aged 54. He had served several terms as mayor of Walhalla and was president of the city board of health at the time of his death.

George B. Bunn, M.D., Starling Medical College, Columbus, 1883, was found dead in his office, at Mount Vernon, Ohio, October 22; death was due to heart exhaustion. During the

Spanish-American war he served as brigade surgeon with the Seventh Army Corps in Cuba.

William J. Kearney, M.D., McGill University, Montreal, 1875, died at his home in Mariposa, Cal., October 10, from pneumonia, aged 45. He was born in Canada, and for a number of years practiced in Montreal, but in 1885 he removed to California.

Leonard Latter, M.D., Detroit Medical College, 1875, died at his home in Monument Beach, Mass., October 21, aged 50. He practiced many years in Falmouth, and was well known among the summer residents along the Buzzard's Bay shore.

John R. Moore, M.D., Jefferson Medical College, Philadelphia, 1854, died at his home in Parnassus, Pa., October 12, aged 76. He was a well-known practitioner in Western Pennsylvania, until his retirement six years ago.

Albert Binder, M.D., Medical College of Ohio, Cincinnati, 1886, died at his home in Ottoville, Ohio, from pulmonary tuberculosis, October 22, aged 38. He was a member of the American Medical Association.

Lorenzo Firmen, M.D., said to have been the oldest physician in Ohio, died suddenly at his home, in Findlay, October 13, aged 94. He was a native of Massachusetts.

Jefferson M. Mason, M.D., Medical Department Arkansas University, Little Rock, 1888, died at his home in Floresville, Texas, October 12, from diabetes.

William M. Gray, M.D., New York University, 1846, died at his home in Allegheny, Pa., October 10. He formerly practiced in Menard County, Illinois.

Webster D. Gear, M.D., Beaumont Hospital Medical College, St. Louis, 1893, died at his home in Argentine, Kan., from heart failure, October 19.

George G. Rahauser, M.D., Jefferson Medical College, Philadelphia, 1866, died at his home in Pittsburg, Pa., after a short illness, aged 58.

Louis D. LaBonte, M.D., College of Physicians and Surgeons, Baltimore, 1894, died at his home in Derby, Conn., October 21, aged 31.

William Geddes, M.D., Howard University, Washington, 1884, died at his home in Washington, October 21, from paralysis, aged 50.

Guy Dean, M.D., acting assistant-surgeon, U. S. A., died in the hospital at Santa Mesa, P. I., from pulmonary tuberculosis, September 15.

Charles Edward Dority, M.D., College of Physicians and Surgeons, New York, 1884, died at his home in Brooklyn, N. Y., October 23.

H. H. Crooker, M.D., Louisville Medical College, 1895, died suddenly at his home in South China, Maine, October 15, aged 36.

Charles F. W. Haase, M.D., New York University, 1857, died at his home in New York City, after a long illness, October 15.

Samuel Butcher, M.D., Jefferson Medical College, Philadelphia, 1864, died at his home in Mauricetown, N. J., October 18.

Harmon J. Dean, M.D., Miami Medical College, 1857, died at his home in Brocton, N. Y., October 11, after a brief illness.

Miscellany.

San Francisco Plague Report.

CASE 42.—Alex. W., which was the case reported in the last communication, the man who applied for treatment at the Marine-Hospital, September 13. This man has since recovered. A pure culture of plague bacillus was obtained from fluid aspirated from the bubo.

CASE 43.—Tom Chin Fat, died September 14, at 125 Waverly Place. Body of a well-developed, fairly well-nourished Chinese male. Cervical, axillary, popliteal, epitrochlear and right femoral glands barely palpable. No existing signs of previous venereal disease. Conjunctiva hemorrhagic. In left inguino-femoral region there was a large firm mass, largest in the femoral region. Section of this swelling showed numerous hemorrhages and gelatinous edema. The lymph glands of the bubo were markedly hemorrhagic and the hemorrhage of the surrounding tissues extended into the abdominal cavity, involving the whole of the antero-lateral abdominal wall. The left iliac glands were much enlarged and hemorrhagic, as were also the mesenteric glands, which were the size of peas. Heart, muscle soft, otherwise normal. Liver, cloudy swelling, and a few areas of coagulation necrosis. Lungs, tubercular. Stomach, submucous hemorrhages. Spleen, enlarged, a few small, whitish specks subcapsular. Pulp soft, trabeculæ obliterated. Smears showed numerous pest bacilli.

CASE 44.—Mrs. Saggau, residence 628 Broadway. Died September 27. This woman was a native of Bavaria, and 52 years old. She was taken sick very suddenly on the 24th. She had been doing a washing that day and was perfectly well, laughing and talking immediately before the attack. She started into the house, but fell suddenly on the floor and was seized with a chill and vomiting. The next day she was taken to the German Hospital, where she soon became comatose and died on the 27th. Autopsy showed body of a well-developed, well-nourished, rather fat Caucasian female of middle age. Lungs: Pleural adhesions on both sides; left lung congested and slightly edematous. Right, slightly congested. Heart was flabby, walls rather thin, some roughening of the mitral valve, segments, otherwise normal. About 20 c.c. clear fluid in pericardium. Spleen was enlarged, soft, pulp very dark and swollen, trabeculæ obliterated; smears did not show any organisms. Liver was normal in size, capsule smooth and glistening; cut surface showed cloudy swelling. Kidneys showed capsule adherent, granular. Mesenteric glands slightly enlarged, dark and hemorrhagic. Lymph glands of right femoral region very much enlarged, forming a well-marked bubo. Incision disclosed hemorrhage and edema of the surrounding tissues, and the glands themselves were enormously enlarged, hemorrhagic, and necrotic. Within the abdominal cavity, the iliac glands were also enormously enlarged, forming a continuous chain with those of the inguinal and femoral regions. There was also an area of hemorrhage of the retro-peritoneal connective tissue behind the bifurcation of the abdominal aorta. Smears from the gland substance showed numerous typical plague bacilli.

CASE 45.—Lee Ming Lee, Chinese male, aged 49, cigarmaker, died September 27, at 12 Spofford Alley. Bubo found in right femoral region. The report from the autopsy is pending.

CASE 46.—Jew Hoeg Kuey, male, aged 40 years, died September 29, at 109 Waverly Place. Autopsy showed body of a well-developed, well-nourished, Chinese male, of middle age. Conjunctivæ injected. No enlargement of the superficial lymphatic glands, but the right submaxillary gland was enlarged. Buccal mucosa negative. No evidence of venereal disease. Small venereal wart on penis, but no ulceration. Heart: There was a thickening of the base of the chordæ tendinæ of the mitral and tricuspid valves; otherwise normal. Both lungs show apex adhesions and slight tubercular infection, but no consolidation or abscesses. Spleen was 14x8x3½ cm., pulp soft, rich in blood. Malphigian bodies and trabeculæ indistinct. Liver, 24x10x6 cm.; surface hobnailed. Kidneys showed chronic nephritis. Suprarenals not enlarged. There is an acute gastro-entero-colitis. No ulceration of Peyer's patches. Tonsils hemorrhagic, submaxillary and retro-pharyngeal glands enlarged. Esophageal mucosa injected. Intima of thoracic aorta markedly hyperemic. Arteries show chronic endarteritis. Smears from submaxillary gland, tonsils and spleen showed numerous streptococci and bi-polar staining bacilli. Diagnosis confirmed by inoculation.

CASE 47.—Wo Tai, male, Chinese, aged 50 years. Died October 10, at 103 Waverly Place. Was foreman of a gang at the Pacific Mail Dock. Autopsy showed body of a well-developed and well-nourished Chinese male. Rigor mortis well marked. No palpable gland except in the left inguino-femoral region, where they were enlarged into a distinct bubo. The skin over the swelling presented a bleb about 1 cm. in diameter, the

contents of which showed numerous bi-polar bacilli in smear. There were dark scars over the shins; no evidence of venereal disease. Incision of the bubo showed the glands to be enlarged, hemorrhagic and necrotic with a distinct gelatinous peri-glandular edema. The glands were largest in the femoral region. Heart valves normal. Muscle showed fibroid changes. Right auricle larger than normal and contained a clot. Lungs: Left contained a small calcareous tubercle in the upper lobe; otherwise normal. Right, normal, a few adhesions to outer wall. Spleen was enlarged, 16x3x4 cm.; showed acute splenitis. Mesenteric glands not enlarged. Kidneys injected. Liver and gall-bladder negative. Hemorrhagic glands in left iliac and lumbar regions. Smears from glands of bubo and blood showed numerous pest bacilli, but none in the spleen. Animal inoculation positive, the guinea-pigs dying five days after inoculation.

Compensation by the Valves in Aortic Insufficiency.—Drasche noted marked improvement of all the symptoms of aortic insufficiency in three patients who died within two or three years of an intercurrent disease. The autopsies of each showed that the insufficiency had become practically compensated by changes in the valve-flaps, which had altered in such a way as to remedy the defect and arrest the regurgitation more or less perfectly. He urges others to study these changes more closely in future so that their clinical manifestations may be recognized. In a general way, he remarks, every case of actual aortic insufficiency, with palpitations, edema and dyspnea at times, in which these symptoms gradually subside while the general health improves and the signs on the part of the heart grow less distinct, can be recognized as a case of compensation obtained by some retrogressive process in the semi-lunar valve-flaps, rather than due to compensation by the mediation of the left ventricle. This compensation, by a retrogressive process on the part of the valve-flaps, is most probable when the sclerosis, induration or shriveling is but partial. The details of his findings are published in the *Wien. Med. Woch.* of June 1 and 8.

Congress of Criminal Anthropology.—The following resolutions were adopted at the International Congress of Criminal Anthropology which has just concluded its sessions at Amsterdam: 1. That every child who has committed a crime should be examined by a competent physician, before being summoned into court, and those discovered to be actual degenerates should be placed in pedagogic establishments organized for the purpose to train and improve them intellectually and morally. 2. That the biological record of the criminal should be appended to the court record in every criminal case. 3. That governments should take effective steps to arrest the progress of alcoholism, such as the strict surveillance of saloons, if necessary, closing some of them, and government monopoly of the production and sale of alcohol in general. The Italian school urged that a crime should not be considered from the standpoint of personal culpability, but from that of the danger to society represented by the criminal. The physician should stand by the side of the magistrate, and the latter should be a criminologist and not a mere commentator of the text. The *Progrès Médicale* announces that the next congress will be held at Turin in 1906.

Position Treatment of Hemorrhoids.—G. Oeder recommends in the *Ztft. f. Phys. Therapie*, iv, 8, to raise the pelvis as an aid in treating hemorrhoids. A wedge-shaped cushion is placed under the lower portion of the trunk, raising it considerably above the level of the chest, thus allowing the blood in the congested nodules to escape by its own gravity. One night is usually enough. Severe cases may require the application of the cushion day and night.

Binary Syphilis.—This is a new term introduced by Tarnowsky to designate the syphilis acquired by the descendants of syphilitics after they have lost the immunity to the disease with which they were born. Binary syphilis is especially deleterious for the offspring, abortions and still-births being exceptionally frequent. He attributes the dying-out of certain tribes to endemic syphilis supplemented by this binary form.

Lime in the Treatment of Cutaneous Tuberculosis.—Christides has used a saturated solution of quicklime for eight years in the treatment of cutaneous tuberculous processes, and asserts that it transforms the focus into a simple, rapidly-healing inflammation. It destroys the morbid tissues and microbes, while it does not affect the adjacent sound skin. It can be applied in the form of a salve.—*Grèce Médicale*, June.

Societies.

COMING MEETINGS.

Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.
Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.
Southern Surgical and Gynecological Association, Richmond, Va., Nov. 12-14, 1901.
Tri-State Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Nov. 19-21, 1901.
Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Lenawee County (Mich.) Medical Society.—This Society was organized at Adrian, October 22, and the following officers were elected: President, Dr. Daniel Todd, Adrian; vice-president, Dr. George Howell, Tecumseh, and secretary-treasurer, Dr. David L. Treat, Adrian.

Clinical Society of Washington, D. C.—At a meeting of this Society, October 14, the following officers were elected for the year: Dr. Walter A. Wells, president; Dr. Monte Griffith, vice-president, and Dr. J. Carlisle De Vries, secretary-treasurer.

University of Chicago Medical Society.—The organization of this Society, to be composed of members of the University faculties, was perfected, October 22, by the election of Dr. Henry H. Donaldson, as president, and Dr. Preston Kyes, secretary.

El Paso County (Texas) Medical Society.—The third annual meeting of this Society was held October 12, and the following officers were elected: Dr. Stephen T. Turner, president; Dr. Walter N. Vilas, vice-president; Dr. Junius S. Rawlings, secretary, and Dr. Herbert E. Stevenson, treasurer, all of El Paso.

Southern Kentucky Medical Association.—At the meeting of this Association, held at Bowling Green, October 25, the following officers were elected: President, Dr. W. N. Hall, Woodburn; vice-presidents, Drs. James C. Douglass, Franklin, and M. L. Garvin, Horse Cave, and secretary, Dr. Lee P. Trabue, Elkton.

Chicago Gynecological Society.—The twenty-third annual meeting of this Society was held October 19, and the following officers were elected: President, Dr. L. E. Frankenthal; vice-presidents, Drs. A. H. Ferguson and J. C. Hoag; treasurer, Dr. Emil Ries; editor, Dr. C. S. Bacon; pathologist, Dr. M. L. Harris, and secretary, Dr. W. H. Rumpf.

Iowa State Association of Railway Surgeons.—At the eighth annual meeting of this Association, held at Des Moines, October 17, the following officers were chosen for the coming year: President, Dr. Arthur L. Wright, Carroll; vice-president, Dr. Benton H. Criley, Dallas Center; secretary, Dr. Ira K. Gardner, New Hampton, and treasurer, Dr. Gilbert Baldwin, Ruthven.

New York State Medical Association.—The eighteenth annual meeting of this Association was held in New York City, October 21-24, and the following officers were elected: President, Dr. Alvin A. Hubbell, Buffalo; vice-president, Dr. William H. Biggam; secretary, Dr. Guy D. Lombard, New York City, and treasurer, Dr. Edward H. Squibb, Brooklyn. The delegates to the American Medical Association are: Drs. E. Eliot Harris, New York City, two years; E. D. Ferguson, Troy one year; Charles A. Wall, Buffalo, two years; Charles E. Quimby, New York City, one year, and Hubert H. Arrowsmith, Brooklyn, one year. The alternates are: Drs. De Lancey Rochester, Buffalo; Z. J. Lusk, Warsaw; Irving S. Haynes, New York City; L. G. Baldwin, Brooklyn, and Charles S. Payne, Liberty. An account of the meeting will appear in a later issue of THE JOURNAL.

Idaho State Medical Society.—This Society was entirely reorganized and a new constitution and by-laws adopted along the lines recommended by the American Medical Association. The officers elected were: President, Dr. H. A. Castle, Pocatello; vice-president, Dr. John W. Givens, Blackfoot; secretary-treasurer, Dr. Ed. E. Maxey, Caldwell (for two years); dele-

gate to A. M. A., Dr. Ed. E. Maxey, Caldwell (for two years); alternate, Dr. John W. Givens, Blackfoot; chairman committee on arrangements, Dr. F. J. Ledbrook, Moscow; chairman committee on legislation, Dr. O. B. Steely, Pocatello; chairman committee on nominations, Dr. R. L. Nourse, Hailey; chairman committee on publication, Dr. Ed. E. Maxey, Caldwell. Dr. L. P. McCalla, Boisé, was appointed to represent the Idaho State Medical Society on the Legislative Committee of the American Medical Association. Moscow, Idaho, was selected as the place for the next annual meeting, October 9 and 10, 1902.

Medical and Chirurgical Faculty of the State of Maryland.—A movement looking to the consolidation of the local societies with the Medical and Chirurgical Faculty of the state, as sections of the latter, was inaugurated last April, and suitable amendments proposed to the constitution of the Faculty to carry the matter into effect. These amendments lie over until the next meeting of the faculty. It was proposed to form five sections, viz., 1, clinical medicine and pathology; 2, surgery; 3, obstetrics and gynecology; 4, neurology and psychiatry, and 5, ophthalmology and otology, "and as many more as may at any time be proposed in writing by ten members of the Faculty and approved by a vote of three-fourths of the members present at a stated meeting." The clinical society took action on the above last Friday, and it was then determined to abandon independent organization; those members who are not members of the Faculty were advised to become so, and those who are members were urged to participate in the formation of the proposed sections, particularly in clinical medicine and surgery. It was ordered that all the property of this Society be disposed of, the debts paid and the net proceeds donated to the Faculty. Sixty members attended the meeting, and of 27 not members of the Faculty twenty-five signified their intention of becoming so. About $300 will be turned in to the Faculty, which will probably be put into the permanent endowment fund.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Oct. 1, 1901.

Dr. Joseph Collins, president.

Spinal Fracture, with Special Reference to Operative Interference.

DR. GEORGE L. WALTON, Boston, presented a paper on this subject, dwelling particularly on the question of whether it was not desirable to make early operation in this class of cases the common custom. He said that there were no symptoms which would lead one to assert that the cord was or was not unquestionably crushed. In the cases of so-called complete injury one finds immediate relaxed motor paralysis and entire absence of rigidity or other irritative sign in the motor sphere. Partial injury to the cord might be indicated by slower onset of paralysis, its unilateral or irregular distribution, the partial retention of the reflexes and subsequent improvement. In fracture with total transverse lesion the area of anesthesia was generally sharply marked, and the level was materially below the seat of the lesion. The classical symptoms of complete transverse lesion certainly do not indicate conditions beyond repair. Incomplete anesthesia points to incomplete lesion of the cord; the same is generally true of anesthesia of limited or unilateral distribution. Injury to the nerve roots alone sometimes appears in the cervical region after stretching and bruising, perhaps with temporary displacement of vertebræ. The diagnosis of local concussion of the spine was still applied by certain authors to such cases. Retention of urine was the rule in all varieties of spinal fracture with injury to the cord whether the lesion involved the cervical, dorsal or lumbar cord. This probably showed that mechanical conditions prevent the escape of urine so long as the propulsive force is lacking. The symptoms referable to vasomotor disturbances are evasive and baffling. The usual rise of surface temperature might perhaps be explained by the dilatation of superficial blood vessels due to cutting off the vaso-constrictor influence from the medulla. Absence of sweating tends to fortify the theory that the principal sweat center lies in the medulla, the fibers being interrupted in their course by the lesion. Sweat secretion appears to be due to specific nerve influence conducted by specific nerve fibers and not to heat. It is now generally recognized that the knee jerk is lost in cases of complete destruction of the cord, and cases of spinal fracture constitute no exception to this rule. The superficial reflexes were generally lost or diminished in these cases, and were probably always lost in the complete lesions. The Babinski reflex was a common later phenomenon, but he would doubt its occurrence in cases of total destruction of the cord without reparative process. The local signs, such as the formation of a knuckle, were very variable, and not of much significance. Operation often shows that the apparent irregularity is of no importance. It should be remembered that a great variety of curves are found in the back in healthy persons free from injury. This statement was fortified by the exhibition of a series of tracings from the backs of healthy students in the Boston Normal School of Gymnastics. The Roentgen rays might prove of value in making diagnosis, but in his own experience this method had not yielded sufficiently satisfactory results. The prognosis in cervical cases without operation was generally grave, death usually occurring within a few days. In cases of fracture of the dorsal or lumbar region without operation the prognosis was better, but still very grave. The fatality in non-operative cases was about 80 per cent. The statistics at hand were not very reliable regarding operative cases because many unsuccessful cases were not reported. The cases operated upon at the Massachusetts General Hospital since 1870 yielded a mortality of about 64 per cent. In some quarters laminectomy was not advocated, or was even denounced. Apprehension regarding the danger of the operation had been entirely allayed, and many cases had been reported showing that laminectomy is not dangerous by reason of the weakening of the spinal column. It was doubtless true that in most cases the crush of the cord had taken place. The author was inclined to think that owing to the decided limitations of our diagnostic ability it was well to promptly resort to operation in all cases, except the moribund and those with great displacement, and give the patient the benefit of the doubt. According to his personal experience the course of the operative cases coming under his observation had been more favorable than he should have expected without operation, from his previous experience and his knowledge of the literature. The neurologist was often asked whether it was wise to open the dura at the operation, and his answer should be in the affirmative. An edematous condition of the arachnoid was apt to exist and would be relieved by such a procedure, but the chief reason was the opportunity this afforded for inspecting the cord. Of late the custom had been not to suture the dura but to leave it open. It had been the usual custom in the past to secure drainage for a day of two, but various recent operators had demonstrated that it was not at all necessary, and by eliminating drainage one could secure quicker healing and greater immunity from sepsis. In cases of grave shock it would seem to be reasonable to delay operation if only to better interpret the symptoms. Rapidity of operation was important, and the surgeon need not fear injuring the cord by the use of forceps.

DR. CHARLES L. DANA said that his own experience had led him to believe that the operation is practically safe, and that the spinal column itself is not injured by the operation. He had not had any fatal results in his operative cases, about half a dozen in all, and two of them were cases of injury in the cervical region. It was a matter of astonishment to him that such long and severe operations could be done upon these patients without sacrifice of life. He must confess, however, that the ultimate results of these operations had not been satisfactory, according to his observation. He had seen some improvement in motion and in the bladder symptoms in these cases, but that had been about all, and it was quite possible that such improvement would have occurred without operation. If by clinical observation one could be sure that the cord was crushed one should not recommend operation. This could often be done. If there was a line of anesthesia coinciding with the line of paralysis, and this co-existed with the absence of knee jerks, he would feel almost positive that the spinal cord had been cut across, although there were certain exceptional cases affecting the cervical region which did not seem to follow this rule. It seemed to him that the opera-

tion performed by Lloyd, and which the speaker had seen employed by Abbé, was the quickest, safest and most effective. The author had done a service in bringing up this subject and urging a more persistent effort to relieve this distressing class of cases. The general opinion among surgeons was that this was a class of cases which hold out but little hope of benefit from operation.

Dr. Edward D. Fisher said that he had had a number of cases of fracture of the spine under his observation, and in the main he would agree with the reader of the paper that an operation is advisable. He would do this because death rarely occurs as the direct result of the operation. Where there had been a fatal termination he felt that the same result would have occurred if there had been no operation. In two cases that had been under his observation in which cocain had been used, the operation had been done as well as under general anesthesia. In one of the cases the injury had followed a dive in shallow water, and in the other from an acrobat diving off the shoulders of another acrobat. The lesions had been about the same in each case, and because of the situation of the lesion they had been afraid to administer a general anesthetic. When the cord was touched there was a sensation of pain, but no localization, and the operation was conducted without any more shock than with general anesthesia. He agreed with the reader of the paper that it was almost impossible to make an accurate diagnosis between cases in which the cord had been partially or completely crushed. He did not believe that a lesion through the cervical region, with an absolute loss of reflexes, positively indicated that there had been a complete destruction of that region. Sometimes on cutting down and exposing the cord one observed very little change in the appearance of the cord until the dura had been cut. Even then there might be very little change because of a hemorrhage in the substance of the cord. The distribution of the sensation in almost all of these cases was irregular, so that the classical picture was rarely observed. In many cases where there had been absolute loss of reflexes there had been partial recovery; indeed, in his experience it had been the rule to see only partial recovery.

Dr. Graeme M. Hammond did not think it was always possible for the neurologist to say that the symptoms presented were positively indicative of complete destruction of the cord. In one case coming under his observation, in which a young man had fractured his fourth cervical vertebra by diving in shallow water, there had been evidence of complete injury to the cord. He had been operated upon a year or two afterward, but it was needless to say there had been no resultant improvement. In another case in which there had been an incomplete injury to the cord, and in which operation had been resorted to shortly afterward, there had been complete recovery and the man had returned to his occupation of wrestler. Within a few days he had seen a very interesting case. It had been first reported four years ago. Several bales had struck him on the back, and almost immediately he had presented the symptoms of tabes, pure and simple. He had had no reflexes and almost complete anesthesia with the Romberg symptom. He had been operated upon twelve weeks after the injury, and had made a complete recovery with a return of reflexes. He had seen this man within a few days, now twelve years after the injury, and he had then presented absolutely no symptom of injury to the cord. Such cases naturally lead one to be rather optimistic in regard to the mild cases. The fact that there was spinal deformity meant nothing, for in Pott's disease of the spine there was often very marked deformity without any spinal cord symptoms. If the symptoms presented in a given case pointed to the total transverse lesion of the cord there was nothing to be done but operate, and even this gave a forlorn prognosis. In the milder cases the operation should be undertaken as soon as possible, as here the prognosis was much better. He would operate in any cases, no matter how hopeless it seemed, because nothing else could be done, and the patient was no worse off than before. In the milder cases it was our duty to operate.

Dr. B. Sachs said that the question arising regarding operative interference in these cases was similar to the question of surgical interference in Pott's disease or in cases of tumor. The answer to this question must depend very largely upon the stage. He could not agree with Dr. Hammond that operation should be done because to say the least, the person would be no worse. It was still the fashion to delay surgical interference until everything else had been tried, whereas if surgical interference was to do any good it should be practiced at once. In cases of fracture of the spine, therefore, whether complete or incomplete, operative interference at the earliest stage could do no harm and might be productive of a great deal of good. The differential diagnosis between complete and incomplete crush was difficult. When the crush was complete the reflexes were almost invariably absent, whereas if there was more or less maintenance of conduction through the cord the reflexes were apt to be impaired or exaggerated according to the site of the lesion. The dissociation of sensation was, in his opinion, an exceedingly valuable symptom, as it pointed out the rather moderate involvement of the cord. He was inclined to think that it was often a root symptom and not an indication of absolute involvement of the cord itself.

Dr. J. Arthur Booth said that his experience had been limited, but he had not seen any great benefit from operation, although it should be said that operative interference had been resorted to at a late stage. It seemed rational to treat fractures of the vertebræ on the same general surgical principles as fractures in other parts of the body. In two of his cases the complete paraplegia existing prior to operation had remained unaffected, though there had been some diminution of anesthesia and improvement in the condition of the bladder.

Dr. Joseph Fraenkel referred to a case at the Montefiore Hospital of fracture of the spine. The patient had been admitted a year and a half after the accident, and had been walking around since the injury. Although the operation had been done late, it was worthy of note that three years and a half after the injury the autopsy showed that the cord had not been entirely destroyed. About six years ago he had presented to this society a paper on the differential diagnosis between complete and partial destruction of the cord. In four cases in which the reflexes had been lost the autopsy had shown complete destruction in only one of the cases. That shock alone was sufficient to destroy the reflexes was an old physiological dogma. He wished to insist that it was important to note the condition of the deep and superficial reflexes because for the maintenance of the deep reflexes it was necessary that the cord be intact, whereas this was not requisite for the superficial reflexes. The plantar reflex was the one that was not destroyed.

Dr. George E. Brewer said that there was a greater inclination in Boston than in New York for operating upon these cases. He had personally passed through various stages of opinion regarding operating on these cases. At first he had been influenced by those around him in Boston. The general rule had been when there was paralysis below the point of injury and involvement of the sphincters, to do an exploratory operation. He could not recall a single one of these cases that had been benefited by the operation, though he felt that they had all been examples of complete crush of the cord. In New York City the surgeons had been perhaps a little too conservative. Injury in these cases is either a crushing one or there is a hemorrhage within or without the cord; hence the outlook from operation was not good. The cases of hematomyelia recover without operation; cases of severe crushing injury, even with operation, do not. This seems to be the prevailing view here at the present time. Possibly some of the early successes were in cases of unrecognized hematomyelia, in which, of course, recovery would have taken place entirely independently of the operation. Last winter he had seen a girl with injury of the last lumbar vertebra. There was a sensory paralysis and complete loss of control of the bladder and rectum. Dr. Hammond had examined the case, and believing that there was no transverse lesion, had urged operation. The speaker had performed laminectomy, and had found only a

small spicule of the bone. The patient had recovered from the operation, and at the end of six weeks had regained control of the bladder and rectum. When seen two or three months after operation she had almost completely recovered. Had it not been for the advice of Dr. Hammond he would have looked upon this case as an improper one for operation. It had been his practice to introduce in these cases a very small rubber drain.

DR. A. C. BRUSH, Brooklyn, said that he had seen a number of these cases. In the past six months he had had several *x*-ray photographs made, and they had been so variously interpreted by those who had seen them that they had ceased to have any value. A case was mentioned in which great improvement had followed the removal of a spicule of bone in a man brought into the Kings County Hospital after a fall. A diagnosis had been made of fracture of the arch. An immediate operation had been done, and the arch found to be broken down, but this was not pressing upon the cord, but a fragment of the tenth dorsal vertebra. This case had impressed him with the value of operative interference as a means of diagnosis.

DR. WALTON, in closing, said that the statement made by Dr. Dana regarding the symptomatology of complete crush of the cord seemed to impeach the observations of a number of trustworthy observers. Regarding late operations he would say that if the pressure had been removed there was no use in operating, and if the pressure had existed for many months there was little prospect of doing any good by operating. Theoretically, the late operation would be useful in cases in which symptoms arose from the formation of callus on the inside of the laminæ, and the pressure on the cord, but his personal experience did not include any case of this kind.

WILLS' HOSPITAL OPHTHALMIC SOCIETY.

Regular Meeting, held in Philadelphia.

Dr. Conrad Berens in the Chair.

DR. P. N. K. SCHWENK presented a case of dislocated cataract in a 35-year-old man who had been struck in the eye some thirty years previously. The dislocation, which had taken place in the anterior chamber, and which was accompanied with symptoms of secondary glaucoma, had occurred but one week before the case was seen.

Dr. C. Berens asked if there had been any irritation of the fellow eye, which was replied to in the negative. He referred to a case occurring in his clinic. The patient, a 47-year-old man, had received an injury to the affected eye some thirty years previously. He had never had any trouble save that of poor vision until a few days before he appeared in the outpatient department of the hospital; severe attacks of pain at that time compelling him to seek relief. The globe was markedly swollen in comparison with the other eye and intraocular tension was greatly increased. There was ciliary tenderness of the good eye with a hyperemia in the optic nerve head and macular region. Enucleation was performed. Examination of the eye showed that the crystalline lens was dislocated downward and forward. The iritic tissues were atrophied, the ciliary body was degenerated, and there were the pathologic conditions of secondary glaucoma. The interesting point was the period during which such a dislocated lens can remain inert. His theory was that an exudate had formed between the lens and tissues of the iris by the formation of lymph, the symptoms of secondary glaucoma being produced by a blocking of the fluids of the eye.

DR. CHARLES A. OLIVER presented a case of dislocated lens into the anterior chamber with symptoms of acute secondary glaucoma. The patient was struck in his right eye with a boxing glove some eighteen years previously, the eye becoming blind in a year's time. The eye was never painful until four days ago. At the time of the examination, the pupillary area was blocked by a cataractous lens that was bulging into the anterior chamber. Vision was limited to a point of light perception in the lower temporal field. The lens was readily extracted through a section made through the lower periphery of the cornea with a wire loop, without the loss of any vitreous. The wound was thoroughly healed in forty-eight hours' time and there was never any reaction. The fellow eye was healthy.

DR. SCHWENK stated that he intended, as opportunity arose, to remove the dislocated lens in addition to doing the iridectomy in appropriate cases of glaucoma. This procedure he deemed desirable provided that there was not any probability of severe hemorrhage. He believed such a dislocated lens to be the causative factor in producing secondary glaucoma more frequently than any exudate and pointed out that it was nothing more than a hard foreign body in the anterior chamber.

DR. OLIVER stated that glaucoma complex arises from many conditions. In the traumatic lenticular type the eye is usually quiescent for a long period of time, when suddenly some slight injury occurs by which the more or less opaque lens is thrust into a false position, such as the pupillary area, by which stoppage of lymph flow between the chambers is produced. In such cases he has frequently performed and advised an immediate removal of the lens. His experience has been that totally dislocated lenses could remain in the vitreous chamber for years without the appearance of any gross symptoms of any kind except uveal disturbances, but should they happen to get into the line of flow of any of the intraocular fluids and give rise to lymph blockage, a precipitation of glaucomatous symptoms must as a rule be expected. He believed the plan of combination of a peripheral iridectomy with extraction of the lens a useful one in appropriate and carefully chosen cases, citing a successful example which had come under his care.

DR. WILLIAM THOMSON presented a case of exenteration for orbital sarcoma in a 79-year-old man. He also exhibited a photograph of the condition before operation, showing the enormous masses of sarcomatous material filling the orbit and protruding from it—soon following the removal of the eye some two years before. During the procedure, the tumor-mass was found mainly attached to the periosteum of the external, the superior, and the inferior walls of the orbit.

DR. OLIVER gave a brief account of a case of orbital growth—a sarcoma involving the frontal, ethmoid, and sphenoid sinuses, and the antrum—which he had removed in its entirety at one operation by breaking successively into these cavities from the orbital cavity. The socket granulated thoroughly into shape, and there never has been any recurrence of the growth or any metastasis.

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE, AND THROAT SURGEONS.

Regular Meeting, held September 26, 1901.

Complete Retinal Detachment.

DR. G. W. MERRITT presented a case of complete retinal detachment which came on suddenly twelve years ago, and has persisted unchanged ever since. In this case there was no etiological factor obtainable.

DR. R. PAYNE spoke of the therapeutic value of subconjunctival injections of normal salt solution in these cases, and stated that he had tried an injection of 10 to 12 minims in one case, but that the resultant pain was so great that he did not repeat the experiment.

DR. W. F. SOUTHARD described his method of giving subconjunctival injections, which consisted in directing the point of the needle well outward after introducing it under the conjunctiva, thus avoiding the pain and danger of infecting the capsule of Tenon. He also gave a brief history of a case of retinal detachment which he had observed in a business man some fifteen years ago. In this case the detachment had come on without any previous illness or trauma, and had remained stationary, both as to extent and as to vision, for fifteen years.

Toxic Amblyopia.

DR. R. PAYNE then demonstrated two cases of toxic amblyopia. The first case gave a history of going to bed perfectly well, and of awaking in the morning almost entirely blind, being able to see moving objects only. Two or three days later

even this small amount of vision left him, so that he could not distinguish light from darkness. Three weeks later, when first seen by Dr. Payne, he was again beginning to see objects. The veins of the fundus were a trifle full, the arteries somewhat narrowed, the margins of the papillæ somewhat hazy, the temporal halves of the discs taking on a glistening white appearance, the nasal halves retaining a pinkish appearance. Blindness was almost absolute in the nasal halves of the fields, the temporal halves possessing perception of moving objects. The patient has always been perfectly well, and there was no evidence of specific disease, diabetes, hemorrhage, nor of the taking of any drug which might produce the sudden amblyopia. His occupation of bookbinder did not expose him to any toxic influence, nor did it demand very keen vision. The patient had taken a moderate amount of alcohol for years, five or six drinks of whisky a day, and had chewed two or three small plugs of medium strong tobacco a week. This was not excessive, yet it was the only cause to be found for the amblyopia. It is probable that his field was narrowed gradually, or that he had developed scotomata previous to this attack and that the suddenness of the attack was apparent only.

The second case was one of blindness from drinking wood-alcohol. A large quantity, said to be a pint, was drunk with suicidal intent. The patient was unconscious for four days, and on recovering was absolutely blind, with widely dilated pupils. When seen ten days later he had absolutely no perception of light, his pupils were widely dilated, right papilla a trifle hazy and uniformly milky white, both veins and arteries a trifle narrowed; no other changes in the fundus. The left papilla exhibited practically the same changes, only not quite so far advanced. The patient has now been under treatment for three or four weeks; the papillæ are becoming whiter, and there is absolutely no light perception in either eye.

Dr. Southard held it unnecessary to assume any toxic agent in the first case, and reported a case in which the central vision remained good while the concentric narrowing of the fields progressed until total blindness ensued. In this case no tobacco nor alcohol had been used, and the patient was a picture of health. At no time was there any swelling of the nerve-head, and the reflexes were always normal.

Dr. Eaton was of the opinion that the changes in the fundus in the first case were possibly due to a distension of Schwalbe's (subarachnoid) space, giving rise to edema of the nerve and retina, and consequent atrophy from compression. This conjecture seemed borne out by the blur in the left eye, and the appearance of edema in the macular region. A number of men who had inhaled Columbia spirits, had complained of temporary obscuration of vision. In these cases the loss of vision is intermittent.

Dr. Merritt stated that the whiteness of the dises in the first case was much more pronounced than when he saw the case two weeks ago.

Dr. Payne stated that the reflexes in both cases were normal.

Dr. Eaton recalled the case which he presented to the Society on February 21 of this year, in which a crystal of methylene-blue and a 20 per cent. solution of protargol had been applied to an infected ulcer of the cornea, leaving a dense, bluish-green deposit on the cornea. This deposit has now entirely disappeared, and the vision has risen to 20/10.

Therapeutics.

Treatment of Pneumonia.

In his article on the treatment of pneumonia, Hare, of Philadelphia, emphasizes two statements: 1, when called to care for a patient through an attack of illness the physician should be a watchman all the time and a therapeutist only when necessity arises; 2, in all acute infectious diseases, particularly in croupous pneumonia, patients may be divided into three classes; namely, those who are so mildly ill that all they need is good care and little or no active treatment; cases so malignant that nothing can produce a cure, and a third class between the first two, which is capable of cure only when the most skilful treatment is given. We must also keep in mind the fact that pneumonia is an infectious disease and runs a definite course and no attempt should be made to influence its regular course by any line of treatment. However, complications arise in a good percentage of the cases so that the skill and tact of the physician would have to be brought into action and opportunities will be afforded for the physician to show sense and knowledge of therapeutics. In typical cases the process passes through three stages, namely, the stage of hyperemia or engorgement, the stage of consolidation or red hepatization, and the stage of resolution. In cases of delayed resolution complications are liable to arise, which require special treatment. By the use of anti-pneumatoxin, endeavors have been made to antagonize if possible the injurious influences of the diplococcus pneumoniæ on the blood and different organs. If the efforts in this line of treatment are perfected the dangers and complications arising from an attack of pneumonia will be greatly diminished. As has been mentioned, however, the combating of dangerous symptoms which arise with the complications, and the strict support of the patient's condition and strength so that the tendency to exhaustion may be withheld, must occupy the attention of the practitioner.

If the physician sees the patient soon after the chill he may have opportunity, if the conditions are properly recognized, to arrest the severity of the disease and perhaps avoid an otherwise fatal illness. The patient should be ordered to bed at once in a large well-ventilated room, and if possible a competent nurse should be employed. The following should constitute the early treatment in order to establish good elimination and relieve to some extent the congestion:

℞. Hydrargyri chloridi mitis .....gr. iii-vi | 20-40
Sodii bicarb .....gr. v-x | 30-60

M. Sig.: At one dose, to be followed at the proper time by a saline cathartic.

The following may be administered to relieve the pain, cough, and to promote elimination by the skin:

℞. Pulv. opii et ipecacuanhæ .....3ss 2|

Ft. chartulæ No. vi. Sig.: One powder to allay the pain, and repeat in three hours if necessary.

The following combination is sometimes used after administering the purging dose of calomel:

℞. Tinct. aconiti .....m. xv 1|
Tinct. opii camph. .....3iss 6|
Sol. ammon. acetatis .....3iii 12|
Syr. zingiberis .....3iii 12|
Aquæ q. s. ad.....℥iv 128|

M. Sig.: One tablespoonful every two hours.

To establish renal elimination the following may be of service:

℞. Spts. etheris nitrosi .....3ii 8|
Liq. ammon. acetatis q. s. ad.....℥iv 128|

M. Sig.: One tablespoonful every four hours.

The question arises and is frequently asked as to the use of bleeding in the early stages of pneumonia. There can be no question as to the advisability of resorting to this method in strong sthenic individuals of middle age and with a flushed face, difficult respiration and strong, full pulse. In such cases blood to the amount of 8, 12 or even 20 ounces may be withdrawn from the arm of the patient until the pulse becomes soft and the respirations show improvement. No such depressing treatment should be resorted to, however, in feeble asthenic patients.

Rather than resort to venesection in these strong individuals other sedative measures may be taken during the first twelve or fifteen hours of the disease, by giving the patient a hot foot bath and placing hot compresses to the chest to relieve the pain, or if the fever is high, a cold compress changed frequently is of service. Internally the following is useful to depress the circulation and produce diaphoresis:

℞. Tinct. veratri viridis .....℥i 32|

Sig.: Three minims every twenty minutes until three or four doses are given.

In the second stage of pneumonia different conditions are present and the treatment must likewise be changed. In this stage a greater amount of labor is placed upon a heart which has become more or less weakened from the toxic substances carried by the blood. It is in this stage that the heart and general strength of the patient demand the attention and therapeutic judgment of the physician. The right heart must necessarily withstand the increased pressure and obstruction in the pulmonary circuit. If it can properly do its work, then the physician is doing injury to his patient by the administration of cardiac stimulants in his anxiety to do him justice. The question then may be asked: What signs and symptoms must be present in this stage to guide the physician in his treatment? In reply, we would state that the character of the heart sounds are of importance as well as the condition of the pulse. If the second pulmonic is well accentuated and the heart regular, that heart is doing as good work as could be expected, showing as it does that hypertrophy of the right heart is well developed and in excess to dilatation; in other words, the right heart is competent. Consequently, to whip a competent heart is like whipping a team of horses which are pulling their heavy loads competently and smoothly. On the other hand, when the load drawn drops into a quagmire the team may be temporarily spurred on by the whip in order that they may put forth some extra strength to successfully extricate the load. In the same way when the right heart shows that dilatation is overcoming the hypertrophy as shown by the weakening of the second pulmonic, then the heart may, with advantage, be aided by the administration of heart stimulants. As a result of this weakening other symptoms will arise, such as increased cyanosis, the change in the character of the respiration, and perhaps the mental condition of the patient. As heart stimulants, the following may be employed:

℞.	Strychninæ sulphatis .....gr. ¼-½		015-03
	Spts. ammon. arom. 3iv	16	
	Aq. camphoræ q. s. ad.....℥ii	64	

M. Sig.: One teaspoonful every three or four hours.

The foregoing may be given alternately with spiritus frumenti ounce one half to one ounce every four hours. If the cyanosis and the subjective symptoms of the patient increase, showing increased inability of the right heart to do its work competently, then a stronger stimulation must be resorted to. Digitalis has been greatly lauded in the treatment of this disease. It reduces the temperature and lessens the rapidity of the pulse, and is of use as a heart tonic whenever the pulse is of great rapidity. It may be given as follows:

℞.	Infusi digitalis 3iii	12	
	Potassii citratis .....gr. xx	1	33

M. Sig.: At one dose, to be repeated in four hours.

The great tolerance for digitalis in pneumonia has been commented upon by many writers; but we must remember, in using it as a heart stimulant in the second stage of pneumonia, that this drug should be pushed only when there are positive evidences or indications of the right heart giving out. It has the disadvantage, especially the tincture, of contracting the peripheral blood vessels and thus increasing blood pressure, and this in turn throwing more work upon the heart. It is advisable then to decrease the peripheral blood pressure as much as possible and thus negatively stimulating the heart by lightening its burden. To do this we can depend upon no better class of drugs than the nitrites, which may be administered as follows, in order to dilate the peripheral arterioles:

℞.	Spts. glonoini (1 per cent.).....m. xv	1	
	Spts. ammon. arom.....3v	20	
	Tinct. cardamomi comp. q. s. ad.....℥ii	64	

M. Sig.: One teaspoonful every four hours.

The foregoing prescription may be given alternately with the digitalis, or given in combination as follows:

℞.	Spts. glonoini (1 per cent.).....m. xxv	1	66
	Tinct. nucis vomicæ 3i	4	
	Tinct. digitalis 3ii	8	
	Tinct. gent. comp. q. s. ad.....℥iii	96	

M. Sig.: One teaspoonful every six hours.

In conjunction with the treatment of the heart in the second stage of pneumonia the organs of elimination must receive proper attention, especially is it necessary that the kidneys be properly stimulated and encouraged to do their work properly. Danforth, in his article in the "American Text-book of Therapeutics," makes the statement that a case of pneumonia is not hopeless as long as the kidneys are in active service, otherwise a fatal result may be expected. The hepatic stimulation should not be neglected and careful attention should be given to the bowels and skin.

If the third stage or that of convalescence proceeds favorably and with no complications, treatment by drugs is unnecessary. Good digestible nourishing food and proper amount of rest will usually suffice. If resolution is delayed and the cough troublesome the following may be given:

℞.	Codeinæ sulph. .....gr. vi		36
	Ammon. carb. 3i	4	
	Aq. camphoræ .....℥i	32	
	Syr. tolutani q. s. ad.....℥iii	96	

M. Sig.: One teaspoonful every three hours.

The complications most likely to arise are, pleurisy, pericarditis, endocarditis and meningitis, which should be treated as independent diseases.

Medicolegal.

Particulars Required in Personal Injury Case.—The first appellate division of the Supreme Court of New York says, in the personal injury case of Steinau vs. the Metropolitan Street Railway Company, that it does not think that the plaintiff should be compelled to specify by a bill of particulars the injury complained of, its nature, location and extent. And while it thinks that an itemized statement of the expense that the plaintiff was put to for medical and surgical appliances was correctly ordered, it thinks that the particulars should be confined to such a statement, and that the plaintiff should not be compelled to furnish the defendant with the names and addresses of the physicians, the number of visits, and other particulars. But it holds that she might be required to state the number of weeks that she was confined to her bed as alleged in her complaint.

No Physician in Attendance at Trial of Rape Case.—In the case of People vs. Figueroa, where the defendant was convicted of having committed rape on the body of a child 6 years of age, the Supreme Court of California says that the fact that no physician was in attendance at the trial appeared to be due to the fact that no subpena was served on one. The sheriff was not the only party that could serve a subpena, and, he having neglected to make service, the defendant, if he desired the presence of a physician at the trial, should have requested a continuance until he could procure the attendance of such physician as he might have subsequently subpenaed. Not having done this, he had nothing, the court holds, of which to complain.

Temporary Indigestion and Informal Consultations.—The United States Circuit Court of Appeals holds, in the case of McClain vs. the Provident Savings Life Assurance Society of New York, that, having had "dyspepsia or indigestion at times" did not convict the insured of untruth in the sense of his contract of insurance, when he answered "No" to the interrogations in his application as to his having, or having ever had, any of an appended list of 50 or 60 diseases, including dyspepsia. Temporary indigestion, or dyspepsia at times, the court says, is too common an ailment, and not serious enough to suggest itself as a disease to one answering such a question. Again, it says that the catalogue of diseases, to each of which an interrogation point was appended in the application, was a long one, and embraced diseases of a serious character; so that, under the circumstances, the insured may well have ignored or forgotten the temporary indigestion from which he at times suffered, when called upon to say whether he had ever had,

among other diseases, the disease of dyspepsia. Then, there was this question and answer: "When and by what physician were you last attended, and for what complaint? A. Had no medical attendance." But the jury found that he had been attended by a certain physician for temporary indigestion, not material to the risk, while the evidence disclosed the fact that the physician was an intimate friend, with whom the insured was in the habit of having daily intercourse; that he kept a horse at the physician's stable; that they rode and talked together daily. The court holds that, as the physician never attended him at his house, his consultations, such as they were, as testified to by the physician himself, might well have been considered by the insured as informal and casual, and not within the category of medical attendance, as inquired about in the application.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, October 19.

1 *Operative Preperitoneal Rupture of the Bladder, with the Report of a Case. John A. Wyeth.
2 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
3 *A Brief Statement of the Sanitary Work So Far Accomplished in the Philippine Islands, and of the Present Shape of Their Sanitary Administration. Charles R. Greenleaf.
4 *Advisability of Early Operative Intervention in Acute Mastoiditis: Report of a Case. Edward B. Dench.
5 *Report of the Medical Staff Attending the late President William McKinley.
6 *Report of Summer Work of Milk Commission of the Medical Society of the County of New York. Henry Dwight Chapin.

Philadelphia Medical Journal, October 19.

7 *The Case of President McKinley.
8 *A Symposium on the Czolgosz Case.
9 *The Trial of Czolgosz. George S. Graham.
10 *The Crime of Czolgosz, the Assassin. John B. Chapin.
11 *The Opinion of an Expert Who Examined Czolgosz. James W. Putnam.
12 *The Czolgosz Trial: A Unique Event. Charles K. Mills.
13 *Some Remarkable Features. Wharton Sinkler.
14 *Not a Case in Psychiatry. F. X. Dercum.
15 *On the Co-ordination of Respiratory Movements. R. du Bois Reymond.
16 *Some of the Ocular Affections of Childhood, Associated with Impairment of General Nutrition. S. D. Risley.
17 Address in Obstetrics. Davis S. Funk.
18 *The Case of President McKinley.
19 *The Simultaneous Employment of Analgesia Obtained by Spinal Cocainization and Ether or Chloroform Narcosis. George R. Fowler.
20 *The Practical Value of Blood Examinations in Medicine and Surgery. Thomas R. Brown.
21 Extrauterine Abdominal Pregnancy: Operation by the Vagina: Recovery. Charles G. Davis.
22 Purpura Hemorrhagica Following Acute Lobar Pneumonia; Recovery. H. L. Underwood.
23 A New Operating, Dressing and Examining Table. M. G. Burgess.
24 Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Medical News (N. Y.), October 19.

25 *The Case of President McKinley.
26 *Report of the Summer Work of the Milk Commission of the Medical Society of the County of New York. Henry Dwight Chapin.

Medical Record (N. Y.), October 19.

27 *The Case of President McKinley.
28 *Failure of the Knife in the Treatment of Cancer. Robert Reyburn.
29 *Report of the Summer Work of the Milk Commission of the Medical Society of the County of New York. Henry Dwight Chapin.
30 *Laboratory Aid in Surgical Technique. George B. Broad.

Boston Medical and Surgical Journal, October 17.

31 *The Value of the X-Ray in the Diagnosis of Renal Stone; Report of Four Cases. Paul Thorndike.
32 *Malignant Disease of the Tonsil. F. E. Hopkins.
33 Tubercular Peritonitis. (To be continued.) Henri T. Fontaine.
34 *Privileged Medical Communications. David W. Cheever.
35 A Brief Résumé of the Life and Work of Ambroise Paré. (Continued.) Charles G. Cumston.
36 Association of Anemia with Chronic Enlargement of the Spleen. (Continued.) Arthur H. Wentworth.
37 Gangrenous Appendicitis; General Peritonitis; Multiple Adhesions; Gangrene of Bowel Wall; Perforation of Bowel; Purulent and Fecal Abscesses; Operation; Drainage; Death; Autopsy. Charles L. Scudder.

Cincinnati Lancet-Clinic, October 19.

38 Preventable Disease in the Army of the United States—Cause, Effect and Remedy. W. O. Owen.

Pediatrics (N. Y.), October 15.

39 *Two Cases of Chronic Hydrocephalus in Infants Treated by Tapping and by the Introduction of Aseptic Air in the Place of the Fluid. Wm. Ewart and W. Lee Dickinson.
40 *Results of Tendon Grafting in Infantile and Spastic Paralysis. A. H. Tubby.
41 *The Value of Widal's Serum Reaction in the Diagnosis of Typhoid Fever in Children. J. H. Thursfield.

International Medical Magazine (N. Y.), October.

42 *Questions and Answers Regarding Syphilis.
43 *Syphilis May Be Benign, Semi-Malignant or Malignant. Louis A. Duhring.
44 *The Many Sources of Error in Problems Concerning Syphilis. G. Frank Lydston.
45 *Three Years of Active Constitutional Treatment Necessary. Orville Horwitz.
46 *No Responsibility Should Be Taken Regarding the Marriage of Syphilitics. Thomas G. Morton.
47 *Marriage of Syphilitics Safe After Five Years of Active Treatment. Edward L. Keyes.
48 *The Unrecognized Chancre. William S. Gottheil.
49 The Etiology of Syphilis. A. Robin.
50 *A Few General Remarks on the Management of Syphilis. Eugene Fuller.
51 *Treatment of Syphilis. Robert H. Greene.
52 *Syphilitic Affections of thhe Bronchi, Lungs and Pleura. Norman B. Gwyn.
53 Syphilis of the Nose and Throat. E. B. Gleason.
54 *Diagnosis and Management of Syphilis. Follen Cabot, Jr.
55 *The Curability of Syphilis. William S. Gottheil.
56 How Best to Diagnosticate Communicative Syphilis in a Wet Nurse. J. D. Thomas.
57 Syphilis of the Nervous System. D. J. McCarthy.

Providence Medical Journal, October.

58 The State Care of Epileptics. John M. Peters.
59 A State Sanatorium for Tuberculosis in Rhode Island—What Would It Accomplish? Jay Perkins.
60 Anesthesia in Obstetrics. Herbert G. Partridge.
61 Mental Enfeeblement. George F. Keene.
62 A Further Use of Hot Air. Frank E. Peckham.
63 The Nature of Hysteria. William McDonald.
64 Ectopic Gestation. Henry R. Brown.
65 A Case of Labor in Dislocation of the Uterus Following Ventro-fixation and Appendectomy. Herbert Terry.
66 A Case of Traumatic Emphysema of the Neck. Harry S. Flynn.

The Post-Graduate (N. Y.), October.

67 *Observations on Lateral Curvature of the Spine; Pathological, Clinical, Mechanical. A. M. Phelps.
68 Version. George L. Brodhead.
69 Examination of the Blood. Hermann Lenhartz.
70 Neurological Lecture (Tabes, Etc.) Philip Meirowitz.
71 Report of Clinic. W. C. Phillips. Henry D. Chapin.
72 Notes from the Clinics. D. B. St. John Roosa, Augustus Caille, Charles W. Allen, Otto Maier.

Medical Summary (Philadelphia), October.

73 The Home Treatment of Nasal Catarrh. (To be continued.) Edwin Pynchon.
74 Treatment of Typhoid Fever. M. K. Sturdivant.
75 Notes from My Practice. J. S. Leachman.
76 Hydrophobia: Its Symptoms, Treatment, Etc. (To be continued.) Wm. Alexander Armstrong.
77 Hearing. Edwin W. Pyle.

Archives of Pediatrics (N. Y.), October.

78 *Tuberculosis of the Female Internal Genital Organs—Secondary Infection of the Peritoneum and the Intestine. J. L. Duenas.
79 *Acute Recurring Respiratory Failure in the Newly-Born, with Symptoms Apparently of Bulbar Origin. Irving M. Snow.
80 The Feeding of an Incubator Baby. Charles W. Townsend.
81 *An Analysis of Thirty-two Cases of Congenital Heart Disease. John Lovett Morse.
82 Appendicitis in Children of Two Years and Under. J. P. Crozer Griffith.
83 Maternal Impressions—Report of a Case. B. K. Rachford.
84 Two Cases of the Bullous Form of Impetigo Contagiosa. Emelyn L. Coolidge.
85 Intestinal Obstruction from Typhoid Fever. W. F. Boggess.

Occidental Medical Times (San Francisco), October.

86 Plague Reports. H. A. L. Ryfkogel.
87 Some Gynecological Impressions Residual from Three Decades of General Practice. Wallace A. Briggs.

88 Incised Wounds of the Muscles, of the Occipital and External Carotid Arteries, and External Jugular Vein; Recovery. F. G. Walters.
89 Four Cases of Extrauterine Pregnancy treated by the Vaginal Route. Frank L. Adams.
90 Topical Treatment in Gynecology. George Wm. Davis.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), October.

91 *A Tumor (Neuroglioma) of the Superior Worm of the Cerebellum Associated with Corpora Quadrigeminal Symptoms. Hermon C. Gordinier.
92 A Case of Progressive Unilateral Ascending Paralysis, Probably Due to Multiple Sclerosis. Charles S. Potts.
93 A Case of Progressive Muscular Atrophy and Tabes, with Autopsy. Joseph Collins.

Medical Times and Register (Philadelphia), October.

94 What Part Should Physicians Take in Municipal Affairs. C. F. Markel.
95 Chronic and Nervous Diseases. W. H. Walling.

Bulletin of the American Academy of Medicine (Easton, Pa.), October.

96 *Some of the Ethical and Sociologic Relations of the Physicians to the Community. S. D. Risley.
97 *The Abuses of Institutionalism. W. G. Carpenter.
98 *The Advantages of Civil Service Principles in the Conduct of State Hospitals for the Insane. Gershom H. Hill.
99 *Hospital Mismanagement. A. Goldspohn.
100 Hospitals and Sanatoria Founded, Owned and Controlled by the Medical Profession: A Case in Hand. H. Bert Ellis.
101 Institutionalism. John Curwen.
102 Care of Epileptics in Massachusetts. Everett Flood.
103 Institutionalism—What Is It? Elmer Lee.
104 *Tendencies in Hospitals for the Insane with Some Suggestions. J. E. Robbins.
105 *The Need of National Co-operation in the Establishment of Sanatoria for Tuberculosis. A. Mansfield Holmes.
106 *The Relation of the Clinical Laboratory to the Hospital. Henry W. Cattell.

Denver Medical Times, October.

107 The Institution of a National Medical Bureau. Carey K. Fleming.
108 Twentieth Century Surgery. Leonard Freeman.
109 Some Thoughts on Abdominal Surgery, with a Brief Report of Cases Operated upon Since January 1, 1899. I. B. Perkins.
110 A Few Etiologic Factors in Displacements of the Uterus. Clarence L. Wheaton.
111 A Cure for Consumption by the Inhalation of Medicine Through the Medium of Hot Air. J. Byron Sloane.

Chicago Medical Recorder, October.

112 A Brief History of the Chicago Medical Society from Its Origin to the End of Its First Half Century of Progress. N. S. Davis, Sr.
113 *Uric Acid Fallacies. Frank Billings.
114 *A Method of Blood Antisepsis. G. G. Taylor.
115 *The Home Treatment of Pulmonary Tuberculosis. Robert H. Babcock.
116 The Prevention of Hemorrhage in Ophthalmic Operations by the Use of a Solution of Adrenalin Chlorid. D. Winton Dunn.

Annals of Gynecology and Pediatry (Boston), October.

117 *Transversal Incisions in Celiotomy. Charles G. Cumston.
118 Three Cases of Epidemic Cerebrospinal Meningitis in Infants. John L. Morse.
119 Technique in Obstetric Practice, with the Exhibition of a Practical Antiseptic Labor Bag. H. Judson Lipes.
120 Studies in the Normal and Pathological Structures of the Ovary. (Concluded.) Mary Dixon Jones.

St. Paul Medical Journal, October.

121 Edward Jenner and Smallpox Before and After the Introduction of Vaccination. Burnside Foster.
122 Notes in Orthopedic Surgery. Franklin Staples.
123 Cesarean Section versus Craniotomy. J. W. Andrews.
124 Concealed Accidental Hemorrhage. H. H. Witherstine.
125 Some Experiences with a Smallpox Epidemic. Donald B. Pritchard.
126 Operation for the Relief of Pendulous Abdomen. A. E. Spaulding.

Annals of Surgery (Philadelphia), October.

127 A Contribution to the Pathology of the Sphincters. Edred M. Corner.
128 *Milton's Method of Exposing the Anterior Mediastinum Modified for Ligature of the Innominate Artery. B. Farquhar Curtis.
129 Abscess of the Liver. Ellsworth Eliot, Jr.
130 *Foreign Bodies Accidentally Left in the Abdominal Cavity. August Schachner.
131 The Worsted Truss in Inguinal Hernia. J. C. Hubbard.
132 *Pneumococcus Arthritis, Primary in the Knee-joint. Dudley P. Allen and Cabot Lull.
133 Some Observations on Fractures of the Skull, Based on One Hundred and Forty-six Cases. Richard H. Harte.
134 Suppurative Pericarditis Following Appendicitis; Recovery After Incision and Drainage of Pericardium. Arthur H. Mann, Jr.
135 A Report of Two Cases of Facial Anthrax Treated by Injections of Carbolic Acid, with Recovery. Louis H. Mutschler.
136 The X-Ray and Photographic Technique Necessary to Bring Out Bone Detail in the Print. Eugene R. Corson.

Cleveland Medical Gazette, October.

137 Opinions in Relation to the Questions of the Special Committee of the American Medical Association, regarding the Prognosis and Treatment of Acute Gonorrhea in the Male. (Continued.)
138 The Urinary Analysis in 114 Consecutive, Unselected, Abdominal Sections Without a Death. Hunter Robb.
139 Chorea. James H. Taylor.
140 State Care and Treatment of Crippled and Deformed Children. F. H. Darby.

Journal of Comparative Neurology (Granville, Ohio), October.

141 The Cranial Nerves and Cutaneous Sense Organs of the North American Siluroid Fishes. C. Judson Herrick.
142 The Psychologic Theory of Organic Evolution. H. Heath Bawden.

Ophthalmic Record (Chicago), September.

143 A Case of Commotio Retinæ Caused by Contrecoup, with Persistent Blindness, Resulting in Complete Recovery. Henry A. Baudoux.
144 Tests for Heterophoria. G. C. Savage.
145 Is the Theory of the Vicarious Fovea Erroneous? A. Edward Davis.
146 On the Employment of Agar-agar in the Formation of a Stump After Enucleation or Evisceration. Geo. F. Suker.
147 High Degree of Conical Cornea, with Hyperopic Contraction. H. V. Würdemann.
148 Injury to the Eye from the Explosion of a Water Glass. S. Mitchell.
149 Further Remarks upon the Surgical Treatment of High Myopia, with the Report of an Additional Operation. Charles W. Kollock.
150 A Box for Mounting Eye Jars. Brown Pusey.

Peoria Medical Journal, September.

151 Summer Touring Amongst the Chicago Clinics.

The Canadian Practitioner and Review (Toronto), October.

152 *Address on Surgery. Dr. Jones.
153 *The Medical Treatment in Surgical Tuberculosis. W. B. Thistle.

Texas Medical Journal (Austin), October.

154 *The Systematic Doctor: Pelvic Peritonitis. W. C. Lipscomb.
155 The Public Health. J. S. Brownlee.
156 Perforated Intestine Searcher. Lucian Lofton.

St. Louis Courier of Medicine, September.

157 *Ureter Catheterism in the Male: A New Ureter-Cystoscope. Bransford Lewis.
158 Report of a Case of Obstructive Prostatic Hypertrophy: Complete Retention: Bottini Operation: Recovery of Ability to Urinate Voluntarily. Bransford Lewis.
159 *Do We Treat Syphilis Properly by Sparing the Patient in the Primary Stage? Charles O'Donovan.
160 Surgery of the Mammary Gland. W. M. Wright.
161 Dangers from Quackery. Isadore Dyer.
162 On Making and Closing Abdominal Incisions. J. Shelton Horsley.
163 La Grippe with Pulmonary and Cerebral Complications. Marie L. Grote.
164 Some Hints on the Management of Laparotomy Cases. Frank A. Glasgow.
165 Tuberculosis of the Cervical Glands, Tendon Sheath and Hip-Joints; Compound Comminuted Fracture of the Humerus. Etc. Nicholas Senn.

Atlanta Journal-Record of Medicine, October.

166 *On the Use and Abuse of Nasal Sprays. Dunbar Roy.
167 *Factors Influencing the Severity of Syphilis. Bernard Wolff.
168 *Continued Fever, or a So-called Ridge Fever in Upper South Carolina. J. H. Moore.
169 Report of a Surgical Clinic (Jaw Traumatism). J. S. Greenleaf.

AMERICAN.

1. **Rupture of the Bladder.**—Wyeth reports a case where bladder rupture occurred during a surgical operation from an effort to distend the organ in order to reach it by the suprapubic route. He thinks that, while the case is rare, it would be well to have a search made for similar ones. He has performed suprapubic cystotomy between sixty and seventy times and has employed as much as twenty-four ounces of fluid to distend the bladder, but never before had any trouble.

He thinks in cases where the habit of frequent micturition has prevailed for several years, leaving the organ in a somewhat permanently contracted condition, it would be advisable to be content with the difficulties and possible dangers of operating through a narrower incision with from eight to ten ounces of injected fluid rather than to run the very small risk of rupture by employing a larger quantity. In his case the patient recovered successfully.

2. **The Lane Lectures.**—This sixth lecture by Morris is devoted to the light treatment—the Finsen method—and especially its employment in lupus. He has come to look favorably on it and thinks it the best treatment for this condition, though it has its disadvantages in certain cases. He expects a still more brilliant future for the *x*-ray and the light treatment.

3. **Sanitation in the Philippines.**—Greenleaf gives an account of the conditions existing in the Philippines at the time of the American occupation, which were certainly bad, and of what has been done since that time by our sanitary authorities. Smallpox has been to a large extent exterminated. A number of contagious diseases, such as bubonic plague, typhoid and others, have been more or less thoroughly controlled. Much valuable work has been done in the laboratory. A Department of Public Health has been organized which has regulated matters successfully and the prospects for the future are in this respect the very best. When we reflect that some of the diseases found among those people are virulent in the nature of their infection, and in other tropical countries quickly develop into epidemics which are attended with frightful mortality, and that these people have been living under conditions of hardship and suffering, it is a matter of congratulation that so much success has been obtained and that the ratio of sickness in the army has been at times lower than has been observed in the tropical service of any other nation. He knows of no tropical islands in the world that have a better climate than the Philippines, but the natives have not been instructed how to take care of themselves. The sanitary measures had a pretty nearly virgin soil to work on.

4. **Mastoiditis.**—After reporting a case Dench points out the advisability of early operative interference and the dangers of delay.

5.—See also THE JOURNAL of October 19, p. 1029.

6.—See editorial in THE JOURNAL of October 19, p. 1042.

7.—See also ¶5, above.

8, 9, 10, 11, 12, 13, 14. **The Czolgosz Case.**—This issue gives a number of opinions in regard to the assassin, among them one from a lawyer who considers that the statement of the counsel for the criminal of their opinion that he was insane was unjustified as they did not present any evidence to that effect. Drs. Chapin, J. W. Durham and others remark on Czolgosz's mental condition, maintaining that he was justly convicted and that punishment should follow. Dr. F. X. Dercum does not consider the case one that calls for medico-legal decision. It does not belong to psychiatry, but to that of the psychology of crime.

15. **Co-ordination of Respiratory Movements.**—Du Bois Reymond argues for the existence of a respiratory center and points out what he considers a new reflex. When the thorax was compressed, glottic respiratory movements appeared which could not be induced in dead animals. All known sources of excitation of the respiratory centers were excluded by the conditions of the experiment, complete apnea and complete pneumothorax—or in several cases section of the vagus below the origin of the recurrent nerve—hence he thinks it must be due to a hitherto unknown kind of reflex in which the passive movements of the thorax act as a stimulus, giving rise to an afferent impulse exciting the motor center of the larynx. For sensory organs originating this impulse we must look to the sensory organs of the thorax articulations, tendons and muscles. The afferent channel must follow the course of the intercostal nerves and reach the reflex center by way of the spinal cord, the section of which, below the medulla, arrests the respiratory movements though artificial respiration is continued. The muscular sense or posture-perceptive sense of the thorax will have to be at least in part effective and the co-ordination of respiration thus shown to be exactly analogous to co-ordination of different muscles in the movements of the limbs.

16. **Ocular Affections of Childhood.**—Two cases are reported showing impaired general vitality and faulty metabolism, manifested not only by abnormality in this, but by a group of general and ocular symptoms, headache, general malaise, precarious appetite and variable temper. With these there was asthenopia, undue sensitiveness to light, inability to use the eyes with comfort, impaired acuity of vision, injected lid-borders and in both cases there was at the beginning congenital hypermetropic astigmatism. Risley thinks that in the absence of this congenital anomaly of vision the pathologic ocular conditions would not have occurred from the existing faulty metabolism. Another inquiry suggests itself: How far does the eye-strain of school children influence the general health? He thinks this hardly needs a demonstration.

18.—See also ¶5, above.

19. **Combined Analgesia.**—In order to avoid so-called mental shock in nervous persons, Fowler has been led to attempt the combination of spinal analgesia, and general narcosis with very satisfactory results. A very small amount of the general anesthetic agent is used to quiet the patient after the preliminary spinal cocainization and he thinks that the objections due to these patients being conscious of what is being done, have been quite thoroughly obviated. He is not aware that the suggestion has been offered or carried into effect of producing slight narcosis for the purpose of the spinal lumbar puncture or of combining narcosis for obliterating both the touch and sensation and the mental disturbance with the analgesic effects of spinal cocainization. Two cases are reported.

20. **Blood Examination.**—Brown reviews the advantages of blood examination, showing what different elements we observe in an analysis of the blood and gives the forms of disease in which the methods have been found of advantage. The diagnosis of typhoid fever has been very largely cleared up by the Widal reaction. There are certain forms of primary anemia in which the diagnosis is rendered possible only by blood examination. Lymphatic leukemia is by this means diagnosed from Hodgkin's disease, tuberculous or syphilitic adenitis and sarcomatosis of the glands, while splenomyelogenous leukemia is differentiated from Banti's disease, chronic malaria with enlarged spleen, tuberculosis or syphilitic malignant growths of the spleen, hydronephrosis or renal or ovarian neoplasms. In diabetes, the Williamson test would be of great value and too little has been done in connection with the Justus test in syphilis. The blood conditions in diphtheria and scarlet fever are mentioned, a high percentage of myeloeytes in the former being regarded as an unfavorable sign by Engel, while several authorities regard an increase of eosinophiles in the latter disease as a favorable sign. In anemia, whether primary or secondary, the prognosis is governed by the blood examination. The study of leucocytes, especially in surgical cases, is also mentioned and in exanthemata where the presence of leucocytes point toward one or the other condition. The value of leucocyte counting in surgery is important, especially in appendicitis. Two cases are reported showing its value.

25.—See also ¶5, above.

26.—Ibid., ¶6, above.

27.—See also ¶5, above.

28. **Cancer.**—Reyburn argues against the operative treatment of cancer with the knife. He says that when an incision is made in any part of the body for the removal of a malignant growth we at once provide and lay wide open for infection every vein and lymph channel in the space operated upon. He asks the question: Can we substitute for it anything that will prevent this systemic infection? He thinks this can be done by taking advantage of a substitute for the knife, such as the electro-cautery or, in a limited number of cases, the use of arsenic or chlorid of zinc for the removal of morbid growths. He quotes the successful results of Dr. John Byrne, who utilized

the electro-cautery. The best reason for the employment of this operation is that it is absolutely aseptic and a very significant fact is noted by Dr. Byrne, namely, that when the growth does recur in cases that have been operated on, it rarely does so in the cicatrices produced by the action of the electric cautery on the tissues, indicating that the vitality of the contagium, whatever it may be, has been destroyed and rendered harmless. The objection may be urged, he says, against Byrne's method that it is not applicable for the removal of cancers of the breast or large cancerous tumors occurring elsewhere in the body. He suggests that in such cases it would be well to immediately follow the knife with the electric or thermo-cautery. Arsenic and chlorid of zinc produce layers of lymph under and around the former seat of cancer which prevent infection and he has only recently begun to use this method of treatment; he can only say that the results so far are exceptionally good and he hopes others will test them.

29.—See also ¶6, above.

30. **Surgical Antiseptics.**—Broad gives an account of experiments made with various aseptics on a pair of hands known to be infected, using first bichlorid of mercury after scrubbing with green soap and water, soaking the hands in bichlorid 1 to 2000 or 1 to 4000 for periods varying from five to fifteen minutes. In every case the culture test always developed a staphylococcus. For two weeks they worked this way without better results, then the permanganate-oxalic acid method was tried and, as with the bichlorid method, finger scrapings and pieces of the skin in culture media always developed the staphylococcus aureus. Formalin was next used, in strength varying from 1 to 4 per cent. With it results were at first more gratifying, but at no time did the growth of the microorganism fail to appear. Then followed a scrubbing with green soap with no better results. Finally the subject became disgusted and refused to be experimented on further. Here the infection had extended over a period of three months and persisted in spite of strong aseptics. He thinks this is evidence that the unprotected hands may be, and often are, a source of infection even though they are washed and disinfected. The probability of silk being a cause of infection led to some work with it to show just when it was rendered sterile by boiling. Different sizes from 1 to 20 were first infected with the pure culture of staphylococcus pyogenes aureus. They were boiled for from twenty to seventy minutes, the pieces being removed under aseptic precautions every five minutes. The water was brought to a boil before the silk was dipped in. He found, as might be expected, that the larger the silk the longer the time required to render it sterile. No. 20 silk required 60 minutes; No. 16, forty-five; No. 12, forty; No. 8, thirty-eight; No. 6, thirty-five; No. 4, thirty; and all below No. 4 were boiled 25 minutes, excepting No. 1, in which no growth was obtained after 18 minutes' boiling. This was perhaps a pretty thorough test as probably no ordinary silk could be so absolutely infected as this was, but he thinks it would be safe to use this method. Silkworm gut was also tested, but no growth could be obtained after forty-five minutes' boiling. Catgut is a matter of considerable importance. The material from which experiments were made was prepared by the bichlorid method. After the fat was dissolved it was put in a 1 to 1000 alcoholic solution of bichlorid and preserved in alcohol or glycerin alcohol. The results were fairly good and it was exceptional that any infection was found. Formalin, often so satisfactory, in a size larger than No. 2 was uncertain. The ammonium sulphate method was tried, but the strength of the catgut was much impaired. The most perfect method, in the author's opinion, is the sterilization of catgut by dry heat, subjecting the material in sealed envelopes at 300 F. for three hours, then following it with the same heat for one hour to kill any spore. Culture-tests have shown that catgut prepared in this way is absolutely sterile, and clinical experience has borne this out. Rubber gloves boiled eighteen minutes were sterile, while after fifteen minutes they still gave a culture. Experiments were made with the expired air, a mask was devised and worn for one hour, at the end of which time pieces of gauze through which the wearer had breathed were removed. Examination always gave a growth, largely staphylococci and diplococci, and an occasional bacillus. In this way we may be able to explain an occasional cause of suppuration when an assistant or observer has been present suffering from some suppurative disease of the nose or mouth.

31. **X-Ray in the Diagnosis of Calculus.**—Four cases are reported and illustrated, showing the utility of the *x*-ray in renal calculi. The results are to a certain extent negative, but Thorndike believes there is more to be expected from *x*-ray photography in this condition. If the stone contains only a small amount of urates or some other mineral salt to give a shadow, it is capable of being recognized with some degree of precision by properly experienced observers. He notices the statement he heard made at a lecture, of the impossibility or impracticability of lifting out the kidney on to the loin, and splitting it along its convex border to expose its interior to easy examination. He has not experienced this difficulty and he has used this exploratory technique in six instances and without the least trouble from hemorrhage or otherwise. In some stout people it may be impossible, but in many of average weight the procedure is not difficult.

32. **Malignant Disease of the Tonsil.**—This is a rare condition, but its symptoms and pathology are discussed by Hopkins. He finds that males are more apt to be cancerous than females. He gives the symptoms of sarcoma and carcinoma in particular and says that unilateral enlargement in an adult should raise suspicion of malignancy, but absolute diagnosis is not always easy. He reports one case where the growth removed proved to be lymphatic sarcoma, the patient dying from recurrence three years from the time he first came under observation. Another case where the patient died within a month from pneumonia. He says that if a general rule were to be formulated for these conditions it might be: Enucleate the tumor with the finger and blunt instruments if the case is seen early and before the surrounding structures are invaded. Remove also cervical lymphatics if they are involved. If the new growth has gone beyond the stage which admits this shelling-out process with reasonable hopes of success, then external operation may be performed. In cases that are inoperable when first seen, palliative removal of the growth might be done by blunt dissection and Dr. Coley informs the author that he has treated one case with erysipelas toxins with the result that though the patient died of recurrence, it was eight years later. Massey has reported cures by the cataphoric destruction of cancer cells and though the current he uses is sometimes quite strong, it is well to know of every possible resource that may be available.

34. **Medical Secrecy.**—Cheever pleads for a change in the Massachusetts law to make it similar to that of New York in regard to medical confidences. The physician should not reveal any facts unless in case of crime where justice would miscarry if he refuses to tell the secret. Let the criminal law court decide and relieve the doctor of his obligation of secrecy.

39. **Hydrocephalus.**—After reporting two cases, in one of which there were eight tappings with an aggregate of 11 pints of fluid removed, Ewart and Dickinson offer the following provisional conclusions: 1. With due precautions the fluid of chronic hydrocephalus may be completely evacuated from the yet unclosed skull of infants, and aseptic air may be allowed to take its place. This operation may be repeated without detriment and with scarcely more risk than belongs to the usual method of paracentesis. 2. In favorable cases of moderate effusion, such as Case 2, a single operation may suffice. Continued oozing from the puncture for a few days after the removal of the tubes is not unfavorable. 3. In cases of considerable effusion an obvious indication is to relieve the brain from the weight and from the pressure of the fluid. The evacuation is facilitated by the introduction of aseptic air. In Case 1 this treatment proved to be of decided advantage. By a timely repetition of the operation a hydrocephalic infant might be enabled to carry the weight of the head, and if the treatment were begun sufficiently early, permanent damage to the brain tissue might be averted and a normal development might

perhaps ensue. 4. In large heads, while hydrocephalus persists, a considerable splashing sound is readily obtained. There is obvious risk in eliciting this sound by forcible succussion, and for the same reason any abrupt movement of the head should be avoided.

40. **Tendon Grafting.**—Tubby reports cases of talipes calcaneo-valgus, talipes calcaneus, equino-varus, calcaneo-varus, and spastic paralysis treated by tendon grafting. Of 11 cases of paralytic talipes, 6 have shown good results, and 5 fair, meaning by "good" that the results in these cases were fully attained and improvement was permanent, and by "fair" that a partial improvement was secured. In no case was there absolute failure. In four operations on the forearm for spastic trouble, the results were good in three and partial in one. He describes the technique of his operation at some length. He thinks tendon grafting has a future before it, but it will have to be used with discrimination. It is useless in cases of flail-like joint, where all the muscles are badly affected, and it should not be employed in slight cases of paralytic valgus or varus or slight equinus, in all of which section of the tendo Achillis will be sufficient. It is an operation that requires the greatest care in the selection of cases and muscles to be employed and careful watching of results of operation for years afterwards.

41. **Widal Reaction in Children.**—Thurstield has employed the test in more than 100 cases, in 42 of which he had a positive reaction. In some cases he has repeated this several times. Doubtful reactions are very seldom met with, and repetition with a different culture has not been doubtful. He has employed, as a rule, a broth culture of typhoid bacillus, generally not more than twenty-four hours old, made from a stock culture occasionally renewed from a trustworthy source. Of the 42 cases in which the reaction was positive, several were cases in which there would have been considerable difficulty without it, and there was no clinical example of typhoid fever which failed to give a reaction. He thinks, therefore, that the test is at least as reliable in children as in adults, or even of greater value. The occurrence of a previous attack of typhoid can usually be excluded in children and thus one cause of error common in the adult is avoided. Judging from the cases that he has been able to test before the end of the first week, he thinks the reaction occurs earlier in children than in adults. There is also among children a fever which, while it strongly resembles typhoid, does not run the course or present all the symptoms. He thinks it is possible that it may be an abortive typhoid, but the use of the serum reaction has shown that there are a few of these cases which are true typhoid.

42. **Syphilis.**—A number of questions were submitted to various syphilographers and their answers obtained. The questions were as follows: 1. What is the safest course in the diagnosis? 2. Has the range of remedies in syphilis increased in recent years? 3. What is the possibility of the secondary period being skipped in cases of severe tertiary lesions? 4. How far should the physician assume the responsibility of sanctioning matrimony in syphilitics? 5. What is the possibility of the transmission of syphilis in the progeny of a tertiary syphilitic? 6. Are there any cases where unequivocally syphilitic fathers have had perfectly healthy children?

43.—Dr. L. A. Duhring concludes that it is safest to proceed slowly in the diagnosis. In cases where there is a doubt, give the patient the benefit. Prolonged observation will furnish aid. There are two kinds of syphilis, the benign or mild form and the malignant or semi-malignant, the latter rebellious to treatment. The range of remedies has surely increased of late and the specific remedies not so much relied on as they formerly were. There is no doubt that in some cases secondary lesions are skipped, but the tertiary symptoms may not be severe even then; unless the case has been neglected as to treatment of the primary and secondary periods, the chances are in favor of any tertiary symptoms being mild. Syphilitic patients are apt to take the consensus of a number of physicians' opinions in regard to matrimony. In the mild cases three years should suffice to render subjects free from taint; in very mild cases even two years. The advisor must keep in mind whether he is dealing with the benign, semi-malignant, or malignant type. The same rule—the benignancy or malignancy of the disease in the parents—governs the healthfulness of children. Syphilitic fathers, after proper treatment, may undoubtedly have healthy children. The length of time they may remain healthy is a question hard to answer. In a general way, however, in mild cases, the question may be answered in the affirmative.

44.—Dr. G. Frank Lydston does not think the positive diagnosis of primary syphilis is so frequently possible as is generally supposed. There are many shades of variation between the classic type which the expert physician can diagnose with his eyes shut and the slight parchment induration which often resembles slight inflammatory induration. The mixed forms are apt to give trouble, and a mistake may occur in the diagnosis to any one, however expert. He does not think the therapeutic remedies have been very much enriched by any reliable remedies, but there have been some modifications of treatment which have been of great value. Among these is the hypodermic use of mercury, and one of the most valuable adjuncts in his experience is potassium chlorate in full doses. The exhibition of this drug in alternation with mercury is of great value, not only on account of the lessening of mercury, but for the curative action of the chlorate itself. He is skeptical as to the secondary period being ever skipped, but it may be slight and not noticed. As regards marriage the physician should assume no responsibility whatever, but should tell the patient that we have no known means of pronouncing a patient permanently cured. He is skeptical as to the possibility of transmission of syphilis to the offspring of tertiary syphilitics. He believes that in a large number of cases syphilitic fathers may have perfectly healthy children. All these cases, however, had late syphilis. He does not know of a case begotten in the first year of syphilis which was healthy.

45.—Dr. Orville Horwitz answers the first question by saying: Wait for the first manifestations of the secondary symptoms. The second question he answers in the negative. The third, that in some irregular types the secondary period is absent. To the fourth question he says that if the syphilitic has had three years of active constitutional treatment and is then kept under observation for one year and no signs of the disease have appeared, marriage may be advised with safety. Children born of parents suffering from benign syphilis are healthy unless the parents are affected with the irregular form of the disease, when both secondary and tertiary symptoms are present. The danger of transmitting the disease rarely reaches the vanishing point until about six years after infection. Fathers suffering from tertiary syphilis may have healthy children.

46.—Thomas G. Morton advises that the safest course of diagnosis is to consult a competent medical man and thinks that the range of remedies has not materially increased. He believes that the secondary symptoms may be slight and unnoticed, but the disease follows a regular course. The physician should assume no responsibility in sanctioning marriage in these cases, and any person who has been infected might be expected to transmit more or less taint. So far as his observation goes apparently healthy children have resulted from the marriage of syphilitics, but at any time the disease might appear in them.

47.—Edward L. Keyes advises caution as to the diagnosis, believes that the therapeutic remedies have increased and that the secondary period can be skipped absolutely, but in most such cases it is only overlooked. He thinks marriage can be sanctioned five years after infection, if there has been thorough treatment during these years, and believes that syphilis is never transmitted, as such, to the third generation. Fathers infected with late syphilis may have healthy children.

48. **Unrecognized Chancre.**—Gottheil believes that attention to the following points will prevent error in the diagnosis in the vast majority of cases: 1. The presence of tumor as the original lesion. 2. The painless and indolent character

of the tumor. 3. Coincident with its appearance, or very shortly after, there is a peculiar stony induration of the nearest lymphatic glands. This is to be carefully distinguished from the later general adenopathy. 4. The time a chancre takes for its development and retrogression is only a few weeks. Tuberculous infection takes months, and cancer even years for its development. 5. Early in the history of chancre, but later in the local adenopathy referred to, there occur unmistakable signs of general infection, such as pain, especially nocturnal, in the joints, synovitis, lymphadenitis, exanthems, etc. They are frequently slight and fugacious, and any patients presenting a tumor with these characteristics should be carefully and systematically examined at short intervals for their appearance.

50. **Management of Syphilis.**—The insidiousness of the disease is insisted on by Fuller, who remarks that the unexpert may make quite a percentage of mistakes in diagnosis. The patients dreading it at first, soon come to slight the trouble and may reject their doctor's diagnosis and neglect treatment, or they may overdo the matter. Those who have suffered from the secondary manifestations are generally convinced and stick faithfully to treatment, and escape later severe trouble. In cases of locomotor ataxia, for example, he has observed it is remarked that the early symptoms of the disease were trifling and the treatment correspondingly light and inefficient.

51. **Treatment of Syphilis.**—Fifteen years ago Greene commenced to treat his syphilitic patients practically in the following manner: "All constitutional treatment, except the expectant, was postponed until the appearance of erythema—the initial lesion being treated generally by the mildest of local mercurial preparations, such as the plaster, or weak solutions of bichlorid or black wash. Then came a vigorous administration of the proto-iodid internally, tonics and liberal diet, ordinary rules of hygiene being enjoined. After the disappearance of the erythema, a course or two of inunctions were followed by a return to the proto-iodid internally. This treatment was maintained continuously for several months. Then there were intermittent periods in which no treatment was administered, alternating with more inunctions, or with mixed treatment—that is, mercury and iodid combined; or inunctions externally and the iodid internally. The patient was kept under observation for a period of two years, and at the end of that time considered practically cured. Cases which were extremely anemic, or did not react well to mercury, were given a liberal supply of tonics for a few weeks, such as iron, quinin and strychnia, in combination with the appropriate treatment of any local lesions on the skin or mucous membranes, until the patient had become strengthened and the return to mercury would not generally be followed by distressing effects. He still follows this method to a great extent. He has found, however, that neurasthenia is not only caused by but may be already existent in syphilitic subjects and require more care and attention than the disease itself. He would, therefore, use cold baths, douches, static electricity and other methods, dietetic and otherwise, for this complication. Iron in some cases of non-irritating type, glycero-phosphate of lime, and so on, are not to be despised. Blood examination is important in every case. He believes now that the constitutional treatment should be commenced as soon as the patient and physician are both sure that they have an attack of syphilis to combat. Individuals who have been heavy drinkers do not thrive as well on mercury given internally as by administration by means of baths, or inunctions. Gout, rheumatism and tuberculosis are all rendered more acute by a syphilitic infection. The excretory organs must be kept in a good condition, especially the skin, and Greene advises some form of exercise, severe enough to induce per-spiration, followed by a shower bath or a light Turkish bath once or twice weekly, or mercurial fumigation. He believes that the result of treatment of late years is better than that of earlier times, as we see fewer people disfigured. Patients who have suffered from syphilis should be advised to keep up their tissue vitality for the rest of their natural life, even after there have been no symptoms, and should devote considerable time and attention to exercise, baths, etc., to keep their excretory organs in the best possible condition.

52. **Pulmonary Syphilitic Disorders.**—Gwyn describes the manifestations of syphilis in the lungs, pleura, etc. Interstitial pneumonia may occur in these cases, similar to the same disease from other causes. The diffuse suppuration of the lungs affects usually the middle portion, rarely involving the apices, and advancing toward the periphery. In early syphilis there may be a catarrh or fibrinous pleuritis. The later pleural changes are gummatous and peripheral pleuritis occurring with interstitial pneumonia. Syphilitic bronchial affections may exist alone or may be associated with other lesions, laryngitis, etc. In hereditary disease, while pneumonia of the fetus is usually found in still-born infants, structurally it resembles the diffuse pneumonia infiltrations. The rules of specific treatment in general will apply to treatment of pulmonary affections.

54. **Diagnosis and Management of Syphilis.**—Cabot emphasizes the following points: 1. Importance of never treating a suspected case of syphilis with mercury till sufficient evidence of the disease is present to overcome all doubt in physician's and patient's minds. 2. Dangers of syphilis: its relation to the patient's future and the community at large. 3. Length of treatment: its importance and the prognosis. 4. The relation of the disease to marriage, and the begetting of healthy children.

55. **The Curability of Syphilis.**—The conclusions deduced by Gottheil are as follows: 1. Syphilis is a curable disease, and may even, with restrictions, be called a self-limited one. 2. While the cure of a given case can never be affirmed with scientific accuracy, the chances of its being the fact after a certain time under proper treatment are so great that it may properly be claimed to have been effected. 3. Practically, a patient who has been properly treated through the active stages of his disease, and who has had no manifestations of it for several years thereafter, may be regarded as cured, and may be told so.

67. **Spinal Curvature.**—Phelps gives the results of dissection in cases of spinal curvature and points out what he thinks are the mistakes in the treatment. He holds reliance in gymnastic exercises for this condition one of the greatest fallacies that have ever been offered, and that the various machines that have been devised have no possible effect on the curvature and rotation per se. The only possible good they can do is to assist in holding up the spine, but so long as the ribs are bound together by contracted intercostal muscles, that force can be of but little avail. The only possible mechanical treatment is the using of force under anesthesia that would be unendurable without it: breaking away adhesions or dividing some by the knife; but he has never yet succeeded in straightening a growth in which bone change has taken place. He believes in gymnastic exercise, breathing exercises to expand the chest, elevate the ribs and change the form of the thorax; but these should be performed while the corset is on. They should be light and not severe gymnastics. He believes the aluminum corset is the best substitute for many of the braces and corsets now worn in Pott's disease and lateral curvature, and points out the advantages.

78. **Tuberculosis of the Internal Genital Organs.**—Duenas reports a case with elaborate microscopic examination in which there was peritoneal tuberculosis with involvement of the ovaries and tubes in a child eleven years old. The diagnosis was made largely on the lymphatic constitution of the patient, unfavorable hygienic surroundings and antecedents of the disease; against this was negative hereditary antecedents. The symptoms were peculiar. The stage of anasarca, accompanied by increase of urine at first, suggested the idea of a transient nephritis; then followed a period of four months with fever, diarrhea, emaciation and later three months of hypopyrexia, beginning with hypogastric pain and abdominal enlargement. The case shows that in the absence of a bacillar purulent vaginal discharge it is not even possible to

presume the presence of primary tuberculosis of the female genital tract in children. The operation that was performed was followed by apparent recovery.

79. **Respiratory Failure in the New Born.**—Snow reports two cases and one taken from the literature in which children born after normal labor, and apparently in perfect health for a few days, were taken suddenly with failure of respiration associated with opisthotonos. In one of his cases the child recovered, also in Dr. Keith's case, which is reproduced. He does not explain the condition, and thinks that we have here a new disease as yet unnamed. It may be that there is some transitory but powerful infection of the medulla. He thinks the cessation of breathing is due to some strong inhibitory impulse from the respiratory centers in that region. While the opisthotonos would suggest tetanus, the other characteristics of that condition are not present. In the case reported by Dr. Westcott that recovered, it was suggested that it was due to pressure on the medulla, the rapid clearing-up suggesting congestion or slight edema.

81. **Congenital Heart Disease.**—From a study of some thirty-two cases of congenital heart disease Morse considers the following points: 1. The considerable proportion of cases in which the cardiac lesion was discovered during a routine physical examination, there having been no symptoms referable to the heart. 2. The length of time which the condition may exist without the development of any symptoms, several cases having shown no symptoms at three and four years of age. 3. The comparative mildness of the symptoms in cases of patent foramen ovale. 4. The recovery from lesions which from physical examination were apparently the same as those in cases which resulted in chronic invalidism or death.

91. **Cerebellar Tumor.**—In a case here reported by Gordinier the general symptoms were double optic neuritis passing on to atrophy, intense and continuous headache, vomiting, dizziness, slow cerebration and gradual loss of memory. The focal symptoms were an ophthalmoplegia interna, double incomplete external ophthalmoplegia, marked cerebellar gait, a coarse tremor of the hands and ataxia in the left leg, together with choreiform movements. The autopsy showed glioma involving the central part of the superior worm, which in its growth forward into the mid-brain region destroyed the superior medullary velum, the interior of the posterior quadrigeminal bodies, especially the right, the central gray matter surrounding the aqueduct of Sylvius, the dorsal part of each ocular nucleus as well as the nuclei for the trochlear nerves, the tegmentum in the region of the red nuclei, and the superior cerebellar peduncles at their point of decussation, involving most, the fibers coming from the left side. He analyzes the symptoms with special reference to Nothnagel's statement that in tumors in the region of the corpora quadrigemina, the chief localizing symptoms would be a cerebellar gait and double ophthalmoplegia, especially involving the superior and inferior recti muscles. Gordinier considers his dictum too dogmatic and holds that the distinction between corpora quadrigeminal and cerebellar tumors is at times absolutely impossible.

96.—See abstract in THE JOURNAL, xxxvi, p. 1654.

97.—Ibid., p. 1730.

98.—Ibid.

99.—Ibid., p. 1731.

104. **Tendencies in Hospitals for the Insane.**—This article contains some remarks by Robbins as regards prevailing tendencies in asylums. He thinks there is not much liability to dangerous radicalism, but that the tendency is rather to ultra-conservatism. Advances make their way rather slowly in these institutions. The trained nurse, who has become so indispensable in general hospitals, makes her way slowly here, but she must add to the requisitions of the general nurse, the ability wisely to control unreasonable people. He points out the needs of the asylum nurse and remarks that it is to be feared that the nursing force in these institutions is not equal to the demands. There is the danger of too much commercial spirit in these institutions; wages rather than high ideals of the service are too much regarded. As regards pathologic laboratories, he thinks they may be overestimated in asylums. The average asylum physician has neither the training nor the time for such work. A central laboratory, as in New York, would probably result in better original work. The cases, however, should be thoroughly studied in the asylum, and rigid and systematic diagnosis should be made. Another thing that is slow in coming in asylums, is a properly equipped operating room with modern instruments and appliances. Physicians should keep well in the current of medical progress. The medical staff is usually made up of young physicians who have just served a term in the general hospital. They are required to be on duty day and night, Sundays and weekdays throughout the year. The work is not usually so hard and exacting, but it becomes monotonous, and as a rule they are not allowed to marry, which deprives them of the comforts and enjoyments that come from a home life. The best class of men is apt to avoid these institutions, and others that do come see that their stay can be only temporary and become indifferent or restless and discontented. The mechanical promotion according to seniority is also discouraging. Isolation and the lack of necessities for improvement tend toward deterioration. Association with the insane is not likely to do any mischief; it is the cutting off from external stimulating influence. He remarks that two opposite views are held as to how to get employes to render the most service. One class of superintendents have recourse to the introduction of frivolous amusements for their employes, etc., while others find that efficient services are only to be expected from the sincere and thoughtful, and would encourage moral and religious influences and employ only rational and elevating recreations. He thinks the latter plan the best.

105.—See abstract in THE JOURNAL, xxxvi, p. 1731.

106.—Ibid.

113.—This article has appeared elsewhere. See THE JOURNAL of September 28, ¶130, p. 868.

114. **Blood Antisepsis.**—The method here suggested by Taylor is the use of hydronaphthol, which he considers innocuous when given in a solution of olive oil in doses of 12 gr. daily. In no case was there any untoward effects from the drug and there seemed to be a decided benefit in the symptoms. He has used it in acute phthisis, in typhoid and in other diseases. The ideal method of administration would be intravenous injection in whisky or 50 per cent. alcohol, slightly warmed. It could then perhaps render the blood plasma actually germicidal, but this method is seldom practicable or convenient, and he would not recommend it excepting in emergencies like pyemia or septicemia. The hypodermic method is applicable, though it may produce some discomfort. But the most convenient and pleasant, though not quite so efficient a method is, as he suggests, in a solution of olive oil. He thinks that with prolonged administration the medicine will produce no unfavorable effects and is, therefore, a practicable method of blood antisepsis, pre-eminently in tuberculosis. It is also useful in typhoid, in pneumonia, in malaria as a substitute for quinin, in diphtheria together with antitoxin, in erysipelas by local injection, and in cerebrospinal meningitis, pyemia, septicemia and general septic infection.

115.—This article has appeared elsewhere. See abstract in THE JOURNAL of August 24, ¶40, p. 531.

117.—See abstract in THE JOURNAL of September 28, p. 854.

128. **Ligature of the Innominate Artery.**—Curtis gives a report of cases in which he employed a modification of Milton's method of exposing the anterior mediastinum by splitting the manubrium only instead of the whole of the sternum, and then dividing the bone transversely at the lower border of the first intercostal space. He gives the steps of it in detail, for which the reader is referred to the original.

130. **Foreign Bodies in the Abdomen.**—Schachner has investigated the subject of foreign bodies left in the abdomen and discusses the subject in its pathology and medicolegal relations. He reproduces the account of Kosinski's case where artery clamps were left in the abdominal cavity after laparotomy, from which a lawsuit resulted, ending, however, in

the acquittal of the surgeon from the charge of malpractice. He corresponded with surgeons throughout the country and reproduces in his article answers to a number of his queries which show how frequently such accidents may occur. He also mentions the recent Baldwin case in Ohio, where we believe suit is still pending against the hospital, though the surgeon has been acquitted.

132. **Pneumococcus Arthritis.**—Allen and Lull report a case of pneumococcus arthritis involving the knee-joint and also three cases that have been collected by Cave in which the pneumococci were obtained in pure culture as in his own case. Local infection with pneumococci, apparently judging from these cases, three of which were fatal, is a very dangerous condition, and he thinks that possibly it may be a more frequent infection than has been supposed.

152.—See abstract in The Journal of September 14, p. 714.

153. **Surgical Tuberculosis.**—Thistle pleads for medical treatment in the proper toning-up of cases of surgical tuberculosis and believes creosote by far the most useful of the therapeutic agents at our command. In 10 cases he has had marked results by not neglecting this. He does not see any reason why patients with local tuberculous disease of the bones should be barred from receiving medical as well as surgical treatment, and he reports a case of tubercular disease of the elbow treated by splints, tonics and creosote with good results.

154. **The Systematic Doctor.**—This article which, as it has no author's name attached, seems to be an editorial, points out certain things which it thinks would aid the practitioner in various ways. For instance, keeping better records, and system of tabulating facts and cases, putting down charges correctly and on time. It suggests the card-index system as a valuable aid, and holds the doctors miss it badly by their slouchy methods in presenting accounts. The monthly statement would be a better plan, but it is unusual to find a doctor who sends one out. It is a good plan to keep a dead-beat list, and the establishment and observance of regular office hours will be found advantageous even for the cross-roads doctor, who will save hundreds of miles of travel and make many extra dollars. The careful examination and study of cases, notes taken at the time and industry, are what lead to success. Whenever there is any important lapse in memory look it up again. Keep one's self fresh as to the facts of anatomy and physiology and other branches of medicine by study of references of this kind. The card-index can be used to advantage in this connection.

157. **Ureter Catheterism.**—Various methods of separating the urine from the kidneys are criticised by Lewis, who finds all the previously devised instruments for ureteral catheterization unsatisfactory and the Harris segregator objectionable, as it produces in many cases unbearable pain and is erratic and unreliable. He describes and offers to the profession a cystoscope of his own device, which he thinks has advantages over any previous one, both in its actual use and in its facilities for sterilization. Besides its value in catheterization he found it also of value in cystoscopic examination of the bladder.

159. **Syphilis.**—O'Donovan questions the method of waiting for the secondary symptoms before beginning active treatment. He thinks syphilis can be best treated as soon as it can be diagnosed, and that if this plan were followed the later nervous complications which are now becoming so common would not occur.

166.—This article has appeared elsewhere. See The Journal of July 20, ¶117, p. 224.

167. **Syphilis.**—After noticing the different characteristics of syphilis, Wolff holds that the factors which influence its severity reside both in the seed and soil, but vary in type with the nature of the soil and the quality of the virus. The nature of the soil depends on the physical condition of the infected, his health, race, age and sex. The quality of the virus depends on the dilution from frequent transmission and attenuation by mercurial treatment continuously or intermittently carried out along the links of the antecedent chain. Attenuated virus in healthy soil means abortive or benign syphilis, while with the possible exception of racial immunity or resistance, depraved soil and unmodified virus means severe or malignant syphilis. He notices that with the pure-blooded negro syphilis is very mild and is almost self-limiting, and later lesions of bone and viscera are rarely ever seen, while in the mixed blood or mulatto the ravages of the disease are very great, not only on the surface but in the internal organs. This he thinks is largely due to inherited resistance in the negro, which is less in the hybrid, the environment of each being the same.

168. **Ridge Fever.**—This form of continued fever or ridge fever, which has been described as peculiar to parts of South Carolina, is held by Moore to be a form of typhoid. Quinin seems to have little effect on it; he therefore thinks it can not be a malarial disease.

FOREIGN.

British Medical Journal, October 12.

Chronic Diseases of Joints Commonly Called Chronic Rheumatism, Osteo-Arthritis, and Rheumatic Gout. Archibald E. Garrod.—Garrod discusses here the real relations of rheumatoid arthritis and describes its symptoms. He thinks there are two well-defined groups. One is characterized by the frequent implication of the small joints of the hand and feet and by the symmetrical distribution of lesions, and the conspicuous degree of secondary muscular atrophy. The large joints suffer as well as the small, and those of the spinal column and the temporo-maxillary articulations are implicated in a large proportion of the cases. The hands and wrists are often the parts earliest attacked. In the fingers the first row of the interphalangeal joints usually suffers most, and the terminal joints usually escape. Arthritic muscular atrophy is early seen. The onset of the disease is apt to follow the action of debilitating causes, and of late years especially influenza. Its progress may be slow or rapid. This may be arrested at an early stage and a large degree of recovery may ensue, or it may advance until every joint in the body has become involved. The general health is liable to be impaired to various extents by anemia, etc. Visceral lesions are rare, but albuminuria is occasional. The softer structures of the joints seem to be chiefly involved. Our knowledge of the morbid anatomy is very scanty and it has so little fatal tendencies that the opportunity of examining the joints in the early stages are very rare. We can have no more valuable contribution to this discussion than a careful description of the postmortem appearances in an early stage of this kind of rheumatoid arthritis. It is most frequent in female patients in early or middle life and less frequent in men of the same ages. There is a form of disease met with in children with very similar articular lesions and a fatal result is not rare. In the second group of cases the sufferers are mostly female. With these the articular lesions tend to be symmetrical, and the small joints are usually early attacked; the patients are usually more advanced in life, and there are well-marked differences in the articular lesions. The terminal joints in the fingers are here very liable to be attacked, and especially the carpo-metacarpal joint of the thumb. Constitutional disturbance is practically absent; pain is often slight. The progress of the disease is usually slow; many joints become involved. The enlargement is evidently due to bony outgrowth. Fusiform swelling is entirely wanting. Muscular atrophy occurs, but it is usually less capricious than in the other type. The postmortem appearances of the affected joints conform closely to the classical description of the osteo-arthritic changes. It may occur in early life, but it is more characteristic of advanced age. There are still other complications, but he thinks these two are the most distinct, and the question arises whether they represent two distinct diseases and whether we should not use the term rheumatoid arthritis for the former and osteo-arthritis for the latter. The question also arises whether there is no direct relationship of acute rheumatism and gout to these cases, but he is inclined to favor the idea that this rheumatoid arthritis had its characteristic features from the beginning, though it is not easy to assert

that true rheumatism plays no part at all in its causation. Endocardial lesions have been reported as occurring in a large proportion, but he thinks it is not an event to be anticipated. As far as bacteriologic evidence goes it would point rather to rheumatism being a distinct condition. If there is a relationship with gout it is with the nodular and osteoplastic form, but in the majority of cases no evidence is forthcoming of a gouty origin of the changes in the question. There is some support to the infective theory of the disease, but it is not satisfactory. The main principles to be followed in the treatment are to find out whether there is a debilitating influence present and to relieve it; any unhealthy condition of the mouth and gums should be looked for, as it has been held by some that infection from unhealthy gums plays an important part in the causation of disease. The diet should be as nutritious as possible and meat should not be cut off. Stimulants are in some cases beneficial rather than otherwise when taken in suitable form and quantity. We should try to keep up the patient's strength, and maintain as high a level of general well-being as the condition admits. On the same principle it is desirable to give tonic drugs, cod-liver oil, iron and arsenic provided they do not upset the digestion. Fresh air and such exercise as can be taken without injury to the joints are beneficial, but he thinks massage and passive movements of the joints often do more harm than good. As regards balneotherapy, he thinks that the douche-massage of the kind given at Aix-les-Bains and many English watering places, is preferred to other modes of administration, and especially to deep-immersion baths. In most cases the disease is arrested under treatment and fresh joints are not involved, and if the condition has not already done too much damage to the articular structures, something nearly approaching complete recovery can sometimes be attained. In the discussion that followed, Dr. E. J. Cave rather favored the microbic origin of the condition and reported cases which seemed to him to indicate this. He thinks, however, it is safer to hold one's opinion in suspense.

Peripheral Neuritis in Beer Drinkers; Its Precise Causation and Diagnosis. Ernest Septimus Reynolds.—Reynolds describes the neuritis described in beer drinkers, which has been so prominently before the medical profession of late, and raises the question whether alcohol neuritis may not be due to arsenic, as was proven to be the case in the Manchester epidemic. There is the possibility, of course, that both may produce a neuritis and that the two poisons act in combination, but he believes ethyl alcohol alone never has done it when given experimentally to animals. He can not bring himself to believe that every case of alcoholic neuritis recorded has only been caused by arsenic, but thinks large numbers have been due to the combined action of the two poisons, and that arsenic in an alcoholic subject is much more virulent as a producer of neuritis than when taken alone. He suggests also that beri-beri has been diagnosed for states really due to arsenical poisoning.

New Methods and Results in the Bacteriologic Investigation of Fetid and Gangrenous Suppuration. Edward Rist.—The author describes his own method of bacteriologic analysis of pus, especially for anaërobic germs. It is that of Pasteur. The pus is diluted in several tubes containing to a height of about 4.5 in. liquid sugared agar, which is afterwards allowed to get rapidly solid, by plunging the tubes into cold water. The upper part of the agar column only can absorb oxygen, while the deeper layers are totally deprived of it. The tubes are put into an incubator and the colonies of anaërobic germs appear in the depths of the agar, where they can be withdrawn by means of aspiration through a clay pipette, without destroying the tubes and without preventing the later growing colonies from appearing in their time. Pure cultures of each germ are easily obtained by this system, and each species, once isolated, can afterwards be inoculated on various liquid and solid media. This method avoids the use of the air-pump, of hydrogen or pyrogallic acid, and enables the bacteriologist to make in a very short time a great number of dilutions, which is, of course, absolutely impossible with the other methods. He has studied and described several species of anaërobic germs which seem to play a very important part in human pathology; bacilli racemosus and bacillus fragilis seem to be the most active agents in appendicitis and pulmonary gangrene. These are also found in putrid pleurisy and otitic infections, together with staphylococcus parvulus and micrococcus fetidus. There are other species, however, described by him and his co-workers, and one of the most interesting is a certain bacillus bifidus found by Tissier in infants' intestines, where it has been taken for bacterium coli commune, and which it seems ought to be considered the normal microbe of the infantile intestine. Sometimes there are only anaërobic germs in the pus, sometimes they are mixed, but the author's researches entitle him to the view that whenever there is a fetid suppuration or an active gangrenous process, anaërobic germs are at the bottom of it. He thinks the presence of such germs in pus points to a severe form of infection, whereas the spontaneously curable forms are generally caused by the ordinary well-known pyogenic cocci.

Treatment of Phthisis by Electric Currents of High Frequency and High Potential. Chisholm Williams.—The treatment of pulmonary tuberculosis by high frequency electric currents has, as Williams claims, given very striking results. In 43 cases, all of them over a year's duration and picked by other medical men for the severity of their symptoms, 42 gained in weight and loss of all symptoms, except in a few where slight cough remains and a few bacilli may be found occasionally. The method is described. The Tesla method differs from the ordinary dynamo of the different coil currents in the indefinite alternations and high electromotive force. In the first, or auto-conduction method of the author, the patient is placed in a large solenoid and currents are induced in the living body, from which sparks may be drawn, though this is not needed in actual practice, but just for demonstration. He found that general electrification was better than local and the methods of treatment are of three kinds: 1. Auto-conduction; 2, Auto-condensation, in which the patient lies on a couch in or under which is a large sheet of metal that forms one armature of a condensor, and the patient, by means of suitable handles, the other. In this way currents of from 300 to 400 milliamperes may be safely passed through the body. The third method is by the resonator of Oudin; a solenoid, one end of which terminates in a metal sphere or other shaped terminal, and the other end terminates in the outer coats of the jars connected to secondary terminals of coil. From this can be drawn a long brush discharge similar to the static breeze, but absolutely painless, and of far greater power and intensity. This method can also be used locally. He describes the various symptoms as observed under this treatment. There is a vast increase in the number of bacilli, though a later decrease, and they tend to become clumped and become irregular and small, staining with extreme difficulty. The breathing, pulse, etc., are rapidly affected. In the first month he gives the application sometimes daily, in the second every other day, and in the third twice a week. In several of his cases ordinary occupation was resumed after the first month or so of treatment.

Diagnostic Value of Tubercle Bacilli in Relation to Phthisis. D. J. A. Chowry-Muthu.—A summary of the author's conclusions are as follows: "1. The presence of tubercle bacilli in the sputum proves conclusively the existence of pulmonary tuberculosis. 2. There are other agents beside tubercle bacilli that cause destructive diseases of the lungs, producing symptoms similar to those of tuberculosis. 3. The absence of bacilli in a case of pulmonary disease does not prove the absence of tuberculous disease. 4. It may be due (*a*) to simple phthisis; (*b*) to faulty methods in the examination of sputum; (*c*) to very early tuberculosis of the lung; (*d*) to very late tuberculosis where signs of fibrosis are evident. 5. A correct diagnosis becomes extremely difficult where bacilli can not be found on several examinations, in which case the history, physical signs, and symptoms should be more relied upon than the negative evidence. 6. In all cases of pulmonary diseases a systematic examination of the sputum is of utmost

importance both for negative and positive evidence of bacilli.

Treatment of Chronic Bronchitis in the Elderly and Aged. HARRY CAMPBELL.—The three points of Campbell's article are summed up by him as follows: "In treating chronic bronchitis in those past middle life the toxicity of the blood should be kept as low as possible. The air breathed should be pure and nasal breathing insisted on. The diet should be a bare sufficiency, and alcohol and malt indulged in sparingly, or not at all. Every ounce of superfluous fat should be got rid of. The general health should be maintained at the highest possible level. A vigorous circulation should be maintained. Every precaution should be taken against breathlessness. Breathing exercises should be resorted to in order (among other things) to preserve the mobility of the thorax."

The Lancet, October 12.

Present Treatment of Inoperable Cancer. ALFRED COOPER.—The various methods of treatment of inoperable cancer are reviewed by Cooper: Coley's serum, anti-cancerous serum, oöphorectomy, thyroid feeding, lymph gland extract recommended by Snow, the Roentgen rays, Finsen's light treatment, injection of various irritating substances, acetic acid, alcohol, methyl violet, cobra venom, artificially produced suppuration as by turpentine or arsenious acid, or calcium carbid recommended by Etheridge, and electricity. Among the drugs he speaks in most favor of is chelidonium as having the most evidence of its efficiency. As a result of his review he offers the following conclusions: "1. That in cases of inoperable sarcoma, more especially the spindle-cell variety, the patient should have the option of Coley's fluid given to him, since a certain number of cases have been cured. 2. That in cases of inoperable cancer of the breast in women of about 40 years of age in whom the menopause has not occurred the operation of oöphorectomy should be proposed, and this treatment may be combined with thyroid feeding. 3. That in cases of inoperable rodent ulcer and in the superficial malignant ulceration in other parts the Roentgen rays give a good hope of improvement. 4. That in cases where these other methods are declined or are inapplicable the internal administration of celandine (chelidonium) is worthy of trial, and when the case appears quite hopeless morphia should be pushed without hesitation. 5. Finally, I would suggest that before trying any of these remedies the risk should be fully pointed out to the patient, that the faint hope that most of them afford should not be magnified, and that the discomfort of treatment should be fully discussed; in fact, the surgeon should not do more than offer the treatment and leave the person to accept or receive it."

Mucin in Desiccation, Irritation and Ulceration of Mucous Membranes. W. STUART-LOW.—The anatomy of the mucous coats and the physiology of their secretions are first noted by the author, who gives notes of his cases treated by the use of mucin. He uses tabloids containing 5 grains of mucin and sodium bicarbonate. The cases reported are those of irritable indigestion, which he ascribes to a desiccated condition of the mucous coats. He thinks that the substance acts by supplying the protective, indifferent non-peptonizable and hygroscopic substance, mucus, by administering it just before digestion begins. The sensitive ulcer or erosion or the inflamed wall is covered over or shielded from operation of the acid gastric juice and thus reflex secretion of the latter is prevented. One of the leading clinical indications for the administration of mucin tabloids, as prepared by Burroughs, Welcome & Co., is the presence of clean, red, angry, dry tongue, or a clean, red furrowed tongue, indicating the inefficiency of gastric or protective covering. If in association with this there is pain after feeding and constipation, it indicates not too much mucus in the stomach, as in catarrhal states, but really shortage of mucus; it is well to remove the old gastric mucus and prepare the way for mucin, to administer first a saline aperient. He carefully avoids peptonized foods or preparations in such cases as being unphysiological. For the first one-half hour and probably longer the acid gastric juice ought to be immediately neutralized as it is secreted by means of alkaline salts introduced in the food chiefly by uniting with the proteids of the meal; this is essential so that the amylolytic process may proceed. It is of supreme importance that such neutralization should take place in all irritable and ulcerative states unless the exposed and hypersensitive parts are to be worried by the free acid causing pain and inducing vomiting. Therefore, the administration of such prepared foods has been avoided. He finds that as soon as the patient can retain such a proteid as the essence of beef or fresh meat juice the pain becomes much less, and he relegates the use of such prepared foods to cases of worn-out stomach in the aged.

Cancer, Its Nature and Its Treatment. JOHN HOLDEN WEBB.—The author gives in substance a similar article which has been noticed editorially in THE JOURNAL and which was first published in the *Australasian Medical Gazette;* the view was there stated that the malignancy is a riotous cell growth due to the lack of inhibiting substance provided by the liver. He regards it as a crystallization of cholesterin from the living cell. In carcinoma both tissue elements, cells and follicles, are represented so that the thyroid secretion is imperatively indicated, and he believes that the sole action of this body is to control proliferation of cells and that its action on metabolism is a snare and a delusion. His champion case is one of advanced cancer of the mouth in which the tongue, lower jaw, palate and tonsil had been removed, and where the action of the soap injections was most marked. The whole of the interior of the mouth and cheek when first seen was one mass of cancer. All smell and discharge are now gone and the patient has no pain. He does not expect recovery, but it is wonderful that he should get along as well as he does. He suggests certain precautions. No more than one teaspoonful of soap solution should be administered at one time. These injections are not absolutely without danger; another precaution is to never inject in one's office unless there is a bed for the patient to lie down for an hour or two afterwards. It is always well, he thinks, to employ anesthesia, nitrous oxid for instance. At first he injects nearly every day, and, with improvement, less frequently until one every week or ten days suffices. While he recommends a special soap, the common yellow bar soap will do. It should be dissolved in boiling distilled water and then drained through a sieve or closely woven calico to get rid of any particles of dirt.

Annales des Mal. des Org. Gen.-Urin. (Paris), August.

Special Points in Treatment of Prostatism. F. P. GUIARD.—Among the points emphasized by Guiard are the benefits of small anodyne, rectal injections of antipyrin and laudanum in case of inflammation of the prostate. The most convenient method of making these injections is to insert a vaselined urethral catheter in the rectum, injecting the fluid through this catheter with a small glass syringe held in the lap. In order to prevent the formation of secondary calculi the sand accumulating should be aspirated once a month with a large metallic catheter. He also advocates a whalebone instead of a metal guide for urethral catheters, and the Trendelenburg position for lithotrity.

Bulletin de l'Academie de Med. (Paris), October 1.

Localization of Antimony in the Organism. G. POUCHET.—A recent criminal case of poisoning with antimony interested Pouchet in the subject, and he instituted a series of experiments on dogs and rabbits. The results seem to demonstrate that the toxic action of antimony is not manifested in comparison with arsenic, unless the dose is large, and that its localization is very different from the latter, while the combination of arsenic and antimony seems to enhance the toxic action of the former. Arsenic is refound in the brain, spinal cord, muscles and liver, but no antimony can be discovered in these organs. Traces of both metals are found in the bones, skin and hair, but the largest proportion of antimony is found in the alimentary canal, with a very small proportion of arsenic. The simultaneous administration of some other medicinal substance, such as potassium bromid, seems to modify to a remarkable extent both the symptoms and the localization of these poisons.

Revue Neurologique (Paris), September 15.

Effect of Sunstroke on the Brain. E. Regis.—The effect of a sunstroke is similar in many cases to that of an intoxication. The direct or indirect action of the heat or the autointoxication which it may induce, are liable to cause the symptoms of an acute or chronic intoxication. In a case described, the patient had acute delirium immediately after a second sunstroke. After three months the memory was defective and improvement was very slow and gradual, owing to mental and physical torpor which persisted even a year later. Hypnotic treatment was refused.

Semaine Medicale (Paris), October 2.

Abnormal Position of the Intestines. F. de Quervain.—The intestines may be generally in a normal position with a certain portion more or less irregularly situated, or the entire large intestine may be behind, or to the left or right of its normal place. In a case personally observed, the entire large intestine was in the right half of the abdomen, the third case of the kind on record. Retroposition and sinistroposition with their intermediate degrees are probably due to arrested development, dating from the fifth week of fetal life. The other anomalies are probably the result of some abnormal torsion of the umbilical loop at this early stage. The abnormal position of the intestines may bring the appendix into the small pelvis, on a level with the iliac crest, over the right kidney, or near the margin of the liver, and perforation may occur at any of these points. The inflammation of the appendix at these abnormal points may be mistaken for an affection of the gall-bladder, but mistakes of this kind would be avoided if the course of the cecum were more carefully traced. The transverse colon may extend upward and completely mask the liver dulness. Mauteuffel has collected 24 cases, including 4 personally observed, of torsion of the cecum in which the tumor was not in the ileocecal region. Of this number 13 patients who were not operated on and 2 with an artificial anus, all died, but 6 recovered out of the 9 treated by laparotomy. In case of torsion of an abnormal sigmoid flexure the loop is generally voluminous and fills the larger portion of the abdominal cavity, either toward the left or right. Both the small and large intestine may become twisted around a common mesentery. The symptoms commence very abruptly in these cases, and collapse is so rapid that surgical intervention has hitherto failed to prevent the fatal termination.

Berliner Klin. Wochenschrift, September 16.

Soluble Silver as an Internal Antiseptic. Crede.—Soluble colloid silver is not an ideal solution, Credé admits, but no particles of silver are visible and it filters through blotting paper. It is tasteless, odorless and absolutely unirritating, while it proves extremely bactericidal even for very virulent staphylococci, as a destructive silver salt is formed from it by the action of the bacteria. Credé does not claim the priority of its invention, as he states that an American chemist exhibited argentum colloidale long ago as a scientific curiosity. He reports that three years of experience have confirmed his previous assertions in regard to its efficacy for external application, and its great value in country practice where asepsis is difficult. He is convinced that mercury and iodoform are responsible for many chronic, insidious, unrecognized intoxications, while silver is absolutely harmless. He recommends it now as a means of general internal disinfection in all streptococcus and staphylococcus infections not too far advanced. Abscesses and necrosis are, of course, not influenced by the silver, but phlegmons and all septic processes, epidemic cerebrospinal meningitis and erysipelas are favorably influenced. It has no action in subcutaneous injections and very little by the mouth. It must, therefore, be used in inunctions or by intravenous injection. He uses a 15 per cent. salve of the colloid silver, rubbing two or three grams into the skin after preliminary scrubbing and friction to induce hyperemia, and final rinsing with ether. When the skin is anemic, leathery, painful or incapable of absorption from any cause, intravenous injections take the place of the inunctions, from 5 to 20 c.c. of a .5 to 1 per cent. solution, repeating in one to eight days as required. He has treated cases of sepsis, acute rheumatism, fulminating gangrene, typhoid fever, scarlet fever with septic complications and advanced stages of pulmonary tuberculosis with the silver in inunctions or intravenous injections. All were exceptionally severe cases, but the marked benefit derived from the silver was apparent in every instance. Experiments on horses and other animals showed that the silver settled first in the lungs and liver and then left these organs for the spleen, kidneys and walls of the intestines. After a few weeks not a trace of the silver could be discovered in the organism. As it thus passes through the body so rapidly, its bactericidal effect is transient and the inunction has to be repeated three or four times a day and the intravenous injections twice, in order to obtain the maximal effect. Uncomplicated scarlet fever was not influenced by the silver. In case of infectious gastro-intestinal affections, he gives the colloid silver in pills or adds a teaspoonful to milk, cocoa or any albuminoid food three to six times a day.

September 23.

Prophylaxis of Tuberculosis and Isolation of Consumptives. B. Fraenkel.—In order to prevent infection of others, Fraenkel has long advocated that consumptives should wear masks to catch the droplets expelled in speaking or coughing. He now concedes that the prejudice against such a measure as the constant wearing of a mask is practically insuperable, and yet healthy guinea-pigs placed in a model tuberculosis ward where every precaution against the dissemination of the infection—except masks—was scrupulously observed, the sputa immediately destroyed, etc., nearly all succumbed to tuberculosis in a short time. He cites other arguments to prove that the only means of effective prophylaxis against the spread of "the white plague," is the isolation of all persons affected with it. He estimates that each consumptive infects at least one other person during the course of his disease, and that if the sickness-insurance companies once realize this, they will find it to their interest and advantage to take measures to isolate their consumptive policy-holders. The law now allows them the privilege of supporting their proteges in an institution instead of paying a cash indemnity, and the Berliner Versicherungsanstalt has already commenced the construction of an establishment of this kind for lung diseases too far advanced for admission to a sanitarium. The immense number of these incurables is the chief obstacle to their effective isolation, but if it could once be definitely accomplished the number would grow progressively less after the first few years, instead of the ever-widening circles of infection which now prevail. He does not advocate compulsory isolation, but thinks that consumptives would be glad to take advantage of a home in some dust-free, attractively situated house or barracks with hospital accommodations for the bedridden, in place of the present dreary surroundings of the consumptive poor. He relates several instances showing the inevitable spread of infection from such a source, among them the case of a consumptive dismissed from the public hospital and refused admission to any sanitarium, living with her family in a basement communicating with a thronged tavern.

Inhalations of Oxygen. E. Aron.—After extensive study of the action of inhalation of oxygen as a therapeutic measure, Aron announces his conviction that it is comparatively useless except in carbon dioxid or anilin intoxication, or in disturbances due to rarefaction of air.

Mechanical Reduction of the Hump in Pott's Disease. J. Joseph.—The examination of an anatomic specimen and radiography of a clinical case have established the fact, Joseph announces, that it is possible to reduce the hump and ensure permanent correction. But the mechanism is different from what is generally assumed. The entire spine becomes shorter, the weight above pushes down the diseased portion which settles down in a vertical position, and enough new bone tissue and adhesions form to maintain the spine in its vertical position. He applies a cast and corset which ensure continuous mechanical pressure on the hump, combined with extension, thus favoring the production of adhesions and new bone tissue that

are able to support the spine in its normal position and amply suffice to compensate the defect after the spine has settled down under the weight above.

Deutsche Med. Wochenschrift, October 10.

The Portal of Entry for Tubercle Bacilli and Their Localization in Man. P. GRAWITZ.—The histological difference between the tubercles in human and in bovine tuberculosis might be explained by the racial differences in the reaction of the tissues. For example, the literature on actinomycosis shows that these microbes cause suppuration in man, while in animals they induce the formation of a tumor. Only one case is on record of an actinomycotic tumor in a human brain. Besides this racial predisposition to a given kind of reaction, there is an individual predisposition which varies with the age, food and manner of life. An example of this varying individual reaction is afforded by Busse's experiments on rats. Inoculated with a certain fungus derived from man, none of the animals showed any signs of infection until the females littered and nursed their young. At this time they commenced to grow thin and numerous foci were found in them, while the male animals remained healthy. The puerperium, measles, influenza, typhoid fever and diabetes frequently cause a temporary predisposition to tuberculosis. The debilitated tissues are unable to resist the encroachments of the bacilli and to throw up a wall of granulations around them. A slight injury of the finger in a diabetic may lead to extensive gangrene instead of mere suppuration with a demarcation of granulations as in a healthy subject. In anemic, debilitated children, some slight injury of the mouth or lip may allow the bacteria or cocci to enter, and as they proliferate in the tissues, their ptomains may induce local necrosis or noma to which the tissues oppose no obstacle. The influence of this individual permanent or temporary predisposition is so decisive that Grawitz considers it idle to dream of the final extinction of tuberculosis by the gradual extermination of the bacilli. The predisposition is the main disease, as, for instance, in the case of a diabetic, the diabetes. The tuberculosis is the accident, the same as the carbuncle or symmetrical gangrene in the latter case. Besides the racial and the individual predisposition, there is a predisposition of the organs. Grawitz and Menne have observed forty-two cases of tuberculosis of the internal genitalia in virgins. In a certain number of the cases infection probably occurred from the peritoneum, but in a large proportion, it was explainable only by transmission of infection by way of the blood or lymph. There was no anatomic difference between the lesions by these routes. The epididymis, the apices of the lungs, etc., are favorite nesting-places for the bacilli arriving by way of the blood, and the infrequency of tubercular lesions of the larynx and trachea seems to indicate that tuberculosis of the air passages is not necessarily always due to the inhalation of germs. The frequency of tuberculosis of the intestines has been accepted as proof that the germs must have been ingested in the food. But the rarity of cases in which the intestines alone are infected, shows that only a very small percentage can properly be attributed to this source. Intestinal tuberculosis is accompanied by pulmonary lesions far more frequently than tubercular joint affections or spondylitis. Consequently it appears that only an extremely small proportion of the fatal cases of tuberculosis can be ascribed to infection by way of the food, and when the cases of infection from diseased meat or the swallowing of germs from the air, are subtracted from the total number, scarcely any cases are left that can be attributed to the ingestion of milk from tuberculous cows. More than 25 per cent. of the last series of cadavers at the Griefswald pathological institute, exhibited evidences of tubercular infection at some time. Of the total number, only three children and one man had tubercles in the intestines or mesenteric tabes, without some focus in the lung whence they could have been derived. The intestinal mucosa is not a favorite point for the bacilli to settle. It often remains intact even when the mesenteric glands are severely infected and when for years sputa abounding in bacilli have been habitually swallowed. On the other hand, the bacilli seem to have a special predilection for the tonsils. Old caseous foci and fresh tubercles with giant cells and bacilli, are frequently encountered in the tonsils even when they are small and present a normal external aspect. From the tonsils, the bacilli can pass easily into the cervical lymphatic glands, and even in the absence of any apparent tumefaction of the glands, the bacilli can travel on to the hilus of the lung and thence invade the lung, pleura or pericardium. The child may die in consequence, without exhibiting the slightest indication in the intestines or mesenteric glands that the food was in reality the bearer of the primary infection. It is difficult to prove that the tubercle bacilli entered the follicles of the tonsils from the food, but the assumption is as plausible as for the caseous foci and tubercles in the lymph follicles of the intestines or mesenteric tabes. Further research in this line is necessary, especially to determine the order in which the organs are affected, with microscopic investigation of the tonsils in case of chronic, suspicious swelling of the cervical glands. The autopsy in the rare cases of pure tuberculosis of the intestines may afford evidence that the tubercle bacilli were swallowed in the food, but negative findings in case of general tuberculosis by no means exclude this possibility, even when the entire intestines and their lymphatic apparatus are found intact. The entire number of the *Wochenschrift* is devoted to Virchow, and this communication from Grawitz is also dedicated to "the great skeptic in pathology."

Proliferation of Neuroglia. V. BABES.—The latest research has only confirmed Virchow's assertions in regard to the nature of the neuroglia. They have been characterized as the divination of genius, as no previous research or work by others had led up to his conception of the neuroglia. The details of the finer structure, the fibers and the relations between the neuroglia, the vessels and the nerve elements, and its nutritional and secretory activity, have been later discoveries, but all sustain and supplement his early research.

Analysis of the Feces. H. URY.—Thorough extraction with water of fresh fecal matters from a healthy subject, allows the essential intestinal secretions to be preserved in the aqueous extract, while the remains of the food filter out as insoluble detritus. This method of procedure is not absolutely exact as it takes no account of the epithelium shed by the intestinal walls. But the quantity of this epithelial substance is very small in health and can be disregarded in practice. Among the interesting points learned by this method we note that Ury found that in typhoid fever, notwithstanding the copious diuresis, most of the alkaline salts are eliminated by the intestinal walls instead of by the kidneys as in normal conditions. He found also that an average of 1.6244 gm. of nitrogen was eliminated in the feces in twenty-four hours, on a mixed diet, of which .39 gm. passed into the aqueous extract. To determine the proportion of lime, he evaporated the filtrate over the water-bath, reduced the residuum to ashes and determined the lime in the latter. The quantity was always minimal and most of it was evidently derived from the food. About 26.2 per cent. of the total phosphorus in the feces passed into the aqueous extract; 89.6 per cent. of the combined phosphorus was eliminated in the urine and 10.1 per cent. in the aqueous extract. These latter proportions were so constant that they indicate a physiologic law.

Monatshefte f. Prakt. Dermatologie (Hamburg), July 1.

Treatment of Epididymitis. M. POROSZ.—Experiments on dogs have shown that the disturbances in the circulation in the epididymis are frequently of reflex origin. The organ, not the patient, requires rest. Hot applications should be scrupulously avoided as they increase the inflammation. Porosz recommends injections of a weak solution of subacetate of lead, and the application of a Falkson suspensory after anointing the scrotum with vaselin.

July 15.

Elective Double Stain for Plasma Cells. A. PAPPENHEIM.—If resorcin is added to the methyl green and pyronin stain, the latter is fixed by the substances to which it has a chemical affinity and washes out of the rest of the specimen.

The resorcin is applied in an alcoholic solution after staining for five minutes. This stains the specimen in four colors.

August 15.

Etiology of Eczema. E. Benda.—In extensive experimental tests, inoculation of staphylococci, isolated or in cultures, invariably produced impetigo, while inoculation of the staphylococcus toxins, both with and without the cocci themselves, invariably induced eczema.

Monatschrift f. Ohrenheilkunde (Berlin), August.

Diagnostic Significance of Rhodan Reaction in Saliva in Case of Otitis. E. Juergens.—The saliva from the parotid gland normally contains considerable rhodan, but in case of disturbance in the innervation, accompanying an affection of the middle ear, tests for rhodan are negative. The rhodan test is, therefore, important for the diagnosis of an existing suppuration of the middle ear or other aural affection, although the test is less reliable in smokers.

Muenchener Med. Wochenschrift, October 1.

Significance of Elastic Fibers in Pathologic and Regenerative Processes. B. Grohe.—After a historical review of the various theories in regard to the significance of the elastic fibers, Grohe describes his experimental research on the subject. He fractured the radius or ulna in young rabbits, leaving the other bone as a natural splint. The elastic fibers were ruptured in the fracture and the young regenerated fibers penetrated the external callus and also the inner marrow callus. They usually develop where there is most need for solidity and a fastening of the parts. He found that the new fibers almost invariably proceed from the old, and remain in connection with them. In the bone marrow the only elements containing elastic fibers are the delicate vessels, and the regenerated fibers probably therefore proceed from the elastic fibers in the vessels.

A Case of Tumor-Like Hyperostosis of the Skull. A. Schiller.—About sixteen cases of diffuse hyperostosis of the skull have been published, but not more than a dozen cases of the tumor-like hyperostosis. In the case described, the ostosis had never caused brain trouble, and the fact that the excessive bone development ceased with the general growth, as well as its anatomic location, suggested that it was merely an excessive functioning of the physiologic centers of ossification of the skull. The prognosis in this case is probably favorable, although there is always a possibility that trauma or inflammatory fluxion, etc., may arouse the latent disposition to excessive bone-formation and induce further proliferation.

The Diplococcus Semilunaris as the Companion of Tuberculosis. E. Klebs.—The frequent association of the semilunar diplococcus with the tubercle bacillus explains, perhaps, the inefficacy of specific treatment directed against the latter. It frequently flourishes after the tubercle bacillus has finished its career, especially in tubercular joint and bone affections. When these diplococci are numerous, the prognosis is less favorable as the fact indicates lesser resisting power on the part of the tissues. In experiments on animals the diplococcus induced atrophy of the various organs, especially of the blood-producing, or phlegmonous inflammation. This power of the diplococcus to induce atrophy is very serious in a debilitated tuberculous subject, and may entail phthisis even when the tuberculous processes are almost entirely cured. The emaciation of an old self-immunized phthisic may possibly be due to this mixed infection with the semilunar diplococcus.

A Case of Pseudo-Leukemia and Glycosuria. A. Goldschmidt.—The protracted course of this case of pseudo-leukemia was probably due to the nourishing food and care and rest which the patient was able to procure. An intermittent glycosuria was a prominent feature of the case, accompanied by occasional irregular fever. The glycosuria was not influenced by the food and toward the last vanished completely. Lactophenin seemed to be the most effective remedy to control the fever and nervous disturbances. Arsenic was not tolerated by the patient after the first.

October 8.

Transfusion of Saline Solution in Experimental Tetanus. C. Tonzig.—Moschowitz has recently published statistics which demonstrate that the mortality of tetanus has fallen from 90 to 40 per cent. since the introduction of antitetanus serum, and that Tizzoni's is proving the most effective. Bacelli's method of subcutaneous injection of an aqueous solution of carbolic acid is not fulfilling the anticipations it first aroused. Saline transfusion has proved successful in the experience of some physicians and theoretically is indicated in tetanus. Gomez reports the cure of a severe case in a boy of 7 by subcutaneous injection of 250 gm. a day of a .75 per cent. saline solution. Lasletta has found saline transfusion extremely effective in diphtheria at a time when antitoxin treatment had lost its efficacy. Others have reported fine results from rectal injections of saline solution in typhoid fever and tetanus, with or without supplementary drawing of blood by leeches. Tonzig reports the results of ten series of experiments on large numbers of rabbits. The results failed to demonstrate any absolutely favorable action from saline solution injected into the peritoneum. The tests proved that the tetanus toxin does not circulate in the blood, but evidently fastens on the cells. This lavage of the organism, however, postponed the fatal termination for several days, when the onset of the infection was not particularly stormy. It, therefore, has a certain value which should not be forgotten when for any cause antitoxin treatment is not practicable.

Statistics in Regard to the Diminishing Mortality from Tuberculosis. A. Gottstein.—By comparing the tabulated statistics of twenty-three Prussian cities, Gottstein finds that the mortality from tuberculosis has been steadily diminishing since 1876 so far as adults are concerned, but that in individuals under 20, the mortality remained high until 1894, when it began to diminish a little. This difference in the curves of tuberculosis in children and in adults is probably due to the different localization of the disease. The mortality is influenced by the progress in surgery, which has reduced the mortality in children from surgical tuberculosis. Since 1894 the infant mortality has been reduced to four-fifths of what it was in 1881, which is probably due to the improvement effected in the milk supply about that time.

Gazzetta Degli Ospedali (Milan), October 6.

Bubonic Plague. Lucatello.—The recent small outbreak of plague at Naples is the occasion of this historical and clinical review of the subject. Lucatello states that the antiplague serum made by Lustig at Florence has reduced the mortality to 46.15 per cent. in the cases in which it has been used, and that it has been tried on an extensive scale at Bombay.

Two Cases of Osteomalacia Treated by Castration. S. Catellani.—One patient, a woman of 29, was completely cured by the castration; the other was 39 years old, and the operation relieved her of all pain, but did not prevent a fatal termination seven months later. In the latter case a remarkable remission in the symptoms had been observed in the course of the disease, coinciding with suspension of the menses for six months. When menstruation returned, the osteomalacia resumed its progressive course. The pains permanently disappear in the first or second day after castration. The prolonged administration of phosphorus has cured certain patients and Morpurgo has succeeded in inducing in animals the production of localized alterations in the bones resembling those of human osteomalacia, by microbian lesions in the spine. These facts all tend to establish the close connection between the genital organs and nervous system and the osteomalacic processes.

Nordiskt Med. Arkiv (Stockholm), 1901; i, 2.

Primary Tuberculosis of the Intestines. V. Grimsgaard.—In the case described, the cachexia was caused by autointoxication and by the fatty degeneration of heart and liver, which induced edema, commencing nine months after the first signs of the intestinal trouble. The symptoms had been attributed to a gastric affection until the edema appeared, when the pain assumed more and more the character of colic pains and König's stricture syndrome was presented. The patient

was a married woman of 59, hitherto healthy. Operation was refused on account of the bilateral ascites and edema and the pronounced cachexia, although the patient was not emaciated. On her insistence, an ileo-colostomy was done, to exclude the portion of the small intestine containing the multiple strictures, but the heart was too much degenerated to allow her to rally from the operation. In the 114 cases of tuberculosis of the cecum which have been published, the symptoms indicating a stricture had persisted from six to twelve months in 15; from one to two years in 14; from two to three years in 20 and in one for nine years, for twelve in another, for several years in 3, and for four to eight years in 15. In the 69 cases in which these details are given, 60 per cent. of the patients were between 30 and 40, and only 7 were over 50 and one over 59. The age seems to have a certain influence on the course of the disease. In the first place, chronic nutritional disturbances are more liable to induce fatty degeneration of the heart in elderly than in young persons. Secondly, the characteristic symptoms of a stricture require a longer time for their gradual evolution in elderly persons. In all the case reports it is apparent that the attacks were infrequent at first, with long intervals between them, and that the disease was not recognized until they became more frequent. By this time the stricture is very narrow and compensatory hypertrophy has developed, but the nutritional disturbances and the resulting autointoxication have long been at work, months or years before the pains become violent. When the hypertrophy above the stricture is insignificant, meteorism may exist without the characteristic attacks of pain which are the result of the violent peristalsis of the central portion of the intestine. In the personal case reported, the attacks of colic in 1895 probably had been the first symptoms of the stricture which did not exhibit the unmistakable characteristic picture until five years later, when intervention was too late. The patient's age probably was the reason of the slow development of the compensating hypertrophy.

Simultaneous Extrauterine and Intrauterine Pregnancy. H. Christer-Nilsson.—Pains in the abdomen, occasional scanty hemorrhage from the uterus and evening vomiting, were the only symptoms, but palpation disclosed a tumor on the right Fallopian tube and that the uterus was increasing in size. The patient was a healthy iii-para. A simultaneous extrauterine and intrauterine pregnancy was diagnosed and the tube and ovary were removed without disturbing the uterus. The patient rapidly recovered, but six weeks later the uterine pregnancy was terminated by an abortion following a severe fright. Sixty-seven cases of these simultaneous pregnancies in and outside of the uterus have been published. In Sale's case the laparotomy was done when both fetuses were at term and viable. The "ectoper" was extracted first, and then the normal fetus by Cesarean section. The mother died four days later, probably of sepsis. Only the extrauterine pregnancy had been diagnosed in this case. In Franklin's case, the normal fetus was extracted by Cesarean section and a dead fetus from Douglas' pouch. The mother died of hemorrhage from the ectopic placenta. Besides Sale, Wilson and Chrobak each delivered a viable "ectoper." Ten patients treated expectantly recovered. The fetus left in the abdomen was fully developed in some of these cases. Nineteen other cases of expectant treatment out of a total of 38, terminated fatally. Whitcomb treated a case by killing both of the fetuses at the third month by electricity. They were expelled later by the uterus and the mother recovered. All the patients recovered who came under treatment after the intrauterine pregnancy had been interrupted, with one exception. In Mathewson's case, according to the abstract in the *Cbl. f. Gyn.*, 1898, p. 1421, the fully developed extrauterine fetus was killed with a stiletto after successful delivery. In nine cases in which the pregnancy had lasted less than four months, the entire pregnant tube was ablated with recovery in all but one case. About 80 per cent. of the women had passed through one or more previous pregnancies in the 52 cases in which this detail was mentioned. In one patient it was the eighth pregnancy, in another the twelfth and in another the nineteenth. In only one of all the cases reported was the pregnancy confined to the ovary. The right tube is usually involved, but in three cases the ectopic pregnancy was interstitial.

1901, ii, 2.

Tuberculous Strictures of the Small Intestine. J. Fibiger.—In two cases described in detail, the discovery of multiple strictures in the small intestines was an autopsy surprise. No symptoms had been recognized during life, and the lesions were almost completely healed. There were progressing tubercular lesions in the lungs. In one case the patient had passed through a supposed abdominal typhoid fever twenty-one years before, and for a few years afterward a tendency to diarrhea or constipation had been noted. Fibiger thinks that these symptoms were probably the manifestations of the tuberculous process at its height. In the other case, no symptoms of any kind had ever attracted attention to the intestines. Neither of the patients showed signs of anemia. The healing process had been so complete that all the characteristic alterations of the tissues and the bacilli had vanished except in a very few of the 342 sections of the intestines that had been mounted, which still showed signs of the tuberculous ulceration in the stricture. Repeated microscopic examination of the mesenteric glands was also necessary before the tuberculous nature of the adenitis could be established. Reach has collected 91 cases of multiple strictures of the intestines, and found that tuberculosis was the cause in 42, carcinoma in 6, syphilis in 12, dysentery in 1, typhoid fever in 1, and no cause could be assigned in 17. Fibiger is convinced that these multiple strictures have been sometimes erroneously attributed to syphilis in the past. He describes two typical cases, in which the proliferating, obliterating endophlebitis in the veins of the mesentery and the aspect of the strictures suggested a syphilitic origin, but extremely careful microscopic examination of the tissues established their tuberculous nature. He thinks we have no right to exclude a tuberculous origin, unless we obtain negative results from the combined microscopic investigation of the strictures and of the glands of the mesentery and liver. On the other hand, a syphilitic origin is evident in the few published cases of affections of the small intestine consisting in a fibrous, shrivelling process and tumor-like infiltrations on the intestinal wall, unmistakable cicatricial formations in gummatous nodules. The frequency of these tuberculous strictures in the intestine seems to be increasing, as Fibiger has observed seven cases in the last two years. As the tuberculous lesion heals, cicatricial stenosis follows and the healing generally accompanies a remission in the pulmonary process which, he remarks, almost inevitably coexists with the intestinal affection. As the pulmonary lesions heal, the general health improves and the constant irritation from swallowed sputa is abolished. If it is a fact that the frequency of these cicatricial stenoses is increasing, this may be explained by the greater prevalence of benign, fibrous forms of pulmonary tuberculosis, which Lange has noted for Copenhagen at least. Conrath has suggested that the tubercle bacilli derived from the food are different from the ordinary human bacilli and that the primary chronic hypertrophic tuberculosis of the cecum may be a different kind of a tuberculous lesion.

Bacteriology of Cerebrospinal Meningitis. I. Jundell.—In 387 cases of acute, primary meningitis, epidemic and sporadic, pure cultures of the meningococcus were derived in 249 cases, and of the pneumococcus in 106. In only 32 cases, or 8.3 per cent., were different results obtained.

Malignant Disease in Norway. M. Geirsvold.—The statistics that have been collected in Norway since 1878 show that cancerous affections are increasing in frequency, and that certain localities seem to be peculiarly prone to cancer. It is more frequent in the cities. The occupation and station in life seem to have no influence whatever on the dissemination of cancer unless it reduces the average length of life below 60, the cancer-breeding age. In 79.6 per cent. of the 15,555 cases in which the location is specified, the cancer occurred in the alimentary canal, including about 4 per cent. in the mouth or

throat. This fact inevitably suggests some connection between the food and the development of cancer.

Oliguria. N. VEDELER.—Five elderly women have been treated by Vedeler for scantiness of urine. The trouble simulated a cystitis at first; the concentrated urine, the abundance of sediment and pains during and after micturition. But the absence of bacteria and pus from the urine and the rapid response to treatment showed that the affection was exclusively nervous, an actual decrease in the secretion. One patient was treated with Faradization of the kidney region, another with asafetida. There were no indications of retention nor of hysteria at any time.

Necessity for Small, Numerous Sanitariums for Tuberculous Subjects. M. HOLMBOE.—Besides the large sanatoria, Holmboe pleads for a small establishment in every community, where tuberculous subjects can be treated near home. For most of them four to six beds would be sufficient, and when more than twenty are required, another of these temporary homes should be equipped.

Respiratory Exercises in Pulmonary Tuberculosis. C. F. LARSEN.—Modern sanatorium treatment does not pay sufficient attention to the exercise which tuberculous patients require. The influence of the air on the lungs could be multiplied by systematic exercises in breathing, expelling the residual air by vigorous expiration. Inspiration can not be forced without danger, perhaps, but expiration should be vigorous. The best of all measures is to increase the respiration in general by systematic walks instead of so much reclining. Both circulation and respiration are stimulated by suitable exercise of this kind, graduated to each case.

Chorea and Rheumatism. S. LAACHE.—During the last seventeen years Laache has had occasion to observe 390 cases of acute rheumatism, and has traced them to date, but has been unable to discover a single case in which chorea appeared. He is inclined to define chorea as a "growth neurosis," an anomaly in development, although he admits an endocardo-rheumatic, infectious variety and a neurasthenic. Four of his forty patients with chorea died. In two the autopsy disclosed fatty degeneration of the kidneys, and in two endocarditis. He attributes great importance to fright, as a determining cause. School chorea is due to anemia and chlorosis fully as much as to mental strain. Pains in the joints were noticed in 18 per cent. A heart affection was evident in 42 per cent., but it was slight in all but 18 per cent. He considers arsenic the chief reliance in treatment, administered by the mouth or in the form of subcutaneous cacodylic injections. He has found potassium bromid the best and most harmless narcotic. (Originally published in the *Norsk. Mag. f. Lägevid.*, 1900, p. 97.)

Queries and Minor Notes.

INDIANA MEDICAL PRACTICE ACT.

TOLEDO, ILL., Oct. 18, 1901.

To the Editor:—To obtain a license from the Indiana State Board, is a graduate of the Medical College of Ohio, U. C., holding a certificate issued by Illinois State Board, required to pass an examination? If so, when and where will the next one be held?

B. C. R.

ANS.—Yes. The next regular meeting is to be held in Indianapolis, the second Tuesday in January.

OREGON AND WASHINGTON B. OF H. SECRETARIES.

CHICAGO, Oct. 23, 1901.

To the Editor:—Would you kindly state in the next issue of THE JOURNAL who the secretaries of the Boards of Health are of Washington and Oregon, and where they are located? A. H. G.

ANS.—Dr. Byron E. Miller, Portland, Ore.; Dr. J. P. Turuey, Davenport, Wash.

New Patents.

683,589. Insufflator. Wm. F. Barry, Woonsocket, R. I.
683,680. Electro-massage device. Lee J. Chapman, Columbus, Ohio.
683,556. Eye-cap and lid-closer. Carl B. Dolge, Westport, Conn.
683,738. Apparatus for treating leg defects. Weudelin Enge, Hohentengen, Germany.
683,690. Apparatus for sterilizing disease-germs. Charles M Johnson, New York City.
683,774. Bandage rolling machine. Wm. D. Kilbourn, Pueblo, Colo.
683,564. Electric appliance for treatment of defective hearing. Wm. H. Loop, Cohoes, N. Y.
683,807. Sterilizer. Joseph Schoettl and C. Jaeger, Brooklyn, N. Y.
35,143. Design, hot-water bag closure. Christian W. Meinecke, Jersey City, N. J.
684,392. Hernial Truss. George W. Bell, Kansas City, Mo.
684,179. Spirometer. Paul von Boeckmann, Washington, D. C.
684,351. Electro-therapeutic instrument. Albert W. Courtney and J. S. Mead, Buffalo, N. Y.
684,199. Hernial truss. Charles Delorriers, Chicopee, Mass.
684,200. Abdominal supporter. Wm. B. Dewees, Salina, Kan.
684,218. Invalid bedstead. Michael D. Gavan, St. Louis, Mo.
684,225. Electro-medical device. George Graybill, York, Pa.
684,231. Aseptic or hygienic receptacle cover. James B. Hammond, Camden, Me.
684,263. Soda water tank. Wallace S. Judd, Cleveland, Ohio.
684,269. Electrical apparatus for body wear. Joseph Kornitzer, Socorro, N. M.
684,078. Breast pump. Wm. H. Martin, New York City.
684,085. Suppository. Daniel H. Murphy, Hartford, Conn.
683,991. Water-bag for the head. Stella Rowe, Cincinnati, Ohio.
683,994. Medicament applicator. Gustav Schirmer, Chicago.
684,131. Operating table. Albert Taubert and R. Kny, New York City.
684,326. Vacuum-electrode for therapeutic purposes. Reinhold H. Wappler, New York City.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A CIVILIAN WAR HOSPITAL. Being an Account of the Work of the Portland Hospital, and of Experience of Wounds and Sickness in South Africa, 1900. With a Description of the Equipment, Cost and Management of a Civilian Base Hospital in Time of War. By the Professional Staff, Anthony A. Bowlby, C.M.G., F.R.C.S., Senior Surgeon; Howard H. Tooth, M.D., C.M.G., F.R.C.P.; Cuthbert Wallace, M.B., B.S., F.R.C.S.; John E. Calverley, M.B., B.S., M.R.C.S.; and Surgeon-Major Kilkelly, C.M.G., Grenadier Guards, Principal Medical Officer and in Military Charge. With Numerous Illustrations. Cloth. Pp. 341. Price, $4.00. New York: Longmans, Green & Co. 1901.

A TEXT-BOOK OF SURGERY. By Dr. Hermann Tillmans, Professor in the University of Leipsic. Translated from the Seventh German Edition by Benjamin T. Tilton, M.D., Instructor in Surgery, Cornell University, and John Rogers, M.D., Instructor in Surgery, Cornell University. Edited by Lewis A. Stimson, M.D., Professor of Surgery, Cornell University. Volume I. The Principles of Surgery and Surgical Pathology. With 516 Illustrations. Cloth. Pp. 841. Price, $5.00 per volume. New York: D. Appleton & Co. 1901.

MATERIA MEDICA, PHARMACY, PHARMACOLOGY AND THERAPEUTICS. By W. Hale White, M.D., F.R.C.P., Physician to and Lecturer on Medicine at Guy's Hospital, London. Edited by Reynold W. Wilcox, M.A., M.D., LL.D., Professor of Medicine and Therapeutics at the New York Post-Graduate Medical School. Fifth American Edition, Thoroughly Revised. Cloth. Pp. 744. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1901.

THE PRINCIPLES AND PRACTICE OF MEDICINE. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., Fellow of the Royal Society. Fourth Edition. Cloth. Pp. 1182. Price, $5.50. New York: D. Appleton & Co. 1901.

A TREATISE ON MEDICAL JURISPRUDENCE. Based on Lectures Delivered at University College, London. By George Vivian Poore, M.D. (Lond.), F.R.C.P., Professor of the Principles and Practice of Medicine, University College, London. With Illustrations. Cloth. Pp. 533. Price, $4.00. New York: Longmans, Green & Co. 1901.

DISEASES OF THE UPPER RESPIRATORY TRACT, the Nose, Pharynx and Larynx. By P. Watson Williams, M.D. Lond., Physician in Charge of the Throat Department at the Bristol Royal Infirmary. Fourth Edition. Illustrated. Cloth. Pp. 436. Price, $6.00. London: Longmans, Green & Co. 1901.

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA. Thirty-first Annual Session, Sacramento, April, 1901. Vol. XXXI. Cloth. Pp. 419. Published by the Society.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year 1899-1900. Volume I. Cloth. Pp. 1280. Washington: Government Printing Office. 1901.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., October 10 to 16, 1901, inclusive:

Arthur I. Boyer, contract surgeon, on being relieved from duty at Fort Lawton, Wash., will proceed to New York City, for annulment of contract.

William J. Calvert, lieutenant and asst.-surgeon, U. S. A., from the General Hospital, Washington Barracks, D. C., to Fort McHenry, Md., for post duty.

Clyde S. Ford, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Robert J. Gibson, major and surgeon, U. S. A., on being relieved from duty at San Francisco, Cal. (see Ogden Rafferty below), will report for transportation to Manila, P. I., and subsequent assignment in the Division of the Philippines.

Evan P. Howell, lieutenant and asst.-surgeon, U. S. A., from Fort Duchesne, Utah, to duty at Fort Clark, Tex.

Frank R. Keefer, captain and asst.-surgeon, U. S. A., on being relieved by Captain Reynolds (see below), to rejoin his station at Fort Monroe, Va.

Henry S. Kierstedt, lieutenant and asst.-surgeon, U. S. A., now on duty in the field with Troop H, 5th Cavalry, is relieved from duty in the Division of the Philippines, and from temporary duty in the Department of California; on his return to the Presidio of San Francisco, Cal., from field duty he will proceed to Fort Lawton, Wash., to relieve Contract-Surgeon Arthur J. Boyer

Louis A. La Garde, major and surgeon, U. S. A., detailed as lecturer on the results of gunshot injuries at the Army Medical School, Washington, D. C.

Ogden Rafferty, captain and asst.-surgeon, U. S. A., relieved from further duty in the Division of the Philippines, and will proceed to San Francisco, Cal., for duty as attending surgeon and medical superintendent of the Army Transport Service, relieving Major Robert J. Gibson, surgeon, U. S. A.

Henry I. Raymond, major and surgeon, U. S. A., on being relieved from duty in Chicago, Ill., will proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Thomas W. Raymond, major and surgeon, U. S. Vols. (captain and asst.-surgeon, U. S. A.), relieved from further duty in the Division of the Philippines, and will proceed to Chicago, Ill., for duty as attending surgeon and examiner of recruits.

Frederick P. Reynolds, captain and asst.-surgeon, U. S. A., is detailed a member of the board in Washington, D. C., to examine candidates for admission into the Medical Corps of the Army, to take effect Oct. 31, 1901, relieving Captain Frank R. Keefer, asst.-surgeon, U. S. A.

Lewis A. Thompson, contract surgeon, leave of absence extended on account of sickness.

Hobart E. Warren, contract surgeon, now on duty at Denver, Colo., will proceed to the General Hospital, Fort Bayard, N. M., for duty at that hospital.

M. Manley Waterhouse, contract surgeon, is relieved from further duty on the transport *Logan,* and from temporary duty at the General Hospital, Presidio of San Francisco, Cal., and will proceed to Fort Wadsworth, N. Y., for duty.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., from Fort Meade, S. D., to San Francisco, Cal., en route to Manila, P. I., for assignment in the Division of the Philippines.

Charles E. Woodruff, major and surgeon, U. S. A., from Fort Riley, Kan., to San Francisco, Cal., en route to Manila, P. I., for assignment in the Division of the Philippines.

In addition to the above, the following order was published on Oct. 12, 1901:

By direction of the Acting Secretary of War, the following-named assistant surgeons, U. S. A., are relieved from temporary duty at the posts designated after their respective names, and will report in person, on Nov. 1, 1901, at the Army Medical Museum Building in Washington, D. C., to Colonel William H. Forwood, assistant surgeon-general, U. S. A., president of the faculty of the Army Medical School, for the course of instruction prescribed in paragraphs 542 and 543, Army Regulations, 1901: All are first lieutenants and asst.-surgeons, U. S. A.:

Jerome S. Chaffee, Columbus Barracks, Ohio.
Charles C. Greer, Fort McPherson, Ga.
Ernest L. Ruffner, Columbus Barracks, Ohio.
Eugene R. Whitmore, Fort Sheridan, Ill.
Conrad E. Koerper, Washington Barracks, D. C.
Robert U. Patterson, Fort McHenry, Md.
Roderick F. O'Connor, Fort Myer, Va.
George P. Heard, Fort McPherson, Ga.
Roger Brooke, Jr., Fort Myer, Va.
Arthur M. Line, Fort Sheridan, Ill.
Verge E. Sweazey, Fort Columbus, N. Y.
Matthew A. DeLancy, Fort Monroe, Va.
Horace D. Bloomberg, Plattsburg Barracks, N. Y.
Paul S. Halloran, Fort Wadsworth, N. Y.
Kent Nelson, Washington Barracks, D. C.
Robert Smart, Fort Monroe, Va.
Lloyd LeR. Krebs, Fort Leavenworth, Kan.
William P. Woodall, Fort Clark, Texas.
Herbert M. Smith, Fort Monroe, Va.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 19, 1901:

Asst.-Surgeon F. M. Furlong, ordered to the Naval Hospital, New York, for treatment.

Pharmacist I. N. Hurd, detached from the Boston Navy Yard and ordered to the *Wabash.*

Surgeon S. H. Griffith, order to report for duty as a member of medical examining boards modified, ordered to report as a member of the medical examining board only, and not as a member of board for examination of medical officers.

Dr. H. R. Webb, commissioned asst.-surgeon from Oct. 11, 1901.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the twenty-one days ended Oct. 17, 1901.

Surgeon H. W. Austin, granted leave of absence for one month from October 7.

P. A. Surgeon A. R. Thomas, to proceed to Naples, Italy, and report to P. A. Surgeon J. M. Eager for duty.

Asst.-Surgeon W. C. Billings, relieved from duty at Los Angeles, Cal., and directed to proceed to Chicago, and report to the medical officer in command for duty and assignment to quarters.

Asst.-Surgeon C. W. Wille, granted leave of absence for seven days from October 17.

Asst.-Surgeon B. S. Warren, granted two days' extension of leave of absence.

A. A. Surgeon J. C. Rodman, granted leave of absence for four days.

A. A. Surgeon H. H. Stearns, granted leave of absence for fourteen days from October 10.

A. A. Surgeon R. T. Walker, granted leave of absence for three days.

Sanitary Inspector Lea Hume, granted leave of absence for October.

Surgeon C. E. Banks, granted leave of absence for four days from October 9.

Surgeon L. L. Williams, to proceed to Baltimore, Md., as inspector.

P. A. Surgeon C. P. Wertenbaker, three days' leave of absence from Oct. 5, 1901, under paragraph 179 of the regulations.

P. A. Surgeon C. H. Gardner, one day's leave of absence under paragraph 179 of the regulations.

Asst.-Surgeon M. H. Foster, granted leave of absence for four days.

A. A. Surgeon Felix Giralt, to proceed to Vera Cruz, Mexico, for temporary duty.

A. A. Surgeon Jay Tuttle, granted leave of absence for thirty days from October 4.

A. A. Surgeon W. S. Walkley, granted leave of absence for eleven days from September 28.

Hospital Steward S. W. Richardson, granted leave of absence for two days.

Hospital Steward H. Walerius, relieved from duty at Memphis, Tenn., and directed to proceed to Portland, Me., and report to the medical officer in command for duty and assignment to quarters, relieving Hospital Steward E. H. Holt.

Hospital Steward E. H. Holt, upon being relieved by Hospital Steward M. Walerius, to proceed to Memphis, Tenn., and report to medical officer in command for duty and assignment to quarters.

P. A. Surgeon J. A. Nydegger, upon being relieved by Asst.-Surgeon J. M. Holt, to proceed to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters.

Asst.-Surgeon J. M. Holt, upon arrival of Asst.-Surgeon W. C. Billings, to proceed to Cairo, Ill., relieving P. A. Surgeon J. A. Nydegger, and assume temporary command during absence of P. A. Surgeon J. H. Oakley on leave.

A. A. Surgeon D. E. Dudley, granted leave of absence, on account of sickness, for thirty days from October 7. Granted leave of absence for thirty days from November 7.

A. A. Surgeon B. W. Goldsborough, granted leave of absence for ten days from October 10.

Hospital Steward E. S. Maguire, granted leave of absence for seven days from October 6.

Hospital Steward W. F. Schlaar, granted leave of absence for thirty days from October 15.

Hospital Steward Frank Siedenburg, directed to report to medical officer in command, Chicago, for duty and assignment to quarters.

BOARD CONVENED.

Board convened for the purpose of selecting site for quarantine station at Brunswick, Ga. Detail for the Board: Surgeon J. H. White, M.-H. S., chairman; Captain J. C. Mitchell, R.C.S.; A. A. Surgeon Hugh Burford, M.-H. S., recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended October 19, 1901:

SMALLPOX—UNITED STATES.

Iowa: Ottumwa, Sept. 7-28, 24 cases.
Massachusetts: Boston, Oct. 5-12, 5 cases.
Michigan: Detroit, Oct. 5-12, 1 case.
New Jersey: Oct. 5-12, Camden, 1 case; Newark, 4 cases, 3 deaths.
New York: New York, Oct. 5-12, 7 cases, 2 deaths.
Ohio: Youngstown, Oct. 5-12, 1 case.
Pennsylvania: Oct. 5-12, Erie, 2 cases; Norristown, 1 case; Philadelphia, 60 cases, 2 deaths.
Rhode Island: Newport, Oct. 5-12, 1 case.
Vermont: Burlington, Sept. 28-Oct. 12, 13 cases.
Wisconsin: Green Bay, Oct. 6-13, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Sept. 21-28, 4 cases.
Belgium: Sept. 21-28, Antwerp, 2 cases, 1 death; Ghent, 1 death.
Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 115 deaths.
Colombia: Colon, Sept. 30-Oct. 6, 1 case; Panama, Sept. 30-Oct. 7, 125 cases.
Ecuador: Guayaquil, Aug. 3-Sept. 21, 25 deaths.
France: Paris, Sept. 10-28, 9 deaths.
Great Britain: London, Sept. 21-28, 163 cases, 6 deaths.
Italy: Naples, Sept. 21-28, 71 cases, 4 deaths; Palermo, Sept. 14-21, 1 death.
Mexico: Hunuema, Sept. 21, epidemic; Vera Cruz, Sept. 28-Oct. 5, 7 cases, 4 deaths.
Russia: Moscow, Sept. 14-21, 1 case; St. Petersburg, Sept. 14-28, 3 cases, 1 death.
Uruguay: Montevideo, July 27-Aug. 24, 71 cases, 10 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Aug. 18-Sept. 1, 3 deaths.
Costa Rica: Port Limon, Sept. 28-Oct. 5, 8 cases, 3 deaths.
Cuba: Havana, Sept. 28-Oct. 5, 3 cases.
Mexico: Merida, Sept. 14-21, a few deaths: Valladolid, Sept. 14-21, epidemic; Vera Cruz, Sept. 21-28, 6 cases, 2 deaths.

PLAGUE.

Philippines: Manila, Aug. 25-31, 5 cases, 4 deaths.
Japan: Formosa, Sept. 7-14, 5 cases, 4 deaths.

CHOLERA.

Japan: Onsen District, Sept. 7-14, 1 case.
Straits Settlements: Singapore, Aug. 25-31, 1 death.

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Original Articles.

A FURTHER REPORT ON PERMANENT CATHETERIZATION.*

J. RILUS EASTMAN, M.D.

INDIANAPOLIS, IND.

Permanent catheterization in the male has been praeticed by the writer in fifteen cases. In each case the catheter was retained for more than ten days, and in two instances for more than sixty days. These cases embraced a variety of conditions demanding bladder drainage, and in all but one entirely satisfactory results were obtained.

The fifteen cases included six perineal operations for stricture of the posterior urethra—one of which involved resection of nearly all of the pars membranacea—two operations for the closure of the perineal urethral fistulæ, two cases of perineal lithotomy, two cases of severe cystitis complicating prostatic hypertrophy, a case in which the catheter was introduced to drain and give physiologic rest to the bladder for the relief of atony and incontinence following stricture of the pars anterior, a plastic operation for the cure of a vesicorectal fistula, and another for the closure of an old unhealed suprapubic cystotomy wound.

An experience of fifteen cases is hardly extensive enough to justify the drawing of general deductions. The writer therefore submits the following points as mere impressions in the hope that a larger experience will establish their accuracy.

The mechanical urethritis occasioned by the presence of the catheter was in all cases insignificant. There was no complaint of urethral pain, and the discharge from the urethral mucosa was never annoying, usually just enough secretion of tough fibrino-muco-purulent character, accumulating during 24 hours, to form a thin ring upon the catheter at the meatus. The decidedly benign urethritis invariably became less active after the catheter had been in position for a few days. In two cases the catheter was retained without changing for two months, and in these, during the latter weeks, the discharge became practically nil. These facts suggest that the urethral mucosa develops a tolerance for the instrument after suffering its presence for a few days. In a few of the cases cited during the first few days permanganate of potassium in hot weak solution was injected between the catheter and the mucosa, but even when this measure was omitted the urethritis was slight. The catheters used were of soft rubber with two eyes. Large sizes were chosen for the reason that such catheters as completely fill the lumen of the urethra occasion less frictional irritation than smaller ones, which readily slide and twist in the canal. If a small instrument is used urine may escape freely from the perineal wound or find its way to the meatus between the catheter and mucosa. Prompt closure of the perineal wound and convalescence may be thus retarded. The penis will often by bending and writhing disgorge a small limber instrument, whereas a large catheter, because of its greater stiffness, is much more easily retained. The presence of the large catheter in the bladder-neck seemed to relieve irritability in this region. Severe muscular spasm or tenesmus never occurred during its use by the writer. Dilatation of the anal sphincters relieves irritability. Why, therefore, should not dilatation of the vesical sphincter produce a somewhat similar result? The catheters used varied in size from 26 to 29—Charrière scale.

The presence of a properly applied retention catheter should not produce cystitis. It has been stated that inflammation of the bladder may occur during permanent catheterization as the result of direct extension of an urethritis or from decomposition of the small quantity of urine which always moistens the intravesical end of the catheter. If cystitis was produced in either manner in the writer's cases it was not severe enough to occasion symptoms. Permanganate of potassium solution or a solution of hydrogen peroxid were occasionally introduced into the bladder, chiefly, however, for the purpose of eliciting assurance that the catheter was freely open. Regular flushing of the bladder was not practiced except in the two cases of cystitis complicating prostatic hypertrophy. Boracic acid in solution proved undesirable for irrigation in these cases, as its crystallization in the long-retained catheters partially obstructed the lumen. In the cases of cystitis pain and strangury were distinctly relieved by permanent catheterization. Guyon and Michon used the retained catheter in a large number of cases of cystitis attending prostatic hypertrophy, and in 77 per cent. a cure is said to have been obtained. It is essential to success in the treatment of cystitis that the catheter be introduced just far enough so that the tip bearing the eyes projects within the bladder and is accurately secured in this position. Pain and strangury suggest that the catheter has been introduced too far. The lumen of the catheter should be large enough to drain the urine from the bladder as fast as it enters from the kidneys.

It was noted that the pressure absorption produced by the continuous presence of the large soft rubber catheter was such as to remove extensive soft and hard infiltrations. After two weeks' retention of the catheter it was often easily possible to pass steel sounds several sizes larger than the catheter itself.

It is reported that occasionally during permanent catheterization with a metallic instrument abscesses develop in the peri-urethral tissues at the scrotal angle.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

These have possibly been due to pressure exercised by the hard catheter. At any rate, no such complication has occurred within the writer's knowledge from the

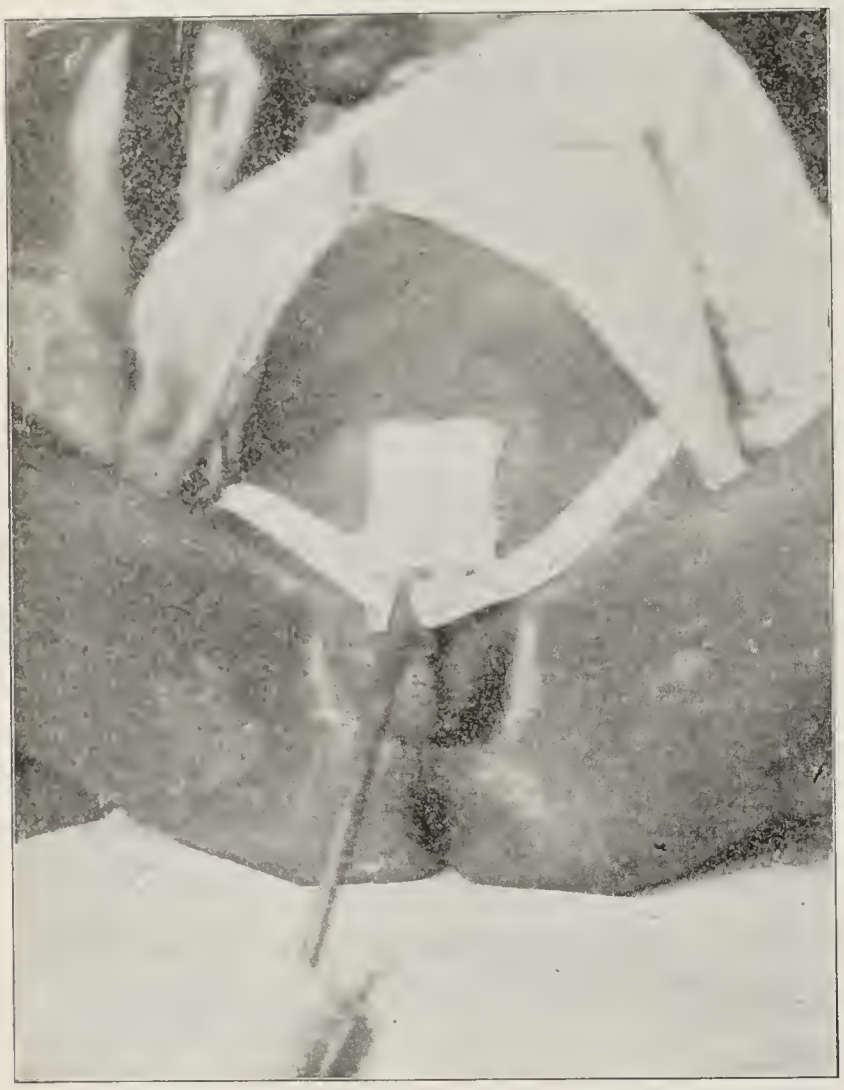


Fig. 1.—Retained catheter, secured by two transfixing safety pins and two adhesive straps.



Fig. 2.—Reinforcing straps.

continued pressure of a soft rubber drainage catheter.

It has been urged that continued use of the retained catheter will conduce to atony of the bladder. This is certainly not a valid argument against its use in properly selected cases. If it puts at rest the bladder muscularis, perineal and suprapubic openings do likewise. Fuller, with others, has shown that rest in many cases of vesical atony, particularly those cases resulting from stricture, is a sovereign agent in treatment.

There are many good reasons why permanent catheterization should be selected as the method of choice for routine use in selected cases in draining the urinary bladder. Among these the following may be enumerated:

1. By its use the urine is removed by the natural exit.

2. If used after operations involving opening of the posterior urethra until the perineal defect is closed, the period of convalescence is shortened since the perineal wound closes promptly if the urine be drained through the urethra.



Fig. 3.—Transverse strap to hold the penis down.

3. The caliber of the urethra is maintained or even increased, and the subsequent passage of instruments is rendered easy.

4. Much of the tedious work of after-treatment, as sounding, becomes unnecessary or is decidedly lessened.

5. After perineal section involving removal of a portion of the posterior urethra, intermittent catheterization or sounding is exceedingly harmful and difficult of execution; hence, maintenance of the urethral lumen becomes a serious task. If, however, the retained catheter is used. sounding becomes unnecessary and the new segment of urethra has a guide over which to form itself.

6. The urine may be thus accurately drained into a receptacle, and bedsores, dermatitis and much discomfort are avoided.

7. The danger of uremic poisoning is reduced, since the area of the unprotected tissue with which the urine must come in contact is diminished. For the same

reason the danger of bacterial infection or intoxication is lessened.

8. Pain and fever are notably slight during permanent catheterization, if care be exercised that the instrument does not project too far into the bladder.

9. Soft and hard infiltrations which may narrow the caliber of the urethra are removed by the pressure absorption produced by the presence of the catheter.

10. Drainage of the bladder in cystitis may be accomplished by this method without subjecting the patient to a more or less dangerous surgical operation, as must be done when suprapubic or perineal drainage is employed; here also the possibility of delayed non-closing of the wound enters into the consideration. The catheter may often be introduced in such cases with as little pain and inconvenience as accompanies the introduction of Skene's catheter for permanent catheterization in the female.

A convenient method of retaining the catheter is as follows: After the introduction of the instrument it is transfixed with two safety pins just in front of the external meatus. To each of these pins is fastened a narrow strap of adhesive plaster with the glue side toward the penis. These straps fall naturally along the course of Poupart's ligaments and around the sides. They may, if necessary, be reinforced by two other straps, which should pass downward along the outer edge of each abdominal rectus muscle, crossing the first two near the sides of the root of the penis, and continuing downward between the thighs to the buttocks. If the penis turns upward it may be easily held down by an additional strap passed transversely over its dorsum, the ends of this strap being fastened to the skin of the buttocks or the posterior aspect of the thighs.

FALLACIES IN THE TREATMENT OF URETHRAL DISEASES.*

ROBERT HOLMES GREENE, A.M., M.D.

Attending Surgeon to Workhouse Hospital, New York City; Attending Genito-Urinary Surgeon to French Hospital.

NEW YORK CITY.

Looking backward over the history of the treatment of the diseases of the urethra, if one is impressed with the slight amount of real progress that has been made, there is less cause for surprise if the fact is taken into consideration that our knowledge of the nature itself of these diseases, certainly until the last fifteen years, has been very slight. Known in ancient days to be an entity by itself, urethritis came to be considered as another manifestation of syphilis from early in the sixteenth until the middle of the last century. Neisser's discovery of the gonococcus in 1879, and particularly the discoveries of Pasteur, Metchnikoff and others as to the nature of infecting diseases and the way the body reacts against them, have acted as guideposts, showing the way towards their proper treatment, although the information from this source as regards their treatment through a misrepresentation of the above-mentioned discoveries has sometimes proved misleading. One general law as regards treatment of the urethra that can easily be interpreted from the discoveries made by these later observers is, that measures tending toward the destruction of an invading organism in one portion of the body should be destructive towards organs invading any other portion of the system; the influences of such measures being modified by the character of the organism and the portion of the body attacked. Apparently some of the recent exploiters of rapid cures of urethritis have not taken this into account. If, however, an overwhelming mass of clinical observation show their measures to be correct, then it must be that our interpretations of Nature's laws are wrong, and upon the pathologists rests the duty of modifying their present explanation of Nature's phenomena. Thus the pus of urethritis is often considered in recent times to be the disease itself instead of a mere symptom of the conflict going on between the forces of the body and the invading microbe, and an effort of Nature to destroy, by means of the bactericidal serum, the invading organism, and to sweep them and the results of the conflict between them and the portions of the body away by its flow. Then again, some fifteen or twenty years ago, the so-called strictures of large caliber of the pendulous urethra were held accountable for many of the inflammatory affections of that membrane, and their incision recommended as a method of treatment. Operations for these running up into the hundreds in number were not infrequently reported. Two factors have probably caused these operations to fall into disuse: Clinical experience not having demonstrated from such measures the good clinical results that might theoretically have been expected, and the possession at the present time of a more definite knowledge as to what stricture really is. Roughly speaking, true organic stricture of the urethra is cicatricial tissue formed at the base of a granuloma in the urethra due to a change in the position in the normal cells from a horizontal to a vertical plane and their gradual lengthening. The granuloma is an infiltration of the round-cell type around and under the base of an ulceration or a dipping down of this infiltration in the urethral follicles, which ar much more numerous than has been generally considered the case; the dipping down of the ulceration being after-results of acute inflammatory diseases of the urethra. This cicatricial tissue may be, of course, much more quickly formed by external injury or careless instrumentation. If strictures as a routine matter are being incised at the present time less generally than a few years past, it is to be looked upon with commendation; for undoubtedly in the past, many cases of the above-mentioned granuloma which may cause swellings in the urethra have been mistaken for true stricture and unnecessarily incised. It can be stated as a fact that the chronic inflammatory conditions following urethritis in the urethra, both anterior and posterior, and in the

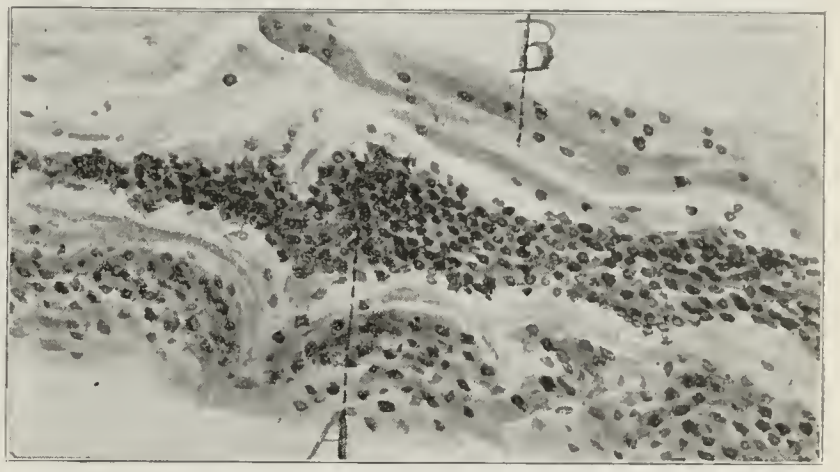


Fig 1.—Case 5, showing connective tissue hyperplasia about an acinus which has become filled with an inflammatory exudate. Section taken from the peripheral portion of an enlarged gland removed by operation. *a*, Inflammatory exudate of small round cells; *b*, hyperplastic connective tissue fibrils. This represents the acute infiltration of the acini, similar to what is seen in prostatitis associated with urethritis.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

prostate, proceed in a slow method. The writer's experience has been that outside of the traumatic cases above mentioned, strictures of such resiliency following urethritis as to require a cutting operation are almost never met with, certainly not in men under 40 years of age. To be sure, in hospital practice he has, like all surgeons, found a series of cases with a mass of cicatricial tissue in the deeper portions of the urethra of such resiliency as to require incision in order to give the urethra a proper caliber, but these have been cases that have given the history of antecedent operative procedures that were apparently unnecessary, and the patients have been men who have been careless of their well-being and have not attended to measures necessary to keep their urethras properly dilated.

The discovery of the gonococcus apparently suggested to its first advocate the so-called irrigation method of treatment for acute urethritis, the disease being considered at this time as being generally confined to the anterior urethra alone. Within the past few years it has been demonstrated as the result of observations made by several men, of whom the writer is one, that urethritis not rarely but generally invades the deep urethra and prostate and not the anterior urethra alone. These discoveries as to the nature of urethritis have had an important bearing upon the treatment of urethritis in two particulars. It has obliged those who believe in the irrigation treatment of acute urethritis to recommend the extension of irrigations to the deep urethra and bladder, in order to be logical. It renders illogical at once the position adopted by the earlier advocates of the irrigation method who recommended the irrigation method for the anterior alone, and illogical as well, the position of those who still advocate the use of injections to the use of anterior urethra alone by the patient, and illogical also the position of those who recommend the use of recurrent irrigations from the bulbus urethræ out. The above refers, of course, to acute urethritis and is not meant to refer to the local treatment of some chronic lesion remaining after acute inflammatory processes have subsided. The believers in irrigation methods of treatment of acute urethritis received a powerful recruit a few years past in the person of Dr. Janet, whose method of irrigation by permanganate of potash has had so many followers in this country. Theoretically, the advocates of these methods are, according to the laws of modern pathology, in error, their idea apparently being either that the gonococcus can be killed by direct administration to it of some substance inimical to its existence, or that the soil may be rendered unsalubrious for it to breed upon, or that the substance injected being kept continually present on the urethral wall, when the gonococcus emerges from the deeper layer of the urethra, it is there to put an end to its career; or, as one of the advocates of recurrent irrigations suggests, the gonococcus can be knocked off the walls of the urethra and washed out at the same time.

The above seems to be the sum total of the theoretical explanation of the good results which advocates of the early irrigation treatment of urethritis claim to obtain; for all evidence as to the presence or absence of the gonococcus obtained from staining methods alone is of comparatively little scientific value, unless the results are confirmed by cultures. Eight years ago the writer claimed that local treatment for urethritis should not be commenced until the acute symptoms had subsided; that is, from six to eight weeks after the onset of the disease. His belief, at that time, was founded on clinical experience and conformed to the pathological laws as at that time understood. Recent discoveries in pathology and his further experience in dispensary and hospital work have tended to render them more positive. The list of genito-urinary surgeons who hold the same belief comprises many prominent men and seems to be increasing in size. Such wonderful results, though, are claimed to be shown by clinical experience by the advocates of irrigation methods in the early stages of urethritis, that their claims must be considered seriously, although their views are not apparently in conformity with pathological laws, nor is the evidence furnished by them as to the presence or absence of the gonococcus by microscopical examinations of the secretions alone, of scientific value. It seems there must be some fire where there is so much smoke. It tends to discredit somewhat, to an unbiased mind, belief in the views of those who claim that acute urethritis is an ephemeral disease capable of being cured in a very few days by any process of irrigations, to find that the advocates of such irrigations differ so widely as to the proper material to be used for

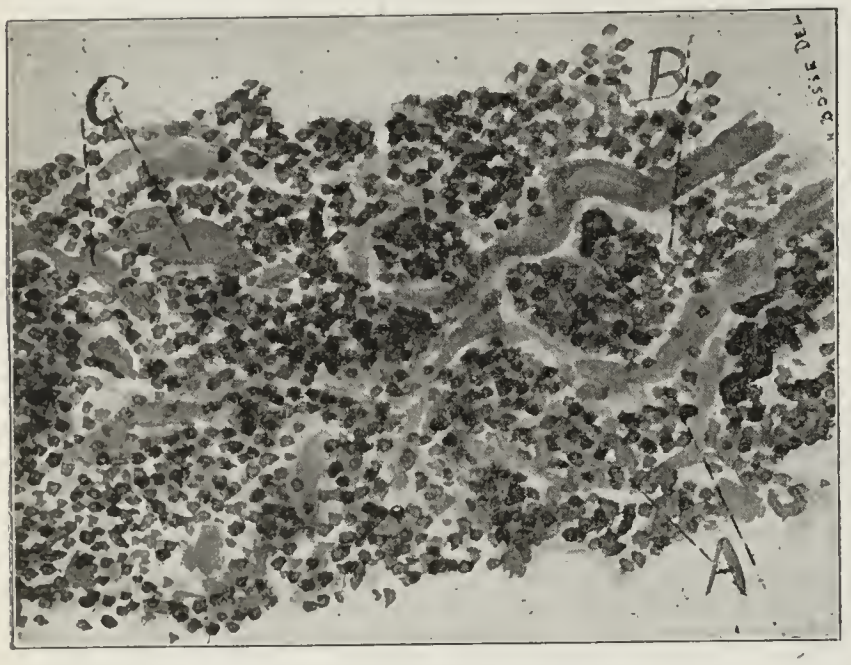


Fig. 2.—Case 30, showing an extreme small round cell infiltration in the immediate neighborhood of the posterior urethra. The central portions of this gland showed a great interstitial hyperplasia with the cell infiltration becoming more and more marked, until the area pictured was reached. *a*, Small round cells; *b*, acini filled by exudate; *c*, stroma, largely obscured by the cell infiltration. This represents a later stage of same condition as shown in Fig. 1, where the acute process still continues.

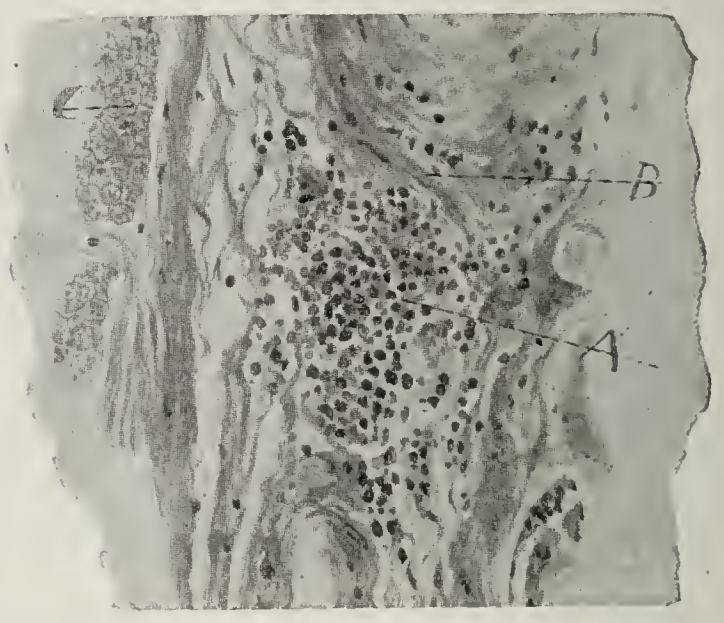


Fig. 3.—Case 1, showing moderate round-cell infiltration, with marked interstitial increase. Taken from central portion of gland. Tissue removed by operation. *a*, Patch of round-cell infiltration; *b*, hyperplastic connective tissue; *c*, normal smooth muscle fibers, transverse section. This represents condition as shown in Fig. 1, where the process has become chronic, the muscular fibers surrounding the acini are being replaced by connective tissue fibrils.

their solution. The list of such substances is only partially filled by the mention of permanganate of potassium, mercurial, ichthyol, etc., ad infinitum.

There is some evidence which goes to show that they render the patient more comfortable by these methods; that a purulent discharge is more quickly changed into a muco-purulent one; and that the gonococcus sooner disappears from the surface of the urethra. The writer is of the opinion, however, based on his clinical experience as well as on any theoretical pathological knowledge of the disease that he may have, that by these methods the gonococcus or whatever form of microbe may be causing the inflammation, instead of being allowed to have its battle with the forces which the body marshals to said microbe's destruction, is driven into the deeper portions of the urethra and the prostatic follicles. By the use of these methods the tendency to what is termed latent urethritis, that is, the recurrence of urethritis without reinfection even years after the original invasion of the disease—a condition which is recognized by all observers on this subject—is increased. The observations of many people extending over a long

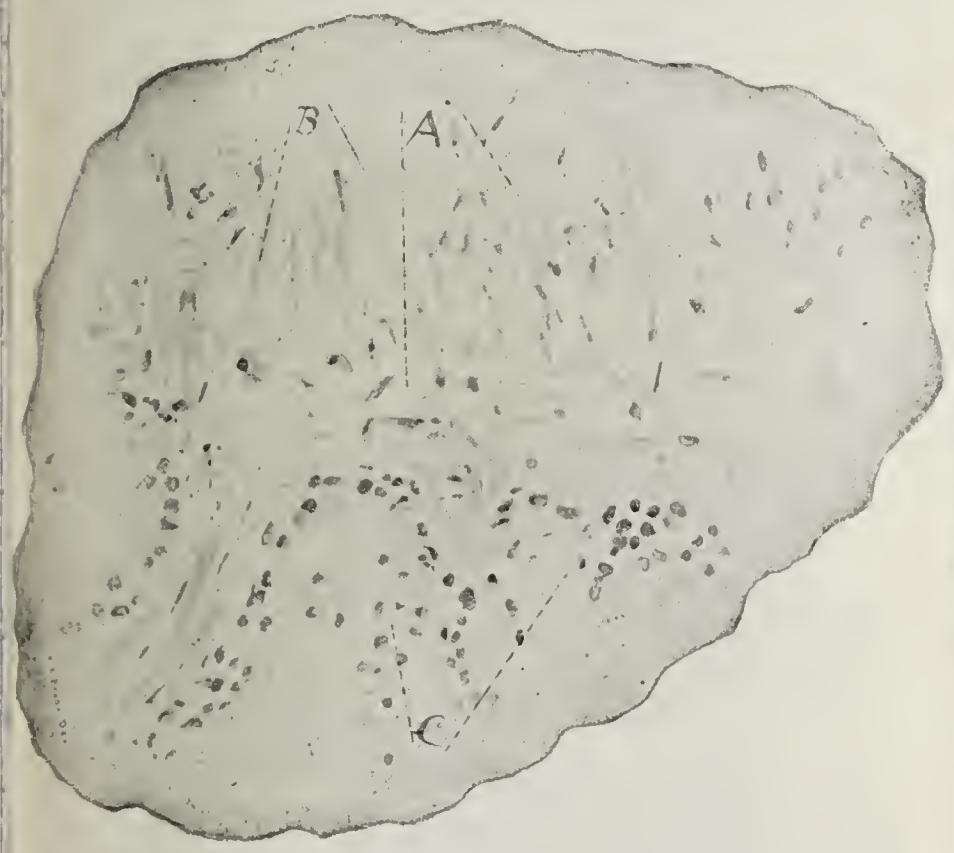


Fig. 4.—Case 28. Moderate prostatic hypertrophy in man of 53 years. Showing increase in interstitium, separation of muscle fibers and proliferation of the epithelial cells of acini, some of which are completely filled by these cells. *a*, Hyperplastic connective tissue; *b*, normal muscle fibers; *c*, proliferating epithelial cells, almost completely filling the acini. This represents a form in which the inflammatory process has caused a rapid proliferation of the epithelial cells of the acini and a production of connective tissue which has displaced the muscle cells to a considerable degree.

period of time will be necessary to entirely substantiate the value of the opinions held by those who believe in the postponing of local treatment for urethritis until after the acute stage has subsided. The frequency with which infection entering through the urethra breaks through the barriers set up by Nature, such as the bactericidal serum, the phagocytosis and the chemotactic action of the nuclei with the ptomain given off by the invading bacteria, should be closely studied; and fortunately, it is just now a subject which is occupying the attention more and more of the medical world. The frequency of the diseased condition of the female in the ovaries and oviduct, in the prostate and testicles in the male, in the bladder, ureters and kidneys in both sexes, blood infection which may or may not affect the heart, meningitis, conjuctivitis and certain other diseases of the eye that are due to infection from the urethra, should be ascertained with much more positiveness than our knowledge at the present time informs us. In the earlier part of this paper the writer stated that the treatment of urethritis should be based on our present knowledge of the character and extent of the disease. Urethritis being shown to generally extend to the urethra and prostate in the form of a granulomata in the urethra, later causing cicatricial tissue stricture, which rarely requires an operation by incision. Antecedent traumatism only generally through instrumentation or previous cutting operations, necessitates it in a man under 40. The best treatment of acute urethritis for the first six or eight weeks, at least, is to refrain from local measures; leave it alone, like an infected wound occurring at the bottom of a long narrow sinus of any other part of the body. The chronic urethritis should



Fig. 5.—Specimen removed at autopsy from an old man. History of chronic urethritis. Gland much enlarged. Large corpora amylacea in acini from which all epithelium has been removed. Increase of interstitium, atrophy of muscle. Areas of inflammatory infiltration. *a*, Corpora amylacea; *b*, areas of inflammatory exudate. This is one way in which the condition shown in Fig. 4 can terminate. Degeneration of the epithelial cells has caused the formation of large corpora amylacea, and the irritation of these has produced the surrounding inflammatory reaction.

be treated locally, carefully and for a long period of time. The irrigation method of treatment for acute urethritis is wrong; it increases apparently the prostatic infiltration and the danger of the recurrence of the inflammation from latent urethritis, although it may render the patient more comfortable, and more rapidly change the purulent inflammation in the muco-purulent one. It has been demonstrated that a chronic prostatitis following urethritis is an extremely common occurrence. Any observer, by carefully washing out the bladder in a case of acute urethritis, massaging the prostate and examining the few drops of secretion mi-

croscopically that the patient is able to pass immediately afterwards—although he will not in every case obtain secretion enough—will find that the secretions will contain substances which show an infiltration of the inflammation into the prostatic follicles. Dr. Gouley in his last book on genito-urinary diseases as a result of autopsies performed on those who had had chronic prostatitis following urethritis and who died of some intercurrent diseases, states that "a granulomatous inflammation was found dipping down in the prostatic follicles and tending to close up the mouths of the ducts." Apparently it is the same kind of granuloma as is associated with the granuloma found in the urethra which is the antecedent cause of stricture, and like all inflammations following urethritis of a slow grade of inflammation.

The writer, in a paper read before the American Association of Genito-Urinary Surgeons three years ago at West Point, showing the frequency of prostatitis in connection with urethritis and as the result of some clinical experience, expressed the opinion that urethritis was the cause of prostatic hypertrophy of the aged. He expressed his views later in a paper read before the Academy of Medicine in New York. During the last hundred years the list of the names of observers who have believed that urethritis was the main cause or one of the causes of prostatic hypertrophy of old age has become a long one, and space does not admit of their mention here. Autopsic evidence, however, seemed to be against it, for the enlarged prostate examined microscopically in sections was shown by scientific observers to be generally an adenoma, and not due to an increase in connective tissue growth as might have been expected. The small hard prostates, however, showed an increase in connective tissue growths. The books have also mentioned the prevalence of a prostate in which the growth consisted of an increase in muscular tissue. A few weeks ago the



Fig. 6.—Case 32. Greatly hypertrophied prostate removed by Dr. Lilienthal. Showing marked increase in the connective tissue elements *a*; epithelial cells partly filling acini *b*; and inflammatory exudate about acinus *c*. Another way in which the process shown in Fig. 4 can terminate. The final stage of this type results frequently in the "small, hard prostate."

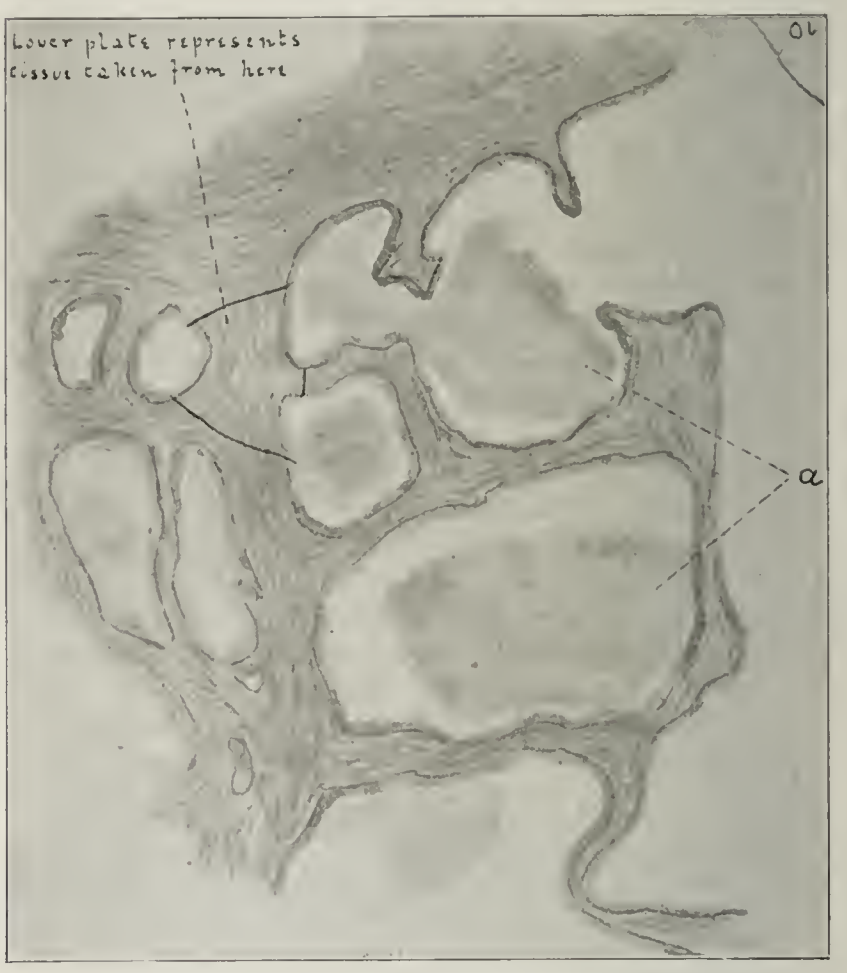


Fig. 7A.—Case 31. Greatly enlarged prostate removed by Dr. Guiteras. Outline sketch showing cystic acini, the so-called "cystic adenoma of the prostate."



Fig. 7B.—Section of wall between these acini, showing great decrease in the amount of muscle and hyperplasia of the connective tissue elements. *a*, Cystic acini, produced by obstruction of the ducts which have been produced by pressure of the inflammatory process about them; *b*, hyperplastic connective tissue fibrils, representing the chronic inflammation; *c*, atrophic muscle fibers, compressed by overgrowth of interstitium. This represents the same character as Fig. 6. That is, cystic distension of the acini instead of formation of large corpora amylacea as shown in Fig. 5. Enormous connective tissue increase surrounding acini and taking place of muscular fibers.

attention of the writer, through the kindness of Dr. B. Lapowsky, was called to an article written by Prof. Stanislaus Ciechanowski[1] on the anatomy of prostatic hypertrophy. Ciechanowski's researches have been most exhaustive in character, and after studying sections made from many diseased prostates he states as his opinion that the prostatic hypertrophy of the aged is an inflammatory disease; that if the original focus or the inflammation is towards the periphery of the prostate an increase in connective tissue will take place and give rise to the small hard prostate; if more central, that is, if the inflammation invades the mouths of the ducts, the larger and softer variety of enlarged prostate would be formed which resembles an adenoma and is easily mistaken for that. The prostate with an enlargement consisting mainly of muscular tissue, he failed to find in his investigations, nor was one found of this type in the investigations carried on at his suggestion by Dr. Brooks. Ciechanowski states that finding all the enlarged prostates examined by him to have an inflammatory origin, he thinks urethritis must be held accountable on account of its great frequency as a producer of inflammation in that region. The writer was so impressed with the conclusions of Ciechanowski that he requested Dr. Harlow Brooks, the eminent pathologist of the Bellevue and University Medical School, to carry on some investigations in the manner of Ciechanowski to see whether the latter's conclusions would be affirmed or disproved. Dr. Brooks kindly consented to do this work purely from a scientific interest which he took in the subject, and through his efforts and the writer's a large number of prostates in a comparatively short space of time were fortunately procured. The plates shown represent sections through some of the hypertrophied ones in this collection and it is hoped their study will illustrate the nature of the growth better than an exhaustive description. The writer here desires to express his thanks to Dr. J. P. McGowan of New York City for the use of a collection of nearly seventy prostates which Dr. McGowan had accumulated and on which some microscopic work had been done by Dr. Smith. Quite a number of the prostates in this collection were enlarged. Through the kindness of Dr. Charles Peck sections from six enlarged prostates, which had been removed and of which the histories could be obtained, were secured from the museum of the New York Hospital, and his thanks are likewise due to Dr. J. P. Tuttle, New York City, for a prostate removed at an autopsy, and to Dr. Howard Lilienthal and Dr. Ramon Guiteras for a prostate each had removed at an operation and concerning which the history of the patients could be obtained. Dr. Brooks was also enabled to obtain quite a number of prostates. In all nearly a hundred prostates were placed at the disposal of Dr. Brooks; of these thirty were enlarged, and of quite a large proportion of these latter the histories could be obtained. Dr. Brooks, to whom the writer feels the main credit for the outcome of these investigations belongs, reports as follows:

In accordance with your suggestions I have made a careful microscopic study of thirty specimens of hypertrophied prostate glands. The studies were made with special reference to the conclusions recently reached by Ciechanowski in his elaborate study of this condition.

The specimens studied by me comprised nearly every variety of enlarged prostate, including several of the so-called cystic adenomas, but excluding cases in which the enlargement was clearly of neoplastic origin, i. e., as carcinomata, etc.

In all of the specimens studied, inflammatory changes were clearly evident. The character of these lesions varied in the several cases from a chronic interstitial hyperplasia with more or less small round-cell infiltration, to actual suppuration and necrosis. In most of the specimens the inflammatory process noted was clearly of a vascular origin and in the acute cases could be traced in several instances direct to extension from the posterior urethra or from the ducts and acini of the prostate gland.

Apparently in most of the cases the hypertrophy was the direct result of the inflammatory changes, manifested in hyperplasia of the connective tissue, muscular atrophy and cell infiltration.

The study of these cases leads one to the conclusion that at least most forms of prostatic hypertrophy, including the so-called cystic adenoma, are of inflammatory origin and are in no way of the nature of new growths. The type of hypertrophy resulting depends on the location and character of the primary inflammatory process; as to these points I am in full accord with the opinions advanced by Ciechanowski.

One is not justified in drawing such sweeping conclusions from a study of so few cases as have been at our command in the brief period which has been allowed us, but taken in connection with the extensive studies just mentioned, I think we may look on this confirmatory evidence as almost conclusive.

I wish again to call your attention to the fact that at the outset I was not at all prepared to accept the decidedly radical conclusions of Ciechanowski, but careful study of the specimens which we have collected has won me to his view. Enclosed with this brief general report you will find a detailed report of my findings in each specimen.

It would not be claiming too much to conclude from these investigations that prostatic hypertrophy is an inflammatory enlargement and that urethritis, while perhaps not the only, is its most frequent causative agent. The question of urethritis in marriage, the question as to how extensive it is in its systemic effects, whether it is a simple ephemeral disease in the vast majority of cases capable of being quickly cured in a few days by the early administration of irrigations, as the believers in that form of treatment claim, or whether it is often a more deep-seated affair subject to the same pathologic law as allied diseases, as is believed by the writer, among others, are questions, the positive solution of which would be of great value to the medical profession and to the commonwealth. It is not from any one genito-urinary surgeon that a true answer to all these questions can be expected, but it can only be by the combined good scientific work of specialists in all diseases of general practitioners and pathologists that these problems can be solved.

In conclusion the writer can only reiterate what he has previously said, that we have, in his belief, in urethritis a disease often serious in character, far reaching in its results; apparently established by Nature or God, as you will, as a punishment for immorality; and is one among many of the signs which Nature presents, which tend to show that in domesticity and the proper fulfilling of the marriage vows, the laws of Nature and the moral law are closely allied.

1. Mittheilungen Aus den Grenzgebietten der Medizin und Chirurgie. Jena, 1900.

Classification of Mental Diseases.—The Italian neurologists and alienists in congress assembled at Ancona in October, adopted the following classification as best adapted for statistical purposes: 1, congenital psychoses; 2, acute and simple; 3, chronic, primary and consecutive; 4, paralytic; 5, accompanying a neurosis; 6, toxic, and 7, infectious.

NEW METHOD OF SKIAGRAPHIC DIAGNOSIS FOR RENAL AND URETERAL SURGERY.*

G. KOLISCHER, M.D., AND L. E. SCHMIDT, M.Sc., M.D.
CHICAGO.

Skiagraphy for medical purposes was especially advanced and perfected in America. Calculous deposits were especially attractive for *x*-ray diagnosis. McArthur, Bevan, Leonard and others four years ago showed the necessity of skiagraphs in all suspected cases of renal stone. Our method, now to be described, will perfect the knowledge of the topography of the kidney and ureter, the location of calculi and aid in important differential diagnoses. A conservative and plastic surgery of kidneys and ureters has lately made such progress and achieved such good results—we refer especially to Fenger and McArthur cases—that the absence of such diagnostic measures was the stimulus for our work. To a limited extent the different methods of collecting urine from each kidney and the cystoscopic observation of the ureteral openings has satisfied this desire. Skiagraphs frequently show the kidney-shaped shadow of the kidney while the representation of the ureters on the plate naturally failed on account of the delicate structures of these tubes. But, by the introduction of a suitable *x*-ray absorbing material into these organs with a simultaneous skiagraph, results of the highest value may be obtained and diagnostic problems solved that hitherto have been obscure. The technique is as follows: For locating the ureteral openings in the bladder and sounding the ureters in most of the cases we use Brenner's cystoscope; only in a few cases, where special peculiar conditions prevailed, we resorted to an improved modification of Casper's cystoscope.

Extensive cadaver work convinced us that the most desirable material for the sounds is lead, blended with some antimony. This kind of lead-wire is extremely flexible, so that the natural course of ureters would not be changed by introducing the sound. These sounds are soft and their surface polished up to perfect smoothness, so that injuries to the lining of the renal pelvis and of the ureter are not to be expected, and, in fact, are not to be observed, as careful examination in cadavers has proven.



Fig. 1.—Cadaver experiment.



Fig. 2.—Tangential insertion of ureter and dilated renal pelvis.

If you free the ureter by dissection in a cadaver, its course is not changed by the introduction of our sounds, unless excessive force is used. On the other hand, this wire is sufficiently strong not to be torn by its movements through the canal of the cystoscope.

Our results and the diagnostic possibilities of our methods can best be discussed on examination of the pictures which we present. We desire to say that we selected a number of cases as representative types of certain pathologic conditions. The first two pictures are taken from a cadaver and show that, although the sound was pushed up with all possible force, the course

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

of the ureter was not materially changed; at the same time it can be seen how the end of the sound curls upon itself in a dilated pelvis, thus outlining the renal pelvis.

The next picture is taken from the living and shows: 1, tangential insertion of the ureter; 2, a dilated pelvis outlined exactly by the wire. These conclusions have been verified by the findings during the operation, performed on account of suppuration in the kidney.

The next picture shows what we would determine as cicatricial distortion and consecutive partial obstruction of the right ureter. This patient met with a railroad accident some years ago, resulting in fracture of the pelvis. After dismissal from the hospital symptoms of intermittent hydronephrosis set in and still prevail. The sound can not be passed above the pelvic brim and



Fig. 3.—Ureteral obstruction.

the skiagram shows a decided deviation of the ureter. There, where the tip of the sound is to be seen, is evidently the seat of the obstruction, and there must be the field of operation.

The next picture shows a stone in the parenchyma of the kidney.

We desire to call attention to the diagnostic features of this case. We see distinctly the distance between the tip of the sound and the calculus, this distance corresponding with the distance of the location of this stone from the renal pelvis. In fact, this patient was operated on some time ago by a Chicago surgeon on account of serious renal symptoms. The pelvis was split open and no stone was found, and even acupuncture failed to reveal the seat of the suspected stone. If this patient will be operated on now, an operator equipped with one of these skiagrams will hardly fail to find the calculus.

The next two pictures are taken from a female patient suffering from floating kidney. These pictures give us some valuable information.

Judging from the outlines of the kidney and the insertion of the ureter, we can see that not only a descensus of the kidney has taken place, but also a rotatory dislocation. Considering these conditions it can be easily understood how temporary obstruction is produced in such cases. The second picture was taken after the kidney was pushed further down. We see how the ureter, in order to follow the excursion of the kidney, was forced into a double curve.



Fig. 4.—Stone in parenchyma of kidney.

At the same time, we wish to show the skiagrams of a kidney and a renal stone, pictures which were taken without previous sounding of the ureter, so that these skiagrams have to be judged upon without the guidance of the ureteral sound. The difference of the diagnostic dignity between such skiagrams and ours is obvious.

If we sum up the results and possibilities of our method we can state our method is free from danger. We can determine the course of the ureters, and the location of renal pelves; we can diagnose dilatation of the renal pelvis; we can determine the location of renal calculi. We are able to determine the seat of an ureteral obstruction, and we are in a position to judge to a certain extent upon the nature of the ureteral obstruction.

We have the possibility of differentiating gallstones from renal stones, which differential diagnosis occasionally is a very hard one, or even impossible to make by other means.



Fig. 5.—Floating kidney, high up.



Fig. 6.—Floating kidney, low down.

We have the possibility of distinguishing between nonrenal neoplasms and dislocated and enlarged kidneys.

In all cases where a surgical kidney can not distinctly be made out by bimanual palpation, cases which quite often present greatest difficulty in finding the kidney after incision was made, our method will give most valuable information concerning the topographical location of the kidney.



Fig. 7.—Ureteral stone without wire insertion.



Fig. 8.—Kidney stone without wire insertion.

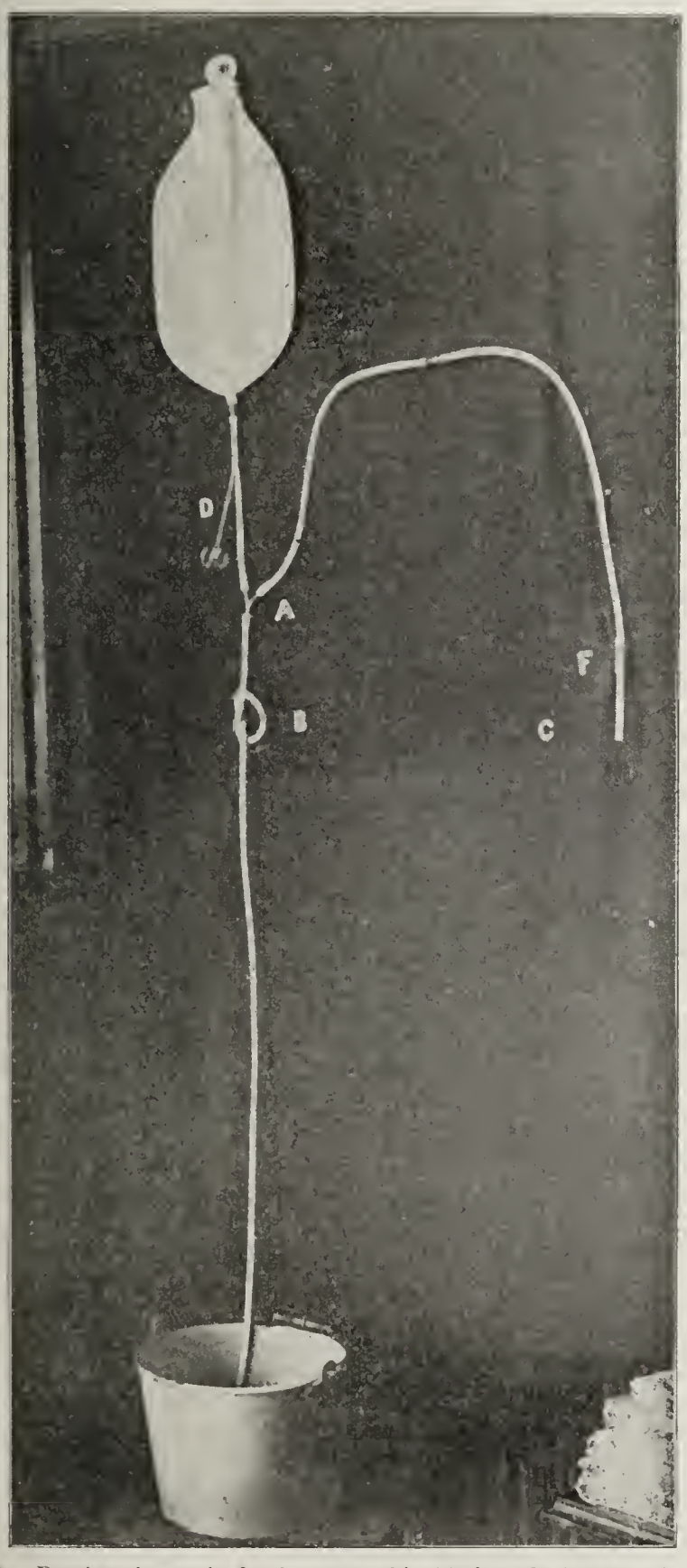
We would like to appeal to our professional colleagues to use this method, for we are positive it means an im-

provement in our diagnostic means and that extensive use of this method will enlarge its possibilities.

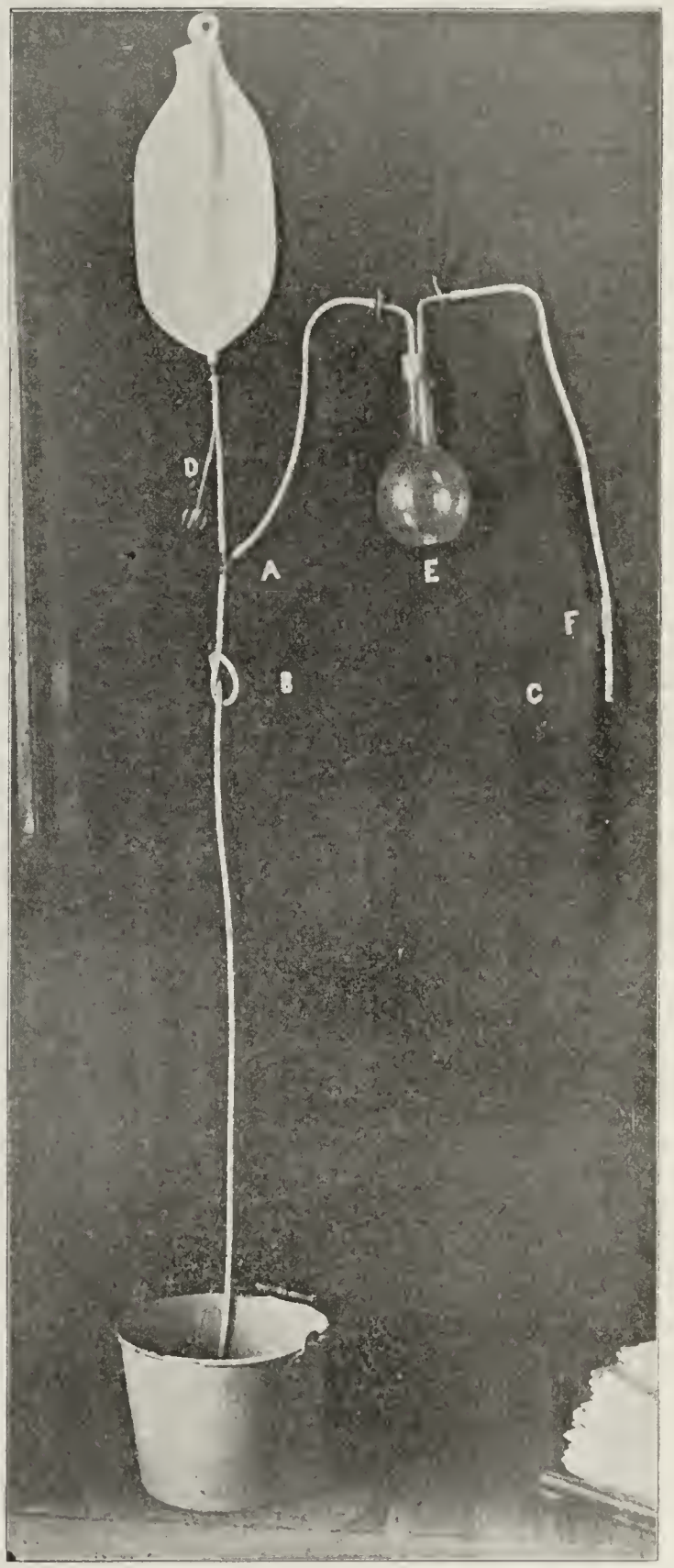
In conclusion we wish to state that Mr. W. C. Fuchs of Chicago has done all our *x*-ray work.

DISCUSSION ON PAPERS OF DRS. FULLER, SYMS, GUITERAS, EASTMAN, GREENE, KOLISCHER AND SCHMIDT.

DR. R. H. M. DAWBARN, New York City—I should be very glad to devote the time allotted to me in opening the discussion to the papers themselves alone, but I have decided, with the consent and approval of the Chairman, to spend my time in demonstrating an apparatus, so simple, for suprapubic drainage, that I think I might say it is pretty nearly ideal. That is a subject, of course, germane to that which we are discussing, of bladder and urethral surgery; I do not intend to take up the question (suprapubic drainage), but assuming it is to be employed, I think I can demonstrate to you that this method is thoroughly satisfactory. I have used it now about ten years, and it is not as well known as it ought to be outside of New York, although Dr. Weir of New York, and a few others here present, have employed it and will speak well of it. Ten years ago to-day, while I was enjoying my misery in a dental chair, it occurred to me that the principle then being used to keep my mouth dry could be used as well in other cavities requiring drainage up-hill. Twenty-five years ago, a dentist of Buffalo, named Dr. Snow, who is now dead, devised this method. Up to that time wads of bibulous paper had always been packed against the salivary ducts to keep the mouth dry. Dr. Keen of Philadelphia, Cathcart of England, Walker of New York, myself and others, have thought out and used modifications of this thing. The principle, however, belongs to Dr. Snow of Buffalo. The principle is that of intermittent syphonage, and it is not that of the Sprengel air-pump, as you might at the first glance suppose. The only points upon which I can lay claim to originality are the employment of simple and inexpensive means. A large fountain syringe, and a hard rubber



Dr. Dawbarn's method of suprapubic bladder-drainage. A, the Y-tube of vulcanite rubber. B, the "trap;" this is made by simply tying a knot; Dr. Dawbarn's method. C, a catheter with end cut off, thus making two eyes. D, artery forceps: a fountain syringe catch does as well, to regulate the flow. F, short piece of larger tubing; between this and the catheter air enters the bladder freely.



Dr. Dawbarn's method of suprapubic bladder-drainage. Showing a vacuum-bottle introduced into the circuit. E, bottle with rubber stopper and two glass tubes. This is used temporarily, at any time, to reckon the flow of urine per hour, and to analyze it undiluted by fluid from the reservoir.

Y-connection, the latter costing 20 cents in New York, are the only essentials, though I commonly add to this a soft rubber catheter of good size, as being less likely than other rubber tubes to become obstructed by accidental pressure. The glass trap employed in the other named inventions is quite needless and has obvious objections. While thinking over the matter it occurred to me that a trap is the same in principle and in effectiveness whether curved as usual, and as we see it always beneath every washstand, in towns, or whether instead it is quite differently shaped as the accompanying photographs indicate. Then the idea occurred of making such a circular trap and also having it self-retaining in that shape by just tying the simplest of all knots in the exit tube of the fountain syringe.

A trap is absolutely essential to the plan. By the catch just above the Y in the figure (which may be an artery forceps, or instead the clamp coming with every fountain syringe, removed from the tube and snapped upon its side, we regulate the speed of flow to drop by drop. When the trap is thus filled, the next drop starts a sudden syphonage of it, which in turn creates a vacuum between it and the bladder, and empties the latter. As often, then, as the trap empties, the bladder is evacuated. Commonly we regulate the flow so that this occurs every five minutes or so; the nurse need only refill a four-quart syringe a very few times daily. The apparatus can in practice be relied upon to maintain, if the patient is supine, a dry bed, and this with comfort to him; that is, the emptying of his bladder will not cause him pain.

It is necessary, however, to permit ordinary atmospheric pressure upon any urine in the bladder, or the apparatus will not empty that viscus. Hence a short piece of larger rubber tubing (shown in the illustration) is loosely slipped over the catheter, where it passes through the abdominal and bladder walls, and the two tubes are fastened together at one or two points by a stitch. Between them air passes in. The outer tube is held in its place as follows: Pass a long narrow strip of zinc oxid adhesive plaster from trochanter to trochanter across the abdomen where it crosses the wound, fasten it by a stitch to the side of the outer tube, just described.

The catheter is cut across between tip and eye and thus two openings into its lower end are arranged for. This has the same advantages that double-eyed stomach tubes possess. A point which I especially like about this drainage apparatus is the ease with which by it one may wash out the bladder; and practically always where we do suprapubic cystotomy this is advisable for a few days at least. It is only necessary to untie the knot—which is the trap—and alternately to pinch the tube below and above the Y. Pinching below, the water flows speedily into the bladder, pinching above, it empties the bladder as quickly. It is as simple a means as possible for washing out a stomach or a bladder in ordinary office work.

Finally, we wish occasionally to estimate the amount of urine that runs per hour, and to analyze it undiluted by the fluid from the fountain syringe. To do this, put into place between the Y and the bladder any large bottle with a tight rubber stopper piereed by two glass tubes. Thereupon, of course, this bottle becomes a vacuum and the urine passes from the bladder into it.

The only device used for the exit of urine by the suprapubic route which, as it seems to me, at all competes with the drainage device which I have been describing are the De Pezzer tube, the plan of Blasucci, and Dr. Gibson's, of New York, suggestion to use on the bladder the Kader gastrostomy idea, of a catheter sewn to the bladder walls so as to run obliquely through them. All of these plans have this in common, that in case the catheter is obstructed—it may become from thick ropy mucus, blood, pus, or calcareous deposits—washing out the bladder is much more difficult and ineffective because of the lack of free atmospheric movement within.

If, instead, the present plan is substituted I do not believe any surgeon will fail to be struck by its practical advantages.

DR. A. E. ROCKEY, Portland, Oregon—The operation of prostatectomy has been an evolution. It began first by cutting out large masses through large incisions, by retractors introduced into the bladder where the operations were done by sight; but the present plans, brought down to a scientific procedure, have given us entirely different methods. That method which will accomplish the object, which is the removal of the obstruction with the least interference of the tissues, will prove to be the best method. I believe that what Dr. Fuller has said about the passive indifference comparing it to the former indifferent treatment of appendicitis has come to be true in regard to prostatectomy. I believe it is incumbent upon the general surgeon to-day to give more attention to this subject. All who have given the subject careful attention know that these cases go year after year until they are almost too bad to be reached, and then either die or come to a radical operation. Now, then, the question for us to decide is, what method shall we adopt? Dr. Guiteras and Dr. Syms have described their technic and Dr. Fuller has described his in his book. In the January number of the St. Louis *Courier of Medicine* (1900) I described the method that I had been using for some time. It is what might be called a recto-vesical method, although at that time I had my assistant place his fingers in the rectum to raise the prostate. Previous to that time I had quite an unusually large number of large glands, more than subsequent experience has demonstrated to be the rule. The method I used was that of a combined morcellation and enucleation. Guiding the instruments with the index finger of my left hand, while an assistant raised the prostate from below and then cutting and tearing with the forceps and scissors in the right hand, in addition to the enucleation made with the finger. Since that time I have modified my technic until it is practically as described by Dr. Guiteras, without the use of perineal drainage. There are some differences in the method I use, as compared with those of Dr. Fuller and Dr. Guiteras, and as we are working together for the development of a satisfactory plan I trust I may be pardoned for taking the time of the Section to describe the technic that I employ. I now universally use a very small incision. It is not necessary in an ordinary case to make an incision over an inch and a half long through the integument and between the muscles, and the incision in the bladder I think is seldom more than an inch in length. Through an incision of that kind you can pull a prostate an inch and a half or two inches in diameter. The gland is usually soft and the bladder elastic. In the occasional instances of fibroma of the gland morcellation as previously mentioned may be done through the small incision. I hold a small-bladed scalpel vertically, and push down through the tissues and make the incision to the bladder in one cut in an upward direction; then push up the prevesical fat with the finger, or divide the lower portion with another touch of the scalpel. The next move is to catch the bladder in the center with a pair of bullet forceps, which is passed to the assistant who draws it to the opposite side. With a Martin needle armed with heavy silkwormgut I make a vertical stitch through the entire bladder wall of about half an inch in the direction of the incision and bring the needle through the abdominal wall and tie one knot without pulling it too tight. Then tie another loop above this through which the safety-pin retaining the drainage tube may be passed. I will illustrate this on the blackboard. The same process is repeated on the other side. The bladder is now well anchored with these stitches. With a quick, downward cut a vertical incision about an inch long is made into the bladder, and the index finger of the left hand inserted for exploration. If stones are present they are removed at once, and the debris thoroughly washed out. If there are no stones present a pair of straight hysterectomy scissors is inserted alongside of the finger, the tip of which rests in the urethra. The blade is pushed well into the urethra, the other one resting back of the gland, and a firm vertical cut is made. The scissors are then laid aside, the left hand removed, and pushed into a rubber glove which is held ready by a nurse. Two fingers of the gloved hand are now inserted into the rectum and the index finger of the right hand is pushed firmly into the intravesical incision in the gland, and the division line of the capsule sought for. When this is found it is almost always possible, by the bi-manual manipulation, to

enucleate the gland in one piece without any other instrumentation. In a few cases morcellation and excision by the scissors of portions which can not otherwise be detached must be resorted to. Cases of this kind, however, I think do not occur oftener than one in ten of those that come to operation. After the enucleation of the gland I insert a large drainage tube to almost the depth of the base of the bladder and fasten it by safety-pin through the loops previously mentioned. This is connected by a long tube passing to a pan under the bed. The method of suspending the bladder brings the inverted outer side against the tube like a valve and usually promotes a syphon drainage. The device described by Dr. Dawbarn would undoubtedly be of additional advantage in this method. I have resorted to perineal drainage as advocated by Dr. Fuller and Dr. Guiteras in but one case. My experience with suprapubic drainage as described here has been so satisfactory that at present I am not inclined to resort to perineal drainage.

Now the operation of suprapubic prostatectomy has been given a very black eye by one of the speakers, who claims for it a terrible death rate. This may have been true of the earlier operations done by the crude technic of McGill's first operation, with its large incision, but is by no means true of the operation which has been described in the papers of Drs. Fuller and Guiteras, and certainly not in my own operations. In many prostatectomies I have lost no patients as a direct result of the operation. One man died the next morning after operation from a pre-existing uremia, and one died in two weeks from a continuation of suppurative cystitis and nephritis due to long previous neglect. So far, I have not encountered a dangerous hemorrhage or one which would induce me to pack the bladder, as has been advised by some, and although I have removed glands larger than my fist, as I have previously described, I have not a single death that can be fairly attributed to the operation. It is not the very large glands that always give the trouble. A gland no larger than an English walnut may completely obstruct, be easily removed, and the patient quickly cured.

My second last patient was 80 years of age and made a magnificent recovery, and a year ago I operated on a man in his 81st year, who also recovered. The day on which I expected to take the train for the Association meeting I received a telephone call requesting me to operate on a case of prostatic obstruction which would be brought the next morning. I mention this case to show the extreme conditions we sometimes find. The man lived seven miles from a physician, who was called without knowing what kind of a case he would find, but the urinary retention was complete. He first tried a rubber catheter without success, and then after nearly half an hour's work, with a metal catheter from his pocket-case, succeeded in emptying the bladder. In the week which followed two other physicians took turns in relieving the man from time to time in the same way. When he was brought to me his scrotum was black with extravasated blood and swollen to about four times its natural size. The bladder could no longer be entered, but a little bloody urine could be drawn from time to time from the prevesical space. At the operation when the incision was made extravasated urine was found outside of the bladder. When the prostate was enucleated there was a clot of black blood an inch and a half in diameter in the tissues under the gland. This man was 72 years of age and a telegram received from my assistant this morning informs me that he is doing well. The profession owes a debt of gratitude to Doctors Fuller, Guiteras, and Syms, for the original work they have done in developing satisfactory methods for the relief of this serious malady.

Dr. Frank Warner, Columbus, Ohio—It has struck me that operative procedures should be employed earlier in the most of these cases. The inclination, it seems to me, is to let the operation for the relief of hypertrophy of the prostate go until it becomes an operation of last resort. If we do not operate before a man is 80 years old, he has suffered from that enlarged prostate many years. Instead of temporizing with this and that method, if we get at it a little earlier and try to avert some of the difficulties that follow, the operation of prostatectomy will receive many more advocates. Instead of waiting until changes have been produced in the bladder and kidneys that render the operation so dangerous, anticipate by an earlier operation. As the gentleman preceding me stated, one of his cases died the following day from uremia. Another case died from some other changes that had already occurred in the kidneys. It only goes to emphasize the fact that if we are going to spend so much time in developing the method to be employed, we want to spend some time in the consideration or give some considerable thought to the question of the time to operate. I do not mean to advocate operating early in every case of hypertrophied prostate. We can not know what ones are going to give great or little trouble. But when a case has proceeded far enough to no longer readily yield its disagreeable symptoms to systematic catherization and bladder irrigation, then is the time to come in with our operation before the extensive pathologic changes have occurred in the urinary apparatus that will render the operation unsuccessful. After these changes have once occurred about the bladder and in the kidneys and the patient has reached a considerable age, it seems to me, it is then better surgery not to attempt the radical operation of prostatectomy, but rather depend upon the drainage of the bladder by a prostatotomy and secure what relief we can in that way rather than in performing the radical operation.

Dr. E. W. Andrews, Chicago—Dr. Fuller has informed us that the Bottini operation is easy, and this is exactly the mistake that those who practice the operation have made. Instead of being easy, I consider the Bottini operation one of the most difficult in surgery. My own experience has been somewhat considerable and disappointing. After Dr. Willie Meyer brought into view very forcibly in his paper the good results of Freudenberg I took it up early and used it 17 times. I am very sorry to say that in this number I had 1 death; that I had only 3 cures, these being rather brilliant and prompt cures, and all the other cases range from complete failure to slight improvement and in some cases with improvement temporarily. I advise cystoscopic inspection of the bladder preceding the Bottini operation, the application of the method only to a limited number of cases, in which we have a circle or collar, which can be divided or in the other cases in which there is rather an abruptly pointing or pedunculated prominence to the right, left or middle. Limited to these selected cases it may give better results in the future. One of my own successful cases developed a somewhat large calculus, the core of which, when I removed it three months later, proved to have been constituted by a slough thrown off from the cautery incision. I should be interested to know whether these have occurred in the practice of others.

Prostatectomy by the median incision in the perineum I consider the coming method. However, as to quick operating, while desirable, we must remember that as in the case of the rectum and other operations requiring the lithotomy position, a very complete anesthesia is essential. We can not hold the patient partly anesthetized in position, and consequently begin early with our incision, as one of the speakers has suggested; working on the perineum before profound anesthesia is attained is rather impracticable. The muscles must be relaxed. Dr. Sym's apparatus is certainly an admirable one, and this leads me to speak of an instrument, the invention of Dr. A. H. Ferguson, which I have found useful. This is a prostatic retractor, accomplishing the same purpose that Dr. Sym's admirable and ingenious apparatus accomplishes in a different manner. The instrument is a urethral staff, inserted like the old-fashioned perineal lithotomy staff. The lower end of this staff would be spoon-shaped, except that it is in reality a hollow band wire-loop. The circumference of the loop here has a measure given in French, say number 25. The introduction of this loop is per urethram, as in lithotomy. Having brought it into the bladder, it is then reversed just as we reverse the Bottini instrument before making the cut. The assistant, holding this loop and elevating it, presses the prostate downward against the peritoneum. We accomplish two things: not only does it press the prostate downward toward

the peritoneum, but on the retraction of tissues surrounding it it restricts the hemorrhage, which, in spite of the statement of the last speaker, may be considerable. We get practically none, or little, until the moment of removal of the instrument at the close of operation.

I agree entirely about the value of narrow incision, for the reason that it diminishes the area from which absorption takes place. I have entirely quit using such an incision as the so-called Zuckerkandl incision for prostatectomy. The horse-shoe incision has the disadvantage that it is too much surgery for these old men; it cuts too much muscle, exposes too much tissue, causing urinary absorption and infection and it is from this source as much as from the suppression of kidney function that we get the uremic poisoning that usually carries off these old men. A small median incision, as described by the first speaker, gives ample room and even with the larger incision we can not see the prostate. When you have made the incision and enucleated your prostate, you have, as a rule, cleared the two lateral lobes with the right forefinger, so that they hang free; and about the last thing you do, I think Dr. Fuller said the second thing you do, is to clear the small middle lobe. As you clear the middle lobe and enucleate, you nearly always get into this sulcus [illustrating] between the middle and lateral lobes and hence you will open the bladder; but you open the bladder not through the membranous urethra, but through the prostatic urethra. If you open the membranous urethra it is pretty sure to be torn, and is less favorable than to drain the bladder.

DR. G. MACGOWAN, Los Angeles—The paper on the skiagraphs of renal calculi is intensely interesting to one who has paid attention to bladder and urethral surgery, for it is a new method placed into our hands, presumably, to be used by all with equal success. We certainly should have in it an agent which would give us better diagnostic results than we have been able to get heretofore. The gentlemen say that they have introduced these leaden bougies through a Brenner cystoscope. Most of those who have used a Brenner cystoscope believe that, for the purpose of viewing the bladder base, it is the best cystoscope that exists, but for the purpose of catheterizing the ureters, it has been one of the poorest of cystoscopes. From my personal experience, and, I believe, from the personal experience of most of the individuals who have devoted time and attention to this specialty of genito-urinary surgery, the catheterization of the ureter by the electric cystoscope, if the ureter be a healthy one, is an exceedingly difficult matter. In the hands of those who use the cystoscope every day, or a number of times a week, if a ureter is enlarged, if you have a gaping ureter, it is not a difficult thing, with a modified Casper, or with the Nitze-Albarren, to catheterize it, with fair ease. I have yet to know of any man except Casper, or one of his pupils, who has been able to claim to catheterize normal ureters rapidly. I saw Young do it in Baltimore, the other day, with the modified Casper cystoscope, on a neurasthenic, who held perfectly still while he did it. Most of us will not be able to use these sounds, and also will not be able to have at our command a person who is competent to take excellent skiagraphic pictures.

I think we all owe to Dr. Guiteras a debt of great gratitude for the most interesting manner in which he presented to us the methods of treating enlarged prostates—I mean prostatectomy and the prostatotomy of Bottini. I say prostatectomy first, because it is my rule to advise my patients, whenever they come to me requiring such relief, to submit themselves to a prostatectomy. If they decline to do so, I advise them to permit a prostatotomy. Once in a while I advise prostatotomy first. I have operated on about fifty old men by prostatotomy and prostatectomy. These men varied in ages from 65 to 81 years; only one was younger, and he was 63. The results have not been perfect, nor can they be, with either method. All you have to do is to take out the bladder of one of these individuals, open it and examine it, and you will see the utter impossibility of the skill of man, under any circumstances, to give such a man a perfect bladder again.

Dr. Fuller and Dr. Syms spoke about obtaining perfect results. This is not my usual experience, but it is wonderful how, after a developed obstruction to the outflow of urine is removed, the apparently atrophied bladders will regain contractility, and the apparently fibroid bladders will expand gradually to useful proportions. In most of the cases of prostatectomy that I have done, I have used Dr. Fuller's method, and I believe, in the large majority of cases of difficult prostatectomies, that it is the only method that is available. You may make your small incision through the perineum, and use the admirable methods described of pulling down the prostate, with success, in thin men with shallow perineums. But if you have a stout man, with a deep perineum, you may insert one finger into the rectum to pull down the prostate and endeavor to work the index finger of the other hand into the narrow space made from the perineal wound, usually through the urethra, into the capsule of the prostate, but you will find that you can not remove a large middle lobe, or an obstructing lateral lobe, projecting well into the bladder, by this method. True, you can pull away, and take out, small pieces of this prostate through the perineum. What does an enlarged prostate look like upon section, in the majority of cases? It looks like a geological specimen known as pudding stone; a matrix filled with nodules of various sizes. The secreting glands, unevenly enlarged, lie embedded in their stroma of fibrous and muscular tissues. You can not usually tell exactly which special lump is the cause of the urinary obstruction. You have to take them all out if you wish to make a certain cure.

A number of years ago I operated upon a gentleman, who was, at one time, the most distinguished orthopedic surgeon in America. I removed from him a prostate as large as a fist, in a number of pieces. I thought I had it all. He made a good recovery. Six months afterwards he died of other troubles. He had instructed me to examine his bladder, prostate and kidneys, postmortem. I did so, and found the left kidney very much atrophied, while the other was nearly destroyed by the pressure of a stone almost as large as a duck's egg. One little glandular enlargement, left in the prostatic stroma at the time of the operation, had grown to be larger than a pigeon's egg. This was intravesical, but, if it had been intra-urethral, he would have had a return of his urinary obstruction.

When a man's leg is broken, and you let him out of bed for exercise and give him a pair of crutches, would he not be extremely foolish to throw away one of his crutches and hobble on the other? That is exactly the position we are in, we surgeons, with regard to operating enlarged prostates. You have, on the one hand, a most excellent method without the knife, given to us by Bottini. You have, on the other hand, a most beautiful and absolutely surgical method of removal, given by, it matters not whom. Because a man can not or will not, or his relatives will not allow him to submit to a prostatectomy, do not refuse him the alternative of a prostatotomy.

What matters it if after a Bottini he has an ounce, or two, or three ounces of residual urine, where he previously had ten, fifty, or even two quarts, as we have seen them have. Is not the cure relatively a good one?

Take up one of these bladders with its wall thickened by chronic cystitis, or fibroid degeneration, enlarged, or contracted—could you hope for a perfect cure? You would not get it if you did. But if, during the remaining years of these old men's lives, you can reduce the disturbance of their nightly rest by lessening the necessity for urinating by five, ten, or twenty times; or, if you only give them extra ease in using the catheter, you have done these men great good.

I want to assure Dr. Fuller that my experience as a dermatologist taught me, years ago, that the scars made by the galvanic current are of two kinds; if you use the positive pole for electrolysis, you will get a contracting scar that is hard, dense, unyielding, deformative. If you use the negative pole you will get smooth scars, flexible, soft, which do not deform—my face is full of them. The burns produced by galvanocautery do not deform, are smooth and flexible. I have in my collection of bladders those of two men operated upon by me by the Bottini method. They have beautiful channels in the

bottoms of their urethræ. If you did not know, you certainly could not pick out what portion of the bladder neck the Bottini incisor had burned through by any contracted or hardened condition of the scar. They are perfectly flexible. His fears upon this point are without foundation in fact, and he can rest assured that the Bottini can be used without that fancied danger.

I wish to pay one little tribute to Dr. Greene's paper. Ultzmann used to teach us in Vienna, that the boy who had gonorrhea and, as a sequel, had an acute prostatitis, which became chronic, lasting for six months, or, for one, two, or three years, was certain not to have an enlarged prostate when he grew old. As I have grown older, I have doubted the exactitude of his observations in these cases. The argument Dr. Greene presents to us in these pictures, is an argument from "after before." I have never seen a prostate in chronic obstructive prostatitis free from inflammation. These prostates have all been inflammatory, and if you will but think about the preceding and accompanying evils of an enlarged prostate, and also of the instrumentation to which these urethras have been subjected, you will readily see that the evidences presented here are worth very little.

With Dr. Fuller's great skill he makes his operation appear too easy, for it does not seem difficult to him. It is not an easy operation. In some of your patients the hemorrhage is extreme; they bleed so that you wish you had never touched them. They bleed until it makes your hair rise. Then others have prostates that you can not peel out and you would be thankful to have a better rongeur than those we use at the present time, to bite our way through them.

Dr. J. E. Allaben, Rockford, Ill.—An old man, 77 years of age, who had suffered from prostatic trouble for ten years, is compelled to use the catheter most of the time. About eight months ago he had complete retention of urine, which had existed for three days when I was called in consultation. Numerous unsuccessful attempts had been made to pass a catheter, and I also failed in an attempt under anesthesia. I did a suprapubic cystotomy, relieving the bladder of several quarts of urine mixed with pus. Recovery was rapid. Would the gentlemen under these conditions recommend either immediate prostatectomy or the operation at a later date when the patient is quite comfortable at the present time, save the slight inconvenience incurred by the wearing of a tube in the suprapubic wound which drains into a rubber urinal worn upon the person? The patient is able to be about and attend to business better than for ten years.

Dr. R. Guiteras, in reply—I would like to answer the Doctor's question regarding the case of prostatic hypertrophy. I think in cases in which a patient has acute attack of retention, and a large amount of urine is present, that the bladder should never be emptied at one time as would result in the case of an operation. If a catheter can be passed we should never draw off more than a pint of urine at the first seance. If we can not pass a catheter after the use of morphin, rest, hot baths, etc., we should aspirate suprapubically, not drawing off more than one pint the first time, as the withdrawal of 18 ounces has caused hematuria, and that of 22 ounces has caused suppression of urine due to acute congestion of the kidneys. If the kidneys are damaged medically or surgically any interference with the genito-urinary tract is likely to cause this renal congestion, as the kidneys can not work as they should. They can not eliminate what they ought, that is, the necessary amount of urea, and uremia and death may follow. Therefore, first relieve the retention, either by catheter or aspiration. Aspirate several times if necessary, then always accustom the patient to the catheter before performing such a radical operation as prostatectomy. Improve the condition of the bladder as much as possible by catheterization and local treatment.

Dr. MacGowan is certainly right. Neither after a prostatectomy or a prostatotomy can one have the bladder which we find in a 21-year old man, although it is wonderful to note how much tone is regained in bladders in which we have seen before the operation by the cystoscope numerous trabeculæ and diverticuli, accompanied by a chronic cystitis, and to think that these bladders really regain tone after an operation, and that the patients have control of them!

I would speak one word in favor of the Bottini operation. Of course, I believe the enucleation of the prostate, prostatectomy, is the coming operation, and that it is in the same position to-day hysterectomy was a number of years ago, and, gentlemen, working along the same lines in which we are now engaged, we will probably some day or other formulate an operation which can be performed with ease, and without much danger to the patient, and which will give good results. This I feel sure of.

The Bottini method does seem to-day a crude and unscientific one, yet the results in certain cases are good. I know this from my own operations, and I have a record of 24 with careful histories and no deaths. I have a number of patients operated upon two years ago, and all but three were relieved. I do not say that they were cured. Two of the three still complain of a constant burning sensation, an ardor urinæ, although their residual urine has been diminished to one-half an ounce. In the other case the patient still suffers from frequency, although the residual urine has decreased from 9 ounces to one-half an ounce. There was another more recent case which was a very remarkable one, as the man had led a catheter life for four years with complete retention and after the operation had only 4 ounces of residual urine.

To illustrate the function of the genito-urinary organs, I mention another case of a man with 5 ounces of residual urine before the operation. Two years after it he said he was perfectly well with absolutely no symptoms. He said he felt as though he had never been troubled with his prostate before, and notwithstanding the fact that the cautery blade had traveled through his prostate in three different places and he was 65 years of age, he still had control of his general functions and came to me suffering from a venereal trouble, saying that he was in prime condition.

One word more about prostatectomy. We can not always enucleate the prostate. Of this I am sure. Some years ago a patient was sent to me for a prostatectomy, but I did not consider his condition sufficiently good to warrant an operation. I felt that he would die, and planned after his death to have an autopsy and remove his prostate. As soon as he died I tried to remove it, but I could only tear it away in little pieces, and could not perform an enucleation. In other words, the enucleating finger could not be made to sweep around the lobes between them and the capsule and shell them out. It must be remembered in speaking of prostates that they grow in the line of least resistance. The capsule is very dense in these cases of prostatic hypertrophy and it is very much thickened. I have seen capsules taken from cases postmortem which were in some places one-half an inch in thickness. Therefore, we can not always tell by rectal touch alone the shape of the prostate. We must be governed as well by the amount of the impediment in the prostatic urethra, by the length of the canal, and the amount of residual urine. We must bear in mind that the gland in undergoing enlargement and working along the line of least resistance tends to protrude, as a rule, not into the bladder as much as it does upward and backward into the urethra and the bladder.

Dr. E. Fuller, in reply—Everyone who has much experience with prostatic surgery will have his individual peculiarities and preferences in operating. In some special instances the perineal route to accomplish the removal of prostatic obstruction is the preferable one. Many times, however, it is not. By the suprapubic route one can always accomplish the removal of the prostatic obstruction. This can not always be done by the perineal route. Dr. Syms, in his paper, illustrates this point for one of his perineal cases failed because he was unable to effect the removal of the obstruction. One can not always enucleate a prostatic obstruction. Sometimes one has to use cutting forceps to effect its removal and very rarely the obstructing mass may be too fibrous and firm even for forceps, in which rare cases Jessup's prostatic scissors may be necessary. Undue hardness and adherency may indicate scirrhous cancer of the part and when such cases are encountered it is

always well to have an histological examination made of the tissues removed.

Dr. Greene's paper was of interest. I do not, however, feel that his conclusions have any support as far as my clinical observations are concerned. In fact, I am firmly of the opinion that prostatic hypertrophy is not in the least dependent for its origin on a preceding gonorrhea. I have often brought to notice the fact that inflammatory tumefactions involving the fibrous tissues about the seminal vesicles and extending into the fibrous capsule of the prostate—the source of which inflammations is the seminal vesicles—are frequently mistaken for prostatic hypertrophy. In the production of these inflammatory lesions the gonococcus, of course, plays an important rôle. There is no evidence of an inflammatory process in the histology of prostatic hypertrophy such as affects elderly men. In fact, Dr. MacGowan has just called attention to the theory that gonorrhea protects against a subsequent senile hypertrophy of the prostate. Whether it does or not I do not know further than that it is a fact that very many sufferers from prostatic hypertrophy seem to be from among those who have led exemplary lives. Another strong point in favor of the fact that gonorrhea has nothing to do with the causation of prostatic hypertrophy lies in the fact: the inhabitants of India, China and Japan seem to be wholly or certainly in very great measure free from that complaint, while gonorrhea is as prevalent among them as it is among the races prone to senile disease of the prostate.

The apparatus shown by Dr. Dawbarn is certainly ingenious. I do not, however, require his apparatus to guard against "wet bed" after my suprapubic cystotomies, since I so close the wound against the drainage tube that no leakage takes place until such time as the tube is permanently removed to allow the closure of the incision. Then, of course, under any circumstances there will be temporary wetness, which requires the wearing of an absorbent pad.

Dr. Andrews thinks that the Bottini operation is not easy, because, as far as I can judge, he has obtained only three good results out of seventeen cases. I do not see that goes to show that the operation is not easy, for I feel sure that Dr. Andrews operated skilfully in all his cases and did as well as anyone could with the Bottini operation. It simply shows the point I made in my paper, to-wit: how few cases are suited to the Bottini operation.

Dr. MacGowan has laid great stress on the vesical lesions, existing many times in the bladders of those who have suffered long from prostatic obstruction and from this argues that even though the obstruction be removed the function of the bladder must remain to a large degree crippled. This is one of the old arguments against prostatectomy. Sir Henry Thompson and Guyon formerly taught that a bladder which had once lost its expulsive force owing to prostatic obstruction would never regain it and that accordingly the removal of the obstruction would do little good. This theory has been shown by clinical experience to be entirely fallacious and so are Dr. MacGowan's fears regarding the recovery of the vesical function and the persistency of vesical lesions. If a prostatectomy is thoroughly and properly done, that is, if all the prostatic obstruction is removed and then if the bladder through the maintenance of artificial drainage is kept at complete rest for four weeks or thereabout, perfect repair will take place in the lesions which have resulted from the obstruction and the bladder on the healing of the drainage and incisions will be able to empty itself naturally. I never had but one case where after prostatectomy the bladder was not able to empty itself. In that instance, owing to the tubercular pericystitis, a disease entirely independent of the prostatic hypertrophy, the walls of the bladder were so bound down by adhesions that they could not contract. Sometimes a patient may dribble a little after the operation, losing some urine on active exercise, but this is usually temporary.

Dr. MacGowan also advanced the theory that in the performance of the Bottini operation if the negative pole of the battery were used for cauterization a less sear would result. Desnos, some years ago, in his experiments on dogs' urethræ disproved this assertion. He found that very severe strictures followed the use of electrical cauterization of the part and that the use of the positive or negative current made no difference.

DR. J. RILUS EASTMAN, in reply—I believe that when Dr. Greene assumes that inflammation is an important etiological factor in prostatic hypertrophy, he is not far from the truth. In the microscopic examination of a considerable number of prostates in Virchow's Institute for the study of the corpora amylacea, I was struck with the great frequency with which the cardinal signs of inflammation appeared in the prostatic tissues. It was developed that the corpora amylacea themselves are formed by the desquamation of spheres of epithelium from the walls of the acini of the prostate gland by subsequent amyloid degeneration of these cells. These prostates were taken from persons of all ages, from childhood to old age, and in all these cases desquamation of acinus epithelium had taken place to a greater or lesser degree. Not only that, but there was almost constant infiltration of the stroma by leucocytes—fibroblasts and young connective tissue cells and fibers—indicating that interstitial inflammation, as well as parenchymatous inflammation existed. It is not difficult to assume, inasmuch as these inflammatory conditions are commonly present, that prostatic enlargement is in some way associated with them. I predict that time and investigation will develop that inflammation is a very important etiologic factor in prostatic hypertrophy.

DR. R. H. GREENE, in reply—I did not expect to be believed when I advanced the view that prostatic hypertrophy was due to inflammation often probably of gonorrheal origin. It is not a popular view. I met a very eminent man yesterday, a member of this Association. I suggested to him that it might be possible that prostatic hypertrophy was due to a continuation of an old inflammation in the posterior urethra. He said: "Oh, no; I am threatened with prostatic hypertrophy myself." It is not a popular view and it will be a long time before it becomes so, but I believe it is the true one.

Dr. MacGowan says that of course we have some inflammation in these cases from the necessary passage of sounds and catheters. I would reply that the text-books on histology and lecturers on the subject have, as the result of autopsical evidence through a wrong interpretation of the evidence, taught that prostatic hypertrophy was not an inflammatory condition, but that prostatic hypertrophy was either a simple adenoma, that is, an increase of the glandular tissue, or an increase of the muscular tissue, or a mixture of both. It is, however, entirely an inflammatory condition, judging from the evidence of the sections furnished by me, with an atrophy of the normal constituents of the gland, and not a local inflammation superimposed on a tumor, which is his view of the condition.

Dr. Fuller says that the inflammation is outside of the prostate in many cases. I believe it. That is why you can not tell by feeling through the rectum whether the prostate is enlarged or not on account of a similar condition to the one he mentions going on frequently outside; but his views concerning that condition have no relation to my investigations, but these specimens I have shown are sections through the prostate and show an inflammatory condition in all of them of various types, and have nothing to do with inflammations outside the prostate. If my theories as to the nature of the hypertrophy are correct, the methods of treatment would apparently be two: one to treat chronic posterior urethritis long and persistently and to keep patients with chronic urethritis under observation for a considerable length of time, and to examine them from time to time after active treatment had ceased; the other is in those cases in whom insufficiency of the bladder has taken place and the residual urine causes trouble to operate and remove tissue enough, to overcome the obstruction and in a manner not to cause the least formation of cicatrical tissue. For these purposes neither the Bottini operation nor the operation for complete enucleation seem indicated. You have in the West, a man in St. Louis, who has done more operations on the prostate, I believe, than any other man in the United States; his method of operating through the posterior urethra with enucleating just about what is necessary, is apparently

attended with a very small death rate. I refer to Dr. John P. Brison, of St. Louis.

Dr. Parker Syms, in reply—I would urge the importance of one thing; if operation is to be done for the relief of prostatic obstruction it should be done early. When physicians and the public understand this and act upon their knowledge a great change will be wrought, for the mortality will be as nothing compared with that of the present time.

Concerning the Bottini operation, I am glad to state my views emphatically. I believe it to be an absolutely unsurgical and unscientific procedure. Years ago it was demonstrated and acknowledged by the profession that internal urethrotomy should not be performed deeper than the pendulous portion of the urethra. Whenever urethrotomy is necessary beyond that point, it should be done by external incision so that drainage may render it safe. This is acknowledged and accepted by the profession. The Bottini operation leaves a wound at the neck of a bladder which is full of infective urine. It is certainly a dangerous procedure. It is an incomplete operation, and I think it will be seen so to be when cases so operated upon have been observed more fully.

I would like to say concerning the failure to remove the prostate in my second case, to which Dr. Fuller has referred, that it was at a time before I had invented my retractor, and it was partly on account of this failure that I did devise the instrument. I believe to-day that every hypertrophied prostate can be removed through a simple median incision in the perineum.

Years ago I learned that when a statement was made by men to the effect that they were able to do things which I thought impossible, not to boldly assert that these things could not be done, for it has been my happy experience in watching the advance of progressive surgery, to find the impossibilities of yesterday become the possibilities of to-day. I think it is proper when one realizes his inability to perform a certain act, to say, "I can not do it," not to say "it can not be done," for there may be found someone who is able to accomplish it.

Concerning the choice of method of prostatectomy, I must say that I think a simple, median perineal wound—which is all that is left after operation as done by the method I have described above—is a far simpler and safer procedure than is any form of suprapubic cystotomy. The drainage is along the line of gravitation and is complete, the wound is a simple one and not large.

The patients are fairly comfortable and recover promptly. I have had mine sitting up at periods varying from the fifth to the tenth day. In two patients, as I have stated, there has been temporary dribbling after healing, but this has been owing to the fact that I made an unduly large cleft through the prostatic urethra. I am not sure to-day whether this is absolutely necessary in some cases or not, but I believe it is not necessary. I think it may be avoided by making the opening in the membranous urethra not too far back. In my last case I was careful to avoid this and was careful to separate the bladder from the prostate before I began the final enucleation. In that patient I removed the tube from the bladder on the fourth day, when I removed the packing; he had complete control of his bladder at once and made a most speedy recovery. That case, when I first saw him, had 52 ounces of very foul urine in the bladder. I did not operate nor empty the bladder at once but I succeeded with great difficulty in introducing a catheter and gradually emptying the bladder and slightly reducing its capacity.

Regarding the final functions of these bladders, I think it may be truly said that we can never restore them to histological perfection, but from the reports of the operators who have done the best work in this line, I think it can be said that these bladders do recover function fully. A bladder that is contracted may be dilated; a bladder that is dilated may be reduced in size. Certainly in my experience the patients have regained their functions so far that they have been able to hold their urine from four to six hours, holding from six to ten ounces, and have been able to empty their bladders, showing practically no residual urine.

THE TREATMENT OF PNEUMONIA.*

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In order to formulate a rational plan of treatment for a given disease it is necessary to recognize the nature of the disease, its course and mode of termination when recovery takes place, and its course and mode of termination when death occurs; it is also necessary to be able to recognize by symptoms and physical signs the changes that are occurring in the organs and tissues of the body during the course of the disease and to know the prognostic value of such changes when recognized.

Pneumonia is an acute infectious disease manifesting itself as a general toxemia, with a local disturbance in the lung passing through the clinically recognizable states of congestion, hepatization and resolution or disintegration.

A brief review of the clinical course of a favorable case shows us the initial chill; the high temperature; the increased frequency of respiration; the pulse of moderate frequency, full volume, high tension and normal rhythm; the coated tongue; the anorexia; the sluggish liver and inactive bowel; a kidney not functioning properly; the diminished excretion of chlorids; the presence in the urine of albumin, and usually casts; the more or less pronounced nervous symptoms; the cough; the rusty sputum; the dry hot skin; the flushed face of slightly dusky hue, and the leucocytosis. For a week or ten days these symptoms persist, the most important change occurring in the increasing frequency of respiration, and loss of the tension and sometimes change in rhythm of the pulse.

At the end of this period there occurs a profuse sweat, the temperature falls, the respiration becomes less frequent, the pulse improves in rhythm, the patient falls into a quiet sleep and awakens refreshed and well. If the case does not go on to recovery or dies before the time of the crisis, death occurs either from the intensity of the toxemia or from interference with oxygenation from involvement of too great extent of lung or from some complication.

The chief cause of death in pneumonia, exclusive of complications, is failure of the circulation through degeneration of the myocardium.

Several factors enter into the causation of this myocardial degeneration, namely, the toxemia of the infection acting directly upon the muscle fibers; the same cause active in the general system and producing an increase in the arterial tension throughout the body, thus making harder work for the myocardium of the left heart already suffering from toxemia; the morbid changes in the lung causing obstruction to onflow of the blood from the right heart, thus throwing harder work upon the right myocardium also suffering from the toxemia. The amount of pulmonary involvement would be, of course, a decided factor from this point of view, as well as from that of interference with oxygenation, too great an interference with oxygenation producing death.

Sometimes death occurs from the effect of the toxemia upon the brain-wild maniacal delirium wearing the patient out. or a low, muttering delirium ending in coma and death. Sometimes the kidney bears the

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brunt of the attack and uremia is added to the toxemia of the infecting organism.

Occasionally the gastro-intestinal tract is most seriously involved, and there occurs a violent diarrhea or a marked fibrinous inflammation of the lining mucous membrane.

The most common and serious complications of pneumonia from which death may occur are meningitis, pericarditis, endocarditis, nephritis and empyema. These, however, will not be considered in this discussion, which is limited to the treatment of pneumonia.

This review of the course and modes of termination of pneumonia shows that the most serious element in the disease is the toxemia, and next to this in degree of seriousness is the amount of lung involvement existing at any one time in the course of the disease. The first aim of the treatment, then, should be to get rid of toxins. The natural avenues of excretion by which toxins may be carried off are the respiratory, the renal, the gastro-intestinal and the cutaneous. In all cases of pneumonia the lung and the kidney are involved in the morbid process to a greater or less degree, according to the case. It would be obvious folly then to attempt to stimulate either of these tracts to any great excretory activity.

The bowels and the skin remain and nature has pointed out by the profuse sweat that occurs at the time of the crisis the avenue that she chooses for the greater part of the work of excretion. Accordingly, the prime therapeutic measures for relieving the toxemia are opening up of the bowels and skin and keeping them active. For this purpose there should be administered an initial dose of calomel of 0.50 gram followed by a saline laxative. This measure should be repeated during the course of the disease for the same purpose as the first dose and for the further purpose of relieving the distension of the right heart when indications of that condition are present.

To keep the skin active there is nothing more efficacious and less harmful than the proper use of the hot mustard foot bath. This can be given with next to no disturbance of the patient, the tub being put into the bed, with most excellent results so far as sweating is concerned. These baths may be kept up at four-hour intervals throughout the course of the disease. This sweating, in connection with the stimulation to be referred to later, is, in the opinion of the writer, the most important of the general therapeutic measures.

Another measure of value in preventing further bacterial invasion, is the frequent and thorough cleansing of the mouth with a mildly antiseptic solution. I think this a measure of considerable importance, as we know the pneumococcus is present in the mouth in considerable numbers.

While attempting to get rid of toxins by these means, it is important to put and keep the patient in the best possible condition to resist and overcome the toxemia that is present. For this purpose care should be exercised in the selection of a proper diet. This should be fluid and so far as possible should be sterile, so that no new poisons may be introduced. A large amount of pure water should be administered so that there may be plenty of fluid to flush the excretory organs. It is best administered in small amounts at short intervals.

Besides food, stimulation is necessary, and among stimulants strychnin and alcohol are the most useful in pneumonia. Moreover, the administration of them should not be delayed until failing circulation peremptorily calls for them. As soon as the diagnosis is made the strychnin should be begun in doses of 0.002 gram at four to six hour intervals as indicated. The interval may be shortened and the dose increased as symptoms which call for such increase in dose appear. As much as 0.004 gram every two hours may be given hypodermically with the best results.

Next to strychnin, alcohol is our best stimulant. Nevertheless, in some cases it seems to produce decided cerebral disturbance, particularly in those addicted to its abuse. In such cases ammonium carbonate or aromatic spirits of ammonium is a most useful substitute. These drugs are usually well borne by the stomach if combined with liquor ammonii acetatis and administered in mucilage or milk.

The local treatment of the lung is of importance. A careful physical examination of the chest should be made by the physician at every visit. In this way he can tell when congestion is beginning in any part; and vigorous local treatment will in many cases prevent the further progress of the morbid process. As soon as a portion of the lung is shown by physical examination to be in a state of beginning congestion, the prompt and thorough application of leeches, wet cups or dry cups over the part, will often stay the process there; or if it does not stop it entirely, will delay its progress twenty-four or forty-eight hours and give an opportunity for the clearing up of any previously involved portion of lung. My preference is for leeching or wet cupping. If dry cupping is resorted to, it should be very thorough, the skin and subcutaneous tissue rising up in the cup to as great a height as possible and turning blue or purple while there. The cups should be left on for a half hour and the process repeated every four to six hours. I have seen, postmortem, the direct anatomical evidence of the local value of this procedure, when thoroughly done. During the intervals between the applications of the cups the chest should be covered with a light woolen jacket. The poultice jacket should be relegated to the dark ages.

With ice applications I have not produced the relief of congestion desired. If, in spite of these local measures to relieve congestion, the process still persists and we begin to have evidence of over-distension of right heart, such as increasing cyanosis, the pulse losing its tension and becoming small and sometimes irregular, the liver enlarged, the veins pulsating and the area of cardiac dulness increasing chiefly to the right, whether a murmur of tricuspid insufficiency is present or not, prompt relief can usually be obtained by the withdrawal of 8, 10, or 12 ounces of blood from the median vein of the forearm. This procedure may be repeated several times if need be in the course of the disease. The procedure is of value both for its local effect in relieving the right heart distension and also for its general effect in withdrawing a decided amount of toxic material. At this time a little digitalis, given with due regard to its physiologic effect, may be of decided value.

After the withdrawal of blood, and in cases in which heart failure is imminent without evidence of right distension, the subcutaneous injection of normal salt solution has on several occasions proven of inestimable value. The use of the salt solution by rectum has also been of value, but of course does not give the prompt result that the hypodermic administration does. Whether the value of the procedure is dependent upon the restoration of bulk to the blood after the relief to the right heart has been obtained or whether the salt itself is of value, is

worthy of investigation, the fact being established that in three cases that have come under my observation—in one of them three times—the administration of the salt solution certainly had a marvelous effect in averting an evidently impending death.

If more than one lobe is involved the regular administration of pure oxygen gas at stated times, shortening the interval and prolonging the duration of the administration if cyanosis persists or increases, or if the frequency of breathing progresses to dyspnea, has proven of undoubted value in a number of cases.

In case of sleeplessness and restlessness chloralamid, chloral, Dover's powder, morphin and hyosein hydrobromate are to be recommended in the order named; though with the thorough attention to the relief of toxemia by keeping the bowels and skin active, it is seldom that recourse to hypnotics is necessary.

On the possible complication of pneumonia I do not wish to touch, as that would take me beyond the scope of the subject announced; but I do desire to say that under the eliminative supporting treatment outlined complications are rare.

Before closing I wish to utter a protest against the treatment of pneumonia by large doses of digitalis in the early stages of the disease as irrational and unscientific, being based on a wrong conception of the nature of the disease.

If our conception of the infectious nature of pneumonia is correct, by the time the chill has taken place the disease is established, and any efforts to jugulate the disease by the use of remedies employed to overcome or prevent pulmonary congestion are most certainly misdirected, for preventing the change in the lung—and it is doubtful if the digitalis treatment can accomplish this—certainly will not overcome the toxemia; two of the most serious cases of pneumonia that have come under my observation have had no pulmonary involvement demonstrable by physical signs.

The treatment of pneumonia by the pneumococcus antitoxin is the natural and rational plan from the recognition of the infectious nature of the disease, but so far the attempts to produce a reliable antitoxin serum that will preserve its antitoxic powers have not been entirely successful, and consequently there are very great variations in the reports as to the results obtained by its use. However, improvements are being made and eventually I have no doubt that pneumonia will be put in the same category with diphtheria, which was formerly dreaded and of great mortality, but now, when carefully studied, diagnosed early and properly treated with large doses of antitoxin, shows 100 per cent. of recoveries. Until that time comes, however, we will get our best results by recognizing the essentially toxic nature of the disease and treating it along the eliminative supporting lines here suggested, which may be briefly summarized as follows:

1. The sustaining of the metabolic processes of the individual by the administration of easily digested or predigested foods in small quantities at stated intervals, the administration of large amounts of pure water for eliminative purposes and the administration of oxygen gas by inhalation whenever the absorbing surface of the pulmonary mucosa is involved to such extent as to interfere with proper metabolic oxygenation.

2. Elimination, (a) by the liver and bowel through the vigorous use of calomel and salts: (b) by the skin through sweats induced by external heat: (c) through withdrawal of blood when indicated by right heart distension.

3. Stimulation of heart by strychnin, alcohol or ammonium carbonate, and in suitable cases by the subcutaneous injection of normal salt solution.

4. The local treatment of the lung by leeching, wet cupping or dry cupping as indicated.

As the value of the method of treatment detailed above was questioned at the time of the presentation of the paper, I beg leave to add, in publication, the statistics on which its value rests.

In some of the cases the notes are, unfortunately, decidedly incomplete, even the date of crisis not being mentioned, but enough is present—date, age, diagnosis, complications, treatment and result, to give them the necessary value for this statistical report.

Onset.	Termination.	Result.	Age.	Crises, Complications, Etc.
1. 1, '91.	1, 24, 91,	Recovery,	76	
2, 1,	3, 10,	"	14	
2, 9.	3, 28.	"	39	
2, 15,	3, 14,	"	52	
4, 14,	5, 21.	"	56	
8, 20,	9, 25.	"	82	
10, 31,	. . . .	"	34	
1, 16, '92,	. . . .	"	15	
1, 18	. . . .	"	29	
1, 18,	1, 31, '92,	"	74	
1, 31,	2, 20,	"	54	
2, 5,	2, 23,	"	22	
2, 7,	2, 21,	"	60	
2, 9.	2, 11,	Died,	35	Alcoholism; D. T.
3, 4.	.	Recovery,	37	
3, 6,	5, 20,	"	55	Chronic nephritis.
9, 30,	10, 14,	"	20	
10, 13,	11, 1,	"	35	
10, 26,	. . .	"	47	
1, 6, '93,	1, 21, '93,	"	23	Erysipelas
1, 4,	1, 19,	"	21	
1, 9,	1, 25,	"	24	
2, 22,	3, 15,	"	24	
2, 26,	3, 11,	"	30	
3, 6,	3, 21,	"	22	
3, 27,	4, 11,	"	45	
9, 13,	10, 10,	"	48	Entire left lung: patient was bled 16 ounces twice.
11, 4,	11, 23,	"	23	
11, 13,	12, 19,	"	20	
11, 18,	12, 12,	"	35	
11, 23,	12, 8,	"	50	
11, 27,	12, 4,	Died,	62	Sick one week before treatment.
11, 29.	12, 28,	Recovery,	40	Tuberculosis.
12, 7,	12, 9,	Died,	60	Sick eight days before treatment.
12, 14,	12, 28.	Recovery,	57	
12, 16,	1, 4, '94,	"	45	
12, 26,	3, 29,	"	18	Endo- and pericarditis.
12, 27,	1, 9,	"	24	
1, 7, '94,	2, 4,	"	81	
1, 23,	3, 15,	"	32	
3, 8,	3, 29,	"	38	
3, 24,	4, 4,	"	32	
5, 20,	6, 6,	"	48	
7, 29,	8, 22,	"	81	
7, 30,	8, 24,	"	22	
9, 25,	10, 29,	"	82	
10, 7,	11, 21,	"	20	
10, 15,	10, 19,	Died,	27	Typhoid fever.
11, 3,	12, 5.	Recovery,	54	
11, 1,	11, 15,	"	29	
12, 2,	12, 24,	"	38	
11, 30,	12, 11,	"	20	
12, 9.	1, 4, '95,	"	12	
12, 10,	1, 2,	"	40	Double.
1, 11, '95.	1, 30.	"	43	Crisis tenth day.
1, 15.	1, 28,	"	21	
1, 17.	3, 14,	"	25	Typhoid fever.
1, 24,	2, 2,	"	33	
2, 2,	2, 19.	"	50	Mitral stenosis.
2, 12.	3, 7,	"	32	Crisis seventh day.
2, 13.	3, 25,	"	80	
2, 18.	3, 12,	"	38	Crisis ninth day.
2, 28.	3, 19,	"	32	Crisis seventh day.
2, 25.	3, 25,	"	25	
2, 25.	3, 26.	"	38	Developed lung abscess.
3, 19,	4, 17,	"	27	Crisis seventh day. Empyema.
5, 26.	6, 2.	Died.	50	Entire left lung; lower lobe of right.
9, 22,	10, 5.	Recovery,	30	
10, 20,	11, 13,	"	5	Crisis ninth day.
10, 20,	11, 11,	"	14	Crisis twelfth day.
11, 5,	11, 27,	"	70	
11, 6.	12, 3,	"	23	Crisis seventh day.
11, 5.	11, 30,	"	33	Crisis nineteenth day.
11, 3,	11, 22,	"	18	Crisis twelfth day.
11. 12,	11. 23,	"	23	Crisis tenth day.
11. 29.	12, 7,	Died.	33	Sick fourteen days before treatment (Alcoholism).
11. 23.	1, 8, '96.	Recovery,	67	Crisis ninth day.
12, 2,	12, 9.	"	25	
12, 1.	12, 13,	"	24	Crisis third day.
12, 2,	2, 23.	"	24	Crisis tenth day, followed by serous effusion.
1, 1, '96,	1, 19.	"	48	
1. 1,	1, 22,	"	48	Crisis ninth day.

Onset.	Termination.	Result.	Age.	Crises, Complications, Etc.
3, 12,	3, 18,	Died.	48	Alcoholism; sick two weeks before treatment; crisis March 16.
6, 28,	7, 20,	Recovery.	50	
8, 12,	8, 31,	"	26	
8, 14,	9, 25,	"	83	
9, 17,	12, 8,	"	15 12	
9, 18,	9, 25,	Died,	12	Pericarditis.
10, 7,	10, 15,	Recovery.	30	
11, 4.	11, 16,	Died,	61	Chronic nephritis, myocardial degeneration.
11, 14,	11, 18,	"	25	
11, 14,	12, 16,	Recovery,	78	
12, 23,	2, 17, '97,	"	29	Double; crisis twentieth day.
1, 2, '97,	1, 25,	"	26	Crisis seventh day.
1, 9,	1, 26,	"	36	Crisis seventh day.
1, 17,	2, 16,	"	41	
2, 19,	3, 27,	"	25	Crisis ninth day.
3, 12,	4, 10,	"	62	Morphine habits.
3, 20,	3, 26,	Died,	24	Double, pericarditis. [ment.
3, 20,	4, 2,	"	65	Nephritis, sick 8 days before treat-
3, 24,	4, 14,	Recovery.	26	Crisis seventh day.
3, 29,	4, 22,	"	44	
8, 30,	9, 22,	"	17	Crisis seventh day.
9, 25,	10, 15,	"	32	Crisis ninth day.
11, 15,	12, 10,	"	84	
11, 26,	12, 31,	"	65	Crisis ninth day.
1, 1, '98,	1, 18, '98,	"	8	Crisis ninth day.
1, 15,	1, 19,	"	20	Crisis seventh day.
1, 29,	2, 24,	"	21	Crisis tenth day.
2, 26,	3, 9,	"	24	Crisis seventh day.
3, 1,	3, 29,	"	44	Chronic nephritis.
3, 17,	4, 15,	"	37	Crisis tenth day.
3, 28,	4, 15,	"	14	Crisis seventh day.
3, 26,	4, 20,	"	28	Pseudo-crisis fourth day, real crisis seventh day.
7, 2,	7, 17,	"	16	Crisis seventh day.
7, 17,	7, 31,	"	82	Crisis seventh day.
10, 10,	11, 21,	"	35	Crisis seventh day.
11, 15,	12, 17,	"	82	Crisis tenth day.
11, 28,	12, 8,	Died,	46	Purulent pericarditis.
11, 11,	12, 9,	Recovery,	18	Crisis seventh day.
11, 27,	1, 22, '99,	"	30	Crisis fourteenth day.
1, 10, '99,	2, 6,	"	43	Crisis ninth day.
1, 11,	1, 13,	Died,	45	Sick seven days before treatment; entire left, upper right.
2, 3,	3, 2,	Recovery,	13	Crisis tenth day.
2, 5,	2, 25,	"	40	Crisis tenth day.
3, 11,	3, 20,	Died,	32	Alcoholism; D. T.
3, 26,	4, 29,	Recovery,	60	Crisis tenth day.
3, 27,	4, 21,	"	56	Crisis tenth day.
4, 19,	5, 15,	"	83	Crisis tenth day.
7. 5,	8, 14,	"	27	Crisis tenth day.
8. 8,	8, 19,	"	29	Crisis fifth day.
9, 21,	10, 27,	"	80	Crisis tenth day.
11, 25,	12, 16,	"	22	Crisis seventh day.
11, 25,	1, 8, '00,	"	51	Crisis tenth day.
12, 16,	1, 1,	"	35	Crisis tenth day.
1, 12, '00,	1, 16,	Died,	45	Double.
1, 24,	2, 27.	Recovery,	50	Crisis tenth day; cystitis.
2, 16.	3, 7,	"	58	Asthma.
2, 19,	3, 7,	"	54	Mitral obstruction.
2. 20,	3, 19,	"	62	Crisis tenth day.
2, 22,	3, 22,	"	35	Crisis tenth day.
2, 28,	4, 10,	"	17	Crisis tenth day.
3, 1,	3, 22,	"	34	Crisis seventh day.
3, 11,	4, 16,	"	34	Crisis tenth day; diphtheria.
3, 25,	4, 16,	Died,	38	Double.
3, 10,	3, 26,	Recovery,	23	
3, 20,	. .	"	26	
4, 1,	4, 6,	Died,	89	Edema of lung; asthma; dilated heart.
9, 12,	12, 13,	Recovery,	35	Relapsing pneumonia; three distinct attacks, with crisis on seventh, tenth and ninth days respectively.
9, 29,	10, 12,	"	25	Crisis seventh day.
10. 9,	12, 1,	"	35	Entire right lung; crisis tenth day.
10, 16,	10, 26,	"	39	Crisis fifth day.
10, 5,	11, 3,	"	12	Crisis fifth day.
10, 21.	11, 24,	"	23	
10. 25,	11, 1,	Died,	67	
10. 31,	11. 27,	Recovery,	61	Crisis seventh day.
10, 25,	12, 18.	"	46	Crisis tenth day.
11, 14,	12, 5,	"	35	Crisis tenth day.
11, 26,	12, 17,	"	19	Crisis tenth day.
1, 3, '01.	3, 7, '01.	"	54	Crisis tenth day.
1. 3,	2, 28.	"	82	Crisis tenth day.
1, 10,	1, 27,	"	50	Crisis seventh day.
1, 11,	2, 22,	"	50	Influenza.
1, 19,	2, 14,	"	40	Crisis tenth day; double pneumonia.
1, 21,	2, 12,	"	50	
1, 30,	2. 1,	Died,	46	Alcoholism; nephritis; entire left lung.
2. 21,	2, 27,	"	45	Double pneumonia.
3. 13,	4, 1,	Recovery.	49	Crisis seventh day.

The cases reported are from the service of Dr. Charles G. Stockton in the Buffalo General Hospital, my own service in the Buffalo Hospital of the Sisters of Charity and from my private practice.

Altogether, 168 cases were treated with 17 deaths. This gives a death rate of 10⅛ per cent. This is better than most other methods of treatment, and if the cases that died are analyzed it will be found that four had been sick a week or more before treatment was instituted, and so can not fairly be considered, that two suffered with chronic nephritis, one had asthma and a dilated heart as well as being 89 years of age; that one had typhoid fever as a complication and that two entered the hospital with delirium tremens, no history obtainable as to the length of illness and died in less than 48 hours. If these cases are excluded, as I think they fairly may be, it reduces the number of cases to 158 and the deaths to 7, giving a death rate of 4.43 per cent. better than any other plan of treatment that I have heard of.

Although the number of cases reported is small it covers a period of a little over ten years and includes cases from all walks of life and of all ages, and may therefore, I think, be considered fairly representative.

THE ABORTIVE TREATMENT OF PNEUMONIA.

A PLEA FOR THE USE OF CARDIAC DEPRESSANTS IN THE TREATMENT OF THE CONGESTIVE STAGE OF PNEUMONIA.*

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In presenting this subject I have nothing new to offer and for this I apologize, but in this day of rapid advancement in medicine we are apt to reach out after the newer remedies and forget the older ones; therefore, I offer this plea for the use of one of the old cardiac depressants which seems to be rapidly giving way to new, and, I believe, less valuable remedies in the treatment of the congestive stage of sthenic types of pneumonia, namely veratrum viride.

That it is applicable to the congestive stage only and that the physician is often called too late to use it, I am perfectly willing to concede. I must admit also that its use really is an abortive treatment and that in the stage of hepatization is worse than useless and may be said to be malpractice.

We must also bear in mind the fact that many cases of pneumonia run through their course without medication and terminate satisfactorily; also that when we apply treatment we are often uncertain whether we have benefited our patient or not. Perhaps he would have gotten along just as well without our aid.

We may apply our abortive treatment and our patient get along admirably, but almost every practitioner, especially of the country, where we so often find cases of pneumonia in the robust, will tell you that he has met cases in which he was certain the patient must have a full-fledged pneumonia, bound to run its course, and yet in three or four days find him looking about over his farm seemingly a perfectly well man. We can only apply our remedies, and if successful, we are happy; if not, who can say but that our patient might have been worse had such treatment not been instituted.

In the congestive stage of pneumonia we must suppose that we have to contend with a condition not unlike an inflammation in other parts. When such inflammation takes place the vessels begin to dilate in the inflamed area, and as their lumen becomes larger the blood is attracted in this direction and soon a much larger amount of blood is accumulated here. The heart becomes somewhat excited and with each stroke increases the amount. Under such conditions it seems that the vessels in other portions of the body are contracted, thus increasing the amount sent to this area and lessening the opportunity to get away from it. A condition of stasis exists—stagnation, if you please. Still, the heart

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with every stroke is adding more blood to the oversupply, and soon the white blood corpuscles begin to migrate and we have our exudate escaping through the weakened walls of these overcrowded vessels. But the process goes on; the excited heart is pumping more blood into the area; the vessels become more dilated, consequently weaker, and the exudate greater.

In what way can we relieve the condition? There seems to be two rational methods of relief: bleeding and the use of cardiac depressants. The use of the coal-tar preparations is common in this stage, but I believe nearly all thinking physicians will agree that it is not rational treatment.

Nanerede proved that blood taken from the venous side of an inflammation produces an increase in the rapidity with lessened force in the circulation in the parts.

Certainly it is reasonable to suppose that a certain amount of blood taken from the vessels will relieve this congestion. It would seem then that our forefathers, when they advocated bleeding, were as rational in their treatment as we are in some of ours; but our knowledge of the disease has taught us that if it must run its course, the patient needs all the blood he has to withstand the strain; therefore, bleeding is now avoided and we look for other measures. On the other hand, our physiologists have taught us that the vessels of the human anatomy when fully dilated are capable of holding more than twice the amount of blood contained therein. Further, it has been demonstrated that the abdominal vessels alone when fully dilated will hold all the blood in the human economy.

Now, if we can in this stage of congestion, by the use of some drug, accomplish in a few hours this dilatation of the vessels, the blood will naturally seek the course offering least resistance. Then the inflamed area is relieved of pressure and stagnation; the exudate ceases to be thrown out, or at least in much less quantity. Have we not then accomplished something in the treatment of this condition? Will we not by limiting the exudate lessen the severity of the attack, perhaps abort? There are three drugs in our armamentarium capable of doing this: Tartar emetic, aconite and veratrum viride.

The first is too depressing to use satisfactorily. To get the effect upon the vasomotor center, tartar emetic must be pushed to such an extent as to produce very unpleasant nausea and sometimes purging; and the depression is so marked that it is best not used.

Aconite, while it answers very well, does not sufficiently paralyze the vasomotor center to widen the blood paths so markedly as does veratrum; nor is it so safe; consequently it must take a second place.

Wood, in speaking of veratrum viride, says: "In full therapeutic doses it lowers the pulse rate both by a direct action upon the muscle (jervin), and by stimulating the inhibitory nerves (veratroidin); it diminishes the force of the heart beat by a direct influence on the cardiac muscle (jervin) and produces a general vasomotor paralysis (jervin)." Butler, in speaking of it, says: "Jervin renders the pulse slower and softer with marked reduction of arterial pressure. This action is due to direct depression of the cardiac muscle, or of the motor ganglia, the dilatation of the arterioles being the result of a depressant effect upon the vasomotor center."

Further; it is safer than either of others named. Veratrum viride then fulfills all the indications. It is efficient; it is safe. By its action we may paralyze the vasomotor center, dilating the blood paths all over the body, and the blood flowing in the way of least resistance: the vessels in the inflamed area are relieved of the pressure and the consequent exudate ceases to be thrown out.

To do this it has seemed best to me to administer the tincture (U.S.P.), which is a 40 per cent. solution, in oft-repeated doses. Norwood's tincture is a 50 per cent., or a saturated solution, and possesses no advantage over the tincture.

From 2 to 5 minims of the tincture is given every thirty minutes to an hour, until the physiological effect is noticed, viz., some nausea, sweating, relaxation of the skin, a reduction of the pulse and temperature. Keep the patient quiet in the recumbent position to avoid excessive nausea, bearing in mind that vomiting in all cases should be avoided if possible. In this there is usually but little difficulty. Small doses of laudanum have been recommended for this purpose, but it is seldom necessary if the above precautions are taken and the remedy is prescribed in peppermint water.

After such reduction in the pulse the remedy may be continued in the same sized dose, but at longer intervals, say from two to four hours, so long as it seems best to control the circulation. Given in this way, beginning within the first few hours after the initial chill, many cases may be aborted, and the patient is back at his business in three or four days.

In those cases in which we fail to abort, or are called too late to do so, it may be administered as suggested, so long as it seems necessary to control the circulation. This is sometimes a very difficult point to decide. Certainly I have not been in the habit of stopping its administration as soon as an exudate is found present, as has been advised by some writers upon the subject. But so long as the pressure is too great, the exudate being thrown out and the pulse angry, I have been satisfied with its results and believe that it lessens the amount of exudate and therefore cuts short the attack.

DISCUSSION ON PAPERS OF DRS. ROCHESTER AND DICKERSON.

Dr. De Lancey Rochester said that he must antagonize the position taken by the author of the last paper. He thought that the treatment of acute pneumonia by the use of aconite, veratrum viride, and tartar emetic, a most irrational treatment. The patient dies from the heart. Now, what does this treatment do? It commences by depressing the heart. If we wish to act upon the peripheral circulation, why not use warm baths and counter-irritation? The patient is suffering from toxins; we are dealing with an infectious disease; why begin with a depressing agent?

Dr. W. L. Dickerson said that it is true that veratrum viride will depress the heart and it was just for this reason that he gave it in acute pneumonia, but only during the congestive stage. If we can prevent excessive congestion and excessive exudation by this agent why not use it? Digitalis increases the congestion by stimulating the vasomotor center, and contracting the arterioles, thereby raising arterial tension. Therefore, it should not be given early in the disease. He does not give his patients veratrum viride after the stage of hepatization has commenced; but if a patient can be seen in the first six to twelve hours, he gives it in small doses as described in his paper and his patients get well. As regards the other treatment, namely, with strychnin and applications to the chest, mustard foot baths, etc., he approved of them when indicated.

Dr. J. F. Spelman, Anaconda, Mont., said that he believed that no man had ever aborted pneumonia. If a patient starts out with acute pneumonia, he has an infectious process which will go through its stages regularly to resolution, or one of the less favorable forms of termination; but it will not be aborted. He approved generally of the treatment in the first paper. There were two points that he would wish to make in regard

to therapeutics. Before speaking about them he would like to explain that in his practice in a mining region he had had unusual opportunities of observing this disease, considerably greater than those of ordinary private practice. From the experience which he had had during the last four years, he had come to the conclusion that medicine does not affect acute pneumonia at all. Apart from acting upon the organs of elimination, which had been spoken of, and a supporting treatment, remedies are of no avail. For the pain, a hypodermic of morphin—one-eighth grain—is perhaps the best. In the general treatment, strychnin, cocain and caffein do good, not because the heart is failing, but because it is going to fail and they prevent it. For the pneumonic process, there is no specific treatment at the present time.

DR. DE LANCEY ROCHESTER said that he wished to explain that the reason he had presented his paper was because he had observed reports in various journals lately which spoke of cutting short acute pneumonia by the use of certain agents. His object was to point out that in this disease we have to deal with toxemia, and that cardiac depressants are out of place. He thought that the reader of the last paper makes a mistake in giving cardiac depressants and in not giving strychnin early enough.

DR. RICHARD C. MOORE, Omaha, Neb., said that no treatment for acute pneumonia could be formulated into a hard and fast rule to apply equally to all cases. We must take into consideration the general condition of the patient, and the attendant circumstances, in selecting the appropriate treatment. While the treatment advocated by Dr. Dickerson would be useful in some cases, to put an alcoholic patient upon such a depressing treatment would be only to hasten the fatal result. On the other hand, to subject a sthenic case to the opposite course of treatment, to fill him up with food and inject strychnia into him, would hardly be in accordance with our views of proper treatment. In such a case, the veratrum viride would give prompt relief; the excited restless patient sinking into a sweet sleep after a few doses. So in cases which start in asthenic and you give him whisky and cardiac stimulants, you have the delirium lessening and he will sink into a quiet sleep. The treatment must, therefore, be appropriate with the stage and condition of the patient. After we get the patient into a more comfortable condition, we can then consider the infectious character of the disease. Some years ago, at the recommendation of Dr. Andrew H. Smith, of New York, he had used the carbonate of creosote in acute pneumonia and he had been surprised to see that he could get the crisis so soon after the administration of this remedy. With regard to local applications, he knew of nothing that would equal the oiled-silk jacket during the acute stage; under this oiled silk he makes a cold-water application, upon absorbent cotton. It is astonishing how much relief is afforded to the patient by the cold water and oiled-silk applications. After taking it off and leaving the house the speaker had known patients to beg the nurse to renew it. This can be accepted as proof that it is of value. He desired to call attention to the usefulness of carbonate of creosote in acute pneumonia, which he thought acted almost like a specific.

THE CHAIRMAN, referring to the increased mortality from acute pneumonia reported by the preceding speaker, said that there had been an epidemic of influenza during the last few months, which may have been the cause of the increased number of cases of pneumonia and increased mortality.

DR. SBELMAN said that there had not been any influenza in his part of the country for the last six months and did not regard his cases of pneumonia as of this type.

THE CHAIRMAN explained that he had asked this question because in many of the communities of the East the mortality from pneumonia had increased greatly, and it had occurred to him that it was due to the fact of the prevalence of influenza at the time.

DR. CASTON said that he lived in a malarial section of the country in Tennessee, where they have malaria in the warm months and the same patients have pneumonia in the winter months. He realized that this disease is generally said to be an infectious disease. He knew that authorities state that it is a self-limited disease. But he could not agree with these gentlemen altogether, because if his experience had taught him anything whatever, it was that pneumonia can be aborted by a good article of veratrum viride. He was firmly convinced of this fact. He had practiced in the country for 19 to 20 years and he had treated a great many cases of pneumonia and he had aborted a great many cases of pneumonia. He had so much confidence in this treatment, based upon his own experience, that he could say, if there is anything he liked to treat it was pneumonia.

DR. MARY K. MCCOY, Duluth, Minn., inquired of the last speaker, how did he know that it was really pneumonia, if the cases got well so soon? How could he know that it would have been pneumonia, if it had not been aborted?

DR. HOFFMAN, St. Paul, said that nearly every medical society that he had attended for the last few years had had a symposium on the treatment of pneumonia. He had observed that nearly every man who had read a paper had given some scheme for saving patients. Now, in spite of all this, it is a deplorable fact that the death rate of pneumonia is increasing in the last few years. Whether it is because our statistics are more correct, or it is because the disease has become more virulent, he did not know, but he thought that it was the general experience that the disease at present is more fatal. But this is no reason for losing faith in the good effects from treatment. He said that the experience of the Doctor from Montana was correct and that the mortality had been greater. When he first went to Montana he had treated his patients and had lost some, but his results were encouraging. It would be just as much a mistake to give depressants to all cases as it would be to give digitalis and strychnia to all cases. He, therefore, approved the recommendation to adopt the treatment to the case.

STRABISMUS; ITS TREATMENT.*

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NEW YORK CITY.

(Concluded from page 1172.)

RESULTS.

Non-Operative Treatment.—In February, 1900, I reported results of treatment in private practice of 40 cases of convergent strabismus by the non-operative method. In these 40 cases 25 per cent. were cured; that is, secured parallelism, and single binocular vision was obtained in 7.5 per cent. of the cases. While in hospital practice, in 262 cases, where glasses alone were tried, and these not faithfully, only about 5 per cent. of the cases were cured.

Since February, 1900, I have given special attention to the non-operative method of treatment of squint in private practice and at the clinic of Drs. Lewis and Van Fleet, at the Manhattan Eye and Ear Hospital, where all of the squint cases, through the courtesy of Drs. Van Fleet and Lewis, came under my personal care. I have also, during that period, been performing Panas' operation, when any operation was necessary, in my private practice, 11 cases in all. At the clinic, Drs. Roosa, Van Fleet, Meanor and myself have operated by the Panas method on 23 cases. Excluding cases which came but once or twice, or have been lost from observation, there are 83 cases upon which to make a final report as to results of treatment, non-operative and operative. Three of these cases had been operated upon by simple tenotomy some years before coming under my care without

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

seeuring parallelism. By means of non-operative treatment I gave two of them single binocular vision and one of them binocular vision, and have included them in a separate table to show the benefit of non-operative treatment in securing a perfect result after operative treatment had failed. From observing Table No. 1 it will be seen by the non-operative method of treatment 23 cases, or 28.75 per cent., were cured, that is, secured parallelism. Eleven of the 23 eases, or 13.75 per cent. secured single binocular vision; and 3 cases, or 3.75 per cent., secured binocular vision; 17 eases, or 21.25 per cent., were improved, some a little and some very much; 4 cases, or 5 per cent., were unimproved, but these did not follow treatment as directed; finally 2 cases, or 2.5 per cent., became worse while under treatment. Thirty-four cases, or 42.5 per cent., came to operation, the results of which are shown in Table No. 2.

Thirty-seven of the 46 cases in Table No. 1 had convergent squint and 9 divergent. Hypermetropia was present in 41 of the cases and myopia in 5.

By means of the non-operative treatment alone 28.75 per eent. of the cases were cured, and with further continuance of the treatment 30 per cent. at least should secure parallelism. Priestly Smith,[2] in a series of 200 cases, secured binocular vision of some kind in 28.5 per eent. of the cases by the use of non-operative treatment alone, a very close agreement in results obtained in the cases reported by me.

W. Lang and James Barrett[3] reported a series of 102 eases in which 36.3 per cent. were cured by means of glasses alone, but they counted the eases which had five degrees and less of squint as cures, while I have not done so. I have eounted no case as a cure which did not have parallelism, the angle alpha being taken into consideration. Judging from all of the statistics that I have been able to look up, I would say 30 per cent. of all cases of squint may be cured by non-operative treatment alone. Such a result certainly justifies our persistent and careful trial of this method of treatment in every case before resorting to operation.

As valuable as the non-operative treatment is before operative measures are undertaken it is just as valuable, or more so even, in completing a eure after operation. He who operates on a squint and does not follow it up with after-treatment and close observation will fail to make a eure in many cases. While, if the cases are followed up with the non-operative treatment, the cure is often completed.

The younger the patient and the earlier the non-operative treatment is begun the better the results. This point has been shown by all observers who have reported cases, and is a well-established fact.

Of the 34 cases which came to operation 29 cases were convergent and 5 divergent. Hypermetropia was present in 31 eases, 3 of which had divergence; myopia was present in 3 cases, one of which had convergence.

Twenty-six of the cases, or 76.47 per cent., secured parallelism, 11 of which latter cases, or 32.35 per cent., secured single binocular vision, and 2, or 5.88 per cent., binocular vision. Five cases, or 14.70 per cent., had over-effect, and 3 cases, or 8.82 per cent., had under-effeet. After two operations on two cases of over-effect, and on one case of under-effect two of these cases secured parallelism, making the percentage as follows: parallelism, 82.36 per eent.; over-effect, 11.76 per cent.; under-effect, 5.88 per cent.

2. Trans. Ophth. Soc. Unit. King., vol. xviii, 1898, pp. 17-47.
3. Ophth. Hospt. Reports (London), 1889.

The remaining cases of over-effect and under-effect are still under observation, and if it becomes necessary will be operated on a second time. In cases of over-effect the second operation is performed upon the opposite muscles to those which were first cut, and in the same way, that is, they are stretched and then cut. In one of the two cases of over-effect that was operated on a second time, advancement of the muscles first cut was performed, but it did not relieve the over-effect; while the other ease that had the opposing muscles stretched and eut secured parallelism.

These 34 cases here reported, taken in connection with the 36 cases operated upon by Panas' method and reported by Dr. Roosa eighteen months ago, make 70 cases in all that we have observed sufficiently to report upon. Twelve of the cases that Dr. Roosa reported in 1899 and 1900 have been seen in the last month (May), and the others have been seen now and then since his report. In his first report there was one case of over-effect. The over-effect in this case has diminished until only about five degrees of divergence remains, though ten degrees was present originally. In one case a convergence has resulted, while in two other cases divergence has resulted —one of ten degrees and the other of twenty-five degrees, but this latter case was a complicated one, that is, there was a central opacity of the cornea in the squinting eye. In other words, in two cases the tendency was to divergence, while in two other cases it was towards convergence. Divergenee, therefore, after Panas' operation is no more to be feared than eonvergenee, judging by these eases operated upon eighteen months to two years ago.

The results on the whole 70 cases at the present writing are as follows: parallelism, 60 cases, 85.7 per eent.; over-effect, 7 cases, 10 per cent.; under-effeet, 3 cases, 4.2 per cent.

[I may say, since compiling the tables of eases for this paper, I have operated on 6 other cases in the elinic, all of which secured parallelism and one single binocular vision. If we add these cases to the 70 here reported the number of cures would be about 87 per cent.]

In these cases it must be remembered that two operations were performed on only 3 cases, the desired effect being obtained by one operation together with non-operative treatment. And it is this very feature of the operation, its effectiveness on one trial, which makes it superior to other operations. To show the value of this operation as to ultimate results it is only necessary to compare it with results obtained by the old methods of simple tenotomies, advancements, ete.

In 1886, Roosa reported a series of 100 cases of eonvergent strabismus, which he had operated upon, with results obtained, together with the review of the subject of squint. In this paper he said he had been able, after careful search, to find tables comprising a scant 300 cases. Of the 100 cases he operated on parallelism was secured in 79 cases, or just 79 per cent.; convergence remained in 16 per cent.; divergenee in 4 per cent., and upward squint in 1 per eent. That is to say, 21 per eent. were failures although he operated on some of the cases two or three times, and stated that in some cases, not included in his tables, he had operated four and five times on a single case. His results in these 100 cases are a fair average as compared with the results obtained by other operators who used the same method. The results obtained by the same operator and his pupils by Panas' method are considerably better, and are secured in the great majority of eases, as observed earlier in this

TABLE 1.—RESULTS OF NON-OPERATIVE TREATMENT IN FORTY-SIX CASES TESTED UNDER A MYDRIATIC.

No.	Date, Name, Age (years).	Diagnosis.	Deg.	Fixation.	Duration.	Vision and Refraction.	Treatment.	Results.
1	Jan., 1900, G. L., 3½	Convergence, constant, left	20	False	Since 8 months old.	Objective tests; R. H. 3 D., L. H. 4 D.	Atropin, exclusion pad. glasses, +2.75, R.; +3 50 L.	May, 1901; convergence 10°; has not worn glasses all the time or followed other treatment steadily.
2	March, 1900, M. F., 3½	Conv., const. some nystag.	20	True	Unknown	Objective tests; H. 1 D. each	Glasses, pad; atropin intolerable.	May, 1901; convergence 5°.
3	Oct., 1900, H. G., 25	Conv., period.	10	"	23 years	R. 20/20w. +1.25 D.; L. 20/20w. +1 50 D. +1.25 C. 105°	Glasses, pad, stereoscope	Single bin. vis. after 2 weeks, which holds May, 1901.
4	Feb, 1901, A. H., 5	Convergence, constant, left	30	"	1 year	Can not read; objective H. 2 D., R. C. H. Astg., L. 1 50 D. 50 C. 75°.	Glasses, atropin, pad.	May 5, 1901; patient gave up all treatment after first week because of illness; squint same as at first, 30°.
5	Jan, 1900, E. P. O. B., 18	Divergence, alternating.	5	"	1 year	R. 20/50: 20/10w. −.75 D ⊂ −.50 C. 165°, L. 20/50: 20/10 w. −1 D. ⊂ 50 C. 15°.	Glasses, stereoscope	May, 1901; condition unchanged; gave up all treatment after 3 months
6	June, 1900, M. C., 30	Diverg., const left.	15	"	Unknown	R. 20/200: 20/40w. −5.50 D. ⊂ −1.50 C. 45°; L. 20/200: 20/50w. −5 50 D. ⊂ 2 50 C. 45°.	Glasses, pad, stereoscope, declined operation.	Slight improvement.
7	June, 1900, J. Y. B., 29	Diverg., alter.	5	"	Unknown	R. 20/15: 20/15 +w. +1. D., L. 20/15: 20/15 +w. +1. D.	Tonics, stereoscope	One month later single bin. vis.; not seen since.
8	Sept., 1900, H. M., 28	Div., per., alt,	5	"	Unknown	R. 20/20: 20/20 +w. + 50 C. 90°, L 20/20: 20/20+w. +.50 C. 90°	Glasses, tonics, declined opera	Mar., 1901; diverge nce 8°.
9	Oct, 1900, J. C. N., 35	Diverg., const left.	30	"	Since 4 yr. old; operat. 20 yr.	R. 10/200: 20/200w. +4 C. 90°, L. 20/40: 20/20w. +1.50 D ⊂ +2 C 90°.	Glasses, declined second opera	Condition unchanged.
10	Dec., 1900, M. A. S., 38	Diverg., alternating.	5	"	Unknown	R. 20/15: 20/10w. +.75 D., L. 20/15: 20/10w. +.50 D. ⊂ +25 C. 90°.	Glasses, tonics, stereoscope	May, 1901; single bin. vis. all the time; no diplopia as before treatment.
11	Sept., 1900, A. B., 3	Conv., const. right.	5	"	4 years	R. 20/200: 20/200w. +1 D. ⊂ +3 C. 100°, L 20/30: 20/20w. +2 50 D. ⊂ 1.25 C. 85°.	Glasses, pad, atropin.	Oct, 1900; parallelism; 5, 14, 1901, parallelism, bin. vis.
12	Sept., 1900, J. G., 14	As above	20	"	12 years	R 10/200: 20/200w. 3+D., L 20/200: 20/30w 2+D.	" " "	Oct. 11, 1900; eyes parallel for distance, but 5° conv. for near; not seen since.
13	Sept., 1900, N. M., 3	Conv., const.	20	"	1 year	Objective tests; H. 3 50 each.	" " "	May 14; eyes parallel.
14	Sept., 1900, C. K., 6	Conv., const right.	40	"	5 years	Objective tests; R. +2 D. ⊂ +3 C. 75°, L. +2 D. ⊂ +3 C. 105°.	" " "	May 14, 1901; conv. 35°; has not followed treatment; advised operation.
15	Sept., 1900, A. C., 20	As above	20	"	Since a baby	R. 20/40: 20/20w. +1 D. ⊂ +.50 C. 90°, L. 20/50: 20/30w. +1 D. ⊂ +1 C. 105°.	" " "	Oct. 27, 1900; conv. 25°; saw but once after giving glasses.
16	Oct., 1900, A. B., 11	As above	15	"	7 years	R. 20/40: 20/20 w. +4.50 D. ⊂ +2 C 90°, L. 20 20: 20/20w. +4.50 D. ⊂ +.75 C. 90°.	" " "	May, 14, 1901; single bin. vis.
17	Oct., 1900, B. C., 12	As above	15	"	Since baby	R. 20/200: 20/70w. +2 C. 90 ⊂ −1 C. 180°, L. 20/100: 20/40w. +2 C. 75°.	" " "	Dec 18, 1901; conv. 10°; not seen since.
18	Oct., 1900, J. B., 17	Conv., const. left.	5	"	2 years	R 20 20: 20/20 +w. +2 50 D ⊂ +25 C. 180°, L. 20/200: 20/30w. +1.75 D. ⊂ +1 50 C. 180°.	" " "	Dec. 18, 1900; single bin. vis.; May 14, 1901; single binocular vision.
19	Oct., 1900, W. K, 10	Conv., const. right.	15	"	1 year,	Can not read; objective tests; R +7 D. ⊂ +1.50 C. 75°, L. +7 D. ⊂ +1 50 C. 105°.	" " "	Dec. 1, 1900; convergence 5°; not seen since.
20	Jan., 1901, W. McG., 6	As above	50	"	1 year	Objective tests; R. +2 D. ⊂ +2 C. 90°, L +2 D. = +2C. 90°	" " "	May 14; convergence 20°.
21	Feb, 1900, F. C., 13	Converg., periodic.	5	"	Since baby	R. 10/200: 20/70w. +2.50 D. ⊂ +4.50 C. 80°, L. 20/70: 20/50w. +2.50 D. ⊂ +4 C. 80°.	Glasses	May 16; eyes parallel; binocular vision.
22	Feb., 1901, M. O'N., 11	Conv., altern'g	15 5	"	Since baby	R. 20/20: 20/20+w. +1.25 D., L. 20/20: 20/20+w. +1.25 D.	Glasses, pad, atropin.	May 16; convergence 5°; sursumvergence 5°.
23	Feb., 1901, J. S, 8	Conv., const right.	20	"	4 years	R. 20/50: 20/40w. +2D. ⊂ +2 50 C 90°, L. 20/50: 20/40w. +2 D. ⊂ + 2.50 C. 90°.	" " "	May 2; convergence 5°.
24	Feb., 1901, B S., 3½	Conv., const. l.	40	"with effort	6 months	Objective tests; +4 D. each eye	" " "	April 30; convergence 25°.
25	Feb., 1901, J. K., 5	Conv., const. r	15	True	2 days	Objective tests; R. +3 D, L. +2.50 D.	" " "	May 2; parallelism.
26	Feb., 1901, T. L, 3	Conv., altern'g	20	"	8 months	Objective tests; +3.50 D. each eye.	" " "	May 16; parallelism.
27	March, 1901, L. L, 4	Conv, const. l.	15	"	8 months	Objective tests; +2 50 D. ⊂ +1 C. 90°, +2 D ⊂ +1 50 C. 90	" " "	May 16; convergence 10°.
28	March, 1901, J. B., 7	Conv., nystagmus.*	5	False	Since birth	R 20/200: 20/70w. +4 D, L. 4 200; central choroiditis and myopia 8 D.	Atropin, glasses, +4 D. R., plain left.	May 14; parallelism, both uncovered and with glasses on; left convergence 50° when right is covered.
29	March, 1901, F. R., 7	Conv., const. l.	10	True	1 year	Objective tests; +6 D. each eye	Glasses, pad, atropin	May 16; parallelism; single binocular vision.
30	March, 1701, M. G, 5	As above	15	"	1 days	Objective tests; R. +1.75 D., L +2.25	" " "	May 16; parallelism.
31	March, 1901, E. H. 9	Conv., periodic		"	Since a baby	R. 4/200: 20/100w. +7 D., L. 7/200: 20/50w. +7 D	" " "	May 16; parallelism; single binocular vision.
32	March, 1900, B. J, 18	Conv., const. l.	15	"	13 years	R. 20/50: 20/30w. +4.50 D. +.50 C. 90°, L. 12/200: 20/100w. 3 D. .50 C. 90°.	" " "	May 24, 1900; convergence 2°.
33	March, 1900, M. W., 13	As above	10	"	7 years	R. 20/200: 20/30w. +2.50 D., L. 15/200: 20-70w. +1.50 D. ⊂ +4 C. 75°.	" " " bar-reading	May, 1900; eyes parallel; May, 1901; eyes parallel; single binocular vision.
34	March, 1900, A. C., 3	Conv, const. r.	40	"	1 year	Object tests; R. H. 6 D., L. H. 5 D.	Glasses, pad, atropin: atropin discontinued on acct. of poisoning	June, 1900; convergence 5°; not seen since.
35	April, 1900, E. M., 10	As above	15	"	2 years	R. 20/100: 20/70w. +3 D. ⊂ +2.50 C 90°, L. 20/100: 20 40w. +3.50 D. +1 C. 90°.	G., pad, bar-reading, stereoscope	May 8, 1901; sing. bin. vis. distance, not for near.
36	May, 1900, E. S., 7	As above	30	"	4 years	R. 20/200: 20/200w +4.50 D, L 20/30: 20/20w. +3.50 D.	Glasses, pad, atropin.	After 1 month conv. 15°; not seen since.
37	May, 1900, A. G., 9	Conv, const l	40	"	8½ years	R. 20/30: 20/30w. +3 D +1 C. 75°, L. 20/40: 20/40w. +2 D. +4 C. 100°.	" " "	Aug. 23, 1900; convergence 30°; not seen since
38	May, 1900, R. S., 3½	Conv., const l.	15	"	1 month	Objective tests; R. H 3 D, L. H. 4 D	" " "	Mar. 4, 1901; eyes parallel.
39	July, 1900, R. H, 4	Conv, altern'g	10	"	3 months	Objective tests; R. H. 3. D, L. H. 3 50 D.	Glasses, atropin	Eyes parallel after 3 mos for distance; not seen since.
40	July, 1900, J. O C., 12	Conv., alt.; usually squints r.	45	"	Since an infant.	R. 20/50: 20/30w. + 75 D. +1 50 C. 90°, L. 20/20: 20/20w + 1.25 D. +75 C. 90°.	Atropin, pad, glasses, bar-reading, stereoscope.	Aug 28, 1900; parallel for dist., 5° conv. near; Oct. 11, sing. bin. vis.; May 11, 1901, sing bin. vis. for all dist.
41	March, 1901, M. B., 6	Conv. const l.	15	"	2½ years	Objective tests; R +3 D. +.50 C. 90°, L. +3 D. +1 C. 90°	Glasses, pad, atropin.	May 16; parallelism; binocular vision.
42	March, 1901, M. B., 16	As above	15	"	7 years	R 20 30: 20/20w. +3 D., L. 20/100: 20/70w. +3.50 D.	" " "	May 20; parallelism.
43	June, 1900, L McG., 12	Divergence, alternating.	12	"	2 years	R 20/20): 20/50w. - 6 D. - 1 50 C. 170°, L. 18/200: 20/50w. 6 D. 2 C. 15°.	Glasses, stereoscope	May, 1901; divergence 8°; seen but twice.
44	July, 1900, L. P., 17	Diver., const., left.	5	"	4 months	R. 10/200: 20/20w. −4 50 D, L. 5/200; 20/20w. - 9 D	Glasses, pad, bar-reading, stereoscope	May 14, 1901; single bin. vis. with glasses, 5° divergence without.
45	Oct., 1900, M. F, 6	Diver., cons, r.	10	"	Unknown	Objective tests; R. - 3 D. - 3 C. 15°, L. 2.50 C. 165	Glasses, pad	May 14, 1901; divergence 2°.
46	Sept, 1900, J. H. C., 28	Conv., cons., l.	5	"	Since a baby	R. 20/40: 20/20w. +5 50 D., L. 20/200: 20/70w. +5.50 D	" "	Unimproved.

* When right is covered left converges 50°. Both uncovered perimeter shows 5° convergence left.

TABLE 2.—RESULTS OF PANAS' OPERATION COMBINED WITH NON-OPERATIVE TREATMENT IN THIRTY-FOUR CASES.

No.	Date, Name, Age (year).	Diagnosis.	Degree.	Fixation.	Duration.	Vision and Refraction. Under Atropin.	Treatment.	Results.
1	Sept., 1900, H. C. K., 23	Convergence constantly left.	60	True	Since a baby	R. 20/70,20/20w. +1.50 D., L. 20/200:20/100 +w. +1.50 D ⊂ +2.50 C 105°	Atropin, glasses, pad, Panas' operation, stereoscope, bar-reading	Triplopia immediately after; 6 weeks later single bin. vis.; V. 20/40 in squinting eye.
2	Sept., 1900, A. McC., 4.	Convergence constantly right.	40	"	Since a baby	Objective tests, R. H. 3 D., L. H. 2 D	Atropin, glasses, pad, Panas' operation	Over-effect 15° immediate; 2 weeks later parallelism, which holds April, 1901
3	Nov., 1900, B. J., 10. .	Convergence constantly left.	35	"	5½ years .	R. 20/70:20/50w. +2 D. ⊂ 1.50 C. 80°, L. 20/200: 20/100w. +2 D. ⊂ +1.50 C. 100°.	Glasses 15 mo. altogether, pad, atropin, Panas' opera.. stereoscope, bar-reading	Immediate effect 5° divergence; after 1 day single bin. vis., which holds April, 1901.
4	Jan., 1901, T. B, 22 . .	Conv. and sursumver. const. left.	30	"	15 years. .	R. 20/100 20/20w. +4 D. ⊂ +.75 C. 35°, L. 2/200: 20/50 w. +4.50 ⊂ +.75 C. 125°.	Glasses, pad, atropin, Panas' operation, stereoscope.	Immediate effect, diver. 20°, sursumvergence 25°; May, 1901, sing. bin. vis. for distance, not near point.
5	Apr. 13, 1900, I. I, 15. .	Divergence alternating.	5	"	6 months .	R. 20/20:20/20 +w. +.75, L. 20/20:20/20 +w. +1 D.	Tonics, glasses, Panas' opera, Dec. 13. .	30° over-effect at first; single binocular vision 6 weeks later, and still holds.
6	Dec. 5, 1898, L. J. B, 30	As above	15	"	Since a child	R. 20/15 −w. +.25 D. ⊂ +25 C, 180°, L. 20/15 −w. +.25 D. ⊂ +.25 C. 180°.	Glasses, Panas' operation Jan. 23, 1901 .	20° over-effect at first; single binocular vision 4 months later, holds.
7	Mar. 29 1900, N. V., 8..	Convergence constant left	20	"	2 years . .	R. 20/70:20/20w. +3 D. ⊂ +.75 C. 90°, L. 20/200: 20/40 w. +1 D. ⊂ +2 C 90°.	Glasses, pad, atropin, reduced squint to 15° Aug. 31; Panas' operation.	Immediate over-effect 20°; Oct. 6, over-effect 10°; April 20, 1901, over-effect 10°; to be operated on again.
8	June 29, 1900, W. D., 25	As above	20	"	20 years. .	R. 20/20:20/20w. +2 D. ⊂ +1.25 C. 90°, L. 20/30: 20/20w. +3.50 D. ⊂ +1 C. 180°.	Glasses, pad, atropin, Panas' operation July 11.	Parallel at onee; single binocular vision; same 8 months later.
9	July 5, 1900, A. S, 6. .	As above	25	"	1 year. . .	R. 20/200:20/20 −w. +3 D., L. 10/200,20/200w. +3.50 D. ⊂ 75°.	Glass, pad, atropin, redueed squint to 15°; Jan. 16, 1901, Panas' operation . .	Parallel at once; single bin. vis.; Mar. 23, 1901, sing. bin. vis.; vision 20/20 in each eye.
10	Dec, 1900, J. C, 19 . .	Diver. cons. right.	20	"	Since child	R. 4/200:20/70w. − 11 D., L. 20/70:20/20w. .50 D. 75	Glasses, pad, Panas' operation.	Immediate over-effect 30°; April, 1901, parallelism.
11	July, 1901, E. S., 11 . .	Diver. preferably; mostly right eye	30	"	10 years . .	R. 20/70:20/20w. −1.50 D.. L. 20/40 20/20w. − 1 D.	Glasses, Panas' operation, July; also in November on same muscles	Immediately after 2d opera, diverg. 10°, but homo. diplopia 6°; May, '01. sing bin. vis. with or without glasses.
12	Dec., 1900, W. T., 16 . .	Divergence constant left.	25	"	S nee a baby	R. 20/20:20/15w. +.75 D., L. 20/30:20/30 +w. +.75 D.	Panas' Operation.	Immediate over-effect 20°; 1 week later sing. bin. vis, which holds, May, 1901, without glasses; patient has angle alpha 20°, giving appearance of divergence.
13	May, 1900, A. G., 9. . .	Convergence constant left.	40	"	8½ years .	R. 20/30:20/30 +w. +3 D. ⊂ 1 C +75 , L. 20/40: 20/40 +w. +2 D ⊂ +1 C. 100°.	Atropin, glasses, Panas' operation . . .	Oetober, 1900, parallelism.
14	June, 1900, J. B., 1½ .	As above	60 Rt 15 Lt.	False	Since 1 mo. of age.	Objective test, R. H. 5, L. H. 4	Atropin, Panas' operatiou	Parallelism immediate after operation, which held for a month; not seen since.
15	Oct., 1900, J. K., 4. . .	As above	35	True	Since a baby	Can not read objeetive tests, H. 4 D. eaeh; ordered +3.50 D. eaeh.	Glasses 10 months before I saw her; atropin, pad, Panas' operation.	Immediate effeet 5° eonv.; patient stopped all treatment 2 weeks after operation, not wearing glasses even; May, 1901, eonv. 10°.
16	Mar, 1900, A. D., 38 . .	onvergence constant right.	60 Lt. 10 Lt.	False right	12 years. .	R. 3/200 not imp., L. 4/200;20/50w. −12 D. ⊂ 1.50 C. 180°.	Glasses, R −10 D., L. −10 D. ⊂ 50 C. 180°, pad, Panas' operation.	May 8, 1901, R. V. ⊂ 20/50, L. V. = 20/50; single binocular vision.
17	Apr. 1, 1900, J, S, 5 . .	As above	50	False	3 years . .	Objeetive tests, H. 5 50 D eaeh eye	Panas' operatiou April, 1900; again Mar., 1901.	Over-effect 10°, which remained till Mareh, 1901, when Panas' opera. on external reeti; May, 1902, eyes paral.
18	Apr., 1900, J. B, 23 . .	Convergence constant left.	60	True	20 years. .	R. 20/200:20/20w +5.50 D ⊂ +1 C. 90°, L. 2/200: 20/200w. +5 50 D. ⊂ +2 C. 105°.	Glasses, atropin, pad, Panas' operation.	May 31, 1901, parallel for distance, 5° convergence for near point.
19	May, 1900, C. J., 5.. . .	onvergenee constant right	20	False	4 years . .	Objeetive tests, R. unelean eataract, L. Hastig Co., nystagmus.	R. plain glass, L. +2 D. ⊂ +2 C. 90°; atropin, Panas' operation.	May, 1901, eyes parallel.
20	Aug., 1900, D. P., 16. .	Conv. cons. left.	30	"	Unknown	R. 20/30:20/20w. +2.50 D., L. 3/200,3/200w. +3 50 D.	Glasses, pad, atropin, Panas' operation.	Aug. 25, 1900, eyes parallel.
21	Aug, 1900, C. H., 10.. .	As above	25	True	5 years . .	R 20/70:20 40w. +2.50 ⊂ +2 C. 70°, L. 20/200:20/200 w. +2.50 ⊂ +2 C. 105°.	As above..	May 14, 1901, single binoeular vision with and without glasses.
22	Sept., 1900, S. M., 13 .	As above	35	"	Since a baby	R . 20/200:20/30w. +6 50D., L. 20/200:20/30w. +7 D.	Atropin, pad, glasses, Panas' operation by Dr. Maneor (house surgeon).	Immediate effeet after operation, conv., changed to divergence 30°; advanced both internal reeti, one after the other; eonv. 15°; ultimate diver. 10°.
23	Sept, 1900, T. G., 6. .	Convergence eou stant right	20	"	Since a baby	Objective tests, H. 3 D. each	Atropin, pad, glasses, Panas' operation.	Immediate over-effect 30°; April 23, 1901, parallelism; May 14, 1901, parallelism.
24	Oet., 1900, E. H., 17. .	Convergenee constant left.	35	"	Sinee a baby	R. 20/200:20/30w. +4 D. ⊂ +2 C., 75°, L. 15/200: 20/70w. +4 D. ⊂ +2 C. 105°.	" " " " "	May 14, 1901, binocular vision.
25	Oct., 1900, M. G., 22 .	Convergence constant right.	25	"	Sinee a baby	R. 20/70:20/40w. +1.50 D. ⊂ + 3 C. 80°, L. 20/40: 20/30w +1.50 D. ⊂ + 3 C. 105°.	" " " " "	April 3, 1901, eyes parallel,
26	Oct., 1900, A. F., 10 . .	Convergenee constant left.	60	"	7 years . .	R. 20/20:20/10w. +1.25 D., L. 2/200:4/20 0w. +3 C. 90°.	" " " " "	Parallelism.
27	Sept., 1900, W. G, 4 . .	Convergenee constant right.	30	"	2 years . .	Objective tests, R. +2.50 ⊂ +3 C. 105°, L. +2.50 ⊂ + 3 C. 75°.	" " " " "	Dec 8, 1901, convergenee 10°; not seen since.
28	Oct., 1900, E. N, 7. . .	As above	40	"	3 years . .	R. 20/100:20/70w. +3.50 D. ⊂ 2.50 C. 75°, L. 20/70: 20/30 +5 D.	" " " " "	May 18, 1901, eyes parallel; single biuoeular visiou.
29	Oct., 1900, E. B., 15 . .	As above	60	False	12 years. .	R. 3/200:10/200w. +3 D ⊂ +1.25 C. 75°, L. 20/20: 20/20 +w. +3 D ⊂ +1 25 C. 120°.	" " " " "	April 18, 1901, eyes parallel.
30	Nov., 1900, M L., 9 . .	As above	15	True	7 years . .	Can not read objeetive tests, R. +4 D. ⊂ +.50 C. 90°, L. +4 D. ⊂ +.50 C. 90°.	" " " " "	May 16, 1901, parallelism distanee; 5 conv. near.
31	Jan., 1901, M. K, 6 . .	Convergenee constant left.	20	"	3 years . .	Can not read objeetive tests, R. +2.50 D. ⊂ +.50 C. 105°, L. +2.50 D. ⊂ +1.50 C 90°.	" " " " "	Immediate over-effect 20°; May 14, divergence 10 .
32	Feb., 1901, M. C., 11.. .	Convergence constant.	25	False	7 years . .	R. 4/200:20/200w. +2 D. ⊂ +.75 C. 75 , L. 20/20: 20/20 +w. +1.50 ⊂ + 75 C. 105°.	" " " " "	May 16, divergenee 10°.
33	Mar., 1901, D. P., 25.. .	Conv. both eyes; head carried to l.	40 Rt. 10 Lt.	"	Since a baby	R 3/200:3/200w.+2.50 D., L. 20/50:20/20w. +.75 D. ⊂ +.25 C. 90°.	" " " " "	May 16, parallelism.
34	June, 1900, E. H., 4 . .	Conv. constant.. . . .		"	Sinee baby	Objeetive tests, +.75 C. 90° each.	Glasses, Pauas' operation	Parallelism without glasses; binoeular vision.

TABLE 3.—RESULTS OF SIMPLE TENOTOMIES COMBINED WITH NON-OPERATIVE TREATMENT IN THREE CASES.

1	Sept., 1900, N. H., 20 .	Convergence constant left.	5	True	Since a baby	R. 20/40:20/20w. +1.50 C. 90 −.50 D., L. 20/200: 20/70w. +2.50 C. 90°.	Had 3 or 4 operations before coming to me; atropin, glasses, pad, stereoseope, bar-reading.	After 5 weeks' treatment single binocular vision, which still holds, May, 1901.
2	Nov., 1900, L. B. L., 30	Convergence constant right.	5	"	27 years. .	R. 20/200:20/30w. +1.50 D. +1 C. 95°, L. 20/70: 20/15w. +.75 D. + 1 C. 90°.	Operation, both eyes, at 8 yr. by another surgeon, glasses; by me, new glasses, pad, stereoseope, bar-reading.	One week, single binocular vision, which holds May 8, 1901; perfeet eomfort.
3	Sept., 1900, H. F., 17. .	As above...	25	"	15 years. .	R. 20/70:20/20w. +3 D., L. 20/70:20/20w. +3 D . .	Had 2 oper' 3 yr. ago, atropin, pad, glasses	May 14, 1901, eyes parallel; binoeular vision.

paper, by one operation, which is certainly a great gain over the method of simple tenotomies, where two, three and as high as five operations are sometimes necessary to complete a cure. Furthermore, the main objections against Panas' operation, over-effect, has not been borne out by the statistics in the 70 cases reported by us and the 250 cases reported by Panas. Panas reports failure in only about 5 per cent. of his cases.

By way of explanation of the greater percentage of failures in the cases reported by Roosa and myself, as compared with the cases reported by Panas, I may say three of our cases were operated upon while the patients' eyes were under the influence of a mydriatic. In each one of these three cases over-effect resulted, due, we believe, to the effect of the mydriatic. Under no circumstances should Panas' operation be performed while the eyes of the patient are under the effect of a mydriatic. Because, immediately following Panas' operation, as a rule, we have a temporary over-effect, and the mydriatic increases it and makes it permanent. It is easy enough to instill a mydriatic if the effect of the operation is not great enough, but it is impossible to get rid of the effect of the mydriatic, for some days at least, when once in. We therefore give word of warning to those who intend to operate after Panas' method not to do so while the patient's eyes are paralyzed with a mydriatic.

In a very few cases a second operation is called for, but with this second operation I believe the percentage of cures (parallelism) will easily be brought up to 95 per cent. in all cases.

Cases Worthy of Special Mention.—Cases Nos. 1 and 8 are remarkable in showing triplopia immediately after operation; the former case being of interest also by reason of the vision in the amblyopic eye increasing from 20/200 to 20/30.

Each of these cases, aged respectively 23 and 25 years, had excessive convergent squint in the left eye from youth, the latter case having but little amblyopia in the squinting eye, while the former had a very decided amblyopia. In each case immediately following the operation there was horizontal triplopia for the near point, and for the distance also for bright objects, as a candle-flame. The second case, No. 8, in the first table, would at times have triplopia, then diplopia and then single binocular vision—all within a few minutes' time. When triplopia was present the image from the right eye was between the two images from the left, and was the brightest of the three, while the extreme right hand image was the faintest of the three. When diplopia was present (in this instance the images from the maculæ were fused, forming one image, while the faint image to the right was from the new-formed macula in the left eye) left image was very bright while the right was very weak.

It required the most favorable surroundings to bring out the triplopia, as a bright light in a dark room. Looking at a white door-knob at twenty feet immediately afterward, he had single binocular vision as shown by prism test.

With the Kroll pictures, the trap and the mouse, for instance (the trap being on the left side of the picture in front of the squinting eye), he saw two traps and the mouse between them. After two days triplopia could not be brought out, and single binocular vision existed from this time on until eight months later when the patient was last seen.

The first case, No. 1, was exactly like the one just recited, except the image from the false macula was weaker. Furthermore, on account of his amblyopia it required a much longer time for him to obtain single binocular vision, taking five weeks to establish it. At first he saw single at five feet and then single binocular vision extended to within one foot of the eyes and as far away as ten feet after a few weeks. Beyond ten feet he had homonymous diplopia, while inside of one foot he had cross diplopia. Five months after the operation the range of single binocular vision was from eight inches to fifteen feet, and he was able with the Kroll pictures to put the mouse in the trap, the flower in the pot, the frog in the pool, etc., but not to fuse the homologous objects of the Kroll pictures, as the two girls or two horses, so as to form one girl or one horse. His vision in the amblyopic eye had increased to 20/50, at this time. One month later the vision in the bad eye increased to 20/40, and single binocular vision existed for all distances beyond six inches. He was able also now to fuse the homologous objects of the Kroll pictures.

A third case somewhat similar to the two cases here reported is one from the hospital clinic where paradoxical diplopia followed operation. E. S., aged 11 years, divergent strabismus, 30 degrees, constant most of the time in the right eye, though occasionally the left eye squinted; duration 10 years.

R. V. 20/70; 20/20 w. —1.50 D.
L. V. 20/40; 20/20 w. —1.00 D.

The treatment consisted in wearing glasses and having Panas' operation performed. Immediately after the operation there was a divergence of ten degrees, but a homonymous diplopia of six degrees. Ten months after operation the patient had single binocular vision both with and without glasses.

The three cases just cited and the two to follow form other links in the chain of positive evidence in favor of amblyopia ex anopsia, but before commenting on them I will cite the two cases in hand of marked amblyopia which were greatly improved by treatment.

A. S. (Case 9 in Table 2), aged 6 years, convergence 25 degrees, constant in the left eye, duration one year, true fixation, R. V. 20/30; L. V. 10/200. Under atropin:

R. V. 20/100; 20/20— w. +3.00 D.
L. V. 10/200; 20/200 w. +3.50 D.

These glasses were ordered and the exclusion pad to be worn one hour three times a day over the right eye: also atropin was instilled twice a day into the eyes for a month at a time with intermissions of a month. After three months the amount of the squint was reduced to fifteen degrees, but could not be further improved with three more months of treatment, making six months of all of non-operative treatment. Panas' operation was now performed. On the following day the eyes were parallel, and on the second day after operation single binocular vision was present for the near point. The exclusion pad was ordered to be worn one hour three times a day on the right eye; three months later single binocular vision existed for all distances with vision 20/20 in each eye with glasses, + 3 D. each. Adduction 13 degrees, abduction 6 degrees, sursumduction, right and left, 3 degrees.

Another case in point, No. 16, Table 2: Ada D., age 38, high myopia, convergence 60 degrees right eye, with false fixation, 10 degrees convergence left eye; duration twelve years. R. V. 3/200 not improved; L. V. 4/200; 20/50 w. —12 D. ⊂ —1.50 C. 180°.

The ophthalmoscope showed 12 diopters of myopia in

each eye, with normal fundi, except for small scleral ring at the disk in each eye. Ordered glasses —10 D. R.; and —10 D. ⊂ —1.50 C. 180 L. Two weeks later Panas' operation was performed; five days later the eyes were parallel. The patient was ordered to wear her glasses all the time and to wear the exclusion pad on the left eye twice a day for an hour. Thirteen months later the patient had single binocular vision with glasses on, and the vision had increased in the amblyopic eye from 3/200 to 20/50, the same as in the good eye.

The two cases of triplopia and the one case of paradoxical diplopia show that a new perceptive center can be formed in the eye by use, while the last case shows that the center of vision, after it is much reduced, can be improved by use. And Roosa, Risley and others have reported cases where the vision was good before squinting and became reduced after squinting, showing that the vision may be reduced by non-use.

I am as firmly convinced that the non-use of an eye may cause weak vision or amblyopia as the non-use of a man's arm causes weak muscles in the arm. Physiologically one is as easily understood as the other. A quotation from Brudenell Carter is pertinent here: "Vision," he says, "like every other nerve function, must be cultivated for the attainment of a high degree of excellence. The visual power of London children is not cultivated by their environment. They see the other side of the street in which they live, and the carts and omnibuses of the thoroughfares. They scarcely ever have the visual attention directed strongly to any object which it is difficult to see or which subtends a visual angle approaching the limits of this ability; and hence the seeing function is never exerted to anything like what should be the extent of its powers."

Three of the patients reported by me in this paper have complained that the sight in the good eye has been made worse by tying the eye up, it taking at least one-half hour to one hour to recover the normal vision after the patch is removed.

Case No. 12, in Table No. 2, is unique because of the great size of angle alpha, which was 20 degrees in each eye, measured very carefully with the perimeter, time and again.

W. H., aged 16, left eye has always turned outward, mother and two sisters have divergent squint when they become tired. The amount of divergence is 25 degrees, exclusive of the angle alpha, but it looks much greater on account of the very large positive angle alpha.

R. V. 20/15; 20/15 + w. +.50 D.

L. V. 20/50; 20/30 + w. +.50 D. ⊂ +.50 C. 75°.

Panas' operation was performed at once because the glasses had a tendency to make the squint worse. The immediate effect of operation was ten degrees of convergence; nine days later the eyes were parallel with single binocular vision for all distances. His wide angle alpha, however, gave him the appearance of having divergent squint, the so-called incongruous squint of Donders, or apparent squint of other writers. Six months later the patient had single binocular vision by all tests, with and without glasses, and was entirely comfortable, although he had not worn his glasses for two months.

So far as my knowledge goes a 20-degree angle alpha is the largest on record. Cases of as high as twelve degrees have been reported, but I knew of none larger until meeting with this one.

Another case worthy of report is the following: J. O. C., aged 12, convergence of the right eye since an infant, constant; amount 45 degrees, true fixation.

R. V. 20/50; 20/30 w. +1.50 D. ⊂ +1.50 C. 90°.

L. V. 20/50; 20/20 w. +2.75 D. ⊂ +.75 C. 90°.

These glasses were ordered together with atropin and the exclusion pad. Five weeks later the eyes were parallel for the distance with five degrees of convergence for the near point. After three months' treatment single binocular vision was present, which is still maintained. This case is remarkable because of the amount of the squint—45 degrees, the age of the patient before treatment was begun—12 years—the duration, twelve years, and for the result.

CONCLUSIONS.

1. That it is desirable that we have a uniform or standard set of tests for the accurate measurements of strabismus.

2. A better understanding of the physiological action of the ocular muscles and of physiology in general, than at present obtains, should be had by those treating and operating on strabismus cases.

3. The amblyopia present in most cases of convergent strabismus is functional and acquired, and not congenital except in rare cases.

4. The non-operative treatment of strabismus—atropin, the exclusion pad, and, in patients old enough, glasses, the stereoscope and bar-reading—should be begun as soon as the squinting is observed; for, it is in the early cases that this form of treatment is capable of doing so much good. By means of it, if the case is taken in time, false fixation and suppression of the image in the squinting eye are prevented, fusion of the images encouraged, and form-perception, that is, true binocular single vision often maintained. Even where one or more of these functions have been lost persistent effort in the non-operative method of treatment frequently restores them.

5. About 30 per cent. of all cases of strabismus may be cured by non-operative treatment alone.

6. Just as soon as the non-operative method of treatment ceases to improve the condition of the squint, it is time to operate. Delay in operating after this is not only useless but harmful, because the habit of suppressing the image in the squinting eye becomes fixed and the amblyopia worse.

7. After the eyes have been operated on, the use of the stereoscope, bar-reading, the pad, glasses, etc., are of the utmost use in completing the cure.

8. Panas' method of operating for strabismus by stretching the muscles before cutting them is to be recommended as safe in execution, quick in results and efficient. It should never be performed while the patients' eyes are under the influence of a mydriatic.

DISCUSSION IN SYMPOSIUM ON STRABISMUS.*

DR. C. M. CULVER, Albany, N. Y.—The English word "cured" has different meanings as used by different persons. With any meaning of it, strabismus is not, generally, cured by operation. We must have the non-operative treatment before an operation, and afterwards in order to be fair to our patients. When I was invited by Dr. Ellett to participate in the discussion of this subject I was asked to discuss Dr. Jackson's paper concerning the non-operative treatment and therefore my notions concerning the matter are correlated with reference to that. The operation for strabismus provides a condition wherein the trouble may be cured; it does not cure it. It is like the operation for talipes in that respect. Gladden has pointed out that because a person is not a total abstainer it is not fair to assume that he is a confirmed drunkard, and

* For the previously published papers on this subject see THE JOURNAL, October 26, pp. 1087-94, and November 2, pp. 1165-72.

because one advocates non-operative treatment of strabismus it does not follow that he is never in favor of the operative treatment. The opportunity that I had to study this question was encountered during eighteen months of study in Dr. George T. Stevens' office. I have not been quite faithful to that training, for I have never done more than five operations on one case of strabismus. The non-operative treatment should consist in whatsoever can induce the eyes to coöperate in securing binocular vision. It seems to me it is very like teaching a child to walk and for this purpose the apparatus Dr. Jackson shows seems to me most commendable.

DR. F. C. TODD, Minneapolis—In regard to the objections to the non-operative treatment and the reason it can not always be carried out is because of the length of time necessary, and yet it seems to me the patients should be as willing to subject themselves to the non-operative treatment as to the frequent operations recommended by some authorities. There is one important point which Dr. Jackson mentioned which I wish to emphasize and which should always be carried out. I refer to the correction of the entire ametropia in the amblyopic or squinting eye; this can only be done by subjective means. This is often neglected I am sure from the number of such cases I find who are wearing only a spherical correction when a compound glass is required to produce the correct focus. If we may judge from the literature a procedure upon the subject, tenotomy is doubtless performed more often than advancement; yet the latter is steadily gaining ground. The amount which Dr. Clark stated, as secured by a tenotomy, seems to me to vary a great deal under different circumstances. One operator that I have seen work is in the habit of stretching the tendon and tissues after tenotomy and in that way an excessive amount may be corrected. The operation of tucking is one I have been performing in the past two years, and with an instrument which I have devised for the purpose great accuracy can be secured; if extra guy sutures are used a high degree of strabismus may be corrected in one operation. Dr. Davis' results certainly show the benefits of Panas' operation. Stretching of the tendon, as he described it, seems to me at first a radical procedure, but I can see that it is more conservative in its results than tenotomy without stretching, because while more marked at first the tendon being lengthened from the previous stretching necessarily takes its attachment further forward on the globe and thus, as Dr. Davis suggests, the best results are secured with this operation in strabismus of small degree.

DR. G. C. SAVAGE, Nashville—There are three terms to be used in connection with the muscle study. These terms are: planing, converging and paralleling. The first two terms are always to be applied to the visual axes; the superior and inferior recti plane them, and the interual and external recti govern the converging. The paralleling is done by the obliques, and has no reference whatever to the visual axes, for the lines that are to be parallel are the vertical axes. It is certainly incorrect to speak of paralleling the visual axes in operating for squint. In the study of squint we must investigate from the three standpoints: planing, converging and paralleling, and our operations must be determined accordingly. We must know beforehand whether there is an error in either one of these three directions, and we must see to it that our operations shall result in bringing the visual axes into the same plane, in giving ability to the internal and external recti muscles to do the proper converging in this plane, and to enable the obliques to always parallel the vertical axes of the eyes with the median plane of the head. While sometimes the error is only one of convergence, not infrequently there is also a failure on the part of the muscles to plane the visual axes and to keep the vertical axes parallel. The first operation done for squint was most likely done about one hundred and fifty years ago by a man named Taylor, and while we can not be positive as to the nature of that operation, I am inclined to believe that it was a division of the inferior oblique muscle. If Taylor, who traveled all over Europe straightening crossed eyes, had been honest with himself and mankind, he would not have kept his secret until his death. His operations were all done privately, and no one was allowed to see the eye until after the evidence as to the nature of the operation had entirely disappeared. I have done that operation myself recently with a high degree of satisfaction in a very bad case of squint, complicated by an extraordinary amount of plus-torsioning. I did this operation because I believed that Taylor, the quack, had done the same operation successfully. In my case I had no fear that the ends of the cut muscle would separate sufficiently to allow the great plus-torsioning to be transformed into minus-torsioning.

As to the kind of operation to be done, I have well-defined views in my own mind, and I put these views into practice. I do not follow Landolt in never doing a tenotomy, but always advancing the weak muscle; nor do I follow those who are in the other extreme, who do complete tenotomies, even severing the check ligaments, but do no advancements. I never do a complete tenotomy on a rectus muscle, but in all cases of squint I do a partial tenotomy of the too strong muscle and a shortening or an advancement of the too weak muscle at the same time. In doing the partial tenotomies I do not always divide the central fibers. If there is a torsioning of the eye complicating this squint, then the peripheral fibers in one direction or the other, depending upon the muscle, and the character of the torsioning, should be cut instead of a central tenotomy. In shortening or advancing a muscle we must always take into consideration the presence or absence of torsioning. If there is no complication of this character, then a muscle should be shortened or advanced in direct line of its original action; but if there is a complicating torsioning, the shortening or advancement must be such as to elevate or depress the plane of its action, as might be indicated. Of all the complete tenotomies that have ever been devised Panas' is certainly the safest and the best. By stretching the muscle before dividing the tendon the fibers are more or less paralyzed, and after cutting the tendon there is less retraction than would be if the fibers had not been stretched. Before these fibers have had time to regain their power, which was taken from them by the stretching, the cut tendon has had time to re-attach itself to the globe more advantageously than the attachment would have been if the retraction had been further back.

DR. E. F. BAKER, Mt. Vernon, N. Y.—For nearly twenty years I have been operating upon but very few cases of ordinary convergent squint. I have found that these cases can be otherwise cured more satisfactorily to the patient and to me. In order to follow up these cases and at the same time receive some compensation for it I have proceeded in a line that might be considered unethical. I found that if I charged $100 for the operation they were quite willing to pay it, but when they came back at the end of the year not much better I had to do the second operation without charge and if at the end of another year they were not improved they began to think the money should be returned. Now, I am in the habit of telling them that I am willing to take care of them for a considerable time and do the best I can and I name a sufficient sum to cover it. In this way I have been able to follow up my cases. In a paper read before the state society some years ago (and I quote these figures from memory), I said that of 105 cases managed in this way 85 were cured to the satisfaction of the patient and only 20 came to operation. I have followed the same plan as laid down by Dr. Jackson, and when the case does not do well and the squint is not corrected I always imagine that I have not done my part of the work well. The great trouble is that these patients do not come young enough. I frequently put glasses on patients at the age of 2 or 3 years and if they be made comfortable to the child there is no difficulty in managing the parents. I was somewhat surprised at the remark of one of the readers that cases of alternating squint were the most difficult. Why, I feel like saying always that these cases are curable.

DR. J. L. THOMPSON, Indianapolis—Most of our cases come from small towns where everybody knows us and we can not do things as they do in large cities; now I never operate on them until I think and talk it over with them for a year; sometimes they fall, in the meantime, into somebody else's

hands, and I never regret it at all. We must educate not only the public but the profession on this question, and tell physicians particularly what they may expect of operations done in two minutes. We should impress it upon physicians that they should not send these patients expecting immediate operation. I have offended several physicians by telling them that it is too serious a thing to do at the first office visit.

Dr. F. C. Hotz, Chicago—I believe there is no diversity of opinion as to the importance of the non-operative treatment of convergent strabismus in children. Dr. Thompson has struck a very good point in referring to the ignorance of the general practitioner in this regard. They send patients to us and expect an operation to be done in a minute or two and the parents are greatly disappointed when told that before operating a very minute examination is required to determine the advisability of operating. Now, when it comes to operation I wish to endorse fully one point made by Dr. Clark, that in every case of operative treatment we must divide the effect between the two eyes, whether you correct the convergence by tenotomy or advancement, so as to preserve the harmonious action of the muscles.

Now, I wish to say a word in regard to tenotomy which so far seems to have found so little favor with the gentlemen who have expressed their opinions. It is true that very bad results have been seen after tenotomies of the internal recti for convergent strabismus and that in after years we sometimes have been ashamed to see a patient whom we had operated on years before. But is the bad result the fault of the principle upon which the correction by tenotomy is based, or is it the fault of the operator? I think we should not throw overboard an operation which has its good points because many operators, myself included, have had bad results with it. If the convergent strabismus was the consequence of a faulty action of the externus, certainly the advancement of this muscle would always be indicated; but if it is the result of faulty action of the internus it is certainly not rational to leave the faulty muscle alone and produce an abnormal condition in the normal externus. That the internus is at fault originally is, I think, shown by the good results obtained with the non-operative treatment and also by the occurrence of an alternating strabismus. I can not conceive the possibility of an alternating strabismus due to weakness of the external muscle of one eye. In moderate cases of convergent strabismus of say 15 degrees measured by the perimeter—and I measure my cases by the perimeter—I am sure the internal rectus muscles carefully tenotomized to such an extent as to reduce the abnormal part of their converging power, but reserving the full degree of that power necessary to sustain convergence for near work, can be done with impunity. If the strabismus has lasted any length of time other conditions obtain and it is there that correction by simple tenotomy leads to such slipping back of the muscle that it loses so much of its converging power as to bring about the bad effects mentioned. In such cases advancement of the externi is required. I am standing, therefore, in this position, that I do tenotomies for slight conditions, advancement for middle cases, and combine the two in excessive cases. In alternating strabismus the simple tenotomies will do the work perfectly. I was greatly surprised to hear it stated that these cases were the most difficult to relieve by operations; on the contrary, I find them the most favorable for operative or non-operative treatment.

Dr. D. M. Campbell, Detroit, Mich.—The problem of strabismus varies largely with the kind that we have. If we have a converging strabismus the correction brings us problems vastly different from those applicable to post-operative divergent strabismus. In many cases of convergent strabismus it may be possible to correct by tenotomy, but none of us would have the temerity to say that post-operative strabismus would be corrected by a tenotomy of the external rectus. So before we can profitably discuss the question the different kinds of strabismus should be differentiated. Then again, in the complicated varieties, the convergence, associated with turning upward of one eye, presents different problems from the simple strabismus. None of us would expect to correct that by a simple tenotomy of the internal rectus; we must eliminate the complicating features of each case.

Dr. A. B. Hale, Chicago—I did not suppose the non-operative and operative advocates would become separated in the discussion; both methods must always be used together in order to obtain a cure. I have learned one valuable lesson by my experience with the stereoscope, namely, that binocular vision is not necessarily fusion. Binocular vision can be compared to exercises to which we subject a patient and expect him to go through with it so much at a time, while fusion is a condition to which normal eyes are accustomed. I want to ask Dr. Clark what material he uses in his buried sutures.

Dr. William Wilder, Chicago—It seems to me when the operative treatment of strabismus becomes necessary we should consider very carefully the question of whether one muscle is too strong or the opposing muscles too weak. It would be as absurd to cut a weak muscle in the eye as it would be to make a tenotomy in talipes caused by paralysis. That plan of treatment has been discarded in most cases by the orthopedists. If we find that the abductive power of one muscle is at fault we can proceed to strengthen it by advancement and in such cases I have been able to obtain excellent results by operating on one eye alone, although in many cases I do divide the operation between the two eyes. There is one point in regard to the technic of advancement that I think should be insisted upon in high degrees of convergence or divergence; it is impossible to correct the deformity without resecting a considerable portion of the tendon and in many of these cases I have secured the best result at the time by having the patient look at a red light for a test at the time of operation. Before the sutures are finally tightened the patient watches the light with a Maddox rod and I tie the stitches one at a time.

Dr. Black—I want to say a few words about the Panas operation. At first I was impressed with the belief that we did not get a sinking of the caruncle. This led me to believe that it might be possible to accomplish a considerable effect upon a moderate amount of squint without actually doing a tenotomy, but simply following the Panas operation up to the point of stretching the muscle. I do not believe it would be of any value in cases of marked squint, but in cases of intermittent squint or small amounts of constant squint. Waiting for a favorable case to present itself, one of intermittent squint that had been under observation for a considerable interval came to me about six months ago. The child was about 12 years old and had been watched for four years. The hypermetropia was about 5 diopters and the case was almost well, but the parents were getting uneasy and I believed it best to perform an operation. Both interni were stretched and we had a marked divergence for about ten days with complete correction resulting in about thirty days without tenotomy. I have not had the opportunity to repeat this, but I have noticed in doing the Panas operation that if the hook is removed after the stretching we often have the divergence. It is possible that this would only be temporary in the majority of cases.

Dr. A. E. Prince, Springfield, Ill.—I have a word to say on the cosmetic aspect of the subject, in cases of paralysis of the rectus and extreme over-correction with limitation of motion. About fifteen years ago I operated several times with unsatisfactory results. Finally, I operated in a case of double overcorrection. A tramp doctor had stopped at a house and operated for internal squint in a boy for his lodging and $2.50. Later the eyes became extremely divergent and possessed almost no motion. I determined to make as bad an operation as my predecessor. Accordingly I made an exsection of half an inch of each external rectus so as to get behind the capsule of Tenon. An internal limiting suture was inserted which had the desired result and his eye remained cosmetically straight. Some years ago, at the invitation of Dr. Agnew, I operated at the Manhattan Eye and Ear Infirmary upon a case of paralytic convergence due to an injury. Patient's head had been jammed between two cars. In this case I exscted the internal rectus back to the apex of the orbit. The case was kept in the infirmary for some time as an exhibit case. Dr. Beard of

Chicago was the house surgeon at the time and remembers it. Since then I have exsected for paralytic strabismus a great many times with satisfactory results. Attention was called to this method of treatment in an article entitled "Section and Exsection of the Rectus," in The Journal of the Association, Oct. 13, 1888. I desire to mention it again, for every now and then I correct one of the cases which has been pronounced incurable by eminent oculists. I have had two cases who came to me requesting an enucleation rather than tolerate a motionless divergence; they would prefer a glass eye. In both cases the cosmetic success was eminently satisfactory.

Dr. A. A. Hubbell, Buffalo—I have had considerable experience in strabismus, and in the earlier part of my practice I approached it with a great deal of confidence from the operative standpoint. I got over that, however, a long time ago, and I now consider that it is one of the most unsatisfactory conditions we have to treat by operation. The first thing to be done is to endeavor to make clear in our minds the etiology of strabismus before we attempt any treatment whatever. Now, it must be admitted that concomitant strabismus, primarily, is a disturbance of innervation. It is a mistake, as I have said many times, to regard this affection as due to a weakness or over-strength of the muscles themselves. Taking alternating strabismus as an illustration, it can not be said that one internal rectus is too strong at one moment and the other at the next. The trouble is essentially with the centers of innervation which control the deviating movements. There may be a great deal of truth in Dr. Stevens' statement that a disturbance of innervation of the lateral muscles may be brought about by a hyperphoria, just as an error of refraction may produce the same effect. Perhaps the cyclophoria of Dr. Savage will do the same thing. We must thus take many things into consideration. The correction of errors of refraction is one of the primary steps to be taken toward relief, but it should be done early. Spectacles have little effect generally upon divergent strabismus, and if they are applied very early in convergent strabismus we may get a cure in a large percentage of cases, especially if the patient is old enough to practice the exercises mentioned by the other speakers.

I agree with some of the other gentlemen that it is a mistake to encourage the general practitioner to consider strabismus to be such a simple thing, and that it may be let alone until the child is 8 or 10 years old, when it can be easily and perfectly corrected by a tenotomy. We should see these cases early, as I have said, in order to get the best results from optical treatment; for later on they cease to be influenced by these measures, and operation, even with all its drawbacks and uncertainties, becomes necessary. The subject is a broad and difficult one, and I will close my remarks by confirming Dr. Ray's statement that alternating strabismus, in my experience, is a difficult condition to treat successfully by means of spectacles.

Dr. C. A. Veasey, Philadelphia—The method of correcting these cases which I have followed personally and which is also the method in use in the service of Dr. De Schweinitz at the Jefferson Hospital of Philadelphia, consists in a combination of some of the methods advocated here with modifications. In the first place, when a person presents himself with a condition of squint he is very carefully refracted and it is insisted that he shall wear a full correction constantly. If the case is a moderate one—and like Dr. Hotz we always make perimetric measurements of the angle before and after refraction—we at once begin to use the stereoscopic exercise, which is of benefit in moderate degrees, but of little use in high degrees. The patient is carefully watched, the angle of squint measured from time to time and if it is not making any improvement after a period of time, operation is advised. The operation performed depends upon the character of the squint. If alternating we usually find it necessary to divide it between the two eyes; if it is monolateral with amblyopia in one eye and of moderate degree of deviation we can usually correct it by an operation on the amblyopic eye. In the latter condition a complete tenotomy of one muscle is first performed, to be followed by advancement of the opponent if required. The operations are always done, except in young children, under cocain anesthesia, the angle being measured at different stages so that the effect may be controlled. Both eyes are bandaged or both are left unbandaged according to our control of the patient, the latter being preferable, and stereoscopic exercises are begun at once. In this way we are not only obtaining good results cosmetically but also in many cases binocular single vision.

Dr. Hiram Woods, Baltimore—In reference to the contradictory reports as to the result in alternating squint I have been surprised that more stress has not been laid upon the acuity of vision in connection with the prognosis. My own experience has been that in cases of alternating squint with pretty nearly normal vision in both eyes the prognosis is good. I want to add a word of endorsement of Dr. Wilder's remarks with reference to the significance of abduction in testing these muscular conditions. This, with the parallax test of Duane, is the most important we have in determining the cause underlying the trouble. It is easy to see why faulty abduction is a valuable symptom, because the externus has an individual nerve supply. Abduction has not the same bearing. By Gould's exercise one can double or quadruple it in a few minutes. It is not so easy with abduction. Such a rapid increase apparently in muscular power seems to me nothing but the development of positive relative convergence, or teaching the patient how to separate C. for A.

Dr. Edward Jackson, in reply—Regarding alternating squint, there seems to be a confusion of different classes of cases. In cases of alternating squint with high ametropia and almost equal visual acuteness, I have found comparatively little difficulty. But there is a class of cases where the alternation clearly depends upon inability to turn the eyes in certain directions. With these cases there are great difficulties in treatment. The keeping of the eye open after operation is a very important point in the treatment of squint, and perhaps our greatest gain by a squint operation is in the breaking up of old habits of movement and leaving the eye for a time susceptible to the influence of non-operative treatment. The use of the eyes during these first few days after operation may be more important than anything else we can do in weeks of treatment afterwards. I might have said more about the stereoscope. I regard the ordinary form as about as valuable as the special ones that have been made for the treatment of strabismus. By varying the width of the pictures very different effects can be gained and there is an opportunity for inventive skill in furnishing the exercises for children. With regard to the strength or weakness of muscles, of course, that should be studied in every case before operation, and yet I have been decidedly disappointed in the effects of an advancement for convergent strabismus where I was sure the external rectus was the musele at fault.

Dr. C. F. Clark, in reply—I should be very sorry to be put in a false position of being considered an authority upon strabismus. I regard our work in this line as merely a preliminary skirmish in the long struggle. I believe in the non-operative treatment, but we can not always use it, for there are hundreds of cases in which we must act quickly if we would do anything at all. Now, I think there is a decided limit to the value of non-operative treatment even where you might obtain the results. A well graduated and carefully worked out operation is often preferable to the hope long deferred and the effort to obtain that which you may not get in the end unless you have peculiar people to deal with. I am sorry that no one brought out exactly what they mean by an operation when they do operate; how far they confine themselves to the division of the tendon, or to what extent they divide the lateral fibers. I am coming more and more to the opinion that we should confine ourselves as far as possible to the tendon and leave the lateral fibers alone. In advancement, however, I think we should include the capsule with the tendon in order to get a good result.

A question was asked about the Fox operation. As soon as I heard Dr. Fox's paper I obtained his instrument and have been holding it in reserve until I could find a case in which

I would be willing to inflict the amount of traumatism he affects for the amount of correction desired. I do not like to operate in the dark as he seems to do. I feel deeply indebted to Dr. Prince for his forceps, which are to me invaluable, and by using them and the hook you can graduate your operations and have the whole of the tendon under control and determine how much to take off.

As to sutures, I generally prefer black silk because I can see them afterwards and remove them easily. As to the strength of muscles, I think we are using wrong terms in many of these cases. There are many cases where one muscle lacks strength or one is excessively strong, but I believe it is mostly a matter of innervation.

DR. A. E. DAVIS, in reply—I wish to say that the test employed by me was in every case the perimeter whenever it was possible. There is one point in the Panas operation that I would like to emphasize, namely, that it can be employed in either divergent or convergent strabismus and without regard to the presence of hypermetropia or myopia. I think that if we fail to recognize the fact that strabismus is a binocular affection we shall fail to get good results; we must operate on both eyes in every case. I was glad to hear Dr. Prince's experience, for it accords with my own.

DR. J. M. RAY, in reply—I formerly had very much the same idea in regard to the question of alternating squint as has been expressed here by Dr. Hotz and others; but when I began to study my cases, I found that the results did not accord with my opinion. On looking up the work of others, I find that the studies of Lang and Barrett, the monograph of Holthouse, and the recent work of Worth, all show as plain as figures can, that the correction of alternating squint, either by glasses or by tenotomy, is a more difficult problem to solve than is the correction of monolateral squint. My compilations show only 12 per cent. of cases of alternating squint cured by adaptation of glasses, while 30 per cent. of the monolateral ones were brought to parallelism by lenses. The same is true of the operation. Alternating cases are less often corrected by a single tenotomy, and advancements are more often necessary. As stated in the paper the externi are much weaker proportionately than in monolateral squint. My definition of alternating squint would include all squints that fix indiscriminately with either eye and where there is practically the same amount of vision in each.

TYPHOID FEVER—DIETETIC TREATMENT.

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The vital points to be considered in the course of treatment of typhoid fever are: 1. Exhaustion, from continued draining of the body, if a prolonged diarrhea exists; thus large quantities of serum are lost and the blood supply weakened. 2. Continued fever means continued loss of fat and muscle and rapid emaciation. 3. Loss of strength from recumbent position, and from absence of normal substantial foods. 4. Toxemia, showing its effect chiefly on the heart and circulating apparatus demands careful noting when stimulation is demanded. 5. Résumé of foods successfully used in a series of cases of typhoid. 6. The value of salines and especially the administration of saline infusion per rectum, and if coma prevails, its use by hypodermoclysis. 7. Albumin and salt administered subcutaneously. 8. Peptonization of foods; sterilization and pasteurization; use of raw milk in this condition. 9. The administration of water with and without carbonic acid gas. 10. If severe vomiting and gastric disturbance exists, feed per rectum and colon; if severe diarrhea and tenesmus prevails, feed per stomach.

Exhaustion.—When the body loses large amounts of serum, the volume of blood is diminished, and the skin appears parched and loses its normal elasticity; hence large quantities of water are indicated. This will be very grateful to the patient, especially during the febrile state. We must seek to supply this deficiency of liquid, abstracted from the body, by infusing large quantities of normal saline solution and giving frequents draughts of water to which the raw white of egg has been added. It is surprising to know how much albumin can be put into the body by gradually giving liquid draughts when the thirst demands it.

While it is a rare thing to find a nursling or an infant below one year of age having typhoid fever, even such children will digest small quantities of raw white of egg when fed at intervals of two and three hours. One of my favorite dietetic remedies is whey, which is made by peptonizing the milk at a temperature of about 115, beating up the curded milk with a fork until the curd is evenly divided, then straining this liquid whey through a cheese-cloth. When it is flavored by the addition of a few drops of lemon juice, or vanilla, or peppermint, we make it more palatable and do not disturb its nutritious properties.

Barley water, rice water, farina water, almond milk are all nutritious foods, easily digested and readily absorbed.

Toxemia.—If there is a distinct toxemia or evidences of profound systemic poisoning, nothing will be as useful as the introduction of large quantities of a normal saline solution, hypodermically. This can be injected into the abdomen by plunging a large aspirating needle into the deep cellular tissue to which is attached an ordinary fountain syringe holding about two quarts of water. Too much pressure is not needed for the introduction of a pint, or two pints of liquid; frequently, holding the syringe about two feet from the patient's body, will give ample pressure for its thorough introduction.

The lymphatics, during the febrile state, are usually so greedy that they will absorb several quarts of this normal saline solution and hence this important fact should be noted; the bowels and the heart's action should be carefully followed and a comparison made of the condition of the same, before, during and after the injection of this normal saline solution. It is advisable, if the patient has been benefited, to repeat these injections every six, twelve or twenty-four hours, depending on necessity. Flushing the system with this normal saline solution will carry off from the skin and kidneys large quantities of poison.

Rectal Feeding.—If the stomach rebels and vomiting is an urgent symptom, then we must try giving the stomach rest and rely on rectal feeding. For this purpose the rectum should be thoroughly flushed with normal saline solution, and one ounce of thoroughly peptonized milk, to which one ounce of starch water is added, should be injected in intervals of four hours.

Sub-cutaneous Feeding.—An important point to remember is, that the white of a raw egg can be added to the normal saline solution and injected hypodermically.

Thirst.—Carbonic acid water and water acidulated with dilute hydrochloric acid seem to be not only very well borne but appear to inhibit bacterial action, besides being very grateful to feverish patients.

The successful management of a typhoid fever case does not depend on the administration of drugs, excepting eliminatives, but depends solely on supporting the vitality of the child by giving it liquid foods, as above enumerated, and thus sustaining the heart.

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REVERSIBILITY OF ENZYMES.

A most important addition to biological sciences is furnished reeently by the observation that ferments, at least several kinds if not all, are eapable of reversing their ordinary splitting aetion, and instead eombine the separated substanees into the substanee they originally formed. For example, the renal epithelium, whieh has long been known to synthesize benzoie aeid and glycoeoll into hippurie aeid when brought into eontaet with a mixture of the two substanees, will aet in an opposite manner when brought into eontaet similarly with hippurie aeid alone, splitting it up into glycoeoll and benzoie aeid. In other words, enzyme aetion is like any other ehemieal reaetion, in that the reaetion is reversible.

This important property of enzymes was first demonstrated by A. C. Hill,[1] who approaehed the question in the way above mentioned, that is, with the objeet of ascertaining if enzyme aetion was reversible in the same way in whieh ehemieal reaetions are. He was sueeessful, for he found that maltase, a ferment whieh splits maltose into glueose, plaeed with a solution of glueose, will ause a eertain number of moleeules of glueose to eombine to form maltose. Also, it was found that the end result was the same whether the enzyme aeted upon maltose solution or upon glueose solution, for in either ease the ehanges eaused the produetion of a solution eontaining a mixture of maltose and glueose with the same relative proportions of eaeh. It thus beeomes evident that the enzyme brings about a eertain equilibrium between the eomplete substanee and its eomponents. When that equilibrium is reaehed no further aetion oeeurs, but if we remove one of the substanees, say by dialysis when this is possible, then the reaetion will eontinue as long as equilibrium is not attained. Whether this reaetion will be one of building or of splitting will depend upon which of the substances is in excess.

Lipase, the fat-splitting ferment, has been found also to aet as a fat-forming ferment by J. H. Kastle and A. S. Loevenhart.[2] While this ferment is ordinarily thought of as a constituent of the panereatie juiee these authors and others have found that it is mueh more widespread, being present in the liver, submaxillary gland, and kidney of the hog, and also, whieh is of especial importanee, in the epithelium of the small intestine. Indeed, the panereas is not the ehief plaee of its existenee, for liver tissue has nearly three times as vigorous lipolytie aetion as the panereas tissue. Hanriot has also demonstrated the presence of a powerful lipolytie enzyme in the blood serum, so it is to be presumed that the distribution of fat-splitting ferment is almost universal in the body, for if not present in the tissues of an organ it would be supplied by the blood flowing through those tissues.

Now, with this new knowledge both of the wide distribution of lipase and its double aetion, we are in a fair way at last to elear up the perplexing question of fat metabolism, both in health and disease. Take for example fat absorption from the intestine. It may now be eonsidered to take plaee by some sueh steps as these: First the lipase of the panereatie juiee splits up fat into fatty aeid and glyeerin; by the laws of osmosis these substanees would diffuse into the epithelial eells lining the intestine, but here, meeting the lipase of these eells, part would be synthesized into fat; and histologists have long sinee shown the presenee of fat droplets in the absorbing epithelial eells. Next, in the portion of the eell nearest the laeteal stream the glyeerin and fatty aeid still uneombined would pass out by osmosis, and so the neeessity of establishment of equilibrium would lead to a eontinuous splitting of the fat in this part of the eell, with liberation of more glycerin and acid. When these reaeh the blood stream equilibrium is re-established by the lipase of the serum. Probably the tissue eells utilize the fat in a quite similar manner.

Thus is explained by simple physieal laws a proeess long puzzling to physiologists, who have often fallen baek in despair to that fast-narrowing loophole of escape, the "vital properties of the eell." As new observations are rapidly pointing out the part played by enzymes in eell aetivities in ways hitherto unsuspeeted, the far-reaehing importanee of this fuller understanding of the manner of enzyme aetion is pereeived.

1. Journal of the Chemical Society, lxxiii, 1898, 634.
2. Chemical News, vol. lxxxiii, 1901, Nos 2150 to 2155.

PENNY-WISE DISINFECTION.

The full report of Governor Gage's speeial lay "health eommission"—chiefly of newspaper men—has eome to hand and is interesting and suggestive. Its eonelusions and that of his "state board of health" that there is not and never had been any plague in San Franeiseo, and that the reports of its existenee were based upon the diagnostie mistakes of sueh ineompetent observers as Drs. Barker, Flexner and Novy, has already been noticed in The Journal. In this full report, however, there are other interesting details. After the agreement with the United States authorities as to disinfeetion and eleansing of Chinatown, the report says that the instruetions of Dr. White, the government offieial designated to oversee the work, "were rigidly adhered to." This is important; but we read, a few lines farther on, the self-congratulations of the eommissioners over their eeonomy and that "by disregarding the reeommendation of Dr. White to purehase sulphur, biehlorid of mereury, Duteh ovens, etc., in large quantities a considerable saving was

effected. Thus the work of disinfection and fumigation was thoroughly performed with 300 pounds of sulphur although the Marine-Hospital service estimated that 30 tons would be necessary. Fifty pans were bought and 20 only used, but the requisition of the federal official called for 200." These are valuable facts as showing the rigid adherence to instructions and the thoroughness of the work.

Some 30,000,000 cubic feet of dwelling apartments are said, by the board of health, to have been fumigated; thus one pound of sulphur was sufficient per 100,000 cubic feet, a fact in sanitation that is worth knowing. It is such admissions as these that make the report suggestive and enable one to estimate the general thoroughness of the work. We sincerely trust that the local San Francisco Board of Health, which has, we believe, manfully held its own way and opinion thus far as regards the plague cases in that city, will be able to ward off a serious outbreak of the disease, which, according to the Public Health Reports, still lingers in its Chinese quarters. If they fail they can not be much to blame when we consider the opposition of the state authorities and what it means. Should they fail and the pest really become epidemic the Governor and the creatures of his "boards of health" will probably find that they have been laying up for themselves a day of wrath.

One can not help comparing the methods adopted by the governing authorities in California with the methods adopted in foreign countries in bravely meeting this foe and not denying its existence, especially the open recognition of its existence by the authorities in Glasgow and the energetic methods adopted to suppress it. The disgraceful way in which the Governor of the great state of California and his creatures have acted in regard to this epidemic is a reflection not only on the city of San Francisco and the state of California, but on the United States.

RAILWAY SANITATION.

According to a Berlin dispatch, the Prussian state railway authorities are taking special precautions against the spread of contagion by public conveyances under their charge. They even propose to go so far as to have a physician accompany through trains and the station masters are to furnish him with detailed reports of typhoid cases, etc., occurring in their towns or any suspicions of such. Sterilized water tanks are to be put up and conspicuously labeled and fresh boiled water supplied. All precautions against infection are to be employed about the stations, which will be practically quarantine stations. All this is said to be on account of the spread of typhoid, but it is to be presumed other infections will not be disregarded. Any person who travels and who has even an ordinary eye to sanitary defects can see many opportunities for mischief in railway carriages, and it is said that aside from the spitting nuisance, matters are worse in European travel than in this country. One probable good effect of the public scare as to tuberculosis, etc., which has not yet reached its climax, will be to improve matters, and it is even possible that the expectorating nuisance may be put down. The important point is that the right thing be done; it is too much to expect that only this will be attended to; there will undoubtedly be many mistakes. If we can feel that decent disinfection, comparative cleanliness and just, reasonable and practicable precautions against infectious disease are the rule, and spitting is suppressed, we can trust to our vital resistance for the rest and travel with comparative comfort. The Western Passenger Association, it is reported, is to consider a demand from the Travelers' Protective Association that traveling consumptives be isolated. It might be well if this could be done, but there are enough infected individuals whom hardly anything short of a tuberculin test could reveal, to make such an attempt ineffective. Every passenger would have to be examined to insure full protection, and this is a manifest impossibility. In the meantime we need not forego altogether the pleasure of travel on account of the perils that have always existed, even to a greater extent than at present, and of which we are only now becoming fully aware.

Apropos to the above it may be added that the Russian bureau of railways has also published rules in regard to travelers, requiring all cases of infectious disease on railroad trains to be at once removed and put in charge of the police at the nearest station where medical care can be given. Any car in which a case of smallpox, scarlet fever, diphtheria, typhoid or dysentery has occurred must be detached and disinfected. In case of other infectious disorders the question of disinfection, etc., is left to the judgment of the medical official.

MORE SANITARY SLEEPING-CAR ACCOMMODATIONS NEEDED.

In another column a correspondent calls attention to a nuisance that, it is rather strange, has not received more attention heretofore, viz., the promiscuous and varied use of the washing apparatus on sleeping-cars. Any one who has utilized these extensively can corroborate our correspondent's charges. Personal cleanliness is praiseworthy, and tooth-brushing an essentially sanitary measure, but, like some other salutary performances, it should be done with some regard for public decency. Hawking and spitting into a public wash-bowl and blowing one's nose into it are offenses that come pretty near to, if they do not quite reach, the climax of offensiveness. It is possible, perhaps, to imagine worse ones, but there is no need of it. For years the writer has followed, in public wash-rooms, the custom of washing only from the spout, and there are many others who do likewise, but this can not be done in the contrivances of the railroad car. There is no reason why railroad and sleeping-car companies should not follow our correspondent's suggestion and add separate tooth-washing sinks and enforce their usage. We have yet a few wrinkles of civilization to adopt, and this is one.

ANOTHER FAITH DELUSION.

A "christian science" writer evidently wants to climb with his fad into the band-wagon. Noticing the improvement in mortality statistics during the past decade he immediately correlates it with the growth of his delusion. He says: "While investigators may ascribe this remarkable improvement to different causes, according to their point of view, these figures prove conclusively that at the same time that 'christian science' has been sweeping over the country from end to end, health and longevity have made great conquests over sickness and death." It is a common observation in psychiatry that the morbid mind applies everything to itself and its own agency, and this utterance has much of that appearance. It was taken, however, from a communication to an insurance publication and there was probably an idea that it might pass for an argument or evidence in favor of Eddyism with insurance officials, who have not shown a tendency to favor that cult in a business way. We might as well credit the reduced mortality of the last ten years to the influenza as to Eddyism; the same reasoning will apply to both, but the Eddyites won't see it.

THE INFLUENCE OF CONCENTRATION AND OF THE NUMBER OF SITES FOR HYPODERMIC INJECTION.

There is a belief in some quarters that drugs taken in undiluted form are more active than when taken diluted, but this view is not generally accepted. It would on the same line of reasoning be expected that medicaments administered hypodermically would be the more active the more concentrated their form. Of this, some observations recorded by Dr. S. J. Meltzer[1] would seem to supply evidence, as well as of the further fact that the intensity of action can be increased by making the injection in more than one situation. The observations were made in the course of experiments disproving an assertion that had been made to the effect that animal tissues are capable of neutralizing or fixing the poisons of strychnin and venom. When the minimum effective dose of strychnin divided into three equal parts was injected into three of the previously ligated extremities of a guinea-pig violent convulsions occurred as soon as the ligatures were removed. These convulsions were more pronounced and set in earlier than those induced by injection of the whole amount into a non-ligated member. Further experiments showed that injection of a given quantity into three unligated members was followed by more profound effects than injection of the same amount into a single unligated member. Finally, it was found that the injection of a given amount of strychnin was followed by far less pronounced effects when the dilution was greater, and even if larger amounts of the drug were used. These observations accordingly demonstrate that the effects of subcutaneous injections depend upon the concentration of the solutions injected and are materially influenced by a greater distribution of the injected quantity over several areas.

VIVISECTION IN POLITICS IN MASSACHUSETTS.

There is a little paper called the *Animal Defender* devoted to general misrepresentation, in behalf of the causes of anti-vivisection, anti-vaccination, etc. In its latest issue it reproduces the letter of President Brown of the American Humane Association, published in THE JOURNAL October 19, and says in comment thereupon: "Some of the worst instances of human vivisection have been openly confessed by their perpetrators in THE JOURNAL'S columns within the last two years; and no word of criticism or reproof has ever accompanied them." Our readers can appreciate this misrepresentation—we might use a stronger and more emphatic term—without our dilating upon it; it is mentioned to show what sort of reckless statements are emitted by these zoöphile fanatics. We call them fanatics in charity, though a much worse designation might better fit. Their literature is circulated among the people and undoubtedly creates a certain amount of public sentiment, and may even influence legislation. In the same issue is published the status of Massachusetts' legislative and state candidates at the coming election regarding the question of legal restriction of vivisection, as given by answers to a circular letter sent out by the New England Anti-vivisection Society. A plea is made for all supporters of the cause of zoöphily to note these replies and select their candidates accordingly. As they are introducing the subject into politics it would be well hereafter for the medical profession to see that legislators are duly enlightened. The matter is called to the attention of the profession in Massachusetts especially. Those who estimate the prohibition of the alleged sufferings of a few animals utilized for the benefit of our race as "the most important matter before the world to-day," therefore above even the temporal and spiritual salvation of mankind, are not very safe advisers.

THE MICROBIC FLORA OF THE MOUTH OF NURSLINGS.

The importance of microbes both in health and in disease fully justifies all studies that tend to throw light upon their relations to the human body. The microbic flora of the mouth has been studied extensively in the adult, but in the case of the newborn and in the nursling, in which the conditions are in every way simpler and less complicated, a beginning only has just been made in the study of the buccal bacteria. Lewkowicz[1] carefully examined the mouths of several nurslings according to improved methods, and his results indicate that streptococci are the earliest and most numerous bacteria to appear. A pneumococcus of little or no virulence is also quite constant. Other micrococci were also found, but in no case did he meet with any pyogenic staphylococci. Among the bacilli an acidophile form is most frequent. Later on, strict anaërobes are found. Their existence in a cavity so well aërated as the oral is probably due to the presence of numerous recesses into which the air penetrates with difficulty, and also to the action of the numerous aërobic forms which use up all the free oxygen and thus establish the conditions necessary for anaërobism. One of these anaërobic organisms, bacillus bifidus communis, forms a large part of the intestinal flora in nurslings and it seems to make its appearance in the mouth and in the intestine at about the same time. The author also succeeded for the first time in cultivat-

1. Journal of Experimental Medicine, vol. v, No. 6, p. 643.

1. Arch. de Med. Exp. et d'Anat. Path., 1901, xiii, 633-660.

ing the leptothrix buccalis, which is also a strict anaërobe. Studies of this sort must form the basis for an appreciation of the importance of variations in the bacterial species in pathological states, whether general or local. Then the much richer and more variegated buccal flora later in life is studied with better understanding if we go upward from the simpler conditions in the newly born to the adult in whom the anatomical relations are more complicated and the food-supply a great deal more varied.

LOMBROSO ON ROYAL CRANIA.

According to the Paris dispatches, the savants of that capital have not the reverence for potentates and fear of *lèse majesté* laws in their mental make-up to any great extent. They recently enjoyed a lecture from the celebrated Italian anthropologist, Professor Lombroso, who was feted by them on his way home from the Amsterdam Congress of Criminology, in which he discussed the characteristics of contemporaneous rulers, using as illustrations a series of casts of their craniums furnished by Virchow. Most of them were found by him to be criminals or lunatics, the exceptions being the Czar of Russia, who is a sort of harmless innocent, and King Edward VII, who is only somewhat more than the ordinary average of mediocrity. The Emperor of Germany he considers a born tough, who under ordinary conditions would probably come to the gallows, and the Sultan of Turkey would in common life be a sneak thief. Details are wanting as to Professor Lombroso's opinion of the other royal personages, but others have endorsed his views that Europe is in the hands of idiots, rascals and lunatics. It had seemed to us before that modern royalty was, in spite of its many faults, rather a good lot as compared with their predecessors, and that while the institution of royalty was unfortunate in giving responsible position to those handicapped by a bad family history, it was at present better represented than might have been expected under the circumstances. We are not surprised at the verdict on the Sultan, but as for the rest it seems still a little harsh. In fact, such a wholesale disparagement of exalted personages has almost an anarchistic twang, and we doubt whether it is profitable even if there is a basis for it. Emperor William would probably make it unprofitable if he could, and Professor Lombroso need not be surprised if he should some time find himself *persona non grata* on venturing within his jurisdiction. Possibly, Lombroso himself, if he could see himself in a purely objective way, might find considerable abnormality and degeneracy in his own cranial and mental organization.

SYPHILITIC ENTERITIS SIMULATING MELENA IN THE NEWBORN.

Hemorrhage from the bowel is naturally only a symptomatic manifestation in children as well as in adults. Intestinal ulceration and erosion of a blood vessel constitute the most obvious cause, although the bleeding may take place in connection with a condition of hemophilia. A case has recently been placed on record by Dr. Jos. Esser,[1] in which enteritis of syphilitic origin in a newborn child was attended with fatal hemorrhage from the bowel and which is of especial interest on account of the underlying disorder. An illegitimate female child, with jaundice, began on the fifth day of life to have bloody stools, which continued until death occurred on the tenth day. On the sixth day a rapidly progressive bluish-red swelling appeared on the dorsum of the left hand and ruptured toward night, discharging blood. On postmortem examination there was found, in addition to osteochondritis, indurated enlargement of the spleen and vascular changes, and thickening of the jejunum with ulceration of the mucous membrane. Also the follicles of the ileum and the colon and the mesenteric glands generally were enlarged. Microscopic examination disclosed cellular infiltration of all of the coats of the intestine, particularly about the smaller vessels, causing occlusion and necrosis with ulceration. The walls of the splenic vessels, especially the smaller and the medium sized, were thickened, particularly the adventitia and the media, and the lumen was narrowed. Hyperplasia of the stroma adjacent to the larger vessels was present and the pulp cells contained a considerable amount of black granular pigment. The spleen contained also small areas of necrobiosis. The subcutaneous connective tissue related to the lesions on the hand was infiltrated with blood and the middle coat of the vessels—both arteries and veins—was greatly thickened. The vasa vasorum were in some instances surrounded by cellular infiltration, and in some places the elastic fibers of the intima were torn and the wall and the surrounding tissues suffused with blood.

1. Archiv für Kinderheilkunde, 32 B., 3 u. 4 H., p. 177.

TETANUS FROM ANTI-DIPHTHERIA SERUM.

A considerable number of children in St. Louis have been infected with tetanus by the injection of anti-diphtheria serum. A number of deaths has occurred from tetanus in children treated with diphtheria antitoxin either for curative or prophylactic purposes. This antitoxin was manufactured by the city of St. Louis, and the statement is made that the horse which furnished the serum developed tetanus. It is also stated that a guinea-pig injected with the diphtheria antitoxin used in these cases promptly developed tetanus. Whatever truth there may be in these startling statements they certainly are calculated to strike a note of alarm and of regret that there should have happened anything that even remotely corresponds to the news reports. There is to be considered not only the sad fate of the children who possibly escaped diphtheria only to die of tetanus, but also the general effect which such lamentable mishaps are sure to exercise upon the public. The medical profession knows only too well to what evil purposes happenings of this kind are used by the anti-vaccinationists, anti-vivisectionists, "christian scientists," and crotchety persons in general. Prejudice and fear thus engendered among the communities may cause a degree of harm that in the end becomes immeasurably greater than the immediate damage. One of the most important and also difficult rules for physicians, since the days of Hippocrates, "first of all do no damage"—*πρῶτον τὸ μὴ βλάπτειν*—is called to mind by the immediate and remote consequences of occurrences like the one reported from St. Louis. The unavoidable and unforeseen difficulties in the way of always carrying out this precept, the wisdom of which no one

denies, are a matter of familiar experience to practitioners of medicine. It is not always possible to control fully the circumstances surrounding the production and handling of many of the powerful and complicated agencies used with general success in combating dangerous diseases. This is not the first time that fatal tetanus has resulted from the injection of diphtheria antitoxin, and in all probability it will not be the last time; thus there is placed upon those that undertake its manufacture a tremendous responsibility which should and no doubt does stimulate to ever renewed and redoubled vigilance. Physicians everywhere should ever bear in mind that even a puncture by a hypodermic needle may be the means of introducing the most dangerous infections, the agents of which may occur in the fluid injected, upon the instrument used, and upon the skin of the patient.

Medical News.

COLORADO.

St. Luke's Hospital, Denver, is to have a $60,000 addition to accommodate 40 patients. During the last fiscal year 1027 patients were received at the hospital and 602 operations performed. Among the directors, all of whom were re-elected, were Drs. Frederick J. Bancroft and Edmund J. A. Rogers.

New Health Orders.—The Board of Health of Colorado Springs, desiring to avoid a repetition of last winter's epidemics, has issued orders for the connection of all houses with sewers, or when this is impossible, the combination of vaults and cesspools in accordance with the requirements of the health ordinances. A second order holds those in charge of private or parochial schools responsible for the strict enforcement of the compulsory vaccination law and the observance of the ordinances regarding infectious, contagious or communicable diseases.

DELAWARE.

Smallpox is reported in Bethel with three cases, one patient being in a critical condition.

Dr. Columbus Henry, Newark, has been appointed trustee of the poor farm, White Clay Creek Hundred.

Dr. Swithin Chandler and wife of Wilmington, are spending a year in Europe where Dr. Chandler will take up special studies in Vienna, Berlin and Paris.

DISTRICT OF COLUMBIA.

Army Changes.—Lieutenant-Colonel Ezra Woodruff, deputy surgeon-general, U. S. Army, was placed on the retired list, October 24.——Dr. Charles H. Andrews, acting assistant surgeon, U. S. Army, was appointed major and surgeon of Volunteers, November 2.

Government Hospital for the Insane.—Ground has at last been broken for the addition to the hospital, for which $1,000,000 was appropriated. The extension is to accommodate 1000 patients and 200 employes. The trustees recommend an additional appropriation of $145,000 for an administration building, of $150,000 for a central heating and power plant, and of $20,000 for an enlargement of the kitchen, and of $495,000 for the care of 2250 inmates at an estimated cost of $220 per capita.

Freedmen's Hospital.—In his annual report, Dr. William A. Warfield, surgeon-in-chief of the Freedmen's Hospital, Washington, recommends the erection of a new building large enough to gather all the various wards of the hospital under a single roof and equipped with the needed appliances of a modern hospital. The present buildings are all old frame structures, difficult to heat, troublesome to ventilate and inaccessible. During the fiscal year 2552 patients were cared for in the hospital and 5084 persons received treatment in the out-patient department.

Waldeyer's Washington Welcome.—Dr. Heinrich Wilhelm Gottfried von Waldeyer, president of the Berlin Academy of Sciences, visited Washington, October 30. He was entertained by Dr. Charles Wardell Stiles at his residence, welcomed in characteristic way by the students of the Georgetown Medical College, whom he addressed in German, his remarks being translated by Dr. George M. Kober, dean of the college; received by the president; tendered a luncheon at the Jesuit College, a reception at the Department of Agriculture, a dinner by Dr. Stiles and a reception by the Cosmos Club.

ILLINOIS.

Bond County Medical Society has decided on a fee-bill allowing $1.50 for day calls and $2.00 for night calls in town.

Unknown Donor.—A gift of $15,000 to Northwestern University, Evanston, is announced. The donor is a wealthy physician of Ohio who desires to do good by stealth.

Brokaw Hospital.—The new building for this hospital, built at a cost of $20,000, will be ready to receive patients by the middle of November. The building will accommodate 55 patients.

Alice Home, the public hospital at Lake Forest, erected and donated to the village by the Durand family, is to be enlarged by the erection of a contagious disease ward to cost $8,000, donated by Mrs. H. C. Durand.

Smallpox.—Red Bud has 27 cases of smallpox, with one death; Hamilton, 16 cases; Wythe Township, several cases, and Mount Auburn, 3 cases. Quarantine has been established and all schools at Hamilton and Elvaston have been closed.

Personal.—Dr. John Haig, Leroy, has been compelled to retire temporarily from practice on account of his eyes.——Dr. E. R. Motley, Kinderhook, has sold his practice to Dr. Charles W. Trautwein, and will move to Virden.——Dr. Charles E. Wilkinson, formerly of Monticello, has returned after 18 months spent in study in Europe, and has located in Danville.

Chicago.

Dr. George W. Hall has been appointed neurologist to Cook County Hospital.

Scientific research under the auspices of the Rockefeller fund will soon begin under the direction of Dr. Ludvig Hektoen. Dr. J. C. Friedman will devote his whole time to original investigation.

Personal.—Dr. Arthur R. Reynolds, Health Commissioner, visited the Buffalo Exposition last week.——Dr. Alfred Hakanson has returned from Europe and has opened an office at 100 State St.

A New Journal.—The Chicago Pathological Society will hereafter publish its transactions in journal form in place of the annual transactions. Number 1, vol. v, of the new series has just been received.

"Passing-Up" Tabooed.—Two students of the University of Chicago have been suspended for participating in "passing-up" fellow students, a custom which the authorities of the university have prohibited.

Health Department Guiltless.—Judge Tuley on October 31 directed the jury to bring in a verdict of not guilty in the case against Dr. Arthur R. Reynolds, Commissioner of Health, and Mathias Brand, formerly a member of the Board of Health, in the suit of Mrs. Mary E. Moore, who sought to recover $25,000 damages on account of alleged detention in the isolation hospital.

The Week's Mortality.—During the week ended November 2 there were 408 deaths reported to the Health Department. this being 34 fewer than the preceding week, but 22 in excess of the corresponding week of last year. The week's mortality record was the second lowest during the year, the death rate being but 12.08 per thousand of population. Fewer deaths than customary from acute intestinal diseases; diphtheria, heart diseases and nervous diseases chiefly contribute towards the low mortality rate. There were 23 deaths from typhoid fever during the week, or 7 fewer than the preceding week. which was the highest point reached in several years.

INDIANA.

Smallpox is reported epidemic at Glendale, Daviess County, where 27 cases have occurred, and at Union City.

Linton Physicians' Club.—The physicians of Linton have organized a club for social and scientific purposes, which meets every Wednesday evening.

"Dr." Earl C. Smith, Indianapolis, set down in Polk as an eclectic physician, has been held under $300 bonds at Madison for practicing without a license.

Diphtheria is prevalent at Shelbyville, where one school has been closed, and in the southern part of Scott County. The spread of the disease at Knox and North Judson has been checked.

Board of Health.—The Mayor of Indianapolis has named as the new City Board of Health, Dr. George H. E. House, president; Dr. George H. F. Kahlo, Dr. Frederick C. Heath, and Dr. Eugene Buehler as city sanitarian and secretary to the board. The new board has appointed Dr. Norman E. Jobes, superintendent of the City Hospital, and Dr. Charles O. Lowry, superintendent of the City Dispensary.

Personal.—Dr. B. D. Brown, Indianapolis, has been appointed assistant superintendent of the East Tennessee Hospital for the Insane at Lyon's View, Knoxville, vice Dr. Clio Collier, resigned.——Dr. I. J. Vaughan has returned to Topeka.——Dr. Alva L. Spinning has located in Michigan City.——Dr. H. B. Shacklett, Leavenworth, has moved to New Albany.——Dr. Joseph E. Ziliak, Haubstadt, has moved to Linton and formed a partnership with Dr. Sam N. Quillian.——Dr. W. E. Kessinger has moved from Scotland to Sandborn.

IOWA.

The Southeastern Iowa Medical Society will meet at Burlington, November 26.

The Constitutionality of the state law regarding osteopaths is on trial. The suit of Parsons against the State Board of Medical Examiners was begun before Judge Holmes, at Des Moines, October 31.

Personal.—Dr. Mary C. Heilesen has located at Shenandoah.——Dr. Albert M. Barrett, Independence, sailed for Europe, October 22, where he expects to study for six months and then return to become one of the staff of the Danvers (Mass.) Insane Hospital.——Dr. Ernest E. White, Pleasant Plain, has moved to Knoxville where he is associated with Dr. Norman R. Cornell.

LOUISIANA.

New Orleans' Mortality.—The mortality of New Orleans for September among whites was at the rate of 12.52 per 1000 per year. The mortality among the colored population is not given.

Physicians Licensed.—The State Board of Medical Examiners, at its meeting October 24 announced that 17 out of the 31 candidates examined had passed. Three candidates were colored, of whom one passed.

Yellow Fever Institute.—The following New Orleans physicians have been selected as civilian members of the Yellow Fever Institute, created by Act of Congress in March last and placed in charge of the United States Marine-Hospital Service: Drs. Felix Formento, Henry A. Veazie and Lucien F. Salomon, and Professor Beyer of Tulane University. The Institute will be divided into four sections, the first of which will concern itself with the history and statistics of the disease, including the relation of the slave trade and modern sanitation. Section B will be occupied with the cause of the disease, while Section C will specially study its transmission by the mosquito. This insect will be studied from all points. Its life and habits will be thoroughly investigated, and the question whether its progeny may be infected through the parent insect, and whether infection may be conveyed by other than its means worked out. Section D will consider quarantine and treatment. The main lines of study of this section will be whether disinfection of baggage is necessary to prevent the spread of the disease; the treatment of the patient, the immunity of individuals and of races, individual prophylaxis and communal prophylaxis by means of sanitation.

Charity Hospital Appointments.—At the recent meeting of the Board of Administrators of Charity Hospital, New Orleans, the medical committee submitted the following-named visiting staff for the half-year: Visiting physicians—Drs. P. Emile Archinard, Thomas S. Kennedy, Edouard M. Dupagnier, Lionel A. Cazenavette, Abraham Nelken, J. Moore Soniat, Joseph M. Elliot, Arthur Weber, Narcisse F. Thiberge, George S. Bel, L. C. Chamberlain, Henry B. Orr, John B. Elliott, Louis F. Reynaud, Jacob A. Storck, Otto Lorch, Edward J. Huhner, W. B. Robertson, Louis G. Le Beuf, William H. Seeman, J. A. Danna, William W. Butterworth, Jacob Barnett, Henry Bayon, G. King Logan and John B. Elliott, Jr.; visiting surgeons—Drs. Ernest S. Lewis, Paul Gelpi, C. Jefferson Miller, L. B. Guthrie, L. Thibaut, Charles L. Chassaignac, E. Denegre Martin, Henry S. Cocram, W. M. Perkins, Marion Souchon, Luther Sexton, Sidney P. Delaup, S. M. D. Clark, Hermann B. Gessner, Charles A. Borey, Rudolph Matas, Albert S. Yenni, Edmond Souchon, Eugene H. Walet, Edmund Moss, J. Lewis, C. Perrilliat, Frederick W. Parham, Paul Michinard, Felix A. Larue, John F. Oechsner, Clarence L. Horton, S. W. Stafford, Marion H. McGuire, William E. Parker, I. I. Lemann, Hampden S. Lewis, Jules Lazard and C. N. Chavigny; visiting aurists, rhinologists and laryngologists—Drs. J. Phares O'Kelley, Otto Joachim and Edward W. Jones; visiting oculists—Drs. Edward W. Jones, Otto Joachim and Paul L. Reiss; dermatologists—Drs. Isadore Dyer and Ralph Hopkins.

MARYLAND.

Baltimore.

The semi-annual meeting of the Medical and Chirurgical Faculty will be held at Elkton, Cecil County, about the middle of the month.

Mortality and Morbidity.—The city has been free of smallpox since early in July. The deaths for the week ended November 2 were 178; only 2 died from typhoid fever and 12 from pneumonia.

Editions of Hippocrates.—Dr. Howard A. Kelly has 150 editions of the works of Hippocrates. This is, without doubt, the finest and most complete collection of the writings of the "Father of Medicine" in America, if not in the world.

Dr. John C. Hemmeter's book on "Diseases of the Stomach" has been translated into German, and a French edition is also in preparation. The whole of the fourth edition—5000 copies—of Osler's "Practice" has been sold and a reprint will be necessary.

Personal.—Dr. Albert Scott Harden sailed on October 28 to complete his medical studies in Europe.——Dr. John Montgomery West will sail shortly to spend several years at German universities.——Dr. Sidney O. Heiskell has resigned as chief surgeon of the Maryland Naval Reserves; Dr. Alan W. Smith has been appointed to fill the vacancy.

Repeal of Infectious Diseases Hospital Ordinance.—The action of the city council in repealing the ordinance creating the Infectious Diseases Hospital Commission and re-enacting the same is a temporary death-blow to our hopes of securing this long-needed institution; it deprives the commission of the appropriation and other resources for building and paying for the site already chosen. The property was in all respects suitable and the only drawback was the objection by neighbors to the location there.

New Section Organization.—The new place for the organization of sections by the Medical and Chirurgical Faculty was put into effect on November 1, when the Section in Clinical Medicine and Surgery was organized by the election of Dr. L. McLane Tiffany as chairman, and Dr. John Ruhräh as secretary. Dr. Osler exhibited a case of scurvy and Dr. Ruhräh gave a lantern demonstration of syringomyelia and other affections. About 75 were present. There are five sections at present contemplated; they will meet in turn on Fridays.

MICHIGAN.

Scarlet fever has broken out in Montgomery and the public schools have been closed.

Dr. Donald Maclean and Dr. Max Ballin, Detroit, have located in the Grand Circus Building, 271 Woodward avenue, and announce that their practice will be limited to consulting and operative surgery.

Personal.—Dr. Della P. Pierce, Kalamazoo, is convalescing from typhoid fever.——Dr. Grant Ide, Dutton, has disposed of his practice and is visiting in Oshtemo and Mattawan.——Dr. Frank A. Waples, Battle Creek, has left that city for New York.——Dr. William H. Matchette, Dollar Bay, has located in Hancock.

MINNESOTA.

Dr. Homer P. Dredge, Belview, has been elected coroner of Redwood County, vice Dr. Arthur B. Hawes, Redwood Falls, resigned.

Personal.—Dr. Samuel H. Boyer, Duluth, was seriously injured in a runaway accident, October 24.——Dr. David F. Rae, Pelican Rapids, has moved to Fergus Falls.

Smallpox is reported as follows: Red Lake Falls has 30 cases and schools and public buildings are closed; St. Paul has 3 cases; a patient with well-developed smallpox drove into Red Wing from Bay City, Wis.

Vaccination Requested.—At the Grant School, Minneapolis, two children were exposed to smallpox, and the board of education has requested that all unvaccinated children be

vaccinated in accordance with the direction of the Board of Health.

Physicians in Partnership.—Drs. James B. McGaughey, Edward D. Keyes, Nathaniel S. Lane, Donald B. Pritchard, Hans M. Lichtenstein, Oswald Leicht and Hugh F. McGaughey, Winona, have formed a partnership which became operative November 1.

MISSOURI.

A medical department is to be added to St. Louis University provided the necessary funds for its establishment can be raised. It is said that substantial promises have already been made.

Tetanus from Antitoxin.—Thirteen deaths from tetanus following injection of diphtheria antitoxin are reported from St. Louis. It is claimed that the use of impure antitoxin is responsible for these fatalities, but the facts will be undoubtedly brought out at the inquiry which is to be held. The antitoxin in question was prepared under the supervision of the city bacteriologist.

Personal.—Dr. Louis P. Butler, Caseo, who has recently returned from Europe, is about to locate in St. Louis.——Dr. Jerome K. Bauduy, St. Louis, broke his left arm and sustained other serious injuries in a fall, October 20.——Dr. Edgar S. Harris, Tarsney, is taking a post-graduate course.——Dr. William T. Edwards, Avilla, has moved to West Plains, where he will take over the practice of Dr. Henry C. Shuttee, who has located in El Reno, Okla.

Smallpox is epidemic in Independence. It is said that there are more than 100 cases there, that the houses where smallpox exists are not placarded and that there is no attempt at quarantine. The State Board of Health is considering the advisability of establishing quarantine in order to protect the surrounding territory and especially Kansas City. The warden of the State Penitentiary has notified the sheriffs throughout the state that on and after November 15 no prisoners will be received at the penitentiary unless they shall have been vaccinated at such time as to make it safe to admit them.

NEBRASKA.

Scarlet fever at Hyannis caused the public schools to be closed, October 28.

Typhoid fever is epidemic in Harrison township, Knox County, where there are now 35 cases.

Hospital to be Fireproof.—The State Board of Public Lands and Buildings has decided that the reconstructed Norfolk Hospital for the Insane shall be fireproof.

To control smallpox the State Board of Health has demanded that every physician in the state report to the Board by letter every case of smallpox coming under his notice, within 24 hours thereafter under pain of revocation of his certificate to practice.

Smallpox is epidemic on the Winnebago reservation, where 53 are already said to have died from the disease. It is said that 200 cases now exist and that the Indians have no adequate medical attention. The surrounding country maintains quarantine against the reservation.

Personal.—Dr. James A. Andrews, Eustis, who was injured by a kick from a horse three weeks ago, is slowly recovering at a sanatorium at Lincoln.——Dr. Fred E. McKeeby, Red Cloud, has decided to locate in Colorado, where his father is already in practice.——Dr. W. J. Ryan, Omaha, has located in Union.

NEW HAMPSHIRE.

Dr. Albert E. Brownrigg, for three years assistant physician at the New Hampshire State Hospital for the Insane, has accepted an appointment as resident physician at the Highland Spring Sanatorium, Nashua.

Personal.—Dr. John W. Staples, Franklin, has moved to Worcester, Mass.——Dr. James A. Day, Claremont, has located in Waltham, Mass.——Dr. George W. McGregor, Littleton, will spend the winter at Pinehurst, N. C., as house physician at the Carolina.——Dr. M. W. Work, Marlow, has located in Keene.——Dr. John L. Walsh, Concord, has opened an office in Proctor, Vt.——Dr. Francis W. Lamb, Tilton, has gone to New York, where he intends to devote several months to post-graduate study.

NEW YORK.

Scarlet fever has broken out in West Utica. In the last few days 14 cases have been reported.

Personal.—Dr. C. B. Albright, Williamson, has located in Keene, N. H.——Dr. William E. Curtin, Amsterdam, has opened an office in Cohoes.

New Oswego Hospital.—The plans for the addition to the Oswego City Hospital have been approved. The building will be 58 by 38 feet and will cost $25,000.

Diphtheria is epidemic at Greenfield, a small village near Findley's Lake. Several persons have died owing to a failure to use antitoxin promptly. Antitoxin is now being used freely, and it is hoped that no more deaths will occur.

Buffalo.

Dr. Ferdinand Henrotin, of Chicago, addressed the Obstetrical Section of the Buffalo Academy of Medicine concerning the diagnosis and treatment of the various forms of septic pelvic diseases.

Ptomain Poisoning.—Several cases of ptomain poisoning have been reported in this city, and in every case the source of the milk was derived from one milkman. The Health Department is investigating the cause of the trouble.

Smallpox Well Guarded.—There are two cases of smallpox at the Quarantine Hospital, both of which are doing well. Buffalo, with its many foreigners who congregated here during the Exposition, may well consider herself fortunate in the small number of cases reported, but we are by no means assured that all danger is over now that the Exposition is closed. The city would have been in a pitiable plight had an epidemic occurred, because through the selfish motives of the aldermen, Health Commissioner Wende's urgent appeal for a modern quarantine hospital was not acted on, and the present quarantine hospital is an excellent example of what a hospital should not be, and does not deserve to be termed a hospital. It is to be hoped that a modern quarantine hospital for the care and study of infectious and contagious diseases will be established by the municipality of Buffalo. Great credit is due Dr. Wende for guarding the city from smallpox. There were times when the city was spared from the ravages of this epidemic by his alertness.

New York City.

German Hospital, Brooklyn, has received an anonymous gift of $5000.

Dr. Edward Wallace Lee, formerly of Omaha, and for the last year in St. Louis, has located permanently in New York City.

Prospect Heights Hospital and Brooklyn Maternity.—Under this title the Brooklyn Maternity and New York State School for Training Nurses will henceforth be known. Failure to secure an appropriation from the city has necessitated this change.

New York Skin and Cancer Hospital.—Dr. L. Duncan Bulkley will deliver a series of clinical lectures on "Diseases of the Skin" in the out-patient hall of the hospital, on Wednesday afternoons, commencing November 6, at 4:15 p. m. The course will be free to the medical profession.

American Association.—We have received circulars, etc., sent out by a concern in New York City which calls itself the "American Association." It is evidently a kind of collection agency, especially soliciting membership from physicians. A correspondent suggests that we call attention to the fact that it has no connection whatever with the American Medical Association.

OHIO.

Smallpox.—Only six cases of smallpox remain at Newark. ——Findlay is threatened by a smallpox epidemic.

Personal.—Dr. Frank B. Humbert, Mount Liberty, has moved to Orrville.——Dr. Francis N. Pilcher, Gnysville, has located in Columbus.——Dr. J. Milton Long, Zanesville, has moved to Massillon.——Dr. Steele, Frost, has located in Guysville.

Asylum Overcrowded.—On account of the overcrowded condition of the State Hospital for the Insane at Newark, the trustees of that institution have recommended an appropriation for the establishment of several new wards, including a special building for acute cases.

Physician Wins Suit.—Dr. Joseph D. Ely, Toledo, whose bill was contested on the allegation of malpractice in the treatment of an injury of the elbow-joint, was given judgment for the full amount of his claim with interest and costs in Judge Kenyon's court, October 25.

Diphtheria is increasing to an alarming extent at various points in the state. In Cleveland, 31 new cases were reported last week; in Youngstown, 32 cases have been reported, and in Columbus and Lima the disease is so prevalent as to bring prominently into notice the advisability of closing the public schools in the affected neighborhoods.

Newark Isolation Hospital.—The decision in the injunction proceedings against the Newark Board of Health, restraining it from establishing a hospital outside of the city, is that the smallpox hospital may be maintained north of Newark until the six patients confined therein shall have recovered. No new patients can be taken into the hospital there after October 25. If any cases occur after that date the Board of Health must provide a hospital for them within the corporate limits of the city.

PENNSYLVANIA.

The estate of the late Dr. Jeremiah S. Trexler, Kutztown, is valued at $100,000.

Scarlet fever has caused the closure of the Howellville school in Tredyffin township.

Staff Entertained.—The medical staff of Pittston Hospital was given a sumptuous game supper by Dr. John B. Mahon, president of the Hospital staff, October 27.

Hospitals Hampered by New Law.—The Presbyterian Hospital of Pittsburg and Allegheny is greatly overcrowded, and although it has a fund of $40,000 toward a new building it can not proceed with the work on account of the new state law relating to the building of new hospitals in cities. The same law has prevented the erection of the new United Presbyterian Hospital at Allegheny for which land valued at $100,000 was recently donated, and which already has funds in hand for the erection and maintenance of the institution.

Personal.—Dr. John J. Light, who spent the summer in post-graduate study at Johns Hopkins University, has returned to Schaefferstown.——Dr. Robert Lee Finn, Greenfield, who, rather than pay a fine, served a month in the Erie County Jail for illegal practice, and has returned to Greenfield and defiantly commenced practice, and now, as a result, he is to be tried on a similar charge at the next term of the court of quarter sessions.——Dr. Lloyd Sallade, Williamsport, has been appointed to the resident staff of the Scranton Hospital.——Dr. Horace B. Heysham has opened an office at Norristown.

Philadelphia.

President of German Hospital.—Mr. Herman Hessenbruch has been unanimously elected president of the German Hospital, vice John D. Lankenau, deceased.

A Convenient Location.—The site for the municipal emergency hospital to be erected is in the poor burying ground, in the new Camden Cemetery, where a similar hospital was erected during the last smallpox epidemic. Four buildings will be put up at once. It has not yet been decided whether or not to remove the present smallpox patients to the hospital, but any new cases that develop will at once be taken there.

Vaccination Urged.—At the last meeting of the Philadelphia Medical Society the following resolutions were adopted: "Whereas, smallpox is prevalent in the city of Philadelphia to an extent that warrants every precaution being taken to prevent an epidemic with the advent of cold weather; and, Whereas, we possess in vaccination an absolute safeguard against the disease; Therefore, be it resolved that the Philadelphia County Medical Society, representing the physicians of the City and County of Philadelphia, strongly indorse vaccination and urges upon every one not recently vaccinated to avail himself of the great protective power of this procedure."

TENNESSEE.

Cornerstone Laid.—The cornerstone of the new building for the Medical Department of U. S. Grant University, Chattanooga, was laid with appropriate ceremonies, October 29.

The Health of Memphis.—The twenty-second annual report of the Memphis Board of Health shows remarkable progress in sanitation. Within the last decade the death-rate has been yearly reduced. But in the report just issued the death-rate is 5 per cent. lower than during the previous year. There were but 35 cases of diphtheria with 5 deaths and 93 cases of scarlatina with 5 deaths.

Personal.—Dr. Michael Campbell, superintendent of the Tennessee Eastern Hospital for the Insane, has been unanimously re-elected for a term of eight years.——Dr. Clio B. Collier, of the staff of the State Hospital, Knoxville, has resigned and will locate in Washington.——Dr. Payne A. Tinsley, Dandridge, has succeeded the late Dr. James A. Harris as physician of Jefferson County.——Dr. J. B. Layman has opened an office in Knoxville.

State Board of Health.—The State Board of Health, which met recently at Nashville, heard Secretary Albright's report, which showed there had been in the state between April 1 and September 12, 2,059 cases of smallpox and 94 deaths. Of these cases 861 were white. Shelby and Davidson counties, the report says, are, for the first time in years, free from smallpox. Scarlet fever of a very mild type exists in a number of counties. A resolution was adopted pertaining to tuberculosis, anthrax and glanders, which are said to exist in several sections of the state among the lower animals. The resolution asserts that these diseases may be communicated to the human race, and gives notice that all persons are prohibited from selling milk or other dairy products intended for human food from cattle infected with these diseases.

GENERAL.

Ankylostoma Duodenale in Hawaii.—Executive Officer Pratt has issued a letter to each Government physician indicating the prevalence of severe cases of anemia (Egyptian chlorosis) due to the parasite ankylostoma duodenale. He suggests large doses of thymol, and that reports of its effect be sent to him in each case.

Precautions Against Plague Introduction.—The quarantine authorities of the United States and Canada are taking the necessary precautions against the introduction of the bubonic plague from the infected ports of Europe. The National and State officials will co-operate and exert every effort to prevent its introduction.

Manila Medical Society.—The new Society is meeting with opposition from the Collegio de Medicos y Pharmceuticos. The members of that school claim that no new medical society is needed. There is a so-called society of physicians and pharmaceists already in existence, but it is claimed that there have been but two or three meetings of the body within two years, and then only for the purpose of discussing politics and not questions of importance to the profession with which the members of the society are supposed to be identified. It will be readily seen that a new medical organization is sadly needed. It is the intention of the new Society to hold semi-monthly meetings for the purpose of discussing questions pertaining to the practice of medicine and surgery. As a well-known army surgeon remarked: "When a Filipino graduates his studies are over. He does not keep abreast of the times. The physicians of Manila, outside of the Americans and one or two whom I have in mind, are many generations behind the times. They know practically nothing whatever regarding the modern practice of surgery and medicine. They have taken no steps to investigate the diseases of the tropics. Especially has this been the case in regard to dysentery. Very little is known regarding amebic dysentery, and what little is known has been discovered by American practitioners. If the local doctors had made a study of this disease ten years ago, there is no doubt that we would know how to cope with it successfully by this time." The new society will publish a monthly medical journal, in which will appear the proceedings of the Society at the various meetings as well as original articles by the members of the Society.

CANADA.

Smallpox has appeared at Winnipeg; over seventy cases have been reported at Ottawa.

Health Report of Toronto.—The following are the figures for contagious diseases for October: Typhoid, 16; scarlet fever, 69; diphtheria, 71.

Dr. R. O. Raymond, one of the oldest practitioners of Montreal, died last week. He was 74 years of age, and had been practicing in that city for fifty years. For some years he was the official physician of the Montreal gaol.

British Columbia Fears Smallpox.—Advice from Rossland dated October 29 states that considerable alarm is felt at many points near the international boundary line owing to the existence of an epidemic just across the border. Dr. Sinclair, the Dominion health officer for this district, has been advised of the outbreak and is having quarantine officers appointed to assist him in his work while the epidemic continues.

Incurable Children.—The annual meeting of the Toronto Home for Incurable Children was held last week. The annual report showed that the Home was progressing favorably. During the past year 6 children were admitted; and the number at present being cared for is 11. The treasurer's report showed

that donations to the extent of $1500 had been received during the year. The board of medical attendants was re-elected.

The Chinese vs. Health.—An action has recently been tried at Vancouver before the Chief Justice of British Columbia and a jury, brought by a chinaman against a health inspector for breaking into his house in the performance of his duty. The judge and jury upheld the action of the health inspector on the ground that the laws of the Board of Health with regard to "lodging houses" showed that the inspector was within his rights. The action was for $1000 damages.

Osteopaths and Christian Scientists.—Two trials are at the present time proceeding at Toronto, one against an osteopath and the other against a "christian scientist," the latter charged with manslaughter, his child having died without medical attendance, from diphtheria. In the case of the osteopath, an inquiry is being made into the death of a young woman in his office, who died suddenly, and who was undergoing treatment for a very large goiter.

Quebec Municipal Councils and Vaccination.—In consequence of outbreaks of smallpox multiplying in the Province of Quebec, the Provincial Board of Health has ordered that municipal councils shall see that industrial establishments shall require all persons in their employ to be vaccinated who are not able to show they were successfully vaccinated within the past seven years. The executive officer of all the municipal sanitary authorities has also been ordered to see that directors of all educational institutions shall satisfy the board of health that their charges have been successfully vaccinated.

Ontario September Deaths.—A short time ago the Ontario Board of Health sent out warnings to the clerks of the different municipalities cautioning them to make monthly health returns. The effect of this has been salutary, as for September, 99 per cent. of the population has been accounted for, which means that 770 out of 777 municipalities have been summed up. The total deaths for the month were 1959. This is an increase of 31 over August, but a decrease of 531 in comparison with September of 1900. The deaths from contagious diseases were as follows: Scarlet fever, 13; diphtheria, 45; measles, 2; whooping cough, 17; typhoid, 41; consumption, 165.

FOREIGN.

Surgeon-General W. Taylor, M.D., C.B., has been appointed Director-General of the British Army Medical Service.

Obituary.—The death is reported from St. Petersburg of Marcel Nencki, well known for his researches and discoveries in biologic chemistry and numerous contributions to medical literature.

New Schools of Tropical Science.—Germany has recently started a school for the study of tropical medicine, and the French government has decided on the establishment of two, in Paris and Marseilles.

Legacy for the University of Leipsic from Physician's Estate.—The widow of the late professor of the history of medicine at Vienna, Dr. Puschmann, has bequeathed her entire property, about a quarter of a million dollars, to the University of Leipsic.

Koenigsberg Medical Course Closed to Women.—The Königsberg medical course is nominally open to women, but three professors, Stieda, Lossen and Pape have closed their lectures to women students, which debars them from completing the course.

Cancer Research Endowment.—A fund of 500,000 marks has been presented to the city of Frankfurt, Germany, for an endowment for research in regard to the etiology of cancer. Ehrlich and Weidenreich have been entrusted with the task, the latter summoned from Strassburg for the purpose.

Bubonic Plague in Great Britain.—The three cases of plague in Liverpool are reported convalescent in hospital. It has appeared again in Glasgow, where there has been one death; there are now three suspects in the latter city found in a station hotel belonging to the Caledonian Railroad.

German Association for the History of Medicine.—Sixty persons interested in promoting the study of the history of medicine and the natural sciences, have organized an association for the purpose. The annual fee is ten marks. The treasurer is Dr. Emil Wohlwil, Hamburg. Dr. Peypers, of Amsterdam, editor of *Janus*, is one of the officers. The society will commence the publication of a periodical in 1902. Societies, institutes, libraries, etc., as well as individuals, are cordially invited to membership.

Special Article.

Fatal Results from Diphtheria Antitoxin in St. Louis.*

In reply to a request for information in regard to the deaths from antitoxin in St. Louis, Dr. Mac C. Starkloff, Health Commissioner of St. Louis, writes to THE JOURNAL under date of November 6: " . . . On the afternoon of October 26, I received a communication from a physician saying that he had under his observation two cases of tetanus which were undoubtedly caused by the diphtheria antitoxin furnished by the Health Department. I immediately ordered that the distribution of antitoxin be at once discontinued, and addressed a letter to Dr. Amand Ravold, our consulting bacteriologist, by whom our antitoxin is made, asking for information in regard to the production of antitoxin. I enclose a copy of his reply.

"Following the reports of death from tetanus claimed to have been produced by the antitoxin, I had a conference with Dr. R. M. Funkhouser, coroner, and an investigation was begun. Also a commission of expert pathologists, consisting of Drs. B. Meade Bolten, E. C. Walden and Carl Fisch, was appointed to make autopsies and examine the serum, a few bottles of which were found in the possession of several physicians.

"Up to the present date, as far as I have ascertained, there have been twenty cases of tetanus reported, following the use of our serum, with ten deaths. . . . The lot of diphtheria antitoxin labeled August 24 ran out on October 23, and the last dose of it was injected on October 24."

Report of the Bacteriologist.

The following is from the report of Dr. Amand Ravold, referred to above:

The horse from which the antitoxic serum labeled Aug. 24, 1901, was taken, was quartered at the Poor House stables. He was a bay horse, 16 hands high, weighed over 1600 lbs., and named Jim. Originally, he was an ambulance horse, had been injured in the shoulder, and was turned over to me by Dr. Jordan, chief dispensary physician, in 1898. He has been under treatment for the production of diphtheria antitoxin for nearly three years, has been bled a number of times and has furnished over 30,000 c.c. (30 quarts) of diphtheric antitoxin. In fact, the greater part of the antitoxin distributed by the Health Department during the years 1900 and 1901 came from this horse.

On August 10 he was inoculated with 800 c.c. of diphtheria antitoxin of a strength of 0.02. August 24, I bled him, taking 10,000 cubic centimeters (10 quarts) of blood. (The blood was kept in an ice chest 300 yards from the stable.) From this blood we obtained 2400 c.c. of serum, which was brought in from the Poor House, August 28 and 30. I personally added 0.4 per cent. tricresol to the serum, allowed it to stand for twenty-four hours, drew off 10 c.c. and tested it on six guinea-pigs to ascertain its antitoxic value. It was found to contain between 150 and 200 units to the cubic centimeter and was labeled 1500 units to 10 c.c. None of these guinea-pigs died either of diphtheria or tetanus, although the 200 unit pigs were sick for several days. It was bottled about September 10, and the distribution began. From that date until October 26 no other serum was given out to physicians.

From October 23 to 26 we ran out of serum. On October 18 Mr. Taylor called my attention to the fact that our serum was running low and that an unusual demand was being made for it. I gave instruction that not more than one bottle be given to any applicant until a new lot of serum could be obtained.

On September 22 I again injected Jim with 300 c.c. of strong diphtheria toxin, and on September 30 bled him, taking 8000 units of blood. On October 2 I was notified by telephone that Jim was sick, and Dr. Ellis, veterinarian of the Health Department, was sent out to see him. He pronounced the horse sick with tetanus and ordered him killed. The serum from the horse was sent to the City Chemist's laboratory October 8 or 9, while I was in Chicago; tricresol was put in it by my assistant, Mr. Schmidt. On my return, October 11, Mr. Taylor brought two flasks containing antitoxin, and said that it came from the Poor House while I was away. It was the serum from the dead horse. I emptied one flask and Mr. Taylor the

* This report was received after the editorial on this subject was on the press. The latest newspaper reports at this writing, Nov. 7, state that 13 deaths have occurred from the use of the antitoxin.

other into the laboratory sink. On October 26, we received information from Dr. Jordan that a case of tetanus was said to have been caused by the city antitoxin.

A search was made for some of the August 24 serum. Two bottles were found in the City Dispensary on Sunday, October 27, and turned over to Mr. C. A. Snodgras to search for the bacillus of tetanus. He will report to you when his investigation is completed.

A bottle of serum is in the possession of Dr. Johnson, of the dispensary staff, and one in your possession. I earnestly advise that one of the bottles of serum be given to Dr. E. C. Walden and the other to Dr. Meade Bolten, of this city to ascertain whether or not the serum contains the bacillus of tetanus or the toxins of tetanus. Both are bacteriologists and thoroughly reliable men.

Preparation of Antitoxin.—Our antitoxin is prepared as follows: For obtaining the diphtheria toxins, we inoculated a specially prepared broth with bacillus diphtheriæ No. 8 of Park, and grew it in an incubator at 37 C. for from eight to ten days. At the end of that time it is taken from the incubator; 0.4 per cent. of tricresol is added to it, and after standing for twenty-four hours is filtered through a porcelain filter. Small quantities are injected into guinea-pigs, in order to ascertain its toxic potency. If the toxin proves highly virulent, it is injected into horses in gradually increasing doses.

Strong, healthy horses are selected, free from glanders and tuberculosis; about once every ten days increasing quantities of toxin are injected subcutaneously into them; the site of the injection being the side of the neck or the loose tissue behind the shoulder blade. Here the hair is clipped short and the hide first washed with soap and water and then soaked with a powerful disinfectant, consisting of a 5 per cent carbolic acid solution containing one to 1000 corrosive sublimate and a 0.5 per cent of hydrochloric acid. The injection is made with a sterile syringe. When the horse can give large quantities of diphtheria toxin without producing decided elevation of temperature or other disturbances of health, he is ready to bleed. Our method is to shave a wide area along the side of the neck over the jugular vein; this area is thoroughly disinfected with the acid (carbolic acid solution mentioned above) and with a sterile knife an incision is made through the skin over the vein. A sterile sharp pointed canula with a rubber tube attached to it, is thrust through the incision into the vein beneath, and the blood flows through the tubes into specially constructed flasks, which have been steam serilized. The wound in the skin is stitched up and flexible collodion painted over it.

The blood put in an ice chest is allowed to clot, and when the serum separates, which takes several days, it is poured off and to it is added 0.4 per cent. of trieresol. After standing several days to "ripen" it is filtered through a sterile paper filter, and the filtered serum is mixed in definite quantities with ten times a minimal lethal dose of diphtheria toxin. The mixture is injected into guinea-pigs weighing 300 grams, to ascertain the quantity of serum which will keep the guinea-pig from dying; ten times that amount of serum is an antitoxic unit. The number of antitoxic units in one cubic centimeter is then calculated and the serum labeled. Upon the label is written the day of bleeding and the number of units to 10 c.c. of antitoxin.

Before distribution, the serum is again filtered and put into small sterile bottles, each containing 10 c.c. of serum and corked with a sterile cork stopper. A label upon it bears the date of the bleeding and the number of antitoxic units in the bottle.

I go to this length in explaining our methods to show the rigid aseptic precautions with which the whole procedure is surrounded. In regard to myself, I have personally selected every horse from which we have made antitoxin. I have given every injection which the horses have received since the beginning of the work. I have bled the horses throughout the whole period of the investigation, and, further, I have with very few exceptions tested every lot of serum which has left the laboratory.

Feeling keenly the very great responsibility which has rested upon me, I have been painstaking in my endeavors to produce a high grade of antitoxin serum, and have trusted no part of the procedure to anybody, except the preparation of the diphtheria broth, which my assistant, Mr. Martin Schmidt, skilfully makes for me, and the filling of the small bottles with serum, which is the work of our careful janitor, Henry Taylor.

The horse Jim seemed to be in perfect physical condition when I bled him on August 24 and September 30. The bleeding on September 30 was followed by a decided reaction; on the following day he refused food and began breathing with difficulty. Dr. Ellis pronounced him sick beyond recovery, with tetanus, and he was killed.

I feel confident that the tetanus bacillus will not be found in the serum, both from the painstaking care with which it is prepared and from the fact that it contains 0.4 per cent. of tricresol. It is, however, within the limit of probabilities that the horse may have had the tetanus bacillus latent, or slowly acting within him some time before August 24, and that the disease did not develop sufficiently to manifest itself until his vitality was lowered by the bleeding of September 30. If this were so, the tetanus toxin might have been in his blood on August 24, the date of the bleeding. If the tetanus toxins were in the horse's blood prior to August 24, it was beyond the range of human knowledge to detect it by an inspection of the animal.

It is a well-known fact that horses undergoing treatment for the production of diphtheria antitoxin are highly susceptible to infection with the bacillus of tetanus. We have lost six antitoxin horses with tetanus since 1895.

Very respectfully, [Signed] AMAND RAVOLD, M.D.
City Bacteriologist.

Correspondence.

A Place to Clean the Teeth Needed in Railroad Car.

PITTSBURGH, PA., Oct. 28, 1901.

To the Editor:—Apropos of the much discussed question of the spitting nuisance, the attention of the managers of the sleeping car companies should be called to the practice of cleaning the teeth and spitting in the bowls of the washroom, in violation of every principle of decency, good taste and sound hygiene. A sign in conspicuous form and in unmistakable terms, should be placed in the lavatories of sleeping cars, positively forbidding spitting, cleaning the teeth or blowing the nose in the washbowls. Nothing more unpleasant can be imagined than to witness the actions of the unclean animal, as he performs his morning ablutions, brushing his teeth and spluttering and snorting over the bowl. One's gorge rises at the sight, when a person reflects that he must wash in the same place or forego the comfort of having the facilities of keeping clean. The thought of washing in a bowl into which the person who has preceded has deposited various secretions and vile impurities from his teeth, mouth, nose, throat and bronchi, would be quite enough to deter many persons from using the lavatories at all. It is not only the filthiness of it all, but the actual danger from this practice that calls for immediate correction. It is no imaginary evil when subjects of phthisis, nasal catarrh, ozena, bronchorrhea and syphilitic disease deposit the secretions from the mouth and nose into these receptacles.

Not long since, the writer witnessed one of the occupants of a sleeper taking his morning wash. He not only cleaned his teeth in a very painstaking manner over the bowl and blew his nose repeatedly into the basin, but to complete this part of his toilet, he took from his satchel a piece of whalebone in the form of a horseshoe, and placing this instrument across the posterior surface of the tongue, thoroughly scraped that member a number of times, the decomposed epithelium and debris from the dorsum of the tongue being deposited in the bowl, where he had already blown his nose, cleaned his teeth and cleared the secretions from his throat.

The cleaning of the teeth is a very necessary and important part of the morning toilet, and certainly the art that enters into the modern sleeping car can easily solve the simple problem involved in this necessity. The sleeping car is a veritable wonder of ingenuity, and provision can be made no doubt for the cleaning of the teeth, and afterwards no one should be permitted to use the bowls for such a purpose.

It is one of the unexplainable things, that this practice should ever have been tolerated; for the first man who blew his nose or expectorated into the receptacle where other people had to wash their faces, should have been ejected from the car.

Yours respectfully, HENRY D. FULTON, M.D.

Report of Autopsy on Assassin Disclaimed.

NEW YORK CITY, Nov. 2, 1901.

To the Editor:—It has come to my knowledge that an account purporting to be a report of the autopsy performed upon the assassin Czolgosz has in a manner been placed upon the market and offered to various medical journals. To prevent other periodicals from being misled I beg to inform you that no authentic report has as yet been issued, and that none is authentic or reliable unless signed by Dr. Carlos F. MacDonald or myself, or both jointly. Since the alleged report is based upon a series of disjointed data dictated by me to a stenographer in whom I reposed confidence and who had no permission to give out any portion of it, it is necessarily valueless and unintelligible and possibly misleading. As may be readily understood, these notes were made as aids to the memory and to supplement other notes in my sole possession and hence are useless unless corrected and revised by myself.

Should it happen that any garbled rendition be published, Dr. MacDonald and myself will feel it necessary to repudiate and disclaim it. Very sincerely yours,

EDWARD A. SPITZKA, M.D.

Ether to Make Criminals Talk.

WEEHAWKEN, N. J., Oct. 30, 1901.

To the Editor:—Allow me to propose a new use of ether. In the case of condemned criminals, who refuse to talk and thus implicate their confederates, put them under the influence of ether in much the same way that patients are prepared for surgical operations. Ether, given in a certain way and quantity, will cause otherwise silent people to talk. While thus intoxicated with ether it is not unlikely that the criminal will give some clew as to his confederates. The ether should be carried only to the stage of stimulation, not of profound anesthesia.

At a time during the stage of stimulation the will power is in abeyance and the door of the mind is unlocked. When this period is reached the tongue is free to tell the most secret things. This stage may be prolonged for ten or twenty minutes, or for a longer time, by the judicious use of other stimulants. Very truly yours, ALBERT W. WARDEN, M.D.

Married.

C. E. DRAKE, M.D., to Miss Garnet Dumm, both of Zanesville, Ohio, October 24.

GEORGE THEODORE MUNDORFF, M.D., to Minnie Grau, both of New York City, October 30.

HARRY E. PETERMAN, M.D., to Miss Helen Louise Meyer, both of Baltimore, October 23.

E. M. WHITTEN, M.D., to Miss Georgia Weiner, both of Nebraska City, Neb., October 25.

C. T. ESTABROOK, M.D., to Miss Edith L. Tourtellotte, both of Worcester, Mass., October 24.

THOMAS C. BUSSEY, M.D., Texas, Baltimore County, Md., to Mrs. Augusta E. Gorman, of Baltimore, October 23.

ARTHUR CHAPMAN DOTEN, M.D., Worcester, Mass., to Miss Ethel Sturdivant Norton, of Portland, Maine, October 23.

Deaths and Obituaries.

William M. Hudson, M.D., Jefferson, 1855, died at his home in Hartford, Conn., October 30, aged 68. For the last twenty years he had been stockholder auditor of the New York, New Haven and Hartford Railroad Company and had held a number of important public positions.

E. L. Diefenderfer, M.D., University of Pennsylvania, Philadelphia, 1862, a prominent practitioner of Milwaukee, died at his home in that city, October 27, from malignant disease of the intestines, after an illness of a year and a half, aged 62.

John D. Dunning, M.D., University of Buffalo Medical Department, Buffalo, N. Y., 1852, died October 27, at his home in Webster, N. Y., aged 75. He was one of the charter members of the New York State Medical Association.

J. Mortimer Crawe, Sr., M.D., Jefferson Medical College, Philadelphia, 1859, the oldest practicing physician of Watertown, N. Y., died there October 29, aged 71. He was a member of the New York State Medical Association.

Dennis W. Porter, M.D., Rush Medical College, Chicago, 1878, who had practiced in Stonington and Blue Mound, but moved recently to Decatur, Ill., on account of ill-health, died at his home in that city, October 23.

Peter Hewetson, M.D., one of the oldest physicians of Ohio, who had practiced in Amanda, Ohio, for half a century, died at his home in that place, October 26, from heart trouble after a brief illness, aged 79.

R. D. Blackmore, M.D., University of Iowa, Iowa City, 1901, a surgeon in the employ of the Rock Island extension in Texas, died at the University Hospital, October 26, from typhoid fever, aged 27.

J. Arthur Fullenwider, M.D., Barnes Medical College, St. Louis, 1900, located in Champaign, Ill., died at St. Luke's Hospital, Chicago, after an operation for appendicitis, October 23, aged 25.

Robert T. Bush, M.D., New York University, 1865, died at his home in Gallatin, Tenn., October 27, aged 65.

Miscellany.

Reduction of Temperature by Continuous Irrigation of the Rectum.—A recent Geneva inaugural thesis describes the results of experiments on dogs to determine whether the temperature of the body can be influenced by double current irrigation of the rectum. Two urethral sounds were used for the purpose, with water at 75 F. The temperature in the axilla was reduced constantly in healthy dogs from two to nearly four degrees in the course of forty minutes of this irrigation. Further tests showed that the same results were attained whether the water was at the temperature of the body or above it and whether the irrigation was prolonged more or less than forty minutes. The results indicate that the influence on the temperature is of a reflex nature. In fourteen out of sixteen dogs rendered febrile by the subcutaneous injection of pus or putrid matters, the temperature was influenced the same as in the healthy dogs, with two exceptions. It returned to normal in all cases in the course of one or two hours. The double current irrigation proved perfectly harmless in all the numerous tests.

Pawlow's Latest Researches on the Digestive Processes.—Pawlow's researches on dogs provided with a gastric fistula made in such a way as to simulate natural conditions, have elucidated so many obscure points in our knowledge of the processes of digestion, that he was awarded the Nobel prize of $50,000 as recently announced in THE JOURNAL. His latest studies have established that the second or chyme period of digestion is induced by a reflex of gastric origin, and that the stomach possesses an auto-regulating mechanism. When a sufficient amount of hydrochloric acid has been secreted, it exerts an inhibiting action on the gastric secretion. His experiments for the study of the bile were on dogs with intact biliary passages. The portion of the intestine containing the orifice of the common bile duct was fastened to the abdominal wall, opening outward. He found that the flow of bile is intermittent, and that only fats, the products of the digestion of albumin and the extractives of meat have the power to induce the secretion of bile. He has also established that the bile has an inhibiting action on the gastric juice, while it promotes the action of the pancreatic juice and especially of the saponifying ferment in this juice. It, therefore, serves as an intermediary between the gastric and the pancreatic digestion. The pancreatic juice is the stimulant par excellence of the intestinal juices. He has also found that the reflex which regu-

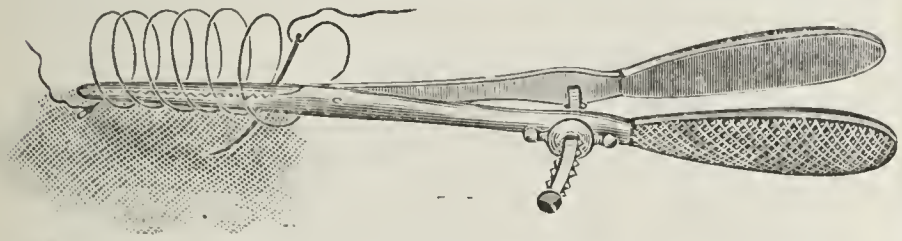
lates the passage of food from the stomach into the duodenum is of a chemical rather than a mechanical order. The reflex follows the entrance of the acid chyme into the duodenum. He was able to cause an alkaline solution in the stomach of a dog to be retained indefinitely by instilling diluted gastric juice or hydrochloric acid into the duodenum. The stomach emptied itself at once, if, instead of the acid, an alkaline solution was instilled. This mechanism is evidently designed to prevent the passage of too large amounts of gastric juice into the intestines, as its acidity would inhibit the action of the pancreatic juice. The ingestion of food has a similar inhibiting action on the evacuating movements of the stomach. They occur even during fasting, but cease after the ingestion of food for an interval long enough to allow it to undergo the necessary modifications. Application of irritants to the surface of the stomach induces an enormous secretion of mucus, free from pepsin, destined to protect the walls of the stomach and aid in the elimination of the irritating substance or render it harmless by a coating of mucus. The ingestion of meat stimulates exclusively the pepsin cells to activity.

New Instruments.

NEW PILE CLAMP.

RUFUS D. MASON, M.D.
OMAHA, NEB.

I wish to briefly describe a new pile clamp that I have had made and used with great satisfaction. This instrument is lighter and neater than those commonly used, and yet is strong enough to withstand all the pressure required. Being made with smooth, tapering jaws, it is adapted not only to pile



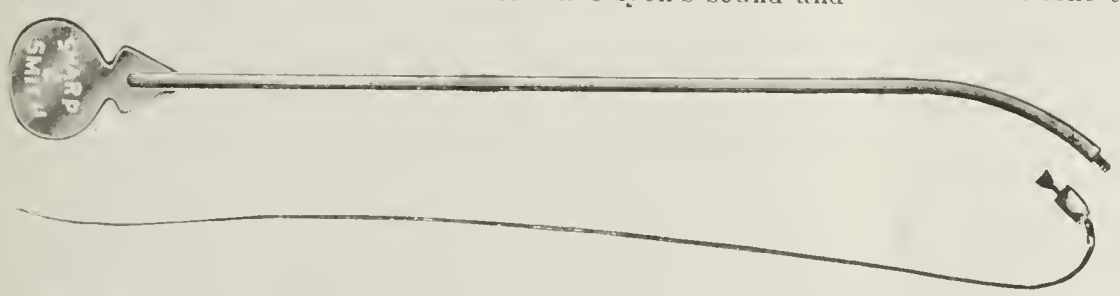
operations, but to any place where a clamp may be needed in abdominal or pelvic cases. The opposing edges of the jaws are notched to secure good holding qualities. The cut shows the method of using it in the continuous suture operation for piles. For cantery operations it is simply perfect.

AN IMPROVED METHOD OF ATTACHING A METALLIC SOUND TO A FILIFORM BOUGIE.

HENRY G. ANTHONY, M.D.
CHICAGO.

In the treatment of tight strictures it is frequently desirable to pass a metallic sound, catheter, or lithotomy staff attached to a flexible filiform guide rather than employ tunneled instruments or Bang's whalebone bougie.

The device now employed for attaching a filiform guide to any urethral instrument is the one used in Guyon's sound and



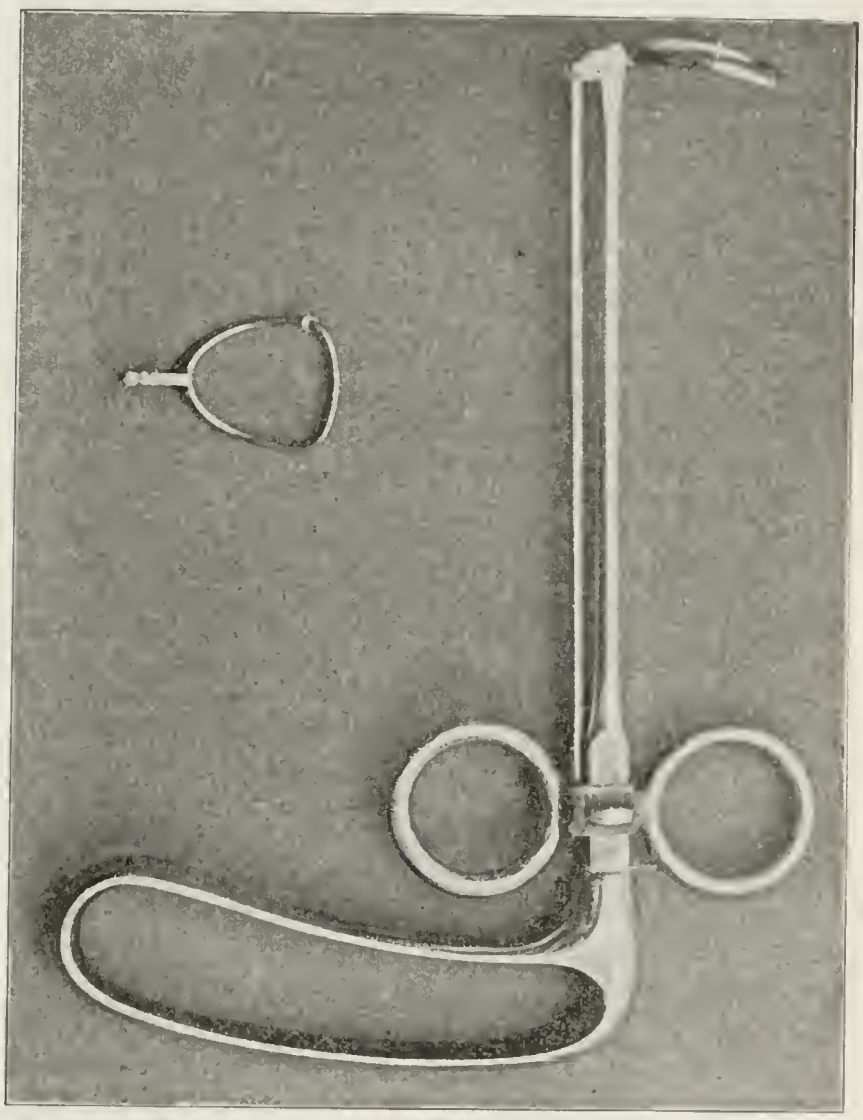
in Maisonneuve's urethratome. A metallic tip threaded onto the end of the filiform is screwed into the end of the sound. This method of attachment is insecure and unsafe. Cases are on record in which filiforms have become detached in the bladder necessitating surgical operation.

To obviate this danger I had the tip of a sound cut off and bored through so that after a filiform has been passed through the tip it may again be screwed onto the end of the sound. Only the best imported filiforms with large heads should be employed and the sounds should be of the Otis or Ultzmann curve.

A NEW ADENOID CURETTE.

W. STANLEY SAMSON, M.D.
LANCASTER, OHIO.

The accompanying illustration shows a new adenoid curette, constructed on different principles from other sharp or dull curettes used in adenectomy. The main shaft of the instrument is 14 centimeters long, attached to a pistol grip. Upon the shaft rests a slide with two rings for the index and second fingers. To the slide is attached a second shaft, by means of which the blade can be moved 45 degrees forward and backward when traction is made upon the rings. The blades, two in number, resemble the Gottstein blade in general conformation. The dull blade has no cutting edge; the horizontal portion is round and the size of a No. 16 piano wire.



The knife blade resembles the blade of the Gottstein curette very closely, excepting the knife, which is only 2 millimeters wide. The fenestra of each blade is 16 millimeters transversely and 20 millimeters longitudinally. The dull blade is to be used on soft growths and especially in children of but a few years; the knife blade is for tough and highly organized adenoid tissue. The cardinal feature of the instrument is that the shaft can be maintained at the same relative position, and the blade brought against the choanæ and then swept over the vault, embracing the largest growths; by greater traction on the rings the blade is brought against the pharyngeal wall and by an upward movement of the hand the cutting edge is carried as low as desired. The procedure may be repeated as often as necessary without removing the instrument from the nasopharynx. The instrument is aseptic, and the blades are interchangeable.

Book Notices.

Transactions of the Medical Association of Georgia. Fifty-second Annual Session. 1901. Atlanta, Ga.: Published by the Association.

The Secretary's report shows that the membership of this Association is 460 in good standing, with 150 on the list who are not in good standing, these being back in their annual dues. This represents about one in six of the regular members of the profession in Georgia who belong to the State Association. The report of the Committee on Medical Legislation is an interesting document. It illustrates the oft-repeated assertion that the profession wields a great political influence when it can be aroused to act. The osteopaths made a big fight for a bill in the Georgia Legislature and the committee representing the State Association sent out earnest and repeated appeals by mail and otherwise, urging the members of the profession to use their personal influence with the members of the Legislature. The result was noticeable and the osteopath bill was decisively beaten. The committee says: "It was pleasing in the highest degree to observe the power of the three thousand doctors of this State when fully aroused and united for a common purpose. This experience illustrates in a striking manner the potency of this influence when properly directed, and it is devoutly hoped that this object-lesson may not be underestimated or forgotten." We, too, hope that this object-lesson will not be forgotten, but we are afraid it will be. Committees in like work in other states during the last two or three years have had a similar experience to that of our friends in Georgia, but it can not be reiterated too often that when the medical profession unitedly uses its influence for any political purpose, it succeeds. The volume contains 32 papers read at the last meeting, together with the Constitution and By-Laws of the Association, the Code of Ethics of the American Medical Association, and a list of the members of the Medical Association of Georgia.

Surgical Technic. A Text-Book on Operative Surgery. By Fr. von Esmarch, M.D., Professor of Surgery at the University of Kiel, and E. Kowalzig, M.D., Late First Assistant at the Surgical Clinic of the University of Kiel. Translated by Professor Ludwig H. Grau, Ph.D., Formerly of Leland Stanford University, and William N. Sullivan, M.D., Formerly Surgeon of U. S. S. *Corwin*. Edited by Nicholas Senn, M.D., Professor of Surgery at Rush Medical College. With 1497 Illustrations and 15 Colored Plates. Cloth. Pp. 866. Price, $7.00. New York: The Macmillan Co. 1901.

As its title indicates, this book is on technic only. As such, it has become recognized as the best in any language, and to the publishers, translators and editor, American and English surgeons owe a debt of gratitude. The translators have done their work well. Occasionally the peculiarity of the German idiom shows itself, but not often enough to mar the English, even for the most fastidious. No better man could have been selected to edit the work than Dr. Senn, and his additions in brackets add to its value. If we were asked in what this surpassed other works on surgical technic, we should reply: in recognizing the value of the smallest detail, in its wealth of practical illustrations, and in the conciseness and precision of its language. *Kurtz und buendig* was the motto adopted by the author in writing the original work in the first instance, which, by the way, was a prize essay. The book will prove to be the most valuable addition to English surgical literature of the year.

A Text-Book of the Practice of Medicine. By Dr. Herman Eichhorst, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the University of Zurich. Translated and edited by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic. Two octavo volumes of over 600 pages each; over 150 illustrations. Price, per set, Cloth, $6.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Dr. Eshner has done good service to English-speaking readers in his translation of this standard text-book of that distinguished German author, Eichhorst. He has made additions and annotations where it seemed advisable. The two-volume form in which the book appears does not lessen, but rather adds to its value, as the two single volumes are more convenient for use than one large one would be. The translation appears to be excellent, though once in a while we see a slip. We do not know whether to give credit to the translator or not for a confusion of the animal and vegetable kingdom on page 395; the statement that "hemoglobinuria has been noticed after ingestion of fungi, particularly mussels," strikes us as odd. This, however, is a minor matter and does not affect the general excellence of the work. The editor has introduced a number of illustrations, replacing or supplementing those in the original text, which add to its value.

International Directory of Laryngologists and Otologists. By Richard Lake, F.R.S.C., England. Published under the auspices of The Journal of Laryngology, Rhinology and Otology, Rebman, London. 1901.

This little book contains the names and addresses of practitioners engaged in the study and practice of Laryngology and Otology and is intended to cover Europe, Africa, Asia, Australasia and North and South America. This is the second and an enlarged edition. It contains many names, but unfortunately has not been edited with sufficient care to enable one to distinguish between those who have a good standing in the profession as Laryngologists and Otologists and many others who pose in this light without sufficient qualification. However, it serves a most useful purpose in giving us the correct names and addresses of those whom we know by their writings. It is manifestly impossible to make such a directory perfect. We may, therefore, commend the author for what he has accomplished, while hoping for something better in another edition. If the author had indicated by reference, letters or numbers, all the society affiliations of each physician named it would have given the reader a fairly good idea of their professional standing and it would not have materially increased the size of the book.

Surgical Experiences in South Africa, 1899-1900. Being Mainly a Clinical Study of the Nature and Effects of Injuries Produced by Bullets of Small Caliber. By George Henry Makins, F.R.C.S., Surgeon to St. Thomas' Hospital, London. Cloth. Pp. 493. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This work is a valuable contribution to military medicine. The author has utilized his experience most thoroughly and it would be hardly possible for any surgeon who has to deal with gunshot traumatisms, and especially military surgeons, not to derive benefit from its perusal. It seems to us one of the most valuable medical contributions that has appeared upon recent military operations. The book is elegantly illustrated, and gracefully written. The author gives illustrations of the various missiles, showing some taken from captured cartilages that have evidently been tampered with to make the wound more deadly. He does not, however, credit all the accusations that have been made as to the use of explosive bullets. The treatise is one that will be likely to be referred to by almost all military surgeons, at least while gunshot wounds are caused in war or until methods have changed in a way that we can not at present conceive.

A Handbook of Pathological Anatomy and Histology, with an introductory Section on Postmortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M.D., LL.D., Professor of Pathology and Director of the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York. Sixth Edition with 13 Full-page Plates and 453 Illustrations in the Text in Black and Colors. Cloth. Pp. 819. Price, $5.00. New York: Wm. Wood & Co. 1901.

This excellent work has long been a standard and each succeeding edition makes its popularity among medical students, whether young or old, more secure. The present issue has been produced under the supervision of the junior author, Dr. Delafield having retired from an active share in its preparation.

To keep the work well abreast with advancing knowledge, some of the chapters have been entirely rewritten and every part, where necessary, has been revised so as to bring the subject matter well up to date. Many new illustrations have been added and evidently great pains have been taken on the part of both author and publisher to make the work as perfect as possible in every detail.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Fifth Edition, Thoroughly Revised. Cloth. Pp. 1297. Price, $5.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Dr. Anders is to be congratulated on the fact that five editions of his text-book have been called for in less than four years. The reason for this popularity is that the book is written with a full grasp of the necessities of the general practitioner. The latter has found it to be just what he wants, not only in that it covers the various subjects fully in detail, but because the general plan is such that reference to any phase of the subject is easily and readily made. In this new edition the whole work has been brought fully into harmony with the present known facts and recent developments in medicine. Several chapters have been rewritten and some new subjects introduced.

Atlas and Epitome of Special Pathologic Histology. By Docent Dr. Herman Dürck, of the Pathologic Institute of Munich. Edited by Ludvig Hektoen, M.D., Professor of Pathology in Rush Medical College, Chicago. Vol. II. Liver, Urinary Organs, Sexual Organs, Nervous System, Skin, Muscles, Bones. With 123 Colored Illustrations on 60 Lithographic Plates. Cloth. Pp. 192. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

This is another of the series known as "Saunders' Medical Hand-Atlases," books which have been well received by the medical profession of this country. This one on special pathologic histology is no exception to the other books of the series, which are practical and well illustrated expositions of the subjects treated. That the editor of the work is Dr. Ludvig Hektoen is sufficient to prove that from a scientific point of view the work is thoroughly reliable, up to date and in accordance with present known facts. The illustrations are very numerous, and all excellent.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. With 80 Illustrations and 3 Plates. Fourth Edition, thoroughly revised. Cloth. Pp. 642. Price, $2.75. New York and Philadelphia: Lea Brothers & Co. 1901.

This fourth edition of Jackson's diseases of the skin appearing in eight years of the first, shows its acceptability and in its present form it will be no less a success. The plan of alphabetical arrangement is a convenience to the reader and it forms one of the most handy text and reference books that we have seen. A number of new articles have been added on subjects not included in former editions, amongst which are acne keratosa, acne urticata, carate, craw-craw, endothelioma, etc. The illustrations are much the same as in the former works and call for no special mention.

Obstetric and Gynecologic Nursing. By Edward P. Davis, A. M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Illustrated. Pp. 402. Price, $1.75. Philadelphia and London: W. B. Saunders & Co. 1901.

In the admirably clear way observed in his previous literary work, Dr. Davis takes up systematically the details of obstetric and gynecologic nursing, never invading the domain of the physician, but giving minute directions for the guidance of the nurse in normal and abnormal pregnancies, obstetric emergencies and the principal gynecologic operations. In an appendix a dietary with full directions for the preparation of foods is given, and also the methods of preparing surgical supplies and the methods and precautions of the Philadelphia Hospital. The book is satisfactorily illustrated and will be of value to all obstetric and gynecologic nurses, both in hospital and private practice.

Anesthetics and Their Administration. A Text-Book for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M.A., M.D., Cantab., Anesthetist to His Majesty the King. With Illustrations. Second Edition. Cloth. Pp. 528. Price, $4.00. London and New York: Macmillan & Co.

While this is stated to be a second edition, it is to all intents and purposes a new book. As it treats on general anesthesia only, the Schleich infiltration anesthesia, the various local anesthesias and spinal anesthesia are not mentioned. The information on the subject up to date is clearly and succinctly presented. The author considers the abolition of the stage of excitation the most valuable step in the evolution of anesthesia. Like most of the English authors, he advocates closed ether anesthesia, nitrous oxid and ether anesthesia.

Physicians' Clinical Chart and Fee Book. By Walter Key, M.D., Pilger, Neb. Leather. Price, $1.00.

This is a combination clinical chart and fee register, affording the practitioner not only opportunity for close study of the progress of his patients, but also a source of future reference, which is of no slight importance to the progressive physician. It is to be hoped that the copy for this excellent little book in future editions will be more carefully revised, and the proofs more critically read.

Urinary Diagnosis and Treatment. By John W. Wainwright, M.D., Member of the American Medical Association. Cloth. Pp. 111. Price, $1.00. Chicago: G. P. Engelhard & Co. 1900.

Dr. Wainwright's little book discusses, in addition to the material usually found in hand-books of this kind, the clinical significance of urinary findings and their practical application to the treatment of the diseases of which they are symptomatic.

Societies

COMING MEETINGS.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 12-14, 1901.

Tri-State Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Nov. 19-21, 1901.

Western Surgical and Gynecological Association, Chicago, Dec 18-19, 1901.

Oklahoma Territorial Medical Association.—The autumnal session of the ninth year of this Society will be held at Oklahoma City, November 13.

The Fifth District Branch of the New York State Medical Association will hold a meeting at the Palatine Hotel, Newburg, at 2 p. m., November 20, to which the members of the Association and the profession generally are invited.

Union District Medical Association of Indiana and Ohio.—At the annual meeting of this Association held in Connersville, Ind., October 24, the following officers were elected: Dr. Samuel C. Thomas, Rushville, Ind., president, and Dr. Everett R. Beard, Liberty, Ind., secretary and treasurer. The next place of meeting is Liberty, Ind.

Military Tract (Ill.) Medical Society.—The annual meeting of this Society was held in Macomb, October 24 and 25. The following officers were elected: Dr. Robert A. Kerr, Peoria, president; Drs. George E. Luster, Galesburg, and James E. Coleman, Canton, vice-presidents, and Dr. Charles B. Horrell, Galesburg, secretary and treasurer.

Central Illinois District Medical Association.—The twenty-seventh semi-annual meeting of this Association convened at Pana, October 29. The following officers were elected: President, Dr. T. L. Catherwood, Shelbyville; vice-presidents, Drs. E. J. Brown, Decatur, and George W. Fringer, Pana; treasurer, J. H. Miller, Pana; and secretary, C. R. Spicer, Taylorville. The next meeting will be held in Pana.

Medical Society of the Woman's Medical College (Baltimore).—The annual meeting of this Society was held, October 22, and the following were elected officers: Dr. W. Milton Lewis, president; Dr. Louise Erich, vice-president; Mary Cook, recording secretary; Henrietta M. Thomas, corresponding secretary; Jennie Browne, treasurer. The annual address was delivered by Dr. E. F. Cordell on "The Hartford Medical Society, 1797-8."

NEW YORK STATE MEDICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York City, Oct. 21-24.

The President, Dr. John A. Wyeth, in the Chair.

FIRST DAY, MONDAY.

At the meeting of the Council and Fellows on the first day, routine business was transacted, and the following officers elected: Dr. Alvin A. Hubbell, Buffalo, president; Dr. W. H. Biggam, Brooklyn, vice-president; Dr. Guy D. Lombard, New York, secretary; Dr. E. H. Squibb, Brooklyn, treasurer; Dr. Irving S. Haynes, New York, chairman of the Committee on Arrangements; Dr. E. Eliot Harris, New York, chairman of Committee on Legislation; Dr. J. W. S. Gouley, New York, chairman of Committee on Library; Dr. Alexander Lambert, chairman of Committee on Public Health and Medical Charities; Dr. J. Riddle Goffe, chairman of Committee on Publication; Dr. C. E. Quimby, New York, chairman of Committee on Nominations.

SECOND DAY, TUESDAY.

Correction of Deformities Following Osteitis of the Knee.

DR. WISNER R. TOWNSEND, New York, said that the application of force under anesthesia would correct most cases. Excision had been largely superseded by osteotomy, but a cuneiform osteotomy was only indicated in cases of marked deformity.

Appendiceal Fistula.

DR. JOHN B. DEAVER, Philadelphia, read this paper, and pointed out that such fistulæ constituted a preventable sequel to appendicitis operations, and that prevention was to be brought about by always operating on appendicitis at an early stage. Where the discharge consisted almost entirely of mucus it pointed to the appendix having been left behind and being connected with the fistula. Fecal fistulæ of the large bowel were more apt to heal spontaneously than those of the small bowel. For simple non-fecal fistulæ, a search should be made for the foreign body, all drainage should be removed and washing out of the fistula discontinued. Where a section was required, as was often the case in fistula of the small bowel, he preferred to do an end-to-end anastomosis by intestinal suture.

DR. DE LANCEY ROCHESTER, Buffalo, stated it to be his present belief that operation should be done in every case of appendicitis so soon as consent could be obtained.

DR. FREDERICK HOLME WIGGIN, New York, counseled greater thoroughness in operating, making it a point to systematically remove all the diseased tissue. Too often the appendix was left behind. It was well that the author had cautioned against a very common though senseless practice, i. e., persistent irrigation of these fistulæ. Many cases of fistula had been indefinitely prolonged by this thoughtless practice.

DR. E. D. FERGUSON, Troy, cited some cases in support of the position he took, that prompt operation should be the rule.

DR. GIBBON, Scranton, Pa., took a still more advanced position, and declared that the proper time to operate was before there had been any appendicitis.

DR. S. BUSBY ALLEN, New York endeavored to chill the rising enthusiasm of the surgeons present by the statement that about as many persons recover under the medical as under the surgical treatment.

DR. PARKER SYMS, New York, said that even admitting for the sake of argument that 80 per cent. recover under the medical treatment of appendicitis, this was nothing to be proud of, in view of the fact that, at the present day, the mortality attending early operations for appendicitis is almost *nil*. For the existing prejudice against operating in appendicitis medical men rather than the laity were responsible.

DR. J. R. STURTEVANT, Theresa, said that as a country doctor he wished to cast his vote for the early surgical treatment of this disorder.

DR. ALLEN A. JONES, Buffalo, also spoke of the advantages of operating, either immediately or in the interval between attacks.

DR. JOHN EDWARDS, Gloversville, seeing that the surgeons were having things too much their own way, put in a plea for what he called "the calomel treatment" of appendicitis. This consists in the administration of small doses of calomel throughout the attack, together with the avoidance of morphin.

DR. C. B. TEFFT, Utica, said that as the cause of appendicitis was to be found in the appendix, and thorough treatment demands the removal of the cause of a disease, he could not escape from the conviction that the successful treatment of appendicitis must be surgical. Any of the alleged cures under medical treatment had been temporarily relieved; they had not been permanently cured.

DR. ALFRED T. LIVINGSTON, Jamestown, spoke of the great harm done by the use of morphin, and pointed out that, unlike a proper remedy, it baffles instead of assisting Nature.

The Electrophone as an Aid to Deafness.

DR. SAMUEL G. TRACY, New York, exhibited this instrument, which he had devised. It consists essentially in a combination of the microphone and telephone, and is intended as a convenient and useful substitute for the ear trumpet and the conversation tube. It would prove useful in about 80 per cent. of cases of chronic catarrhal deafness, and in a few other forms of deafness.

Symposium on Malignant Growths.

DR. ALBERT E. WOEHNERT, Buffalo, read a paper on "The Clinical Course of Cancers, with Reference to Their Resemblance to Inflammatory and Infectious Processes." He spoke of the part played by environment, and pointed out that metastasis often occurs early. The more rapid the growth the greater the leucocytosis, and the greater the toxemia.

DR. GEORGE BLUMER, Albany, "The Present Status of the Infectious Theory of Malignant Neoplasms," described the so-called cancer parasite, and the many interesting experiments made in this field, together with the claims made by well-known investigators, but held that no one had yet been able to successfully cultivate an organism from malignant growths. The tumors that had been said to result from certain inoculation experiments were not true tumors at all, but only granulomata. There were many facts, he said, suggestive of the infectious origin of malignant neoplasms, but such origin was far from having been proved.

DR. ALEXANDER LAMBERT, New York, in a paper on "Intrathoracic Growths," said that intrathoracic growths are usually malignant. Malignant growths of the pleura are usually secondary, and give rise to a hemorrhagic pleuritic exudate. Carcinoma of the lung is more commonly primary, and is seven times more frequent than sarcoma. The symptoms are dyspnea and pain, often accompanied by currant-juice sputum. Expectoration and fever are less than in pulmonary tuberculosis. Sarcoma is more frequent than carcinoma in the mediastinum. They are often associated with a peculiar paroxysmal cough, which is almost pathognomonic.

DR. JAMES EWING, New York, considered "The Estimation of the Malignancy of Tumors with Reference to the Reported Cures of the Disease," and directed attention to the necessity, in reporting cases of cancer, to sharply distinguish between the different varieties. It was now well known that certain forms of cancer are almost certain to return regardless of the radical nature of the operation. Cancers having their origin in the skin of the breast are decidedly less malignant than other forms of cancer of the breast. It was best to base a prognosis on the age and rapidity of growth of a given tumor. Adenocarcinomata are often radically cured by the surgeon's knife. Malignant tumors springing from the lining cells of the lacteal ducts are apt to be very insidious in their course, and are rather slow of growth. True carcinomata are most malignant when occurring during lactation.

DR. ANDREW R. ROBINSON, New York, in a paper on "The Treatment of Carcinomatous Growths by Caustics," spoke of cutaneous epitheliomata. After speaking of the necessity for destroying all the cancer cells lest the partial removal serve only to increase the rapidity of growth, the author described the action of some of the caustics that had been used for the destruction of cancer, notably chlorid of zinc, caustic potash

and arsenious acid. He preferred the last because of its attacking pathological in preference to normal tissue. This agent was particularly well suited to the treatment of cancers of the face, as it causes less disfigurement than the knife, and is less apt to be followed by a recurrence.

Dr. Joseph S. Gibb, Philadelphia, presented a paper on "Malignant Disease of the Nose and Accessory Cavities." He said that sarcoma of the nares was more common among males and that no period of life was exempt. Carcinoma, unlike sarcoma, spreads quite rapidly into the sinuses, and pain is an early and characteristic symptom. Surgeons were disinclined to operate on carcinoma of the nose.

Dr. James P. Tuttle, New York, discussed the topic of "Cancer of the Large Intestine." He said that next to the rectum the cecum was the most frequent site for malignant disease in the large bowel. The principal methods of treatment were three, viz., 1, excision; 2, enterostomy, and 3, entero-anastomosis. The first method gave the greatest prolongation of life, being about two years, while for enterostomy the period was nine or ten months, and for entero-anastomosis seven or eight months. The last gave the lowest immediate mortality.

Dr. Henry H. Morton, Brooklyn, described in a paper on "Malignant Disease of the Penis," the symptoms and the technique of the two operations commonly done for this condition.

Dr. S. Sherwell, Brooklyn, speaking of the use of caustics, said that he preferred to use the acid nitrate of mercury, applying it after curetting and cocainization. It should be neutralized with bicarbonate of soda after about twenty minutes.

Dr. Stephen Smith, New York, spoke of a very favorable experience he had had with cancers treated by the application of anhydrous sulphate of zinc.

Dr. John A. Bodine, New York, advocated the use of arsenious acid, applied preferably in the form of a paste composed of two parts of this acid and one part each of orthoform and gum acacia.

The Daily Medical Inspection of Schools.

Dr. Frederic W. Loughran, New York, spoke of the advantages of such inspection, and described the method employed by the health department of New York City.

Dr. James Lee, New York, said that this most excellent work should be broadened until it included the investigation of the sanitary condition of school buildings, the state of the special senses, and the fitting of the school work to the health and strength of the individual pupil.

Ethyl Bromid and Ethyl Chlorid Respectively as Surgical Anesthetics.

Dr. S. Ormond Goldan, New York, presented this communication. He said that these agents were not, in his opinion, superior to nitrous oxid, and their use as a preliminary to chloroform was unnecessary and dangerous. They should not be given except with the patient recumbent.

Dr. James P. Tuttle, New York, said that ethyl chlorid had been administered in New York City about two thousand times for anesthesia, without a single death or serious symptoms. It was best given on the old chloroform inhaler. It was especially adapted for use with alcoholic subjects.

Dr. Lucius W. Hotchkiss, New York, reported a case of "Perforation of Gastric Ulcer, with Report of a Case," in which he had operated successfully sixty hours after the occurrence of the perforation.

Dr. Frank W. Dennis, Unionville, in a paper on "The Therapeutic Value of Alcohol as Understood at the Beginning of the Twentieth Century," presented a mass of carefully selected statistics, all tending to show the evil effect of alcohol, and emphasizing the physician's responsibility when prescribing this agent.

Dr. A. Brothers, New York, read only a portion of his paper on "Pelvic Inflammation in the Female; Its Diagnosis and Management by the General Practitioner." He emphasized the importance of making the presence of pus the dividing line between medical and surgical treatment.

Dr. Grover W. Wende, Buffalo, under the caption of "Skin Diseases of Special Interest," presented an interesting series of photographs illustrating prominent cutaneous affections.

(To be continued.)

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting, held Oct. 8, 1901.

Dr. George H. Evans, in the Chair.

Present State of the Bottini Operation, with Special Reference to Personal Experience.

Dr. M. Kretoszyner thought the best time to operate was in the first stage of prostatism where distressing symptoms of frequent urination were setting in, and where cystoscopic examination demonstrated the beginning trabecular bladder. Whenever under such conditions we had to leave our patient to self-catheterization, where the slightest error in asepsis would expose him to all the dangers of an ascending urinary infection, then and there was the time for the Bottini. Here, with strict asepsis, we could perform the operation without any particular danger to, and with the greatest benefit for the future of the patient. Careful preparation, however, was always necessary, during which time local and internal treatment should be carried out, and careful local examinations made. He considered cystoscopy a necessary preliminary procedure without which we should only operate in exceptional cases. Whenever cystoscopy could not be successfully performed, and we were placed before the alternative of operating in the dark, he would then prefer to open the bladder from above.

The technic was considered in detail and the necessity of careful after-treatment urged. He had operated upon 26 patients with 3 deaths. One died from general sepsis; the second, ten days after operation, the postmortem examination demonstrating a far advanced interstitial nephritis; and the third died three days after the operation with acute uremic symptoms. Eleven of his patients had regained normal urinary functions. Six had materially improved; their general health and bladder function had been very much benefited by the operation, but they still had a residual urine of from 4 to 8 ounces and they still had to use a catheter once or twice daily. In 4 patients he could see no perceptible improvement, although they were operated on and treated with the same care as the successful cases. The two remaining cases were young men suffering from purulent prostatitis after gonorrhea. In both cases he made three incisions with the result that no more pus could be pressed out of the gland and all distressful symptoms had disappeared in both of these cases, however, almost complete incontinence followed the operation, which, in one case (three months after the operation) had partially improved. While refraining from formulating conclusions as to the real merits of the operation, he thought that it had come to stay and that the terrible suffering of old men from this condition would be effectually lessened by the procedure.

Perineal Prostatectomy.

Dr. George Goodfellow read a paper in which he described the technic which he thought was original as follows: The patient is placed upon his back with the thighs flexed on the abdomen (an exaggerated Simon position), a median incision is made, the membranous urethra and bladder entered. The finger is then introduced, pressure above the pubic bones made with the other hand, which permits the viscus to be drawn as far as desired toward the external opening. The enucleation is then made easy, and can be done very rapidly, the resulting hemorrhage amounting to almost nothing. After treatment is simple, consisting of daily irrigation of the bladder with passage of good-sized sounds for ten days to two weeks in cases where the condition of the bladder demands such action. In uncomplicated cases, within forty-eight hours a part of the urine will be passed per urethram, and no further treatment is called for other than the introduction of sounds until all danger of contraction is over. It will be seen that

the operation just described is precisely what it purports to be: prostatectomy through a perineal incision; and, from the results, well worthy further trial. The author claimed that by means of this position and this method, with bi-manual manipulation, the neck of the bladder could be brought to the perineum without trouble, and the entire interior of the bladder as thoroughly explored with the finger as the interior of the uterus under similar circumstances.

Palliative Treatment of Chronic Prostatic Hypertrophy.

Dr. John C. Spencer read a paper on this subject which he divided into general, medicinal and mechanical. Under the head of general treatment he included all that pertains to a maintenance of the best possible physical condition of the patient. Drugs, he thought, were only useful as placebos. Under the head of mechanical treatment there were comparatively few resources of a strictly non-operative nature at our command. Those cases where the amount of residual urine was small, the bladder being clean, required no treatment whatever; those suffering from occasional ischuria, with larger amounts of residual urine, must be catheterized from one to four or five times daily. He thought it might be possible to effect a slight reduction in the size of the gland by judicious massage, particularly in these cases where there is a catarrhal condition in the ducts and acini of the gland added to the hypertrophy; another procedure which sometimes gave relief to ischuria, was judicious dilation of the vesicle neck. He thought it was only by the most painstaking attention to these and many other details, individual to each case, that we might be able to make life tolerable to such sufferers as were denied relief through some radical operation.

Professor Vincenz Czerny of Heidelberg, who was the guest of the Society that evening, opened the discussion on these papers. He said that it was difficult for him to open the discussion on this valuable subject, but was very thankful it had been possible for him to note the experience of his colleagues here in the Society. He thought the subject was a large one, as it was treated to-day. The conservative treatment of the prostatic enlargement in the first place would be necessary, much as he had been fond of the radical course of extirpation. He had made several extirpations this year, the first of these was interesting as it was a subject 60 years of age, on whom he had made the suprapubic incision and extirpation of the projecting part of the gland on three different occasions; he had always come back as the enlargement returned. The first specimen of this extirpation was cancerous, he thought, but the examination showed it to be adenoid tissue; he finally extirpated by a semilunar incision in the perineum, in the same position described in Dr. Goodfellow's paper. A catheter was left in ten or twelve days and in five or six weeks he could urinate every two or three hours and only a very few drops of urine came through the fistula. The extirpation of cancer was a much more dangerous procedure because it was necessary to take out the capsule. The technic was much more difficult and the hemorrhage was great. He thought the Bottini was indicated where a valvular projection of the gland existed obstructing urination. It was not always easy to make the diagnosis and the cystoscope was not easy to use.

Dr. G. Chismore said that the results of his observations with some experience in the treatment of the trouble which ensued had led him to be conservative in prostatic surgery; that conservative opinion had been of late much disturbed by the successful results obtained by Dr. Goodfellow as set forth to-night. He thought the liability to infection was less in the perineal than the suprapubic route. He thought the method of operating would be improved somewhat in technic, and we would eventually say to a man coming to us with senile hypertrophy: "Sir, have your prostate removed and you will be well." He had seen one or two good results from the combined suprapubic and perineal operation, but no case as yet with a perfectly satisfactory result from that procedure.

Dr. R. L. Rigdon said he was sure all had been much pleased to listen to the papers and have the pleasure of the discussion given by Prof. Czerny and Dr. Chismore. It was evident that the operation on the prostate must go through the same evolution as the operations on the other parts of the body before we arrived at a conclusion at all definite and accepted by everyone. First, with Dr. Goodfellow's paper, he was much interested in the statement that the Doctor had no difficulty with a finger three inches long to enucleate the whole prostate if necessary. He had been through the perineum a number of times, for one reason or another, and found that it was difficult to reach the bladder, and in a case on which he made an autopsy, but which was not operated on for prostatic hypertrophy, but in which there was prostatic trouble, he was quite sure it would have been impossible for him to enucleate it even if he had pressed down on the pubes. He was glad that Dr. Goodfellow had such excellent results, but the method of operating should be tried further. With this operation he thought we would come across cases in which it would be impossible to reach the growth. He was satisfied that the perineal route was better than the suprapubic because of improved facilities for drainage. In regard to the Bottini operation, he had been skeptical about it and only recently had been lead to look with some favor on the operation judging from the results published. He had noticed in the paper read to-night by Dr. Krotszyner that the Doctor operated on 26 cases, 3 cases died and 2 had a fistula, therefore we have a bad result in about 20 per cent. of cases; still, Bottini's operation presented some favorable features, but we must confess it was not an ideal operation. He believed the conservative treatment in many of these patients would give better results than the radical work.

Dr. E. E. Kelly said he had seen one of these operations of Dr. Goodfellow and it was well to emphasize two or three points that would overcome the objection raised by Dr. Rigdon. First, the position of relaxing all the abdominal muscles, and he was certain from the case he saw he could easily have brought the neck of the bladder to the surface and explored. Another thing was the celerity with which it was done, not more than five minutes of actual work and this was of great importance in elderly men where an anesthetic was an element of danger. Another thing in regard to the operation was that it was free from hemorrhage. The hemorrhage was exceptionally small and he believed that the Doctor stated that he never had to apply a ligature to check the hemorrhage. He was certain it would supersede the Bottini and it could be undertaken at an early period.

Case of Prostatic Calculus Removed Through a Perineal Incision.

Dr. C. G. Levison said the patient was 35 years of age, gave a history of cystitis of gonorrheal origin, of 7 years' standing, during which time he had consulted a number of physicians. He complained of great perineal pain, vesical tenesmus, and frequent micturition, pain in the back, etc. The urine contained quantities of pus; chemical examination revealed traces of albumin due to pus; no serum albumin. Microscopic examination revealed quantities of pus and epithelial cells. Neither blood nor tubercle bacilli could be demonstrated. Harris' segregator collected clear urine from both ureters. In consequence of these examinations it was felt that the pus was of vesical origin. The cystoscope revealed a picture such as is usually seen in the hypertrophy of the aged. Metallic sounds introduced into the urethra did not come in contact with a stone, excluding the adventitious calculus. Rectal examination revealed an enlarged prostate, with indurated lobes. The right lobe was found to be the size of a pigeon's egg. Palpation revealed a middle lobe, with a smooth surface, producing the impression as if a stone lay embedded in the prostatic substance. Repeated examination made the diagnosis more probable. Firm pressure upon this part of the gland caused less uneasiness than when a normal prostate is manipulated. The patient himself could recognize when the finger passed over this indurated region. Massage of the prostate expressed less secretion than normal. Diagnosis of concretion of the middle lobe of the prostate with hypertrophy of the lateral lobes of inflammatory origin, was

made, and removal of the stone was advised, for it was felt that the stone was an active factor in the causation of the perineal pain and tenesmus. The operation was carried out as follows: With the patient in the exaggerated lithotomy position and the bladder filled, a horse-shoe incision 1.5 cm. anterior to the anus was made, and the rectum separated from the bladder, by blunt dissection. Hemorrhage was slight and easily controlled. An incision into the middle lobe exposed a concretion the size of a hazel-nut, which was shelled out. As part of the concretion had infiltrated the surrounding gland substance, this part together with the tissues was removed. The prostate was here dissected from the urethra without difficulty. As the prostate was incised on both sides of the concretion to effect its removal, but slight hemorrhage occurred. The wound was closed, with gauze drainage. Convalescence was practically unimpeded. The pain and vesical tenesmus had disappeared since the operation, confirming the supposition that the stone was the causative factor of the bladder symptoms. Microscopic examination of the prostatic tissue revealed an increase of the interstitial tissue together with an atrophy of the glandular structure. It was infiltrated with microscopic concrements. Chemical examination of the concrement unfortunately was not made.

NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, held October 8, 1901.

Dr. H. J. Boldt, in the Chair.

Dr. Egbert H. Grandin presented a specimen of "Tubal Gestation."

Multilocular Cysts of the Kidney.

Dr. G. G. Ward presented this specimen and gave a complete history of the case. Multilocular cyst of the kidney is a rare disease. It is almost always bilateral. Dickinson found only 1 case in 26 in which it was unilateral; Richie, 2 in 88; Lejars, 1 in 62, while Henry Morris found 4 in 7 cases. The average age was 45 years. It was considered hereditary by some authorities, but not by others. Bar reports 3 cases in one family, and Carl Beck found a similar instance. Henry Morris operated upon 5 cases (nephrectomy) and 2 were well seven years and three years after; this would apparently justify nephrectomy in those cases where the other kidney was found to be normal by palpation or inspection through the incision.

Placenta Duplex, or Biloba.

Dr. George L. Brodhead presented this specimen because of its great interest and rarity, and also because of the fact that what may be termed the supplementary placenta measuring from 15x9.5 cm. was of about the same size as the main placenta, which measured 14.5x11 cm., to the center of which the cord was attached. There was a space of about 5 cm. between the two placental masses which were connected by chorion and three fetal vessels, one of which was of large size. The fetus depended as much upon one placenta as upon the other. The one point of clinical importance to be remembered in connection with a specimen of this nature was that the supplementary portion (placenta succenturiata) may remain in the uterus and give rise to trouble; hence, the necessity of a careful inspection of the placenta immediately after its expulsion.

Mammary Changes of Menstruation.

Dr. J. Clifton Edgar presented to the Society an oil reproduction from Nature of the mammary changes produced incident to the menstrual epoch. The painting was not a selected one, but was taken from a number of cases seen during the past ten years in 600 consecutive examinations for evidences of rape. Both in medicolegal cases and in the diagnosis of pregnancy in private practice had he been impressed with the analogy between the changes in the nipple, primary areola, veins and Montgomery's tubercles in the menstruating and pregnant condition, the latter being limited to the first three months. He drew attention to the prominent veins, the darkening and edema of the areola, the erection and congested nipple, and the fact that a slight serous discharge, yellowish in color, caused dry scales to form in the orifices of the milk ducts. His observations lead him to conclude that the condition, especially among the upper classes in nulliparous women, was rather the rule than the exception, and also that very often the mammary changes of the first third of gestation can not be distinguished from those occurring in the premenstrual period of gestation; that, in fact, the mammary changes of early gestation are valueless even for an uncertain diagnosis of pregnancy.

Dr. Charles Jewett had been accustomed to attach some diagnostic importance to the mammary changes in first pregnancies in the absence of pelvic disease, and the fact that mammary changes counterfeiting pregnancy were present at the outset of menstruation did not wholly destroy the value of these signs as evidences of pregnancy. Approaching menstruation, as well as pelvic disease, must be excluded, and the other early signs, nausea and a skipped period, etc., must be considered. The question raised by Dr. Edgar recalled a case seen by him within a week or two. The subject had been exhibited as a pseudo-hermaphrodite. It was rather one of arrested development of the genitals in a male. The penis was very small and there were rudimentary testicles in the scrotum. There was no vagina, no external organs of generation, nor ovaries. The man, who was about six feet tall, was beardless; his breasts were large and as pendulous as those of a woman who had borne children; the areolæ were pigmented. The abdomen was pendulous and was marked with lineæ albicantes, which extended down over the upper portion of the thighs.

Comparative Study of the Immediate Recovery of Patients Following Vaginal and Total Abdominal and Supravaginal Hysterectomies—130 Cases.

Dr. LeRoy Broun read this paper. It has frequently been said that statistics are of little value in determining the worth of any method of operating and, he believed, that there was much reason for such a widespread opinion, since too many factors enter into the make-up of such reports to render them of much service to the operator seeking the best methods. A small percentage of deaths simply shows either the skill of the operator, or an unusual run of fortunate cases, or both. Three years ago he was an ardent advocate of the vaginal route of operating, believing that the after-recovery of the patient was smoother, and knowing that there are but few intra-pelvic growths that can not be removed by this route. During this time and for two years previous, this choice of route was adopted whenever it was possible to do so by Dr. Cleveland and himself at the Woman's Hospital. The results were excellent and apparently left nothing to be desired. During the two years past upon the same service this method had been unconsciously and gradually, to a large extent, replaced by the abdominal route, the object being to exercise as much conservatism as was possible. There were many staunch advocates of both methods of operating, but it was not his object to bring together such arguments but to compare the immediate recovery of patients following the performance of these classes of operations. With this end in view he brought together all the hysterectomies performed during the last two years on two of the services in the Woman's Hospital. These had been arranged under the respective heads of vaginal hysterectomies, complete abdominal hysterectomies, the cervix being removed, and supravaginal hysterectomies, the cervix being left.

Vaginal hysterectomies, 34 in number, were done after the following method: Hemostasis of the uterine arteries was obtained by the vasotribe or angiotribe. After complete separation of the uterus and the diseased adnexa, the broad ligaments were clamped off, one clamp on each side being used. Sterile gauze packing was loosely placed—well above the ends of the clamps—and lightly filling in the intervening space and the vagina. The clamps were removed at the end of twenty-four hours. The gauze packing was all removed by the seventh day, its removal being commenced on the fifth, unless there was some indication to the contrary, such as a rise in temperature, when its removal was commenced earlier.

Complete hysterectomies were 35 in number. The method here pursued was that adopted by the majority of operators. The uterine arteries were ligated with catgut. The ovarian arteries were obliterated in the majority of cases by the Skene electric clamps: when this was not used they were tied off with catgut. The peritoneum was not closed, the raw surfaces being simply covered with sterile gauze, the free end of which protruded from the vagina. This gauze was not disturbed until the fifth day unless there were indications. As in the vaginal hysterectomies it was all removed by the seventh day.

Supravaginal hysterectomies consisted of 54 operations; they were done in the manner customary with the majority of operators. The ovarian and uterine arteries were secured on both sides with catgut. The anterior and posterior flaps were united with running catgut Lembert sutures shutting off the stump of the cervix and leaving no raw surface exposed. The intervening dead space between the flaps was either drained for twenty-four hours by a small portion of gauze protruding the cervical canal into the vagina, or no drainage was used.

The above description of the technique used was given in order the better to compare intelligently the results obtained from this comparative study. A period of ten days from the time of operation was considered ample to determine the exact source of recovery of the patient; within this time any secondary infection that might arise would have usually shown itself. From the tabulated records of each class of operation a composite chart was made, both of the temperature and pulse. No fatal terminations were included in the comparison because it was his desire to determine if there was any difference in the smoothness of the recovery, as evinced by the temperature and pulse record. For the information of any desiring to know the death rate the following was given: 36 vaginal hysterectomies, 2 deaths (1 insanity, 1 sepsis); 36 complete hysterectomies (abdominal), 1 death (1 sepsis); 59 supravaginal hysterectomies, 5 deaths (4 sepsis, 1 pneumonia). A careful study of the composite charts reveals a remarkable similarity in the curve of recovery of both the temperature and pulse in each class of operation. There was shown to be a slight difference in favor of the vaginal route; this operation, however, is practically the same from a surgical standpoint as the complete abdominal hysterectomies with the absence of the abdominal incision and sutures. This slight difference he attributed to the presence of the sutures in the abdominal wall and not to any advantage of operating through the vagina. From the composite temperature and pulse curve there was only one conclusion to be drawn; that from this standpoint it is a matter of choice and individual preference with the surgeon, the patient making as even a normal recovery after one method of operating as from that following another. To further study the recovery after these operations he compared first the vaginal and complete abdominal hysterectomies as belonging to one class of what he called the open method, i. e., drainage through the vagina. Both have gauze drainage, which must be removed; one has, in addition, the abdominal wound, which is to the patient the most prominent feature of the operation. This wound, with its pain and frequent dressings, impairs the morale of the patient. Coming intimately in contact with the patients after these two classes of operations, the difference in their mental equilibrium impressed him strongly. After the gauze drainage was removed in both, the patient following the vaginal hysterectomy is thoroughly at ease, mentally and physically. The one following the abdominal hysterectomy has the wound in the abdomen uppermost in her mind and is anxious for some time. Of the two methods of operating he regarded that by the vagina the more difficult and to obtain the same results as by the abdomen required a larger and wider experience in operating. He referred, of course, to complicated cases of adherent diseased adnexa, and not to the simple removals of cancerous uteri. The abdominal route, with the assistance of a full view of the field of operation by the Trendelenburg position, and a complete isolation and cutting-off of the intestines by gauze pads, was, in his estimation, much the safer method. Here adhesions severed under the eye and injuries to attached intestines can be more intelligently avoided. In performing these two classes of operations it was not their custom to close the pelvic peritoneum in either. The raw surfaces are covered loosely by sterile gauze packing, the free end of which extends into the vagina. It had never been their experience to find the adhesions between the plastic roof formed over the gauze and the intestines to give rise to any trouble, nor was he aware of any being reported by others.

Supravaginal hysterectomies: The above open methods involving as they do a necessary contracting granulating cavity, and attended with foul discharge, while safe, was still at variance with the refinement of surgery, where primary union is sought and the avoidance of open suppurating wounds is expected. The recovery of patients from this class of operation was surgical in every respect; there was no suppurating cavity to close by contraction and granulation. The method had the additional advantages of leaving the cervix which is said to be the seat of sexual feeling in women. The vault of the vagina is also kept intact and its elasticity maintained. He did not regard, however, the operation as materially shortened by leaving the cervix, for in total hysterectomy the extra time consumed in removing the cervix is largely compensated for by the rapidity with which the drain of sterile gauze covering the denuded surface is introduced, this covering consuming less time than the closing of the peritoneal flaps over the cervical stumps. A study of the composite temperature and pulse curves of the 54 cases of supravaginal hysterectomy showed a remarkable similarity in the recovery of patients from this class of operation as compared with the composite charts of those recovering from total abdominal and vaginal hysterectomies. In other words, while the method is more surgical, there is, however, no advantage gained in the ease of recovery so far as the temperature and pulse curve would indicate. Late ligature infection and the danger of septic absorption through the larger area of connective tissue exposed has been frequently urged against vaginal and total abdominal hysterectomies. This was not in accord with the experience at the Woman's Hospital. In those operations where it was considered safe to do so ligatures were replaced by the vasotribe, Skene's electric clamp or the ordinary clamp. When ligatures were used No. 2 size was employed. That there must be some absorption was evident, but in his experience it did not have an appreciable effect upon the temperature or pulse of the patient. A close study of the individual charts in both classes of operations bore out this statement: the open vault of the vagina precludes any retention of the secretions above. The true advantage of the supravaginal method was in the absence of any drain with its attendant painful removal, the absence of resulting suppurating cavity, and the time gained in the discharge of the patient from surgical care. The leaving of the cervix, while of distinct advantage, is accompanied by some risk, since, if secondary infection occurs through its canal the effusion under the flaps now made septic can not be reached except by a secondary operation. The dead space necessarily existing between the peritoneal flaps and the cervical stump had always been to him a source of concern. That the effusion here is usually taken care of by the patient is known to all and is shown by the even temperature curve of the 54 cases reported. That this satisfactory outcome was not always in accord with his personal experience was true. To avoid this secondary infection the habit of closing the cervical stump was customary although not universally adopted. The method of draining into the vagina by a small gauze wick protruding through the canal of the cervical stump, and which was removed at the end of twelve or twenty-four hours, he thought to be a questionable one, since it furnished a channel for infection of the sub-peritoneal space. For the same reason did he regard the leaving of the stump open as cut across liable to permit a secondary infection of the space above. The vagina, even if sterile at the time of operation, can not remain so with the bloody serum escaping over the vulva. The wonder was that when we re-

call Cohn's classical statement that "one germ under proper condition may give rise to more than half a million of similar organisms within twenty-four hours," that with the draining of the cervical stump into the vagina secondary infection under the peritoneal flaps is not the necessary sequence instead of being only the occasional occurrence. When such an infection does occur it is fortunately in most instances of a mild type and the confined pus is liberated by gentle stretching of the cervical stump.

The writer than detailed the cases that terminated fatally already referred to in the beginning of the paper. As a result he drew certain conclusions. It was noted that the percentage of mortality in the 36 cases of vaginal hysterectomy was 5.5, that of the 36 cases of complete hysterectomy was 2.75, while that of the 59 cases of supravaginal hysterectomy was 8.33. When it was recalled that the temperature and pulse record, as shown on the chart, of all cases recovering was practically the same in one class of operations as in the others; when it was further borne in mind that the vaginal and complete hysterectomies were with few exceptions performed on patients with purulent adnexa associated with dense adhesions, and in whom the possibilities of infection from the condition present were greatest, the difference in the mortality became more striking than the percentage death rate showed. The deduction from the data was in direct opposition to Dr. Nobles, who, in his finished article of four years ago on "Hysterectomy for Fibroma" from a collection of 345 cases of supravaginal amputations by five American operators, a death rate of 4.9 per cent. He (Dr. Noble) also quoted Olshausen's table of 806 vaginal hysterectomies with a death rate of 5.6 per cent., as opposed to 520 total hysterectomies with a death rate of 9.6 per cent. He thought that if the different techniques of the various operators were known some reason for this difference might be seen. The question of draining the sub-peritoneal space of supravaginal hysterectomies through a dilated cervix was one in which operators were not yet in thorough accord. The usual method of those who advocate drainage of this space was to insert through the dilated, or longitudinally divided cervical stump a gauze wick which was removed in 24 or 48 hours after the operation. That this drainage through the cervix was a bad practice he was personally convinced. All of the five deaths from supravaginal hysterectomy, with the possible exception of one, were caused by sepsis. Three of these cases could not have been septic from the pathological conditions present. Of the two remaining, one had in addition to the fibromyoma a pyosalpinx which was unruptured and had a retroverted uterus with pyosalpinx. Here there was no rupture in removal; even if ruptured there was every evidence from the history that the pus was sterile. In all the fatal cases the sub-peritoneal space was drained by the gauze wick through the cervix. There was no other conclusion but that through the drainage channel the infection traveled, and this was in keeping with the literature on the subject, chiefly that coming from the Johns Hopkins Hospital. Fortunately, in the large majority of instances in which drainage was carried out no infection occurred. Miller, in his bacteriological study of the cultures made from the interior of the uterus and of the pus from diseased ovaries and tubes, reports, in the Johns Hopkins Bulletin, the following results: In 44 cases of hysterectomy mostly for pelvic inflammatory disease the cultures from the interior of the uterus were all negative. In 51 cases of pyosalpinx, ovarian and pelvic abscess, the cultures were negative in all but one; in this the gonococci were found. During the past six months in all the cases of supravaginal hysterectomies it was the custom in their service to close the cervical stump with catgut sutures before uniting over it the anterior and posterior flaps of the peritoneum. Up to the present there had been no secondary infection.

A review of the various facts brought out in his study led Dr. Brown to the conclusion that: 1. While the finished result of a supravaginal hysterectomy was most satisfactory, the operation was, however, marred by the possibility of a secondary infection, at times terminating fatally. When this infection does occur it can be reached only by secondary operation. 2. The chances of this infection occurring are greater when the sub-peritoneal space is drained through the canal of the cervical stump, or when the canal is left open. There is every reason to close the stump as offering the best results. 3. Total abdominal hysterectomy, though not such a finished operation as the supravaginal, is, however, one in which there is less likelihood of any secondary complications, and though objectionable on account of the suppurating cavity to be closed by contraction and granulation, yet offers to the patient a surer means of uninterrupted recovery. This conclusion, while at variance with Olshausen's large collection of cases in which he gives a 5.6 per cent. death rate for supravaginal, and a 9.6 per cent. for total hysterectomies is, however, the only one to be drawn from the collection brought together.

Therapeutics.

Alcohol and Tobacco Habits.

A subscriber asks whether or not drunkenness and the tobacco habit can be cured at home, and the treatment for the same.

The liquor habit can certainly be better handled in some well regulated, reputable sanitarium for nervous diseases which is conducted and supervised by capable and experienced men.

The success of treatment at home depends a great deal upon the condition of the patient and his ability to exercise self control over either of the habits. If this is impossible then, of course, compulsory measures must be taken. The treatment should consist of alteratives and tonics.

D. R. Brower, in an article on treatment of chronic alcoholism, recommends the following as an alterative:

℞. Auri et sodii chloridi .....gr. 1/10-1/8		006-0075
Pulv. resinæ guaiaci .....gr. ii		12

M. Ft. cap. No. i. Sig.: One such to be taken one hour before each meal.

As a tonic the following is recommended:

℞. Tinct. nucis vom. 3ii		8
Tinct. capsici 3iii		12
Tinct. cinchonæ comp. q. s. ad.....℥iii		96

M. Sig.: One dessertspoonful after each meal in water; or:

℞. Tinct. nucis vom. .....℥ss		16
Tinct. capsici .....℥i		32
Ext. lupulini flu. .....℥iii		96
Inf. gent. comp. .....℥iss		48

M. Sig.: One dessertspoonful three or four times a day.

Careful attention must be given to elimination by the skin, bowels and kidneys; the diet should be properly regulated. If anemia is present it should be corrected by the administration of iron in some form, and when there is general loss of strength and mental feebleness the following sometimes serves a good purpose:

℞. Strychninæ sulphatis.....gr. 2/3-i		04-06
Syr. hypophos. q. s. ad.....℥iii		96

M. Sig.: One teaspoonful three or four times a day.

Treatment of Dysentery.

Hughes, in *Med. Record*, recommends the following in the treatment of dysentery:

℞. Acidi sulphurici dil. .....℥ss		16
Tinct. opii deod.		
Spts. camphoræ, āā .....℥i		32
Tinct. capsici		
Spts. chloroformi, āā .....℥ss		16
Spts. vini gallici .....℥iss		48

M. Sig.: One teaspoonful every three hours if necessary; or:

℞. Magnesii sulphatis .....℥iss		48
Acidi sulph. dil.		
Tinct. opii deodor., āā 3ii		8
Aq. chloroformi q. s. ad.....℥iii		96

M. Sig.: One dessertspoonful every four hours.

Treatment of Zona (Herpes Zoster).

The following formulæ to be employed in the treatment of herpes zoster is recommended by *New York Med. Jour.*:

℞. Acidi tannici
Bismuthi subnit., āā 3ss 2
Zinci oxidi
Amyli, āā .....gr. lxxv 5

M. Sig.: To be applied locally.

Kaposi recommends the following, if powders seem to irritate:

℞. Ceræ flavæ 3iiss 10
Olei olivæ .....℥i 32
Ext. opii (aquosi) .....gr. vi 36

M. Sig.: For local application.

Lestikow employs the following:

℞. Acidi boracici .....gr. xl 2 66
Cocainæ hydrochlor. .....gr. viiss 50
Vaselini 3vi 24

M. Sig.: Apply locally and cover with cotton or gauze.

Treatment of Pertussis.

T. J. Mays, in *Med. Record,* recommends the use of counter-irritants over the region of the pneumogastric in the neck, by applying strips of mustard plaster about two inches wide from the angle of the jaw to the clavicles on each side of the neck, two or three times a day until the effects of the mustard are evident. He states that amelioration of the spasmodic cough is the result. He sometimes uses the following locally instead of applying the mustard:

℞. Chloralis hydratis
Menthol
Pulv. camphoræ, āā .....℥ss 16

M. Sig.: Apply locally several times daily.

Painting the same area with tincture of iodin twice a day, until irritation of the skin is produced, is of benefit. In stubborn cases he injects silver nitrate over the vagi beneath the skin, using three to six minims of a 2/5 per cent. solution of the drug, preceded by an injection of a few drops of cocain solution.

Treatment of Hemorrhoids.

The following combination is recommended by Anderson in *Med. Record*:

℞. Hydrastin
Pulv. aluminis, āā .....gr. xv 1
Cocainæ muriatis .....gr. viiss 50
Ol. theobrom. q. s.

M. Ft. suppos. No. xii. Sig.: Insert one every night.

To Check the Diarrhea in Typhoid Fever.

℞. Acidi carbol.
Ext. opii, āā .....gr. i 06
Bismuthi subnit. .....gr. xviii 1 20

M. Ft. pil. No. vi. Sig.: One pill three times a day.

Method of Applying Hot Fomentations.

Below is given the proper method of applying hot fomentations to different parts of the body. While it may seem a simple thing to do, there are too many physicians who are unable to give specific directions to attendants in carrying out such procedures. The following methods are advised by the *Pacif. Health Jour.* The necessary articles are two or three pieces of flannel each one yard square, a pail of boiling water and a towel. First, get all the articles for treatment in readiness in a convenient place; have the water boiling hot. Then the patient is to be prepared by being put in a position so that the part to be fomented will be easily accessible, protected only by covering that can be readily thrown back. The feet should be kept warm. Next take one of the squares of flannel, or fomentation blankets, and spread out smoothly upon a convenient surface in readiness to receive the wet, hot blanket. Taking another fomentation blanket fold to suit the part to be treated. For instance, if the stomach or abdomen is the part to be treated, fold the blanket double three times, that is, so that it will be one yard long, one eighth yard wide, and eight thicknesses. Holding one end in each hand, dip the center up to within a few inches of each end into the boiling water, twist each end tightly in opposite directions, and pull, thus wringing the blanket until the water will not drip from it. Quickly unfolding the blanket to the required size, lay it upon the dry one in readiness; fold in the ends and fold the dry blanket over it, thus retaining the heat and rendering it bearable to the patient. Place it upon the parts and leave until comfortable, occasionally passing the hand under it to prevent burning. Then renew by using the third blanket for the wet one, allowing no lapse of time between the two fomentations. Repeat the process until the object is obtained, being careful that the patient is not left uncovered at any time during the treatment, as the hot moist surface will become readily chilled if exposed for any length of time.

Treatment of the Throat in Scarlet Fever.

The following is given by the *Med. Standard* as a local application to the throat in scarlet fever:

℞. Acidi carbol. 3ss 2
Glycerini
Aq. camphoræ, āā .....℥i 32
Potassii chloratis .....gr. x 66
Aquæ q. s. ad. .....℥vi 192

M. Sig.: Use as a gargle or spray.

As a local application in the form of a spray or to be applied with a swab, hydrogen peroxid diluted with two or three parts of water is universally recommended.

As an antiseptic and for the itching of the skin the *Standard* recommends the following:

℞. Ichthyol 3v 20
Lani .....℥x 300
Olei olivæ .....℥i 32

M. Sig.: To be applied locally as an inunction.

Treatment of Sore Throat.

As stated in the *Dietetic and Hygienic Gaz.*, one of the best remedies for sore throat is a compress worn over the throat at night. A piece of muslin or light cloth about half the size of an ordinary handkerchief should be folded so as to cover a space of about three or four inches, wrung lightly out of cold water, and placed around the neck. This should be covered by a piece of rubber cloth, oil silk, or oiled muslin. A long, narrow strip of dry cloth should now be wrapped around the neck in such a way as to hold the compress firmly in place. If this compress is so put on as to retain its place, prevent evaporation, and exclude the air, it is an admirable remedy. It should be put on when retiring at night and taken off in the morning on arising, the neck being then washed off in cold water and rubbed until the skin glows.

Medicolegal.

Can Not Bind the State by Promise of Free Treatment.—On the second appeal of State Hospital vs. Fountain, an action against the guardian of an insane patient, the Supreme Court of North Carolina holds that the contention could not be sustained that the ward's estate was not liable for the expense of maintaining and treating her at the hospital because the guardian, upon his qualification as such, applied to the superintendent to know if any charge was made for patients who were able to pay, and was informed that no charge was made for any person, and thereupon his ward was allowed to remain in the hospital. The court says that the contention could not be sustained as it is too well settled that its agents or officers can not bind the state by any contract they may make, when not so authorized to do; especially in violation of the express statute (Section 2278 of the Code of 1883) which allows the admission into the institution of others than indigent insane person upon payment of proper compensation.

Right of Recovery for Operation.—The second appellate division of the Supreme Court of New York has affirmed the judgment of the trial term in the case of MacEvitt vs. Maass, which was reported on page 520 of THE JOURNAL of Feb. 23,

1901. As the appellate division restates the case, the physician who brought this action against a husband to recover for services rendered as physician and surgeon to his wife, after examination of the patient, told the husband that a surgical operation for an internal trouble was necessary, whereupon it was agreed between them that he would perform the operation for $75. The physician testified that a further examination, a few days later, revealed that the first diagnosis was erroneous; that the condition of his patient was more grave than first supposed; that the operation first suggested was not necessary, but that a different and more severe operation was required, which, unlike the former, jeopardized life; and that he told all these things to the husband, who consented to the operation then advised, but that nothing was said between them upon the subject of the fee. Under these circumstances, the court thinks that the question was properly submitted to the jury whether the physician superseded the original agreement based upon the first examination, and it holds that the verdict, which it states was for $275, should not be disturbed. And it is of the opinion that there was evidence sufficient upon which to base the verdict rendered, because there was proof in the record of an operation with the attendance of four physicians and six nurses; an operation severe in character, two and one-half hours in duration, which required the knife, and which was followed by many daily visits, covering a period of between two and three weeks. Then, two experts who attended upon the operation, and one of whom was present at the subsequent visits, were called, and placed a value on the services rendered, and the court holds that the plaintiff was not confined to a hypothetical questioning of such experts, for they were entitled to give their opinions upon what they knew of the services.

Medical Examiner and Statements as to Health.—Section 1812 of the Iowa Code provides that, where a life insurance company's medical examiner or physician acting as such under the rules and regulations of the company reports an applicant to be a fit subject for insurance, the company "shall be thereby estopped from setting up in defense of the action on said policy . . . that the assured was not in the condition of health required by the policy at the time of the issuance or delivery thereof, unless the same was procured through the fraud or deceit of the assured." Now, it is evident, the Supreme Court of Iowa says, in the case of Peterson vs. the Des Moines Life Association, that the medical examiner or physician contemplated in this section is the person who examines the applicant, and determines his condition of health, and reports whether he is a proper risk. It is no doubt customary for life insurance companies to have a general medical advisor or director at the home office, whose advice is taken into account in determining whether the risk shall be accepted; but the person who makes the actual examination, and reports on the applicant's condition, is evidently contemplated by the statute as the medical examiner or physician referred to. Then, it says that it is to be noticed that the estoppel declared by the statute is as to the condition of the health of the assured at the time the policy was issued. There may, no doubt, be warranties as to other matters not relating to the health of the assured—such as his place of residence or occupation—breach of which will avoid the policy notwithstanding the statute; but, so far as the statements relied on as warranties relate to the health of the assured and his acceptability as a risk on that account, the company is estopped from showing their falsity, unless they constitute fraud or deceit in procuring the report or certificate of the medical examiner. Nor does the court agree with the contention advanced that the estoppel applies only to the condition of health of the assured at the time the policy is issued, and that statements as to previous disease, treatment by physician, accidents, etc., are warranties any breach of which will avoid the policy. In other words, it thinks that the estoppel relates to all matters inquired about so far as they bear on the health and physical condition of the applicant as affecting the risk, whether they refer to the time the policy is issued or to some previous time; for the ultimate question is whether the applicant is a suitable person to accept as subject of life insurance. Moreover, it says that the tendency of the courts, without the aid of legislation, has been to construe statements as to previous accidents and diseases into mere assertions on the part of the applicant as to what he knows of his personal knowledge, or may be presumed in good faith to know, instead of strict warranties regardless of personal knowledge.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), October 26.

1 *Transmission of Tuberculosis Through Meat and Milk. John J. Repp.
2 *Symptoms, Diagnosis and Treatment of Enlarged Prostate Gland. Charles J. Whalen.
3 Report of a Case of Filaria Medinensis—Guinea-worm Dis case. Edward Francis.
4 *Analgesia from the Spinal Subarachnoid Injection of Cocain. J. Garland Sherrill.
5 The Use of Ethyl Bromid as a Primary Anesthetic to Ether or Chloroform. Emery Marvel.
6 Chorea with Partial Paralysis Secondary to Rhinitis. C. Fontaine-Maury Leidy.
7 The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Boston Medical and Surgical Journal, October 24.

8 The Case of President McKinley.
9 *Association of Anemia with Chronic Enlargement of the Spleen. (Continued.) Arthur H. Wentworth.
10 *A Brief Résumé of the Life and Work of Ambroise Paré. Charles G. Cumston.
11 *Tubercular Peritonitis. (Concluded.) Henri T. Fontaine.
12 The Report of a Unique Case of Chlorosis. Wm. Edgar Darnall.

Medical News (N. Y.), October 26.

13 *Giant Sacrococcygeal Tumors, an Account of One Which Pursued an Atrophic Course. Charles A. Powers.
14 Four Cases of Tumors. James E. Newcomb.
15 *Biopsy—The Histological Diagnosis of Dermatoses and Tumors of the Skin of Doubtful Character. Jean Darier.
16 Report of Two Interesting Cases of Appendicitis. William B. Young and William M. Johnson.
17 *The Physician in Relation to the Dispensing of Medicine. J. Tracy Meivin.
18 Anchylostoma Duodenale in Texas. M. Charlotte Schaefer.

New York Medical Journal, October 26.

19 Costume Deformities. E. H. Bradford.
20 *On Resistance Exercises in the Treatment of Deformities of the Feet and Ankles. E. Muirhead Little.
21 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
22 How Do You Treat Habitual Constipation? S. A. Knopf.
23 Importance of Drinking Freely of Water. B. C. Loveland.
24 Constipation in Children and in Adults. William S. Ackert.
25 The Value of Calomel and Sodium Phosphate Objections to Enemata. Wm. F. Barclay.

Medical Record (N. Y.), October 26.

26 The Prevention of Yellow Fever. Walter Reed and James Carroll.
27 *On the Mode of Transmission of the Infectious Agent in Yellow Fever and Its Bearing upon Quarantine Regulations. A. H. Doty.
28 Arterio-sclerosis: Importance, Definition, Etiology, and Symptomatology. Charles E. Nammack.
29 *Cinchonism, and Its Effect upon Articulation and Vocalization. Carl Seiler.

Philadelphia Medical Journal, October 26.

30 Political Assassinations. Charles K. Mills.
31 The Czolgosz Case. Edward C. Spitzka.
32 *Some Respiratory Conditions Dependent upon Gout and Obesity. J. M. Anders.
33 *Results and Advantages of Closing the Nephrorrhaphy Wound with Aseptic Adhesive Strips. Augustin H. Goelet.
34 *Multiple Primary Neoplasms in One Individual (Spindle-cell Sarcoma of Forearm, Adeno-carcinoma of Pylorus, Myomata of Stomach-wall). Treatment with Coley's Mixture. Aldred Scott Warthin.
35 Are the Smaller Medical Colleges an Essential Factor in Medical Education? William J. Gillette.

St. Louis Medical Review, October 26.

36 A Case of Stab Wound of the Liver. H. C. Dalton.
37 Gleanings During Eleven Years Devoted to the General Practice of Medicine. J. H. Herring.
38 Official Report of President McKinley's Case.

Cincinnati Lancet-Clinic, October 26.

39 Osteomyelitis. C. E. Caldwell.
40 *Dysentery. George J. Monroe.

The Medical Age (Detroit, Mich.), October 10.

41 *Treatment of Malarial Infeetion. Henry B. Favill.
42 Insanity as a Defense in Criminal Cases. B. D. Eastman.
43 The Traiued Nurse in Obstetrieal Cases. C. C. Mapes.

Medical Fortnightly (St. Louis), October.

44 Evolution in the Medieal Profession. M. V. Ball.

Virginia Medical Semi-Monthly (Richmond), October 11.

45 The Present Status of Epilepties in Virginia. William F. Drewry.
46 Two Cases: 1, Transvaginal Band Obstrueting Labor; 2, Prolapsed Ovary Simulating Direet Inguinal Hernia. E. T. Brady.
47 Clinical Examination of the Blood. L. H. Warner.
48 The Mosquito. Ennion G. Williams.
49 The Conservative Surgieal Treatment of Appendicitis. W. E. Fiteh.

Iowa Medical Journal (Des Moines), October 15.

50 The Surgery of Gastric Ulcer and Carcinoma. Van Buren Knott.
51 *What Constitutes a Good Common School Text-Book in Physiology. Clifton Scott.
52 *The Treatment of Internal Hemorrhoids Without General Anesthesia. Rufus D. Mason.
53 Treatment of Intestinal Obstructions Caused by Incarcerated Hernia. O. R. Wright.
54 Hysteria. J. W. Harrison.
55 Adenoids. B. C. Kelly.
56 Acute Obstruction of the Bowel to an Enterolith. C. H. Churchill.

Northwestern Lancet (Minneapolis), October 15.

57 Medical Aspect of Gastric Cancer. J. W. Bell.
58 Injuries of the Spinal Cord. James H. Dunn.
59 A Visit to the Hospitals of Paris. John H. Rishmiller.

American Practitioner and News (Louisville, Ky.), September 15.

60 *The Cure of Enuresis. Phllip F. Barbour.
61 Diagnosis of Bright's disease. Andrew Sargent.
62 The Treatment of Bright's Disease. A. G. Blincoe.
63 Sarcoma of the Jaw. E. W. Samuel.
64 Immunity and Serumtherapy. Lyttleton B. Cook.
65 Strangulated Umbilical Hernia. William C. Dugan.
66 Syphilitic Ulceration. I. N. Bloom.
67 *Age of First Menstruation in United States. Geo. J. Engelman.

American Journal of Obstetrics (N. Y.), October.

68 Address, British Medical Association. John W. Byers.
69 *Scratch-marks on the Wax-tipped Catheter as a Means of Determining the Presenee of Stone in the Kidney and in the Ureter. Howard A. Kelly.
70 *Three Cases of Cesarean Section, and a Consideration of the Indication for Craniotomy. Joseph B. DeLee.
71 Repeated Pregnancy in the Same Tube: A Case of Homotopic and Homositic Repeated Tubal Pregnancy. Frank A. Stahl.
72 Percentage Modification of Cow's Milk for Infant-Feeding. Edward Hamilton.
73 Two Cases of Brain Tumor in Gynecological Practice. Hunter Robb.
74 The Excessive Vomiting of Pregnancy. William M. Taylor.
75 *Toxicity of Urine in Pregnancy. Robert W. Stewart.
76 *On Prolonged Pregnancy; Report of a Case, and Compilation of Sixty-one Well-Authenticated Cases of This Kind. Fred. J. Taussig.
77 Torsion of a Hydrosalpinx Resulting in Infarctiou. William H. Weir.

Quarterly Journal of Inebriety (Hartford, Conn.), October.

78 Pharmacology and Therapeuties of Ethyl Alcohol; Is Alcohol a Stimulant or a Nareotic? A Review of More Recent Authorities. Winfield S. Hall.
79 *Some Obscure Injuries Followiug the Toxle Use of Alcohol. T. D. Crothers.
80 Arsenical Poisoning from Beer Drinking. T. N. Kelynack.
81 Alcoholism in Three Acts. Osgood Mason.
82 Cigarette Smoking. Dudley S. Reynolds.
83 The Alcohol Question as a Cultural and Race Problem. August Forel.
84 Inebriety: A Study of Its Causes, Duration, Prophylaxis and Management. Charles L. Dana.

Journal of the Association of Military Surgeons (Carlisle, Pa.), August.

85 The Status of the Military Surgeon. Alexander J. Stoue.
86 A Plea for Immediate Celiotomy in Penetrating Gunshot Wounds of the Abdomen in War. Charles E. B. Flagg.
87 *Suprapubie Operation for Varicoeele and Other Condltions Oceurring Within the Scrotum Requlring Surgieal Interference. Alfred E. Bradley.
88 Observations In China and the Tropics on the Army Ration and the Post Exchange or Canteen. Louis L. Seaman.
89 Three Noteworthy Cases of Brain Injury. George T. Vaughan.
90 Regimental Field Equipment, Model of 1901, for the Medical Department of the Regular Army. John Van Rensselaer Hoff.
91 The Pennsylvania Brigade Hospital Tent. Herbert A. Arnold.
92 Some Points in Military Surgical Practice. Jefferson D. Griffith.

Canada Lancet (Toronto), October.

93 Report of Cases Treated with Superheated Dry Air. W. H. Pepler.
94 Puerperal Insanity. Ernest Hall.
95 A Case of Opium Poisoning. F. W. Marlow.
96 Post-Typhoidal Ulceratiou and Abductor Paresis of the Larynx. D. J. Gibb Wishart.

Journal of Experimental Medicine (N. Y.), October.

97 Alloxuric Excretiou in a Case of Leucopenia. Robert Hutchinson and J. J. R. McLeod.
98 Studies on the Morphology of Gauglion Cells in the Rabbit. Frederick R. Bailey.
99 *The Acid Intoxication of Diabetes in Its Relation to Prognosis. C. A. Herter.
100 *Notes upon the Agglutinations Obtained by Intraperitoneal Insertion of Celloidin Capsules Containing Bacilli and upon a Mode of Preparing Such Capsules. Johu McCrae.
101 *Some Experimental Data on the Significance of Conceutration and of Multiplicity of Area in Hypodermic Injections. S. J. Meltzer.
102 *Observations on a Case of Cyclic Albuminuria. LaFayette B. Mendel and Donald R. Hooker.

Western Medical Review (Lincoln, Neb.), October 15.

103 Nebraska's Medical Pioneers. T. P. Livingstou, and H. Winnett Orr.
104 A Plea for Greater Care in the Treatment of Cases of Ophthalmia Neonatorum. D. C. Bryant.
105 Follicular Conjunctivitis. J. W. Bullard.
106 Neurasthenia. Jay G. Roberts.
107 The Treatment of Pneumonia in Children. Georgina Grothan.
108 The Drug Habit: Its Cause and Restrictiou. Joseph M. Aiken.
109 Intestinal Suture, All Knots Inside. F. Gregory Connell.
110 *The Prevention of Insanity. Henry Waldo Coe.

Interstate Medical Journal (St. Louis), October.

111 *A New Chloroform-Oxygen Anesthesia. Heinz Wohlgemuth.
112 A Critical Review of Some Recent Literature on the Pathology of Tabes Dorsalis. Sidney I. Schwab.
113 *Some Obscure Injuries Following the Toxic Use of Alcohol T. D. Crothers.

University of Pennsylvania Medical Bulletin (Philadelphia), October.

114 Early Infantile Inguinal Hernia of the Vermiforin Appendix. George A. Piersol.
115 *The Conservation or Preservation of the Ovaries and Functionating Uteriue Tissue in the Operation of Hystero myomectomy. Henry D. Beyea.
116 A Review of Some Recent Literature on the Etiology of Carcinoma. Aloysius O. J. Kelly.
117 Appendicitis in Children of Two Years and Under. J. P. Crozer Griffith.
118 A Series of Twelve Articles on Medical Men Prominent in the Civil and Military Affairs of Revolutionary Times Francis R. Packard.

Kansas City Medical Record, October.

119 Gunshot Wounds of the Abdomen. E. F. Robinson.

New York State Journal of Medicine (N. Y.), October.

120 The Pathology, Diagnosis, Special Prophylaxis aud Treatment of Tuberculosis of the Female Pelvic Organs. John G. Clark.
121 *The Operative Treatment of Symblepharon by the Use of Thierseh Grafts. Wilbur B. Marple.
122 The Pathology, Diagnosis, Special Prophylaxis and Treatment of Tuberculosis of the Skin. John A. Fordyce.
123 Report of Three Cases of Intestinal Obstruction Due to Meckel's Diverticulum. John F. Erdmann.
124 *Quackery: Several of Its Dangers and Remedies for Same. Francis E. Fronczak.
125 *The Major Obstetric Operations from the Standpoint of the General Practitioner. Edward Reynolds.
126 *The Racial Faetor in Hysteria. Julins Ullman.
127 Intraspinal Cocainization for Surgical Anesthesia. S. Ormand Goldan.

Medical and Surgical Monitor (Indianapolis), October 15.

128 Impressions of German Surgical Clinics. J. Rilus Eastman.
129 Medieine as a Profession—Faets, Fallacies and Faneies About It. Walker Schell.

Medical Sentinel (Portland, Ore.), October.

130 The Soeiologic Problems of Medicine with Sidelights. H. A. Castle.
131 Report of a Case of Tetany. Alexander Hunter.

Medical Herald (St. Joseph, Mo.), October.

132 *One of the Complications Which May Follow the Injection Treatment for Hernia. N. M. Baskett.
133 A Review on Intubation of the Larynx. Hal Foster.
134 A Case of Sporadic Cretinism. Emma W. Demaree.
135 The Epidemic of So-called "Smallpox." J. D. Brummall.

Pacific Medical Journal (San Francisco), October.

136 The Need of Broader Views Concerning the Study of Inebriety. (Continued.) P. C. Remondino.
137 Puerperal Insanity. Ernest Hall.
138 The Etiology, Physiology, Pathology, Symptomatology and Treatment of Crime. George I. Bluhm.

Hot Springs Medical Journal, October.

139 Sacculated Aneurysm of the Arch of the Aorta. Henry A. Robbins.
140 *Movable Liver—Hepatopexy. J. H. Carstens.

The Ophthalmic Record (Chicago), October.

141 Case of Foreign Body Lodged Within the Eyeball and Removed Eighteen Years After the Injury; Sympathetic Inflammation Three Times Without Loss of Vision. Alvin A. Hubbell.
142 A Case of Hysteric Blindness and Deafness. H. V. Wuerdemann.
143 *Three Mechanical Rules for the Ready Detection of the Paretic Muscle in Single Ocular Paralysis. M. F. Weymann.
144 Resection of the Superior and Middle Cervical Ganglia of the Sympathetic for Subacute Glaucoma. Presentation of Patient. Melville Black.
145 A Secure Stitch for Advancement Operations. Frederick Herman Verhoeff.
146 *A New Formed Physiologic Macula. James Bordley, Jr.
147 Chorioretinitis Striata. J. Wilkinson Jervey.
148 Some Remarks on the Use of the Clock Dial Chart in the Refraction of Astigmatism. J. S. Johnson.
149 Hemorrhage into the Orbit of a New-born Child. C. D. Conkey.
150 A Method of Measuring the Amount of Ciliary Spasm by Means of the Shadow Test. R. W. Place.

Oklahoma Medical Journal (Guthrie), September.

151 Should the Determination of Insanity in Law Differ from the Determination in Medicine? C. H. Woods.

Journal of Medicine and Science (Portland, Me.), October.

152 Therapeutics. S. C. Gordon.
153 The Relation of Animal Diseases to Public Health. Don D. Grout.

Alabama Medical Journal (Birmingham), October.

154 Intravenous Saline Infusion. J. M. Mason.
155 Maternal Impressions. Thomas D. Parke.

Therapeutic Gazette (Detroit, Mich.), October 15.

156 *Esophagotomy in Children for Foreign Bodies, with the Report of a Case Aged Sixteen Months, and the Removal of a Metal Clasp Which Had Been in the Gullet for Seven Months. William J. Taylor.
157 *Narcotic Drug Habits and Their Treatment. George E. Pettey.
158 Two Cases of Boric Acid Poisoning. J. F. Rinehart.
159 The Treatment of Prostatic Hypertrophy by Dilatation. John A. Ciminger.
160 Suprarenal Extract and Adrenalin in Internal Medicine. A. L. Benedict.

Medical Review of Reviews (N. Y.), September 25.

161 Hereditary Syphilis. A. Jacobi.
162 A Physiologic Study of Anarchy. William B. Noyes.

New Yorker Medicinische Monatsschrift, September.

163 Milchzucker in der Sauglingsnahrung. A. Jacobi.

Charlotte (N. C.) Medical Journal, October.

164 *Sigmoidopexy for Prolapse of the Rectum. D. M. Mott.
165 Ovarian Tumors Requiring Removal, with Report of Cases. E. C. Davis.
166 Some Suggestions of the Treatment of Fractures of the Shaft of the Femur. H. P. Coile.
167 Ethics of City Physicians. S. A. Oren.
168 Hospitals in the Smaller Towns. A. L. Beachman.

Memphis Medical Monthly, October.

169 Sigmoiditis: Its Etiology, Pathology, and Treatment. Presentation of Case. John L. Jelks.
170 Typhoid Fever: Essentially Still a Widely Prevalent Disease. John A. Blackmon.
171 Eye Complications in the Acute Infectious Diseases, with Report of Cases. George S. McReynolds.
172 The Trained Nurse. Byron Robinson.
173 Acute Inflammatory Edema, and Abscess of the Larynx. Lubet-Barbon.

New England Medical Monthly (Danbury, Conn.), October.

174 Erysipelas. W. L. Smith.
175 On the Treatment of Meningitis with Unguentum Credé. F. Daxenberger.
176 The Prevalence and Treatment of Gout. Charles W. McIntyre.
177 Saccharomyces Cerevisiæ, Its Physiological Action and Therapeutic Value. L. H. Warner.
178 A Useful Article for the Surgeon's Grip. S. Green.
179 Treatment of Primary Syphilis. Frank H. Washburn.

Medical Times (N. Y.), October.

180 Modern Views on Paresis. D. K. Mills.

AMERICAN.

1. **Transmission of Tuberculosis.**—Repp reviews the questions of the transmission of tuberculosis by meat and milk to animals, both experimentally and by natural methods, giving abstracts from the literature, and also the question of the similar transmission to man. There is no experimental evidence whatever of the transmission of tuberculosis to man by tuberculous meat, and its transmission by natural methods in this way is only presumptive. Of course, meats, if thoroughly cooked, destroy all the danger. As regards milk the evidences, though comparatively few, give presumption that it is possible.

2. **Prostatic Hypertrophy.**—Whalen's article gives the symptoms, diagnosis, and treatment of enlarged prostate. He thinks that dilatation with steel sounds or dilators has a certain value, but it has never given complete relief. Operations for drainage are only palliative measures. Where permanent drainage is to be established, he prefers it by perineal urethrotomy rather than suprapubic drainage. Galvanopuncture, iodin injections, and ligation of the internal iliac are obsolete methods as is also castration. He does not favor vasectomy as recommended by Harrison. Perineal section and enucleation as done by Nichol and Alexander are of value in selected cases if the removal is complete, but operations which do not attack the hypertrophy of the lateral lobes are not radical and can not effect a permanent cure. Suprapubic section or prostatectomy is the most curative procedure and if there is a suspicion of stone or tumor, it will always be found most satisfactory. The operation advised by Belfield, of combined suprapubic and perineal section, is often done, but personally he has never had any difficulty in removing the hypertrophied prostate by simple suprapubic section. Where it is difficult, a great help will be found by placing a finger of one hand in the rectum and exerting counter-pressure while enucleation with the other forefinger is being done. Lack of thoroughness and care in selecting cases is responsible for the difference of opinion regarding prostatectomy. The mortality, he thinks, is largely due to the advanced stage of the disease and the poor systemic condition of the patient. The Bottini operation, he believes, is palliative in most cases. He thinks that this and prostatectomy are the only procedures to be tried at the present time. The larger the prostate, the more favorable for prostatectomy, while for the smaller ones the Bottini operation is indicated. Prostatectomy should not be done as a last resort; the time to do it is before great damage has been done to the bladder and kidneys. If this plan is followed and spinal anesthesia used in place of the usual anesthetics he thinks that the mortality of prostatectomy can be brought as low as, if not lower than, the Bottini operation and that the results will be far better.

4.—See abstract in THE JOURNAL, XXXVI, p. 1726.

9. **Splenic Anemia.**—The continuation of Wentworth's article in this issue is largely a review of the literature.

10. **Ambroise Pare.**—The conclusion of the memoir of Ambroise Paré by Cumston is here given, with notes on some of his contemporaries. It forms an interesting historical study and the author has evidently devoted considerable research to the subject.

11. **Tubercular Peritonitis.**—In this concluding portion of Fontaine's article the treatment is discussed and the various theories as to the effect of abdominal section are noticed, but the author does not, himself, express a preferential judgment. The percentage of recoveries in the surgical cases is evidently not too encouraging—from 25 to 35 per cent. The percentage

of mortality increases the longer the cases are observed. It is evident that the surgical treatment of tubercular peritonitis is far from being settled. In fibrous, caseous or ulcerative cases surgery reports only bad results and has no effect except as a palliative for bowel constriction or grave complications. In cases of ascites and encystment both medical and surgical methods have strong claims, and only long and more frequent observation of the results will decide for which the balance lies. The author thinks that in complicated cases it is better to give the medical treatment a thorough trial because there is already a tendency to spontaneous recovery and medical measures may suffice. The results from the medical treatment seem to be about as good as from the surgical treatment, and the latter will be as efficacious a little later on, if found necessary. The medical treatment advised seems to be to keep the alimentary canal aseptic, to prevent local irritation, to use proper diet, ice-bags, and in acute cases, for the first few days, to treat like an acute peritonitis. After that, no opium, but hot fomentations for the pain, if necessary. Keep the diet fluid, use calomel and salines in divided doses, intestinal antiseptics, tonics and such general remedies as are supposed to be curative for tuberculous affections. The treatment should continue for several months under careful observation. In no case should we forget to add the tonic influence of fresh air, which has so much benefit in this as in other forms of tuberculosis.

13.—See abstract in The Journal, xxxvi, p. 1582.

15. **Biopsy.**—The name biopsy is given by Besnier to a sort of autopsy on the living, consisting in excision of eruptive lesions or fragments of tumor for the purpose of histologic examination. The advantages of it are in furnishing a means of diagnosis, and the disadvantages are slight. The patient can usually be brought to consent. The operation done under asepsis avoids infection and the time required for the removal of the part and the pain are exceedingly slight. The preferable instrument is the sharp Graefe knife, which cuts out the flap pinched up, including the desired piece. Hemorrhage is usually insignificant. Local anesthesia may be generally dispensed with and cocain injections are undesirable on account of the edema they produce. The incised tissue should be at once immersed in the fixing agent that has been chosen. Biopsy is indicated whenever the practitioner is face to face with a cutaneous lesion, or an accessible lesion of the mucous membrane, where definite diagnosis can not be otherwise made. In tumors and ulcerations of doubtful character tending to infect surrounding tissue the indication is absolute and pressing, though in other cases diagnosis may not be so imperative. The greatest use of the method is for the clearing up of epithelioma-appearing cases, etc. These are often difficult to distinguished from tuberculous ulcer, gummata, actinomycosis, lupus, and various other conditions. Cutaneous tuberculosis also furnishes frequent occasion for fruitful resort to biopsy, and syphilis and leprosy must also be taken into account, also mycosis fungoides, and sarcoma. Biopsy is optional in benign malignant tumors, which are troublesome on account of their number and persistency. In special cases Darier has resorted to biopsy for the diagnosis of certain common dermatoses, which in atypical forms present problems in diagnosis. He says to sum up: "Biopsy is an operation which furnishes an easy and rapid means for establishing or confirming a diagnosis otherwise impossible or doubtful in the case of various dermatoses and cutaneous tumors. It is too often neglected by some, and very rarely employed by others. For this reason he has believed it worth while to recall it to the attention not only of dermatologists but of physicians and surgeons generally.

17.—See abstract in The Journal of July 13, p. 138.

20. **Resistance Exercise.**—The use of resisted movements of the part of the body in which the definite resistance is to be governed, with the object of strengthening the muscles which cause the movements, is by Little referred to under this head. He says that they are useful in various deformities of the foot and hand and describes the methods, especially an automatic arrangement. To make the child, especially the young ones, who are difficult to get to apply themselves to these exercises, he has devised an arrangement whereby the proper movements can be affected by ringing of a bell, and very few children can resist this temptation. In order that they should not tire of the exercise it is essential that they should not be allowed to play with the machine too long. Its use should be reserved for stated periods and be made rather a treat than a task. In an intelligent child of 10 years or more this is hardly required, but in many cases it is better to substitute the resistance of a small weight to that of the nurse's hand on account of any possible carelessness on her part.

21. **The Lane Lectures.**—Morris defines syphilis as an exanthematous fever diluted by time, and discusses its cutaneous manifestations, the polymorphous character of the lesions, hereditary syphilis, modes of inoculation, diagnosis and treatment. He favors the early use of mercury before the constitution has become infected and this continued with occasional intermissions for two or even three years. The worst of the aggravating agencies is alcohol, and tobacco still further aggravates the condition. He suggests as a prevention a sort of social ostracism; if the contamination of a healthy person through the carelessness of a diseased one who knows himself to be such could be made a criminal offense, it would be still better. The prevention of syphilis has become a matter of urgency in Europe, as according to Fournier, it is more serious than it was of former years. The public should be wakened to the importance of a systematic effort to stamp it out. Leprosy is also considered, and its prodromal period, which may extend over years, the evolution of the disease and other manifestations, its geographic distribution, its relation to colonization and undoubted contagion are discussed. He gives some remarks also in regard to medieval leprosy and points out that the segregation of lepers is a necessity to stamp out the disease.

26.—See abstract in The Journal of October 5, p. 930.

27. **Transmission of Yellow Fever.**—The mosquito theory of the transmission of yellow fever is endorsed by Doty, who finds that while it is not yet demonstrated that there may not be other means, it is really evident that the disease is not contracted by personal contagion or through the medium of clothing, bedding, cargoes and vessels. He thinks we are justified in changing the quarantine regulations to conform with the latest views.

29. **Cinchonism and Hearing.**—Seiler finds from experiments with a complete set of test tuning forks and occasionally a musically trained subject, that the ordinary tinnitus aurium due to middle-ear disease never transgressed the limits of pitch from d-1 (297 vibrations as the lowest point) to f-2 (704 vibrations as the highest), and that these subjective noises had no effect on the vocalization or articulation, but that they would invariably affect the sounds which had the same or nearly the same number of vibrations per second. The subjective noises of so-called cinchonism, as produced by the various drugs such as quinin, sodium salicylate, etc., he found to be invariably of a very high pitch, varying from as low as the g-3 (1584 vibrations) to as high as the i-4 (3960 vibrations) and often even higher. In the few cases of musically educated persons whom he has examined and who were familiar with the aural analysis of sound, inquiry elicited the fact that the noise was composite in character, being made up of a variable number of individual sounds. These were sometimes harmoniously blended to form a chord, the fundamental tone of which was always constant in pitch, but varied with the drug producing the noise—usually the lowest with quinin, and the highest when sodium salicylate produced the subjective aural sensation. The third fact which he observed was that any composite noise of high pitch, such as is produced by the hissing or escaping of steam or the noise of rapidly revolving grindstones, not only interfered with the pronunciation of those consonants, which, according to the investigation of Helmholtz and others, have for their characteristics a combination of sounds of very high pitch. th, s, sh, and z, and the

like consonant sounds of articular speech, but also caused them to be most easily obliterated and consequently most difficult to be appreciated and recognized by the ear. This fact, which is quite familiar to steam engineers and grinders, is to be explained by the well-known acoustic law of interference. The acoustic or physical laws fail us completely when a subjective, in reality physically non-existing noise, such as that of cinchonism, materially interferes, as it undoubtedly does, with the pronunciation of those consonants of high-pitched composite characteristic sounds and even alters the quality and timber of the high-pitched vowel sounds. He does not offer any explanation or hypothesis of what is to him an inexplicable but undoubtedly existing influence of purely subjective and non-externally produced sensations upon a purely physical phenomenon such as vocalization and articulation.

32. **Gouty and Obese Respiratory Conditions.**—The abnormal respiratory conditions in sufferers from obesity have not, Anders says, been studied as much as they deserve. Their pathogenesis is not clear, but the mechanical embarrassment from the deposition of fat throughout the body will largely account for them. He has found the respiratory capacity by actual measurement to be less than 2.5 inches in obese subjects, and it is obvious that such interference with lung expansion must excite dyspnea upon muscular exercise, or over-distension of the stomach and even during recumbency. Dyspnea is more marked in the anemic than the plethoric variety, in which latter type there appears to be compensatory hypertrophic changes in the muscular structure. One thoracic symptom belonging to over-fatness especially mentioned, is pain in the subscapular and intrascapular muscles, which may be acute on moving the organs or attempting to maintain an erect position. The restrictions of thoracic excursions in the respiration and the enfeebled heart action combine to cause passive venous congestion of the bronchial mucosa. Thus we have in obesity a hyperemic bronchitis with troublesome cough and sometimes copious mucoid expectoration, aggravated by weather changes, irritants, etc. The physical signs are variable. Closely connected with this is asthma, which is usually regarded as of cardiac origin, but is favored by respiratory activity. There is also an asthma in obese cases due to gastric disturbance. The active stage is also an accompaniment of obesity and there are reasons to think that both these are dependent upon liver inadequacy. Personal experience leads Anders to think that severe paroxysmal dyspnea seen in obesity is in many cases not a true asthma; it is relieved by assuming and maintaining the erect posture for a short period. When asthma does occur, however, as well as with these cystic dyspneas, the effect of the usual treatment to reduce body weight is liable to aggravate the asthmatic symptoms. His own conclusions as to the question of the relation of the asthma to polysarcia are: 1, that asthma occurs in about 5 per cent. of the cases of obesity; 2, that it only occurs in extreme polysarcia; 3, that there is present a gouty state or history in most cases in which true asthma is secondary to obesity; 4, that about 50 per cent. or one-half of the cases are curable by overcoming the causative condition. He also mentions the bronchial affections in their relation with gout and the association of gout with over-fatness. Asthma may be caused by gout independently of obesity and the usual treatment of such cases is by the antipodagral remedies. There are cases where lithemia rather than gout exists, as shown by high urinary acidity, diminished renal inadequacy, etc.

33. **Nephorrhaphy.**—The title of this article is rather misleading, as only the first part of it refers to the use of adhesive straps instead of sutures for closing a nephrorrhaphy wound. The larger portion of the article refers to the recognition of misplaced kidney and the operative measures required for its relief. Goelet gives the symptoms which indicate prolapsed kidney, such as chronic congestive disturbance, nervousness, fatigue, palpitation, epigastric pain, dragging pain in the loin, inability to rest on the left side, bladder irritability, jaundice, pain simulating appendicitis, ovarian trouble, renal colic, etc.

34. **Multiple Malignant Neoplasms.**—Warthin describes a case with autopsy where there were sarcoma, carcinoma, and myomata co-existing. Coley's serum was ineffective and he finds that it produced simple necrosis in parts where it was injected, and suggests that if spontaneous necrosis and degeneracy so frequent in malignant tumors is to be regarded as one of the factors in the production of tumor cachexia, excessive necrosis produced by injections of toxins must be favorable to the rapid development of cachexia, with also the dangerous systemic effects of the substances injected.

40. **Dysentery.**—Monroe considers that dysentery is often produced by exposure and that straining at the stool may often induce sufficient irritation to cause it. He thinks also that dysentery is contagious and he noticed that it seemed to be communicated in one case by a bed which had been used by a former sufferer and in others by the use of houses which had been closed for months after dysentery had occurred in them. Therefore, he thinks, in the epidemic form it will be well to isolate patients, thoroughly ventilate houses, frequently changing the bed and clothing and disinfecting discharges and other exposed articles. In epidemics he has found it good to begin with calomel, then followed with quinin and subnitrate of bismuth when the discharges change. In some epidemics he has given tincture of opium and castor oil mixed every four hours after using calomel. He does not see any benefit from astringent injections. He disbelieves entirely in the serum treatments, or rather says he thinks all have more or less of a humbug in them and credits any effects to carbolic acid which is combined with them all.

41. **Malaria.**—Favill insists on the diagnosis of malaria being confirmed before specific treatment is commenced and he has long since come to withhold his prescription of quinin until he has made a microscopic diagnosis. If we go ahead and give quinin and the case is troublesome or dubious the evidence of infection that we are trying to establish may be destroyed, though it may be there all the time. Quinin is not of diagnostic value in a multiplicity of cases. In this part of the country we should see but few cases of estivo-autumnal fever and they are most likely to give trouble. It is hard to say always what is the best to do with a case of estivo-autumnal fever; it runs such a course, baffling and irregular, so as to be almost beyond our therapeutic reach. When we have decided to give quinin, the question is how much? It is a grave question whether we should treat the case hypodermically or not. The reason quinin does not act when given by the month is because it is not absorbed by the intestinal canal. He asks: What alternative administrations have we? Three, hypodermic, rectal and intravenous. The rectal method is unsatisfactory, but he has seen cases where he did not dare to resort to the hypodermic administration and the rectal method had to be relied upon. The hypodermic administration of quinin is possible and extremely effective, but there are objections to it, especially the dangers of local necrosis, and the condition of the patient favors this sometimes. The difficult question to settle is how much good quinin will do in certain cases, between the final results and the infection. Have we here a disease infection or have we its indirect result? Unfortunately, in most cases the diagnosis in this respect can not be made and we give quinin because we have nothing else to do. The rejuvenation of the blood becomes an important question in the terminal aspect and here comes in the use of judgment and experience in therapeutics. Finally, the best way to administer quinin in simple cases where there is a distinct paroxysm, is before the onset of the paroxysm, or during it, but we have few of these cases now. For the most part the drug can be given throughout the day and will almost invariably fulfill its purpose. The drug must be administered according to the necessities and possibilities of each case; the point is to get it into the blood in sufficient quantities. This leads to the statement that there is no such thing as a dose of quinin. The dose of quinin is what will produce the desired effect, whether it be 3 or 30 grains and this will depend on the conditions of the case.

51. **School Text-Books on Physiology.**—In the opinion of Scott, a good common-school text-book should first have its

teachings such as are sustained by the most recent scientific investigations. 2. It should represent sufficient anatomy. 3. It should give due emphasis to the cellular microscopic structure of the tissues so that the cell activity of the organs can be comprehended. 4. The physiologic anatomy of the body should be so explained as to be within the comprehension of the pupils. 5. The physiologic processes should be so emphasized that they will stand out as distinct. 6. Sufficient emphasis should be placed upon hygienic matter, which, however, should not be distributed through the book, but given after the other parts. He goes over the text-books that have been offered and points out their defects and merits as they appear to him. Martin's "Human Body" is too illogical in its order and arrangement, but the later revisions are better than the former ones. The best book of all which he speaks of is Thornton's "Physiology," which is more nearly ideal than any he knows of, though he speaks well of Colton's and Blaisdell's physiologies also.

52. **Hemorrhoids.**—The operation mentioned by Mason for the cure of internal hemorrhoids consists in first preparing the patients with cathartics and enemas and restricted diet and then inserting a pledget of cotton saturated in a 10 per cent. solution of cocain, up the anus about two inches. After about five minutes the piles will be partly free from sensation. Then have them forced out by the patient, if possible, if not, by other means, and grasp the tumor lightly at the base with the notched clamp and inject it full with a 2 per cent. solution of cocain. After about a minute a clamp is closed as tightly as possible and all the piles above the notched edge cut off. With a curved needle threaded with catgut, stitches are passed through each notch and tied tightly and after all are tied the clamps are removed and a neatly closed wound that heals by primary union is the result.

60.—This article has appeared elsewhere. See abstract in THE JOURNAL of October 19, ¶18, p. 1067.

67.—See abstract in THE JOURNAL, xxxvi, p. 1650.

69.—See abstract in THE JOURNAL, xxxvi, p. 1653.

70. **Cesarean Section.**—A case of Cesarean section is first reported by DeLee and the relative propriety of the different operations in cases of dystocia discussed. He argues for the propriety of craniotomy in certain cases, holding that the mother is more important notwithstanding the teachings of the Catholic church. While the mortality from Cesarean section is comparatively low, it still is sufficient to make the operation a serious one, while that of craniotomy may be said to be absolutely *nil* at the present time. We must consider that fact that a large proportion of children die in early life, which would affect the value of the child's life as compared with that of the mother. There is also the possibility of the child being a monstrosity, idiot or imbecile and he asks what we would do if the child were illegitimate or if the patient was a dwarf, imbecile or criminal. Would it be desirable to perpetuate or multiply such cases? The physician, he thinks, is legally and morally obliged to obtain permission, however, to perform any operation and in case of division of opinion, the mother desiring a child, and the father desiring, if possible, to save the life of the mother, he thinks the husband's word should be the governing one. In any case the fact should be thoroughly laid before the parties concerned and if permission for Cesarean section is not granted the following courses are open: 1. Expectancy. Not infrequently the calculations of the obstetrician have been entirely upset by nature and a child spontaneously born. 2. Prophylactic version. 3. High forceps. When these fail craniotomy steps into its right. No man should wait until the patient is in actual danger or use forcible means to save himself by reason of the morbid sentimentalism against having destroyed a child. If the child is still-born or dies in a few days he has destroyed it in the worst possible manner as far as both mother and child are concerned. In advanced cases the mortality of Cesarean section is much higher than when performed early and may be out of the question. When the patient has been in labor more than twenty-four hours, when she is presumably infected, when operation has been attempted by unskilled hands, Cesarean section and symphysiotomy should be prohibited. The child should be sacrificed and premature labor induced, or the former operations under ideal conditions may be then performed.

75. **Toxicity of Urine in Pregnancy.**—In this article Stewart reports experiments which seem to indicate that all the fresh urine which killed mice must have contained micro-organisms at the time of injection and in every case septicemia or the presence of bacilli could be demonstrated in the blood. Urine passed by the patient over boric acid usually contains a convulsive poison which is deadly in 100 per cent. of cases, and when the urine is drawn by catheter under strict surgical asepsis the mortality is greatly reduced, and when the urine is so drawn and immediately boiled the mortality is still further lessened.

76. **Prolonged Pregnancy.**—In the case here reported by Taussig, the woman had three pregnancies while under observation, two of normal length and one in which without question the duration of gestation lasted 323 days. She was able each time to fix the date of last menstruation. The child died in each case shortly after birth so that there was no question of amenorrhea from lactation. He reviews the published cases of prolonged pregnancies and says that we have here a mass of evidence which should make the most conservative acknowledge that this condition occurs in the human race and it has long since been proven to occur in lower animals.

79.—This article has appeared elsewhere. See THE JOURNAL of October 5, ¶45, p. 941.

87. **Varicocele.**—Bradley recommends the suprapubic operation for varicocele, that is to say, tying the veins near the inguinal canal. He finds by correspondence with military surgeons that the method has been in use by Major Banister, who describes it as one of the most successful surgical procedures, without risk to life and well adapted to military service, and by Major Borden, who believes that varicocele should never be considered a cause for discharge, but operated upon in this manner. Bradley's method of performing the operation is locating the cord first by palpation and making an incision directly over the external ring, 1 to 1½ inches long. After reaching the sheath of the cord and opening it, enlarged veins frequently present, which can be picked up, drawn out and excised. They are separated by blunt dissection and ligated one-half to three-fourths inch above the testicle by two catgut ligatures. The veins thus ligated off are excised and the stumps drawn together by ligatures left long enough for this purpose. After tying, the approximation is made more perfect by threading the ends of the ligatures and taking a few continuous sutures. The cord is now replaced in the sheath which is closed by fine catgut continuous sutures; the deeper tissues are approximated by continuous catgut and the skin by subcuticular silkwormgut. A sterile cotton collodion dressing is applied and a suspensory bandage. In a week the dressing is removed, the silkworm sutures taken out and a suspensory worn for some time thereafter.

99.—See abstract in THE JOURNAL, xxxvi, p. 1414.

100. **Celloidin Capsules.**—McCrae has studied the agglutination phenomenon by the method of enclosing the bacilli in capsules inserted into the abdominal cavity of animals, and in this article he gives the description of making these capsules. He fits the body of an ordinary drug capsule over the end of a tube which is constricted a little above its end. The tube is heated and then the capsule melts on the tube. Then both are plunged into a thin liquid celloidin so that it adheres directly to the capsule and the glass and this is repeated until the desired thickness of celloidin is obtained. The gelatin is then melted out by filling the capsule with water and placing in a test tube half filled with water and then heated in an autoclave. Into a capsule thus prepared a culture is inserted, care being taken not to wet the glass of the tube which is well fused with a blow-pipe flame, thus making a sterilized capsule. 1. He found that the capsules thus made allowed dialysis when placed into the peritoneal cavity. 2. The normal tissues, un-

stimulated, do not possess the power of causing agglutination; they do not require to be stimulated by the presence of the bacterial bodies, but will produce their share of the agglutinins when acted upon by the bacillary products. 3. Agglutination follows the insertion, in the peritoneal cavity, of "capsulated" bacilli; it gradually increases in degree, and on the removal of the capsule, containing the bacilli, begins to disappear. 4. Varieties of bacilli, related closely in morphology and cultural reactions, do not, as a rule, produce serums which inter-agglutinate.

101. **Hypodermic Injections.**—Meltzer has tried experiments with multiple injections as compared with single ones in the rabbit and he finds that the former, though the total amount of substance injected is less, are more effective. Thus the distribution of a certain quantity of poison among several places of the body is more effective than the injection of the same quantity in a single dose into one place.

102. **Cyclic Albuminuria.**—The authors report a case of cyclic albuminuria in an otherwise apparently healthy young man in which they noticed the excretion of proteid from hour to hour under various conditions and point out the independence of changes in the diet or medicine. No relationship between the volume of urine eliminated and the quantity of proteid excreted has been ascertained, but the albuminuria was checked while the patient was in a horizontal position. Mendel and Hooker say the attempt to refer this to attendant circulatory changes in the kidneys is, for the present, no more than an interesting speculation.

110.—This article has appeared elsewhere. See THE JOURNAL, xxxvi, ¶23, p. 843.

111. **Chloroform-Oxygen Anesthesia.**—Wohlgemuth's article describes his method of employing oxygen combined with chloroform with the view of avoiding asphyxia and describes his apparatus. The details of the latter are too elaborate to be given here. His experience with this form of narcosis comprises, so far, more than 300 cases, which he thinks is sufficient to authorize him to bring his experience before the profession. He has never seen any signs of suffocation, and patients who bore ordinary anesthesia badly stood this method splendidly. In twelve instances the weak irregular pulse improved during narcosis. 166 patients were fully conscious immediately after operation; 13 required between 8 and 30 minutes, and 1 slept three hours; 21 dispensary patients got off the table and walked home. Kidney irritation was never observed and he thinks with this method an overdose of chloroform is impossible. He hopes that future trials will establish the value of the method.

113.—See also title 79.

115.—This article has appeared elsewhere. See THE JOURNAL of October 19, ¶62, p. 1066.

121. **Symblepharon.**—In the case reported Marple has employed the Thiersch grafts with success in a case of symblepharon. The method is not new, since Hotz used it in 1893, and others a little later. He describes his technique and remarks that the grafts should be from one-third to one-half larger than the surface to be covered, as allowance should be made for subsequent shrinkage. Whether to introduce the grafts the same day the symblepharon is divided will depend upon the amount of bleeding; if slight, there is no objection to proceeding at once. It is best to use a shell of transparent glass to protect the cornea. If there is much pain and infiltration the shell must be removed. In dividing the symblepharon it is important to obtain a pouch of normal depth so that the lids are easily closed over the shell after it is introduced. In the case presented the operation was done with success two years ago and the results seem to be permanent. He does not wish to be understood as advocating the use of Thiersch's grafts in all cases of symplepharon. In many cases we can get along without them, but in several of his own cases he is sure that no other method would have succeeded nearly so well. The grafts are taken by him from the inner surface of the arm.

124. **Quackery.**—The dangers and temptations of quackery are noticed by Fronczak, who offers the following suggestions for its prevention: In the first place medical schools should admit only young men whose antecedents, surroundings and personal character are such as will not admit of any probability that they will afterwards dishonor them by quack methods. The son of a patent-medicine man will possibly follow some such a course as the father, and the employe of a cure-all medicine office will surely use the quack tactics of his former employer. 2. The medical student ought to be an educated man to a high degree, a liberal man, though one that will not tolerate anything outside the confines of honesty of judgment, common sense and morals. After graduation from a course of at least four years he should have hospital experience of one or two years. A thorough knowledge of medical science thoroughly equips the physician and at the same time prevents him from diverging to the side-track of dishonesty or quackery. 3. The medical students should be taught all the simple means of healing and nursing. They should be forewarned against imposters and attempt to protect the community by exposing quack methods. 4. They should try to popularize as much as possible writings on hygiene and simple medical preventatives. 5. Physicians should never antagonize one another or speak ill of one another or use unethical or improper means of securing practice. In using such they lower the standard of the profession both with themselves and the public and open the field for quacks. 6. State restrictions to practice of medicine should be such as to insure competent physicians and every transgression of the law should be severely punished. The contents or ingredients of all patent medicines should be printed on every bottle or vial and all conspicuous and nauseating advertisements should be prohibited. 7. The medical press of the country should give due notice of all quacks in their neighborhood and the method employed by these and provide physicians with valid and strong arguments to be used against quacks on every occasion. They or the medical societies should see that the newly settled quack should not be allowed to linger. Finally, physicians should be careful in giving their opinion on all new drugs that have not been thoroughly tested or tried. It gives the quack the excuse to say that the medical men do not really know what is good, but condemn one day what they praise another, and try things on their patients dangerous to life and health.

125. **Major Obstetric Operations.**—The conclusions to which Reynolds has been led are as follows: "1. When the conditions are such that the child can be delivered with anything like reasonable ease by forceps or version, one of these operations is preferable to any cutting operation. 2. When the mechanical relations would render forceps or version unusually difficult, forcible and prolonged, and when the mother is in the favorable class, the equally low maternal mortality and the far lower fetal mortality of the Cesarean section renders it the operation of choice. 3. When the mechanical conditions make the intrapelvic delivery of an intact child at term impossible or unduly difficult, the great superiority of Cesarean section over the induction of premature labor in fetal mortality and its extremely low maternal mortality render it again the preferable operation. 4. When the ordinary operations fail and the woman is in the unfavorable class, symphysiotomy is the operation of choice and may be expected to lead to a favorable result for both mother and child in the great majority of cases, provided always that the degree of mechanical difficulty permits of its application. 5. When in the unfavorable class of cases, the degree of relative disproportion between head and pelvis is too great to admit of a safe symphysiotomy, craniotomy to the living child should be unhesitatingly chosen, since the maternal mortality of either form of section is so enormous, and because I can not doubt that the life of the potential mother of many children is of more value than that of any one unborn fetus." He thinks that if these principles are true there are but few if any cases of uncomplicated mechanical obstruction in which a happy outcome is not within the power of prompt and intelligent medical care if applied early. He insists on the value of pelvimetry and thinks that

any one having a first case of labor in a patient should calculate all the possible contingencies of mechanical obstruction.

126. **Hysteria.**—Hysteria is not confined to the human species, and Ullman reports several cases from the literature, of it occurring in dogs and other animals. In the human species it does not belong to any time, nor is it peculiar to any race. There are certain etiologic factors which if allowed to play will cause definite symptoms of this disease to appear in any race. The influence of emotions such as traumatism, general disease, such as typhoid, etc., and the influence of sexual organs, and intoxication. The Israelites appear to be more especially subject to this condition, and he explains the fact by their heredity and antecedents. In the black race he believes that it occurs in their native state, and in spite of the observation of Hammond to the contrary, the most typical cases of hysteria were very common during the slave period as May has shown. Correspondence with those who have had much experience with the colored race inclines him to believe that the negro is as subject to hysteria as the white with the same intelligence, education and environment. The Indian aborigines of this country were liable to be hysterical, though less so probably than some others. A few individual cases of the trouble have been noted in connection with their religious superstition, but as the Indian becomes more and more civilized he becomes more subject to it. He does not find much evidence of its frequency among the Chinese. He does not believe it is as frequent with them as in the white race. It is a condition common to all people, but it affects certain races more than others, such as the Jewish and Latin peoples. This is due to environment rather than to hereditary antecedent qualities.

132. **Injection Treatment for Hernia.**—A case is here reported of hernia involving principally the omentum with a very small knuckle of the intestine which was reduced en masse, but again came down and called for operation. A large number of adhesions and extensive agglutination was found, which required careful dissection and made the operation tedious and apparently doubtful in its outcome, though the patient ultimately recovered without a bad symptom. The existence of these complications was attributed to the injection treatment which had been instituted about one year before.

140.—See abstract in The Journal of September 28, p. 850.

143. **Ocular Paralysis.**—In cases of ocular paralysis in the very early stages when there is still a chance for treatment to be effective the diagnosis is sometimes difficult. The limitation of motion is often not demonstrable at all, hence the primary deflection not observable, and secondary deviation not satisfactorily shown. Weymann offers the following three rules; "1. Diplopia appears in the field of action of the paretic muscle. 2. The advancing image belongs to the paretic eye. 3. Paresis of any obliquus or external rectus produces homonymous; any other muscle heteronymous diplopia." Using stained lenses of equal density of tint, but differing color, for both eyes, best fusion colors, shows the binocular single picture in fusion tints, while the changing color of the parting images facilitates prompt recognition. Examples are given showing the application of these rules.

146. **New Formed Physiologic Macula.**—Bordley reports a case where after operation for squint an excentric portion of the retina took up and performed perfectly the functions of the macula, with not only the same acuity of vision as the normal one, but was also capable when stimulated of assisting in the most perfect associated ocular movements.

156. **Esophagotomy.**—The case reported is one in which a child had swallowed a metal clasp and the operation for its removal is here described. Taylor reviews the literature of esophagotomy for such cases and insists on the importance of the Roentgen rays, and the value of their expert interpretation. He believes it is always advisable to attempt to suture the esophagus with catgut, because then if we do not close the wound at first we can diminish its extent. The external wound should be packed with gauze, there being no objection to using one or two sutures at each end to diminish its length. The dressing should be changed very frequently. Boric acid is the strongest antiseptic which should be used about the wound for fear of doing damage. From a review of the literature he feels sure that the question of short and fat neck should not be a special factor in determining our selection of method of reaching the foreign body. We should be guided only by its position as located by the skiagraph.

157. **Drug Habits.**—According to Pettey there are four points in the successful management of these cases: 1. Thorough elimination; 2, support of the vital functions; 3, relief of suffering; 4, entire control of the patient and his surroundings. He believes in the use of hyoscin to relieve the suffering of these cases of morphin habitués. It does not affect the vital functions or leave after-effects and the patient should be kept under its influence for twenty-four hours from the time abstinence symptoms begin to make their appearance. If the beginning course has been thoroughly carried out it will be hardly found necessary to continue the administration of hyoscin more than twenty-four to thirty-six hours and at the end of this time the patient will remain free from pain and nervousness, will sleep from five to eight hours, have no craving for the morphin, and in a few days have an appetite that is hard to satisfy. In most cases no after-treatment is necessary. He does not believe in alcohol or strychnin. Other stimulants should be interdicted. During the period of treatment which under the rapid withdrawal method lasts but a short time the patient should be separated from his family and for ten days to two weeks afterwards to avoid sympathy and over-attention, which have a bad effect.

164. **Sigmoidopexy.**—The operation recommended by Mott is that of McLeod, published in the *Lancet* of July 19, 1890, and described, though not commended, in Treves' "Manual of Surgery." The operation is performed by first making a laparotomy, a 2-inch incision, a little internal to the anterior iliac spine, dividing the muscle layers according to their fibers, opening the peritoneal cavity and reaching with the index finger for the bougie introduced per anum and held by an assistant. This is quickly found, crooked up by the finger and fixed by two stout catgut sutures to the inner side of the wound in the abdominal wall. The suture pierces the peritoneal and muscular coats, but, of course, leaves the mucous lining intact. Close the peritoneum with a catgut suture and the transversalis and internal oblique with silkwormgut. The external oblique was joined by a strong catgut and the skin incision closed by interrupted horsehair sutures. In his case the progress was uneventful, and he thinks, instead of this being an extreme measure as characterized by Treves, it is much simpler and more rapid of performance and causes less shock and loss of blood than complete excision and incurs no more risk than any other ordinary laparotomy operation.

FOREIGN.

British Medical Journal, October 19.

A Discussion on Renal Tension and Its Treatment by Surgical Means. Reginald Harrison.—Dr. Harrison calls attention to the evidences that the kidney may be in a congested state and in a condition of extreme tension, causing the cortical tissue to be enormously swollen and changed to a deep coffee color in extreme cases. He compared the condition to that of the eye in glaucoma and suggests the term renal glaucoma as not an inappropriate one. A somewhat similar condition might also exist in the testicle, which results sometimes in sterility. Four illustrative cases are reported and discussed and the surgical method of relief described. In incising the capsule of the kidney for relieving tension he prefers doing so along the convex border, while punctures may be made almost anywhere where the engorgement seems greatest, but he thinks it is well to avoid the pelvis. Drainage is an essential part of the process and may be continued some days or even weeks. As to the question as to which organ should be selected, he thinks there is not much choice unless there is something to indicate it, such as the presence of pain. Both organs are usually involved in an inflammatory condition, though possibly not to the

same degree. In double nephritis, however, relief of tension in the one kidney relieves the other. In the discussion following, Dr. Cousins remarked on the favorable results of the operation for these conditions, and said the most favorable cases for surgery appear to be those associated with acute nephritis and infection through the blood. Tension may be caused by partial or complete retention of urine, from infection or from chronic alcoholism.

Certain Points in the Operative Treatment of Renal Calculus. J. Hutchinson.—The importance of the Roentgen rays in the operative treatment of renal calculus is particularly emphasized by Hutchinson, who sums up as follows: "1. The *x*-rays (except perhaps in stout subjects, or in the case of very small stones) enable an exact diagnosis as to size, position, and number of renal calculi to be made. 2. They enable the surgeon in performing the operation of nephrolithotomy to do so with the least possible injury to the kidney, and to dispense with bringing that organ on to the surface of the wound. 3. Limited incisions made directly over the calculi through the renal pelvis are to be preferred when practicable. Such wounds of the pelvis heal well. 4. Before the operation it is most important to get the urine into a healthy condition. The administration of urotropin before and afterwards is of much value. 5. Renal calculi, however small, should be operated on as soon as they are positively diagnosed. Their danger to the kidney structure and to the patient's life bears no relation to their size."

Radical Cure of Femoral Hernia. R. H. Parry.—Parry remarks on the objections to the usual methods of radical operation of closing femoral hernia from below, claiming that efficient support can not be provided for the approximation of structure outside of Poupart's ligament, that the femoral vein is in danger of being injured or compressed and that a depression is left above the crural ring. The method which he proposes consists in exposing the crural ring from above and attaching the conjoint tendon to Cooper's ligament, thus effectually blocking the entrance by structure which can be readily displaced to do this and also be adjusted so as to avoid pressure on the veins. The technique consists first in a curved incision with the convexity downward from a point a little external to the pubic spine to the middle of Poupart's ligament, raising a flap of skin, ligating and dividing the superficial epigastric vessels and exposing the ligaments. The femoral sheath is opened near Poupart's ligament and the sac and adherent fat now turned out as far as possible with the finger. This avoids the saphenous vein. The sac is then opened and the adherent omentum sutured or ligated and removed. When the fat has been removed on the outside surface the sac is usually much smaller than in inguinal hernia, and the rules for the latter can not always be followed in femoral hernia. If its walls are thin and torn it should be removed and the opening into the peritoneum carefully closed. An incision is made through the aponeurosis of the external oblique immediately above and parallel to the inner half of Poupart's ligament. The inguinal canal is opened and its contents drawn aside to define the lower margin of the conjoint tendon. The transversalis fascia is next divided where it passes beneath Poupart's ligament to form the anterior layer of the femoral sheath. The peritoneum is left intact except where necessary to ligate and remove omentum, which can not be returned through the ring. Retracting the parts at this stage affords an excellent view of the upper surface of the ring, the femoral vein and Cooper's ligament. A catgut suture is passed through the fundus of the sac where it is tied and then through the neck close to the parietal peritoneum and finally carried through the transversalis fascia and conjoint tendon. When the suture is tightened the sac doubles up and disappears beneath the abdominal wall; the suture is then knotted. For attachment of conjoint tendon to Cooper's ligament, a strong catgut suture is carried by a sharp curved needle on a handle through the conjoint tendon and transversalis fascia at a point opposite to the outer margin of Gimbernat's ligament, passed horizontally beneath the muscle and fascia for about one-half inch and then brought through them. The inner end of the suture is now passed through Gimbernat's ligament, the outer through Cooper's ligament, and both are brought out in the groin. The second suture is applied in the same way, but while the outer end is being passed through Cooper's ligament close to the femoral vein care must be exercised lest the accessory obturator artery be punctured. Traction on the end of the sutures brings down the conjoint tendon and transversalis fascia over the crural ring, and after it has been determined that no undue pressure is made on the vein the sutures are tied. Two or three medium catgut sutures connect the conjoint tendon with Poupart's ligament to assist in keeping down the tendon, and to strengthen the inguinal canal. The rest of the operation is completed in the usual way, two or three silkworngut stitches keeping the edges of the skin together, while approximation of the rest of the wound is secured by a continuous horsehair stitch. No drainage of any kind is used. The same procedure has been adopted in strangulated hernia. The sac is opened and the bowel carefully examined. If found in a fit state and the condition of the patient suitable, operation as detailed is performed.

Prevention of Shock During Prolonged Operations. W. H. Brown.—The method suggested by the author for the prevention of shock consists in having, as soon as the patient is under ether, a competent surgeon open a selected vein and begin to transfuse as the major operation proceeds, the amount injected being governed by the state of the pulse and the loss of blood consequent on the operation. In his cases he has used as a rule about five pints of fluid. The advantages of the method are that everything is at hand and prepared for. There is no emergency operation of transfusion in cases of extreme shock. Everything is prepared for beforehand. He thinks many times such a method would enable one to bring to successful issue cases which would otherwise succumb to the extra shock of operation.

The Lancet, October 19.

The Treatment of Hemiplegia. Leonard G. Guthrie.—The following is the summary of Guthrie's article as regards the treatment of hemiplegia: "1. Neglect and want of treatment aggravate severe, and retard the recovery of mild, cases. 2. The evils to be foreseen and guarded against are articular adhesions, late rigidity, and muscular atrophy. 3. Articular adhesions should be prevented by passive movements of each joint from the very first. 4. Faulty positions of the limbs should be constantly corrected or they will become chronic. 5. Contraction of muscles should be treated by endeavors to improve the nutrition of their weaker opponents. 6. Massage, passive movements, and to a less extent, electricity, should be used with this object. These agents not only counteract muscular atrophy from disuse, but probably take the place of normal stimuli and invigorate the neurons. 7. The recovery of mild cases may be often hastened by re-education of movements. Want of re-education frequently prevents recovery. 8. Re-education consists in a combination of passive and active exercises. 9. Movements should be first encouraged in those parts which naturally tend to recover first. 10. Incoördination and general weakness of limbs which have yet regained power of movement should be treated by exercises and mechanical therapeutics. 11. It is important to find out what the patient can do and to make him do it."

Journal of Laryngology, Rhinology and Otology, October.

The Principles of Treatment of Tuberculous Laryngitis. St. Clair Thomson.—The principles to bear in mind in tuberculous laryngitis according to Thomson are as follows: "1. Pathology and clinical experience show that in the majority of cases the focus of infection is near or in the cricoarytenoid joint. 2. Many cases only present themselves at a stage when the possibility of effecting a cure by local measures is quite untenable. 3. The principle of *primum non nocere* should be constantly kept before us, as many measures which have been tried in this affection have only distressed the patient and hastened the disease. 4. In the light of present knowledge and therapeutic resources, the most rational principle is to attempt to make an early diagnosis of the disease while in an in-

cipient stage. Any persistent or suspicious laryngeal catarrh should be treated seriously on even a presumptive diagnosis. 5. Once diagnosed, the patient should be treated on the principles laid down in the modern method of sanatorium treatment. 6. Symptomatic treatment should be directed to an irritative, catarrhal, or obstructive condition of the air-passages. 7. In addition, silence should be enjoined, the disuse of the voice being proportionate to the degree in which the focus of infiltration approaches or interferes with the arytenoid joint. 8. In cases where the situation or extent of disease do not warrant an expectation of complete arrest of process, treatment should be symptomatic, and in many cases the sanatorium treatment is uncalled for."

Presse Medicale (Paris), September 28.

Lecithin in Tuberculosis. H. CLAUDE and A. ZAKY.—Guinea-pigs inoculated with tuberculosis and then treated with lecithin, survived much longer than the control animals. The general health was much improved and resistance to the infection evidently augmented. Similar results were observed in twenty-one clinical cases. The lecithin rapidly modifies the nutritional processes; the amount of phosphorus that is eliminated is very much decreased, while there is a constant tendency to progressive increase of the co-efficient of the utilization of nitrogen. In the early stages of tuberculosis the effect of the lecithin was marked in the remarkable increase in the appetite and weight and improvement in the general health. "The absolute harmlessness and the undoubted benefit to be derived from lecithin render it a very valuable adjuvant in the treatment of tuberculosis." Six pills of 5 cg. each were the average daily dose.

Ko-Sam as a Specific for Dysentery. COGNACQ.—Ko-sam is a Chinese drug, which has a remarkable local action on dysentery by reflex vaso-constriction. It has both hemostatic and cholagogue properties, and in Cognacq's experience with twenty-five cases of acute dysentery, proved an actual specific. It is the seed of a shrub which grows in Petchili and is agreeable to take, with no after-effects except occasionally slight, transient gastric disturbance.

October 9.

Orthostatic Albuminuria a Relic of Infectious Disease. C. AUBERTIN.—Orthostatic albuminuria is not a distinct morbid entity, but is merely a variety of albuminuria dependent on certain conditions in the circulation, but always on the foundation of some more or less characteristic renal lesion. In five cases observed by Aubertin, it first appeared during convalescence from scarlet fever, and was accompanied by symptoms indicating an acute nephritis. Reviewing the cases that have been published, Aubertin notices that some preceding infectious disease is mentioned in nearly every case, and is not excluded in the others. In his cases the albuminuria was purely orthostatic, that is, it occurred after standing, without fatigue. It was uninfluenced by the diet, or muscular exercise when the patient was reclining.

Revue Medicale du Canada (Montreal), October 16.

Anilin in Treatment of Tuberculosis.—The thesis of Eva Abramovitch (Montpellier) proclaims the efficacy of pure anilin by inhalation as a disinfectant of the lungs. She first discovered its therapeutic properties by the error of a druggist, who gave her a bottle of crude anilin when she applied for a balsam. She relates that she was yellow, green and blue in turn, but at the end of three weeks her cough was entirely cured. After numerous tests and experiences, she announces that redistilled, pure anilin is perfectly harmless, and is absolutely destructive to Koch's bacillus. Inhaled into the lungs it induces active hyperleucocytosis; the character of the sputa in pulmonary tuberculosis rapidly changes and all expectoration finally ceases, while the patients rapidly gain in weight. There is no danger from its use for the heart, nervous system nor kidneys, when they are intact, and even in pathologic conditions or when an over-dose has been taken, the disturbances are transient. She recommends for inhalation a 25 per cent. solution of freshly redistilled anilin in a saturated solution of boric acid to which a little menthol has been added, gradually increasing the proportion of the anilin. The inhalations should be repeated twenty-five to thirty times every half-hour, and the treatment kept up long after all stethoscopic signs have vanished, in order to prevent recurrence. The anilin can also be applied in inunctions or may be administered by the mouth.

Formalin Test for Albumin in the Urine. TRETROP.—The physician can carry with him a small vial of formalin as it is not a corrosive, and can test the urine at the bedside. Four or five cubic centimeters of fresh urine are heated in a test tube nearly to boiling point, and a few drops of 40 per cent. formalin are added after it is removed from the flame. If there is any albumin in the urine it coagulates like the white of an egg, and accumulates on the surface of the urine and also settles on the walls of the tube. After pouring off the fluid, the proportion of albumin can be determined by weighing or by the size of the coagulum left.

Semaine Medicale (Paris), October 9.

Associated Epidemics. V. BABES.—Epidemics of certain complications of diseases are sometimes observed in hospitals. The ordinary pyogenic micro-organisms seem to acquire unusual virulence from some reason, and attack inmates of hospitals debilitated by their previous affection. Babes has described several extensive epidemics of this kind. In the present communication he reports an epidemic of forty cases occurring in two rag-pickers' communities, which presented the clinical picture of exanthematous typhoid fever. But neither during life nor at the autopsy was it possible to discover any typhoid bacilli nor typhoid lesions, although the serum reaction was pronounced in most cases. The influenza bacillus was found numerous in the eight cases that came to autopsy. The disease could not have been an aborted typhoid fever, as the agglutinating reaction in several was absent at first and became positive only later. Neither could it have been simple grippe, as the grippe bacillus was not always found at first, but appeared later, and it was found in old lesions, pneumonic, softening or gangrenous foci. The evidence seemed to indicate that in this epidemic there was some hidden factor, some primary infection of which it was impossible to detect the causal agent, and that the influenza and possibly also the typhoid bacillus were secondary arrivals, and that the latter for some reason was unable to thrive and produce its usual lesions. Possibly there may have been no specific primary infection but merely a peculiar lack of resisting power on the part of the poorly-fed subjects due to their unhygienic environment, close to the city dumping grounds in clay-pits. This lack of resistance on the part of the organism may have allowed the ordinary microbes, streptococci and others, to prepare the soil for the invasion of the influenza or typhoid bacilli. In any event, study of this epidemic at Bucharest last winter proves that the discovery of the influenza bacillus does not necessarily indicate an epidemic of grippe, nor do the positive results of the agglutinating test demonstrate that typhoid fever is epidemic. Both of these elements of diagnosis may be found in the evolution of a special syndrome—an associated epidemic—which yet is neither la grippe nor yet typhoid fever. It also proves that every epidemic is not inevitably produced by a single specific microbe, but that certain associated epidemic diseases may occur, induced by ordinary causes on a predisposed soil, by associated factors, or by specific germs grafted on other equally specific infectious diseases, undetermined as yet. In the associated epidemic described, the primary affection probably differed in different patients. In the majority the fundamental disease seemed to be typhoid fever, but in two of the patients it seemed to have been measles, in another, general infection by the pneumococcus, streptococcus and staphylococcus, and in another, arteriosclerosis evidently aggravated by the invasion of the grippe bacilli which were found numerous in every case.

Berliner Klin. Wochenschrift, September 30.

Splashing in the Stomach a Sign of Atony. B. STILLER.—Pure atony of the stomach is not necessarily accompanied by

muscular insufficiency. The motor function of the stomach is twofold, a concentric contraction and the peristalsis for evacuating its contents. Atony is defective concentric contraction, and muscular insufficiency is defective peristalsis. The former may exist alone, but it predisposes to the latter, and the expelling power may vary with the time, the length and the quality of the meal and even with the mood. But at any time during digestion the splashing sound can be elicited, revealing the underlying atony. It is usually merely one manifestation of a congenital atony of the entire organism, entailing enteroptosis, nervous dyspepsia and general neurasthenia. Stiller suggests the term congenital universal asthenia as descriptive of this specific and extraordinarily frequent condition. The first and most constant sign is the splashing sound in the stomach, which reveals the atony of the organ, and when supplemented by the changes in resonance in different positions, renders further investigation with the sound superfluous.

Apparent and Actual Disease Foci. BUTTERSACK.—The incubation, localization and other features of infectious diseases are best explained, Buttersack thinks, by the assumption that the germs first find their way into some lymph gland or glands. They may remain latent in these foci for days or years, but when they finally surmount these barriers, the lymph channels afford an easy means of conveyance by which they invade the entire organism and settle at the points for which they have a special predilection or which are the least effectively protected by the resisting forces of the organism.

Treatment of Continuous Flow of Gastric Juice. L. V. ALDOR.—In the five cases of gastrosuccorrhea which Aldor describes, the symptoms—pains in the stomach, excessive thirst, obstinate constipation and frequent vomiting—were so severe that malignant disease was suspected. The condition was finally differentiated by the large amounts of gastric juice found in the stomach at all times, the low specific gravity of the stomach contents, the large proportion of uncombined hydrochloric acid and the defective digestion of starch, with the positive exclusion of motor insufficiency of the stomach. The subjective symptoms frequently subsided but the objective persisted unchanged. Only one case is known in which this excessive secretion of gastric juice was unaccompanied by any symptoms. Belladonna has a strong inhibiting action on the secretion of gastric juice, and atropin is the only drug at our disposal with which gastrosuccorrhea can be influenced. It should be supplemented by an alkaline saline water taken before and after every meal, as hot as the patient can bear. By this means the gastric juice is neutralized and a sedative action obtained, while the results are equivalent to a rinsing out of the stomach. One or two teaspoonfuls of Carlsbad salts taken during the day are also useful. Lavage of the stomach will seldom be found necessary with this treatment. Even when the symptoms are most severe, a single lavage in the morning will be found sufficient. Starchy foods should be avoided. The systematic and abundant ingestion of fats not only supplies the required calories in a non-nitrogenized form, but modifies the secretion of gastric juice.

Centralblatt f. Bakteriologie (Jena), September 10.

Insects as a Living Culture Medium for Germs of Contagious Diseases of Man and Animals and for Experimental Research. C. VON HOLUB.—For two years Holub, of Odessa, has been experimenting with insects, inoculating them with ulcus molle, syphilis, etc., or infecting them by feeding them on substances contaminated with the fluids from soft chancre. In every instance he found that the entire body of the insect offered a pure culture of the specific microbe. He did not have a single failure in 1000 experiments. The insects were of numerous varieties, orthoptera, rhynchota, hemiptera, coleoptera, lipidoptera and diptera, from grasshoppers and bugs of numerous kinds to beetles, butterflies and flies. Most of his tests were with ulcus molle, and although other bacteria were sometimes present in the fluid inoculated, only pure cultures of the typical streptobacillus developed, and its virulence was enhanced. The infected insects lived twenty-one days as the maximum, if fed, and only fourteen days if not fed. The development of the microbe was evident in twelve hours. The inoculations were made with a fine needle in the heart or throat. An infected insect invariably infected in turn its sound mate, although great care was always taken to make the inoculations as far as possible from the genitalia and digestive organs. Flies fed on the exudate from a case of soft chancre soon swarmed with the specific bacillus in pure cultures. One infected insect always transmitted the infection to others in the same jar. Although ulcus molle is an external disease in man it developed internally in the insects without apparent external manifestations.

Centralblatt f. Chirurgie (Leipsic), October 5.

Heteroplastic Operation for Congenital Dislocation of Hip Joint. O. WITZEL.—The object of the operation described was to supply a support for the head of the femur, as the existing socket was too shallow to hold it. A row of gold-plated nails was driven into the bone just above the acetabulum, forming a strong barricade by the close juxtaposition of the rounded heads of the nails set in a semicircle. The child of 4 first operated on, had a left dislocation with congenital shallowness of the socket. A plaster cast was applied to the entire limb, including the foot, during narcosis, with vigorous extension. After several days of assurance that the cast fitted well and was comfortable, a window was cut in it over the hip joint, and the exposed skin was scrubbed and painted with iodin. A large sterilized sheet was then spread over the child, a slit cut in it over the hip, and the edges of the slit fastened to the skin with forceps just inside the edges of the opening in the cast. The soft parts were then incised down to the fascia, the incision carried 8 cm. on a straight line slanting across the upper portion of the great trochanter. The soft parts were then drawn up out of the way, and after preliminary location of the head, etc., by needle puncture, five or six nails were driven into the bone in a semicircle around the head, forming a fence to keep it in place, the rounded heads of the nails corresponding to the neck. As the pelvic walls are unusually thick in congenital dislocations of this kind, the nails were driven in for 2 cm., the outside ones slightly slanting to prevent any injury to the sciatic nerve. They were 3 mm. in diameter, about 4 cm. long and the points were nearly blunt. A short, thick stick with a depression in the lower end to fit over the head of the nail, was used between the hammer and the nail to prevent injury to the soft parts. The cutaneous incision was sutured with fine silver wire; it lies considerably below the semicircular fence of nails. The effect of this procedure does not seem to differ from that of any ordinary bloodless, manipulative reduction. The nails fully answer their purpose and will in time probably aid in the formation of a bony limbus.

October 12.

Cause of Phlegmons After Amputation of Fingers. C. LAUENSTEIN.—The tendons are usually pulled out in amputating and when the stumps retract, they carry back with them, far into their sheath, the germs of infection. In time a phlegmon develops, which could have been avoided by amputating the tendons without making traction on them.

Centralblatt f. d. Grenzgeb. d. Med. u. Chir. (Jena), October 2.

Tuberculosis of the Bladder. K. R. VON HOFMANN.—This was formerly considered a rare affection, but Hofmann has been able to collect ninety-four communications on the subject that have been published since 1895. Men are more frequently affected, and in adults there is usually a primary focus elsewhere, generally in the kidneys or genitalia. In children, tuberculosis of the bladder is generally primary. Gonorrhea seems to induce a predisposition on the part of the bladder equivalent to trauma. The lesions are mostly small and cluster around the ureteral orifices, but a few cases of general ulceration are on record. Perforation has occurred into the rectum, and one fatal case has been reported in which the bladder perforated into a persisting urachus. In adults, the symptoms are, as a rule, an immoderately frequent desire to urinate, pain, pyuria and hematuria, but in children, the first, principal, and sometimes the only, symptom is incontinence of urine,

with or without pyuria. Instances have been known in which a primary tubereulous cystitis had developed and progressed in a child without causing any symptoms referable to the bladder. The urine is always acid at first, but as the disease progresses and mixed infeetion is superposed, it gives an alkaline reaction. A tubereulous process anywhere in the urogenital tract favors secondary infection, and the symptoms induced by the latter first attract attention to the primary process. The hematuria usually is slight and appears with the last few drops of urine. Immoderately frequent micturition is soon accompanied by pain, or existing pain may become aggravated. Suspicion of tuberculosis is usually a contraindication to cystoscopy, and the diagnosis must be based on bacteriological examination which is rendered difficult by the resemblance between the tubercle and smegma bacilli. Hesse's culture medium, originally designed for the sputum, differentiates the bacilli better perhaps than any other means. This is a combination of 5 parts Heyden's "Naehrstoff"—a soluble albumin, in its properties midway between coagulated albumin and somatose—5 parts sodium chlorid; 30 parts of glycerin, 10 of agar; 5 of a 28.6 per cent. solution of sodium, and 1000 of distilled water. The smegma bacillus will not grow on this medium. Remissions are sometimes noted in the course of tuberculosis of the bladder, and the affection may have a protracted course of fifteen to twenty years. Complete recovery is not so unusual as is generally assumed, especially in case of primary affection. Treatment is the same as for tuberculosis in general. Goldberg and Richter report cases which remarkably improved under internal administration of ten to seventy drops of a mixture of equal parts of ichthyol and distilled water three times a day in increasing doses. In one case a patient took twenty-five to seventy drops for months without disturbing the digestive apparatus, and with remarkable improvement of the bladder and kidney tuberculosis. Botswood, Chetwood and others recommend nuclein and report satisfactory results. In one case, a tubercular affection of the bladder which had lasted eighteen months, was treated by subcutaneous injections of nuclein for two months and then a 5 per cent. solution was administered by the mouth, with complete recovery of the patient. Bazy and others recommend what they call "the permanent dressing" for the bladder, i. e., injections of 20 to 30 c.c. of a 5 per cent. emulsion of iodoform in fluid vaselin. It is injected into the empty bladder and as soon as the vaselin appears in the urine during micturition further urination is suspended for the time. By this means the emulsion can be kept in the bladder for several days. Janin adds 5 per cent. guaiacol to the mixture. Ramond has reported excellent results from distention of the bladder with air, and Battle with water, but their successes have not been confirmed by others to date. Several writers announce recoveries after cauterizing or curetting the bladder, especially in women. Camero reports 5 permanently cured, 5 temporarily improved and 4 failures out of 14 cases thus treated by curetting; Guyon 8, very much improved and 1 failure in 9 cases. The former calls attention to the necessity of treating the urethra at the same time. The French regard operative interference as merely palliative, but others have secured excellent results with it. Sectio alta is preferable, even for women. Sectio mediana may exceptionally render service as in a case reported by Greiffenhagen in which a caseous perineal abscess had perforated into the urethra, with simultaneous tuberculosis of the bladder, testicles and urethra. Five weeks' drainage of the bladder through the wound in the perineum, followed by the use of the permanent catheter for four weeks, cured the patient, and the cure had persisted a year to the date of publication.—*Deutsche Ztft. f. Chir.*, 1896.

Muenchener Med. Wochenschrift, September 10.

Simplified Intubation. A. Rahn.—No special skill or experience is required for intubation with the tube as modified by Rahn. The family doctor can insert and remove it without the least difficulty or danger. The shape is altered to allow the portion opposite the thyroid cartilage to be smaller in diameter than the rest, while the tube at the lower end is more olive-shaped, and at the upper end flares more like a funnel, the edge sloping downward from the back. Not far from the top a metal hook projects inside the tube about half across its diameter. The tube is inserted by an instrument similar to Krause's "universal loop," with a metal sheath over the wire loop which by a screw can be made to project as far as may be desired. The loop is hitched over the hook in the top of the tube and screwed fast to it. The tube can thus be inserted in the throat as if solidly fastened to a long handle. The child should lie on the bed. One assistant holds the head and gag, another the hands folded on the breast and the feet. The physician holds down the tongue with the left forefinger, and with it also pushes the epiglottis aside. The tube is then inserted with ease. It can be taken out with equal facility, the wire loop catches on the hook, and is then screwed fast to the tube. If strings are used two or three knots should be tied in them close to the tube so that they can be more readily found.

Wiener Klin. Wochenschrift, October 10.

The Spinal Cord in Children and Syringomyelia. J. Zappert.—Schultze has described hemorrhages in the posterior horns discovered in the spinal cords of two infants after difficult delivery. Pfeiffer has also reported a similar case and Zappert now reports another. Schultze's swinging had not been applied in two of these cases, and consequently can not be incriminated in the production of the hemorrhages. It is more than probable that these hemorrhages resulting from traction during delivery, may entail such injury on the surrounding cells that they may prove the foundation on which syringomyelia develops later. But this can not be a frequent cause of the affection, as only four instances are known and Zappert discovered these hemorrhages only once in his research on 200 spinal cords from embryos and infants newly born and up to two years of age. He urges others to inquire if delivery had been especially difficult in the cases of syringomyelia that come under observation. He found many anomalies in the size and shape of the central canal, but does not consider them pathologic in most cases, especially what he calls simple hydromyelia, i. e., an enlargement of the central canal to the rear, tapering into a point and forcing the gray commissure before it into the posterior septum. There is always the possibility, however, that this simple hydromyelia may develop later into cavities, and possibly be accompanied by proliferation of the neuroglia. He was able to discover an advanced phase of this combination in the spinal cord of a 19-months' rachitic infant who had died from bronchitis. The central canal was abnormally large and surrounded by proliferated glia, indicating that the child in time might have had syringomyelia. In the case of one anencephalous infant who died soon after delivery at term, the central canal was enormously large and double in some parts—an evidently pathologic congenital hydromyelia. It was the only spinal cord of the entire number investigated in which the enlargement of the central canal was, as in syringomyelia, most pronounced in the region of the neck. No positive evidences were found in any case of congenital proliferation of neuroglia.

Defective Development of the Kidneys in Congenital Lues. A. Stoerk.—Microscopic study of the finer structure of the kidneys during the last months of fetal existence or the first months of life, showed constant vegetative disturbances, pathologic defective development, under the influence of the hereditary deleterious influence. The disturbances were invariably of the same nature in the twenty cases examined and were never found in the sixty control kidneys examined except in two in which inherited syphilis was not absolutely to be excluded.

Alteration in the Pancreas in Case of Diabetes. A. Weichselbaum.—The atrophy invariably noted in the writer's experience in cases of "pancreas diabetes," involved the parenchyma and essentially the cells of Langerhans. If this finding is confirmed by others, it sustains the assumption that these "islands" are vascular glands and that they produce the substance which prevents the retention of sugar in the blood. The unusual abundance of the centro-acinar cells possibly indicates increased function of the organ, a secondary phenomenon en-

tailed by the diabetes. The numbers of granules of fat in the epithelium is possibly also merely a secondary phenomenon resulting from the increased metabolism in diabetes. The age of the eighteen diabetics in whom the pancreas was examined almost immediately after death, ranged from 14 to 75, and the diabetes had lasted from three weeks to nineteen years. All had died in coma. In the only case in which the pancreas failed to show marked macroscopic and microscopic atrophy of the parenchyma, a large glioma was found in the cerebrum. In one case the pancreas was completely indurated and inflammation had evidently preceded the induration. Investigation of the pancreas in cases of other affections showed marked atrophy of the parenchyma, but the centro-acinar cells of Langerhans were spared. Weichselbaum, therefore, is inclined to consider the atrophy of these islands, the characteristic token of diabetes.

Metastatic Ophthalmia in Epidemic Cerebrospinal Meningitis. WINTERSTEINER.—The autopsy disclosed a suppurative pericarditis, an abscess in the thyroid cartilage, numerous subcutaneous hemorrhages and a sacral decubitus. The staphylococcus was found in the pus from the pericardium, but Weichselbaum's intracellular meningitis micrococcus was discovered pure in the suppurative ophthalmia. The optic nerve was sterile.

Friedlaender's Bacillus in a Cerebral Abscess. M. SACHS. Sachs reports the second case on record in which pure cultures of Friedlaender's pneumonia bacillus were derived from an abscess in the brain. In both cases there was coexisting suppuration of the middle ear, which was probably the primary process.

Zeitschrift f. Hyg. u. Infectionskr. (Leipsic), xxxviii, 1.

Penetration of Bacteria into the Lungs. O. NENNINGER.—The experimental research described shows that dust and droplets containing bacteria penetrate to the terminal ramifications of the air passages. Droplets seem to have a greater penetrating force than dry dust. As the lung is in constant communication with the exterior it is not always sterile, but can be found so under favorable conditions. The lung is not a good shelter for microbes and they rapidly disappear from it. No trace of the anthrax bacilli introduced, for instance, in some of the experiments, could be discovered in the lung twelve hours later. The same mechanism which separates and expels droplets in expiration, separates and causes them to be inhaled during inspiration and carried to the remotest air passages. The constant movements of the muscles engaged in speaking, chewing, swallowing and breathing also aid in detaching droplets from the fluids in the mouth and throat. Nenninger compares the germs thus derived to a spark glimmering in the ashes. A conflagration may result at any moment and infection may suddenly flare up in the lung from aspiration of the germs casually finding their way into the mouth, throat and upper air passages.

Zeitschrift f. Orthop. Chir. (Stuttgart), Ix, 3.

Report from Hoeftman's Clinic. STRUBE.—In advanced cases of scoliosis Hoeftman supplements continuous extension on a sloping plane, by Weir Mitchell's method of feeding. The general health rapidly improves in most cases and the patient is then ready for active gymnastic treatment. Among the points emphasized in this profusely illustrated communication are the advantages to be derived from massage in cases of irreducible hernia with adhesions, even of many years' duration. The hernia is taken in both hands and gently pulled outward, with rotating movements. An assistant at the same time pushes the intestines away from the spot inside, with his palm applied to the abdomen below. By this traction in both directions, the adhesions are gradually loosened, and after a few repetitions of the massage, the hernia is easily reduced.

Treatment of Curvature of the Spine. W. Schulthess.—An apparatus on the principle of a standing swing is proving very successful in Schulthess' Orthopedic Institute at Zurich. The trunk is fastened in extension, the arms raised, with spring pads working on the projecting shoulder or back, while the patient stands in a swing which moves on an axis on a level with the deformity to be corrected. An adjustable heavy weight on a long bar at right angles to the swing, travels with it. Schulthess calls this apparatus the "hip pendulum and shoulder pulling and pushing apparatus."

Progressive, Multiple, Ossifying Myositis. W. RAGER.—Microdactylia was noted in 24 of the 54 cases of this affection that have been published. No treatment has any effect, and death finally occurs from the interference with respiration and mastication, but long survival is possible, as the disease runs a very erratic course. It always commences in childhood. In the new case described, the child was apparently healthy except for the deformity in thumbs and big toes. Between the age of 1 and 2 some transient bony tumors were noticed in the forehead. Two years later another appeared in the neck, until gradually most of the voluntary muscles contained these bony tumors, completely suspending their function. The process is first an asymmetrical, focal, doughy, edematous tumor, increasing in size for a few days, with pain and sometimes slight fever. The tumor then subsides somewhat, but gradually becomes harder and harder. The lesions became more numerous in this case at puberty. The internal organs seemed to be intact. The parents and other children were healthy.

Iatrike Proodos (Syra, Greece), May-June.

Malarial Psychic Troubles. J. KARDAMATIS.—The nervous disturbances observed in the course of malarial infection are caused by the toxins secreted rather than by the malarial parasite itself. They are usually most pronounced in persons of a neuropathic tendency, and the infection may arouse a morbid predisposition or a latent local or general affection, or it may aggravate an existing disease. The delirium is similar to that of other infectious diseases and the malarial drunkenness like that of alcohol, with the four degrees of agitation, anesthesia, coma and paralysis. Malarial delirium may be subacute, acute or superacute and even acute mania has been observed, but is rare. In the delirium the patient is in a dream from the irritation of the centers of special sensibility, and the delirium is induced by the hallucinations. Psychic troubles are rare in the course of chronic paludism, while those which have been published as first appearing long after recovery from the malarial infection, are dubious from more than one point of view.

Gazzetta Degli Ospedali (Milan), September 29.

Chronic Peritonitis. R. SUPINO.—The aim in treatment of subacute and chronic peritonitis should be to increase the resisting powers of the organism by dietetic and hygienic measures, supplemented by small doses of iron and arsenic. Supino thinks that operation is unnecessary, as spontaneous recoveries occur without it. He combats the ascites by the local application of tincture of iodin. In case of a scrofulous, lymphatic tendency, he has been very successful with daily subcutaneous injections of the iodo-iodid solution recommended by Durante. His experience at the Pisa "Ospizio Marino" has included numbers of cases of "actual resurrections" which he ascribes to the benefits of the sea air, although the institution has no facilities for bathing in warmed sea water, which he thinks would be of immeasurable advantage in such cases. He also recommends the seashore in the winter as preferable in that climate, to the summer.

Physiopathology of the Suprarenal Capsules. G. LUCIBELLI.—Animals deprived of both suprarenal capsules rapidly succumbed, but after extirpation of one capsule, the animals continued to increase in weight with no disturbance in any function. Lucibelli also found that rabbits supported infection better after the removal of one capsule than before—the animals survived an infection to which all the control intact animals succumbed. When the infection was so severe as to be necessarily fatal, the animals with one capsule survived considerably longer than the intact animals. The exaggerated protective function displayed by the one remaining capsule was explained by the marked increase in size of the capsule left, and

its histologic alterations. Hyperplasia of the young cells was evident and augmented nutrition by the circulation in the cortical and medullary substance. Experiments with microorganisms inoculated into one capsule showed that the other capsule, under these circumstances, had no power to modify or conquer the resulting infection.

Lo Sperimentale (Florence) lv, 3.

Influence of Mechanical Causes on Development of Bones. G. BANCHI.—The results of an interesting series of experiments on animals indicate that the functioning of the muscles is an important factor in the development and shaping of the bones, on account of the mechanical irritation caused by their contractions.

Rhinoscleroma. C. MANTEGAZZA.—The inefficacy of treatment or surgical intervention in case of rhinoscleroma, suggests the advisability of trying serum treatment. Mantegazza's experimental research reported in this communication, confirms the specific action of the bacillus discovered by Frisch, as the causal agent of rhinoscleroma, thus providing a base for the production of an effective serum.

Queries and Minor Notes.

MEDICAL PRACTICE ACTS.

PALMERSTON, ONT., Oct. 30, 1901.

To the Editor:—Please answer in THE JOURNAL the following queries and greatly oblige: 1. What are the fees for license in Nebraska; when and where are the examinations held? 2. What are the fees for license in Michigan; when and where are the examinations held? 3. Where is Oak Park, a suburb of Chicago, situated with relation to the city proper? What is its population?

W. R.

ANS.—In Nebraska the fee for registration is $10. The board meets on the first Tuesday of each month at the Capitol Building, Lincoln. In Michigan the fee for examination is $10. Regular meetings of boards are held at Lansing on the second Tuesdays of June and October, each year. Application should be made at least two weeks before to the secretary, Dr. B. D. Harison, Sault Ste. Marie. Oak Park is directly west of Chicago, and is practically a continuation of its suburb wards, though not included. It is the largest village in Cicero Township; the population of the township was 16,310 in 1900.

PHARMACY AND MEDICAL LAWS.

CLEVELAND, OHIO, Oct. 28, 1901.

To the Editor:—Will you please inform me through THE JOURNAL to whom I should write to procure copies of the pharmacy and medical laws of the States of Arkansas and Colorado? C. H. G.

ANS.—Write to the Secretaries of State, Little Rock and Denver.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Oct. 17 to 23, 1901, inclusive:

Edward T. Comegys, major and surgeon, U. S. A., member of a board at Fort Meade, S. D., to determine the fitness of officers for promotion.

William M. Gray, major and surgeon, U. S. A., leave of absence extended.

Thomas G. Holmes, contract surgeon, relieved from duty as transport surgeon of the transport *Grant*, and on the expiry of his present leave of absence will proceed from Detroit, Mich., to Fort Walla Walla, Wash., for post duty.

Frank P. Kenyon, captain and asst.-surgeon, Vols., having tendered his resignation, is honorably discharged from the service of the United States, to take effect from this date, Oct. 23, 1901.

William F. Lewis, captain and asst.-surgeon, U. S. A., from Fort Leavenworth, Kan., to duty at Fort D. A. Russell, Wyo.

Irving W. Rand, captain and asst.-surgeon, U. S. A., leave of absence granted.

Alexander N. Stark, captain and asst.-surgeon, U. S. A., now on duty at Fort McHenry, Md., will proceed to Fort Monroe, Va., for temporary duty, October 21; also member of examining boards at Fort Monroe, Va., vice First Lieutenant Matthew A. De Laney, asst.-surgeon, U. S. A., relieved.

William A. Summerall, captain and asst.-surgeon, Vols., leave of absence granted.

Benjamin L. Ten Eyck, captain and asst.-surgeon, U. S. A., leave of absence on certificates of disability extended.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., member of a board at Fort Meade, S. D., to determine the fitness of officers for promotion.

Henry E. Wetherill, lieutenant and asst.-surgeon, U. S. A., having been found incapacitated for active service on account of disability, which is not the result of any incident of service, is wholly retired, to take effect Oct. 16, 1901.

Eugene R. Whitmore, lieutenant and asst.-surgeon, U. S. A., member of an examining board at Fort Sheridan, Ill., during the temporary absence of Major Francis J. Ives, surgeon, U. S. A.

Appointments, Promotions, Retirements, Etc.,

of Army Medical Officers, recorded in the Adjutant-General's Office, between Aug. 15 and Oct. 15, 1901. Previous notices of this character were published in THE JOURNAL of Sept. 7, 1901. During the month ending September 15, the only changes recorded were the promotion of two regular medical officers to be surgeons, with the rank of major: Captain Eugene L. Swift, asst.-surgeon, dating from May 7, 1901, and Captain Paul Shillock, asst.-surgeon, dating from June 7, 1901.

During the month ending October 15, there were:

Regular Army, Appointments.—To be assistant-surgeons, with the rank of first lieutenant: Wilson T. Davidson, of New York, Sept. 5, 1901; George H. Crabtree, of Illinois, Sept. 5, 1901; George H. Richardson, of Pennsylvania, Sept. 9, 1901; Herbert M. Smith, of Virginia, Sept. 20, 1901; Evan P. Howell, of Georgia, Sept. 21, 1901, and Cosam J. Bartlett, of California, Sept. 21, 1901.

Volunteers, Honorably Discharged.—Captain Frederick H. Morhart, asst.-surgeon, Sept. 30, 1901, and Captain Meyer Herman, asst.-surgeon, Oct. 8, 1901.

Killed in Action.—Major Richard H. Griswold, surgeon, Sept. 28, 1901, at Balangiga, Samar, P. I.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 26, 1901:

Surgeon J. M. Edgar, ordered to the *Wabash*, October 23, as relief of Surgeon H. G. Beyer.

Surgeon H. G. Beyer, detached from the *Wabash*, upon reporting of relief, and ordered to the *Prairie*, when put into commission.

Asst.-Surgeon R. T. Atkinson, detached from the *Wabash*, October 30, and ordered to the *Prairie* when put into commission.

Asst.-Surgeon B. B. Kerr, ordered to the *Wabash*, October 28.

Asst.-Surgeon E. Thompson, ordered to the Naval Hospital, Boston, Mass., October 26.

Surgeon G. Pickrell, detached from the *Columbia*, upon reporting of relief, and ordered to the Naval Dispensary, Washington, D. C.

Surgeon P. Leach, ordered to the *Columbia*, as relief of Surgeon G. Pickrell.

P. A. Surgeon R. M. Kennedy, ordered to the *Franklin*.

Asst.-Surgeon A. G. Grunwell, ordered to the Naval Hospital, Norfolk, Va., November 1.

Asst.-Surgeon L. W. Bishop, ordered to the *Independence*.

Pharmacist H. Henry, detached from the *Independence* and ordered to the Bureau of Medicine and Surgery, Navy Department.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Oct. 26, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Oct. 6-13, 3 cases, 1 death.
Kentucky: Lexington, Oct. 12-19, 2 cases.
Louisiana: New Orleans, Oct. 12-19, 5 cases.
Massachusetts: Boston, Oct. 12-19, 18 cases, 2 deaths.
Nebraska: Omaha, Oct. 6-19, 6 cases.
New Hampshire: Concord, Oct. 6-12, 1 case, 1 death.
New Jersey: Camden, Oct. 12-19, 6 cases.
New York: Oct. 12-19, Elmira, 6 cases; New York, 4 cases, 1 death.
Pennsylvania: Norristown, Oct. 12-19, 1 case; Philadelphia, Oct. 12-19, 69 cases, 10 deaths; Pittsburg, Oct. 12-19, 1 case; Steelton, Oct. 13-20, 1 case.
Rhode Island: Newport, Oct. 12-19, 1 case.
Utah: Salt Lake City, Oct. 12-19, 1 case.
Vermont: Burlington, Oct. 12-19, 15 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Sept. 28-Oct. 5, 4 cases.
Belgium: Brussels, Sept. 28-Oct. 5, 1 death.
Colombia: Cartagena, Sept. 23-29, 1 death; Panama, Oct. 7-14, 125 cases.
France: Paris, Oct. 5-11, 6 deaths.
Great Britain: London, Sept. 28-Oct. 5, 169 cases, 7 deaths; Southampton, Sept. 28-Oct. 5, 1 case.
India: Calcutta, Sept. 7-14, 2 deaths; Madras, Sept. 7-13, 2 deaths.
Mexico: Mexico, Sept. 29-Oct. 6, 2 cases.
Nova Scotia: Halifax, Oct. 6-12, 20 cases.
Russia: Moscow, Sept. 14-28, 5 cases, 1 death; Odessa, Sept. 28-Oct. 5, 2 cases; Warsaw, Sept. 14-21, 1 death.
Spain: Madrid, July 15-Sept. 9, 26 deaths.
Uruguay: Montevideo, Aug. 16-24, 22 cases, 2 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Oct. 6-13, 1 case, 1 death.

PLAGUE—INSULAR.

Philippines: Manila, Aug. 18-Sept. 7, 13 deaths.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 31-Sept. 7, 6 cases, 6 deaths; Newchwang or Newchang, Aug. 31, 2 cases.
India: Bombay, Sept. 10-17, 250 deaths; Calcutta, Sept. 7-14, 18 deaths; Karachi, Sept. 8-16, 18 cases, 13 deaths.

YELLOW FEVER.

Costa Rica: Port Limon, Oct. 5-12, 2 cases, 1 death.
Mexico: Merida, Sept. 21-28, 3 deaths; Valladolid, Sept. 21-28, 4 deaths; Vera Cruz, Sept. 28-Oct. 5, 7 cases, 4 deaths.

CHOLERA.

India: Bombay, Sept. 10-17, 11 deaths; Calcutta, Sept. 7-14, 8 deaths; Madras, Sept. 7-13, 113 deaths.
Java: Batavia, Aug. 31-Sept. 7, 80 cases, 68 deaths.

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Original Articles.

THE VALUE OF THROAT CULTURES IN DIPHTHERIA.*

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In no disease which the general practitioner has to treat is an accurate and prompt diagnosis of more importance than it is in diphtheria. It is practically undisputed that a true diphtheritic exudate is caused by the Klebs-Löffler bacillus. It is a fact now established and generally accepted that many of the diseases which have as a sign a membranous exudation in the throat are not diphtheria. It is also established that a true diphtheritic exudation may exist in other portions of the body than the throat, and it is well known that true diphtheria bacilli may exist in a throat free from any exudate, and in a person entirely free from clinical signs of any disease. Another important fact, long ago pointed out by Jacobi and other observers, is that true diphtheria, capable of transmitting the disease, frequently passes under the form and guise of some benign throat affection, usually follicular tonsillitis.

These facts have all been proven by the workers in bacteriology, aided by clinical observers. If these are well proven, have they aided the general practitioner in his daily work? Have they made it possible to distinguish these puzzling cases? If they have, are the means employed of such a character that they should be part of a routine practice? All these questions can be answered in the affirmative.

Soon after the recognition of the Klebs-Löffler bacillus, Baginsky published a paper in which he made enthusiastic claims of the value of throat cultures as an absolute diagnostic means of distinguishing cases of true diphtheria from those which simulate the disease. In the course of his article he remarked "that before long the use of throat cultures as a diagnostic means will be as common as the microscopic examination of the urine is to diagnose renal disease." For a time this belief was common, and throughout the entire country the various boards of health established centers from which culture-tubes could be obtained. At first these were used largely throughout the various cities, but soon fell into disuse to a great degree, this certainly being so in my district of Philadelphia, in which practice physicians who are always ready to avail themselves of every possible opportunity to make an accurate diagnosis.

The facts I have stated being true—that the bacillus of diphtheria is present in all cases of true diphtheria and that many membranous exudates are due to other organisms than the Klebs-Löffler bacillus—it would seem to always follow that Löffler's bacillus must always be found in a culture made from a case of diphtheria, and conversely in membranous exudates which are not true diphtheria Löffler's bacillus should never be found. This is true in the vast majority of cases, but it is not always so; that is, in certain cases of true diphtheria the bacillus diphtheriæ does not grow in the first culture made, and in certain cases which are not true diphtheria a bacillus which is extremely like if not a true diphtheria bacillus is found.

These cases are rare, but the class of cases in which there are no classical clinical signs of diphtheria, but in which true active, virulent diphtheria bacilli are found, is large. It is this latter class in which cultures are of the greatest possible value. It is also this class which it seems to me have made many men lose faith in this most valuable diagnostic test. This latter is because we are not all so wise and observing as Jacobi, who said long before the bacillus of diphtheria was discovered: "There are more cases of diphtheria walking about our streets than are confined to the houses." Also because practicing physicians are slow to recognize that a case of true diphtheria may recover in a very few days without treatment, and yet cause in another individual a fatal attack of the disease.

Another cause for disuse of cultures, at least those made by health boards, is that diphtheria bacilli remain in the throat of a patient who has suffered from diphtheria a long time, three or four weeks, after all clinical signs have gone, certainly so long in cases promptly treated with antitoxin.

In cities where the home is placarded under the same rules as they are in Philadelphia, physicians are not willing to keep their patients confined to the house as long as the bacilli are in the throat, and consequently do not use cultures.

I am quite certain that these are some of the reasons, though I think improper ones, for the disuse of cultures by the physicians of the writer's district. I take it that they probably hold good in other localities though I have no data to prove it. Of late years I have been making throat cultures in all throat exudates and have notes preserved of most of the results. The use of these cultures is of the greatest possible comfort to me, amply repay me, and are of much value to my patients.

I constantly carry in my pocket a tube of blood-serum and make a culture of every throat which is in any way suspicious. The value which I see in the use of these cultures will be best made clear by citation of certain cases; and by a statement which it seems to me will be borne out by all those who have had much experience in general practice, that is, that it is impossible to make a certain and accurate early diagnosis of diphtheria, either by the symptoms of the case, the location of the membrane, or the character of the exudate.

An early accurate diagnosis can be made by the use of cultures and the demonstration of diphtheria bacilli in

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee: Drs. Frank Billings, George Dock and J. M. Anders.

the culture. The following statements can be proven: 1. True cases of diphtheria may have few or no clinical symptoms. 2. Cases of tonsillitis or pharyngitis may have severe symptoms and be serious, but not true diphtheria, and consequently not able to transmit diphtheria. 3. A diphtheritic exudate may be easily detached and leave no bleeding surface. 4. An exudate due to some other organism may be a true membrane impossible to detach from the mucous membrane.

These statements are common knowledge, but I have notes many times repeated to prove them. A few will suffice.

CASE 1.—A boy, 7 years old, was affected with an exudate strictly confined to both tonsils and to the follicles of the tonsils. There was no fever, by careful observation. The pulse was not quickened and the appetite was good. Indeed, except for the tonsillar exudate the lad seemed entirely well. A culture made from the throat showed a pure culture of diphtheria bacilli. This was surely a true case of diphtheria as proven by the fact that his grandmother, who nursed him, contracted diphtheria of a virulent type.

CASE 2.—A male, about 16 years old, was suddenly seized with high fever, extremely sore throat, much swelling and engorgement of both tonsils, with a slight exudate easily removed. The case greatly worried me, but I was much relieved to find that a culture twelve hours old did not show diphtheria bacilli. Repeated cultures were also negative. The patient promptly recovered without specific treatment in three or four days.

CASE 3.—A little girl was seized with fever, sore throat and vomiting. On examination it was found that both tonsils were covered with a thick pultaceous exudate which was easily removed and left no bleeding surface. A pure culture of diphtheria bacillus was found in twelve hours. In this case three cousins with whom she played developed typical diphtheria, and bacilli were demonstrated in their throats.

CASE 4.—A young man entered my office with a patch of membrane on his uvula which it was impossible to detach. It appeared like a classical diphtheritic membrane. A culture was made and he was at once given antitoxin. No diphtheria bacilli grew, but a pure culture of staphylococci did. This was repeated in other cultures. No case of diphtheria developed from the young man.

In all these cases the presence or the absence of diphtheria bacilli allowed me to make a diagnosis within twenty-four hours. It is true that the results of all my cultures have not been so striking or so comforting, but these suffice to make my point.

Cases, such as the following, are rare, and when cultures are made by the health board and the case placarded, it is most annoying and disheartening, but if an error exists, it is on the safe side:

A married woman was seized with a sore throat, fever, etc. On both tonsils was an exudate which resembled that of ordinary follicular tonsillitis. In the first culture made there were many bacilli which looked just like diphtheria bacilli. In following cultures they were entirely absent. The child of the woman, who was constantly with her, did not develop diphtheria.

I suppose cultures can most surely and with less risk of mistake be made in the laboratories, but they can be made at home in our own little laboratories, which should exist if we expect to keep pace with the rapid strides of modern practice.

The necessary equipment is: 1, a good microscope with an oil-immersion lens, and the necessary working knowledge; 2, culture-tubes of blood-serum; 3, an oven with a thermostat; 4, stains, cover-slips and slides; 5, ability to recognize diphtheria bacilli when present. Necessarily, the use of these require skill, but when once acquired it is just as easy to examine a culture-tube as it is to examine a specimen of urine.

I presume that for a long time the practice will not become routine, but the sooner we come to it, the sooner we will be able to distinguish between these important and annoying cases. They but prove by their rarity the value of the habit of making cultures.

DISCUSSION.

DR. DE LANCEY ROCHESTER, Buffalo, N. Y.—I rise to second the position taken by Dr. Fussell and to state that I have found the taking of cultures in the throat a valuable aid in the treatment. It is my habit to take cultures from every sore throat that I see and, in many cases, the diagnosis of diphtheria has been made earlier than it possibly could have been in any other way. I think the value of the antitoxin is very great when it is administered early and in large doses. The treatment of diphtheria is not under consideration, but I would like to say that the use of antitoxin in large doses, 6000 units in thirty-six hours, gives us the best results, and without any unpleasant symptoms except, possibly, urticaria. In a suspicious case of diphtheria the taking of early and repeated cultures is very valuable. Not infrequently there is a pseudo-bacillus which resembles, in its anatomic characteristics, very closely the bacilli of diphtheria, and it has repeatedly happened that the board of health will report to us that the organisms very much resemble those of diphtheria, that it is very suspicious, and they ask for a second culture; this second culture, of course, will clear the matter up, but valuable time may be lost. To repeat the cultures I think is as valuable as to obtain the first culture.

In regard to the persistence of the organisms in the throat after the clinical manifestations of the disease have disappeared, I have experimented a great deal in different applications which will overcome that condition, and I have come to the conclusion that there are three agents of value in getting rid of these organisms early. The first of these is Loeffler's solution, which must be applied thoroughly and with a swab; spraying does no good; swab the throat well and but one or two applications will be necessary. It is an exceedingly painful application and so very difficult to apply to children's throats. I have had it in my own throat and I have never had such a painful sensation; it lasted about fifteen minutes. Therefore, I started to find another application. Nitrate of silver is but little painful to the throat, even when applied in strong solutions. I found that a 10 per cent. solution, if applied thoroughly, is fully as efficacious as the Loeffler solution; it should be applied with a swab and done thoroughly, and it will clear up the throat very rapidly. Then again I make it a practice to have the patients spray their throats with a 50 per cent. solution of peroxid of hydrogen, i. e., equal parts of the peroxid of hydrogen and water, and this is used regularly every three or four hours and, in this way, I get rid of the organisms rapidly.

DR. R. C. NEWTON, Montclair, N. J.—We had a mild epidemic of diphtheria in Montclair last March. Out of the first ten cases which developed in two or three days all were taking milk from the same dairy. The Health Inspector went at once to that dairy and took cultures from the throats of everyone who was engaged around the cows. There were 45 men employed in the dairy, and our of these, two were found who had the Klebs-Loeffler bacilli in their throats, and these two men were engaged in milking the cows. Afterwards 17 more of the milkmen showed the bacilli in their throats. The sale of the milk was promptly suspended and the epidemic ceased. The inspector by taking these cultures prevented an epidemic of diphtheria and probably a loss of a number of lives. Anti-

toxin was administered to every man at the dairy. Of course as these men milked they would infect the milk in the manner so well explained in Dr. Boston's paper, and this accounted for the spread of the disease. The New York City Board of Health took an interest in the matter and it was through their investigations that it was proved that the bacilli found in the throats of these milkmen were the true Klebs-Loeffler bacilli and were virulent. That the disease did not take more hold and we did not have more cases among the large number of families supplied by this dairy is explained by the fact that the bacilli will not grow at a temperature of 40 F. The milk at this dairy is cooled down to 40 immediately after milking and is kept so until delivered. Hence there was little chance for the bacilli to multiply, and only a few comparatively found their way into the throats of the milk-consumers.

Dr. C. W. Lillie, East St. Louis, Ill.—The question of the value of taking cultures from the throat is pretty well settled, but whether it is to be done for the benefit of the patient or not is not clear. I think the culture method will be of more benefit in the way of prophylaxis than it will be in the treatment of an individual case, and it is in that direction that we must expect its greatest benefits. The case referred to by Dr. Newton is an example of the value in culture-taking. If the boards of health were always careful, and always placed the matter in the hands of a competent person, a much greater benefit would be experienced, but this matter is usually left in the hands of politicians for certain reasons, who hand over the work to one specially favored by them, with the result that but little results are obtained. If this matter should be taken in hand by persons who are competent it would be a very useful method. I think it is the duty of the medical profession to urge upon the health authorities the necessity for making these cultures for determining the presence or absence of the bacilli and thus prevent the spread of this disease.

TOTAL RETROFLEXION OF THE IRIS.*

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Cases of total retroflexion of the iris are of such rare occurrence that I venture to report the following:

A. G., German, aged 55, laborer, presented himself to me at my clinic at the Charity Eye, Ear and Throat Hospital, Buffalo, N. Y., on May 26, 1899. Two weeks previous to that date he had fallen from a wagon, and had struck the left side of his face and head against the pavement. He did not think that there was a stone or other object on the pavement against which he fell, but it seems quite probable to me that he was mistaken. According to the patient's statement, there had never been any injury or disease of either eye previous to this fall. Vision had been acute in both eyes, and the color of eyes and size of pupils had been alike. At the time of his first visit, the left eyelids were somewhat ecchymotic, and the episcleral tissues of the left eyeball were deeply congested, but there was no pain. The cornea was slightly hazy, the aqueous chamber was filled with blood, and the tension of the eyeball was somewhat diminished, although there had been no laceration of the sclera or cornea and not even an abrasion of the conjunctiva. The presence of blood in the aqueous humor prevented any view of the fundus from being obtained. A simple treatment, consisting in the occasional use of hot fomentations over the eye to favor the absorption of the blood, was prescribed, together with instillations of a saturated solution of boracic acid.

The right eye was normal in every respect. The pupil was of usual size and reacted well to light. The iris was bright and lustrous and of a rather deep-blue color. Both eyes were quite prominent in their orbits.

The blood in the aqueous humor of the left eye was gradually absorbed, and had quite disappeared on June 10. There remained, however, a quantity of dark-gray colored debris, which floated about in clumps and shreds, and which seemed to be attached more or less to the parts in the ciliary region. This debris also became absorbed, only a little of it being visible on June 23. At this time, no trace of the iris could be found, either by the use of focal illumination or the ophthalmoscope; neither were the ciliary processes visible. Without instrumental assistance, the blackness of the pupillary area was co-equal in size with that of the corneal disc, and the ophthalmoscope gave a reddish reflex of the fundus of the same diameter. The appearance, in fact, was that of total aniridia. Not only was there an absence of the iris, but the crystalline lens had also disappeared, and with + 10 D. vision equaled 6/60. There were still some opacities in the aqueous humor which somewhat obscured an ophthalmoscopic examination of the fundus, and I deferred my search for the crystalline lens to a later date.

In the course of a few weeks, the reaction had entirely subsided, the tension had become normal, all opacities had disappeared, and every part of the fundus accessible to ophthalmoscopic examination was perfectly clear and distinct; aside from the aphakia and the disappearance of the iris, there was no evidence of any deep-seated injury or disease. A careful search was then made, both by myself and Drs. Abbott, Howe, Grove, and other ophthalmologists, and we all failed to find the crystalline lens in the vitreous cavity or in any other part of the eye. It certainly had not been extruded from the eyeball, as there had been no rupture of the sclera, and it was concluded that after being more or less lacerated by the contusion, it had become rapidly absorbed.

As regards the invisibility of the iris, it was decided that this was due to its having been thrown backwards, throughout its whole extent, against the ciliary body. Had it been torn from its periphery, it would have been seen in some part of the eyeball, and probably at the bottom of the aqueous chamber. But not even the smallest remnant of it could be found either early or late in the case.

On February 16, 1900, a rough test gave vision equal to 5/12 with a + 11 D. spherical glass. A spherocylindrical combination might have brought the vision to a higher degree of acuteness, but the patient disappeared, and a further test has not been possible.

Reduced to its lowest terms, then, this case is as follows: a violent concussion of a previously normal eye, followed by aphakia and disappearance of the iris. The crystalline lens was either dislocated to a point where it could not be found, or else it had become absorbed. The latter supposition is the one I accept. The iris was thrown entirely out of view, and this could only be done, so far as I am able to determine, by being reflected back against the ciliary body.

The mechanism of retroflexion is very obscure, but in this case it evidently consisted, in part, 1, in the destruction of the posterior support of the iris by a laceration of the zonule in a large part of its extent, and thus permitting a sinking backwards of the lens whether lacerated or not; 2, in rupturing the pupillary margin of the iris, probably at several points, allowing this membrane to become easily turned back and super-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

imposed over the ciliary body; and 3, after being torn at its pupillary margin, and thrown backwards against the ciliary body, the effusion of blood, which attended the lacerations, necessarily filled the space between the iris and cornea, and thus crowded upon the already reflected iris, and held it firmly in its new position till it became so fixed there that it could not replace itself.

This case is not only of interest as an example of an exceedingly rare traumatism of the iris, but it also shows how violent a contusion and injury may be inflicted on the eye, with remarkable lesions in the anterior portion of the globe, and yet useful vision be preserved.

REMARKS.

Retroflexion of the iris, otherwise known as inversion, introversion, retroversion, sinking in, disappearance, retraction, etc., of the iris, may be partial or total. The partial form may follow various traumatisms and certain operations in which the zonule has been ruptured, either with or without luxation of the crystalline lens. It has occurred in my practice in two cases during the operation of simple extraction of senile cataract, attended by rupture of the zonule and escape of vitreous humor. Passeur[1] records a case in which partial retroflexion occurred during an attempt to perform an iridectomy for seconday glaucoma, following luxation of the crystalline lens. Similar cases have been seen by others. A partial retroflexion of the iris has also been noted after contusions of the eyeball, and particularly after wounds of the cornea or selera near the corneo-scleral junction, with rupture of the zonule and hernia of the vitreous body. But some cases have been recorded as partial retroflexion in the bibliographies of this lesion which undoubtedly belong to another class. For example, a case cited by C. Bell Taylor,[2] is not one of retroflexion, but a traumatic iridectomy in both eyes. No claim is made by the author that it was anything else. Eales and White[3] describe two cases of rupture of the sclera, with entanglement of the iris in the wound. These should not be regarded as retroflexions of the iris, as the description does not sustain such a diagnosis. It would be more proper to classify them as partial hernias.

Total retroflexion has a much greater interest than the partial form, inasmuch as it often occurs without any laceration of the cornea or sclera, and its mechanism is problematic. Von Ammon's case,[4] upon whose description the pathology of this lesion has up to the present time been based, was the first definite example of total retroflexion without laceration of the outer coat of the eye. The case of J. Adam Schmidt,[5] recorded in 1804, undoubtedly belongs to this class, but is indefinite in its history. Von Ammon's case marks the beginning of our real knowledge of this subject. In this case there were no external lesions of the eyes, yet in both there was total retroflexion of the iris.

Since this memorable report, only a small number of undoubted cases have been recorded. We may recall the following: Vose Solomon[6] reported a case in which there was total disappearance of the iris from contusion, with laceration of the sclera. A second one was by John Williams[7] in which there was injury of the eyes with complete loss of the iris and crystalline lens. A third case was by G. von Ottingen, of Dorpat,[8] caused by concussion of the eye, the iris disappearing and the crystalline lens, with its capsule, being dislocated into the vitreous humor. C. Bader[9] refers to a fourth case which was undoubtedly one of this lesion, and was probably caused by traumatism. The iris was apparently absent in an eye which had been blind for years and had a chalky lens rolling about in the hyaloid fossa. After excision of the eye, the iris "was found pressed upon the ciliary processes by aqueous humor." A fifth case was that of A. Samelson,[10] in which there was a total retroflexion of the iris, only a narrow border of it being visible. The ciliary processes were covered by this dark mass. L. W. Beardsley[11] describes a sixth case, seen on the fourth day after a contusion. There was a recent scar of the upper part of the cornea about 2 mm. from the limbus and about 3 mm. in length. The iris was invisible, and the crystalline lens became absorbed. With + 12 D. Sph. the vision ultimately reached 6/15. A seventh case was also mentioned in the same connection by Dr. Beardsley as occurring in the practice of Dr. C. Barck. In this case the eye was struck by a stone, and was seen a few days later. There was no external wound or cicatrix, either of the cornea or sclera. The crystalline lens was dislocated downward into the vitreous humor, and there was no trace of the iris. The fundus was just visible. Vision was about 6/50 with + 12 D. Sph. The case was only seen once.

Besides these cases, two or three others have been referred to by writers, but I have not yet been able to verify them, or to determine whether they are partial or total. This brief résumé, however, will suffice to show the infrequency of the lesion, and under these circumstances I may be pardoned for presenting to such a body as this the report of a single case.

1. Archiv für Ophthalmologie, 1873, Band xix, Ab. ii, p. 317.
2. London Lancet, 1873, vol. ii, p. 839.
3. Ibid., 1899, vol. ii, p. 412.
4. Archiv für Ophthalmologie, Band i, 1854, p. 119.
5. Schmidt und Himly's Ophthalmologische Bibliotek, Band iii, 1804, p. 171.
6. British Med. Jour., April 14, 1860.
7. Dublin Medical Journal, vol. xxxviii, August, 1864, p. 250.
8. Petersburg Med. Zeitschrift, xi, i, 1866.
9. Natural and Morbid Changes of the Human Eye and Their Treatment, London, 1868, p. 352.
10. British Medical Journal, Sept. 28, 1872.
11. American Journal of Ophthalmology, vol. xvi, 1899, p. 300.

TARSADENITIS MEIBOMICA.*

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Definition.—A subacute or chronic infection of the Meibomian glands, tending to periodical acute exacerbations and, secondarily, altering the whole structure of the tarsal cartilages, chiefly the upper.

Etiology.—Diffusion through part, or all, of the Meibomian glandular system of chalazial disintegration products and their cause.

Pathogenesis.—Chalazia representing unhealthy granulation tissue of a very low type, scantily supplied with blood vessels, tend, from this nature of their make-up, to break down. The age of the patient and the condition of the general health modify this tendency to disintegration, great youthfulness and general debility favoring a destruction more or less acute, while more advanced age and good health favor chronicity. This circumstance is due merely to varying degrees of body resistance. Chalazia may, therefore, undergo, 1, suppuration; 2, chronic inflammatory softening.

1. Suppuration may be so severe as to bring about not only the destruction of the neoplastic tissue, but also of the tumor sac. This occurs chiefly in children and young persons and is the only method of spontaneous

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cure. (This hint on the part of Nature should be noted under the head of treatment.)

More often the suppurative process fails to obliterate the sac and re-formation follows, though weeks and months may elapse before renewed chalazial construction begins and then another long period may go by before the small developing tumor is accidentally noticed. The suppurative process referred to does not lead to tarsadenitis, as, owing to its short duration, the discharge products soon find issue by means of perforation. This latter takes place almost invariably to the outside. Tension and distension, the chief causes of necrotic tissue destruction in spontaneous abscess drainage, are practically limited to the external lamina of the tarsal cartilage, as the eyeball supports, splint-like, the inner half.

2. Chronic softening is the type of chalazial disintegration. It does not begin, as a rule, during the formative period of the tumor, but after some growth has taken place which makes the problem of nutrition and resistance more difficult as the tumor-bulk increases. In this, it merely follows the example of other neoplasms (cancer, tubercles, gummata, etc.). With high powers of resistance the development of a chalazion may be very gradual and thus the tumor may enjoy a long period of exemption from its fate of disintegrating softening. But the vast majority show evidence (*q. v. infra*) of this process almost any time.

The disintegration products are very slowly formed and find exit through the excretory duct of a Meibomian gland, or a subconjunctival perforation. In either case the drainage is, owing to its scantiness, intermittent. The consistency of the discharge favors flow only under accumulation and consequent tension. During the intermissions, the drain openings become closed by clotted secretions in the form of an occluding pellicle resembling much a collodion film. Eruption takes place only after the accumulation tension overcomes the adhering power of the film. This latter is quite considerable, so that the drainage products have to lift off the pellicle by distension. This gives an appearance of a vesicle having undergone suppuration.

Drainage of this kind is not ideal on account of the intermittently pent-up discharges. The consequent local irritation soon converts the discharging track into a regular sinus with circumfistulous induration and unhealthy granulations about the orifice. A Meibomian duct engaged in this fistulous function is readily recognized by its nipple-shaped appearance. Above it, the observer will always detect, by palpation, a chalazion more or less disorganized and perhaps one or more secondary foci.

The reactive swelling often closes the duct in places and then discharge sacculations occur between the occlusions. Relief may come by subconjunctival perforations, after which the course of the fistulous duct is outlined by a purplish path along which small subconjunctival pus-lakes are observed like beads on a string. However, the inflammatory (necrotic) softening also occurs in the interglandular septa. Irruption into neighboring glands takes place and, by a repetition of this process, most, or all, of the upper cartilage may actually become detached into an anterior and posterior lamella from the destruction of the septal partitions. This brings about a clinical picture which I have called, on pathologico-anatomical grounds, *Tarsadenitis Meibomica.* The presentation of an example in the concrete being preferable to abstract statements, I here append a case.

Consultation by Mr. O. in the fall of 1899: Near the middle of the upper free border of the left lid a crater-like gland mouth; well above it, a degenerated chalazion, formerly the size of a pea, now not larger than a small shot; between it and the opening, another nodule hardly larger than a millet seed. Bulbar conjunctiva somewhat suffused, moderate photophobia, slight lacrimation, especially in the dust, sensation of fulness, heaviness and roughness, together with great itching and smarting about upper lid. The latter, considerably swollen, drooped and was tender to the touch. Eversion (painful) exhibited mushy swelling and lividity of conjunctival epithelium, a good deal of papillary roughness, and—a characteristic feature—an appearance simulating alligator leather, which was explained by the circumstance that the great inflammatory tumefaction over the infected glands made that surface stand out prominently, while the non-infected ducts, in the absence of swelling, looked like raphés between the infiltrated areas. In three different places were seen small grayish vesicles about the size of a pinhead. Puncture allowed the escape of a quantity of discharge hardly appreciable, but compression brought out a small drop. In places, the cartilage had thus been separated into two lamellæ, the inflammatory softening having admitted not only of irruption into neighboring glands, but of total removal of the septal tissue with free communication between distant intraglandular spaces. At the same time conjunctival perforation had occurred, the little vesicles being merely fistulous drains with their occluding pellicle distended.

A 5 per cent. solution of protargol injected into one perforation would freely emerge from the others. To get at the fountain-head of the trouble, I opened and scraped the tumor. For this purpose I used a minute spoon with spiculated border (I regret not to know the name of the inventor of this most excellent instrument) and found that I could freely curette between the separated tarsal laminæ, close up to the free border. After this procedure I continued lavage with the silver salt. All openings were injected, the duct orifice included, as there was found occasionally partial clogging from any one point.

This at once relieved the subjective complaints, though the reaction rather aggravated the swelling and the flow of pus for the first few days. It also changed the color of the morbid secretions from an ashen gray to a light yellow.

After three weeks neither pressure nor lavage produced pus, but the lid was still much thickened. In the absence of subjective symptoms, treatment was considered finished. It must be admitted, however, that from an idealistic point of view the cure was far from satisfactory, as the induration did not entirely disappear. This patient has had two relapses since: one in the fall of 1900, another in March, 1901. Incision emptied considerable muco-purulent discharge both times.

The case related allowed me, for the first time, to recognize the trouble and to determine its nature. I have since treated three more cases easily diagnosticated and thus have come to the conclusion that the affection is relatively frequent.

It is interesting to note how the master mind of the great clinician, Professor Fuchs, views this condition. He says in his text-book: "In particularly bad cases (of chalazion) an actual degeneration of the lids, especially the upper, takes place. The lids are thickened, and everted only with difficulty. The skin forms nodular projections, but can be displaced upon its bed and is not essentially altered, etc., . . . In such cases we might at first sight be disposed to think of tarsitis or a neoplasm."

He notes the presence of nodular projections in the skin, but hastens to add that the latter is not essentially altered. Now, as a matter of fact, the degenerated chalazia (and their secondary foci below them) do feel like nodules in the skin and seem to glide with it, but

critical examination with the tarsus steadied, demonstrates that they are not in the skin, but in the "cartilage." Incision proves both their location and structure. He says further: "Those chalazia which develop in the excretory ducts of the Meibomian glands assume a special appearance. They are then situated near the free border of the lid from which they project like a nipple."

He seems to take the nipple appearance for tumor eversion, when, as a matter of common observation, all chronic fistulous tracks develop a crown of proud flesh around the external opening. There is truth in the statement that a chalazion near the free border more readily produces this feature, but simply because the duct in this region is not as easily closed by reactive swelling and, therefore, continues its fistulous function more regularly than would a longer and thinner channel, as the latter is apt to establish auxiliary drainage by conjunctival perforations all along its route. Moreover, nipple orifices are common with chalazial tumors high up; in fact, a close situation to the free border of a primary chalazion is rather exceptional and, whenever one is observed there, it is mostly a secondary focus. Palpation above it will usually reveal the parent growth. Sometimes the latter has undergone degeneration and consequent elimination to such an extent that it is hardly any longer palpable, yet the tell-tale appearances of the conjunctiva settle the question even then. One will notice that the livid path marking the fistulous duct passes far above the secondary focus and ends in the characteristic discoloration marking the seat of the original neoplasm.

In an effort (for which I beg) to verify my statements, I ask of my readers some patience and attention, and in order to facilitate matters in the way of a first diagnosis, I ask indulgence for a diagnostic analysis: The drooping of the upper lid gives the patient a sleepy look and on account of the frequency of this sign in trachoma one is apt to think of this disease. However, the thickening of the lid should counsel caution. I do not mean to say that tumefaction is always absent in trachomatous drooping, but, when it occurs, it usually marks considerable inflammation, hence discharge, photophobia, lacrimation and bulbar involvement. This is precisely the point of difference in tarsadenitis, for the patient never complains of these spontaneously. He may, on suggestion, admit that light is not altogether agreeable and that his eyes water more readily in the dust, but the points he is quite insistent about are an annoying smarting and itching. Nor does the bulbus show any implication, unless it be a slight degree of venous congestion as we observe after a debauch.

A highly diagnostic point is the simultaneous presence on the free border of one or several "nipple orifices" of the Meibomian ducts. Their existence should not be inferred on account of small roundish elevations, for secretion plugs might produce them. A little pressure soon dissipates the doubt, as it empties the little amber-like pearls of Meibomian secretion. The fistulous nipple-mouth can not be squeezed out or wiped away. Moreover, it shows plainly inflammatory reddening, which may, however, be hidden under an occlusion pellicle. Palpation will reveal the shot-like granulomata.

The most valuable, in fact, pathognomonic, sign is the alligator-leather appearance of the conjunctiva lining the tarsal cartilage. The accumulation between the two tarsal laminæ of chalazial granulations and their morbid secretions not only causes distension, but also great inflammatory reaction of the subjacent conjunctiva, especially as the latter in this locality is closely adherent, almost after the fashion of a perichondrium. The consequent venous engorgement gives quite a livid color and a very marked swelling of the papillæ. The latter circumstance creates a very entrapping simulation of the papillary form of trachoma. In fact, I want to plead guilty personally to this very trap. Still, the raphé-like depressions over the undestroyed septa should, with their lighter (pinkish) hue, stay at once error in this direction. The remarkable thing is that stimulating applications (Cu SO4 in substance) actually give a sense of relief, nor is this strange when we consider the shedding of the proliferating surface epithelium.

Alligator-leather appearance, accompanied by much thickening of the lids and great smarting and itching, has always served me for an indication for incision, nor have I failed to drain away pent-up discharge. The subjective complaints then begin to cease at once. Another diagnostic feature is the presence of one or several vesicular elevations on the conjunctival surface filled with grayish or yellowish matter and about the size of a pinhead. They are capillary perforations with an occluding pellicle.

In exceptionally acute attacks external perforation takes place with subcutaneous abscess. The latter occurrence in the upper lid, especially toward the temporal part, should invite inspection as to the possible existence of tarsadenitis.

SUGGESTIONS FOR LESSENING THE FREQUENCY OF RELAPSES AFTER TREATMENT OF MORPHINISM.*

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Every physician well understands that the percentage of relapses of patients treated for morphinism is large—just how large I do not know. In many instances it has been an absolute impossibility for me to keep track of the cases I have treated. During a correspondence with a physician a few months ago in regard to my treating his son for the morphin addiction, he wrote me that he knew that statistics proved that 95 per cent. of all patients cured relapsed. I have heard it stated that one can prove almost anything, except facts, by statistics. If the physician has the statistics to corroborate his assertion, I am prepared to believe the statement correct. It has been estimated by some who have had considerable experience that 50 per cent. of cases treated relapsed. I dare say that that is a fair estimate when all classes of cases are counted, but if we will eliminate the well-marked cases of degenerates I feel sure that the percentage will be far below the above estimate.

I believe that if those who treat morphinism could do as the careful surgeons sometimes do, select his cases and have full control of them until they are discharged by him, that he would be able to reduce the percentage to less than 25. All who have had experience I think will bear me witness that it is a most difficult thing to do, to retain a patient under treatment for a sufficient length of time after the morphin has been discontinued to regain a reasonable amount of physical and moral strength and tone.

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*Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

Usually very soon after the morphin is entirely withdrawn the appetite is abnormally acute; sleep is sound and refreshing; the mental faculties are all buoyed up; their hopes, anticipations and expectations are all overdrawn; their confidence in themselves to withstand any temptation that can possibly come to them is much overestimated; they have no desire whatever for opiates; in fact, they believe that they are fully as unlikely to relapse as one who has never used opiates is to acquire the addiction. However, in case of pain from any of the ordinary ills of life, or if they allow themselves to become fatigued, mentally or physically, the temptation to relieve themselves just that once is very great. At this point there are many relapses. Had the patient remained in the institution for a few weeks longer or until he had regained more fortitude and strength of character he would probably have remained free of the addiction for the remainder of his life.

Another very frequent cause of relapse is the use of alcoholic drinks. I am convinced that there is scarcely an exception to the rule, that any person who has once been addicted to morphin will relapse sooner or later if he will allow himself to use alcohol as a beverage in any form or in any quantity.

He must be a total abstainer during the balance of his life. Tobacco in all forms appears to have a tendency to provoke a desire to use narcotics after having once been addicted to the use of them. And especially is this true with cigarettes where the smoke is inhaled as is customary with most cigarette smokers. In nearly all cases where I have been unable to induce patients to discontinue cigarettes while taking treatment or after being cured they have relapsed within a few months' time. Highly seasoned or stimulating food, any form of dissipation or excess may become the straw that breaks the camel's back.

The degenerates, depraved and vicious, furnish a large number of habitués, nearly all of whom, no matter how thoroughly they are treated, nor how well they are guarded, after treatment within a short time return to their former associates and loafing places and very soon begin using drugs again. Of course, there are some exceptions; once in a while one who appears the most hopeless will remain for years or for a lifetime without relapsing. I have in mind two or three of what appeared to be among the most hopeless cases that I have ever treated who have now gone over two years without returning to the use of the drug. Experience has taught me not to despair of any case that manifests a desire to be cured. It is also just as true that some of those who seem the most hopeful will relapse at the first opportunity.

There is a class of patients that relapse after a period of from three to eight months, which seem to be the least excusable of all. They leave the institution in a very good condition; their general health is apparently all that could be desired; they improve in flesh and strength; all their surroundings are favorable; they are pursuing their vocations with comfort and perhaps feeling better and stronger than for years; but, strange as it may seem, they have not learned that they can not take one dose and not take more. This one dose may be taken for some pain, real or imaginary; it may be for fatigue or a mental depression, or, as I have known it to be taken, simply to see if the effect would be as it formerly was. It seems very peculiar that one or two experiences of that kind would not be sufficient, but I have known instances where the same thing had been repeated time and again. It would appear that the only thing that can be done for this class of patients is to cure them as often as they relapse. It is unjust to say that they were not cured because of their relapse. We would not think of saying that a man was not cured of pneumonia because he had a second attack in three months or a year. A person is cured of morphinism when he does not desire or require morphin or any other drug to make him feel comfortable and well. Undoubtedly, the greatest safeguard that can be given a newly cured habitué is perfect health.

The plan or method of treatment that will come nearest to securing that end will have much to do with lessening the percentage of relapses. Physicians, I believe, have adopted one of three general plans for the relief of morphinism: 1, the sudden withdrawal; 2, the rapid reduction; 3, the gradual reduction. The first, the sudden withdrawal, we will only consider for the sake of condemning it. It is cruel in the extreme and is not without danger to life. I have known of only a few cases treated in this way and have known of one death by it. The symptoms which follow the sudden withdrawal of morphin from a person taking 10 to 30 grains in twenty-four hours, is always alarming, such as vomiting, diarrhea, profuse perspiration which the patient describes as feeling cold as ice-water, severe pains and cramps in the abdomen and calves of the leg, a peculiar, unbearable pain of the joints as though they were being pulled apart. The heart's action becomes very weak and rapid, running up to 140 and 160 or 200 beats per minute. There is also an indescribable nervousness which the patient usually declares to be the most unbearable of all. These symptoms may be followed by collapse and death or they will gradually subside after a few days and the patient finally recovers. However, I can scarcely imagine a physician that would be willing to apply such heroic measures to a patient who is already a physical and nervous wreck. I am very sure he would not consider such severe measures where milder means will secure as good or better results, at least in any other form of disease and especially so where the nervous system is involved.

The rapid reduction is little better. With this method the withdrawal is so rapid that we get nearly all of the abstinence symptoms that we have with the sudden withdrawal, although they may be somewhat modified and there is less danger of collapse, but the misery is longer drawn out. It might be argued that it would be well for the patients to suffer during the treatment, that there would be less inclination for them to return to the use of it again if they knew they must suffer severely to become free of it; but the facts I think will not sustain the argument. The severe strain and shock from that kind of treatment, added to an already injured nervous system, can only have a tendency to make the patient less able to withstand temptation. It must be remembered that withdrawing the morphin is not curing the morphin habit. Unless the patient is so far restored that there is not a constant desire felt for a narcotic he might as well not have had the morphin withdrawn. While the gradual reduction method as has usually been described and practiced is a decided improvement over either of the other two, it is not all that could be desired. To withdraw a certain fraction of a grain each day or to withdraw a certain fraction of the dose of the previous day is not a good method. When a certain amount is withdrawn each day regardless of the condition of the patient one would be cer-

tain to soon have some of the withdrawal symptoms manifest themselves. Unless the reduction is discontinued the appetite will disappear, sleep will be absent and the patient will be losing ground instead of improving. By the time the morphin is entirely withdrawn the patient will be very weak, much emaciated and extremely nervous.

It is possible by a modification of the gradual reduction method with a large proportion of patients to withdraw the morphin and have them feeling better during their entire treatment than while they were taking morphin ad libitum; also to have a majority of them improve in weight and strength and general health. These conditions undoubtedly will have a tendency to lessen the number of relapses.

The method that I practice in all cases is a form of gradual reduction and is graded in each individual case according to the condition of the patient. I take it for granted when a patient comes to me that he is taking more morphin than he requires to make him comfortable. This will be found true in nine cases out of ten. Nearly always where the dose is more than 10 grains per day he will be fully as comfortable on about one-half the quantity that he has been accustomed to use. If he should feel much discomfort from the amount withdrawn, at once increase the quantity sufficiently to secure comparative ease. I always give morphin four times a day to each patient and intend to give enough each time to keep them fairly easy until within an hour or so of the time to give it again. As an illustration we will presume that we have a patient who is taking 10 grains per day; we would presume he might be comfortable on 4 grains. Make a solution of 16 grains to the ounce and give 30 minims, which would represent one grain which we will give four times during the twenty-four hours. If we find that he is uncomfortable and shows any of the abstinence symptoms we will increase the quantity a few minims; if we find him comfortable after twenty-four or forty-eight hours withdraw one minim at each of the four doses. Continue the reduction each day until we find he is taking as small a dose as possible without feeling too much discomfort for more than an hour or so before the time for giving morphin again. When this point of discomfort has been reached we will rest for two or three days or until the patient is comparatively easy on the amount he has been receiving; then withdraw another minim and proceed in this manner until the amount has been reduced to 6 or 8 minims, when it is better to make a solution of 8 grains to the ounce and give twice the quantity, as a minim of the strong solution will represent a larger amount of morphin than we should be able to withdraw at one time without producing too much discomfort. Again, when this solution has been reduced so the patient is taking only 5 or 6 minims we make another solution of one-half the strength and give twice the amount and so on until he is not taking more than 1/120 grain at a time, when we try to discontinue it entirely.

In some cases it will have to be reduced to a much smaller quantity before it can be entirely withdrawn. Never discontinue the morphin while the dose is large enough so that the loss of it can be felt by the patient. During the entire withdrawal period and for a longer or shorter time afterward the patient should be built up with nerve tonics, heart tonics, and general tonics, a liberal diet, and as much sleep as possible. I have been using static electricity with several cases during the past year and I believe with great benefit to some. It has appeared to me to have a quieting effect on the nervous system. I also believe that it has had a decided effect on equalizing the circulation. Often when the patient is troubled with cold extremities a few applications of spray and perhaps mild sparks twice a day for a few days will entirely overcome the difficulty and there will be no further trouble. From the experience I have had with the static current I believe it to be beneficial as a nerve tonic in many cases and should be continued all through the treatment. I am inclined to consider it one of the most valuable single agents, if not the most valuable one, that we have in the treatment of morphinism, but I intend to give it a more thorough trial. No rules can be laid down to govern any particular case; the indications must be met as they arise, with each individual patient.

The physician who treats morphinism should devote his entire time to the watchful care of his patients.

Because of this need of minute personal supervision of the patient, the general practitioner fails and must continue to fail to attain the success reached in special institutions. The impression on the mind of the patient who goes away from home for treatment is always beneficial. He enters the institution expecting to be governed by the rules and regulations that control the other patients. He expects to be cured. He comes in contact with those that are cured and is encouraged. As a prevention of relapses I believe it better that each patient be permitted all the liberty during treatment with which he can be trusted. I am well aware that it is almost universally believed that an habitué can not be trusted at all and that they will take narcotics at every possible opportunity, but that is not my experience if he is made reasonably comfortable and has an assurance that at any time when he feels more discomfort from the lack of the drug than he is willing to endure that he can have enough morphin to relieve him. There is only a small percentage that will abuse the liberty given them. There are some who will take advantage of the least opportunity offered to procure a drug. Such must be confined to their rooms and closely watched But where liberty can be given they are better prepared to withstand temptation than where liberty has been denied. After patients have returned to their homes and have regained a sufficient amount of strength they should have pleasant employment and the companionship of congenial friends who will assist and encourage them.

Physicians called to treat patients who have once been addicted to the use of narcotics should be very careful to not give even the smallest amount of any form of an opiate, not even a little paregoric in a cough mixture. Legislation, to make it more difficult to procure morphin, would perhaps save some from relapsing as well as to prevent some from acquiring the addiction. With the best methods of treatment and all the safeguards that can be thrown around a patient there probably will always be some relapses, but that should not be used as an argument why all habitués should not receive treatment, and because one has relapsed is not a reason he should not receive treatment again.

DISCUSSION.

Dr. T. D. Crothers, Hartford—The subject with which the paper treats is by no means settled, and there are no fixed rules and regulations that can be applied to every case. The method of reducing the quantity of morphin taken by these patients, whether rapidly or slowly, can only be decided by

the status of the particular case we have to deal with. I have seen cases where a rapid reduction of the drug proved entirely satisfactory. I think that when a man has been taking 10 or 20 grains of morphin daily, and the quantity has been reduced to one grain, we can cut this off entirely without waiting longer. There is a strong psychic element in these cases, and we should endeavor to gain full control of the mentality of the patient to succeed. Beyond 4 or 5 grains the amount of morphin utilized by the system is very small. A man may be taking 10 or 20 grains daily, but he does not get the full physiological effect of that sized dose. When I get a patient who is taking such a large dose, I immediately cut it down to 5 grains without letting him know the amount of the reduction, and later, in the course of a few days, I substitute some other alkaloid. There are so many narcotics that can be easily substituted for the morphin without causing the patient any particular discomfort. The greatest obstacle I have to deal with in these cases is to get rid of the needle fascination. When that is accomplished the case is more simple. To some persons the puncture of the needle is such a delight that it is very difficult to overcome it. No two cases of morphinism can be treated on the same lines. After the dose has been reduced to one grain, I usually withdraw the drug entirely and substitute some narcotic. In some instances I give a large dose of valerian or hops, and after a profuse sweat and bath the patient receives a hypodermic of pure water with the belief that it is morphin; as a result he will often sleep for many hours.

Dr. John Punton, Kansas City—My experience with morphin patients proves that the majority of them are suffering from malnutrition, and are greatly reduced in flesh as the result of the habit. I am inclined to think, therefore, that attention to the nutrition of the patient is just as important as the withdrawal of the drug, and that without the one the other is useless. Forced feeding is just as essential in these cases as in other neuroses. I would like to ask the essayist what he does to control the paroxysms at night.

Dr. A. J. Pressey, in reply—Dr. Crothers stated that he withdraws the morphin entirely when the dose has been reduced to one grain, and that the patients bear this very well. My experience is different. As regards the substitution of other narcotics, I have tried them all and found that in the end they prove just as bad as morphin. The drug which we employ as a substitute must, of course, be an opiate. The symptoms that result from the withdrawal of one grain of morphine are almost as severe as those following the withdrawal of 5 or 10 grains. I know that most men can be carried along quite as comfortably on 5 grains when their accustomed dose has been 10 grains. I had one man who was taking 120 grains of morphin and a large quantity of whisky daily, and I carried him along comfortably on 10 grains per day, in fact, he was much more comfortable than before, but to take away the last grain at one time has not proven so easy. Many of my patients could not stand the sudden withdrawal of the final 1-20th or 1-60th or even 1-80th of a grain, and the dose had to be reduced gradually to 1-120th and even to 1-240th of a grain.

Dr. Punton spoke of the value of forced feeding. This has never been found necessary in any of my cases. As soon as the morphin is withdrawn to such an extent that the patients feel comfortable, they will feed themselves, and they want about four or five meals daily. I always give a lunch at 10 p. m.—bed-time—and in addition to this many of the patients ask for a glass or a pitcher of milk to drink during the night.

Medical Students in England.—The following is the number of students beginning a full course in the various medical schools: St. Bartholomew's Hospital, 84; Charing Cross Hosp., 14; St. George's Hosp., 12; Guy's Hosp., 68; King's College, 27; London Hosp., 64; St. Mary's Hosp., 35; Middlesex Hosp., 19; St. Thomas' Hosp., 48; University College, 31; Westminster Hosp., 17; London School of Medicine for Women, 30; Cambridge, 115; University of Durham, 26; Bristol University, 18; Owens College, 54; University College, Liverpool, 50; Yorkshire College, 27; University College, Sheffield, 12; London School of Trop. Med., 19; Liverpool School of Trop. Med., 3; total 773.

INJURIES, FEIGNED AND REAL, WITH THEIR DIFFERENTIATION AND MEDICOLEGAL ASPECT.*

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Injuries may be divided into two classes: 1, those with visible signs and symptoms; 2, those with invisible symptoms. Injury to certain tissues produce evidences of molecular change which usually justify the signs present and the symptoms complained of. A solution of continuity in either soft or bony parts requires no inductive or exclusive process of reasoning for their detection. Injuries to the nervous system productive of distinct objective symptoms, motor disturbances or discoverable sensory manifestations, do not tax the examiner's ingenuity to draw conclusions. Injuries to the nervous system, non-productive of objective symptoms in which the examiner is compelled to depend entirely upon subjective symptoms to arrive at the truth, are the most trying types the physician has to cope with. The invisible symptoms are the sensory, such as pain and the paresthesia. The visible symptoms and signs are chiefly motor and atrophic. Without repeating unnecessary detail as to the value of electricity and a thorough knowledge of the physiology of the nervous system, I will cite two cases, one of a common type and not difficult of diagnosis, the other in all its essentials surrounded by doubt because of the circumstances associated with the case, the presence only of subjective and the utter absence of objective symptoms.

A man is thrown violently to the ground and the only visible injuries are contusions to parts of the body, with the concomitant pains. The following day, apart from a slight soreness, the accident is dismissed. Subsequently the person injured notices that there is a gradual loss of power in one extremity confined to a group of muscles without disturbances of sensation. As time elapses the loss of power increases until a complete local palsy is evident. We are suddenly requested to state in how far is the injury real or feigned. Our first test is with the faradic current and feeble or no response follows. With the interrupted galvanic current we obtain contractions of the paralyzed muscles, but an altered response from the normal opening and closing contractions. Instead of obtaining the formula, CaCl is greater than AnCl, we have CaCl equals AnCl, or AnCl is greater than CaCl; in other words the reactions of degeneration. With such categorical evidence we state that the injury is real beyond any doubt whatsoever, and at once disprove the charge of malingering. Although where the important questions of liability and the degree of injury has arisen, the associated conditions, such as the nature of the injury, the locality of the contusions and the course of the case, must not be ignored. Here we have established facts which justify the most positive testimony, irrespective of the tribunal whether lay or medical.

On the other hand, a man claims to have been injured in a well-known accident, and, after spending the customary time in bed, whether for honest or other motives, on getting about complains of a continuous, localized pain, either along the course of the nerve, over the spine or in some other portion of the body. He describes the pain as follows: Persistent, continuous, with feeble re-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

missions, and never changing its locality. He attributes it all to the injury sustained either many weeks or months ago. He presents absolutely no objective symptoms. We are again asked by persons upon whom the liability has been placed, in how far is his suffering real or feigned. Here is a more difficult and a different task from the preceding case.

First of all the fact that a monetary consideration may be involved should make us distrustful and resolved to ply every element of our resources either to confirm the truth of his suffering or unmask the deception. What are the methods which will lead us at least approximately to a conclusion? My experience teaches me that one can not have pain for a long period of time without producing some discoverable sign or change, however slight, which can not be detected either by the aid of electricity or our senses. There can be no pain without an involvement of sensory nerve fibers, whether it be in muscle, bone, cartilage or serous surfaces. Pains attributable to injuries are usually ascribed to the nerve or nerves. Let us suppose his injury was in the region of the shoulder and arm, involving branches of the brachial plexus with or without motor loss—the latter condition being readily ascertained by the reactions of electricity. If the complaint be one of pain only, covering a long period of time, and we find none of the characteristic associated conditions, are we not justified in denying that the person has pain?

In regions where persistent pain has been complained of we should find the following: 1, primarily an increased electro-muscular contractility and later a lessened electro-muscular contractility, a result uninfluenced by the patient's will; 2, an increased electro-sensibility, a result easily influenced by the patient's will; 3, a glazed, sometimes puffed and bleached, skin over the area of pain; 4, perverted nutrition of the hair follicles and nails over the region of pain; 5, possibly some muscular atrophy and flabbiness; 6, increased skin and muscular reflexes; 7, unnatural tremor induced by the effort to hold the member absolutely immobile; 8, general lowered nutrition necessarily produced by prolonged suffering; 9, hyperesthesia or anesthesia and variable sensibility to temperature, and 10, the locality of pain bears a close relationship to the distribution of nerves. It must be noted whether the pain and complaint conform to any of the well-known clinical types.

If we find the major part or all these signs and symptoms in a region presenting a persistent and prolonged pain the suffering is real. But viewing the complaint of pain, accompanied with normal surroundings, or conditions normally present under physiologic circumstances, such as, the natural electrical reactions, no abatement of the general health, no trophic changes, no paresthesia, or in other words, conditions found in those who do not complain of pain, are we not justified in branding the complainant as an impostor and charge him with malingering? Can a person have a persistent pain for a long period of time without producing some visible or palpable change in the surrounding tissues or in time affecting the general health? Pain in itself is a perverted sensation and impalpable, but the results of pain are often easily discovered. Because one complains of pain where a question of liability and damages are involved, it should not be said that he has not true pain.

Apart from the physical aspect of the presence and result of pain must be considered the fact that many people suffering injury, creating the question of a monetary responsibility, will semi-consciously malinger for selfish reasons and feign symptoms that are not readily perceptible to the senses. Hyperesthesia and anesthesia in the distribution of affected nerves are frequently observed. The esthesiometer, if carefully applied, will aid us materially. If the pain is remote from the distal part of the extremities, the esthesiometer will show an increased sensibility over the painful area, and the distal surfaces having normally a superior sensibility are now lower than over the area of pain. Tuerck and Trousseau, and later Nothnagel, assert that hyperesthesia is the primary manifestation in areas of pain, and is subsequently followed by anesthesia. Pain in a nerve or nerves does not always imply a marked disturbance of other part supplied by branches of this nerve. Hilton has taught us that the same nerve supplying the joints, and the amount of damages to be awarded. Let the lay-also supply the muscles moving the joint and skin over the insertion of the muscles. Inflammation of a joint produces rigidity of the muscles moving this joint because the same nerves supply the three different tissues involved; subjectively immobility of the joint surfaces is produced to lessen pain. A nerve in pain is an irritable and an irritated nerve and has in consequence all its functions heightened or increased. There is an unnatural flow of secretions when nerves are irritated, as is evidenced by an increased flow of saliva in facial neuralgia. A drastic or alkaline purge, irritating the intestinal mucous membrane nerve terminals, produces purgation; so should an irritable mixed nerve, supplying a cutaneous surface and the muscles beneath, likewise produce an increased or heightened function, discoverable both by electricity and other methods of examination.

MANNKOPFF'S TEST.

In this I do not have much faith, although Rumpf lays great stress on it in traumatic neuroses. It consists in observing the pulse rate before, after, and during pressure upon an area alleged to be painful. If the pulse becomes more rapid while the pressure is being made, it is supposed to be proof that the pain is real and has reflexly caused the heart to beat more rapidly. We can claim that if a patient complains of pain on the surface of the body it must be expressed by the nerves that reside there. There is no other structure that can express it, and somewhere in the course of its distribution between its peripheral termination and its central spinal or cerebral origin, the precise cause of the pain must be situated.

Pressure over painful areas should elicit pain, or some form of perverted sensation in nerve terminals; but, you will ask, can not any one wince under pressure and claim to have pain? This is a shortcoming in our examination, but, by suddenly detracting the patient's attention and then pressing on the supposed painful spot, you catch the patient unawares, and, if he is feigning, you are enabled to make deep pressure without obtaining evidences of pain. The changes observed in the skin overlying the painful area are atrophy, pigmentation and roughening. The atrophic skin appears smooth and more shiny than that of the other parts of the body. A change may also be noticed in the hair, a brittleness, coarseness, or unnatural grayness. The hair may have a tendency to fall out, or may grow denser along the course of affected nerves. The nails may be paler or discolored, transversely furrowed or have a diminished rate of growth.

Wherever the localized area of skin shows trophic disturbances, such as, atrophy or hypertrophy, congestion

or blanching, hyperesthesia or anesthesia, and its hair follieles altered either in quality or quantity, we may conclude that there lies beneath, either direetly or indireetly, a nerve disturbance, and if a history of injury exists these changes should be ascribed to injuries of a nerve or nerves.

A speeies of modern robbery, which has grown to enormous proportions, is found in accident cases, and with these the neurologist is more or less associated. Modern transportation has greatly increased the number of accidents, and, as these cases are subject to jury trials in questions of liability and damages, an abuse has grown until the larger corporations often pay unjust claims rather than submit the question to a prejudiced jury. The professional injured and complainant for damages is a modern production and in our larger cities one-fourth of the cases possess this blackmailing character. The city electric lines lose from $300,000 to $500,000 annually and many of the cases are trumped up and pampered for the occasion by the unscrupulous collusion of lawyers and physicians, who agree to divide the gain among themselves. Observe very closely a damage suit at trial and note with what detail the complainant's ease has been mastered and how some innocent perversion of function is enlarged and given an importance, how a trifle is made to appear as the most excruciating suffering and what a possible or positive permanency is attached to each disturbed function, to influence an ignorant set of laymen towards bringing a heavy verdict for the plaintiff. On the other hand, note the weakness of the defense in the utter absence of valuable medical testimony or a physician who has made but one examination and that in the latter part of the trouble, and who is now supposed to know as much about the case as the one in charge from the inception of the injury to the time of trial.

Seguin criticises our methods by saying that in this country claimants are very rarely subjected to scientific watching and repeated examinations. The physician or expert is expected to deliver an opinion after one or two interviews with the patient, so that the chances of detecting simulation are much reduced. A large corporation having many employes and many accidents should protect themselves by having a competent physician of their own choosing visit the injured at the earliest possible moment and subsequently as often as in his judgment he deems it necessary, so as to familiarize himself with the nature of the injury, the course of repair and recovery, and as to the degree of permanent injury. He could and should make these examinations in the presence of the attending physician at such time and place agreed upon, and, if proper notes are made, the corporation likely to be made the defendant is now armed with valuable testimony which not only forearms them when unjustly assailed, but in a measure has a restraining influence on those who seek to present physical conditions in a grossly exaggerated form. The knowledge on the part of the plaintiff that the defendant's surgeon has notes and information of his case from beginning to end would compel him, for his own safety, to confine himself to the truth and decidedly limit his prevarication. A large Philadelphia corporation sends its physician only after the case is reported convalescent and probably after all visible signs of injury have passed away. This weak position on their part puts them at the mercy of their opponents and from the many large and unjust sums mulcted from them one would imagine that they would alter their methods.

From a medical standpoint the prevailing methods of trial in injury cases are unseientifie and productive of unjust results. In all cases there are two important elements to be considered; 1, as to the liability of the individual or corporation; 2, as to the degree and permanence of the injury and the amount of damages to be awarded. At the present time both questions are submitted for final conclusion to a lay jury, whose only guide as to the injury and its results and damages is the medical testimony which is often contradietory, misleading and unsatisfactory.

I hold that a better procedure would be to let a lay jury pass upon the evidence involving the question of liability, and, having this once determined, the medieal testimony should be submitted to a jury of medieal men to determine the degree and nature of the injury, its possible permanent influence on the future life of the injured, and, when this is finally settled, to have this same body of physicians fix the amount of damages to be awarded. Were a law of this kind enacted, there would be less robbery in accident suits, and careless and unscrupulous medical men, not confined to general praetitioners alone, would be more ehary in presenting their oftentimes biased and mercenary evidence.

Imagine a buteher, a baker and a dry-goods merehant passing judgment upon traumatic neuroses, sueh as paraplegia, neuritis, palsies, impaired vision and the various disturbances of locomotion incident to the graver accidents. How often in cases where the plaintiffs are women, who were but slightly injured or more likely not injured at all, is the hysterical or neurasthenic element produced.

Medical and expert testimony in accident cases is the opprobrium of the profession to-day, and the sooner such questions are considered from a scientific standpoint the greater the honor will be accorded to the medical profession. The physician is the only one that ean differentiate the feigned from the real sufferer, and judiciously pass upon the nature and degree of the injury and the amount of damages to be awarded. Let the layman confine himself to questions of liability alone.

DISCUSSION.

Dr. Harold N. Moyer, Chicago—If the suggestions made by Dr. Ott in his paper were all carried out, they would probably necessitate a change in the English Magna Charta and an amendment to most of the state constitutions in this country, if not to the Constitution of the United States itself. In communities with a jurisprudence derived from the English common law they are impracticable.

Dr. Leo M. Crafts, Minneapolis—I can not subscribe to all the assertions made by Dr. Ott. That portion of the paper which referred to the differentiation between the objective and subjective symptoms frequently observed after injuries I consider admirable, but my experience does not agree with his as regards the amount of malingering by people who have been exposed to injury. I think his assertion in this respect is too broad and the result of observation from a biased standpoint. The statement that the plaintiff is more likely to be influenced by a moneyed consideration than the other party certainly does not obtain in the West; I do not know how it may be in the East. It is easy to understand how a corporation with large means can do more to influence litigation than can be done by a single individual whose means are usually limited. It has been my experience that these corporations frequently disregard the safety of their employes and the traveling public, and depend upon their wealth and influence to free them from just penalties for their neglect. I am thoroughly in accord with what Dr. Ott said regarding the desirability of a change in the legal procedure ordinarily followed in accident cases. If we could by some means obtain such modification of joint action as to make it possible to get impartial medical or

surgical testimony of an expert nature, it would do much to elevate the so-called "expert testimony" from the position of disrepute which it now occupies.

DR. RICHARD DEWEY, Wauwatosa—One point was not mentioned by the essayist, namely, the suggestive effect of the injury itself upon the patient, and, even more, the suggestive effect of an examination of the patient by the physician, especially if the latter asks him leading questions as to certain symptoms. The symptoms complained of by these persons may not be genuine, and still may not be dishonest. I have observed more than once a tendency to regard as dishonest all symptoms which are of a subjective nature and which can not be proven by objective means. Even in cases where the question of damages did not enter I have seen, as has every one experienced in these matters, serious impairment of function without demonstrable structural lesions.

DR. J. G. BILLER, Cherokee, Iowa—I have been unfortunate enough in two or three instances to be imposed upon by persons who claimed damages for feigned injuries, and who at once recovered when the damages were paid. I recall the case of a farmer whose reputation for honesty was excellent and whom I had known for years. He met with a railway accident, and I examined him, with the chief surgeon of the company, and in view of his symptoms, which had evidently been prompted by his attending physician, we made a favorable report. The railway company paid him $7000, and a few days after he had received the money the man was in town buying cattle. We should have some definite way of getting at these cases. They are often a disgrace to the profession. In the case I have referred to we made a very thorough examination, but we were unable to obtain any definite proof that the symptoms were feigned.

DR. HERMAN GASSER, Platteville, Wis.—So long as we cling to our present indefinite method of defining pain as subjective and objective, it will be impossible to formulate any system that will lead us to definite conclusions. There is no such thing as subjective and objective pain; there is only one kind, and that is pain. It is a psychical product. It always has some pathological basis for its production. In some instances the pathological lesion is easily discoverable; in others it is not. The reader of the paper referred to an increased pulse-rate as an indication of pain. Bichat showed long ago that this was a valuable sign as indicating the presence or absence of real injury or of pain. The significance of the pulse as an indication of health or disease can not be overestimated. If we see a sick or injured patient whose pulse is good and strong, no matter how badly he may claim to feel—he may even be in convulsions—still we can rest assured that there is no immediate danger. As regards the occurrence of symptoms, feigned and real, after the receipt of injuries, I recall the case of a girl who fell into an excavation while walking along the street. She was apparently not injured. Her relatives suggested that she ought to put in a claim for damages. She soon afterwards began to complain of pain in various parts of the body, and this was subsequently followed by the devlopment of mental disturbance. She was examined by a number of physicians, and all of them, with one exception, thought she was hysteric. She finally recovered $2300 damages without the case going to trial, but this did not cure her, and she is still in a very poor condition both mentally and physically. She had a hysteric nervous organization and the advice of her fool friends made it chronically active, and she is now paying a severe penalty.

DR. F. SAVARY PEARCE, Philadelphia—I do not think the suggestions made by Dr. Ott regarding the methods of trial in these cases can ever be carried out, for the simple reason that the physician has nothing to do with the judicial side of the question involving the damages. The physician simply has to decide whether the person is injured or not, and this is often a very difficult question for the neurologist to answer. Having determined that the plaintiff is or is not suffering from a traumatic neurosis, either functional (which I do not believe in) or organic, then the evidence is given to the jury and the latter should make the award of damages.

DR. JOHN LEEMING, Chicago—My experience in the West confirms the experience of the essayist, and is not in accord with that of Dr. Crafts. The difficulty in ascertaining the condition of the patient previous to the occurrence of the accident has not been referred to. In cases where we can demonstrate the presence of structural lesions by actual measurement or by electrical tests there can be no suspicion of malingering, but the difficulty we have to deal with is to exclude positive shamming, or what I call "involuntary simulation," in persons who have received a trivial injury and who claim to be suffering from very serious neuroses. The nature of the injury is frequently out of all proportion to its effects, and these effects do not occur in cases where no litigation is pending. We should try to form a positive opinion regarding the true nature of these cases, and not hesitate to express it.

DR. LAMBERT OTT, in reply—Those who do not believe there is much rascality in connection with accident cases in large cities, I would invite to spend a brief period in Philadelphia and watch the jury trials, and I am sure they will become convinced. My suggestions regarding the method of trying these cases may not be practicable under our present statutes, but if they were adopted I believe the results would be far more satisfactory and just than by the present methods. I have studied this class of cases closely in Philadelphia and other large cities and the prevarication, distortion of facts, complaints of extreme suffering, with no visible evidence of disturbed tissue, associated with a history of trivial injury, make up the complexus of fraud presented for the purpose of mulcting corporations. I regret to say that in the trial of injury cases involving a large amount of damages you will often find the well-paid specialist on the side of the plaintiff with his biased statements giving strength and substance to their side. Large corporations are more just in the settlement of claims against them than individuals and whenever it is shown that they are justly liable they seek an amicable and fair settlement. Our courts in Philadelphia groan under the burden of such cases and only recently a band of conspirators were arrested and convicted for purposely meeting with accidents and subsequently feigning injury in order to extort damages from street railway companies. It is within the power of the medical procession to stamp out this rascality by condemning the malignerer and compelling all others to confine themselves to the truth.

SAMUEL FULLER—PILGRIM, DOCTOR AND DEACON.

I. N. DANFORTH, A.M., M.D.
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"The names of those which came over first, in ye year 1620, and were by the blessing of God the first beginners and (in a sort) the foundation of all the Plantations and Colonies in New England; and their families."[1] So reads the quaint caption of Governor William Bradford's list of the *Mayflower* passengers, appended to his "History of Plimouth Plantation." Among the passengers, we read the name of "Mr. Samuell Fuller, and a servant caled William Butten. His wife was behind, a child which came afterwards."[2] Bridget Fuller, the wife of "Samuell," with a child who soon died, came over in the ship *Anne,* and landed at Plymouth in August, 1623; hence, both Samuel Fuller and his wife are properly classed among the "old comers" or the "forefathers," as the forefathers included all those who came in the first three ships; the *Mayflower,* the *Fortune,* and the *Anne.*[3] Referring again to Bradford's history, we read that "Mr. Fuller his servant dyed at sea; and after his wife came over, he had tow children by her, which are living and growne up to years (1650); but he dyed some 15. years agoe" (in 1633).[4] With these brief and quaint remarks, Bradford dismisses Samuel Fuller and his family.

Samuel Fuller's servant, William Butten (who was probably a student-assistant), who died at sea, November 6, 1620, as recorded by Prince;[5] and Bradford writes: "In all this viage ther died but one of ye passengers, which was William Butten, a youth, servant to Samuell Fuller when they drew near ye coast."[6]

There can be no doubt, I think, of the correctness of Packard's statement that "the earliest practitioner of medicine in Massachusetts was Samuel Fuller, who was among the passengers on the *Mayflower* in 1620."[7] It is probably also true, as stated by Packard, that "he held no medical diploma, nor was his position officially recognized"—i. e., by the "merchant adventurers," who were the financial backers of the pilgrims. Although, according to Palfrey, he came from London, it is not likely that he had pursued the study of medicine systematically. He must have joined the pilgrim company in Holland, as Palfrey states that he followed the occupation of a silk-weaver while the pilgrims lived in Leyden.[8] But they were all compelled to accept such employment as they could find in Holland, and they found it hard and up-hill work to earn even a scanty maintenance; in fact, this was one of the most persuasive reasons which led them to cross the then unknown ocean, and found the tiny republic, so memorable in the annals of civil and religious liberty. But diploma or no diploma, with or without "official" recognition, Fuller was practically and gladly recognized as the physician of the pilgrim colony, and was even called in a similar capacity by Governor Winthrop to the then infant colony of Massachusetts Bay on several occasions.

On reaching Leyden in 1611, according to Goodwin,[9] Fuller was chosen deacon in the pilgrim church, and was from that time forward a trusted leader and counsellor in all matters relating to the pilgrim church—spiritual, medical and secular. He also had a hand in the negotiations which resulted in the purchase of the *Speedwell* as one of the transports for the company across the Atlantic, as shown in the correspondence recorded by Bradford.[10] Goodwin states—I do not know upon what authority—that Fuller was one of the first "Board of Assistants to the Governor of Plymouth colony, continuing in office many years."[11] He was probably "assistant" in 1631, but this conjecture is based upon rather feeble evidence.

The first record of his professional work occurs in August, 1621, when in a scrimmage with the Indians "ther was 3. sore wounded; these they brought home with them," i. e., to Plymouth, "& had their wounds drest & cured and sente home."[12] This act of kindness had an excellent effect in the way of winning the friendship of their savage neighbors. In June or July, 1622, came the *Charity* and *Swan,* two ships sent by "Master Thomas Weston"—from whom the pilgrims suffered so much ill-usage—having in them some 50 or 60 men, and a very undesirable crowd they were. In fact they appear to have been a gang of tramps, chiefly interested in living without work, and they succeeded in foisting themselves upon the pilgrims for nearly two months, making sad havoc with the ears of green corn, which they stole and roasted and devoured, night and day, to the great damage of the growing crop, upon which the pilgrims were so dependent for the coming winter. During their unwelcome sojourn at Plymouth several of their number became "sick and lame,"[13] and these they left at Plymouth under Dr. Fuller's care, "although they had a surgeon of their own," Mr. Salisbury.[14] In the winter of 1628 an epidemic appeared among the newly arrived colonists at "Naumkeag" (now Salem), in Massachusetts Bay, caused "by infection that grue amonge ye passengers at sea, it spread also among them a shore of which many dyed, some of ye scurvie, other of an infectious feaoure" (fever), "which continued some time amongst them, though our people," i. e., at Plymouth, "through God's goodness escaped it."[15] Lieut.-Gov. Endicott of Naumkeag, having heard of Dr. Fuller of Plymouth, wrote Gov. Bradford "for some help, understanding here was one that had some skill yt way & had cured diverse of ye scurvie, and others of other diseases, by letting blood & other means."[16] Accordingly, Dr. Fuller was sent to the Bay colony, where he attended to the bodily ailments of the settlers, and also took occasion to make some explanations concerning the form of worship in use among the pilgrims, which removed some previous misunderstandings on that point. As a result of this visit, Gov. Endicott writes to Gov. Bradford, May 11, 1629: "I acknowledge my selfe much bound to you for your kind love and care in sending Mr. Fuller among us, and rejoyce much yt I am by him satisfied touching your judgments of ye outward forme of God's worshipe."[17] In the summer of 1630 Dr. Fuller was again called to Massachusetts Bay on account of the great prevalence of sickness, occasioned, says Gov. Winthrop, by "ill diet at sea." Therefore, on July 8, he went to Matappan (now Dorchester), "and let some 20 of these people blood." On August 4, he was at Salem, and a little later at Charlestown, probably still "letting blood" and discussing theology, for our good Doctor was quite as well versed in the theological squabbles of the day as he was in medicine. Soon after (in August?), we find him writing "the sadd news here is that many are sick and many are dead. I here but lose time, and long to be at home. I can do them no good, for I want drugs and things fitting to work with." Shortly, perhaps immediately, thereafter, Fuller returned to Plymouth, accompanied by Lieut.-Gov. Endicott. These visits of Dr. Fuller were potentially instrumental in initiating and cementing the close friendship which from that time forward existed between the "Old Colony" and the Colony of Massachusetts Bay.

In January, 1631, Henry Harwood, "a goodly young man" from Boston, was taken to Plymouth from a shallop wrecked on the Cape, and Dr. Fuller was obliged to "extend surgical treatment to him," says Goodwin, although the nature of the treatment is not specified.

This is the brief but suggestive history of Dr. Samuel Fuller's professional life so far as I have been able to trace it. But, of course, the quaint old records show us but an infinitesimal fraction of the work he actually did. We must picture him traveling back and forth from Plymouth to the sparse settlements of Massachusetts Bay, either on foot or in an open boat; or ministering to the manifold wants of the pilgrims during that first terrible winter (when half their number died), and for thirteen years afterwards; or visiting their savage neighbors, among whom a fearfully fatal epidemic raged for several years prior to and following the landing of the pilgrims and puritans. How primitive must have been his practice; how limited his medical and surgical armamentaria; how few and incapable the nurses at his command; what a lonely, isolated, depressing and dispiriting condition of things, for a physician burdened with such grave responsibilities! It is impossible for us physicians, situated as we are to-day, to apprehend or justly appreciate the poverty of knowledge and

methods by which he was environed. One can not help questioning whether those bold, hardy, fearless and resolute, yet self-denying and self-forgetting pilgrims, ever realized what vast and momentous results hung upon the success or failure of their wonderful experiment of self-government in church and state. Happily for us they triumphed; but who can estimate the consequences to civil and religious liberty, if they had failed!

But Dr. Fuller, as we have already seen, was also Deacon Fuller, and he was quite apt to have a hand in the theological squabbles which were so common in pilgrim and puritan days. In 1611, while the pilgrim church was still in Leyden, Deacon Fuller became involved in an epistolary controversy with one Daniel Studley—whom an old writer calls "that hypocritical chameleon"—and said Studley[18] "grinds his teeth against Samuel Fuller, a Deacon of Master Robinson's company; whom with his friends he describes as being ignorant idiots, noddy Nabalites, dogged Dogs, fair-faced Pharisees, shameless Shemites, malicious Machiavellians"—rather a choice assortment of alliterative expletives, from a "Ruling Elder" (Studley), to a Deacon (Fuller). It illustrates the fierce and uncompromising spirit of the times.

Deacon Fuller also had an eye to business, especially in the matter of the church collection, even in the presence of distinguished guests, as shown in the following description, by Governor Winthrop, of a church service in Plymouth in 1632: "On the Lord's Day," in the forenoon, "there was a sacrament which they did partake in; and, in the afternoon Mr. Roger Williams (according to their custom) propounded a question, to which the pastor Mr. Smith spake briefly; then Mr. Williams prophesied; and afterward the Governor of Plimouth (Bradford) spake to the question; after him Elder (Brewster); then some two or three men of the congregation. Then the Elder desired the Governour of Massachusetts (Winthrop) and Mr. (Rev. John) Wilson to speak to it, which they did. When this was ended, the Deacon, Mr. Fuller, put the congregation in mind of their duty of contribution; whereupon the Governor and all the rest went down to the deacon's seat, and put into the box and then returned."[19] How this contribution business would have delighted the soul of old John Wesley if he had been present!

According to Rev. Edward Everett Hale, Dr. Fuller was one of the capitalists, or one of the "persons of largest means in the Leyden group of the emigrants";[20] but Dr. Azel Ames, in his recent work, says that "the good Doctor"—Hale—"is clearly in error."[21] * * * But Dr. Ames concludes that Dr. Fuller was "one of the Leyden chiefs, connected by blood and marriage with most of the leading families of Robinson's congregation. He was active in the preparations for the voyage * * * and doubtless one of the negotiators for the *Speedwell.*"[22] In fact, he commenced the voyage in the *Speedwell,* but was transferred to the *Mayflower* after the *Speedwell* broke down, as the prospects seemed to warrant the conclusion that there would be an increase of "pilgrims" before long, and that a physician would be a rather important factor in the ship's company. With characteristic pilgrim forethought, Mistress Susannah White—sister of our Dr. Fuller—provided herself with a strong, solid, serviceable oaken cradle before leaving Leyden, and she took good care that the cradle (as well as her brother the Doctor), was safe aboard the *Mayflower* when at last she sailed away from the old to the New Plymouth. This cradle, after having rocked Peregrine White—first-born of American pilgrim babies,—and we know not how many other pilgrim babies—has descended to this day, as one of the few veritable and genuine *Mayflower* relics.

Dr. Fuller evidently did not believe that it was good for "man to be alone," as he was married three times. His first wife was Elsie Glascock, whom he must have married in England, but we have no certain data; she probably died in England prior to the removal of the pilgrim church to Holland. On April 30, 1613, he was married in Leyden to "Agnes Carpenter, maid, of Wrentham in England," daughter of Alexander Carpenter. but she did not live long, and, so far as I can learn, left no children. May 27, 1617, he was married to Bridget Lee, maid, of England, accompanied by "Joos" Lee, her mother,[23] the name "Joos" being the Dutch recording-clerk's spelling of some English pronomen, but what it was we can not now ascertain. Bridget Lee Fuller, as we have seen, did not accompany Dr. Fuller in the *Mayflower,* but followed in the *Anne* in 1623, bringing also their child, probably three or four years old; but this child died soon after they landed. Two other children, Samuel and Merey, were born in Plymouth. Dr. Fuller's wife, Bridget, survived him many years, and was highly respected in Plymouth. She became quite famous as a nurse and midwife, and her services were much in requisition in this capacity.

In the year 1633, says Bradford. "it pleased ye Lord to visite them" (the pilgrims), "with an infectious fevoure, of which many fell very sicke, and upward of 20. persons dyed, men and women besids children, and sundry of them of their ancient friends which had lived in Holand; as Thomas Blossome, Richard Masterson, with sundry others, and in ye end (after he had much helped others) Samuell Fuller, who was their surgeon and phisition, and had been a great help and comfort unto them; as in his faeultie so otherwise, being a deacon of ye church, a man godly and forward to do good, being much missed after his death; and he and ye rest of their brethren much lamented by them, and caused much sadness & mourning amongst them; which caused them to humble themselves & seek ye Lord; and towards winter it pleased the Lord ye sickness ceased. This disease allso swept away many of ye Indeans from all ye places near adjoyning, and ye spring before, espetially all ye month of May, there was such a quantitie of a great sort of flies, like (for bignes) to wasps or bumble-bees, which came out of holes in ye ground, and replenished all ye woods, and eate ye green things, and made such a constante yelling noyes, as made all ye woods ring of them, and ready to deaf ye hearers. They have not by ye English been seen or heard before or since.*

But ye Indeans tould them sickness would follow, and so it did in June, July, August, and ye cheefe heat of somer."[24]

Thus died Samuel Fuller the pilgrim "phisition" and deacon. It is much to be regretted that we can not know more of this pioneer physician of the "Old Colony." His will seems to indicate that he was a teacher as well as a doctor and deacon, as he directs that "Elizabeth Cowles, who was submitted to my education by her father and mother at Charlestown, to be returned to her parents;" and the same disposition to be made of "George Foster being placed with me by

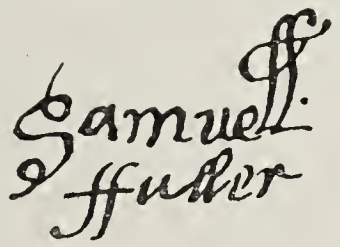
* Bradford here describes a visitation of the cicada septendecem, or seventeen-year locust, the first account of its appearance in New England.

his parents still living at Sagus" (now Lynn); and "Widow Ring submitted to me the oversight of her son Andrew." He gives vent to his affection for Roger Williams as follows: "Whatsoever Mr. Roger Williams is indebted upon my books for physie, I freely give him." We also find this eurious bequest: "I give to the Church of God at Plymouth the first cow-calf that my brown cow shall have."[25] While there are some uncertainties regarding this gift, when we realize that heifers were then (1633) worth £13 in Plymouth, and that the purchasing power of a pound sterling was four times greater than it is now, we shall see that the church might be pardoned for "indulging a hope" of fruitfulness on the part of Deacon Fuller's brown cow after all.

He left a library of twenty-seven volumes, says Goodwin, but does not enumerate them. Dr. Azel Ames remarks: "One is surprised and amused that the library of the good Dr. Fuller should contain so relatively small a proportion of medieal works (although the number in print prior to his death in 1633 was not great, while rieh in religious works pertinent to his function as a deacon" (Loe. Cit. p. 216); and then with provoking reticenee, he fails to mention the "medieal works" which Dr. Fuller did possess.

"Indications show that he was a man of intellect and good presence, it not being improbable that he was of regular education. He is among the noblest and most interesting of the pilgrims, and the regard of his descendants should secure him a fitting monument on that sacred hill where he prayed, and now sleeps in a grave of whieh 'no man knoweth.' Surely the zeal of his suceessors in the healing art might well provide some memorial of the good physician's excursions of mercy to the pestilential cottages of infant Salem, Dorchester and Boston."[26]

In conclusion, I append a facsimile of the autograph of Dr. Fuller, for which I am indebted to that monumental work. "Winsor's Narrative and Critical History of the United States." In place of an initial capital "F" he uses "ff," as was the frequent practiee in those days.



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ENFORCEMENT OF MEDICAL LAWS DEPENDENT ON AN ORGANIZED PROFESSION.

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The question of medical legislation has been an open one for a time sufficiently long for thinking men of the profession to have become thoroughly conversant with it, but every member of an examining board soon becomes aware of the fact that many physieians in states having good laws by which to regulate the praetice of medicine, know practieally nothing about them. In some cases a few of the best men of the profession openly oppose medical legislation, laying down the broad proposition that every man should be allowed to do as he pleases in this free land of ours, employing if he wishes any one elaiming to be a practitioner of medicine regardless of qualifications. Others take the position that the possession of a diploma from a medieal college in so-called good standing and the registration of this diploma should be the only requirement demanded of them, taking the broad ground that the possession of such diploma is proof that the holder of it is better qualified for his work than the average member of an examining board.

These are samples of the objeetions presented. This diversity of opinion among physicians regarding medieal laws interferes much with their enforcement. "In union there is strength," is more applicable to this condition of things in medical legislation and the enforcement of medical laws than any other possible thing. The old adage, "doctors disagree," is constantly flung in the faces of the medical profession when the enforcement of medical laws is urged. Violations of these laws are reported to the prosecuting attorney of the state or county, and he frequently replies that whilst Dr. M. desires the laws enforced, Drs. N. and P. do not want any such thing done and he is unwilling to enter upon the prosecution of the violators of medical laws.

This is especially the case when the prosecuting attorney is a salaried officer. His compensation is neither increased nor diminished by his enforcement of laws, and as the enforeement of any laws, new ones especially, and medical ones more particularly, may make him enemies and henee lose him votes in his next eleetion, he is too well satisfied to do as little work along sueh lines as possible. In many instances these irregular and non-registered, law-infracting physicians live in a country district where they eontrol a elass of voters, or in a city they belong to the advertising class who pay the daily or weekly papers to exploit their wonderful skill as physicians and surgeons, and as a result it is the part of a business policy for the attorney to let them alone. These faets are set forth thus plainly that those who desire so to do may understand some of the difficulties met with by examining boards in having medical laws enforced. In other cases, a physician writes to the board notifying it that Dr. A. is violating the medical law, but that his name must not be used in prosecuting him as it would render him unpopular with Dr. A.'s friends, a thing that he ean not afford to do as he expects to fall heir to Dr. A.'s work when he is driven by

the law out of the practice. The informant is willing to give names of parties for whom Dr. A. prescribes, and then leave the board to do the rest, or have it done as best they can.

This brings us directly to the consideration of the best method of the enforcement of the medical laws. We are ready to assert that they can not be enforced except through and by the medical profession, and it is a self-evident proposition that in such matters individual effort amounts to but little. A single physician, acting alone, unaided by others in the same neighborhood or county, could avail almost nothing in the enforcement of medical laws. He would be regarded as a troublesome, envious fellow, and unless he were willing to spend his own funds freely, could accomplish but little. To grapple successfully with the enforcement of our medical law there is needed a united, organized profession. In my experience as secretary of the Tennessee State Board of Medical Examiners, in those counties in which there exists a live, active, working, well-organized county society, infractions of the medical law are few, and at long intervals. A well-organized county medical society is regarded by the best class of citizens as reflecting the interests and wishes of the medical men of the county, and also as including in its folds, as a rule, the medical talent of the county. This fact gives it a weight and influence which as a society it can exert in many ways, when the individual members would fail in the accomplishment of anything. The request to the prosecuting attorney of the county by his county medical society that he vigorously prosecute Dr. A., would be at once effective, where individual effort would prove perfectly futile. A county medical society, as an organized body, would have great weight with politicians, as well as prosecuting attorneys, so that if our laws were non-effective, members of the law-making body in those counties where these societies are active would promptly ask what was wanted, and would readily undertake to secure it for them. Where there are no such organized societies, the profession is handicapped and can exert no influence except of a personal character. Too many physicians hold aloof from all political and other meetings, desiring to be neutral on all questions, but such a policy generally meets the fate it deserves—a complete failure.

Medical men should be not only physicians, and human beings, but also model citizens, and as such should take an active part in the every-day affairs of life. They should be the leading citizens of their respective neighborhoods, and as such, coupled with a well-known and well-understood professional organization, their influence would soon become great. With a live, active county society in every county in the state, medical laws can be enforced. An evildoer would not leave one county and move into another and practice in open violation of the law, because an organized profession is prepared to make him comply with the law in each county. The step taken by the American Medical Association in adopting the report of the Reorganization Committee and accepting the new Constitution and By-Laws arranged by that committee, will prove to be of incalculable advantage to the medical profession of this country, if the state societies reorganize in accord with the suggestions connected with this report. If this is done the state societies must be composed of only such members of the medical profession as are in good standing with their respective county medical societies. No one then can be a member of the American Medical Association who is not connected with and in good standing in his state society, and no one can hold membership in his state society who does not belong to his county society, so that the county society, or its equivalent, the oldest recognized society of the county, becomes the unit of measure for organized medicine. This is exactly as it should be. No one should be received by a state society who is not acceptable to, and does not belong to his county society, because the county society knows him best, and if he is fit to become a member of organized medicine, it will gladly accept and enroll him in its membership. Many men have crept into the American Medical Association who do not really belong there. Under our new laws they must be dropped or enter in by the way of the county medical society.

With the profession fully organized medical laws become as easy of enforcement as other laws. The medical profession will not be composed alone of individuals, but will become an organized and compact whole, the county members being the units of the county societies; the county societies, the units of the state societies; and the state societies, of the American Medical Association. Hence, what is asked by a county medical society becomes the demand of the state organization and then of that of the Nation, and the request or demand of the soon-to-be 20,000 or 40,000 members of the medical profession will have some weight even in National affairs.

In this state (Tennessee) there are about 4,000 practicing physicians. Of this number 400 are members of the state society, while about as many more belong to the different county and district societies representing organized medicine in this state. Under our new rules and regulations the strength (numerical) of the state society will be doubled, and of course its influence will grow.

No one can hesitate about demanding that medical laws be enforced, as the call can be made upon the county society to look after all violations within their bounds, and the society acting as an organized body can and will undertake the duty assigned it without bringing upon itself any opprobrium.

The enforcement of medical laws interest chiefly physicians, not the general public, and from a common business standpoint it becomes the duty of the profession to see that the laws do not become nonentities upon our statute books. It may be necessary in many cases to employ special attorneys to aid the prosecuting attorney. If this is done by the county medical societies, and the expense met out of the funds either of the state society, or the examining board, or out of the fines assessed against offenders, the laws can be easily enforced. Evildoers, unlicensed practitioners, would soon fold their tents and seek more profitable and congenial climes.

The success of this method of procedure has been clearly demonstrated by the Kentucky Board, when an attorney was employed at a salary to rid the state of all quacks plying their trade contrary to the laws. If this can be done by one attorney, how much more rapidly and effectively can the same thing be accomplished when the county medical societies, representing organized medicine, zealously proceed in a similar way. The profession of each county knows who is violating the law, and can reach such an one promptly, whilst if they delay and report the matter to the state society or the state board of examiners, much valuable time is lost. The local medical profession, whilst inaugurating the prosecutions to enforce medical laws, are merely representing

the medical profession of the state and are not subjcet to the opprobrium so mueh dreaded by many of the "holier than thou" members of our profession. In this way and this way alone can medical laws be enforeed, and when enforeed, not in a vindictive, malevolent manner, but simply for the good of the whole people, will be universally approved.

DIFFICULTIES MET WITH IN ENFORCING STATE MEDICAL LAWS.

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The penal sections of medical acts are not only very similar in the different states, but they have their constitutional authority from the power of the legislatures to enaet laws eovering what is known as the police power of the state. They are, therefore, on the same plane as other state laws, for instance, the law regulating the sale of liquor or the laws covering violence against the person, etc. Consequently, it is the duty of the prosecuting or district attorney to enforce a medieal law just as preeisely and strictly as it is customary for him to proseeute persons guilty of a crime against property or the person. The proseeuting or district attorney under the law has no authority given him to select what laws he shall enforce or to adjudge one legislative act necessary and another unimportant. All state laws are equally necessary and important from the standpoint of his duties under the law.

The above is an exact statement of a prosecuting or district attorney's duty in the matter of enforcing all state laws, including medical laws. But duty under the law is one thing and practice quite another thing. The majority of prosecuting or district attorneys are influenced in the view of their duties by the circumstances surrounding them in their respective districts, and while many of them conscientiously endeavor to enforce what they consider popular and necessary laws, still, when it comes to enforcing laws which in their judgment are unimportant and unpopular, they refuse or neglect to make use of the legal machinery at their disposal and insist upon methods not contemplated by the legislatures. As an illustration, an open and continuous violation of the liquor law comes to the notiee of the district or prosecuting attorney. The information reaches him that a person is running a saloon and selling liquor without the necessary license. Does he wait until a licensed saloon-keeper swears to a formal complaint before taking any action? No. He instructs the sheriff, his exeeutive offieer, to investigate and lay a complaint at once. On the other hand, he is informed that a certain person in his district is publiely displaying the usual sign of a physician and surgeon and is practicing medicine without being registered according to law. Often times he has exact information concerning the party complained of from the executive officer of the board of medical registration in the state. Instead of instrueting the sheriff in the matter he assumes an air of injured innocence and states his willingness to prosecute if some reputable citizen will step forward and swear to a formal complaint, or in other words, he says "I am perfectly willing and eager to do my duty under the law if I am compelled to do so. This quack complained of has a great many friends, ergo, votes, and I can square myself with these friends at the proper time, but I must on no account set the law in motion of my own violation through channels contemplated by law, *id est,* the sheriff and his deputies, otherwise I shall be held responsible by the party complained of." We all of us know of the injury accruing to the medical man who swears out a formal complaint against an illegal and unqualified medieal practitioner in his district. The law never contemplated that a law-abiding and reputable eitizen should be injured in the process of enforcing any law, great or small. It has provided the machinery for the enforcing of laws whether important or unimportant, and it is the duty of the prosecuting or distriet attorney to use this maehinery irrespeetive of whether the law that is violated is popular or unpopular, important or unimportant.

The present attorney general of Michigan informs us that the above statement of a proseeuting or district attorney's duty is a correct interpretation of his duty under the law. Experience as an executive officer of a medieal registration board leads us to believe that the greatest difficulty met with in enforcing medieal laws is because of the apathy and ignorance of his duties, if nothing worse, of the ordinary prosecuting or district attorney, and the principle at fault lies in the method of creating such proseeuting or distriet attorney, i. e., the elective method. In Ontario, where the appointive method is in vogue, and where the prosecuting or district attorney holds office during good behavior only, all state laws, great or small, including the medical law, are enforced to the letter. Information to a crown attorney in a confidential way that a person is practicing medicine illegally is invariably followed immediately by investigation and arrest. A reputable physician in the same field is not made responsible for an unscrupulous and disreputable rival's downfall. The appointive prosecuting or district attorney does not attempt to evade responsibility in enforcing the law, but rather takes credit to himself for not only doing his duty but his whole duty. Under our elective system and covering only a two years' term, there is of neeessity a great deal of "trimming" done by the ordinary and everyday prosecuting or district attorney. His duty consists in doing those things that will not harm any of his chances for renomination and re-election. Of course, it is not possible to change our system to the appointive one under our constitution. It is incumbent, therefore, for us to "cut our cloth" to the best advantage. A great deal in the right direction can be done by the state legislatures conferring larger powers and means upon the attorney-generals of the states. A rigid and frequent inspection by the attorney-general's department of the prosecuting or district attorneys would go a long way towards remedying the difficulties encountered now in enforcing medical and other important acts.

Another very important factor met with in enforcing state medieal laws is due to the ignorance of physicians and citizens generally relative to the duties of prosecuting or district attorneys under the law, and also the duty of residents of a district towards insisting upon the district or prosecuting attorney doing his whole duty. An exeeutive officer of a medical board is generally in receipt daily of letters of complaint from physicians giving information concerning the praetice of an illiterate and unlieensed practitioner, accompanied by the statement that in the writer's opinion "the law is of no earthly use, otherwise the party or parties complained of would not be permitted to practice." They seem to be ignorant of the fact that a law can be ever so stringent but may be praetically useless in a district if the eitizens of

such district elect and keep in office a prosecutor who neglects to do his whole duty under the law, and they forget that as citizens they also have duties to perform; that it is not the law but the local administration of the law that is at fault.

Prosecutions started by medical boards or by medical men are liable to misinterpretation by the great mass of the people, and, therefore, to a greater or less extent lose their force; usually such prosecutions are unpopular and the only remedy for this is for the state boards and medical men generally to devote their energies towards compelling the prosecuting or district attorneys to do their duties under the law. They should advocate a more conscientious enforcement of all laws; also, they should hold a prosecuting or district attorney solely responsible for the non-enforcement of laws, and endeavor to have an attorney nominated and elected who will conscientiously do his whole duty with respect to the enforcement of all laws. No legislature has the power to create penal clauses of a medical act of such quality that they will take care of themselves, for their enforcement in a very large measure depends upon the ability and conscience of the prosecuting or district attorney, who is, under our constitution, the guardian and administrator of all state laws.

LAWS REGULATING THE PRACTICE OF MEDICINE IN THE VARIOUS STATES AND TERRITORIES OF THE UNITED STATES.

Below will be found a résumé of the conditions or legal restrictions of medical practice in the several states and territories of the United States. The frequent inquiries that are made to THE JOURNAL as to these points convince us that a digest of the medical laws of the states, brought as nearly up to date as is possible, will be appreciated. We have given verbatim in many cases the sections of the law that are of special interest, and in all cases have endeavored to state the essential facts. Recent legislation is given in full, so far as it pertains to medical practice. In all cases where possible, the abstracts or quotations have been submitted to the secretaries of the several examining or licensing boards and embody their corrections. In only one or two states have we failed in this, on account of lack of response to our repeated inquiries, but in these cases the facts are given from other presumably reliable sources. In many states the locality in which the examinations take place is not fixed, but is changed from time to time at the convenience of that particular examining board. For further information in practically all cases it will be advisable to communicate with the secretary or executive officer of the board at the address given.

ALABAMA.

Examination by state or county board is required of all candidates for license. Examination must be in writing and comprise ten different branches, viz., chemistry, anatomy, physiology, natural history, diagnosis, surgery, mechanism of labor, obstetric operations, and hygiene and medical jurisprudence. Materia medica and practice are intentionally omitted. Examinations are conducted by a paid supervisor not a member of the board. Every written examination by a county board is reviewed and reported upon by the state board. County boards can only examine candidates having diplomas from reputable medical colleges. There is no such restriction on the state board. An average of 75 per cent. is required to pass. All physicians, of whatever school, are examined alike.

Failure to pass a county board precludes any subsequent examination by any county board within twelve months, but appeal may be taken at once to the state board, which will give the candidate a new examination. The licenses must be recorded in the probate office of the county. By resolution of the state board of examiners, members of the faculties of medical colleges are forbidden to serve on county examining boards when graduates of their respective colleges are applicants.

The standard of qualifications, subjects and methods of examination, etc., are regulated by the State Medical Association, the board of censors of which forms the "state board." The fees for examination are $10 to the supervisor and $1 for registration in probate office. Dr. W. H. Sanders, state health officer, Montgomery, Ala.

ARIZONA.

The Territorial Board of Medical Examiners, 3 regulars, 1 homeopath and 1 eclectic, appointed by the governor, meets on the first Mondays in January, April, July and October, at Phoenix, to examine candidates for license. The examination of each applicant is conducted by the members of the board of the school of the practice represented by the diploma presented for inspection to the board.

"Section 1. . . . A diploma regularly issued by a medical college properly and lawfully organized under the laws of the state or territory wherein said college shall be located," is essential.

"Section 2. It shall be unlawful for any person to practice medicine, surgery or obstetrics in Arizona, unless such person shall have passed a satisfactory examination before the examining board hereinafter provided; and provided, further, that the provisions of this act shall not apply to women who have practiced obstetrics; provided, further, that the provisions of this act shall not apply to resident practicing physicians or surgeons, who have already complied with the present existing laws."

Sections 3 and 4 prescribe the appointment and organization of the board of examiners, the fee of $5 for examination, which shall be the only compensation of the board, etc.

"Section 5. Any person shall be regarded as practicing medicine who shall profess publicly to be a physician, or who shall prescribe for the sick; but nothing herein contained shall be construed to prohibit gratuitous services in cases of emergency, or for a physician or surgeon of the United States Army in the discharge of their duties as such; but none of the provisions of this act shall apply to those who are now and who have heretofore legally practiced medicine in Arizona.

"Section 6. Any person violating any of the provisions of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be fined in any sum not less than $100, nor more than $1000, or by imprisonment in the county jail for a period of not less than three months nor more than one year, or by both such fine and imprisonment at the discretion of the courts."—Revised Statutes, 1901.

Secretary of board of medical examiners, Dr. Wm. L. Woodruff, Phœnix. All examinations shall be written, and on the following subjects: Anatomy, physiology, chemistry, materia medica, surgery, practice of medicine, obstetrics, gynecology and nervous diseases; a failure to secure an average of 75 per cent. on three or more subjects causes rejection.

ARKANSAS.

By the law of 1895, boards of medical examiners shall be appointed by the respective county courts, each consisting of three educated physicians, two of whom must be graduates of a reputable medical college; in counties including two judicial districts two boards may be appointed. These boards are authorized to examine any resident of the county who desires to practice medicine, and if they find him qualified, to grant a certificate entitling him to practice in the county or other counties into which his practice shall extend, as long as he remains a resident in the county where the certificate is issued. The fee for examination is $6. This apparently applies only to non-graduates, as June, 1901, registration of diploma with the county clerk is, we are informed, sufficient.

CALIFORNIA.

The new California law provides for a board of medical examiners, 9 in number, 5 elected by the Medical Society of the State of California, and 2 each by the State Homeopathic and Eclectic State Societies. The regular meetings of the board to be held the first Tuesday of April, August, and December; examinations of applicants for certificates may be held at other times and places under the supervision of any one member, the questions and answers to be submitted to the whole board for action thereon. Special meetings may be called by the president.

"Section 5. Every person before practicing medicine or surgery, or any of the departments of medicine or surgery in this state, must have the certificate herein provided for. In order to procure such certificate he must produce satisfactory testimonials of good moral character, and a diploma issued by some legally chartered medical school, the requirements of which medical school shall have been at the time of granting such diploma in no particular less than those prescribed by the Association of American Medical Colleges for that year; or he must produce satisfactory evidence of having possessed such diploma, or a license from some legally constituted institution which grants medical and surgical licenses only upon actual examination, or satisfactory evidence of having possessed such license; and he must accompany said diploma or license with an affidavit stating that he is the lawful possessor of the same, that he is the person therein named, and that the diploma or license was produced in the regular course, either of instruction or examination, without fraud or misrepresentation of any kind. Such affidavit may be taken before any person authorized to administer oaths, and the same shall be attested under the hand and official seal of such officer, if he have a seal. In addition to such affidavit, said board may hear such further evidence as, in its discretion, it may deem proper as to any of the matters embraced in said affidavit. If it should appear from such evidence that said affidavit is untrue in any particular, or if it should appear that the applicant is not of good moral character, the applicant must be rejected. In addition to the requirements above set forth, each applicant for a certificate must be personally examined by said board as to his qualifications to practice medicine and surgery. The examination shall be conducted in the English language, and shall be, in whole or in part, in writing, and shall be on the following subjects, to-wit: Anatomy, physiology, bacteriology, pathology, chemistry, pathology and toxicology, surgery, obstetrics, materia medica and therapeutics, and theory and practice of medicine. When the applicant applies for examination in materia medica and therapeutics, and theory and practice of medicine, he shall designate in what school of medicine he desires to practice, and only the member or members of the board who belong to the school so designated shall participate in this part of the examination. Examinations shall be practical in character, and designed to discover the applicant's fitness to practice medicine and surgery. Examinations in each subject shall consist of not less than ten questions, answers to which shall be marked upon a scale of one to ten. If an applicant fails in his first examination he may, after not less than six months, be re-examined. If he fails in a second examination he shall not thereafter be entitled to another examination in less than one year after date of second examination, and shall be

required to pay for such examinations the full fee. The examination papers shall form a part of the records of said board, and shall be kept on file by the secretary. In said examination the applicant shall be known and designated by number only, and the name attached to the number shall be kept secret by the secretary until after the board has finally voted upon the application. The secretary of the boart of medical examiners shall in no instance participate, as an examiner, in any examinations held by the board; nor shall he be entitled to vote upon the question of granting any certificate to practice medicine and surgery. Said board may, in its discretion, accept and register, upon payment of the registration fee, and without examination of the applicant, any certificate which shall have been issued to him by the medical examining board of the District of Columbia, or of any state or territory of the United States: provided, however, that the legal requirements of such medical examining board shall have been, at the time of issuing such certificate, in no degree or particular less than those of California at the time when such certificate shall be presented for registration to the board created by this act; and provided, further, that the provisions in this paragraph contained shall be held to apply only to such of said medical examining boards as accept and register the certificates granted by this board without examination by them of the ones holding such certificates. Each applicant on making application, shall pay to the secretary of the board a fee of $20, which shall be paid to the treasurer of said board by said secretary."

"Section 6. When any applicant has shown himself to be possessed of these qualifications herein required, and has successfully passed the said examination, a certificate must be issued to him by said board, authorizing him to practice medicine and surgery in this state. Said certificate shall be signed by the president and secretary of the said board, and sealed with the seal of the board."

"Section 8. Every person holding a certificate authorizing him to practice medicine or surgery, or both, in this state, must have it recorded in the office of the county clerk of the county in which the holder of said certificate is practicing his profession, and the fact of such recording shall be endorsed on the certificate by the county clerk recording the same. Every such person, on each change of residence, must have his certificate recorded in the county to which he shall have changed his residence. The absence of such record shall be *prima facie* evidence of the want of possession of such certificate. And any person holding a certificate who shall practice medicine or surgery, or attempt to practice medicine or surgery, without having first filed his certificate with the county clerk, as herein provided, shall be deemed guilty of a misdemeanor, and shall be punished by a fine of not less than $25 or more than $100, or by the imprisonment in the county jail for a period of not less than 30 days nor more than 60 days, or by both such fine and imprisonment."

Refusal or revocation of certificate may be for unprofessional or dishonorable conduct, which is defined as follows: 1. The procuring or aiding or abetting in procuring a criminal abortion. 2. The obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured. 3. The wilfully betraying a professional secret. 4. All advertising of medical business in which grossly improbable statements are made. 5. All advertising of any medicines, or of any means, whereby the monthly periods of women can be regulated, or the menses re-established if suppressed. 6. Conviction of any offense involving moral turpitude. 7. Habitual intemperance.

"Section 16. The following persons shall be deemed as practicing medicine or surgery within the meaning of this act: 1. Those who profess to be, or hold themselves out as being engaged as doctors, physicians or surgeons in the treatment of disease, injury, or deformity of human beings. 2. Those who, for pecuniary or valuable consideration, shall prescribe magnetism or electricity in the treatment of disease, injury, or deformity of human beings. 3. Those who, for pecuniary or valuable consideration, shall employ surgical or medical means or appliances for the treatment of disease, injury, or deformity of human beings, except dealers in surgical, dental and optical appliances. 4. Those who, for pecuniary or valuable consideration, prescribe or use any drug or medicine, appliance, or medical or surgical treatment, or perform any operation for the relief or cure of any bodily injury or disease. The doing of any of the acts in this section mentioned shall be taken to be *prima facie* evidence of an intent on the part of the person doing any of the said acts to represent himself as engaged in the practice of medicine or surgery, or both, but nothing in this act shall be construed as to inhibit service in case of emergency, or the domestic administration of family remedies; nor shall this act apply to any commissioned officer in the United States army, navy, or marine-hospital service, in the discharge of his professional duties, nor to any legally qualified dentist when engaged exclusively in the practice of dentistry, nor to any physician or surgeon from another state or territory, when in actual consultation with a legal practitioner of this state, if such physician or surgeon is, at the time of such consultation, a legal practitioner of medicine or surgery in the state or territory in which he resides; nor to any physician or surgeon residing on the border of a neighboring state and duly authorized under the laws thereof to practice medicine or surgery therein, whose practice extends within the limits of this state, provided, that such practitioner shall not open an office or appoint a place to meet patients or receive calls within the limits of this state."

Secretary board of medical examiners, Dr. C. C. Wadsworth, 1104 Van Ness Ave., San Francisco.

COLORADO.

The first three sections of the law of 1881 established and provided for a board of medical examiners, nine in number, "physicians of ability and integrity, graduates of respectable medical colleges," 6 regular, 2 homeopathic and 1 eclectic, to be appointed by the governor.

Section 4 provides that applicants for license, if graduates, must present their diplomas to the state board for verification, or furnish other evidence of graduation from a legally chartered medical school in good standing (requiring as a condition of graduation attendance upon four courses in four separate years, and adopting a standard similar to that of the Association of American Medical Colleges). Non-graduates must be examined by the board, and if the result is satisfactory will also receive a certificate.

Section 6 prescribes the fees $5 for certificate to graduates and $10 for examination, in advance. Section 7 prescribes the subjects of the examination, which may be altogether or partly in writing, viz., anatomy, physiology, chemistry, pathology, surgery, obstetrics and practice of medicine—exclusive of materia medica and therapeutics.

Section 8 requires recording of certificate with county clerk. Section 10 authorizes refusal or revocation of certificates for cause and Section 11 defines practice "any person shall be regarded as practicing medicine within the meaning of this act who shall profess publicly to be a physician and prescriber for the sick or shall attach to his name the title of M.D., or surgeon or doctor in a medical sense. But nothing in this act shall be construed to prohibit gratuitous services in cases of emergency."

"Section 14. The state board of medical examiners shall meet as a board of medical examiners in the city of Denver on the first Tuesday of January, April, July and October of each year and at such other times and places as may be found necessary for the performance of the duties."

"Section 15. (Amendatory.) No person shall be deemed to have violated the provisions of this act or the act of which it is amendatory who has complied with provisions on their part; and it shall be the duty of the state board of medical examiners to issue certificates to all persons authorizing them to practice medicine in this state who shall have complied with the provisions of this act and the act of which it is mandatory, including graduates of the electropathic school without prejudice, partiality or discrimination as to schools or systems of practice of medicine. That only courts of record in the State of Colorado shall have jurisdiction over and power to enforce the provisions of this act."

Secretary board of medical examiners, Dr. S. D. Van Meter, Denver.

CONNECTICUT.

According to the act approved May 25, 1893, the state board of health was empowered to appoint three examining committees on the nomination of the Connecticut Medical Society, the Connecticut Homeopathic Medical Society and the Connecticut Eclectic Medical Association, respectively, and to designate when and where said committees should hold examinations. Since 1897 all applicants to practice medicine or surgery must be examined in anatomy, physiology, medical chemistry, obstetrics, hygiene, surgery, pathology, diagnosis, and therapeutics, including practice and materia medica. Each committee shall frame its own questions and conduct its examinations in writing, and both questions and answers are filed with the state board of health. Each applicant shall have the right to choose which of the three committees shall be the one by whom he shall be examined; but before taking such examination he shall pay to the committee their expenses, not exceeding, however, the sum of $10. An applicant, after having been rejected by any of said examining committees, shall not be eligible to examination by another committee of examination until after the expiration of twelve months.

This year (1901) the law was amended again by the General Assembly in the following particulars: "The examinations are fixed at three specified dates annually, on the second Tuesdays of March, July and November, at such places as the committee may designate, and such additional meetings may be held as they may determine. Midwives are also examined, through the aid of an interpreter when necessary. The fee for examination is raised to $15 for general practice, but retained at $10 for examination for midwifery only. No person is eligible for examination for general practice unless he has received a diploma from some legally incorporated medical college. The registration of any practitioner may be revoked and canceled if convicted of any crime in the practice of his profession, or of a felony."

The definition of the practice of medicine as given in the law is: "No person . . . shall, in this state, for compensation, gain or reward, received or expected, treat, operate or prescribe, for any injury, deformity, ailment, or disease, actual or imaginary, of another person, nor practice surgery nor midwifery, unless or until he has obtained a certificate of registration as hereinafter provided, and then only in the kind or branch of practice as stated in said certificate."

There are, however, numerous specified exceptions, including dentists, emergency cases, employes of United States in the scope of their duties, physicians from outside as consultants in treating special cases, the recommendation of trademarks, proprietary remedies, sun cure, mind cures, christian science, or anyone else not prescribing drugs, poisons, medicine, chemical, or nostrums. Secretary state board of health, Prof. C. A. Lindsley, M.D., New Haven.

DELAWARE.

Delaware's law resembles in some features that of Pennsylvania. There is a medical council consisting of the chief justice of the state and the presidents of the two state boards of medical examiners. These boards are appointed by the governor from lists submitted by the Medical Society of Delaware, and by the Homeopathic Medical Society of Delaware State and Peninsula. Each consists of five members representing their respective state societies. Certificates for license to practice medicine are issued by the medical council to those who pass a satisfactory examination upon questions selected by it from lists furnished by the boards.

"Section 13. From and after the passage of this act any person not heretofore authorized to practice medicine and surgery in this state, and desiring to enter upon such practice, shall deliver to the secretary of the medical council, upon the payment of a fee of $10, a written application for examination, together with satisfactory proof that the applicant is more than 21 years of age, is of good moral character, has obtained a competent common school education, and has received a diploma conferring the degree of medicine from some legally incorporated medical college. Applicants who have received their degree in medicine after the passage of this act must have pursued the study of medicine for at least four years, including three regular courses of lectures in different years, in some legally incorporated medical college or colleges prior to the granting of said diploma. Such proof, if required, shall be made upon affidavit. Upon making of said payment and proof, the medical council shall issue to said applicant an order for examination before such one of the state boards of medical examiners

as the applicant for certificate may select. In case of failure at any such examination the candidate, after the expiration of six months and within two years, shall have the privilege of a second examination by the same board to which application was first made, without the payment of an additional fee, but if after six months and before two years from such examination said application shall be withdrawn the said $10 shall upon demand be returned."

"Section 15. The clerk of the peace of any of the counties of this state shall issue a license signed by the governor and countersigned by the secretary of state and sealed with the seal of this office, certifying that such person is authorized to practice medicine and surgery in that state, conformably to the laws thereof, to any person who shall present to him a certificate as provided in this act, or who shall have been qualified in one of the counties of this state prior to the passage of this act, and to no other person."

"Section 16. The provisions of this act shall not apply to physicians who are practitioners of any other state coming into this state in consultation with any lawful practitioner of medicine and surgery in this state."

Penalty for illegal practice: fine of not more than $500 or less than $100 or imprisonment not exceeding one year. A supplementary act passed April 18, 1895, provides:

"Section 1. The Medical Council of Delaware may refuse to issue a certificate for a license to practice medicine or surgery or may revoke a certificate issued for a license to practice medicine for the following causes, to-wit: Chronic and persistent inebriety, the practice of criminal abortion; conviction of a crime involving moral turpitude or for publicly advertising special ability to treat or cure chronic incurable diseases, or where any person shall present to the said medical council any diploma, license or certificate that shall have been illegally obtained or that shall have been signed or issued unlawfully or under fraudulent representation; in complaints for violating the provisions of this section the accused person shall be furnished with a copy of the complaint and given a hearing before the said medical council in person or by attorney."

"Section 2. Applicants examined and licensed by, or who are, or have been members of state examining and licensing boards of other states, upon the payment of $50 to the treasurer of the Medical Council of Delaware and on filing with the secretary of said medical council a copy of his or her license or certificate certified to by the affidavit of the president and secretary of such board, showing also that the standard of requirements of the said board at the time the said license or certificate was issued, was substantially the same as that required by the said Medical Council of Delaware, and of his or her affidavit as to the personality thereof, may be granted a certificate for a license to practice medicine and surgery by the said medical council upon the recommendation of the said board of medical examiners without further examinations thereby." (Reciprocity has been established with new Jersey.)

"Section 3. The state treasurer shall pay the sum of $300 per annum, in quarterly payments of $75 each, to the treasurer of the Medical Council of Delaware, who shall apportion and pay the same to the members of the said boards for their necessary expenses, and in addition $5 per day for each member for every meeting attended, but said per diem shall not exceed in any one year more than $25."

The applicant must be at least 21 years of age, must have a competent common school education and must have a diploma conferring the degree of Docter of Medicine from some legally incorporated medical college. Applicants who have received their degree since the passage of this act must have pursued the study of medicine for at least four years, including three regular courses of lectures in different years, prior to the granting of said diploma. Applicants must furnish satisfactory proof of good moral character. The examinations are conducted in writing. The boards of examiners meet at Dover on the third Tuesday of June, and the second Tuesday of December each year. The sessions last three days. No provision is made for granting unexamined candidates permits to practice in the intervals between the meetings of the boards of examiners. Subjects examined upon: Anatomy, physiology, hygiene, chemistry, surgery, obstetrics, practice of medicine, pathology, diagnosis, therapeutics, and materia medica. Examination fee, $10. P. W. Tomlinson, M.D., secretary of the medical council, Wilmington. Applicants must present their diplomas to the board.

DISTRICT OF COLUMBIA.

The District Commissioners appoint a board of medical supervisors consisting of the presidents of the examining boards and two others not physicians, one of whom shall be learned in the law; also three examining boards of five each, all physicians, one of the regular school and one for each of the other schools, homeopathic and eclectic, the two latter from lists made up by the homeopathic and eclectic societies respectively. These examining boards submit lists of questions from which the supervisors select those for the examination. The examinations are conducted by the examining boards and the results submitted to the supervisors, who issue the licenses.

Only graduates in medicine from colleges authorized by law to confer the degree of Doctor of Medicine are admitted to examination. If the diploma was issued after June 30, 1898, it must represent a four years' course. Examinations are held quarterly, commencing on the second Thursdays in January, April, July, and October of each year and continuing until the following Monday. Applications must be made on forms furnished by the Board of Medical Supervisors. They must be filed with the secretary of the Board at least two weeks prior to the day set for the examination which the applicant desires to enter. A fee of $10 must accompany each application.

Each candidate will be subjected to a written and oral examination. The branches covered by the examination are arranged in eight sections as follows: 1. Anatomy and histology; 2, physiology and hygiene; 3, chemistry, toxicology and medical jurisprudence; 4, pathology and bacteriology; 5, materia medica and therapeutics; 6, surgery and diseases of the eye and ear; 7, obstetrics and gynecology, and 8, practice of medicine. The written examination is divided into eight sessions of two hours each, extending over three days. The oral examination is held on the day or days immediately following. In the written examination ten questions are given in each session, and the answers must be complete within two hours. The examinations occur in the order above mentioned, subject, however, to change without notice. The oral examinations continue from day to day until finish. Licenses will be refused or revoked upon discovery of fraud or deception in passing examinations.

A general average of 75 per cent. will entitle the candidate to a license if in no section the percentage be less than 50; a candidate having a general average of 75 or more and having attained less than 50 in a single section, may, upon his request, be granted an immediate re-examination in that section. If, however, a candidate have less than 50 per cent. in more than one section, or less than 33.6 in any section, his application will be rejected, no matter what may be his general average. Midwives are also subject to examination before being licensed and registered. The law provides for revocation of license for fraud in passing examination, chronic inebriety, criminal abortion, crime involving moral turpitude and unprofessional or dishonorable conduct. Licenses must be recorded with clerk of district supreme court. The usual exemptions of government officials, outside consultants, emergency and domestic practice are provided for. The law contains a reciprocity clause. Executive officer of the board of health, Dr. William C. Woodward, Washington.

FLORIDA.

There are nine examining boards in Florida appointed by the governor, one for each judicial district and one each for the homeopathic and eclectics. These boards are expected "to examine thoroughly every applicant for certificate of qualification to practice medicine in any of its branches or departments, upon the production of his medical diploma from a recognized college or in the event said applicant shall have lost his diploma, or the same shall have been destroyed prior to the year 1870, then upon satisfactory evidence to such board of such loss or destruction, upon the following subjects: Anatomy, physiology, gynecology, surgery, therapeutics, obstetrics and chemistry, but no preference shall be given to any school of medicine: provided, that it shall be the duty of the board of homeopathic medical examiners to examine thoroughly every applicant for certificate of qualification to practice medicine in any of its branches or departments, upon the production of his diploma from a college recognized by the American Institute of Homeopathy, upon the following subjects: Anatomy, physiology, surgery, gynecology, materia medica, therapeutics, obstetrics and chemistry, and no preference shall be given to any school of medicine."

Any member of the several boards can grant a temporary certificate good till the next meeting. He must notify the secretary of the board of his action and the secretary notify the other boards. It is said that the law is not always alike efficient in all parts of the state and that temporary certificates are sometimes used as permanent ones.

GEORGIA.

There has been no change in the law approved Dec. 12, 1894. The law provides for the appointment by the governor of three separate boards of medical examiners. "One board to consist of five members of the regular school of medicine: one board of five members of the eclectic school of medicine, and one board of five members of the homeopathic school of medicine. The members of each of said boards shall be men learned in medicine and surgery, of good moral and professional character, and graduates of reputable medical colleges; but none of them shall be members of the faculty of any medical college. Each of said three boards shall be wholly independent of and separate from the other two in the performance of the duties herein required of each of said boards. A majority of each board shall constitute a quorum." Each board shall hold two regular meetings in each year. One meeting shall be held at such time, on or just before graduation day of each medical college now chartered, or that may hereafter be chartered in this state; and the board of examiners, after consultation with the faculty of said college, shall fix a time for its meeting to suit a majority of the students graduating from said college; the other on the second Tuesday in October.

"It shall be the duty of each board, at any of its meetings, to examine only applicants who are graduates of an incorporated medical college, school or university that requires not less than three full courses of study of six months each, who shall desire to commence the practice of medicine or surgery in the state; but any person from any other state who shall have graduated prior to April 1, 1895, at a lawfully chartered medical college requiring only two full courses of study, shall be eligible for examination and license; provided, always, that the applicant for such examination shall hold a lawfully conferred diploma from an incorporated medical college which conforms to the system of practice represented by the board to which the application shall be made, unless the applicant desires to practice a different system from that recognized in his diploma; then he shall appear before the board which represents the system that he proposes to practice. In no event shall an applicant who stands rejected by one of said boards be examined or licensed by either of the said boards. If the applicant desires to practice a system not represented by any of the boards hereby established, he may elect for himself the board before which he will appear for examination. When an applicant has passed a satisfactory examination the president thereof shall grant to him a certificate to that effect. A fee of $10 shall be paid to the board by each applicant before such examination is had. "In case an applicant shall fail to pass a satisfactory examination before any board, he shall not be permitted to stand any further examination before any of the boards within the next three months thereafter. Nor shall he again have to pay the fee prescribed as aforesaid for any subsequent examination; provided, that when, in the opinion of the president of any board, any applicant has been prevented by good cause from appearing before said board, the president and members of said board designated by him shall constitute a committee, who shall examine such applicant, and may, if they see fit, grant him a certificate which shall have the same force and effect as though granted by a full board, until the next regular meeting of the board, when, if the applicant fails to appear for examination, said certificate shall

be void. Any person shall be regarded as practicing medicine or surgery within the meaning of this act, who shall prescribe for the sick or those in need of medical or surgical aid, and shall charge or receive therefor money or other compensation or consideration, directly or indirectly; provided, however, that midwives and nurses shall not be regarded as practicing medicine or surgery."

Secretary board of medical examiners (regular), Dr. B. S. Holmes, Atlanta.

IDAHO.

The state board of medical examiners are appointed by the governor, and must not have a majority of any one school of medicine. The act of 1899 provides (Sec. 6) that: "After the passage of this act, every person, except as hereinafter provided, desiring to commence the practice of medicine and surgery, or either of them, within the state shall, immediately and prior to commencing same, make a written application to the state medical examining board, upon suitably prepared blanks, to be furnished by the board, for a license. The applicant shall transmit with said application his or her diploma, together with an affidavit that said diploma is genuine, and that the applicant is its rightful possessor and the identical person named therein, and that it was obtained by pursuing the regular course of study or examination, and setting forth that he or she is a citizen of the United States, or has declared intention of becoming such. If the diploma has been issued by a reputable college of medicine in good standing the applicant shall be eligible to examination. All applicants shall be examined in the applied branches of the theory and practice of medicine and surgery or either of them, as those branches are taught in the reputable chartered schools of the system of medicine to which the applicant belongs and which the applicant intends to practice and such examination shall in all cases include anatomy, physiology, pathology, diagnosis, hygiene, chemistry, histology and toxicology. No applicant for license shall be allowed to practice medicine and surgery, or either of them, until such license shall have been granted. The board shall cause the examination to be scientific and practical and sufficiently thorough to test the applicant's fitness to practice medicine and surgery, or either of them, and if the applicant correctly answer at least 75 per cent. of all the questions submitted, the board shall grant him a license to practice medicine and surgery in the state. Applicants must furnish sufficient evidence to the board that they are of good moral character. All applications under this section must be accompanied by $25, which is the fee for examination. Should the applicant fail to pass the examination, the fee is not returnable. In the case an applicant for an examination fails to pass the required examination, he or she may be re-examined after the expiration of six months, and within one year without the payment of an additional fee, and thereafter said applicant may be examined as often as desired at any regular or special meeting of the board on the payment of the regular fee for such examination. The board may also refuse a license, for unprofessional conduct, or conduct of a criminal, immoral, or dishonorable nature."

Section 7 defines what shall be considered "unprofessional or dishonorable conduct" including participation in criminal acts; employing "cappers" or "steerers," obtaining fees by professing to cure incurable diseases: violation of professional secrecy, advertising and intemperance.

"Any person shall be regarded as practicing medicine and surgery or either who shall advertise in any manner, or holds himself or herself out to the public as a physician and surgeon, or either, in this state, or who shall investigate or diagnosticate or offer to investigate or diagnosticate any physical or mental ailment of any person with a view of relieving the same as is commonly done by physicians or surgeons, or suggest, recommend, prescribe or direct, for the use of any person, sick, injured or deformed, any drug, medicine, means or appliance for the intended relief, palliation, or cure of the same, with the intent of receiving thereof, either directly or indirectly, any fee, gift or compensation whatsoever."

This does not include services rendered in cases of emergency, where no fee is charged. "Any person who shall present to the board, as his or her own, the diploma of another, or a forged affidavit of identification, or who shall attempt to personate another practitioner of a like or a different name, shall, upon conviction thereof, be subject to such fine and imprisonment as are made and provided by the statutes of the State of Idaho for the crime of forgery."

Section 16 gives the usual exemption of government officers, railway surgeons and outside consultants. Licenses must be recorded within thirty days with county recorder. Regular meetings of the board of the first Tuesday in April and October. Special meetings when called. Secretary, board of medical examiners, Dr. R. L. Nourse, Hailey.

ILLINOIS.

The regulation of medical practice is in the hands of the state board of health. The law enacts that:

"No person shall hereafter begin the practice of medicine or any of the branches thereof, or midwifery, in this state without first applying for and obtaining a license from the state board of health. Application shall be made in writing, and shall be accompanied by the examination fee specified, and with proof that the applicant is of good moral character. Applications from candidates who desire to practice medicine and surgery in all their branches shall be accompanied by proof that the applicant is a graduate of a medical college or institution in good standing as may be determined by the board. When the applicant has been inspected by the board and found to comply with the foregoing provisions, the board shall notify the applicant to appear before it for examination, at the time and place mentioned in such notice. Examinations may be made in whole or in part in writing by the board, and shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner. The examination of those who desire to practice any special system or science of treating human ailments who do not use medicines internally or externally, and who do not practice operative surgery shall be of a character sufficiently strict to rest their qualifications as practitioners. Provided, that graduates of legally chartered medical colleges in Illinois in good standing as may be determined by the board, may be granted certificates without examinations. If the applicant successfully passes his examination, or presents a diploma from a legally chartered medical college in Illinois of good standing, the board shall issue to such applicant a license authorizing him to practice medicine, midwifery or other systems of treating human ailments, as the case may be: Provided that those who are authorized to practice other systems can not use medicine internally or externally or perform surgical operations: Provided further, that only those who are authorized to practice medicine and surgery in all their branches shall call or advertise themselves as physicians or doctors; and provided further, that those who are authorized to practice midwifery shall not use any drug or medicine or attend other than cases of labor. Any wilful violation on the part of an applicant of any of the rules and regulations of the board, governing examinations shall be sufficient cause for the board to refuse to issue a license to such applicant. Such certificates shall be signed by all members of the board and attested by the secretary.

"Every person holding a certificate shall have it recorded in the office of the county in which he resides or practices within three months from its date, and the date of recording shall be endorsed thereon. Until such certificate is recorded, the holder shall not exercise any of the rights or privileges conferred therein. Any person practicing in another county shall record the certificate in like manner in the county in which he practices, and the holder of the certificate shall pay to the county clerk the usual fee for making the record. The fees for examination and for a certificate are $10 for examination in medicine and surgery, and $5 for a certificate if issued; $5 for an examination in midwifery, and $3 for a certificate if issued. For all other practitioners $10 for an examination and $5 for a certificate if issued. The state board of health may refuse to issue the certificates provided for in this act to individuals who have been convicted of the practice of criminal abortion, or who have by false or fraudulent representation, obtained or sought to obtain practice in their profession, or by false or fraudulent representation of their profession have obtained or sought to obtain money or any other thing of value, or who advertise under names other than their own, or for any other unprofessional or dishonorable conduct, and the board may revoke such certificates for like causes. Provided, that no certificate shall be revoked or refused until the holder or applicant shall be given a hearing before the board. Any person shall be regarded as practicing medicine, within the meaning of this act, who shall treat, or profess to treat, operate on or prescribe for any physical ailment or any physical injury to or deformity of another. Provided, that nothing in this section shall be construed to apply to the administration of domestic or family remedies in cases of emergency, or to the laws regulating the practice of dentistry or of pharmacy. And this act shall not apply to surgeons of the United States army, navy or marine-hospital service in the discharge of their official duties, or to any person who ministers to or treats the sick or suffering by mental or spiritual means, without the use of any drug or material remedy."

The law authorizes the board of health to exempt graduates of Illinois medical colleges from examination. It is not regarded as mandatory and by petition of the leading colleges the board has exercised its discretion in the matter and all graduates are alike examined. The last provision regarding treatment "by mental or spiritual means," etc., was inserted largely by "christian science" influence, and has been doubtless influential in some legal decisions. Thus the appellate court in one decision has practically defined the practice of medicine as confined to the administration of drugs, interpreting the concluding words of the above stated exemption as "By a familiar rule of construction the last clause means 'without the use of drug or like material remedy.'" On this interpretation of the law it was ruled that a "magnetic healer" who assumed the title of "Doctor" was not practicing medicine and therefore not liable to the penalty for illegal practice; contrary decisions have been made in other decisions of the appellate court. Another, a supreme court decision, makes it impossible to discipline any one for dishonorable or unprofessional conduct whose license was issued before the present law went into effect.

Board meets for examinations at Great Northern Hotel, Chicago, on the second Wednesday of January, April, July, and October. Secretary, state board of health, Dr. J. A. Egan, Springfield.

INDIAN TERRITORY.

The regulations as to medical practice vary according to local laws in the different tribal organizations and are binding on their members. Those not members of the different tribes or Indian nations can reside there only on sufferance.

INDIANA.

The governor has the appointment of the state board of medical registration and examination of five members which must not include any professor or teacher in a medical college and "each of the four schools or systems of medicine having the largest numerical representation in the state shall have at least one representative on said board."

Examination is required of all applicants for license to practice medicine in Indiana except students matriculating in medical colleges in that state prior to January, 1901, and graduating and making application prior to Jan. 1, 1905. The board is required to make and record from time to time a schedule of the minimum requirements which must be complied with by applicants for examination for license to practice, before they shall be entitled to receive such license. The board shall establish and cause to be recorded a schedule of the minimum requirements and rules for the recognition of medical colleges, so as to keep these requirements up to the average standard of medical education in other states. "After the year 1897 no change shall be made in schedules of requirements in any year after the month of January of such year nor shall any change be made to have any retroactive effect, or that shall effect students theretofore matriculated. Such record shall be at all times open to examination by the public, and the said schedules of requirements after they have been established and recorded, and all changes made therein, shall be printed in circular form, and mailed to all medical colleges in the state, and shall also be furnished to any person upon application. Said board shall not in the establishment of the aforesaid schedule or requirements, discriminate for or against any school or system of

medicine, nor shall it prescribe what system or systems or schools of medicine, shall be taught in any of the colleges, universities or other educational institutions of the state. It shall have the power to make and establish all necessary rules and regulations for the reciprocal recognition of certificates issued by other states and to prevent unjust and arbitrary exclusions by other states of graduates of medicine from this state who have filled its requirements."

No certificate shall be issued to any person whomsoever until he shall have satisfied the board that he has graduated at a reputable medical college, maintaining a standard of medical education as prescribed and shall have passed a satisfactory examination as to his qualifications to practice. The applicant shall have the right to designate, in writing, at the time he files his application, the member of the board who shall conduct his first examination in materia medica, therapeutics, theory and practice of medicine, surgery, obstetrics and gynecology.

The board at its discretion may authorize the secretary to issue a temporary permit to an applicant for the interim from date of application until the next regular meeting of the board. The state board of medical registration and examination shall have the right to review the evidence upon which a license has been obtained, and if it shall be found that a licensee has been obtained by fraud or misrepresentation, the board may revoke such license. The board (may) refuse to grant a certificate to any person guilty of felony or gross immorality, or addicted to the use of liquor or drug habit to such a degree as to render him unfit to practice medicine or surgery. If any person holding a license under the provisions of this act shall be guilty of any of the above enumerated acts or shall have procured a certificate or license by fraud or misrepresentation, the board may, after notice and hearing, revoke any license which has heretofore been or may hereafter be issued to him, together with the certificate upon which such license has been or may be issued.

Appeal is provided for. Midwives also have license and if without diplomas, must pass a satisfactory examination. The usual exception is made as not discriminately against different systems and schools of medicine, midwives, United States surgeons, consultants, or physicians whose practice extends from a neighboring state, and medical students under a registered physician for a period of two years.

"Section 8. To open an office for such purpose or to announce to the public in any way, a readiness to practice medicine in any county of the state or to prescribe for, or to give surgical assistance to, or to heal, cure or relieve, or to attempt to heal, cure or relieve those suffering from injury or deformity, or disease of mind or body, or to advertise, or to announce to the public in any manner a readiness or ability to heal, cure or relieve those who may be suffering from injury or deformity, or disease of mind or body, shall be to engage in the practice of medicine, within the meaning of this act: Provided that nothing in this act shall be construed to apply or to limit in any manner the manufacture or sale of proprietary medicines. It shall also be regarded as practicing medicine within the meaning of this act, if any one shall use in connection with his or her name the words or letters "Dr.," "Doctor," "Professor," "M.D." or "Healer," or any other title, word, letter or designation intending to imply or designate him or her as a practitioner of medicine or surgery in any of its branches Provided that this act shall not be construed to apply to non-itinerant opticians who are at this time engaged in the practice of optometry in this state nor to professional or other nurses."

The board may grant limited certificates which shall authorize the proper clerk to issue to the holder a license to practice osteopathy only. Such certificates shall be issued on the same terms and conditions as others, except that the applicant therefor shall not be required to pass an examination in materia medica nor shall the college from which he presents a diploma be required to conform to the standard fixed as to instructions in materia medica, but such college shall so conform in all other branches of instruction. Such license shall not authorize the holder to administer or to prescribe or use on any other than himself any drugs or medicines, and any such administration, prescription or use of any drug or medicine by the person holding such limited license shall be practicing medicine without a license, and such person shall be punished therefor as others are punished for practicing medicine without a license.

Fee for examination $25, good also for one other examination within the year. Fee for examination of midwives $10. Certificate must be recorded with county clerk in county of residence. Regular meetings of board at Indianapolis on the second Tuesday of January and July of each year. Special meetings as necessary. Secretary, board of medical registration and examination, Dr. W. F. Curryer, 42 E. Ohio St., Indianapolis.

IOWA.

The following is taken from the circular of information of the Iowa State Board of Medical Examiners:

"Section 2576 makes the physicians of the state board of health (seven, including two homeopaths and one eclectic, appointed by the governor), the board of medical examiners, and the secretary of the former board the secretary of the latter; provides for meetings in May and November and oftener if deemed necessary; provides for issuing a certificate upon proper application and prescribes the fee therefor. It prescribes the method of examination, and states that a failure to pass the examination will entitle the candidate to a re-examination without additional fee. Section 2577 requires that before beginning the practice the certificate shall be registered with the county recorder of the county in which the holder thereof resides, and in any other county of the state to which he may remove to practice. The fee for such record is fifty cents. Section 2578 declares that a certificate may be refused to any one otherwise qualified who is not of good moral character; and for like cause, or incompetency, or habitual intoxication, or upon proper evidence that a certificate had been granted upon false or fraudulent statements as to graduation or length of practice, may revoke the same; provided that such revocation can only be made by an affirmative vote of at least five members of the board, and this number shall embrace at least one or more members of the different schools of practice of the board; and further, that the standing of a legally chartered medical school can only be questioned by a like vote. Section 2579 says that anyone shall be regarded as a physician under the meaning of the law who shall publicly profess to be a physician, surgeon or obstetrician, and assume the duties thereof, or who shall make a practice of prescribing and furnishing medicine for the sick and who shall publicly profess to cure or heal. The following persons are exempt from the provisions of the law: Medical students who have attended not less than two full courses of lectures in a reputable medical college, who may prescribe under the supervision of a preceptor or gratuitous services in cases of emergency; surgeons of the United States army, navy, or marine-hospital service; physicians and midwives who have previously obtained certificates on length of practice without diploma or examination; physicians who, without such certificate, have been in practice in Iowa for five consecutive years, three years in one locality; registered pharmacists, filling prescriptions; advertising or selling patent or proprietary medicines or natural mineral waters flowing from wells or springs.

"Section 2580 prescribes penalties as follows For presenting to the board of medical examiners a fraudulent or false diploma, or one of which the holder is not the rightful owner, in order to procure a certificate; or for filing or attempting to file with the county recorder the certificate of another; or for practicing without obtaining and recording the required certificate; or for continuing to practice after the certificate has been revoked—unless embraced in the exceptions of section 2579—the offense is declared a misdemeanor, and the fine not less than $300 or more than $500 and imprisonment in the county jail until such fine is paid. Any one who shall attempt to file with the county recorder the certificate of another person, with the name of the party to whom it was issued erased and the claimant's name inserted, or shall attempt to file with the board of medical examiners any false affidavit of identification, shall be guilty of forgery. Section 2581 declares an itinerant physician to be a physician practicing medicine, surgery or obstetrics, or professing or attempting to treat, cure or heal diseases, ailments or injuries by any medicines, appliance or method, who goes from place to place, or from house to house, or by circulars, letters or advertisements asks persons to meet him for such treatment at places other than at his office at his place of residence and requires all such, in addition to the ordinary physician's certificate, to procure an itinerant's license from the state board of medical examiners, for which he shall pay to the state treasurer the sum of $250 per annum. The penalty for itinerating without such license is the same as for practicing as a physician without a certificate. The board may, for cause, refuse to issue such license, or having issued it, may revoke it for incompetency or gross immorality. This section does not prevent a physician from attending patients in any part of the state, to whom he may be called in the regular course of business, nor from consulting with other physicians.

"Section 2582 provides that after Jan. 1, 1899, no person can begin the practice of medicine in Iowa, excepting upon examination; that no person can be admitted to examination except upon graduation from a medical college recognized by the board as of good standing, and that no college can be so recognized by the board that does not require of those graduating after Jan. 1, 1899, attendance upon four full courses of study of not less than twenty-six weeks each, no two of which courses shall have been given in any one year, as a condition of such graduation. This section was amended by the 28th G. A. so as to require the board of medical examiners to examine the graduates of Iowa medical colleges who desire certificates at the time of graduation and at the place where the college is located. The fee for examination was reduced from $20 to $10. Section 2583 provides for the payment of $8 per day to the members of the board for each day actually spent in the work of the board, and a salary of $25 per month for the secretary," in addition to his salary as secretary of the state board of health. The board meets for examining candidates for license at Des Moines two weeks before the first Wednesdays of February, May, August and November. Secretary state board of medical examiners, Dr. J. F. Kennedy, Des Moines.

KANSAS.

The law passed March 22, 1901, provides for the appointment of a board of registration and examination of seven members, no one school of medicine to have a majority, and that "All persons intending to practice medicine, surgery or osteopathy after the passage of this act shall apply to said board at any regular meeting, or any other time or place as may be designated by the board, for a license. Application shall be made in writing, and shall be accompanied by the fee specified, together with the age and residence of the applicant, proof that he or she is of good moral character, and satisfactory evidence that he or she has devoted not less than three periods of six months each, no two within the same twelve months, or after Jan. 1, 1902, four periods of not less than six months each, no two in the same twelve months, to the study of medicine. Candidates shall submit to an examination of a character to test their qualifications as practitioners of medicine or surgery, and which shall embrace all those topics and subjects a knowledge of which is generally required by reputable medical colleges of the United States for the degree of Doctor of Medicine: provided that the examination in materia medica and therapeutics and in the theory and practice of medicine shall be conducted by those members only of the board who are of the same school of practice as the applicant claims to follow; provided, further, that graduates of legally chartered medical institutions of the United States or foreign countries in good standing, as determined by the board, may be, at the discretion of the board, granted a license without examination; * * * provided, further, that the board may in its discretion accept, in lieu of examination or diploma, the certificate of the board of registration and examination of any other state or territory of the United States or any foreign country whose standards of qualification for practice are equivalent to those of this state.

"Section 4. Upon the completion of the examination or the acceptance of the diploma or certificate as herein provided, the said board shall, if it finds the applicant qualified, grant a certificate to said applicant to practice medicine and surgery within this state, and which shall be signed by the president and secretary and attested by the seal of the board. Within thirty days of the date of any certificate of license issued by the board, the owner shall have

it recorded in the office of the clerk of the county in which he resides, or if a non-resident of this state, then of the county in which he has an office or intends to practice, and the date of the recording shall be endorsed thereon; and until such certificate or license is recorded he shall not exercise any of the rights or privileges conferred. The county clerk shall keep in a book for the purpose a complete list of the certificates recorded by him, which books shall be open to public inspection during business hours."

Fee for examination must not exceed $15; that for examining diploma or certificate from another state must not exceed $10.

Section 6 defines the practice of medicine and states the exemptions as follows: "Any person shall be regarded as practicing medicine and surgery within the meaning of this act who shall prescribe or who shall recommend for a fee for like use, any drug or medicine, or perform any surgical operation of whatever nature for the cure or relief of any wounds, fracture or bodily injury, infirmity or disease of another, or who shall use the words or letters "Dr." "Doctor," "M.D.," or any other title in connection with his name which in any way represents him as engaged in the practice of medicine and surgery; but nothing in this act shall be construed as interfering with any religious beliefs in the treatment of disease, provided that quarantine regulations relating to contagious diseases are not infringed upon. All persons who practice osteopathy shall be registered and licensed as doctors of osteopathy as hereinbefore provided, but they shall not administer drugs or medicines of any kind, nor perform operations in surgery."

The other usual exemption is also made of government officers, outside consultants, gratuitous services and domestic medicines.

Section 7 provides penalties for illegal practice, making it a misdemeanor subject to fine of not less than $50 or more than $200 for each offense. Board meets on second Tuesday of February, June and October, and one other meeting, time not stated. Secretary board of medical registration and examination, Dr. Henry W. Roby, Topeka.

KENTUCKY.

The medical law, as amended in 1898, provides:

"Section 3. Authority to practice medicine shall be a certificate from the state board of health, which board shall, upon application, issue a certificate to any reputable physician who is practicing or who desires to begin the practice of medicine in this state, who possesses any of the following qualifications: 1. A diploma from a reputable medical college legally chartered under the laws of this state. 2. A diploma from a reputable and legally chartered medical college of some other state or country, indorsed as such by the state board of health (only such as meet the minimum requirements of the American Medical College Association). 3. Satisfactory evidence from the person claiming the same that such person was reputably and honorably engaged in the practice of medicine in this state prior to Feb. 23, 1864. 4. Satisfactory evidence from any person who was reputably and honorably engaged in the practice of medicine in this state prior to Feb. 23, 1884, who has passed a satisfactory examination before said board. Applicants may present their credentials by mail or proxy, and the board shall issue its certificates to such applicants as are entitled thereto as though the applicant was present. All certificates shall be signed by the president and secretary, and attested by the seal of the board, and not more than $2 shall be charged for any certificate.

"Section 4. Nothing in this law shall be construed as to authorize any itinerant doctor to register or to practice medicine in any county in this state.

"Section 5. The state board of health may refuse to issue the certificate provided for in Section 3 of this article to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public, and it may, after due notice and hearing, revoke such certificate for like cause. In all cases of refusal or revocation the applicant may appeal to the governor, who may affirm or overrule the decision of the board, and this decision shall be final."

"Section 7. It shall be the duty of the state and local boards of health to bring to the attention of the courts any violations of the provisions of this law within their respective jurisdictions.

"Section 8. Any person living in this state, or any person coming into this state, who shall practice medicine, or attempt to practice medicine in any of its branches, or who shall treat or attempt to treat any sick or afflicted person by any system or method whatsoever, for reward or compensation, without first complying with the provisions of this law, shall, upon conviction thereof, be fined $50, and upon each and every subsequent conviction shall be fined $100 and imprisoned thirty days, or either or both, in the discretion of the court or jury trying the case; and in no case where any provision of this law has been violated shall the person so violating be entitled to receive any compensation for the services rendered. To open an office for such purpose, or to announce to the public in any way a readiness to treat the sick or afflicted shall be deemed to engage in the practice of medicine within the meaning of this act."

The usual exceptions are made in not discriminating against particular systems or schools of medicine, midwives, U. S. surgeons, etc.

Certificates must be recorded with county clerk; fee for recording, 50 cents. Secretary state board of health, Dr. J. N. McCormack, Bowling Green.

LOUISIANA.

Louisiana requires a diploma from a medical college in good standing as determined by the state boards (regular and homeopathic appointed by the governor on recommendation of the state societies) of medical examiners and a satisfactory examination. The applicant must also satisfy the board that he or she is over 21 years old, of good moral character, and possesses at least a fair primary education. Certificates must be recorded with county clerk.

"Section 13. Be it further enacted, etc., That any person shall be regarded as practicing medicine, in any of its departments, within the meaning of this act, who shall append the letters "M.D." of "M.B." to his or her name, or repeatedly prescribe or direct, for the use of any person or persons, any drug or medicine or other agency for the treatment, cure or relief of any bodily injury, infirmity, or disease. This act shall not apply to farmers, and planters when exclusively practicing, without compensation, on their employes and tenants."

Fee for examination, $10, one-half refunded if no certificate is given. For certificate, $1. For temporary permit, $5, credited on examination fee. Midwives must be also examined for license; fee for certificate, $5; plantation and rural midwifery excepted. The usual exemptions are made for army, navy, and marine-hospital surgeons, and consultants from other states. Board meets at least twice a year, generally at New Orleans. Secretary state board of medical examiners, Dr. F. A. Larue, 624 Gravier St., New Orleans.

MAINE.

The examining board, known as the board of registration, was created by an act passed in 1895. The board consists of six persons appointed by the governor; they serve six years each. Members of this board can not belong to the faculty of any medical college or university, "and not more than two members of said board shall at one time be members of any one chartered state medical society." The fees taken in by the board go into the state treasury. The compensation of members of the board is $5 per day for actual time spent, and 5 cents per mile traveling expenses, the secretary getting additional compensation for books, stationery, postage, etc. The act of 1895 provided for registration on passage of a satisfactory examination, but this was amended March 22, 1901, so that hereafter all who apply for registration as physicians and surgeons must be examined and also have a diploma. Each applicant at least seven days before date of his examination must present to the secretary of the board certain information in regard to preliminary education, character, age, etc., and evidence of having graduated from some reputable medical school or college having power to confer degrees in medicine. The examination covers anatomy, physiology, pathology, materia medica, therapeutics, surgery, principles and practice of medicine and obstetrics.

It is "illegal for any person not duly registered by this board to practice medicine or surgery, or any branch thereof for gain or hire within this state. Whoever not being registered as aforesaid shall so practice or shall advertise or hold himself out to the public as a physician or surgeon in this state who appends to his name the letters M.D., or who uses the title of doctor or physician, meaning thereby a doctor of medicine, shall be punished by a fine of not less than $100, nor more than $500 for each offense, or by imprisonment in jail for three months, or both."

"Section 2. Neither shall this act apply to clairvoyants or the persons practicing hypnotism, magnetic healing, mind cure, massage, christian science, so called, or any other method of healing if no poisonous or dangerous drugs are employed nor surgical operations performed; provided, such persons do not violate any of the provisions of section 9 of this act in relation to the use of M.D. or the title of doctor or physician.

The following new rules have recently been passed by the board:

RULE 8. All medical schools and colleges legally chartered by the states in which they exist, and having the power given them by the state to confer the degree of Doctor of Medicine, and having an unchallenged reputation for honest teaching, and granting of diplomas, only after a proper time of study and an examination in all the branches with a rating averaging, at least 75 per cent shall be considered as "reputable schools or colleges," and in good standing.

RULE 9. The minimum grade of preliminary education before admission to the study of medicine which the board will approve is a good English education, evidenced by a knowledge of English orthography and composition, mathematics, including algebra and plane geometry, geography, history, natural philosophy or physics and chemistry, with some laboratory work; and also the ability to read at sight common Latin prose. A college degree, a diploma from some normal school, high school, or academy, or a successful entrance examination to any recognized college will be accepted as evidence of the above. All others must pass an examination.

RULE 10. The standard of medical instruction which the board will approve is three years of medical study and three courses of lectures for those who graduated previous to 1902, and four years study and four courses of lectures after 1901. Five years of reputable practice before 1901 will be accepted in lieu of one year's study. Colleges or medical schools complying with these rules 9 and 10, will be approved by the board as far as preliminary and medical instruction is concerned.

The board has also adopted this year a rule regulating reciprocity of licensure as authorized by the act. A special circular and form of application is devised giving the conditions, which, with other forms, etc., must be obtained from the secretary. Fee for examination, $10. Regular meetings of the board are held in March, July and November of each year and such additional meetings at such times and places as it may determine. Secretary board of registration of medicine, Dr. A. K. P. Meserve, Portland.

MARYLAND.

There are two boards of medical examiners in Maryland, one representing the Medical and Chirurgical Faculty of Maryland and the other the State Homeopathic Medical Society. This fact should be considered in comparing the results of examinations. The law as last amended provides:

"Physicians and surgeons of good moral and professional standing who shall hereafter come into this state with the intent to follow the practice of medicine and surgery, graduates of a medical college or university of good standing or having a certificate or license from a board of medical examiners of any state where the requirements for practice are equal to those required by the board named in this article, may make application to the president of either board of medical examiners of this state, which application shall be made under oath and shall state when and how long the applicant has been engaged in the practice of medicine and surgery and from what medical college, university or other institution of learning he or she graduated. The board of medical examiners shall have the authority and discretion to require the applicant to undergo an examination, or may require said applicant to submit to a special examination, the terms and methods of which shall be prescribed by the board of medical examiners, and upon paying the fee for examination. After the examination and determination of the board that said applicant is qualified to practice medicine and surgery, and entitled to a license, a license shall be issued, which shall be filed and recorded

and it shall be then the dnty of the clerk and of the court to register the name of the person so licensed as physeian or snrgeon, or both, in accordance with the provisions of the act."

The term, "practicing medicine or a practitioner of medicine," when used with respect to the qnalifeation of a practitioner or applicant to be registered under this article, shall be constrned to mean the praetice of medicine as a profession or means of livlihood and by one duly licensed or registered. It shall be the dnty of the secretary of either or both of said state boards of medical examiners to inqnire into all violations of law under this article and to institute all proceedings or prosecntions, and all expenses incnrred by any secretary of either of snch boards shall be allowed and paid out of the fnnds acqnired by or belonging to said boards. Section 41 reqnires a diploma from a school in which attendance on three annual courses of lectnres is necessary for graduation. Examinations are written and cover the snbjects of anatomy, physiology, chemistry, snrgery, practice of medicine, materia medica and therapentics, obstetrics, gynecology, pathology, medical jnrisprudence and hygiene. Section 44 provides:

"That all examinations shall be condncted in such manner tha the name, school of gradnation and preparatory training of said applicant shall not be made known to the board of examiners until his examination papers have been graded. An applicant receiving a majority of the votes of the board before whom the applicant appears shall be considered to have passed a satisfactory examination and entitled to the license of said board." Fee for examination $10. License must be recorded with circnit clerk. Fee for recording $1.

Secretary, board of medical examiners (regnlar), Dr. J. M. P. Scott, Hagerstown.

Exception to these statutes are provided for United States surgeons, consnltants, those practicing temporarily nnder a preceptor, midwives and gratnitons service in an emergency.

MASSACHUSETTS.

In Massachusetts the board of registration in medicine appointed by the governor has full charge of the regnlation of admission to practiee. Applications for registration are received only when made upon blanks fnrnished by the board, and signed and sworn to by the applicant. The law is mandatory that all mnst be examined; therefore certificates of registration by other state boards, or diplomas of gradnation, can not be received in lieu of an examination. No special dates, other than the regular meetings of the board, are assigned for examinations, but seasonable notice will be sent to those whose applications are on file, as to date and place of special examinations. All candidates mnst be examined; the fee is $20. The latest legislation is as follows:

"Section 1. The examination for registration as physicians and snrgeons nnder the provisions of chapter 458 of the acts of the year 1894, and acts for the amendment thereof and in addition thereto, shall be in whole or in part in writing in the English language, and shall be of scientific and practical character. They shall include the subjects of anatomy, snrgery, physiology, pathology, obstetrics, gynecology, practice of medicine and hygiene, and shall be snfficiently thorongh to test the applicant's fitness to practice medicine.

"Section 2. Any applicant failing to pass an examination satisfactory to the board of registration in medieine, and therefore refnsed registration, shall be entitled, within one year after snch refusal, to a re-examination at a meeting of the board called for the examination of applicants, without the payment of an additional fee; but two snch re-examinations shall exhaust his privilege nnder his original application.

"Section 3. Any person who, not being then lawfnlly anthorized to practice medieine within this commonwealth and so registered aecording to law, shall hold himself out as a practitioner of medieine, or shall practice or attempt to practice medicine in any of its branehes, within the limits of this eommonwealth, shall be deemed guilty of a misdemeanor and shall be punished by a fine of not less than $100 nor more than $500 for each offense, or by imprisonment in jail for three months, or by both snch fine and imprisonment; and in no case where any provision of this law has been violated shall the person so violating be entitled to reeeive compensation for serviees rendered."

After the usnal exemptions of emergency service, domestie remedies, government officers, eonsultants, etc., it is specified:

"Nor shall this act apply to osteopathists, pharmacists, elairvoyants, persons practicing hypnotism, magnetic healing, mind enre, massage, ehristian seience, or cosmopathie method of healing or to gratuitous prescribing by registered pharmacists: provided, such persons do not violate any of the provisions of section 3 thereof."

Regular meetings of board are on second Tuesday of March, July and November each year. Secretary, board of registration, Dr. E. B. Harvey, State House, Boston.

MICHIGAN.

The board of registration in medicine, inclnding five regnlars, two homeopaths, two eclectics and one physio-medical, is appointed by the governor on reeommendation of the respective state societies. Applieations for registration and examination are received when made upon blanks furnished by the board and signed and sworn to by the applieant. The law is mandatory that all must be examined, except graduates of approved and designated colleges, a list of which is furnished the applicant. Therefore, eertificates of registration by other state boards, or diplomas of graduation from colleges not listed, can not be received in lieu of an examination. No special dates other than the regular meetings of the board are assigned for examinations, viz., the second Tuesdays in June and October of each year, at Lansing. Until further notice, applicants under examination will be given ten questions each of the following subjects, viz., anatomy, chemistry, bacteriology ,histology, pathology, physiology, practice of medicine, surgery, obstetrics, gynecology, hygiene and public health laws of Miehigan, medieal jnrisprudence, toxicology, diseases of the eye and ear, therapeutics, mental and nervous diseases, minor surgery, surgical pathology, snrgical anatomy. Registration is refused when the average thus obtained is less than 75 per cent. Persons refused registration by failure to pass an examination satisfactorily, may be re-examined at any regular meeting of the board. The fee for examination is $10, which must accompany the application.

Application for an examination or re-examination at any regnlar meeting of the board, should be made at least two weeks before the date of the same, to the secretary. Certifieates of registration or a certified copy must be filed with county clerk.

The law does not apply to government officials in their regnlar dnties, outside consultants, temporary assistance in cases of emergency, domestic administration of family medicines, nor to any legally qualified osteopath engaged in the practice of osteopathy under the provisions of act number 78 of the public acts of the State of Michigan of 1897, regnlating and licensing the practice of osteopathy in the state.

"Section 9. When any person shall append the letters M.B. or M.D., or prefix the title "Dr.," or "Doetor," or any other sign or appellation in a medical sense to his name, it shall be *prima facie* evidence of practicing medicine and surgery within the meanIng of this act."

Secretary, state board of registration, Dr. B. D. Harison, Sault Ste. Marie.

MINNESOTA.

The state board of medical examiners, nine in nnmber, three of them homeopaths, is appointed by the governor. Each applicant for license is reqnired to make an affidavit settIng forth his age, place of residence, time and place of each eonrse of lectnres, and the date of gradnation. If the applicant is a gradnate in medicine, his affidavit mnst be corroborated by the exhibition of his diploma or a certificate from the dean of the medical college showing that he is a graduate. Applicants who are non-gradnates are required to corroborate their affidavits by exhibiting their cards of attendance at lectnres or by certificate from the dean.

Gradnates prior to Jnly 1, 1887, mnst present evidence of having attended two courses of lectures in different years, if their diploma dates later than Jnly 1, 1887, and prior to Jan. 1, 1899, three courses are reqnired, and if subseqnent to Jan. 1, 1899, fonr conrses. A fee of $10 must be paid at the beginning of the examination. The fee is not returned in case of failnre. A general average of 75 per cent. mnst be attained. Candidates from all schools shall answer in common all questions snbmitted, except the questions on materia medica, which are adapted to the school of medicine accepted by the candidate. The answer papers upon subjects peculiar to any one school of medicine are sent to the members of this board who are representatives of snch school.

"Any person shall be regarded as practicing within the meaning of this act who shall append the letters M.D. or M.B. to his or her name, or for a fee prescribe, direct or recommend for the nse of any person any drngs or medicine, or other agency for the treatment, care or relief of any wound, fraetnre or bodily injury, infirmity or disease; provided, however, this act shall not apply to dentists. * * * This act shall not apply to commissioned surgeons of the United States army, or navy, to physicians or surgeons in actnal consultation from other states or territories, or to actnal medical stndents practicing medicine nnder the direct snpervision of a preceptor."

Lieenses must be recorded by the clerk of the district court in and for the connty where the licensee resides. Fee for examination $10. Regnlar meetings of the board at the capital on first Tuesday of January, April, Jnne and October. Secretary, state board of medical examiners, Dr. C. J. Ringnell, Minneapolis.

MISSISSIPPI.

Chapter 104, annotated code, 1892. "Every person who desires to practice medicine must first obtain a license to do so from the state board of health. If any person shall practiee as a physieian or surgeon, without having first been examined and obtained a license as required by law, he shall, on conviction, be fined not less than $20 nor more than $200, or be imprisoned in the connty jail not exceeding thirty days. Every person who desires to obtain a license to practice medicine must apply therefor, to the state board of health and must be examined by said board touching his learning in the following branehes of medicine only, viz., anatomy, chemistry, obstetrics, materia medica, physiology, pathology, surgery, and hygiene; and, if the applieant be fonnd by the board, upon examination, to possess suffieient learning in said branches and be of good morals, the board shall at once issne to him a license to practice medicine, which shall be signed by each member who approves of its issuance. * * * Every person who shall apply for license to practice medieine, shall, before he will be entitled to be examined, pay a fee of $10.25, of whieh $10 are to be divided equally among those members of the board who attend and conduct the examination of the applieant, and 25 cents to be paid to the secretary of the board for filing and preserving the application for license. Every person who receives a license to praetice medicine must file it in the office of the clerk of the circnit court of the county in whieh he resides within sixty days from the date of its issnance; otherwise it shall become void. The secretary of the state board of health may issue under his signature a temporary lieense to any one to practice medicine, which shall be valid until the next meeting of the board for examining applicants; and snch license shall show that date of its issnance, otherwise it shall become void. Only one temporary license shall ever be issued to the same person, and it shall always be made to an individual and not to a partnership. The secretary shall be entitled to 25 cents for sueh license, and the same shall be recorded as a permanent license is reqnired to be, nnder like penalty for failure." Secretary, state board of health, Dr. John F. Hunter, Jackson.

"Section 1. Chap. 79, Acts 1898. Be it enacted by the legislature of the State of Mississippi, that section 3246 of the annotated code of Mississippi be amended to read as follows: The state board of health shall meet at the capitol twice in each year, at such time as may be designated by the board, for the purpose of examining applicants for lieense to praetice medicine, and shall continue in session until all applicants are examined and the examinations are approved or disapproved. All examinations as to applieant's learning shall be npon written questions and answers, and distinction shall not be made between applicants beeause of the different systems of sehools of practice that may be chosen." The board has selected the second Tuesday in May and October to hold the examinations.

MISSOURI.

Extract from law, approved March 12, 1901, and taking effect June 16, 1901:

"Sections 3 and 4. All persons desiring to practice medicine or surgery in this state, or to treat the sick or afflicted as provided in section 1 of this act, shall appear before the state board of health at such time and place as the board may direct and shall be there examined as to their fitness to engage in such practice. All persons appearing for examination shall make application in writing to the secretary of said board thirty days before the meeting. They shall furnish satisfactory evidence of their preliminary qualifications, and shall also furnish evidence of good moral character. The medical examination may be in whole or in part in writing, and shall be of elementary and practical character, but sufficiently strict to test the qualifications of the candidate as a practitioner, and shall embrace the subjects of anatomy, chemistry, physiology, pathology, therapeutics, obstetrics, gynecology, surgery, practice of medicine, medical jurisprudence and hygiene, and such other branches as the state board may direct.

"The candidates shall be required to answer 75 per cent. of such questions as are asked him before being granted a certificate. Provided, however, that the examination of any applicant in therapeutics shall be conducted by the member or members of said board who represent the system of medicine of which said applicant has been a student. If there shall be no representative of the school or system of which the applicant has been a student, the examination in therapeutics shall be conducted by an examiner appointed for that purpose by the governor of Missouri, but all examinations other than that in therapeutics shall be conducted as heretofore provided in this act. The board of health shall issue to such persons as they find, upon examination, to possess the requisite qualifications, a license to practice medicine and surgery in accordance with the provisions of this act, and the state board of health shall not be permitted to favor any particular school or system of medicine, but all applicants shall be subjected to the same examination and the same degree of proficiency shall be required of all." The board shall examine persons applying for a license, although such persons can not speak the English language, the applicant in all such cases to pay the expense of an interpreter satisfactory to the board.

Section 4. Every person holding a license from the state board of health shall have it recorded in the office of the county in which he resides, and the record shall be endorsed thereon. And the clerk is authorized to charge a fee of $1 for recording each license for record. Any person removing to another county to practice medicine or surgery shall have his license recorded in the county in which he removes to, and the holder of said license shall pay said clerk of said county, the usual fee for making the record. The county clerk shall keep in a book for that purpose a complete list of the licenses recorded by him with the date of issue. Any person neglecting for twenty days to record his license as in this section provided after entering upon the practice, shall be guilty of a misdemeanor and on conviction thereof shall be fined not less than $10 nor more than $50, and on failure to record said license for thirty days after such conviction shall be liable to a fine of not less than $100."

Fee for examination $15, re-examination free within twelve months. License must be recorded within twenty days with the county clerk, fee $1; in St. Louis with the health commissioner. Board meets for examinations quarterly, on January 1 of each year at Jefferson City, and at other points as the president and members of the board select. Secretary, state board of health, Dr. William F. Morrow, Kansas City.

MONTANA.

The state board of medical examiners is appointed by the governor. The medical practice act reads:

"Section 3. Every person hereafter wishing to practice medicine or surgery in any of their departments in this state, shall apply to said board for a certificate so to do. Every person applying shall present his or her diploma to the said board of examiners for verification as to its genuineness; and if the diploma is found genuine and is issued by a medical school legally organized and in good standing, whose teachers are graduates of a legally organized school, which facts the said board of examiners shall determine, and if the person representing and claiming said diploma be the person to whom the same was originally granted, at a time and place designated by said board, or at a regular meeting of said board, said applicant shall submit to an examination in the following branches, to-wit: anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventative medicine, practice of medicine, surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence, and such other branches as the board shall deem advisable, and present evidence of having attended four courses of at least six months each, but such evidence of attending such four courses of lectures shall not be required of applicants graduating prior to July 1, 1898; said board shall cause such examination to be both scientific and practical, but of sufficient thoroughness and severity to test the candidate's fitness to practice medicine and surgery; when desired such examination may be conducted in the presence of the dean of any medical school, or the president of any medical society of this state. After examination such board shall, if the candidate has been found qualified, grant a certificate to such candidate to practice medicine and surgery in the state of Montana; which said certificate can only be granted by the consent of not less than four members of the said board, and which certificate shall be signed by the president and secretary of said board and attested by the seal thereof: Provided, however, that during the intervening period of the sessions of the board, any person desiring to practice medicine in this state may present his or her diploma to the president or secretary of the board, who may issue a certificate good until the next regular meeting of the board."

"Section 5. Every person obtaining a certificate from the board must, within 60 days from the date thereof, have the same recorded in the office of the county clerk in the county wherein he resides. If he removes from one county to another to practice medicine or surgery, his certificate must immediately be recorded in the county to which he removes."

"Section 6. This act shall not apply to mid-wives of skill and experience, commissioned surgeons of the United States army and navy in the discharge of their official duties, nor to physicians and surgeons in actual consultation from other states and territories." Fee for examination $15. Re-examination on failure, within six months, free. Secretary William C. Riddell, Helena, state board of medical examiners. Examinations, first Tuesdays in April and October of each year.

NEBRASKA.

The state board of health, composed of the governor, attorney-general and superintendents of public instruction, appoints four "secretaries," graduated physicians of at least seven consecutive years of practice, to assist and advise the board granting certificates for licenses to practice medicine and prosecution of all violations of the medical practice law. Two shall be regular physicians, one homeopathic and one eclectic. The "secretaries" are in reality the board of health; the method adopted is to get around the constitution, which forbids the creation of more "boards."

"Section 7. It shall be unlawful for any person to practice medicine, surgery or obstetrics or any of the branches thereof, in this state, without first having obtained and registered the certificate provided for by this act; and no person shall be entitled to the certificate herein provided for unless he shall be a graduate of a legally chartered medical school or college in good standing; said qualifications to be determined by the board. Provided, however, that nothing in this act shall be construed to prevent physicians residing in other states from visiting patients in consultation with resident physicians who have complied herewith."

"Section 8. The term 'medical school or college in good standing' shall be defined as follows, to wit: a medical school or college requiring a preliminary examination for admission to its course of study in all the common branches, and in Latin and in the higher mathematics, which requirements shall be regularly published in all the advertisements and in each prospectus or catalogue issued by said school, which medical school or college shall also require as a requisite for granting the degree of M.D. attendance upon at least four courses of lectures of six months each, no two of said courses to be held within one year, and having a full faculty of capable professors in all the different branches of medical education, to-wit: anatomy, physiology, chemistry, toxicology, pathology, hygiene, materia medica, therapeutics, obstetrics, bacteriology, medical jurisprudence, gynecology, principles and practice of medicine and surgery, and specially requiring clinical instruction in the two last named of not less than four hours per week in each during the last two courses of lectures: Provided that this four years' clause shall not apply to degrees granted, or to be granted, prior to August, 1898."

Section 9 provides that applicants must present their diplomas to the board, with the usual affidavit as to genuineness, and makes any misstatement in such perjury. Section 10 provides for the issuance of license and its recording with the county clerk in whatever county or counties the practice extends. The board can refuse or revoke certificates for cause, and no person not qualified can recover by law for medical services. Penalties: fine $50 to $300 and costs are prescribed for illegal practice.

Section 17 reads: "Any person shall be regarded as practicing medicine within the meaning of this act who shall operate or profess to heal or prescribe for or otherwise treat any physical or mental ailment of another. But nothing in this act shall be construed to prohibit gratuitous services in cases of emergency, and this act shall not apply to commissioned surgeons in the United States army and navy, nor to nurses in their legitimate occupations nor to the administration of ordinary family remedies." Section 18 prohibits itinerant nostrum vendors, etc. Fee for registration $10, which is used for compensation of the secretaries. Rules adopted by the Nebraska State Board of Health Feb. 3, 1898:

"Rule 1. That this board shall hereafter refuse to issue a state certificate to applicants who present diplomas from foreign countries as a basis for registration, unless the holder of said diploma has passed the state examination and received a certificate entitling him to practice medicine and surgery in the country in which his diploma was issued, or unless he is a licentiate of a recognized college of physicians and surgeons authorized to grant licenses.

"Rule 2. That in the future no certificate will be issued without letters of recommendation with regard to the moral and professional character of the applicant from at least two reputable medical men who live in Nebraska, or, if from non-residents of this state, such letters must be endorsed by reputable medical men of Nebraska."

The board meets on the first Thursday of each month at Lincoln Secretary of the board, Dr. Geo. H. Brash, Beatrice.

NEVADA.

The governor appoints a mixed board of medical examiners, which issues two forms of certificates, one for persons who present to it satisfactory diplomas or licenses, and the other for candidates who may be examined by the board, and "whenever a certificate is issued by said board, it shall notify the respective county clerks of the several counties within the state of the issuance of such certificate or certificates; and it shall be the duty of said clerks to keep and file said notices and also keep a list of the persons to whom issued.

"It shall also issue a certificate to any person who has had issued to him a diploma or license from any reputable school or college of medicine and surgery which is located without the United States, upon the applicant being found competent after having passed a satisfactory examination by the said board. When the board is not in session its secretary may issue a temporary certificate whenever the applicant shall have deposited the usual fee and filed his diploma or license with him, and such temporary certificate shall entitle the holder to practice until the next regular meeting of said board. And all examinations of applicants to practice shall be thorough and searching, and shall be in the following branches: Anatomy, physiology, chemistry, materia medica, therapeutics, principles and practice of medicine, principles and practice of surgery, gynecology, obstetrics, ophthalmology, path-

ology and all snbjects relating to the practice of medicine and snrgery. The board may judge whether the college or institution which issued any diploma or license presented to it is reputable and legally chartered and worthy of recognition, subject to the action of the courts lu cases of abuse of its discretion in this respect."

The fee for certificate is $25. Certificates must be recorded with county recorder. "Any person shall be regarded as practicing medicine within the meaning of this act, who shall profess publicly to be a physician or surgeon, or who shall prescribe for the sick or profess to cnre the sick by the administration of drugs or other means, or shall append to his name the letters M.D.: but nothing in this act shall be construed to prohibit any gratuitous services in cases of emergency, or to commissioned surgeons in the United States army or navy."

Regular meetings of the board occur on first Mondays in May and November. Secretary, state board of medical examiners, Dr S. L. Lee, Carson City.

NEW HAMPSHIRE.

The law provides for three boards of examiners, representing the regular, eclectic and homeopathic state societies. To be admitted to examination for license to practice medicine, the candidate mnst be over 21, of good moral character, have a college degree or edncation equivaleut to a full course in a registered academy or high school, and have studied medicine not less than four full school years, inclnding four satisfactory courses of not less than six months each in four differeut calendar years, and must either have received the degree of bacheler or doctor of medicine from some registered medical school, or a diploma or license conferring fnll right to practice medicine in some foreign country. Five or more years of reputable practice may be taken as equivalent for part of the preliminary education or four-course requirements, provided the substitution is stated in the license. The fee for examination is $10. Second examination permitted after six months' additional study without additional fee. Christian scientists, magnetic healers, clairvoyants, etc., exempted irom provisions of this act, if they do not call themselves doctors or M.D.'s. The superintendent of public instruction, Channing Folsom, Coucord, is the regent of the Board. Examination is at least twice a year, iu June and December. The law contains a reciprocity clause, but it is not enforced, as it is uot mandatory.

NEW JERSEY.

The board of medical examiners consists of five regular physicians, three homeopathic and one eclectic, appointed by the governor aud confirmed by the senate. Examinations are held in the capitol, Trenton, on the third Tuesday and Wednesday in June and September. Applicatiou for the blank forms for examination should be made to the secretary and must be returned for approval and filing, with a fee of $25, at least ten days before the examination. Fee will be returned on failure to pass the examination. Requirements for admission to examinations: 1. Academic—a certificate of graduatiou in arts or sciencces, or certified evidence of academic education equivalent to a high school course. 2. Medical—four years of medical study, including at least three courses of medical lectures in different calendar years iu a legally incorporated medical college in good stauding, prior to graduation iu medicine. Only graduates in medicine are admitted to the examinatious.

Subjects of examination: All examinations shall be written in the English language, and shall be held in the following subjects, namely, materia medica and therapeutics, obstetrics aud gynecology, practice of medicine, including diseases of the skin, nose and throat; surgery, including surgical auatomy and diseases of the eye, ear and genito-uriuary organs; anatomy; physiology; chemistry; histology, pathology and bacteriology; hygiene and medical jurisprudence. Candidates intending to practice homeopathy or eclecticism will be examined in materia medica and therapeutics by the members of the board of examiners representing those schools. Two hours are given to each section, in which ten questions are submitted. A total average of at least 75 per cent., or 675 points out of a possible 900, must be attaiued.

Endorsement of other state licenses: The license issued upon examination by a state board of medical examiuers of another state may be endorsed by this board, in lieu of an examination, under the following conditions: 1. The caudidate for endorsement must present with the applicatiou a duly attested certificate of academic education in conformity with the requirements. 2. The candidate must have studied medicine at least four years, including three conrses of medical lectures in different calendar years in a legally incorporated medical college or colleges prior to receiving the degree of Doctor of Medicine. 3. The candidate mnst have passed a state examination of substantially the same kind and grade as that required by this board, and mnst have received a state license. 4. Candidate must have obtained a total average marking of at least 75 per cent. prior to receiving a state license. Candidates must designate the state license to be endorsed, and the acceptance of an application for the endorsement can not be determined nntil the forms provided by this board have been properly filled ont and submitted for approval.

Application for endorsement of a medical license issued by another state examining board must be made upon a blank form provided by this board, and obtained of its secretary, and must be filled out in conformity with the above conditions respectiug age, nativity, residence and academic and medical education; bear the seal of the medical institution from which the candidate was graduated, with the certificate of the dean or other executive officer; bear a verbatim copy of the applicant's state medical liceuse over the seal of the state examiuing board issuing the same, together with the affidavit of the president and secretary thereof, as to date of examination, number of license, subjects examined and total average attained, and must be returned to the secretary of this board for approval and filing, with the affidavit of the candidate and a certified check or postal money order for the regular fee of $50. If approved, the license of this board will be issued within a few days, and the application form, with academic certificate, will be filed in the state library at Trenton. The endorsement of a college diploma cau not be accepted in lieu of an examination. A certified copy of the license issued by this board must be filed with the clerk of the couuty in which the candidate intends to practice.

Any person hereafter commencing the practice of medicine and surgery in any of its branches in this state without first having obtained and filed a license from this board, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished for the first offense by a fine of not less than $100 or by imprisonment in the county jail for a period of not less than thirty days or by both fine and imprisonment, and for each subsequent offense the pnnishment shall be double that of the preceding one; and it shall be the duty of the respective district attorneys of the counties of this state to prosecute violation of the provisions of this act. All communications should be addressed to the secretary, E. L. B. Godfrey, M.D., Camden.

NEW MEXICO.

The Territorial board of health, composed of four regular physicians, two homeopaths and one eclectic, appointed by the governor, has charge of admissions to practice medicine.

"The board shall, upon the production of evidence satisfactory to it, license any person who is the holder of a diploma from a medical college in good standing, to practice medicine, surgery and obstetrics in New Mexico, and shall require all persons not the holders of such diplomas to pass such examination as to the board shall seem proper. In the verification of all diplomas and the condncting of all examinations, the president and secretary of said board shall be and are hereby empowered to administer oaths, and any person making a false oath or affidavit before said board, shall be deemed guilty of perjury, and be subject to punishment for that crime. Every person holding a certificate shall have it recorded in the office of the probate clerk of the county whereln the practitioner resides, within thirty days after said certificate is issued; it must be again recorded in any county to which the practitioner may remove permanently. The fact that no certificate shall be found in the county where any person is practicing or offering to practice medicine, shall be accepted by the court as prima facie evidence that no such certificate has been issued, and shall throw the burden of proving that he has a certificate upon the defendant in any suit or prosecution begun against him for the violation of the provisions of this act.

"For the purpose of this act, the words 'practice of medicine' shall mean to open an office for such purpose, or to annouuce to the public or to any private individual in any way, a desire or willingness or readiuess to treat the sick or afflicted, or investigate or diagnose or offer to investigate or diagnose, any physical or mental ailment or disease of any person; or to suggest, recommend, prescribe or direct, for the use of any person, any drug, medicine, appliance or other agency, whether material or not material, for the cure, relief or palliation of any ailment or disease of the mind or body, or for the cure or relief of any wound, fracture or bodily injury or deformity, after having received, or with the intent of receiving thereof, either directly or indirectly, any bonus, gift or compensation. Provided, that nothing in this act shall be construed to prohibit gratuitous service in cases of emergency, or the domestic administration of family remedies, or women from practicing midwifery; and this act shall not apply to surgeons in the service of the United States in the discharge of their official duties."

Examinations will be required of all applicants to practice medicine in New Mexico, who shall have graduated after July, 1897, from any medical college which does not require of matriculants as a minimum evidence of sufficient general education, a high school certificate or its equivalent; and for graduation, proof of four years' study of medicine and four terms of lectnres occurring in four separate years. The previous standard of three years' study and three terms of lectures in three separate years, with the preliminary requirement of matriculants of high school certificate, or its eqnivalent, will be maintained for all applicants who graduated between July 1, 1890, and July 1, 1897. According to a resolution of the territorial board of health adopted April 24, 1899, each applicant must furnish as references regarding moral character and professional standing, two or more names of reputable physicians, preferably the president and secretary of state licensing board, or president and secretary of state medical society where applicant last resided. Fee for certificate on diploma, $15; on examination, $25, not returnable. Applicants must present evidence of preliminary education with their diplomas. Meetings of board for examinations on first Mondays of June and December. Secretary of board of health, Dr. W. G. Hope, Albuquerque.

NEW YORK.

The regnlation of admission to practice in New York is under the control of the Regents of the University, a body that has the oversight of educational matters in the state. It is composed of 19 regents elected for life by the legislature. The governor, lientenant-governor, secretary of state and superintendent of public instruction are members ex-officio. The Regents appoint three state examining boards from lists furnished by the respective state medical societies, regular, homeopathic and eclectic, each appointee furnishing evidences of qualifications and of at least five years' practice in the state. Each board submits to the regents lists of suitable questions in anatomy, physiology and hygiene, chemistry, surgery, obstetrics, pathology and diagnosis, and therapeutics, including practice and materia medica. From these lists the regents prepare question papers for the examination which are the same for all candidates, "except that in therapeutics, practice and materia medica all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candidate and shall be in harmony with the tenets of the school as determined by its state board of medical examiners. The examinations are conducted by a regents' examiner, not a member of any of the several boards, and are exclusively in writing and in English. The questions and answer papers are examined by the respective examining boards and an official report on the same transmitted to the board of regents, signed by the president and secretary of the examining board, stating the standing of each candidate and recommending or not for license. The regents issue the licenses when they are satisfied the candidate is qualified.

"No person can practice medicine unless licensed and registered. To be admitted to examination for license the candidate (1) must be over 21, (2) of good moral character (certificate from two

physicians in good standing), (3) have the general education required preliminary to receiving the degree of bachelor or doctor of medicine in the state (48 academic counts—a good high school course at least); (4) have studied medicine not less than four full school years of at least nine months each, including four satisfactory courses of at least six months each in four different calendar years in a medical college registered as maintaining at the time a satisfactory standard; (5) has either received the degree of M.B. or M.D. from some registered medical school or a diploma or license entitling him to practice medicine in some foreign country. The regents may in their discretion accept as the equivalent for any part of the third and fourth requirement evidence of five or more years reputable practice, provided that such substitution is specified in the license."

The law contains a reciprocity clause, which has so far been inoperative, because it is held that other state requirements are not equal to those of New York in respect to the medical tests or the preliminary education requirements.

After Sept. 1, 1901, according to a regulation of the board of regents, a recent *photograph* of each candidate is required as a part of the application. The legislature has amended the law also so as to permit the regents to admit conditionally to examination in the subjects of anatomy, physiology, chemistry and hygiene, students who are 21 or over and have studied medicine not less than two years and attended two full courses in different years, under the same general conditions otherwise as in the final examination. Fee for examination, $25, payable in advance. Licenses must be recorded with the county clerk before beginning practice. The usual exemptions of government officials, consultants, etc., are included in the law. Secretary board of medical examiners, regular, Dr. Maurice J. Lewi, 102 West 81st St., New York. Secretary regents of the University, James Russell Parsons, State Capitol, Albany. The New York law does not contain a satisfactory definition of the practice of medicine. An attempt was made to remedy this at the last session of the legislature, but failed.

NORTH CAROLINA.

The board of examiners in North Carolina is appointed by the state medical society. The law as amended in 1899 provides that the board examine all applicants who exhibit a diploma, or furnish satisfactory proof of graduation, from a medical college in good standing requiring an attendance of not less than three years and supplying such facilities for clinical instruction as shall meet the approval of the board, for license to practice medicine or surgery, or any of the branches thereof, on the following branches of medical science, namely, anatomy, physiology, surgery, pathology, medical hygiene, chemistry, pharmacy, materia medica, therapeutics, obstetrics and the practice of medicine, and if on such examination they be found competent, to grant to each applicant a license or diploma, authorizing him to practice medicine and surgery, or any of the branches thereof: Provided, five members shall constitute a quorum and four of those present shall be agreed as to the qualifications of the applicant: Provided, that the requirement of three years' attendance shall not apply to those graduating prior to January first, 1900. Provided, further, that license or other satisfactory evidence of standing as a legal practitioner in another state shall be accepted in lieu of a diploma and entitled to examination.

To prevent delay and inconvenience, two members of the board of medical examiners may grant a temporary license to any applicant who shall comply with the requirements as to graduation prescribed and make report thereof to the next regular meeting of the board: Provided, such temporary license shall not continue in force longer than the next regular meeting of the board, and such temporary license shall in no case be granted after the applicant has been refused a license by the board of medical examiners.

The board of medical examiners shall assemble at the same time and place where and when the medical society assembles, and the said board shall remain in session from day to day until all the applicants who may present themselves for examination within the first five days after its meeting shall have been examined and disposed of: Provided, that the said board may, at its discretion, meet not more than one week before the said society, but always in the same place; and that one additional meeting in each year may be held at some suitable point in the state if deemed advisable. The board shall have power to demand of every applicant thus licensed the sum of $10 before issuing a license or diploma, and the sum of $5 for each temporary license, to be paid to the secretary of the board. Midwives and outside consultants are exempted. Licenses must be registered with the clerk of superior court of the county within 30 days after receiving same.

Secretary, board medical examiners, Dr. J. Howell Way, Waynesville. The next regular annual session will be held at Wilmington, N. C., in May, 1902.

NORTH DAKOTA.

The governor appoints the examining board, consisting of nine members, two of whom must be homeopaths and one a lawyer. Section 277 of the revised code of North Dakota provides that: "All persons before commencing the practice of medicine, surgery or obstetrics, in this state shall apply to the board for a license so to do, and such applicant shall submit to an examination in the following branches: Anatomy, physiology, chemistry, histology, materia medica, therapeutics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence and such other branches as the board deems advisable, and present evidence of having attended three courses of lectures of at least six months each; the board shall cause such examination to be practical and scientific and sufficient to test the candidate's fitness to practice medicine, surgery and obstetrics. If such applicant passes the prescribed examination, the board shall grant him a license to practice medicine, surgery and obstetrics in this state, which license shall be signed by the president and secretary of the board and attested by the seal thereof. The fee for such examination shall be $20, to be applied by the board toward paying the expenses thereof. The board may revoke or refuse a license for dishonorable or immoral conduct, chronic or persistent inebriety or for the practice of criminal abortion."

"Any person shall be regarded as practicing within the measures of this act, who shall append the letters M.D. or M.B. to his or her name or for a fee prescribe, direct or recommend for the use of any person any drug or medicine or other agency for the treatment, cure or relief of any wound, fracture or bodily injury, infirmity or disease; provided, however, this act shall not apply to dentists." Surgeons in the United States army or navy, outside consultants, and medical students under supervision of preceptors, are also exempted.

Examinations held in Grand Forks, the first Tuesday in January, April, July and October of each year. Secretary, state board of medical examiners, Dr. H. M. Wheeler, Grand Forks.

OHIO.

The governor appoints a mixed board of medical registration and examination representing the different schools of practice. "All applicants for license shall file with the secretary of the board a written application on a form prescribed by the board, verified by oath, and furnish satisfactory proof that he is more than 21 years of age, and is of good moral character. In the application, as a condition of admission to the examination, he shall produce either of the following credentials: a diploma from a reputable college granting the degree A.B., B.S., or equivalent degree; a diploma from a normal school, high school or seminary, legally constituted, issued after four years of study; a teacher's permanent or life certificate; a medical student's certificate of examination for admission by any state board; a student's certificate of examination for admission to the freshman class of a reputable literary or scientific college; or a certificate of his having passed an examination conducted under the direction of the state board of medical registration and examination by certified examiners, none of whom shall be either directly or indirectly connected with a medical college; said examinations to be held simultaneously in Cincinnati, Cleveland, Columbus and Toledo and the questions submitted to be uniform at such places; and has either received a diploma from some legally chartered medical institution in the United States in good standing at the time of issuing such diploma, as defined by the board; or a diploma or license approved by the board, which has conferred the full right to practice all branches of medicine or surgery in some foreign country, with the application, the applicant shall present his diploma or license, as above defined, and accompanying the same, shall file his affidavit duly attested, stating that he is the person named in the diploma or license, and is the lawful possessor of the same, and giving his age, residence, and the college or colleges at which he obtained his medical education, the time spent in each college, the time spent in the study of medicine, and such other facts as the board may require; if engaged in the practice of medicine, the applicant shall state the period during which, and the place at which, he has been engaged in the practice of medicine or surgery."

Each applicant shall be examined in anatomy, physiology, pathology, chemistry, and materia medica and therapeutics, the principles and practice of medicine, surgery, obstetrics, and such other subjects as the board may require. The applicant shall be examined in materia medica and therapeutics and the principles and practice of medicine, of the school of medicine in which he desires to practice, by the member or members of the board representing such school. An affirmative vote of not less than five members shall be required to authorize the issuance of a certificate. The fee for examination shall be $25, which shall not be returned in case of failure to pass such examination, but the applicant may within a year after such failure, present himself and be examined again without the payment of an additional fee. The board may, in its discretion, dispense with an examination in the case of a physician or surgeon duly authorized to practice medicine or surgery in any other state, territory, or the District of Columbia, who may desire to change his residence to Ohio, and who makes application on a form to be prescribed by the board, accompanied by a fee of $50 and presents a certificate or license issued after an examination by the medical board of such state, territory, or the District of Columbia, accorded only to applicants from states, territories and districts whose laws demand qualifications of equal grade with those required in Ohio; but such examination shall not be dispensed with unless under the law and regulations of the state, territory, or the District of Columbia, equal rights and privileges are accorded to physicians and surgeons of Ohio, holding the certificate of the board, who may desire to remove to, and practice in such state, territory, or the District of Columbia. Certificates must be filed with the probate judge of the county in which he resides, for record. Midwives also have to be examined for license; fee $10.

"Any person shall be regarded as practicing medicine or surgery or midwifery within the meaning of this act, who shall use the words or letters, 'Dr.,' 'Doctor,' 'Professor,' 'M.D.,' 'M.B.,' or any other title in connection with his name, which in any way represents him as engaged in the practice of medicine or surgery or midwifery, in any of its branches, or who shall prescribe, or who shall recommend for a fee for like use any drug or medicine, appliance, operation or treatment, of whatever nature, for the cure or relief of any wound, fracture or bodily injury, infirmity or disease. The use of any of the above mentioned words or letters or titles in such connection, and under such circumstances as to induce the belief that the person who uses them is engaged in the practice of medicine or surgery or midwifery in any of its branches, shall be deemed and accepted as *prima facie* proof of an intent on the part of such person to represent himself as engaged in the practice of medicine or surgery or midwifery."

As usual, emergency practice, domestic remedies, government officials, consultants from outside the state, etc., are exempted from the provisions of the law. Osteopathic graduates passing satisfactory examinations in anatomy, physiology, chemistry and physical diagnosis are allowed to practice their massage, but forbidden to give drugs or perform surgery. Secretary, state board of registration and examination, Dr. Frank Winders, Columbus. Regular meetings of the board at Columbus on the first Tuesday in January, April, July and October. Examinations will begin on the second Tuesday of June and December and will continue for three days. Examinations will not be held at any other time except as stated above.

OKLAHOMA.

The territorial board of health has among its functions to regulate admissions to practice. Only graduates of reputable recognized colleges are given certificates without examination. Others must pass a satisfactory examination and prove that they have been five years engaged in reputable practice. The board can refuse examination to those it considers unfit. The fee for license on diploma is $2, for examination $30, not returnable. All examinations are in writing and must show qualifications equal to those required for graduation in respectable medical colleges. No person can practice if not of good moral character or if he is an habitual drunkard. Board meets for examination every three months; next meeting, December 5.

President board of health, Dr. E. E. Cowdrick, Enid; secretary, Dr. Grant Cullimore, Oklahoma City.

OREGON.

The governor appoints the state board of medical examiners, consisting of three regular, one homeopathic and one eclectic physician. The law provides that: Every person, except those licensed under former laws, desiring to practice medicine and surgery, or either of them, in any of their or its branches in this state, shall make a written application to the board for a license, which application shall be supported and accompanied by an affidavit setting forth the actual time spent by the applicant in the study of medicine and surgery, and when, whether such study was in an institution of learning, and if so, the name and location thereof, and if not in such (an) institution, where and under whose tutorship such study was prosecuted, the time said applicant shall have been engaged in the actual practice, if at all, of medicine and surgery, or either of them, and where the applicant was located during the time of such practice, and the age of the applicant at the time of making application; such application and affidavit to be filed and preserved in the office of the secretary of said board. Such applicant at the time and place designated by said board; or at the regular meeting of said board, shall submit to an examination in the following branches, to-wit: Anatomy, physiology, chemistry, materia medica, therapeutics, practice of medicine, surgery, obstetrics, diseases of women, medical jurisprudence and such other branches as the board shall deem advisable. Such examination shall be both scientific and practical and of sufficient severity to test the candidate's fitness to practice medicine and surgery, and by written or printed, or partly written or partly printed, questions and answers, and the same shall be filed and preserved of record in the office of the secretary of said board. After a satisfactory examination the board shall grant a license to the applicant to practice medicine and surgery in the State of Oregon, which can only be granted by the consent of not less than four members of the board. The board may refuse or revoke a license for unprofessional or dishonorable conduct, subject, however, to the right of such applicant to appeal from the decision of said board refusing or revoking such license. The words "unprofessional" or "dishonorable conduct" as used in the act, are defined in the same words as in the California practice law, with the addition that "the employment of what are popularly known as 'cappers' or 'steerers'" is also included under these heads. Fee for examination is $10.

"Any person shall be regarded as practicing within the meaning of this act who shall append the letters, 'M.D.' or 'M.B.' to his or her name, or, for a fee, prescribe, direct or recommend for the use of any person any drug or medicine or agency for the treatment, care or relief of any wound, fracture or bodily injury, infirmity or disease: Provided, however, the act shall not apply to dentists in the practice of their dental profession."

Board meets at Portland for examination on first Tuesday of January and July. Secretary, board of medical examiners, Dr. Byron E. Miller, Portland.

PENNSYLVANIA.

The medical council, a body composed of the lieutenant-governor, the attorney-general, the secretary of internal affairs, the superintendent of public instruction, the president of the state board of health and the presidents of three state boards of medical examiners, have the supervision of the examination of candidates to practice medicine in the state. These, except the secretary and treasurer, serve without pay. There are also appointed by the governor three boards of medical examiners of seven members each, representing the several medical societies of the State of Pennsylvania, the regular, homeopathic and eclectic, from lists furnished by them. The fees for examinations, after payment of current expenses, are apportioned pro rata to the members of the several examining boards according to the number of candidates examined by each These boards submit to the medical council a list of questions from which the council makes up the questions for each examination The examinations, which are in writing, are conducted by the respective boards and the results transmitted to the council, which issues the licenses to those who have successfully passed.

"A preliminary examination shall be required from all candidates for medical license in the following branches, to-wit, arithmetic, grammar, geography, orthography, American history, physiology and hygiene, and English composition. The diploma of a college, diploma of an academy, seminary, normal school, or high school; or a teacher's permanent certificate; or a student's certificate of examination for admission to the freshman class in a literary college, shall be accepted in lieu of such examination." Preliminary examinations are held under direction of the medical council in June preceding the examinations by the state examining boards, and in October after the opening of the medical colleges, at Philadelphia and in Western Pennsylvania.

Section 13 of the medical practice law reads: "From and after the first day of July, 1894, any person not heretofore authorized to practice medicine and surgery in this state, and desiring to enter upon such practice, may deliver to the secretary of the medical council, upon the payment of a fee of $25, a written application for license, together with satisfactory proof that the applicant is more than 21 years of age, is of good moral character, and has obtained a competent common school education, and has received a diploma conferring the degree of medicine from some legally incorporated medical college of the United States, or a diploma or license conferring the full right to practice all the branches of medicine and surgery in some foreign country. Applicants who shall have received their degree in medicine after the first day of July, 1894, must have pursued study of medicine for at least three years, including three regular courses of lectures, in different years, in some legally incorporated medical college or colleges, prior to granting of said diploma, or foreign license, and after the first day of July, 1895, such applicants must have pursued the study of medicine for at least four years, including three regular courses of lectures, in different years, in some legally incorporated medical college, or colleges, prior to the granting of said diploma or foreign license. Such proof shall be made, if required, upon affidavit. Upon the making of said payment and proof, the medical council, if satisfied with the same, shall issue to said applicant an order for examination before such one of the state boards of medical examiners as the applicant for license may select. In case of failure at any such examination the candidate, after the expiration of six months and within two years, shall have the privilege of a second examination by the same board to which application was first made, without the payment of an additional fee; and it is provided further, that applicants examined and licensed by the state board of medical examiners or state boards of health of other states, on payment of a fee of $15 to the medical council, and on filing in the office of the medical council a copy of such license certified by the affidavit of the president and secretary of such board showing also that the standard of acquirements adopted by the said state board of medical examiners or state board of health, is substantially the same, as is provided by sections 11, 12 and 13 of this act, shall without further examination receive a license conferring on the holder thereof all the rights and privileges provided by sections 14 and 15 of this act."

Licenses must be registered with the prothonotary of the court of common pleas and in the county of residence; fee $1. The law contains a reciprocity clause, but only certificates of New York are accepted and (until recently, New Jersey). The usual exemptions of government officers, outside consultants, border practice, etc., are made in the law. Secretary, medical council, Hon. James W. Latta, Harrisburg.

RHODE ISLAND.

Law of 1895, Section 3: "Authority to practice medicine under this law shall be a certificate from the state board of health, and said board shall upon application issue a certificate to any reputable physician who is practicing, or who desires to begin the practice of medicine or surgery in this state, who possesses any of the following qualifications: 1. A diploma from a reputable and legally chartered medical college, endorsed as such by the state board of health. 2. Satisfactory evidence from the person claiming the same that such person was reputably and honorably engaged in the practice of medicine or surgery in this state prior to January 1, 1892. Any person not qualified as hereinbefore provided, before practicing medicine or surgery in this state, shall present himself before said board of health and submit himself to such examination as said board may require. Said board shall examine person presenting himself and if the examination is satisfactory, shall issue its certificate as hereinbefore provided. Provided, any person so presenting himself shall pay to the board the sum of $10 for each examination, and said fee shall in no case be returned, and shall be applied to pay the expenses of the board of health. Applicants may present their credentials by mail or proxy, and the board shall issue its certificates to such applicants as are entitled thereto as though the applicant were present. All certificates shall be signed by the president and secretary, and attested by the seal of the board, and not more than $2 will be charged for any certificate.

"Section 4. Nothing in this law shall be so construed as to authorize any itinerant doctor to register or to practice medicine in any part of this state.

"Section 5. The state board of health may refuse to issue the certificate provided for in section three of this article, to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public, and it may after due notice and hearing revoke such certificate for like cause. In all cases of refusal or revocation the applicant may appeal to the appellate division of the supreme court, who may affirm or overrule the decision of the board, and its decision shall be final." Sections 7 and 8 provide for prosecution and punishment for illegal practice in the state. Section 8 says: "To open an office for such purpose, or to announce to the public in any other way a readiness to practice medicine or surgery in this state, shall be to engage in the practice of medicine within the meaning of this law." Licenses must be registered with the town or city clerk.

Supplementary examinations in the subjects of surgery, theory and practice of medicine and in obstetrics, including gynecology, are required of graduates from schools which do not give four full years of eight months in each year as a requisite for issuance of diploma. Also of those from schools which admit to advanced standing in the second year, applicants who may be graduates of dental, veterinary or pharmaceutical schools, and which in this way permit the student to go through the school in three years. Schools which admit to advanced standing applicants who have taken a course equal to the first year of the college and who are examined before entrance into the second year, are considered as in good standing and no examination is required. Full examination is required from schools which are located in a city of less than 50,000 inhabitants. The examination is upon seven subjects and on practically the same as those recommended by the Conference of Medical Examining and Licensing Boards of New England. Board meets for examination at State House, Providence, on the first Thursday in the months of January, April, February and October. Secretary, state board of health, Dr. Gardner T. Swarts, Providence.

SOUTH CAROLINA.

The authorization to practice medicine is in the hands of the state board of medical examiners, one from each congressional district elected by the South Carolina Medical Association and

commissioned by the governor. The board holds its meetings at the state house in Columbia on the third Tuesday of May of each year, at which time all applicants for a license to practice medicine in this state must exhibit a diploma from a recognized medical college, a certificate of moral character, and must pass a satisfactory written examination on all branches of medicine. The chairman and secretary of the board are allowed to grant a temporary license to practice medicine until the meeting of the board in May of each year, at which time the applicant must come up for the regular written examination above mentioned. The applicant for a temporary license will be expected to stand an oral examination on all the branches of medicine. Temporary license fee $2.50.

Physicians moving into the state from other states are subject to the same laws as those who are residents, irrespective of any examinations held previous to their change of location. No one is allowed to practice medicine in this state without either a temporary license or a regular license as prescribed by law. The questions at the examination are similar in character to those given by a first-class medical college. Examinations are held under the following heads 1, anatomy, general and regional; 2, physiology and histology; 3, chemistry, practical uranalysis, medical physics and hygiene; 4, materia medica, therapeutics and toxicology; 5, surgery and surgical pathology; 6, practice and diseases of children; 7, obstetrics and gynecology. An average of at least 75 per cent. on the whole list of subjects shall be attained by each applicant, and he shall not make less than 60 per cent. on any one branch. A fee of $5 will be required of each applicant who is granted a license, said fee to be paid to the secretary before examination is entered upon. The fee will be refunded to those failing to pass. Licenses must be recorded with clerk of county court. It would appear that the graduates of medical colleges in South Carolina are by recent legislation (1900-1901) exempt not only from examinations but also from all other provisions of the law, including fees, application for license, etc. All that appears to be required, according to the opinion of the attorney-general, is that satisfactory evidence be given the board that the college has an advertised four years' course and that they have met the requirements in the judgment of the faculty. This exemption does not apply to holders of diplomas received before the adoption by the college of the four years' course.

United States government officials and consultants from without the state meeting licensed physicians, dentists and midwives are also exempted. Appeal to the governor from the action of the board is provided for, and he can order a special examination. Secretary, state board of medical examiners, Dr. S. C. Baker, Sumter.

SOUTH DAKOTA.

Law of 1893: Section 5. "The board of health of this state is hereby constituted a board of public examiners ex-officio for the purpose of examining and licensing physicians to practice medicine in this state and any person who is a graduate of a lawful medical college who has attended three full courses of medical lectures of six months each, no two full courses within the same year, and who is of good moral character, and is not an habitual drunkard, shall upon proof of such facts to the superintendent of the state board of health as said board shall require, and on payment of a license fee of $5, which shall be applied as a part of the superintendent's salary, receive from said superintendent of the state board of health a license certifying the applicant to be a practicing physician and qualified for such as prescribed by this section; which license shall be recorded in the office of the registrar of deeds in the county where such practicing physician resides. Provided that the requirements of the three courses of lectures shall not apply to those who have graduated prior to the passage of this act." Licenses may be revoked after due hearing by the board for intemperance, immorality or gross unprofessional conduct. It is made the duty of the state attorneys to prosecute for violations of the law. The usual exemptions are made.

Secretary, state board of health, Dr. A. E. Clough, Madison.

TENNESSEE.

The latest law of Tennessee approved April 22, 1901, provides for a state board of medical examiners by whom all applicants for license must be examined. The board consists of six members who must be graduated physicians of not less than six years' practice, two of whom must reside in each grand division of the state, the three schools of medicine being represented as follows: regulars, four; homeopaths and eclectics, each one. The appointments are made by the governor.

Section 5 provides for a regular meeting of the board once each year in the city of Nashville, "so long as the period of temporary licenses herein after provided for shall continue, and shall thereafter be held semi-annually in the said city of Nashville: but special meetings may be held oftener upon the call of the president."

Section 6 provides that persons desiring to obtain a license must make application in writing to the board accompanied by the examination fee ($10 for permanent license, $5 for temporary license) and by $5 for certificate of license with satisfactory proof that the applicant is of good moral character. "When these preliminary requirements are satisfied, the applicant shall then present himself before the board for examination upon the following branches, viz: Anatomy, physiology, chemistry, pathology, surgery, obstetrics, materia medica and practice; but the member or members of the board representing each separate school of medicine, shall have the right to examine all applicants of that school in the branches peculiar to the teachings of that school, and the board shall accept the grade placed by such member or members upon such special branches. Provided, however, that graduates of any reputable medical college in the State of Tennessee shall until June 1, 1902, be granted a certificate of license by said board, without reference to the number or length of terms attended and without the examination herein above prescribed; but this provision shall cease and determine after June 1, 1902.

"Section 7. That the two members of said board in each grand division of the state shall at such time or times as the board may direct meet at some convenient point in their respective divisions for the purpose of examining applicants for permanent licenses. Such meetings shall be held at stated periods, and the questions to be propounded upon such examinations shall have been determined upon in advance by the board, and shall be identical in each division and such examinations shall be held on the same day in each division, and under uniform rules and regulations to be adopted by the board. The examination papers shall be sealed up and carried to Nashville to the annual meeting of the board at which time they shall be examined, graded, and passed upon by the board in annual session, and the results declared and certificates issued to those entitled to receive them. The board or any of its respective sections may at the option of the members supplement such written examination by an oral examination, and the recorded value of such oral examination may be given such importance as each member of the board sees fit.

"Section 8. Be it further enacted, that if the applicant for examination shall thereupon be found worthy and competent by the board, it shall issue to him a certificate of permaneut license in accordance with the facts in each case to practice medicine or surgery in this state.

"Section 9. Be it further enacted, that in order to prevent delay and inconvenience the two members of the board of any grand division of the state may grant a certificate of temporary license to any applicant who is permanently located as a resident of some designated place in that division of the state, upon satisfactory evidence to them that such applicant possesses the qualification herein above required, and upon examination by them of such applicant in the subjects named in section 6 of this act, (Fee for examination for temporary license, $5, and fee for license, $1; total $6) and make report thereof to the next regular meeting of the board, such temporary license shall not continue in force longer than the conclusion of the next regular meeting of the board, and shall in no case be granted within six months after the applicant has been refused a certificate of license by the board, provided that after Jan. 1, 1903, no certificates of temporary license shall be issued."

Sections 12 and 13 prescribe recording of license with county court clerk prior to commencing practice and on changes of residence from one county to another and the keeping of the records of the same by the clerk. Section 15 prescribes for revocation of license for unprofessional or dishonorable conduct, which is defined in section 16.

Section 16 defines the words unprofessional or dishonorable conduct as used in Section 15 of this act in the same words as in the California law, except that with habitual intemperance the "excessive use of narcotics" is added. Section 17 prohibits itinerant or other nostrum venders. Section 18 prescribes peualties for illegal practice. Section 19. "Be it further enacted that any person shall be regarded as practicing medicine within the meaning of this act who shall treat or profess to treat, operate on, or prescribe for any physical ailment or any physical injury to or deformity of another.". The law is specified not to apply to those usually exempted, or to osteopaths not giving or using medicine in their practice, nor to opticians nor to christian scientists. Section 21 provides for the grand jury to have inquisitorial power in case of violations of the act. Section 22 disqualifies the board for issuing any license contrary to its provisions, and Section 23 repeals former law and amendments contrary to this act.

Secretary, state board of medical examiners, Dr. T. J. Happel, Trentou.

TEXAS.

The new law that went into effect July 9, 1901, provides for the appointment by the governor of three boards of medical examiners, regular, eclectic and homeopathic, from lists furnished by the respective state societies and that all persons desiring to practice as physicians or professional midwives, and uot qualified under earlier laws, must pass an examination.

"Section 6. In case any applicant shall fail to pass a satisfactory examination he or she shall not be permitted to stand any further examination within one year thereafter, and in no event shall an applicant who stands rejected by one of said boards be examined or licensed by either of the other boards. If an applicant desires to practice a system not represented by any of the boards hereby established, he or she may elect for himself or herself the board before which he or she will appear for examination; provided, that no applicant shall be rejected because of his or her adhereuce to any particular school of medicine or system of practice, nor on account of his or her views as to the method of treatment, and cure of disease; and provided further, when in the opinion of the presidents of the boards any applicant had been unavoidably prevented from appearing before the board at their regular meeting, said president shall, upon notification, appoint a committee of three members to examine such applicaut and if the examination be satisfactory, notify the secretary, who shall issue him or her a temporary certificate, which shall have the same force and effect as though granted by the full board until the applicant shall have the opportunity to appear before the board at its next regular meeting, when said temporary certificate shall become void. No applicant shall be admitted to examination who can not submit satisfactory evidence that he or she is more than 21 years of age, and is of good moral character. Applications for license must be made in writing and presented to the president or secretary of the board before which the applicant desires to appear and must be accompanied with a fee of $15; provided when the applicant desires to practice midwifery alone, the fee shall be $5.

"Section 8. All persons who may change their residence to the State of Texas, on filing a true copy of a license granted by the board of medical examiners of another state or territory certified by the affidavits of the president and secretary of said board with satisfactory proof of the genuineness of the same, and showing that the standard of requirements of the medical laws of said state or territory and that adopted by said board of medical examiners are equal to that provided for in this act, and who, on the payment of the usual fee of $15, may be registered and receive a license from the board of medical examiners of Texas to practice in this state.

"Section 9. Any person shall be regarded as practicing medicine or surgery within the meaning of this act who shall profess publicly to be a physician or surgeon and shall offer for practice as such or prescribe for those needing medical and surgical aid,

and shall charge or receive therefor money or other compensation. This act shall be so construed as to include persons not pretending to be physicians who offer for sale publicly on the streets or other public places remedies not manufactured and compounded within this state, which they recommend for the cure of disease. Consultants, government officials acting as such, etc., are exempted.

"Section 10. The applicant shall be examined in the following branches: Anatomy, physiology, chemistry, materia medica, therapeutics, histology, pathology, practice of medicine, surgery (including diseases of the eye, ear, nose and throat), obstetrics, gynecology, hygiene and medical jurisprudence."

Secretary, state board of medical examiners, Dr. M. M. Smith, Austin.

Regular meetings of the examining boards are specified to be held twice a year, at places duly advertised.

UTAH.

The state board of medical examiners consisting of seven members "who shall be representatives of the various recognized schools of medicine" is appointed by the governor.

"The board shall have power to issue certificates to any person who furnishes satisfactory proof of having received a degree or diploma from a chartered medical college in good standing and who shall pass a satisfactory examination before the board. The board shall issue two forms of certificates or licenses, one for persons holding such a degree or diploma who have been examined and favorably passed upon by the board, and another for persons desiring to practice obstetrics under the provisions of section 1737. Certificates and licenses shall be signed by all members of the board granting them." The fee for the examination provided above shall be $15, which shall be paid to the treasurer of the board of examiners.

"No non-graduate licensed under the provisions of the acts of the territorial legislature shall, in any way advertise as a doctor, physician or surgeon, but shall, if he advertises at all, do so as a licensed non-graduate practitioner of medicine. The secretary of the board shall enter, without fee, upon the register to be kept by him, the names of all persons to whom certificates are issued as physicians and surgeons.

"Examinations may be made wholly or partially in writing. The board of medical examiners may refuse to issue the certificates provided for in this title to individuals convicted by a court of competent jurisdiction, of any offense involving immoral or dishonorable conduct, the nature of which shall be stated in writing. The board may revoke such certificates for like causes.

"Any person shall be regarded as practicing medicine within the meaning of this title who shall treat, operate upon, or prescribe for any physical ailment of another for a fee, or who shall hold himself out by means of signs, cards, advertisements, or otherwise, as a physician or surgeon; but nothing in this title shall be construed to prohibit services in case of emergency, or the administration of family remedies, nor to prevent medical officers of the United States army from the discharge of their official duties, nor to prohibit visiting physicians in the act of consultation.

"Persons desiring to practice obstetrics in this state shall be entitled to a license upon satisfactorily passing an examination by the state board of examiners and paying to the treasurer thereof a fee of $5; provided, that this section shall not be construed to prevent physicians holding a certificate from practicing obstetrics or to prohibit such service or the acceptance of a fee in case of emergency, or persons practicing obstetrics in communities where there are no licensed practitioners.

"The board of medical examiners shall meet on the first Monday in January, April, July and October of each year, at 10 o'clock a.m., and such other time as the president of the board shall deem necessary. The place of meeting shall be at the state capital. The term 'medical college' in this title shall include colleges in good standing in the states where they exist."

Secretary, board of medical examiners, Dr. R. W. Fisher, Salt Lake City.

VERMONT.

The board of registration in Vermont consists of the board of censors of the respective state medical societies which are authorized to examine and license practitioners of medicine, surgry and midwifery. Any one who offers his services as such or who assumes the title of Doctor must obtain a certificate from such board. Pursuant to Act 112, Laws of Vermont, 1898, the board of censors of the Vermont State Medical Society will require graduates in medicine who apply for a license to practice medicine in the state of Vermont, to pass an examination in anatomy, physiology, materia medica and therapeutics, chemistry, practice of medicine, surgery, obstetrics and pathology. Examinations will be held at Burlington, on the third Wednesday of January, April, July and October of each year. The standard of the colleges is determined by the board. Fee for examination, $5. Licenses must be recorded with the county clerk of the county in which physician practices.

Secretary, state board of censors (representing Vermont State Medical Society), Dr. C. W. Strobill, Rutland.

VIRGINIA.

Virginia has a state board of medical examiners, one from each congressional district, and three at large, from list furnished by Medical Society of Virginia, besides two homeopathic members nominated by the Hahnemann Medical Society of the Old Dominion Law of 1900. The applicant for license "shall produce before said board a diploma, or other satisfactory evidences of his graduation in some medical college, chartered by the state or territory in which the same is situated; provided, that any undergraduate taking a graded course in any regularly chartered medical college shall be entitled to an examination on such branch or branches as he or she may present a certificate from the said college of having passed a satisfactory examination, and having once passed a satisfactory examination on each of such branches before the state board of medical examiners, no further examination shall be required on such branch or branches; but an applicant failing to pass a satisfactory examination on any of such branches, shall not be permitted to be examined on such branch or branches until he or she presents a diploma of graduation as Doctor of Medicine from some regularly chartered college of medicine. When an applicant shall have made an examination satisfactory as to proficiency before the board in session, the president thereof shall grant to such applicant a certificate to that effect. A fee of $10 shall be paid to said board, through such officers or members as it may designate, by each applicant before such examination is had, and in case any applicant shall fail to pass a satisfactory examination, he shall not be permitted to stand any further examination within the next six months thereafter, nor shall he have again to pay the fee prescribed as aforesaid; provided, however, no applicant shall be rejected upon his examination on account of his adherence to any particular school of medicine or system of practice, nor on account of his views as to the method of treatment and care of diseases; and, provided, further, that when, in the opinion of the president of the board, any applicant has been prevented by good cause from appearing before the board, he shall have authority, in his discretion, to grant a special permit to such applicant to practice medicine or surgery until he shall have an opportunity to appear before the board in session for examination, which special permit shall be revocable at the discretion of the president, and in no case shall it entitle the holder thereof to practice after the next regular meeting of said board. The board shall have in their discretion, authority to accept in lieu of examination of an applicant, a diploma or other satisfactory evidence of the graduation of the applicant in some medical college chartered by the state or territory in which the same is situated, and a certificate from the examining board of any other state or territory in which the same is situated, and a certificate from the examining board of any other state or territory of the United States or the District of Columbia, showing that such applicant has passed a satisfactory examination as to his proficiency and obtained a license from said board to practice medicine and surgery in said state, territory or district; provided, that any person who was examined by the state examining board prior to Jan. 1, 1900, and whose fee for such examination was duly paid, but who failed to pass said examination, shall have the right and privilege of taking the examination before the state board notwithstanding the provisions of this act."

"Any person shall be regarded as practicing medicine or surgery for compensation within the meaning of this act, who shall profess publicly to be a physician or surgeon, and shall offer for practice as such, or who shall prescribe for the sick or those needing medical aid and shall receive therefor money or other compensation, directly or indirectly." Section 1752 exempts dentists, midwives, government officers, in the line of their duties, and consultants from without the state.

Secretary state board of medical examiners, Dr. R. S. Martin, Stuart.

WASHINGTON.

The examining board of nine members is appointed by the governor. They must be skilled and learned in the practice and theory of medicine and surgery, and hold office for three years.

Section 3. "Hereafter every person desiring to commence the practice of medicine and surgery, or either of them, in any of its or their branches, in this state shall make a written application to said board for license so to do. Each applicant for such license shall be not less than 21 years of age, shall furnish a certificate of good moral character, and shall be a graduate of some duly authorized medical college now having at least a three years' graded course. Such applicant at the time and place designated by said board, or at the regular meeting of said board, shall submit to an examination in the following branches: Anatomy, physiology, chemistry, histology, materia medica, therapeutics, preventive medicines, practice of medicine and surgery, obstetrics, diseases of women and children, diseases of the nervous system, diseases of the eye and ear, medical jurisprudence, and such other branches as the board shall deem advisable. Said board shall cause such examination to be both scientific and practical, and of sufficient severity to test the candidate's fitness to practice medicine and surgery; which examination shall be by written or printed, or partly written or partly printed questions and answers, and the same shall be filed and preserved of record in the office of the secretary of said board. After examination, if the same be satisfactory, said board shall grant a license to such applicant to practice medicine and surgery in the state of Washington, which said license can only be granted by the consent of not less than five members of said board, except as hereinafter provided, and which said license shall be signed by the president and secretary of said board and attested by the seal thereof. The fee for such examination shall be $10, and shall be paid by the applicant to the treasurer of said board toward defraying the expenses thereof; and such board may revoke or refuse to license for unprofessional or dishonorable conduct, subject, however, to the right of such applicant to appeal from the decision of said board, refusing or revoking such license as hereinafter provided." The section also contains a reciprocity clause which is ineffective as no other state boards have made arrangements complying with the Washington law.

No provision is made by the state law authorizing the issuance of a temporary permit to practice pending the meeting of the board. The standard requirements for those having practiced ten years or over is a general average of 70 per cent. Those having practiced less than ten years are required to have obtained an average of 75 per cent. Section 4 gives the definition of an unprofessional or dishonorable conduct, in the same words as in the Oregon statute. Section 8 prescribes penalties for illegal practice and defines the same: "Any person shall be deemed as practicing within the meaning of this act who shall have and maintain an office or place of business with his or her name and the words 'physician' or 'surgeon,' 'doctor,' 'M.D.,' 'M.B.,' in public view, or shall assume or advertise the title of doctor or any title which shall show or shall tend to show that the person assuming or advertising the same is a lawful practitioner of any of the branches of medicine or surgery in such a manner as to convey the impression that he or she is a practitioner of medicine or surgery under the laws of this state, or any person who shall practice medicine under a false or assumed name, or under cover of the name of some legal practitioner, or personate any legal practitioner, or for a fee prescribe or direct, or recommend for the use of any person any drug or medicine for the treatment, care, relief of any wound, fracture or bodily injury, infirmity or disease. Provided, however, this act shall not apply to dentists while confining themselves strictly to dentistry. Justices of the peace and the superior court shall have

concurrent jurisdiction of violations of this act." It shall be the duty of the respective county or district attorneys to prosecute all violations of this act. The board meets alternately in Eastern and Western Washington at such places as it may designate, in the first Tuesday of January and July of each year. Special meetings may be held when necessary.

Secretary state medical examining board, Dr. J. P. Turney, Davenport.

WEST VIRGINIA.

The state board of health, consisting of two physicians, graduates of reputable medical colleges and of six years' continuous experience in medical practice in each congressional district are appointed by the governor, and have regulation of practice of medicine in the state.

"The state board of health shall at such times as a majority of them shall deem proper, hold examinations, for the licensing of practitioners of medicine. Such examinations shall not be less in number than three, during each year, and shall be held at such points in the state as shall be most convenient to those presenting themselves for examination, or to the state board of health. At such examinations written and oral questions shall be submitted to the applicants for license, covering all the essential branches of the sciences or medicine and surgery, and the examination shall be a thorough and decisive test of the knowledge and ability of the applicant. The president and secretary of the state board of health shall issue certificates to all who successfully pass the said examination, and such certificates, after having been duly recorded as hereinafter provided, shall be deemed licenses to practice medicine and surgery in all their branches of this state. The state board of health shall give timely notice of the time and place of holding each such examination, by publishing such notice in at least three newspapers of general circulation in this state, and all persons wishing to present themselves for examination should notify the secretary of the state board of health to that effect. No applicant for license to practice medicine in this state shall be rejected because of his or her adherence to any particular school or theory of medicine. The state board of health shall call to their assistance, in the examination of any applicant who professes the homeopathic or eclectic school of medicine, a homeopathic or eclectic physician duly licensed to practice medicine in the state, and such homeopathic or eclectic physician so called to the assistance of the state board of health, shall be allowed the per diem and actual expenses incurred, hereinafter allowed to regular members of the state board of health; provided, however, that the provisions of this and the preceding section shall not apply to the physicians living in other states and duly qualified to practice medicine therein, who shall be called into consultation in this state by a physician legally entitled to practice medicine in this state under these sections. Every person on presenting himself for examination as hereinbefore provided, shall pay to the state board of health, or to the members thereof by whom he is examined, a fee of $10, which shall not be returned if a certificate be refused him. But he may again at any time within one year after such refusal, present himself for examiuation as aforesaid, without the payment of an additional fee, and if a certificate be again refused him, he may as often as he sees fit thereafter, on the payment of a fee of $10, be examined as herein provided, until he obtains such certificate. Any person shall be regarded as practicing medicine, within the meaning of this chapter, who shall profess publicly to be a physician, and to prescribe for the sick or who shall append to his name the letters 'M.D.' This act shall also apply to apothecaries and pharmacists who prescribe for the sick. This act shall not apply to commissioned officers of the United States Army and Navy and Marine-Hospital Service."

Certificates may be revoked for malpractice or dishonorable conduct, with right of appeal to circuit court. Secretary state board of health, Dr. A. R. Barbee, Point Pleasant.

WISCONSIN.

The board of medical examiners is appointed by the governor from lists furnished by respective state medical societies of the regular, homeopathic, eclectic and osteopathic schools of practice. Three of the members shall be regular, two homeopaths, two eclectics, and one osteopath. The board holds regular meetings on the second Tuesdays in July, at the Park Hotel, in Madison; October, at the Athearn Hotel, in Oshkosh; January and April, at the Hotel Pfister, in Milwaukee, and may hold such other meetings at such other times and places as may be deemed necessary.

All persons commencing the practice of mediciue or surgery in any of their branches, shall apply to said board at the time and place designated by the board or at any regular meeting for license so to do, and shall submit to an examination in the various braneches of medicine and surgery and present to said board a diploma from a reputable medical college that requires at least four courses of not less than six months each before graduation; no two of said courses to be taken within any one twelve months, and that shall after the year 1901 require for admission thereto an elementary education equivalent to that necessary for entry to the junior class of an accredited high school of this state, including one year's course in Latin, and for graduation from said medical college at least four courses of not less than seven months each; no two of said courses to be taken within any one twelve months, provided, however, that any student who is now matriculated in any medical college of this state which requires four courses of six months each as a prerequisite of graduation, no two courses to be taken within one twelvemonth, shall, on presentation of his diploma from such medical college and on payment of the fees specified in this act, be admitted to practice without further examination by such state board of medical examiners. The examination in materia medica, therapeutics, and practice of medicine shall be conducted by members of said board representing the school of medicine which the applicant claims to follow. The fee for such examination shall be fixed by the board, but shall not exceed $10, and $5 additional for the certificate if issued; such fee shall be paid by the applicant to the treasurer of the board, to be applied toward defraying the expenses of the board. If any person licensed by said board shall be convicted of auy crime committed in the course of his professional conduct, the court in which such conviction is had, may, in addition to any other punishment imposed pursuant to law, revoke such license. Said board shall have the power to adopt such rules for its government and may require the filling out of such blanks as it may deem necessary to get at the true character and qualifications of applicant for license, and may use discretionary power in refusing license to any who cannot furnish proof of good morals and professional character. The person so receiving such license shall record the same with the county clerk in the county of his residence. Any practitioner of medicine holding a certificate from any other state board imposing requirements equal to those established by the board provided for herein, may on presentation of the same with a diploma, be admitted to practice in this state without an examination, at the discretion of the board on the payment of the fee. United States Army, Navy and Marine-Hospital surgeons, consultants from without the state, and students practicing under direct supervision of a preceptor are exempted from the provisions of this law.

Section 1435. "Every person shall be regarded as practicing medicine within the meaning of this section, who shall append the letters M.D. or M.B. to his or her name, with intent to represent that he or she is a physician or surgeon, or who shall for a fee prescribe drugs or other medical or surgical treatment for the cure or relief of any wound, fracture, bodily injury, infirmity or disease. Said sections shall not apply to dentists in the practice of their profession. It shall be the duty of the board of medical examiners to investigate all complaints of disregard, non-compliance or violation of the aforesaid sections, and bring all such cases to the notice of the proper prosecuting officer; and it shall be the duty of the respective district attorneys to prosecute violations thereof.

Section 1436. No person practicing physic or surgery, or both, shall have the right to collect in auy action in auy court fees or compensation for the performance of any medical or surgical service or to testify in a professional capacity as a physician or surgeon in any case unless he, before April 20, 1897, received a diploma from some incorporated medical college or society, or shall since said date have received a license from the state board of medical examiners; provided, that in all criminal actions the court may in its discretion aud in furtherance of justice, receive the testimony of any physican or surgeon without requiring proof of the incorporation of the medical society or college from which he graduated."

Section 4603a. Any person prohibited by Section 1436 from testifying in a professional capacity as a physician or surgeon who shall assume the title of doctor of medicine, physician or surgeon by means of any abbreviation or by the use of any word, words, letter or letters of the English or any other alphabet, or by any device whatsoever, printed, written, painted or exhibited in any advertisement, circular, handbill, letter or other instrument, or on any card, sign, door or place shall be punished by fine of not less than $25, nor more than $100, or by imprisonment in the county jail not less than ten days nor more than sixty days for each offense. In any prosecution hereunder the burden of establishing the defendant's right to use any such title shall be upon him: provided, that women may practice midwifery, and that veterinary surgeons may practice in their special departments without beiug subject to the provisions of this section.

Secretary board of medical examiners, Dr. H. M. Ludwig, Richland Center.

WYOMING.

The state board of medical examiners is appointed by the governor. "Every person desiring to practice medicine or surgery, or who may publicly profess to cure or treat disease, injury or deformity in any manner whatever in this state, must be examined by the state board of medical examiners and pay a fee of $25 for such examination provided: that any person who shall present to said board a diploma from some medical college of recognized merit, said college being a member of the American Association of Medical Colleges, the Homeopathic Institute, or the National Eclectic Medical Association, or any college of similar standiug in foreign countries, may receive a certificate from said board without examination, for which a fee of $5 shall be paid by each graduate. The certificate issued by the board must be filed for record in the office of the county clerk of the county in which such person desires to practice."

The examinations shall be of an elementary and practical character, and shall be upon the following subjects: Anatomy, physiology, chemistry, pathology, materia medica and therapeutics, hygiene, theory and practice of medicine, surgery and obstetrics, and sufficiently strict to test the qualifications of the candidate as a practitioner. Students may prescribe, under immediate supervision of preceptors, and gratuitous service may be offered in case of emergency. Lawfully qualified physicians, residing in other states or countries, may hold consultations with physicians in this state, and any physician or surgeon residing upon the border of a neighboring state, in which he is authorized to practice, whose practice extends into this state, may practice without filing a diploma with the board, as before provided. This act does not apply to commissioned surgeons of the United States Army and Navy or medical examiners of relief departments of railroad companies.

The state board of medical examiners shall examine all persons upon the theory and practice of obstetrics who openly profess to practice obstetrics or midwifery, who do not have authority to practice medicine or surgery; and they may issue to such candidates and person or persons who shall pass a satisfactory examination, certificates which shall authorize and empower them to practice obstetrics or midwifery. No person shall practice obstetrics or midwifery unless either a practicing physician authorized to practice under the provision of this act, or holding such certificates as are prescribed by this section; provided, that nothing in this section shall be construed to prohibit persons from rendering services in case of obstetrics or midwifery in cases of emergency.

Unqualified itinerant physicians and nostrum venders are prohibited under penalty. Board meets at Laramie, about March 15, 1902. Examinations may be held at any time, by giving ten days' notice to secretary of state board of medical examiners, Dr. G. P. Johnston, Cheyeune.

On the following page we give a tabulated statement of some of the principal features of the different state laws, including the conditions as to examination, admission to practice by diploma, etc., and the composition of the licensing boards.

STATE.	Diploma Only.	Examination Only.	Diploma or Examination.	Diploma and Examination.	Examining Boards Mixed.	Examining Boards Separate.	Special Boards.	Preliminary Examination (State).	Examining Bd. App'd. by State Med. Soc.	State Graduates Exempt.
Alabama[1]	...	Yes	...	...	...	...	...	...	Yes	...
Arizona	...	...	...	Yes	Yes	...	...	...	...	...
Arkansas[2]	...	...	Yes	...	...	...	...	...	...	...
California	...	...	...	Yes	Yes	...	...	...	Yes	...
Colorado	...	...	Yes	...	Yes	...	...	...	...	...
Connecticut.	...	...	...	Yes	...	Yes	...	...	...	...
Delaware	...	...	...	Yes	...	Yes	Yes	...	...	...
District of Columbia	...	...	...	Yes	...	Yes	Yes	...	...	...
Florida[3]	...	...	...	...	...	...	...	...	...	...
Georgia	...	...	...	Yes	...	Yes	...	...	...	...
Idaho	...	...	...	Yes	Yes	...	...	...	...	...
Illinois[4]	...	...	...	Yes	Yes	...	...	...	...	Yes
Indiana	...	...	...	Yes	Yes	...	...	...	...	...
Indian Territory	...	...	...	...	...	...	...	...	...	...
Iowa.	...	...	...	Yes	Yes	...	...	...	...	...
Kansas[5]	...	Yes	Yes	...	Yes	...	...	...	...	...
Kentucky	...	...	Yes	...	...	...	...	...	...	...
Louisiana	...	...	...	Yes	...	Yes	...	...	...	...
Maine.	...	...	...	Yes	...	...	...	Yes	...	...
Maryland.	...	...	...	Yes	...	Yes	...	...	Yes	...
Massachusetts	...	Yes	...	...	...	...	...	...	...	...
Michigan[6].	...	...	Yes	...	Yes	...	...	...	...	...
Minnesota	...	Yes	...	...	Yes	...	...	...	...	...
Mississippi	...	Yes	...	...	...	...	...	...	...	...
Missouri	...	Yes	...	...	Yes	...	...	...	...	...
Montana	...	...	...	Yes	...	...	...	...	...	...
Nebraska	Yes	...	...	...	Yes	...	...	...	...	...
Nevada	...	...	Yes	...	Yes	...	...	...	...	...
New Hampshire	...	...	...	Yes	...	Yes	...	...	...	...
New Jersey[7]	...	...	...	Yes	Yes	...	...	...	...	...
New Mexico	...	...	Yes	...	Yes	...	...	...	...	...
New York	...	...	...	Yes	...	Yes	Yes	...	...	...
North Carolina	...	...	...	Yes	...	...	...	...	Yes	...
North Dakota	...	Yes	...	...	Yes	...	...	...	...	...
Ohio	...	...	...	Yes	Yes	...	...	Yes	...	...
Oklahoma	...	...	Yes	...	...	...	...	...	...	...
Oregon.	...	Yes	...	...	Yes	...	...	...	...	...
Pennsylvania	...	...	...	Yes	...	Yes	Yes	Yes	...	...
Rhode Island.	...	...	Yes	...	...	...	...	...	...	...
South Carolina	...	...	...	Yes	...	...	...	...	Yes	Yes
South Dakota	Yes	...	...	...	...	...	...	...	...	...
Tennessee	...	Yes	...	...	Yes	...	...	...	...	...
Texas	...	Yes	...	...	...	Yes	...	...	...	...
Utah	...	...	...	Yes	Yes	...	...	...	...	...
Vermont[8]	...	...	...	Yes	...	...	...	...	Yes	...
Virginia	...	...	...	Yes	Yes	...	...	...	...	...
Washington.	...	...	...	Yes	...	...	...	...	...	...
West Virginia	...	Yes	...	...	...	...	...	...	...	...
Wisconsin	...	...	...	Yes	Yes	...	...	...	...	...
Wyoming	...	...	Yes	...	...	...	...	...	...	...

[1]Diploma is not required for admission to examination by state board, but is necessary in examination by county boards.

[2]County boards are provided for by the Arkansas law, but registration of diploma is said to be only required.

[3]District boards appointed.

[4]Graduates of Illinois medical colleges may be exempted from examination, but this provision of the law Is uot regarded as mandatory by the board.

[5]The board has the power, at its discretion, to grant license without examination to graduates of legally chartered medical colleges of the United States or foreign countries. The Kansas law, as will be seen in the text, does not specifically require a diploma as a prerequisite for examination for license, but specifies that satisfactory evidence be furnished of three (and after January, 1902, four) years' study of medicine.

[6]Only a minority of the medical colleges are recognized by the board; a list is furnished on application. Graduates of all others must pass an examination.

[7]New Jersey has a special provision for permitting physicians not otherwise qualified by law to temporarily take charge of a qualified physician's practice at his request for a period of not less than two weeks or exceeding four months. Application must be made for this special license, and a fee of $2 paid.

In a number of the states the different schools of practice are not recognized in the law, hence it is not always possible to say whether they have representatives on the examining board or not.

[8]Vermont has also homeopathic and eclectic societies which make their own rules and prescribe conditions for license.

THE PROVINCES AND TERRITORIES OF THE DOMINION OF CANADA.

The Dominion consists of seven provinces, and the Northwest Territories. Of these, Ontario requires from a student five years of medical study, and Quebec is expected to demand soon the same length of time. The other provinces require a study of four years. The five older, namely Ontario, Nova Scotia, Quebec, New Brunswick, and Prince Edward Island, exercise a supervision over the matriculation and course of study. Moreover, Ontario, Nova Scotia, New Brunswick, Prince Edward Island and British Columbia require a final professional examination; Ontario calls also for an intermediate examination, at end of second year of study. There is no reciprocity at present existing between the provinces, but the new, sparsely populated provinces and territories admit licentiates from the others. Dr. Thomas G. Roddick's inter-provincial Registration Bill is now before the Dominion House; it creates a "Medical Council of Canada." The medical requirements of Newfoundland are similar to those of Manitoba.

ONTARIO.

"The College of Physicians and Surgeons of Ontario" is the name adopted by the medical profession in Ontario in its corporate capacity. The "Council" of the College of Physicians and Surgeons of Ontario is empowered and directed to enact by-laws for the regulation of all matters connected with medical education; for the admission and enrolment of students of medicine; for determining from time to time the curriculum of the studies to be pursued by them, and to appoint a board of examiners, before whom all must pass a satisfactory examination before they can be legally qualified to practice in Ontario. The Council consists of 17 territorial and 8 collegiate representatives, and 5 homeopaths.

Matriculation.—Every medical student must be registered in the manner prescribed by the Council, and this shall be held as preliminary to his medical studies, which shall not be considered to begin until after the date of such registration. The matriculating student must satisfy the Council that he is a graduate in arts, or has passed the senior matriculation or examination at end of the firsts year in arts, at any university in the British dominions; or present a certificate that he has passed the examination conducted by the education department on the course prescribed for matriculation in arts, including chemistry and physics, and approved by the lieutenant-governor.

Curriculum.—Every student must spend a period of five years in actual professional studies, except graduates in art or science of any college or university recognized by the Council, who have spent two years in the course of physics, chemistry, biology and physiology, and have passed examinations in their university course on the said subjects while taking their degree; such students will be required to spend four years in the study of medicine.

Examinations.—The professional examinations are divided into three parts: Primary, intermediate and final. The primary shall be undergone after the second winter session; the intermediate after the fourth winter session; the final after the fifth year. Fees, registration of matriculation, $20; primary examination, $30; intermediate and final examination, $50; registration of membership (license), $25; registration of additional degrees, $2; annual assessment, $2.

NOVA SCOTIA.

The Provincial Medical Board consists of 13 practitioners of at least seven years' standing, 7 of which are appointed by the governor, and 6 elected by the Medical Society (i. e., the profession). To obtain a license each applicant must pursue the following course:

Matriculation.—No person shall begin the study of medicine, in order to qualify himself for practice in this province, unless he has first completed his 16th year, paid a fee of $10, presented satisfactory college certificate, or passed the examination prescribed by the board.

Curriculum.—Every student must attend, in the study of medicine, four collegiate sessions, of at least eight months each year.

Professional Examinations consist of the following: First professional, after end of second year of medical study, fee, $15; second professional, at end of third year of study, fee, $10; third professional, at end of fourth year, fee, $25.

QUEBEC.

The Quebec Medical Act of 1896 enacts as follows: 1. Every medical student must pursue his professional studies during a period of not less than four years without interruption from the time of his having passed the preliminary examination. 2. Of the above four years, four six-month sessions at least must be passed in attendance on lectures at a university, college or incorporated school of medicine recognized by the board. A certificate of study from a licensed physician for the period intervening between the courses which the student has attended will also be required. This certificate shall not be called for, if the candidate has followed four nine-month courses.

In order to register a diploma in medicine in the Province of Quebec and to obtain a license it is necessary that all students must pass a preliminary examination before the examiners appointed by the Council, or produce a certificate of having passed an equivalent preliminary examination before a college or licensing board recognized by the Council of the College of Physicians and Surgeons of Quebec."

NEW BRUNSWICK.

The Medical Council of Physicians and Surgeons of New Brunswick is composed of nine legally qualified medical practitioners of not less than seven years' standing, four of whom are appointed by the governor and five by the New Brunswick Medical Society (of which every licensed practitioner is a member).

Matriculation.—Hereinafter (1881) no person shall begin or enter upon the study of physics, surgery or midwifery, for the purpose of qualifying himself to practice the same unless he shall have obtained from the Council a certificate that he has satisfactorily passed a matriculation or preliminary examination or unless he has passed a matriculation examination in arts and science at some recognized college.

Registration.—In order to obtain a license to practice the applicant must have passed the preliminary examination; he must have studied medicine during four years; he must have passed the professional examination irrespective of any diploma which he may possess. The professional examination is held in St. John annually in June.

PRINCE EDWARD ISLAND.

The Council of the Medical Society (i. e., medical profession)

of Prince Edward Island is composed of seven members elected by the registered members of the Society. Every applicant for registration must satisfy the Council: 1. That he has passed a preliminary or matriculation examination on the subjects specified in the by-laws of the Council, and had his name registered in the Medical Students' Register; any person holding the degree of B.A. from a university in the British dominions, or a teacher's first-class certificate of this province, is exempted; 2, that after such examination and registration, he has studied medicine four years in a university or medical college of good standing; 3, that he has satisfactorily passed a professional examination before the council.

BRITISH COLUMBIA.

The College of Physicians and Surgeons of British Columbia is the corporate name of the medical profession of the province. Its Council is composed of six members, elected for three years. The Council admits upon the register any person who shall produce a diploma from any medical college requiring at least four years' course of study, provided that where the college did not require a course of study of at least four years, a post-graduate course added in point of time to that of the college, completes the four-year course; provided, also, that the applicant shall furnish satisfactory evidence of identification, and pass before the members thereof a ıfactory examination in anatomy, chemistry, materia medica, cal jurisprudence, midwifery and diseases of women and chil-, pathology, physiology, surgery, and theory and practice of medicine.

MANITOBA.

The Council of the College of Physicians and Surgeons of Manitoba consists of 11 territorial, 3 collegiate and 1 homeopathic representatives. The following are entitled to registration as practitioners: 1, members of any incorporated college of physicians and surgeons of any province of the Dominion; 2, those qualified to practice in Great Britain and Ireland; 3, graduates in medicine of the University of Manitoba; 4, others must give evidence of qualification by examination, if necessary, to the Council of the University of Manitoba, which is the sole examining body in medicine in the province.

NORTHWEST TERRITORIES.

The Council of the College of Physicians and Surgeons of the Northwest Territories consists of five elective members. The Council shall admit upon the register, 1, any person possessing a diploma from any medical school in Great Britain and Ireland having power to grant such diploma, and who shall produce such diploma and furnish satisfactory evidence of identification; 2, any member of an incorporated college of physicians and surgeons of any province of the Dominion of Canada; 3, any person producing a diploma from any recognized medical college requiring a four-year course; provided that the applicant shall pass a satisfactory examination before the Council. Fees for examination, $50; registration, $50; annual assessment, $2; permits to practice are not granted by the Council.

Clinical Report.

A CASE OF SENILE GANGRENE.*

JAMES A. ROLLS, M.D.
WATROUS, NEW MEXICO.

S. G., Mexican, aged 78, has always been a man of temperate habits, no history of venereal disease, enjoyed good health and was exceptionally robust until 56 years of age, at which time his right foot became gangrenous without any apparent cause. Dr. W. R. Tipton of Las Vegas, to whom the case was referred at that time, August, 1877, has kindly given me the following notes from his records: "The disease began with pain in the sole of the foot, the toes became cold and assumed a purplish color; finally they became somewhat edematous and a spreading gangrene developed; amputated through the calf of the leg, and the gangrene appearing in both flaps, did a subsequent operation at the upper third of the thigh, which was entirely successful."

After this operation the patient's health remained good for twenty-three years. On February 1, however, he noticed some numbness in the left foot and began to suffer considerable pain, referred to the ankle joint, particularly at night. I saw him for the first time February 14. Examination at this time revealed the following condition: Patient is a large, powerfully-built man of good museular development, well nourished; temperature normal; pulse 80, of high tension; radial and temporal arteries firmer than normal but by no means rigid; no heart lesions; urine normal; appetite and digestion fair; bowels act normally. A small, almost circular, patch of dry dark wrinkled skin about the size of a quarter and adherent to the deeper tissues is situated over the navicular and internal cuneiform bones of the left foot. The foot was markedly cold to the touch, and movement caused pain at the ankle joint and in the leg above the ankle.

Since there were at that time no constitutional symptoms, I directed that the foot be kept elevated and wrapped in batting; that the patient be given a more than usually generous diet and prescribed full doses of opium to be given at night, because from pain the patient lost a good deal of sleep.

On March 22 nearly the whole of the foot, from the ankle joint down, except the posterior aspect of the heel, was in a dry, black, withered condition, painless to the touch, and, in fact, quite dead. The appearance of the foot, indeed, tallied exactly with the classic descriptions of dry gangrene, resembling as it did, nothing more than the varnished foot of a mummy. It was noteworthy, however, that in the sole of the foot, two small blebs had formed, and crepitation could be elicited on palpation, showing that the post-tibial artery had kept up a better blood supply than the anterior. The temperature was at this time a little over 100, and the pulse 110.

On April 9 the gangrenous condition had reached the junction of the lower and middle third of the leg anteriorly, while on the posterior aspect there seemed to be a greater amount of resistance to the process; moist sloughs had formed and the odor was very foul. Systemic poisoning was now quite marked, the pulse being small, at 120, temperature 102.

As there seemed no indication that a line of demarcation would form, I performed an amputation through the condyles of the femur on April 14, just ten weeks after the onset of the disease, and as there was little or no chance that the patient would want to use the stump, I made the flaps more nearly equal in length than in Carden's operation in order to avoid the danger of gangrene in a long, thin, anterior flap. In choosing the knee as the site of operation, I had the advantage of the experience of Dr. Tipton with the right leg, and was also influenced by the fact that there was reason to believe that the anterior tibial was the chief artery affected, and, since the obstruction is usually greatest just where the branch leaves the main artery, that as a consequence any tissue depending upon it for nourishment would undoubtedly perish. In this connection Dr. Steven Smith reports the case in the *Philadelphia Med. Journal*, Oct. 29, 1898, of a man aged 78, suffering from senile gangrene in whom he chose the knee joint as the seat of amputation without waiting for a line of demarcation. He points out that at the knee there are eight arterial branches and shapes his flaps so as to injure them as little as possible.

In the present case the wound did well and was nearly healed, when, 20 days after the operation an incident occurred which showed this old man's enormous vitality. He developed a double broncho-pneumonia and for two days lay in a semi-comatose condition, but finally rallied and is to-day in good health and earning a living by teaching in a Mexican school.

The point I found most difficult to determine was: In such a case when and where should operation be done? In the scanty literature to which I have had access one thing seems clear, namely, that authorities even in the present decade have divided themselves into two groups in discussing this subject. On the one hand are those who censure any operation done below the tubercle of the tibia and advocate operation at a very early date. On the other are those who say that it is very seldom necessary to go as high as the knee and advocate waiting at all hazards for a line of demarcation. Hutchinson in England, and Heidenhain in Germany, have of late been the advocates of early and high operations, while Landow takes the opposite view and advocates waiting for a line of demarcation in the foot and operating just above it, and if the process shows no sign of being limited to the foot he operates through the calf of the leg. The latter procedure would certainly have failed in the present case, as Dr. Tipton found the lower part of the superficial femoral entirely occluded, while in the left leg, although the anterior tibial was pervious, the walls were so thickened, especially at the upper part, that the lumen was very much encroached upon. This, to some extent, bears out Heidenhain's figures that the vessels affected in order of frequency are the anterior tibial, the superficial femoral, and the profunda femoris, this last being very rarely the diseased vessel.

* Read before the New Mexico Medical Society.

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RECIPROCITY OR UNIFORM MEDICAL LEGISLATION.

The desirability of a uniform standard of qualifications for practice throughout the United States is self-evident and is recognized in the reciprocity clauses contained in the medical practice acts of many of the states. That these reciprocity clauses are for the most part ineffeetive is due to many reasons, some of them valid, others perhaps not so unqualifiedly so. Each state makes its own medical law and establishes its standards. Any legal differences in these or any assumed laxity in the exeeution of the law may be made the eause of refusal of reciprocity, even when this is provided for in the statute. So long as there is no co-operation between the makers of the laws there can be no reciprocity.

Each state law is more or less modified to meet the imagined special local needs or interests and without regard to those of other states where different conditions may be imagined to exist. Further, while there has been an obvious intent to adopt the good features of similar laws of other states, sufficient care has often not been used to avoid their mistakes, and to note the legal questions that have arisen and that may apply to the proposed legislation. The give-and-take element, the element of compromise, which is almost inevitable in the construction of such laws, is entirely ignored as far as possible relations with other states in the union are concerned. The fact that these compromises are made in favor of internal interests is itself a potent reason for the rejection of reciprocity by other commonwealths. If we add to these reasons the fact that there is a not unpraiseworthy desire of each state in constructing its own practice act to improve on the laws of other states, and that variations made with this in view are naturally the most serious obstacles to reciprocity, we have no difficulty in appreciating the reasons why it has not been effected. The result of this state of affairs is a disastrous one in many ways; it is not only inconvenient to the individual practitioner, but it also tends to lower the standing of Ameriean physicians throughout the world. We are not judged elsewhere by our highest standards as much as by our lowest; in our medical as well as in other relations we are looked upon by foreigners as a Nation with a large N, and the minor state distinctions do not count. There need be no question as to the wisdom and policy of establishing a uniform high standard universally recognized within our national territories if it can in any way be shown possible.

The most obvious remedy for this unfortunate state of affairs, were it practicable, would be a national standard of medical qualifications, but this is impossible under our federal constitution. We have here the same governmental weakness that is felt when we come to deal with other health matters such as quarantine between the states, and in our marriage and divorce legislation.

A valuable, and it may be some time a fruitful, suggestion has been offered by Dr. C. K. Fleming in a recent address.[1] He points out that the National Government has the power and right to assist any state in any internal matter in which it may request or desire such aid. and suggests that the medical profession unite in the demand for a national bureau of health and medicine. Together with the investigation of health matters generally, one of the duties of this bureau is thus proposed: "This bureau should investigate the condition of the medical profession in the various states of the union, should classify the profession so far as possible with reference to determining the relative proficiency and efficiency of physicians in various states; should likewise investigate the laws regarding the licensing of physicians and the laws providing for the revocation of licenses, the grounds therefor, and the proceedings necessary to be taken in order to revoke licenses, the intellectual and moral standards required in the various states of the physicians, and generally to make a report in the regular annual report of the bureau, and full and complete investigation of the medical laws in the various states, with such recommendations as the bureau shall deem wise, such suggestions to be placed in the form of proposed legislative enactments, to be passed in full by sueh states as may agree to adopt the suggestions. As soon as practicable and as soon as such investigation ean be made as will warrant that step, the bureau should prescribe a full and complete set of laws, rules and regulations for the admission of physicians to the practice of medicine, for the controlling of physicians in the practice of medicine, and for the entire government of the profession in the various states; such legislation to be adopted by such states as may care to adopt it. Of course, the proposed legislation should embody such standards and such regulations as shall tend to uplift the profession and place it upon the high plane to which it aspires, and the regulations should be such as not to be irksome, but sufficient to prevent abuse and so planned as to give the greatest freedom of movement of physicians from one part of the country to another and to insure the greatest possible encouragement to those proposing to enter the profession upon legitimate lines." In addition to the above he also suggests that the bureau should investigate and classify in its reports the various medical colleges with reference to their eomparative efficiency and otherwise indieate the means to bring medical education to the highest practical plane of excellence. Of course, the law organizing the board should be so drawn up as to prevent its becoming a

1. Denver Medical Times, October, 1901.

creature of the politicians; and there is sufficient precedent in the present scientific bureaus at Washington to insure this being possible.

This, however, is not the only way in which the medical profession of the country can work, we believe efficiently, for the desired results. Every law regulating medical practice has heretofore been the product of the local organized profession; a national practice act will have to be the result of the co-operative endeavor and influence of the profession throughout the whole country. It may be that this can be best directed to the establishment of such a government bureau as above directed, but this is not all that can be done. The national organization of the profession, the AMERICAN MEDICAL ASSOCIATION, can and should take up this problem through the recently constituted House of Delegates. Committees should be formed to study the subject, to take and analyze the merits and defects of the state laws, to take note of the legal questions that have been developed and their solution, and to draw up tentatively the ideal standard which can be submitted to and discussed by the other organizations interested. The counsel of the leading representatives of the profession could not be better given in any other way.

The establishing of a high national standard of medical qualifications for government purposes as a requisite for government appointments not subject to examination, etc., while not binding on the states, could hardly fail to have a good effect on the professional standing at home and abroad. It would give foreigners a basis on which to judge us and should raise the general estimate of the American medical profession. The state qualifications are at present ignored by them, but they could hardly overlook a national license. And at home, if the plans here suggested are followed, it is reasonable to think it could hardly fail to have a general elevating tendency and in a short time lead to a uniform qualification throughout the states and thus be solved the question of reciprocity.

ENFORCEMENT OF MEDICAL LAWS.

To get results in the regulation of the practice of medicine, it is necessary first to get the needed legislation, and then to enforce the laws. To simply put the laws on the statute books and do nothing to enforce them is only half accomplishing the good sought to be obtained. Axiomatic as this may be, the idea has never seemed to be appreciated in the past by those who have been working for legislative enactments and for the regulation of the practice of medicine. Time, energy and money have been spent to get the necessary laws by committees of our state societies and by others, but this accomplished, nothing more has been done. Laws will not enforce themselves.

If a law is one whose enforcement will give satisfaction to all—except the one who has infringed it and who will suffer by its enforcement—there is no hesitancy on the part of the police, public prosecutor or the judiciary in punishing law-breakers. When the law affects only a certain class, it is different, even if the ultimate object of that law is for the good of the public. For instance there are laws made, in the interest of the health of the community, to secure sanitary plumbing, the direct effect of which is on the plumbers, compelling these to be qualified to do the work, and licensing them for this purpose. The plumbers' association sees that these laws are enforced, at least so far as it applies to their craft. Similar illustrations might be quoted. Nearly all states have laws for the protection of dumb animals, yet these are seldom enforced, except where associations, such as the humane societies, have been created to enforce them.

There are now laws on the statute books of practically every state and territory whose objects indirectly are for the protection of the people against quacks, charlatans and medical pretenders. Directly, however, these laws affect the medical profession. Their enforcement is expected to benefit the profession by limiting membership in it to those who are, nominally at least, honorable and qualified for the duties its members assume.

That the medical profession is directly interested is shown by the fact that all of these laws have been enacted on the demand and through the efforts of medical men. As the public is not closely interested, those who are elected by the public to see that the laws are enforced, and who cater to public sentiment, are liable to neglect their duties as regards enforcing these special laws, because "there is nothing in it" for them. Theoretically, the prosecuting attorneys are expected to enforce all laws, including those regulating the practice of medicine. Practically, they have not done so and will not do so. This is a condition that we might as well recognize and act accordingly, if we expect to have these laws enforced.

Dr. Harison[1] calls especial attention to this difficulty, and his remedy is "for medical men to devote their energy toward compelling the prosecuting or district attorneys to do their duty under the law." From the theoretical point of view, this advice may be correct, but practically, such energy would be wasted. Under present conditions these public prosecutors have nothing to gain by prosecuting illegal practitioners—neither political favor nor the applause of the populace.

Dr. Happel[2] gives the true remedy for the laxness in the enforcement of these laws. The remedy for this is, as for most of the curses which affect our profession, organization. As he says, well-organized, wide-awake county societies are the effective weapons for enforcing the laws, either from the fact that their political influence is sufficient to force the public prosecutor to do his duty, or because they are wide awake enough to employ an attorney to do it without the aid of a public prosecutor. There are scores of such county societies scattered through the country that will verify the assertion of Dr. Happel, but the difficulty here lies

1. See page 1303.
2. See page 1301.

in the fact that the profession in adjoining counties is unorganized and does nothing. This compels the active society to be on the alert all the time to keep out of their borders those who are permitted to practice in the adjoining territory.

What is needed is a well-organized active state society with its branches ramifying into every county and with a paid attorney of its own to act for the profession, independent of, or as an assistant to, the public prosecutor. We say "paid attorney," because from our experience and observation, we are confident that in no other way will the medical laws be enforced. Of course, to employ an attorney takes money, and to get money the state society must be supported by the whole profession of the state in a financial way. Not only is it necessary to have the financial support of the profession of the state, but also an organization in each county to report infringements of the law and to aid and coöperate with the state society. Then the whole territory would be covered and, with the mutual help, no difficulty would arise. This needs a more systematic organization than now exists in most of the states.

Reference has often been made to the effective work that has been done in Kentucky in ridding that state of quacks. The workers there get discouraged sometimes because of the fact that the profession in adjoining states is doing nothing, which makes it so much the harder for them. If like work were done in other states as is being done in Kentucky, there would soon be an end of quacks, pretenders and charlatans in the whole of the United States. The enforcement of the medical laws needs not only the coöperation of the county and state societies, but, as well, coöperative work among the various states.

TYPHOID PNEUMONIA.

Distinction is to be made between pneumonia with so-called typhoid symptoms, pneumonia due to mixed infection in the course of typhoid fever, and pneumonia due wholly or in part to the bacillus of typhoid fever. Strictly speaking, the term typhoid pneumonia perhaps should be limited to the last condition of which there are a few interesting instances on record, instances that bear scrutiny from the bacteriologic point of view. Typhoid bacilli have been isolated from pulmonary consolidations in typhoid fever a number of times after death, but writers, such as A. Fraenkel, are of the opinion that in most of these cases to the bacillus should be assigned only secondary importance in the etiology of the complicating pneumonia. In two cases of lobar pneumonia in typhoid fever, V. Stühlern[1] isolated during life the typhoid bacillus from the sputum, which in both instances was markedly hemorrhagic. In one of the cases he found the bacillus also in the material withdrawn by means of a syringe from the consolidated lung—lower and middle right lobes. In addition, he found also the micrococcus lanceolatus. In these two cases the typhoid bacillus was present, then, in the alveolar exudate, whence it was discharged with the sputum. In a third case of pneumonia in typhoid fever examined postmortem there were present in the lung diplococci and typhoid bacilli, and the pneumonia had a pronounced hemorrhagic character. Curschmann emphasizes the fact that pneumonias in typhoid fever more frequently give a hemorrhagic sputum than the common, genuine lobar pneumonias. Recently Dieudonne[2] reports another instance of pneumonia in typhoid fever with hemorrhagic sputum, diplococci and typhoid bacilli in the latter. Later, the sputum contained typhoid bacilli in pure culture. In this case the clinical picture presented was essentially that of pneumonia, and typhoid bacilli were present in the sputum for seven weeks and after convalescence was well established.

Cases like those mentioned in the foregoing show that the sputum in typhoid infection may be an important factor in spreading the bacillus of typhoid fever, just as in pest pneumonia the sputum is also a dangerous carrier of the pest bacilli. The importance of careful disinfection of sputum under these circumstances is self-evident. Hemorrhagic expectorate in the pneumonias complicating typhoid and also in apparent primary pneumonia should awaken the suspicion of the physician if the possibility that typhoid bacilli may be present and thus lead to further bacteriologic examinations of this class of cases which is highly desirable for a thorough understanding of their real nature.

1. Centralbl. f. Bakt., 1900, xxvii, 353-356. See Editorial note, JOURNAL A. M. A., 1900, May 5, 1138.

THE WRONG AND RIGHT WAY OF PROSECUTING ILLEGAL PRACTITIONERS.

In a certain town in a Western state a "cancer doctor," with no medical qualification, was pretending to cure not only cancers but other diseases also. On the instigation of some physicians he was arrested, taken before the justice court and fined. His lawyer appealed to the district court, and there the decision of the lower court was affirmed, but the attorney carried it to the supreme court. Meanwhile, the illegal practitioner kept on his work unmolested. In course of time the case came up before the supreme court, but those interested neglected to employ an attorney to follow it up, with the natural result that the case was thrown out and the cancer quack is still practicing in the same town; the physicians, disgusted at the outcome, are doing nothing there to suppress him. A few months afterward, in the same town, a Chinaman started with effective advertising and patients rushed to him. A few of the physicians employed a young attorney, who promised to carry the case through and rid the town of the Chinaman. He secured the names of some of the patients and had the Chinaman arrested, using one patient as witness. The Chinaman was fined, but appealed to the district court, giving bonds. The following day he was arrested and again fined. The day after, he was arrested twice, each time new witnesses in the form of patients being urged to appear against him and additional fines were assessed and bonds re-

2. Centralbl. f. Bakt., 1901, xxx, 481-483.

quired. Then, the Chinaman's attorney went to the physicians' attorney with a demand to know what he proposed to do, as the bonds given in each case were now amounting to quite a sum. The Chinaman's attorney was informed that his client would be prosecuted so long as he practiced illegally and that the cases would be followed to the supreme court if necessary. With that the Chinaman suddenly left the town and has never been heard of since. We give these as examples of two ways of enforcing the medical laws.

ANOTHER VICTIM TO OSTEOPATHY.

Osteopathy recently figured in a Toronto inquest, a woman having died suddenly at the office of one of these irregulars. She was being massaged for goiter, as it appears, and the manipulation of her tumor was followed by a hemorrhage into the lung with resulting suffocation and death. The osteopath, according to the reports, declared himself to be a product of the Kirksville school and claimed that it was not necessary for him to know anything about medicine. His case-book was brought into court and in it appeared cases diagnosed as typhoid, diphtheria and numerous other ailments. The jury verdict was a rather peculiar one: It acquitted every one from responsibility for the death, but condemned the treatment as dangerous, and expressed an opinion that strict laws should be enacted "to put an end to this dangerous practice and others of a kindred nature." Of course, until such law is made, the osteopath will probably go on; yet it is some satisfaction to know that the practice is condemned, even with a whitewash for the practitioner.

DEFINITION OF PRACTICE OF MEDICINE.

The proper wording of the definition of the practice of medicine is a point upon which, judging from the variance in state laws in this respect, there seems to be some difference of opinion. In several of the states no attempt is made to define it, the lawmakers evidently thinking it enough to leave it to the common acceptation of the meaning of the words. In other states they seem to have less faith in their judges and have more or less elaborately enumerated the acts that are included under this head. In some cases only a general definition is offered, such as "professing to practice or prescribing," "treating or professing to treat," etc. Others are more specific and give details, such as "using the designation of Dr. or M.D.," "diagnosing, suggesting or recommending remedies," etc. The element of compensation enters into many of the definitions, the practice is defined as doing all these for a fee. In some states the need is evidently felt of some specific statutory expression of what the practice of medicine is under the law, in others this is apparently not held to be so essential. While the public has only vague ideas on the subject in some respects, there would seem to be a sufficiently well understood established usage of the term that ought to be sufficient also in law. Admitting, however, the advisability of an explicit statutory definition, the important point is to have it the right one. A partial definition is worse than none, as its specifications are its limitations; what is not included, is not provided for. A too elaborate and detailed one gives the greater opportunity to pick flaws in its provisions and may by its excessive prohibitions excite opposition as attacking personal rights; a too loose and comprehensive one may possibly tempt a loose interpretation and nullify itself to a certain extent. The golden mean must be preserved, and this would seem at first sight to be not an easy task. With the variation of the theme however on our different state statute books, and the body of judge-made law that is accumulating there is a chance at least to learn something of what will and will not stand the legal tests and yet guard the public and the medical profession from the evils of illegal practice. A careful searching of supreme court reports would be a valuable aid in making up the definition of the practice of medicine. Those that have stood the test of attacks from varied points of view ought to be studied and from them a composite or adapted definition be compiled. It may be found that the simpler and briefer ones are the best.

CARE IN THE MANUFACTURE OF ANTITOXIN.

Serious results from the use of the diphtheric antitoxin in St. Louis are liable to do much harm through the use that will be made of them by those who are watching for a chance to fight the medical profession and by those who oppose serum therapy in general. That this is one of the avoidable accidents, it seems to us, can not be denied, although it is one of those peculiar cases in which it is hard to place the blame. Neither is the manufacture of antitoxin by the state or the municipality to be condemned on account of these results in St. Louis. While there is no blame to be attached to any one in particular, is it not possible that there has been a false economy on the part of authorities in utilizing broken-down horses of the police and fire departments and having them under charge of irresponsible poorhouse inmates while they were being used for serum inoculations? In the manufacture of such an important product as antitoxin there is need of the greatest care, of continued watchfulness, an absolute assurance of non-infection and non-infectious surroundings, and that only those who can be absolutely trusted in every respect should be employed, this including stable attendants. We do not charge the St. Louis Health Department with not having employed due precaution, but mention the possibility as it is suggested by reading the statements in the local press and those which appeared in our pages last week.[1] The question of economy should not be considered for a moment, as seems to be the case judging from the reports contained in the St. Louis papers. Commissioner Starkloff is quoted as saying that the city has been manufacturing its own antitoxin practically without cost, which is not an argument in favor of the continuation of such economy. The fact that it is cheaper supplied in this manner than to purchase it should not carry any weight whatever. The question to be considered is that of safety and guaranteed purity. It is strange, but a fact, that just now we are having more tetanus than usual in various parts of the country. In St. Louis it is said that other cases are occurring among children where antitoxin had not been used, and pos-

1. See pages 1258, 1260.

sibly a thorough investigation may result in unexpected developments and that perhaps more deaths have been credited to the use of the antitoxin than should have been.

Medical News.

ALABAMA.

Dr. William M. Mastin has reached Mobile after his trip round the world with Drs. Senn, Brower and Frank of Chicago.

The State's Health.—Dr. William H. Sanders, Mobile, state health officer, reports searlet fever prevalent in several countries, but states that there have been no eases even suspicious of yellow fever this year.

CALIFORNIA.

Personal.—Dr. James W. Brown, Grass Valley, who was seriously injured in a runaway accident, October 17, is now convalescent.——Dr. Albert J. Underhill, a graduate of Johns Hopkins Medical School, Baltimore, has located in Los Angeles. ——Dr. William H. Flint, New York City, has returned to Santa Barbara, where he formerly resided, to spend the winter.

Elizabeth Bard Memorial Hospital, Ventura, will be opened to receive patients on December 1. The hospital has been established by Senator Thomas R. Bard and Dr. Cephas L. Bard in memory of their mother after whom the hospital is named. The building is to accommodate forty patients, will have connected with it a training school for nurses, and will cost about $30,000. Dr. Bard will have immediate supervision of the hospital.

Camp for Consumptives.—Hemet, Riverside County, has a health camp for the care of consumptives. It consists of twelve tents, one for each person, with a court for physical exercise and for sun baths. Each court is surrounded by a high duck wall to screen it from others. The treatment embraces living and sleeping in the open air and daily exposure of the naked body to sunshine and air, with proper food and exercise.

COLORADO.

Quarantine Against Plague.—Colorado still maintains a quarantine against Chinese from San Francisco.

Personal.—Dr. William T. H. Baker, Pueblo, has been made examiner of recruits at the Pueblo recruiting station, vice Dr. Warren, ordered to another post.——Dr. William C. Mitchell, Denver, bacteriologist of the State Board of Health, has returned from an official investigation of the plague situation in San Francisco.

Infectious Diseases.—The State Board of Health reports that during October 118 cases of diphtheria, 179 of scarlet fever and 54 of smallpox were reported. Compared with September, this shows an increase of 13 cases of diphtheria, 77 of scarlet fever and 39 of smallpox. The increase in smallpox is due to the failure at different places to recognize the first case.

New Sanitary Regulations.—The State Board of Health has adopted a sanitary code in which are two important regulations to go into effect Jan. 1, 1902. One requires the report of every case of typhoid fever by the attending physician or householder to the local health officer, and by him to the State Board of Health. The other requires the securing of a burial permit from the local health officer before any dead body can be buried or otherwise disposed of.

ILLINOIS.

Personal.—Dr. Amos J. Thornber, Powellton, has moved to Burlington, Iowa.——Dr. George Sibbard, Seneca, has opened an office in Morris.

Herman D. Cable Memorial.—The Herman D. Cable addition to the Evanston hospital, erected at a cost of $28,000, and accommodating 30 patients, was opened for public inspection, November 9.

Quarantine Regulations.—The Clinton Board of Health has formulated rules for quarantine and has directed that the health officer hereafter shall leave a copy of the regulations with each family quarantined.

Penalty for Unlicensed Practice.—Suit has been instituted against "Dr." Williams in the Union County Circuit court to compel him to pay $1100 in fines for practicing medicine in the state without a license. It is averred that Williams was warned more than a year ago by a member of the State Board of Health that he must cease practice until he should have complied with the requirements of the state law, but that he paid no attention to this warning and went on practicing.

Communicable Diseases,—Typhoid fever is epidemic in Kankakee, where 150 cases have occurred: the local health officer, Dr. William E. Scobey, is endeavoring to secure an investigation of local sanitary conditions and the adoption of measures for the present checking of the disease. Freeport has a number of cases.——Searlet fever is said to be raging in Hamilton, where the schools have been closed. On account of the disease the schools of Ridott, Seward and Winnebago have been closed.——Diphtheria has appeared in Garrett Biblical Institute, Evanston, and in Ridott township.——Smallpox has caused the closure of four schools in the western part of Hancock County. Fourteen houses are quarantined in Red Bud. Grafton has fourteen cases of the disease. The Elvaston, Eagle and Brown schools have been closed on account of the prevalence of the disease.

Chicago.

Dr. F. Gregory Connell has been appointed surgeon to St. Vincent's Hospital, Leadville, Colo., and has left for his post of duty.

Registration of Nurses.—Graduate nurses of Chicago will ask from the next state legislature a law requiring the registration of trained nurses.

Bequest to Hospitals.—By the will of Mary Corrigan, Alexian Brothers' Hospital, St. Elizabeth's Hospital, St. Joseph's Hospital and St. Anthony's Hospital each receives $5000.

Beds Endowed.—Edward Finley and wife have donated property valued at $10,000 to found and maintain two free beds in the Hibbard ward at St. Luke's Hospital. They will be known as the "Edward Finley" and "Dorcas A. Finley" beds.

Illinois Medical College has purchased for $45,000 a piece of property 50 by 100 feet, at the southwest corner of Washington Boulevard and Halsted street, and after making extensive changes in the building, will use it as a medical college and dispensary.

Institute for Scientific Investigation of Infectious Diseases.—We understand that one of the wealthy families of Chicago is arranging to endow, in a most liberal manner, an institution for the study and scientific investigation of infectious diseases. The details and particulars have not yet been made public, but it is reported that it will be second in importance only to that of the gift by Mr. Rockefeller.

Exemption from Smallpox.—The continued exemption of the city from smallpox is a source of gratification to the Health Department. It is not too much to claim that Chicago's present freedom from the pest—no case since August 12—is due in great measure, at least, to the effects of the vaccination campaign. On the other hand, the fact developed that 15 per cent., or more than a quarter of a million of the population, is still unvaccinated.

Satisfactory Health Conditions.—Measured by the continued low death rate the public health conditions of Chicago seem to be eminently satisfactory. The number of deaths last week, 397, represents an annual rate of 11.77 per thousand of population. There were fewer deaths last week, as compared with the preceding week, from typhoid fever, Bright's disease, consumption and cancer. The mortality among infants and persons over 60 years of age was also lower, but among children between 1 and 5 years there was a slight increase. Diphtheria deaths during the week numbered 15, this being the highest number since the week ended Feb. 2, 1901, when 17 deaths were recorded from this disease. The diphtheria mortality for the year, however, is unusually light. Some spread of measles is noted.

INDIANA.

Diphtheria in mild form has invaded Greencastle and strict quarantine has been established.

A sanatorium is to be built at Hammond by Dr. James P. Henderson, to cost $20,000 and to accommodate 43 patients.

Physicians' Census.—The report for 1900 of the State Board of Medical Registration and Examination will show that there are in Indianapolis 647 physicians and about 6500 in the state.

Licenses Revoked.—The State Medical Board, on November 6, revoked the licenses of "Dr." Hibbard, who has a "gold cure"

at Marion, holding that he was not entitled to practice under the diploma he held, and that of "Dr." D. K. Boyer, Middlebury.

Personal.—Dr. F. E. Ray, formerly assistant physician at the Central Indiana Hospital for the Insane, has opened an office in Indianapolis.——Capt. Frank W. Foxworthy, assistant surgeon, U. S. Volunteers, who has been on duty in the Philippine Islands with the Thirty-fourth Infantry, and as superintendent of the City Hospital, Manila, has returned to Indianapolis and resumed practice.——Dr. George L. Perry, Westchester, has gone to Chicago to take a hospital position.

Deaths in October.—The Monthly Bulletin of the State Board of Health reports 2614 deaths in October, an annual rate of 12.2 per 1000. In the same month of 1900 there were 2933 deaths, a rate of 13.7 per 1000. The death-rates per 100,000 for 1900 and 1901, respectively, were, from tuberculosis, 134.5 and 135.5; diphtheria, 47.8 and 24.3; typhoid fever, 89.5 and 95.6; diarrheal diseases, 97 and 68.9; pneumonia, 63.7 and 60.4; cerebrospinal meningitis, 26.2 and 8.9; cancer, 37.9 and 43.1; violence, 50.6 and 49.7. The comparison is in favor of 1900, and being by rates is fair.

IOWA.

Isolation Hospital Burned.—Tracey Home, Des Moines, a hospital in which fifteen smallpox patients were quarantined, was badly damaged by fire, November 7. The inmates were rescued by firemen and police.

Quarantine Raised.—As no cases of contagion have arisen from the visit of a party of school teachers of Marshalltown to the Tama Indian Reservation, the local health authorities have ordered the quarantine raised.

Personal.—Dr. Robert A. Patchin, Des Moines, has been seriously ill, but is now improving.——Dr. Alexander M. Cowden, Grandview, has located at Washington.——Dr. John J. Ball, Creston, has moved to Brooklyn.

Smallpox Among Indians.—The member of the State Board of Health detailed to investigate the conditions in the Tama Indian Reservation regarding smallpox has reported that five deaths have occurred, that several cases exist and that the Indians refuse to be vaccinated.

KANSAS.

Measles is epidemic in Diamond Springs, Morris County.

Smallpox.—The situation in Fort Scott is alarming. There are now more than 20 cases in the city, and the Washington school has been closed. Baldwin has eight cases, all mild and all quarantined. One case is reported from Argentine.

Personal.—Dr. Robert N. Dinsmore, Richmond, has moved to Baldwin City, where he has bought the residence of Dr. Henry C. Owen.——Dr. John Maclay, Weir City, has purchased the residence of Dr. Dinsmore at Richmond, whom he will succeed in practice.

Hospitals Demanded.—The people of Kansas City are demanding that the city build a city hospital and an emergency hospital, as those at present existing are overtaxed, and are, in addition, private institutions dependent for their support on voluntary contributions.

Mitchell Hospital Opened.—The hospital annex of the Kansas State Protective Home, Leavenworth, was opened October 27. The building is for the use of colored people, contains 7 rooms and can accommodate 25 patients. Dr. Charles M. Moates is physician in charge and is assisted by Dr. Clarence C. Goddard and others.

MARYLAND.

Diphtheria is reported to be epidemic at Eastern Berlin and Westernport, where the public schools have been closed, and at Piedmont.

Typhoid with Relapses.—At his clinic November 9 Dr. Osler showed a case of typhoid fever in which there had been four genuine relapses.

Baltimore Deaths.—For the week ended November 9 there were 181 deaths, 3 being from typhoid fever, 9 from pneumonia, 4 from diphtheria, and 28 from tuberculosis.

State Examinations.—At the semi-annual state examinations for license to practice medicine 28 persons presented themselves, 3 of whom were women and one colored.

Johns Hopkins Historical Club.—At the meeting of this club November 11 papers were read by Dr. John Turner, Jr., on "Ancient Anatomists," and by Dr. Eugene F. Cordell on "The Medicine and Doctors of Juvenal."

Personal.—Dr. P. G. Wooley, Baltimore, has been appointed research fellow in pathology by the faculty of medicine of McGill University, Montreal, and will assist Dr. Adami, his especial work being the discovery of means to combat infectious diseases.

Addition to St. Joseph's Hospital.—Two new wards which have been added to St. Joseph's Hospital, Baltimore, were opened November 7. The funds for one building were raised by the Ladies' Auxiliary, and for the other by a bequest from the late Louis Doda. One ward is for the use of colored patients.

Medical Classics Donated.—A prominent member of the Medical and Chirurgical Faculty has presented to the library about 100 volumes of medical classics purchased in Amsterdam last summer. The oldest work is a Celsus of 1497, and there are five editions of Hippocrates, Oribasius, Rufus of Ephesus, Willis, Boerhaave, Jenner and others.

MASSACHUSETTS.

Epidemic Disease.—Fitchburg is threatened with an epidemic of typhoid fever and Danvers has more than 100 cases of measles.

New General Hospital.—Dr. Charles H. Cogswell, Boston, has purchased the Langwood Hotel in the Middlesex Falls Reservation and will establish a general hospital there.

Personal.—Dr. L. R. Bragg, Gloucester, has located in Webster.——Dr. George K. Blair, late interne at the New York Hospital, has established himself in practice in Salem.——Dr. Charles F. Canedy, Shelburne Falls, has decided to open an office in Greenfield.

Resolutions.—At the regular bi-monthly meeting of the Berkshire District Branch of the Massachusetts Medical Society at Pittsfield, October 31, resolutions of respect were offered to the memory of Drs. Thomas Riley and Daniel E. Thayer, deceased members of the society.

MICHIGAN.

Doctor Fined.—Dr. Albert H. Steinbrecher, Detroit, was fined $10 and costs for neglecting to notify the Board of Health of a case of scarlet fever for 48 hours.

Conference of Health Officials.—The next general conference of health officials in Michigan will be held in Ann Arbor, November 21 and 22. An invitation has been extended to manufacturers of formaldehyde apparatus to attend and exhibit their disinfectors.

Mortality in State During October.—There were 2548 deaths returned to the State Department for the month, corresponding to a death rate of 12.6 per one thousand population. The number of deaths returned for the month is 338 less than the number of deaths registered during the preceding month, and is 269 less than the number returned for October, 1900. There were 444 deaths of infants under 1 year of age, 167 deaths of children aged 1 to 4 years, inclusive, and 674 deaths of persons aged 65 years and over. Important causes of deaths were as follows: Pulmonary tuberculosis, 158; other forms of tuberculosis, 31; typhoid fever, 88; diphtheria and croup, 49; scarlet fever, 18; measles, 2; whooping cough, 5; pneumonia, 143; diarrheal diseases of infants under two years of age, 158; cancer, 126; accidents and violence, 190. There were two deaths from smallpox.

MINNESOTA.

Dr. Emil G. Geist, St. Paul, formerly house physician of St. Joseph's Hospital, sailed for Europe, October 31.

New Hospital.—St. John's Hospital, Springfield, which was built this past year at a cost of $16,000, was dedicated on October 27. The hospital will be under the management of the Lutheran deaconesses, is modern in construction and is well equipped.

Smallpox Increases.—The fortnightly report of the State Board of Health shows 144 cases of smallpox as compared with 137 for the previous two weeks. The greater number of cases are reported from Moorhead and Crookston and vicinity. Clay county reports 26; Polk, 22; Otter Tail, 21; Norman, 12; Murray, 8; Pope, 7; Fillmore, 13; Lyons, 7; Winona, 5, and Red Lake, 6.

MISSOURI.

The Missouri Baptist Sanatorium, St. Louis, has been given $75,000, which will be sufficient to pay its indebtedness and leave an endowment of $32,000.

Health Department Hampered.—The Municipal Assembly of St. Louis has declined to appropriate $10,000 asked for by

the Health Department for salaries of sanitary officers, inspectors and fumigators.

Did Not Find Tetanus Bacilli.—C. A. Snodgrass, the bacteriologist, employed by the St. Louis Health Department to examine the antitoxin which was prepared by the city, reports that no tetanus bacilli were found by him in the samples of August 24. These samples were taken from the same serum that was used in the fatal cases.

Personal.—Dr. E. H. Brumbaugh has entered on his duties as superintendent of the Ensworth Hospital, St. Joseph.——Dr. Charles F. Greene, Poplar Bluffs, has been appointed local surgeon of the Southern Mississippi and Arkansas Railroad.——Dr. Elias B. Roe, Crab Orchard, has moved to Orriek.——Dr. Charles H. Lester, Kansas City, has been seriously ill with an infected hand, but is now improving.

MONTANA.

Dr. Albert Butler, Carbonado, has located in Red Lodge.

C. A. Baxter, Butte, was fined $100 and costs, October 23, for practicing medicine without a license.

Smallpox has broken out simultaneously in several localities in Carbon County.

Successful Candidates.—Of those who applied for examination for license to practice, at the recent meeting of the State Board of Helena, 17 passed, and 1 was refused license on account of unprofessional and dishonorable conduct during the examination.

Butte is credited by the Bulletin of the Department of Labor with having the highest death-rate from pneumonia of any city in the United States with over 30,000 population. Its death rate from typhoid fever was within one of the lowest, and it had no malaria.

Typhoid Fever.—The disease is apparently under control in Red Lodge. The Great Falls Board of Health has reported that the cases of typhoid fever are due to the turning up of so much new ground by the boulevarding and improvements going on, rather than to the use of infected milk. It calls attention also to the failure of proper sewerage and the neglect of property owners to connect their houses with existing sewers.

NEW JERSEY.

Dr. Emery Marvel, Atlantic City, has gone to Vienna for four months.

Smallpox.—Three cases of smallpox were discovered in one day, at Newark, one of which, it is alleged, was concealed from the authorities.

NEW YORK.

Smallpox.—A number of cases of smallpox have been reported at Niagara Falls.

To Increase Lunacy Examination Fee.—The physicians of Wayne County have presented a resolution before the Board of Supervisors, asking that the fee for lunacy examinations be raised from $5 to $10.

Craig Colony Prize Awarded.—At a meeting of the Board of Managers of Craig Colony, October 8, the report of the Prize Committee was approved, and the prize of $200 was awarded to Professor Carlo Ceni of Pavia, Italy. The successful essay, the title of which is "Serotherapy in Epilepsy," will shortly be published.

Fifth District Branch of the State Medical Association will hold a special meeting at the Palatine Hotel, Newburg, N. Y., on Wednesday afternoon, November 20. Important papers will be presented by Dr. John B. Deaver, Philadelphia, and Drs. Chas. E. Quimby and William Rice Pryor, New York. These papers will be followed by discussions. A large attendance of physicians is anticipated from among the members residing in the Fifth District Branch, which includes the Counties of Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster and Westchester. For the accommodation of the physicians in Manhattan who wish to attend this meeting a special car will be attached to the 11:50 a. m. train, on the West Shore Railroad, Weehawken Ferry. Luncheon will be served at Newburg at 1:45 p. m. The meeting is called for 2:30 p. m. All physicians are cordially invited to be in attendance.

Buffalo.

Dr. Earl G. Danser has been elected coroner of Erie County.

Diphtheria has again appeared in the public schools, 13 children were found to have the disease in a latent form, proven by cultures made in Public School 59.

The Exposition Hospital on the Exposition grounds has been closed permanently. A surgeon will be stationed in the service building to care for any injured workmen employed on the demolition of the buildings.

Smallpox.—Health Commissioner Wende is preparing a communication for transmission to the aldermen, giving a detailed account of the history of the 13 cases of smallpox which have appeared in the city during the summer and fall. The patients now under treatment for the disease are doing nicely, and there is no imminent danger of an epidemic.

Endorsement of the Health Department.—Petitions are being circulated by prominent Buffalo physicians asking for the re-appointment by Mayor-elect Knight of Health Commissioner Wende and Assistant Health Commissioner Green. Their appointment is petitioned for irrespective of political affiliation; the department of health under the present management has been conducted upon strictly non-political principles with the objects of maintaining the public health, reducing mortality and protecting our industries.

New York City.

Coroner Enjoined.—The Supreme court has handed down a decision restraining Coroner Zucca from trying Coroners' Physician Dr. Hamilton Williams, and removing him from office. The court holds that the power of removal is expressly vested in the Board of Coroners, and not in any individual member.

Memorial Hospital not to be Erected.—The Skene Hospital for self-supporting women as a memorial to the late Dr. A. J. C. Skene, has been dissolved by order of the Supreme court of Brooklyn, N. Y. The sum needed was $300,000, but of the $23,000 subscribed only $3261 were paid, and this last amount is to be distributed among the contributors.

Bellevue Hospital has just lost by death a man who enjoyed the distinction of being the oldest patient in that institution. His name was Thomas H. Robinson, and he had been constantly there since Feb. 21, 1881, suffering from a spinal affection brought on by a railroad injury. He made himself very useful about the hospital, and gained many friends there.

Scarlet Fever Epidemic Threatened.—Public School No. 99, at Throgg's Neck, Burough of the Bronx, was closed November 9, because out of the 400 pupils between 30 and 40 were reported sick with a mild form of scarlet fever. The infection was traced to a child who returned to school after an illness of some weeks and a course of "home treatment" without a diagnosis.

Midwife's Negligence.—Miss Julia O'Neill, a midwife, has been arrested on the charge of having failed to register as a midwife, and of having neglected to call in a regular physician to see a newly-born infant who was suffering from a severe form of ophthalmia. As the result of her negligence the child became totally blind. This occurred last December, but the case only came recently to the knowledge of the authorities when the baby was brought to the Manhattan Eye and Ear Hospital for treatment.

The Incubator Troubles.—A case that has come up in the sheriff's office brings out some interesting facts connected with the baby incubator exhibit at the Pan-American exposition. This exhibit was in charge of three partners, and one of these now claims that the other two partners have hidden the apparatus and have secreted the proceeds of the show. The assertion is made that the exhibit in Buffalo brought in $125,000, and that instead of receiving one-fourth of the gross proceeds he has been paid only $14,000. The plaintiff also declares that it is the intention of the other partners to still further defraud him by taking the exhibit without his consent to the exposition to be held in St. Louis.

Ward vs. Hospital.—The case of Helen D. Ward against St. Vincent's Hospital has been passed upon once more, this time by the appellate division. It will be remembered that the plaintiff brought suit because she had been severely burned by a hot water bottle through the negligence of a nurse, and that the case has already been tried twice. Judgment on the first trial was reversed because the trial justice misconstrued the action to be one in tort and not on contract. A judgment was awarded the plaintiff. The appellate division now orders a reversal because the trial judge refused to charge the jury, as requested by defendant's counsel, that the defendant was not bound to assign to the plaintiff the best nurse in its hospital, but only a nurse who was ordinarily well trained and ordinarily competent and skilful.

OHIO.

McKinley Hall.—The new chapel and amusement hall at the State Hospital for the Insane, Massillon, which is to be dedicated November 21, is to be called McKinley Hall.

New Hospital Needed.—Dr. Walter W. Brand, health officer of Cleveland, advises the erection of a new isolation hospital to cost $3500, the old building to be used as a detention hospital for suspects.

Personal.—Dr. John E. Hill, Tallmadge, has moved to Akron.——Dr. William T. Howard, Jr., has been appointed city bacteriologist of Cleveland.——Dr. Charles A. Foster, Washington Court House, who is about to locate in Newark, was given a farewell dinner by his professional brethren, October 28.——Dr. Howard W. Quirk, Cleveland, has moved to Jersey, Licking County.

Dr. William H. H. Nash, Columbus, an old and esteemed practitioner, who through the infirmities of age and failing eyesight is no longer able to continue his professional work, and who has no relatives or means of support, has been admitted to the Home for the Aged through the good-will of the Columbus Academy of Medicine, which has authorized the managers of the Home to draw upon it for $150, and which has pledged itself to the payment of all moneys required to provide him with a home for the rest of his life.

PENNSYLVANIA.

Vaccinate Railroad Employes.—Dr. Edwin C. Town, medical examiner and chief surgeon of the Pennsylvania Railroad Company, has, within the last two weeks, aided by assistants, vaccinated 4200 of the company's employes, and reports that 80 per cent. are successful.

Contagious Diseases.—Diphtheria is epidemic near Ruffsdale, where 80 cases are reported and where the public schools have been closed. At Greenfield, Erie County, seven have died; many are ill. The disease has appeared at Thiel College, Greenville.——Smallpox has appeared at Bryn Mawr College.

Personal.—Dr. John J. Cannan, Williamsport, has returned to Bradford, and resumed practice.——Dr. William E. Keller, Scranton, has been appointed a member of the medical staff of the Lackawanna hospital.——Dr. Frederick G. Ibach, Mauch Chunk, has moved to Tamaqua.——Dr. Robert M. Kennedy, Pottsville, past assistant-surgeon, U. S. Navy, has been appointed surgeon and has been assigned to duty at Norfolk, Va.

For Poor Consumptives.—The board of managers of the Free Hospital for Poor Consumptives, Philadelphia, makes the following appeal for support: "We have 40 patients, in various hospitals, for each of whom we pay $5 a week. We have 2 female patients in the Adirondacks, for each of whom we pay $7 a week. We have 20 male patients in our camp at White Haven, who stand us about $5 a week per patient. Our expenses aggregate about $1300 a month. The state gives us about $400 a month, and we are compelled to raise $900 a month from the charity of the people. Our treasury is empty. We have no money to pay our October bills. A word as to our work. The 40 dying patients are given a decent place in which to die, and we are abating 40 centers of distribution of tuberculosis. Ninety per cent. of the 30 cases at White Haven we believe will recover, and return to lives of usefulness. In August their gain was twelve pounds per patient; in September, seven pounds per patient. Four patients have returned to work. It is certain that tuberculosis can be cured, but money must be provided."

TENNESSEE.

Dr. Robert W. Dulaney, Jonesboro, has been appointed physician for the Southern Lumber Company in Johnson County.

Franklin Fined.—"Dr." J. C. Franklin, Nashville, found guilty of sending obscene matter through the mails, was fined $1700 and costs, October 25.

Memphis Hospital Medical College opened, November 1, for the year, with an initial registration of 461, the largest enrolment in the history of the institution. Dr. Hugh Spencer Williams delivered the opening address.

WISCONSIN.

Milwaukee Hospital benefited to the extent of more than $1000, on annual donation day, November 7.

Must Build Separately.—The city attorney of Milwaukee and district attorney of Milwaukee County have decided that under the law the city and county have no right jointly to erect an isolation hospital.

Post-Graduate School in Milwaukee.—Drs. William H. Earles, Walter H. Neilson and Warren B. Hill, Milwaukee, have incorporated the Milwaukee Post-Graduate School and Polyclinic, with a capital stock of $50,000.

Smallpox.—Marshfield has 9 cases; 3 new cases have developed in Ashland, where the Catholic schools have been closed; 6 cases are under treatment at Superior; a case has been reported at Prentice; 2 new cases are in quarantine at La Crosse; at East Wrightstown the village schools have been closed because of an outbreak of the disease; Kaukauna, Sherwood and Stockbridge have cases; many cases are occurring around Wausau, necessitating closure of schools; at Little Chute more than 50 cases are under treatment; De Pere reports 6 cases of the disease.

GENERAL.

Smallpox.—The United States Health Reports give 262 as the number of cases of smallpox in the country for the week ending November 9.

Army Medical School.—The 6th session of this institution began November 14. The instruction is given in the Army Medical Museum and Library, in Washington, D.C. Nineteen student surgeons reported for instruction at the school and the course will last five months.

Plague in San Francisco.—Another death from bubonic plague was reported October 31. Dr. M. J. White, of the Marine-Hospital Service, diagnosed the case. The lay press states that the Chinese, instigated by the state authorities, have begun proceedings against the City Board of Health to have the quarantine removed.

CANADA.

Convictions Against Druggists.—Some time ago several druggists of Toronto were fined in the police court for practicing medicine without the proper qualifications. Appeals were taken to the Court of Sessions with the result that all have had their convictions quashed.

Smallpox in Manitoba.—The epidemic of smallpox in the province of Manitoba has been more extensive than at first supposed. There have been 8 or 9 cases at Hartney, 6 or 7 at Deloraine, 4 at St. Andrew's, 2 in Winnipeg, one at Neepawa and one at the Selkirk Asylum, a case which proved fatal.

Dr. Philip Weatherbe, Halifax, has just completed his course in medicine at Edinburgh University. He is at present on a visit to Canada and intends taking a commission in the Indian Army Medical Corps. He has had an experience of nine months' service in South Africa with the Scottish Hospital Corps from Edinburgh.

Laval University.—The annual report of Laval University, just issued, shows that encouraging progress is being made in this institution. The attendance last year in all the faculties was 719, an increase of 114 on the preceding year. There were graduated in medicine 42 students. Dr. Etienne Larin has recently been appointed assistant professor of clinics at the Hotal Dieu Hospital.

Toronto Sanitarium.—The Local Board of Health has again recommended to Council the submitting of a by-law to the electorate on January 1, for $50,000 for a free consumption sanitarium, the city to hand over the said sum when a like amount has been paid to the city treasurer in trust. The sanitarium is not to be situated farther than 40 miles from the city and is to care for all classes of patients. Action will also soon be taken against the spitting nuisance in the way of placing notices in public places.

A New Disease.—The books of the Toronto osteopaths recently impounded by the Crown show that these "practitioners" do not strictly confine their work to their own particular pathy. In the list of diseases which they have "treated" in Toronto, rheumatism, typhoid fever, pin worms, Morton's disease, etc., appears one set down as "rumbling in the head, especially in bad weather or poor health." If the alienists wish to keep abreast of the times, they will have to get after the pathology of this new disorder.

Dr. C. A. Hodgetts, Toronto, who for some time has been associated with the Ontario Board of Health as a special medical inspector, has been appointed permanently to the position of medical inspector to the unorganized districts of Ontario. There is a population of 100,000 scattered along a frontier of some 6000 miles of railway, lake and river; it will be Dr. Hodgetts' special duty to see that the recent regulations of the Health Department with regard to lumber camps, railway-construction camps, etc., be carried out.

Osteopathy Dangerous.—The Ontario Medical Council is getting after several of these "practitioners." Two of them recently appeared before a coroner's jury in regard to the death of a young lady through the bursting of a blood vessel while undergoing treatment for a large goiter. The jury in this case recorded their verdict, that they believed this sort of practice unskilful and dangerous, and that strict laws should be enacted which would put an end to this dangerous practice, and others of kindred nature which they believe are all too common in Toronto.

Eddyite Convicted.—A trial which has excited a great amount of interest in Toronto was that which ended a few days ago in the conviction of a father for manslaughter, who failed to provide proper medical attendance for his infant son that died from diphtheria. The case is to go on to the Appeal Court in order to ascertain whether medicine is a necessary of life according to the Canadian Criminal Code. In connection with this trial there were several amusing incidents, one very steadfast in the faith asserting that he, by his prayer, could escape a bullet from the Crown Prosecutor, provided the latter directed one at him. Of course the laugh was on the Crown Prosecutor, who had to declare that he was a good shot in spite of the faith of the witness.

The Indian Medicine Men of British Columbia.—Dr. J. C. Spencer, medical missionary to the province of British Columbia, says that the Indian medicine men are the great foes of the missionaries. They administer no medicines, but try to drive out the evil spirits of the disease by taking the medicine themselves. If one fails he calls in a second, and when all have failed, they initiate the sick man into the mysteries of their practice, so that he may make friends with the evil spirits himself. There is a hospital at Fort Simpson on the Pacific Coast which does an immense amount of good not only to the Indians but to Orientals as well. This hospital receives $1,500 annually from the government. It is well equipped and supplied with three nurses.

Site for Sanitarium for Tuberculosis.—The alarming increase in the number of deaths from tuberculosis in the Province of Quebec during the past two or three years has resulted in a number of Montreal physicians making an effort to establish a sanitarium nearer the city. The Fathers of the Holy Cross who have charge of the Cote des Neiges College, have offered a large tract of land on the north side of the second mountain; and the physicians consider the situation all that could be desired for a consumption hospital. A leading citizen has offered to endow the institution sufficiently to meet the expenses of running it, provided the provincial government erect the building. The following shows the death rate and the annual increase: 1894, 2664; 1895, 2791; 1896, 2826; 1897, 3079; 1899, 3487; 1900, 4782.

Research Laboratory Promised.—The free hospital now in course of erection near the Muskoka Cottage Hospital will soon be ready for the reception of patients. The main building is the gift of Mr. W. J. Gage, of Toronto, and the estate of the late Mr. Hart A. Massey. It is located in a beautiful park of 56 acres within half a mile of the town of Gravenhurst. Fifty beds for Toronto's poor are being provided; the Grand Trunk Railway will carry free of charge 100 patients each year to and from the institution. All in excess of that number will be carried at half rate. Physicians and nurses will also be carried free of charge. This hospital will be for those in the earlier stages of consumption; the National Sanitarium has purchased a fine site near Toronto at a cost of $30,000 for advanced cases. It is understood that the late Mr. W. E. H. Massey has bequeathed $30,000 for a research laboratory in connection with the Gravenhurst institution.

FOREIGN.

Smallpox in Panama.—The Marine-Hospital Service reports 300 cases of smallpox in Panama, Colombia; the city has a population of 30,000.

Plague in Great Britain.—The last case of bubonic plague in Glasgow was reported and placed in the hospital November 1. The authorities consider that the disease has been stamped out. At Hull a suspicious death occurred on a steamship, believed to be due to the plague.

Professor Antona, Italian senator, sued the authors of a defamatory article published in an Italian paper, accusing him of the responsibility for the death of a patient. The courts decided in his favor and condemned the defendants to two years of imprisonment and a fine of 2000 lire.

Virchow's Pathologic Institute.—The newly-opened pathologic institute at Berlin is Virchow's special pride. He announces that he will personally conduct a group of twenty colleagues through it every Saturday afternoon. Applicants for the privilege inscribe their names beforehand.

Deaths Abroad.—The professor of forensic medicine at Madrid, Dr. T. Yanez y Font.——Dr. J. H. Chievitz, professor of anatomy at Copenhagen.——Dr. G. Naeher, one of the leading physicians of Munich, a pioneer in the effective co-operation of the members of the profession in the "battle of the clubs."

The Amalgamation of the Scientific Institutes at Hamburg.—The various scientific institutes at Hamburg are to be grouped like a university, and the directors and lecturers will form the faculty, issue reports, etc. The official title of the faculty will be the "Professorenconvent" of the Scientific Institutes. Besides promoting individual research, the institutes will carry on research desired by outside scientists and advise in scientific matters generally. Hamburg has long been wishing for a university of its own, and this step is in the line of the consummation of its desires.

Nothnagel's Sixtieth Birthday.—The *Wiener Klinische Rundschau* devoted its issue of October 13 to a souvenir number in honor of Nothnagel's 60th birthday. It contained twenty-six original articles by his pupils and friends and a full-page reproduction of the fine oil portrait which was hung with appropriate ceremonies in his amphitheater, at Vienna, the "first internal Klinik," when he resumed his lectures. He had declined this homage and spent the actual birthday out of town, but his friends were not to be deprived of the opportunity to do him honor.

German Congress of Physicians and Scientists.—The seventy-third annual congress of the German society of "Aerzte und Naturforscher" met this year at Hamburg with a large attendance. The principal addresses were on Herz's discovery of electric waves; the chemical provisions of the cell; the problem of fecundation; importance for chemistry of electric methods and theories; the natural defensive forces of the organism; the latest developments in regard to ions, electrons, etc.; the protecting substances in the blood, and the present status of the theory of the descent of man. The next congress will be held at Carlsbad in September, 1902.

LONDON LETTER.

The Diminution of the Birth Rate.

"The increasing sterility (infecundity would have been a more accurate word) of American women," discussed by Dr. Geo. J. Engelmann and others at the last meeting of the American Medical Association (THE JOURNAL, October 5, p. 890) has its counterpart in this country, though the phenomena are not nearly so striking. At the recent meeting of the British Association—not a medical but a scientific body, which meets annually to discuss the scientific problems of the day—the diminution of the birth rate in such widely separated English-speaking lands as England, the United States and Australia was discussed. Mr. Edward Cannan showed that the average number of children to a marriage in the United Kingdom has fallen from 4.36 in 1881-84 to 3.63 in 1900. The decline is probably due to the artificial prevention of conception—a practice which appears to become more and more prevalent.

Smallpox Increase in London.

A somewhat serious increase in the number of cases has just occurred. On October 24 no less than 11 fresh ones were notified—making 168 under treatment. On October 26 no less than 13 fresh cases were notified—the largest number received in one day during this outbreak. The deaths from the disease since the beginning of the outbreak are as follows: Week ending September 28, 5; October 6, 3; October 12, 3; October 19, 11. The neglect of vaccination is a great difficulty in checking the outbreak. Public bodies such as school boards, boards of guardians for the poor and vestries are often hostile or indifferent to vaccination and will not give the public vaccinators facilities for revaccination of those under their charge.

A New Vaccination League.

To counteract the anti-vaccinationists, who are a strong body in this country, a vaccination league has been inaugurated, and it is proposed to start an active campaign in London for the purpose of spreading knowledge on lines antagonistic to the Anti-Vaccination League. Already it has received the adhesion of many influential members of the medical profession: Sir Alfred Garrod, Professor Stewart and Mr. Jonathan Hutchinson, who was one of the leading members of the Royal Commission on Vaccination. It is intended that steps shall be taken to enforce the vaccination law in certain districts of London.

Literature will be distributed and a magazine in the interests of vaccination will probably be started. Lectures may also form a feature of the league's propaganda.

Hematuria in Childhood.

At the Harveian Society Mr. Campbell Williams read a short but very exhaustive paper on this subject. He pointed out that in many cases of calculus hematuria was absent, the only diagnostic signs being dysuria and frequent micturition. The first symptom of renal tuberculosis might be copious hematuria. Caruncle of the urethra was an occasional cause of hematuria in female children. In scurvy-rickets hematuria might precede the usual osseous and oral manifestation of the disease. In hemophilia, also, hemorrhage from the bladder or kidneys might be the primary symptom.

Irish Vital Statistics.

The annual report of the registrar-general for Ireland is of a hopeful character, though the drain on the population of the country which has been going on for the last half century still continues. During the last decade both the marriage and birth rates have considerably increased, the former from 4.45 per 1000 to 4.96, and the latter from 22.3 to 23.1. The death rate shows a downward tendency, being 17.7 in 1899 compared with 18.2 in 1890. Emigration has fallen from 13 per 1000 in 1890 to 9.2 in 1899. The average during the decade was 9.8. Ireland is remarkable for the small number of illegitimate births. Comparing the provinces the percentage of children born out of wedlock in Ulster was 3.6, in Leinster 2.5, in Munster 2.5, and in Connaught 0.5. Cancer is on the increase in Ireland as elsewhere. The rate for last year was .06 per 1000, an increase of .02.

Correspondence.

Cigarettes.

FT. ROBINSON, NEB., Nov. 9, 1901.

To the Editor:—The statement that "cigarettes are the least dangerous form of tobacco," as quoted from Dr. Kuborn's Report to the Royal Medical Academy of Belgium, as noticed in the Paris Letter in THE JOURNAL of October 12, seems to challenge justifiable inquiry. A very large percentage of the United States troops who have returned from Cuban service are addicted to this mode of tobacco-using, and—while the *modus operandi* of cigarette smokers may differ in different parts of the globe—the above mentioned quite generally inhale the smoke for several seconds, and then slowly expel it through the nostrils. By that time it seems to have parted almost entirely with the, at least grosser, products of combustion, as is apparent from its color, and as one might expect from its long and intimate contact with the moist surfaces of the lungs, bronchi, fauces, nares, etc., the opportunity for the absorption of the nicotin is much greater than in ordinary smoking. Further, as I have frequently seen done, if, before inhalation, this smoke is forced from the lips rapidly over the nail of the thumb, or better still, over a piece of cool glass or porcelain, a fan-shaped, brown stain will be deposited, rank in odor and oleaginous with nicotin. At each inhalation the major portion of this tobacco essence is directly absorbed by the mucous tissues and must tend to produce nicotinism far more rapidly than is possible with any other method of tobacco-using.

E. W. BLACK.

St. Luke's Hospital.

NILES, MICH., Sept. 30, 1901.

To the Editor:—My attention has been called to an editorial in your issue of the 7th inst. concerning the so-called St. Luke's Hospital of this city. I see you are not fully acquainted with the methods and managements of this institution, and, although I know as much as anyone on the outside, probably, I can not say that I know all about it.

I believe this so-called hospital commenced operation here in the fall of 1896, but its work has always been conducted with as much secrecy as possible, and it was not until it had been doing business some months that we learned of its methods. Our State Board, at its meeting in January, 1899, considered the matter quite at length, but no law under which proceedings could be commenced could be found and nothing was done.

St. Luke's is organized and incorporated under the laws of the State, and it is capitalized at $10,000, 400 shares at $25 each. Of these "Dr." Charles W. H. B. Granville, of Niles, Mich., had 196, "Dr." Arthur C. Probert, of Washburn, Wis., 203, and Annabelle Granville, of Niles, Mich., 1.

Under this law St. Luke's issued "certificates of merit," as they were termed on their face, although in appearance diplomas, and the name of Nicholas Senn, as well as many other men of good standing in the profession, was used to sell them.

I do not think St. Luke's Hospital ever really had a patient in it, at least not one who stayed over 24 hours.

In order to reach this institution, the Legislature of 1899 passed Act No. 151, entitled "An act to specify the sources of authority for the issuing of medical diplomas," etc. Since this time I am not aware that St. Luke's has issued anything except what they term "certificates of stock," which have the appearance of diplomas, however, and it seems to us here very laughable that they should be able to sell such things to anybody in their right mind. If you know of any infringement of the laws of the State by this institution, I would like to know of it.

You speak of "Dr." Granville as the head of the concern. He was never more than a figurehead. Although no state law could reach the institution, one of Dr. Granville's numerous wives found him out, and, after being put under $500 bonds, he left for parts unknown, and St. Luke's paid the $500; so he is only a memory.

"Dr." Probert has been the real head at all times. He has held positions of honor, influence and trust, in business, politics and religion. He is a nice appearing man and a particularly dangerous one. . . . . At the present time proceedings for his extradition from this State by the Governor of Indiana for defrauding the inhabitants of Bourbon, Ind., and vicinity, are in progress. He is generally described by those who know him well as a "bird."

Respectfully yours, FRED R. BELKNAP, M.D.
Member Michigan State Board of Health.

A Battle with the Clubs at Ludington, Mich.

The lay press has contained recently accounts of a club or society organized in Ludington, Mich., for the purpose of getting cheap medical treatment. The newspaper accounts are all similar to the following, clipped from a Chicago paper:

"Ludington (Mich.) doctors began it with something termed a doctors' trust. Now Ludington has a Health Association, with one community doctor, supported by monthly dues from association members, who number 240 families, each paying 50 cents a month. As a result, one doctor, who, at least, is named Best, is drawing $1,800 a year salary for being ready at all hours and seasons to respond to Health Association calls. A woman doctor with the Scandinavian name of Hoglund forced the measure. Dr. Hoglund went to Mason County as midwife and broke the union scale of Mason County physicians. The doctors prosecuted her. The Swedish Aid Society espoused her cause and helped her fight. The Ludington Health Association was the fruit of the bitterness engendered. Dr. Herbert M. Best of the Detroit Medical College was chosen as physician to the association. His only pay is the 50 cents monthly which each household in the association pays in for his services. There are 240 families now in the association, and the number is growing rapidly. When Dr. Best arrived in Ludington he was waited upon by members of the Mason County Medical Association and importuned to join. As a "contract" physician, however, he discovered that he was not eligible to membership. Then he was boycotted by the "regular" physicians. So far as Dr. Best has gone with his work he is pleased. He is sure of his comfortable salary for a country doctor, and he has found no disposition on the part of the members of the association to abuse their privileges. In calling on a family he simply asks to see the membership card. Last week he averaged only three office calls and two visits

to residences daily. He says when the busy season of winter comes on if he is worked too hard the association will get an assisting physician. In the meantime, when Dr. Best, who is young, has to call in consulting physicians in a case, he has to go to Grand Rapids for the talent."

In reply to a request for information in regard to the matter, the following has been received. It seems that both of the doctors are Canadians, and graduated from a Detroit college this year:

LUDINGTON, MICH., Nov. 9, 1901.

To the Editor:—The information you request takes us back to 1900, when the Michigan law took effect, requiring all practitioners of medicine to re-register. On this being accomplished all the physicians in Mason County legally working, except one, met and formed the Mason County Medical Association, under the same by-laws as govern all other medical associations and for the same purposes and to protect themselves against the deadbeats, who are as thick here as in other places

According to law, and by request of the State Board of Registration, they forwarded the names of all those illegally practicing medicine to the prosecuting attorney. Among these occurred the name of a woman that has lived in Ludington for years. She received legal notice to stop practicing midwifery, but refused to obey, claiming the right to continue on account of some paper she holds from Sweden. The others notified stopped, at least for a time. One newspaper here abused, lied about and scandalized the Mason County Medical Association, calling it a trust, etc., and supporting the Swedish Aid Society in their view of the prosecution of the case. At the present writing the prosecuting attorney has not attended to the case.

You see that all the physicians could do would be to protect the people against her bad work and injuries (and they are many) by supplying evidence or being witnesses in some sad cases well known to the profession here, and they will testify when the case is reopened.

This, no doubt, was used as an excuse for the formation of the so-called "health association" by the editor of the paper referred to above (who is one of their officers) and the other leaders, aided by a false report circulated by them that we had doubled our charges since organizing, also that we would attend no one owing a bill until every dollar owed any member was paid. If true, a brutal proposition, but there is not a word of truth in it. The facts are: the fees were unchanged from the prices charged for years, but if a family or person is on the "deadbeat list" they have to pay any doctor of the association the new call, or visit, cash, and all subsequent visits cash. This is the only restriction placed against anyone on the "D. B. List."

Several doctors in Ludington were offered the chance to act with, or for the so-called "health association" against the other ten physicians in the city, but all refused to entertain such an unfair proposition.

Two outsiders came here to see about it, but would not enter into such an agreement; the third, Dr. Best, a 1901 graduate of Detroit College of Medicine, came under a guarantee of $50 per month. The Medical Association feeling that no one acquainted with the circumstances would continue to act with a body of people under such false statements and conditions, invited Dr. Best to our regular supper and meeting, there explaining the professional status and all facts relating thereto. We asked him to join with us, assuring him that we would do all that we could to assist him when occasion demanded. But if he continued with the "health association" under existing circumstances we could not in justice to ourselves have anything professionally to do with him. He decided to stay with the "health association," and induced another young man of the same college and class (May 9, 1901), whose name is Dr. George V. Oill, to come here and associate with him. Their success has not been good, and even in the two months numbers have left the "health association" and come back to their regular physicians; a large number we do not wish to return for their names form a part of the "deadbeat list."

The Mason County Medical Association thank you for the interest taken, and unite with you for professional integrity.

We are, dear sir, yours respectfully, A. P. McConnell, President; Samuel C. Burland, Secretary pro tem.; W. H. Taylor, and fourteen others.

Association News.

New Members.

The following is a list of new members for October:

ALABAMA.

McKinney, E. P., Kellyton.
McWhorter, G. T., Riverton.

ARKANSAS.

Kinsworthy, J. H., Little Rock.
Rush, J. O., Forrest City.
Cooper, St. Cloud, Fort Scott.

CALIFORNIA.

Lockwood, Chas. D., Los Angeles.
Roseuthal, C. H., San Francisco.
Ohrwall, H., San Francisco.

COLORADO.

Shyrock, H., Denver.
Foley, J. W., Leadville.
McDouald, R. J., Denver.
Root, M. R., Denver.

CONNECTICUT.

Fitzgerald, E., Bridgeport.
Swain, H. L., New Haven.
Smyth, H. E., Bridgeport.

FLORIDA.

Jackson, J. M., Jr., Miami.

GEORGIA.

Brawner, J. N., Atlanta.
Davidson, A. C., Sharon.
Brewster, W. A., Augusta.

ILLINOIS.

Rea, I. H., Chicago.
Andrus, S. C., Rockford.
Henkel, F. W. E., Chicago.
Froom, A. E., Chicago.
Mortou, E. C., Chicago.
Jacque, J. L., Chicago.
Cambourn, S. A., Chicago.
Hall, G. C., Chicago.
Seim, Gerhard, Blue Island.
Ragsdale, A. C., Metropolis.
Heffernan, M. T., Decatur.
Cottrell, David, Chicago.
Crocker, F. S., Chicago.
Eskridge, J. H., Chicago.
Kindig, F. M., Chicago.
Michael, May, Chicago.
McClauahau, A. C., Chicago.
Rogers, D. W., Chicago.
Snydacker, E. F., Chicago.
Walker, W. H., Chicago.
Woley, H. P., Chicago.

IDAHO.

Galbraith, A., Pocatello.

INDIANA.

Eichel, S. J., Evansville.
Braxtan, T. N., Loogootee.
Hays, T. A., Burns City.
Phares, J. W., Howell.
Durham, J. L., Graysville.
Morgan, E. E., Ft. Wayne.
Chambers, J. D., Ft. Wayne.

KANSAS.

Milton, C. A., Dodge City.
Elliott, C. S., Fulton.
Dietrich, A., Pittsburg.

KENTUCKY.

Strother, W. H., Big Spring.
Johnson, C. B., Frankfort.
Williams, T. D., Bardstown.
Coleman, W. H., Louisville.

LOUISIANA.

Lowe, M. M., New Orleans.
King, A. C., New Orleans.

MASSACHUSETTS.

Hudnut, F. P., Boston.
St. Germain, J. P., New Bedford.
Curtis, W. C., Wollaston.
Durant, C. E., Holyoke.
Collins, W. J., Northampton.
Finch, G. H., Springfield.
Yoosuf, A. K., Worcester.
Bolster, A. S., Worcester.
Minshall, A. G., Northampton.
Mitchell, H. W., Hawthorne.
Page, A. K., Boston.
Woodbury, H. E., Natick.

MARYLAND.

Franks, H. L., Baltimore.
Green, J. R., Towson.
Windsor, S. J., Davies Quarter.

MICHIGAN.

Gillette, L. M., Battle Creek.
Doyle, C. E., Augusta.
Haass, E. W., Detroit.
Wittwer, E. A., Auburn.
Beers, M. M., Stevensville.
Mercer, R. E., Detroit.

MINNESOTA.

Novak, E. E., New Prague.

MISSOURI.

Steele, W. E., Sedalia.
Madry, A. H., Aurora.

MONTANA.

Brooke, B. C., Helena.
McKenzie, T. J., Anaconda.
Wiener, J. O., Great Falls.
Fairchild, J. H., Great Falls.
Fergusou, G., Great Falls.

NEW JERSEY.

Ward, E. M., Bloomfield.
Bunting, P. D., Elizabeth.
Henggeler, J. H., Paterson.
Newton, W. K., Paterson.
Pierson, F. H., Elizabeth.
Sell, F. W., Rahway.
Whitehorn, H. B., Verona.
Schlemm, R., Weehawken.

NEBRASKA.

Hostetter, W. A., Omaha.
Eskildson, R. E., Omaha.

NEW HAMPSHIRE.

Hodsdan, E. W., Ceutreville.
Adams, C., Concord.

NORTH CAROLINA.

Goodman, A. B., Crescent.

NEW MEXICO.

Parkhurst, W. E., Roswell.

NORTH DAKOTA.

Wink, H. K., Jamestown.

NEW YORK.

Blauvelt, G. F., Nyack.
Peddle, G. H., Perry.

OHIO.

Calliuan, D. F., Jr., Corning.
Ray, Victor, Ciucinuati.
Webb, Dudley, Cincinnati.
Sager, B. E., Cleveland.
Martin, Friedrich, Cleveland.
Messenger, A. C., Xenia.

OREGON.

Clark, E. S., Chemawa.
Ziegler, A., Portland.

PENNSYLVANIA.

Barshinger, M. L., York.
Brittain, W. C., Cochranton.
Corss, Frederick, Kingston.
Donaldson, H. J., Williamsport.
Hamilton, J. W., N. Clarendou.
McLain, A. M., Irvin.
McIlwaine, G. D., Washington.
Morton, G. D., Philadelphia.
Whitney, H. L., Plymouth.
Wagenseller, B. F., Selinsgrove.
Klump, G. B., Bellefonte.
Phillips, F. J., Pittsburg.
Westervelt, H. C., Pittsburg.
Mathiot, E. B., Pittsburg.
McCreight, W. S., Allegheny.
Huggins, R. R., Sharpsburg.

Murray, R. J., Sewickley.
Boyer, H. P., Philadelphia.
Coyle, H. J., New Brighton.
Wallace, R. S., East Brady.
Kennedy, L. C., Scranton.
Hammond, Wm., Glenolden.
Kurtz, W. J., Howard.
Kerns, S. P., Philadelphia.
Miller, J. C., Lincoln University.
Johnston, G. C., Pittsburg.
Roberts, J. K., Cochranton.
Heard, J. W., Pittsburg.
Baner, L. G., Philadelphia.
Krauss, Frederick, Philadelphia.
Saller, Jos., Philadelphia.
Murray, G. D., Scranton.
Reed, J. A. E., Lancaster.
Leitzell, Spring Mills.
Emerick, H. M., Milton.
Simcox, L., Philadelphia.
Mason, J. B., Mt. Jewett.
Fernad, M. K., Philadelphia.

RHODE ISLAND.

Rothwell, N. P., Pawtucket.

SOUTH DAKOTA.

Miller, Frank, Aberdeen.
Miller, E. O., Aberdeen.
McNutt, H. E., Aberdeen.
Brown, S. A., Sioux Falls.

TEXAS.

Nichols, Clay, Yoakum.
Jones, I. J., Austin.
Beckman, A., Bartlett.
Williams, Dee, Anson.

TENNESSEE.

Copenhaver, W. McS., Bristol.

VERMONT.

Avery, J. W., Proctor.
Hazelton, W. F., Bellows Falls.
Marshall, M. S., Montpelier.
Millliken, C. W., Post Mills.
Burr, C. H., Montpelier.

VIRGINIA.

Pole, E. A., Hot Springs.
Robinson, W. A., Brink.

WASHINGTON.

McLoughlin, G. N. Ft. Simcoe.
Stewart, F. J., Tacoma.
Dewey, H. W., Tacoma.
Coe, A. H., Spokane.
Luhn, H. B., Spokane.
Martin, H. S., Spokane.
Smith, D. L., Spokane.

WEST VIRGINIA.

Oyster, L. C., Lambertport.
McIntire, G. L., Grangeville.
Workman, W. H., Worth.

WISCONSIN.

Purtell, E. J., Milwaukee.
Hurd, H. H., Chippewa Falls.

Book Notices.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases, and Head of Neurological Department, Northwestern University Medical School, and Frederick Peterson, M.D., Chief of Clinic, Department of Nervous and Mental Diseases, and Clinical Lecturer on Psychiatry, Columbia University. Third Edition, Revised and Enlarged. Cloth. Pp. 870. Price, $5.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

This third edition of Church and Peterson's work has, as they state in their preface, been thoroughly revised, both with additions to its subject-matter and in the rearrangement wherever necessary. New illustrations, new tabular matter, and diagrams for assistance in the solution of diagnostic problems have been added. These changes bring the book fairly up to date, and it will continue to be the favorite text-book that it has been since its first appearance. In the main, however, the text is unchanged and there have been no extensive additions or new diseases noticed. We still think the second part by Dr. Peterson, though admirably written and convenient for the student, is hardly equal in its arrangement and its recognition of the latest acquisitions on the subject to the first part furnished by Dr. Church. Dr. Peterson holds to the old-fashioned arrangements of insanity to a great extent and does not fall in with the modern tendency to accept the changed views that have been recommended by Kraepelin and others in regard to certain important types. However, his descriptions are, in the main, very good, and for a convenient text-book of insanity it will be likely to hold its own. Like many other writers he recognizes cerebral spinal syphilis as distinct from general paralysis, notwithstanding the close resemblance between the two, but we hardly trust the parallel column comparison between the two diseases, and we think the student would be misled if he diagnosed or refused to diagnose general paralysis on account of some of the distinctive features that are here pointed out. The illustrations are numerous and in the main admirable. Taking the book as a whole, we can say nothing that is not commendatory.

A Manual of Determinative Bacteriology. By Frederick D. Chester, Bacteriologist of the Delaware College Agricultural Experiment Station, and Director of the Laboratory of the State Board of Health. Cloth. Pp. 401. Price, $2.60. New York: The MacMillan Co. 1901.

The author of this book undertook the arrangement of all described species of bacteria in order to determine whether certain forms isolated by him from the study of the bacterial flora of cultivated soils were new forms. The labor was so great that it was thought best to embody the results in book form so that other workers might have the advantage of the results. The book serves principally the purpose of identification. The classification adopted is not claimed to be perfect, but the best one that could be made under the circumstances. From glancing at the index and the body of the work it is believed that Chester's work will prove to be a useful one in determining the identification of unknown bacteria. By its aid the pupil, as well as the advanced worker, will be able readily to determine the identity of bacterial cultures. The work will, therefore, be a useful laboratory manual. There is an interesting glossary of descriptive terms used in bacteriology, and the morphology and cultural characteristics of bacteria receive consideration in the first part of the work. The scheme for the study of bacteria given in the third chapter is certainly a valuable one, and if it were followed much greater clearness would result in the study and description of bacteria. The book can be recommended confidently to laboratory workers in general.

A Treatise on the Acute, Infectious Exanthemata. Including Variola, Rubeola, Scarlatina, Rubella, Varicella, and Vaccinia, with especial reference to Diagnosis and Treatment. By William Thomas Corlett, M.D., L.R.C.P. Lond. Professor of Dermatology and Syphilology in Western Reserve University. Illustrated by 12 Colored Plates, 28 Half-tone Plates from Life, and 2 Engravings. Pages viii-392. Sold only by Subscription. Price, Extra Cloth, $4.00 net, Delivered. Philadelphia: F. A. Davis Company. 1901.

The book by Dr. Corlett is the outgrowth of his own experience as a young physician beset with difficulties in the differential diagnosis of the acute infectious eruptive diseases. The dangerous, communicable nature of these diseases has so far rendered it almost impracticable to give adequate clinical instruction to medical students. It must be acknowledged that in the practical teaching of medicine, the shortcomings of the present methods are greater in the class of eruptive diseases than in any other. The photographic reproductions are excellent, especially those illustrating various forms and stages of smallpox. Some of the colored plates are also quite satisfactory. The book certainly fills a fairly well-defined place and will be found useful to student and practitioner alike. There is an interesting chapter devoted to the early history of eruptive diseases. The diseases considered are variola, vaccinia, varicella, scarlatina, rubeola and rubella. From the publisher's standpoint, the work does not leave much to be desired, although the binding might have been better.

Principles of Surgery. By N. Senn, M.D., Ph.D., LL.D., Professor of Surgery in Rush Medical College, in Affiliation with the University of Chicago. Third Edition. Thoroughly Revised, with 230 Wood-Engravings, Half-Tones, and Colored Illustrations. Royal Octavo. Pp., xiv-700. Extra Cloth, $4.50 net. Philadelphia: F. A. Davis Company. 1901.

Senn's "Principles of Surgery" has been before the profession ten years, and is perhaps the best work which has come from this author's pen. It is so well known that a general review of it is unnecessary. There have been few changes made in this the third edition. We note a short chapter on Degeneration, and one on Blastomycetic Dermatitis. Also a few X-ray plates have been introduced illustrating some of the changes which take place in bone. Many of the later views on some of the questions in surgical pathology have not yet found their way into the book; for instance, in describing the white corpuscle of blood one is led to suppose there is but a single variety of leucocyte, and no mention is made of the various kinds which are present in the blood and the changes which they undergo in certain pathological conditions. Notwithstanding this fact the work is a very excellent one, and the best one in the English language which deals with this subject.

The Principles and Practice of Medicine. Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., Fellow of the Royal Society. Fourth Edition. Cloth, Pp 1182. Price, $5.50. New York: D. Appleton & Co. 1901.

Few books on medicine in recent years made a more favorable impression on first appearance than Osler's "Practice." The reason for this is not hard to discover; it was original, complete, scientific, but above all written in a charming manner. It appeared first in 1892 and in nine years four editions have been required. The edition just issued contains a more thorough revision than either of the preceding ones. The opening chapter on typhoid fever has been in the most part rewritten, and that on malaria has necessarily been recast to

accord with the present knowledge of the etiology and prophylaxis of this disease. The chapters on many of the other more common diseases have also been in part rewritten. Many diseases not mentioned in former editions have been considered in this one, making the book more complete than ever. It will continue to hold its position as one of the best text-books on the practice of medicine in the English language.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. For Practitioners and Students. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry and Kindred Branches, Including Much Collateral Information of an Encyclopedic Character, Together with New and Elaborate Tables of Arteries, Muscles, Nerves, Veins, etc.; of Bacilli, Bacteria, Micrococci, Streptococci; Eponymic Tables, Diseases, Operations, Signs and Symptoms, Stains, Tests, Methods of Treatment, etc. By W. A. Newman Dorland, A.M., M.D., editor of the "American Pocket Medical Dictionary." Second Edition, Revised. Leather. Pp. 770. Price, $4.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

The necessity for a second edition of this dictionary inside of eleven months is sufficient evidence to show the popularity with which it was received on its first appearance. The general arrangement of the words and their definitions is very satisfactory and the use of thin Oxford Bible paper and flexible covers has made it possible to produce a word book, full and complete enough for all ordinary use and yet so compact that it is but little larger than the ordinary abridged dictionary. For everyday use it is the most satisfactory of any published.

A TEXT-BOOK OF BACTERIOLOGY. By George M. Sternberg, M.D., LL.D., Surgeon-General, U. S. Army. Illustrated by Heliotype and Chromo-lithographic Plates and 200 Engravings. Second Edition, Revised. Cloth. Pp. 707. Price, $5.00. New York: Wm. Wood & Co. 1901.

Sternberg's text-book of bacteriology has for some time been the standard and all that is necessary to say of this edition is that it still fully represents the state of knowledge of the subject of which it treats. In this edition there have been added two new sections, one on Protective Inoculations in Infectious Diseases and one on the Bacteriology of Plant Diseases. It is impossible for the physician who pretends to keep in touch with modern medicine to get along without a text-book on bacteriology, and we know of none more deserving of recommendation than this one of Sternberg's.

AN INTERNATIONAL SYSTEM OF ELECTRO-THERAPEUTICS. For Students, General Practitioners, and Specialists. By Numerous Associated Authors. Edited by Horatio R. Bigelow, M.D., Permanent Member of the American Medical Association. Second Edition. Revised and brought up to date, with several New Departments, Embodying the Most Recent Developments of the Science. Edited by G. Betton Massey, M.D., Ex-President and Fellow of the American Electro-Therapeutic Association. Thoroughly Illustrated. Royal Octavo. Pp. x-1147. Price, $6.00. Philadelphia: F. A. Davis Company. 1901.

Four new articles appear in this edition: on the galvanic current, on the electrical treatment of aneurysm, on the Roentgen rays, and on the treatment of cancer by cataphoresis of mercury. The book is a compilation of articles on electricity by various men, rather than a systematic work, and consequently contains much that is mere repetition. Many of the chapters are out of date.

Married.

BENSON S. ROBERTS, M.D., to Miss Janie S. Ing., both of Baltimore, October 29.

THOMAS MOORE, M.D., to Miss Evelyn Scott, M.D., both of Detroit, Mich., October 30.

EUGENE E. MARTIN, M.D., to Miss Mae C. Stemler, both of Buffalo, N. Y., October 30.

R. WOODS OGILVIE, M.D., to Miss Jimmie Lester, both of Princeton, Ky., November 6.

A. B. AUSTIN, M.D., to Miss Mary Emma Shaw, both of Long Beach, Cal., October 24.

BENJAMIN L. HUME, M.D., to Miss Harriet Randolph Jones, both of Petersburg, Va., October 30.

CHAUNCY M. BENEDICT, M.D., to Miss Claire Clawson, both of Salt Lake City, Utah, October 29.

WILLIS SANFORD HOBSON, M.D., to Miss Florence Marsh Lower, both of Cleveland, October 30.

JACOB A. STOUT, M.D., Columbus, Ohio, to Miss Carrie Bidleman, Circleville, Ohio, October 22.

HENRY SAMUEL ZIMMERMAN, M.D., Chicago, to Miss Pearl Mae Whitman, Cameron, Ill., October 30.

JOSEPH D. DAVIDSON, M.D., Fresno, Cal., to Mrs. Louise Peden Rose, Nashville, Tenn., November 12.

GEORGE H. BRANNON, M.D., Mayor of Manhattan, Ill., to Miss Margaret Moran, Chicago, October 31.

AUGUSTUS RALPH REDER, M.D., assistant medical director of the Burlington road, Chicago, to Miss Susie Alice Pierce, Aurora, Ill., October 30.

Deaths and Obituaries.

Arthur E. Mink, M.D., Syracuse (N. Y.) University College of Medicine, 1887, professor of nervous and mental diseases and of general medicine in the College of Physicians and Surgeons, St. Louis, neurologist to the City Hospital and a member of the St. Louis Medical Society and the American Medico-Psychological Association, died after a prolonged illness from hepatitis, at his home in St. Louis, October 31, aged 37.

Melville D. Peck, M.D., Columbian University, Washington, D. C., 1869, died at his residence in Washington, D. C., October 25, from heart disease, aged 59. He was born in Solon, N. Y., and enlisted in the Tenth N. Y. Cavalry and at the close of the Civil war began the study of medicine. After practicing in Cortland, N. Y., he became a clerk in the U. S. Patent Office and finally in the Pension Bureau, where he remained until his death.

James Lytton Flynn, M.D., Kentucky School of Medicine, Louisville, 1865, was found dead in his room at Milwaukee, November 2, aged 68. He was a veteran of the Mexican war, a surgeon in the Union Army during the Civil war, a practitioner in Louisville for a time, but since 1871 had been a resident of Milwaukee. Apoplexy was the cause of death.

William A. Dinwiddie, M.D., Jefferson Medical College, Philadelphia, 1859, assistant surgeon during the Civil war, and thereafter a lieutenant of cavalry in the U. S. Army, died after a long illness, due to injuries received in the line of duty, at Palmyra, Wis., November 4, aged 62. The remains were taken to Cedar Falls, Iowa, for interment.

Charles H. Orton, M.D., Trinity Medical College, Toronto, 1848, a resident of Milwaukee from 1849 to 1888, where he was city and county physician for twelve years, for many years a member of the common council and its president, and who had lived in Chicago since 1888, died at his home in that city, November 8, from senile debility, aged 84.

Reuben D. Mussey, M.D., Miami Medical College, Cincinnati, 1871, a prominent physician of Cincinnati and for the past twenty-five years surgeon and chief surgeon of the Cincinnati, Hamilton and Dayton Railroad, died November 4, at his residence in Glendale, from blood poisoning, after a protracted illness.

Edward E. Riggs, M.D., Jefferson Medical College, Philadelphia, 1886, a prominent physician of Pittsburg, resident physician at Mercy Hospital and a member of the South Side Medical Society, died at the home of his father, Dr. Isaac W. Riggs, in Pittsburg, November 2, from consumption, aged 37.

John W. Allen, M.D., Bellevue Hospital Medical College, New York, 1881, a member of the Louisiana State Medical Society and a prominent practitioner of Shreveport, La., died at his home in that city October 27, from nervous prostration, after an illness of two years, aged 43.

John T. Laning, M.D., Pennsylvania Medical College, Philadelphia, 1863, a surgeon in the New Jersey Volunteers during the Civil war, and thereafter a practitioner in Wash-

ington, D. C., was found dead in a churchyard in Hopewell, N. J., his home, October 31, aged 70.

D. B. Allen, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1861, surgeon of the First Iowa Cavalry and Thirteenth Iowa Infantry during the Civil war, and an esteemed practitioner of West Liberty, Ohio, died at his home in that city, November 3, aged 78.

Oscar E. Yates, M.D., twice mayor of Holland, Mich., a prominent physician of over 30 years' practice, a member of the Michigan State Medical Society and of the American Medical Association, died at his home in Holland, October 27, from pneumonia.

Edward G. White, M.D., Starling Medical College, Columbus, Ohio, 1854, a surgeon in the United States Army during the Civil war, and a resident of La Grange, Ind., for nearly half a century, died at his home, October 27, from apoplexy, aged 71.

Joseph N. Norcross, M.D., Jefferson Medical College, Philadelphia, 1872, one of the best-known and most respected physicians of Old Town, Maine, died at his farm at Otter Stream, near Milford, after an illness of two years, November 9, aged 50 years.

William F. Harris, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1885, state senator for his district and a successful and popular practitioner of Hancock County, Ill., died at his home in Ferris from typhoid fever, November 3, aged 37.

Asbury C. Helm, M.D., Bellevue Hospital Medical College, New York, 1871, died October 23 from the effects of an overdose of morphin, at his residence in Sawyer's Bar, a mining camp in Siskigou County, Cal., aged 56.

Edwin Windele, M.D., M.R.C.S. Edin., 1876, died at his residence in San Francisco, November 3, after a short illness, aged 52. He had been a resident of California since 1879, and of San Francisco since 1884.

James Barnes, M.D., Jefferson Medical College, Philadelphia, 1825, a life-long resident of Beaver County, Pa., died at his home in New Brighton, October 27, after many years of illness, aged 82.

John C. Orr, M.D., University of Pennsylvania, 1895, captain and assistant surgeon of Volunteers, of Chambersburg, Pa., died September 12, from dysentery, at Mindanao, Philippine Islands, aged 31.

Eugene D. Whitney, M.D., College of Physicians and Surgeons, Chicago, 1898, health officer of Painesville, Ohio, died at his home in that village from typhoid fever, November 4, aged 32.

George Francis Swan, M.D., University and Bellevue, New York, 1899, a member of the New York State Medical Association, died at his home in Highbridge, New York City, November 5.

Charles M. Spalter, M.D., Harvard Medical School, Boston, 1900, and a former interne in the Woman's Hospital, New York City, was accidentally shot and instantly killed, November 8, aged 26.

Edward G. Watson, M.D., Rush Medical College, Chicago, 1884, a prominent physician of Friend, Neb., and fusion state senator in 1897, died at his home, October 31, from typhoid fever.

James F. Morris, M.D., Memphis (Tenn.) Hospital Medical College, 1884, died at Crowley, La., November 4, from cerebral hemorrhage, after a short illness, aged 45.

John W. Littleton, M.D., College of Physicians and Surgeons, Baltimore, 1885, who had practiced in Salisbury and Albemarle, died in Greensboro, N. C., November 2.

Orrin N. Moon, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1881, died at his home in Howell, Mich., November 3, from kidney disease.

William W. Blackman, M.D., New York University, 1848, one of the oldest and best-known practitioners of Iowa, died at Osage, November 5.

William J. Gillett, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1868, died at Parsons, Kan., October 30, aged about 60.

C. Purcell Woodward, M.D., Baltimore University School of Medicine, 1892, of New Egypt, N. J., died at Toms River, November 4.

James Gun, M.D., McGill University, Montreal, 1861, for forty years a practitioner at Durham, Ontario, died October 23.

Thomas P. Crittenden, M.D., University of Nashville, Tenn., 1864, died at his home in Nashville, November 2.

Miscellany.

Jules Bizzozero.

Italy has lost this year one of her most prominent medical scientists, the distinguished professor of general pathology at the University of Turin. Jules Bizzozero was born at Varesa, in 1846. He obtained his general education at Milan and graduated in medicine at Padua when 20 years of age. He became a military surgeon during the War of Independence immediately after, but devoted the remainder of his life to scientific work in medicine. He studied with the microscopist, von Frey, in Zürich, and afterwards with Virchow, in Berlin. At the age of 27 he was made professor of pathology in the University of Turin.

As a student at Padua, he began work in medicine at a time when the influence of the German spirit was first being felt in Italy. At the early age of 16 years, Bizzozero published a paper dealing with the structure of bones in batrachians, and at the age of 18, another concerning the processes of epithelial cells, in which he asserted that the so-called prickles were not canals, but connections between the cells, leaving spaces between them for the passage of nutritive juice. Among his earlier studies, too, were those which resulted in the demonstration of connective tissue cells with their prolongations in the juice canaliculi of von Recklinghausen. Bizzozero was among the first to study the histology of experimental tuberculosis and contrast the changes therein with those in chronic inflammation. In 1865 he observed the contractility of the cells of the bone marrow, and in 1869, at the age of 23, published his complete work on the bone marrow, including a description of the course of the blood vessels and an explanation of the slowness of the circulation. He observed the division of the nucleated red blood corpuscles, described the globuliferous cells which occur in the marrow and interpreted them properly and distinguished the myeloplaxes of Robin from the cells with large budding nuclei, now known as megalocaryocytes. He also studied the changes which occur in the bone marrow in various diseases. He was one of the first to observe and study cell inclusions—the pioneer work in what later developed as the doctrine of phagocytosis.

With Bozzolo, Bizzozero published a monograph on tumors of the dura mater; with Manfredi, another on the structure of molluscum contagiosum; with Salvioli, another on serous membranes, especially on the lymph vessels of the diaphragmatic peritoneum.

He invented the chromocytometer in 1879, and with it studied the variations in the blood after hemorrhages, and the effects of peritoneal transfusion of defibrinated blood. This instrument is still largely used in Italy, and is for that country what the instruments of Gowers and of von Fleischl are to us. Bizzozero was one of the first to study the return of the hemopoietic function of the spleen in the adult after repeated hemorrhages. With Torre he studied the origin of the red blood corpuscles in birds and proved that they come only from vessels in the bone marrow. He demonstrated the indirect division of the red blood corpuscles in lower vertebrates and in embryo mammals. In 1882 appeared his complete work upon the blood platelets, or, as he called them, the "piastrine." He maintained that they pre-existed in the blood of mammals, combated Hayem's idea that they are an early stage of the

red corpuscles, and proved their great significance in relation to the formation of white thrombi.

Bizzozero's "Manual of Clinical Microscopy" has been in great vogue on the continent. It appeared first in 1885 and has passed through several editions, the fifth having been published during this year; it has been translated into a number of foreign languages.

With his pupils, he was busily engaged from 1887 to 1893 in the study of the physiological regeneration of glandular elements and upon the influence of the nervous system, of the state of nutrition and of temperature upon these processes. It was he who found that it is in the depths of the glands of Lieberkuehn and of the gastric glands that karyokinetic regeneration of the gastroenteric epithelium takes place. The sum of his results in this field are embodied in his well-known address, made before the International Medical Congress at Rome, in 1893. At about this period, Bizzozero began to suffer from a choroiditis, which prevented further work with the microscope. He then turned his attention to questions of sanitary legislation and did much to educate the Italians regarding hygienic problems, particularly of vaccination, tuberculosis and malaria.

He numbered among his students many of the more important of our modern Italian investigators, including Golgi, Manfredi, Bassini, Foà, Tizzoni, Salvioli and Vassale. Foà, who has written in the *Archives Italiennes de Biologie* the appreciative notice of Bizzozero's life, from which we have derived the above data, states that he is to be regarded as a most remarkable man, to whom Italy owes a large part of the renewal of scientific interest in the medical schools of that country, and the impulse given to modern sanitary reform. Bizzozero was a tall man, of delicate constitution, but of noble countenance. A victim to neuralgia, he maintained in spite of it a cheerful temperament and a remarkable capacity for work. Though a senator at Rome, he was never in the full sense of the word a political man. At all times, and especially in his later life, he was deeply interested in sanitary laws of a social character.

Smallpox in Kentueky.

Of the one hundred and nineteen counties in Kentucky all but nine—Clinton, Cumberland, Edmonson, Estill, Gallatin, Harlan, LaRue, Owsley and Trigg, all remote from the main lines of travel—have had more or less experience with smallpox during the present epidemic, covering a period of nearly four years. Detailed reports from 108 of the afflicted counties and from every municipality in the state have been received by the State Board of Health. A total of 394 distinct outbreaks are reported, 85 of these being fresh importations from other states. In all 11,269 cases are reported, with 184 deaths, a mortality of 1.63 per cent. Special hospitals were erected in 63 counties and municipalities, but probably a majority of cases outside of the large cities and towns were isolated and treated in their homes. Reports are made of 392,280 persons vaccinated during the epidemic, and of 408,825 found protected by one or more previous vaccinations, out of a total population of 2,147,174, leaving 1,335,039, or a little more than 62 per cent. unvaccinated; 340,000, or over 40 per cent. of those vaccinated, are residents of the larger cities and towns, 175,000 of the City of Louisville. The actual cash expended from county and municipal treasuries on account of smallpox was $308,271, to say nothing of the expense to individuals. The reported loss from interference with business was $734,000. This does not include the great loss to transportation companies from interference with travel and commerce. This latter item is only an aggregate of estimates, many boards not reporting upon this point, and is only given for what it is worth.

These are the bare, naked figures in regard to the most expensive and widespread epidemic from which our state has ever suffered, and covers an experience which might have been easily avoided had heed been given to the united voice of the medical profession and the iterated and reiterated warnings of state, city and county health officials urging universal vaccination. Our people had had little experience with smallpox since the Civil war, and a generation had grown up not only unprotected by, but indifferent to, vaccination. A generation of physicians had come on also, most of whom had never seen a case of smallpox. These conditions account for the frequent errors in diagnosis, and this in turn for the wide prevalence of the disease. The origin of the present epidemic is now pretty well understood. The disease was brought from Honduras to Mobile in the winter of 1896-7, gradually spread up through the mining regions of Alabama and Tennessee, the first case reaching us at Middlesboro from Birmingham early in December, 1897, in the person of a negro miner. The case was mild, no physician was called, and numerous cases and many exposures had occurred before the character of the disease was recognized and reported. It was stamped out after 281 cases and 4 deaths, the city being in rigid quarantine until it was done. The next importations were from Knoxville to Jellico and Richmond, and at both places many cases and exposures occurred before the disease was diagnosed and reported, but both outbreaks were stamped out in the face of much difficulty. From this time on importations were frequent and into widely separated sections of the state. The funds of this board were soon exhausted and we were unable to send our inspectors to the assistance of the local boards except where the local fiscal authorities would meet the expense. But leaflets and circulars of warning were scattered broadcast and multiplied a thousand fold by the generosity of the newspapers.

In the spring of 1900 the General Assembly increased the annual appropriation of the board to $5000, and, when this became available in June, we were again able to take the field against the disease in earnest. Many county and municipal boards of health had been able to do ideal work in the meantime with funds furnished by their respective fiscal authorities, confining the disease to first cases or families in nearly every instance. This was the desire of the local boards everywhere, but as a rule they were hampered and thwarted by the parsimony and shortsighted economy of the local purse-bearers, and too often the disease spread from community to community practically unhindered. For this reason our work was very difficult for some months, but some counties and towns were persuaded, some threatened, and a few put under strict non-intercourse quarantine. At last the headway was apparent and by October 1 of this year not a case existed in the state. Since that time importations have been made into three widely separated counties, and with 62 per cent. of our population not only unvaccinated but ignorant and negligent upon the subject, the whole work may have to be done over at any time.

Our management of the disease was very simple. The first case or cases, and all subsequent cases were rigidly isolated, in a hospital where possible; all exposed persons were searched out, vaccinated, and kept under observation, and vaccination was urged on all in the contiguous territory. In many country districts we were forced to adapt these methods to local conditions. One of the greatest of our difficulties was in securing satisfactory and reliable vaccine virus. In my experience, infected and bad arms followed the use of the glycerinated lymph much more frequently than of the dry points, and this accounts for much of the opposition we have had to vaccination.—Abstract from forthcoming Report of State Board of Health, by Dr. J. N. McCormack, Secretary.

The Passing of Sectarianism in Medicine.—We are optimistic enough to believe that the conditions outlined in the closing paragraph of Dr. Reed's eloquent Presidential Address, delivered at the St. Paul meeting of the American Medical Association, will be brought to pass before another generation has come and gone. There is a very considerable number of able and scholarly practitioners of medicine who are at the present time barred from the privilege of professional association with those who form the great body of scientific practitioners because they were misguided and ill-advised when they began the study of medicine and the sectarian atmosphere with which they were then surrounded has clung to them ever since. Some voluntarily cling to the name which they have assumed, not because they believe in any of the absurd theories which

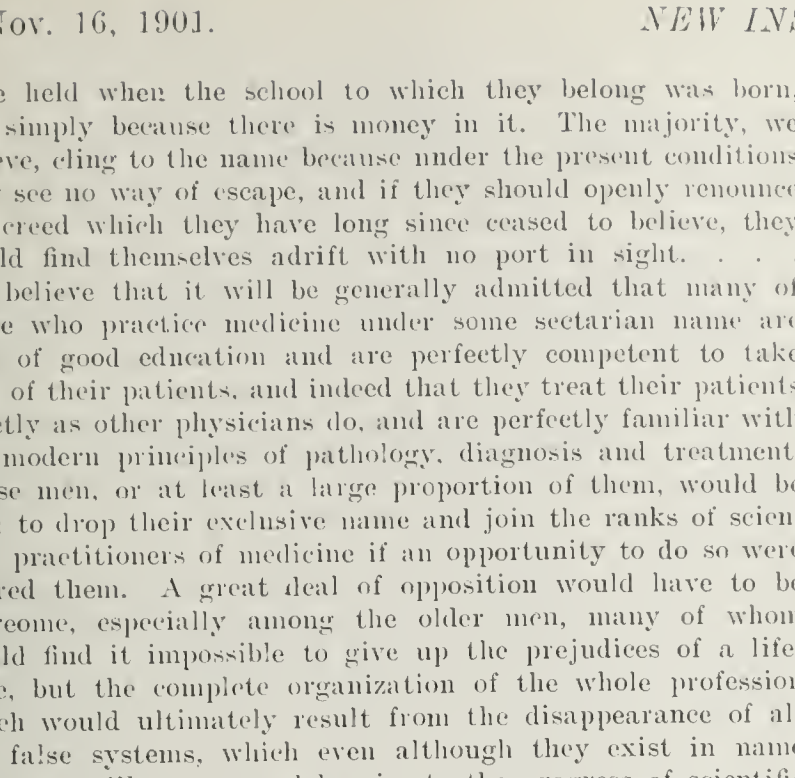
were held when the school to which they belong was born, but simply because there is money in it. The majority, we believe, cling to the name because under the present conditions they see no way of escape, and if they should openly renounce the creed which they have long since ceased to believe, they would find themselves adrift with no port in sight. . . . We believe that it will be generally admitted that many of those who practice medicine under some sectarian name are men of good education and are perfectly competent to take care of their patients, and indeed that they treat their patients exactly as other physicians do, and are perfectly familiar with the modern principles of pathology, diagnosis and treatment. These men, or at least a large proportion of them, would be glad to drop their exclusive name and join the ranks of scientific practitioners of medicine if an opportunity to do so were offered them. A great deal of opposition would have to be overcome, especially among the older men, many of whom would find it impossible to give up the prejudices of a lifetime, but the complete organization of the whole profession which would ultimately result from the disappearance of all the false systems, which even although they exist in name only, are still a very real barrier to the progress of scientific medicine, would accomplish such a vast amount of good that we hope to live to see it brought to pass.—*St. Paul Medical Journal.*

New Instruments.

SOME NEW INSTRUMENTS.

FRANK ALLPORT, M.D.
CHICAGO.

An annoying feature of eye and ear work in a general hospital is the lack of concentration of instruments, drugs, appliances, etc., necessitating many delays incident to nurses or internes going from ward to ward in search of needed articles. I have endeavored to obviate this difficulty by designing an eye and ear case for hospital work which will contain practically all that is essential for ordinary service. The case is constructed of nickel-plated copper.

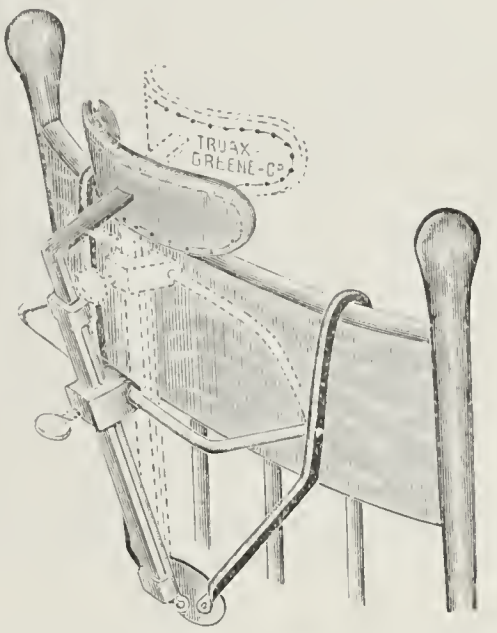


It has a strong handle, making it easy of transportation from ward to ward. It has a cover for protecting it from dirt. The top compartment is divided into large spaces for holding bulky objects, such as head mirrors, insufflators, tuning forks, etc., and small places for holding solutions, ointments, cotton, etc. It has a large drawer also for holding bulky objects, and a small drawer for holding knives, scissors, forceps, etc. In my own hospital service I find it a great time-saver, and most convenient, and I trust it may prove so to others.

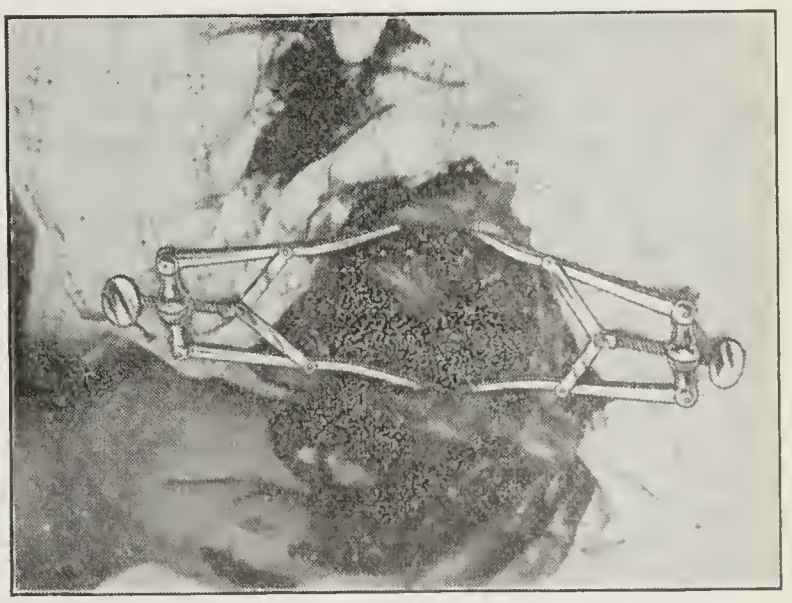
An instrument which I have found useful is a simple gauze-packer, originally intended for mastoid work, but which may find a use elsewhere. The end of the packer is conical in shape with a flat base, thus presenting no tendency for with-



drawal of the gauze as the instrument is withdrawn, nor perforation of the gauze by the point of the instrument, as the wound is packed.



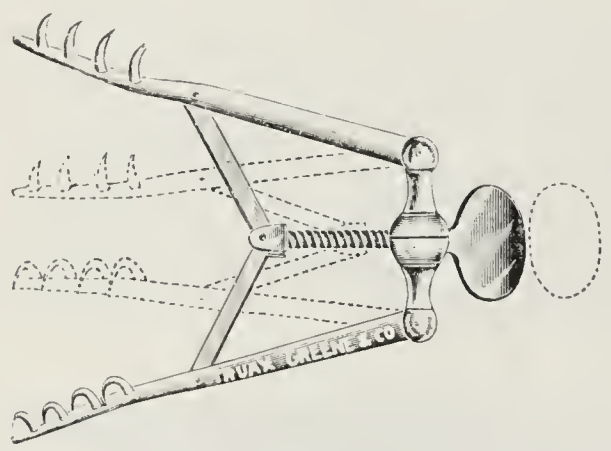
I desire to call attention to a head-rest which I have used in my office for nearly twenty years. It is especially useful for the external examination and treatment of eyes. It may also be used in small operations where the patient may maintain a sitting posture, and I have frequently used it in hospitals and homes, for cataract and iridectomy operations, etc. It can be used upon the back of any plain wooden chair, and when thus placed makes an exceedingly good operating chair. The head can be raised or lowered by a simple thumb-screw on the back of the frame.



I have referred so many times in the past to my mastoid retractors that I am almost ashamed to speak again at the present time, my excuse being their frequent imperfect manufacture, and misuse. I claim complete priority in the suggestion of self-retaining mastoid retractors, notwithstanding which fact several surgeons have devised modifications of my retractors without the courtesy of a recognition of my original instrument. I have yet to see a retractor the equal of my first instrument in simplicity, practicability and efficiency. I am, therefore, anxious that it should be manufactured and used correctly.

When small openings and drills were used in opening the mastoid bone, one retractor was sufficient, but now that large openings and chisels are deemed the best surgery, I use two instruments, one in each end of the wound, as shown in the picture.

When thus used the retractors open the wound to its fullest capacity, and give the operator an ample field for his work, without an extra pair of hands around the head, which is, of course, necessary in using hand retractors. The teeth on the arms of the retractor should be placed well under the periosteum, and the arms then dilated as widely as possible, using considerable force to thus separate the sides of the wound. Such force necessitates a strong and substantial instrument, and this point is one frequently overlooked by manufacturers who aim to produce a pretty and delicate instrument, rather than one substantial and forceful. The forcible dilatation of the wound not only gives a fine unobstructed and permanent view of the field of operation, but also entirely does away with any material hemorrhage from the soft, flap tissue. I never use artery forceps in a mastoid operation, and it is certainly most desirable to dispense with them if possible. But in order to do this, the retractors must be widely and forcibly separated. Some manufacturers defeat this end by constructing the instrument in such a way that the screw pin is so short as to render a wide dilatation of the blades impossible, thus rendering the instrument practically useless. Other manufacturers accomplish the same undesirable result by making the screw handle round or square, whereas it should be flat, to enable the operator to secure a firm hold, and use all desirable force in turning the screw-head and thereby separating the blades. The distance between the extreme ends of the blades when expanded should be at least two and one-half inches.



It is hoped that manufacturers desiring to make the retractors will heed the above directions, and make them accordingly. It would seem as if a surgeon designing instruments should at least have the courtesy accorded him of having his instruments made according to his specific instructions. I recently went into two Chicago instrument houses, and in the first one found three mastoid retractors of different designs, being sold under my name. They did not bear the slightest resemblance to my retractors, except that they had teeth and spreading arms; one of them was absolutely grotesque in its appearance. At another store they showed me some retractors bearing my name, in which the arms would not spread much over one inch, which of course made the instrument absolutely useless. Such circumstances naturally make surgeons reflect whether it should be considered unprofessional to hold a patent on an instrument. As it is now, the moment he publishes an instrument all manufacturers have a right to make it, and before long the instrument on the market bearing the inventor's name may be so far removed from his original idea as to make him ashamed that he ever gave it to the profession. There certainly should be some way of allowing the surgeon to control the manufacture of his own instrument. It may not be well for him to benefit pecuniarily by its sale (although I believe this to be a subject capable of double-sided argument), but he should at least be able to dictate who should participate in the manufacture of his own devices, and to insist that he be given the opportunity of inspecting all of his own instruments should he care to claim this privilege.

My retractors are usually well made by Tieman & Myrowitz, of New York; Truax, Greene & Co., and Chambers, Inskeep & Co., of Chicago.

92 State street.

Societies.

COMING MEETINGS.

Tri-State Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Nov. 19-21, 1901.

Indian Territory Medical Association, Muskogee, Dec. 3-4, 1901.

Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

St. Louis Academy of Medicine.—At its annual meeting, November 5, the Academy elected the following officers: Dr. Augustus C. Bernays, president; Dr. J. William Williamson, vice-president; Dr. Alfred Roulet, secretary, and Dr. G. Howard Thompson, treasurer.

Little Rock (Ark.) Medical Society.—At the annual meeting of this Society held November 4, Dr. William A. Snodgrass was elected president; Dr. Strodder U. King, vice-president; Dr. Charles C. Stephenson, secretary, and Dr. Rezin W. Lindsey, treasurer. The annual banquet will be given by the president November 18.

Detroit Physicians' Association.—At the meeting of this Association at the Cadillac, October 25, the finance committee reported that in the past 10 months about $15,500 has been collected and although a deficit of $450 still existed, due to the small amount of business during the first months, it was decided to continue the system six months longer.

Dodge County (Neb.) Medical Association.—A number of physicians of Dodge County met at Fremont, Neb., October 31, and organized this Association, with Dr. Leander B. Smith, Fremont, as president; Drs. Robert C. McDonald, Fremont, and J. M. Doan, North Bend, vice-presidents; Dr. A. P. Overgard, Fremont, secretary, and Dr. William J. Davies, Fremont, treasurer.

Somerset County (Pa.) Medical Association.—At its recent annual session held at Rockwood, the following officers were elected: Dr. Harmar D. Moore, New Lexington, president; Dr. W. H. Gardner, Rockwood, vice-president; Dr. H. Clay McKinley, Meyersdale, secretary; Dr. Asa F. Speicher, Elklick, corresponding secretary, and Dr. Walter S. Mountain, Confluence, treasurer.

Aesculapian Society of the Wabash Valley.—The fifty-fifth annual meeting of this Society was held at Paris, Ill., October 31, with 75 members in attendance. Dr. Charles B. Fry, Mattoon, Ill., was elected president; Dr. Edgar L. Larkins, Terre Haute, Ind., vice-president, and Dr. Harry McKennan, Paris, Ill., secretary and treasurer. The Society adjourned to meet in Mattoon, Ill., in May, 1902.

West Texas Medical Association.—The twenty-fifth annual meeting of this Association was held at San Antonio, October 31. Resolutions of regret and sympathy on the death of Dr. McPherson Barnitz were passed and the following officers elected: Dr. William E. Luter, San Antonio, president. Drs. Alfred G. Heaney, Corpus Christi, and Edward B. Jackson, San Antonio, vice-presidents, and Dr. W. B. Russ, San Antonio, secretary and treasurer.

Rock Island County (Ill.) Medical Society.—More than 20 physicians of Rock Island, Moline, and Rock Island County, met at the Harper House, Rock Island, October 31, and formed a county organization in accordance with the plan formulated by the American Medical Association. Dr. Carl Bernhardi, Rock Island, was elected president; Dr. Lewis D. Dunn, Moline, vice-president; Dr. John G. Swensson, Moline, secretary, and Dr. Warner L. Eddy, Milan, treasurer.

Central New York Alumni Association of the Albany Medical College.—At the annual meeting of this Association, held at Fulton, N. Y., October 31, the following officers were elected: Dr. Wilmer C. Kellogg, Syracuse, president; Drs. Richard F. Stevens, Lysander, Charles J. Bacon, Fulton, G. Griffin Lewis, Syracuse, William C. Fawdrey, Lorraine, Charles B. Tefft, Utica, and Charles Bernstein, Rome, vice-presidents; Dr. Frederic H. Brewer, Utica, secretary, and Dr. Merritt B. Fairchild, Syracuse, treasurer. The next meeting will be held at Syracuse in September, 1902.

Ingham County (Mich.) Medical Association.—The physicians of Ingham County met at Lansing, October 29, and perfected the organization of a society, whose work will be to ascertain the legal status of doctors in the county. Dr. Frank E. Thomas, Mason, was elected chairman, and Dr. D.

M. Nottingham, Lansing, secretary and treasurer. It was resolved to ask every doctor in the county to pay an assessment of $1 each into a fund to employ legal counsel to fight the board of supervisors' action in cutting down their claims for treating typhoid fever and consumption.

NEW YORK STATE MEDICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York City, Oct. 21-24.

(Continued from page 1267.)

THIRD DAY.—WEDNESDAY, OCTOBER 23.

Arteriosclerosis; Importance, Definition, Etiology and Symptomatology.

Dr. Charles E. Nammack, New York City, opened the symposium on arteriosclerosis with this paper. He said that by arteriosclerosis was meant a hyaline degeneration of the structural elements of the vessel wall with hyperplasia and subsequent contraction of the caliber of the vessel. The effect was first an impairment of contractility, and later a weakening of elasticity and osmosis, with consequent interference with metabolism. There could be no doubt that individuals were born differing in the thickness of the arterial walls as much as in the size and development of other parts of the body. Statistics showed that in Greater New York the death rate among physicians, whose worries make them an easy prey to arteriosclerosis, was only exceeded by those of saloon-keepers, who are intemperate, and by butchers, and the most underpaid factory operators. Thirty-five per cent. of these medical men died from Bright's disease, apoplexy and heart disease—the threefold sequelæ of arteriosclerosis. In connection with the treatment it was well to remember that out-door exercise dilates arteries better than do the iodids.

Cardiac Manifestations of Arteriosclerosis.

Dr. De Lancey Rochester, Buffalo, said that the treatment of the underlying arteriosclerosis was the all-important thing in connection with such disorders of the heart. By reason of its action on the heart and arterioles digitalis is dangerous, and should only be used as an emergency drug, and then cautiously and only for a very short time. He much preferred to use a reliable fluid extract of cactus. In the treatment of an attack he made use of amyl nitrite by inhalation, nitroglycerin by hypodermic injection, with sometimes morphin and atropin.

Management and Therapeutics of Arteriosclerosis.

Dr. Egbert Lefevre, New York City, said that it was often necessary to make use of the nitrites, but their effect did not last at most more than two hours; moreover, if given too freely they tended to hasten degeneration. The iodids have the power of steadying the circulation and of lowering arterial tension without reducing the force of the systole of the heart. The syrup of hydriodic acid should be given three times a day in doses ranging from one to four drams. When the hypertrophy of the heart no longer fully compensated for the obstruction in the arteries it would be found desirable to give every night from two to four minims of the tincture, or half a grain of the leaves of digitalis.

Dr. Sturtevant called attention to the great variations in the strength of the fluid extracts of cactus on the market, making the dosage vary from two to fifteen minims.

Dr. James J. Walsh, New York, spoke of the important rôle played by heredity, and the useful hint thus afforded the medical adviser in helping predisposed persons to select the most suitable vocation in life.

Dr. Charles G. Stockton, Buffalo, remarked that in these cases gastralgia was often such a prominent symptom as to overshadow the disorder of the heart.

Blood Examination from the Standpoint of the General Practitioner.

Dr. Frank W. Higgins, Cortland, said that the specific gravity of the blood could be readily ascertained with no other instrument than a urinometer. Chloroform and benzine are mixed in such proportions that the drop of blood neither sinks nor floats, and then the specific gravity is taken with the urinometer. The specific gravity varies to correspond with the hemoglobin. In the determination of the percentage of hemoglobin there is an error of 5 per cent. arising from differences in using the scale of colors. A leucocytosis of 12,000 to 50,000 meant infection, most commonly with the formation of pus. This sign was often useful in differentiating between appendicitis and typhoid, and in diagnosticating a pneumonia having masked physical signs. Another important point for the general practitioner to remember was, that a diminution in the red blood corpuscles was the only rational basis for the use of either iron or arsenic. The paper closed with some practical remarks on the technique and results of microscopic examination of stained specimens of blood.

Dr. Richard C. Cabot, Boston, said that the determination of the hemoglobin could now be readily undertaken at the bedside, thanks to the invention of Tallqvist's hemoglobinometer. This is nothing more than a scale of color and a pad of special bibulous paper bound in the form of a small book that can be carried in the pocket. It is only necessary to place a drop of blood on a leaf of this paper, and then compare the color so produced with those found on the color scale to enable to read off the percentage of hemoglobin within 10 per cent. Another good point about this device is that it only costs $1.25.

Conservative Surgery for Tuberculosis of the Lymphatic Glands of the Neck.

Dr. Parker Syms, New York City, presented this paper. He was of the opinion that the very radical method of operating on these glands was unnecessary in the majority of cases, and was objectionable because it does not offer a sure and permanent cure and because it increases rather than diminishes the danger of systemic infection. Where the glands were not broken-down they should be anointed with a 10 per cent. ichthyol ointment, but where they were broken-down, they should be incised and drained before rupture takes place. They should then be treated with a 10 per cent. emulsion of iodoform and glycerin, and if this were persisted in for a sufficient length of time the result would usually be very satisfactory both to the patient and the surgeon.

President's Address.

Dr. John A. Wyeth, New York City, delivered this address, on "Comments on Some New Surgical Methods." Speaking of intraspinal cocainization he gave it as his opinion that the credit for introducing this new method of inducing anesthesia belonged to Dr. August Bier rather than to Dr. J. Leonard Corning. The method was certainly useful in certain cases, and he would not hesitate to employ it in persons who objected strongly to the usual methods of anesthetization. Dr. Wyeth next considered a method of obliterating blood vessels by injection. This is original with him, and was based on some experiments on dogs in which he had succeeded by the injection of boiling water in obliterating the external carotid artery down to its terminal branches. The method, which had been suggested by witnessing the results of Dr. Dawbarn's method of cutting off the nutrition of neoplasms by ligation of their main artery, had been tried on the human subject in one case, and with a gratifying result. The remainder of his address was devoted to a brief consideration of the promising operation of prostatectomy and of the proposed treatment of cancer of the breast by removal of the ovaries.

Iodophilia.

Dr. Richard C. Cabot, Boston, opened a discussion on the value of bacteriological and pathological research in diagnosis, prognosis and treatment, by this paper on iodophilia. He said that the term merely referred to a long-known reaction of the polynuclear leucocytes to iodin. The reagent employed is composed of one part of iodin, three parts of iodid of potassium, 100 parts of water and enough gum acacia to make a thick syrup. It was a fairly stable solution, and would not require renewal for several months. The reaction consisted in the production of a more or less brownish coloration, chiefly in-

tracellular, of the polynuclear leucocytes. Its significance could not be stated with accuracy, but it could be said positively that when it was present the individual was sick. It would be obtained in cases of asthma, pneumonia, abscess formation, well-marked anemia, either primary or secondary, and, in general, in toxemia.

Laboratory Differential Diagnosis in Surgery.

DR. SIMON FLEXNER, Philadelphia, contributed to the discussion a general review of the results of laboratory research, speaking specifically of the Widal reaction, leucocytosis, examination for malarial parasites in the blood, etc.

Modifications in Methods of Operative Surgery Resulting from Laboratory Research.

DR. JOSEPH D. BRYANT, New York City, closed this special discussion by an interesting historical account of certain surgical cases occurring in Bellevue Hospital thirty years ago, and contrasting the treatment then in vogue with modern methods, the result of much laboratory investigation.

The Pneumatic Cabinet in Treatment of Diseases of the Heart.

DR. CHARLES E. QUIMBY, New York City, gave in this paper the results of a long personal experience with the cabinet in this class of affections. He is one of the few who still have faith in this apparatus, and certainly he adduced a mass of clinical evidence in support of that faith. He defined pneumatic differentiation as a difference of atmospheric pressure upon the lungs and upon the cutaneous surface, and pointed out that such differentiation, by lowering vascular tension and augmenting the flow of blood, improves general nutrition.

Gunshot Wounds of the Hip Joint by Reduced Caliber Projectiles.

MAJOR LOUIS A. LA GARDE, Washington, D. C., presented specimens and skiagrams illustrative of some of the effects of modern small-caliber bullets, and pointed out the humane character of these modern projectiles when fired at the usual range employed on the field of battle. A striking statement was that since the Civil war the mortality from gunshot wounds of the knee had been reduced over 78 per cent.

DR. G. N. JACK, Depew, explained in a paper on "Asthma of Blood Origin, and not Nerve or Reflex," his theory of the blood origin of asthma. His idea is that asthma arises from an inability of the blood to carry the requisite quantity of oxygen.

Acne.

DR. EDMUND L. COCKS, New York City, speaking of acne vulgaris, said that about 75 per cent. of the cases are met with before the age of 18, and that, in general, it may be looked upon as an indication of impaired digestion and circulation. If proper treatment were not instituted sufficiently early there was apt to result a good deal of disfigurement. The treatment consisted in a general attention to hygiene, the exclusion from the dietary of pastry, hot bread, sweets, fried meats, potatoes and alcohol. After curetting the lesions a soothing lotion should be applied, and the parts should be sponged with hot water at night.

DR. FRANK D REESE, Cortland, took issue with the author regarding the difficulty of treating acne, and claimed that by proper attention to the habits of life, and insisting that the patient make free use of the nail-brush and of tincture of green soap, there should be no great difficulty in curing these cases.

FOURTH DAY.—THURSDAY, OCTOBER 24.

Surgical Malposition of the Gall-Bladder.

DR. E. D. FERGUSON, Troy, reported three cases to illustrate a fact not generally mentioned in the text-books of either surgery or anatomy, i. e., that the position of the gall-bladder is variable. In the first case, it was located behind the posterior border of the liver; in the second, it was behind the peritoneum at the posterior edge of the inferior surface of the liver, and in the third case extended from the lower surface and posterior border of the liver downward behind the colon.

Differential Leucocyte Count in Fractures.

DR. WILLIAM G. LE BOUTILLIER, New York City, gave the results of observations on the temperature and blood in a series of fractures. Thus, in 50 consecutive cases of simple fracture the temperature had often been as much as three degrees above the normal. In no instance had the temperature reached the normal before the third day after the injury, and in 25 per cent. of the cases had still been somewhat elevated at the end of two weeks. However, this temperature was not to be taken as an index of the occurrence of infection in compound fractures, for in many instances it had been about the same in both classes of fractures on the second or third day. Sixty-five differential blood counts had been made in 73 cases of simple fracture, and 39 counts in 10 cases of compound fracture. The ordinary leucocyte count had appeared to be a better test of infection than the temperature, though not quite reliable. On the first day there had been about 85 per cent. of polynuclear neutrophiles and less than 15 per cent. of leucocytes, but after the first two days the lymphocytes had increased as the polynuclear neutrophiles had diminished. The differential counts had borne no appreciable relation to the temperature.

Prostatic Obstruction to Urination; Its Remedy by Enucleation of the Diseased Parts.

DR. J. W. S. GOULEY, New York City, discussed in this paper the nature of prostatic enlargement and what had been accomplished by enucleation.

DR. PARKER SYMS, New York City, said that he had been working in the direction of doing the enucleation of the prostate entirely by the perineal route, as he believed that in this way the mortality of the operation could be very materially reduced. As an improvement in the technique he had introduced the use of a special retractor that he had devised. It consists of a rubber bulb attached to a tube like a catheter. The instrument, while collapsed, is introduced into the bladder through an opening in the membranous urethra, and is then distended by injecting into it two ounces of water. The instrument thus serves to hold the bladder in place and draw the prostate towards the wound. He had used it with considerable satisfaction in upwards of a dozen cases. (See THE JOURNAL, Nov. 2, p. 1154.)

DR. EUGENE FULLER, New York City, thought the surgeon should not employ any one surgical procedure to the exclusion of others. For example, where the prostate is very large, enucleation through the perineum would be tedious and rather dangerous to an old man. Again, when the bladder was very atonic it would be much safer to employ a suprapubic opening in order to efficiently cope with hemorrhage.

DR. E. WALLACE LEE, New York City, said that these old men were seldom in condition to stand prostatectomy, yet they could often be relieved by simple suprapubic cystotomy with drainage. Moreover, he had personally witnessed a reduction of the size of the prostate as a result of castration and vasectomy.

Vesical Emergencies; Their Surgical Management.

DR. EUGENE FULLER, New York City, spoke, among other things, of what constituted the best modern practice in the treatment of retention of urine, both from inflammatory obstruction and from prostatic enlargement. He pointed out that the old-fashioned silver prostatic catheter, while an effective instrument, was a very dangerous instrument, and should only be used very carefully and to meet an emergency.

Uterine Prolapse.

DR. FREDERICK HOLME WIGGIN, New York City, said that the proper treatment of uterine prolapse required that an operation be done to obliterate the hernial sac and restore the damaged perineal structures. The prolapsed parts should be reduced, the patient be placed in bed with the foot of the bed raised, the local ulcerations should be made to heal by the use of antiseptic tampons. When this had been accomplished, a laparotomy should be performed and a purse-string suture of

kangaroo tendon inserted through the uterus, about the attachment of the round ligament, and then into the broad ligament in such a way as to fold up this ligament. Such a suture is inserted on each side, and the uterus thus given a new point of attachment near the insertion of the broad ligament at the pelvic brim. After the patient had been confined to bed for a period of four or five weeks, a second operation should be done for the suture of the separated tendons of the perineal muscles. The author said that this operation had yielded him very good results, even in aged women, because of the rapidity with which it could be done and the absence of any great blood-loss.

Typhoid Cholecystitis.

Dr. Charles G. Stockton and Dr. Albert T. Lytle, Buffalo, presented a joint paper on this topic, reporting four cases of cholecystitis which had complicated typhoid fever.

Dr. De Lancey Rochester, Buffalo, who had been the attending physician in one of the cases, commented upon the marked indicanuria that had been present. He said that this had increased as the leucocytosis had increased.

Dr. Allen A. Jones, Buffalo, and Dr. E. D. Ferguson, Troy, emphasized the fact that the pain was essentially due to the cystitis and to the presence of gallstones.

Dr. Thomas F. Reilly, New York City, gave the results of an inquiry that he had set on foot at St. Joseph's Hospital among 100 of the phthisical patients found there, in the following paper: "What Percentage of Gouty and Rheumatic Patients Develops Fatal Pulmonary Phthisis?" Only six of this number had never had an attack of acute articular rheumatism, yet not one of the whole series had suffered from gouty disorders or gave a family history of gout. Loss of sleep had been a prominent causal factor in 45 per cent., but exposure to the weather and alcoholic excesses were responsible for many cases.

Dr. E. D. Ferguson, Troy, reported the case of a "Durham Tube in the Right Bronchus," in which this form of tracheotomy tube, owing to a defect in construction, had been swallowed. By the addition of a collar, he said such accidents could be effectually prevented.

Resection of Cervical Sympathetic in Treatment of Glaucoma.

Dr. Wilbur Marple, New York City, reviewed the literature, and commented upon the meager details that Jonnesco had published regarding his own cases, and especially upon the fact that most of the cases had not been kept under observation a sufficient length of time. The improvement often observed after Jonnesco's operation appeared, in most instances, to be temporary.

Dr. James J. Walsh, New York City, said that he had personal knowledge of some of Jonnesco's work, and could say that in some of the cases of glaucoma of the irritative chronic type, operated upon by Jonnesco three years ago, the great improvement in vision that had followed the operation had continued since that time.

Dr. Alvin A. Hubbell, Buffalo, remarked that this operation was still in an experimental stage, and, in his judgment, promised very little.

Report of Case of Gunshot Wounds of Intestines.

Dr. H. Van Hoevenberg, Kingston, reported this case as an example of what could be accomplished in country practice amid unfavorable surroundings, and with the object of impressing the lesson that it was the surgeon's duty, even under discouraging circumstances, to give his patient the best chance for life. Incidentally the case illustrated the value of morphin in cases of perforating wounds of the bowel.

Dr. R. H. M. Dawbarn, New York City, said that he had long advocated the "morphin splint" in wounds of this class, for, such medication by quieting peristalsis and preventing the surging of waves of liquid feces against the wounds, the injured parts were placed at rest and an opportunity afforded nature to seal them up with fibrinous exudate. He also advocated repairing the rents in the bowel with a continuous suture, as the insertion of the interrupted suture takes from three to five times longer.

Dr. George Tucker Harrison, New York City, pointed out, in a paper on "Indications for Treatment in Uterine Myomata," that the hemorrhages, being often dependent solely upon endometritis, should be first treated by curettage before resorting to more radical operations. It was a rule, to which there were but few exceptions, that uterine myomata undergo retrograde degeneration after the menopause.

Technique and Method of Inserting the Fixation Sutures for Prolapsed Kidney.

Dr. Augustin H. Goelet, New York City, prefers to make the incision along the outer border of the erector spinæ muscle, separate the muscles in the direction of their fibers and strip back the fibrous capsule of the kidney. Two fixation sutures are used, and are inserted upon the lower half of the kidney in such a way that the traction comes at a right-angle to the surface of the kidney. The external wound is closed by aseptic strips of adhesive plaster.

Dr. George M. Edebohls, New York City, said that it was a common error to try to fix the kidney by its lower half only. He anchors by means of four suspension sutures, one over the middle of each pole, the kidney being anchored to the raw quadratus lumborum muscle.

Dr. Howard Lilienthal, New York City, said that the technique employed by the author of the paper was exceedingly simple, but he thought all suture methods would fail if room enough were left to allow of the kidney displacing downward. He, therefore, leaves in a gauze packing for about ten days, so as to secure granulation over a large surface and obliterate this space.

Dr. Willy Meyer, New York City, said that the originator of this gauze-packing method had advocated keeping in the gauze for three weeks and then removing it under anesthesia. Dr. Edebohl's technique seemed to him preferable.

Dr. R. H. M. Dawbarn, New York City, objected to the insertion of sutures because they would cause leakage of urine.

Dr. Goelet replied that he had never observed such leakage.

Dr. J. R. Sturtevant, Theresa, reported "A Case Simulating Glanders." with photographs, that others might judge as to the correctness of the diagnosis, about which he thought there was some doubt.

NEW YORK ACADEMY OF MEDICINE—SECTION OF OTOLOGY.

Stated Meeting, held October 9th, 1901.

Dr. James F. McKernon in the Chair.

Dr. George B. McAuliffe presented a new Eustachian catheter and demonstrated its use upon a patient. Instead of the angle being in the end of the curve it was distributed along the curve of the instrument. It was especially suitable in those patients with wide nares. The instrument is passed directly into the tube after traversing the outer part of the floor; as it passes over this the septum shoves the catheter right into the Eustachian tube in the last movement of catheterization.

Extensive Thrombus of Lateral Sinus with Re-Infection Following Chronic Suppurative Otitis with Ligation of the Internal Jugular Vein.

Dr. M. D. Lederman presented F. R., 17 years old, who had been admitted to the hospital with symptoms of a septic nature. He gave a history of having a running ear for ten years, which later improved. One week ago he was struck a blow over the right ear, which caused a bloody discharge for two days. There was tenderness over the mastoid, with a temperature of 100.8 F. and pulse 84. Examination revealed an old suppurative otitis with the membrane almost entirely absorbed, and some pus in the middle ear. Antiseptic douching every three hours with the Leiter coil was carried out for twenty-four hours. The following day there was pain over the side of the head. The ice-coil was discontinued so as not to mask the symptoms, as there was a previous history of irregular suppuration. A distinct chill of severe character was followed by the usual symptoms of a septic involvement of the sinus.

On August 12 the first operation was performed. Not much pus was found in the antrum but considerable granulation tissue was removed. The diseased bone was curetted from around the sinus and the vessel was incised from the knee to the jugular bulb. A septic thrombus was found and the lumen of the sinus was cleansed until a free bleeding showed that the posterior opening was patent. No return flow followed the use of the curette through the lower end of the sinus (the jugular bulb), so the jugular was tied about two inches from the clavicle. No disease of the vein in this region could be detected, so no attempt at resection was made. So soon as the ligature was applied it immediately filled with blood, permitting the belief that a free circulation was being carried out through the tributaries. At the end of two days the dressings were removed; the neck wound was clean but the antrum opening showed some pus. The sinus seemed to be doing nicely. It was thought advisable to cleanse the antrum site and so the curette was employed until a clean return of fluid through the external canal showed that the drainage was good. The temperature remained about 99 until the fifth day when it suddenly rose to 105 F. On August 17 some pus was found in the region of the jugular bulb; around this was found some little pus which did not lead to any pocket. The wound was then dressed daily and it was noticed that the temperature fluctuated, with an occasional chill, indicating sepsis in a severe form. On August 22 a purulent discharge was observed and the patient was again operated upon for the third time, and the external wall of the sinus was removed to near the torcular. The incision was made to the end of the bone wound, through the sinus, and the infected thrombus was curetted away. The wound was then douched with bichlorid and the entire wound dressed. The antrum wound was packed separately. The patient rapidly improved. The infection evidently occurred from the antrum, as a portion of the sinus had been thoroughly cleansed at the first operation.

Symptoms Pointing to the Neeessity for Operative Interferenee in Mastoid Suppurations.

Dr. Wendell C. Phillips said that the most marked symptom appearing during the course of an acute suppuration of the middle ear showing involvement of the mastoid is pain which comes on usually some time after the excrueiating pain which preeedes suppuration of the middle ear has passed away, and after the discharge from the ruptured or incised drum has been established. This pain is dull, heavy, not definitely localized but diffused over the surface of the temple. With it there is a feeling of fulness, heaviness and pressure over the entire parietal region. The pain may, or may not, be constant. Another prominent symptom is tenderness upon pressure, usually marked at the tip of the mastoid, but is more significant if it is higher up over the mastoid antrum; one's mastoid tip may be tender on pressure even when there is no disease present. Temperature was also considered, but it was not a very important symptom in mastoid involvement. Facial expression was emphasized. This expression was one rather indicative of anxiety, an extremely unhappy expression. The head usually hangs forward and leans towards the healthy side. External periostitis with or without infiltration was also considered as a symptom, although, as a rule, operative interference should be resorted to long before these symptoms appear. When present it is more of a complication than a symptom. The drum membrane should not be overlooked in making a diagnosis of mastoid involvement, especially Shrapnell's membrane, the attic region. When this membrane, together with the posterior superior portion of the wall of the canal, is found to be bulging downward and forward into the canal, a picture is given which constitutes one of the most prominent symptoms of mastoid suppuration. Prolonged tenderness upon pressure over the region of the antrum, together with the bulging described, gives sufficient reason for operative interference, especially so when the pus contains streptococci or staphylococci. Symptoms of other complications he simply referred to, such as rigors, vomiting, vertigo, choked disc, aphasia, paralysis of the extremities, high temperature, facial paralysis, dulled mentality, uneven pupils, the so-called typhoid condition, etc. All of these symptoms indicate that the suppurative process has gone far beyond the mastoid cells into either the lateral sinus, the dura, the cerebrum or the cerebellum. It may be possible to have a non-suppurative involvement of the mastoid cells, a mere congestion, but such a condition is hardly probable.

Free incision of the drum membrane carried well through the attic region into the external canal allowing the escape of pus, will often completely relieve all indications of mastoid involvement. The whole theory of such relief is based upon the importance of free drainage; this, together with blood-letting locally, with the ice-coil or hot poultices, should be abortive in a small percentage of cases. During the early stages of middle ear suppuration, and even after the mastoid symptoms appear, irrigation with hot water is commendable treatment. There is a great tendency to use the ice-coil and hot poultices for too long a time; the ice-coil should not be used longer than 24 or 36 hours; the continued use of poultices he considered almost as bad; in fact, any prolonged attempts at aborting mastoid involvement was to be deprecated. He emphasized the importance of placing the patient in bed and keeping him there until all symptoms had passed away. External operation should be performed in acute suppurative inflammations of the mastoid cells when a permanent remission of symptoms has not been brought about by free drainage through the drum membrane, or by the application of the ice-coil or poultices, or from local blood-letting. When the time has arrived for operating there should be no delay. In cases presenting symptoms of mastoid involvement, if there is present in the pus streptococci, staphylococci, or pneumococci, it was his belief that no amount of palliative treatment will have any effect upon the final result; it is especially in the grip cases that we should not delay operative interference. The method of operating should carry out this one prime factor, namely, that all diseased tissue should be removed. Regarding the Wilde incision, aside from the benefits that results from the local blood-letting, nothing was to be expected from it except the annoyance of having an open wound to contend with in a near-by location. It has been stated that if upon making a Wilde incision the external table seemed to be healthy no attempt should be made to enter the cells; experience did not bear out this statement.

Long delayed suppuration of the middle-ear attended with involvement of the attic and probably the antrum and mastoid cells, may lead to the necessity for external operation in order to overcome the suppurative process. This is especially true in cases of chronic otorrhea, the discharge of which is offensive, and with the establishment of cholesteatomatous masses and carious bone. Only by an external operation in many instances may we hope for permanent relief. That a chronic otorrhea is attended with more or less danger to life will not be denied, and to-day life insurance companies refuse absolutely to accept as risks persons who suffer from a chronic discharge from the ear. An attempt should be made to cure permanently all cases of chronic otorrhea. Local measures, removal of the necrosed ossicles and of other known methods, should be made use of before resorting to external operation.

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Regular Meeting, held October 7, 1901.

The Society organized for the season by electing Dr. Wm. Osler president, and Dr. Guy L. Hunner secretary.

Primary Splenomegaly with Cirrhosis of the Liver.

Dr. W. Osler exhibited a case which he believed to be one of Banti's disease, an affection characterized by enlarged spleen, contracted cirrhotic liver and jaundice. A woman, aged 40, came in Aug. 3, 1898, with an abdominal tumor extending 17 cm. below the left costal margin, ascites and edema of the feet and legs. Hemoglobin 47 per cent., red corpuscles 2,500,000, leucocytes 2500. This tumor appeared eleven years ago when she first had malaria. The chills were repeated each spring for four years, the tumor continuing to grow during that period, but not increasing any since then. On September 30, she left the hospital, the hemoglobin being 50 per cent., the red cells

3,500,000, and leucocytes the same as before. There was no jaundice. On Sept. 30, 1901, she returned with jaundice of a month's standing, and pigment spots about the eyelids. The edge of the liver could be felt and was evidently cirrhotic. Blood examination: hemoglobin 75 per cent., red corpuscles 5,720,000, leucocytes 3470, coagulation time 5 minutes. The spleen extended 18 cm. below costal margin and was 15.5 cm. in width.

Removal of Foreign Body from Esophagus.

DR. J. M. T. FINNEY exhibited a young man who had been operated on by Dr. F. 10 days before. He had swallowed a plate containing one tooth. It could be reached with a forceps, but the prongs of the plate were caught in the sides of the gullet and it was only forced further down. Esophagotomy was done, but renewed efforts again failed. The plate was now forced down to the cardiac orifice and a gastrotomy being done it could be felt with a finger passed up through the cardia, but could not be extracted. A bougie was then passed upward from the stomach to the mouth, and a sponge tied to it. This was then drawn downward and the cardia being dilated with the finger the plate was forced through it. The stomach wound was closed without drainage; the esophageal wound was packed with gauze and after a few days of liquid diet, recovery was complete.

Excision of Gall-Bladder.

DR. FINNEY proposed a new method of operating, designed to avoid the raw surfaces which form adhesions with the intestines. He lifts a peritoneal flap, starting at the fundus, incising on either side through the peritoneal and muscular coats of the bladder and after separating these from the fibrous coat a short distance with the handle of the knife, easily dissects off the rest with the finger. After removing the gall-bladder the incision is carried through the peritoneum, making a cuff as in appendix operations. Then, covering the raw surfaces of the stump with this peritoneum, he draws the edges together with sutures. Four cases thus treated have all done well, but the operation is only adapted to selected cases.

Gunshot Wound of the Intestines.

DR. R. H. FOLLIS said the patient was shot in the abdomen with a 22-caliber revolver just after a meal, and two and one-half hours before admission to the hospital. The bullet entered to the left of the umbilicus about the middle of the rectus muscle. Incision was made in the course of the wound and three small perforations were found in the jejunum. These were closed, and the peritoneal cavity wiped out of the bloody fluid, but neither the source of the hemorrhage nor the bullet were found. The presumption was that there was a fourth perforation which took care of itself. The wound was closed with silver sutures and subcutaneous silk and a good recovery ensued.

Granulated Hernia with Gangrene of the Bowel.

DR. FOLLIS stated that since the opening of the hospital in 1889 there have been 11 cases of strangulated hernia with gangrene. Four of these were treated by immediate end-to-end suture after excision, with 3 deaths. Four others were treated by the formation of fistula after excision, with the idea of doing a secondary suture later. Two of these lived for the secondary suture and both died after this was done. In one other case the strangulated loop was thought to be viable and was returned, but the patient died. One case was operated on under cocain, the bowel being sutured to the abdominal wall and a second operation of excising the discolored bowel done after fifteen hours; end-to-end anastomosis was made and the abdomen closed. Chloroform was used and the patient died later of broncho-pneumonia. Case: Male, 71, admitted with right inguinal hernia of two years, strangulated for twelve hours. Immediate operation under cocain, constriction relieved and loop brought out of abdominal cavity, but not excised. Bowel was left to see if it would clear up. This not taking place in twenty-four hours, the gangrenous bowel was removed and end-to-end suture made with the Halsted bag. The operation was done without the peritoneal cavity and the twenty-four-hour adhesions were not disturbed or the gauze dressing removed until anastomosis was completed. The wound was then cleansed and intestine returned. The patient was exhibited.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Oct. 9, 1901.

Vice-President, Dr. Alexander H. Ferguson, in the Chair.

Open-Air Treatment of Consumption.

DR. HOMER M. THOMAS said he was convinced that there was no climate which of itself would cure consumption. It was equally true that there was no climate suited to every case of consumption. Individuals differed materially in their powers of reaction; therefore, a climate that might be bracing to one would be exhaustingly cold to another. In some cases an equable climate was desirable, whereas a cool, bracing climate was more suited to others, although it should always be abundantly sheltered against wind and weather. Warm climates, as a rule, were unfavorable to consumptives. A mild, equable climate would suit the largest average of cases. There were certain features which were common to all rural localities in which consumptives were benefited. As a rule, they had pure air, free from dust and smoke, and the impurities which necessarily went with a dense population. They were fresh and bracing with excellent artificial protection against cold or storms. They had sufficient fine weather to render an outdoor life possible, and, lastly, the soil was well drained, dry and warm. Wherever these conditions were found and suitable arrangements could be made, it would be found possible to treat most consumptives with success. A high altitude, dry atmosphere, fine weather, equable temperature, or abundant sunshine were not all in themselves essential to success, although they might be especially desirable in individual cases. It was possible to treat most consumptives successfully at or near their own homes. Many consumptives were physically unfit to take long trips. Whenever there was fever, exhaustion after slight exertion, excessively free perspiration, a long journey was attended with risk. Physicians should seek for their cases the greatest amount of fresh, pure and open air. The patients should have cheerful surroundings; they should avoid reinfection and keep the gastro-intestinal tract in a high state of functional activity. Specific medical or therapeutic measures always sustained a secondary rôle. In addition to the variety of amusements that patients might be surrounded with, it would be found that useful occupations as well were never contraindicated. Gardening, like carpenter work, or, in fact, any avocation which could be pursued tentatively in the pure, fresh air, was valuable. The speaker was a strong advocate of the great beneficence of an open-air treatment, associated with all of the collateral hygienic measures. The open-air treatment of consumption was actively prosecuted in Germany, France, Switzerland, Russia, Norway and Sweden, England, and in many centers in the Eastern, Middle, Southern, and Western portions of the United States. His experience with the open-air treatment had been so favorable that he could quite heartily recommend a trial of it in all suitable cases.

DR. ROBERT H. BABCOCK said that no one who had employed the open-air treatment of tubercuIous patients for many years, could doubt the value and possibility of carrying it out at the homes of patients. He emphasized the importance of educating the profession in general on this point. It was possible to carry out this treatment with patients of sufficient means in the country 'round-about Chicago; but how to carry it out with a poor clerk, whose salary did not amount to more than $75 or $80 per month, was a question that had interested physicians in Chicago, because the majority of their patients were poor. However, it was possible to treat poor patients in the city of Chicago. If there was a balcony connected with the flat; if there was simply a yard with a few feet of space, or a vacant lot in the neighborhood across the street, either one of these afforded possibilities for carrying out the open-air treatment. It was the fresh air, the sun, and the out-of-door air that was needed. Dr. Babcock illustrated this

with the citation of a number of cases. He was a believer in climate because it afforded the possibility for patients to live out of doors without the same danger that they encountered here on the lake shore. Given a patient with sufficient means, who could command the attendance of a physician, and who would carry out his instructions to the letter, he would necessarily send that patient away. But given a person of limited means, who could not afford, in addition to every other expense, the attention of a home physician, particularly if he was sent to a suburb, and the physician had to spend two or three hours in making his visits, he would recommend sending such a patient to another climate where the possibilities were greater. He urged treating patients in Chicago who were suffering from consumption, no matter how poor they were. Give them the open-air treatment. If this could not be given perfectly, it should be given imperfectly. But give it.

DR. ARNOLD C. KLEBS stated that tubereulosis was such a chronic disease that if physicians attempted to treat it medicinally, large doses of drugs had to be given for a long period of time, which would affect digestion, and prove a failure. It was very fortunate that the open-air treatment and sanitary régime for this disease were being agitated. As to hereditary tendency or predisposition, he thought that the hereditary factor did not lessen the possibility of improvement or cure.

DR. JOHN A. ROBISON referred to the treatment of indigent tuberculous patients. He said that in Cook County there was an institution well equipped for the treatment of these patients; that the principal object for which this institution was erected had been frustrated by political methods. One of the principal things in the treatment of tuberculosis was a good diet for patients. At Dunning, he stated that 15 cents' worth of oatmeal was supposed to last the average patient a month. The patients were fed oatmeal and milk in the morning; at noontime they were given mush and milk, while in the evening they received a light dinner, with possibly a little piece of meat. The result was that the majority of the patients did not remain at the institution more than about two weeks; perhaps a few of them remained four weeks. A great many were walking patients, returned to other parts of the city and became new centers of infection. He urged the Society to exert its influence in carrying out the open-air treatment as advocated by the essayist.

DR. N. S. DAVIS, JR., said that the poorer people oftentimes moved to a more advantageous climate more readily than the wealthier ones, who were affected with tuberculosis. If somewhat ill with the disease, they quit work, and would either go to a hospital or seek some other climate; while men of wealth clung to their work for an indefinite length of time.

DR. DAVID J. DOHERTY suggested a change of vocation. Persons who worked indoors could be prevailed upon to get out of doors and fill positions, such as drivers on street-cars, peddlers, etc. He had often noticed a number of feeble men gathering up waste paper in the parks. If such positions could be obtained for patients with incipient tuberculosis, he believed it would be a help towards their speedy recovery.

DR. JOHN A. ROBISON reported in detail an interesting case of brain tumor.

Surgery of Pulmonary Abseess, Gangrene and Bronchieetases Following Pneumonia.

DR. D. N. EISENDRATH drew the following conclusions:

1. Both acute and pulmonary abscess and gangrene following pneumonia may develop immediately, and chronic and simple putrid abscesses, with or without bronchiectases, are more remote sequelæ of both croupous and influenzal pneumonia.

2. The most valuable points in the history are the etiology; the sudden expectoration after an apparent crisis of pure non-odorous pus in the simple abscess cases, or of fetid pus in the gangrenous variety. In the chronic cases there was usually a history of pneumonia having preceded the condition at some considerable time previously, followed by expectoration of large quantities of pus, with exacerbations of fever, accompanied by emaciation and frequently clubbed fingers.

3. Signs of cavity are seldom present. The moist râles, especially of large metallic character, are the most reliable physical signs. The character of the sputum is also of great value, whether purulent or fetid. Elastic fibers are more frequently found in gangrene than in abscess, being comparatively rare in the latter.

4. The *x*-ray is only of confirmatory value, as it shows chiefly thickened areas of lung, and should not be absolutely relied upon. When it shows a shadow at the same point where the physical signs are present, it is of value.

5. The prognosis of abscess and gangrene following pneumonia, medically treated, is not very favorable. Many cases of both varieties can be successfully treated in a surgical manner by pneumotomy. One of the greatest difficulties is the exact localization of the focus. The statistics which the essayist had gathered showed a marked increase in the percentage of recoveries, especially in the cases which have been reported within the last five years over that of the preceding five or even ten years. The prognosis for the chronic cases is not so favorable. The patients are usually operated upon when in an emaciated condition, and the walls of the cavity are often soft, so that they do not contract well after being drained, and the free communication of a bronchus with such cavities is also a great barrier. But statistics in this variety are also improving, especially when combined with excision of the affected portion of the lung.

DR. E. FLETCHER INGALS said that the diagnosis should be made accurately before operating. A certain amount of danger attended exploratory puncture in cases of pulmonary abscess, and that it was unreliable in many instances. No one would question the difficulties attending the diagnosis who had had occasion to study such cases for any length of time. As to operations for bronchiectasis, he thought it was well established that where there was more than one cavity, say two or three cavities, especially in a case of bronchiectasis following pneumonia, the results were usually unfavorable, as most of the patients died. The only case he had operated on of that kind was one in which he did not know there was more than one cavity present. He was not able to find the cavity he was searching for, but he found one of considerable size, cylindrical in shape, but the patient did not recover. He agreed with the essayist as to the necessity of operating on all cases when the diagnosis could be made, and when a reasonable time, say three or four weeks, had been allowed for the tissues about the cavity to have gotten in a more healthy condition. The majority of cases of abscess following pneumonia recovered. The difficulty of locating the cavity was very great in most cases.

DR. ROBERT H. BABCOCK discussed three points: 1. The location of the pulmonary cavity; he said one should bear in mind the fact that the cavity was likely to be located higher than expected. 2. One may be deceived into the belief that he had a pulmonary cavity to deal with following a pneumonic abscess, when, as a matter of fact, it might be a bronchiectatic cavity, or a system of bronchiectases, and the differential diagnosis was by no means easy. 3. Another point was with reference to empyema following pneumonia. This condition could usually be differentiated from pulmonary abscess, but it was not always easy to do so, by any means. This was particularly true when we had what not infrequently occurs—an interlobar empyema. A case was cited in point.

DR. CARL BECK exhibited a boy in connection with the discussion on Dr. Eisendrath's paper, who had, in succession, pneumonia, gangrene, abscess, with destruction of a large part of the left lung. The boy was operated on by him, and the abscess drained.

DR. EISENDRATH, in closing, said that medical treatment was useful in many cases. He had seen one case of acute gangrene following pneumonia the past year, the patient having recovered. Cases of abscess and gangrene were known to completely recover. Taking cases that became chronic, he thought the chances were far better with operation than without it. He thought it was impossible to differentiate a circumscribed empyema from an abscess or an interlobar empyema from an abscess.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Prescription Writing.

We purpose giving the fundamental prineiples employed in the writing of prescriptions. No apology is offered for taking up sueh an elementary subjeet, as we believe it will be appreciated by a large number of our readers. The whole subject will be discussed, including, in detail, the metrie system.

A prescription is the written evidenee of a physician's therapeutic ability. It is one of the things by which a physieian, just beginning practice, is measured. Not alone are defieieneies in this art eonfined to the young man just out of college, but seeming carelessness among older practitioners covers up their ignoranee and inability to write a prescription as it should be written. Suffiee to say that there is not a suffieient amount of time allotted to the medical student in properly training him in the method of prescription writing. Too many prescriptions are allowed to go into print without the proper endings, and in indifferent language. A prescription is a written formula for meaieines, with proper instruetions for methods of eompounding, to be followed by the druggist, as well as direetions for administration to be observed by the patient or his attendant.

In writing a preseription both the ingredients—if it be a compound prescription—and the instruetions to the druggist should always be written in Latin. While, as Thornton states, this is not imperative, yet there are many reasons why this should be carried out.

1. Latin is a language whieh will never undergo change, whieh insures perpetuity of the name given the drug.

2. Latin is understood in all countries and ean thus be universally interpreted.

3. The Latin language should be used in writing preseriptions because it is best as a rule that the patient should not know what he is taking. There are a great many patients who elaim that they are unable to take eertain drugs, as for example quinin, ealomel, morphin, etc., asserting that they are affected in certain peculiar ways by these several drugs. Should a physician preseribing for sueh peculiar individuals make the mistake which eaused them, no doubt, to leave their former doetor, then he will probably be similarly disposed of. So that in sueh instances the Latin terms not only inspire the patient to the belief that he has derived benefit from the hydrargyri ehloridum mite, whereas ealomel would have done him great harm.

Another valuable point to be gained in using Latin is that in the pharmaeopeia no offieial drug has two Latin names, while a preseription ealling for "snakeroot" may mean "serpentaria" or "eimicifuga," etc.

PARTS OF THE PRESCRIPTION.

A eompound prescription, to be complete and properly perfected, should be made up as follows:

1. The name of the patient, written in plain English.
2. The superscription.
3. The body of the preseription, or the names of the drugs to be preseribed, properly written in Latin.
4. The directions to the druggist, whieh should always be written in Latin.
5. Direetions to the patient, which, as in case of the first, should be written in plain English, and with definiteness as to time and method of taking.
6. The physician's name plainly written.

The name of the patient should have an important plaee upon the prescription, so that no mistake will be made by any member of the household when more than one member are sick at the same time, and to enable the druggist to know whether the prescription eompounded is aimed for an adult member of the family or an infant.

Treatment of Tic Douloureux (Trigeminal Neuralgia.)

The following is of service as reeommended by Merck's Arehives:

℞.	Butyl-chloral hydratis.....gr. lxxx	5	30
	Dionin .....gr. iv		25
	Aleoholis .....ʒss	16	
	Glyeerini .....ʒi	32	
	Aq. destil. q. s. ad.....ʒiv	128	

M. Sig.: One dessertspoonful every half hour until relieved, or three to four dessertspoonfuls every four hours.

Dionin is said to produce no sueh bad after-effeets as morphin, sueh as nausea, eonstipation, etc. It ean be given in doses ranging from one-fourth to one grain.

Treatment of Neuralgia.

The following is recommended in the superfieial forms of neuralgia:

℞.	Menthol 3ss	2	
	Olei gaultheriæ 3i	4	
	Tinct. eapsici .....m. x		66
	Ext. belladonnæ .....gr. xxii	1	50
	Lani 3iv	16	

M. Sig.: To be applied to painful area two or three times a day.

Treatment of Acute Mania.

In cases of aeute mania with marked mental exeitement, the following is recommended.

℞.	Hyoseinæ hydrobrom. .....gr. 1/8		008
	Morphinæ sulph. .....gr. ii		12
	Sacch. laetis q. s.		

M. Ft. eapsulæ No. xii. Sig.: One capsule every four to six hours.

In these acute eases of mania which very frequently oeeur in young women the condition of the bowels and the blood must always be very carefully observed and eorreeted. It is not unusual in sueh eases to obtain marked improvement within a very short time by promoting elimination by the bowels and kidneys.

Carbolic Acid in Tetanus.

In a case of tetanus whieh developed in a young man of eighteen years of age, Dr. Louis Plessner of Bay City, Mich., reports recovery from the use of carbolie aeid injections. The young man noticed stiffness of the neek, so he states, as early as the third day after stepping on a wire nail. The following injection was given:

℞.	Acidi earbol.....gr. ii		12
	Glyeerini		
	Aquæ, āā 3ss	2	

The foregoing injeetion eontaining 2 grains of carbolie acid was given twiee a day, the patient receiving in all 63 injections. The physieian states that the patient rested better in about one-half hour after the injection. He further states that the injection seemed to be fugitive in aetion. The kidneys were elosely watched, as well as other symptoms of carbolie acid poisoning. The only indieation was noticed in the odor of carbolic aeid in the breath. The only other medieine given was a mixture of ehloral and bromid during eonvaleseenee for insomnia present.

Treatment of Catarrhal Jaundice.

The bitter tonies along with dilute hydrochloric acid are reeommended as tonies, antifermentatives and hepatie stimulants, The following combination makes an effeetive mixture in sueh eases:

℞.	Aeidi nitro-hydroehlor. 3iv	16	
	Tinet. nueis vom. 3iii	12	
	Tinet. gentianæ q. s. ad.....ʒiii	96	

M. Sig.: One teaspoonful after meals three times a day in water.

The following is very often preseribed in eases of catarrh of the bile duets:

℞.	Sodii salicylatis 3ii	8	
	Ammonii ehloridi .....ʒss	16	
	Aquæ menth. pip. q. s. ad.....ʒiii	96	

M. Sig.: One dessertspoonful after each meal in water.

Treatment of Functional Hepatic Disorders.

The following combination is recommended by Lockwood:

R.	Pulv. rhei	gr. viii	50
	Sodii bicarb	gr. xx	1 33
	Pulv. ipecac.	gr. i	06
	Tinct. nucis vom.	m. xx	1 33
	Aq. menthæ pip. q. s. ad	℥iv	128

M. Sig.: Shake, one teaspoonful before each meal.

Treatment of Vaginal Diseases.

Prof. J. C. Wood, in *Ther. Gazette*, is of the opinion that by means of the atomizer, medicaments can better be forced into the tissues than when applied locally by means of applicators. In the treatment of leucorrhea due to gonorrheal infection, he sprays the vaginal walls through a fenestrated speculum with a solution of hydrogen peroxid of 50 per cent. strength. The walls are then wiped thoroughly and the following applied as an antiseptic spray:

R.	Acidi borici	gr. iv	25
	Thymol	gr. 1/16	004
	Sodii boratis	gr. i	06
	Sodii bicarb.	gr. ss	03
	Olei pini sylv	gr. 1/6	01
	Eucalyptol	gr. 1/10	005
	Olei gaultheriæ	gr. 1/10	005
	Olei piperitæ	gr. 1/10	005
	Alcoholis		
	Glycerini, āā	℥ii	64

If the secretion is mucous and tough, Dobell's solution is recommended. After spraying, the vaginal walls are kept apart by a tampon medicated with a 10 per cent. glycerin solution of ichthyol. After the removal of this the patient is instructed to take a douche of bichlorid 1 to 2000. The treatment should be repeated twice a week.

Astringent Dentifrice.

Sabrazes, in *Jour. de Méd. de Bordeux*, recommends the following:

R.	Saccharin.	gr. viiss	5
	Acidi benzoici	℥i	4
	Tinct. kramcriæ	℥ss	16
	Olei menth. pip.	m. vii	5
	Olei cinnamomi	m. x	66
	Alcoholis	℥iii	96

M. Sig.: Use as a dentifrice.

Medicolegal.

Two Thousand Dollars for Flesh Injury to Foot.—The Court of Appeals of Kentucky holds, in Bowling Green Stone Company vs. Capshaw, that an award of $2,000 damages for injury to a man's foot could not be considered excessive where the flesh was torn and mashed, so that under the great toe and the ball of the foot flesh had to be cut off, it being shown that the injury was painful and permanent, and that the man lost much time from labor and would be a slight cripple for life, though no bones were broken or removed.

Eight Thousand Dollars for Loss of Leg Below Knee.—The Supreme Court of Iowa holds, in the personal injury case of Wimber vs. the Iowa Central Railway Company, that where a switchman in his 39th year and in good health, with an expectancy of life of 26 years, met with an accident necessitating the amputation of his right leg about six inches below the knee, and causing pain, suffering, mental anguish, loss of time, and decreased ability to earn usual in such cases, an award of $14,500 damages must be considered excessive, and all in excess of $8,000 must be remitted, if the judgment be allowed to stand.

Fifteen Thousand Dollars for Hip Injury.—The Supreme Court of Alabama holds, in Southern Railway Company vs. Crowder, that where a passenger was thrown from her seat and hurt by a violent jerk of the train, the evidence tending to show that among the serious hurts which she sustained there was a fracture of a bone in the hip joint, in the treatment of which she was for several weeks kept prostrate with a weight suspended to her foot, and that this hip injury had resulted in impairment of her general health, and a stiffening and shortening of her leg to an extent which would thenceforth deprive her of its natural use, a verdict for $15,000 could not be said to be excessive, the jury being authorized to award for recovery a sum which would furnish reasonable compensation for these injuries and the suffering naturally attendant thereon.

Fixing of Compensation for Postmortem Examinations.—The New York statute provides that "a coroner shall have power, when necessary, to employ not more than two competent surgeons to make postmortem examinations and dissections and to testify to the same, the compensation therefor to be a county charge." Under this statute, the Court of Appeals of New York holds, in the case of Foy vs. Westchester County, the coroner has no power to fix the compensation of a physician whom he employs to make postmortem examinations. In this case, which was an action brought by a physician to recover for postmortem examinations made by the direction of a coroner, the physician alleged that the county had "audited and allowed for each of said postmortem examinations the sum of $10," from which the court assumes that he presented his claim to the board of supervisors, which made the audit. Continuing, it says that the board had jurisdiction to audit the same, and its audit was final, not having been reviewed or reversed upon certiorari, as it is termed, and was payable at the amount audited by the county treasurer upon the physician's presentation of the proper warrant or certificate of the supervisors. The allegation that the amount of the audit was "not the value of his services" might state a case for a review of the audit by certiorari, but not a cause of action. Wherefore, the court affirms a judgment in favor of the county, based on a dismissal of the complaint.

Spitting or Coughing of Blood.—In the case of Peterson vs. the Des Moines Life Association, the assured was asked in her medical examination whether she had ever had any "spitting or coughing of blood," and answered "No." There was, however, evidence that on various occasions prior to the giving of this answer the assured did spit blood, and the jury so found in response to a special interrogatory. But the trial court, in its instructions, limited the inquiry to the question whether the assured was subject to spitting or coughing of blood, and the Supreme Court of Iowa holds that this was proper. It says that the inquiry must be given a reasonable construction, and such construction would limit it to such spitting or coughing of blood as a reasonable person might suppose to indicate some ill health or physical condition affecting the desirability of the applicant as a risk. It would surely not be expected that the applicant should answer as to spitting of blood by reason of the extraction of a tooth or accidental biting of the tongue. The finding of the jury that the assured had spit blood, was, therefore, not conclusive. The jurors may have found, under the evidence, that she had not spit blood in such a sense as to show that her answer was fraudulent. The same reasoning, the Supreme court says, disposed of the complaint of the association in this case as to other answers of the assured with reference to previous ill health and accidents. It was for the jury to say not only whether such answers were untrue, but also whether, if untrue, they were fraudulent.

Kleptomania—Opinions of Experts.—Kleptomania, according to the Supreme Court of Iowa, in the larceny case of State vs. McCullough, where the defense was insanity, is an irresistible desire to steal. It is, as it understands it, a weakening of the will power to such an extent as to leave the afflicted one powerless to control his impulse to appropriate the personal property of others, without regard to whether such impulse is inspired by avarice, greed, or idle fancy. Then, practically, the whole defense in this case resting upon the opinions of experts, who were men of a high degree of skill and long experience in treating mental ailments, the court holds that, while the jury were to pass upon the weight of the opinions in the light of all the facts, they should have been permitted to take such opinions fairly, and consider them without detraction by the court. And, inasmuch as it says that the Supreme court as now constituted, would not, if the

question were a new one, approve the reasoning employed in the Hockett case (70 Iowa, 446), where expert testimony was more or less discredited, it states that it is not inclined to apply the rule announced there to any save a similar state of facts. In that case the witnesses testified, as appears from the opinion, wholly in response to hypothetical questions, while here two of the experts had personally examined the defendant, and one of them based his opinion in part on the facts learned through such examination. This, it thinks, was a material distinction, and, it holds, made the criticism approved in the Hockett case unwarranted and erroneous when contained in an instruction to the jury in this case.

Current Medical Literature

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), November 2.

1 *Carbonate of Creosote as a Remedy for Pneumonia, with a Report of Nine Cases in Which the Administration of It Has Been Followed by Remarkably Uniform and Good Results. Leonard Weber.
2 On the Use of A. C. E. Mixture and Ethyl Bromid in Operations for Adenoid Vegetations. J. W. Gleitsmann.
3 Notes on Vienna Hospitals. John E. Somers.
4 *The Pathology of Bright's Disease. George E. Davis.
5 *A Report of Some Cases Presenting Gross Lesions of the Basal Ganglia. M. L. Perry.

Boston Medical and Surgical Journal, October 31.

6 *The Mechanics of Lateral Curvature as Applied to the Treatment of Severe Cases. (Second Paper.) Robert W. Lovett.
7 *Intermittent Hydrops. E. G. Brackett and F. J. Cotton.
8 *Association of Anemia with Chronic Enlargement of the Spleen. (Concluded.) Arthur H. Wentworth.
9 A Case of Anomia and Paraphasia. Geo. H. Thomas.
10 On the Passing of the Trephine. Thomas H. Manley.

Medical News (N. Y.), November 2.

11 *Some Observations on Southern California. Samuel A. Fiske.
12 *Examination of the Mouth in Infancy Childhood. Jacob Sobel.
13 A Case of Concussion of the Brain and Hystero-epilepsy. William B. Noyes.
14 *On Experimental Tuberculosis of the Suprarenal Capsule in Relation to Addison's Disease; Preliminary Report of a Pathological Study. Bindo De Vecchi.
15 *The Physician as a Social Factor. Alexander Rovinsky.
16 *An Interesting Accident of Staining. J. O. Cobb.

American Medicine (Philadelphia), November 2.

17 *The Influence of Mental Depression on the Development of Malignant Disease. Joseph D. Bryant.
18 *Transmission of Tuberculosis Through Meat and Milk. (Concluded.) John J. Repp.
19 *Clinical Points in Diabetes and Bright's Disease. A. J. Hodgson.
20 Convulsive Tics. Otto Lerch.
21 *The Relative Infrequency of Tuberculosis Among Jews. Maurice Fishberg.
22 *Should We Burn Our Dead? Henry D. Fulton.
23 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Philadelphia Medical Journal, November 2.

24 *Observations on the Treatment of Croupous Pneumonia. James C. Wilson.
25 *Appendiceal Fistula. John B. Deaver.
26 The Etiological Potency of Heredity in Mental Disease. Carlos F. MacDonald.
27 Acute Alcoholic Multiple Neuritis with Peculiar Changes in the Gasserian Ganglia. Charles W. Burr and Daniel J. McCarthy.
28 The Influence of Secondary Infection in Chronic Pulmonary Phthisis. Alexander G. R. Foulerton.

New York Medical Journal, November 2.

29 *Address in Surgery. Reginald H. Sayre.
30 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
31 *Scientific Aids to Diagnosis. Henry H. Holton.
32 How Do You Treat Habitual Constipation? (Concluded.) R. C. Burton, A. Noel Smith, Joseph L. Spruill, Harold D. Cochrane, J. Molgaard, L. J. Jermain, M. M. Saliba.

Cincinnati Lancet-Clinic, November 2.

33 *Two Cases; Eight and Ten Intestinal Perforations, and One Button Anastomosis; Recovery. J. F. Baldwin.
34 *Of How Much Value Is Alcohol as a Medicine. Katherine Rooney.

St. Louis Medical Review, November 2.

35 Gunshot Wounds of the Pregnant Uterus. George Gellhorn.
36 *A New Disease, or an Old Disease with New Features. J. W Carhart.

Albany Medical Annals, November.

37 Address, Albany Medical College. Howard Van Rensselaer.
38 The Functions of a Medical Society. Andrew MacFarlane.
39 Selected Topics in Obstetrics. George M. McCombs.
40 Why Go to a Sanitarium? W. F. Robinson.

Medicine (Chicago), October.

41 *The Stereognostic Sense. L. Harrison Mettler.
42 *Psychology of Neurasthenia. James G. Kiernan.
43 Cerebral Aneurysm, with Report of a Case. H. H. Stoner.
44 Arteriosclerosis. Harold N. Moyer.

Peoria Medical Journal, October.

45 Dysentery. M. S. Marcy.

Pennsylvania Medical Journal (Pittsburg), October.

46 Address of the President, Medical Society of the State of Pennsylvania. Thomas D. Davis.
47 Address of Welcome, Philadelphia County Medical Society. Geo. Erety Shoemaker.
48 Address of Governor. William A. Stone.
49 Some Aural Complications of Influenza. S. MacCuen Smith.
50 Incudectomy in the Treatment of Progressive Hardness of Hearing, Tinnitus, and Aural Vertigo. Charles H. Burnett.

American Gynecological and Obstetrical Journal (N.Y.). October.

51 *Fibroids and Pregnancy. Charles G. Cumston.
52 Conservative Surgery of the Ovaries and Tubes; Report of a Case. W. W. Grant.
53 Report of a Case of Ruptured Ectopic Gestation Successfully Operated upon in a Tenement House. Abram Brothers.
54 *Is Cesarean Section Justifiable in the Treatment of Placenta Previa? E. Gustav Zinke.

The Clinical Review (Chicago), November.

55 The Use of Oxygen Gas in Diseases of the Chest. John M. Patton.
56 Clinical Lectures upon Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Woman's Medical Journal (Toledo, Ohio), September.

57 The Medical Woman as Teacher in Medical Schools. Eliza H. Root.
58 How Long Does Widal's Reaction Persist? Helen McMurchy.

The Journal of Tuberculosis (Asheville, N. C.), October.

59 *The Skirmish Line of Incipient Tuberculosis. J. H. Tyndale.
60 *On the Use of Alcohol in Phthisis. Edward Preble.
61 *The Modern Treatment of Tuberculodermata. Noah H. Aronstam.

Maryland Medical Journal (Baltimore), November.

62 Advances in Preventive Medicine. A. C. Abbott.
63 Chronic Cystitis Due to Bacillus Typhosus; Report of a Case of Seven Years' Duration. Hugh H. Young.

Archives of Otology (N. Y.), August-October.

64 *On the Therapeutic Value of Vibratory Massage of the Drumhead. Dr. Schwabach.
65 *On Otogenous Meningitis. Jacob Cohn.
66 *Retropharyngeal Abscesses After Otitis Media Purulenta. George Kien.
67 *Thrombo-phlebitis of the Superior Longitudinal Sinus Following Inflammation of the Frontal Sinus. G. Killian.
68 A True Cholesteatoma in the Posterior Cranial Fossa—Infected by Middle Ear Suppuration—Operation—Recovery. O. Korner.
69 A Case of Pyemia Caused by Bilateral Otitis Media, with Osteophlebitis of the Temporal Bone. E. Rimini.
70 Two Cases of Brain Abscess—Operation—Recovery. P Manasse.
71 *The Technique of Intranasal Operations. Alfred Denker.
72 *The Histology of Aural Polypi. G. Bruhl.
73 Operations on the Mastoid in Constitutional Disease. Ernst Barth.
74 *Eye-Disease in Relation to Tuberculosis of the Nasal Mucous Membrane, and the Treatment of the Latter by Means of Lactic Acid. V. Hinsberg.

Canadian Journal of Medicine and Surgery (Toronto). November.

75 "The Passing of the Surgeon" in Toronto. F. N. G. Starr.
76 *Epidemic Cerebrospinal Meningitis—The History of an Outbreak. J. McKenty.
77 *Mild Smallpox. G. A. Kennedy.
78 *On the Necessity of Better Recognition and Isolation of Trachomatous Patients in Canada. W. Gordon M. Byers.

The Laryngoscope (St. Louis), October.

79 *The Nasal Septum. Walter J. Freeman.
80 The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.
81 A Case of Epileptiform Convulsions Caused by Shoe-Button in the Nose. J. S. Steele.

82 Recurrent Paralysis with Complete Aphonia Passing into Abductor Paralysis, with Returning Singing Voice. J. W. Gleitsmann.
83 *Anilin Oil, with Report of a Case Showing Toxic Symptoms from Its Use in the Ear. Homer Dupuy.
84 *Acute Suppuration of the Fauclal Tonsil and Peritonsillar Tissue. M. A. Goldstein.
85 Glandular Complications of Tonsillitis and Peritonsillitis. Talbot R. Chambers.
86 Unusual Foreign Body in Pharynx. W. Stanley Samson.

International Journal of Surgery (N. Y.), October.

87 Surgery of the Billary Passages. John B. Deaver.
88 The Operation for Choledochus Stone. J. W. Kime.
89 On Suprapubic Cystotomy and Retrograde Catheterization as a Guide in Perineal Section for Obliterative Urethritis. Howard Crutcher.
90 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
91 Appendicitis, When to Operate. A. L. Beahan.
92 Regional Minor Surgery. (Continued.) George G. Van Schaick.
93 Report of a Remarkable Case of Fractured Skull. Granville P. Conn.

Medical Mirror (St. Louis), September.

94 The Care of the Consumptive. J. W. Kime.
95 Pulmonary Tuberculosis. W. J. Fairfield.

Transactions of the Chicago Pathological Society, October 14

96 *The Question of Ovarian Pregnancy. J. Clarence Webster.
97 Tracheo-Bronchial Fibrinous Cast. E. R. LeCount.
98 Hyperplastic Tuberculosis of the Vermiform Appendix. Thomas R. Crowder.
99 Demonstration of a Specimen of Chronic Indurative Paranephritis and Diffuse Capsular Lipoma Following Chronic Suppurative Pyelitis. S. Dahl.

Kansas City Medical Index-Lancet, November.

100 How Far Should the Generalist Invade the Special Field of Gynecology? C. Lester Hall.
101 Etiology and Treatment of Prostatic Hypertrophy. E. O. Smith.
102 Reminiscences of a Recent Trip Abroad, Including Visits to the London, Paris, Berlin, etc., Hospitals, Clinics, Medical Museums and Libraries, as Well as the British Medical Association. John Punton.
103 Berlin, Germany. Richard J. Tivnen.

Fort Wayne Medical Journal-Magazine, October.

104 *Hydriatics in the Treatment of Chlorosis. G. W. McCaskey.
105 A Report of Two Interesting Cases of Chronic Rheumatism. E. J. Yager.
106 An Anomalous Heart. N. L. Deming.
107 President McKinley's Case. H. V. Sweringen.

Southern Illinois Journal of Medicine and Surgery (Metropolis), October.

108 Puerperal Eclampsia, with Report of Cases. D. W. Grear.

Merck's Archives (N. Y.), October.

109 *The Therapeutic Management of Alcoholic Inebriety. J. M. French.
110 Therapeutics in Tetanus. F. K. Day.
111 An Index of Diseases Alphabetically Arranged, with Their Modern Treatment. (Continued.) G. Bjorkman.

Louisville Monthly Journal of Medicine and Surgery, November.

112 Duties of Physicians to Each Other. Wm. Blair.
113 Management of Typhoid Fever in Country Practice. R. D. Hovions.
114 *The Clinical Examination of the Blood in Diagnosis. L. B. Cook.
115 *Report of Two Cases of Aneurysm. J. L. Atkinson.
116 Tuberculous Spondylitis, or Pott's Disease. D. B. Stone.
117 A Report of Some Surgical Cases. J. Hunter Peak.

Vermont Medical Monthly (Burlington), September 25.

118 Treatment of Sciatic Neuritis Due to the Uric Acid Diathesis. H. Edwin Lewis.

Medical Bulletin (Philadelphia), October.

119 Clinic Held September 25, Before Members of the Pennsylvania State Medical Society, in the Medico-Chirurgical Hospital. William L. Rodman.
120 Introductory Address, Medico-Chirurgical College, Session of 1901 and 1902. John C. Heisler.
121 *The Therapy of Phytolacca Decandra. John V. Shoemaker.

Detroit Medical Journal, October.

122 Complicated Pregnancy Requiring Surgical Interference. T. K. Holmes.
123 Mastoid Operations—Disaster from Waiting for Group Symptoms. C. B. Stockwell.
124 Aortic Aneurysm. David E. Hills.
125 The Phillippine Islands from Health Standpoint. Graham E. Henson.

Kingston Medical Quarterly, October.

126 Presidential Address, Executive Health Officers' Association of Ontario. W. T. Conneli.
127 Tuberculosis: Do Our Schools Favor Its Propagation and Extension? John Herald.

Medical Examiner and Practitioner (N. Y.), October.

128 Substandard Risks in Relation to Life Insurance. E. Poels.
129 On the Causes of Deaths in the Early Years of Assurance. R. Hingston Fox.
130 Observation on Certain Alcoholic Habits in Relation to Life Assurance. Dyce Duckworth.
131 Woman from the Standpoint of Life Insurance. Dr. Mahillou.
132 *Appendicitis and Life Insurance. J. Welll-Mantou.
133 Syphilis and Life Insurance (Résumé). L. W. Salomonsen.
134 Albuminuria for Sixteen Years Without Perceptible Impairment of Health. P. Maxwell Foshay.
135 A Contribution to Our Knowledge on Antipyretics. L. H. Warner.

Southern California Practitioner (Los Angeles), October.

136 Vaginal and Cervical Lacerations. Rose T. Bullard.
137 Intrauterine Infection Best Treated by Intra-irrigation. O. D. Fitzgerald.
138 Glandular Fever. Dudley Jackson.

AMERICAN.

1. **Creosote in Pneumonia.**—A number of cases are reported showing the benefit of the use of creosote in pneumonia. The formula advised is:

℞. Creosot. carbonat. 3ss
Sapon. medicat. 3l

M. F. capsulæ No. 60. Two to be taken every three hours, ten to twelve daily.

Weber maintains that it exerts a remarkable beneficial and uniform influence on pneumonic patients, and asks whether it is really a remedy for the disease. He does not think the beneficial qualities are due to antipyretic or bactericidal action and holds that it must be antidotal to pneumonic toxins.

4.—See abstract in THE JOURNAL, xxxvi, p. 1726.

5. **Basal Cerebral Lesions.**—Perry reports three asylum cases in which interesting postmortem findings occurred. The first was one of acute mania where there were no paralyses nor localized symptoms. There was an area of softening, involving the posterior two-thirds of the lenticular nucleus, and the posterior half of the caudate nucleus. The fibers of the capsule appeared to be normal, as were the thalami and the remainder of the basal ganglia and other portions of the brain. The second was a case of terminal dementia in which there was a sudden attack of spasm of the left side with loss of consciousness, death occurring twenty-five minutes later. There were two small hemorrhages in the optic thalamus of the right side, one the size of a pea and the other about one-fourth as large. Both were situated in the posterior part of the thalamus. No other lesions existed to account for the condition. In the third case, an epileptic suffering from chronic mania for years, the patient died from enteritis without any localizing symptoms. There was a cystic tumor of the pineal gland, making it about four times the size of the normal organ, but no degeneration of the brain tracts whatever. He thinks the following conclusions may be drawn from the cases: 1. The corpus striatum—caudate and lenticular nuclei—has no intimate relation with either the motor or the psychical spheres. 2. There may be a very extensive lesion involving both the caudate and the lenticular nuclei without giving any symptoms. 3. There is in the posterior portion of the lateral nucleus of the optic thalamus an area, irritation of which will produce immediate loss of consciousness with convulsive movements upon the opposite side, and destruction of which will produce immediate death. 4. There may be a tumor of considerable size involving the pineal gland without giving any pressure symptoms. 5. The pineal gland may be entirely destroyed by disease without producing symptoms. 6. There is no tract of nerve fibers originating in the pineal gland and connecting it with the remainder of the brain.

6. **Spinal Curvature.**—The conclusions of this second article by Lovett are in substance as follows: In cases of scoliosis with fixed bony curves, the same corrective treatment can not be applied as in cases of flexible curves. The fact that there is

a fixed portion of the spine situated between two movable parts makes it easier to twist or displace the thorax as a whole than to make any change in the curved portion itself, hence forcible attempts to correct bony rotations in fixed curves will increase the lateral curve unless the thorax is kept from rotating, and forcible attempts to correct the latter curves are likely to increase the rotation. Suspension apparently has little corrective effect in rigid cases, being more likely to affect the compensatory curves than to produce improvement in the rigid curve itself. For the application of forcible jackets the prone position with the legs hanging perpendicularly seems most effective for two reasons: 1, because in the prone position, greater side displacement between the vertebræ is permitted on manipulation than in the suspended position, the spine not being put on a stretch, and elasticity thereby exhausted, and, 2, because in the prone position, with the legs hanging perpendicularly, it is possible to apply a jacket which shall flatten to some degree the lumbar curve of the spine and when the erect position is assumed this flattening of the lumbar spine will necessitate some degree of hyperextension in the dorsal region on account of the equilibrium of the spine. When the effect of rotations of the spine, and their effect on lateral deviation is better understood, it may be possible to add the element of rotation to the corrective forceps applied in the treatment of scoliosis. With regard to forcible correction one or two things may be done: 1. Force, carefully antagonized, may be applied to the curve itself. 2. The curved region may be twisted as a whole, or displaced sideways as a whole, in its relation to the rest of the spine. The first is the more desirable when possible, but the latter may be of much use in improving the general outline of the body. The separation of the two is important in intelligent therapeutics. It is relatively easy to displace the thorax in relation to the rest of the column, but relatively hard to change the curve itself. Forcible correction seems to have its place only as preliminary to gymnastic treatment, and the author does not advocate the use of corrective plaster jackets except as a temporary means to secure a better foundation for gymnastics or, if necessary, for mechanical treatment.

7. **Intermittent Hydrops.**—Taking a case as their text, Brackett and Cotton review the symptoms and the literature of this disorder. They say it seems we have here an affection without a discoverable anatomical basis, without proof of infection, giving a simple non-inflammatory serous effusion in the joints, occurring at regular inexplicable intervals, interrupted without rule, or in accordance with what we may term psychic stimuli, associated in some instances with what are usually classed as functional nervous disorders. The disease seems to be a functional, as opposed to an organic trouble, and whether we do or do not call it a vasomotor neurosis depends upon our choice of words. The therapeutics of the disorder is bewildering, and it is hard to formulate treatment, but it seems fair to infer that quinin and arsenic, and electricity should be tried, and if no result is achieved, after a time allowed for the chance of spontaneous remission, puncture and injections or open drainage may be resorted to. A rather extensive bibliography, largely taken from Benda's exhaustive monograph on the subject, is appended.

8. **Splenic Anemia.**—In his concluding paper Wentworth summarizes his conclusions: 1. The blood changes are those of secondary anemia varying in different cases. 2. The degree of cachexia does not always correspond with the blood changes. The percentage of hemoglobin is frequently over 50 per cent., the number of red corpuscles is often more than 3,000,000, and it is obvious that the cachexia does not depend on these conditions. He suggests as probable that the cachexia and other symptoms are produced by a chronic intoxication, similar to that of cancer, tubercle, etc., and that the splenic and blood changes are merely two of the results produced. The source of intoxication is unknown and may be multiple. 3. It is not easy to see how fibroid changes in the spleen can produce toxin. There is no analogy between the liver, kidney and spleen. An overgrowth of connective tissue in the spleen can not produce symptoms, and the functions of the spleen are in no way analogous to those of the thyroid gland and suprarenal capsules. 4. If it were possible to produce toxic substance by fibrous tissue, it is difficult to account for the absence of such in connection with chronic hyperplasia of the spleen from various causes. In these cases the splenic lesions are identical with those described by Banti as characteristic of anemia splenica. 5. It has been said that splenic alterations are primary, but this requires more facts to confirm it. The splenic lesions are characteristic of chronic hyperplasia. 6. The splenic lesions in so-called splenic anemia do not warrant the statement made by Banti and others that it is related in any way with pseudoleukemia. There is no analogy between the hard glandular form of malignant lymphoma and the lesions of chronic splenic hyperplasia. There is also considerable uncertainty as to the nature of the hard form of malignant lymphoma, and its classification is discussible. 7. A tendency to generalize from observations of one or two cases is to be deplored. In splenic anemia nothing characteristic of a primary disease has been discovered in any organ or in the blood. The few cases unquestionably show a diverse etiology. The investigations have been incomplete and most of the statements depend on clinical observations. Banti's own cases prove the varied etiology. 8. The evidence is conclusive that anemia infantum pseudoleukemica is a secondary anemia, and that it owes its peculiar symptoms and blood changes to the occurrence of severe anemia at an early age. 9. There is little doubt that anemia infantum pseudoleukemica and anemia splenica infettiva are identical conditions and there is less proof that anemia splenica infettiva is a primary disease of the spleen than that the other is a primary condition of the blood. 10. There is no apparent connection between the character of the blood and the splenic changes in infancy. Identical lesions in the spleen show varying degrees of anemia, sometimes marked and sometimes very slight changes in the blood. The degree of leucocytosis varies in the same way. 11. These differences can not be explained by the duration of the condition in many cases. All that one can say about these secondary anemias of infancy is that in some cases there occurs a chronic hyperplasia of the spleen, and in others not. 12. The names anemia splenica, primary splenomegaly, anemia splenica infettiva, and anemia infantum pseudoleukemica are objectionable because they are misleading. Anemia splenica has been used for many years as one of the synonyms of pseudoleukemia and should not be used to describe conditions that are in no way related to pseudoleukemia. No evidence has been furnished justifying the use of the term "primary" in splenomegaly. The same may be said of the word "infettiva" in connection with the infantile form of splenic anemia. Anemia infantum pseudoleukemica is a secondary anemia of infancy, and is no way related to pseudoleukemia. A very complete bibliography is appended to the paper.

11. **Southern California.**—The general conclusion of Fiske's article is that the Southern California climate is as soothing as that of Colorado is stimulating. There seem to be two distinct seasons in hotel life there. In the winter come the tourists from the East, in the summer the migration of the Californian himself. He has been generally told that summer is the preferable season of the two.

12. **The Mouth in Infancy.**—The method of examination of the mouth in childhood is described in detail by Sobel, who would conduct a systematic examination as follows: A depressor is inserted in the left angle of the mouth, the cheek and lips everted, then at the right angle and the cheek and lips everted. The spatula then catches the frenum and the under surface of the tongue, the frenum and the floor of the mouth are observed. The spatula being removed the upper surface of the tongue is viewed; the latter then firmly depressed and the hard and soft palate, fauces, tonsils, pharynx and, in the vast majority of cases, the epiglottis are observed. The first step —eversion of the cheeks and lips—being the least disagreeable, gains the confidence of the patient for the more uncomfortable examination of the tonsils and pharynx. He points out the different conditions which will be revealed by each step of the operation and suggests as an ideal means of holding the child

to have it rest against the mother's right breast, its head against her shoulder, the left hand holding the child's knee's and her right its hands. The right index finger and thumb are placed on the infant's temporal region, and with the palm the head is held firmly against the mother's shoulder. The importance of good light is mentioned. Direct daylight thrown into the mouth answers every purpose and subdued light is rather more satisfactory than bright sunlight. At night it is always well to examine with a forehead reflector or an especially constructed pocket electric lamp.

14. **Suprarenal Capsule Tuberculosis.**—From experiments on rabbits De Vecchi finds that by tuberculosing the suprarenals a serious poisoning of the animal is produced, ultimately fatal. The circulating poison has great destructive properties, as shown by pathologic changes in the heart, liver and kidneys, and the cells of the central nervous system are particularly vulnerable. These explain the nervous symptoms of those suffering from Addison's disease. Secondary changes of the sympathetic, even where the celiac ganglion was apparently destroyed, were not observed. He has not been able to produce any skin pigmentation in his experiments. The lungs, the alimentary tract, the pituitary glands, the thyroid and ovaries show no tubercular changes.

15. **The Physician as a Social Factor.**—The fact that no physician was selected for a place in the Hall of Fame, and the general lower social position of the profession as compared with the two other learned professions are dilated upon by Rovinsky, who explains the facts by the deficient preliminary education and the commercial tendencies of so many members. The need is of a united profession that will take a more active part in the social and political affairs, better registration of the profession and representation in its legislative assembly and better *esprit du corps*. We have let things go of themselves too much, and have cultivated individualism to our damage.

16. **Staining Accidents.**—Cobb reports the observation of what appeared to be a new bacillus, a rod about three times the size of the tubercle bacillus and shaded light-blue, while using methyl instead of methylene blue as a contrast stain in sputum tests. Instead of a bacillus he found it was really a crystal of the stain, and he calls attention to the need of care in the use of gentian-violet, methyl-violet, rosanilin and Sudan iii, especially on sputum work.

17. **Mental Impression and Malignant Disease.**—Bryant has studied the subject of mental depression on the incidence of cancer, reviewing the literature, especially the statements that it may act as an exciting cause for the latter. It appears from his investigation that there is little evidence to warrant the assertion that mental depression exerts any influence in the causation of cancer except from blood impoverishment, which almost invariably exists in melancholia. The preponderance of malignant manifestations in the female should be attributed rather to the broader field of attack than to any form of special vulnerability.

18. **Tuberculosis.**—Repp concludes his article by summing up the evidence as it appears to him that tuberculosis may be transmitted from animals by eating meat or being inoculated with it, also that it may be transmitted through milk of tuberculous cows or by inoculation of the same, both when the udder is diseased and when it is healthy. The meat and milk of certain tuberculous animals contain living virulent tubercle bacilli. Tubercle bacilli of cattle are pathogenic to man, hence he concludes that the meat of such animals is unfit to eat if highly tuberculous, but is safe if only slightly so, especially if well cooked and the tuberculous tissue eliminated. Milk from tuberculous cows is always bad if the udder is infected unless thoroughly sterilized and if the udder is apparently not infected it still should be looked on with suspicion. Tuberculous cows may be kept for breeding purposes if they are isolated even from their own offspring, and their products sterilized before use or they may be slaughtered for food under conditions imposed as stated above. All legislation and regulation should favor the disposition of tuberculous animals as suggested above.

19.—See abstract in The Journal of July 13, p. 134.

21. **Tuberculosis Among the Jews.**—Fishberg goes over the statistics, especially of New York City, as to tuberculosis in the Jews and credits the apparent immunity to the precautions specified in the Jewish ritual as regards food, especially meat, and the relative infrequency of alcoholism and syphilis in the race.

22.—**Cremation.**—Fulton's article is a plea for cremation as opposed to burials, using the well-known arguments and also the economic ones of less cost to the individual's estate and family.

23.—See also ¶30.

24. **Croupous Pneumonia.**—Croupous pneumonia more than any other disease, as Wilson remarks, demands a very large series of cases to determine the efficiency of any kind of treatment, and he advocates the expectant stimulating and supporting treatment. The method of the German Hospital in Philadelphia is outlined. The diet consists chiefly in milk and light broths, though some variety is allowed in small amounts. When the patient takes from one to two pints of milk and a pint of chicken or mutton broth every twenty-four hours it is regarded as sufficient. Water is given freely but in small amounts. Under ordinary conditions the patient is sponged night and morning, the temperature being regulated by the sensation. If the bodily temperature exceeds 104 F. cold sponging may be repeated at intervals of two to three hours and in the early course of the attack two or three large flat ice-packs are applied to the affected side for the purpose of making the patients feel more comfortable. Alcohol is given, in the majority of cases ordinarily not over 4 to 6 ounces of whiskey in twenty-four hours, though larger amounts may be given to patients accustomed to its use. A calomel purge is commonly given on admission—in fractional doses if there is nausea and vomiting. Opiates are used for pain generally in the form of Dover's powders in 2 or 3 grain tablets, diminishing towards the close of the attack. Cardiac sedatives are seldom given, digitalis sometimes in response to direct indications. As a rule strychnia is given as a cardiac stimulant, and the nitrites, especially nitroglycerin, especially for the relief of the laboring right ventricle. If these measures fail and small mucous râles and cyanosis occur, venesection is indicated. If pulmonary edema supervene, atropin is given hypodermically, often with apparently good results. Dyspnea is combated with oxygen, well diluted with air. Dover's powders will control the nervous symptoms to some extent, and increase in the quantity of alcohol together with cold applications to the head and neck. Neither poultices nor cotton jackets are allowed. The patients wear a moderately heavy, loose-fitting merino undershirt. At the crisis the patient is carefully watched, and if the Dover's powders have been discontinued, a hypodermic injection or an opium suppository is administered. In some cases ammonium carbonate, alcohol or hot coffee seem indicated. Collapse is very rare. During convalescence an abundantly nutritious diet is given. Bitter tonics are sometimes employed, and there is no hurry about the patient's getting out of bed.

25.—See abstract in The Journal of November 9, p. 1260.

29.—See abstract in The Journal of October 5, p. 934.

30. **The Lane Lectures.**—This eighth lecture by Morris reviews the nervous disorders of the skin, their mechanism, nature, treatment, etc. A large part of the lecture is given to the subject of itching, which he does not attempt to fully explain. The other subjects mentioned are urticaria, dermographism, stigmata and hysterical edema.

31.—See abstract in The Journal of October 5, p. 935.

33. **Gunshot Wound of the Abdomen.**—After reporting two cases Baldwin gives his comments, and maintains that, at least in civil practice, every gunshot wound of the abdomen should be followed up at the earliest possible opportunity and every bit of clothing or extravasated matter and if possible the bullet itself be removed; while if penetration has occurred, the proper closure of the intestinal wound will give the patients practically the only chance.

34. **Alcohol.**—Rooney reports here briefly the experience of Kane Summit Hospital, which has been a temperance institution for a number of years and where the results of the disuse of alcohol have been most encouraging. She thinks the effects of the agent are those of a sort of "nerve tooler" and brain paralysant and that it is utterly useless as a tonic or a food.

36. **New Disease.**—Carhart describes a disorder which has no marked prodromal stage, commencing with a nervous chill, intense pain in the back and abdomen, but not with the usual malarial pyrexia and sweating. Soon after the rigor sets in the head becomes intensely hot with acute pain, usually beginning in the medulla oblongata and extending over the top of the head to the forehead. There is extreme restlessness, but rarely loss of consciousness, though occasionally delirium. The general temperature rises, but not in proportion to the cerebral heat. The tongue is coated with the thinnest possible, delicate, bluish-white coating, not foul in any part; no red lines or margins; not usually flabby with indentations. Thirst is almost absent; water seems to aggravate the prevalent slight nausea. There is almost complete anorexia, and emaciation is rapid. The bowels are more or less constipated, the kidneys little damaged, occasionally slight albuminuria, no sugar. The disease does not seem to be contagious. All the cases occurred in the early autumn, after a hot, dry summer. A resemblance to cerebrospinal meningitis is noticed, but there were no spots or streaks of congestion on the face, forehead or ears and some other differences, no spots or patches. The tongue is different. Quinin seems to aggravate the condition and the best treatment in his experience has been the use of mild laxatives, potassium bromid for the nervous symptoms, and cold water to the head with occasional hot footbaths. The gradual flow of cool water on the head seems to have the best effect. Absolute quiet and freedom from all excitement must be maintained. He does not report the proportion of fatalities, though it does not seem to be usually or generally fatal from the tone of his remarks.

41. **The Stereognostic Sense.**—From a general review of the subject, Mettler concludes that our knowledge of the position of the limbs is in all probability the result of a cortical association and interpretation of numerous afferent impulses in the muscles, articulations and the skin, in all of which are found sensory tactile end organs. The prominence of one or other set of afferent impulses in the production of the stereognostic sense depends whether the parts are in active movement or are at rest. The necessity of activity or rest in perception depends largely upon its nature. In most cases the space and pressure sense will have to be employed, involving a sensation of movement, hence the deep tactile organs concerned in the so-called muscle sense will come into play. On the other hand the limb may remain at rest and be able to give us knowledge of a stream of water moving over it or of the movements of a feather, so that we can tell the nature of these objects where the skin organs are employed. In any case the sensation is primarily one of touch. The locality of sensation is of minor importance. Astereognosis is hardly a very definite localizing symptom; it merely indicates a false perception resulting from an alteration in the central perceptive apparatus or in the paths, but in conjunction with other symptoms it may prove to be of the greatest value.

42. **Psychology of Neurasthenia.**—Kiernan's paper, though not long, is rather an elaborate consideration of the subject, which can best be appreciated by reading.

51. **Fibroids in Pregnancy.**—The dangers and advantages of myomectomy during pregnancy are detailed by Cumston, who thinks that direct operative treatment during pregnancy for the removal of fibroids is rarely indicated and that it is better to wait until labor before operating. In a few cases it is probably better to interfere during the puerperium when the child has been expelled without operative interference. Premature labor artificially induced should be rejected. According to the conditions the surgeon will choose between conservative myomectomy and the radical operation. As regards the obstetric aspect of the question, he would say that the forceps should never be applied to overcome any impediment caused by fibroids and he thinks that version is a deplorable recourse. The question whether to wait or operate is important and where the pelvis is completely blocked and the impossibility of a natural labor is evident, Cesarean section should be resorted to before the birth canal has become too distended and unfavorable conditions have arisen.

54. **Cesarean Section in Placenta Previa.**—Zinke analyzes the statistics and holds that Cesarean section and Porro's operation are perfectly legitimate and elective procedures in all cases of placenta previa, central and complete, and especially so when the patient is a primapara, when the os is closed and the cervix unabridged; when hemorrhage is profuse and can not be controlled by tampons, and separation of the placenta around the internal os is difficult or impossible. There are exceptional cases and perhaps even a small majority of placenta previa cases that can be treated successfully in the manner of Fry and DeLee, but the value and importance of the child's life must be considered.

59. **Incipient Tuberculosis.**—In order to establish the very first indications or "the skirmish line" of tuberculous infection, Tyndale says we must watch for the following: 1. Progressive and persistent anemia, unaccounted for by other conditions, especially stomachic or intestinal indigestion. This last, if existing, should be removed before a positive diagnosis is entered on. 2. Progressive and persistent emaciation with the same exclusions as above. Frequent weighings alone are to be relied upon. He calls attention to the entire occlusion of the thoracic duct curve by tuberculous nodes as enough in itself to account for the rapid progressive anemia and emaciation. 3. The earliest auscultation and percussion sounds. Seek for the changes of rhythm in breathing and do not wait for the changes in pitch, the interrupted rhythm, the broken or the "ragtime" rhythm. The percussion findings give no clue to the condition, save in confirming by its normality that no organic change leading to alteration of pitch or of quality has as yet taken place.

60. **Alcohol in Phthisis.**—Preble objects to the free use of alcohol, but says it would be a valuable remedy if all the possibility of misuse were guarded against. Generally speaking, it is not longer given when the indications can be filled by other remedies.

61. **Tuberculodermata.**—Aronstam emphasizes the fact that the various tuberculides are merely a local indication of a general tuberculous dyscrasia or a cutaneous manifestation of the undermining destructive, imperiling and ravaging action of the tubercle bacilli, which may at any time favor the entrance of pulmonary, meningeal, or peritoneal tuberculosis. Hence we should treat the tuberculides just as we treat cases of tuberculosis of other organs, employing all possible means, prophylactic, mechanical or medicinal, to ameliorate incurable ones and to eradicate those which can be done away with.

64. **Vibratory Massage of Drumhead.**—Schwabach has experimented with vibratory massage in 173 cases, 103 of which were bilateral affections of the auditory organs, in a total of 276 affected ears. He found the method of slight apparent advantage in cases of sclerosis. The cases do not warrant a favorable prognosis if the first application of massage is followed by improvement only, and an unfavorable prognosis was given when the improvement was insignificant. In a large proportion of cases improvement was not permanent. He had 22 cases of chronic middle-ear catarrh and in these the results were not favorable. In subacute middle-ear catarrh permanent improvement of tinnitus and acuteness of hearing occurred in 16 or 44.4 per cent.; in 13 or 36.1 per cent. no permanent result was obtained. In the remainder permanent improvement was obtained by combined treatment with massage. Inflation or massage after treatment by either method alone failed. In 6 out of 11 ears with influenza complicated with middle-ear infection the final result was much improved, and in 26 cases of chronic middle-ear suppuration there was improvement in the subjective noises in 22 out of 24 affected ears and improve-

ment in hearing in 16 out of 36 ears. There was improvement in both tinnitus and hardness of hearing in only 18 or 50 per cent. Briefly stated the results of his operations are as follows: Among 43 cases of sclerosis of the middle-ear improvement in hearing was obtained in only 4.9 per cent. where the impairment of hearing had not reached a high degree, while a permanent cure of subjective noises occurred in 28.3 per cent. The best results were in the sequelæ of chronic suppuration of the middle ear. In 91.6 per cent. there was complete recovery or notable improvement in the subjective noises and unpleasant sensations, and the hearing power of the patient improved in only 55 per cent. In cases where precise diagnosis could not be made, the results of massage were not good enough to justify further trial. He would recommend the method in patients suffering from subjective noises to such a degree as to render them unable to attend to their business, but he thinks it does very little good in sclerosis. It is also to be recommended in cases of simple chronic hypertrophic middle-ear catarrh with dulness and retraction of the drumhead, also in subacute middle-ear catarrh, in influenzal otitis, and in sequelæ of chronic purulent otitis media where the customary treatment fails in relieving the subjective noises and the power of hearing. In pronounced cases of idiopathic affections of the sound-perceptive apparatus, massage, so far as his experience goes, promises no results whatever.

65. **Otogenous Meningitis.**—A number of cases are reported by Cohn, who considers the clinical diagnosis, which is often impossible. Lumbar puncture is the only means of recognizing it distinctly and is almost always followed by relief of the patient, but recovery will always be exceptional. The most important measure is prophylaxis.

66. **Retropharyngeal Abscesses.**—Formerly these abscesses were supposed to depend on injuries of the pharynx and esophagus, on caries of the cervical vertebræ, affections of the retropharyngeal lymphatics, etc. To these causes Kien adds otitis media suppurativa, both acute and chronic, and reports three cases. When pus is once occluded in the middle ear it strives to make its way out, and if it can not escape externally it may burrow along the bone or any bony openings. It may escape upward through the tegmen, as in Kessell's case, and then enter the middle of the posterior cranial fossa, and escape downward through the foramen rotundum or ovale. It may escape by the jugular foramen and along the basilar bone to the anterior side of the spinal column and downward, but the direct paths are more often followed. It may cut down through the floor of the antrum or along the anterior wall of the meatus or through the posterior antral wall into the cranial fossa and from there proceed downward. The routes may be partly preformed (vascular channels) or they may represent the neoplastic perforations. The occipito-mastoid suture may favor extension of pus and there may be still other routes. The diagnosis of such abscesses is easy as soon as the pharyngeal wall bulges, and when the pressure on the external cervical region causes pus to well up from the meatus. They may cause very serious disturbance, pain in the neck, difficulty of breathing and if they are not opened or do not evacuate spontaneously, suffocation may follow. Gravitation abscesses extending to the mediastinum have been seen in neglected cases. The external incision is imperative if the abscess lies beneath the cricoid cartilage, or in other words, so deep that it can not be reached by the knife from the inside. In Koenig's opinion the external incision is indicated in every case as the only safe way to avoid infection. He makes the incision on the outside of the neck on a level with the inferior thyroid artery, if the tumor has gravitated so far. Open along the inner margin of the sterno-cleido, on a level with the larynx, on the inner side of the thyroid vessels, keeping close to the larynx until the medial side of the carotid is reached, where the connective tissue of the pharyngeal space is encountered. Chiene makes the incision along the posterior margin of the sterno-cleido-mastoid, and enters the abscess cavity from the anterior wall of the spinal column. Kien thinks if the fistula is already present in the pharynx, if the abscess is not too large, or if there seems to be the least possibility of working from the mastoid opening without running the risk of gravitation or retention, it is sufficient to make a broad communication between the abscess and the mastoid opening, and to conduct the after-treatment from this opening.

67. **Thrombo-phlebitis of the Superior Longitudinal Sinus.**—The superior longitudinal sinus is in close relation with the posterior frontal sinus and inflammation of the latter may extend by thrombo-phlebitis to the superior longitudinal sinus. The symptoms may be local or general, the latter are pyemic. The local changes may be divided into intra- and extra-cranial. The former will be situated below the frontal and parietal bone and may be overlooked. The intradural changes are present in every case and lead to death, through circumscribed, one or double-sided meningitis of the convexity. "Thrombo-phlebitis of the superior longitudinal sinus after frontal sinusitis may be divided into the following stages: 1. The prodromal stage: symptoms of sinusitis, fever, severe frontal headache. 2. The initial stage: pain in the parietal region. 3. Stage of regional abscesses (the disease has not become generalized): clinical appearances varying according to the site of the extra- or intra-cranial abscess and the presence with the latter of general brain symptoms. 4. Pyemic stage: rigors, remittent fever, pulmonary complications, splenic tumor, etc. 5. Terminal stage: meningeal symptoms developing after one to four days. The terminal stage may follow directly on the initial stage (fulminating course). Stages 3 and 4 may appear simultaneously." It would be of the greatest aid to therapeutics if the initial stage gave us some characteristic signs of involvement of the superior longitudinal sinus. At present we have only the parietal pain in this stage. If the abscess is situated extra-cranially, the diagnosis can be made from it. The differential diagnosis between abscess originating directly from the frontal sinus and indirectly by means of the superior longitudinal sinus and meningitis, can be made only after opening the skull and making a diagnostic puncture. The pyemic symptoms are directly referable to this sinus, but the meningitis can originate independently. A rapid case can be explained only at autopsy. It is very important that, in all autopsies on persons dying of intracranial complications after a frontal sinusitis, the superior longitudinal sinus should be carefully examined, and if found diseased, all the veins leading to the various abscesses must also be carefully investigated. The treatment is analogous to that of thrombo-phlebitis of the transverse sinus after suppuration of the middle ear. Before the onset of a diffuse purulent meningitis, recovery may be possible, but the chances are not favorable.

71. **Intranasal Operations.**—Denker advocates the use of the galvanocautery in intranasal operations as avoiding hemorrhage and the necessity of the tamponade.

72. **Aural Polypi.**—From an examination of 60 aural polypi by various staining methods Bruhl concludes that 78 per cent. of these are not tumors but are inflammatory tissue formations. The minority are tumors, and according to histologic structure, aural polypi are to be divided into polypoid granulations—partly fibromatous—and myxo-fibromas.

74. **Tuberculosis of the Nasal Mucous Membrane.**—After reporting 5 cases, Hinsberg remarks that these illustrate the various changes which follow nasal tuberculosis. 1. There may be some dacryocystitis without any evidence of tuberculous lesions, with symptoms of disease of the lachrymal sac. This is least harmful and is easily treated, though, according to Seifert, it is the primary stage of severer lesions. In these cases the causal connection is overlooked if the nose is not examined. 2. An evident tuberculous disease of the lachrymal sac is present. 3. The conjunctiva and cornea are affected by the transmission of infectious material if the dose does not cease at a certain time. This may be (a) inflammatory due to irritation of the secretion, but not to tubercle bacilli. Manifest disease of the lachrymal passage may be absent; or (b) of specific tuberculous nature, usually in the form of infiltrations on the conjunctiva, which may extend to the cornea. These are usually situated in the neighborhood of the punctæ lachrymales and connect with the lachrymal sac by a fistulous

tract. 4. The secretion of the tuberculous lachrymal sac may leave the conjunctiva intact, but causes tuberculous lesions in the surrounding skin of the eyelids. In all these cases the fistulæ are present showing the path of infection. In most cases the granulation tumors can be easily removed by a snare, or the thermocautery and curette. Lactic acid on a tampon left in place for hours may aid some if concentrated. The tampon should be applied not only to the diseased area but also to the surrounding tissues. Lactic acid attacks only diseased skin and mucous membrane. He thinks systematic treatment carried over a long period of time is advisable, and if nasal tuberculosis is not seriously complicated by morbid conditions and if treatment is carried over a sufficient length of time the prognosis is not unfavorable. Untreated there is danger of its extending to other parts, even the lungs.

76.—See abstract in THE JOURNAL of September 14, p. 711.

77.—Ibid., p. 712.

78.—Ibid., p. 713.

79. **The Nasal Septum.**—The various pathologic conditions of the nasal septum, deviations, dislocations, ridges and spurs, hypertrophy, atrophy, hematoma, ulcer, vascular dilatation, synechia, tumors, tuberculosis, syphilis, etc., are described by Freeman. He thinks the chief cause of deviations and probably of many other deformities is the lack of development of the hard palate and gives his reasons in detail. This deformity of the palate he thinks may be due to adenoids in many cases.

83. **Anilin Oil.**—After reporting a case where bad effects were produced by the patient's use of anilin oil, by local absorption, and a review of the cases in the literature, Dupuy concludes that the chances of injury from this agent thus applied are small and that it can be used in the hands of the physician for operative work on the drum and contiguous parts, but we can not with impunity place so toxic and so readily absorbed an agent as anilin in the hands of patients for the purpose of frequent instillations.

84. **Tonsillar Abscess.**—The points Goldstein emphasizes are: 1. That acute abscess formation in the tonsil per se is extremely rare. 2. That our knowledge of the place of entrance of infection into the peri-tonsillar tissue is still uncertain. 3. That the many measures thus far suggested to abort this condition have been unsuccessful. 4. That early surgical interference, even before pus formation has been established, is our best prophylactic procedure.

96. **Ovarian Pregnancy.**—Webster notices the recently reported cases, especially that of van Tussenbrock, but doubts whether the explanation given by her is entirely correct. He thinks that the fertilized ovum in the human subject can begin its development only in tissue derived from the Müllerian tract, and her claim that the ovum was fertilized in its follicle is not, he considers, proven.

104. **Chlorosis.**—McCaskey thinks that we have an oligemia as well as an oligochromemia and oligocythemia in chlorosis, and that iron acts in a special way, and suggests the possibility of some sort of mechanical or chemical influence on the intestines favorably affecting the digestive processes and that its markedly beneficial action in the treatment of chlorosis is indirect. He also specially calls attention to the value of hydriatic treatment, rest in bed in cases where it appears to be indicated, open-air exercise, and properly graded gymnastics begun at the right time. Suitable selected hydriatic measures, at least in severe and impracticable cases, would appear to him, together with the use of iron and forced feeding, to give us the best results.

109. **Alcoholism.**—The practical treatment of inebriety is comprised in four essentials, according to French: 1. Breaking up the habit of drinking. 2. Removing the morbid craving. 3. Freeing the system from the effects of drink. 4. Influencing the moral nature to perpetuate the cure. In breaking up of the habit of drinking, the first thing to do is to get the patient's consent and co-operation, and to find a remedy which will counteract relaxation, tone up the nervous system, stimulate cell activity, though not as a substitute for alcohol, but rather an antagonist, opposing its effects throughout the whole sphere of its action. Elimination should be stimulated to activity. There must be a sedative for the delirium, insomnia and excitement, remedies for the gastric catarrh, etc. The first of these indications is best filled by strychnin, which may be added to and supplemented by that of atropin. It exalts the function of the spinal cord, increases intestinal peristalsis and aids elimination. Atropin calls the vasomotor centers into action and affects the nerves of taste, leading to distaste for alcoholic liquors. Apomorphin is valuable for emptying the stomach of alcohol and sobering up and is also of value to produce nausea and disgust at the sight, smell or taste of liquor. It should be given without the knowledge of the patient, hypodermically with other injections. The proportion of strychnia and atropin recommended by the author are one-sixth to one-fourth of a grain of sulphate of atropin, 1 gr. of nitrate of strychnia, with 4 gr. of boric acid in an ounce of sterile hot water. Of this the average dose is 10 minims, but it may be a little higher, according to the effect produced, given four times a day. The dose of strychnia is intended to be one-half of the amount required, the remainder being given by the mouth. For internal medication, a simple bitter tonic is the chief essential. Other remedies may be added for the action of the liver and otherwise. As a considerable proportion of alcoholics are also syphilitics, it is well also to make provision for this element, and he thinks that any good gold chlorid does is in this way. Of the sedatives the combination of bromid, chloral, and hyoscyamus is of service, and where there is a busy, talkative delirium, hyoscine hydrobromate hypodermically is indicated. When a patient has lost the morbid craving for alcohol and normal appetite begins to reappear, the cure is well under way, but in no case is it sure. Two-thirds of the cases at least he believes have relapses or will do so in the end, and he thinks that 33 1/3 per cent. is a very fair percentage of cures in conditions of such seriousness as chronic inebriety.

114.—See abstract in THE JOURNAL, xxxvi, p. 1726.

115.—Ibid., p. 1727.

121. **Phytolacca.**—The advantages of phytolacca in various conditions are enumerated by Shoemaker, and he names the preferable preparations, the fluid extract and tincture, the dose of which ranges from 5 minims to a fluid dram. It is very depressing if given in too large a dose, and it is an undesirable remedy as an emetic. Its effects are of value as an alterative in certain constitutional maladies. It has a use in puerperal mastitis, and engorgement and inflammation of the lymphatic glands, in seborrhea, violent inflammation, acute eczema and tonsillitis, and has a field of usefulness in syphilis. It has also been of value in chronic rheumatism and some physicians recommend it in cases of inoperative cancer as retarding the growth. He thinks the profession generally should give the remedy a more careful study than it has perhaps received.

132. **Appendicitis in Life Insurance.**—The conclusions of Weill-Mantou's article are as follows: "1. Any abnormal sensitiveness in the appendicular region justifies postponement. 2. Applicants are admissible when cured by operation, a few weeks after interval operations; after three or four months when the resection has been done during an attack; in eighteen months or two years when the applicant has been cured by the simple opening of a purulent collection about the appendix. It will always be best to require a statement from the operator or from a physician present at the operation, giving the precise nature and the results of intervention. The same conclusions will hold in cases of circumscribed peritonitis with spontaneous evacuation of the purulent collection. 3. Any typhlitis, appendicitis, appendicular colic or crisis, however slight, acknowledged by the applicant or suspected by the examiner, will subject to a postponement of two or three years. 4. Two or more attacks will require a more lengthy postponement, which will be proportionately increased according to the number and severity of the attacks. 5. The research of family antecedents will be considered as an important element of great moment in the younger applicants. 6. In cases of remote an-

teceding attacks of appendicitis, the examiner must carefully investigate the existence of signs which might reveal the slightest awakening of the old appendicitis. 7. Every case of chronic and of recurring appendicitis must be rejected."

FOREIGN.

British Medical Journal, October 26.

The Communicability of Human Tuberculosis to Cattle. SHERIDAN DELEPINE.—Four experiments with calves are reported; only two survived long enough to allow definite results to be obtained. In the first case it was thought probable that the calf suffered from congenital tuberculosis; the experiment, therefore, is inconclusive. The second calf was inoculated with 5 c.c. of mixed tuberculous human sputum on August 1, injected subcutaneously on the inner side of the right femorotibial articulation, and died on August 7. There was enlargement of the lymphatic ganglia on the inoculated side, fibrinous peritonitis, enlargement and congestion of the spleen and a small amount of pleural exudates existed. Microscopic examination of the gland showed tubercle bacilli, and inoculation experiments on the guinea-pig from this subject caused tuberculosis. The case might, therefore, be given, Delépine says, as an instance of rapid infection of the lymphatic ganglia at a distance of five inches from the seat of inoculation, but he considers the experiment inconclusive as there was a possibility that the bacilli found in the precrural gland might have been carried from the seat of inoculation to the gland without multiplying and be still sufficiently active to infect the guinea-pig without being necessarily infective for the calf. The cause of death in each of these two cases was a general infection with a bacillus present in the sputum which caused acute septicemia, which could also be produced in guinea-pigs. The third calf was given 50 c.c. of mixed sputum in its food for one day. Death occurred twenty-eight days later. There was no trace of tubercle in the organs excepting in those connected with the alimentary canal and multiple tubercle bacilli were found in the esophageal glands. The cause of death was infection similar to that of the first two calves, but he holds that the case creates a strong probability that the tuberculosis of the glands had been caused by the ingestion of tuberculous sputum. The fourth calf had 5 c.c. of sputum injected into the peritoneal cavity. There was no evidence of tuberculin reaction twenty-six days after inoculation, but one occurred sixty-eight days after, and the animal was slaughtered seventy days after inoculation. Marked tuberculosis of the peritoneum extending gradually to the pleura and pericardium was found. No other organs were infected with the tubercle excepting a few of the lymphatic ganglia connected with the peritoneum. He considers the last two cases were sufficient to indicate the probability of tuberculosis having been introduced as the result of ingestion or peritoneal infection with human tuberculous sputum. It should be stated, however, that none of his calves were subjected to any tuberculin test before the experiments. He says that tuberculosis is exceedingly rare in calves and if there may be a certain amount of truth in the view that tuberculin has a preventative action, it would be illogical to inject a calf with tuberculin prior to such experiments.

Results Obtained by Anti-Typhoid Inoculation in an Epidemic of Typhoid Fever. A. E. WRIGHT.—This article is an analysis of an epidemic of typhoid which occurred in the Richmond Asylum, Dublin, with special reference to the results of inoculation. The results of the investigation is stated in tabulated form and show that in 298 average population of uninoculated, there were 30 cases of typhoid with 4 deaths, giving a percentage of cases of 10, and the deaths as 1.3 per cent. With the average population of 339 persons inoculated there were five or six cases with one death, giving a percentage of cases of 1.5, and of deaths .3 of 1 per cent.

The Role of Toxic Action in the Pathogenesis of Insanity. W. FORD ROBERTSON.—The question discussed by Robertson is how far toxic action is the cause of insanity, and he maintains that it is the primary etiologic factor in all cases where there are not, 1, inherent defects of the cortical organisms inconsistent with normal development; 2, physical causes which directly injure the cortical neurons, more especially traumatism; 3, deficiency of materials necessary for nerve-cell metabolism; 4, in some cases where the insanity may be due to sensory impulses. In some of the primary toxic cases the determining factor is a series of sensory impulses, but there are good reasons for believing that in many of these cases where depression or physiologic emotion passes into distinct mental disease there has already been a toxic condition which of itself might not be sufficient to disorder the cerebral metabolism, but became capable of doing so under such stimulus. He insists particularly on the importance of auto-intoxication from the gastro-intestinal tract as the chief factor in the pathogenesis of a large number of acute and chronic diseases, including several forms of mental disease. Among these a large proportion of cases of general paralysis, alcoholic and senile insanity, dementia precox, and most cases of chronic mania and melancholia. The great majority of cases of insanity are not primarily diseases of the brain, but are dependent upon the action of toxins derived from elsewhere which affect the functional activity of the cortical nerve cells by destroying their metabolism and even permanently damaging or destroying them.

Colitis or Asylum Dysentery? THOMAS CLAYE SHAW.—The author contends that asylum colitis is not a bacterial dysentery, as some have thought, but is due to a condition of nerve degeneration tending to ulceration of the bowels, occurring in the insane, especially on account of their disordered general metabolism, their irregular habits of overfeeding and taking into their systems of substances which are liable to produce trouble. It is quite possible that it may be due to some toxic condition set up in the individual. The presence of bacteria does not always indicate that these are the cause of the presence of the disease. During the conditions of lowered vitality in the mentally diseased the bacteria are apt to be in evidence more than in other cases where insanity does not exist.

A Plea for the Occasional Performance of Depression in Cases of Cataract. HENRY POWER.—The use of depression in certain cases is advocated by Power, who reports the experience in India, where it is often performed by ignorant natives with often brilliant results. The cases in which he thinks it would be advisable are: 1. Those where otherwise any operation would seem dubious, as in persons greatly enfeebled by age or other infirmities. 2. In cases where there are physical obstacles for the extraction operation, such as extremely small palpebral fissure or deeply-seated and small eyes. 3. In cases where there is a troublesome condition of chronic conjunctivitis which does not yield to treatment. The condition can be temporarily rendered aseptic and small puncture offers less danger of injury to the internal portions of the eye than would more extensive incision. 4. There is a complication of cataract deafness, in one case of which he regretted that he did not endeavor to depress instead of performing extraction in the usual way. The patient interfered with the bandage, and severe inflammation followed, with loss of the eye. He thinks it would have been better had he depressed and kept her in bed one day and then allowed her to go about. 5. Other cases where depression would probably give better results than extraction are in lunatics, imbeciles, and idiots in whom interference with the bandages are liable to occur; in old, flat, flabby and phlegmatic patients, who are specially liable to complications. 6. Chronic bronchitis may be a complication in old age which would interfere with the ordinary cataract operation. 7. There are cases where there is softening or liquefaction of the vitreous, and the lens easily shifts its place. If a large cut is made the vitreous flows away with the lens. 8. Another class of cases where depression may be performed is when one eye has been unsuccessfully operated upon. If the patient has suffered much he may refuse to submit to a second extraction, but would be in favor of depression, and lastly, in the extremely rare hemorrhagic diathesis where few would case to use knife treatment. The objection that irido-cyclitis and septic inflammation might occur is valid only in case of the breaking up of the lens, he thinks, and the operator had better discontinue the operation if that occurs. Glaucoma may occasionally follow depression, but it can be generally met by the use of eserin, or if necessary an iridectomy. He thinks the danger is somewhat exaggerated.

Bulletin de l'Academie de Medicine (Paris), October 8.

Negative Role of the Hypophosphites. MASSOL.—If some sodium phosphate is poured into a glass containing calcium hypophosphite and the fluid is rendered alkaline, a tricalcic phosphate is precipitated and the fluid contains sodium hypophosphite in solution. In experiments and tests on dogs and on two clinical subjects, the same process occurred. Calcium hypophosphite administered by the mouth is not altered in the stomach on account of the acidity of the gastric juice, but in the intestines it is decomposed with the phosphates from the food, and tricalcic phosphate is precipitated, which is eliminated in the feces and is lost to the organism. Sodium hypophosphite remains in solution and passes into the circulation. But it is not utilized, as it is incapable of being oxidized, and the entire amount is refound in the urine in the form of a hypophosphite. Consequently, calcium hypophosphite administered medicinally not only fails to benefit the organism, but directly aids to deprive it of a quantity of phosphoric acid corresponding to the weight of the calcium administered.

Chloral as a Vesicant. BONNET.—If chloral hydrate is spread on a diachylon plaster and applied to the vaselined skin, the part begins to burn in fifteen minutes. The plaster is then removed and the part covered with cotton. A phlyctena forms and the patient drops to sleep. Bonnet uses about 3 gm. of the chloral for a plaster 12 by 15 cm. in size. The subsequent slumber proves that the substance is more or less absorbed.

Treatment of Ozena by Methylene Blue. BONNET.—Five patients were cured of ozena in three or four weeks by daily irrigation of the nasal cavities with methylene blue in the proportion of 2.5 gm. to the liter of water. The irrigations were made three times a day at first. Except for the stain on the nostrils and upper lip, this method of treatment has no disadvantages.

Gazette Med. Belge (Liege), October 10.

Application of Hypnotism in the Education of Vicious or Degenerate Children. BERILLON.—Kleptomania, onanism, moral perversity and onychophagia can almost invariably be cured in children by hypno-pedagogic measures, even when the children have long been considered incorrigible. Bérillon urgently advises the more general adoption of hypnotism for this purpose, although he thinks it should be kept in the hands of practiced neurologists or alienists, and never used except after the failure of other measures. It aims to re-educate the will and create actual psychic inhibiting centers. The effect of this hypno-pedagogic treatment has always been durable in his experience. In kleptomania there seems to be an entire lack of inhibiting power. This can be created in the child by bringing him after he is hypnotized, to a table on which some money is lying. "You see the money. You want to take it. Very well, take it if you wish and put it in your pocket." The child takes the money. "This is what you usually do, but now you are going to put the money back and you will always do this henceforth. You will be ashamed that you have stolen and you will hasten to restore what you have taken." After a few seances of this mental gymnastics the child is permanently cured of his bad habit. He treats onanism by having the hypnotized child raise his arms, inducing an actual psychic paralysis in them, informing him that this paralysis will recur whenever he is on the point of yielding, at the same time using the most convincing moral arguments to inspire horror of the habit. Inveterate biting of the nails is frequently a sign of degeneracy. He treats it on the same principles as above. Hypno-pedagogy is more successful, the greater the intelligence of the subject. It is inapplicable to idiots and imbeciles. The automatic, reflex impulses which in normal children yield to moral suasion and ordinary measures, in degenerates are extremely tenacious. Waking suggestion has no influence on them, but wonders can be accomplished by this "mental orthopedics." This communication was one of the addresses at the fifth international congress of criminal anthropology, recently held at Amsterdam.

Progres Med. (Paris), October 5 and 12.

Parasitic Sclerosis of the Lungs. G. ARTHAUD.—Whenever there is marked decrease in the vibrations of the walls of the thorax, not to be explained by some extrapulmonary lesion, it is due to some zone of sclerosis, and the older the lesion the less vibration. As the sclerosis becomes older, the dulness increases and it becomes complete by the end of twenty years. A tubercular lesion passes through four phases in its development. The first is that of embryonal infiltration, with a transient and general obscurity to auscultation, resembling the characteristics of senile respiration, always dependent upon diminished elasticity of the lung. The second stage is the adult tubercle with giant cells, and auscultation reveals a roughness and exaggerated vesicular murmur, resembling exaggerated puerile respiration, due to excessive elasticity. In passive congestion or inflammation, and in edema of the lung, these two phases of auscultation appear in a reversed order. The third stage is that of caseous transformation and suppuration. Auscultation discloses that the respiration has ceased to be vesicular, and is becoming discontinuous, with râles and predominance of the souffle. The lack of continuance in the respiration is characteristic of every profound lesion of the lung, in the same way as the regression of the musele tissue before the fibrous tissue is the base of the anatomic alterations in the organ. But the final disappearance of the elasticity of the organ is only the first phase in the evolution of sclerosis. As the fibrous lesion passes into the fourth stage of the tubercular process, the souffle becomes less intense and vanishes completely by the end of twenty years. The discontinuous respiration persists, the souffle fades away into total obscurity. When the sclerosis is less than five years old, the souffle predominates; between five and ten the souffle is of normal intensity; between ten and fifteen there is obscurity, and from fifteen to twenty, extreme obscurity or absolute disappearance. Palpation, percussion and auscultation therefore give different results according to the age of the "serofula of the lung."

Bulletin de la Soc. Med. des Hop. de Paris, August 1.

Differentiation of Variola and Measles by the Blood. J. COURMONT.—In every case of smallpox, mild or severe, suppurative or hemorrhagic, from the first invasion to the commencement of convalescence, there is a mononucleosis invariably comprehending a certain proportion of myelocytes and of nucleated red corpuscles. Even in case of a complication inducing polynucleosis, the diagnosis is still possible by the presence of myelocytes. The tests reported in this communication show that this formula of the composition of the blood never occurs in measles.

Congenital Facial Paralysis. A. B. MARFAN.—At the autopsy of an infant of four months who had exhibited during life unilateral facial paralysis, with a deformity of the outer ear, the facial nerve on that side was absent except inside the cranium, and the existing portion was atrophied. The primary trouble had probably been in the petrous bone—an osteitis or arrested development—and this had arrested the development of the facial nerve and ear, while the intracranial portion of the nerve had developed, although undergoing secondary atrophy.

Congenital Facial Paralysis. J. COMBY.—Three infants with congenital facial paralysis observed by Comby, seventeen collected by Cabannes and one recently reported by Lagrange, presented more or less marked involvement of the eye in the paralysis. Forceps had not been applied in the delivery of any of the children in these cases, but the paralysis simulated obstetrical facial paralysis. It is incurable and is probably of nuclear origin. The ophthalmoplegia may predominate and entail the loss of the eye. There was no apparent hereditary taint in any of the children, such as syphilis, tuberculosis or traumatism during pregnancy.

Revue de Chirurgie (Paris), October.

Spinal Cocainization. KALLIONZIS.—It is impossible to compare chloroform general anesthesia and spinal cocainization, but each has its special indications and its well-defined sphere of usefulness. Kallionzis urges surgeons to abandon their hesitancy and reserve and cordially adopt spinal cocainization according to Tuffier's technique, as a precious addition to the means of anesthesia at our command for certain cases. He

has operated with it, or assisted when it was being used, in 110 operations, and is convinced that it deserves the attention and favor of all surgeons.

Goundou or Anakhre. MENDES and JEANSELME.—A bony, spongy tumor, ovoid and symmetrical, growing at the root of the nose, affects the negroes of the west coast of Africa, who call it "goundou." It usually appears before puberty and interferes with vision and respiration by its encroachment on eye and nose. Headache, epistaxis and a muco-purulent nasal discharge accompany its inception, but the general health does not suffer. Mendes reports a case, the first observed in Brazil, distinguished by the fact that the tumor was unilateral. Extirpation of the tumor is the only effective treatment.

Tuberculosis of the Female Generative Organs. MARIE GOROVITZ.—The details of fifty cases personally observed or collected in the literature, including several theses, are given in this comprehensive article, which is concluded from the five preceding numbers. The conclusions of the writer's research are summarized as follows, after premising that tuberculosis of the genital organs is far more frequent than formerly supposed. Modern methods of histologic and bacteriologic research, supplemented by inoculation of animals, have disclosed the presence of tuberculosis in many cases in which formerly it would not have been recognized. Although it is often secondary, yet it may be primary, and it is of the utmost importance to diagnose it in its incipiency. Examination of the secretions and of the particles obtained by curetting will render the greatest services in case of tuberculous endometritis. The latter is usually secondary and almost always tuberculosis of the tubes is the primary source. Tuberculous lesions of the tubes induce more or less pronounced reaction on the part of the peritoneum, in particular a variety of peritonitis with an encysted effusion, formerly called "young girls' ascites." In the course of a laparotomy on account of a tuberculous peritonitis, the annexes should always be carefully examined. It will frequently be found that they are the primary source of infection and they should be ablated if possible, preferably by the abdominal route. The extirpation should be far-reaching, and this extensive opening of the abdomen, while it removes the source of the affection, will have the most favorable influence on the peritoneal lesions. Bouilly has performed twelve operations of this kind with twelve recoveries, the cures persisting for seven, four and one-half, four, and two years. These results proclaim the value of radical and comprehensive surgical intervention. The details of these twelve operations are described in full in the course of the article. In genital tuberculosis the infection may arrive from above or from below. The former is most frequent. The clinical facts reported establish the possibility of tuberculous infection from the husband. The presence of tubercle bacilli in the sperm of phthisics explains this method of contagion. The experimental research reported also demonstrates that the tubercle bacillus deposited without traumatism on the mucous membrane of the genital apparatus, is capable of colonizing there and inducing the lesions characteristic of tuberculosis.

Opening the Antrum of the Petrous Bone for Mastoid Suppurations. O. LENOIR.—Antrectomy is recommended by Lenoir both as a complete operation in itself and also as the preliminary to other operations indicated by complications of suppuration of the middle ear or mastoid cells. It is easy to establish certain landmarks for the intervention, and injury of important organs can be avoided with almost certainty. It provides easy entrance into the base of the skull for treatment of cerebral or cerebellar complications of inflammation of the middle ear. The technique of antrectomy is similar to that of the Stacke operation, only in the reversed order. It allows complete oversight of the antrum, while in the latter operation the entrance but not the termination nor even the direction of the attic can be examined. Hammond has reported three cases of facial paralysis after operating by Kuster's technique. In Chaput's method of extensive resection of the petrous bone, the facial nerve is constantly menaced and paralysis has several times resulted. The aim of the operation is the same as in antrectomy, but the technique is much safer in the latter. Abscesses in the brain of otitic origin are nearly always close to the petrous bone. In children they are usually temporosphenoidal, sometimes cerebellar, very rarely beyond these regions. The petrous bone will have to be treated in any event, and therefore it is more rational to commence the intervention at this point and work through the antrum, utilizing the cavity already provided. Another advantage over trephining is the superior drainage.

Centralblatt f. Bakteriologie (Jena), September 16.

Vitality of Buried Typhoid Bacilli. W. RULLMANN.—In some of the tests of buried typhoid bacilli which are reported, the bacilli were found alive and virulent after having been buried for nine and sixteen months in sterile soil. The bacilli died rapidly in nine tests with unsterilized dirt, but in two others they were found living after a hundred days.

September 21.

Agglutination of Yeast Cells. A. MACFADYEN.—The serum of animals injected with the juice of compressed yeast cells (Buchner's "zymase") acquired the property of agglutinating yeast cells in turn.

Raising the Melting Point of Nutrient Gelatin. H. J. VAN'T HOFF.—The addition of one drop of 40 per cent. formalin to ten grams of gelatin raises the melting point so high that even boiling water is unable to dissolve the gelatin. Van't Hoff has found that one part of formalin to 1750 parts gelatin produces a gelatin which does not melt below 104 F. in the water bath.

Behavior of Bacteria in the Bodies of Immunized Animals. S. J. GOLDBERG.—Animals artificially immunized against the pyocyaneus and typhoid bacilli proved more resistant to secondary infection with anthrax and typhoid bacilli than the control animals. Typhoid bacilli injected into the body vanished in the course of four to eight hours. They assembled first in the liver, where they were devoured both by the endothelial cells of the liver and the leucocytes. Later they were found most numerous in the spleen in the animals immunized against the pyocyaneous. The bacilli collected in the bone marrow instead of in the spleen in the animals immunized against the typhoid bacilli. The bone marrow in the latter case probably constitutes the chief means of defense of the organism against bacterial invasion. The serum of the animals thus treated did not appear to possess any antitoxic properties.

Centralblatt f. Chirurgie (Leipsic), October 19.

Pendent Pelvis for Operations Close to Diaphragm. G. KELLING.—The organs under the diaphragm can be brought plainly into view and completely exposed by drawing the patient to the foot of the table and allowing the pelvis and legs to hang over the edge. The position is the same as that in which the cadaver is placed for the dissection of the diaphragm. It will be found of inestimable advantage in extensive operations on the stomach and upper surface of the liver. Kelling uses a Stelzner operating table which has a sliding top. The patient's trunk is fastened by a strap over the shoulders crossed behind the back. The leg holders are arranged to hold the thighs, and the spine is bent in the lumbar region. The ordinary longitudinal incision should be supplemented by a transverse incision starting at the tip of the twelfth rib. The intestines must be packed in with a napkin to prevent their falling forward, and the napkin fastened to the skin with peritoneal forceps or by sutures. An assistant maintains pressure on the intestines with one hand, and with the other retracts the costal arch. An iron band is fastened to each side of the table forming an arch over which a cloth is thrown to separate the abdomen from the anesthesia proceedings. The personnel should be trained in the rapid and aseptic change from the horizontal to this pendent position in the course of an operation if necessary.

Centralblatt f. Gynaekologie (Leipsic), September 14.

Value of Cocain in Obstetrics. F. WESTPHALEN.—Tedious, difficult delivery can be promoted and hastened by cocainization of the pelvic floor. It does not suppress the true labor pains,

but actually strengthens them, while at the same time it arrests the reflex inhibiting influences which are protracting the birth process. Westphalen has found that after a suppository of 3 cg. cocain has been introduced into the rectum the labor pains become regular, the pauses tranquil and delivery follows in a comparatively brief time. His experience with this measure in the last two years has been extremely satisfactory. The labor pains become regular in five or ten minutes after the suppository has been introduced. No toxic effects were observed in any case, but he established by personal experience that 3 cg. of cocain in the rectum induced slight mydriasis for half an hour, and consequently, he has never surpassed this dose, but has occasionally repeated it in one and a half hours.

October 5.

Infection of Parturients by Bath. WINTERNITZ.—Stroganow's assertions of the danger of infection from fluids entering the vagina during the bath have not been confirmed by Winternitz' tests. He states that a copper bath tub, cleaned and then rubbed off with alcohol, used only once, and the patient's external genitalia afterward disinfected, is absolutely harmless. He found that the bath water did not penetrate into the vagina in any of his tests with colored water, etc.

Value of Cystoscopy in Tuberculosis of the Female Bladder. W. STOECKEL.—Two observations of chronic tuberculosis of the bladder are reported, which do not present the slightest symptoms, and were supposed entirely cured, but the cystoscope shows that the tubercular lesions are progressing. In another case a circumscribed vesicular edema is developing around the orifice of one ureter on a tuberculous basis.

October 12.

Mechanism of Hydrorrhea in Pregnancy. K. REIFFERSCHEID.—The membranes must have ruptured at an early date in the case described, allowing the fetus to escape into the body of the uterus, where it continued to develop. The liquor amnii continued to form, but instead of collecting in the bag of waters, trickled out of the uterus, causing the hydrorrhea.

Deutsche Med. Wochenschrift (Leipsic), October 17.

Symphyseotomy and Cesarean Section. A. MARTIN.—In the case described a moderately contracted pelvis was complicated by unusual hardness of the fetal skull. Symphyseotomy was performed, but even with this, extraction of the fetus was impossible and secondary Cesarean section was necessary before delivery could be accomplished. This is not the only observation of the failure of symphyseotomy that has been published, and Martin concludes that symphyseotomy does not stand on the same plane as Cesarean section, on account of the fact that the aim of the operation is not always realized, while Cesarean section is always sure of success. He has applied Fritsch's fundus incision in four cases and comparing the results with those obtained with the ordinary incision in twenty other cases, he considers the former superior. The danger of adhesions is no greater than with the ordinary incision, while the wound can be more easily sutured.

New Facts in Regard to the Biologic Test for Blood. E. ZIEMKE.—The new Uhlenhuth-Wassermann serum test for blood can be obtained, Ziemke has found, by treating the animals with blood from cadavers. The serum obtained from the animals later was only a very little less effective than when blood from living subjects had been used for the preliminary injections. It was able to induce an almost instantaneous cloudiness in the dissolved blood in a proportion of 1 to 30. Uhlenhuth has recently had a large number of specimens of blood sent to him for examination, and he was able not only to differentiate human blood, but could also state the animal from which the blood was derived in the other specimens. Attempts to preserve the serum for future use showed that the addition of a little chloroform will preserve it for a time, but that it gradually becomes less and less effective. The serum can be desiccated and the globulin thus derived has the same properties as the fresh serum, but loses its efficacy in time. Ziemke has obtained the reaction with this "dry serum" three months old, but without the exact precision of the fresh serum. The formation of flakes is the true criterion of the test. The mixture of animal blood with human blood does not affect the reaction. The preliminary injections offer less chances of infection if made subcutaneously than into the peritoneum. The most important item in Ziemke's article is his discovery of a method of applying the test to blood so old and altered that it is insoluble in the ordinary media. He accomplishes this by dissolving the blood in a concentrated solution of potassium cyanate, then neutralizing the alkaline fluid by adding a few crystals of tartaric acid, carefully testing with red and blue litmus paper until the neutral reaction is almost reached. The fluid is then poured off and filtered. It remains turbid if the least trace of an excess of acid is present, but if faintly alkaline it is clear. It is then diluted with water until yellowish red in color, when it is ready to respond to the serum test. Blood from the stomach of a cadaver that had been buried for ten years and was mummified to parchment, was treated in this way, and the typical reaction promptly obtained.

Report of the German Sanitariums for Tuberculosis. ENGELMANN.—The 18th volume of the German Imperial Health Department contains the statistics of the 49 sanitariums in Germany from the beginning of 1899 to the middle of 1900. The total inmates were 6273, the number of beds 4000. At present there are 60 sanitariums with 5000 beds. More than three-fourths of the patients were committed by the sickness insurance societies and one-tenth by the "Krankenkassen," benevolent societies and lodges. Only one-fifth of the patients were women. The previous environment had been favorable in 56 per cent., medium in 32 and unfavorable in 12 per cent.; 45 per cent. were in the thirties and 27.8 in the forties. In 34.7 per cent. some grandparent, parent or brother or sister had had pulmonary tuberculosis. In about 50 per cent. the disease was of less than one year's duration. The average length of treatment was 92.4 days. About 50 per cent. remained in the institution three months. More than 50 per cent. had been engaged in an occupation causing inhalation of dust, metal, coal and glass dust, other organic substances, wood and wool dust, in the order named. About one-third of the patients were in the first stages of tuberculosis. The private sanitariums had the most severe cases. Of the entire number of patients only 7.4 were reported cured, but improvement was evident in 88 per cent. Bacilli were found in the sputa in 53 per cent. on entrance, and in 40 per cent. on dismissal. Fully 67 per cent. of the dismissed patients were able to resume their occupation, 7 per cent. engaged in a new occupation, 15 per cent. were able to partially resume work and only 11 per cent. were incapacitated for earning their livelihood. The total number improved has increased by 3 per cent. in the last fiscal year, owing to more careful selection of cases. Improvement occurred in 95.2 per cent. of those in the first stages of the disease; in 89.9 per cent. in the second and in 71.5 per cent. in the third stages. The working capacity of the dismissed patients rapidly decreased, until after six months only one-fifth were able to continue their occupation, and after three and one-half years, four-fifths had died or become entirely incapable of working. One-fourth of the total number had died after one and one-half years had elapsed, and more than 50 per cent. after three years. The proportion is a little better among those dismissed as capable of resuming work. At the expiration of one year after dismissal more than 50 per cent. were still working. After the lapse of two years the majority were dead or incapable of earning their livelihood. After the lapse of eighteen months only 75 per cent. were still alive, and after three years less than 50 per cent. The proportion of cases of persisting improvement is somewhat better among those dismissed as able to resume work. Less than 50 per cent. are still capable of working, but they were able to continue their occupation for three or four years. The figures from the first years of the sanitarium movement show that 45 per cent. are still capable of working after four years. After the first year it was 95 per cent.; after the third year 80 per cent. A remarkable fact was learned by the latest investigation, namely, that quite a number of those patients in the second or third

stages of the disease who had been dismissed as unimproved and incapable of working, were able to resume their occupation after a certain length of time. This is probably due to the improvement in their hygiene and manner of life, the result of the instruction they received at the sanitarium. The most important general conclusion resulting from consideration of these statistics, is the necessity of diagnosing and treating the disease in its earlier stages. Such cases are nearly always able to resume their occupation, even although the bacilli still persist in their sputa. Experience also shows that the ability to work is retained for more than four years in only about 25 per cent.

Muenchener Med. Wochenschrift, October 15.

Cause of the Hemostatic Action of Gelatin. Zibell.—In the course of considerable research, Zibell was able to establish that gelatin contains constantly about .6 per cent. of lime. The hemostatic action of lime has been long known and several of the most famous mineral waters used for hemostatic therapeutic purposes contain only .03 to .09 per cent. of lime. The anatomists have long proclaimed the mysterious relations between lime and the walls of the vessels, without attempting to explain them. In view of these facts, Zibell is inclined to attribute the hemostatic properties of gelatin to the large proportion of lime in it.

Cotton Cast for Congenital Wry-Neck. A. Schanz.—The plaster cast does not accomplish what we anticipate after operations for congenital torticollis and recurrences sometimes occur entirely due to this failure of the cast. Schanz has discarded it now completely for a cotton cast. After the sterno-cleido-mastoid muscle has been severed, the neck is packed with layers of cotton over which a bandage is wound, alternating the cotton and the bandages and gradually drawing the latter tighter, until the whole forms a cast extending from below the under lip to the axillary line, and holding the head thrown back on the median axis. Although made of soft material, this bandage completely answers the purpose of an immobilizing cast, and yet it is so elastic that it yields to the movements of the head and thorax and always fits close to them. If it becomes loosened, an outer layer can be unwrapped and tightened. The elasticity of this cast also serves to hold the stumps of the muscle far apart, as the neck is stretched to a surprising length, and the connective tissue that forms between the stumps aids in maintaining overcorrection. Schanz has applied this cotton cast in sixteen cases and has found only one drawback. This is the possible compression of the brachial plexus from pressure of the clavicle on the upper thorax. The first symptom of this compression is a numbness in the hand, and this must be guarded against by shaping the bandage to avoid the danger point. The cast is a trifle wider than the diameter of the head and curves like a watermelon below.

Value of Crede's Silver Therapy. G. Woyer.—Four or five years of experience in the Vienna University gynecologic clinic has convinced Woyer of the great value of Crede's silver therapy. He describes in detail three cases of puerperal sepsis which altered for the better immediately after inunctions of the colloid silver, and the patients recovered in such a comparatively short time that the cure can be ascribed only to the silver treatment.

Systematic Deep Breathing as a Means of Combating Seasickness. M. Kaufmann.—This communication describes the writer's personal success with systematic deep breathing as a means of preventing and arresting seasickness. He also states that he has found it very useful in cases of syncope threatening loss of consciousness or vomiting. The patient recovers much more rapidly when made to take deep inhalations. They are also useful to control epistaxis, breathing deep through the nose and expiring through the mouth. Desire to vomit can also be arrested by deep breathing; the muscles of respiration are placed in a position which is unfavorable to the act of vomiting, while the supply of oxygen diminishes the reflex irritation in the vomiting center. In singultus in nervous women, deep breathing has a similar inhibiting action on the reflex spasm. In all these applications the diverting of the attention is an important factor in the result attained. Kaufmann's experience fully confirms what Heinz claims for systematic deep breathing as a means of warding off seasickness.

Functional Test of the Kidneys Valuable in the Diagnosis for Abdominal Surgery. Casper.—The phloridzin test of the function of the kidney has been studied and perfected by Casper in respect to its value for abdominal surgery, as a means of excluding the possibility of stones in the kidney when other symptoms point to them. He described nine cases at the Naturforscher Congress in which the diagnosis of renal lithiasis seemed certain, but catheterization of the ureters separately and the results of the phloridzin test in regard to the artificially produced sugar, the proportion of nitrogen eliminated by the kidneys and the determination of the freezing-point, afforded evidence which excluded the possibility of a calculus. This method of differentiation should be reserved of course for the cases in which the diagnosis by ordinary means is dubious.

Wiener Klinische Rundschau, October 13.

Roentgen Treatment of Alopecia Areata. G. Holzknecht.—A patch of alopecia reacts to the Roentgen treatment with a persistent redness after four weeks, but the remaining hairs do not drop out, while the sound scalp reacts with the dropping out of the hairs after eight to fourteen days, but no redness. New hairs begin to grow on the alopetic patch in the successful cases in six weeks, while three months are required for the new growth of hair on the sound scalp. Certain cases prove refractory, but it seems to be impossible to determine beforehand this category of patients, although Holzknecht has been making a special study of this subject for some time. He describes and illustrates one case showing a fine growth of hair six months after Roentgen treatment was instituted. The patient was a clerk of 18. He had eight bald patches on the back of his head, the disease progressively increasing for five months when treatment was commenced. In Kienboeck's successful case published last year, the patient was 26 and the alopecia had lasted for three years and had long been stationary. Holzknecht remarks that it is absurd to attribute the curative result to the bactericidal properties of the rays. A bactericidal effect is obtained only when the rays are far too powerful to be applied to the human skin. In one case he has observed, the trichophyton tonsurans cultivated readily from a Roentgen dermatitis induced on a boy with herpes tonsurans, showing that even an unusually vigorous application of the rays had no influence to check the growth of the micro-organism.

Polyneuritis After Medicinal Doses of Fowler's Solution. J. P. Karplus.—The patient was a young woman who had taken arsenic at various times before without ill effects. Her physician prescribed the ordinary dose of Fowler's solution on account of palpitations. Symptoms of intoxication and finally the typical paralysis developed, but even then the true cause of the trouble was unrecognized for a long time. The patient was under constant medical supervision and was in a hospital for a few weeks, but the possibility of arsenical intoxication never seemed to have occurred to her advisers, although suggested by the family.

Multiple Sclerosis of Unusual Etiology. R. V. Jaksch.—Three workmen in a chemical factory were compelled to stand where their feet were very hot, and, against the rules of the establishment, they opened the doors and windows of the room in which they worked in all weathers. In the course of a few months each one presented the symptoms of multiple sclerosis of the brain and spinal cord. Jaksch attributes the affection in this case to the trauma of getting chilled while heated, which evidently occurred frequently during the cold months. Nystagmus and tremor were not observed or were transient, and there were no alterations in the papillæ. It was impossible for two of the patients to walk backward and Romberg's sign was transiently noted in one case. All the patients improved after cessation of the trauma and applica-

tion of hydrotherapy, exercises, electrotherapy and sodium iodid, so that they could partially resume work.

Influence of the Upper Intestines on the Rectal Sphincter. L. V. Frankl-Hochwart.—Constriction of the upper portion of the intestines induces relaxation of the sphincter, while relaxation of the intestines causes constriction of the sphincter. This law was deduced from experimental research on dogs. Nothnagel has noticed that in case of acute invagination violent tenesmus occurs. During the spastic contraction the sphincter is paralyzed and the anus becomes incontinent. Tenesmus also occurs in volvulus of the sigmoid flexure, and can be utilized as a diagnostic measure to differentiate it from internal incarceration. Both these symptoms are more easily understood if we bear in mind the relations between the movements of the intestines and the tonicity of the sphincter.

Nephrolithiasis and Affections of the Spinal Cord. H. Schlesinger.—Calculi have been found in the kidneys comparatively frequently in cases of traumatic injury of the spinal cord and of syringomyelia, much less frequently with spinal tumors. One case has been published in which they were found accompanying acute encephalo-myelitis. The symptoms indicating the presence of calculi do not appear until months or even years after the spinal affection. In these cases they are usually phosphatic calculi, very seldom urates. Cysto-pyelitis may be absent, notwithstanding the lithiasis and the spinal affection, but usually it accompanies phosphate stones. The spinal affection seems to have some direct or indirect influence on the formation of calculi. It may require some predisposition on the part of the subject, especially in case of urate calculi.

Cardiac Neurosis. A. Pick.—During the past year Pick has observed forty-one cases of cardiac neuroses. The symptoms were principally subjective palpitations and dyspnea following every slight physical effort, the striated muscles easily fatigued. The patients were all men betwen 18 and 30 years of age. Running for half a minute or stooping over several times would induce the symptoms, with the pulse increasing to 120 or even 140. The thyroid gland was very slightly enlarged in each case, and generally the right lobe. The syndrome continued without change for years. No aggravation has been noted in the patients seen recently after an interval of a year or two. Pick does not attempt to determine whether this syndrome is that of a latent Basedow's disease or not, but he mentions that the heart is liable to be affected even with apparently harmless struma. Schranz states that he noted degeneration of the heart in 49 out of 308 cadavers with goiter.

Tidsskrift f. d. Norske Laegefor (Christiania), October 1.

Bismuth Subsalicylate in Diarrhea. C. Lund.—Summer diarrhea and summer cholera have been invariably arrested in Lund's experience by one or two powders of bismuth subsalicylate. It should always be mixed with water in the spoon in which it is given, as it may get into the nose and cause sneezing or coughing if administered dry. He gives one gram at a time to adults and about a quarter of a gram to children. He has found it very beneficial also in controlling the diarrhea in typhoid fever.

St. Petersburg Med. Wochenschrift, October 5.

Atrophy of the Stomach Mucosa in Chronic Nephritis. W. Vierhuff.—A woman of 60 presented symptoms of atrophy of the gastric mucous membrane secondary to chronic contracted kidney, the result of a long-standing tendency to formation of calculi. The autopsy confirmed the diagnosis. This explanation of atrophy of the gastric mucosa and its most prominent symptom, absence of secretion of hydrochloric acid, has been advanced for carcinoma, diabetes mellitus and tuberculosis, but never for nephritis to the writer's knowledge. Chronic nephritis is fully as liable as these other affections to induce the retention of toxic substances in the organism, with secondary toxic phenomena, among which atrophy of the gastric mucosa occupies a prominent place.

Gaceta Medica (Mexico), September 1.

Rarity of Appendicitis in Mexico. J. Olvera.—The deaths from diarrhea and enteritis in the City of Mexico far outnumber those from this cause in any other large city in Europe or America. In London, for instance, the mortality from diarrhea and enteritis was 658 during the last quarter of 1899, while in the City of Mexico, with a population of less than one-third, it was 759. Notwithstanding this fact and the universal use of chile and other hot condiments, appendicitis and typhoid fever are almost unknown. The record for the last five years contains only 30 cases of appendicitis in a general mortality of 15,466 to 18,438. During this time 11 cases of typhoid fever were reported and 31 of abscesses in the iliac fossa which may have included cases of appendicitis.

Crónica Medica (Lima, Peru), August 15.

Generalized Pneumococcus Infection. E. E. Escomel.—A patient with pneumonia exhibited numerous abscesses in the forearm and chest, from which the pneumococcus was derived, unassociated with other micro-organisms. Over a dozen large abscesses of this kind required evacuation, two of them in the salivary glands. Complete recovery occurred in abont six weeks.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Text-Book of Nervous Diseases, Being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D., Professor of Nervous Diseases in Cornell University Medical College. Fifth Edition. With 244 Illustrations. Cloth. Pp. 633. Price, $3.50 net. New York: William Wood & Co. 1901.

The Century Book for Mothers. A Practical Guide in the Rearing of Healthy Children. By Leroy Milton Yale, M.D., Formerly Lecturer on the Diseases of Children at Bellevue Hospital Medical College, New York; and Gustav Pollak, Editor of "Babyhood." Cloth. Pp. 461. Price, $2.00 net. New York: The Century Co. 1901.

A Manual of Medicine. Edited by W. H. Allchin, M.D. Lond., F.R.C.P., F.R.S. Ed., Senior Physician and Lecturer on Clinical Medicine, Westminster Hospital. Volume III. Diseases of the Nervous System. Cloth. Pp. 417. Price, $2.00. New York: The Macmillan Co. 1901.

Infant-Feeding in Its Relation to Health and Disease. By Louis Fischer, M.D., Visiting Physician to the Willard Parker and Reception Hospitals of New York City. Containing 52 Illustrations, with 23 Charts and Tables, Mostly Original. Second Edition. Cloth. Pp. 343. Price, $2.00. Philadelphia: F. A. Davis Co., Publishers. 1901.

A Text-Book of Physiological Chemistry For Students of Medicine and Physiclans. By Charles E. Simon, M.D., Baltimore, Md. Cloth. Pp. 453. Price, $3.25. Philadelphia and New York: Lea Brothers & Co. 1901.

The Diagnosis of Nervous and Mental Diseases. By Howell T. Pershing, M.Sc., M.D., Professor of Nervous and Mental Diseases in the University of Denver. Illustrated. Cloth. Pp. 223. Price, $1.25 net. Philadelphia: P. Blakiston's Son & Co. 1901.

Compte-Rendu du Congres International Pour L'Enfance. Tenu à Budapest du 13 au 17 Septembre, 1899, Sous le Haut Patronage de S. Alt. Imp. et Roy. Archiduc Joseph. Rédigé avec le Concours des Présidents et Secrétaires des Sections par Etienne Scherer, Traduit en Francais par Armand Sasvari., Publié par le Comité Exécutif du Congrès. Paper. Pp. 967. Budapest: Société Anoyme d'Imprimerie de Pest. 1901..

Proceedings of the Pathological Society of Philadelphia, October, 1901. Paper. Pp. 66. Published by the Society. 1901.

Pediatrics. The Hygienic and Medical Treatment of Children. By Thomas Morgan Rotch, M.D., Professor of the Diseases of Children, Harvard University. Third Edition, Rearranged and Rewritten. Illustrated by Numerous Engravings in the Text and by Colored Plates. Cloth. Pp. 1021. Price, $6.00. Philadelphia and London: J. B. Lippincott Co. 1901.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. Hale White, M.D., F.R.C.P., Physician to and Lecturer on Medicine at Guy's Hospital, London. Edited by Reynold W. Wilcox, M.A., M.D., LL.D., Professor of Medicine and Therapeutics at the New York Post-Graduate Medical School. Fifth American Edition, Thoroughly Revised. Cloth. Pp. 744. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

Diseases of the Digestive Organs In Infancy and Childhood, with Chapters on the Diet and General Management of Children, and Massage in Pediatrics. By Louis Starr, M.D., Late Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Third Edition; Rewritten and Enlarged. Illustrated. Cloth. Pp. 448. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1901.

The Diagnosis and Treatment of Diseases of the Rectum. Being a Practical Treatise on Fistula, Piles, Fissure and Painful Ulcer, Procidentia, Polypus, Stricture, Cancer, etc. By William Allingham, F.R.C.S. Eng., Ex-Member of Council of the Royal College of Surgeons of England; and Herbert W. Allingham, F.R.C.S. Eng., Surgeon to the Household of His Majesty the King.

Seventh Edition. Cloth. Pp. 471. Price, $3.25. New York: William Wood & Co. 1901.

ESSENTIALS OF OBSTETRICS. By Charles Jewett, A.M., M.D., Sc.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital. Assisted by Harold F. Jewett, M.D. Illustrated by 80 Woodcuts and 5 Colored Plates. Cloth. Pp. 386. Price, $2.25. New York and Philadelphia: Lea Brothers & Co. 1901.

THE MEDICINAL PLANTS OF THE PHILIPPINES. By T. H. Pardo De Tavera, Doctor en Medicina de la Facultad de Paris. Translated and Revised by Jerome B. Thomas, Jr., A.B., M.D., Captain and Asst.-Surgeon, U. S. V. Cloth. Pp. 269. Price, $2.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

A HANDBOOK OF DISEASES OF THE NOSE AND PHARYNX. By James B. Ball, M.D. (Lond.), Physician to the Department for Diseases of the Throat, Nose, and Ear, West London Hospital. Fourth Edition. With 61 Illustrations. Cloth. Pp. 439. Price, $2.25. New York: William Wood & Co. 1901.

SYPHILIS AND OTHER VENEREAL DISEASES. By H. De Meric, Member of the Royal College of Surgeons of England. Cloth. Price, $1.75. New York: William Wood & Co. 1901.

LESSONS ON MASSAGE. By Margaret D. Palmer, Masseure and Manager of the Massage Department of the London Hospital. Cloth. Pp. 234. Price, $2.00. New York: William Wood & Co. 1901.

THE PHYSIOLOGIC ACTION OF DRUGS. An Introduction to Practical Pharmacology. By M. S. Pembrey, A.M., M.D., Joint-Lecturer on Physiology in Guy's Hospital Medical School; and C. D. F. Phillips, M.D., LL.D., Examiner in Materia Medica and Therapeutics in the University of Aberdeen. Cloth. Pp. 99. London: Edward Arnold. 1901.

THE PHYSICIAN'S POCKET ACCOUNT BOOK, Consisting of a Manila-Bound Book of 208 Pages and a Leather Case. By J. J. Taylor, M.D. Price, $1.00 Complete. Subsequent Books to Fill the Case 40 cents Each, or 3 for $1.00. Philadelphia: Medical Council.

MICROBES AND HEALTH. By Samuel J. Wilson, M.D., Detroit, Mich., Member Clinton County Medical Society. Cloth. Pp. 230. Price, $1.00. Lansing, Mich.: Robert Smith Printing Co. 1901.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA. Forty-eighth Annual Meeting held at Durham, N. C., May 21, 22 and 23, 1901. Cloth. Pp. 294. Charlotte, N. C.: Queen City Printing and Paper Co. 1901.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF WEST VIRGINIA held at Grafton, May 22, 23 and 24, 1901. Instituted April 10, 1867. Paper. Pp. 575. Wheeling, W. Va.: West Virginia Printing Co. 1901.

PROCEEDINGS OF THE NEW YORK PATHOLOGICAL SOCIETY. May, 1901. Paper. Pp. 14. Published by the Society.

PHOTOGRAPHIC ATLAS OF THE DISEASES OF THE SKIN. A Series of 80 Plates, Comprising more than 100 Illustrations, with Descriptive Text, and a Treatise on Cutaneous Therapeutics. Part IV. Philadelphia and London: J. B. Lippincott Co. 1901.

New Patents.

Patents of Interest to Physicians, granted Oct. 15, 22 and 29:

684,411. Surgical splint. Elihu L. Cook, Harlan, Iowa.
684,753. Vapor-bath apparatus. Palmyra O. Garrett, McGregor, Tex.
684,701. Water bag. Christian W. Meinecke, Jersey City, N. J.
685,088. Surgical appliance. Ashbel P. Barlow, St. Joseph, Mich.
685,090. Bandage or plaster. Moriz Bauer, Vienna, Austria-Hungary.
685,091. Surgical instrument case. Max W. Becton, New York City.
684,912. Pill-forming machine. Arthur Colton, Detroit, Mich.
684,978. Making food from blood. Max Dietrich, Friedrichsberg, Germany.
685,053. Antiseptic pocket cuspidor. John S. Lamond, Paterson, N. J.
685,171. Obstetrical device. Henry W. Post, Fultonville, N. Y.
11,941. Reissue. Disinfecting appliance. Thomas N. Thomson, Scranton, Pa.
35,225. Design. Body brace. Philo B. Sheldon, Erie, Pa.
35,226. Design. Abdominal bandage. Philo B. Sheldon, Erie, Pa.
685,268. Fumigating apparatus. Henry H. Freedman, Lansing, Mich.
685,538. Urine tester. Emil A. Starz, Helena, Mont.
685,543. Obtaining a preparation of the pancreas. Wilhelm Weber, Stolberg 11, Germany.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., October 24 to 30, 1901, inclusive:

Weston P. Chamberlain, lieutenant and asst.-surgeon, U. S. A., from Fort Adams, R. I., to duty at Fort Greble, R. I.

James R. Church, lieutenant and asst.-surgeon, U. S. A., relieved from duty in the Department of Cuba, to report to the Surgeon-General at Washington, D. C., for instructions.

Joseph T. Clark, captain and asst.-surgeon, U. S. A., relieved from duty in the Division of the Philippines and assigned as attending surgeon and examiner of recruits in Philadelphia, Pa.

Richard M. Fletcher, contract surgeon, member of an examining board at Fort Meade, S. D., *vice* Lieutenant Samuel M. Waterhouse, asst.-surgeon, U. S. A., relieved.

Herbert W. Hatch, contract surgeon. The journey of this surgeon from Fort St. Michael, Alaska, to San Francisco, Cal., is approved by the Secretary of War; he is assigned to temporary duty in the general hospital, Presidio of San Francisco, Cal.

Thomas G. Holmes, contract surgeon, previous orders so amended as to direct him to proceed from Detroit, Mich., to Plattsburg Barracks, N. Y., for duty at that post.

Charles E. Marrow, lieutenant and asst.-surgeon, U. S. A., from the Division of the Philippines to duty at Fort Morgan, Ala.

H. A. Santoine, contract surgeon, leave of absence granted.

Herbert M. Smith, lieutenant and asst.-surgeon, U. S. A., member of an examining board at Fort Monroe, Va., during the temporary absence of Lieut.-Col. R. M. O'Reilly, deputy surgeon-general, U. S. A.

Robert E. Warren, contract surgeon, former orders directing him to proceed from Denver, Colo., for duty at the General Hospital, Fort Bayard, N. M., revoked.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., previous orders so amended as to assign him as transport surgeon on the transport *Grant*.

Eugene R. Whitmore, lieutenant and asst.-surgeon, U. S. A., former orders directing him to report November 1, 1901, to the President of the Faculty, Army Medical School, Washington, D. C., revoked.

Abraham D. Williams, captain and asst.-surgeon, U. S. Vol., leave of absence from the Division of the Philippines extended.

Charles E. Woodruff, major and surgeon, U. S. A., former orders revoked; he is relieved from further duty at Fort Riley, Kan., and will proceed to New York City, to report for duty on the transport *Crook* to sail on or about December 1, 1901, for Manila, P. I., where on arrival he will report for assignment in the Division of the Philippines.

Ezra Woodruff, lieut.-col. and deputy surgeon-general, U. S. A., retired from active service, having reached the age of 64 years.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending November 2, 1901.

Asst.-Surgeon R. T. Orvis, detached from the *Pensacola,* upon reporting of relief, and ordered home and to wait orders.

Asst.-Surgeon U. R. Webb, ordered to the *Pensacola,* as relief of Asst.-Surgeon R. T. Orvis.

Medical Inspector F. Rogers, having been examined by a retiring board and found incapacitatel for active service on account of disability incident thereto, is retired from active service, October 28, 1901, under the provisions of section 1453, Revised Statutes.

Surgeon D. O. Lewis, detached from the *Philadelphia,* ordered home and granted sick leave for three months.

P. A. Surgeon R. T. Orvis, commissioned past assistant-surgeon from May 27, 1901.

P. A. Surgeon G. L. Angeny, commissioned past assistant-surgeon from Sept. 16, 1901.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended November 1, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Oct. 13-20, 2 cases.
Indiana: Evansville, Oct. 19-26, 7 cases.
Kentucky: Lexington, Oct. 19-26, 1 case.
Massachusetts: Cambridge, Oct. 19-26, 1 case.
Minnesota: Minneapolis, Oct. 19-26, 1 case.
New Jersey: Newark, Oct. 21-28, 15 cases, 1 death.
New York: New York, Oct. 19-26, 8 cases, 3 deaths.
North Dakota: Bottineau County, Sept. 15-Oct. 15, 10 cases; Cass County, Sept. 15-Oct. 15, 1 case; Edmond County, Sept. 15-Oct. 15, 6 cases; Mayville, Oct. 18-25, 1 case.
Pennsylvania: Norristown, Oct. 19-26, 5 cases.
Rhode Island: Newport, Oct. 19-26, 7 cases.
Wisconsin, Green Bay, Oct. 19-27, 4 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Sept. 28-Oct. 5, 3 cases, 2 deaths; Ghent, Oct. 5-12, 2 deaths.
Brazil: Rio de Janeiro, Sept. 1-15, 109 deaths.
Canada: Halifax, Oct. 5-12, 7 cases, 1 death; St. John, Oct. 19-26, 6 cases.
Colombia: Cartagena, Sept. 29-Oct. 6, 2 deaths; Panama, Oct. 14-21, 125 cases.
France: Paris, Oct. 5-12, 3 deaths.
Great Britain: London, Oct. 5-12, 175 cases, 6 deaths.
India: Bombay, Sept. 17-Oct. 1, 2 deaths; Calcutta, Sept. 14-28, 2 deaths.
Italy: Naples, Oct. 5-12, 54 cases, 5 deaths.
Mexico: City of Mexico, Oct. 6-13, 1 death.
Russia: Moscow, Sept. 28-Oct. 5, 5 cases, 1 death; Odessa, Oct. 5-12, 2 cases; St. Petersburg, Sept. 28-Oct. 12, 5 cases.

PLAGUE—UNITED STATES AND INSULAR.

California: San Francisco, Oct. 13-20, 1 case, 1 death.
Philippines: Manila, Aug. 31-Sept. 7, 6 cases, 3 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, Sept. 1-15, 13 deaths.
China: Hong Kong, Sept. 7-14, 11 cases, 11 deaths.
India, Bombay, Sept. 18-Oct. 1, 454 deaths; Calcutta, Sept. 18-21, 27 deaths; Karachi, Sept. 15-22, 15 cases, 8 deaths.
Italy: Naples, Oct. 5-12, 2 cases, 2 deaths.
Turkey: Smyrna, Sept. 28, 1 case.

YELLOW FEVER.

Brazil: Rio de Janeiro, Sept. 1-15, 9 deaths.
Colombia: Bocas del Toro, Oct. 28, 1 case.
Cuba: Havana, Oct. 5-12, 1 case; Trinidad, Sept. 30, 1 case.
Mexico: Progreso, Sept. 28-Oct. 5, 1 death; Vera Cruz, Oct. 12-19, 20 cases, 7 deaths.
West Indies: Curacao, Sept. 28.-Oct. 6, 2 cases, 1 death.

CHOLERA.

India: Bombay, Sept. 17-Oct. 1, 7 deaths; Calcutta, Sept. 15-28, 19 deaths; Madras, Sept. 14-27, 99 deaths.
Japan: Yokohama, Sept. 23-30, 1 case, 1 death.
Java: Soerabaya, Aug. 1-31, 1800 cases, 1400 deaths; Samarang, Aug, 1-31, 1050 cases, 600 deaths.

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Original Articles.

THE NON-SURGICAL TREATMENT OF HETEROPHORIA.*

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Had I chosen my own title I should have omitted the word "non-surgical," because in my practice I have concluded that there is no surgical treatment, properly speaking; and that any operative treatment whatever of heterophoria is not only useless but bad. For, not only does it not cure, but, in my experience, it makes real cure far more difficult, sometimes even impossible. I say, "in my experience," which is in private practice, with intelligent and co-operating patients. In hospital practice there may be rare cases in which operation is required. For six years I have seen no case of heterophoria needing operation, and none unsatisfactory when treated with common sense instead of with scissors. Of course, if the scissorer's design is to create mental effects in the patient and financial ones in both patient and doctor, that does not lie in the province of medicine, and we may look, smile, and go about our own business. But, if the object of scissoring is to lengthen or shorten a tendon, it seems to me that one will soon arrive at two or three indisputable facts: 1. In the vast majority of cases heterophoria is an innervational affair. 2. It depends upon errors of refraction. 3. Proper spectacles are the principal and effective means of cure, with the aid of prism gymnastics in exophoria. It seems unnecessary to add that it should go without saying that all other intercurrent complicating, or systemic conditions that are causative of ocular weakness and imbalance must have been diagnosticated and treated. Sometimes, certainly, such are alone responsible for the mischief. The oculist who is indifferent to or ignorant of such general causes, is not, as he should be, a physician before being a specialist. He is only one grade better than the pseudo-oculist who treats all eye-strain as due to systemic causes.

As to hyperphoria, owing to the narrowed range of muscular action of the vertical muscles some cases appear to be peripheral rather than central in origin, and with such the question would seem to be pertinent, why not tenotomize? My answer to that would be Yankee-like: Do you know a surgeon that you would trust to operate upon your own hyperphoria? I am sure that if I had ever so high a degree I would endure the evils that I had rather than fly to others I know not of. Perhaps, however, the choice would be precisely because of evils witnessed and known. For instance:

CASE 4077.—This was a professor who for a few degrees of hyperphoria had the right superior rectus "snipped" by a famous oculist, and the left eyeball was so frightened that it tried to hide under the upper lid, producing a bad effect upon the onlooker and for the patient diplopia, loss of occupation, and great wretchedness, financial, social and psychic. There seemed nothing for it but an advancement. But, before submitting he came to me. Under strict promises of secrecy not to divulge his colleague's name, who occupied a chair in the same college, I undertook the doubtful task of curing a traumatic hyperphoria of seven degrees without other surgical instruments than a couple of pieces of glass! In snipping a snip the snipper had utterly ignored a tormenting astigmatism. A partial prismatic correction added to the cylinders subsequently reduced, finally made my friend shower me with benedictions whenever we met. He does not now refer his patients to his fellow-professor!

The highest degre of hyperphoria or hypertropia I have successfully treated by refractive methods was that of:

CASE 3631.—A lawyer had 15 degrees and had been advised by a dozen or two of the best specialists to permit tenotomy. He had shrunk from following the advice although diplopia and subjective symptoms had come near wrecking his health and his business career. When he came to me, I of course found that his ametropia had been ignored or mistreated. I combined with his spherocylinders 12 degrees of prismatic correction and in a short time this was further reduced to 10 degrees. Health and happiness were completely reinstated in six months.

I do not think I have a dozen patients wearing prisms permanently for the correction of hyperphoria. Under proper ametropic correction these, like most heterophorias, disappear. It is only as regards this and the frequency of required operation that I differ from my friend, Dr. Reber, in the conclusions which he draws in the most excellent study of 150 cases of heterophoria read before this Section last year at Atlantic City. The factors of proper treatment are:

1. The absolutely accurate estimation of the refractive errors by cycloplegia and the subjective method and the prescription of spectacles and their adjustment according to the hundred modifying conditions of the individual case.

2. When the hyperphoria is 3 degrees or over, a temporary but partial neutralization by prisms may be necessary to tide over the period required by Nature to reinstate a normal balance of innervation.

3. Supplementary ocular gymnastics, mere excursions of the eyeballs upward and downward, etc., aid in bringing about balance.

4. Instruction in ocular hygiene is frequently helpful. The book or writing habitually placed too far below the horizontal plane may be productive of much eye-strain. High arm-chairs and other similar devices would vastly lessen the sufferings of many people.

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Esophoria of a symptom-producing kind, like hyperphoria, is extremely rare, is innervational, and is dependent upon ametropia. Permanently worn prisms of course only increase the disease, and tailoring the tendons is utter delusion. For example:

Case 2996.—A literary worker had both internal recti cut, reducing his esophoria of about 18 degrees to orthophoria for a month or two, but finally resulting in a reinstatement of all the old imbalance. Again the intense sleepiness came back and again the scissors were appealed to, but with precisely the same results as before. After a year of proper ametropic correction the esophoria is 6 degrees and as much happiness exists as is ever possible after the peripheral mechanism has been uselessly mangled.

Equally instructive is the case of a studious minister, who, with extreme use of the eyes at near range, has not a symptom and yet he has 20 degrees of esophoria. He requires only accurate correction of his ametropia. Hundreds of case-records show either a reduction of esophoria to a normal balance by means of ametropic correction alone, or, if not always so, there is complete absence of symptoms. Data and methods of treatment are:

1. Normal balance or physiologic orthophoria is for city-folk and near-workers, 2 degrees or 3 degrees of esophoria estimated by the Maddox-rod test, at 20 feet with suspended accommodation.

2. When there is less than 2 degrees the tendency and result is exophoric.

3. Orthophoria is almost surely a disease, likely to be worse than the higher degrees of esophoria.

4. Esophoria from 3 degrees to 6 degrees produces no symptoms with proper ametropic correction.

5. Esophoria above 6 degrees and up to the strabismic limit may or may not produce symptoms of eye-strain.

6. All esophoria is curable or at least modifiable by convergence-repression, i. e., by high corrections in hyperopia and by low corrections in myopia, but above all by proper corrections of astigmatism and anisometropia.

Exophoria, or insufficient adduction-power, is the most frequent, 50 to 1 surely, of all heterophorias, and, fortunately, the most amenable to treatment. I greatly dislike rules and laws in the practice of medicine, because there may be almost as many exceptions to almost any rule as there are instances in proof. But in a general way, I find by experience:

1. Real exophoria or insufficiency of adduction-power in a near-worker may exist and be productive of mischief when the 20-foot test shows 1 degree or 2 degrees of esophoria.

2. Orthophoria is usually exophoria, i. e., it is a disease. There is in city-dwellers, usually, an insufficient innervational power of the interni, with 20-foot balance.

3. With positive 20-foot exophoria, eye-strain and brain-tire exist in proportion to the degree of the defect.

4. Cure by prism-gymnastics is quick according to the youth of the patient, and the lowness of the degree, slow in proportion to the greater age, lessened vitality, and highness of the degree of the exophoria.

5. A not infrequent result of the prism-gymnastic treatment of exophoria is the continuance of more or less of the original exophoria as measured by the 20-foot test, but with an increase of the adduction-power five or ten, or even twenty times, there will finally come a cessation of the symptoms.

6. Having attained this high adduction-power, with relief of the symptoms, a continuance of the prism-gymnastics must be kept up occasionally with the highest power prisms, to prevent, as in any function, deterioration by disuse.

The only methods of treating exophoria of which I have any experience are:

1. Accurate estimation of the ametropia, and its correction according to the exophoria to be overcome. Low hyperopic corrections and high myopic corrections are, of course, the rule, according to the degree of the defect, but also according to the hundred of co-operating conditions, the power of accommodation, the presbyopia, the anisometropia, the age and vitality of the patient, the severity of the symptoms, the occupation, the responsiveness of reaction to prism-gymnastics, the adduction-power, etc. No finer problem or more complex one exists in medicine than this of prescribing glasses in exophoria. The prescribing optician, the "ophthalmotrician," or even the six-weeks' post-graduate specialist may not be trusted with it any more wisely than a baboon with an astronomic observatory.

2. With all fitting deference to wise advisers, I am unable to see or to imagine what least good could be accomplished by the use of so-called gymnastics with weak or low degree prisms. Attempting to jump over a thirty-foot wide stream by a two or three-foot jumper can result in little more than a deserved cold-water bath. Two or three degree helps can not meet the indications of a twenty or fifty degree weakness.

3. The gist of the matter is to increase adduction-power until it is equal to the demands. This increase of power is easily, quickly, and infallibly procurable by daily exercises with prisms, bases out, and as rapidly as the power rises, the prisms increased in degree until either the exophoria has been replaced by esophoria or the symptoms have all disappeared. Hold the power gained by occasional exercises, according to the amount of near work demanded of the eyes and also according to individual tendency to reversionary weakness. In low degrees of exophoria a frequently effective method of treatment is by what I have colloquially designated, "thumb exercises." These consist in the patient holding the thumb at arm's length on a level with the eyes and gazing fixidly at the nail while the thumb is brought accurately between the eyes as closely as is possible without any failure of the eyes to converge. The instant divergence or diplopia is detected, withdraw the hand again to arm's length, and thus continue these rhythmic exercises for several minutes, several times a day. If the increase of adduction-power and the relief of symptoms is proved insufficient, then the method of prism-gymnastics must be instituted.

4. The technic of prism-gymnastics in exophoria is: *a.* Begin with the highest degree prisms with which the images of a point of light are kept single. *b.* The prisms should be square and not round and must be accurately mounted and accurately adjusted. Holding the prisms in the hands as has been advised does harm, not good. *c.* The exercises should be ordered about four times a day, for about five minutes at a time. *d.* They should be with the object gazed at fixedly and earnestly ("with knitted brow," "savagely"). The distance of the object should be varied by an attendant, or by walking about, from 10 inches to 20 feet or more. The prisms should be raised away from the eyes and lowered about twenty-five times while gazing at differently distanced objects, during each seance. *e.* The patient

should be instructed to distinguish and guard against outward rotation of one eye with diplopia, etc.—a quickly harmful procedure. *f.* So fast as adduction-power grows, the strength of the prisms should be increased. This will usually be by 3 degrees or 5 degrees at a time, and every two or three days, until the limit is reached, esophoria induced, or the symptoms disappear. I have sometimes carried the adduction-power as high as 80 or 100 degrees before the desired result appeared. *g.* With a wished-for increase of adduction-power there is likely to be a change of ocular pressures and corneal curvatures so that a retesting of the ametropia becomes necessary.

It seems useless to take up your time with a brave array of case-histories. Hundreds, perhaps thousands, could be collated. The lessons derivable from them is all that seems necessary. The chief ones I gather from mine are as follows:

The infinite patience and clinging to hope on the part of the physiologic and neurologic ocular mechanism is a constant source of wonder and delight, and teaches the daily law to help Nature along the lines of her desires by common-sense and physiologic methods. Her motto is surely *nil desperandum,* and it should be ours. We shall rarely fail when we try to aid Nature's method of spontaneous therapeutics. We should beware of our impertinent surgical short-cuts. Surgery is the despair of medicine, and we should never adopt surgical methods while there is a glimmer of hope by natural means and in the directions indicated by the subtle and inherent strivings for normality. To show but one case illustrative of what Nature and the doctor may do when they work together let me cite:

Case 2870.—A physician's little girl of 7 came to me with 28 degrees of exophoria, i. e., her exophoria was really exotropia, the divergent strabismus being habitual except under the stimulus of the violent will to converge, when binocular vision was possible for only a few seconds. With a 3-degree prism, base out, this temporary power was impossible. I would not consent to operation. It took about four years of treatment, but to-day the child has slight esophoria, constant binocular vision, perfect acuity, and absence of all eye strain.

Even in cases of positive strabismus natural or non-surgical methods may prove effective if the patient is taken in hand sufficiently early in life, before amblyopia has become too pronounced, and before morbid habits have been too long continued.

THE OPERATIVE TREATMENT OF HETEROPHORIA.*

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On what cases of heterophoria should we operate? On what muscle should the operation be done? What kind of operation should be done? These are all questions that should be answered by the operator before undertaking this class of work. Certainly, an innervational heterophoria should never be operated upon. A pseudo-esophoria is always curable by convex glasses. A pseudo-exophoria is likewise curable by concave glasses. There are cases that present themselves now and then in whom there is a want of convergence innervation, i. e., there seems to be a fault in the third conjugate innervation. This condition, as a rule, should be treated by exercise, though occasionally an operation must be done.

No operation should be done in cases of heterophoria, intrinsic in character, that can be relieved by gymnastic exercise, even though this treatment should have to be resorted to for a long while. Nor should those cases be operated upon whose muscle error is small, and for whom comfort can be obtained by the wearing of weak prisms in positions of rest.

The heterophorias not curable by correction of errors of refraction, by prisms in positions of rest, or by rhythmic exercise, should be subjected to operative procedure. Such cases are not infrequent, and the relief from operations skilfully done is by no means uncertain. There is no department of surgery that requires more care in the making of the diagnosis. The condition of every extrinsic ocular muscle must be determined before any one muscle is to be operated upon. There are but two objects in view in muscle operations, the one is altering the tension of the muscle, the other is changing its plane of action.

In order that I may be the better understood when I speak of the operation involving the changing of the muscle plane, it would be well to define it. The rotation plane of any muscle cuts the center of origin of the muscle, the center of rotation of the eye, and the center of the muscle insertion. The axis of rotation is always at right angles to this plane. The plane of an internus or an externus muscle may coincide with the horizontal plane of the eye, when, of course, the vertical axis of the eye becomes the axis of rotation. In such a condition the contraction of an internus or externus will effect only one motion, viz., the rotation of the eye directly in, by the internus, or the rotation of the eye directly out, by the externus. When the center of attachment of the internus is above the horizontal plane, no longer can the muscle plane coincide with the horizontal plane, and a contraction of the internus results in a complicated movement of the eyeball. An internus thus attached not only turns the eye in, but also turns it up and torts it in. The center of the insertion of an externus above the horizontal plane results always in a complicated movement, turning the eye out, turning it up and torting it out. When the centers of attachment of these muscles are below the horizontal plane, the secondary results of their action are the reverse of those mentioned, i. e., a too low internus turns the eye down as well as in, and torts it out; a too low externus turns the eye down as well as out, and also torts it in.

The tension of a muscle is to be altered either by a central partial tenotomy, as when operating on the too strong muscle; by shortening the muscle in the line of its original plane or by advancing it straight forward, as when operating on the too weak muscle. In making either one of these operations the existence of a cyclophoria must be first excluded. When there is cyclophoria complicating any one of the other heterophorias, the operation on the rectus muscle should alter the tension of the muscle and at the same time change the plane of its action. In such a case a partial tenotomy should not be central only, but should include those peripheral fibers, a division of which would be corrective of the cyclophoria. A shortening should be done in such a way as either to raise or depress the plane of action of the muscle as might be indicated by the complicating cyclophoria. In making advancements, the new attachment should be

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carried either higher or lower than the original attachment, as the character of the cyclophoria might determine.

The operation to simply alter the tension of a rectus muscle with the view of lessening its power is a central partial tenotomy. This, as in all operations, should be done under strict aseptic precautions, and while the eye is under the influence of cocain. If the operation is to be bloodless, a drop or two of adrenalin chlorid solution (1 to 1000) should be instilled at the time the cocain is used. The lids having been separated sufficiently by a stop-speculum, the patient should be asked to look as far as possible in the direct opposite direction from the muscle to be operated upon, so as to expose well the field of operation. With forceps the conjunctiva alone, over the insertion of the muscle, may be raised, when a small opening should be made with a Stevens scissors. Through this opening the capsule of Tenon may be grasped and then divided. Thus the tendon of the muscle is exposed, the central fibers of which should be lifted by the forceps and then divided by means of the Stevens scissors, thus buttonholing it. While still holding the tendon up with the forceps the buttonhole may be enlarged with the scissors by cutting first in one direction and then in the other, close to the sclera, being very careful not to encroach too far toward the peripheral fibers. The forceps should now be laid aside and the Stevens hook should be inserted through the buttonhole beneath the uncut fibers, first on the one side and then on the other, by means of which the amount of resistance is determined. If this is still too great other fibers must be cut with the scissors, between the hook and the sclera, always being careful to leave a sufficient number of peripheral fibers to act as stay-cords to prevent the cut muscle from retracting too much. The strength of the uncut fibers in both directions should be equal, so that the plane of the muscle may not be changed. Both judgment and skill must be exercised, else too much or too little of the tendon may be cut. It is better to aim at leaving some of the old error uncorrected than to transform it into the opposite condition. The conjunctiva may, but the capsule of Tenon must, be divided co-extensively with the division of the tendon, to obtain the effect desired. In no kind of heterophoria should a complete tenotomy ever be done; but, if by accident it should happen, the tendon should be stitched to the sclera directly behind the original insertion, and at that distance behind determined by a correct understanding of the exact character of the error for which the operation has been undertaken.

A skilled operator will find it easy to grasp, with the forceps, conjunctiva, capsule of Tenon and tendon of muscle all at the same time, and with one snip of the scissors buttonhole all these structures and then proceed with the operation as set forth above.

If a complicating cyclophoria is to be corrected by a partial tenotomy of a rectus, not only must the tension of the muscle be altered for the correction of the main error, but its plane must be changed so as to correct the complicating cyclophoria. The kind of cyclophoria having been determined—and it is nearly always a plus cyclophoria—one is not left in doubt as to how the operation should be done. To cure a hyperphoria and a plus cyclophoria the nasal and central fibers of the superior rectus of the hyperphoric eye should be divided, while the temporal fibers should be left uncut and sufficiently strong to prevent an over-correction of the hyperphoria; or the temporal and central fibers of the inferior rectus of the cataphoric eye should be divided, leaving the nasal fibers uncut and of sufficient strength to prevent an over-correction of the error.

In a partial tenotomy for sthenic esophoria complicated with a plus cyclophoria, there being no hyperphoria, the lower and some of the central fibers of both interni should be divided, leaving the upper fibers uncut. In this way the tension of the muscle is altered, curing wholly, or in part, the esophoria, and the plane of each muscle is elevated so as to correct the plus cyclophoria. The plane of both interni having been equally elevated, there is developed, of necessity, a slight double hyperphoria, which, however, will give no trouble, being easily overcome by a pose of the head.

In operating on a case of sthenic esophoria complicated by a right hyperphoria and a plus cyclophoria, the first operation must be done on the internus of the cataphoric eye, and should consist of a complete division of the lower and central fibers, leaving uncut the upper fibers of the tendon. The threefold effect of this procedure is a correction in part, or wholly, of the esophoria, a correction of the cataphoria, and a cure of the plus cyclophoria. Whatever part of the esophoria may remain, after this operation, should be corrected by a central partial tenotomy of the right internus. Should some of the right hyperphoria remain, but no cyclophoria, a central partial tenotomy of the right superior rectus should be done; but if there should remain some uncorrected plus cyclophoria, as well as right hyperphoria, the inner and enough of the central fibers of the right superior rectus should be cut to cure these conditions. These three operations—sometimes even one or two of them—will cure a complicated case of this character.

If the esophoria is asthenic and uncomplicated, the operation of shortening should be done on one or both externi, and the plane of these muscles should be the same after, as before, the operation, otherwise a cyclophoria would be created.

If the asthenic esophoria is complicated with a right hyperphoria only, the externi should be shortened as though no complication existed, and later the hyperphoria could be treated by exercise, by a prism in position of rest for the hyperphoric eye, or by a central tenotomy of the superior rectus of the hyperphoric eye. In such a condition no muscle plane should ever be changed. The plane of a muscle should never be changed unless there is a cyclophoria to be corrected.

If the asthenic esophoria should be complicated with a plus cyclophoria alone, not only should both externi be shortened but the plane of each should be depressed so as to cure both esophoria and the plus cyclophoria. This double effect is accomplished by having the loop of the suture through the muscle near its upper margin, while the two ends are passed through the tendon near its lower margin. Tying the knot on the silver suture-plate pulls the muscle lower on the globe, thus changing its plane of action. The double cataphoria resulting will not be harmful.

If asthenic esophoria is complicated by a right hyperphoria and a plus cyclophoria, the first operation should be on the externus of the hyperphoric eye, and should be a shortening so done as, at the same time, to depress the plane of its action. The triple effect will be to cure more or less completely the esophoria, the right hyperphoria and the plus cyclophoria. If the left externus must be shortened for a remaining esophoria, whether complicated or not by a cataphoria and plus cyclophoria, one or both, for obvious reasons the plane

of this muscle should not be altered. If the plane were elevated, it would lessen the cataphoria, but would increase the plus cyclophoria; if the plane were lowered, it would decrease the plus cyclophoria, but would increase the cataphoria. After the straight-forward shortening of the externus of the cataphoric eye, whatever hyperphoria alone may exist should be treated, if sufficiently great in quantity, by a central partial tenotomy of the superior rectus of the hyperphoric eye; but if the remaining hyperphoria should be complicated with a remaining plus cyclophoria, the inner, and as much as necessary of the central, fibers of the superior rectus of the hyperphoric eye should be cut.

The operation for sthenic exophoria uncomplicated, is a central partial tenotomy of one or both externi, preferably both. The object in view being only the alteration of tension, care must be exercised that the plane of rotation shall not be changed. In operating on an externus it is far more easy to grasp, with fixation forceps, the conjunctiva, capsule of Tenon and muscle tendon, and buttonhole them with the scissors simultaneously, than it is with other muscles.

When sthenic exophoria is complicated by a hyperphoria the operation on the externi must not be done with a view of affecting the hyperphoria, hence a central partial tenotomy is indicated. Later the hyperphoria must be relieved by a central partial tenotomy of the superior rectus of the hyperphoric eye, and, if necessary, a central partial tenotomy of the inferior rectus of the cataphoric eye. The tension of these muscles should be altered without a change of plane.

In sthenic exophoria complicated by a right hyperphoria and a plus cyclophoria, the first operation should be done on the externus of the hyperphoric eye, and it should consist of a division of the upper and central fibers, leaving uncut the lower fibers. The threefold result of this operation will be: 1, relaxing the tension of the externus, lessening, if not curing, the exophoria; 2, a turning of the eye down, thus counteracting the hyperphoria; 3, torting the eye in, curing the cyclophoria. If some of the exophoria remain, whether still complicated or not by right hyperphoria and plus cyclophoria, the operation on the left externus must be a central partial tenotomy. The reason is clear: a division of the upper and central fibers would so change the muscle plane as to increase the cataphoria, although diminishing the cyclophoria; while a cutting of the lower and central fibers would so change the plane as to lessen the cataphoria but increase the plus cyclophoria. The only safe course between this Scylla and Charybdis is a central partial tenotomy of the left externus. These two operations having been done, any remaining right hyperphoria, without a plus cyclophoria, should be relieved by a central partial tenotomy of the right superior rectus; but if the remaining hyperphoria should be complicated with plus cyclophoria, the nasal and central fibers of this tendon should be cut, with the double purpose of altering the tension for the hyperphoria and changing the plane for the cyclophoria.

When sthenic exophoria is complicated by a plus cyclophoria only, the upper and central fibers of both externi (not one alone) should be cut. The triple effect of these operations is: 1, alteration of tension for the exophoria; 2, lowering the plane of both externi for the plus cyclophoria; 3, the development of a double cataphoria which, in itself, is not bad.

In asthenic exophoria uncomplicated, the tension of the externi must be increased by shortenings or advancements so done as not to change the plane of rotation. The same is true of asthenic exophoria complicated by a hyperphoria alone. Later the hyperphoria may be relieved by a central partial tenotomy of the superior rectus of the hyperphoric eye.

When an asthenic exophoria is complicated with a right hyperphoria and a plus cyclophoria, the internus of the cataphoric eye should be so shortened or advanced as to alter its tension for the exophoria, and elevate the plane for counteracting the cataphoria and curing the plus cyclophoria. If the internus of the once hyperphoric eye must be shortened or advanced to still further correct the exophoria, not any longer complicated, it must be so done as not to change its plane; and the same is true if the only remaining complication is a hyperphoria, for in counteracting the hyperphoria, a plus cyclophoria would be developed. It is also true that only the tension of the internus should be altered by a shortening or advancement when the remaining exophoria is complicated by hyperphoria and plus cyclophoria, for the reason that lowering the plane would increase the cyclophoria although lessening the hyperphoria, while elevating the plane would increase the hyperphoria although diminishing the cyclophoria. Later the hyperphoria or hypercyclophoria should be remedied by the correct operation on the superior rectus.

An asthenic exophoria complicated by a plus cyclophoria must be treated by such shortening and advancement of both interni as to alter the tension for the exophoria and elevate both planes for the plus cyclophoria. The double hyperphoria resulting would be counteracted by a pose of the head.

Cyclophoria may exist alone and may be so high in degree as to demand relief by operation. This can be accomplished by operating on both superior or both inferior recti. A plus cyclophoria uncomplicated can be relieved by dividing a few of the nasal fibers or advancing a few of the temporal fibers of both superior recti. In doing the former a double cataphoria is developed while the cyclophoria is cured; in doing the latter the cyclophoria is cured but a double hyperphoria results. Since a double cataphoria is preferable to a double hyperphoria, a division of the nasal fibers of the superior recti should always be chosen.

The plus cyclophoria can be cured by a division of the temporal fibers or an advancement of the nasal fibers of both inferior recti. The former would give a double hyperphoria while the latter would give a double cataphoria, hence, of the two, the latter should be chosen.

As to final results a division of the nasal fibers of the superior recti and an advancement of the nasal fibers of the inferior recti are precisely alike; but the former should be preferred, for it is more easily done and gives the patient much less inconvenience.

DISCUSSION ON PAPERS OF DRS. GOULD AND SAVAGE.

DR. S. D. RISLEY, Philadelphia—While I regret very much that Dr. Gould finds it necessary, under the qualifying conditions stated in his paper, to regard tenotomy of certain ocular muscles as malpractice, I find some consolation in the fact that Dr. Savage did not insist that it was malpractice to omit tenotomy. I am willing to admit that after the series of papers by Dr. Stevens, published several years ago, that the ophthalmological world ran tenotomy-mad. I heard one surgeon say that he had done more than 200 tenotomies in a single year. In one of these papers I believe we have an illustration of how the pendulum may swing too far in the opposite direction.

In 1894 in a paper I had the honor to present at Edinburgh to the International Congress, I pointed out some of the dilli-

culties that lie in the way. Attention was called to the frequent distortions to the human skull as shown in any cursory study of a hatter's forms taken as patterns from the heads of his patrons; many of which are so ill-shaped as to appear grotesque when compared with the diameters of a model skull. It is highly probable that these anomalous forms of the skull modify the form and dimensions of the bony orbit by changing the line of direction of the orbital planes. It is reasonable to suppose that during development in an anomalously shaped orbit that not only certain modifications would occur in the form of the eyeballs and in the length and line of direction of the optic nerves, but also in the origin and point of attachment, the length and direction of the ocular muscles; conditions, any one of which would lead to more or less marked disturbance of motility, and in many complex ways modify the conditions of binocular vision. In view of such considerations it is plainly obvious that any effort to reduce all the possible abnormalities of binocular vision to the simplicity of a law governing their occurrence and correction will probably result in failure. I believe, therefore, that we can not afford either in the study or management of these conditions to be dogmatic. It is my opinion that no chapter in ophthalmology is filled with more difficulties; that no subject should be approached with more critical caution than the abnormalities of binocular vision. That much harm has been done by unwisely performed tenotomies I am ready to believe; but, on the other hand, I am also sure that much suffering has been relieved and many careers rendered more hopeful by the wise aid of the skilful and cautious surgeon.

Dr. M. F. Weymann, St. Joseph, Mo.—When a physician practices very largely in any one line, he acquires a certain amount of perfection not obtained by the average man. Thus, Dr. Savage may be able to get results above the understanding and reach of the rest. However, a measure not assimilable by the professional corps at large is a dangerous practice to advocate for general purposes, on account of the failures and actual damage in some instances that may result. Surgical interference with the muscles of the vertical plane seems to me a bad practice, although in tenotomies of the muscles of the horizontal plane I have had many nice results. Yet, even here, the complex nature of the muscular mechanism upsets often all seemingly correct and logical reasoning. A few weeks ago I operated for internal strabismus on a little girl. I decided to cut the upper fibers of the internal rectus tendon, but through some unaccountable mistake I clipped the lower portion. I was surprised to see the un-intended section produce the intended result. Likewise, I have failed when faithfully carrying out partial section according to established notions. Dr. Risley's reference to the great variability of orbital conditions also tends to show the impracticability of hard and fast rules.

Dr. Dudley S. Reynolds, Louisville—There are a great many other questions to settle before proceeding to partial, or complete tenotomy in such cases. Conditions of malnutrition, state of the nervous system, habits of the individual, mode of living, age and hereditary conditions, all have to be considered. It is very important to remember what Dr. Risley has just said about physical conformation of the face and head in connection with abnormal shape of the orbit, and consequent anomalies of the orbital contents. Surely no one would expect to change the shape of the orbit by dividing the tendons of ocular muscles. Many a case of heterophoria due to anxiety and overwork, with consequent malnutrition and loss of rest has been ruined by frequent tenotomies. One recent case in my observation was operated 13 times, and the surgeon wanted to operate again, in a person with a small central scotoma in one eye. A multitude of cases of heterophoria may be cured by constitutional treatment with suitable regulation of diet, habits and mode of living. Many are cured by constitutional medication and correction of errors of refraction, without either prisms or tenotomies. Reflexes from the genito-urinary system are sometimes causes of heterophoria. I have known more than one case cured by successful operation for the cure of hemorrhoids. Many of them are due to auto-intoxication from constipation of the bowels. All these, and many more matters should be duly considered before subjecting the patient to any sort of tenotomy.

Dr. J. E. Colburn, Chicago—I must plead guilty to having performed a good many of these operations, and while I have had many occasions to regret operations I have had a great many occasions to congratulate myself and the patients upon the good results obtained. I believe with Dr. Risley that the conformation of the orbit has very much to do with the position of the eyes, their relative activity and with the production of heterophoria. I believe that errors of refraction are the cause of a great many cases of pseudo-heterophoria and also that general debility is the cause of some instances; such patients can not bear the discomforts of a muscle error with the same degree of patience they have been able to do when in a better systemic condition. I believe it is possible in a certain class of cases to accomplish many of the things Dr. Gould has referred to in his paper, but I feel that his rules must be exceedingly limited in their application. That a tenotomy, graduated or partial, is a serious operation, I am well aware, but I believe it is a justifiable procedure when done under the proper conditions. I believe in giving the patient the benefit of correcting the refraction, gymnastic exercises, etc., but that there are a certain class of cases where we must consider the patient and his inability to give us the months of time for exercises necessary to bring about the conditions which Dr. Gould says will result and that we must give such patients the relief if only for a time that comes by operation.

Dr. C. H. Williams, Boston—Before we do any operations on the eye muscles, or in fact before we make a diagnosis in these complicated cases, it seems to me we need to get at all the facts of the case, as to how much muscle error there is and where it is located. I wish to call your attention for a moment to a piece of apparatus which I made last summer and which I have used for the past six months and found very helpful in this direction [exhibiting new instrument]. It consists of a hollow tin case shaped like a Geneva cross, each arm being about eighteen inches long; inside this case are a series of incandescent lights. A slot is cut in the front of each arm about half an inch wide and the length of the arm, behind which is fastened a strip of red glass. In front of this case is a wheel of wire pivoted at the intersection of the arms of the cross; this wheel carries sixteen small incandescent lights arranged in the form of a cross, to correspond to the arms of the case below. These lights are covered by having a small cylinder of tin about each lamp, and on the front of each cylinder is a number in green glass; these lights are placed on the wheel at such distances apart as would correspond to the deviation produced by a prism, when viewing the lights at a distance of twenty feet, and the number before each light gives the number of the prism which would at that distance cause a displacement of that amount. The person to be tested wears a pair of spectacles, of which one eye is filled with a red glass, and the other eye with a green glass. When testing a patient, the electric lights of the instrument are controlled by a switch so that the vertical red line and the horizontal numbers are lighted at one time, or the horizontal red line with the vertical numbers, or the vertical red line and the vertical numbers. Starting with the first combination, the vertical red line and the horizontal green numbers, the patient is asked to state where the red line seems to stand; if it comes in its true position between the 1 and 2 we know that there is no deviation of the axes of the eyes to the right or left, but if the red line seems to stand to the right (the red glass in the spectacles being before the right eye) it shows there is a convergence of the axes, and if the red line is over No. 4 it shows this deviation is equal to that produced by a prism of four degrees. If on the other hand the red line appears over No. 5 to the left, it shows there is a divergence of the axes equal to a prism of five degrees. The even numbers are to the right of the center, and the odd numbers to the left. Again, when testing a patient with the horizontal red line and the vertical green numbers showing, if he sees the red line in the center between the 1 and 2 it shows he has no

displacement of the axes up or down, but if the red line stands near the number 5 below the center it shows that the axis of that eye stands above the other equal to the displacement caused by a prism of five degrees. To show the amount of torsion, if any, the vertical red line and the vertical green numbers are lighted. If they appear superimposed, or standing parallel to each other, there is no torsion, but if the red lines and the green figures appear crossed the vertical meridians of the two eyes are not parallel, and the number of degrees which it is necessary to turn the wheel with the green figures in order to bring the red line and the green figures parallel, measures the amount of torsion. Through these spectacles the patient can only see the red lines with his right or red eye, and can only see the green figures with the left or green eye, the glasses cutting off the other rays. In this way each eye is unconsciously fixing a separate object, and if the axes of the eyes are in their proper position the red lines and green figures will seem to be in their proper place, but if there is a deviation its character and amount can be quickly and accurately measured. It is desirable to have a second pair of spectacles with the red glass in the left eye, and the green glass in the right eye; and it is essential to select the color of the spectacle glasses with care, so that the red glass will not transmit any of the green light, nor the green glass any of the red light from the lamps.

Dr. J. L. Thompson, Indianapolis—In the beginning of my thirty years' practice I paid more attention to insufficiencies of the internal muscle than to esophoria, but since I have been examining for esophoria I find that 98 out of 100 of my patients have from 1 to 3 degrees and that it seems as natural as the flexion of the hands and arms. In fact, if the patient does not have esophoria I look upon the case as an insufficiency of the internal recti muscles. I started in my practice with a great fear of operations upon the internal muscles except in cases of strabismus, where I operated freely, and it astonishes me now after twenty years to see that I have not had much over-correction in these cases. I have never operated on a case of strabismus until it has been under observation for a year, and I think in the future it will be five years before I operate on these muscle cases.

Dr. G. C. Savage, Nashville, Tenn.—Dr. Risley mentioned malformations of the skull as causative of heterophoria. There is nothing clearer than that a malformed orbit must contain an eye out of its normal relationship. The result will be one kind or another of heterophoria. In the treatment of such heterophoria, however, it is impossible to alter the shape of the orbit; therefore, if the error is to be corrected, it must be done by treatment of the muscles involved. Whatever then may be the cause of a heterophoria which is intrinsic in character, the principle of treatment remains the same. I wish to say that the instrument that Dr. Williams has very ingeniously invented will do everything that he claims for it. I do not want anybody to go from this meeting believing that I am an extremist on the muscle question, for I am not. My paper was of necessity confined to the operative treatment of heterophoria, and I am always delighted when I have a case of intrinsic heterophoria which can be cured by exercise, or by weak prisms in positions of rest. There are, however, a great many cases that can not be thus cured, and on these I always operate.

Dr. Frank Allport, Chicago—In considering the question of graduated or other tenotomies for the relief of so-called muscular asthenopia, I like not only to be honest with my patients and refrain from burdening them with unnecessary expenses, but I like also to be honest with myself. I must, therefore, ask myself the question: Do I find it necessary to perform tenotomies for asthenopia in order to secure satisfactory practical results, both to my patients and myself? A negative reply is inevitably the result of such an interrogatory. I have the average number of asthenopic patients in private and dispensary practice, and I presume I secure about the average results. At all events, in the course of a year I do not see many asthenopic patients who express much dissatisfaction from their treatment. I do not claim better results than others, and I can honestly say that I very rarely perform a tenotomy for asthenopia. Sometimes a year or so may elapse without the performance of such an operation. I therefore find it difficult to understand why some men perform this operation so frequently. I find that most of my cases do very well without tenotomies and without prisms, by a thorough correction of refractive errors and observance of the laws of health and hygiene. It may be with the unusual knowledge and skill possessed by such men as Drs. Stevens and Savage, the frequent performance of such operations may be not only useful but wise, but I am free to confess that from my own standpoint I do not feel myself capable of freely interfering with the functions of the ocular muscles. I recall the case of a gentleman operated on in Chicago who had only one eye. Through an accident his other eye was completely blinded. Some years after this accident, while suffering from asthenopia, he sought the advice of a professional muscle clipper, who, through motives which I do not attempt to analyze, performed several partial tenotomies on the good eye.

Dr. C. F. Clark, Columbus, Ohio—My experience has been very like that of the last speaker; yet I have been inclined to think of late that I have been too conservative in the matter of operations. I am willing to run the risk with being charged with radicalism when I say that within a few months a case that I had treated with muscle exercises faithfully, and for a time successfully, came to me and I found that I had kept that patient for several years with only a partial use of her eyes when she had the need for the full use of them; a very slight advancement gave me a brilliant result. By muscle exercise following the operation the abduction was carried from 18 degrees to 58 within three weeks and she had no discomfort. It convinced me that in many cases I had been guilty, as perhaps Dr. Gould has been, of being too conservative.

Dr. Hiram Woods, Baltimore—I can fully agree with Dr. Risley that if you once admit Dr. Savage's premise and then work out his conclusions you are compelled to admit that his reasoning is logical. The question with me is the premise, as given by Dr. Savage: "Heterophoria not curable by correction of refraction errors, prisms in position, or strengthening exercise." I think he should add, "provided the heterophoria is shown to be the cause of trouble still persisting." Experience has taught me that with more exact and careful methods of diagnosis the number of cases that are left for tenotomy are very small. I formerly did from ten to twenty a year, while now I do not believe I do more than one or two, and then usually for esophoria. One of the most important steps in the examination is to try to determine what the heterophoria is due to and in this connection we must not only look after the refraction and the health but into the school and home hygienic conditions. It takes a considerable amount of time to get down to these facts and possibly Dr. Thompson is right in putting it at five years. I can not go so far as Dr. Gould in saying that operation is never justifiable, for there is a class of cases in which enormous benefit results, namely, in esophoria. I do not find the high degrees of hyperphoria that some do. I have never used the instrument that Dr. Savage exhibits, but I have looked for cyclophoria persistently with the Maddox prism, as Dr. Savage taught, and found it only three or four times. In esophoria, however, with low abduction, and with the parallax displacement which Duane described, a tenotomy is often followed by the best results. I know that in my own experience a tenotomy done by Dr. Harlan of Baltimore benefited me enormously. I want to ask Dr. Gould in regard to his method of muscle exercise whether he considers the rapid development of adduction an increase in muscular strength or a development of positive relative convergence. Landolt dwells upon defective relative convergence as a cause of asthenopia. Why is it claimed that orthophoria is as bad a condition as some degrees of heterophoria? While the normal condition probably is a degree or two of esophoria for distance and three or four degrees of exophoria at the near point, as Dr. Theobald pointed out some years ago, the statement that orthophoria causes asthenopia is not in accord with my observations.

Dr. L. Connor, Detroit—It is perfectly evident that this is a very complex problem and that some gentlemen see one part of it with greater distinctness than others. So far as my own observation goes we may seek for the cause of these muscular disturbances along perhaps three or four lines: one is a reflex occurring with certain conditions of the nose or allied organs; another is malnutrition of the eye whose muscles wobble as the muscles elsewhere do in similar conditions; a third is a physiological lack of power, and lastly there are unquestionably anatomical defects. I think it is well established that when we have settled upon an anatomical error as the cause of the trouble an operation is absolutely necessary. In other conditions the removal of the cause of irritation, etc., has certainly resulted well. It is entirely unsafe to say that anatomical conditions alone are the cause of heterophoria and that all cases should be operated upon. A friend of mine was operated on thirty-eight times within eight months and has more muscular unbalance to-day than ever before. You all know there are cases of disease of various sorts cured by operation *per se* and I am certain that many cases of heterophoria are cured simply by the cutting, and a cutting on the ear would do just as much good. I have never seen any good resulting from a partial tenotomy; I might just as well have cut the conjunctiva somewhere else. I do not mean to say the men who operate do not benefit their patients, but the good should be ascribed to its proper cause and, in some instances at least, to hypnotic influence.

Dr. D. B. Wylie, Milwaukee—The gentleman who has just had the floor touched upon a point which I think is not looked after to the extent it should be, which, in my practice at least, has appeared to be of great importance, that is, external irritation. In neither of the papers, nor in the discussion have I heard anything about correcting diseased conditions or irritated conditions of the conjunctiva. You may call these pseudo-heterophorias if you will, but they produce the same asthenopia. I have time and again seen small degrees of esophoria or exophoria disappear entirely after the cure of a very mild degree of conjunctivitis. I was somewhat surprised at one of the gentlemen stating that surgery is the despair of medicine. It seems to me that is beyond the power of any man to defend.

Dr. D. M. Campbell, Detroit, Mich.—The differences of opinion seem to be on the causes of heterophoria; in the treatment of the condition we are probably not so far asunder as might appear from the discussion. Most of us correct the refraction and look after the general health of the patient and cure a large number of cases, and yet in a large practice there will be a certain residual number uncured by whatever we do. In a report I made to the Michigan State Medical Society upon a study of 500 cases of asthenopia I found less than 2 per cent. that had to undergo operation.

Dr. H. Harlan, Baltimore—I envy very much the men who can have such positive convictions as to permit dogmatic statements such as we have heard. I want to ask Dr. Gould whether his statement that no case should be operated on is the swinging backward of the pendulum as the result of unsatisfactory experience in operating, or whether that has always been his opinion.

Dr. George M. Gould, Philadelphia—It is my belief that we are emphasizing entirely too much this question of muscle trouble. It may be highly scientific to do this work, but I have found many patients coming to me wearing prisms that seemed to my mind utterly unnecessary and never could have been called for. I feel it a higher duty to emphasize the importance to correct refraction, of applying the proper glasses in relation to these muscle troubles. Several misunderstandings have taken place which I wish to correct. I never said or implied that no case should be operated on. I made certain reservations and further said that this paper was written from my own experience limited to a private practice in a good class of intelligent people: I have been able to cure their symptoms or relieve them so perfectly that I have kept them as satisfied patients. I do not wish to be dogmatic because I thoroughly believe that in the matter of the practice of medicine individual genius has its own law and one man will accomplish by his method what another man could not accomplish with it.

I wish to correct a misinterpretation about "surgery being the despair of medicine." What I meant was that none of us believe in proceeding to surgical measures if we can cure our patients by medical and physiological means. We certainly despair of curing our patients naturally before we proceed to surgery. I do believe that local irritation of the conjunctiva may produce a temporary heterophoria, but on the other hand I believe these conditions are usually corrected by proper glasses which remove the heterophoria at the same time. The question has been asked why orthophoria should be considered a disease. My feeling is that in orthophoria with the Maddox rod at 20 feet there is almost always an insufficient adduction power for close work and that the trouble thus produced justifies its being considered a diseased condition.

A TABLE OF OCULAR EXTRINSIC PARALYSES.*

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In the "International Clinics," Vol. iii, Fourth Series, 1894, appeared an article by Prof. F. C. Hotz, on "The Diagnosis of Paralyses of the Ocular Muscles by the Double Image Test," which was a distinct advance in simplifying the methods of detecting the affected muscle in these perplexing cases. In studying that article, it occurred to the writer that the subject might be further simplified by exhibiting these paralyses with the position of the false image in graphic or tabular form. Soon afterward he prepared the table, which, with some modification of terms, has been used by him in teaching and in practical work since. As the table has stood the test of time and has commended itself to many practitioners and students, it is now presented for the consideration of this Section, in the hope that it may prove of value to others.

Let us consider briefly the more recent nomenclature of the movements of the eyes, mainly following that of Maddox; the muscles producing those movements, and the action of each muscle in the primary position of the eyes as well as in secondary positions.

PRIMARY POSITION.

The primary position may be stated to be that in which with the head perfectly erect, the eyes are directed toward a point upon the horizon midway between the eyes.[1]

In testing the eye muscles the primary position should be first assumed and the relations of the images formed by the two eyes studied in this position and later the relation of the images in departures from this position should be considered.

MOVEMENTS OF THE EYES.

In passing from the primary position, the eyes are capable of eight simple co-ordinate movements and, by combinations of these, all possible positions may be attained. Two of these movements, adduction and abduction, are employed in convergence and divergence; four, dextroduction, levoduction, superduction, and subduction, are employed in parallel movements; and two, extortion and intortion, are employed in rotating the eyes around their antero-posterior axis "so as to make the cornea revolve like a wheel." Because of this

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

1. While this definition is not strictly accurate for all movements of the eyes, it is sufficiently accurate for all practical purposes in making the diplopia tests.

torsion the upper segment of the cornea has been adopted empirically to represent the movements of the eye. These eight movements are produced by the twelve muscles, six for each eye as follows:

Abduction, the separation of the axes of the eyes so that the corneæ diverge, is produced by the external recti, assisted by the superior and inferior obliques.

Adduction, approximation of the axes of the eyes so that the corneæ converge, is produced by the internal recti, assisted by the superior and inferior recti.

Dextroduction, the turning of the eyes to the right, is produced by the abductors of the right eye and the adductors of the left eye.

Levoduction, the turning of the eyes to the left, is is produced by the adductors of the right eye and the abductors of the left eye.

Superduction, the turning of the eyes upward, is produced by the superior recti. assisted by the inferior obliques.

Subduction, the turning of the eyes downward, is produced by the inferior recti assisted by the superior obliques.

Extortion, the rotating of the upper segment of the cornea outward, is produced by the inferior obliques, assisted by the inferior recti.

Intortion, the rotating of the upper segment of the cornea inward, is produced by the superior obliques. assisted by the superior recti.

ACTION OF THE INDIVIDUAL EYE MUSCLES.

Each of the six muscles of the eye has one movement for which it is particularly responsible: The external rectus for abduction; the internal rectus for adduction; the superior rectus for superduction; the inferior rectus for subduction; the superior oblique for intortion, and the inferior oblique for extortion. This action of each muscle may be called its primary action, but each has other actions varying according to the position of the eyes when the action occurs, which may be called secondary. The external rectus and the internal rectus have no secondary action when moving in the horizontal line, but in all other positions they have secondary actions. All the other muscles have secondary actions in all positions. Usually the movements of the eyes in straight lines from the primary position are all that are necessary to be considered in making diplopia tests for ocular paralyses; but in certain complex cases it is desirable to study the motions of the eyes in all possible positions. The limits of this paper will not, however, permit a review of the action of each muscle in all positions.

If we keep in mind the origin and insertion of these various muscles it will assist us greatly in remembering their actions. The external and internal recti passing horizontally from origins which are to the inner side of and behind the eyeball to insertions on the horizontal meridian of the anterior segment of the globe, act. when the eye is in the horizontal plane, to simply rotate the eye to the right and left. In the upper plane each acts as a superductor and intortor, in the lower plane as a subductor and extortor.

The superior rectus from an origin which is to the inner side of and behind, passes diagonally to its insertion in the upper anterior segment of the globe near the vertical meridian. Having this diagonal position the muscle even in the primary position not only superducts the eye, but it also adducts and intorts it.

The inferior rectus having a similar origin, direction and insertion in the anterior inferior portion of the globe, primarily subducts the eye, but at the same time adducts and extorts it.

The superior oblique from a potential origin to the inner side and in front of the eye, passes diagonally to its insertion in the upper outer part of the posterior segment of the globe and in the primary position, not only intorts but also subducts and abducts.

The inferior oblique having a similar origin, direction and insertion in the outer lower part of the posterior segment extorts and also superducts and abducts.

It is thus seen that all the recti except the external adduct; that the obliques abduct; that the superior muscles, obliques and recti, intort; that the inferior muscles, obliques and recti, extort; that the superior recti and inferior obliques superduct and that the inferior recti and superior obliques subduct.

For the maintenance of binocular single vision all these muscles must act with the greatest precision and harmony, so that the rays of light coming from an object shall fall upon similar portions of the retina in each eye. If one muscle is weakened in the slightest degree the eye is not held in the proper position but rotates slightly in a direction opposite to the action of the affected muscle and rays of light falling upon a different portion of the retina from that in the other eye, the object is seen double, that is, diplopia occurs.

PROJECTION.

Observation and education have taught us when looking at an object, that is, when the eyes are so directed that rays of light coming from that object fall upon the macula, that another object so situated that rays of light coming from it fall to the left of the macula is to the right of the object viewed, and that rays of light falling below the macula come from an object above the object viewed. In the normal position of the eyes when both are accurately fixed, rays coming from the object viewed fall upon corresponding parts of the maculæ and rays coming from the right pass over to corresponding points to the left in each retina and are interpreted to the consciousness as being to the right. When, however, one eye deviates, say to the right, it is so turned that rays fall further to the right on the retina than they would if there was no deviation, and by education are interpreted by the brain, as being further to the left than they actually are. And as for all other directions, so that we find when one eye deviates from its fellow, the image of the deviating eye is always projected in a direction opposite to that in which the eye turns. It was shown above:

1. That when a muscle is weakened, the other muscles turn the eye in a direction opposite to the action of the affected muscle. 2. That projection of the false image is always in a direction opposite to the turning of the deviating eye. And from these two facts a third is apparent that is of great assistance in detecting the affected muscle, namely,

3. That the false image always appears to be displaced in the direction of the action of the affected muscle.

4. Another point of importance is the fact that the distance between the images increases when the eyes are turned in a direction calling for the action of the affected muscle, and diminished when the eyes are turned in the opposite direction.

VARIETIES OF DIPLOPIA.

According to the relative positions of the images, diplopia is classified as lateral when the images are disposed approximately horizontally and as vertical when

they are disposed approximately perpendicularly. Very rarely the displacement is about midway between horizontal and vertical; but with these rare exceptions there is no difficulty in placing the diplopia in one or the other class. These two varieties of diplopia are further subdivided according as the false image is displaced toward the temple or toward the nose. In horizontal displacements of the eye it is manifest that the false image must be displaced toward the temple or toward the nose. But in vertical displacements, owing to the fact that all the superductors and subductors are also either abductors or adductors, there is always lateral displacement and thus the false image is also projected either toward the temple or toward the nose.[2] If the images are separated so that the image of the right eye is seen on the right side and that of the left eye on the left side, the diplopia is homonymous or temporal: but if the images are crossed so that the image of the right appears to be to the left of that of the left eye the diplopia is hetoronymous, crossed or nasal. The writer much prefers the simple English terms, temporal and nasal to indicate the position of the false image, but as these have not been generally adopted the more usual homonymous and crossed are used in the table and in this paper.

Having in mind the foregoing facts, the muscle affected is readily determined. In making the tests the patient should be so placed that the eyes in the primary position are directed toward a small bright light, as a candle flame, 20 feet away. A red or green glass should be placed before one eye. This glass serves a double purpose. It makes the separate images more apparent, and it shows which image belongs to the right eye and which to the left. If now the patient sees two images of the flame, we inquire at once whether the images are side by side or one above the other. If the former, lateral diplopia, is found eight of the twelve muscles are at once excluded and we know that one of the four lateral recti muscles is involved. Knowing whether the diplopia is homonymous or crossed, the number of muscles involved is reduced to two, and then by directing the patient to turn the head to the left so that the eyes are dextroducted, or the head to the right so that the eyes are levoducted, we bring the analysis down to a single muscle and can say at once which one of the four lateral recti is involved. Suppose, for instance, that the patient says that the image of the right eye is to the right of the other and that it passes farther from it as the head is turned to the left, eyes dextroducted, we know at once that it is one of the four laterals, because the diplopia is lateral; that it is one of the externi because it is homonymous and that it is the right externus because the images separate when the eyes are turned to the right calling this muscle into action.

If, however, the diplopia is vertical, we know at once that one of the eight vertical muscles is involved. If while vertical, it is homonymous, it is shown that one of the four obliques is involved. In either of these cases if diplopia is present in the upper field, that is in superduction, we know that it is one of the muscles that turns the eye up, while if present in the lower field, we know that it is one of the subductors. Having in this way reduced the quest to one of two muscles, the position of the images shows which of these two is affected. Thus if we have with the eyes turned upward the image of the right eye above and to the right of that of the left eye, the right inferior oblique is at once shown to be the one paralyzed.

A TABLE OF OCULAR PARALYSES.

- Diplopia
  - Lateral. 4 — External or Internal Recti
    - Homonymous. Externi.
      - 1. Images separating in Dextroduction — Rt. External Rectus.
      - 2. " " " Levoduction — L. " "
    - Crossed. Interni.
      - 3. " " " Levoduction — Rt. Internal "
      - 4. " " " Dextroduction — L. " "
  - Vertical 8 — Superior or Inferior Recti and Obliques
    - Homonymous. Obliques. 4
      - In Superduction Inferior
        - 5. Right Image Higher. Rt. Inferior Oblique.
        - 6. Left " " L. " "
      - In Subduction Superior
        - 7. Right " Lower. Rt. Superior "
        - 8. Left " " L. " "
    - Crossed. Recti. 4
      - In Superduction Superior
        - 9. Right " Higher. L. " Rectus
        - 10. Left " " Rt. " "
      - In Subduction Inferior
        - 11. Right " Lower. L. Inferior "
        - 12. Left " " Rt. " "

Persistent diplopia indicates paralysis or paresis of one or more of the ocular muscles.[3]

1. When a muscle is paralyzed the eye turns away from the action of that muscle.
2. Projection is in the opposite direction to the deviation of the eye.
3. Projection is in the direction of the action of the affected muscle.
4. The images separate in turning the eyes in such a direction as to call for the action of the affected muscle.

DISCUSSION.

DR. F. C. HOTZ, Chicago—Several years ago I worked out a similar scheme for facilitating the diagnosis of ocular paralyses by the diplopia test. My plan was based upon the fact that we can group the six ocular muscles into three pairs, each of which controls one of the three principal rotations of the eye: the first pair (internus and externus) controls the lateral movements; the second pair (superior rectus and inferior oblique) the upward movements, and the third pair (inferior rectus and superior oblique) the downward movements. In any case of paralysis, therefore, the first question to be settled is this: The kind of diplopia locates the disturbance upon which pair of muscles? Lateral diplopia indicates an affection of the first pair; vertical diplopia in the upper field points to the second pair; and vertical diplopia in the lower field to the third pair. The next step is to decide which muscle of the pair is affected. This question is at once answered by the homonymous or crossed character of the diplopia. Homonymous diplopia of the first

2. In vertical diplopia in a patient with previous esophoria or exophoria the images might be exactly vertical (the author has seen one such case), but these exceptions to the rule must be exceedingly rare.

3. Exceptions: Injuries, diseases and tumors of the orbit causing displacement and loss of motion, usually obvious; and chronic spasms of the muscles of the eye, so rare as to be negligible.

pair points to the externus; crossed diplopia to the internus; homonymous diplopia of the second pair points to the inferior oblique; crossed diplopia to the superior rectus; homonymous diplopia of the third pair points to the superior oblique, and crossed diplopia to the inferior rectus.

The affected muscle being found it only remains to determine whether it is the muscle of the right or left eye. This last question is answered by the well-known fact that the image of the affected eye is projected in the direction of the normal action of the paralyzed muscle; and that the distance between the double images increases in this direction and diminishes in the opposite. If, for instance, we have found a paralysis of the externus and the images separate when the eyes are rotated to the left, but come together when the eyes are rotated in the opposite direction, we know at once the paralyzed muscle must be the externus of the left eye.

I have taught this method a number of years and always found the quick and easy way of making a correct diagnosis was a great revelation to the students who are accustomed to look upon the paralyses of ocular muscles as one of the most difficult and perplexing problems. Dr. Starkey has elaborated a similar method and I am pleased to learn that he too has been successful and well satisfied. It shows that students may readily understand the clinical pictures of ocular paralyses if they are presented to them in a comprehensive manner.

Dr. W. H. Wilder, Chicago—Dr. Starkey's table will be a valuable addition to the class room. It is certainly difficult to get students to comprehend this matter of ocular paralysis and any way of simplifying it is of value. The only suggestion I would make would be that this table might be supplemented by a diagram giving the evidences of tortion or tilting of images that we see when certain straight muscles or the obliques are paralyzed. I do not agree with Dr. Hotz on this point. If you have an affection of one of the straight muscles it is easily recognized without taking the patient into the dark room, but the difficulties come with the partial paralyses or pareses, where the degree of diplopia is not great and the difficulties are worse when a group of muscles are affected. It is not an easy matter to work these cases out to a satisfactory conclusion.

Dr. M. F. Weymann, St. Joseph, Mo.—The subject of the diagnosis of paralysis affecting a single muscle of the eye may be reduced to three mechanical rules whose application requires little thought and analysis: 1. Diplopia appears in the direction of the action of the affected muscle. 2. The faulty image is always in advance; this is reversed only when the paretic eye is used for fixation. The first two rules determine easily any paresis in the horizontal plane. 3. Of the muscles acting in the vertical sense, the obliques produce homonymous, the recti heteronymous diplopia.

Dr. Edward Jackson, Denver—I think it is extremely important for practical reasons not to attempt to burden the mind with any such table, but to follow a plan similar to that indicated by the last speaker. It is well enough to have such a table for reference, but I think for practical work we have the whole theory of the subject in the rules Dr. Weymann has given. The diagnosis of partial paralyses in a large majority of cases is not rendered simpler by such a scheme, and I find that they can not be settled in a few minutes or even in an hour by repeated tests. You must remember that no ocular movement is dependent upon any one muscle and no movement is lost by the paralysis of a single muscle, unless it be direct lateral movements of a certain nature. I think the measure having the greatest value as a final test is the accurate measurement of the fields of binocular fixation.

Dr. Horace M. Starkey, in reply—If I understand Dr. Hotz, this paper illustrates his method of teaching to-day as well as that of ten years ago. The object of my study has been to make the teaching of this rather complex subject as simple as possible, and certainly it has been much more easily understood by physicians and students, when explained in connection with this table, than by any other means that I have been able to devise. It is not expected that the table will be memorized, but rather to be at hand for ready reference. The reason that no supplementary table was added, as suggested by Dr. Wilder, is because it seemed to me that the simpler the table could be made the more valuable it would be.

MULES' OPERATION.*

FRANK C. TODD, M.D.

Clinical Professor of Ophthalmology and Otology, University of Minnesota; Attending Eye and Ear Surgeon to City and Asbury Hospitals.

MINNEAPOLIS, MINN.

The operation of evisceration was devised by Graefe in 1884, his object being to prevent death from meningitis following removal of suppurating globes; and by Mules of Manchester, England, at about the same time, his object being to prevent sympathetic ophthalmitis which occasionally follows enucleation. Since which time this operation has been urged by some surgeons as furnishing a more suitable stump for prothesis.

In 1885 Mr. Mules devised and executed the operation which bears his name. This consists in ordinary evisceration, including ablation of the cornea and the insertion of an artificial vitreous.

In 1886 Mr. Adams Frost of London practiced the insertion of a glass ball immediately after enucleation; his method was as follows: After incising the conjunctiva all around the cornea the tendons of the recti were secured by sutures, then enucleation followed with the insertion of the globe, after which the sutured tendons were fastened and the conjunctival flaps brought together.

Mr. Lang of Moorfields shortly afterwards modified this operation by inserting the artificial globe into Tenon's capsule.

In 1895 Dr. Fox of Philadelphia devised the operation of inserting an artificial globe into an orbit where the eyeball had previously been enucleated. His operation consists in opening the conjunctiva horizontally, dissecting a hole in the orbital tissues into which the globe is inserted, the tissues then being sutured over the ball. Dr. Fox records a success of 85 per cent. in 48 operations. Simple evisceration in the opinion of most surgeons presents no advantages over enucleation. It does not, at any rate, after a few months, make a better stump than results from a careful enucleation. In those cases where Mules' operation can not be performed, the Frost-Lang operation may be substituted. The Fox operation is a very ingenious one and certainly causes a great improvement in the appearance of appropriate cases, but it is probable that this operation will not be very generally adopted, since the reform Snellen eye has been invented and is giving such satisfaction. Many of the members of this Section have used the reform eyes, no doubt, and will give us the benefit of their experience. There are two forms made, of which I show some samples. In both of them the back is filled in, but in one it is filled in more than in the other. (Figs. 2 and 3.) They are certainly a great improvement over the old form. The large cavity which results from enucleation is partially filled in and does away, in part at least, with the collection of mucus, besides giving far better results from a cosmetic standpoint. Recently I received a letter from Dr. de Schweinitz, in which he says that by the use of the reform eye in cases where he has recently performed enucleation according to the improved

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann

technic, i. e., suturing the tendons, he has had as good results as after Mules' operation, though he states that he still performs the latter operation in selected cases. We certainly have much to thank Dr. Snellen for in giving us this great improvement, and it only seems strange that some one did not devise such an artificial eye before.* There are many cases in which the Snellen eye will be of great benefit, but I do not believe that it can ever take the place of Mules' operation where the latter can be performed, because there are at least the following advantages of the latter operation over improved enucleation with the insertion of the reform eye.



FIG. 1.



FIG. 2.



FIG. 3.

Fig. 1.—The original hollow artificial eye, or eye-shell, for cases of atrophic eye ball, and after Mules' operation. Fig. 2.—A double-walled shell for cases where a smaller stump remains, as after a simple evisceration. Fig. 3.—An artificial eye-globe, where the conjunctival sac is emptied and spacious.

MULES' OPERATION.	ENUCLEATION WITH SUTURING TENDONS AND INSERTING REFORM EYE.
1. Growth of orbits uniform.	1. Growth of orbits not uniform.
2. Mobility.	2. Mobility less and will decrease in time as is the case following simple evisceration.
3. Orbit entirely filled in.	3. Orbit only partially filled in.

As yet the use of the reform eye has not been sufficient to enable us to make further comparison.

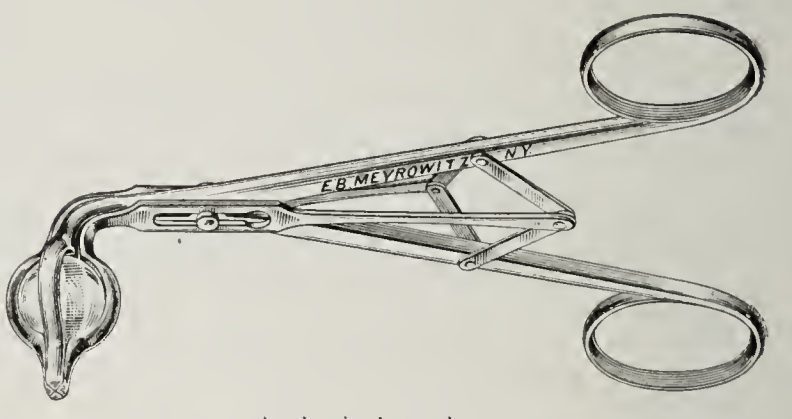
I shall mainly give you my own experience with Mules' operation and conclusions derived therefrom. If you desire a more full treatise upon this subject and also regarding other substitutes for enucleation, I refer you to the papers read before the Section of Ophthalmology of the Thirteenth International Congress of Medicine at



Mules' Glass Spheres.

Paris, and particularly to the excellent paper read at that meeting by De Schweinitz, summarizing the opinions of 67 American surgeons who had given their experience with substitutes for enucleation, 32 of whom had performed Mules' operation. It is worthy of note that those who have performed a number of these operations have had a large percentage of successes and are enthusiastic in their commendation, while many who have performed but few and had a larger percentage of failures do not consider the operation advisable. The great discrepancy in the results of the various operators surely indicates a difference in technic and I believe that statistics gathered a few years hence will show a greater percentage of successes and a larger number of operators who will agree with those of larger experience, notably Fox, Buller and Allport, who are strongly in favor of the operation. In England we find enthusiasts in Carter, Bickerton and others, who have performed the operation for many years. Swanzy says in his last edition of "Diseases of the Eye," regarding Mules' operation:

"This proceeding—a modification of the foregoing—was also proposed by Mr. Mules for cases of threatened sympathetic ophthalmitis, and, like simple evisceration, has not yet met with universal acceptance in those cases, because many fear that it does not afford sufficient protection against sympathetic ophthalmitis. I do not participate in this feeling. In cases of staphyloma, however, and in some other conditions where the questions of sympathetic ophthalmitis in the other eye, or of a new growth in the eye to be operated on, do not enter into consideration, no proceeding is, in my opinion, more satisfactory, at least in young persons, than this beautiful one of Mules'. The prothesis it gives is almost perfect



Author's Introducer.

"The danger that the glass sphere may get broken by a blow upon the eye has been put forward as an objection to this method. No doubt it is an accident which may occur, and would then necessitate the enucleation of the eye, but no case of the kind has as yet been recorded, although the operation has been in use for fifteen years. Silver spheres, instead of those of glass, have been sometimes employed to obviate the danger referred to.

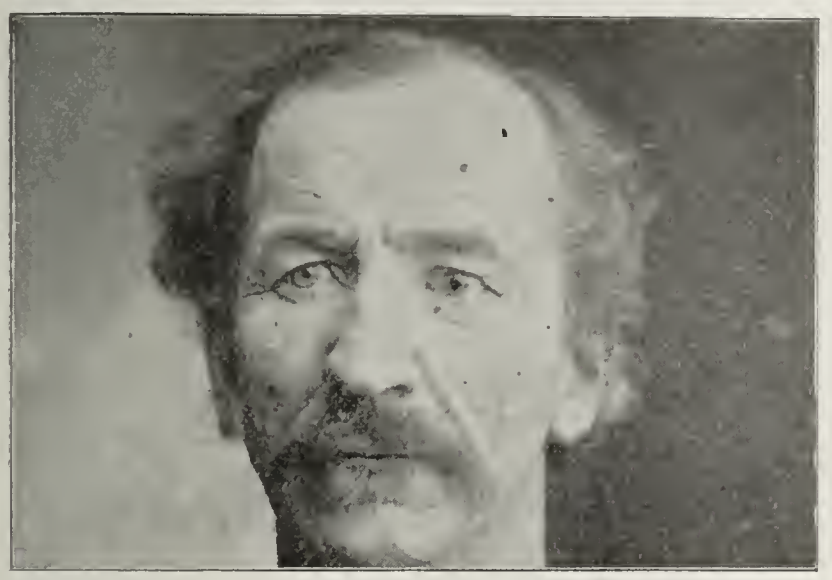
"I can heartily recommend this procedure. I use it frequently, and I am much pleased with it, for, with a well-fitting glass eye, the cosmetic result it gives is infinitely better than that produced either by complete enucleation or by evisceration of the eyeball."

De Schweinitz speaks very highly of Mules' operation and states in conclusion that "the best cosmetic results among the substitutes for enucleation, if successful abscission be excluded, are secured by Mules' operation which is only positively contraindicated by malignant disease, sympathetic ophthalmitis, extensive laceration of the sclera, and extreme phthisis bulbi." Yet he states finally: "Mules' operation, when successful, certainly furnishes admirable results, but I feel sure that although at the present time, from the cosmetic standpoint, it seems to be one of the best of the substitutes for enucleation it is not likely to endure as an operative measure, unless the percentage of failures is greatly reduced." There can be no doubt that this percentage of failures can and will be reduced.

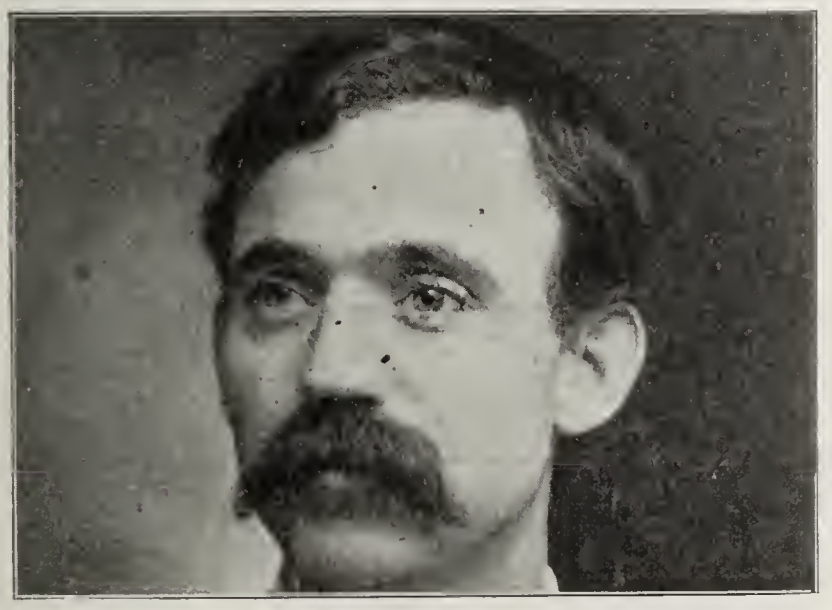
The number of cases upon which I have performed Mules' operation are 31: these include two cases of Dr.

* Since reading this paper I have discovered an article published in the Ophthalmic Record, May, 1901, which states that the closed artificial eye was devised by J. L. Borsch, in 1894.

Allport (whom I assisted) which I have had an opportunity to follow out, also another case of Dr. Means of Columbus, whom I assisted in his first Mules' operation in 1899. All of these cases are either under my personal observation or I have recently heard from them by correspondence. Two were operated five years ago, and the others during the past four years and up to the present time. All of these patients are still retaining the globe excepting two in which the ball escaped, and the case of Dr. Means, in which the glass ball was removed eighteen months after insertion by another surgeon. These three cases are given in detail later.



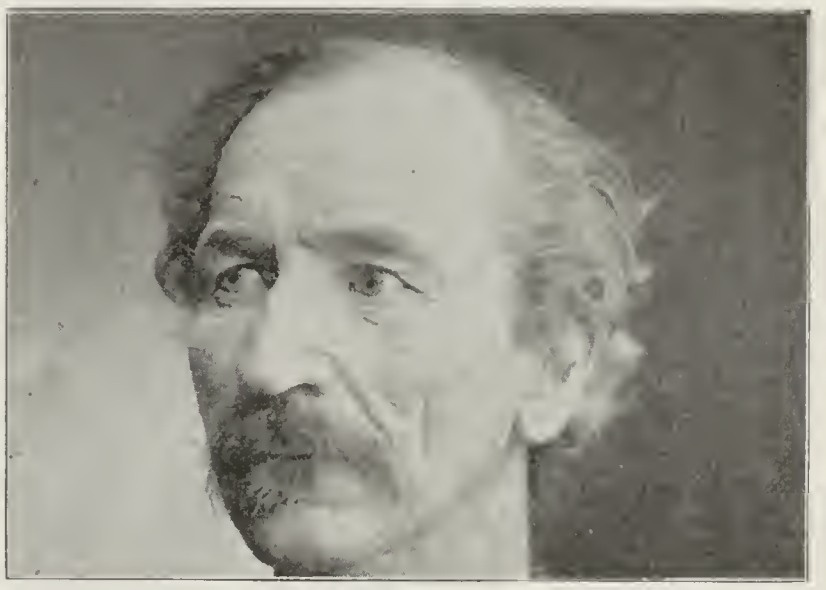
Age at Operation.—The youngest person operated was one year old, and as the child had an extra large scleral cavity, having lost the eye from ophthalmia neonatorum followed by staphyloma, a good-sized glass ball was inserted in order to better assist in maintaining uniform growth of the two orbits. This child is here and I show the case to demonstrate the uniformity of orbital development. The oldest was 54 years. The only reason for not inserting a globe in old people has been the fact that



the cosmetic improvement has not been as important as in young people. The other cases ranged in age from 4 to 45 years.

Time in Hospital.—Regarding the time in the hospital, while at first I kept them in two weeks I now keep them only one week. I do not consider it essential to keep the patient in bed but a few days, and simply advise him not to use his good eye for reading and not to exercise to any extent for two weeks, though I keep the patient under observation for two weeks and prefer to see him one month. The prothesis was inserted in some cases two weeks after the operation, but in many cases it was thought best to wait a month, and in one case two months, before allowing the patient to continually wear the glass eye. Regarding the material used as an artificial vitreous I have used glass in all my cases. Fox sums up this point as follows: "I prefer first glass balls, then gold balls. Silver balls produce argyria and undergo oxidation. Aluminum globes become disintegrated, as was shown in one case where I used a perforated aluminum sphere as suggested by Dr. Bryant. This caused great pain, because the tissues surrounding it grew through the opening."

Contra-indications.—As absolute contra-indications I



would consider malignant intra-ocular growths and diseased or injured eyes which have already excited sympathetic ophthalmitis; extreme phthisis bulbi and sclera so lacerated that it could not be made to retain an artificial vitreous. (Frost-Lang operation may be substituted in the two latter classes.)

I have had no experience in performing Mules' operation where sympathetic ophthalmitis was present and have not cared to be a pioneer in the experiment, though I could not have had worse results than I have had fol-



lowing enucleation in these cases, for in the few cases I have had, enucleation failed to permanently arrest the disease, and in two cases at least total blindness ultimately resulted. Old diseased eyes, traumatic or non-traumatic, in which iridocyclitis is present and which are said to be most apt sooner or later to cause sympathetic ophthalmitis, even when sympathetic irritation is present, I do not consider contra-indications and have on my records 7 such cases; in all these cases there has been a complete and immediate subsidence of the sympathetic irritation and no return. Three years ago, however, I enucleated such an eye because the patient considered

the time element more important than cosmetics and he has since had attacks of sympathetic ophthalmitis. Had I inserted an artificial vitreous in this case I probably would have considered the operation at fault. It was simply a case in which enucleation failed to arrest a developing sympathetic ophthalmitis.

Phthisis bulbi if not extreme need not prevent the insertion of a glass globe within the sclera. Case 28 was one of phthisis bulbi. A small globe was inserted into the scleral cavity. Glaucoma is not a contra-indication if we may judge from the success attained in Case 2.

Neither do I consider suppuration of the globe a con-



tra-indication, for in all such cases the results have been highly satisfactory and suppuration has ceased with the operation. I have had four such cases, of which the worst was that of J. T. M., male, age 28, machinist. A piece of brass entered the vitreous. Mules' operation was performed ten days after the injury, the vitreous chamber was full of pus, but the tissues healed as readily as any case. The fact that the presence of tuberculosis of the iris is not necessarily a contra-indication if limited to the iris is evident from the record of Case 1. In this case Dr. Allport had performed an iridectomy for tuberculosis of the iris, and upon recurrence Mules'



operation was performed. Gunshot wounds are not contra-indications unless the sclera is too much lacerated or shot is present in the orbit and causing irritation. I have had only one such case, and in this the shot had passed completely through the ball and become embedded in the bone. Mules' operation was performed with success.

Failures would include escape of artificial globe, the development of sympathetic inflammation and a stump over which an artificial eye can not be worn because of its irritability.

Sympathetic Inflammation.—No opinion is more valuable on this point than that of De Schweinitz, who concludes after his thorough investigation of 317 operations by 32 operators, as follows: "Eyes so wounded that they are likely to excite sympathetic ophthalmitis if seen before two weeks have elapsed need not be enucleated, that is, evisceration or Mules' operation may be performed, because, *with perhaps the exception of a single case, there is no positive proof that those operations have of themselves excited sympathetic disease. They may fail to arrest the development of sympathetic ophthalmitis, just as enucleation may meet with a similar failure.*" (Italics mine.)

Dr. de Schweinitz reports painful stump requiring removal three times. The only case in which I have had



this experience is the one of Dr. Means, whom I assisted two years ago while in Columbus.

J. R., male, 22, left eye blind and at times some pain. Right eye in good condition. Mules' operation performed as usual, no reaction, recovery uneventful. From time to time Dr. Means wrote that the patient, who was away at college, complained of inability to wear an artificial eye, and at my suggestion the Doctor removed some of the stitches which he thought might be causing the irritation. May 17, Dr. Means writes in reply to my letter as follows:

"The patient you refer to has had the glass ball removed. He came to me last December and I removed another stitch that was deeply embedded in the upper fornix. I thought



probably this was causing the irritation. He returned to college, and claimed that his eye did not improve. I received a letter from him later stating that the other eye was becoming irritated. I wrote him to come to me at once, but received a letter from an oculist in his college town, saying that he had removed the glass ball to relieve irritation. He simply removed the ball and allowed the sclera to remain. The Doctor intimated that the ball was too large, and therefore made undue pressure. I have operated on only one case since, and it has proven an entire success."

I am not prepared to explain this case, but do remember that we used a ball which was quite tight and

think the explanation of the surgeon who removed the globe quite probable.

Escapes are due to the following causes: reaction, hemorrhage, sepsis and consequent sloughing of edges of the sclera, imperfect ball, too large ball, too small ball, improper coaptation of sclera, use of absorbable sutures, insufficient number of sutures, too early wearing of prothesis, and later sepsis introduced by means of the prothesis or otherwise, resulting in abscess.

Reaction.—Those of greatest experience at first had a great deal of inflammatory reaction following their operation, and Fox attributes many of his early "escapes" to this cause. In the 317 cases tabulated De Schweinitz reports excessive reaction 77 times. The only case in which I have experienced any greater reaction than following enucleation are in Cases 1 and 2; only one of these could be called excessive. These I attribute to the fact that just before inserting the globe the cavity was dried out with iodoform gauze, enough of the powder remaining to cause the inflammatory reaction, and I believe a common cause of reaction is the use of irritating antiseptics. I have found very hot sterile water of the most service, because it acts as an antiseptic, is non-irritating and effectually stops hemorrhage, which may in itself be a cause of expulsion.

Moist dressings are undesirable because they promote suppuration, and a dry, sterile or non-irritating antiseptic dressing with a pressure bandage will aid in preventing reaction. This bandage should not be removed before two or four days have elapsed, unless complications arise, and the good eye need not be bandaged at all though the patient should be cautioned to keep it quiet.

While an irritating antiseptic should be avoided as much as possible, and if used it should be followed by irrigation with hot sterile water, yet a condition of asepsis is important and the balls should be sterilized in boiling water, and before inserting should be examined to discover any small hole through which the water may have entered. Occasionally such imperfect glass globes will be discovered.

The ball inserted should be as large as the scleral cavity will admit and yet small enough so that the edges of the sclera will not be pulled apart during the healing process. Case 15, already spoken of as being the only case in which there was an escape, I believe is an example of the use of a too small ball.

Laura D., aged 4, consulted Oct. 31, 1899. Dirty wire cut left eye yesterday while at play. Find large wound across cornea with escape of contents of the globe and evidence of infection. Operation delayed till November 2, awaiting consent of mother. November 2, performed Mules' operation as usual, the only difference being that a globe was inserted smaller than the cavity would have admitted comfortably, because I had on hand no globes of medium size and could not obtain one in the city. There was no reaction and result was successful. An eye was adjusted (date not recorded) and patient returned to her home one hundred miles away. A letter was received Feb. 21, 1900, stating that on February 11 the operated eye began to "look sore," and for the next two days "she had a good deal of pain." After which there was relief, but the glass ball became visible, and February 20 it came out (three months and eighteen days after operation). My opinion of this case is that the ball being too small to become firmly encysted was movable in its cavity and acted as an irritant.

The sclerotic coat is so non-vascular that union does not quickly take place, and hence the importance of careful coaptation of the cut edges and the necessity of using many strong, non-absorbable sutures. These become encysted and do not often cause irritation, but if they should the conjunctiva can be opened and the irritating sutures removed after firm union has taken place. Occasionally it has been found necessary to suture the conjunctiva during convalescence because it had separated.

As a rule, it is best to wait a month before inserting a prothesis for permanent use, and when first used, the patient should be seen daily to ascertain the effects. The irritation produced might be sufficient to cause the recently united scleral edges to part. If this seems imminent, it may be necessary to wait a week longer, when the artificial eye may be tried again. If the sclera separates, it should be reunited with sutures as before. In my experience this has never happened.

The second case in which there was an escape of the glass ball was that of W. M., whose eye was operated upon May 28, 1898. It was an old case of recurrent iridocyclitis with sympathetic irritation. The original trouble had been gonorrheal ophthalmitis, which had occurred two and one-half years previous to the time Mules' operation was performed. The results of the operation were successful and the patient had no trouble of any consequence until May 18, 1901. While doing the ordinary work on a farm and wearing the prothesis, not taking pains to keep the prothesis clean, the tissues became infected and the result was that when he reached the city four days later I found the glass ball protruding and an abscess of the orbit present. Pus was found in the orbital tissues and in the sclera back of the glass ball. The glass ball was removed and the cavity irrigated daily. The stump is now quite healed. The escape in this case was clearly due to sepsis introduced on account of the carelessness on the part of the patient, who was constitutionally unclean.

I have always found great difficulty in securing a proper fitting glass eye to cover the stump after Mules' operation. After a successful operation the only thing required to secure perfect appearance is a well-fitting eye of the correct shade, and hence one feels like being very particular in the selection. Most of the eyes now on the market are not fitted to be used for these cases. To fit well and give the best results the iris should be placed well up and not far toward the internal side, leaving a broad white margin below while the temporal side of the eye should not be as large as the usual prothesis: an extreme convexity is undesirable as such eyes appear too prominent when in place. The customary notch should be very slight, or may be absent.

In conclusion, I wish to state that I believe Mules' operation has come to stay and that as time goes on the percentage of failures will decrease and it will be more universally performed. The following are the advantages:

1. Absence of tears and secretion.
2. Development of orbit maintained.
3. Absence of enophthalmus.
4. Moisture of prothesis maintained.
5. Mobility.
6. In general the satisfaction to the patient, because of natural appearance and consequent absence of self-consciousness, which is bound to make a vast difference in the success and happiness of the individual.

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DISCUSSION.

DR. FRANK ALLPORT, Chicago—Failures in this operation are more or less frequent from the ambitious desire to fill in the scleral sac to its utmost capacity, in order to provide a large stump upon which to place the artificial shell. Considerable reaction and swelling usually follow the operation, and if the ball is too large, stitches are liable to pull out and expulsion of the ball will follow. An important point in this operation is the use of plenty of scleral sutures. Some operators make a rule to insert three, four or five sutures. I use as many as the incised sclera will hold, and place them well back in the scleral tissue. I found it useful to follow the suggestion of Dr. Prince, of Springfield, in swabbing out the interior of the scleral sac with a 95 per cent. solution of carbolic acid just before inserting the globe, and neutralizing the acid immediately with alcohol. It certainly adds to the safety of the operation by rendering the interior of the sclera as aseptic as possible. I insert my conjunctival sutures very far back in the conjunctival tissue, as I was very much annoyed by the conjunctival sutures pulling out and leaving a central opening in the conjunctiva, thus exposing the scleral sutures. In my last few cases I have placed the sutures as far back in the conjunctiva and underlying tissue as was practically possible, and I have not since been annoyed by the unpleasant and unfortunate gaping of the edges. I always wait until hemorrhage has practically ceased before inserting the glass globe. Some operators pay little attention to this point, but the hemorrhage following the curetting of the sclera is usually excessive and while the wait is tedious, I believe it better to endure it than to be in too great haste to insert the globe. The hemorrhage can be controlled to a certain extent by the use of very hot bichlorid solutions and packings with iodoform gauze. I do not like aluminum globes, because I saw one case in the practice of a colleague in Chicago where the globe greatly disintegrated and had to be cut away with considerable disfigurement to the orbit. Up to the present time I have had unvarying success in my Mules' operations, but I am sorry to say that I have to report my first failure. It was a case in which I found a calcareous lens and orbit. When I inserted the scleral sutures in this case, I noticed that the tissue was fragile, and I should have had better judgment than to have gone ahead with the operation, but never having had an experience with an eye of this kind, I completed the operation. I subsequently lost this ball, and had to treat the case as an ordinary evisceration. I think this case should teach us the lesson never to make a Mules operation in a calcareous eye, for I believe that in such cases we will always find the sclera incapable of standing the necessary pressure.

DR. MELVILLE BLACK, Denver—Concerning the use of Snellen's eyes I believe that with their use this operation in the future will not be so frequently performed. In my experience with the Snellen eye, covering a period of two years, it has been so satisfactory that I have abandoned the Mules operation entirely and have had just as good cosmetic effects as with the implantation of the glass ball. We secure by the use of this shell all that the Mules operation can give us without the long delayed healing process, together with the fact that a large percentage of these people are unable to spend the time necessary to secure a good cosmetic result.

DR. H. FRIEDENWALD, Baltimore—I should like to make the statement that insertion of the glass globe after enucleation does not prolong the period of healing; it may after the Mules operation. I have not had experience with that. I have had only one case in which the ball came out and in that case I had used a gold one. In my short experience with the Snellen eye I am inclined to think we shall probably do these operations more rarely than we used to.

DR. H. MOULTON, Fort Smith, Ark.—One of the arguments advanced for the Mules operation is that the orbit, in the case of children, develops symmetrically with the orbit of the other eye. I have observed a number of cases in which the globe had atrophied in childhood and in every one of them the development of the orbit was very insufficient and in some the growth seemed to have absolutely ceased at the time the atrophy took place. I have wondered why operators should expect that the orbit would develop more after the Mules operation than in these atrophy cases, and I would like to ask if operators are satisfied that they have observed in practice such a development of the orbit as they expected after the Mules operation.

DR. F. C. TODD, in reply—In regard to the development of the orbit my experience has not been long enough to observe it in many cases. One of the cases just shown demonstrates the uniform development of the orbits. In that one, however, there was a large anterior staphyloma and I was able to insert a large ball, which must certainly assist in the development of the orbit. This was the one operated when one year old.

THE TREATMENT OF THE ACUTE PSYCHOSES IN PRIVATE PRACTICE.*

C. EUGENE RIGGS, A.M., M.D.
ST. PAUL, MINN.

The various forms of mental perversion usually first come under the observation of the general practitioner. As for the acute insanities, their prognosis varies in proportion to their early recognition and treatment. Skilful attention at the outset will frequently avert an attack, or, at least, cause to run a benign and favorable course that which would otherwise have developed into a prolonged and serious illness. "In regarding the causation of insanity," says Dr. Mercier, "we should not exclusively concentrate attention upon the nervous system, but should remember that this is a question of general medicine. We must not wrap ourselves up too closely in our specialty; we should take wide views, and regard insanity as a malady, not of the brain alone, but of the whole man; it is a disease of the whole organism and it can only be properly understood and properly dealt with when so regarded."

Since the representative medical schools have made a course in psychiatry an essential part of their curriculum, the attitude of the profession has radically changed with reference to insanity. It is a comparatively short time since it was thought that only a state hospital or private institution for the treatment of the insane could care for these patients. It is now believed by some of the most experienced in our profession that no person should be sent to an institution who is a suitable subject for home treatment. I am convinced, as the result of a large experience, that home care in properly selected cases (and by "home care" I mean that either in a private family or a private hospital) will shorten the length of an attack by a period varying from a few weeks to several months. There can be no question, not only that the association of the insane with each other adds greatly to their suffering, as the result of personal contact, but that auto-suggestion intensifies and prolongs indefinitely the morbid mental state. It is the absence of these conditions, together with the opportunity for individualization of treatment, which makes home care so desirable and successful.

I am far from being antagonistic to our state hospitals; on the contrary, I am most appreciative of the great work they are constantly doing. They have a defin-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

ite sphere of usefulness which they alone can fill, yet, because of their imperative limitations, there devolves upon the general practitioner great responsibilities in his unavoidable relation to the insane, which responsibilities, both in justice to his patient and himself, he can not ignore.

While it is not to be expected that the average medical man should be minutely grounded in the histology and pathology of the brain cortex, it is reasonable to demand that with the clinical aspects of mental disease he should be moderately acquainted. Neither is it required that he be able scientifically to classify his cases; this, by the most expert, can only be approximately done. All that is necessary is that he should perceive that there is a deviation from the normal mental state, appreciate the underlying causative conditions, and direct the treatment and régime indicated.

I have but little sympathy with the spirit of alienistic pessimism which has too much dominated our profession. Its probable source is the teaching of Maudsley and Lombroso. This pessimism is subversive of that greatest of all therapeutic influences, hope; it paralyzes all endeavor; its gospel is that of degeneracy; influenced by its spirit, the physician regards effort upon his part as worse than useless, and the barque of his neglected patient drifts pilotless upon a most tempestuous sea.

The distinguished English alienist, Dr. George H. Savage, once said to me that if he believed as Dr. Maudsley did, he could not practice his profession. His experience did not substantiate Maudsley's conclusions. He had observed children of an insane mother or of an insane father, even of parents, both of whom were insane at the time of conception; he had kept these under observation for years, and they had never departed from the normal.

No one will deny that the innate resistance of the cortical cell in these cases is not up to the average, but there is, beyond question, an inherent tendency upon the part of the nervous system to revert to the normal, and if circumstances and environment permit, the brain cell will, in the process of time, regain its initial power.

The recognition of this inherent lack of resistance in the cell, and the prevention of special stress at such critical periods as adolescence, the climacteric and senescence, together with the buttressing of the nervous strength at all times, will prevent the nervous system from exceeding its "tensile resistance," and the life of the individual will not vary noticeably from that of his fellow. Upon the family physician devolves the supreme duty of recognizing tendency, checking it by environment, and preventing its becoming inevitable. In other words, his chiefest duty is that of prevention rather than cure.

I am aware that if inherent nervous defects go beyond a certain limit (and where this mystic boundary lies no one can say) degeneracy and death are inevitable, Nature declaring that that racial stock is no longer fit to exist. These inevitable degenerates bear but a small proportion to the entire social unit, yet their number has been greatly increased by the ignoring of the principles which I have just laid down. The necessity for the early recognition of the first deviation from the normal can not be too strongly emphasized, the standard of comparison being the individual himself. One must not overlook the normal physiologic variations which become pathologic only when they extend beyond their natural boundaries.

Persistent insomnia, digestive disturbances associated with constipation, loss of weight with a lowering of the general physical tone, inertia, abnormal elation or depression, should be regarded with grave suspicion in persons predisposed to mental alienation.

Dr. Mercier regards toxemia as the sole cause of insanity. According to his view, hereditary tendency means simply "a defective power of elimination, rather than textural defect." This surely seems too dogmatic. I believe rather that Dr. Clouston's theory, that insanity is due to perverted nutrition of the cortical cell, is correct. So-called hereditary tendency simply means that the cell metabolism is more unstable than normal. It may be stress and heredity, or it may be toxemia, with or without heredity, which gives rise to the perverted brain functioning.

The general practitioner is familiar with the mental features characteristic of toxic states, such as Bright's disease, diabetes, the fevers, pneumonia, the puerperal, post-operative and post-influenzal insanities, also those of the poisons—chloral, opium, alcohol, cocain, etc. He well knows that the insanity is toxic, and chemistry and bacteriology teach him not only its origin, but the most approved method of treatment as well.

An impoverished nutrition in one having the insane diathesis does not necessarily mean insanity; it may result in one of the neuroses, such as neurasthenia, hysteria, chorea, epilepsy. Given inherent nervous defect, the pathologic resultant may be either a neurosis or a psychosis. Perverted cellular nutrition is the basic cause of the pathological findings in insanity, such as morbid changes in the cell itself, increase of the neuroglia, degeneration of the blood vessels, and the pathological changes of the membranes, the skull and the scalp. The fundamental fact, then, which we have to consider is that of cell nutrition. Prevention of the metabolic derangement is the one thing of supreme importance. This is much easier of accomplishment in its beginning than after the complete evolution of the disease; it is for this reason I have placed so much stress upon the importance of the early recognition and treatment of mental diseases.

Physicians disagree as to the importance of rest in the treatment of the psychoses. Some uniformly keep their patients in bed; others as uniformly insist upon exercise; either method used indiscriminately is pernicious. Treatment should be individualized and the method adapted to the needs of the case, not the case to the method. The value of rest in the care of the acute insane can not be too strongly insisted upon. Perverted metabolism will remain uncorrected so long as the patient is allowed to over-fatigue himself. While functioning is excessive, cellular nutrition is impossible; the nerve cell is unable to repair in the intervals of functioning the loss sustained during the period of overactivity. In mental disorders restitution upon the part of the higher cortical elements is imperfect, and forced rest prevents abnormal activity, placing the neurons under the physiological conditions most favorable for their nutrition. Moreover, it is far from improbable that nerve cells suffering from altered metabolism generate toxins which greatly intensify the abnormal condition.

Nutrition is of the greatest importance in the acute insanities, which are, as a rule, underfed. Milk and eggs are the best nourishment. I recall an instance last year where the patient had grown steadily worse on an ordinary diet. After coming under my care I gave her as high as 140 ounces of milk, three or four eggnogs, six tablespoonfuls of bovinin, together with six ounces of

malt, daily. Her recovery was satisfactory. Full feeding is especially important in puerperal cases; it will quiet patients when hypnotics and sedatives prove utterly useless. I do not believe in temporizing. If the patient refuses food, or takes it in insufficient quantities, I always resort to artificial feeding. Some months ago I had under my care a most violent case of recurrent mania; it was the third attack, and after previous seizures death had seemed imminent from exhaustion. During this attack this was absolutely averted by the immediate and persistent use of the stomach tube until she took sufficient nourishment voluntarily.

The digestion of these large quantities of food is materially assisted by massage. The secretions can not be too carefully watched. Colonic flushings with the normal saline solution are most useful in overcoming sluggishness of the bowels. While food is the best hematinic, a good iron preparation is usually advisable; strychnia is admirably adapted both to quiet excitement during the acute stage and to assist convalescence. Whisky also is especially valuable in controlling excitement; strychnia and whisky are more efficient for this purpose than is hyoscin. I have found paraldehyde, sulfonal and trional to be the best hypnotics; but the possibility of hematoporphyrinuria must be borne in mind when the two latter agents are used. I think, however, the less hypnotics are used, the better; in my experience the hot pack and the hot bath have proven more efficacious. Mechanical restraint, although seldom necessary, is at times desirable. I have had wildly excited cases ask for it, and they were certainly much quieter and less irritable when placed in the restraining sheet than when controlled by the nurses alone.

It is hardly necessary to say that a nurse, experienced in mental diseases, is very essential to the successful handling of these cases. The personal interest of the nurse in the patient counts for much in the betterment of the case; her cheery presence is a constant inspiration, while by keen insight and unfailing tactfulness she can do much to correct the mental obliquity. Observant of the likes and dislikes of her patient, she may so shape the environment as to avoid unnecessary irritating influences; with a gentle persistence she may direct along healthy channels the morbid energizing. The discovery and cultivation of some special preference or capability on the part of the patient may furnish a clew which will lead to recovery. Some years ago one of my cases of acute mania apparently ceased to improve after reaching a certain point; chronicity seemed imminent. The nurse observed that the patient possessed not a little taste and skill in botanizing. We succeeded in interesting her in the flora about St. Paul; as her interest in this work increased, her delusions disappeared.

I wish especially to emphasize the danger from suicide during convalescence; it occurs as frequently as during the acute attack. Too great care can not be taken to avoid such an unfortunate contingency.

Under certain conditions and in carefully selected cases travel is a therapeutic measure of great importance. To advise it indiscriminately is more than a mistake; it is a crime. Whether it be by sea or by land, the special nature of each case must determine. My own observation and experience coincide with the views set forth by Dr. Savage in a recent article on "The Use and Abuse of Travel," the salient points of which I here give: The purpose of travel, namely, to aid the nutritive processes, to prevent introspection, and to healthfully modify the association of ideas, must ever be kept in mind. Travel has two spheres of greatest usefulness, either as a preventive measure or as an aid to convalescence.

Slight dementia, due to serious bodily illness, and the insanities associated with phthisis, asthma, etc., have been greatly benefited by sea voyages. Paranoia is harmed, never helped; travel increases the morbid egoism and intensifies the delusions. In excited mental cases, especially in general paralysis, travel is contraindicated. Much has been hoped for it in adolescent insanity, but the results have been most disappointing. An ocean voyage is thought to be especially desirable for the milder melancholias, those arising from shock, influenza and overwork. The graver forms of the disease are only intensified by it. A case of melancholia of the pronounced religious type, now under my care, has developed melancholic frenzy as a result of being kept too constantly on the move; the quieter melancholiacs are kept, the better. Travel greatly increases the probability of suicide in this class of cases. "I think," says Dr. Savage, "the person who makes the melancholiac rush from dissipation to dissipation, is a brute, an ignorant brute."

DISCUSSION.

DR. RICHARD DEWEY, Wauwatosa, Wis.—The experience which I have had has been that the general practitioner very seldom considers for a moment the possibility of looking after a case of acute psychosis personally or at the home of the patient. Sometimes I have seen patients who might well have been cared for in their own homes sent away to institutions, and yet I think the other mistake is more apt to be made, namely, that of keeping patients who need special care and skill and experience under conditions in their own homes or in general hospitals that are unfavorable to them. The man who has had experience with this class of patients can sometimes give them excellent care, even at home, but generally speaking, the home treatment is apt to fail. According to my experience, the physician who has not had an opportunity to come in contact for a prolonged period with insane patients in institutions for the insane, is apt to fail in appreciating the interests of the case. Not infrequently he fails to take proper precautions to prevent the patient from committing suicide, or he may require more of the patient than the conditions of the case will admit or are desirable in the way of exercise. Such patients are also decidedly apt to be kept too much under narcotics, particularly if demonstrative or noisy. The question of travel, to which Dr. Riggs referred in his paper, is another point in regard to these cases that requires careful consideration. In the incipient stages of the acute psychoses, or during the period of convalescence, travel may prove beneficial, but in the acute stage, especially in those forms of psychosis in which there is depression, there is so much self-concentration that these patients are incapable of taking any interest in travel or of deriving any benefit therefrom, while they obviously incur certain dangers.

DR. JOHN PUNTON, Kansas City—I am a firm believer in the theory that in the treatment of all forms of acute psychosis very little can be done towards a cure without proper and absolute isolation, whether at home or away from home. One of the great drawbacks I have to contend with in the treatment of this class of cases is to keep the patient free from all outside influences, especially the friends and relatives. A great many general practitioners can not realize the importance of this measure, and in referring the case they try to make all sorts of compromises with you, and tell you that they will turn the patient over to you providing you permit the friends and relatives to visit him when they please. I think the lesson ought to be taught to the general practitioner that at times absolute isolation is necessary. Sometimes resort to absolute isolation, however, is not imperative, but the majority of cases require it within certain limits. One of the great difficulties in connection with the acute psychoses is their early diagnosis. Very few practitioners are qualified to make

a diagnosis of an acute psychosis in the early stage of the disease. Very few general practitioners are fully awake to the fact that upon what is done during the first three months of an acute insanity largely depends the chances of recovery. These cases rapidly pass from a curable to an incurable stage. I do not regard a general city hospital as a proper place for cases of acute insanity, nor do I think that such patients should be kept in asylums. I think the more sane we can make his surroundings, the better for the patient.

Dr. Frank P. Norbury, Jacksonville, Ill.—From the standpoint of the general practitioner, we can look upon many of the problems of the acute psychoses as belonging to internal medicine, and I look upon acute cases, especially in adolescents, as chiefly in that field of problems. Not infrequently these patients are suffering from malnutrition, due to overstudy, loss of sleep, faulty feeding or defective elimination; anemia is pronounced, and, if this and other conditions of innervation are recognized and taken hold of at the proper time and in the proper way, I am quite sure that much can be done for these unfortunates without the necessity of waiting for the development of insanity and then resorting to its routine treatment. The general practitioner should fall in line with the alienist in the treatment of the acute psychoses and the alienist must be a well-grounded, thorough internalist. I know full well, both from my experience in the hospital and as a consultant out of it, that the general practitioner is too apt to put all these cases in one class, and, ere he resorts to an inquiry as to what are the problems involved, he is too willing to resort to the use of sedatives and hypnotics. We who are working in internal medicine as well as giving special attention to mental diseases, are loth to regard insanity in general, leaving out the question of heredity, as involving anything more than great problems of internal medicine.

Dr. C. A. Drew, State Farm, Mass.—It seems to me that the general practitioner, when he treats these cases at home, is obliged, because of the surroundings of the patient, to resort to the use of drugs which he knows are not, perhaps, for the best interests of his patient. He has many difficulties to contend with that the physicians in institutions have not. The problem is largely one of internal medicine, and it is often necessary to get the patient away from his immediate friends and family. Their overanxious state is detrimental to the patient's welfare and interferes with the treatment. As regards the treatment of a case of acute psychosis, elimination is of the first importance, and this is best obtained by the use of cathartics, Turkish baths and cold sponging. The patient should be removed from his immediate family and at least two good nurses should be provided to take care of him; in cases of delirium, three nurses are not too many. One suggestion made by the essayist should be accepted with some hesitation, namely, the use of alcoholic stimulants. Most cases have an underlying neurasthenic constitution, and we might do them great injury by stimulating them with alcohol at this stage. Indeed, alcohol is rarely, if ever, indicated in acute psychoses of patients under 50 years of age. In the involution psychalgia of an older patient, its anesthetic effect may be grateful and less objectionable than that of opium. I can not endorse too heartily the recommendations as to early, forced feeding, and the use of strychnin as a stimulant when stimulation is needed. This, after the torpid bowel has been thoroughly unloaded, is among the most important precepts of mental therapeutics. Substituting the Turkish bath or the wet pack for alcoholics, when a sedative is needed, I could heartily agree with every proposition and conclusion of Dr. Riggs' paper.

Dr. Orpheus Everts, Cincinnati—So far as Dr. Rigg's views of the subject presented are hypothetical, they are as good as any. So far as they are practical, I endorse them fully.

Dr. J. G. Biller, Cherokee, Iowa—I have had considerable experience in the treatment of insane people at home, and the results have always been disastrous. If patients were removed from home when insanity first manifests itself, a large proportion of them would be better off. In my section of the country most of the people are farmers, and, although many of them are intelligent as regards the ordinary affairs of life, they are not intelligent when it comes to taking care of a crazy person. Their sympathies are too apt to run away with them. The patient will receive better attention and his chances of recovery will be better in a well kept institution for the insane, even though trained nurses can be provided for his treatment at home.

Dr. F. W. Langdon, Cincinnati—It has been my fortune to be obliged to treat many cases of the acute psychoses outside of institutions for the insane, and I have seen a fair proportion of these cases terminate favorably. Yet, we should remember that the environment in which the abnormal mental state developed is not the best in which to recover from it. Many of the mental aberrations consist of distorted associations, and they can not be treated satisfactorily in the accustomed surroundings. In exceptional cases they may be treated successfully at home, but even then the wisdom of this course is doubtful. Most of these patients are poor and the expense of skilled attendance is more than the average family can bear for any length of time. Such patients can be better taken care of and for less money at a private institution. However, there are many places aside of the patient's home and the regulation institution for the insane where these patients can be successfully and satisfactorily treated. I refer to small convalescent homes or a farm where in a private family the patient's environment can be completely changed. If "non-institutional" treatment were substituted in this paper for "home" treatment I should agree with the conclusions.

Dr. M. P. Sexton, Kansas City—It is entirely impracticable to treat a case of acute psychosis at the patient's home. Even where they have the means to do everything that is necessary, it is impossible for the family to turn the patient over to the doctor and nurses. There are certain home influences which will prevent the doctor from carrying out his views. I believe, therefore, that everyone of these cases, unless the illness is exceedingly brief, should be sent away from home and placed in an institution where the medical man is constantly on the ground and in absolute control, and where every one connected with the institution is trained for his or her work.

Dr. F. Savary Pearce, Philadelphia—I wish to indorse what Dr. Riggs has said as to the practical advantages of forcing the patient to take nourishment. I have in mind a patient, a young woman suffering from hebephrenia, who was apparently drifting into permanent dementia. She refused to take nourishment of her own accord and resort was had to forced feeding. By means of the stomach-tube, large quantities of milk were introduced into the patient's stomach daily, and she immediately began to improve and is perfectly well to-day. It is a singular fact in these cases that if you persist the patient will finally acquiesce in the method of treatment even though refusing to swallow from a glass. The patient to whom I have referred would not take any food of her own will, but, as soon as the nurse produced the stomach-tube, she would open her mouth and allow it to be introduced. In my opinion, forced feeding is as important as the environment.

Dr. Harold N. Moyer, Chicago—In the management of a case of acute psychosis, it is not always possible to do the ideal thing. We are frequently forced, by the circumstances of this or that particular case, to temporize, and we often lay down rules one day, only to break them the next. This, at least, has been my experience. I have in mind a case of acute psychosis that recovered after a course of treatment at home and in travel extending over a period of about two years. The expense of his treatment was between $30,000 and $40,000. There was no time during his illness that removal to an institution would not have proved beneficial, and he would probably have recovered there at least six months sooner; the main thing with the friends, however, seemed to be to avoid commitment to an institution.

Dr. H. A. Tomlinson, St. Peter, Minn.—I want to call attention to a statement made in the paper which might lead to misapprehension. The persistence of the idea that it is harmful for the insane to be associated together is contrary to the

experience of those who are most familiar with their care. Within the past year this subject was discussed in two papers by prominent German alienists, both of whom stated that in their experience recent cases of insanity are best cared for in dormitories, and that their association together is an advantage, because it gives the patient something besides himself to think about. This has also been my personal experience. Any case of acute insanity can be treated successfully outside of an institution, but I agree with the statement made by Dr. Langdon that no insane person can be cared for so well nor cured so promptly while living under the conditions in which the mental disturbance developed. There should be not only an entire change in environment, but also the removal of every one connected with the life of the patient at the time of the outbreak of the mental disturbance. For these reasons, unless circumstances are exceptional, any given case of insanity will recover in an institution properly equipped for its care more quickly than the same patient will in a general hospital or a private house.

DR. JAMES G. KIERNAN, Chicago—I have had considerable experience in the treatment of acute psychoses, both as a hospital physician and as a neurologist outside of the hospital. In dealing with such a case, various elements, to some of which Dr. Moyer referred, must be taken into consideration. In a large number of cases of confusional insanity, it does not make much difference whether they are treated at home or in an institution, but it does make a difference whether or not a commitment should be made out. Commitment in most of the states is attended by disgraceful publicity and it leaves a certain stigma. The mental confusion states can be advantageously treated in sanitariums and in general hospitals. Home treatment of these cases, however, is exceedingly trying on relatives, and more than one member of the family may break down from the care of such cases. Neither neurasthenia nor hysteria can be properly cared for in the home environment, and such patients must be removed from home ere much can be done for them. This is true to an even greater extent of the psychoses. Melancholia, for example, should never be taken care of at home. The environment has a bad effect and suicide is always an imminent possibility. Wealth can not guard against this when they are taken care of at home. The home care of acute psychoses is harmful rather than beneficial, and is an important factor in the increase of the insane; under home conditions the insane but too frequently pass from an acute to a chronic state. The influence of the chronic insane on the acute insane has for decades been shown to be beneficial. In this, Krapelin but repeats the experience of alienists the world over, and this position has almost become a truism among alienists. The influence of the chronic insane upon the acutely insane of the explosive type is peculiarly beneficial. It conduces to an amount of self-control by them not otherwise attainable. The objections charged to the association of the acute and chronic insane arise from the disgraceful overcrowding of the insane hospitals for the benefit of the localities in which they are built. Such overcrowding prevents individual treatment and supervision, the absence of which has for decades proven very injurious.

DR. C. E. RIGGS, St. Paul, in reply—I believe that the distinction that has existed between the neurologist and the alienist is a thing of the past. As practicing physicians, we have to deal with both of these conditions, and as the result of my experience, I have formed definite conclusions on the subject, and these I have given you in my paper. I have had patients plead with me never to send them back to state institutions. I am not decrying the institutions themselves, but the disagreeable associations connected with them. We all know the effect of suggestion, whether upon the sane or insane, and I am firmly convinced that the suggestion of the chronic insane upon the acute cases is harmful and undoubtedly prolongs the condition which we are trying to correct. I use the term "home care" in a modified sense. I fully recognize the advantages which have been referred to, and in many instances we must accommodate ourselves to the particular circumstances of the case. The stigma that attaches to this condition in the eyes of some people undoubtedly is one of the factors which induces the family or friends to try to keep the patient at home. One of the objects of my paper was to call attention to the incipient manifestations of the trouble, and its relations to the problems of internal medicine. The use of alcoholic stimulants in these cases is only advisable in certain instances. I have seen whiskey used with beneficial effect in these cases; if necessary, it should be given freely, practically *ad libitum*, until the desired result is attained, but not longer. I recognize the dangers referred to, but I have never seen any unfavorable results follow its use after the recovery of the patient.

THE PSYCHOSES OF CHOREA.*

HAROLD N. MOYER, M.D.

CHICAGO.

Our nosology fails to distinguish between chorea which occurs as a symptom in the course of an infection, which by some is regarded as a rheumatism, and that which is dependent upon organic disease. The acute chorea which has more or less involvement of the joints and pericardium, and sometimes without it, is commonly spoken of as the chorea of Sydenham. The agent is not the same in all of the cases. The choreas which are associated with mental disease in adults, generally have an organic basis; the secondary dementia accompanying post-hemiplegic chorea, and Huntington's chorea, are due to progressive degeneration of the cerebral cortex, associated with dementia. Many of the insane present choreic movements, which are simply the expression of organic changes in the cortex, occurring in the terminal states of the ordinary psychoses.

Excluding the choreas of advanced life usually associated with organic disease, the occurrence of a well-marked psychosis in the progress of the chorea of Sydenham is exceptional. The case which is reported in this paper is the only one that has come under my observation.

The mental condition of the choreic child is one on which there is no unanimity of opinion. Spitzka[1], prompted by a sensational claim made in the New York Neurological Society that all choreic children are morally imbecile, says: "In mild cases of chorea the mind is no more seriously affected than in any other affection annoying to children and associated with insomnia. Even in severe cases, the mental faculties may be found to be quite intact. Such disturbance as is found in the majority of cases, is the result of the motor disturbances and of the ensuing restlessness, irritability and peevishness of the child. In protracted cases of chorea, the mind suffers in the direction of actual insanity; in that case, maniacal outbreaks, confused delirium, enfeeblement of the memory, rapid emotional change, and, in extreme cases, dementia may ensue." A psychosis with these symptoms is to be designated as choreic insanity.

Regis[2] gives a much better picture of the mental condition of choreics. He calls attention to their defects of memory and attention, the mobility of ideas, the lack of consistency in the recollections and the mental hebetude. The most characteristic symptom in these patients is the existence of special hallucinations to which Marce especially called attention. These almost always involve vision; very rarely, taste, hearing or common sensation. They are especially common in females and rarely appear before 14 years of age. They occur chiefly

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in the evening, in the drowsy condition between waking and sleeping, and are very often continued in dreams. They are always of a painful nature, terrifying and fantastic, and abound in scenes of deaths, burials, obituaries and conflicts. They cause so much terror that the patient is in fear of going to sleep and will try to keep himself awake in consequence. When these hallucinations are continued into the sleep, they cause nightmares. This symptom is sometimes a premonitory sign, occurring many days prior to the convulsive movements. Sometimes, and more commonly, it appears at the time the choreic paroxysms show themselves. Its early disappearance is a favorable sign; sometimes it becomes continuous and deepens into an actual insanity. The majority of choreic patients are impressionable, emotional, disputative, and even violent.

This picture of Regis of the mental condition of the choreic accords with my own experience. Of the last ten cases which I have seen of the chorea of Sydenham, occurring after 10 years of age, four presented in well-marked degree, the changes which Regis describes. In four others the history was so imperfect that such mental phenomena might easily have escaped detection. The remaining two were surrounded by people who were sufficiently intelligent to describe such a condition had it existed; so its absence may be reasonably predicated.

My own judgment of the mental condition of choreics inclines more to that of Regis than of Spitzka, though it is to be remembered that the latter describes the peevishness and irritability which goes to show that he does not regard the mental condition of the choreic as quite normal. He does not, however, refer to the specific hallucinatory stage preceding or accompanying the choreic manifestations, which was pointed out by Marce, and which my observations show is frequently present.

Regis, in speaking of choreic insanity proper, says that it may be either maniacal or melancholic. Certainly the former is the most frequent, as I have not met with it in my own experience, nor have I seen a well-marked case of melancholia or seen a report of it described in the literature. Meyer[3] in discussing choreic insanity, says that no one can doubt that derangement of the mental functions in acute chorea is very common. He regards the maniacal form as the most frequent, but also recognizes the agitated melancholic type, and even an acute delirium, occurring in this disease. In chorea he recognizes two types; those in which the insanity precedes by some time the chorea and those in which it comes on some time after the chorea. He describes the case of a girl of 8 having marked mental depression, with a tendency to remain in the same position. Once or twice a day she became, without any external cause, suddenly excited; she scolded, broke what was within her reach, and struck at those who went near her. All hallucinations were denied, a statement which was repeated after her recovery. Three or four days after commencement of this state, choreic movements were noted, at first slight, but later becoming general. At the end of six weeks' treatment, the choreic symptoms had entirely subsided and with them the mental derangement.

My own patient was that of a fairly well-developed girl, 15 years of age, without neurotic heredity—at least so far as could be gathered from an imperfect family history. In the spring of 1900 she developed choreic movements fairly well marked in the upper extremities, which later became general. In the third week she became acutely maniacal, restless, sleepless, singing, constantly dancing about, knocking against the furniture and other objects until the skin became excoriated and bruised in many places. Sleep was impaired and her nutrition rapidly failed. Under treatment, which included rest in bed, there was a gradual lessening in the choreic movements and a complete recovery from the chorea and with it a disappearance of the mental symptoms. In the spring of the present year the chorea returned and with it the acute maniacal conditions. The symptoms presented were identical with those of the preceding attack. A few cases of acute insanity in the course of the chorea of Sydenham have been reported of recent years.

Bode[4] described a case in a woman 24 years of age who, five weeks before coming under observation, had given birth to a child. The mental symptoms were melancholic in type. The chorea and insanity lasted a month and a half, and during its progress she developed an optic neuritis, which improved under treatment. In this case the symptoms point to organic disease, probably a luetic trouble.

Jastrowitz[5] reports the case of a girl 20 years of age who developed a mental trouble in which there was depression having the general appearance of a primary dementia. During the progress of this affection, chorea developed with the ordinary accompaniments of pain in the joints. Later, the chorea disappeared, but without very marked improvement in the mental condition. A second case reported by the same writer is much the same in its clinical history, excepting that there was improvement in the mental condition and the chorea, though there remained a loss of memory for the period of the illness and an impaired recollection of happenings prior to the illness.

Cowen[6] reports a case of maniacal chorea in a man 21 years of age in which the chorea developed some time after the onset of the psychosis. There was complete recovery from both the chorea and the mental disease, but with a loss of memory of occurrences during the period of the illness.

Reifensthul[7] describes two cases of chorea minor which were accompanied by marked mental symptoms, the character of which is not stated.

C. W. Burr[8] reports a mixed case in which chorea and acute delirium occurred in the course of scarlet fever.

It will be seen that the rarity of reference in the literature shows that insanity in the course of Sydenham's chorea is exceptional. My own case is one of the most typical so far described in the literature. Many of the cases reported are evidently associated with organic disease of the nervous system, acute febrile affections, or pregnancy, in such a way that the direct relation of the psychosis to the chorea is obscure.

The following conclusions are justified by our present knowledge of the subject:

1. A well-marked alteration of the character and mentality can be noted in the majority of cases of chorea, usually preceding by some weeks the onset of the choreic movements.

2. Distinct hallucinatory phenomena are present in a considerable number of cases, which are not, however, of sufficient severity to merit being classed as a distinct psychosis.

3. The mental disturbance in chorea usually comes on after choreic movements, but it may precede them.

4. The type is usually maniacal, though it may occasionally be melancholic or present the character of an acute delirium.

5. Mental disturbances are commoner in older children; they are rarely observed before the twelfth year.

6. Chorcas which are accompanied by mental disturbance later in life, are almost always accompanied by organic changes in the central nervous system.

7. The prognosis is favorable when the mental disease complicates the simple, acute chorea of Sydenham. Insanity associated with chorea in middle and advanced life is almost invariably associated with organic disease of the central nervous system.

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DISCUSSION.

Dr. C. Eugene Riggs, St. Paul—I saw two cases of chorea associated with insanity last winter. I found the literature very barren upon this phase of chorea, and was interested in the phenomena these cases presented. In both of them the mental condition followed the chorea. One was a colored girl, about 15 years old; the other was a young man, about 17. The girl was apathetic; she would not talk, could be induced to take nourishment only with the greatest difficulty, and had spells of intense excitement, when she had to be restrained. The young man was rational at intervals, with periods of excitement, and he showed a suicidal tendency. He made a perfect recovery. The last time I saw the young woman her condition was unchanged, but I think she will recover.

Dr. E. G. Carpenter, Columbus—I have observed perhaps half a dozen cases of insanity combined with chorea in the adult. Two of the cases were Huntingdon's chorea. Four of the cases resulted fatally. It is safe to look upon insanity following Huntingdon's chorea in the adult as a grave condition. In the cases which I observed, the patients gradually grew worse and died within two or three years. The choreic movements became very active and led to exhaustion.

Dr. Edward E. Mayer, Pittsburg—I have been interested during the past year in the psychoses of chorea on account of two cases which were under my care. One was a case of mania following childbirth, which had been preceded by choreic manifestations. The other case, which I saw recently, was a woman who is still under treatment. She suffers from chorea accompanied by mental depression. The chorea came on immediately after the menopause, which was about two years ago, and about six months later she developed symptoms of mental depression, which have resisted various methods of treatment and have steadily progressed, until now she presents the typical picture of hypochondriac melancholia. I can not entirely agree with the statement made by Dr. Moyer that we fail to differentiate the chorea which represents an infection and that which is a symptom of some known organic disease.

Dr. John Punton, Kansas City—While the literature upon this subject is rather scanty, I do not think these cases are so very rare. About six years ago I had a case of acute mania, of a very violent form, coming on during the course of a chorea. The patient made a good recovery in four or five months. Since then she has remained entirely well, and has married.

Foreign Bodies in the Rectum Among the Convicts in French Guiana.—Clarac writes from the penal station in Guiana to the *Annales d'Hygiène et de Méd. Coloniale* that the convicts secrete money, saws, files, etc., in their rectum to conceal them until an opportunity for escape arrives. They put the articles in a small cylindrical metal box and manipulate the box close to the sigmoid flexure. The symptoms of proctitis, etc., which are induced by this foreign body attract attention to the patient, and the box can usually be palpated.

MIRROR-WRITING AND THE INVERTED IMAGE.*

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The retina receives an inverted image of objects as they are related in the outer world. That this is so is proven by all text-books of optics[1] and accepted by all text-books of physiology.[2] But the fact that we do perceive objects in their normal relations, although equally undisputed, has been the subject of many theories, both fanciful and serious, since the modern scientific world has been dominated by inductive philosophy. One of the earliest explanations was that of retinal function by which the retina itself projects in a certain direction only the image received upon it, and is connected by one particular nerve fiber with the brain in such a way that the brain connection of the upper retinal element lies below, that of the lower above, that of the right to the left and of the left to the right, so that the image is reinverted on the cortex of the brain. This theory can be received neither by the physiologist nor by the psychologist, for we know that the nerve connections are by no means so simple as this implies, and that the visual process itself is so complex that it must be developed by education before it becomes the perfected function which enables us to localize in space.

A second explanation is that of cerebral function, which to the metaphysical psychologist is an act complete in itself and not amenable to any further analysis. Physiological psychology, however, demands that the cerebral process be analyzed into its component factors. And in doing so we learn that the visual act is by no means so simple as it would appear. In fact, any similar psychic act is complicated. "We may," says Binet in his "Psychology of Reasoning,"[3] "consider external perception as a synthetic operation, since it results in the uniting of the information actually furnished by the senses to the information furnished by preceding experiences. Perception is a combination of the present with the past. To perceive a body which is actually in the field of vision, to recognize in it a certain form, size, position in space, certain qualities, etc., is to unite in a single act of consciousness actual elements (that is to say, the optical sensations of the eye) and past elements (that is to say, a crowd of images); it is to make a single body out of these unconnected elements. This is a phenomenon which completely escapes consciousness; by consulting that witness alone, the operation of perceiving an object appears to be an easy and natural act which demands no effort of reflection on our part; that is in reality an illusion. Experiment and reasoning prove to us that in all perception there is work." Meynert, in his essay entitled[4] "Zusammenwirken der Gehirntheile," gives expression to identical views. We must necessarily, therefore, consider the apperception of the image as a very complex process, into which perception, association and co-ordination enter.

It is not, however, within the province of this article to discuss in greater detail the phenomena of vision; they are at best nothing but a receptive psychic process. Be-

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tween this and any productive manifestation of our visual act lie the equally complicated psychomotor acts. There are innumerable motor acts which depend for their stimulus upon vision: if we see a falling body we jump to one side, since we have learned that that is the way to avoid danger. In a more deliberative way, when we reach for anything we extend the arm in that certain direction in which experience tells us the object lies. If we wish to reproduce anything by writing we accomplish this by combining visual impressions with psychomotor and motor processes. It is this combination which interests us here particularly.

Hitherto writing has been studied in its motor rather than in its psychic aspects, and this is especially true of that pathological condition resulting from defective cerebral activity, mirror-writing. Almost all of those who have written upon this subject during the last twenty-two years have been influenced to a greater or lesser extent by the theory of Erlenmeyer, who gave a purely mechanical explanation for the occurrence of mirror-writing in those whose right side is paralyzed. So strong has been this influence that but very few of these writers have even mentioned the occurrence of mirror-writing in righthanded, healthy persons. Erlenmeyer, in his monograph entitled "Die Schrift,"[5] starts out with the statement that abduction (from the body) is the natural method of executing all finer movements, consequently also of writing. His corollary to this is "that righthandedness is the result of writing with the right hand, and the greater development of the left cerebral hemisphere the result of righthandedness, not its cause." Consequently that those who wrote from right to left must have been lefthanded. In support of this he quotes from the ancient Jewish Thalmud to the effect

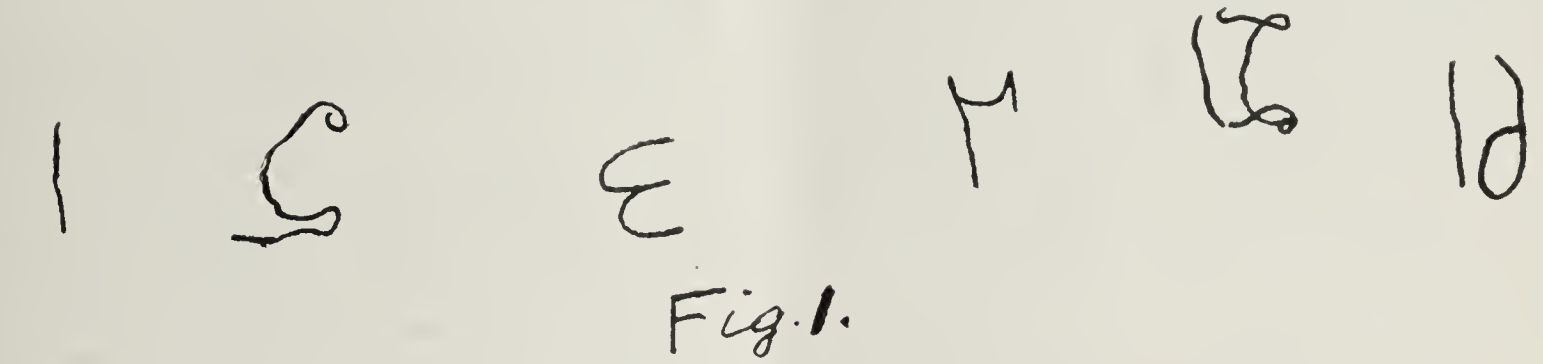
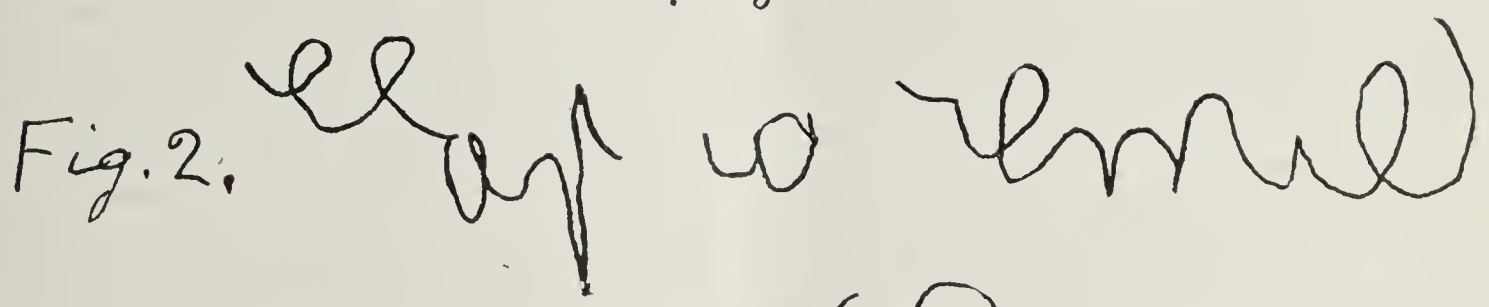


Fig. 1.



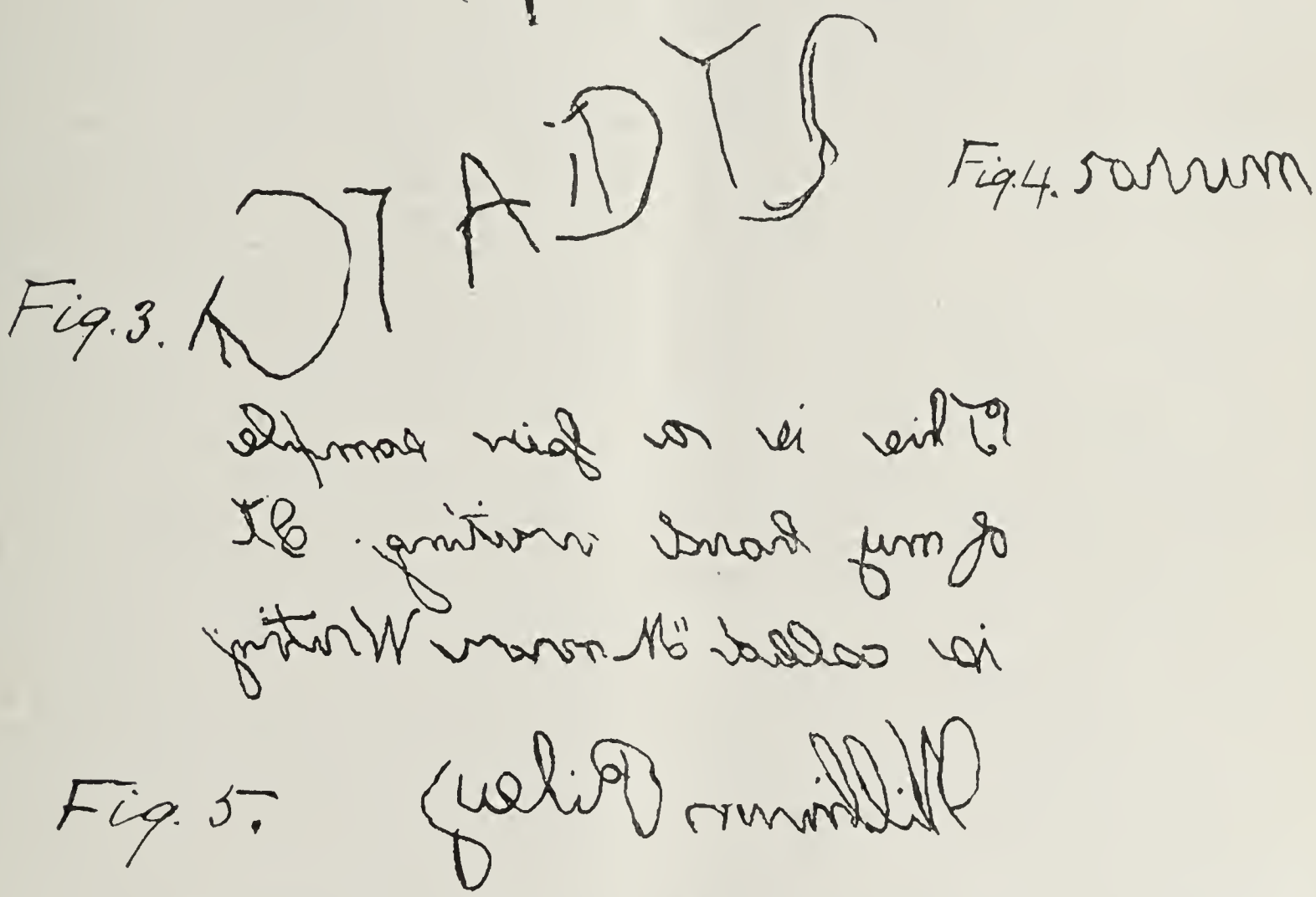


Fig. 1.—Spontaneous writing of numerals (1, 2, 3, 7, 21, 16). Boy, righthanded, 5 years, 6 months.
Fig. 2.—Spontaneous mirror-writing. Boy, righthanded, 6 years, 2 months.
Fig. 3.—Spontaneous name-writing. Girl, 5 years.
Fig. 4.—Mirror-writing. Girl, 13 years. (St. Paul Medical Journal, 1900, p. 386.)
Fig. 5.—Mirror-writing. High-grade male imbecile, 13 years. (From Mills: Journal Nervous and Mental Diseases, 1894.)

that writing on certain religious serolls must be done with the right hand, but that when there is a lack of such serolls the use of those written with the left hand was to be permitted. A translation which we have had made by a competent scholar shows, however, that this does not mean that the ancient Jews were lefthanded, but that writing with the left hand, though allowed, was still, as with us, an exceptional condition. While Baelz,[6] who resides in Japan, in reviewing Erlenmeyer, proves that many of his statements about right and lefthanded writing are utterly false.

A further elaboration of the theory just mentioned applies it to mirror-writing by asserting that when in consequence of some lesion to the left hemisphere the right hand is made useless, the left hand must neeessarily follow this general impulse toward abduction and in writing pass from right to left and produee what we call mirror-writing.

Many authors, although supporting Erlenmeyer's theory by numerous illustrations, incidentally mention a certain degree of mental weakness as an essential factor in producing mirror-writing, and assert that in lefthanded children of a certain age mental defect without hemiplegia may be sufficient to cause mirror-writing. Among righthanded feeble-minded children who were asked to write with the left hand, a relatively large number produced mirror-writing. An attempt to examine writing done by such children with the right hand has never been made upon a larger scale, but there are some few isolated observations which show that under these conditions also mirror-writing may be produced. Such a ease has been reported by Sweeny in the *St. Paul Medical Journal*.[7] Of the occurrence of mirror-writing done with the right hand and by mentally normal children we have found records of only two instances in literature; the one is that of Preyer's child, who in his "Die Seele des Kindes"[8] states the following: "That my child when in his early years he was asked to write the ordinary numerals, as I showed them to him, to my surprise copied in mirror-writing most of them, especially the 1 and the 4, the last frequently also inverted, the 5 on the other hand always correctly; this is not, of course, due to an error in vision, but to an incorrect transposition of the visual image in those motor images which are necessary for writing. Other boys acted—I was informed—the same. The distinction between right and left caused me difficulties in my own childhood, which even now I remember distinctly."

A second similar observation is that recorded by Dr. Albert B. Hale in the *Ophthalmic Record* for May, 1900,[9] which led to the investigations here reported. But that it does occur, and that very commonly, in intelligent, normal, righthanded children, there can be no doubt. Diseussion with many teachers in kindergartens and with intelligent mothers has shown us that children in their earliest years, when they have not yet been taught systematically to write, but are stirred with the imitative impulse characteristie of the young, do write in mirror-writing with their right hand, not always, but quite frequently, and with less and less frequency as education advances and observation becomes more exaet. We have a number of examples to illustrate this fact, most of them produeed by children of between four and a half and seven years, and it will not be difficult for any one to obtain such an example from a child of the proper age if, with patience, he submits the child to a series of tests. It must be noticed that these specimens are not eopies by the ehild, but are purely spontaneous produetions by the child's hand of the image he had in his mind. It is not possible to express in figures the frequency with whieh this phenomenon oeeurs, owing to the very fact that it must be spontaneous; beeause to ask a eertain number of children on a eertain day to produee eertain results would be to destroy the proper time and spirit, since these can be secured only oeeasionally. But we have no hesitancy in saying that almost every ehild at a certain period of its development will be found to produce spontaneous mirror-writing, and that, too, with its right hand.

The question may well be asked here, to what do these facts lead? Or is it possible to conneet all the different conditions under which mirror-writing is produced with the phenomena of visual apperception? Hitherto we have diseussed only the psychomotor and motor expressions of vision as we find it in the child, and these facts seem to offer no satisfactory explanation for the relationship between the inverted retinal image and writing. If, however, it were possible to place the brain of an adult, trained in psychological observation, in the position of the child, and if we could then study the effect of this new retinal image upon motor expression, and could find that, after all, tactile sensation adjusts itself to visual sensation by association, then we might hope to approach the solution of the problem. Fortunately, such experimental proof has been furnished by Professor George M. Stratton, who, in a number of papers, gives the results of experiments on "Vision Without Inversion of the Retinal Image."[10] This as stated is a paradox, for while in the case of the child we have discussed the normal inverted image, Professor Stratton has by means of lenses produced in himself an upright retinal image. But on careful consideration it will be seen that the adult mind by experience has acquired the habit of assoeiating all his tactile sensations with his natural visual sensations, and as it is impossible to dispossess him of these tactile sensations, it is necessary to give him a new retinal image so that this association may be disturbed and, relatively speaking, made to become as they were primitively. To be sure, the new condition is not identical with that in the child, and never can be, because the adult has a large number of memories from which to draw, while the child must both acquire memories and learn to use them. But the experiments of Professor Stratton have temporarily demanded that he form a large number of new assoeiations, in order to co-ordinate his visual, tactile and other sensations. It is impossible to quote at any length from Professor Stratton's most interesting papers; they must be read in full to judge of their convineing character. We must here be satisfied with referring you to these papers in the *Psychological Review* for November, 1896, July and September, 1897, and in *Mind*, viii, New Series, No. 32, and to the discussion in the report of the Third International Congress for Psychology in Munich, 1897. They show that under these unnatural conditions the knowledge of spatial relations was reaequired under more or less difficulty and that our pereeption of the field as upright is not dependent upon the inversion of the retinal image. He very soon learned the distinetion between the new above and below, but found that "right and left were felt to be by far the most persistently troublesome relation, when it came to translating visual into tactual or motor localization," an experience which agrees beautifully with that of Preyer quoted above. He furthermore found that "the inverted position of the retinal image is, therefore, not essential to upright vision." An experience with whieh we are all familiar demonstrating the correetness of this view, is found in our everyday use of the mirror. We dress ourselves, we

adjust our neckties with the transposed image without difficulty, because these simple acts have become habits, but as soon as we attempt an unusual performance with the aid of the mirror, we become awkward and find it difficult to distinguish right from left, and forward from backward, while we readily differentiate the above from the below.

To sum up, our knowledge of spatial relations does not depend solely upon the perceptive organ, but is rather a complicated process of mental co-ordination. The retinal image remains the same, but our mental image of it is guided by our experience acquired laboriously through the other senses. The doctrine of Binet receives one more confirmation.

Let us now recapitulate under what conditions mirror-writing has been observed. We have already dwelt long enough upon that phenomenon which we may call normal mirror-writing and which, as we have shown, is a frequent occurrence in righthanded healthy children of a certain age. Into this group belong those instances mentioned by Durand[11] of mirror-writing produced by adults possessed of little intelligence and who seldom write. Such cases are of common occurrence, and most of you have undoubtedly seen signs crudely painted by the uncultured in which one or more letters or numerals, the S and N particularly, were reversed.

As a pathological condition mirror-writing produced with the left hand is rather common in children with impaired intelligence (see references 12 to 19 inclusive), deaf mutes (references 20, 21, 22), the blind,[22] and in cases of katatonia.[23] No investigations as to results obtainable with the right hand were made in any of these conditions except in the case of Sweeny, mentioned above. Furthermore, mirror-writing done with the left hand has been seen in those who, through some brain lesion, have lost the use of their right arm, and in some few instances when through accident to the right arm itself this member became useless.[24] Both in feeble-minded children and in hemiplegic adults the fact has been noted again and again that coincidently with improvement with the mental condition the tendency to produce mirror-writing decreased.

The question here presents itself, What mental and physical condition have all of these cases in common? Of the existing two theories neither one gives an explanation which will satisfactorily cover all of the cases just mentioned. Erlenmeyer's purely mechanical theory, besides being based upon incorrect data, does not in any way throw light upon those very frequent cases in which individuals do mirror-writing with the right hand. While it can not be denied entirely that the well-established habit of writing in abduction movement with the right hand may have some influence upon the production of mirror-writing with the left hand, still this influence can not possibly be very powerful, or otherwise mirror-writing in hemiplegics would be the rule rather than the exception.

Ireland's theory[25] is even less satisfactory. He believes "that in the case of paralysis of the right arm the image or impression or change in the brain tissue from which the letters are produced by the hand was destroyed, and that in trying to write with the left hand the patient wrote from an image on the right side of the brain in every way corresponding save that it was reversed. Thus D on the left side would have ⊏ on the right, written from left to right with the right hand, or from right to left with the left hand." Modern physiological psychology can not accept with such completeness the dual character of the brain. Then the first objection could be made to this theory also, it does not cover all cases. Credit must be given Ireland, however, for introducing into the process some consideration of the visual element.

Mirror-writing is not a pathological effect per se, nor is it confined to the mentally defective. It is found in the youngest of children and disappears with greater rapidity among the normally intelligent than among the feeble-minded, until at last with but few exceptions it is found only among the mentally defective or in those with some organic brain lesion. Buchwald,[26] Preyer,[8] and Treitel[21] all admit that the condition is not essentially pathologic, and we agree with the last named when he states that Soltmann[27] goes too far when he sees in mirror-writing "the mirror of a diseased mind."

The link that unites all the various states in which mirror-writing shows itself must be an imperfectly developed or pathologically disturbed psychic association and co-ordination. Imperfectly developed in the very young, and in some of the mentally defective, pathologically disturbed after hemiplegia, and in certain acquired psychic disturbances, among which katatonia must be mentioned, the psychosis in which "idea association is nullified."[23]

Why, then, it will be asked, if the inverted retinal image is such an important factor, is it simply mirror-writing and not a complete inversion of the reproduced character? An answer is found in the various analogies offered by physiology and pathology, which show that the function last and with greatest difficulty acquired is the first to be lost. In this instance Stratton's experiments again corroborate the theory. He found that the lateral relationships were the hardest to acquire. Common experience teaches us the same, even the mature adult frequently having difficulty in distinguishing the right from the left.

Our thesis then is this: The outer world is impressed upon the retina in an inverted image. It is only by experience laboriously acquired that we learn to interpret this image and to produce upright writing. The child and the feeble-minded, lacking this experience or unable to acquire it, reproduces the visual image in incorrect spatial relation, hence in mirror or completely inverted writing. The adult suddenly deprived of this experience is reduced to primitive conditions, hence produces the same results which we see in the child

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DISCUSSION.

Dr. G. C. Savage, Nashville—In the first place allow me to say that without being able to offer any explanation for it at all. I believe it to be a truth that the normal eye has a certain plane that should be parallel with the median plane of the head and that that plane biseets the retina. I believe there are two different things connected without vision, that some are gifts and some matter of acquisition. Direction I believe to be a gift and I do not believe we can acquire an idea of direction. I believe that color is another gift, and do not believe we can acquire a sense of color. That direction may be interfered with occasionally I grant and we can not explain why one person has a perfect sense of color and another person an imperfect sense of color, and the same applies to the sense of direction. The things that come by acquisition are the appreciation of form, size, distance, etc. Now, in explanation of the gift of direction, someone, I think it was Cunningham, discovered the law of direction 150 years ago, and if I am right about it then the sense of direction is easily explained, and I believe that the law of direction is that every line of direction must begin at a point on the retina, impinge at the point of light forming the image and pass from that upwards, downwards, outwards or inwards and thence on into space.

I am not going to explain why it is that a child writes a letter now and then that is inverted, but I do believe that sometimes we may be deceived by the statement of individuals. I well remember the report that many of you saw a few years ago from an Arctic explorer who wanted to see whether the Eskimos saw things inverted or as we see them. He gave one of them a pencil and paper while they were looking at a white bear, and asked him to draw an outline image of the bear. The man did so and the explorer reported that the image drawn was an inverted one. Now, I insist that there was something wrong either with the Eskimo or the explorer. In spite of the criticisms of the views I published some years ago, I hold yet to that theory.

Dr. A. B. Hale, Chicago—I did not want to lead the Section into a discussion of the psychology of the retinal image. All I assume is that the retinal image is an inverted one that is transferred to the brain which reproduces it. If Dr. Savage will think a moment he will see that these images are not what the man saw, but copies of what he remembers he saw. The explorer Dr. Savage refers to was probably Dr. Cook, who found that the Eskimos used picture books and such things upside down, even the children; in other words, they were a primitive people and had not been trained to see things as we are. Dr. Cook was not at all satisfied with the picture of the bear. If Dr. Savage will study Stratton's paper he will find an interesting work on the question of the acquisition of the sense of direction.

Dr. Arthur Sweeney, St. Paul—It is apparent to any one who looks seriously into the subject of mirror-writing that it is not confined to those who are mentally weak, but is found in considerable proportion among those of normally developed intellects. I have among my friends found several who wrote mirror-writing while at school, although right-handed. Others, who invert the paper when writing or who turn it sideways, drop into mirror-writing when compelled to write with the paper in the usual position. The subject has heretofore been considered mainly from the standpoint of mechanical ease, rather than as a perceptive defect. The theories of Erlenmeyer and others who have accounted for the phenomenon on the basis of facility of muscular movement have hitherto been accepted as settling the question. I am glad to see that Dr. Kuh has not been misled by this attractive but faulty hypothesis. The phenomenon is essentially dependent on failure of the mind properly to perceive the position of objects in space. The retinal image is an inverted one, and is transposed by the association of impression coming from the perception of light, ocular movement and the knowledge acquired by the sense of touch. Any influence that prevents the proper association of these three factors interferes with the transposition of the retinal image. The eye is in constant motion. If it was still, only a limited number of rays would fall upon the yellow spot. When we look at an object however small, it is necessary, in order to perceive its length, breadth and other relations, that the eye should be moved so as to bring the rays in succession upon the yellow spot. This movement of the eye is slight except when the objects are large or near. This ocular movement is, in my opinion, the most easily disturbed factor in the transposition of the image. It is a purely reflex act, instinctive in character. In the case of Hilda Olson, reported by me a year ago, who had complete inverted vision, there was an astigmatic hypermetropia of 2.5 degrees. This necessitated a flattening of the eye at each accommodative effort, and as two reflexes can not co-exist, the stronger one suppressed the weaker, so that the reflex of ocular movement, so necessary a factor in the transposition of the retinal image, was not operative. The correction of the hypermetropia by glasses gave her normal perception of the position of objects in space. I am glad to see that Dr. Kuh has recognized the purely perceptive nature of the defect, and that it is really a failure of co-ordination of impressions that is at the root of this most curious and interesting phenomenon.

Dr. Richard Dewey, Wauwatosa, Wis.—I am induced to speak of certain phenomena that I am reminded of as having occurred in my own experience which will possibly add force to what has been said regarding the importance of co-ordinate action of the brain in the reception of an impression. Any one who has given this question much thought must have reached the conclusion that there is something in the condition of the brain itself in receiving impressions, whether they relate to the tactile, visual or any other sense. My personal experience has convinced me that in order to receive an impression, there must be a certain preparedness on the part of the brain for its reception. For example, I have sat at the table with a glass of water and another of milk before me, and unconsciously taken a taste of one liquid instead of the other. This gave a strange perception of something that was neither milk nor water, and it was only explained when I found that I had taken something into my mouth under the impression that it was a different thing. I recall another example of this mental confusion. In passing from a room into a hall where I expected to find a window I found instead a blank wall, and this gave rise to a momentary period of confusion in my mind, because I saw something that was not what I had expected to see, and it took an instant for the eye and brain to adjust itself to the fact.

Dr. Herman Gasser, Platteville, Wis.—The correction by glasses in the case referred to by Dr. Sweeney makes it evident that there is no such thing as inverted or perpendicular images. "Thinking is pushing and pulling." Every ray of light that falls upon the retina causes a chemical reaction, with a transformation of its energy into nervous energy, and then is transmitted by the optic nerve to the visual center in the brain by modes of motion. When these impressions are received unphysiologically or incorrectly, the result of habit or error of refraction, they are carried thus to the cortical brain and adjusted to all the other senses of touch, hearing, etc., into the conscious existence which we call mind. That is why there is no such thing as an inverted mental image. It is simply the way we receive certain impressions. The normal or abnormal images are the result of the adjustment of the forces of the outer world as we perceive them with their definite relations by our sensory apparatus and build them into ideal states of mental existence. The mental image and the "image" or reality outside that gave it existence are entirely distinct. This is why if our sensifacient apparatus is not normal we may have what we call abnormal and "inverted" images, but that appear as normal to the individual as was observed in the case where the glasses corrected the error of refraction and it at once was observed in what we term the normal relation.

Dr. Sydney Kuh, in reply—I think Dr. Sweeney and I agree that this is a disturbance of co-ordination. That is the important factor, but such a disturbance of co-ordination may be due to a variety of causes. If any one of the factors that

take part in the formation of a mental image is disturbed, a faulty mental image must of course result. One of the possible factors of this kind is a defect of the ocular movements. The fact remains that not in a single one of the cases of mirror-writing occurring in hemiplegics coming under my observation was there the slightest disturbance of the ocular movements. I do not think that a disturbance of the ocular movements is of any greater importance than a disturbance of any other organ that assists us in forming a mental image.

SCHOOL MEDICAL INSPECTION IN CHICAGO.

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That school medical inspection is at last receiving the merited attention of enlightened school boards and health officers in our larger cities argues well for its future, and adds additional luster to the fame of these medical pioneers who first introduced and championed its cause in humanity's interests. This great aid to prophylaxis was foreshadowed in those admirable German laws which went into effect July 14, 1884, by the adoption of the Prussian Circular to the Royal Governors of Provinces, which concerns the closing of schools in the event of the occurrence of infectious diseases. The diseases and the laws pertaining to them are classified as follows:

1.—*a*. Cholera, dysentery, measles, rubella, scarlet fever, diphtheria, smallpox, typus, relapsing fever, cerebrospinal meningitis; *b*, typhoid fever, contagious inflammation of the eyes, itch and pertussis (while spasmodic).

2. Children suffering from these diseases are to be excluded from school.

3. Healthy children living in same house in which cases named in 1 exist—Exception: it must then be certified by a physician that the school child is protected from danger of infection by proper separation.

4. Children excluded from school for said causes may be readmitted only after the danger of infection has been removed according to a physician's certificate or the usual duration of the disease has expired. This, in the case of scarlet fever and smallpox, is 6 weeks, and for measles and rubella four weeks, from its inception. Regard must be paid to the thorough cleansing of the child's person and clothing before readmission to school.

5. For the observance of orders 2 and 4 the principal or headmaster is made responsible. An immediate report of the exclusion of a child from school on account of an infectious disease must always be made to the local police authorities.

6. Refers to isolation of children attending boarding school when an epidemic occurs. It requires a physician's certificate to release them from quarantine, which he will give only when convinced that the danger of spreading disease is past and all precautions have been observed.

7. When any person living in the school house falls sick of one of the infectious diseases named in 1, or if a case should occur in the household of a school teacher, said case must be reported to the principal and to the police authorities, when proper steps must be taken to isolate the infectious case.

8. When several cases of infectious diseases, as in 1, appear in the locality where the school is situated, the principal and teachers must direct their especial attention to the purification of the school property, to the thorough airing of the class rooms. In particular must the school rooms and sanitaries be carefully cleansed each day. School rooms are to be aired continuously when not in use and the sanitaries must be regularly disinfected according to the regulations of the district police authorities. This rule applies to boarding schools and in them is extended to include dwelling rooms, work rooms and bedrooms of the pupils.

9. School rooms and entire schools where infectious diseases appear in epidemic form must be closed when the district physician advises.

10. Reopening is permissible only after thorough previous cleansing and disinfecting of the premises and on the advice of the district physician.

11. These laws apply as well to parochial and private schools, orphanages, asylums, day missions, and kindergartens.

The foregoing laws, admirable in their way, have furnished the basis upon which most of our state and municipal bodies have founded their regulations appertaining to the same subject. They, however, fall short of the ideal, inasmuch as they do not provide for systematic daily medical inspection, and, to remedy this defect, the practical American rises to the occasion and medical inspection of schools is born.

The first attempt at this work was made in the parochial schools of Philadelphia in 1889, but was discontinued on account of parental objection. To Dr. S. H. Durgin, of Boston, is due the credit of the first victory in this field. Beginning to agitate the question in 1890, he encountered much opposition, but, aided by Dr. C. M. Green, a member of the School Board, he succeeded in overcoming it. Following a serious epidemic of diphtheria he induced the board to sanction medical inspection as a regular department of school life. His important victory dates from Nov. 1, 1894. From that date to Oct. 31, 1896, there were individual examinations of 23,207 pupils, disclosing 6,571 cases of major and minor ills. Of them 5818 were ill enough to be sent home, many of them suffering from markedly contagious or infectious diseases.

The importance of the work is also emphasized when the total school population of Boston at that time is considered. The figures show the presence of 71,495 pupils in the public schools and 11,808 in parochial schools. Roughly then, 10 per cent. of these pupils required medical inspection, and it need scarcely be said that many cases of infectious diseases were thus promptly isolated, to the material benefit of the pupils in normal health.

Attracted by the excellent results shown in Boston, Dr. Charles F. Roberts, Sanitary Superintendent of the New York Bureau of Health, in October, 1896, sent a recommendation to that body urging systematic daily examination of the school children by medical inspection of the Health Department, and, although preliminary investigation proved the immediate necessity for such work beyond the shadow of a doubt, the work was not regularly instituted until March, 1898. Thereafter in three months 63,812 children were examined by the inspectors, and of these 4,183 were excluded on account of contagious diseases.

About the same time the Chicago Health Department, through its regular medical inspectors, working on notification of infectious diseases, received by the department from physicians attending the patients, during four months, visited 233 public schools, locating 1417 cases of diphtheria and 306 of scarlet fever. Despite the urgent demand for such work, it was not until Dr. W. S. Christopher was appointed as a member of the School Board that that body acted upon the recommendations of the Health Department. A corps of fifty medical inspectors was appointed by competitive examination under Civil Service rules, and Jan. 8, 1900, the work was begun. From that date to April 12, 1900, the inspectors examined 76,805 pupils, the school population at that time numbering 200,000. Of these 4539 were found suffering from contagious diseases and excluded from school. Resuming September 17, the work was continued until November 8; it was resumed again

from January 8 to March 1, 1901, and during this time examinations to the number of 56,562 were conducted, the exclusions numbering 3398. Following are the figures of the Chicago Health Department covering diphtheria and scarlet fever for the year preceding medical inspection of schools and the first year under such inspection:

	1899				1900			
	DIPTHERIA.		SCARLET FEVER.		DIPHTHERIA.		SCARLET FEVER.	
	Cases.	Dths.	Cases.	Dths.	Cases.	Dths.	Cases.	Dths.
Jan. ...	381	82	306	26	572	111	805	48
Feb.	307	62	377	41	362	88	505	47
March.. .	284	55	522	68	315	82	435	21
April ...	240	56	507	71	229	67	303	19
May	266	55	512	68	230	58	338	26
June ...	248	63	370	43	211	58	207	18
July	174	47	269	20	158	41	142	10
Aug. ...	235	60	256	28	103	33	92	2
Sept. ...	241	75	327	31	187	42	107	4
Oct.	489	93	747	35	306	79	160	13
Nov.	608	92	888	53	317	72	170	6
Dec.	458	103	719	49	313	66	211	12
Total.	3931	843	5800	533	3303	797	3475	226

It is thus seen that a decrease in the number of diphtheria cases was 628 for the year, with 46 fewer deaths. In scarlet fever the decrease in cases was 2325, with 307 fewer deaths.

These figures make even a better showing when it is considered that physicians as a rule were more careful in 1900 to report cases of this nature to the Health Department than in previous years, and the rapid growth of Chicago must also be taken into consideration. These facts add much to the exeellent results shown in the foregoing table.

Viewed from the point of the economist, preventive medicine adds vastly to the wealth of the nation. Placing the low figure of $1000 on the economic value of a human life, properly conducted medieal inspection adds many hundred lives to the credit side of the nation's ledger every year, and thus proves one of the most profitable fields in which preventive medicine finds its work. At the same time the fact that it may be the saving the life of a Hippoerates, a Michael Angelo, a Wagner, a Robert Browning, a Morse, Edison, Lincoln or Gladstone should never be forgotten in estimating its potential value.

In Chicago during the early months of medical inspeetion of schools, some objection developed on the part of parents who did not understand its aim, but this gradually died out and now the vast majority of them are very much in favor of it. One instance of the good work done through medical inspection exerted much inffuence with thinking parents. This occurred during the winter of 1900-1901 at the D. S. Wentworth school. Four children of the G———— family—two boys and two girls—attended this sehool. The oldest child, a boy of 13, developed a sore throat. His parents, aided by the neighbors, made a diagnosis of "mumps." He was kept at home Tuesday and the remainder of the week, but not until Friday did they eall a physieian to see him. The boy was then moribund from malignant diphtheria, and died within 48 hours. His sister, aged 10, contracted the disease, but she recovered. The Board of Health was notified of the eireumstances and immediately closed the three school rooms where the other children of the family had attended during the week. These rooms were then thoroughly disinfected and the throat of every child in each room examined. All suspieious throats had eultures made from them and the children were sent home pending announcement of the results. This thorough work was kept up for two weeks but no new cases were discovered, and, at the expiration of that time, the quarantine ceased. The foregoing is but one of many instances of a like nature where prompt and efficient medical inspeetion undoubtedly prevented the occurrence of an epidemie. .

One of the most disagreeable duties of inspectors is to examine and exclude children afflicted with pediculi. One irate parent whose four children had been excluded from school kept after the writer for a month. During that time he complained to several members of the Board of Education, including its president. He also took the matter to the local alderman, alleging every reason but the right one as the cause of exclusion These men took the matter up, but on learning the truth referred him baek to his school principal and medical inspector. Finally he gave in and saw that his children had proper attention. They became models of eleanliness and were never again sent in for examination on that score.

In Chicago the branch of medical inspection is under the supervision of Mr. W. L. Bodine, Superintendent of Compulsory Education, to whom the medical inspectors are responsible for the proper diseharge of their duties. A daily report of cases examined and excluded is mailed by each inspeetor at the close of his day's visits to Dr. Arthur R. Reynolds, Commissioner of Health, and a copy is sent him also for transmission to Superintendent Bodine. In case of emergeney, sueh as an outbreak of smallpox, diphtheria or scarlet fever, inspeetors telephone immediately to both departments and thus no time is lost in establishing efficient quarantine.

Following is a copy of the instructions to medical inspectors, under which Chicago medical inspeetors work:

The pupils to be inspected will be referred to the inspector by the principal for two reasons: 1. Those who have been absent four or more consecutive days.

2. Those in the school whom the principal may suspect to be suffering from eontagious diseases.

These two elasses must be kept separate in the reports.

The inspection is to be made with reference to transmissible diseases only, and examination is to be made for the following diseases; scarlet fever, diphtheria, measles, roetheln, smallpox, chicken-pox, tonsillitis, lice, ringworm, or other transmissible diseases of the skin and scalp, and transmissible diseases of the eye.

Scarlet fever cases must be excluded until desquamation haceased.

Diphtheria eases must be excluded until throat eulture shows the absence of the Klebs-Loeffler bacillus.

Severe tonsillitis cases must be exeluded on the clinical evidence alone, and throat eulture made for further diagnosis

Cases presenting suspicious throats, but not definite evidence of disease elinically, must have throat eultures made, allowed to return to their classes until the culture has been examined, and only excluded in case the bacteriologic examination shows exelusion to be necessary.

In making throat examinations the wooden tongue depressors supplied must be used, to the exelusion of all other tongue depressors. *Each tongue depressor must be used only once.* Aseptic methods must be employed in all examinations.

If a ehild is excluded, brief but sufficient reason therefor must be written on the exclusion card.

Inspectors are forbidden to make any suggestions as to the treatment or management of pupils who are sick. *This is imperative.*

Unlike Boston and New York, Chicago, though fully alive to the value of medical inspection, has not as yet made sufficient provision for the permanent employment

of its entire corps of medical inspectors. The emolument is $50 per month and, to cover the ground properly, a man must devote his entire working morning to the service, i. e., from 9 a. m. to 12 m. When the appropriation runs low four-fifths of the inspectors are dismissed and an emergency corps representing the three major divisions of the city is selected from the eligible list. These inspectors do not make daily visits but respond to special calls from a school principal when in his opinion local conditions demand attention. This method does not, of course, compare with the regular daily visits of qualified physicians but seems to be the best that can be done by the School Board when financial stress is acute.

That feature of the Boston system relating to the discovery of infectious disease in the schoolroom, in which event the medical inspector orders the child sent home, reports the case to the Board of Health and follows the case home to see that it is properly isolated there, shows a defect in the Chicago system. When recovery is reported, in the former city, by the family physician, the inspector determines whether all danger of spreading the infection has ceased.

Another improvement might be adopted from the New York rules in this matter, viz., that provision requiring the principal or head teacher in charge to make weekly reports of the names and addresses of all absentees and, if absent on account of illness, naming the disease if possible. In Chicago such list might be handed to the local truant officer who has the right to enter the houses of all absentees, and he might then report his findings to the Commissioner of Health for further action.

Several years ago a New York paper suggested a valuable aid in preventing the spread of infection among school children, i. e., the separate wardrobe. This may be constructed of board, making each partition eight inches deep, or sufficiently large to separate the clothing of each child from that of his neighbor. A weekly cleansing or disinfecting of these wardrobes might be accomplished with but slight expense and most excellent results. This would prevent the spread of many parasitic skin diseases and minimize the spread of more formidable contagions.

Again, much better results might be had by enlisting the active co-operation of all the teachers in the work of detecting disease. This might be accomplished by printing and distributing a placard such as Dr. Meredith Young, Medical Inspector of Crewe, England, has originated for use in the local schools. It bears the caption: "Particulars of Certain Contagious and Infectious Diseases for the Guidance of School Teachers." A copy of this placard is hung in every schoolroom in the district. The diseases enumerated are divided into two classes, A and B. Those in class A include scarlatina, diphtheria, measles, rubella, mumps, pertussis, varicella, variola, and influenza. In class B are listed erysipelas, ringworm, diseases of scalp, scabies, and purulent conjunctivitis. When diseases enumerated in the former class occur, all children living in the same house are excluded from school; in case of those in the second, class B, the exclusion of the actual sufferer alone is insisted upon.

In conclusion, one of the great aims of modern medicine is prevention; for it is written "An ounce of prevention is worth a pound of cure." And it is the endeavor of the Medical Inspector of Schools to live up to this adage. That he is doing so is acknowledged by all those who have given the matter thought, and when the history of Preventive Medicine, as practiced in the twentieth century is written, posterity will undoubtedly award a high place to the daily medical inspection of schools.

TWO DIFFERENT WAYS IN WHICH YELLOW FEVER MAY BE TRANSMITTED BY THE CULEX MOSQUITO—STEGOMYIA TAENIATA.

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HAVANA, CUBA.

Had it been known in 1881 when I reported my first inoculations with contaminated mosquitoes, that eight or ten drops of blood from a yellow fever patient injected under the skin of a non-immune would almost surely produce an attack of the disease, as Dr. Reed and his colleagues have now clearly proved, my discovery of the transmission through the bite of the culex mosquito would have been considered quite plausible.

My experiments would have been taken up and repeated under more satisfactory conditions, the number of mosquitoes required in order to produce a characteristic reaction would have been ascertained, and, probably, twenty years of ignorance on that important subject would have been spared to the medical profession. Without stopping to discuss the nature of the specific germ, the bare knowledge of the fact that the prick of a needle, previously moistened with the lymph of a smallpox or varioloid vesicle, suffices to produce an attack of variola, would have induced my colleagues to interpret my experimental results in accordance with my own ideas. After the infecting bite upon a yellow fever patient some of the germs contained in the blood are likely to remain attached to the parts constituting the sucking apparatus of the insect, so that when the same mosquito is allowed, two or three days later, to bite a non-immune the said germs may be deposited along the track of the wound or washed down into the wounded capillary vessel by the saliva or venom which is usually discharged during the biting and sucking operation. I had at first experienced some difficulty in fitting this interpretation to an essential condition stipulated in my "mosquito theory," namely, that the insect which should transmit the disease must belong to a particular species, different from those normally found in countries and seasons where and when the disease does not appear to be transmissible. I have thought, however, that the salivary secretion of the culex mosquito may possess special conditions enabling the yellow fever germs retained upon the sting to preserve their vitality, perhaps to sporulate, during the interval of days which must elapse between two successive bites. There must be a limit, however, to this anomalous vitality of the germ, which probably may not be prolonged beyond four or five days. This would account for the circumstance that I had never obtained any pathogenic reaction, nor any evidence of subsequent immunity, with my inoculations during the winter season, when the mosquito requires a longer time to digest its feed of blood and often will not bite a second time before a lapse of four, five or six days. My technique was a very simple one. The mosquitoes were caught in my own dwelling, at a time when no cases of yellow fever were supposed to exist in the neighborhood, and after having ascertained by their bright markings and general appearance that they were young insects, probably not more than a few days old, each was confined in a small phial or test-tube

without food or water. The insects were then taken to one of our hospitals and the yellow fever eases carefully examined until one with severe symptoms could be found, not farther advanced than the sixth day (usually on the third, fourth, fifth or sixth) of the attack. The mosquito was then made to fill itself with the blood of the patient, and left to digest its feed of blood, imprisoned within the same phial. In the ordinary course of events, in summer, the insect would be ready for another bite after the lapse of 48 to 60 hours; on some occasions, it would then be made to bite a second yellow fever patient, in which case another interval of days would have to be allowed before applying the contaminated mosquito to a non-immune.

I have carried out the above procedure, in collaboration with Dr. Claudio Delgado, upon 102 non-immunes in the course of 17 years (1881 to 1898). In 17 of the inoculated persons some febrile reaction occurred after a number of days varying between five and seventeen, in 14 of them, and as late as the 22d, 23d and 25th in the 3 others. The reaction consisted in a mild albuminuric attack of yellow fever in 2; in a distinct non-albuminuric attack of the disease in 6; in an abortive attack, with or without traces of albuminuria, in 3; and only an ephemeral fever, of doubtful diagnosis, in 6. Of these 17, two of the 6 who had experienced only ephemeral reactions showed no immunity at all, having been attacked with severe yellow fever in the course of the same year or the next; of the 3 with abortive reactions, one had another attack of the same character two years later; of the 6 who had developed a non-albuminuric yellow fever after their inoculation, one went through another attack of the same type a few months later, on severe exposure, a fatal case having occurred in the room next to the one which he occupied; neither of the two who had presented a mild albuminuric attack after the inoculation ever experienced any subsequent attack of the disease.

Nearly all our inoculations were performed upon persons who had come to stay several years in Cuba; only 10 of the 102 left the island before having completed their fourth year, the rest lived from four to twelve years in Havana (a few spent part of that time in Cienfuegos or Matanzas). Only 4 of the total number (less than 4 per cent.) died of yellow fever; 2 of them five and eight months after their inoculations, the 2 others after five and six years; none of them had reacted after their inoculations. Among all the 102, during their entire residence on the island, independently of the attacks attributed to the inoculations, 4 had fatal hemogastric yellow fever, as previously stated; 19 had albuminuric yellow fever, mostly of a mild type, but 4 of them severe with some hemogastric tokens, all recovered; 17 had non-albuminuric yellow fever, and 9 had abortive yellow fever, including 2 who only developed a suspicious ephemeral fever. The remaining 53 never experienced any form of the natural yellow fever during the years which they spent in Cuba after their inoculations.

I had thought of two ways by which more decided experimental results would be obtained; one way was by applying several contaminated insects at a time; the other to consist in feeding the mosquito exclusively on sugar, during two or three weeks after they had bitten a yellow fever patient, and only applying them after the lapse of that time to a non-immune. From a careful study of Mclier's famous report of the epidemics of St. Nazaire, in 1861, I had come to the conclusion that it was in consequence of conditions such as these that the contaminated mosquitoes which had sought shelter in the hold of the *Anne-Marie* during its trip to St. Nazaire, must have acquired the intense virulence which enabled them to inoculate with fatal yellow fever every person who entered the hold of the vessel after its arrival at that port. It was on these grounds that I wrote, in a paper dated December 31, 1891, the following words: "It is my belief that, while one or two stings from recently contaminated mosquitoes can only occasion in susceptible persons a mild attack or simply confer immunity without any pathogenic manifestations, a severe attack would result from a greater number of such stings and the same might occur in consequence of one single bite from a mosquito which had been fed exclusively on sweet juices during several days or weeks after its contamination, before being allowed to sting another person."

At that time I still attributed the increased virulence to the multiplication of the germs which had been retained within the sucking apparatus of the mosquito; but in 1898 I read before the Academy of Sciences of Havana a paper in which I suggested, as the reason why only the Culex mosquito, alone among its Cuban congeners, has the faculty of transmitting yellow fever, that it has a pathogenic susceptibility for the yellow fever infection which the other species have not; the infectious germs would multiply within the body of the insect and finally reach its salivary and venom glands, to be carried with the secretion of those glands into the track of the wound or into the capillary vessel entered by the sting when the mosquito attacked another victim.

The Military Yellow Fever Commission, presided over by Dr. Reed, was evidently unacquainted with the last mentioned developments of my mosquito theory when they undertook to investigate it in August and November, 1900, since it was exclusively from precedents recorded about the malaria germ that they were induced to adopt the second procedure which I have outlined above. They have proved conclusively the surest way of obtaining a distinct experimental attack of yellow fever is by proceeding in the following manner: The mosquito *must* be applied to the yellow fever patient within the first three days of the attack; the insect is thereafter to be comfortably quartered in a good-sized jar, provided with sugar and a small cup containing water, in which it may moisten its proboscis and obtain facilities for laying its eggs. With such an arrangement the insect may be kept alive during seventy days or more, though a good many die long before that age. With mosquitoes treated in this manner Dr. Reed and his colleagues have tried to develop an experimental case by applying them to non-immunes five, six, eight and ten days after those insects had bitten the yellow fever patients, but they have invariably failed to obtain any positive results under these conditions, while they have succeeded in a large majority of their attempts when the application of those same insects had been delayed until twelve, sixteen or more days after their contamination. From these results Dr. Reed and his colleagues conclude that the yellow fever germ must be a parasite similar to that of malaria, and that, after parting from its human host, it must go through a series of transformations during the mosquito phase of its existence, requiring at least twelve days for their completion, before it can be in a condition to reproduce the disease. As a corollary to this proposition they believe that my previous experimental attempts must have been failures or errors of interpretation, since they are supposed to have been obtained with mosquitoes contaminated only a few days before the inoculation; they also claim that their point has been experimentally dem-

onstrated by the fact that their mosquitoes, when applied from five to ten days after their contamination, have invariably given negative results. The investigators thought, no doubt, that by providing their contaminated insects with food and water, besides giving them the benefit of several additional days since their contamination, they were actually improving upon my original technique; their argument being that since their inoculations had failed, even with those improvements, it was incredible that I should have succeeded in any of my attempts with my simpler method.

It has, apparently, not occurred to those able investigators while criticising my former experiences, to consider a fact which they have themselves demonstrated, namely, that there are two different ways by which the specific germs of yellow fever may be conveyed from the sick to the healthy. One way consists, as I infer from their experiments, in allowing the yellow fever mosquito to become infected in such a manner that, after the lapse of a certain number of days, the salivary and venom glands of the insect appear to become the seat of a local, chronic, lifelong infection, which is attended with a constant reproduction of yellow fever germs, so that the contaminated mosquito will thereafter inoculate some of those germs with every bite. The other way consists in injecting the germs contained in the blood of a yellow fever patient directly under the skin of a non-immune. I am not aware that any attempts have been made to determine the length of time during which the specific germs in the blood may retain their vitality within the glass cylinder of the hypodermic syringe or in any other receptacle,[1] but it stands to reason that they will survive more readily within the blood-sucking apparatus of the yellow fever mosquito, normally moistened with the insect's saliva, which admittedly constitutes the ideal culture medium for the yellow fever germ. Yet there must be a time limit beyond which the germs retained within the sucking apparatus must lose their vitality or perhaps undergo transformations which may temporarily deprive them of the power of reproducing the disease. During that limited time, under favorable circumstances, they may even sporulate and multiply as they might have done within the human host, but, on the other hand, it must be remembered that their position in the internal mouthpieces of the insect must be a precarious one, being at every moment liable to be washed out by a discharge of saliva or to be drawn into the stomach of the mosquito whenever food or water is sucked.

From these considerations it must be inferred that the bite of a yellow fever mosquito which has sucked the blood of a severe case is likely to prove infectious for non-immunes at two separate periods, namely, during the first few days after the insect has bitten the patient, provided that, in the meantime, the mosquito has not had access to any food or water, nor been allowed to bite another subject. After this short period the bite of the insect may be harmless until ten or fifteen days later, when the germs within the body of the insect will have had time to multiply and to invade its salivary apparatus.

The direct infection through the bite of recently contaminated mosquitoes, so far as I can judge from personal experience, produces much milder pathogenic effects, the fever is much less prone to develop albuminuria, and the period of incubation is often prolonged. I believe that after this mode of infection has been duly verified, and with certain improvements, including the employment of home-bred insects and the proper adjustment of the number of these necessary to secure visible pathogenic effects, it will be found to constitute the only method which may be safely used, upon a large scale, for the purpose of conferring immunity.

I certainly do not claim for my experimental results, obtained under difficulties and with considerable personal inconvenience, the significance and conclusiveness of the experiments so admirably carried out by the Military Commission at Camp Lazear; but, after the preceding explanations, every reader must admit that my method of inoculation has, so far, not been investigated by that commission, and that they are, therefore, in no position to pass judgment upon its merits before having done so.

160 Campanario Street.

1. Since writing the above, I have been informed of a recent experiment by Dr. Carroll, at Camp Columbia, showing that the blood of a mild experimental case of yellow fever, kept over night and part of the next day (some 14 hours) and injected to a non-immune has produced a mild but characteristic attack of the disease.

TREATMENT OF RINGWORM OF THE SCALP IN INSTITUTIONS.*

HENRY W. STELWAGON, M.D.
PHILADELPHIA.

The hospital or institution which escapes the misfortune of having to care for cases of ringworm of the scalp has much for which to be grateful. Many such cases occurring in private practice, among properly cared for children of good physique and robust health are, if the disease is at all recent, usually rapidly responsive to well-advised measures. Not so with hospital and institution cases. Even in private practice observation shows that in cases of any duration the disease is frequently rebellious and persistent, and that in many instances the practitioner pronounces the cases cured when the hair has begun to fill in in the affected area or areas; whereas, in reality the disease may still persist in a less conspicuous but chronic state, and the case remains an active center of contagion for other children. In almost all institutions in which children with this disease are admitted or in whom it may develop subsequently to admission, the subjects are almost invariably of poor stock, of impoverished nutrition, and have had, as a rule, the disease many months before coming under treatment. The consequence is that one has to deal with a persistent, rebellious and troublesome type scarcely known to the average practitioner, but an all too common experience with the specialist in skin diseases. With persevering treatment even the most of these cases may be made to yield in some months, or say within a period varying from several months to a year. Exceptionally a longer time is required for cases of great extent and of long duration. Without the methodical and persistent carrying-out of treatment, however, such cases last almost indefinitely—or till Nature begins to look after the cure as the child verges into puberty.

Ringworm of the scalp is in the larger number of cases due to the small-spored fungus, and, as a rule, it may be accepted as a fact that this fungus is the agent in most of the refractory cases. In a fair proportion of scalp cases, however, the disease is due to the large spore variety, and while such yield much more rapidly in most instances, still there are cases due to this variety of fungus which also prove persistently obstinate. Whichever fungus is the causative factor, the treatment

* Prepared for the St. Paul Session of the American Medical Association, in the Section on Cutaneous Medicine and Surgery.

remains the same. As yet we know that the recognition of the fungus variety has a bearing simply upon the prognosis as regards the probable time for a cure.

Strong remedies must, as a rule, always be used in the treatment of scalp ringworm in institutions. There are cases, it is true, in which the inflammatory element is, at first at least, quite marked, and milder applications are usually demanded. In such cases, indeed, this inflammatory element may be said to be a natural attempt toward casting off the disease. In almost all cases, sooner or later, however, the strong remedies are to be prescribed. What are they? In a great measure, one might say that the selection depends upon the habit or the prejudice of the prescriber. Still there is considerable unanimity among those having to do with these chronic cases as to the several remedies possessing greatest value. My own experience emphasizes the usefulness of sulphur, naphthol, iodin, chrysarobin and croton oil. Sulphur and naphthol are most valuable and appropriate for those cases involving a greater part of the scalp. Chrysarobin and iodin for circumscribed areas, and croton oil for those patches which have persistently failed to yield to other remedies.

There are certain adjuvant measures which should be mentioned first, before taking up the manner of application of the above several remedies. First, the hair of the entire scalp should be kept clipped very short, about one-fourth to a half inch in length. The disease is then more easily watched, and any new spots detected in their incipiency and promptly treated. In extensive and extremely obstinate cases it is even desirable to have the scalp shaved every five or six days. The spread of the disease to other parts of the scalp and to other children should be prevented by certain routine measures. With this objeet in view, the scalp is to be washed daily or every second day with warm water and medicated sapo viridis:

℞. Sulphuris præcipitat. 3i
Naphthol .....gr. xxx
Saponis viridis .....℥i M.

The lather should be permitted to remain on for five to ten minutes, as it has in itself, as experimentally shown by Thin, an inhibitory or destructive influence upon the fungus which may be scattered about the parts. If there is fear of taking cold, the scalp may be enveloped with some covering. The lather is thoroughly rinsed off, the parts rubbed dry, and then a general remedial application made, chiefly for the purpose of prevention, to the entire scalp. The following is useful for this purpose:

℞. Sulphuris præcipitat. 3i
Naphthol .....gr. xxx
Petrolati .....℥i M.

Or, instead of the salve, a lotion may be used for this general application, consisting of:

℞. Acid. carbol. 3ii
Resorcin 3i
Solut. acidi boric. (saturat.) .....Oi M.

It is possible that the salve is more effectual in preventing the dissemination of the spores, although it is not so agreeable.

A word as to depilation of the affected areas. This is a measure of some importance, if carefully and repeatedly done, but if the disease is at all extensive or the patient very young, it becomes almost impracticable. As an efficient substitute for this, originally suggested, I believe, by Dr. A. W. Brayton, and in my judgment of superior value, and also possessing therapeutic properties of its own, I can cordially recommend a good depilatory powder. The following, if properly and freshly prepared of good materials, will answer the purpose:

℞. Barii sulphidi 3iii
Zinci oxidi
Amyli pulv. āā .....3iiss M.

At the time of application enough water is added to this mixed powder to make a paste, which is spread in a layer of the thickness of the back of a table knife on the areas, slightly overlapping the edges; this to remain on for three to fifteen minutes, according to the character of the hair and the sensitiveness of the skin; or until heat of the skin or a burning sensation is felt. It is then thoroughly washed off, and if it has acted as it should, the hair of the patch, including the stumps, will have been destroyed deep into the follicles, and possibly to the full depth of the latter. Should there be accidentally much irritation from this, a soothing ointment may be applied for a few hours or a day; as a rule this is never necessary. The depilatory should be applied every five to ten days, depending upon the rapidity of the regrowth.

As to the remedial applications to the individual areas, the same ointment as above, with double the quantity of sulphur and naphthol, will prove valuable in recent cases and especially in very young subjects. The following is the formula:

℞. Sulphuris præcipit. 3ii
Naphthol .....gr. xxx-lx
Petrolati .....℥i M.

Occasionally the larger amount of naphthol, in those of extremely sensitive skin, gives rise to a feeling of considerable burning, and in such cases this ingredient can be reduced in quantity. As a rule, however, the feeling of burning is over in a few minutes, and no active irritation follows. Ordinarily, the best application for the areas in young patients and in recent areas is iodin tincture, containing a small quantity of mercuric iodid:

℞. Hydrarg. iodid, rubri .....gr. i-iii
Tinct. iodini .....℥i M.

I am convinced that the value of iodin tincture applications in this disease is much underrated. The preparation is painted on twice daily, two or three coatings at each time, till the parts become somewhat tender or till the film thus formed cracks or begins to loosen. The parts are then anointed with the milder of the above salves, and as soon as the film is detachable it is picked or pulled off. If there is active underlying irritation, which is rarely the case, a mild ointment may be applied for a day or so. According to circumstances as indicated above, the depilatory powder is again used, and the paintings resumed. This is continued till the new growing hairs show no evidence of fungus, and then the treatment is discontinued, and the patient kept carefully under observation for several weeks. Should signs of the disease again present—if necessary their significance should be confirmed by the microscope—the paintings are again resumed. Or, if the iodin paintings seemed to be slow in bringing about a complete cure, another plan is to be instituted.

Chrysarobin is by far the most valuable application in most of the hospital cases. It must be of the first quality. It is made by various manufacturing chemists, and varies considerably in quality; naturally an efficient preparation is essential for success. It may be used in all cases, but must be employed with greater care in patients under the age of three years. In most of the younger patients in fact the sulphur naphthol salve or the iodin paintings will suffice to bring about a cure.

Chrysarobin is most satisfactorily applied as a solution in chloroform:

℞. Chrysarobini ..... q. s.
Chloroformi ..... ℥i
M. Make a saturated solution.

The areas are painted over with this till well coated with a film of chrysarobin, the chloroform rapidly evaporating. Over this is then painted three or four layers of good collodion. The plain collodion is a little too brittle, and the flexible collodion scarcely compressible enough; a mixture of equal parts is more satisfactory. In eight or ten hours the collodion is again applied. No further application is to be made till the film so formed begins to crack or break way or begins to loosen, which it usually does in two to four or five days. It is usually loosened by the growing hairs beneath. As soon as it becomes detachable it is gently pulled off, and if there is any active irritation beneath, a mild ointment may be used for a few hours or a day, till this is subdued. If there is any sign of stumps or growing hairs, the depilatory is again to be used, and the paintings with the chrysarobin and collodion resumed. This plan is to be continued, as with the plan with the iodin paintings, till the disease is finally cured. In some instances, but if used with care not in many, a mild or moderately severe dermatis of the surrounding skin may be set up, and under these circumstances it becomes necessary to suspend the remedy temporarily. In rare instances this tendency to dermatitis may repeat itself, the skin of the patient being intolerant to chrysarobin, and it must be set aside and give place to another plan. Such idiosyncrasy is, however, rare. If the patient or attendant is careless, some of the chrysarobin may be carried to the face or eye and a temporary disturbance of these parts brought about. This rarely happens, however, with the chrysarobin treatment as here advised, as the remedy is kept covered with the collodion film. In addition, it is advisable to have the patient wear a lining of paper or other material in the hat, which will admit of frequent washing or destruction.

In some instances these several methods will fail to bring about a cure; or more frequently will cure most of the areas, but fail to make sufficient impression upon a few patches. It is just in such instances especially that croton oil has its particular field of usefulness, a plan of treatment warmly commended by Alder Smith. In those cases, too, in which there are throughout but two or three patches, and in which for various reasons a rapid cure is desired, recourse may be had to this application. It is a severe remedy, and the parts are made actively inflammatory. Indeed, the object in view is to bring about an artificial kerion—a somewhat boggy and pustular inflammation, which upon abatement usually results in the cure of the patch. In such cases as here mentioned the application is most valuable, and while it may in some instances destroy groups of a few follieles here and there in the areas thus treated, the subsequent growth of hair covers up these small points of baldness completely, so that this possibility is practically of no importance. The careless use of the remedy and the pushing of the inflammatory action beyond a reasonable limit would, of course, result in considerable follicular destruction, and should be guarded against. If carelessly used or its application be unnecessarily long continued, complete baldness of the area could result, but this has never occurred in my experience; and it seems to me that such disaster could only be from gross carelessness, or possibly from some idiosyncrasy of the patient's skin. The scalp will fortunately stand a good deal of even reckless treatment, and yet finally show but little trace of it. Croton oil is, however, a strong remedy, and must always be used with caution. For this reason it is never to be employed in very young children. The general scalp is to be looked after in the same manner as when other methods are used. With croton-oil applications the use of the depilatory may be omitted. At first it is desirable to apply the oil weakened with two or three parts of almond oil, and if it is found that no active inflammation arises, it should be applied stronger. In most cases the pure oil is required. It should be scantily used, as the oil seems to have a distinct tendency to spread beyond the part to which it is applied. It is to be applied two or three times daily, and to bring about the desired amount of inflammatory reaction usually two to six days are required. When it is possible to have poultices repeatedly applied, the oil applications may be discontinued as soon as slight swelling and minute pustulation present; the subsequent poulticing will bring about sufficiently pronounced inflammation. In most cases, however, I have continued the oil applications till this end was reached and then applied boric acid ointment till the inflammation subsided. This ointment or the mild sulphur naphthol ointment can then be used till the new hairs appear, and then all applications be discontinued; at the end of several days or a week the parts and new growing hairs are examined. If there are still signs of the disease the same method is to be repeated. One should be sure, however, that there is still disease there, before resuming the treatment. If the inflammatory action and pustulation have been of sufficiently high grade, a repetition is not usually necessary. If there are several patches to be treated, not more than one if a large one, or two if small, should be treated at one time with the oil. As soon, however, as the inflammation has subsided a new area can be attacked.

In some cases of scalp ringworm the disease is disseminated—disseminated ringworm of the scalp—consisting of scattered small-sized areas presenting five to ten diseased hair or hair stumps. Such cases can be treated by either of the three active methods—iodin paintings, chrysarobin or croton oil. If the spots are numerous the number should be brought down and then, if necessary for final cure, the oil be employed to the remaining areas. In such cases many of the areas yield readily with any good treatment, leaving behind six or more obstinate spots. In those instances of scalp ringworm in which the disease is so extensive as to practically involve the greater part of the scalp, presenting large and irregular areas, it is advisable to use the stronger sulphur naphthol ointment till the disease is reduced in extent. Or this plan can be used, and a small part treated with the iodin or chrysarobin paintings. Croton oil, if finally required, should be left till the disease is brought down to several circumscribed areas; it is never to be used in the beginning of treatment in these confluent cases, nor should it in fact be applied to an area more than two inches in diameter, at the very most.

The several plans here outlined can also be used with advantage in private practice and with intelligent patients of the dispensary class—in the latter excepting, however, the croton oil applications; this even with private cases must be used with caution, and its action daily inspected.

Cheifez reports the cure of two cases of dropsy by massage, applied for 12 to 15 minutes, 6 times in one case and 17 in the other. Massage is commenced at the feet and worked upward.

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YALE IN MEDICINE.

At the recent two-hundredth anniversary of the founding of Yale College medicine was represented, and most acceptably so, by Professor Welch of Baltimore, himself a Yale alumnus, who delivered an interesting and scholarly address on "The Relation of Yale to Medicine."[1] Naturally the address is of an historical character. It covers the ground as thoroughly as the time would permit and constitutes a valuable addition to the history of medicine in America. Yale is related to medicine through its medical school and also through those who, having received their general education there, "subsequently practiced the art or cultivated the science of medicine." The Yale medical school was not established until one hundred years after the foundation of the college, and Professor Welch sketches in an interesting manner the position and work of the Yale graduates of the eighteenth century who became physicians, and whose success indicates that they had been so trained in mind and character as to be fitted well for their work.

The long line of over 2300 physicians who have received their liberal or professional education at Yale College is headed by Jared Eliot of the class of 1706. Like many other physicians of his day, Jared Eliot combined the offices of clergyman and physician; "for forty years he never omitted preaching either at home or abroad, on the Lord's day," at the same time as he was "unquestionably the first physician of his day in Connecticut." Of the five medical signers of the Declaration of Independence, two were graduates of Yale, Oliver Wolcott, governor of Connecticut, and Lyman Hall, the first governor of the independent State of Georgia. Now that the organization of the state and local societies is being pushed with renewed vigor, the pioneer work of organization of the medical profession by the physicians of Connecticut, beginning with the oldest existing medical society in this country, namely, the Litchfield County Medical Society, founded in 1765, is of especial interest. The charter of the Connecticut Medical Society is a model one even now. In this important work of organization Yale men took a prominent part. According to Welch, the most valuable published contributions of the eighteenth century by Yale graduates did not emanate from a physician, but from Noah Webster of the class of 1778, whose epidemiological writings have a permanent value. His presentation of the theory of fever is also noteworthy.

In the early years of the nineteenth century the Medical Department was established under circumstances wholly unique in the history of medical schools, the initiative coming from the college, and a compact being entered in with the Connecticut Medical Society, whose charter gave it control of the medical education in the state. By the terms of the union the society agreed to share some of its chartered privileges with Yale College, and in 1810 the Medical Institution of Yale College was incorporated, the sixth medical school of the United States. Of the first faculty the most distinguished member was Nathan Smith, whose fame has steadily increased as his profound influence upon medical and surgical practice in this country has become fully recognized. His essays on typhus fever (typhoid fever) and on the Pathology and Treatment of Necrosis are both classical and far ahead of his time, the profession having slowly caught up with the views there advanced. A graduate of Harvard Medical School, much of his most important work was done in New Haven (1813-1829). Nathan Smith is one of the most attractive figures in the history of medicine in this country, and the profession in general should be made more generally familiar than at present with his life and work.

The Yale Medical Department has taken an important part in the movements to advance medical education, and the work of the Sheffield Scientific Schoool in organizing a distinctive, pre-medical biological course, constitutes one of the most important departures in the collegiate education of our physicians. The preparatory and research work of the Laboratory of Physiological Chemistry under Professor Chittenden long ago placed it among the best laboratories of its kind. Among the more than 2000 Yale physicians of the nineteenth century are many famous names, and "the graduates of Yale in the medical profession have contributed their full share to the making of the medical history of this country." The influence of the work of Professor Welch himself as a teacher and investigator entitles Yale to the gratitude and respect of the medical profession. Surely all will join with the medical sons of Yale in the hearty wish that the present meager endowment of its medical school soon may be increased so as to add still more than in the past to the usefulness and fame of this great university.

1. Yale Medical Journal, 1901, viii, 127-158.

THE PATHOGENESIS OF GASTRIC ULCER.

The marked chronicity and limitation to certain geographical regions no less than the peculiar conformation and obscure origin have maintained a singular interest in the so-called round or peptic ulcer of the stomach and duodenum.

In certain localities it is claimed that cases of this nature are increasing. Recent statistics from St. Thomas' Hospital, London, speak for such a condition there, and Greenough and Joslin, who in 1899 summar-

ized the cases of the Massachusetts General Hospital, concluded that gastric ulcer was observed with greater frequency in Boston than in some other large American cities. The importance to surgeons of gastric and duodenal ulcers of this type has increased with the perfected technic by means of which perforation may be successfully combated and various operations to cure or remove the ulcers have been attempted, but as yet with rather meager results.

However interesting these phases, it has been the method of origin of these ulcers that especially has attracted investigators. In animals, gastric ulcers have been repeatedly produced experimentally and sometimes unexpectedly.[1] They have been produced designedly by embolism of the gastric vessels, ligation of the radicles of the portal vein, irritation of the pneumogastric, injury of different parts of the nervous system, by trauma to the epigastric region, and in other manners. The ulcers formed experimentally have, however, failed to simulate "round ulcers" of the stomach; their course has been more acute, they have been multiple or have differed in other respects. The inability to produce round ulcers in animals has consequently not thrown any light upon the etiology of the lesions in man. Among the causes supposed to operate, antecedent localized injury or impaired nutrition and the digestive action of the gastric juice have occupied prominent places. Localized interference with the circulation, trauma, and the action of bacterial or non-bacterial toxins have been advanced to account for the preliminary injury; these explanations, however, omit to elucidate the marked preference of round ulcer for the pyloric region, its round or punched-out character, its extreme chronicity and the fact that it is usually solitary; as for the hyperchlorhydria theory of Riegel, it has been quite generally abandoned.

It seems that the final proof of at least one mode of genesis has been furnished by Yzeren.[2] By section of the vagus below the diaphragm, he was able to produce gastric ulcers in rabbits that were usually single, occurred in the pyloric region and lasted in some instances many months. As is well known, cervical vagotomy, although unilateral, jeopardizes the life of an animal, but Palow showed that with sections below the distribution to the important thoracic viscera, not only will the animal live, but the secretion of the gastric juice is not materially interfered with. In laparotomized rabbits and dogs, Yzeren studied the movements of the stomach, estimated its muscular tonus, the intragastric pressure, and the influence of the vagus upon these activities. He concluded that although there are inhibitory—sympathetic—fibers in the vagus, it is essentially motor. A few days after the vagotomy the stomach becomes smaller and harder; the pressure within the organ is greater and the muscles maintain a fairly continuous tonic contraction. In nine of twenty rabbits that were allowed to live more than two weeks after vagotomy, ulcers were demonstrated; in one animal the ulcer was found over nine months after vagotomy. In all cases the ulcers developed in the pyloric region on or near the lesser curvature; in all except one case the ulcer was single; in one rabbit death took place by perforation. Yzeren likens these ulcers to those of decubitus, as occur for example with chronic myelitis; in the stomach the pressure upon the vessels of certain regions is caused by tonic spasm of the musculature, this in turn results from the loss of the innervation of inhibitory fibers.

There are some attractive points to the theories of Yzeren; the election of certain sites is explained as well as the occasional development of gastric ulcer following severe attacks of vomiting; it is not unlikely that degenerative changes in the vagus in chlorosis might act as vagotomy does in animals. To account for gastric ulcers by muscular contraction is not altogether novel, for Talma in 1899 claimed that cramps in the stomach were in some way connected with gastric ulcer; others, too, have noticed this association. Yzeren has failed to notice the work of the Italian Saitta,[3] who obtained multiple ulcers in the stomachs of rabbits by bilateral vagotomy and administration of HCl.

New researches directed to the discovery of serious alterations of the vagi in chlorosis and other forms of anemia are needed, and these nerves should be thoroughly examined in cases of round ulcer that come to necropsy. The effect of such investigations as these upon the therapy of gastric ulcer can not be foretold; they will certainly lead to more intelligent treatment. Yzeren found that an extra-mucous slitting of the muscular coats in vagotomized rabbits was seldom followed by ulcer; and in man gastro-enterostomy is usually followed by healing of the ulcer.

1. See JOURNAL A. M. A., vol. xxxiii, p. 1366, Gastric Ulcers in the Course of Pneumococcus Septicemia of the Guinea-pig.
2. Zeitsch. für Klin. Med., 1901, xliii, 81.

THE PATHOLOGY OF BURNS.

Extensive burns of the surface of the body have a practical interest and have been the subject of much theoretical and experimental work. But in spite of extensive investigation there is still no unanimity of opinion as to the exact mode of death in many of these cases. The initial shock, broncho-pneumonia, secondary sepsis and hemorrhage from ulcer of the duodenum explain the fatal termination in some instances. Yet there still is lacking a clear understanding of the pathologic processes involved in many of these mysterious cases.

F. A. Hoffman[1] calls attention to the fact that while there has been much experiment and hypothesis concerning this subject there is still a remarkable lack of that which is the true groundwork of the whole matter, viz., a collection of good clinical histories and records of complete autopsies. With these thoughts in mind, M. Wilms,[2] of the surgical clinic of Leipzig, has worked on

1. Constitutional Diseases.
2. Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie. Band viii, Hefte 4 und 5.
3. Gaz. degli Ospedali (Milan), 1900, xxi, 599.

this subject largely from the clinical standpoint, and while his conclusions are not beyond criticism, as he himself admits, his work deserves more than passing notice, if for no other reason, because he proposes a simple therapeutic measure which he believes is of great value.

Wilms dismisses most of the theories already advanced to explain the phenomena of burns as wholly unsatisfactory. The nervous and reflex theory of Sonnenburg has no clinical support from an examination of blood pressure and vasomotor disturbances. Nor do clinical observations bear out the theory of wholesale destruction of red blood corpuscles. The hemoglobin quickly disappears from the urine and blood counts often show more than the normal number of erythrocytes to the cubic millimeter. Nor does he find confirmation of the theory that the remaining corpuscles are so injured as to be unable to perform their functions, or that the liver, spleen and kidney are seriously damaged by the destroyed or altered blood corpuscles. The kidneys may be incompetent, not so much through the absolute increase in the hemoglobin that mechanically obstructs them as through the poverty of the blood in plasma, a large amount being lost through the burned skin. In this way the kidneys are not flushed as they should be. Relative anuria may thus result. A nephritis may occur preceded, and followed, by an albumosuria. The albumose Wilms thinks is the cause of the nephritis with its albumin and casts. The lessened coagulability of the blood and the failure to find numerous thromboses make him question the theory that the blood-plates in cases of burns are greatly increased in number and lead to multiple thromboses.

As stated above, the loss of water, or rather plasma, from the blood is considerable where burns are extensive and not too deep. Of this the formation of blisters and the quickly soaked dressings give ample proof; and Wilms has by measurement of water ingested and water eliminated by the kidneys, shown that this loss of plasma is greater than one would suppose, greater even than in cholera, as Tappeiner[3] showed in 1881. The small amount of plasma in the vessels accounts for the relative richness of the blood in corpuscles and for the anuria. The blood, in a word, is concentrated. In order to avoid this condition as much as possible Wilms has given huge quantities of water, tea, coffee or light beer to his patients and, as he believes, with good results. The concentration of the blood is lessened, the kidneys are flushed and mechanical obstruction diminished, and with the increased amount of urine toxic substances are more rapidly eliminated.

That toxic substances may result from extensive burns and that their presence in the circulating blood may produce a deleterious effect has been often referred to by other writers. Wilms, from the finding of albumose in the urine, believes the toxic substance is a product of the destructive splitting up of albumin in the tissues in the immediate neighborhood of the burn, that this toxic material accounts for the fever, the pulse changes, the vomiting, the collapse, the nephritis. It is eliminated as albumose, though what preceding chemical changes take place is uncertain. This toxemia is found especially in burns of the third degree, where the skin is charred and leathery and exudation on the surface does not take place. In these two conditions of the blood—its poverty in plasma and its richness in toxic material—Wilms sees an explanation, or at least a partial explanation, of the phenomena of burns. His work is suggestive and should lead to more careful clinical observation, including examinations of the urine and of the blood. His treatment—the administration of large amounts of water by the mouth, rectum and under the skin—is harmless and appeals to one as having a rational basis.

3. Tappeiner: Centralbl. f. d. Med. Wissensch., 1881, Nos. 21 und 22.

A VISITOR'S OBSERVATIONS.

In the November issue of the *Practitioner* its editor, Dr. Malcolm Morris, records some of the impressions he received during his recent visit to this country as the Lane lecturer at the Cooper Medical College in San Francisco. He says some pleasant things about the earnestness he observed in the medical schools visited, especially mentioning the Cooper Medical College, the medical department of the University of California, the Johns Hopkins, and the colleges of Philadelphia and New York. He says: "A European observer feels that Professor Osler's dream that at the end of this century ardent Old World students may go to the other side 'as o'er a brook,' seeking inspiration from great masters, may easily be fulfilled." He goes on to state that even at present they might do worse than go to the places mentioned, "for at all of them post-graduate instruction is to be had, which for quality, variety and excellence could scarcely be equaled in any European country." It is pleasant to thus have our good points appreciated by the intelligent foreigner, but it need not make us unduly elated. We can certainly show him a variety in our medical educational institutions and a few that the old world can not excel.

OHIO SOCIETY FOR PREVENTION OF TUBERCULOSIS.

Our news columns contain the announcement of the formation in Ohio of a state society for the prevention of tuberculosis. This is an encouraging sign. While health boards, medical societies and individual members of the medical profession have done much to limit the propagation of tuberculosis, such a society as this one in Ohio will be a big help in the work, from the fact that laymen of large political influence have been induced to take active part by assuming some of the important offices. The society is to be congratulated for having secured the coöperation of these gentlemen, not only because by this means the public at large will become interested, but also because to carry on the work of the society considerable money will be needed, which a purely medical society would not be able to obtain, working alone. So far as formulated, the plans of the society include the establishment of a state hospital for consumptives in whom there is a chance of cure, and the

isolation as far as possible of incurable cases in smaller hospitals in different parts of the state. If the plan can be carried out the greatest good can be accomplished. It is to be hoped that this action in Ohio will be followed by similar action in other states.

AMERICAN JOURNAL OF ANATOMY.

Among the many new journals that have been offered to the profession in this country during the last few years, none has appeared that is more deserving of high praise than the *American Journal of Anatomy*. The initial number, which has just been received, is another evidence of the high-class work that is now being done in this country in the less utilitarian departments of medical science. Activity in ultra-scientific medical work and investigation was never greater than at present, and American investigators are becoming as active and as numerous as are those in any European country. There are many indications that European scientific workers will soon be looking this way to find some of the best original work in the purely scientific as well as in the practical department of medicine and the appearance of this journal is one of them. The scientific contributions contained in it are of the highest order of merit, and its excellence from a mechanical point of view deserves the warmest praise. There has evidently been a determination not to see how cheap the journal could be put out, but how good it could be made. The illustrations are superb, and especially is this true of the plates. It will be published quarterly at five dollars per annum. We understand that a number of generous medical men have backed the enterprise with financial support, so that its future is guaranteed. But it is one of those enterprises that deserves the support of all who are interested in scientific medicine, whether their work lies in the particular branch which this journal represents or not. It is naturally only of direct interest to but few, but indirectly it is of interest and advantage to all who have the welfare of scientific medicine at heart. The editors are Professors Barker of the University of Chicago, Dwight of Harvard, Gage of Cornell, Huber of Michigan, Huntington of Columbia, Mall of Johns Hopkins, Minot of Harvard, and Piersol of the University of Pennsylvania. The list of those who have promised to contribute contains the names of representative men in the profession.

INTOXICATION WITH BISMUTH.

The general impression prevails that when symptoms of poisoning arise in connection with the administration of bismuth or its combinations the manifestations are due to the presence of impurities, the most important of which is thought to be arsenic. Evidence is not wanting, however, tending to show that uncontaminated bismuth may give rise to toxic effects, which in some respects resemble those due to lead and mercury. A number of such instances are cited in a brief communication by Dr. Dreesmann,[1] who also reports a case under his own observation. Thus, following the dressing of wounds and wound cavities with bismuth subnitrate and other preparations of bismuth, as well as the internal administration of large amounts, there has been observed in the urine a white precipitate, becoming black, together with albumin and tube casts, stomatitis, pain in and loosening of the teeth, a metallic taste, with a blue line on the gums, and dark discoloration of the tongue, diarrhea, and pigmentation and ulceration of the intestinal tract, especially the large bowel. It has been shown experimentally that pure bismuth introduced into the pleural or peritoneal cavity is capable of exciting adhesive inflammation, and even perforation. The case of Dr. Dreesmann occurred in a man 30 years old, who had been quite severely burned and was treated with local applications twice daily of a 10 per cent. ointment of bismuth subnitrate. In the course of three weeks a black sediment was noted in the urine. In the course of three weeks more marked stomatitis developed, with pain and difficulty in swallowing. The teeth became loose and a bluish-black line appeared at the margin of the gums. Similar discoloration appeared also on the tongue. An area of ulceration resulting from the burn also exhibited black pigmentation, which disappeared but gradually. The preparation employed was free from contamination, particularly lead, and the symptoms could be attributed only to the bismuth. Improvement ensued as soon as a boric acid ointment was substituted for that of bismuth. From all of the evidence it would thus appear that bismuth, both applied topically and administered internally, is susceptible of absorption, and capable of giving rise to toxic manifestations, consisting principally in irritation of the digestive and the urinary tract; accordingly, some care should be exercised in the employment of this useful drug, which is generally considered entirely innocuous.

1. Berliner Klin. Wochenschrift, 1901, No. 36, p. 94.

SEASICKNESS.

Seasickness is a distressing disorder from which a large proportion of the traveling public suffer; yet it hardly receives mention in works on practice. Its pathology is still a matter for discussion among medical authorities, and now come the naval architects with their theories of its causation. Any one who has had experience knows that steamers are much more conducive to this distressing ailment than sailing ships, and the difference is chiefly attributed to the lack of steadying effect of the wind and consequent unregulated rolling and generally exaggerated motor performance of the vessel. With the increase of size of ocean packets of late years, this cause ought to be somewhat restricted, but according to the scientific shipbuilders a new element is introduced. A long vessel is practically a vibratory bar with its nodes and loops, and the longer the ship and the greater the speed and power of the engines, the more pronounced is the vibration. When the engines of the ship in their action strike the proper note of the structure and work in unison, then it is that the vibrations are greatest, and though the vessel may be running through quiet seas, a score or more of the passengers before unaffected may have to succumb to the sickness of the sea. The seasickness in this case is, therefore, according to the explanation, an effect of a quasi-musical phenomenon; it is a pathologic discord of the

nervous and digestive systems with the vibratory note of the ship, or a special fatigue resulting from the rapid succession of minor shocks. It is aggravated, moreover, according to the naval architects, by the exaggeration of the movement of a spring mattress so that when recumbent the discomfort may be even increased. Heretofore we have not seen so much importance attributed to merely vibratory motion in the production of seasickness, and while it is possible that it may have its part, this is doubtful; still some persons are subject to "car sickness" in railroad travel which may be due to this cause, and similarly sensitive individuals would probably suffer in sea travel, all the more because with it would be combined the pitching and rolling movement that usually causes seasickness. To this latter we must still attribute the greater part of the victims, but the explanation above offered has still a certain interest though not valid for the majority.

MODERATE DRINKING AND TOTAL ABSTINENCE.

Dr. Dyce Duckworth has lately emitted some views in regard to alcoholic drinking, in an address before a congress of medical examiners at Amsterdam, that seem hardly to agree with the accepted views of life-insurance authorities in this country. He maintains that total abstinence is undesirable in an insurance point of view; in fact, that it would be better for everyone to indulge moderately to just the right amount. He admits that even a slight excess is harmful, and he would not advise the daily use of as much as, what he puts as the physiologic dose, two ounces of alcohol. Yet he believes alcohol to be a food and a valuable element in the daily diet. He also admits that total abstinence is better than any, even the least, misuse. Careless persons with unstable nervous systems and of lower animal nature may, he says, practice total abstinence, but sensible people who can control themselves need not; indeed, he goes further and says he believes that the lives of truly moderate drinkers of alcohol are probably on the whole better and more useful than those of abstainers. The weak point in his argument is that he offers nothing but his own authority for all he says, and bases his opinion only on his personal general observation and experience. There should be something more than this in view of the many careful observations, the contradictory experience of so many others, and the accurate experimental studies of such men as Kraepelin and others. To say that moderate drinkers lead better and more useful lives than total abstainers is a little strong, even admitting that some of the latter are cranky and extreme in their views. Insurance experience, in this country at least, does not prove that they are better lives in one sense. There seems to be a difficulty to the average man in walking in the straight and narrow way of moderate drinking that he advocates, and our insurance statistics show a rather better record as regards mortality for abstainers than for the other class. Dr. Duckworth evidently appreciates this weak point, for he says he offers no statistics to prove his contentions and has long since learned to distrust them. Actuaries' figures, however, will probably still continue to govern the policy of insurance companies rather than the personal views of even so eminent a practitioner as Sir Dyce Duckworth. One may reasonably doubt whether figures lie in this case.

UNJUSTIFIABLE DISTRUST IN DIPHTHERIA ANTITOXIN.

An extract from the "Weekly Bulletin" of the Chicago Health Department in the Medical News section of this issue shows that the worst forebodings of the Journal[1] as to the serious and far-reaching results of the recent deplorable occurrence in St. Louis are being fully realized. An increase of one-third in the case mortality of diphtheria since the first of the month is attributed to a growing distrust of antitoxin. The medical inspectors and antitoxin administrators of the department report that parents refuse to allow the use of antitoxin unless the physician will pledge himself that the serum is perfectly pure and free from any danger of causing tetanus. Even then in many cases its use is positively forbidden. Fortunately, the department men are able to give such pledge unhesitatingly. All antitoxin used or distributed by the department is tested—not primarily for its freedom from any pathogenic properties, but for its antitoxic strength. Out of each instalment received in the laboratory 5 per cent. is tested on guinea-pigs previously injected with diphtheria toxin; if the animals survive without untoward symptoms or undue reaction the instalment is accepted as of the the antitoxic strength indicated on the label of the package. Obviously, if the serum contained the tetanus bacillus or other pathogenic germ, that fact would be developed in this test. No such result has ever followed during the six years' use of this remedy by the department, but on three occasions instalments have been rejected for failure of the indicated antitoxic strength. The test is so simple and so conclusive that the practice should be uniformly adopted. If necessary, legislation should be had forbidding the sale or use of any antitoxin not thus tested and certified by some competent authority. It is said above that "fortunately the department men are able" to pledge the purity of the serum they use. Unfortunately, this is not the case with the private physician, who, it is reported, very often shrugs his shoulders and replies to the anxious query of the parent: "I can not guarantee anything; you must take your chances!" Is not this a cowardly attitude for a medical man? Is it not his duty to know positively the properties and the qualities of the remedies he offers to use? He can guarantee this as well as any other remedy he uses, and should hold the producer responsible in this case as he does the druggist who puts up his prescriptions. The evidence so far given points to a fatal but avoidable mistake as a cause of the St. Louis tetanus cases, and the result will be all the greater care and greater safety in the manufacture and use of antitoxin hereafter. A 33 per cent. increase in the case mortality of such a tractable disease as diphtheria under the antitoxin treatment within less than three weeks is too serious a matter to be dismissed with a shrug of the shoulders. The baker's dozen of tetanus deaths in St. Louis sink into positive insignificance compared with the untold thousands of avoidable diphtheria deaths which will inev-

1. See pages 1255, 1323.

itably follow unless members of the medical profession demand a guaranteed purity of antitoxin and are thus enabled to speak with the confidence of definite knowledge and so inspire the anxious parent with their own confidence. The producers of antitoxin themselves, in their own interests, should lose no time in securing such a test and guarantee.

Medical News.

CONNECTICUT.

X-Ray Damages.—Dr. John Weldon, Willimantic, has recovered $6750 damages from a firm in Boston who sold him an *x*-ray machine from which he received a burn incapacitating him from work for twenty-two months.

Scarlet fever is reported to be prevalent in the towns around New Haven. The school at North Branford has been closed; Centerville has six cases, and twelve cases are reported in the Union Hill school district in Union City. Several cases are reported from Meriden.

Memorial to Dr. Hudson.—A special meeting of the Hartford Medical Society was held October 31 to take action on the death of Dr. William M. Hudson, vice-president of the Society. Addresses were made and a committee was appointed to draw up resolutions of respect for his memory.

FLORIDA.

Personal.—Dr. Ned C. Berry, formerly house surgeon in the Plant System Hospital, Sanford, has located in Kissimmee City.——Dr. Richard H. Gillen, De Land, has moved to Seattle, Wash.——Dr. O. S. Whipp, Braidentown, has moved to Clearwater.——Dr. Theodore Turnbull, Monticello, has moved to Jacksonville.

ILLINOIS.

Will County Medical Society met at Joliet, November 12. The address of the evening was delivered by Dr. E. C. Dudley, of Chicago, who reviewed the history and development of hysterectomy and myomectomy for uterine myoma.

Must be Vaccinated.—The Mt. Sterling Board of Health promulgated an order, November 12, that all persons be vaccinated. Those unable to pay will be vaccinated at the expense of the county, provided the fee does not exceed 25 cents.

City Wins Suit.—Du Quoin brought suit against Perry County for expenses incurred in caring for smallpox patients in the isolation hospital and elsewhere. The case went to the Supreme court, which has now decided in favor of the plaintiff.

Diphtheria.—Two schools in Greenwood township, Christian County, have been closed on account of the disease.——Joliet reports one case.——At St. Viateur's College, Bourbonnais Grove, three students are ill with the disease.——Rockford has two new cases.——Eight cases are reported from Cornell.

Personal.—Dr. Robert E. McClelland, Williamsville, who has been ill a long time, has secured Dr. Claude A. Lloyd, Chicago, to take charge of his practice.——Dr. Abraham L. Miller, Dixon, has been elected a member of the board of trustees of Carthage College.——Dr. Charles M. Galbraith, late surgeon of the 47th U. S. Volunteers, has returned from the Philippine Islands and will resume practice in Carbondale.

Smallpox.—Trouble has arisen in Springfield because the mayor has established an isolation hospital in Oak Ridge Park. Thirty cases in all have been reported in the city.——Grafton has the puzzling disease which looks like, but is said not to be, smallpox.——The prevalence of the disease at Hamilton, where 20 cases have been reported, has caused Nauvoo to issue a proclamation establishing a quarantine.——Strawn has several cases of the disease.——Peoria reports 15 cases, and Elverton and Athens have each one.

Chicago.

Smallpox.—During the past week four cases of smallpox have been discovered in the city.

Personal.—Dr. Charles Edward Manierre has returned to Chicago and resumed practice at 552 La Salle avenue.——Dr. F. H. Russell has located in Kewanee, Ill.

Norwegian Lutheran Hospital.—Contracts have been let for the construction of a hospital for the Norwegian Lutheran Deaconess Society, to comprise several buildings from one to three stories in height and to cost $40,000.

Contagious Disease Hospital.—Plans for a hospital where contagious and infectious diseases will be exclusively treated are on foot, and for the purpose of giving information and collecting funds an office has been opened in room 132 Hartford Building. A charter for such a hospital has already been obtained. The necessity for such an institution is urgent.

Influenza Threatens.—Although the mortality rate for last week was satisfactorily low—12.35 per 1000 of population—the outlook for the immediate future is not reassuring, says the Department of Health. Influenza threatens seriously; there was an increase of fully 30 per cent. in the finding of grip germs in the laboratory examinations. The presence of the pneumonia germ also markedly increased.

Distrust Antitoxin.—An increase of fully one-third in the number of deaths from diphtheria in proportion to the number of cases reported is noted during the past fortnight. The medical inspectors of the department report a distrust of the use of antitoxin, both by physicians and parents, which fully accounts for this result. Such distrust is, in the judgment of the Commissioner of Health, wholly unwarrantable. He says: "Probably never before in the history of antitoxin has this specific for diphtheria been so safe to use. The deplorable results in a neighboring city furnish no criterion of the method of antitoxin production in general, and the fact that more than 140,000 injections of the remedy distributed by this department during the past six years without a single such result should reassure those who have been needlessly alarmed."

INDIANA.

Smallpox has appeared at Lafayette, where two cases are reported, and at Castleton, where a small epidemic has occurred in which three patients have died.

Smallpox Risks.—The Secretary of the State Board of Health reports that the conditions all over the state indicate that there will be more smallpox than ever before and urges on the health authorities and the people the necessity of taking preventive measures at once.

Personal.—Dr. George D. Baily has purchased the interest of Daniel J. Mitchell in the Spiceland Sanatorium.——Dr. Cory R. Per Due, Etna Green, has sold his property to Dr. H. E. Crockett, Lafayette, and will move to New York City.——Dr. Oscar Heller, New Palestine, coroner of Hancock County, has resigned and Dr. Noble P. Howard, Jr., Greenfield, has been appointed to fill the vacancy.

Blacklist Debtors.—The Physicians' Protective Association of Elwood has prepared a blacklist, containing the names of families who have run bills with one physician, and when their credit was exhausted, called in another. The physicians will refuse to answer calls from any of them. Their laws are said to impose a fine of $5 on any physician who makes a professional call on a family on the blacklist, and a fine of $25 for the second offense. Every physician in the city is said to belong to the association.

IOWA.

Personal.—Dr. Edwin J. Moffitt, Jesup, has moved to Topeka, Kan., where he has a hospital appointment.——Dr. Charles E. Todd, Oskaloosa, has moved to Los Angeles, Cal.——Dr. Ridenour, Raymond, has located in Jesup.

Physician Found Guilty of Murder.—The proprietor of the Crofford Sanatorium, Leon, on November 16, was found guilty of murder in the second degree on account of his complicity in the death of an inmate of the institution.

Farewell Dinner to Dr. Sawyers.—The Centerville Medical Society gave a dinner, November 1, in honor of Dr. John L. Sawyers, who is about to leave the city. The address of the evening was given by Dr. Ephraim M. Reynolds. Resolutions were passed regretting the removal of Dr. Sawyers.

St. Luke's Medical Board.—The trustees of St. Luke's Hospital, Davenport, have selected the following medical board for the ensuing year: Attending staff, in surgery, Drs. William L. Allen, Henry U. Braunlich, and Richard W. Hill; in gynecology, Drs. J. P. Crawford and Alphons L. Hageboeck; in obstetries, Drs. John A. De Armand and Edward F. Strohbehn; in medicine, Drs. Edward S. Bowman, George E. Decker, Frederick Lambach and Bernhard H. Schmidt; in nervous diseases, Dr. Jennie McCowen; in ophthalmology, Dr. Albert W. Elmer; in oto-laryngology, Drs. George W. Banning and Karl Vollmer. The consulting staff consists of Drs. William

D. Middleton, Lucius French, H. Matthey, Carl Matthey, J. W. H. Baker, and John H. Kulp.

KENTUCKY.

Typhoid fever is epidemic at Cornishville and Dugansville, Mercer County.

Smallpox.—Paducah has two cases.——Three cases have appeared in the Story's Branch neighborhood, Fleming County. ——All the schools in the neighborhood of Craigs and Foothill, Bath County, have been closed on account of the disease.

Diphtheria has broken out in severe form in the northeastern part of Mercer County. On account of the prevalence throughout the state, the State Board of Health has issued a circular on the prevention of the disease, addressed to health officials and the general public.

Personal.—Dr. Edward M. Green, Versailles, has been appointed to the staff of the Georgia Sanatorium for the Insane, Milledgeville.——Dr. Vaudois E. Handley, Sturgis, has decided to move to California.——Dr. Charles W. Aitkin, Flemingsburg, has located in Lexington.——Dr. George Jean, Danville, has passed the examination of the medical department of the Army, and is ordered to the Army Medical School at Washington, D. C.——Major W. W. Gray, surgeon, U. S. Army, has succeeded Major William O. Owen, as surgeon at Fort Thomas.

LOUISIANA.

Physicians Fined.—For failure to furnish vital reports to the health authorities as required by law, eighteen physicians and one midwife of Acadia were fined $5 each, November 11.

The New Orleans Polyclinic opened, November 4, with a good class. The great clinical advantages offered by the city, combined with the mild climate, make it a desirable place for the medical profession in winter.

Dr. Brickell Honored.—Dr. William E. Brickell, who has been physician to St. Vincent's Orphan Asylum, New Orleans, for twenty-five years, was tendered a tribute of love and appreciation in the shape of an entertainment at the institution, November 7, at the close of which he was presented with a silver smoking set.

Personal.—Dr. Arthur W. de Roaldes, founder of the Eye, Ear, Nose and Throat Hospital in New Orleans, who spent the summer in Europe, has returned.——Dr. Edmond Souchon, New Orleans, returned November 7, from a trip through Mexico.——Dr. Latzi L. Szabary, Third District, New Orleans, has leased the Beauregard place, and will reside in St. Bernard parish.——Dr. William Kohlmann, New Orleans, has been appointed surgeon to the Touro Infirmary, vice Dr. Frederick Locber, Jr., deceased.

MARYLAND.

Dr. Albert C. Reuling, Baltimore, has returned from Europe.

Deaths in Baltimore.—There were 156 deaths in the week ended November 16; 14 were from pneumonia, 3 from diphtheria and 2 from typhoid fever.

An orthopedic department has been added to the City Hospital Dispensary, College of Physicians and Surgeons, and Dr. Albertus Cotton has been placed in charge of it.

The new training school for nurses at St. Joseph's Hospital, Baltimore, was opened November 11. Three years of study are required, with two lectures daily and instruction in the wards. The lectures are delivered by the hospital staff.

Dr. Howard A. Kelly gave a reception to the students of the Baltimore College of Dental Surgery November 11. The affair was in the interest of the Y. M. C. A., and the officers of the association were all present with about 100 students and other guests. Addresses were made by Dr. Kelly and Rev. John T. Stone.

Dr. Lesslie M. Sweetnam, Toronto, Ontario, is at the Johns Hopkins Hospital, being treated for blood poisoning. He scratched the fore-finger of his right hand in operating and it was feared that he would lose his right arm, but Dr. Halstead has tried conservative treatment and the case is progressing well.

Dr. Frank T. Shaw and family, Westminster, were poisoned November 16, by eating oysters which had been fried in a preparation of arsenic and cornmeal, made for rats and left in the pantry. The cook not knowing it contained arsenic used it in frying the oysters. Owing to the burning sensations produced, the family partook but sparingly of the repast and prompt vomiting prevented any fatal results.

MINNESOTA.

Addition to City Hospital.—A permit was secured, November 5, to erect an operating amphitheater, kitchen and laundry in connection with the City Hospital, Minneapolis, at a cost of $35,000.

Personal.—Dr. John B. McNerthney, Delavan, will locate in Tacoma.——Dr. Pence, late physician at the City Hospital, Stillwater, has been appointed assistant physician at the Fergus Falls State Hospital for the Insane.——Dr. Robert A. Campbell, formerly admitting physician at the City Hospital, Minneapolis, has been made resident physician at the institution.

Smallpox.—A member of a theatrical company was seized with smallpox at Luverne and the company is in quarantine in its special car.——The disease is reported at Langdon.—— Dr. Robert I. Hubert, St. Cloud, was indicted November 14 for "wrongfully, unlawfully, wilfully failing, neglecting and omitting to report contagious diseases of smallpox to the board of health."

Compulsory Four-Year Course.—The custom heretofore permitted at the State University, of allowing academic students who take a medical course after graduation, one year's credit on their medical course, has been changed, the State Board of Medical Examiners having refused to issue permit to practice to anyone who has not taken a four-year course in a medical school.

Safeguarding Against Blackmail.—Acting under advice from Attorney-General Douglas, Insurance Commissioner Dearth has ruled that, under the laws of Minnesota, general casualty indemnity companies may write contracts, insuring physicians against loss by reason of damage suits arising from the results of their practice upon patients. Such insurance is, however, invalid in case of an operation which is in itself illegal.

MISSOURI.

Personal.—Dr. W. S. Wheeler, Kansas City, has been appointed investigating physician for the Board of Health; salary $150 per month.——Dr. William H. Mook, St. Louis, has been appointed assistant physician at Quarantine.——Dr. W. A. Pendergraft, Elkland, who recently moved to Buffalo, has located in Marshfield.

Fatal Case of Hemophilia.—A case of hemophilia was admitted to the City Hospital, St. Louis, a few days ago and died of hemorrhages from the mucous membranes of the nose and mouth. Postmortem examination revealed general hemorrhages from the mucous membranes, with some increase in the lymphadenoid tissues of the abdominal cavities. A microscopic study of the small arterioles and capillaries is now being made.

Isolation Hospital at St. Joseph.—The Board of Health has introduced an ordinance providing for the immediate erection of a pesthouse at a cost of $1,500. It tacitly agreed to repeal all ordinances providing for public work that could possibly be dispensed with, the funds thus secured to be devoted to meeting Health Department expenses. It resolved to accept no smallpox patients from the county save on payment of $5 a day in advance for maintenance of each patient, in retaliation for the county's refusal to assist the city in erecting a pesthouse.

Coroner Condemns Health Department.—Coroner Funkhouser rendered a verdict November 18 which states: "We find that the decedents came to their death from tetanus, following administration of diphtheria antitoxin containing tetanus toxin, said diphtheria antitoxin having been prepared and issued by the Health Department of the City of St. Louis and bearing dates on labels of Aug. 24 and Sept. 30, 1901. The presence of tetanus toxin in the diphtheria antitoxin shows negligence upon the part of the Health Department in the preparation of said diphtheria antitoxin and in the issuance thereof."

Registration of the Tuberculous.—Much interest has been aroused in St. Louis on account of the proposed legislation regarding tuberculosis. The bill formulated by the Board of Health for action by the City Council classes tuberculosis among the contagious diseases and required that the Board be notified by the attending physician of each case. One section of the bill provides that at the request of any physician the Board shall have the authority to determine the existence of tuberculosis in a suspected case, and shall fumigate the dwelling of such a case once in ninety days if it is thought best. Fines are to be imposed upon physicans failing to report

cases. The St. Louis Medical Society unanimously condemned the bill, believing that the Board of Health should confine its efforts in this direction to educating the people and in making microscopic examinations of the sputum. The only return to the patient from making public his misfortune would be an occasional fumigation which can not be effective. It was asserted that if this measure prevailed it would prevent patients from seeking medical aid in the early stages and defeat the best efforts for limitation of the disease. Education as to cleanliness, thoroughness in the care of the sputum and the disinfection of the utensils used in eating and drinking are more effective than all the so-called disinfection by fumigation. The bill was permanently shelved by the City Council, November 12.

NEBRASKA.

New Licenses.—At its meeting, November 7, the State Board of Health issued certificates to 17 applicants for license to practice medicine in the state.

Wise Memorial Hospital.—This institution, established by a Jewish Society of Omaha, in memory of Rabbi Wise, was opened November 17. It will be conducted on non-sectarian lines and as many free beds as possible will be maintained. Its present capacity is 50 beds. The surgical staff consists of Drs. John E. Summers, August F. Jonas, Byron B. Davis, Charles C. Allison, and Millard Langfeld. The medical staff includes Drs. Oscar S. Hoffman, Paul H. Ludington, Willson O. Bridges, Charles Rosewater and a number of specialists.

Smallpox.—Up to November 7, the physicians throughout the state had reported 600 cases of smallpox.——It was announced that the death rate from the disease among the Winnebago Indians was 10 per cent.——Long Pine has 60 cases. When quarantine was proposed it was found that the state board could recommend, but not enforce regulations. Local boards must protect the health of the community and prevent the spread of the disease.——Cedar and Knox counties have 30 cases of the disease.——Ainsworth has quarantined against Long Pine.——A number of cases have developed at Johnstown and Wood Lake.

NEW JERSEY.

Dr. Daniel Stock, Camden, is seriously ill as the result of an infected wound of the palm of the right hand received while operating.

The new buildings of the New Jersey State Hospital were formally opened November 21 by Governor Vorhees. Among the speakers were Dr. Henry M. Hurd, Baltimore, and Governor-elect Murphy.

Isolation Hospitals.—Two portable hospitals and an administration building contracted for by the Newark Board of Health will be ready for occupancy this week. The hospitals are intended for smallpox patients, the number of which is daily increasing and already exceeds the capacity of the present small building used as an isolation hospital.

The Morristown Medical Club, made up of the leading medical men of Morristown and vicinity, was entertained by Dr. H. A. Cossitt at the State Hospital, who presented a paper for discussion on cholelithiasis, and cited three cases that he had recently operated on, with recovery. The November meeting will be led by Dr. Douglas, of Morristown.

Cheap Diploma.—James Norton-Smith, manager of the Central University of Medicine and Science, Jersey City, was arrested, November 16, on a charge of attempting to obtain money by false pretenses. The charge was made by Chief of Police Benjamin F. Murphy and was based on a letter received from Dr. D. H. Harrison, of Swanville, Tex., to whom Norton-Smith had sent a letter offering to furnish a diploma for $10.

Smallpox in Orange.—Six cases have been reported, all in the same house. On November 14 a girl seven months old was taken with smallpox, which was traced to an uncle who had been for three weeks under treatment with doubtful indications including the convalescent stage. At the date mentioned the mother, her three-year-old son, her brother aged 16, and sister aged 13, all had the disease. The house is now under quarantine and stringent precautions have been taken against the spread of the malady.

Staff Changes.—There have been several changes recently in the staff of the New Jersey State Hospital at Morris Plains. Dr. A. S. Corwin, assistant physician, is now serving upon the staff of Hudson Street Hospital, New York City; Dr. H. A. Cossitt was appointed to fill the position; Dr. T. P. Prout, pathologist and second assistant, resigned to pursue pathological studies at Vienna. He has done some original research work in epilepsy during the past year. This vacancy was filled by the promotion of Dr. H. A. Cossitt, and the appointment of Dr. W. H. Barton, of Connecticut, as pathologist and fourth assistant. Dr. C. C. Beling, late of Hospital of Ceylon, and Edinburgh, Scotland, was appointed fifth assistant, and Dr. Raymond D. Baker, of St. Joseph's Hospital, Paterson, sixth assistant physician.

NEW YORK.

Personal.—Dr. John F. Crowley was appointed town physician of Batavia, vice Dr. Lucius B. Parmele, who has gone to California for his health.——Dr. Hardin W. Bright, Niagara Falls, has moved to Ransomville.——Dr. Fred A. Smart, Carlisle, has moved to Nassau.

Chief Surgeon Suspended.—The Board of Trustees of the State Soldiers' and Sailors' Home have suspended Dr. James T. Burdick, surgeon-in-chief of the Home Hospital, pending the charges preferred against him by Col. Andrew Davidson, commandant. There are twenty-four specific charges, one of which is insubordination. Assistant-Surgeon A. P. Sheelman will have charge of the hospital pending the disposition of the charges. Dr. Burdick is a prominent G. A. R. man, being past medical examiner of the Department of New York, and was appointed surgeon in chief, February 22.

Buffalo.

The Gratwick Pathological Laboratory of the University of Buffalo is expected to be finished in a month. All the apparatus of the laboratory, which is now in the University, will then be transferred to the new building. The laboratory building was given the University by Mrs. Gratwick as a memorial to her deceased husband. Dr. Harvey R. Gaylord is in charge of the laboratory.

Magnetic Healer Fined.—William von Scheidt, a magnetic healer, was arraigned in the municipal court charged with violating a rule laid down by the Health Department, which makes it incumbent on physicians and others to report any cases of contagious diseases. Von Scheidt is charged with having failed to report a case which resulted in death from diphtheria. In this case cultures were taken from the throat by the Health Department and diphtheria bacilli were found The defence of the "healer" is that death resulted not from diphtheria. but malaria. He was found guilty and fined $250 and $28.40 costs.

Report Regarding Smallpox.—Health Commissioner Wende has submitted a detailed report to the Board of Aldermen concerning smallpox in Buffalo. He reported that during the past four months there were 13,226 cases and 431 deaths, in 36 states of the union. Since April last 13 cases were observed in Buffalo. Eight have been cured and five are still under treatment in the hospital. Some of the difficulties in the work of detecting cases and securing public protection are illustrated in the case of Vincent Suracci who while ill of the disease at its height continued to dwell concealed in his home in a crowded tenement house and who, fearing detection and removal to the hospital, absconded to the home of friends near by, to which he was traced with difficulty, and where he was apprehended. This case necessitated the vaccination of the inhabitants of the entire street and its contained tenement houses, which was only feasible by doing the greater part of the work at night with police assistance to secure the whole number.

New York City.

The Hospital Saturday and Sunday Association of New York reported at its November meeting that two years ago the total receipts aggregated $70,000 and last year that it was $74,000, while for the pending collection it was expected that the total would reach $80,000.

Decision on Bequests.—A decision which is of considerable interest to hospitals and various charitable institutions, has just been handed down by the Court of Appeals. It is to the effect that all charitable institutions must pay the state inheritance tax on bequests. The decision was with reference to bequests made by the late Collis P. Huntington to the Roosevelt Hospital, the Hospital for Ruptured and Crippled, and a number of well-known charitable institutions.

Ambulance Accident.—A Sixth Avenue electric car crashed at full speed into an ambulance of St. Vincent's Hospital. Striking it squarely in the middle, the ambulance was completely wrecked, and the driver and Dr. J. W. Cabannis, were

thrown out and severely injured. Because of the frequency of these collisions, and because no attention has been paid to complaints, the hospital authorities declare their intention of bringing suit against the railroad company.

A convalescent hospital is to be established by St. John's Guild at New Dorp, Staten Island, Richmond Borough, for the care of women and children. The announcement of intention was made at the annual meeting of the Guild, November 12, when the annual report was read. During the past summer 61,114 mothers and children were carried out on the salt-water for a day of rest and treatment. Nearly 34 per cent. of that number were bathed in the salt-water bathrooms, and during the last year 2630 cases were admitted in the seaside hospitals, an increase of 24 per cent. over the largest previous year. The treasurer reported as received $119,374.78, an increase of $37,790.64 over 1900; the disbursements were $88,717.97, of which $25,680 were expended for buildings, improvements and repairs, leaving a balance on September 30 of $31,839.33. The Guild's membership is quoted at 1000, which shows an increase of 23.5 per cent. over the preceding year.

OHIO.

St. Clair Street Hospital, Cleveland, is to have a $10,000 addition in the early part of next year.

Fire at Starling.—A fire occurred at Starling Medical College, Columbus, November 9, which started in an incubator in the laboratory and did damage amounting to more than $1000.

Hospital Site Donated.—H. H. Hall, Ashtabula, has offered the city a half acre of land to be used for hospital purposes. The only provision is that a $5000 hospital building shall be erected thereon.

Communicable Diseases.—Springfield has an epidemic of scarlet fever and measles.——Diphtheria and scarlet fever are increasing in Columbus, and causing much anxiety.——At Zanesville it has been decided that there is no need of reclosing the schools of the city; that there is no diphtheria epidemic, and that the usual means at the command of the board of health is sufficient for the occasion.

Prevention of Smallpox.—The current issue of the Ohio Sanitary Bulletin states that from April, 1898, to Oct. 1, 1901, more than 9000 cases of smallpox had been reported in the state, with 124 deaths, and that practically every county had been invaded by the disease. It also gives plain and concise information for local boards of health regarding the detection of smallpox; isolation hospitals; quarantine, its duration and the support and aid of persons isolated; vaccination; disinfection, and burial of the dead.

Cincinnati.

Dr. Samuel E. Newman has returned from his six-month study tour of Europe, November 8.

Low Death-Rate.—According to the report of the Health Department just presented to the Board of Public Service, the annual death rate for the year covered was 16.60 per 1000 of population, the lowest mortality rate shown by the records for twenty years past. The total number of deaths was 5,412; births, 5,548.

Interne Changes.—The terms of Drs. Walter Stix, William Prichard, W. J. Taylor and Shaler Berry, as internes to the Cincinnati Hospital, expired on November 10, after a service of sixteen months. Dr. Stix will leave for Europe to further his education; Dr. Prichard has been appointed assistant surgeon to the State Insane Asylum at Columbus; Dr. Berry will locate at Newport, Ky.; Dr. Taylor will become associated with his father in Cincinnati.

Personal.—It has been officially announced that Dr. Frederick D. Barker, Dayton, has been appointed chief surgeon of the Cincinnati, Hamilton and Dayton Railway Company, filling the vacancy occasioned by the death of Dr. Ramsey. Dr. Barker's headquarters will be at Dayton, Ohio, the appointment taking effect November 12.——Dr. Charles V. Herdliska, now Secretary of Legation at Vienna, has been appointed United States Consul to Kingston, Jamaica.

PENNSYLVANIA.

Dr. George S. McLeod, Jr., Bryn Mawr, has abandoned his practice and home and has gone to Whitehall to take care of the nine smallpox patients in that suburb.

Smallpox Spreads.—During the past week, 72 new cases of smallpox were reported to the Philadelphia Board of Health, with 8 deaths. At present, 219 cases of the disease are under treatment in the Municipal Hospital and at their homes.

School Board Changes.—Drs. George I. McLeod and Samuel S. Stryker, who had been for nearly thirty years members of the Philadelphia School Board, resigned recently. Dr. Victor C. Roberts has been elected a member to fill the vacancy.

Teachers Must Be Vaccinated.—In Common Pleas Court No. 4, Philadelphia, November 14, President Judge Arnold filed an opinion, refusing to grant an injunction in the proceedings recently begun by Mary Helen Lyndall against the Board of Education to have the defendants restrained from interfering with her continuance as a teacher in the Girls' High School. The court ruled as follows: "As school directors may, in the exercise of a sound discretion, exclude from the public schools pupils who have not been vaccinated, as was decided by the Supreme court, so may they exclude teachers and other employes for the same reason. The protection which vaccination is believed to afford must be reciprocal; teachers and pupils are alike entitled to protection against contagious disease. Whether vaccination is a preventive of smallpox, this court has no power to investigate and decide. The Legislature has authorized, and the Supreme court has legalized, regulations requiring vaccination, and therefore a court in the first instance is prohibited from inquiring into the efficacy of vaccination as a preventive of smallpox. The opinion of the plaintiff that vaccination is not a preventive, and that it is dangerous to her health, is not a sufficient reason to exempt her from obedience to the order of the Board of Public Education requiring vaccination; hence the offer of the plaintiff to show that she considered it dangerous to her health was irrelevant and immaterial and was properly rejected." The court further held that the Board had the power to make and enforce such a rule as was made, that Miss Lyndall had refused to comply with the regulation and was therefore subject to suspension or dismissal.

TEXAS.

Dr. George R. Tabor, Texas' new health officer, has quarantined against Liverpool on account of bubonic plague, and all vessels will be subject to detention coming from infected ports.

Restriction of Sale of Poisons.—The San Antonio City Council, on November 4, passed an ordinance prohibiting the sale of morphin, cocain or other poisonous drugs, except upon prescription of a reputable physician.

Personal.—Dr. Charles F. Norton, quarantine officer at El Paso, has resigned to accept the position of clerk and assistant health officer of the state.——Dr. Clay Nichols, Yoakum, has moved to Gonzales.——Dr. Watson G. Terry, Denison, has located in California.

Compulsory Vaccination.—The El Paso ordinance requiring compulsory vaccination became effective November 11, for the winter season. Vaccination officers will scour the Mexican quarters of the city to vaccinate inhabitants, and all pupils of the public schools will be required to present certificates from their family physicians to show that they have been vaccinated. The children of the poor will be vaccinated by the city.

WEST VIRGINIA.

Applicants for Licenses.—At the meeting of the State Board of Medical Examiners, held in Huntington, November 11-13, forty-two applicants registered for examination.

Hospital Closed.—The St. Luke's Hospital, Parkersburg, which was principally maintained by the Ohio River Railroad Company, was closed November 15, as the Baltimore and Ohio would not maintain it.

Personal.—Dr. James W. McDonald, Benwood, has been appointed superintendent of Miners' Hospital, No. 3, Fairmount, with Dr. William C. Jamison as assistant.——Dr. Thomas F. Downing, New Martinsville, has received an appointment as superintendent of Miners' Hospital, No. 2, McKendree, vice Dr. Albert G. Stalnaker, resigned.

Communicable Diseases.—Considerable anxiety prevails in Martin's Ferry by reason of the spread of diphtheria.——An epidemic of diphtheria is raging in Keyser, where 75 cases have been reported.——At Hedgesville the prevalence of diphtheria has caused the closure of the public schools.——Typhoid fever is causing anxiety at Jim's Branch, near Bowen.

WISCONSIN.

Diphtheria is epidemic in Peshtigo and in Daggett, and scarlet fever in Waterloo, where the public schools have been closed.

Dr. E. J. Addison, Marinette, has started for New York. He expects to study there and in Edinburgh, going then to Australia, whence he will return to practice in Marinette.

Antigo Hospital.—Drs. Ignatius D. Steffen and Fred V. Watson, Antigo, have remodeled the old hospital building, increased its accommodations, added a modern operating room, and equipped it.

Waupaca County Insane Asylum.—The plans for the county insane hospital at Weyauwega have been approved, and the contracts let. The building will cost about $80,000 and will accommodate 125 patients.

Logging Camps Closed.—At the instigation of government officials, Senator William O'Neil, Washburn, closed all of the logging camps on the Bad River reservation, November 13. It is presumed that fear of a smallpox outbreak is the cause.

GENERAL.

Plague in San Francisco.—The death of a Chinaman, supposedly from the bubonic plague, occurred in San Francisco, on November 4, according to the lay press.

Dr. John F. Anderson, assistant-surgeon of the Marine-Hospital Service, has sailed on the *Lucania* for Liverpool, where he will investigate the recent plague outbreak.

Dr. William Lee Howard, Baltimore, will shortly bring out, it is said, a study in dipsomania entitled "The Perverts." It is dedicated to Edgar Allan Poe, and is in part a justification of that writer's life.

An Impostor.—It is reported that a certain "Dr. Decker," proclaiming himself a German, has been borrowing money from physicians in Fort Dodge, Iowa, and possibly elsewhere, by working on their sympathies with a tale of woe and of a rich uncle.

CANADA.

Smallpox.—Two deaths occurred from smallpox in St. John, N. B., November 15. Five new cases were reported, which now makes 51 cases in all, with 7 deaths.

Personal.—Dr. J. D. Lafferty, Calgary, N. W. T., has been appointed Registrar of the College of Physicians and Surgeons for the North West Territories in place of Dr. H. U. Bain, deceased.

Dr. George T. Orton, Winnipeg, died on the morning of the 14th inst. He was born at Guelph in 1837, and represented Centre Wellington, Ontario, in the Dominion House of Commons from 1874 until 1890.

Osteopaths Organizing for Defense.—As a result of the recent trial in the Toronto Police Court, and the action of the Ontario Medical Council, the osteopaths contemplate organizing into a body, to be known as the "Ontario Osteopathic Council."

Alumni of the Toronto General Hospital have elected the following officers: Hon. president, Dr. J. T. Fotheringham; Hon. vice-president, Dr. Goldie; president, Dr. F. A. Cleland; vice-president, Dr. A. Chisholm; secretary-treasurer, Dr. J. H. Brent; committee, Drs. O'Brien and Currie.

McGill Medical Buildings.—McGill has just completed unexcelled laboratories for the study of bacteriology, physiology and pathology. They are fitted out with all the most elaborate and scientific instruments; each student will be supplied with a complete set of necessary apparatus. The Medical Faculty will hold the annual banquet on December 6.

Wholesale Poisoning in Montreal.—At the regular meeting of the Hygienic Committee of Montreal the City Analyst presented a rather startling report. An entire family in the city had been poisoned through eating canned apples; an examination of the solder revealed that there was over 70 per cent. lead therein. An analysis of the apples and juice showed them to contain dissolved tin.

Compulsory Vaccination.—The smallpox epidemic throughout the province of Quebec has reached such a critical stage that the Provincial Board of Health now insists upon all municipalities within four days enforcing the regulations with regard to compulsory vaccination, particularly applying to manufactories and educational institutions, and a certificate must be forthcoming that the pupil or workman has been successfully vaccinated within the last seven years.

The Lumbermen and Vaccination.—An order has been issued by the Quebec Board of Health to the proprietors of shanties throughout the province of Quebec, calling upon them to have all their men vaccinated before undertaking the winter's work in the woods. The latest outbreak in the province is at Sorel, where a number of persons are affected. Dr. Beaudry, chief inspector of the board, is investigating at that place and making arrangements to have the regulations of the board carried out.

New Hospital Wing at Hamilton.—The Billings Memorial Wing, a recent addition to the City Hospital, was formally opened on the afternoon of November 12. The donor of the new wing is Mr. John Billings, of that city, and commemorates the memory of his late wife. A new nurses' home is also in contemplation of being erected, the ground for which has already been purchased. The graduating exercises of the Training School were held the same afternoon, when 8 nurses received their diplomas.

Consumption of Liquor and Tobacco in Canada.—The excise returns for the official year ending June 30, 1901, gives an idea of the quantity of drink and smoke in Canada. Beer is the favorite beverage, its consumption per head of the population being 4.737 gallons, as against .765 gallons of spirits and .1 gallon of wine. This is an increase over the preceding year, which was as follows: Beer, 4.364 gallons; spirits, .701 gallons; wines, .085 gallons. The consumption per head of tobacco was 2.404 pounds, as against 2.3 pounds for the previous year.

Grand Jury Presentment on Eddyism.—In the presentment of the grand jury which served at the recent criminal assizes at Toronto, the following reference is made to the case of eddyism before that court: "The weakest point in this case appeared to be that the party most directly and morally responsible for the imposture—if it be such—is the demonstrator, and, as the law stands he can not be held liable, therefore a change seems desirable, which would prevent anyone not a legally qualified physician acting as a substitute for such aid: the prescribing of medicine or other physical treatment should not be necessary to render the demonstrator liable to action." Justice Ferguson complimented the jury on its presentment.

A New Maternity Hospital for Montreal.—At the annual meeting of the Board of Directresses of the Montreal Maternity Hospital held last week, a new site for the purposes of a building, comprising 16,000 square feet, was purchased at a cost of $10,000. The new building will be constructed on the most approved plan, will have accommodation for 45 beds, and will cost between $30,000 and $40,000, exclusive of equipment. The physician's report stated that there remained in the institution at the end of last hospital year, 7 patients, and that during the year there were 229 confinements; one patient had been transferred to the General Hospital, and 9 remained in the institution at the close of the past year. There had been 27 applications at the Training School, 15 being accepted. Eleven nurses were graduated during the year.

FOREIGN.

Smallpox in Vienna.—A dispatch to the press, on November 19, states that Vienna is experiencing a smallpox epidemic: on the 18th, 35 new cases were reported.

A Vegetarian Orphan-Asylum.—The municipal authorities of Breslau have taken the necessary steps to accept the Baron legacy of half a million marks for the foundation of an asylum for children, to be exclusively vegetarian. The legacy was originally bequeathed to the city of Berlin, but was declined.

Passports Not Issued to Consumptives.—The *Allg. Med. Cent. Ztg.* of October 16, states that Russia, Germany and Roumania have entered into a mutual agreement that in future no passports shall be issued to persons with pulmonary affections.

Campaign Against Malaria in Italy.—The Red Cross has stations ready for the campaign against malaria on the Roman Campagna. Two stations are to be equipped for comparative research. One is to be amply protected with screens, and the inmates will be treated with quinin. The inmates of the other station will depend exclusively on Koch's method of warding off malaria by prophylaxis, with quinin for their protection.

Deaths Abroad.—The death is reported of Dr. J. C. Haentzche, physician to the German embassy in Persia. His mastery of Oriental languages was so perfect that he was summoned every year to Berlin to conduct the examinations in the Oriental Seminary.——The historian and editor of Schmidt's Year-Books, Dr. J. A. Winter, has also recently died at Leipsic in his 86th year. He has been librarian at the university since 1859 until quite recently.——A prominent surgeon of Stettin, Dr. C. Schuchardt, has recently succumbed to blood poisoning.——Munich has lost Dr. G. Naster, one of the pioneers in the battle of the clubs.

Infected Antitoxin.—Criminal proceedings have been instituted against Belfanti and Leoni, the director and assistant at the Milan institute which made the diphtheria antitoxin that caused the death from tetanus of a number of children this year. They are accused of criminal negligence in the preparation of the serum. It was established that at previous times the antitoxin had induced anthrax and glanders and that it was not of standard strength. The accused attribute the contamination to dust from a neighboring structure which was being torn down at the time, but the court would not accept this explanation. The case has been postponed for bacteriological tests.

LONDON LETTER.

Plague in Liverpool.

Great Britain has been once more visited by plague—in two of its great seaports, Liverpool and Glasgow. It will be remembered that in the latter town a very severe outbreak occurred last year. At the end of September or beginning of October 5 or 6 cases of illness occurred in Liverpool which were set down as influenza though plague was suspected. The patients were isolated, and two of them—little boys—died. It has now been definitely ascertained that the disease was bubonic plague. On October 23 two brothers, aged 12 and 7 respectively, were admitted to hospital as suffering from typhus fever. On October 28 suspicions arose as to the nature of the illness, which led to investigation of the locality whence the patients came. A woman aged 29 was found ill in a house in the rear of that where the boys lived. It was also ascertained that her mother and sister had died on September 28 and October 3, after brief illnesses. One of them was alleged to have complained of tender armpits. The deaths were certified as influenza. On October 18 a woman who had associated with this family died, and her death was certified as due to apoplexy. On October 26 two children, playmates of the family, were removed to hospital suffering from plague. The patients are well-to-do persons, and there is no connection of the cases with filth or squalor. From time to time during the past two years, cases of plague have arrived at Liverpool, but ample precautions have been taken and averted an outbreak. Three patients are now in hospital and are progressing favorably. No fresh cases have occurred since October 26 (ten days ago), so that there seems reason to think that the disease has been restricted. One theory as to the origin is that a policeman who lodged in the house where the first case occurred and had charge of a mortuary and handled the bodies of persons found drowned in the Mersey was the source. He is now isolated in an hospital.

Plague in Glasgow.

Several cases of illness occurred recently in a prominent hotel in Glasgow. The patients were servants employed on the basement floor. The symptoms were those of bubonic plague. Three persons—two men and a woman—were removed to hospital. Bacteriologic examination has proved that the disease is bubonic plague. One of the patients has died, another is seriously ill, and the third is progressing favorably. On October 30 another female servant was removed from the hotel ill. The disease is believed to have been due to the large number of rats in the hotel, which have been driven there by the demolition of a number of houses. A fourth case has occurred in a barmaid who slept for a night at the hotel. Twelve members of the staff of the hotel have been isolated and will be kept so for fourteen days. An active campaign is being organized against the rats. In two hours no fewer than 200 were killed in the hotel. The hotel is one of the largest in the country and contains 400 bedrooms. Two hundred people were on the premises on the night of the outbreak. The staff of servants numbers 300. The hotel has been emptied of guests and all the servants inoculated with anti-plague serum and placed under medical supervision.

Smallpox Increasing in London.

The number of cases of smallpox in London is still increasing. According to the last report there are 283 cases in hospital. A temporary smallpox hospital is being erected at Dartford at a cost of $250,000, and a permanent one at Hither Green at a cost of $1,500,000. As many as 29 fresh cases have been notified in one day. At present all the patients are received on hospital ships moored in the Thames. The authorities evidently expect that the relatively great immunity from the disease which London has long enjoyed will not be continued in the future. It is expected that with the advent of the cold weather the outbreak will increase. The mortality is high and indicates a virulent type, which must be connected with the neglect of vaccination previously referred to in The Journal. Thirteen persons have died and 87 have been discharged. The re-vaccination of adults is going on on a large scale. In the streets and public places persons are to be seen with a band of tape around the arm. The significance of this is now well known. It is a "danger signal" to prevent grasping or rubbing against the vaccinated arm. By command of the king all the servants in Marlborough House have been vaccinated.

Death of a Great English Chemist.

Sir Edward Frankland, who recently died while on a vacation in Norway, was the subject of a memorial lecture at the Chemical Society by Professor Armstrong, one of his pupils. His fame rested chiefly on his discovery of the law of valency or atomicity, and he probably ranks next to Davy in the roll of English chemists. He was born in 1825, and at the age of 15 was apprenticed to a druggist. In 1845 he studied at the Museum of Practical Geology in London under Sir Lyon Playfair. Two years later he was elected a Fellow of the Chemical Society. In 1853 he was elected F.R.S., received the royal medal of the Royal Society and was appointed lecturer on chemistry at St. Bartholomew's Hospital. A very important part of his life-work was his study of water analysis and purification. In 1865 he was asked to continue Hoffman's monthly analyses of the metropolitan drinking water, which he continued to do until his death. He also investigated the pollution of rivers, the purification of sewage and domestic water supply. He was an intensely reticent and self-contained man, and never played for place or power.

Sir Henry Thompson on Diet.

Sir Henry Thompson, who until he relinquished active practice, was the foremost genito-urinary surgeon in Great Britain and worked contemporaneously with Bigelow, is now hale and hearty at the age of 82. He is not only a great authority on his own branch of surgery but also on dietetics. He also interests himself in the subject of cremation and is president of the English Cremation Society, whose objects he has done much to further with his pen. He has just published a remarkable book on "Diet in Relation to Health," in which his personal experience is a striking object lesson. Thirty years ago, at the age of 52, he gave up alcohol. For the sake of experiment five or six years back he tried the effect of a claret glass of good wine at dinner every day for two months. Then the sick headaches and pains in the joints from which he had suffered in early life came back until he abstained again. Moreover, "after abandoning alcohol, the joints gradually lost their stiffness and ultimately became as supple and mobile as they were in youth and continue absolutely so to this day." He adds: "It may be fairly said that one example does not prove a case. But it is not a single example, and really designates a very large class of active men possessing a more or less similar temperament of which a type is here described." Half our bodily ills are due, he believes, to improper feeding. The necessity for diminishing the amount of nourishment taken as one grows older is not appreciated. "The extra glass of cordial, the superlatively strong extract of meat" are mistakes. Sir Henry draws an alarming picture of the head of the family sinking to decay because his affectionate spouse plies him with dainties he can not digest—the egg whipped up with sherry, the insidious calves' foot jelly, the inopportune cup of cocoa. She urges him to try patent foods which are so "nutritious" that his stomach can not stand them, and she imagines that even his drinks must have nutriment, forgetting that the primary object of drink is to satisfy thirst, and that to take milk, for example, with meat is one of the greatest dietic blunders that can be perpetrated. Even the dentist shares in his condemnation. He gives the patient a set of masticators as efficacious as the originals, but he does not warn the patient that the body needs less food than in the heyday of life. Though not a vegetarian, Sir Henry maintains that three-fourths of our food should be vegetable. This ensures a lighter and more active brain. The light feeder, after his meal, has fresher wit and more cheerful temper. He does not snore in the armchair. Dyspepsia is unknown to him.

Nitric Acid in Noma.—During a severe epidemic of noma following measles G. Cavazzani cured 39 out of 60 cases, by cauterizing the necrosed tissues with nitric acid on a pad of cotton. This proportion of 65 per cent. of recoveries compares favorable with the 27 per cent. recoveries obtained by other methods of treatment during an epidemic in the preceding year. —*Gazzetta degli Ospedali*, October 13.

Correspondence.

"Sanitary Sleeping-car Accommodations."

BURLINGTON, Iowa, Nov. 14, 1901.

To the Editor:—The abuse of the sleeping-car toilet room as complained of by your correspondent and made the subject of editorial comment in THE JOURNAL of November 9, should be a topic of interest to every one who has the health of the traveling public really at heart.

I rode in a sleeping car once, and while I was much more comfortable than some folks might think possible, I still feel that I might have had more for my money. Two dollars a night for a double berth three-quarters wide is enough. But when one has also to contribute an additional 25 cents towards the porter's salary, get an indifferent brush and shine, and see the wash basins used as described, there is room for one to feel that he has been "buncoed."

For that extra quarter one has a right to imagine that the porter should either furnish a special wash basin for each passenger, put the small supply usually on hand through a steam sterilizer, or make an inspection of the passengers individually, to the end that the passengers having lunch-counter remains in their mouths, sooty noses, hands begrimed with infectious dirt, and un-Chesterfieldian manners generally, may be debarred from the use of the basins altogether. Or it might answer the purpose if the basins were numbered and labeled thus: No. 1, wash hands only; No. 2, for faces only; No. 3, for mouths and noses, etc.

I am told that in England they manage these things better. There, every one is expected to bring his tub with him. Years ago I heard an old lady say to her son, who was starting out on his first long journey: "My boy you should be content when you get a clean bite, a clean bed, plenty of good water, soap and towels. People who have these things away from home and complain, may be set down as not having many comforts at home." But I think the old lady had never traveled in a sleeping car.

In conclusion I want to advise every one to do as I did that time I was in the sleeping car. Before using the basin I washed it out carefully and dried it with a clean towel (as I always do when I have strange basins, and frequently those at home). Then I proceeded to forget every unpleasant thing I had seen, and when I got home I found that I had not caught anything. Truly yours, H. B. YOUNG, M.D.

Miscellany.

A new x-ray effect has been developed in the laboratory of the Bellevue Hospital Medical College, New York, which, as described in the current *Electrical Review*, displaces the silhouette with the stereopticon. By using two sources of *x*-rays in the same tube of the apparatus designed for the purpose, the picture stands out distinctly with the intervening spaces of the objects viewed. The relations of the broken bones, etc., to their surroundings as thus indicated to the eye, it is expected, will be of great value as surgical and pathological guides to diagnosis.

Trailing Dresses at Health Resorts.—The authorities at Ems placarded the walls at the beginning of the season with an appeal: "In the interests of the public seeking health at this resort, every effort is made to prevent dust and to prevent its diffusion in the air during the dry and hot season, as is urgently required by consideration for affections of the respiratory organs. The streets and grounds are kept sprinkled to keep down the dust as much as possible, and the feminine portion of the public would essentially contribute to this end if they would refrain from trailing their skirts at this health resort. This is especially desirable during the morning promenade to and from the springs." The *Deutsche Med. Wochenschrift* states that the appeal has had no effect, as "might have been anticipated from the character of the sex which is certainly the weaker sex as far, at least, as the mandates of fashion are concerned." It adds that as the matter is one that affects the general public health, the central health authorities for the empire should take steps to regulate it.

The International Sanitary Congress.—At the recent Pan-American Medical Congress at Havana, the organization of an international sanitary congress was recognized as a necessity. It has now been completely organized and will meet at Havana, Feb. 15, 1902. It is for the purpose of conferring on sanitary matters affecting the various Pan-American countries collectively and individually. Each country is entitled to three delegates, a physician, an engineer and a merchant. The duties, rights and penalties of each country in respect to sanitary matters will be discussed, and the means to aid those nations without resources for such measures for the public health. The Congress will also discuss prophylactic measures in general, and as applied to each particular port. The greatest publicity is desired and membership is open to all men of science, manufacturers and merchants who apply to the committee of organization. Dr. Thomas V. Coronado, of Havana, is secretary, and Dr. Juan Santos Fernandez is president. English, Spanish, Portuguese and French are to be the official languages of the Congress. Further particulars will be furnished on application to the secretary.

Loeffler's Suggestion of the Treatment of Carcinoma by Induced Malaria.—It is an old-established fact that malaria has a favorable influence on the course of certain pre-existing diseases. Hippocrates asserted that persons affected with quartan fever did not become epileptic, and that quartan fever occurring in an epileptic cured his epilepsy. A Hungarian professor of anatomy published in 1775 the history of a case of mammary cancer cured in the course of a few weeks by an intercurrent double tertian fever. Loeffler thinks that these and similar facts justify the attempt to cure carcinoma by artificially inducing malaria, which is a disease over which we have effective control. He suggests that possibly the increase in cancer in temperate countries may be due to the extinction of malaria, and calls attention to the extreme rarity of cancer in the tropical, that is, the malarial-infested countries. He urges physicians in the tropics to collect data in this line, and cites Pagel, who states that he can not remember a single case of cancer in ten years of practice in northern Borneo. Loeffler concludes his communication to the *Deutsche Med. Wochenschrift*, just received, with the assertion that physicians would be justified in experimenting on an extensive scale to cure carcinoma by the inoculation of malaria.

Women in Medicine.—Two important historical works have recently been published in Paris on this subject, one by Melanie Lipinska, and the other by Marcel Baudouin. The latter was undertaken in honor of the semi-centennial of the admission of Elizabeth Blackwell to the medical profession, Jan. 23, 1849. Woman's progress during the last decade has been remarkable. In Russia there has long been complete equality between men and women physicians, and women have recently won their cause in Hungary, Austria and Germany, and the prejudices against the admission of women to the medical profession are rapidly subsiding even in France. Spain still refuses to recognize medical women, although two and three centuries ago several Spanish women acquired some fame by their practice of medicine. Women physicians are now recognized in Belgium since 1890, in Italy since 1878, in Portugal since 1886, in Mexico since 1887, in Sweden since 1870, in Switzerland, Roumania, Bulgaria, in this country and Australia. Baudouin relates the history of Henrietta Faber, who practiced medicine in Havana for years, disguised as a man. She married in 1820 and was at once prosecuted and condemned to ten years of imprisonment. Medical women were numerous in ancient Greece and Rome, and in Italy during the Middle Ages.

The Scientific Investigation of Consumption Cures.—There is a general feeling among the public that methods of treatment of consumption which are not brought forward

through the orthodox channels are systematically boycotted by the medical profession. The argument is one, moreover, which is put forward by irregular practitioners who lay claim to having discovered a "cure" for this too prevalent disease. It will be news to many of our readers that provision at the Brompton Hospital for Consumption for the investigation of remedies for consumption was made nearly half a century ago, and is still available. According to a letter from Dr. J. E. Pollock, which was published in a recent number of *The Times*, the medical officers of that institution are authorized by the committee to avail themselves of any novel method of treatment which offers a reasonable prospect of usefulness. The only condition is that the nature and preparation of the proposed remedy shall be made known to them in writing. The authorities even go the length of admitting the person proposing such remedy to the hospital to observe its effects. A very large number of remedies and methods of treatment have been tested —and found wanting—in virtue of this permission; but it is a significant fact that no secret or other remedy has ever been submitted by outsiders on these conditions, not even the at present notorious Lachnanthes. Of course everything would turn upon what the medical officers considered "a reasonable prospect," and this, it would seem, has not been put to the test for the simple reason that quacks and men of the Alabone type prefer to compile their own statistics, and carefully steer clear of any scientific control.—*Medical Press and Circular.*

Old-Fashioned Fees.—Dr. John Radcliffe (1650-1714), a Yorkshire man by birth who removed in 1684 from Oxford to London, has come down to the present generation with the credit of an exceptional recipient of large fees. He has been described as a brusque, witty, somewhat dictatorial physician who caught the fancy of royalty almost from the start. His strictures upon the feeble pharmacy of his competitors have been mentioned as contributing to his success as a treasurer of honorariums. For attendance on William III, during the first eleven years of his reign, he had on the average more than 600 guineas per annum and was once "ordered 500 guineas out of the privy purse for the cures of M. Bentinck and M. Zulestein." On another occasion, having been sent to Namur to cure Lord Albemarle, after a week's residence in the camp abroad, his majesty gave him a treasury order for £1200, and the patient with a rare gratefulness presented him with 400 guineas and a diamond ring of "envious glitter." Dr. Gibbons, Radcliffe's neighbor, profited by his overflow to the extent of more than £1,000 per annum and a certain apothecary by recommended patronage died worth £50,000. Allowance, however, must be made for high expenses and the depreciation of money values since Dr. Thomas Young (1773-1829) was wont to say that no one should attempt to establish in London who had not a private fortune of £500 or £600 a year. As a whole, the present is a practical age abounding in competitors on the one hand and capricious patients on the other. In this fair land there are many rumors of fortunes made during the hours of sleep, but somehow the statistics are not all on hand, or else popular faith may be awry. At all events, many like John Hunter have been peevish over a guinea when won at the expense of an interrupted investigation, and let it be remembered that physicians are spasmodic accountants.

Annual Convention of the Nation's Doctors.—One of the most important conventions to be held in Saratoga in 1902 is that of the American Medical Association, which is dated for June 10 to 14, inclusive. Last week Dr. John A. Wyeth, of New York, president of the American and State Medical associations, and the secretary of the American Medical Association, were in Saratoga to meet the local physicians and discuss plans for the convention. The officers came up from New York, and were accompanied by Dr. George F. Comstock, of Saratoga, chairman of the hotel committee of arrangements, who had been in New York in attendance upon the meeting of the State Medical Association. The meeting of the Saratoga physicians was held in the parlors of the Worden hotel, those present being Drs. Comstock, Hewitt, Church, Resseguie, Humphrey, Fish, Van Arnam, Varney, Moriarta, Ledlie, Downs, Thompson, Deuell, and J. R. Swanick. President Wyeth addressed the meeting and told the plans the State and American associations had for making the convention a success, and said that it would be his aim to make the meeting, scientifically, the most important of any ever held. The secretary followed and spoke enthusiastically of Saratoga as a convention center. He then outlined some of the work necessary for the local committee to do during the ensuing months in preparation for the convention. Following the meeting, those present were entertained at dinner at the Worden by Dr. Comstock. The American Medical Association will bring together about 5000 delegates, together with their wives and other members of their families. The general meeting will be held in convention hall, while at the same time there will be sessions of specialists in the smaller halls. A feature of the convention, and one from which no little revenue is derived, is the exhibit of the supply men. The exhibit will be in the bottling room of the Hathorn spring, which even at this early date has been secured for that purpose.—Glens Falls (N. Y.) *Times*, Oct. 30.

Married.

EUGENE J. GAY, M.D., to Miss Blanche M. Slade, both of Algona, Iowa, October 30.

CHARLES M. FREEMAN, M.D., to Miss Mary E. Wilkins, at Metucken, N. J., November 15.

ARNOLD B. MCCARTY, M.D., to Miss Lillie Bell Miller, both of Owensboro, Ky., November 6.

ARTHUR GALLMAR, M.D., Baraboo, Wis., to Miss Blanche Guertin, St. Anne, Ill., November 9.

EDWARD DANA MITCHELL, M.D., to Miss Annie Bogardus Tracy, both of Memphis, Tenn., November 6.

HENRY F. AIRTH, M.D., to Miss Bessie Porter, both of Live Oak, Fla., at Jacksonville, Fla., November 7.

HUBERT ASHBY ROYSTER, M.D., Raleigh, N. C., to Miss Louisa Page, at Princess Anne, Md., November 6.

JAMES CARPENTER COBEY, M.D., Frostburg, Md., to Miss Elizabeth Kownsler Earle, Milldale, Va., November 14.

JAMES WALTER RENDLEMAN, M.D., East St. Louis, Ill., to Miss Marie Elizabeth Park, St. Louis, Mo., November 5.

HAMLINE NICKLESON DEEM, M.D., Tyner, W. Va., to Miss Edna Ellen Ramsey, Blennerhassett Island, W. Va., at Marietta, Ohio, November 9.

Deaths and Obituaries.

Albert Leary Gihon, M.D., Philadelphia College of Medicine and Surgery, 1853, Commodore U. S. Navy (retired), died November 17, at Roosevelt Hospital, New York City, after an illness of three days, from apoplexy, aged 68. Dr. Gihon was a native of Philadelphia, and there received his education. The year after his graduation he was appointed professor of chemistry and toxicology in the Philadelphia College of Medicine and Surgery. On May 1, 1855, he entered the Navy as assistant surgeon. His first foreign service was on the sloop of war *Levant*, on the East India station. He participated in the engagements which resulted in the capture of the Barrier Forts on Pearl River, near Canton, China. He also served on the *Dolphin* during the Paraguay expedition in 1858 and 1859, and on the *Preble* on the Coast of Central America and Panama. He received his grade as passed assistant surgeon May 1, 1860, and was on duty at the U. S. Naval Hospital, Brooklyn, in 1861. He was promoted to surgeon on August 1, 1861, and from 1862 to 1865 was on special duty on the *St. Louis* on the European Station, and cruising along the Atlantic Islands after Confederate privateers. In 1864 he participated in the blockade of the coast of South Carolina and from 1865 to 1868 was senior medical officer at Portsmouth, N. H., Navy Yard; from 1868 to 1870 he was attached to the store-ship *Idaho*, which was stationed at Nagasaki as hospital ship of the Asiatic squadron,

and was wrecked during the memorable typhoon of Sept. 21, 1869. In 1870 he was on special duty at Brooklyn, N. Y., was then attached to the Marine Rendezvous, Philadelphia, and later was a member of the Naval Medical Board of Examiners. On Nov. 7, 1874, he was promoted to medical inspector and was on duty at the Bureau of Medicine and Surgery of the Medical Department, and later was ordered as surgeon of the fleet to the flagship *Wabash*, on the European station. He served in the expedition of 1874 at Key West, Fla., returned to the European station as surgeon of the fleet on the flagship *Franklin* in 1874-1875. From 1875 to 1880 he was head of the medical department at the U. S. Naval Academy, Annapolis, and during this tour of duty designed and superintended the construction of the medical hospital ship for the Centennial Exposition at Philadelphia in 1876, where he also exhibited his "ambulance cot," which was approved and adopted for the use of the Navy the next year. He was appointed inspector of recruits and recruiting stations in 1878, was commissioned medical director Aug. 27, 1879, and placed in charge of the Naval Hospital at Norfolk, Va., the ensuing year. From 1880 to 1883 he was a member of the Board of Inspection of the Navy; in charge of the Naval Hospital of Washington, D. C., from 1883 to 1886; at the Hospital at Mare Island, Cal., from 1886 to 1888; of the Naval Hospital, Brooklyn, N. Y., from 1888 to 1892; on special duty from November, 1892, to 1893, and was again placed in charge of the Naval Hospital in Washington from 1893 to 1895. On May 1, 1895, he attained the rank of Commodore, having then been forty years in the naval service. He was retired from active service on Sept. 28, 1895, by the constitutional limitation of age. Since 1876 Dr. Gihon has represented the medical department of the Navy in prominent medical, sanitary and climatological associations and international medical congresses, and has been honored by election to high offices. He was a member of the American Medical Association; fellow and ex-president of the American Academy of Medicine; president of the American Health Association, 1883; vice-president of the Association of Military Surgeons of the United States in 1895, and a member of numerous American and foreign medical, historical and scientific societies. His special work was naval hygiene, and in 1871 he published a work entitled "Practical Suggestions in Naval Hygiene," which was a pioneer in that department of science. He contributed numerous articles to the literature on naval hygiene, public health, sanitary reform, state medicine, higher medical education, vital statistics, medical demography and climatology, and was for six years one of the editors of the Annual of the Universal Medical Sciences. He was the originator, and for several years one of the most active promoters of the project to erect a monument in Washington to Dr. Benjamin Rush. Dr. Gihon was married in April, 1860, to Miss Clara Montfort Campfield, Savannah, Ga., who survives him. His two sons have attained high rank among the younger American artists in Paris. He was made a Knight of the Military Order of Christ by the King of Portugal, and also received the thanks of the British and French governments for distinguished service rendered.



DR. ALBERT L. GIHON.

William Fisher Norris, M.D., University of Pennsylvania, 1861, died at his home in Philadelphia, November 18, from pneumonia, aged 63. Dr. Norris was a native of Philadelphia, was educated at the University of Pennsylvania and took his medical degree at that institution; immediately upon graduation he was appointed resident physician in the Pennsylvania Hospital. In 1863 he entered the army as assistant surgeon, served for one year, and in 1864 was placed in charge of the Douglass Hospital, Washington. At the close of the war he resigned his commission and established himself in practice in Philadelphia, making a specialty of diseases of the eye. In 1876 he was appointed Professor of Ophthalmology in the University of Pennsylvania. He was on the surgical staff of the Wills' Eye Hospital, Vice-president of the Philadelphia Pathological Society, Fellow of the Philadelphia College of Physicians, member of the American Medical Association and of the American Ophthalmologic Society and Fellow of the Pennsylvania Academy of the Natural Sciences. His contributions to ophthalmological literature have been frequent and important. His best known work was done as editor of the "System of the Diseases of the Eye," in which he was assisted by Dr. Charles A. Oliver. This is a collection of monographs by the most distinguished ophthalmologists in this country and abroad. It is comprised in four large quarto volumes constituting the most complete study in the English language of ophthalmology in all its branches and relations. Dr. Norris wrote for this text-book the article on "Cataract and Other Diseases of the Lens."

Barton W. Stone, M.D., died in Louisville, November 13, from pneumonia complicating rheumatism after a short illness. Dr. Stone was born in Fulton, Mo., in 1844. He was graduated at Westminster College, Fulton, and shortly afterward came to Louisville and studied medicine under Dr. J. M. Holloway, graduating at the Kentucky School of Medicine in 1867. He began practice in Louisville. He was appointed assistant physician at the Western Kentucky Asylum, Hopkinsville, in 1869, under Dr. James Rodman and remained in that position until 1889, when he was appointed superintendent by Gov. S. Buckner, and was re-appointed by Gov. John Young Brown. He resigned Jan. 31, 1896, and went abroad to study asylum methods in Europe with a view of opening a private institution for the treatment of nervous diseases. In 1896 he associated himself with Dr. S. S. Crockett in the Morningside Sanitarium near Nashville, Tenn. He afterward became the proprietor, but moved to Louisville, in June, 1899, when he opened the Beechhurst Sanitarium.

J. Marcus Rice, M.D., Castleton (Vt.) Medical College, 1853, surgeon of the Twenty-fifty Massachusetts and later medical director of the Eighteenth Army Corps, in the Civil war, for 47 years a practitioner in Worcester, a member of the Massachusetts Medical Society and at one time president of the Worcester District Medical Society, died at his home in Worcester, November 11, from valvular heart disease, aged 74.

Jarvis S. Wight, M.D., Long Island College Hospital, N. Y., 1864, aged 66 years, died at his home in Brooklyn, N. Y., November 16. During the latter part of the Civil war he was in

the medical service and all through his professional life he maintained close relations with the college named. He was a member of the leading medical societies, an author, and an inventor of certain surgical devices.

Hervey McDowell, M.D., Missouri Medical College, St. Louis, 1858, prominent as a practitioner in Harrison County, Ky., lieutenant-colonel of the Second Kentucky (Confederate) Infantry in the Civil war, a member of the American Medical Association, and president of the Board of Education of Cynthiana, died at his home in that place, November 6, aged 65.

Charles Magill Smith, M.D., University of Pennsylvania, Philadelphia, 1847, a resident of Franklin, La., for more than fifty years, surgeon in the Confederate service during the Civil war, since 1879, president of St. Mary's Parish Board of Health and Coroner, died at his home in Franklin, November 7, after a short illness, aged 75.

William Seward Millener, M.D., Queen's College, Kingston, Ont., 1864, then an assistant surgeon U. S. Army, later a practitioner in Adam's Basin and the West, and a resident of Spencerport, N. Y., for more than thirty years, died at his home in that place, aged 58.

Thomas Flavin, M.D., University of Texas, Galveston, 1892, a member of the first class graduated from that college, and then demonstrator of anatomy, recently practicing at Galveston, died at Houston, after a long illness, November 5, aged about 50.

Robert S. Hamilton, M.D., Jefferson Medical College, Philadelphia, 1857, one of the oldest physicians in Augusta County, Va., and at one time superintendent of the Western State Hospital, Staunton, died at his home in Lone Fountain, November 9.

Horace P. Woodward, M.D., University of Michigan, Ann Arbor, 1854, for many years a practicing physician of Westmoreland, Kan., and later a resident of Escondido, Cal., died at his residence in that place, October 28, aged 77.

Harvey Putnam Tolman, M.D., College of Physicians and Surgeons, N. Y., 1848, of East Onondaga, N. Y., died there, aged 78 years. He was much interested in public affairs, and in 1865 was a member of the assembly.

Helen Upjohn Kirkland, M.D., University of Michigan, Ann Arbor, 1872, who practiced medicine in Kalamazoo until 1889, died at her home in that city from Bright's disease after a long illness, November 5, aged 63.

John P. Bishop, M.D., College of Physicians and Surgeons, Baltimore, 1886, a prominent physican of Charlestown, W. Va., and a member of the American Medical Association, died at his home, November 5, aged 42.

Gustavus F. Sargent, M.D., Medical School of Maine, Brunswick, for several years a practitioner of Bangor, Maine, and Cambridge, Mass., died at his home in Dorchester, Mass., November 2, aged 79.

David A. Gibbs, M.D., New York University, 1847, who had practiced in Social Circle, Ga., for more than half a century, died at his home in that place from paralysis, November 8, aged 76.

H. Robertson Bohn, M.D., Tulane University, New Orleans, 1893, one of the leading physicians of Biloxi, Miss., died at his home in that place, November 8, after a long and painful illness, aged 31.

Howard W. Shaffer, M.D., Kentucky School of Medicine, Louisville, 1891, a practitioner of Ponca, Okla., died at his home in that place from an overdose of chloroform, November 14.

David J. Mallery, M.D., Geneva (N. Y.) Medical College, 1847, died at his home in Bristol Center, N. Y., where he had practiced medicine for 42 years, November 7, aged 78.

Arthur H. Blair, M.D., University of Nashville, Tenn., 1894, a practitioner of Dresden, Texas, died at San Antonio, November 6.

Fred J. Oelschlaegel, M.D., University of Cincinnati, 1880, died suddenly at his home in Cincinnati, November 11, aged 46.

Book Notices.

PRACTICAL SURGERY: A Work for the General Practitioner. By Nicholas Senn, M.D., Ph.D., LL.D., Professor of Surgery, Rush Medical College, Chicago. Handsome Octavo Volume of 1133 Pages, with 650 Illustrations, Many in Colors. Cloth, $6.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

This, the latest production from this well-known author's prolific pen, does not pretend to cover the whole field of surgery, but deals particularly with emergency and intestinal surgery. Much of the work has already appeared in the shape of monographs by the author during the past fifteen years. The early chapters are devoted to anesthetics, hemorrhage and wounds in general, especial attention being given to the author's experience during the late Spanish-American war. Considerable space is devoted to fractures, and the chapter on fractures of the upper end of the femur deserves particular mention as one of the best in the book. Under dislocations only those of the hip, shoulder and elbow are briefly considered. The author's elaborate "multiple" classification of peritonitis is too circumstantial, and tends to confusion. Under intestinal surgery considerable repetition is found, and much space occupied in detailing early experiments with bone-plates, rubber rings, etc., methods now of practically historical interest, concerning which the author himself says: "A more extensive experience with needle and thread has greatly modified my views." The various forms of intestinal obstruction are well described, and the chapter on Tuberculosis of the Intestine is particularly full of interesting facts. The work closes with a chapter on resection and the standard amputations. The author's well-known vigorous and impressive style is still further emphasized by the frequent use of italics. Many of the illustrations are new and original, and well selected to aid the text.

DISEASES OF THE STOMACH AND THEIR SURGICAL TREATMENT By A. W. Mayo Robson, F.R.C.S., Member of Council and Hunterian Professor Royal College of Surgeons of England, and B. G. A. Moynihan, M.S. Lond., F.R.C.S., Assistant Surgeon Leeds General Infirmary. Cloth. Pp. 308. Price, $3.50. New York: William Wood & Co. 1901.

This work is an outgrowth of the Hunterian lectures by Mayo, at the Royal College of Surgeons in England, in 1900, and he has called in to his aid Dr. Moynihan, his associate in hospital work for many years. The book in its way fills a place in our literature that while not vacant, nevertheless has not had so many systematic monographic works upon it as some of the other subjects of regional surgery. The subject of stomach and gastric surgery has added interest to us at the present time on account of the recent discussion of the subject in President McKinley's case, and it is interesting to know that an immediate operation in such cases as that of our late President is entirely in accordance with the recommendations and teachings of the authors. While the small caliber bullets aimed at high velocity pass through the stomach and recovery is possible without operative interference, as has been shown in the recent South African experience, gunshot wounds of the abdomen we meet with in civil practice are inflicted generally by a rougher class of weapons, are more ragged and contused and do not heal spontaneously. The work is elegantly printed and illustrated, and will prove a valuable addition to the literature.

ON THE OPERATIVE SURGERY OF MALIGNANT DISEASE. By Henry T. Butlin, F.R.C.S., D.C.L., Surgeon to St. Bartholomew's Hospital With the Co-operation of James Berry (on the thyroid), W. Bruce Clarke (on the kidney), Alban Doran (on the ovary and uterus), Percy Furnivall (on the stomach, intestine and rectum), Walter Jessop (on the eye), and H. J. Waring (on the liver and gall bladder). Second Edition. Cloth. Pp. 426. Price, $4.50. Philadelphia: P. Blakiston's Son & Co. 1900.

Notwithstanding its merits, this work has waited twelve years for its second edition, which suggests a hitherto limited reading, though one would think that there would be surgeons enough that would find it a convenient and valuable addition to their library shelves. It is a composite work, fully one-half being by the co-operation of the above-mentioned authorities, whose names are familiar to readers of the subjects of which they treat. The work is thoroughly up to the present state of our knowledge on its subject, though there are some points, such for instance as appertain to the proctologic specialty as

developed in this country, that are not fully noticed. The authors seem to have given considerable attention to the American literature of the subject, still there are many hiatuses, which is not to be wondered at considering the great number of journals in which the surgical literature of this country is published. The book will be a serviceable one to every surgeon. What it has to say is to a large extent authoritative, the authors being recognized leaders in this line of practice.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners, with 275 Original Illustrations, Including 36 Colored Figures. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, Eye Department, College of Physicians and Surgeons, Medical Department, Columbia University, New York. Second Edition, Revised. Price, $2.00. New York: William Wood & Co. 1901.

Dr. May's book, as he says in the first word of the title page, is a manual for students and general practitioners. The fact that a second edition of this work is demanded within eight months after its first appearance is presumptive evidence that it is meeting with approval. The entire field of diseases of the eye is covered, and the subjects are well subdivided. The author gives under each division a description of the anatomy of the parts; this is a most valuable addition and reminds one of the descriptions of the anatomy which Fuchs' work contains. Indeed, Dr. May's book shows many indications of influence from Fuchs' book. This is not criticism; it is praise. In this connection, the reviewer is reminded of a letter that he once saw written to a young medical student by his preceptor. The student had written to his preceptor that he was dissatisfied with his instructor in anatomy, and said that the instructor only gave what was contained in Gray. To which the doctor answered: "If your instructor gives what is in Gray, stick to him; he is all right."

SELECT METHODS IN FOOD ANALYSIS. By Henry Leffmann, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania, and William Beam, A.M., M.D., Formerly Chief Chemist Baltimore & Ohio Railroad. With 53 Illustrations in the Text, 4 Full-page Plates and Many Tables. Cloth. Pp. 383. Price, $2.50. Philadelphia: P. Blakiston's Son & Co. 1901.

This work is intended as a concise summary of analytic methods for the use of practical analysts and students, and contains a large amount of matter which will be valuable reading for any physician whether he is a chemist or not. The authors do not go into the effects of adulteration to any extent, but that is hardly necessary. That is more particularly, as they consider it, the physician's business than that of the analytic chemist. The special methods for detecting adulterants, preservatives and poisonous metals are particularly shown in the text and the work is one which should be in the hands of every sanitarian and health officer, and would not be amiss as an addition to the library of every general practitioner and all those who have not at once available recourse to laboratories, etc.

PATHOLOGICAL TECHNIQUE. A Practical Manual for Workers in Pathological Histology and Bacteriology, including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank Burr Mallory, A.M., M.D., Assistant Professor of Pathology, Harvard University Medical School; First Assistant Visiting Pathologist to the Boston City Hospital; Pathologist to the Children's Hospital and to the Carney Hospital; and James Homer Wright, A.M., M.D., Director of the Clinico-Pathological Laboratory of the Massachusetts General Hospital; Instructor in Pathology, Harvard University Medical School. Second Edition, Revised and Enlarged. With 137 Illustrations. Philadelphia and London: W. B. Saunders & Co. 1901.

The new edition of this valuable work keeps pace with the recent advances in pathological technique, and will continue as a most useful guide to the laboratory worker, whether student, practitioner or pathologist. As a practical manual of histologic and pathologic methods in the study of pathologic material, no matter whether from the clinic or from the post-mortem room, this book fills its place admirably. Many changes and additions have been made, and new methods and new illustrations introduced.

THE PRINCIPLES OF HYGIENE: A Practical Manual for Students, Physicians, and Health Officers. By D. H. Bergey, A.M., M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. Illustrated. Cloth. Pp. 495. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

The general principles of hygiene are brought together in this work in a convenient form for the medical student and physician and the author has carried his work more particularly to matters of school, military and naval hygiene than was perhaps formerly the custom in works of this kind. The treatment of the subjects is necessarily rather concise, but the facts are clearly stated. In a general way we can say that the work is one that possesses decided advantages for the American physican and student. He gives quite a full reproduction of the quarantine laws of the United States and also of Pennsylvania quarantine legislation. A brief and useful appendix giving a conversion of the different weights and measures into the metric system, and quite a full index, add to the value of the work.

MATTHEWS' PHYSICIANS' BLUE-BOOK. A Complete Medical and Surgical Register of the State of Missouri, containing Lists of Physicians and Surgeons, with School and Year of Graduation, and List of Specialists Classified Alphabetically by Towns, Showing Population. Also the Various Hospitals, Sanitariums, Colleges and Other Institutions, State Board of Health, Societies, Journals, etc., and the Late Medical and Pharmacy Laws, 1901-1902. Cloth. Pp. 175. Price, $2.00 net. St. Louis: Lewis S. Matthews & Co. 1901.

This directory contains a list of the physicians of Missouri, arranged alphabetically according to towns, those of St. Louis being grouped together at the end of the book. The name of the college and date of graduation is given, and occasionally other facts relative to the individual. The pages are marred by heavy, black-faced type, evidently to indicate those who have subscribed for the book. Besides other information, it contains the law regarding the practice of medicine in Missouri, and the revised pharmacy laws; the medical journals, medical colleges, hospitals, sanitariums, dispensaries, charitable institutions, and medical societies of Missouri are enumerated, together with a list of counties of the state.

L'EPILESSIA. Eziologia-Pathogenesi Cura. By Dottor Paola Pini. Cloth. Pp. 277. Milano: Ulrico Hoepli. 1902.

This little work has certain decided merits. Although a compilation it is rather unique in its plan, and can hardly be well compared with any other work of its scope and kind on the subject. It is not a monographic account of the disease, as its title might imply, but rather a critical scientific résumé of the various methods of treatment and the theories on which they are based. The specialist in nervous disorders, or any one with much practice among epileptics, will find the little volume a convenient résumé of facts, judiciously stated. Its up-to-date character may be estimated by the fact that the author reproduces in full as an appendix Ceni's article on blood toxicity and serum therapy in epilepsy, read before the Italian Congress di Frenatria in October, and which has just been awarded the Craig Colony prize.

A TEXT-BOOK OF EMBRYOLOGY. By John C. Heisler, M.D., Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. Second Edition, Thoroughly Revised. Illustrated. Cloth. Pp. 405. Price, $2.50. Philadelphia and London: W. B. Saunders & Co. 1901.

It is not very long since we noticed the first edition of this work and expressed our opinion in regard to it. The author has in the present edition attempted to make some additions and alterations as the progress of scientific embryology should demand and to correct so far as they exist whatever errors there might have been in the earlier edition. The most extensive changes are those in regard to the formation of the placenta as it is demonstrated by the recent works of Peters and Webster. This chapter, therefore, has been entirely rewritten. New illustrations have been added, and in other respects the book has been brought up to our present knowledge of its subject.

DISEASES OF THE INTESTINES. By Dr. I. Boas, Specialist for Gastro-Intestinal Diseases in Berlin. Authorized Translation from the First German Edition, with Special Additions by Seymour Basch, M.D., New York City. With 47 Illustrations. Cloth. Pp 562. Price, $5.00. New York: D. Appleton & Co. 1901.

This work, which has enjoyed a wide popularity in its own country and introduced to American readers in this translation by Basch, is intended as an aid to the general practitioner and surgeon. The translator has done a service to American readers by his notes, which are inserted in brackets throughout the text. In some particular parts, especially his statement of American ideas and references, is decidedly of service. It is probably impossible for a continental European writer to keep fully up to American work in this line, and, in most cases, the

American reader will have to supplement his work by the contributions of his own countrymen. In the present edition the translator has met this need to a considerable extent.

ELECTRICITY IN MEDICINE AND SURGERY. By William Harvey King, M.D., of New York. With a Section on Electro-Physiology by W. Y. Cowl, M.D., of Berlin, Germany, and a Section on the Bottini Operation by Alfred Freudenberg, M.D., of Berlin, Germany. Pp. 504. Illustrated. Price, $3.50 net.

This work is divided into Part I, having pages 1 to 250, and Part II, with pages 1 to 296, which method of paging appears awkward to the reader. A large amount of information is gathered together, but the negligent proofreading is "an eyesore." For instance there occur in Part I the following: Drganie, p. 15; portible battery, p. 59; seperate, p. 73; aeeumilator, p. 79; vaeuua, p. 97; ulner nerve, p. 127; in Part II, lemoderma (leneoderma?), p. 259, but lemorderma in the index; pruritis, p. 260; lumpus vulgaris, p. 263. It eontains a detailed aceount of the Bottini operation for prostatie hypertrophy.

DISEASES OF THE NOSE AND THROAT. By F. De Havilland Hall, M.D., F.R.C.P. Lond., President of the Laryngological Society of London, and Herbert Tilley, M.D., B.D. (Lond.), F.R.C.S. Eng., Surgeon to the Throat Hospital, Golden Square. Second Edition, with 2 Colored Plates and 80 Illustrations. Cloth. Pp. 605. Price, $2.75. London: H. K. Lewis. Philadelphia: P. Blakiston's Son & Co.

The seeond edition of this work eontains an inerease of about 50 pages over the first edition. The subjeet matter is of uniform exeellence. Treatment, both medicinal and surgical, is fully and thoroughly described. The various articles on diseases of the aeeessory sinuses have been revised, brought up to date, and gone into more in detail than in the first edition. The illustrations number 80, and two eolored plates. In appearanee the book is about the same as the first edition.

A MANUAL OF BACTERIOLOGY. By Herbert U. Williams, M.D., Professor of Pathology and Bacteriology in the Medical Department of the University of Buffalo. With 89 Illustrations. Cloth. Pp. 290. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This little work gives in the smallest possible spaee the leading facts in baeteriology that the physieian would need and a little more whieh he may learn if his needs and inelinations lead him to go further. It is a eondensed manual of medical bacteriology and as such will eontinue to prove useful to many aetive physicians who do not feel inclined to go more deeply into the matter and study larger and more exhaustive textbooks. The faet that it has passed through two editions within three years shows that it has met a want.

THE MEDICAL NEWS VISITING LIST. 1902. Thirty Patients per Week. Pp. 192. Seal Grain Leather. Prieo, $1.25. Thumb-letter Index, 25 cents Extra. Philadelphia and New York: Lea Brothers & Co. 1901.

This visiting list for 1902 just received is gotten up in the excellent manner that has charaeterized preeeding issues. The work includes the usual large amount of praetical information, tables, etc. It is printed on fine tough paper, durably and handsomely bound, with a ready-referenee thumb letter index.

PHYSICIAN'S POCKET ACCOUNT. By J. J. Taylor, M.D. Book and Leather Case. Pp. 208.

This convenient and complete aecount book eonsists of pages for index, balance due brought forward from former book, account of professional services rendered, record of births, vaccination, etc., eash account. Eaeh page has 31 to 36 lines. It is not limited to any partieular months or year, and can be begun or closed at any time.

Societies

COMING MEETINGS.

Indian Territory Medical Association, Muskogee, Dec. 3-4, 1901.
Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Cass County (Texas) Medical Association.—The physieians of Cass County met at Atlanta, November 9, and organized this Assoeiation with the following officers: Dr. O. M. Connerley, Atlanta, president, and Dr. R. L. McClung, Atlanta, seeretary.

Vermilion County (Ill.) Medical Society.—The annual meeting of this Society was held in Danville, November 8. Dr. J. Milton Guy, Danville, was eleeted president, Dr. Buford Taylor, Westville, vice-president, and Dr. Elbert E. Clark, Danville, seeretary-treasurer.

Henderson County (Ill.) Medical Association.—This Society met at Oquawka, November 5, revised the county fee-bill and eleeted Dr. Isaac F. Harter, Stronghurst, president; Dr. Coleman J. Eads, Oquawka, vice-president, and Dr. William D. Henderson, Biggsville, seeretary.

Hartford (Conn.) Medical Society.—At the meeting of this Society, November 4, resolutions were passed of appreciation of the character of the late Dr. William Hudson, of grief at his death and of eondolenees for his family. Dr. Nathan Mayer was elected vice-president to suceeed Dr. Hudson.

Mahaska County (Iowa) Medical Association.—The third effort of the physicians of this county to organize a medical society was made, November 6, at Oskaloosa, when Dr. Joseph F. Coveny was made temporary chairman, and Dr. Lewis A. Rodgers, temporary seeretary, both of Oskaloosa.

Students' Obstetrical Society of the Louisville Medical College.—This Society was organized, October 31, at the residence of Dr. Walter B. Gossett. The intention is to hold monthly meetings at each of which a paper will be read and diseussed. Dr. Walter B. Gossett was elected president; C. E. Ryan, vice-president; M. A. Gantt, secretary, and W. F. Burnett, treasurer.

East Los Angeles (Cal.) Physicians' Club.—At the reeent meeting of this Soeiety for organization, the following were stated as its objeet: Mutual improvement, the eneouragement of social intereourse and harmony among its members; the elevation of professional eharaeter and the adoption of a uniform fee-bill. Dr. Eber S. Carlisle was elected president and Dr. Robert C. Dundas, secretary and treasurer.

Bucks County (Pa.) Medical Association.—At the annual meeting of this Assoeiation, held at Doylestown, November 6, the following officers were elected: Dr. Howard A. Hellyer, Penn's Park, president; Drs. Henry Lovett, Langhorne, and Alfred E. Fretz, Sellersville, vice-presidents, and Dr. A. F. Myers, Blooming Glen, secretary and treasurer. The next meeting will be held in Newtown in February next.

Medical Society of the City Hospital Alumni, St. Louis.—This Soeiety held its deeennial eelebration November 4. More than one hundred sat down to a repast at Faust's. Besides the active loeal members of the Society, there were in attendanee, Dr. E. H. Gregory, one of the Nestors of the local profession, Dr. Julius Kohl, Belleville, Ill., the oldest member of the Society, and Dr. T. Holland, Hot Springs, Ark. Brief addresses were made by Drs. Gregory, Kohl, Tuholske, Grindon and Lewis.

Grundy County (Ill.) Medical Society.—The physieians of Grundy County met at Morris, November 1, and organized this Society as a branch of the State Medical Society with the following officers: Dr. Austin E. Palmer, Morris, president; Dr. John E. Broek, Coal City, vice-president; Dr. H. Milton Ferguson, Morris, seeretary, and Dr. W. E. Walsh, Morris, treasurer. Drs. John J. Brinckerhoff, Minooka, Frank A. Palmer, Gardner, and O. Prescott Bennett, Mazon, were selected as a board of eensors.

Franklin County (Pa.) Medical Society.—This Society, at a meeting held at Mereersburg, eleeted the following officers: Dr. P. Brough Montgomery, Chambersburg, president; Drs. Oliver P. Stoey, Roxbury, and J. W. Croft, Waynesboro, vice-presidents; Dr. John J. Coffman, Scotland, recording secretary; Dr. H. C. Devilbiss, Chambersburg, eorresponding secretary; Dr. David Maelay, Chambersburg, treasurer; and Dr. H. G. Chritzman, Welsh Run, eensor. After the business and seientific meeting a banquet was given at the Mansion House.

Medical and Surgical Faculty of Maryland.—The Seetion on Neurology and Psychology was inaugurated, November 8, with Dr. Henry M. Hurd as chairman, and Stewart L. Paton as secretary. Dr. Paton showed a case of dementia preeox, Dr. George J. Preston, one of combined selerosis of the eord, and Dr. Henry M. Thomas, one of lead paralysis with double wrist-drop. The Seetion on Clinical Medieine and Surgery was sueeessfully inaugurated, November 1, with Dr. Louis McL. Tiffany as chairman and Dr. John Ruhräh as secretary. Dr. William Osler exhibited a case of seurvy, and Dr. Ruhräh gave some lantern demonstrations of syringomyelia, etc.

Medical Graduates' Society of Bishop's University, Montreal.—At the meeting of this Society, held in Montreal, November 7, the following officers were elected: Dr. Francis W. Campbell, Montreal, honorary president; Dr. George Fisk, Montreal, president; Drs. F. J. Hackett, Montreal, and Dr. Grosvenor L. T. Hayes, Graniteville, Vt., vice-presidents; Dr. William Burnett, Montreal, secretary-treasurer; Drs. F. R. England, Rollo Campbell, J. J. Benny, George Hall, J. M Jaek and F. O. Anderson, resident council, and Drs. Charles D. Ball, Santa Ana, Cal., Albert F. Longeway, Great Falls, Mont., Robert A. Walker, Menominee, Mich., Dr. E. E. Bronstorph, Jamaica, W. I., Dr. Rollin C. Blackmer, St. Louis, Mo., and Dr. Casey Wood, Chicago.

Lenawee County (Mich.) Medical Society.—The first scientific meeting of this Society was held November 5 at Adrian, at which papers were read by Dr. N. D. Yale, Deerfield, on "Progressive Pernicious Anemia," and Dr. C. Kirkpatrick, Adrian, on "Pneumonia." Permanent officers were elected as follows: President, Dr. Daniel Todd, Adrian; vice-president, Dr. George Howell, Tecumseh; secretary and treasurer, Dr. David L. Treat, Adrian. Lenawee County has a population of 50,000, with nearly 75 physicians, and yet this is the first medical society ever organized in the country. It is the result of the effective work of the president of the State Society, Dr. Leartus Connor, and the secretary, Dr. A. P. Biddle, through the local aid of Dr. David L. Treat.

Ohio Society for the Prevention of Tuberculosis.—Under the auspices of the State Board of Health, Dr. C. O. Probst, its secretary, being the prime mover, this society was formed at Columbus, November 15, by 150 physicians and laymen. This Society is formed to fight in every known and feasible way the disease that kills 6000 people in Ohio yearly. An early move is the establishment of a State Hospital for Consumptives. This will be used for all cases in which there is a possible chance for cure. An isolation hospital for incurables is to be built in every county. A subordinate society is to be formed in every county. Free lectures are to be given in colleges, schools, and to the public generally on the danger of contagion from consumptive patients and on the care of consumptive patients. Consumptives are to be separated from other inmates in public institutions. Efforts will be made to establish an anti-spitting crusade. Dr. Byron Stanton, Cincinnati, presided at the first meeting. Dr. C. O. Probst read a paper on the aims of the society, after which it was organized by the election of the following officers: President, Ex-Congressman Joseph H. Outhwaite, Columbus; vice-president, S. S. Knabenshue, Toledo; treasurer, R. M. Rownd, Columbus; secretary, Dr. A. Timberman, Columbus; financial secretary, Dr. B. F. Lyle, Cincinnati; board of directors for three years, Dr. Byron Stanton, Cincinnati; Dr. C. O. Probst, Columbus; Dr. N. C. Tobey, Toledo; for two years, Dr. G. A. Doren, Columbus; Judge Gilbert H. Stewart, Columbus; Dr. A. H. Freiberg, Cincinnati; for one year, Dr. P. M. Foshay, Cleveland; Dr. W. J. Conklin, Dayton; Prof. Cady Staley, Cleveland. The annual meetings of the Society will be held in June.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, Held in Richmond, Va., Nov. 12, 13, 14, 1901.

President Dr. Manning Simons, Charleston, S. C., in the Chair.

First Day—Morning Session.

Laceration of the Cervix and Its Consequences.

Dr. E. S. Lewis, New Orleans, said that lacerations of the cervix were productive of more functional and organic disturbances than had heretofore been supposed. The fascination of abdominal surgery and brilliant results achieved and the increasing scope of this work had, in a measure, diverted attention from these minor injuries which, when neglected, proved most serious, and had an important bearing upon the health, happiness and life of women. The author's intention was simply to awaken attention to the importance of the topic which had, in a measure, been lost sight of, and to emphasize what had been so emphatically and graphically described by Emmet. There was no question as to the course to be pursued by the accoucheur in lacerations of the perineum, although of less significance than tears of the cervix as to final results. In moderately recent cases the classical Emmet operation could not be improved upon; yet in certain long-standing cases, where the cervix had become thickened enormously from hyperplasia the Emmet operation would fail to afford relief. In such cases he had used the Schroeder operation or a modification of it with gratifying results.

Vaginal Puncture or Incisions for Puriform Disease or Exploratory Purposes Are Unsurgical Procedures.

Dr. Joseph Price, Philadelphia, read a paper with this title. He had been asked frequently during the past year to see and reoperate on patients upon whom vaginal incisions or puncture methods had been practiced. In three very recent operations for the removal of pelvic contents puncture and vaginal incisions complicated the sections that would have been otherwise comparatively easy. The vaginal fixation, closure of the openings, refilling of puriform or serous sacs, were only local complications; the general condition of the patient became rapidly unfavorable for favorable abdominal work. He was satisfied that the ancient methods of evacuating puriform accumulations, that of cautery or caustics, was much more scientific than the present methods of vaginal incision. Operators, who practiced vaginal incisions, never know the precise pathological conditions; they puncture or incise a puriform accumulation and guess at a name, ovarian abscess, pus tube, or pelvic abscess; if the fluid evacuated was serous in nature, they called it encysted serous effusion. The probabilities were that it was a dropsy of the tube or hydrosalpinx. Puriform tubes as large and tortuous as one's flexed thumb should never be overlooked or punctured. The error of puncturing an ovarian abscess, or small dermoid, two conditions very commonly found, and both easily enucleated, should never be made. He had never known a patient cured by the methods referred to. The general condition of patients, the rapid restoration to health following clean extirpations from either above or below were striking when compared with the patients traveling around, seeking relief and health, after the timid, incomplete procedures under discussion.

Dr. George H. Noble, Atlanta, stated, as a contrast to the experience of the essayist, that he had treated six cases by vaginal incision and drainage, with very good results, but favored operating through the abdomen and of doing more complete operations where the conditions of the patients permitted.

Dr. Rufus B. Hall, Cincinnati, Ohio, said he had practiced vaginal puncture and drainage in cases in which it was not prudent to do more radical operations on account of the desperate condition of the patients. He had always emphasized the fact to the patient and friends that this operation was not done for curative purposes; that it was a makeshift, and that a more radical operation by the abdomen would have to be done later to afford permanent relief. It was his experience that a large majority of such women returned for radical operations, sooner or later.

Dr. W. D. Haggard, Jr., Nashville, said there were patients who completely recovered from vaginal incision and drainage, and cited an interesting case in point. He fully expected to do an abdominal section in this case to remove a diseased tube and ovary, but apparently the disease had expended its course.

Dr. Lewis S. McMurtry, Louisville, spoke of the great change that professional opinion had undergone of late years in regard to the operative treatment of pus in the pelves of women. He referred to the early history of the vaginal operation and its great popularity for years; but now French and German operators were resorting to the suprapubic route in dealing with puriform collections in the pelvis. These operators were compelled to adopt this route as their patients only partially recovered from vaginal incision and drainage.

Dr. Edwin Ricketts, Cincinnati, did vaginal puncture in a case in 1886. After her first delivery the woman had a severe pelvic inflammation with pus, and her condition was such as to contraindicate an abdominal operation. She recovered and subsequently bore four children. When patients did not get well from vaginal puncture and drainage, the abdomen should be opened and the diseased appendages removed.

DR. GEORGE S. BROWN, Birmingham, held that vaginal puncture and drainage in some cases should be practiced as a life-saving measure. He mentioned six cases that he had in the last four or five years in young or recently married women of gonorrheal infection of the tubes. In these he resorted to vaginal puncture; most of the patients were treated as emergency cases, and so far as he knew, only two or three of them had been reoperated.

FIRST DAY—AFTERNOON SESSION.

Treatment of Pelvic and Abdominal Tumors Complicating Pregnancy, with Report of Cases.

DR. RUFUS B. HALL, Cincinnati, read a paper with this title, The conclusions arrived at from the four cases narrated may be summarized briefly, as follows: In the very small percentage of cases in which malignant tumors are the cause of the obstruction, they should be dealt with according to the well-established principles of modern surgery. The operation should be made at once without any reference to the child, if by so doing there is any additional chance of saving the life of the mother. If the ovarian tumor is thin-walled, of large size and rapid growth, and the patient is not near her full term of gestation, an operation should be advised, even if the uterus is below the tumor. If the tumor is thick-walled and of slow growth, is not causing much, if any, inconvenience, and rides above the enlarged uterus, an operation is not urgently demanded. If the tumor is small in size, is situated below the uterus, and is fixed either by adhesions or impaction an immediate operation is demanded. Tapping the tumor for temporary relief should not be done. In fibroid tumors of the uterus associated with pregnancy, where there are but one or two large nodules, and they are located in the upper half of the uterus, an operation should be advised only in rare instances. These patients can be delivered safely and be operated later, if necessary. If the tumor is below the pregnant uterus and a large nodule blocks up the passage, an operation should be advised and made early. Myomectomy is usually not to be considered in these cases on account of the increased blood supply. The writer would advise it only when an exceptionally favorable tumor for this method is encountered.

DR VIRGIL O. HARDON, Atlanta, said that his conclusions were essentially the same as those enunciated by the essayist. He mentioned two cases of ovarian tumor complicating pregnancy in which he thought it advisable to operate. These cases were singularly alike; both were primiparæ, and during the fourth month of pregnancy. The tumors were removed; the women recovered, went to full term, and the children are living. He had seen many cases of fibroid tumors complicating pregnancy; but where the fibroid is so situated as to exert no pressure on the uterus and thereby not interfere with pregnancy, he thought there was no indication for operation in such cases until pregnancy has been completed.

DR. GEORGE H. NOBLE, Atlanta, said that removal of a fibroid tumor complicating pregnancy should be based upon mechanical obstruction to labor. Ordinarily, of course, there were exceptions, as a twisted pedicle, inflammatory conditions, etc.: then the tumor should be removed. If the tumor or tumors were in the lower segment of the pelvis in advance of the fetus, it was necessary to remove them or the uterus must be evacuated, and as these tumors can be removed with considerable safety and with a chance of saving the life of the child, it was a feasible operation. Dr. Noble narrated cases in point.

DR. W. D. HAGGARD, Nashville, cited a case which he saw with Dr. Fort in which a myomectomy was done. The patient was a colored woman, who had been married ten years, and was sterile. She was three and a half months advanced in pregnancy, and had two subserous fibroid tumors, one about the size of an orange on the right side on the anterior face of the uterus, the other one about the size of a baby's head on the left side, near the fundus. Both tumors were removed easily without any deleterious effects; the woman was subsequently delivered of a full-grown, living child.

Unique Case of Extrauterine Pregnancy.

DR. H. TUHOLSKE, St. Louis, Mo., contributed a paper with this title. The following is a résumé of the case: Tubal pregnancy (ampullar) of the right side. Tubar abortion with complete extrusion of the gestation sac, unruptured and containing fetus; hemorrhage and position carried the sac up to the diaphragm between the right lobe of the liver and upper end of the kidney. Implantation in the parietal peritoneum of the diaphragm as far forward as the attachment of the coronary ligament and in the liver from its upper border to the transverse fissure; down the diaphragm posteriorly and in the upper end of the kidney. Establishment of placental connections, allowing the development of a well-grown living child and pushing the liver in its growth towards the left and turning it upon its axis, with the coronary ligament as a fixed point until the right margin of the liver became the anterior. Histological examination showed original implantation in the ampulla of the right tube, and the formation of a placenta by efficient transformation of the peritoneum and the liver tissue adjacent. The diagnosis of the case from its history was confirmed by clinical, operative, pathological and histological evidence.

The Surgical Treatment of Painful Menstruation.

DR. HENRY D. FRY, Washington, D. C., in this paper stated that pain should not occur at the menstrual period in a healthy woman with healthy pelvic organs. This dual relation between the general health and the generative organs must be constantly kept in mind. As these sufferers are nearly always young girls or unmarried women, the indications must be clearly manifest. The character and severity of the pain, its duration and the condition of the patient during the intermenstrual period must be considered. What results can be expected from surgical treatment? In the discussion of this subject before the last meeting of the American Gynecological Society, the reflected opinions presented a gloomy picture for the woman. His object in presenting this paper is to protest against that verdict rather than offer any original method. His experience has been just the opposite. Failure to give relief has been due, as a rule, to some complication the removal of which subsequently resulted in cure. The line of treatment followed with such satisfactory results is that pointed out in the main by Gill Wylie: First, thorough dilatation of the cervical canal, then the endometrium is gone over carefully with the sharp curette; irrigation and often a second curettage; the application of pure carbolic acid; irrigation and dilatation repeated, if necessary. A Wylie drainage plug as large as will readily pass is inserted into the cervical canal and kept in position by a Smith pessary. For a number of years he was accustomed to leave the plug *in situ* six days, but following the suggestion of Wylie, he now allows it to remain from three to six weeks. He usually keeps the patient in bed two or three weeks after the operation, and if no discomfort be experienced, permit her to get up and go around wearing the plug several weeks longer. He believes the use of the hard rubber plug does much to aid in the permanency of the relief obtained. It causes the formation of a cicatricial ring of tissue at the point of constriction which insures patulency. He had not seen any bad results follow its use. In a few cases it causes pain, and on that account must be removed sooner than the time mentioned. He attributes the failure of those who deplore their results to the omission of some important point in the technique of the operation. For instance, they simply dilate the cervix or dilate and curette. For all necessary purposes dysmenorrhea can be divided into two classes, simple and complicated. The simple comprises about 80 per cent. of the cases, and the treatment described cures or greatly relieves three out of every four. The conditions usually found on examination are as follows: The external genitalia are undeveloped; the vagina, cervix and uterus are small. There is stenosis of the cervical canal and endometritis. The uterus is normal in position or one of exaggerated anteflexion; it is movable and the appendages are healthy. The accompanying endometritis is chronic and due to deficient drainage of the cervix uteri in consequence of stenosis of the cervical canal. The undeveloped condition of the generative organs in young women is very common and parallel to deficient growth of the mammary gland and its consequent failure to perform the

function of lactation. The second class comprises the cases in which some complication exists. It may be displacement, small fibroids in the body of the uterus, or disease of the tube or ovaries. These complications must be recognized and corrected. In a very small proportion of cases, as in cirrhotic ovaries, operators are driven to produce the menopause artificially. In such cases he believes it advisable to amputate the uterus at the same time, as the subsequent reflex nervous symptoms are diminished and the period of suffering shortened.

Repair of a Complete Laceration of the Perineum in a Girl of Nine Years.

Dr. H. A. Royster, Raleigh, N. C., reported this case. The laceration was produced by the finger of the obstetrician at the patient's birth. The patient was a well-nourished girl of 9 years. At her birth her perineum was torn completely through the recto-vaginal septum, and the explanation of this occurrence is stated to be as follows: The child's grandfather, a very aged physician, acted as accoucheur. Owing probably to dimmed eyesight and infirmity, a breech presentation was evidently mistaken for a vertex position and the obstetrician, introducing his finger into what he thought was the child's mouth, but which was really its vagina, exerted traction, and the result was a complete laceration of the baby's perineum. No immediate harm came from the accident, and it was resolved not to attempt a restoration of the injured region until the girl was considerably older. During the autumn of 1900 she came first under the observation of Dr. Hubert Haywood, who related the above facts and referred the patient to the speaker for operation. The parts on examination showed a quantity of dense scar tissue. The tear extended into the vagina to the depth of a half inch, and the sphincter ends were plainly seen on either side. No incontinence of feces had occurred. On Nov. 15, 1900, under chloroform anesthesia, a butterfly-shaped denudation was made in the vagina, and the exposed edges of the rectum pared, taking pains to dissect out the torn sphincters. The rectal tear was then united with catgut sutures, which were tied inside the bowel and cut short. Silkworm gut was used for closing the vaginal surfaces and bringing together the ends of the sphincter muscle. Perfect apposition was obtained and rigid asepsis observed in all the details of the technique. In spite of these precautions only partial success resulted, due to the fact that the patient's bowels became unmanageable just at the beginning of the operation, and the denuded area was constantly and unavoidably bathed by a stream of feces. This unlooked-for disaster was brought about by faulty preparation of the patient before admission. A purgative had been administered the day before, and on the morning of the operation an enema was given, with the report that the bowels had been thoroughly emptied. The continual discharges were a source of much annoyance, but having begun it was considered best to complete the operation. At the end of two weeks it was found that the external sutures did not hold, although union of the upper part of the denuded tissue was secured. A second operation was attempted April 18, 1901. The same method of procedure was employed, but modified to suit the changed relations. The child was prepared under direct personal supervision, and no fecal contamination occurred. The parts healed promptly, and the result was perfect. The author could find no parallel to this case in the literature of the subject.

[*To be continued.*]

UNIVERSITY OF CHICAGO MEDICAL CLUB.

First Regular Meeting, held in the Hull Physiologic Laboratory, Oct. 21.

Dr. H. H. Donaldson was elected president, and Dr. Preston Kyes, secretary for the ensuing year.

Influence of the Valency and Possibly of the Electric Charges of Ions Upon Their Toxic and Antitoxic Effects.

Dr. Jacques Loeb stated that together with his colleagues, he had shown that sodium ions are absolutely essential for the production of rhythmic contractions in striped muscle or in the swimming-bell of a jelly-fish or the heart, and yet that a pure solution of sodium chlorid is poisonous; further, that the poisonous effects of a pure sodium chlorid solution can be overcome by adding a trace of any soluble calcium salt. While some authors had drawn the conclusion that calcium is the stimulus for the heart-beat, the speaker had proved by a series of experiments on the development of the eggs of a marine fish, Fundulus, that this interpretation of the rôle of calcium in the heart-beat can not possibly be correct. The eggs of Fundulus develop in sea water, which is chiefly a solution of sodium chlorid and which has approximately the concentration of a five-eighths normal NaCl solution. The same eggs, however, develop in distilled water and even in redistilled water, thus showing that no ions of any kind are necessary for their development. Yet if these eggs are put into a pure chlorid solution of the strength in which they develop normally in sea-water, not a single egg can form an embryo. If, however, a soluble calcium salt be added, all the eggs form embryos and the embryos develop. This proves conclusively that calcium can not be considered a stimulus for the development of the eggs, as the eggs develop just as well in distilled water. The calcium ions can only perform the function of antagonizing the poisonous effects of the sodium ions.

It occurred to the speaker that this fact might be only a special case of a more general law. Sodium ions are univalent, while calcium ions are bivalent. He tried to determine whether or not he could produce the same effects by the addition of any other bivalent ions besides calcium. He found, indeed, that the addition of a trace of any of the following ions—strontium, magnesium, barium, zinc, iron, cobalt and lead—acted in the same way. He found, moreover, that the addition of a trace of a trivalent metal ion had also antitoxic effects. For instance, when a small amount of aluminium chlorid or chromium sulphate was added to a five-eighths normal sodium chlorid solution, a number of eggs were able to form embryos.

But not only a pure sodium chlorid solution of a certain concentration was poisonous, but a pure solution of any salt was found to be poisonous. For instance, a pure solution of lithium chlorid, ammonium chlorid and potassium chlorid of a certain strength was also poisonous. It was found that a solution of any of these salts which prevented the development of an egg could be rendered harmless by adding a small amount of all or some of the bivalent metal ions mentioned above. A pure solution of any of the salts of a bivalent, *e. g.*, $CaCl_2$, $MgCl_2$, etc., was also poisonous. Such solutions could be rendered harmless by the addition of a comparatively large quantity of a univalent metal ion or a very small quantity of another bivalent or trivalent metal ion. While the poisonous qualities of a solution of any salt could be annihilated by the addition of small quantities of a trivalent or bivalent metal ion or large quantities of a univalent metal ion, the anions were found to have no antitoxic effects whatsoever.

So far as the interpretation of these phenomena is concerned, the speaker pointed out the fact that such an influence of the quantity and sign of the electrical charge of ions has been found by physicists in connection with the phenomena of coagulation and the viscosity of colloidal solutions.

Dr. Loeb drew attention to the fact that from the point of view of the pathologist these experiments are of special interest as some of the observations are very analogous to the observations made by Ehrlich and his pupils in their study of antitoxins and immunity. Two facts of this character may be mentioned: 1. There is a numerical relation between the NaCl used and the amount of Ca-ions needed to counteract the poisonous effects of the sodium ions. The greater the concentration of the sodium salt present, the more calcium is required to render the solution of the sodium salt harmless. 2. In some cases the calcium (or strontium, etc.) can only produce its antitoxic effects if a trace of a second class of ions (for example, potassium) is present. This proved to be the case in experiments on the eggs of the sea-urchins. Neither the potassium alone nor the calcium alone were able to counteract the poisonous effects of a pure NaCl solution,

but both together were effective. The potassium ions act in this case like the "immune body" in Ehrlich's experiments.

A Case of Myiosis Intestinalis in Man.

DR. ALBERT PEACOCK reported this case. The patient, who came in from the country, complained of abdominal distension and excessive appetite. The existence of tapeworm was suspected. On examination of the feces the fly-larvæ were discovered. Specimens of the larvæ were placed under the microscope and demonstrated to the Club.

DR. L. F. BARKER said the case reported is of unusual interest on account of its rarity. Invasion of the human body by larvæ of insects has frequently been reported; the nasal pharynx, the external ear, the skin and open wounds and ulcers, are most frequently involved. The existence of larvæ in the stomach and intestines of human beings occurs, however, much less frequently.

Invasions of the body by fly-larvæ are most common in hot countries, and it is in the text-books of tropical diseases that we find the fullest accounts of them. Scheube in the new edition of his work, distinguishes three principal varieties: 1, those due to larvæ of Lucilla macellaria, so-called "screw worms"—these appear to be allied, if not identical with the Musca anthropophaga and the Sarcophila Wohlfahrti of other authors; 2, Dermatobia noxialis, or so-called beef worm, identical, in all probability, with the Oestrus Guildingi of Hope—these give rise to boils in the skin; 3, Ochromyia anthropophaga, the larvæ which so often affect the skin of natives of Senegambia.

Sandahl of Stockholm has reviewed the bibliography of myiosis intestinalis with special reference to the cases occurring in the Swedish literature. He finds instances where the larvæ are those of flies (myiosis), others where the larvæ are those of beetles (canthariosis), and again others where the larvæ are those of butterflies (scolechiosis). He lays most emphasis upon the case carefully reported by Lampa in 1887. In this instance the patient on July 4 discovered creeping larvæ in the stools, which were recognized by Lampa as insect larvæ. They were washed in water, put into a box containing some earth and given food. Two weeks later several adult flies developed, and these were recognized by Holmgren as belonging to the species Aricia (Holmalomyia) scalaris and A. manicata. Lampa believed that the larvæ had their origin in the eggs deposited by flies on cold food which had been insufficiently protected and which was eaten without re-cooking.

Care must be taken to distinguish true myiosis intestinalis from instances where fraud has been perpetrated. In the older literature several remarkable instances of the latter type are recorded. Thus Acrel, in 1799, refers to a woman of 30 who, during two years, voided no less than 130 Ascaris lumbricoides, pieces of Tænia solium, and innumerable Oxyures vermiculares, in addition to 265, partly living, partly dead. Staphylinids of various kinds and several larvæ, among others, those of Tenebrio molitor.

The specimens presented by Dr. Peacock show some eleven segments, and at one border of each segment there is a narrow cuticular band covered with minute but very sharp thorns.

An attempt is being made to secure some of the living larvæ and to bring them to development in order that the species here concerned may be determined. Some idea of the way in which the parasite entered the body may then be gained.

Regular meetings of the Club will be held the first and third Monday evenings of each month.

CHICAGO ACADEMY OF MEDICINE.

Regular Meeting, held Oct. 11, 1901.

Dr. De Laskie Miller in the Chair.

Fracture of Inner Occipital Table.

DR. W. G. STEARNS reported a case of "Fracture of the Inner Table of Occipital Bone, with Cerebral Concussion and Contusion, Involving the Base of the Temporo-Sphenoidal and Frontal Lobes." An obese, well-nourished man, 40 years of age, was admitted to the Samaritan Hospital with the history of having been thrown backwards from a cable car, striking his head on the pavement. He was semi-conscious, but easily aroused and talked connectedly. He recognized friends, but had no knowledge of the accident. The scalp was cut one-half inch below the junction of the occipital and parietal bones in direct line with the sagittal suture, exposing the torn epicranium. The pupils reacted sluggishly; the left pupil was a trifle less contracted than the right. There was no loss of power in the limbs, and the reflexes were normal. There was intense pain in the frontal region from the time of injury, and persistent vomiting continued for forty-eight hours, when he was removed from the hospital. For a week after the injury he was in a dazed semi-conscious state, and often complained of severe headache. As he regained consciousness, aphasia and amnesia became evident. There was much irritability and some incoherence. He was admitted fourteen days after the injury to the Oakwood Sanitarium, where he was found to be extremely restless, with grandiose ideas and speech. His memory for recent events was defective, and his answers were not relevant until questions were several times repeated. His gait was reeling and uncertain. His handwriting showed frequent substitution of letters, but no tremor. This condition continued until the evening of the sixteenth day after the injury. He died on the morning of the seventeenth day after the injury, and was found lying on his left side, left leg, thigh, elbow, wrist and fingers being semi-flexed and flexed.

As the patient was carrying large amounts of accident insurance, a necropsy became necessary, and was made by Drs. Stearns and Kiernan. This revealed a thin partially organized clot loosely adherent to the inner surface of the dura over the convexity of the left frontal lobe, and extending downward anteriorly. Upon removing the brain this clot was found to extend downward, covering the entire left middle fossa, and to be from one-eighth to three-sixteenths of an inch thick in its thickest portions. A similar clot was found covering the floor of the left middle fossa, and another covering the upper surface of the left tentorium. Slight mottlings of similar but much thinner clots were found in the right middle and anterior fossæ, and a few were also found in the posterior fossæ. The cerebrospinal fluid was moderate in amount and bloody. The pia was slightly opaque over the convexity, and the median portion of the basal surface. It strips freely except over areas of softening, where it is adherent. The basal arteries and the cranial nerves are normal. The cortex presents an area of softening on the anterior tip of each frontal lobe extending backwards along the basal surface, including that portion adjacent to the longitudinal sulcus. The lesion is deeper and more extensive in the left lobe. Also an area of softening along the anterior portion of the basal surface of each of the temporo-sphenoidal lobes. Convolutions deep and otherwise normal. The fluid of the ventricles was under but slight pressure and was blood-stained. Ependyma normal throughout. All fiber tracts, basal ganglia, cerebellum, pons and medulla normal. On stripping the dura from the base of the skull there was found a linear fracture of the inner table, beginning at a point one-half inch to the left of the median line about two and one-half inches above the torcula, extending downward and to the right, crossing the median line at a point midway between the torcula and the foramen magnum, terminating in the foramen magnum, just to the right of the median line. A second linear fracture, also of the internal table, joined the first at an acute angle at its upper extremity, coursing to the left at first in the line of the lambdoidal suture, then going below it and passing just above the base of the petrous portion of the temporal bone, terminating at about the middle of the outer surface of the temporal fossa.

That portion of the bone on the surface opposite to that which receives the impaction is first put upon tension, therefore first fractured, while the surface receiving the impaction is compressed until its foundation, the underlying medullary portion or the opposite portion, gives way to the strain, and allows the stress to come upon it when, in turn, it is fractured. It is the external surface of a rib which receives an impact from

a flat body, therefore the inner surface first placed upon strain is first fractured, and if force be not too severe, this is the only portion fractured. Similarly, the external table receiving an impaction applied over a large area becomes compressed, not only beneath the area receiving the impaction, but the conical area supporting it, just as the weight resting upon a keystone is transmitted to each stone in its arch. If the force be sufficiently great, the diploë upon which it rests, or the internal table, or both, must give way before the external table can.

Dr. A. H. Ferguson stated that it was admitted in surgery that an impact received upon any part of the skull would not only produce a fracture of the inner table of the opposite side, especially if the impact was strong enough, but it was capable of producing laceration of the membranes of the brain and laceration of the brain itself. This point was clearly brought out by Bryan in experimental work on the cadaver, who found that fracture could be produced by *contre-coup*, with laceration of the membranes of the brain and severe damage to the brain substance itself. Recently Macewen, of Glasgow, had asked Dr. Ferguson whether the chisel and hammer had been discarded in surgery on the brain in the United States. Impact of the hammer in Macewen's opinion had a deleterious effect on the brain. Macewen had traced strange cerebral symptoms following the use of the hammer in a few cases. Dr. Ferguson mentioned a case in which there was severe injury to the brain, with no evidence of external fracture. Fracture, whether of the external or internal table, was the minor part of the injury. He was convinced that a case like this ought to be trephined, the surgeon removing a small button of bone in three places, one where the impact was received, one exactly opposite the frontal lobe, and when symptoms were present of pressure upon the sphenoidal lobe there was no harm in removing a little button of bone there. It was comparatively easy to ascertain whether clots were present, and these could be removed sometimes with great benefit.

Dr. Sydney Kuh had a number of years ago seen a boy, 13 years of age, who was thrown from a horse, striking on the right side of his skull. There were indications of a skull fracture, but no definite symptoms at that time which made it possible to localize a lesion. Five or six days after the injury the patient developed a very characteristic Jacksonian epilepsy, which was limited to the facial muscles and to the right side, that is, on the same side on which the injury had occurred. The condition of the patient became so grave that it seemed very essential to do something in order to prevent death. Dr. Steele was called in and trephined over the left focal area (the face center), and found in that region an area of softening not larger than a dime. The opposite side of the skull, on which there was a contusion, showed a break in the integument, and gave evidence of a fracture. This case illustrated that the opposite side of the brain may be affected. Had the suggestion of Dr. Ferguson been followed in this instance, the area of softening could not have been removed with any degree of benefit to the patient, and the termination of the case would have been fatal.

Dr. Hugh T. Patrick was somewhat surprised by the trend of the discussion, since he had supposed the view was universally accepted that an injury or blow of the head was apt to cause more trouble on the opposite side than on the side on which the blow was received. This was particularly true of injuries inflicted with large bodies. A quick, sharp blow from a small body, which resembled a projectile, was more apt to cause trouble at the point of impact, but it is particularly those cases in which the individual falls, striking upon the head, or in which a large body falls upon the individual, where the injury of the brain is more diffused and apt to be found in localities other than at the point of impact. Some years ago the speaker showed at the Chicago Medical Society the brain of a man who, while intoxicated, fell and shortly became comatose. Dr. Patrick saw the case with a surgeon. Although patient was profoundly comatose, it was evident that one side of the body was more paralyzed than the other. An operation was undertaken, the surgeon being guided by the focal symptoms. The point of impact was not discovered until, at the necropsy, a clot was found and a considerable amount of it removed. At the postmortem examination a severe injury of the brain was found upon the side opposite the point of impact. But upon the same side of the brain there was also a larger clot, the one on the side where the injury was more severe, being not only a large superficial clot, spreading over a considerable area, but it burrowed deeply into the brain. This part of the clot was not removed.

Dr. Patrick pointed out that unless a linear fracture happened to rupture a large vessel, which was not enclosed in bone, or unless the fracture involved a foramen through which passed a cranial nerve, linear fracture of the skull was quite as harmless as a scalp wound. Whether linear fracture was found postmortem or diagnosed during life was a matter of small import, forensic or otherwise. The linear fracture in the case reported by Dr. Stearns had nothing to do with death. He disagreed with Dr. Ferguson and claimed that a safe rule, surgically speaking, in such cases was to be guided entirely by focal symptoms, not by point of impact of the injury, nor by any laceration, or one of the thin spreading hemorrhages over the surface.

Dr. Edward H. Lee said that linear fractures of the inner table did not give rise to symptoms except where lesion of some blood vessel occurred. The blood vessel most frequently injured in such cases was the middle meningeal. Its injury was frequently associated with a fracture of the inner table, so that a bending fracture of the skull resulted in the occipital region, which produced a linear fracture of the inner table, associated with basal fracture. The basal fracture was in direct communication with the lesion. He could not see how fracture of the inner table of the opposite side of the skull could be produced from mechanical factors. This seemed to him an impossibility. He did not think cases existed to show that such lesions resulted. Operative intervention in such cases was absolutely contraindicated. He had treated many skull cases in the last ten years, but unless there were absolute indications for opening the skull, he did not do so. He recalled four or five cases at the Alexian Brothers' Hospital, in which there were depressions of the skull. In a case of quite extensive compound fracture of the skull, he simply relieved the depression. In three others, two of which were children, he left them alone. He did not even relieve the depression, although it was quite marked at the time. These patients had done well since. In the absence of focal symptoms, it was bad surgery to interfere where there were no other absolute indications. While these lesions might be followed by Jacksonian epilepsy, he would rather take his chances of non-interference than to convert a simple fracture into a compound one, exposing a patient who was suffering from such a severe cerebral lesion, possibly associated with a fracture of the base to serious after-results in consequence.

Necessity of Exact Diagnosis in Prostatic Operations.

Dr. Louis E. Schmidt, to obtain a clear view of the subject, classified all cases under three large categories: 1, urinary retention due to prostatic changes may occur when there are alterations in the prostatic urethra proper; 2, when the cause is just on the border between urethra and bladder; 3, when the pathologic changes in the gland impair or completely abolish the functions of the bladder. First, it is a well-established fact that the prostatic part of the urethra sometimes becomes greatly obstructed, so that urination becomes impossible. It may be due to a nodular growth of the urethral part of the prostate compressing the urethral walls, or causing a tortuous passage in the same. It is readily understood in these cases that every operation which involves that part of the prostate within or adjoining the bladder would not result favorably. Examination per rectum shows these nodules just within the anus, covering or only partly covering the rectal surface of the gland. The nodules may be positively diagnosed with metal instruments per urethra. It is an absolute necessity to remove these mechanical obstructions to effect good results. Second, the type of obstruction between bladder and

urethra, i. e., that borders on the internal urethral orifice, may be either a symmetrical thickening or enlargement of the prostate as far as the parts encircle the internal urethral opening or a partial enlargement of single lobes. All these changes have in common that the obstacle to urination is a more or less complete barrier, practically separating the trigonum from the urethra. An operative success is to be sought for in a method by which this barrier is completely removed or is severed to such an extent that again free communication between the *bas fond* of the bladder and urethra is made. A correct diagnosis without incising the bladder can only be made with the cystoscope. If the surgeon confines himself in such cases to the typical Bottini incision, the result will always be incomplete. It is necessary to make a large number of incisions into the barrier or to make a complete incision of the collar-shaped hypertrophy after opening the bladder. Third, another cause for the obstruction to the flow of urine by changes in the prostate is the formation of large prostatic tumors which grow into the cavity of the bladder. In rare cases the surgeon might succeed in getting these tumors between the fingers by bimanual palpation and so make a diagnosis. This is only possible in very thin individuals with relaxed abdominal walls. A radical cure in such cases can only be accomplished by complete removal of such prostatic tumors by means of a suprapubic operation. If the general condition of the patient does not permit of such interference, nothing remains except to establish a permanent fistula. If the mechanical condition is considered in such a case, such a fistula can only be an abdominal one.

DR. JAMES T. JELKS, Hot Springs, Ark., had not been an advocate of the Bottini operation, for the reason he wanted to see what he was doing. With the old Bottini instrument the operator worked in the dark. He had been in the habit of doing the Alexander operation or a modification of it. According to the statistics of Willy Meyer, the mortality from the Bottini operation was 11 per cent. The mortality of operations done by Bottini himself was 10 per cent. The mortality from the old operation of vasectomy was 20 per cent., and that of castration 22 per cent., so that the Bottini operation had decreased the mortality rate. He had taken it for granted that the mortality following these operations had been from general anesthesia, and if Schleich's method could be used the mortality would be much less.

DR. WILLIAM L. BAUM expressed the belief that with the new modifications which have been made in the Bottini instrument, it would have a larger field of usefulness. The great objection that had always been made to this method of operating was the inability of the operator to see how far and how much destruction of tissue he was accomplishing. In cases of doubt he preferred the Alexander operation, knowing that at the present time its mortality was somewhat less, and it possessed the double advantage of being an operation whereby its steps could be watched both through the suprapubic incision and through the perineal.

DR. A. H. FERGUSON narrated a case of enlarged prostate in an old man upon whom he practiced rapid dilatation some twelve years ago. The patient has remained well up to this time. He believed that the proper use of bougies in these cases would do good, and should be judiciously tried in a limited number of instances. He advocated the perineal operation for the treatment of prostatic enlargement. He was not favorably impressed with the Bottini operation for several reasons, one of the most important of which was hemorrhage. He had lost one case by the Bottini method. He preferred the perineal route, and showed an instrument which he uses in doing this operation.

THE DENVER AND ARAPAHOE MEDICAL SOCIETY.

Regular Meeting, held Oct. 8, 1901.

Dr. H. G. Wetherill in the Chair.

Pernicious Anemia.

DR. G. E. TYLER reported the following interesting case: I. B. C., male, 47 years of age, painter, was a hard drinker for twenty years. Never had any digestion trouble until two years ago, when his appetite began to fail and he had occasional attacks of constipation. He then noticed trembling of the legs and a tremor of the right hand. He also suffered from cough and profuse expectoration. The gums and mucous membrane of the lips were bloodless. There was slight edema about the ankles. He did not appear emaciated; no lead line on the gums. Abdomen, liver and spleen were normal. Heart and lungs were negative. Knee-jerk was increased. Two small retinal hemorrhages were noticed in right eye. His temperature on admission to County Hospital, Sept. 9, 1901, was 100.2, but in a few days became normal. He was very weak and desired to remain in bed. Four days after admission he had a profuse hemorrhage from the bowels. Red blood corpuscles, 800,000; white, 4,000; hemoglobin, 40 per cent.; color index, 2.3. Two days later: red, 1,760,000; white, 7,000: hemoglobin, 42; color index, 1.2. Seven days later: red, 2,232,000; white, 8,000; hemoglobin, 42. A differential count of 1,000 white blood corpuscles gave the following percentage: polymorphonuclear, 82.3; small non-nuclear, 13.5; large mononuclear, 2.2; transitional, 1.1; eosinophiles, 0.9. Urine; no albumin or sugar, indol present. Gastric contents: HCl absent, lactic acid present, starch absent, sugar present, rennet absent, pepsin absent. Opler-Bond bacillus and sarcinæ were present. The patient showed some improvement on administration of Fowler's solution in rigidly increasing doses, which he considers to be temporary.

Papilloma of the Larynx.

DR. T. J. GALLAHER said that the small light-red tumors yield to local application. He used formalin with good results. The large red variety calls for cutting forceps. He considers intubation a dangerous procedure, as it may result in pressure necrosis or infection pneumonia. Tracheotomy has been done in young children and they were allowed to wear the tube for years. The two specimens shown were situated in the left vocal cord and at the time of their removal were of the size of a bean. The raw surfaces cicatrized promptly.

Edema of the Larynx.

DR. T. J. GALLAHER does not favor intubation in cases of edema of the larynx unless the operator is within constant reach. The tube does not engage deep enough and is therefore extruded. The necessity of frequent reintroduction of the tube increases the swelling. Edema may occur directly around the tube. Scarification and multiple punctures are disappointing. Ice pack or hot fomentations have no value. If not treated promptly and heroically edema of the larynx is fatal. If adrenalin is used it should be by spray, and kept up persistently at short intervals. Intubation should be done as an immediate measure to bridge over the time until an aseptic tracheotomy could be performed. Case: physician, 29 years of age, was suffering from acute articular rheumatism. On the eighth day at midnight he was seized with acute edema of the glottis. He introduced a tube at 1 a. m.; at 4 a. m. it was expelled and reinserted. During the next twenty-four hours the tube was expelled and reinserted six times. Recovery was prompt and uneventful.

DR. ROBERT LEVY reported two cases of papilloma in adults. One patient was hoarse for four years and was advised to come to Colorado. He removed the growth from the anterior commissure. In the other case, who suffered from great dyspnea, he performed tracheotomy. He has seen three cases in children since 1895. One was treated by intubation. The other two cases were treated for croup and asthma respectively. One was treated by intubation followed by tracheotomy, and the other by the application of salicylic and glacial acetic acid. All the cases recovered.

Specimen from an Unusual Ectopic Pregnancy.

DR. H. G. WETHERILL reported the following case: When seen the first time, she was suffering from severe pain and hemorrhage from the uterus. Her temperature was 100. In a few days all the symptoms disappeared. In the right iliac region a mass was detected by bimanual palpation. She gave history of miscarriage, which occurred three weeks previous.

Two weeks after she had another hemorrhage and severe pains; the mass increased in size. A pelvic abscess suggested itself. A vaginal incision was made and blood and clots were found. The sac was washed out with salt solution and packed with iodoform gauze. Two weeks after there was a sudden attack of intense pain and evidence of concealed hemorrhage was manifest. The abdomen was opened, but no blood found. The broad ligament was found distended to the size of a child's head, not unlike an intraligamentous cyst. When the sac was opened a full-grown fetus was found. The appendix was found grown into the mass and was removed. Before the operation the patient was very weak; indeed, her life was despaired of. As soon as the anesthetic was given, salt solution by hypodermoclysis was administered into the breasts, three pints being used during the operation. A hot salt solution was introduced into the abdominal cavity while she was placed in the Trendelenburg position so that the solution might come in contact with the diaphragm. After the operation her condition was such that it was necessary to introduce salt solution intravenously. The patient made a slow recovery, and is at present in a satisfactory condition. He thinks it was originally a tubo-ovarian pregnancy which ruptured into the broad ligament.

Dr. W. P. Munn suggested that it might have been an ectopic gestation co-existing with uterine pregnancy. Such cases are on record.

MEDICAL SOCIETY OF VIRGINIA.

Thirty-second Annual Session, held in Lynchburg, Nov. 5, 1901.

The President, Dr. John R. Gildersleeve, Tazewell, called the meeting to order and after prayer by the Rev. F. T. McFaden, Dr. Rawley W. Martin welcomed the Society in behalf of the fraternity and the city.

Dr. Smelt W. Dickinson, Marion, delivered an address on the delusions in medicine from the days of astrology and witchcraft down to the modern time of eddyism, osteopathy and magnetic healing.

Re-organization.

The President then delivered his annual address in which he congratulated the Society on meeting for the third time in Lynchburg, its birthplace. He directed the attention of the Fellows of the Society to a resolution passed in 1896 providing that members of the Society should not examine an applicant for life insurance for less than $5.00. He recommended strongly the strengthening of the bonds existing between state societies and the American Medical Association and suggested membership in that "grand, national, representative, medical organization." He suggested in addition that the plan adopted by the American Medical Association for the conservation of time should be adopted, for the obtaining of better results by devoting the morning of each day to general business, one subject and its discussion. That the first evening and succeeding afternoons should be devoted to section work, and the succeeding evenings to social functions.

Dr. J. N. Upshur, Richmond, at the second day's session, offered a resolution to amend the clause in the constitution regarding membership as to limit it to physicians who live in Virginia, who are white and 21 years of age or over. A substitute was offered by Dr. Styll, Newport News, that the amendment take the usual course and lay over for three months, which was carried by practically an unanimous vote. A motion was adopted unanimously that all local medical societies submitting to the Code of Ethics of the American Medical Association should be officially recognized by the State Medical Society.

Scientific Papers.

The discussion of the morning was on uric acid and papers were read by Drs. William S. Gordon, Richmond, and Lewis E. Pedigo, Roanoke, on this subject. Gastro-intestinal therapy was the principal subject for discussion of the afternoon session, the leading paper being read by Dr. John N. Upshur, Richmond.

Report of Special License Committee.

At the evening session the report of the Special License Committee was made by Dr. J. Beverly Deshazo, Ridgeway. This committee was appointed at the last meeting of the Society to endeavor to obtain a repeal of the special license tax on physicians. It has circulated 500 pamphlets in the counties and cities of the state for signature, asking for the repeal of the law and thus far has met with practically no opposition. About 2000 physicians are in favor of the plan, but only 15 or 20 thus far have opposed it. He recommended that headquarters be established in Richmond to further the plans of the committee and private subscriptions be made to defray the necessary expense.

Delegates to American Medical Association.

The third day of the session commenced with the election of the Virginia members of the House of Delegates of the American Medical Association. Drs. John R. Gildersleeve, Tazewell, and Landon B. Edwards, Richmond, were unanimously elected delegates for the long and short term respectively. Drs. Livius Lankford, Norfolk, and Rawley W. Martin, Lynchburg, were elected alternates.

Election of Officers.

The election of officers resulted as follows: Dr. Richard S. Martin, Stuart, president; Drs. Livius Lankford, Norfolk, R. Sumter Griffith, Basic City, and Smelt W. Dickinson, Marion, vice-presidents; Dr. Landon B. Edwards, Richmond, recording secretary; Dr. John F. Winn, Richmond, corresponding secretary; Dr. R. T. Styll, Newport News, treasurer, and Dr. John N. Upshur, Richmond, chairman of executive committee. Newport News was chosen as the place of the 1902 meeting, and Dr. Robert L. Payne, Norfolk, was elected to deliver the annual address.

Medical Examining Board.

The Medical Examining Board elected for the ensuing year was as follows: Rawley W. Martin, Lynchburg; William L. Robinson, Danville, and Albert S. Priddy, Marion, from the state at large. From the Congressional District: Drs. Willard B. Robinson, Tappahannock; Herbert M. Nash, Norfolk; Junius E. Warrinner, Brook Hill; Otho C. Wright, Jarratt; Richard S. Martin, Stuart; Samuel Lile, Lynchburg; Robert C. Randolph, Boyce; Robert M. Slaughter, Theological Seminary; Elliott T. Brady, Abingdon, and Charles W. Rodgers, Staunton.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Prescription Writing—Continued.

II. The symbol ℞ is an abbreviation of the Latin *Recipe*, "take thou." The line drawn across the right lower part of the ℞ is said to have been taken from the sign used to indicate Jupiter in the pagan invocations to that god. This ancient mingling of religion with the healing art serves to explain the universal acceptation by the early physicians of the symbol as an awe-inspiring superscription to their formulas.

The direct object of "Recipe" is drachmam or unciam, etc., of the ingredient, as the case may be. Consequently the names of all the ingredients should be written in the genitive case with their proper endings. These ingredients may be made up of a basis, an adjuvant, a corrective and a vehicle or excipient.

We wish to emphasize the importance of giving the names of the preparations their proper endings. The inability of the physician to write these names in the proper case and in the

proper declension, is an evidence of lack of a good preliminary education.

To illustrate, we give a prescription representing the different endings as follows:

R. Tinctur*æ* nuc*is* vomic*æ* 3iss 6
Acid*i* hydrochlorici dilut*i*.....3i 4
Syrup*i* simplic*is* 3iii 12
Spirit*us* frumenti q. s. ad.....ʒii 64

Misce et fiat mistura. Sig.: One teaspoonful after each meal.

In the above it will be seen that in the first preparation, those words ending in *a* are of the first declension and consequently their genitive ending is *æ*, while the word *nux* belongs to the third declension and the *x* (that is, *cs*) is changed into *cis* in the genitive.

In the second ingredient "acidum" is a neuter noun of second declension and therefore should be written acid*i* in the genitive and the words "hydrochlorieum" and "dilutum" being adjectives must agree with the noun they limit in the proper gender and case.

In the third preparation "syrupus" being a masculine noun of the second declension, it is changed into the genitive and is therefore written syrup*i* in the prescription form.

In the last ingredient, "spiritus," although ending in *us* is not of the second declension; but, as an exception to the rule is of the fourth declension and consequently the ending does not change in the genitive.

Further dwelling upon these points, we might observe that nouns of the first declension end in *a* and the ending is changed into *æ* in the genitive; the accusative takes the ending *am* in the singular and *as* in the plural. As far as the nouns concerned in expressing medicinal terms, they end in *us* or *um* in the second declension in the nominative case and *i* in the genitive, as illustrated in the above prescription. However, there are few exceptions to this rule. These exceptions end in *on* in the nominative and *i* in the genitive; as for example "erythroxylon," "hematoxylon" and "toxicodendron."

There is a greater variety of endings in dealing with nouns of the third declension. The great majority, however, end in the nominative singular in one of the following letters: o, l, n, r, s, and x. We give a few of the nouns as follows for sake of illustration:

NOMINATIVE.	GENITIVE.
Mucilago.	Mucilaginis.
Alcohol.	Alcoholis.
Albumin.	Albuminis.
Æther.	Ætheris.
Salicylas.	Salicylatis.
Rumex.	Rumicis.

(To be continued.)

Treatment of Glaucoma.

The following is recommended by *Merck's Archives* in the treatment of glaucoma:

R. Eserinæ salicylatis .....gr. 1-6 |01
Pilocarpinæ hydrochlor .....gr. iii |20
Cocainæ hydrochlor. .....gr. iss |09
Aquæ destil. q. s. ad.....ʒii 64|
M. Sig.: One or two drops into the eyes at bedtime.

Treatment of Diabetes.

It is stated by van Noorden, in *Wiener Klin. Wochenschrift*, that the tolerance of the system for carbohydrates in diabetes is very much increased by the use of salicylic acid. This is unusually beneficial in those who tolerate from 100 to 150 grams of bread.

Chloretone in Surgery.

The administration of chloretone before ether or chloroform anesthesia with a view of preventing nausea and vomiting during and after surgical operations, is recommended by Dr. Hirschman, in the *Ther. Gazette*. He gives doses of 10 grains to women and to boys under 16 years of age, and 15 grains to men. This is given one-half hour before commencing the anesthetic. He gives it in powder form, dry on the tongue, washing it down with water.

Patients treated in this way, the writer states, have but little or no stage of excitement; about one-third or one-half less of the anesthetic is required only, and the patient is less apt to come out of the anesthesia suddenly during the operation should the administration of the anesthetic be relaxed. He makes the statements based upon a comparative study of sixty cases, half of whom received chloretone and the other half none.

Treatment of Gastralgia.

Gastralgia produces symptoms which may be mistaken for other and graver conditions, such as carcinoma of the stomach, gallstones, appendicitis, chronic mucous gastritis, etc. If these can be eliminated in the diagnosis Melbee, as noted in *N. Y. Med Jour.*, recommends the following outline of treatment:

When an attack is threatening take alternately in tablespoonful doses the following mixtures:

R. Cocainæ hydrochlor.....gr. ivss |25
Tinct. illicii.....m. xv 1|
Aq. aurantii flor.....ʒiii 96|
M. Sig.: One tablespoonful every half hour, alternating with the following:

R. Aq. chloroformi (saturat.).....ʒii 64|
Syr. belladonnæ
Aq. menth. pip. āā.....ʒi 32|
M. Sig.: One tablespoonful every half hour.

If the pain persists and is very severe, give a hypodermic injection of the following, repeated within a few minutes if necessary:

R. Cocainæ hydrochlor.....gr. ¾ |045
Morphinæ hydrochlor.....gr. iss |09
Aq. destil.....3iiss 10|
M. Sig.: Eight minims hypodermically and repeat in fifteen minutes.

In the intervals between the attack seek the cause, chlorosis, neurasthenia, etc. Give daily alcohol baths and follow with rubbing with a hair glove. Take every other day the following mixture:

R. Strontii bromidi.....3v 20|
Syr. hyoscyami.....ʒii 64|
Syr. aurantii.....ʒii 64|
Aq. destil.....ʒv 160|
M. Sig.: One tablespoonful in water every other day.

Counter-irritation should be made over the epigastric region by means of the actual cautery. This should be applied about once a week.

Salol in Smallpox.

Dr. C. Begg, in a paper read before the Medical Society in Edinburgh, states that beneficial effects are produced by salol, inasmuch as, 1, it tends to abort the pustular stage; 2, it tends to diminish the irritability of the patient, and 3, it prevents the giving off of an unpleasant odor. As soon as the vesicular stage is completed Dr. Begg applies the following locally:

R. Ol. eucalypti .....m. v |30
Calaminæ .....3iii 12|
Zinci oxidi .....ʒss 16|
Glycerini .....ʒss 16|
Aq. calcis q. s. ad.....Oi 512|
M. Sig.: Apply gently with a camel's hair brush.

In prescribing salol he usually gives it in doses of 15 grains three times a day, beginning with the appearance of the first eruption and continuing it until the stage of desquamation is finished.

Methyl Blue in Smallpox.

Prof. Matoni, in *Arte Medica*, states that he has obtained very satisfactory results from the use of methyl blue in the different stages of smallpox. In the pustular stage he administers it in divided doses amounting to 6 or 8 grains daily. In this stage his results have been especially satisfactory.

Removal of Warts.

It has been recommended that the removal of warts be done by means of electrolysis, first injecting them with a 4 per cent. solution of sodium chlorid. This, it is claimed, promotes electrolytic action by cutting down the resistance in the

tissues, at the same time favoring the destruction of tissue by the formation of caustic soda.

Medicolegal.

Aggravation of Injury by Improper Treatment.—The Appellate Court of Illinois, First District, holds, in Chicago City Railway Company vs. Cooney, that if the negligence of the company was the direct cause of the injury in question, and it was simply aggravated by some improper treatment by medical attendants through no fault of the injured party or lack of care on her part in selecting such attendants, then the mere fact of such aggravation of the injury would not preclude a recovery for the injury in the suit against the company.

Surgeon Prevented from Reducing Dislocation.—The Appellate Court of Illinois, Third District, holds, on the second appearance before it of Littlejohn vs. Arbogast, that if the surgeon charged with malpractice was prevented from reducing the dislocation of his patient's hip by the refusal of the latter to submit to an operation, he could not be held liable for damages resulting therefrom. It is the duty of a patient, it holds, to submit to the necessary treatment prescribed by his physician or surgeon. If the patient is delirious and can not be made to understand the necessity of the treatment proposed, the physician or surgeon may co-operate with the patient's immediate family and resort to reasonable force. If the patient is in that condition and the members of his family having him in charge refuse to allow the proposed treatment, then the physician or surgeon would not be required to use force. Surely, he should not be held liable for injury to limb or health resulting from a failure to use the proposed treatment.

Nature and Limitations of Physician's Claim.—The Supreme Court of Alabama says, in Morrisett vs. Wood, that the nature of the demand of a physician for medical services rendered without a special contract therefor is simply an implied promise to pay what such services are reasonably worth, and the proper action for their recovery is what is called assumpsit for such compensation as may be shown by the evidence that the physician rendering the services ought to receive. This demand, in the absence of a special contract as to what shall be paid, is an open account. In an action for its recovery it is difficult to escape the conclusion that an account is not the foundation of the suit. Such a demand is subject to the bar of the statute of limitations of Alabama of three years, as provided by statute against open or unliquidated accounts. This defense of the bar provided by the statute can be made because the basis or foundation of the claim is an account which has not been stated. And the court says that it can draw no distinction between the word "account" as used in the statute of limitations of three years and as employed in the section as to a bill of particulars, which provides that at any time previous to the trial, upon notice to the attorney of the party suing, the one sued may have a list of the items composing it, when an account is the foundation of the suit. It means the same in both sections. Therefore, the court holds that, in this case, which was brought by a physician against an executor of an estate to recover for medical services rendered the decedent during his last illness, the contention was untenable that an account was not the foundation of his claims or demands, one of which was for such services, and the other for work and labor done for the decedent at his request. So it holds that the executor was entitled to demand a bill of particulars, or list of items composing the account. Then, this having been furnished, but the witnesses called to substantiate it not being able to verify any of the dates, the court holds that it was error to allow the physician to prove the value of his services by a hypothetical question based on the assumption that he had treated the decedent as often as a certain number of times a month between certain dates, as also that it was error to instruct the jury that under the claim for work and labor they were not limited to proof of the items given in the bill of particulars. The proofs, it holds, should have been limited to the bill of particulars as to the services rendered and the value of the particular items of services when shown.

Provision of Law as to Examination Upheld.—The Supreme Court of Wisconsin says that the gravamen of the relator's complaint, in the case of State ex rel. Kellogg vs. Currans and others, was that he was refused a license to practice medicine in Wisconsin except upon the condition of passing an examination before a medical board created therefor, and paying a fee which must be considered as but compensation for the service of holding that examination. It appears that he matriculated in 1897, and took one course of six months at a reputable medical college of Wisconsin, and then completed his course at a reputable medical college located in Chicago. As the law was in Wisconsin until its amendment in 1901, he would have been entitled to a license to commence practice either on the diploma he obtained, or upon passing examination. But the amendment makes both diploma and examination prerequisite to license to beginners, with proviso that "any student who is now matriculated in any medical college of this state which requires [specified courses of study], shall, on presentation of his diploma from such medical college and on payment of the fees specified in this act, be admitted to practice without further examination." "The fee for such examination shall be fixed by the board, but shall not exceed $10, and $5 additional for the certificate if issued." He strenuously attacked the validity of this statute. But the Supreme Court of Wisconsin does not think that it infringes either that provision of the federal constitution which provides that the citizens of each state shall be entitled to all the privileges and immunities of citizens in the several states, or the one which prohibits any state to make or enforce any law which shall abridge the privileges or immunities of citizens of the United States. Nor does it consider that it violates the provision that no state "shall deprive any person of life, liberty, or property, without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws." It declares that there can be no doubt that it is within the proper power of the legislature to provide that some people may and some may not practice medicine, provided that the characteristics and conditions distinguishing the former class from the latter are of a kind tending to make their exercise of that profession more beneficial or less perilous to the community than the class excluded. The reasonableness of a requirement that one establish his educational qualifications by submitting to an examination, it continues, is one which pertains directly to one of the characteristics which should distinguish those permitted to practice medicine from those not permitted. As to the statute making a class of those who should obtain the education afforded by the then existing medical colleges in the state of a specified standard, it asks: May not the legislature of 1901, upon evidence or investigation, have been convinced that such colleges could be trusted to give education to their graduates to make them safe practitioners, while they could not be so satisfied as to all colleges outside the state? The character of the men conducting the former class, the opportunity and right of the legislature to control and to prevent deterioration, the special applicability of the instruction to the diseases or phases of diseases characteristic of Wisconsin—might not considerations such as these have weight with honest and reasonable minds, and lead them to deem safer the graduates of such institutions, as a class, than those of all other colleges, as to the great majority of which the legislature could neither gain knowledge nor exercise any control? Wherefore, the court holds the act within the police power of the state. And it adds, in closing its opinion: "The fact, if it were a fact, that less educational requirements are demanded from osteopaths as preliminary to an examination by the board, in no wise affects the relator, whose qualifications for admission are, as he alleges in his relation, all conceded, except the passing of the examination. The question whether the requirement of a diploma is an unconstitutional one, as discriminating against those who by some other method of study have acquired equal education, is not open to the relator, who confessedly has his

diploma. We can not set aside the acts of the legislature at the suit of one who, suffering no wrong himself, merely assumes to champion the wrongs of others."

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), November 9.

1 *Some Observations on the Symptomatology and Differential Diagnosis of Apoplexy; with the Reports of Several Illustrative Cases. Theodore Diller.
2 *Some Remarks on the Etiology of Apoplexies. W. K. Walker.
3 *Concerning the Clinical Significance of the Klebs-Loeffler Bacillus. Adolph Rupp.
4 An Unusual Case of Death from Ether Anesthesia, with Autopsy and Microscopic Study. Harlow Brooks.
5 *Practical Results with 1000 Cases of Nitrous Oxid and Ether Narcosis. H. W. Carter.

New York Medical Journal, November 9.

6 *The Treatment of Cutaneous Epitheliomata. Charles W. Allen.
7 *The Future of Gynecology as a Special Branch of Surgery. Ely Van De Warker.
8 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
9 *Muscular Atony an Important Factor in Uterine Displacements. Henry C. Coe.
10 *Devitalized Air Toxemia, a Prime Cause of Tuberculosis. Charles Denison.
11 Caries of the Spine: An Analysis of 1000 Cases. J. Hilton Waterman and Charles H. Jaeger.

Boston Medical and Surgical Journal, November 7.

12 *Medical and Sanitary Conditions in the Philippines. W. P. Chamberlain.
13 *The U. S. Army System of Personal Identification. C. H. Alden.
14 *On the Establishment of Medicolegal Diplomas. Wyatt Johnston.
15 The Erickson Murder. F. H. Baker.
16 Artificial Noses and Ears. Robert H. Upman.

American Medicine (Philadelphia), November 9.

17 *Trional Fatalities. Archibald Church.
18 *The Diagnosis and Treatment of Round Ulcer of the Stomach. N. S. Davis, Jr.
19 *The Nature of Internal Lesions in Death from Superficial Burns. John McCrae.
20 *The Bacteriology of Otitis Media: A Summary of Recorded Observations and a Laboratory Study of 76 Cases. (To be concluded.) John Funke.
21 A Case of Elephantiasis. John M. Bertolet.
22 Appendix Vermiformis Passed in Stool. W. L. Wallace.

Philadelphia Medical Journal, November 9.

23 *The Ultimate Results of Operation for Cancer of the Uterus. Charles P. Noble.
24 Chronic Ulceration of the Stomach Simulating Cancerous Disease: Relation of a Case of Gastro-enterostomy, with the Murphy Button, Recovery. James F. W. Ross and E. B. O'Reilly.
25 *The Surgery of Pulmonary Abscess, Gangrene and Bronchiectases, Following Pneumonia. Daniel N. Eisendrath.
26 *Report of Seventy Cases of Acute Lobar Pneumonia. J. N. Hall.

Medical News (N. Y.), November 9.

27 *Some Further Remarks on Hospital and Dispensary Abuses and Mismanagement, with an Account of the Means to be Employed to Mitigate or Arrest Them. Thomas J. Hillis.
28 *The Relation of Sunshine to the Prevalence of Influenza. Howard S. Anders.
29 A Case of Suppurative Otitis Media Following Influenza: Operation Without Opening of the Antrum; Complete Lack of All Constitutional Symptoms of Inflammatory Disease. O. Waterman.
30 A Case of Raynaud's Disease. W. A. Haley.
31 Three Obstinate Cases of Empyema of the Maxillary Antrum, Cured with Injections of Solutions of Nargol. A. G. Wippern.
32 *Treatment of Typhoid Fever. Basil M. Taylor.

Cincinnati Lancet-Clinic, November 9.

33 *Toxicity of Urine in Pregnancy. Robert W. Stewart.
34 The Action of the Condensed Light upon the Skin as a Therapeutic Agent. A. Ravogli.

St. Louis Medical Review, November 9.

35 *Dermoid Cyst of Testicle. C. C. Morris.
36 *Gunshot Wounds of the Pregnant Uterus. (Continued.) George Gellhorn.

Pediatrics (N. Y.), November 1.

37 *Radical Cure of Inguinal Hernia in Children. Harold J. Stiles.
38 *Diagnosis of Suppurative Pericarditis in Children. Frederick E. Batten.
39 *Observations on Suppurative Pericarditis in Children. George F. Still.
40 *On Essential or Toxemic Dropsy; Dropsy Without Albuminuria. W. P. Herringham.
41 *Ultimate Results of Tendon Grafting in Infantile Paralysis. Sinclair White.

Northwestern Lancet (Minneapolis), November 1.

42 Hemorrhoids. Arthur T. Mann.
43 The Desert Climate for Consumptives. R. M. Phelps.
44 Does the Practice of Medicine Pay? George R. Patton.

Illinois Medical Journal (Springfield), November.

45 Imperative Conceptions. Hugh T. Patrick.
46 Conservative Operations upon the Uterine Adnexa. Henry T. Byford.
47 Infection in a General Surgical Sense. Daniel N. Eisendrath.
48 Recent Developments in Our Knowledge of Cancer of the Uterus. Emil Ries.
49 The Clinical Laboratory in Private Practice. C. Martin Wood.

Medicine (Chicago), November.

50 *What Are the Qualifications Necessary for Success in the Practice of Medicine? Frank Billings.
51 *A Simple Means of Determining a Pretended Impairment of Vision in One Eye. E. F. Snydacker.
52 *The Importance of Exact Diagnosis in Certain Operative Prostatic Diseases. Louis E. Schmidt.
53 An Anomalous Form of Tabes—A Clinical Lecture. Harold N. Moyer.

Journal of Cutaneous and Genito-Urinary Diseases (N. Y.), November.

54 *Inflammatory Affections of the Nails. S. Pollitzer.
55 *Trophic Affections of the Nails. Joseph Zeisler.
56 *Parasitic Diseases of the Nails. Joseph Grindon.
57 *The Treatment of Diseases of the Nails. W. A. Hardaway.
58 *A Probable Cause of Failure in Internal Urethrotomy. G. Frank Lydston.

The Physician and Surgeon (Detroit and Ann Arbor), August.

59 Some Sociologic Problems of Medicine. Charles T. McClintock.

A SYMPOSIUM ON CERTAIN ABNORMALITIES OF GESTATION AND LABOR.

60 Malposition. Austin W. Alvord.
61 Renal Insufficiency. Rush McNair.
62 Neoplasms Complicating Pregnancy and Labor. James G. Lynds.
63 Rectal Obstruction. James A. MacMillan.
64 The Modern Management of Diphtheria. Alexander MacKenzie Campbell.
65 Fever—A Symposium. Hedley Williamson.
66 Pelvic Lesions: An Important Factor in Delaying and Preventing the Normal Menopause. Theodore E. Sands.
67 Inspection of the Rectum and Sigmoid Flexure by Mechanical Means. William L. Dickinson.
68 Osteomyelitis of the Femur. Alexander G. Graybiel.
69 Importance of Making a Thorough Examination of the Thorax in All Supposed Stomach Diseases. H. B. Garner.

Brooklyn Medical Journal, November.

70 Otitis, Sinus Phlebitis and Thrombosis. J. E. Sheppard.

American Journal of the Medical Sciences (Philadelphia), November.

71 *An Epidemic of Noma: Report of Sixteen Cases. George Blumer and Andrew MacFarlane.
72 *Some New Points in Regard to Raynaud's Disease. Carl Beck.
73 *Observations on the Frequency and Diagnosis of the Flint Murmur in Aortic Insufficiency. William Sydney Thayer.
74 *Osteitis Deformans. Frederick A. Packard, J. Dutton Steele, and Thomas S. Kirkbride, Jr.
75 *Asymmetry of the Nasal Cavities. A. Coolidge, Jr.
76 A Case of Acute Leukemia Presenting Some Interesting Features. D. D. Stewart.
77 *Typhoid Cholecystitis, with Observations upon Gallstone Formation. Joseph H. Pratt.
78 The Operative Treatment of Paralytic Talipes of the Calcaneus Type. Royal Whitman.
79 *The Difficulties in Making a Diagnosis in the Bone Lesions of Nurslings. R. Tunstall Taylor.
80 Three Noteworthy Cases of Brain Injury. George T. Vaughan.
81 *Tuberculosis of the Portio Vaginalis and Cervix Uteri; Its Pathology, Diagnosis, and Treatment. Henry D. Beyea.
82 *Remarks on the Diagnosis of Some Forms of Ophthalmoplegia. L. F. Adt.
83 A Consideration of Certain Details in the Management of the Pregnant and Puerperal Patient. William R. Nicholson, Jr.
84 Fibroma of the Nose, with Report of a Case. William Lincoln.

85 *The Clinical Value of Blood Examination in Appendicitis; A Study Based on the Examination of 118 Cases at the German Hospital, Philadelphia. J. C. DaCosta, Jr.
86 *The Blood Count at High Altitudes. W. A. Campbell and H. W. Hoagland.
87 *Critical Summary of Recent Surgical Progress in the Diagnosis and Treatment of Contusions of the Abdomen. Francis T. Stewart.

Cleveland Journal of Medicine, October.

88 Intestinal Obstruction. F. E. Bunts.
89 Sinusitis Nasi and Otitis Media Following Influenza. J. M. Ingersoll.
90 Nitrous Oxid and Oxygen as a General Anesthetic. Ernest E. Brown.
91 An Unusual Case of Pott's Disease. William E. Wirt.
92 Some Facts on the Anatomy and Morphology of the Biliary Tract. C. A. Hamann.

St. Paul Medical Journal, November.

93 *The Present Epidemic of Smallpox in America. H. M. Bracken.
94 Some Indications for Gastro-enterostomy. Wm. J. Mayo.
95 Some Indications for Curettage of the Uterus and Technique of the Operation. J. A. Smeallie.
96 Rational Treatment of Constipation. J. R. Leadsworth.
97 Placenta Previa. R. C. Dugan.
98 A Few New Things in Medicine and Surgery. C. P. Thomas.

Toledo Medical and Surgical Reporter, November.

99 Some Reference to Surgery of Knee-Joint. A. F. McVety.
100 Report of Cases of Sciatic and Brachial Neuritis Treated with Static Electricity. Harry L. Hall.
101 The Therapeutics of Heroin. Louis Miller.
102 Cholera Infantum—Its Treatment. O. M. Main.
103 Case of Stenosis of Rectum; Treatment Inguino-Colectomy. Robert Peter.
104 Palpitation of the Heart. D. Jones.

Buffalo Medical Journal, November.

105 The Science of Medicine and the Healing Art. John L. Heffron.
106 Deafness from Scarlet Fever. Sargent F. Snow.
107 The Ethics of Nursing. George E. Blackham.
108 The Vermiform Appendix and Appendicitis. A. A. Young.
109 Normal Salt Solution by Hypodermoclysis, with Report of an Unusual Case. G. A. Himmelbach.

Alienist and Neurologist (St. Louis), October.

110 The Development of the Sexual Instinct. Havelock Ellis.
111 *The Physiological Mental Weakness of Women. J. P. Mobius.
112 Normal and Abnormal, Rational and Irrational, Healthy or Unhealthy Delusion. Charles H. Hughes.
113 The Physician's Duties in Committing Insane to the Hospital. Professor Hoche.
114 Degeneracy Stigmata as a Basis of Morbid Suspicion. Jas. G. Kiernan.
115 Juvenile Female Delinquents. Eugene S. Talbot.
116 The Legal Disabilities of Natural Children Justified Biologically and Historically. E. C. Spitzka.

Mississippi Medical Record (Vicksburg), November.

117 Abortion as a Disease of Pregnancy and as a Crime. H. A. Minor.
118 Tuberculosis of the Body of the Testicle. Irvin Abell.

Texas Medical News (Austin), October.

119 Splenectomy—Axial Rotation and Death of Spleen; Recovery. T. J. Bennett.
120 A Critical Study of Several Cases of Cholelithiasis. Albert Woldert.

Carolina Medical Journal (Charlotte), October.

121 *Tonsillitis from the Standpoint of the General Practitioner. A. L. Gray.
122 The Mosquito. Ennion G. Williams.
123 Some Observations on the Diagnosis and Treatment of Croupous Pneumonia. W. F. Mitchell.
124 A Case of Double Parotitis Complicating Suppurative Pyelitis and Chronic Colitis: Autopsy. W. C. Kluttz.

International Journal of Surgery (N. Y.), November.

125 Stones in the Kidneys. A. H. Cordier.
126 Notes on the Diagnosis and Treatment of Empyema. Charles C. Miller.
127 Regional Minor Surgery. (Continued.) George G. Van Shaick.
128 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
129 Practical Suggestions on the Treatment of Rectal Diseases. James P. Tuttle.
130 Multiple Osteoma. William L. Allen.
131 Intestinal Obstruction Complicating Pregnancy. W. P. Glendon.

St. Louis Courier of Medicine, October.

132 Municipal Control of the Dependent Classes. Alice M. Smith.
133 Report of a Case of Malignant Anthrax Edema. Ellsworth Smith, Jr., and H. G. Mudd.
134 *The Double-Knife in Histo-pathology. R. B. H. Gradwohl.
135 *Surgical Operations on the Aged. A. H. Meisenbach.
136 Vesico-vaginal Fistula; Operation According to Technique of Freund; Report of Case. Francis Reder.

Georgia Journal of Medicine and Surgery (Savannah), October.

137 Surgical Interest of the Subperitoneal Tissue. Hugh M. Taylor.
138 The Conservative Surgical Treatment of Appendicitis. W. E. Fitch.
139 The Early Operation for Appendicitis from a Pathological Standpoint. J. G. Carpenter.
140 Notes on Surgical Cases (Hemorrhoids, etc.). T. M. McIntosh

New Orleans Medical and Surgical Journal, November.

141 The Relative Diagnostic Value of the Symptoms of Extra-uterine Pregnancy. C. Jeff Miller.
142 *Malarial Hemoglobinuria. Otto Lerch.
143 The Ultimate or Predisposing Cause of Dermato-neuroses; An Hypothesis. J. N. Roussel.
144 Some Ideals for the Pharmacist. Isadore Dyer.
145 Thirty Cases of Acute Lobar Pneumonia with Twenty-nine Recoveries. E. D. Newell.

Medical Review of Reviews (N. Y.), October 25.

146 Hereditary Syphilis. (Concluded.) A. Jacobi.

Medical Standard (Chicago), November.

147 Appendicitis and Its Treatment. A. J. Ochsner.
148 The Commoner Diseases of the Eye; How to Detect and How to Treat Them. Casey A. Wood and Thomas A. Woodruff.
149 A Surgical Clinic (Epithelioma, etc.) Edward H. Lee.
150 Treatment of Pleural Fistulæ Following Operations for Empyema. Aime Paul Heineck.
151 The Circulation in the Nervous System. Herman Gasser.
152 Hydriatic Management of Pneumonia. David Paulson.
153 Complications of the Middle Ear. E. E. Clark.

AMERICAN.

1. **Apoplexy.**—Accepting under this head the symptom commonly known as "stroke," Diller holds that its occurrence without the production of either paralysis or loss of consciousness is far more common than text-books would lead one to believe. The recognition of such conditions is of great importance. It often happens that only one of the two symptoms may be present, and he reports several cases that indicate this fact. One was apoplexy without either paralysis or loss of consciousness, one producing hemiplegia without loss of consciousness, one producing loss of consciousness and mental disturbance but no paralysis, etc.; also complicated cases and cases of loss of consciousness with hemiplegia due to other causes than apoplexy or without apparent cause. He remarks that it may be trite to say that apoplexy is only a symptom, not a disease in itself. Hemorrhage or thrombosis can occur only when blood vessels are diseased and embolism can only follow the entrance of a foreign body into the blood stream. The rise of blood pressure is the most frequent determining cause of apoplexy and in this we have our most significant hint of prophylactic treatment.

2. **The Etiology of Apoplexy.**—Walker remarks on one of the cases noted by Dillon and insists on the importance of autointoxication and the influence of heredity in producing vascular degeneration.

3. **The Klebs-Loeffler Bacillus.**—The summary and conclusions of Rupp's article are in substance as follows: 1. Clinically there are two kinds of diphtheria as regards the Klebs-Loeffler bacillus, those where the bacilli are present and those where they are absent. Both forms have the same clinical history and complications and sequelæ, von Behring to the contrary. 2. The character or quality of the Klebs-Loeffler bacillus in any case of diphtheria does not affect its prognosis. 3. Klebs-Loeffler bacillary diphtheria may be so mild as to simulate tonsillitis, and yet the most virulent bacilli be present. 4. The virulent bacilli may be present in the throats of healthy people, doing no harm either to themselves or others. 5. The Klebs-Loeffler bacilli are found associated with other bacilli in other diseases than diphtheria, but fail to exert any appreciable influence on these diseases. 6. Klebs-Loeffler bacilli vary much in size and shape from the regular and artificially determined type and the amount and quality of their toxicity is not bound in any special or definite way to fit any particular typical or atypical form, if the most recent bacteriologic utter-

ances on the subject be true. 7. The virulency of disease-promoting qualities of the Klebs-Loeffler bacillus can be determined only by experimental inoculation tests. The microscope can only differentiate their forms. Any opinion based on microscopic investigation alone is largely guess-work. 8. The ubiquity of the Klebs-Loeffler bacilli and their irregular and varying forms, besides the inconstancy of their toxic qualities in no way correlates with the clinical phenomena, making it impossible to grant them any primary specific etiological importance in the pathogenesis of clinical diphtherias. 9. The "necessary influences" and the "favoring conditions," besides other factors unknown to us, enfold within themselves the secret of the real causes—not cause only—of clinical diphtherias. 10. The assumed etiologic and pathologic supremacy of the Klebs-Loeffler bacillus is largely, if not altogether, a synthetic demonstration, and although this is not altogether "a bridge of fancies," enthusiastic laboratory workers and their unquestioning followers are traveling over it unhampered by the odious uncertainties and difficulties that have been presented in this paper.

5. **Nitrous Oxid and Ether Narcosis.**—Carter advocates the utility of nitrous oxid and ether narcosis as opposed to the use of ether and chloroform alone. He thinks the method especially valuable in neurotic patients and children and in valvular disease of the heart it can be used with almost perfect safety. Old people take it well, but special care should be exerted and its use avoided in all cases of arterial degeneration. In pulmonary diseases, provided the heart is not affected, he would advise the use of chloroform in preference to gas and ether, though mild cases do not contra-indicate the use of nitrous oxid. The only disadvantage of the method is that it requires somewhat complicated and expensive apparatus and expert skill to administer it, but its general adoption would necessarily lead to the systematic instruction in anesthetics, and would make expert anesthetists.

6. **Cutaneous Epitheliomata.**—The following are the conclusions of Allen's article: 1. Cutaneous cancer can be traced in almost all instances to preceding local irritation. 2. While other causes may be operative, it is not unreasonable to assume that infection may be one source of irritation occasioning cancer. 3. Benign epitheliomatous proliferations of infectious nature transmitted by contagion lend weight to this view. 4. Cancer is curable, but the disease may be allowed to progress until the patient no longer is. 5. No treatment short of the most radical measures should be tolerated. 6. In the application of caustic pastes and subsequent cauterizing dressings we possess a method not alone radical, but one which is in many conditions preferable to the knife. 7. The earlier treatment can be applied, the less likelihood is there of recurrence or of subsequent outbreaks in other parts due to cancerous tissue which has been left behind. 8. The *x*-ray as a means of treatment bids fair to prove quite as effective as caustic applications.

7.—See abstract in The Journal, xxxvi, p. 1652,

8. **The Lane Lectures.**—In this ninth lecture Morris reviews feigned eruptions, erythema of various types, keratodes, multiforme, herpetiforme, pemphigus, erythema nodosum, lupus erythematosus, rosacea, lichen, lichen neuroticus, skin neurosis and mental disturbance, zona, and eczema. He follows Head's opinion that zona, occurring idiopathically without obvious cause, is an acute specific disease of the nervous system analogous to anterior poliomyelitis. As regards eczema he does not support the parasitic theory, considering that it is not proven, though secondary infection is undoubted. In a large proportion of cases he thinks it is produced by disordered innervation of the skin and that the diminished resistance thus caused opens the way to invasion of the micro-organism.

9. **Muscular Atony in Uterine Displacements.**—The importance of this element in uterine displacements is insisted upon by Coe, who offers the following deductions for discussion: 1. Muscular atony is an important factor in the causation of uterine displacements, either alone or associated with the usual factors, overweight of the uterus and weakening of its ligaments and the pelvic floor. 2. Mere restoration of the organ to its normal position with regard to the axes of the pelvis is not sufficient to cause permanent relief of symptoms, provided additional support is not afforded by firm pelvic and abdominal muscles. 3. The prognosis as to the cure of malpositions by operations is influenced by the general muscular tone of the individual. 4. Hence it should be the aim of the physician to endeavor to restore such a healthy condition of the muscles, either before or after operation, by appropriate treatment—baths, massage, electricity, gymnastic movements, out-of-door exercise, tonics, and such regulation of the patient's dress and mode of life as seem best fitted to the individual case. In short, the work of the physician often begins where that of the surgeon ends, if the result is to be complete and permanent.

10. **Devitalized-Air Toxemia.**—Denison insists on the importance of the proper condition of the air, referring to Richardson's experiments as showing that oxygen may be deficient in quality, irrespective of quantity, and hypothetically explaining it by some atomic changes due to electrical disturbance. The toxin which he specially considers as having influence on the development of phthisis is due to stagnant unventilated air existing in the lungs themselves. The unrenewed pulmonary air is simply a tenfold intensification of devitalized air of the environment in which the consumptive lives. He criticises the too exclusive bacteriologic theory of consumption, claiming that it never has been and never will be shown that bacteria are the sole cause of diseases classed as tuberculous, for other causes are entitled to quite as much consideration. The nonconformity to healthful environment is the greatest scourge of the human race.

12. **The Philippines.**—The sanitary conditions in the Philippines are described by Chamberlain, who thinks that it is, for a tropical country, a healthy one. The water supply, however, is usually bad and should be looked after. Dysenteric troubles prevail. The sanitation of dwellings has been unduly neglected there by the natives in the past. Malaria is less prevalent than in Cuba, and he thinks that many cases so diagnosed are really a special fever, which may possibly be Malta fever. Venereal disease is not so prevalent or so serious as was expected. Tuberculosis, while not common, usually takes a bad course, and if the patients remain there, they are soon beyond hope. Skin diseases are very common. The natives live chiefly on rice, but this is simply a matter of necessity rather than of desire. He thinks the army ration does not need any extensive modifications. If any alteration is desirable it is the addition of sugar, which the soldiers seem to crave. The greatest needs there are permanent barracks, general vaccination, segregation of lepers, instruction as to sanitation and study of tropical diseases.

13. **Army System of Personal Identification.**—The army system of personal identification is described by Alden, which seems to be a modified Bertillon plan, and its advantages are shown.

14. **Medicolegal Diplomas.**—The use of the medicolegal diploma and the selection of experts by special qualification, is advocated by Johnston, who describes the standard selected by the Faculty of the McGill University for giving this diploma and believe that when it becomes recognized as a qualification for expert work the advantage will be obvious.

17. **Trional Fatalities.**—Church has collected from the literature a number of cases of fatalities from the use of trional and sulphonal and adds a case of his own with autopsy. He gives special warning that abdominal distress and urinary derangements, including hematoporphyrinuria, indicate trional poisoning of a very grave character, and that the drug, even in so-called safe doses, may give rise to serious and even fatal toxic conditions.

18.—This article has appeared elsewhere. See abstract in The Journal of October 19, ¶85, p. 1066.

19. **Internal Lesions from Burns.**—From a series of 13 cases, McCrae has been led to the following conclusions: 1. The entire pathologic picture presents great similarity to the

conditions found in the diseases characterized by the presence of toxins of bacterial origin in the blood. 2. Damage to the lymphatic tissue is a constant feature, but is not necessarily focal, some cases presenting only diffuse degeneration. The cases which live but a few hours after infliction seem more likely to present a focal condition than those which live a longer time, as the condition which he interprets as proliferation and phagocytosis is one which may rapidly disappear. 3. The focal lesions are not a true necrosis, but rather a proliferation of the endothelial cells of the reticulum and the capillaries, and a phagocytosis by the leukocytes and endothelial cells, to which latter is due the fragmented, disintegrated appearance which suggests a true necrosis.

20. **Bacteriology of Otitis Media.**—This article deals only with the bacteriology of disease of the middle ear. Funke thinks that otitis media may occur in the absence of bacteria, or rather that the literature contains cases that seem to indicate this. The route of entry of infection may be through the blood, through the Eustachian tube, through the tympanic membrane as shown by Moos, through the petrosquamous fissure and by still other routes, but the most important is by the Eustachian passage. The bacteria found are the pneumococcus, streptococcus, and staphylococcus, Friedländer's bacillus, typhoid bacillus, bacillus diphtheriæ, tubercle bacillus, and bacillus pyocyaneus, as well as some miscellaneous forms which have been noted in isolated cases. He concludes with quite an extensive bibliography of the subject.

23. **Uterine Cancer.**—A review of the literature leads Noble to the following conclusions as to uterine lesions: 1. The majority of cases are too far advanced when first seen to hope for radical cure. 2. The percentage of cases of cancer of the cervix remaining free from recurrence at the end of five years under vaginal hysterectomy is variously given, but it may be claimed confidentially that at least 10 per cent. do so, and may be considered cured. 3. The results of hysterectomy, whether vaginal or abdominal, for carcinoma of the corpus are much more satisfactory. Statistics seem to show that about 75 per cent. of the cases are permanently cured, hence a good prognosis may be confidently given for abdominal operations. 4. The abdominal radical hysterectomy for uterine cancer involving the pelvic glands and the parametria along with the uterus is still upon trial. Its primary mortality is probably double that of vaginal hysterectomy and permanent conclusions as to the results are not yet possible. The most encouraging report of the operation is that of Wertheim, that after two and one-half years' experience he has had no recurrence. Noble's experience with cancer has not been satisfactory. He thinks his operative cases have been less than the average.

25. **Surgery of the Lungs.**—Eisendrath reviews the history and conditions of pulmonary surgery and offers the following conclusions: 1. Both acute and pulmonary abscess and gangrene following pneumonia may develop immediately, and chronic and simple putrid abscesses, with or without bronchiectases, are more remote sequelæ of both croupous and influenzal pneumonia, especially the latter. 2. The most valuable points in the history are the etiology; the sudden expectoration, after an apparent crisis, of pure non-odorous pus in the simple abscess cases, or of fetid pus in the gangrenous variety. In the chronic cases there is usually a history of a pneumonia having preceded the condition at some considerable time previously, followed by expectoration of large quantities of pus, with exacerbations of fever, accompanied by emaciation and frequently clubbed fingers, etc. 9. Signs of cavity are seldom present. The moist râles, especially of large metallic character, are the most reliable physical signs. The character of the sputum is also of great value, whether purulent or fetid. Elastic fibers are more frequently found in gangrene than in abscess, being comparatively rare in the latter. 4. The *x*-ray is only of confirmatory value, as it shows chiefly thickened areas of lung, and should not be absolutely relied upon. When it shows a shadow at the same point where the physical signs are present, it is of value. 5. The prognosis of abscess and gangrene following pneumonia, medically treated, is very favorable. One of the greatest difficulties is the exact localization of the focus. His statistics show a marked increase in the percentage of recoveries within the last five years. The prognosis of chronic cases is not so favorable. The walls of the cavity are often rigid and free communication of a bronchus with these cavities is also a great hindrance. The statistics are improving.

26. **Pneumonia.**—Hall's analysis of 70 cases is quite thorough and certain special points are noted. He does not think the increasing mortality of pneumonia means that it has become more malignant. The decreasing death rate from tuberculosis, diphtheria, typhoid and other diseases leaves more people to grow old. Pneumonia is a disease of advancing age. He thinks it entirely probable that its mortality will continue to increase, for it will be a final infection of those escaping death from other causes. Of the remedial measures he has seen benefit from judicious bleeding and great relief from ice-packs in pyrexia. Insomnia requires opiates rather than depressing hypnotics and the free use of strychnia in recent years is a great gain. Cardiac depressants are not advised by him. Liquor ammonii acetatis or sweet spirits of nitre seem to be equally good. Digitalis has been given frequently in cases of heart weakness, and alcohol where needed. He thinks the use of oxygen has been of value in some cases. His opinion as to serum therapy is not too favorable.

27. **Hospital Abuses.**—The special abuses noticed by Hillis are the promiscuous mixing of paupers, pay patients and criminals in hospital wards and the lack of distinction between pay and non-pay patients generally which favors imposition, the propriety of charity patients paying for their treatment by being used for medical instruction, the need of better training of internes in the preparation for hospital service and the payment of the hospital staff. No class of men should be obliged to work for nothing for the community when others do not.

28. **Influenza.**—Anders has analyzed the climatic conditions of influenzal epidemics and finds that the disorder seems to depend more or less on extremes of cloudiness during the season. La grippe seems to like darkness better than light, but he says it is not inferable from his observations that there is the positive and direct relation between the absence of sunshine and the prevalence of la grippe that Ruhemann would have us believe.

32. **Typhoid Fever.**—Taylor pleads for treating typhoid by assisting Nature, favoring assimulation, minimizing waste, deflecting the patient's mind from his business, reorganizing the organism and allowing each organ to do its work to its best advantage. He says the best rule is "if you don't know just what to give don't give anything." There is already inflammation of the bowels, and it is unsurgical to use purgatives like calomel. If nausea exist, give the stomach rest until it can digest food; feed three times a day and give just such food as can be perfectly digested, beef tea and beefsteak pulp moderately heated, powdered crackers, raw eggs. Never allow the patient to eat anything that requires mastication, but always have food prepared so that it needs only to be mixed with saliva. The milk diet he condemns, as also the use of alcoholics. Avoid disturbing the patient during sleep. Allow the patient to drink all the water that is desired. Keep the mouth clean. For restlessness, bromids are effective and leave no bad result. If there is much decomposition in the intestine, he uses saline cathartics and then tincture of iodin and carbolic acid in small doses until they are contra-indicated. Colon irrigation is employed three times a day with warm water. If there is catarrh a little extract of pine and Dr. Mathews' prescription of almond oil, bismuth and iodoform, at night. Two typical causes are reported, and he says in the treatment remember the stomach first, the colon next.

33. **Urinary Toxicity in Pregnancy.**—Stewart details experiments which he has made to determine the toxicity of urine during pregnancy, and while the general result is somewhat undetermined, he leaves the impression that while it has been heretofore attributed to poisons generated in the

human body, it is more often due to micro-organisms. In his own experience, 75 per cent. of deaths could not be attributed to any other cause than bacteria due to infection of urine during catheterization or subsequent manipulation.

35. **Dermoid Cyst of Testicle.**—Morris reports a case of true dermoid of the testicle, containing hair and two teeth. The condition seemed to be congenital as it was probably noted the second day after birth.

36. **Gunshot Wounds of the Pregnant Uterus.**—Gellhorn continues the report of cases from the literature and gives an analysis of the symptoms. From his observation he thinks that in every case of gunshot wound of the pregnant uterus, Cesarean section should be performed at once. The Porro operation is preferable on account of possible infection.

37.—This article has appeared elsewhere. See The Journal of September 28, p. 869.

38.—Ibid.

39.—Ibid.

40. **Essential of Toxemic Dropsy.**—The disease described by Herringham is a condition in which there is dropsy in the legs, sometimes in the arms and face, exactly resembling renal dropsy, but with no albumin in the urine and no constant lesions. The disease closely resembles nephritis in its causation by cold and scarlatina, but can not be explained by the ordinary theories. He is inclined to think that it is due to some toxic poisoning, such, for instance, as that of scarlatina, which may in some cases produce anasarca without inflammatory disease of the kidney and in other cases produce both anasarca and kidney disease. The treatment that has been employed in these cases has been wet packs, hot-water baths, hot-air baths, and iron for the anemia. He suggests the use of syrup of iodid of iron and arsenic, and also endeavors to stimulate the kidneys by milk and digitalis.

41. **Tendon Grafting.**—White refers to the unequal results obtained in tendon grafting, but reports a case showing the advantages. He thinks that the method is a valuable addition to our means of treating a class of cases which, previous to its adoption, were alike objects of pity and reproach to the medical art.

50.—See abstract in The Journal of October 5, p. 932.

51. **Feigned Impairment of Vision.**—The simple test here used by Snydaeker is based on the common belief of ignorant people that they can look at an object with both eyes open and use only one eye. The physical defect here claimed was in the right eye. The left was normal in its visual field, while the right was somewhat contracted. The patient was seated at the perimeter, his right eye gazing at the test object, his left behind the screen, and while thus using only his right eye, the screen was quietly removed from the left and he still claimed to see the same contracted field which the observation of the right eye had previously disclosed. Malingering was, therefore, revealed.

52. **Prostatic Hypertrophy.**—Schmidt describes the various forms of prostatic obstruction, the collar-shaped, hypertrophic enlargement of individual lobes, pedunculated lobes and the formation of large tumors growing into the cavity of the bladder. The methods of diagnosis are given.

54. **Inflammatory Affections of the Nails.**—The various conditions that may affect the nails are noticed by Pollitzer, who believes that the majority of onychias are principally due to staphylococcus aureus. Onychia maligna is a special form rarely seen, which is at least due to bacillus tuberculosis in some cases, while Jonathan Hutchinson holds that it is generally due to syphilis. The most common of all the acute inflammatory conditions is the ingrowing toe-nail. It is due, as a rule, to ill-fitting shoes. The age period of its occurrence, between 15 and 20, and the common association of hallux valgus support this view. Before leaving idiopathic diseases he mentions confectioners' onychia, which is due to the practice of putting their fingers into hot syrup fruits. Next he notices diseases in which the nail inflammation forms a part of an inflammatory dermatosis; among them hyperkeratosis sub ungualis, a rare condition regarded by von Hebra as localized eczema. Eczema of the nails is a protean condition; variability is its special characteristic. Psoriasis may also affect the nails and occurs in two forms, early and late. The early form consists in the development of minute hyperemic spots seen in the proximal portion of the lunula underneath the cuticle, followed by punctate softening and desquamation and the nails finally come to have an appearance of a thimble. In the severer forms of psoriasis the nail-plate is raised up by a dry crumbly mass of scales and a special feature is the occurrence of a sharply marked transverse depression which extends as a "punched-out" groove several millimeters broad across the nail. Above and below this groove the nail-plate may appear comparatively normal. Changes in the nails may occur in pityriasis or pemphigus. Syphilitic affections are very important: chancre of the terminal phalanx is not infrequent. As manifestations of a general syphilitic infection, two groups of nail affections may be described, those which are dry and those which are moist. The first form has occurred as early as eight months after the infection, but most cases occur from two to ten years later. While essentially chronic, it generally yields to anti-luetic treatment. Of the moist forms of nail-syphilis, paronychia ulcerosa syphilitica is the most common, generally occurring during the greatest activity of the general infection. The nail-plates may fall off and their place be filled by ulcerations. The condition is more rarely seen now-a-days owing to the general recognition of syphilis and the improvement in its treatment.

55. **Trophic Affections of the Nails.**—Zeisler describes in this article the transverse furrows or grooves which follow fevers and are due to temporary disturbance or arrest of their growth in the matrix and a somewhat rarer central excavation or depression of the plate due probably to processes of shrinking in the nail bed and described as koilonychia. Alopecia ungualis consists in the total falling off of one or more nails without notable cause and without pain or inflammation: this, he thinks, is due to some unexplained trophic disorder. It has been known to follow severe shock or on exposure to the Roentgen rays. Nail atrophy is another condition first observed in connection with other diseases, and sometimes with disturbed nutrition and peripheral nerve lesions. One form in which it shows itself is brittleness, another is a tendency to longitudinal splitting. He also mentions the leuconychia or white spots under the nails, which may be due to slight traumatism, but these often can not be traced. The chief hypertrophic condition of the nails is a transformation into claw-like appendages. He mentions a case seen by him in which he attributed this to a deep-seated trophic disturbance. In conclusion he mentions the connection with general diseases, frequent inflammation of the nails after nerve lesions and in Raynaud's disease or in syringomyelia.

56. **Parasitic Diseases of the Nails.**—These are chiefly limited to onychomycosis, the animal parasitic affections requiring barely more than mention. The symptoms are described, also the varieties of favus, trichophytosis, and their etiology. Auto-infection seems to be the principal cause in these cases. The various points of diagnosis are pointed out.

57. **Treatment of Nail Disease.**—Hardaway insists on the importance of antisepsis and limitation of the care of the nails to the free borders. In eczema and psoriasis, arsenic internally is advisable and lactophosphate of lime and sulphur are also of considerable value. Th local treatment consists mainly in the use of the preparations of tar, salicylic acid and chrysarobin combinations. We should pay attention to paronychial conditions in onychia and eczema. Syphilis of the nails, of course, is managed by specific treatment. Onychomycosis is rare; after the proper scraping and paring, the usual parasiticides may be employed. Several prescriptions are given. In ordinary onychia, division or evulsion of the nail is generally demanded and gives relief to pain and tension. In most instances strict cleanliness and the use of some antiseptic lotion is all that is necessary in the way of after-treatment. Where there is a suspicion of tubercular granulations, Shield

insists upon the free use of the curette followed by the application of pure carbolic acid. In onychia maligna, as seen in strumous children, tonics and nutritious food should be made an essential part of the treatment. For hypertrophies and atrophies no precise rule can be laid down. Surgical procedures are occasionally demanded. Ingrowing toe-nail is mainly surgical in its treatment, but often relief may be had by inserting lint or tinfoil under the niche of the nail in mild cases.

58. **Internal Urethrotomy.**—Lydston suggests as a possible cause for failure, that more importance should be attributed to idiosyncrasies in these cases. The possible constitutional tendency to fibrous hypertrophic tissue growth should be taken as one of the best explanations.

71. **Epidemic of Noma.**—Blumer and MacFarlane report the facts of an epidemic of noma that occurred at the Albany Orphan Asylum, sixteen cases altogether, and discuss them in the light of the literature. As a result they conclude that noma, while originating in all probability as a simple infection, is always in its later stages a mixed one. While it is probably not always due to the same organism, it is more frequently caused by long thread-like organisms of the leptothrix type that do not grow on ordinary culture media. Krahn's assumption that it is due to mouth organisms is negatived by finding similar organisms in the noma of the genitalia.

72. **Raynaud's Disease.**—Beck reports two cases and illustrates them with skiagraphs showing that the tissue changes in Raynaud's disease are not confined to the soft tissues, but also affect the bones. In the cases reported there was an atrophy of the upper ends of the third phalanges of the hand, and osseous proliferation of the upper end of all the second phalanges.

73.—See abstract in THE JOURNAL, xxxvi, p. 1339.

74. **Osteitis Deformans.**—A case is very fully reported by the authors and the literature of the condition discussed. From a clinical standpoint he concludes that: 1. Sixty-six true cases are found in the literature besides the one here reported. 2. Osteitis deformans is a distinct disease of obscure etiology possibly allied to, though not identical with osteomalacia, fragilitas ossium and acromegaly. 3. The disease is especially one of adult life, though it has been observed as early as 21 years. The largest percentage occurs in males; in a small proportion traumatism seems to play a part in the causation. There is little evidence of any family tendency to the disease, though there are a few examples in the literature. 4. There is a striking general resemblance in the subjects in their general characteristics, the most noteworthy features of which are enlargement and forward projection of the head, dorsal cervical kyphosis, prominence of the clavicles, spreading of the base of the thorax, diamond-shaped abdomen, crossed by a deep sulcus, the relative increase in the width of the hips, and the outward and forward bowing of the legs. 5. The bones most frequently affected are those of the clavicle, tibia and femur. There is a curious preponderance of cases involving chiefly those of the left side, though in some cases it has been crossed, the lower extremities on one side, and the upper on the other being most affected. 6. The association with malignant disease, while present in the case reported, does not seem to be so frequent as usually stated. From a pathologic standpoint the following conclusions are offered: 1. Osteitis deformans is a disease affecting the skull, vertebræ and certain of the long bones. Its essential characteristics are: (*a*) Absorption of compact substance, causing enlargement and confluence of the Haversian canals. (*b*) Formation of new bone which runs diffusely through the affected and the adjacent healthy portions, and which remains uncalcified and is in turn reabsorbed. (*c*) Conversion of the medullary substance into a vascular connective tissue containing fat cells, giant cells and leucocytes. In a small proportion of reported cases the cysts fill with gelatinous matter and giant-celled sarcomas occur in the medulla. (*d*) As a consequence of these processes the original relations of compact substance in the medulla are destroyed, the bones become thickened and asymmetrical, but since the new bone tissue remains uncalcified its elasticity permits of great deformity of the long bones from the weight of the body, and fractures do not occur. 2. The whole picture of osteitis deformans from its pathologic aspect is so characteristic that it must be considered a distinct disease of easy pathologic diagnosis. 3. The etiology of this is as obscure as when first described. Some predisposing tendency, probably trophic, must be assumed and the exciting cause must be mechanical; in the skull, extremes of heat and cold, and in the vertebræ and long bones the ordinary traumata to which these bones are exposed. Lesions of the nervous system are inconstant and rare and probably not a causal factor.

75. **Asymmetry of the Nasal Cavities.**—The following propositions are offered by Coolidge as giving the main points of interest in regard to this condition: "1. In cases of deviation of the septum, the common asymmetries of the other intranasal structures should be classed as physiological compensatory changes. 2. As a rule, these changes in the turbinated bodies and ethmoid bone are not due to increase or diminution of the air current. Neither is the deflection of the septum often secondary to asymmetrical turbinates. 3. Whatever may be the mechanism which underlies this adjustment, the ethmoid and the turbinated bones are especially endowed with nutritive adaptability, and in consequence are able to minimize the disturbance which a deflecting septum would produce. Slight deflections are often rendered entirely innocuous, more extensive ones partially so. 4. The entrance into the nasal cavities proper can not share in this readjustment, and here a deflection of the cartilage of the septum soon becomes obstructive."

77. **Typhoid Cholecystitis.**—Pratt reports cases of cholecystitis and cholelithiasis associated with the presence of typhoid bacilli in the gall-bladder, and points out the probabilities of the agency of this germ in the production of cholelithiasis.

79. **Infantile Bone Lesions.**—Two cases are reported by Taylor showing the difficulties in the diagnosis of bone lesions of children. In the first there was a diagnosis of scurvy with a suspicion of tuberculous osteomyelitis, the second one had the symptoms and picture of Pott's disease; on the abscess being evacuated it showed the staphylococcus aureus. He suggests making the blood examination a part of the routine record as well as that of the urine.

81. **Tuberculosis of the Cervix.**—Beyea reports a case of tubercular infection of the portio vaginalis and cervix uteri and discusses the condition from the literature. He has been able to collect 69 cases including his own, which he analyzes. He points out the peculiarities. The treatment should be operative, as a rule, excepting where there is extensive disseminated tuberculosis.

82. **Ophthalmoplegia.**—Adt points out the difficulties of certain theories of locating lesions affecting the ocular muscles, more particularly those involving the nucleus of the third nerve and those involving the root fibers of this nerve in the tegmentum. He concludes that our knowledge of decussation of the root fibers of the ocular motor thus far derived from clinical and anatomical study is of diagnostic value only in consequence of the fact that it increases the tendency to binocular paralysis in nuclear lesions, but that this decussation causes characteristic combinations has not as yet been demonstrated. He points out that if the anatomy of the nucleus as described by Kolliker and Bach is accepted, a monocular nuclear palsy involving all the branches of the third nerve would be impossible. Lesions on the one side would necessarily implicate those intermingling fibers which have crossed over from the opposite side and he maintains that it has never been anatomically demonstrated that the nuclear lesion can involve all or even the majority of the muscles of one eye governed by the third nerve without affecting the muscles of the other eye. The diagnosis of monocular palsy must be made with reserve in all cases of even partial monocular ophthalmoplegia. He quotes the case reported by Starr of partial

external ophthalmoplegia of both eyes due to embolus in the tegmentum, and criticises the conclusions that, if one or two of the muscles of the eyeball supplied by the third nerve are affected, others escaping, the lesion lies in the tegmentum of the crus cerebri between the nuclei of origin and the point of exit of the third nerve: one or both eyes may be affected, but both eyes are rarely affected in the same way. Making exceptions only in cases of post-diphtheric ocular paralysis, Adt would say that in a case of monocular ophthalmoplegia with sudden onset affecting any of the muscles which move the eyeball supplied by this third nerve, others escaping, the lesion lies in the tegmentum of the crus cerebri and that in case of binocular paralysis of this form with sudden onset the lesion lies in the nucleus of the third nerve in the floor of the aqueduct of Sylvius. These rules are also applicable to a great extent in cases with chronic onset, though lesions of the base of the brain or in the orbit implicating some of the fibers of the third nerve may in rare instances cause similar forms of paralysis.

85.—See abstract in THE JOURNAL, xxxvi, p. 1491.

86. **The Blood Count at High Altitudes.**—The experiments of Campbell and Hoagland lead to the following conclusions as to the rapid increase of the blood count as we ascend: "1. The blood count increases as we ascend (without exertion) at the rate of 50,000 corpuscles per cubic centimeter of blood per thousand feet. 2. The pulse rate increases in the same ratio as the blood count, rising as the pulse rises, and in like proportion falling when the pulse rate falls, showing that the heart seeks to overcome the changes brought about by the lessened barometric pressure. 3. The increase is not a true multiplication of the blood corpuscles, but is due to a changed vasomotor condition in the peripheral vessels incident to diminished barometric pressure. This condition of vasomotor control of circulation and blood count was demonstrated in the various experiments made, where it is shown that the count can be increased or diminished by any means that will dilate or contract the peripheral capillaries. 4. This is further demonstrated by the experiments on rabbits, which showed the same increase as man, and by the mesenteric count demonstrated that the external capillary count was increased at the expense of the internal abdominal circulation. 5. The increase in the blood count disappears and the heart's action returns to the normal when we return to the altitude from whence we started. This is another confirmation of the fact that the increase is a fictitious one, and is due to a diversion of the blood current incident to diminished barometric pressure. 6. The dilatation of the external capillaries (skin and lungs) would not alone account for all the increase, but with this dilatation we have another effect of diminished barometric pressure, viz., diminished arterial tension. With vessels of an increased caliber and a heart with a diminished force we can plainly see that we will have more or less of a temporary stasis in the dilated capillaries. In the course of time Nature seeks to adjust an equilibrium in the economy of those who live at high altitudes. The heart becomes more forcible by the strengthening of its muscles, and the circulation becomes more equitable. Hence the gradual decline in the blood count (Solly) of those who have remained for some time at a high altitude. 7. The want of increase of hemoglobin in proportion to the increase of blood count in ascents is accounted for by the fact that the blood corpuscles, the carriers of the hemoglobin, are not increased at once in high altitudes. After remaining some time at a high altitude the true increase in blood corpuscles takes place, and with it the increase of hemoglobin."

87. **Contusions of the Abdomen.**—Stewart's article is a review of the reported facts in regard to contusions of the abdominal viscera.

93.—See abstract in THE JOURNAL of September 14, p. 713.

111. **Mental Weakness of Women.**—This translation from the German of Professor Mobius maintains that woman is inferior in her brain development, especially in those parts associated with mentality and that this condition exists from birth. Woman is instinctive, animal-like, dependent; on this depends her attractiveness. If woman were not physically and mentally weaker than man with her emotional tendencies, she would be extremely dangerous. Her lack of creative ability is manifest. Her learning powers are quickly lost. While we consider woman mentally weaker than man, nothing to her detriment is thus implied. Her accomplishments differ from those of man. This differentiation seems to be a wise provision of Nature. She learns quicker than man, but loses the faculty earlier. The mental crippling effects of marriage are remarked upon and especially the changes of old age.

121. **Tonsillitis.**—The two chief types of tonsillitis, follicular and parenchymatous, are described by Gray, who points out the difficulties of differential diagnosis from diphtheria and at times the absolute necessity of the bacteriologic test. He believes we will find eventually that tonsillitis is due to specific bacteria, and that we are in error if we allow the cases to be closely associated for any length of time with other individuals.

134. **The Double-Knife in Histo-Pathology.**—Gradwohl calls attention to the value of the double-knife in making pathologic examinations and sums up the reasons why we should use this method of examination. 1. Where there has been a hemorrhage into the tissue, we can see it best in the fresh specimen, getting a better idea of the age of the hemorrhage. Hematoidin crystals can be made out, also amorphous yellow hemosiderin. 2. Necrotic changes can as well be investigated in the fresh specimen. 3. Atrophy is easily made out. Should we want to examine the muscles and nerves in atrophy the use of maceration fluids are necessary. 4. Cloudy swelling and parenchymatous degeneration can be seen only in the fresh specimen. To differentiate this condition from fatty changes use acetic acid which dissolves the intercellular nuclei. 5. Fat changes can be seen by the use of acetic acid, ether and chloroform and osmic acid staining. 6. Hyalin and colloid degeneration can be well studied in this way. 7. The microchemistry of amyloid degeneration can be best solved in the fresh specimen. 8. Inflammation of tissue in general can well be studied in the unstained fresh specimen, but if staining is desired, dip the specimen in methyl green. 9. Tumors of various sorts, if of good consistence, can be diagnosed in this way. The technic of the use of the double-knife consists in arranging the blades at a suitable distance, dipping the knife into water so as to secure a film of water between and over them, holding the knife perpendicularly to the surface to be cut, bringing it firmly down upon the organ, imitating the bow-string movement of the violinist, and swerving the instrument from side to side so as to release the specimen; again dip the blades in water and the specimen floats out and it can then be mounted.

135. **Surgical Operations on the Aged.**—Meisenbach finds that the aged bear capital operations very well and that age *per se* is no contra-indication to operation, other things being equal. The aged, under proper conditions, should be given the benefit of our skill in surgical work, but we must bear in mind that the aged do not bear well the loss of heat and blood.

142. **Malarial Hemoglobinuria.**—Lerch gives certain facts of his experience as regards malarial hematuria in a swampy wooded region in Louisiana. There seems to have been a predisposition, and men were almost exclusively attacked by this special symptom. He says that having here proper conditions, viz., a particular parasite, climate favoring the condition, individuals that have suffered from repeated malarial attacks with serious damage, blood saturated with toxins, faulty metabolism, and the idiosyncrasy above mentioned we can readily understand that then, and then only, the phenomena of hemoglobinuria may be provoked by a number of direct causes that under other conditions would appear to be trivial. Quinin hemoglobinuria is also briefly mentioned. The parasite in the patient is the primary cause; quinin acts only as the provoking agent. He believes that quinin is a specific, but it must be understood that it has no curative influence on hemoglobinuria. All it does is to destroy the parasite and it does this thoroughly. Its continuous administration is injurious. Those

that do not yield with a few doses are not due to the parasite, but are post-malarial. Rest is of utmost importance; fresh air, oxygen treatment is justified; proper elimination, bathing, treatment of anemia, etc., and proper diet are all noticed.

FOREIGN.

British Medical Journal, November 2.

Local Treatment in Diseases of the Upper Air-Passages. Sir Felix Semon.—The author commences the lecture with remarks on the tendency to overdo surgical treatment, and says that the local treatment of ailments of the upper air-passages is not an exception to the rule and has of late years been considerably overdone. The question as to who are the greatest sinners, the profession or the public that permits this sort of treatment, is noticed; he does not think it fair to lay it altogether on the patients, though they are apt to rush into the "non-repellant arms of surgery." Every specialist has some pet operation of his own to which he resorts, and the personal element enters largely into all questions of treatment both as regards the patient and the medical advisers. Our views as to the general principles of treatment of the air-passages are apt to be changed by every new discovery. For the purpose of the lecture he divides the pathologic conditions into the following categories: 1, affections of purely local character; 2, local manifestations of general disorders; 3, local manifestations of the nose and throat dependent on local disease in correlated areas; 4, affections of the upper air-passages supposed to exercise an influence upon other organs and parts of the body, either direct or reflex; 5, local symptoms of sensations of obscure origin. All these overlap each other to a certain extent. In the conclusion of his course he proposes to make some observations on the necessity of a proper proportion being observed between the gravity of the disease and that of the interference. This first lecture deals with the purely local affections of the air-passages and he enumerates the conditions where interference is essential, such as the removal of papilloma, fibroma, complete nasal obstruction, chronic frontal sinus empyema, removal of foreign bodies, etc., and malignant disease of the larynx. We should shake off the belief in the incurability of cancer and not hesitate to operate when it exists while the mischief is still purely local. He thinks, however, that interference with every little deviation, such as nasal spurs, little suppurations in the middle meatus, or every little bunch of adenoid tissue in the vault of the pharynx is not demanded. It is a bad practice for physicians, more and more the fashion, to frighten, perhaps unintentionally, by reciting all the possible contingencies that might arise if the operation was not performed. There should be no hurrying patients into the operation, unless there is good reason for it. He takes up the question of adenoids, pointing out the surgical enthusiasm and the reaction which has taken place to some extent with respect to operation for this disease. As regards the breathing exercise treatment he has an utter lack of confidence in it as a curative method in this condition. As regards operation he divides adenoids into three classes: 1. As to whether they cause (*a*) permanent, (*b*) periodical or transitory, or (*c*) no symptoms. In the first class where respiratory obstruction, open mouth, snoring, thick voice, deafness and the peculiar deformation of the face and chest and general debilitated state of health exist, he considers operation absolutely indicated. In the second class in which are free intervals and alternate periods of obstruction and impairment of hearing, or attacks of earache, the question is more difficult. If the patient is brought to you at his worst with the definite statement that the attacks only occasionally occur and last a short time and you find some soft swelling of the lymphoid tissue, but no deafness or organic ear disease, it would be better to postpone the operation until the symptoms are more decided. If you are in doubt as regards it, lay a clear and non-alarming statement before the parents and let them decide themselves. When adenoids give no symptoms he thinks they should be let alone. There is often not an inconsiderable amount of lymphoid tissue in the vault of the pharynx that has never done any harm. As regards reflex neuroses he is a skeptic, especially those due to adenoids. As regards operation he says the thing is to avoid recurrences, and thorough operation is the best assurance of this. He describes his own method of having the child in the recumbent position with the head well over the table so that there is no danger of blood or loose pieces of adenoid getting into the larynx. The operation should not be finished until the operator by thorough digital observation has convinced himself that there is not a vestige of lymphoid tissue protruding over the surface of the mucous membrane left behind. In conclusion he says, in all purely local affections of the upper air-passages there are certain cases in which all reasonable men will agree that local treatment is required, and others that the moderate section at any rate will be unanimous that it is not. Between these two large classes there is the very large intermediate one in which everything is the question of degree and in which opinions may legitimately differ as regards the local treatment. If we err at all at the present time the tendency is to err by doing too much operating. He quotes Talleyrand's celebrated counsel to a young diplomatist: "Above all, not too much zeal!"

The Dublin Journal of Medical Science, October.

The Blood Corpuscles in Enteric Fever. W. A. Winter.—As there seems to be some obscurity in regard to the leucocytic condition of the blood in enteric fever, Winter has investigated the subject, comparing the relative frequency of white and red corpuscles, also the lymphocytes, large mononuclear leucocytes, polymorphonuclear leucocytes, and eosinophile cells, using Simon's method in estimating the number of leucocytes. At the time of starting this investigation he was not aware of the work of Thayer on the subject or he would have modified his methods to some extent. He gives a comparative table showing the averages of each week compared with Professor Thayer's results. His conclusions are summed up in the following: "1. The number of red blood corpuscles gradually diminishes as the fever progresses, but with the establishment of convalescence regeneration sets in. 2. The number of leucocytes is diminished throughout the course of the fever. This rule does not hold good in all cases, but is so constant that if, in a given case of a non-eruptive fever, the number of leucocytes is normal or subnormal, it would be a strong point in favor of the diagnosis of enteric fever. 3. There is a progressive diminution in the percentage of the polymorphonuclear cells which continues into the stage of early convalescence. 4. The percentage of the large mononuclear leucocytes is increased through the whole course of the fever, and continues into the stage of early convalescence. 5. The percentage of lymphocytes is increased throughout the fever, the increase being most marked in the stage of convalescence. 6. While the fever lasts the percentage of eosinophile cells is subnormal, but with the establishment of convalescence it again reaches and may even pass the normal level." His results in the main agree with those of Ehrlich and Thayer, but disagree with those of Courment and Barbaroux, whose opinion that hypoleucocytosis is due to a decrease in the lymphocytes with possible increase in the polynuclear leucocytes; that this decrease in the percentage of lymphocytes is seen in the stage of convalescence is directly opposed to Winter's experience.

Medical Press and Circular, October 23.

The Asphyxial Factor in Nitrous Oxid Anesthesia. T. Percy C. Kirkpatrick.—The author points out the possible dangers of asphyxia in nitrous oxid anesthesia. Fortunately, the extreme conditions are not commonly met with, but there are objectionable ones that should be avoided. In the first place is the jactitation so commonly met with in gas anesthesia which is really the chronic convulsions of the second stage of asphyxia and may easily be avoided by giving the patient more air. Another phenomenon even more annoying is the struggling which he thinks is also due to the want of oxygen. In many cases the only evidence of asphyxia which may be present is the increased frequency and depth of respiration. It is important to recognize this as an indication of what will follow if it is neglected and because over-stimulation of the respiratory center is apt to be followed by a period of apnea, which may cause trouble. Ordinarily the condition is devoid

of danger, but with weak heart or degenerated vessels it might be serious, and it is almost always followed by violent headache after recovery. The swollen state of the tongue sometimes impedes manipulations about the teeth in gas asphyxia, and is due to the asphyxiated stagnation of the blood. This also favors hemorrhages of the sockets of extracted teeth, thus annoying the operator and when time can only be counted in seconds this is a matter of some importance. These remarks apply with as much force to the administration of ether as that of gas, and in the administration of chloroform any asphyxia is a serious risk. The point to be observed is to give the patient enough air to supply the oxygen while we administer gas enough to anesthetize the patient; hence, the value of the combined oxygen and nitrous oxid method. While the circulation is maintained, and the air way clear, one or two respirations will lessen the cyanosis and indicate the onset of recovery. But if these do not occur he will conclude that either the air is not entering the lungs or that the heart is not acting properly. If the pulse continues to beat he concludes that there is obstruction to the air entering the lungs. Here a method of artificial respiration is indicated; possibly tracheotomy is necessary, but if the circulation is at fault it is worse than useless. If the condition of asphyxia has arisen early during the administration after struggling and is attended with deep cyanosis the case is probably one of overdistension of the heart; while if it occurs later in the administration and comes on suddenly without warning it is most likely due to syncope. In the latter case inversion of the patient is advisable, but with over-distension of the heart this would only make matters worse. In over-distension we should try to modify the heart by intermittent pressure over the precordial area, and possibly also open one of the jugular veins, artificial respiration being kept up continuously in each case.

Age and Sex as Etiologic Factors in Differential Diagnosis of Gastric Ulcer and Carcinoma. William Murrell. —From statistics offered by Welch, Fenwick, Martin, Murrell and others, the author concludes that gastric ulcer is from two to three times as common in women as it is in men, and most of the cases occur in the decade from 20 to 30. On the other hand gastric cancer is a little more common in men, and the majority of cases occur over the age of 50.

The Lancet, November 2.

Human and Bovine Tuberculosis. Edgar M. Crookshank. —Crookshank expresses himself in full agreement with Koch that if infection occurs at all from the milk and meat of tuberculous cattle, it is of very rare occurrence, but he entirely disagrees with Koch in his statement that human tuberculosis can not be inoculated into cattle. He recalls certain experiments of his own and those of Ravenel and others, and while he notices the contradictory results obtained by Koch, he thinks the facts quite in harmony with the view that human and bovine tuberculosis are distinct varieties of the same disease. Man is not the natural soil of bovine tuberculosis and similarly the cattle are not the natural soil for human tuberculosis. The difference in soil is well shown by the facts in regard to smallpox, from which cattle do not naturally suffer, but in exceptional cases the disease can be grafted upon them and the result is a mild infection; smallpox of man is transformed into a locally-inocular, mild, vesicular malady in cattle and can never again acquire an infectious character. Sheep-pox is another instance where a highly infectious malady when successfully grafted on the human subject becomes a mild non-infectious disorder. All tubercle bacilli can be inhaled and taken in with the food by perfectly healthy individuals without producing tuberculosis. There are instances of direct inoculation of man by bovine tuberculosis. Cooks and butchers may suffer from tubercular nodules, but they undergo caseation and disappear. Human infection can only be exceptional; if it were not so, man would be decimated by the disease. Crookshank does not accept the theory that abdominal tuberculosis in children is due to tuberculous milk. There are plenty of chances for auto-infection of the intestines, and many ways in which the child can be infected by human bacilli through the mouth. Physicians of experience are not so ready to attribute consumption in any form to tuberculous meat or milk, and he quotes Drs. R. Douglas Powell and J. F. Goodhart in evidence of this. The vegetarian races suffer badly from tuberculosis and he thinks if children suffer from it the trouble is rather that they do not get enough milk; their nutrition is insufficient. He calls attention also to the importance of heredity and believes in the direct transmission of it to a greater extent than is generally admitted. The direct contagion of consumptives has also been much exaggerated; at the same time the habit of spitting in public places, in railway carriages and so on, should be prohibited and the sputa of phthisical patients should be disinfected. That the virus of tubercle scattered far and wide becomes a constant source of danger to all who inhale the air is not a theory which is supported by his experience. We must not draw hasty conclusions from experiments on small animals like guinea-pigs. If tuberculosis were readily conveyed from person to person the marriage of individuals who become or are consumptive would be a fruitful source of direct infection; it is not so according to experience. There is a great difference between inoculation and natural infection.

Milk or Whey in Enteric Fever? Prideaux Selby.—Milk should not be given as a diet to enteric fever patients according to Selby, because it in many cases forms a hard cheesy curd in the stomach. The bacillus typhosus breeds rapidly in milk and toxins are produced. If we can not give milk what can we give? From a suggestion by someone whose name he has forgotten, he was led to employ whey. The result has been to reduce the death rate of his patients from 15.5 to 2.7 per cent. in 73 cases. The whey contains about one-half as much solids as the milk does. It consists of a solution of milk-sugar, with small amounts of fat, albumin and salt, and he gives figures showing how 4 pints of whey may be a sufficient diet for an adult typhoid fever patient. The method of preparation is to stir two teaspoonfuls of rennet into one quart of milk, warming slowly until it curdles. Break up the curd and strain through a fine linen. It can be sterilized in summer and made more palatable by the addition of tea or coffee or other flavoring. The quantity given varied from 1.5 pints to 6 daily. If it is sterilized some lemon juice should be given occasionally to prevent scorbutic symptoms. The amount of emaciation on this diet varies very much, but not more than it does on any of the usual diets for typhoid. The most marked beneficial effects are seen in the clean mouth and tongue and the gradual diminution of the pulse rate, showing its good effect on the heart. He tabulates his cases and analyzes the symptoms. He thinks alcohol is a valuable factor in feeding, and in some cases of weak heart he gives as much as 24 ounces daily before beginning treatment. From 2 to 4 ounces for adults seem beneficial, using brandy or whisky as the patient desires. For the grass-green defecations occasionally met with he has found 5 to 10 grains of salol rapidly curative. In no case has he had to resort to the cold bath. He never allows the patient to be too warmly covered. If the temperature goes above 103 or 104 F. he has him sponged and placed under a cradle with one or two icebags suspended inside and a sheet over the top. This forms a cold-air bath and is quite efficient. He thinks that no treatment will prevent an occasional hemorrhage after ulceration occurs, but he suggests that large doses of salad oil might saturate the sloughing Peyer's patches, and by stopping the supply of nitrogen to bacilli prevent further ulceration. Drugs are needed as a rule only for complications, and he urges practitioners to give this whey treatment a trial.

Bulletin de l'Academie de Medecine (Paris), October 15.

Urinary Casts. Peiu.—Granular tube-casts are characteristic of epithelial nephritis, even in the absence of indications of acute inflammation, and suggest inflammation in the convoluted tubules. The other varieties of tube-casts have little significance in diagnosis; they merely indicate some modification of the process. Hyalin casts generally accompany disturbances in the circulation, but have no characteristic significance. During the acute phase of epithelial nephritis the granular

casts are numerous, small, and the granules compacted together. In this form they indicate active cellular fermentation. In the subacute stage the granular casts are less numerous, larger, especially when secondary sclerosis is appearing, and an occasional hyalin cast is discovered. When the renal affection is passing into the chronic stage, the albuminuria alone persists, owing to the imperfect regeneration of the convoluted tubules and the formation of an actual cicatrix in the kidney. The tube casts vanish and the prognosis is favorable. When the cure is complete there is no further albuminuria nor casts.

Surgical Treatment of Congenital Cleft Palate. Ehrmann.—Instead of completing the palatoplasty at one sitting, Ehrmann postpones the suturing for a week later at farthest, and considers this modification a great advance in the treatment of quite young children. This is indicated in patients between 6 and 12 years who are frail, with their palate mucosa thin, and also in all cases in which there is not an abundant supply of material for the plastic operation. Secondary hemorrhage is impossible when the operation is done in two sittings, and the liability to suppuration is reduced to the minimum. He sutures the uvula with fine silk, inserting the threads before the field is obscured with blood, and uses silver wire for the remainder of the suture. Wolff has recently published four cases in which the patients were operated on when between six and eighteen months old. At the sixth to ninth year speech was entirely normal. Out of 311 operations on the palate, 192 of the patients were less than 7 years old. The best results were attained at about 2 years of age, which has also been Ehrmann's experience. The deformity of the upper jaw consecutive to palatal operations is caused by complications interfering with regular cicatrization, which it should be the surgeon's care to prevent.

Le Nord Medical (Lille), October 15.

Syphilitic Typhosis. Bournoville.—When the tongue is moist and the sweat is extremely abundant in a case of apparent typhoid fever, the possibility of a syphilitic typhosis should be borne in mind. The extreme intensity of the headache, eruptive manifestations and their generalization, and the negative serodiagnosis confirm this possibility, especially when there is hyperleucocytosis, decreased number of red corpuscles and decrease in the hemoglobin. Specific treatment will rapidly dispel the typhoid condition. The syphilitic agent may be hypervirulent, or the typhoid may be a superposed infection, or the resisting powers of the organism may be at a low ebb. Bournoville accepts the latter explanation as most probable, as in his experience patients included in this category were always much debilitated from excesses or overwork. The typhoid symptoms appear from the thirtieth to the sixtieth day, usually about the forty-fifth. The abdomen is most sensitive in the right iliac fossa, and the diarrhea is absolutely rebellious. The liver is enlarged, and there is generally alimentary glycosuria, urobilinuria and hypertoxicity of the urine. Only one fatal case has been known, but relapses have sometimes occurred.

Centralblatt f. Chirurgie (Leipsic), November 2.

Functional Tests of the Kidneys in Diagnosis for Renal and Abdominal Surgery. L. Casper.—The Journal recently mentioned Casper's announcement at the German Naturforscher Congress of the information to be obtained by separate catheterization of the ureters after the phloridzin test, with determination of the freezing-point of the urine from each kidney. He gives details in this communication. In one case he was able by this means to locate the kidney containing the calculi, impossible to determine by other measures. The tests disclosed that a suprarenal adenoma in one case and cysts in another, did not involve the kidney as supposed. In a fourth patient, the tests differentiated a renal tumor from an appendiceal abscess. In another the differentiation of biliary from renal lithiasis was rendered possible and in three others the negative results of the tests confirmed the diagnosis of simple nephralgia. In sound kidneys the results of the tests are the same on both sides, and a difference between them indicates pathologic conditions. "The sicker the kidney, the lower the values obtained."

Deutsche Med. Wochenschrift (Leipsic), October 24.

Clinical Application of Hemolytic Properties of the Blood. A. Laqueur.—About 0.1 c.c. of human blood serum is able to destroy all the red corpuscles in a 5 per cent. mixture of rabbit blood in 0.85 per cent. salt solution. If human blood serum be heated for half an hour to 56 C. it loses the hemolytic property, probably from the destruction by the heat of the "complement" necessary for the process. But it regains it if a small amount of the complete serum be added to it, 0.1 c.c., for instance, to 1 c.c. of the complete serum. Neisser and Doering found this phenomenon constant in all their tests, except in one case in which the blood was derived from a patient in severe uremia. Laqueur has confirmed this phenomenon in two cases of uremia. The addition of the heated serum to the usual proportion of complete serum annuled the hemolytic power of the latter. In one case this phenomenon occurred under his eyes as the patient first showed symptoms of uremia. In another patient with nephritis but no uremia, the serum behaved like normal serum, as was also the case in numbers of other tests with serum derived from other patients, from venesection, placental blood, etc. The blood pressure was extremely high in both the cases of uremia described, and it increased by 15 to 20 mg. whenever there was an exacerbation of the symptoms. Very effective relief was obtained at such times by total wet packs, which were always followed by subjective improvement and fall of the blood pressure. By this means severe uremic attacks were warded off, and the patients succumbed finally to heart failure. It was noticeable that as the fatal termination approached, the blood pressure fell instead of rising with exacerbations, but even when abruptly dropping from time to time, it still remained higher than normal. Two days before death it had fallen to 155 mm. from its previous height of 210 in one case, and to 140 in the other. The determination of the blood pressure in uremia, for which Gaertner's tonometer is admirably adapted in its simplicity, affords not only valuable assistance in diagnosis and prognosis, but also indicates the moment for therapeutic intervention.

Cytodiagnosis of Meningitis. E. Bendix.—In five cases of tubercular meningitis Bendix found lymphocytes numerous in the cerebrospinal fluid withdrawn by lumbar puncture. In three cases of epidemic meningitis, large polynuclear leucocytes were in the majority, with one exception, in a case protracted through months. In the tuberculous cases, the specific bacilli could be discovered only once. The autopsy confirmed the cytodiagnosis in each case. Bendix considers the presence of polynuclear leucocytes an indication that the process is recent. Lymphocytes, on the other hand, reveal a protracted, chronic process, and hence are valuable in the differentiation of tuberculous from the acute, epidemic variety of meningitis.

Cause of Dacryocystitis. E. Raehlmann.—Among 1081 cases of trachoma observed at Dorpat during 1899, the lachrymal sac was affected in 43. Careful anatomic study of these cases, with sections of ten of the sacs, disclosed that the acute dacryocystitis was merely an extension of the typical trachomatous process. The cicatrices that result from the follicular abscesses cause strictures and consequent stenosis. These facts suggest the necessity of appropriate treatment and justify the extirpation of the lachrymal sac in such cases.

Lymphoma Versus Pseudo-Leukemia. E. Becker.—In this communication from Gerhardt's clinic, various cases of pseudo-leukemia, etc., are described. Analysis of the symptoms and anatomic foundation of these and similar cases has convinced Becker that the designation "pseudo-leukemia" should be discarded. In its place he proposes five groups of affections involving the lymphatic system: 1, lymphosarcomatosis; 2, tuberculous lymphomatosis; 3, syphilitic lymphomatosis; 4, simple hyperplastic lymphomatosis, with the sub-group of infantile splenic anemia, and 5, diffuse lymphomatosis.

Formalin Soap Effective Against Night Sweats in Phthisis. K. Dohrn.—Twelve patients have been treated at the Carolahaus in Dresden by injections of a 5 to 10 per cent. formalinized olive-oil fluid soap. All were much benefited and the sweats were completely arrested in seven cases. The entire trunk was rubbed energetically with the soap for a minute and the skin massaged at the same time. The soap was then sponged off with a damp cloth and the body carefully wiped dry. The procedure is peculiarly refreshing to the patients and all sleep better after it is applied each evening. The fumes of the formalin affected the conjunctiva in one patient, but she was unwilling to dispense with the treatment on account of this slight drawback.

Muenchener Med. Wochenschrift, October 22.

Tardy Disturbances After Tracheotomy and Intubation. M. Pfaundler.—Reviewing the later history after tracheotomy or intubation of 173 children at Escherich's clinic, it was found that the children who had been intubated were as healthy as the same number of average children, and that no connection between any casual affection of the respiratory passages and the intubation could be discovered. But the case was different with the children on whom tracheotomy had been performed. Slight disturbances were evident in 12.5 per cent. of the tracheotomized, and in 18.8 per cent. of those treated by tracheotomy and intubation. Severer disturbances, such as permanent hoarseness, cicatricial tracheal stenosis, chronic cirrhotic pneumonia or pulmonary tuberculosis were noted in 3.5 per cent. of the intubated; in 12.5 per cent. of the tracheotomized and in 31.3 per cent. of the cases in which tracheotomy and intubation had both been applied. Intubation had been used alone in 141 cases, tracheotomy alone in 16 and both combined in 16.

Wiener Klin. Wochenschrift, October 17.

Incarcerated Hernia in the Lateral Abdominal Wall. C. Sternberg.—A woman of 61 was suddenly taken sick with vomiting and pains in the abdomen ascribed to some indiscretion in diet. A tumor in the left side of the abdomen extended from Poupart's ligament to the costal arch, circumscribed on the outside but less distinctly outlined toward the median line. It was slightly movable and subsided perceptibly during inspiration. It was not tender and was distinct from the genitalia. The tumor resembled a kidney in shape. There was no dulness over the kidneys. The tumor was first noticed four days before the vomiting commenced. An operation was refused and death ensued in four days. The hernial sac included the omentum and a loop of the small intestine, in a subcutaneous tear in the internal oblique. No trauma nor predisposition on the part of the tissues could be discovered, to account for the sudden hernia, but possibly some unusual muscular effort may have induced it. Vulpius was able to find only 12 cases of hernia into the abdominal side wall in 1891; 4 were incarcerated and 2 of these had resulted from physical exertion, 2 from a stab wound. Franz has reported 2 other cases, both subsequent to trauma. Wyss has published a congenital case in an infant with other malformations. Surgical intervention in these cases of hernia into the abdominal wall may save life and the non-recognition of the hernia may entail the severest consequences. Albert describes a case in which the hernia was diagnosed a lipoma and only the operation disclosed the error. In another case it was assumed to be an abscess and incised, thus creating an artificial anus.

October 24.

Indications for Lithotomy Operations. O. Zuckerkandl.—Experience with 150 lithotomies and the statistics published by various writers have convinced Zuckerkandl that suprapubic lithotomy should be limited in its application. The mortality ranges from 13.5 to 28 per cent. except in Assendelft's statistics. He operated on children and by the suprapubic route in all his 460 cases. Keith's experience with a similar material treated by lithotripsy showed only a mortality of .5 per cent. in 375 cases. The highest mortality after perineal lithotripsy is only 9.2 per cent., while Freyer reports 1.3, Guyon 2.5, and Zuckerkandl 3.6 per cent. The introduction of perineal lithotripsy marks a great progress in the treatment of stone in the bladder. Lithotripsy is indicated in all cases in which the stones are freely movable in the bladder and the urethra allows the introduction of the instruments. Perineal lithotripsy is indicated when the urethra does not readily allow the passage of stiff instruments, when the prostate is enlarged and the prostatic portion of the urethra is immoderately long or the passage very narrow, provided that the stone is free and accessible to the instrument. Also in case of stricture of the urethra, fistula or callus formation or when there are calculi likewise in the urethra. Perineal lithotripsy may also be indicated in cases in which it is impossible to complete the lithotripsy owing to incarceration of the stone or swelling of the prostate. Suprapubic incision must be resorted to when the stones are so large that the instruments have no play, or when the stones are in a diverticulum, in a deep fundus behind a protruding prostate or in case of encapsulated or impacted stones, in case of concretions around a foreign body or neoplasms of the bladder, and when an abdominal fistula is planned. The permanent catheter is not an absolute protection against general sepsis, and Zuckerkandl drains in the majority of his cases. As a narcotic for lithotripsy, he has been most pleased with 2.5 to 5 gm. of antipyrin, dissolved in 50 gm. of water, injected into the rectum half an hour before the operation is commenced. The anesthesia thus induced was surprisingly perfect, but in cases of irritable bladder, difficult passage through the prostate or when the size of the stones prolongs the operation, superficial chloroform narcosis, preceded by an injection of morphin, is indicated. Cystoscopy will much facilitate the intervention and disclose a divertieulum or an encapsulated or impacted stone and thus warn against lithotripsy alone. The occlusion of the evacuator by a fragment of a stone is avoided by crushing the stones as fine as possible. In two cases he aimed to bring out the stone intact in this way, and after some work with the pump was able to determine that the stone was firmly impacted in the evacuator and was thus removed whole. In two aseptic cases death occurred from septicemia, probably by infection through some slight injury to the urethra, as no evidences of cystitis could be found in the bladder or kidneys. In another case of chronic cystopyelitis, the bladder must have been perforated, whether from a stone or the pumping it was impossible to decide. The operation proceeded without incident, but peritonitis developed a few days later. Twelve of his 95 patients treated by lithotripsy have had the stones recur; phosphates in 9 and urates in 3. No recurrence was known of oxalate stones. After suprapubic lithotomy, complete retention of urine has been occasionally noted, attributable to the forced distention of the bladder. Since he has been operating with the bladder only moderately filled, this sequel has not occurred.

Diagnosis of Aneurysm of the Mesenteric Artery. G. Gabriel.—The diagnosis is based, 1, on the existence of some primary valvular affection, recent bacterial endocarditis in the case described; 2, on the existence of hemiplegia, which may be either due to softening or a bacterial endarteritis; 3, on the presence of a rapidly growing tumor in the abdomen for which no other cause can be assigned, and 4, on the youth of the patient. The cerebral symptoms may be due to embolism with consecutive softening or to bacterial endarteritis of some artery in the brain with subsequent aneurysm, rupture and hemorrhage into the brain substance.

October 31.

Biologic Relations Between Milk and Serum. E. Moro.—Neither human nor cow's milk possesses bactericidal properties, but Moro has established that the serum of nursing infants is more bactericidal and hemolytic than the serum of others fed on artificial food. The change from mother's milk to artificial food or vice versa alters the serum in this respect.

Two Cases of Malignant Epithelioma of the Vagina with Intact Uterus. H. Schmit.—In both cases the patients were permanently cured after the excision of the malignant

chorio-epithelioma. The tumor was formed of a hematoma containing in its center villi and malignant elements of the chorion evidently derived from the villous surface. The facts observed indicate that harmless villi may be transferred to the vagina during pregnancy or delivery and that the tumor develops later from proliferation of the epithelium. It is possible to conceive that the malignant elements might become completely enclosed in the tumor and repeated hemorrhages induce their necrosis, resulting finally in a spontaneous cure.

Influence of "Stasis-Hyperemia" on Bone Formation. A. BUM.—In a series of experiments on young dogs and rabbits, a ligature was applied to the leg above the fracture, an hour or two each day. It was found that the callus had grown much more luxuriantly on the side on which stasis had been induced in this way. The periosteal callus exhibited much more pronounced calcification and ossification. The fractures were alike on each side.

Giornale Della Accad. di Med. (Turin), August-September.

The Diazo-Reaction. M. LAMPUGNANI.—From analysis of the diazo-reaction as it occurred or failed to occur in 500 patients and a number of healthy persons, Lampugnani concludes that it is the expression of a pathologic process in the organism, connected with the elevation of the temperature. The temperature may be elevated without the reaction, but the latter never occurs with normal temperature. Besides the elevation of the temperature, which is a necessary but not the unique cause of the phenomenon, there must be some other factor, possibly the production of some reducing substance, the immediate effect of which is the diazo-reaction. The pigments in the urine evidently co-operate in the production of the reaction. It was positive in 31 out of 49 cases of typhoid fever and in 9 out of 26 cases of pulmonary tuberculosis. The tuberculous patients who exhibited the reaction all died soon afterward. The diazo-reaction has therefore considerable value for the diagnosis of typhoid fever and for the prognosis of tuberculosis. The tests were all negative in nervous, gastric, renal and rheumatic affections, and in acute and chronic intoxications and heart disease, but the reaction was obtained in the 4 cases of malaria examined and in 17 of erysipelas. It never occurred in the healthy subjects nor in rabbits.

Gastric Digestion in the Insane and the Cure of Sitophobia. G. R. RUATA.—Lavage of the stomach is one of the most useful means at our command in the treatment of the insane, from several points of view. Ruata learned from it that morbid psychic states, accompanied by depression, are characterized by a diminution or disappearance of the secretion of hydrochloric acid, while on the other hand it becomes exaggerated during a condition of agitation and excitement. The hyperemia or anemia of the cerebral cortex makes its influence felt throughout the organism on all the vital functions, exaggerating or depressing them. The secretions altered in consequence reflect in their turn on the functions of the cortex, producing sitophobia in some cases and aggravating the psychosis in all. Hypochlorhydria was almost the rule in the phase of depression in mania, alcoholic pseudo-paralysis and amentia confusionalis, and great benefit was derived in these cases from the systematic administration of hydrochloric acid. In all the insane subjects the proportion of total acidity and of uncombined hydrochloric acid was less than normal, although the peptones were constant. The administration of hydrochloric acid conquered even the most rebellious cases of sitophobia in his experience.

Tamponing the Uterus in Cesarean Section. G. VICARELLI.—The danger of hemorrhage and of infection is avoided by tamponing the uterus after Cesarean section through the abdominal wound, with a strip of gauze five yards long by ten centimeters wide. The uterus contracts over the tampon and holds it firm. It does not interfere in any way with the regular discharge of the lochia nor the involution of the uterus nor the normal cicatrization of the wound. It can be extracted through the vagina in one to three days without the slightest trouble. The tampon renders it possible for the operation to be performed at any moment without waiting for labor as there is no fear of hemorrhage from inertia of the uterus. Vicarelli describes seven patients thus treated, all severe cases of deformed pelvis, the results exceptionally fine for both mother and child.

Spinal Cocainization in Obstetrics. G. VICARELLI.—The conclusions from Vicarelli's experience with eleven maternity cases are unfavorable to this method of analgesia in obstetrics.

St. Petersburger Med. Wochenschrift, October 12.

The Mental and Moral Disposition of Tuberculous Subjects. H. NEUMANN.—Various writers have described the sluggish memory, the inability to think or read on subjects requiring thought, etc., which they have noticed in consumptives, and have tried to evolve a type of psyche characteristic of tuberculosis. Neumann does not agree with them and attributes the laziness of thought and action and the heightened sexual appetite, etc., to the idleness of the inmates of a sanitarium who devote all their attention to eating, sleeping and reclining at stated hours, at most reading novels to while away the time. He thinks it is the duty of those in charge of sanitariums for tuberculosis to include some stated work in the course of treatment and compel the patients to do a certain task each day, individualized to the patient. This is less necessary in case of working people, as they do not lose the habit of working in their two or three months' stay, but a young merchant, for example, might be encouraged to study a foreign language, a student to review certain studies, etc. The success of the treatment will be enhanced if the physician systematically applies measures of this kind to prevent the development of neurasthenia, hysteria and hypochondria.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A TEXT-BOOK OF MEDICINE for Students and Practitioners. By Dr. Adolf Strümpell, Professor and Director of the Medical Clinique at the University of Erlangen. Third American Edition. Translated by Permission from the Thirteenth German Edition, by Herman F. Vickery, A.B., M.D., Instructor in Clinical Medicine, Harvard University, and Philip Coombs Knapp, A.M., M.D., Ex-President of the American Neurological Association. With Editorial Notes by Frederick C. Shattuck, A.M., M.D., Jackson Professor of Clinical Medicine, Harvard University. With 185 Illustrations in the Text, and One Plate. Cloth. Pp. 1242. Price, $6.00. New York: D. Appleton & Co. 1901.

ANATOMY, Descriptive and Surgical. By Henry Gray, F.R.S., Fellow of the Royal College of Surgeons. Edited by T. Pickering Pick, F.R.C.S., Consulting Surgeon to St. George's Hospital; and Robert Howden, M.A., M.B., C.M., Professor of Anatomy in the University of Durham. A Revised American, from the Fifteenth English Edition. With 780 Illustrations, Many of Which Are New. Cloth. Pp. 1257. Price, $5.50 net. Philadelphia and New York: Lea Brothers & Co. 1901.

THE PRACTICE OF OBSTETRICS, by Many Authors. Edited by Charles Jewett, M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. Second Edition, Revised and Enlarged. Illustrated with 445 Engravings, 48 of Which Are in Colors, and 36 Colored Plates. Cloth. Pp. 781. Price, $5.00 net. New York and Philadelphia: Lea Brothers & Co. 1901.

PUBLIC HEALTH REPORTS. Issued by the Supervising Surgeon-General Marine-Hospital Service, Under the Act of Congress Granting Additional Quarantine Powers and Imposing Additional Duties upon the Marine-Hospital Service, Approved Feb. 15, 1893. Vol. XV. Parts 1 and 2. Nos. 1 to 52. Cloth. Pp. 3182. Washington: Government Printing Office. 1901.

DISCIPLES OF ÆSCULAPIUS. By Sir Benjamin Ward Richardson, M.D., F.R.S. With a Life of the Author by His Daughter, Mrs. George Martin. In Two Volumes. Vols. I and II. With Portraits and Illustrations. Cloth. Pp. 424. Price, $8.00 net. New York: E. P. Dutton & Co. 1901.

A TEXT-BOOK ON DISEASES OF THE EAR, NOSE AND THROAT. By Charles H. Burnett, M.D., E. Fletcher Ingals, M.D., James E. Newcomb, M.D. With Numerous Illustrations. Cloth. Pp. 716. Price, $5.00. Philadelphia and London: J. B. Lippincott Co. 1901.

PROCEEDINGS OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY. September. Paper. Pp. 12. Philadelphia: Published by the Society. 1901.

CHIMICA CLINICA. Dott. Raffaele Suplno, Assistence alla Clinica Medica Generale di Pisa. Cloth. Pp. 198. Milano: Ulrico Hoepli. 1902.

L'EPILESSIA. Dottor Paola Pini. Eziologia-Patogenesi Cura. Cloth. Pp. 277. Milano: Ulrico Hoepli. 1902.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Oct. 31 to Nov. 6, 1901, inclusive:

Dallas Bache, colonel, assistant surgeon-general, U. S. A., to his home at Los Angeles, Cal., to await retirement from active service.

Peter W. Beckman, contract surgeon, now in San Francisco, Cal., to proceed to Fort Du Quesne, Utah, for duty at that port.

Horace D. Bloomberg, lieutenant, asst.-surgeon, U. S. A., relieved from further duty at the Army Medical School, to report for duty at the U. S. General Hospital, Fort Bayard, N. M.

George C. Craig, contract surgeon, now at Rock Island, Ill., to report to the commanding officer, Rock Island Arsenal, for duty.

William R. Eastman, lieutenant, asst.-surgeon, U. S. A., recently appointed to report in person to Colonel W. H. Forwood, assistant surgeon-general, U. S. A., president of the faculty of the Army Medical School, Washington, D. C., for the prescribed course of instruction.

Guy L. Edie, major and surgeon, U. S. A., member of an examining board at Columbus Barracks, Ohio.

Robert C. Eve, contract surgeon, previous orders annulling contract, revoked; he is relieved from duty in the Department of the East, and assigned to Fort Sam Houston, Tex., to relieve Contract Surgeon G. Graham Watts, U. S. A.

George H. R. Gosman, lieutenant, asst.-surgeon, U. S. A., member of an examining board at the U. S. Military Academy, West Point, N. Y., vice Captain Franklin M. Kemp, asst.-surgeon, U. S. A., relieved.

Henry S. Greenleaf, lieutenant, asst.-surgeon, U. S. A., member of an examining board at the Presidio of San Francisco, Cal., vice Lieutenant John A. Murtagh, asst.-surgeon, U. S. A., relieved.

Ernest K. Johnstone, major and surgeon, Vols., having tendered his resignation, is honorably discharged from the service of the United States, to take effect Nov. 2, 1901.

Palmer H. Lyon, captain, asst.-surgeon, Vols., now at Lyons, N. J., will, on the expiration of his present sick leave, proceed to Fort Hamilton, N. Y., for temporary duty, to relieve Lieutenant Edwin P. Wolfe, asst.-surgeon, U. S. A.

Walter D. McCaw, major and surgeon, U. S. A., from the Division of the Philippines, to report to the Surgeon-General, at Washington, D. C., for instructions.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. A., resignation accepted, to take effect Nov. 5, 1901.

Edward L. Munson, captain and asst.-surgeon, U. S. A., detailed for duty as assistant professor of hygiene at the Army Medical School, Washington, D. C.

Robert M. O'Reilly, lieutenant-colonel and deputy surgeon-general, U. S. A., from Fort Monroe, Va., to Washington, D. C., on official business pertaining to the Medical Department, and on the completion of this duty to rejoin his proper station.

Charles A. Ragan, lieutenant and asst.-surgeon, U. S. A., recently appointed, to report in person to Colonel W. H. Forwood, assistant surgeon-general, U. S. A., president of the faculty of the Army Medical School, for the prescribed course of instruction.

Charles Richard, major and surgeon, U. S. A., member of an examining board at Fort Leavenworth, Kan.

Edward G. Seibert, contract surgeon, to report in person to Major Edward C. Carter, surgeon, U. S. A., attending surgeon, Washington, D. C., for duty.

Paul Shillock, major and surgeon, U. S. A., member of an examining board at Fort Riley, Kan., vice Major Charles E. Woodruff, surgeon, U. S. A., relieved from this duty.

Herbert M. Smith, lieutenant and asst.-surgeon, U. S. A., relieved from duty at the Army Medical School, Washington, D. C., to report for post duty at Fort Leavenworth, Kan., Nov. 2; member of an examining board at Fort Leavenworth, Kan.

Alexander N. Stark, captain and asst.-surgeon, U. S. A., from temporary duty at Fort Monroe, Va., to rejoin his proper station at Fort McHenry, Md.

Sandford H. Wadhams, lieutenant and asst.-surgeon, U. S. A., member of an examining board at Columbus Barracks, Ohio.

Philip G. Wales, captain and asst.-surgeon, U. S. A., from Fort Du Quesne, Utah, to Denver, Colo., for duty as attending surgeon and examiner of recruits at that place.

G. Graham Watts, contract surgeon, on being relieved by Contract Surgeon R. C. Eve (see above), will report in person to the chief surgeon, Department of Texas, for annulment of contract.

Edwin P. Wolfe, lieutenant and asst.-surgeon, U. S. A., from Fort Hamilton, N. Y., to duty at Fort Bliss, Texas.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Nov. 9, 1901:

Surgeon F. Anderson, detached from the Naval Dispensary, Washington, D. C., November 7, and ordered to the *Alabama*, November 9, as relief of Surgeon E. H. Green.

Surgeon E. H. Green, detached from the *Alabama*, November 9, and ordered to duty as a member of the medical examining board, Washington Navy Yard, Nov. 15, as relief of Surgeon A. C. H. Russell.

Medical Director J. C. Ayers, retired from active service, November 3, 1901, by operation of law, under the provisions of Section 1444, Revised Statutes, upon which date he will have reached the age of 62 years; with rank and three-fourths the sea-pay of the next higher grade, under the provisions of Section 11, Navy Personnel Law.

Asst.-Surgeon R. M. Young, detached from the *Columbia* and ordered to the *Constellation* for temporary duty.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the fourteen days ended Oct. 31, 1901:

Surgeon R. D. Murray, appointed as appraiser to place valuation on property of State Board of Health of Florida used for quarantine purposes at Key West, Fla.

Surgeon F. W. Mead, granted leave of absence for one day.

Surgeon J. H. White, appointed as appraiser to place valuation on property of State Board of Health of Florida used for quarantine purposes at Boca Grande, Fla. To proceed to Brunswick quarantine as appraiser, and to the South Atlantic quarantine station on special temporary duty.

Asst.-Surgeon John McMullen, granted leave of absence for seven days.

Asst.-Surgeon H. B. Parker, relieved from duty at New Orleans, La., and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty. Bureau order of Oct. 18, 1901, directing Asst.-Surgeon Parker to proceed to Washington and report to the Director of the Hygienic Laboratory for duty, suspended.

Asst.-Surgeon C. C. Pieree, to proceed to Mullet Key, Fla., for special temporary duty.

A. A. Surgeon Frank Boyd, granted leave of absence for twenty-five days from November 1.

A. A. Surgeon V. B. Gregory, relieved from duty at Tampico, Mex., and directed to proceed to Rio de Janeiro, Brazil, for duty in the office of the U. S. Consul General.

A. A. Surgeon J. W. Hargis, granted leave of absence for ten days from October 19.

Hospital Steward C. W. Stephenson, granted leave of absence for twenty-three days from November 4.

Surgeon H. W. Austin, bureau letter of Sept. 28, 1901, granting leave of absence for one month, amended so that said leave shall be for twenty-one days only.

P. A. Surgeon H. D. Geddings, to assume temporary command of Hygienic Laboratory during absence of P. A. Surgeon M. J. Rosenau.

P. A. Surgeon A. R. Thomas, to proceed to Liverpool, England, for duty.

Asst.-Surgeon John McMullen, granted four days' extension of leave of absence.

A. A. Surgeon B. F. Duke, granted fifteen days' leave of absence from October 25.

A. A. Surgeon R. E. Ebersole, granted three days' leave of absence under paragraph 181 of the regulations.

Hospital Steward, J. E. Beck, granted seven days' leave of absence, from Oct. 20, 1901, under paragraph 181 of the regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Nov. 9, 1901:

SMALLPOX—UNITED STATES.

Illinois: Peoria, Oct. 1-31, 6 cases; Springfield, Oct. 2-Nov. 2, 26 cases.

Iowa: Ottumwa, Sept. 28-Nov. 2, 31 cases.

Kansas: Wichita, Oct. 19-26, 3 cases.

Kentucky: Lexington, Oct. 25-Nov. 2, 3 deaths.

Louisiana: New Orleans, Oct. 25-Nov. 2, 7 cases.

Massachusetts: Boston, Oct. 19-Nov. 2, 22 cases, 2 deaths; Newton, Oct. 19-26, 2 cases.

Michigan: Detroit, Oct. 19-Nov. 2, 2 cases.

Nebraska: Omaha, Oct. 19-Nov. 2, 14 cases; South Omaha, Oct. 17-24, 6 cases.

New Jersey: Camden, Oct. 19-26, 5 cases, 1 death.

New York: Oct. 26-Nov. 2, Elmira, 1 case; New York, 5 cases, 4 deaths.

Ohio: Youngstown, Oct. 12-19, 2 cases.

Pennsylvania: Allegheny City, Oct. 18-25, 1 case; Lebanon, Nov. 2, 2 cases; Norristown, Oct. 26-Nov. 2, 7 cases, 1 death; Philadelphia, Oct. 19-Nov. 2, 111 cases, 22 deaths; Pittsburg, Oct. 26-Nov. 2, 6 cases.

Vermont: Burlington, Oct. 26-Nov. 2, 3 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Oct. 6-19, 6 cases.

Belgium: Antwerp, Oct. 6-12, 2 cases, 1 death.

Canada: Halifax, Oct. 19-Nov. 2, 13 cases; Quebec, Oct. 26-Nov. 2, 41 cases; Winnipeg, Oct. 26-Nov. 2, 1 case.

Colombia: Panama, Oct. 20-28, 300 cases.

Great Britain: Oct. 12-19, Liverpool, 1 case; London, 172 cases, 12 deaths.

Russia: Moscow, Oct. 5-12, 5 cases, 1 death; Odessa, Oct. 12-19, 3 cases; Warsaw, Oct. 7-14, 3 cases.

Uruguay: Montevideo, Aug. 24-Sept. 14, 75 cases, 11 deaths.

YELLOW FEVER.

Colombia: Bocas del Toro, Oct. 15-23, 2 cases.

Mexico: Vera Cruz, Oct. 19-26, 17 cases, 2 deaths.

CHOLERA.

India: Bombay, Oct. 1-8, 3 deaths; Calcutta, Sept. 28-Oct. 5, 3 deaths.

PLAGUE—UNITED STATES AND INSULAR.

California: San Francisco: Oct. 20-30, 1 case, 1 death.

Philippines: Manila, Sept. 7-21, 5 cases, 3 deaths; Taguig, Sept. 7-14, 1 death.

PLAGUE—FOREIGN.

Great Britain: Glasgow, Nov. 1, 4 cases; Liverpool, Oct. 30, several cases, 2 deaths.

India: Bombay, Oct. 1-8, 174 deaths; Calcutta, Sept. 22-Oct. 5, 19 cases.

Turkey: Samsoun, Oct. 1, 9 cases, 1 death.

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Address.

CHAIRMAN'S ADDRESS.

DELIVERED BEFORE THE SECTION ON PATHOLOGY AND BACTERIOLOGY, AT THE FIFTY-SECOND ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

LUDVIG HEKTOEN, M.D.

CHICAGO.

A provision in the constitution makes it incumbent upon the chairman of each Section to deliver an address at the beginning of the annual meeting. In this address he shall set forth the progress of the year in the field covered by the particular Section. The day for formal addresses of this sort is rapidly passing away, and I shall not attempt a detailed review of the progress in pathology and bacteriology during the past twelve months. That the American Medical Association has assumed the sponsorship of a separate section in these branches is, I think, evidence of the general progress that pathology and bacteriology are now making in this country. Societies and separate sections, like hypotheses, are not to be multiplied beyond necessity, but criticism of the tendency to multiply medical societies is hardly applicable to this case because it is an effort to extend the usefulness and influence of a large, national organization of great strength.

It is true, as has been said by others, that much of the work in pathology and bacteriology should be brought out in the clinical sections, that our members should cooperate with the clinicians. Properly managed, our section will help, not hinder this co-operation, because at the same time as we may participate in other sections there is now an opportunity to discuss questions of special interest to pathologists and bacteriologists, an opportunity that it is hoped will bring together each year a group of men of common interests. The constitution and by-laws of the Association give to each section virtual autonomy. This section has the power to regulate its own workings to its best advantage. Experience will soon demonstrate the directions that efforts should take in order to utilize fully the opportunities offered for mutual exchange of opinion, for diffusion of the results of investigation, and of new methods. Special effort should be made at this early stage in the history of the section to secure accurate minutes of the proceedings and to exercise careful scrutiny of the material published in THE JOURNAL as read at our meetings.

The pathologic exhibit which is now in the hands of the section, offers an unexcelled opportunity for the demonstration, to large numbers, of specimens, apparatus, methods of working and of teaching. Naturally, the territory tributary to the place of meeting may be expected to be most largely represented in the annual exhibit. We owe a large debt of thanks to Dr. Frank B. Wynn, the Secretary of the Section, who as Chairman of the Committee on Pathologic Exhibit has shown an unusual ability for the work, the results of which speak for him more strongly than my words.

It has been said recently by competent authority that the opportunities for scientific work in pathology and bacteriology are now highly developed in this country. No one familiar with the situation will take exception to this pleasing statement. Much remains to be done, however, in properly organizing the work in pathology and bacteriology in the various centers. The relations of the teachers of these branches in many of the colleges are, I believe, far from satisfactory. This is also true in regard to the pathologic work in the majority of our public hospitals of various kinds. Unfortunately, the present mode of management is not always conducive to the development in them of a scientific spirit, and the public governing bodies have yet to learn that the pathologist is as worthy of a hire as any other laborer. It is clear, too, that the best interests of pathology and bacteriology demand that bodies now scattered should be organized; much teaching that can be better done and better paid in a single institution has been divided among several, none of which, perhaps, can offer inducements to keep good men permanently. Yet the possibilities for careers in pathology and bacteriology in this country are rapidly equaling in opportunity and reward those of older countries and of other sciences in this country.

An encouraging feature is the steadily increasing interest manifested in medicine by our universities. The modern American university is fast becoming, as it ought to be, a factory of new knowledge in which research and criticism flourish and in which culminate the tops of the waves of progress. The establishment in these very days of the Rockefeller Institute of Medical Research is of special significance as an indication that private wealth is about to become the patron of scientific medicine to a degree heretofore unrealized. Let us hope that the future productive scholarship in pathologic and cognate fields in our country may find suitable opportunity for expression in the proceedings of this section in which we trust the pervading atmosphere may be scholarly throughout.

Original Articles.

EFFECT OF DIRECT, ALTERNATING, TESLA CURRENTS AND X-RAYS ON BACTERIA.*

F. ROBERT ZEIT, M.D.

Professor of Clinical Pathology and Bacteriology at the Northwestern University Medical School, and Post-Graduate Medical School.

CHICAGO.

The subject of this study is one that does not seem to have received the attention it merits. The most extravagant claims for and against the effect of various electrical currents have been made in the past. If we are to judge from the vague statements in the current text-books on bacteriology and electro-therapeutics, it becomes evident that further investigation and experimental work are necessary for a more exact knowledge of this interesting and practical subject. I have carefully examined most of the text-books on bacteriology and electro-therapeutics and find but few which mention the subject at all.

On the other hand, we find in the literature numerous cases where the germicidal action of various electric currents seems to have been clinically proven, and where "electricity" is claimed to have cured certain cases. Are these cures only due to the production of antiseptics and germicides by electrolysis? Can any of the various electric currents have any bactericidal or antitoxic properties without electrolysis or heat? Can any tissue changes be caused without electrolysis or heat by electric currents which may cause the death of the bacteria?

How does a magnetic field affect bacteria? What effect have Röntgen rays upon bacteria?

These questions are of the greatest importance in the practical applications of electro-therapeutics in certain infectious conditions. If the effect is a purely chemical one and the current only produces antiseptics by electrolysis, we might as well use these in many cases directly without the current. The same might be said of the physical effects of various currents—heat.

This electrolytic process of sterilization was employed by Hermite and Webster for sterilization of sewage in 1894, making use of Watt's observation,[1] of 1859, that solutions of magnesium chlorid are converted into hypochlorite, which remains in solution as hypochlorous acid and produces a deposit of magnesium hydrate. Hermite mixed the sewage with sodium chlorid—sea water—and produced hypochlorite by electrolysis. Webster[4] adds chlorids to sewage and uses iron plates as electrodes. The ferrohydroxid produced by electrolysis might as well be added directly to the sewage. Similar processes have since been devised by Oppermann,[2] Marmier and Abraham,[3] Bergé, Hagen and Woolf.

EFFECT OF CONTINUOUS OR DIRECT CURRENT.

Cohn and Mendelssohn[5] in 1879 report that in their experiments the alternating current had no effect, whereas the continuous current caused rapid multiplication of bacteria.

Apostoli[6] studied the antiseptic action of electric currents in 1885, and in 1890 he, together with Laguerriere,[7] reported the results of their experiments to the Paris Academy. Numerous animal experiments were made with bouillon cultures, which were kept at a low temperature by ice. When the current employed was less than 50 milliamperes the virulence of the bacteria was increased at the positive pole only; 300 milliamperes killed anthrax bacilli in five minutes at the positive pole,[6] and 100 to 150 milliamperes were already bactericidal for bacteria without spores.

Prochownik[8] in 1890 treated acute gonorrhea in the female by placing a copper electrode—positive pole—into the cervix and allowing a current of 80 to 100 milliamperes to flow for ten minutes. After three treatments all gonococci had disappeared from the discharge.

Prochownik and Spaeth[9] in 1890 were unable to destroy bacteria by simply dipping the electrodes into the culture medium. They were successful by employing copper electrodes covered with agar and dipped into sodium chlorid solution. Staphylococci and streptococci were killed in fifteen minutes at the positive pole by a current of 60 to 80 milliamperes. Anthrax bacilli with spores required 200 to 230 milliamperes for from one-half to one hour. They attribute the result to the liberation of chlorin.

Verhoogen[10] in 1891 found that the continuous current can only destroy bacteria by chemical or physical effects. If the medium can undergo electrolysis the bacteria die by germicidal acids produced at the positive pole and alkalies at the negative pole. Hydrogen *in statu nascendi* also injures aërobe bacteria at the negative pole. If the medium can not undergo electrolysis the death of bacteria is due purely to physical effects (heat).

Charrin[11] in 1892 dipped copper electrodes into potassium iodid solution and into serum which contained bacilli pyocyanei. A current of 37 to 40 milliamperes destroyed the pigment formation in seven minutes. Longer application of the current destroyed the bacteria by producing iodic acid in the potassium iodid solution and chlorate of copper in the serum.

Kruger[12] in 1893 tried to exclude the chemical and physical effects of continuous currents. By the advice of DuBois-Reymond he employed a method of non-polarizing electrodes, which consists of amalgamated zinc plates in a solution of sulphate of zinc. If a current is allowed to pass through this cell for some time and the current is then suddenly broken, applying the wires leading from the amalgamated zinc plates to a sensitive galvanometer, no deflection of the needle in an opposite direction takes place, which is always the case when other metals or solutions are employed.

Kruger used two glass tumblers filled with zinc sulphate solution, each tumbler containing an amalgamated zinc plate electrode. The bacterial culture was contained in an U-tube of 2 cm. diameter, closed at both ends by a membrane, through which the current had to pass when the two tumblers were connected by the inverted U-tube. The current of 30 Siemens cells was passed through this apparatus, producing an initial current of 80 milliamperes, which rapidly fell to and remained at about 20 milliamperes. If the U-tube contained three days' old bouillon cultures of bacillus pyocyaneus, bacillus prodigiosus or vibrio choleræ Asiaticæ a heavy precipitate of albumin (?) resulted, but the bacteria were not killed after passing the same current for 72 hours through the apparatus. He concludes that the current itself may prevent growth, although it may not kill bacteria. When electrolysis is allowed to take place by passing the current directly through the culture medium he found that any strength of current will destroy bacteria if it is of the proper density and employed long enough. By a current of 20 milliamperes for 24

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. W. T. Howard, D. E. Salmon and W. G. Spiller.

hours he was able to kill the pneumococcus, bacillus murisepticus, bacillus tuberculosis and spore-bearing anthrax and tetanus bacilli. He attributes this result to a combined effect of the current as such and the effect of the ions, the formation of chlorin at the positive pole and its combinations with oxygen, like hypochlorous acid. He found that pure cultures of the pneumococcus and vibrio choleræ Asiaticæ could be employed for immunization after sufficient electrolytic effects of continuous currents.

Smirnow[13] in 1895 claimed that electrolysis of a diphtheria culture changes the toxin into antitoxin when the acidity at the positive pole has reached 0.9 to 1.9, which possesses the same properties as the serum of the immune horse. These experiments were repeated and the results verified by Kruger.[14]

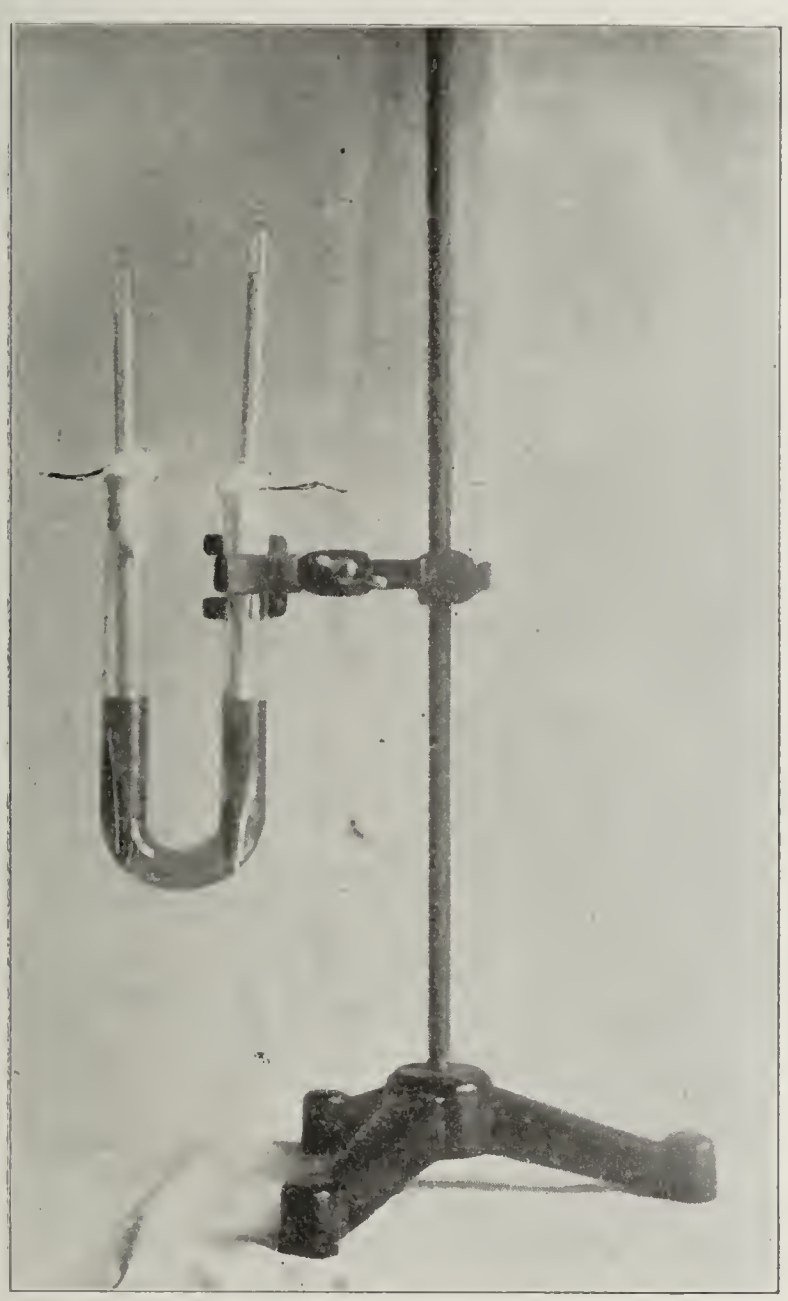


Fig. 1.—Effect of continuous currents on bacteria. Electrolysis and heat. U-tube culture with platinum electrodes.

Friedenthal[15] in a critical review of the literature of the subject up to 1896 concludes that electrolysis and heat alone destroy bacteria. Electricity acts likes light, which also destroys bacteria only by the formation of antiseptic substances.

EXPERIMENTS.—Of the numerous experiments I made to determine the part which the continuous electric current plays in the destruction of bacteria, I will give here only a few of the most representative ones, to illustrate the physical effects of the current—heat—and the chemical effect—electrolysis—and the results when both of these factors are reduced to a minimum. In most of the experiments for studying the physical and chemical effects of the current, fresh bouillon cultures were used in glass tubes of a diameter of 16 mm., bent in the form of an U, of a height of 150 mm., and 42 mm. from center to center, supplied with platinum leaf electrodes 10 mm. by 50 mm., attached to platinum wires, as shown in photograph (Fig. 1). Each arm of the U-tube was supplied with a thermometer, to the mercury bulbs of which the platinum leaf electrodes were fastened by thin rubber bands.

Effect of High Temperatures Produced by the Current.—A twenty-four-hour bouillon culture (Fig. 1) of the bacillus pyocyaneus lost its green color entirely within 4 minutes, when a current of 260 to 320 milliamperes was allowed to pass through it. After 10 minutes it looked like clear bouillon and cultures taken from the fluid remained sterile.

Time.	Current.	Temp.	
	260 milliamperes.	23 C.	
2 min.....	280 "	35.5 C.	(Green color fades gradually.)
4 min.....	320 "	62 C.	(Green color disappeared.)
6 min.....	326 "	81 C.	

I had to interrupt the experiment here for 22 minutes because the foam in the arm with the positive electrode filled up to the cotton stopper, and pressed the bouillon up in the other arm to twice the level of the bouillon in the positive arm. When the current was started again it was:

	Current.	Temp.
	280 milliamperes.	65 C.
8 min.....	310 "	80.5 C.
10 min.....	320 "	98.5 C.

The positive arm was filled entirely with foam, the negative arm about three-fourths. The bouillon was clear and stood at a much higher level in the negative arm than in the positive one. Bouillon tubes were inoculated and agar plates poured from the contents of the U-tube, but remained sterile after 24 hours in the incubator.

A control U-tube, containing a bouillon culture of bacillus pyocyaneus was then treated to the same current for 10 minutes. The temperature was kept between 9 and 18 C. by immersing the U-tube in a dish with ice water. Cultures taken from both arms of this tube showed good growth. The same current was then passed for 10 minutes through another control tube which contained only bouillon. After this had cooled down to the temperature of the room it was inoculated with bacillus pyocyaneus and incubated for 24 hours, showing a fair growth at the end of this time.

The death of the bacillus pyocyaneus in the first experiment is plainly due to the physical effects of the current, that is, the production of heat. Bacillus anthracis and bacillus subtilis were not killed when exposed to the same current for the same length of time, because their thermal death point is higher than that produced by this current, whereas the thermal death point of bacillus pyocyaneus, as determined by Sternberg, is 56 C.

Effect of Electrolysis at Low Temperatures.—To determine the chemical effects of the current by electrolysis and the resulting bactericidal products, it was necessary to exclude the effect of heat.

The following experiments illustrate how the variations in time and current result in variations of antiseptic or bactericidal properties of electrolytic products in the culture. All heat effects are excluded. A current of 48 milliamperes for 3 hours has no bactericidal effect.

The electrolytic products are antiseptic but not germicidal. With a current of 100 milliamperes they become bactericidal to non-resistant forms of bacteria in 75 minutes and to anthrax spores in 2 hours. The same current for 3 hours had only an antiseptic effect upon subtilis spores.

1. Anthrax (Spore-bearing); 48 Milliamperes for Two Hours.

Time.	Current.		Temp.	Cultures.
	48.5	milliamperes.	28 C.	
15 min.....	50.5	"	33.7 C.	Good growth.
30 min.....	51.5	"	36 C.	Good growth.
45 min.....	49.5	"	36.7 C.	Fair growth.
	Experiment interrupted.			
Time.	Current.		Temp.	Cultures.
60 min.....	48	milliamperes.	23.4 C.	Poor growth.
75 min.....	46.5	"	26.5 C.	Poor growth.
90 min.....	47.5	"	30 C.	Very few colonies.
105 min.....	48	"	31.7 C.	Very few colonies.
120 min.....	48	"	32.8 C.	Very few colonies.

The current was interrupted for 5 minutes to take cultures between each reading. At the end of the experiment the bouillon looked perfectly clear. Ten loopsful plated out in agar gave four colonies. A control tube



Fig. 2.—Effect of continuous current on bacteria. Electrolysis and low temperature. Four U-tube cultures with platinum electrodes, in series.

of bouillon treated in the same manner and inoculated with bacillus anthracis showed no growth after one night in the incubator, but when plated out many colonies grew upon the agar, showing that the electrolytic products were antiseptic but not bactericidal.

2. Staphylococcus Pyogenes Aureus and Albus, 48 Milliamperes, for Three Hours.

Time.	Current.		Temp.	Cultures.
	48	milliamperes.	27 C.	
15 min.....	48.5	"	33 C.	Good growth.
30 min.....	48	"	34 C.	Good growth.
45 min.....	48	"	32 C.	Fair growth.
60 min.....	48	"	30.2 C.	Fair growth.
75 min.....	48	"	31.8 C.	Very good growth.
90 min.....	48	"	32.3 C.	Very good growth.
105 min.....	48	"	31.3 C.	Very good growth.
120 min.....	48	"	32 C.	Fair growth.
140 min.....	48	"	32 C.	Good growth.
180 min.....	47	"	31 C.	Good growth.

A control tube of bouillon through which a current of 48 milliamperes was passed for 3 hours was inoculated with staphylococcus albus and showed no growth after one night in the incubator, but when plated out many colonies grew.

3. Bacilli Pyocyaneus, Typhosus, Anthracis and Subtilis.—With 100 milliamperes for 75 minutes, the temperature rose to 38 degrees C. in 20 minutes, so I resorted to cooling by ice water. The current was passed in series through the four U-tubes, which had been placed in glass tumblers containing ice water, as in photograph (Fig. 2).

Time.	Current.		Temperature. Pos. Pole.	Neg. Pole.
	100	milliamperes.	10 C.	6 C.
15 min.....	115	"	7.5 C.	4 C.
30 min.....	100	"	9 C.	6 C.
45 min.....	100	"	10 C.	5 C.
60 min.....	100	"	10 C.	10 C.
75 min.....	100	"	7 C.	5 C.

Agar plates were made of all tubes after 75 minutes, and incubated over night. The pyocyaneus and typhoid plate showed no growth, anthrax six small colonies and subtilis showed many well-growing colonies. Control tubes inoculated showed no growth with any of the four bacteria, but when plated out anthrax and subtilis plates showed many colonies.

4. Bacilli Pyocyaneus, Typhosus, Anthracis and Subtilis.—With 100 milliamperes for 120 minutes. The arrangement was the same as in the last experiment.

Time.	Current.		Temperature. Pos. Pole.	Neg. Pole.
	100	milliamperes.	9 C.	6 C.
30 min.....	100	"	10 C.	5 C.
60 min.....	100	"	10 C.	10 C.
90 min.....	100	"	3 C.	3 C.
105 min.....	110	"	8 C.	7 C.
120 min.....	100	"	7 C.	5 C.

Agar plates made of pyocyaneus, typhoid and anthrax tubes remained sterile, that of subtilis tube showed a fair number of well-growing colonies.

Control tubes through which a current of 100 milliamperes had been passed for 2 hours, showed no growth when inoculated with any of the four bacteria and incubated. Plates made from these control tubes remained sterile except the bacillus subtilis plate, which showed many colonies.

5. Bacilli Pyocyaneus, Typhosus, Anthracis and Subtilis.—With 100 milliamperes for 180 minutes.

Time.	Current.		Temperature. Pos. Pole.	Neg. Pole.
	100	milliamperes.	9 C.	6.5 C.
60 min.....	100	"	3 C.	3 C.
120 min.....	110	"	7 C.	7 C.
140 min.....	100	"	4 C.	4 C.
160 min.....	110	"	9 C.	6 C.
180 min.....	100	"	6 C.	6 C.

Pyocyaneus, typhoid and anthrax plates remained sterile, subtilis plates showed many well-growing colonies.

6. Staphylococcus Aureus, Bacilli Pyocyaneus, Prodigiosus and Anthracis.—With 130 to 150 milliamperes for 80 minutes.

Time.	Current.		Temperature. Pos. Pole.	Neg. Pole.
	125	milliamperes.	21 C.	20 C.
5 min.....	130	"	32 C.	27 C.
10 min.....	140	"	31.5 C.	30.5 C.

The prodigiosus culture became decolorized at the negative pole, and the pyocyaneus culture turned brown at the positive pole.

The current was interrupted after 10 minutes until the temperature of the cultures had fallen again.

Time.	Current.		Temperature. Pos. Pole.	Neg. Pole.
			23 C.	21 C.
20 min.....	130	milliamperes.	38 C.	30 C.

The temperatures again rose rapidly, so I had to interrupt current again for cooling. The foam collecting

upon the bouillon at the negative pole was red in the prodigiosus tube and green in the pyocyaneus tube, the bouillon in both tubes being decolorized.

Time.	Current.	Temperature. Pos. Pole.	Neg. Pole.
		23 C.	23 C.
30 min..	130-140 milliamperes.	37 C.	30 C.

All the U-tubes were now placed into tumblers with ice water to prevent the rapidly rising temperatures.

Time.	Current.	Temperature. Pos. Pole.	Neg. Pole.
		8 C.	8 C.
40 min.....	120 milliamperes.	12 C.	8 C.
60 min.....	130 "	11 C.	11 C.
70 min.....	130 "	12 C.	12 C.
80 min.....	130 "	15 C.	12 C.

All the tubes were now plated out with agar and remained sterile, except a few colonies on the anthrax plate, after 24 hours' incubation.

7. Staphylococcus Aureus, Bacilli Pyocyaneus, Prodigiosus and Anthracis.—With 130 to 150 milliamperes for 180 minutes.

Time.	Current.	Temperature. Pos. Pole.	Neg. Pole.
		6 C.	4 C.
30 min.....	130 milliamperes.	12 C.	8 C.
60 min.....	135 "	11 C.	11 C.
90 min.....	140 "	11 C.	10 C.
120 min.....	150 "	12 C.	11 C.
150 min.....	140 "	16 C.	19 C.
180 min.....	130 "	10 C.	8 C.

All the tubes were plated out on agar and remained sterile in incubator.

Control tubes through which the same current was passed for 3 hours had a strong odor of hypochlorous acid, and showed no growth when inoculated with the above bacteria. When these were plated out no growth took place.

Germicidal Substances at Positive and Negative Pole.—A series of experiments was now made to determine as far as possible the effect of the different bactericidal substances produced by electrolysis at the positive and negative pole in the culture. Museum jars having an inside diameter of 42 mm. and 130 mm. high were filled one-half with bouillon. An inverted U-tube was then made to connect the two jars, and the bouillon was drawn into the U-tube by a small rubber tube which was withdrawn when the bouillon arch was formed, without any air bubbles. Into each jar was placed a thermometer with platinum leaf electrode, 10 by 50 mm., which was fastened to the mercury bulb of the thermometer by a thin rubber band. The jars were then stoppered with cotton and the whole apparatus, which is shown in photograph, sterilized (Fig. 3).

The two jars were inoculated with spore-bearing anthrax bacilli and incubated at 37 C. for 24 hours.

Time.	Current.	Temperature. Pos. Pole.	Neg. Pole.
	95 milliamperes.	19 C.	19 C.
15 min.....105	"	27 C.	25 C.

To prevent the rapidly-rising temperature at the two poles, the whole apparatus was placed into a potato dish containing water and ice, as illustrated by photograph, and the experiment continued (Fig. 4).

Time. Minutes.	Current. Milliamperes.	Temperature. Pos. Pole.	Neg. Pole.	Cultures. Pos. Pole.	Neg. Pole.
30	100	15 C.	15 C.	Good growth.	Good growth.
40	95	7.5 C.	7.5 C.	. . . . .	. . .
50	100	9 C.	9 C.	. . . . .	. . .
60	100	13 C.	14 C.	Few colonies.	Many colonies,
90	105	19 C.	17 C.	2 "	26 "
120	100	18 C.	18 C.	No growth.	No growth.

The culture fluid had a strong acid reaction at the positive pole and an odor of hypochlorous acid.

At the negative pole the reaction was strongly alkaline, requiring 8.82 milligrams of H_2SO_4 to neutralize 1 c.c. of the culture fluid.

The two cultures were shaken and plated out in agar, but no growth resulted from either jar. After 24 hours I again made plates which also remained sterile.

A control experiment was made by passing 100 milliamperes through three similar contrivances for 2 hours, at 31 to 36 C., after which the bouillon was inoculated with bacilli prodigiosus, pyocyaneus and anthracis and placed in the incubator.

All remained sterile, and, when I plated them out, no growth took place, showing that the germicidal substances produced in the bouillon by electrolysis were sufficient at both poles to kill these bacteria.

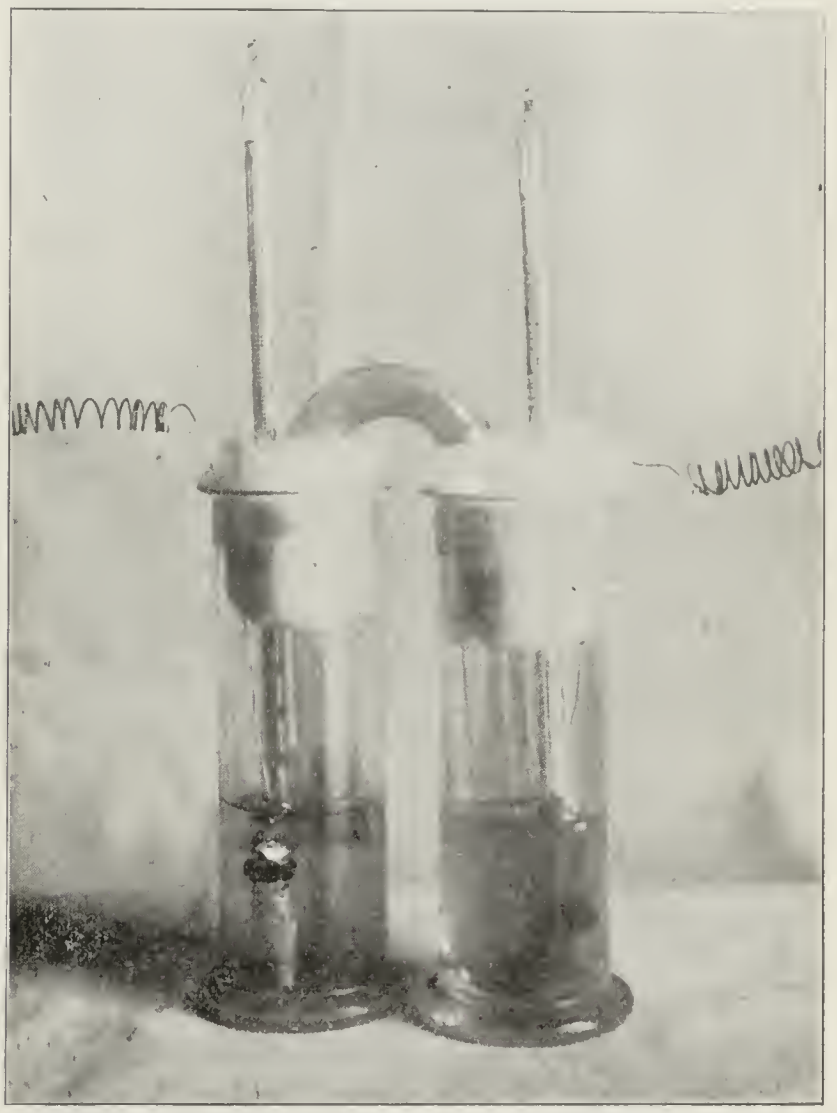


Fig. 3.—Effect of continuous current on bacteria. Germicidal substances produced at positive and negative poles. Culture jars connected by U-tube arch of bouillon. Platinum electrodes.

The bacillus subtilis in a former experiment had shown such marked resistance to the electrolytic bactericidal products of the current that I employed it here also to determine the effects of electrolytic products at the two poles. In a former experiment I was unable to kill the bacillus subtilis by a current of 100 milliamperes for 3 hours. Now I found that the bacillus subtilis was dead at the positive pole in 2 hours, whereas at the negative pole living bacilli or rather spores were still present after the current had passed 4 hours. The earlier death at the positive pole of anthrax and subtilis spores is due to the liberation of chlorin, which combines with oxygen to form hypochlorous acid.

At the negative pole, sodium in the presence of water, forms sodium hydroxid and liberates nascent hydrogen, which rises in numerous bubbles. These bactericidal

products of electrolysis are only present in the two jars. The bouillon arch is practically free from them.

Effect of Continuous Current Without Heat and Electrolysis.—Friedenthal[15] in his critical review of Kruger's[12] work in this direction, has already pointed out that it is illogical to attempt to prevent the influence of heat by cooling and the effect of electrolysis by the use of non-polarizing electrodes, because, if we eliminate both these factors, every influence of electricity is removed.

Kruger[12] maintains that the continuous current alone by means of non-polarizing electrodes and exclusion of chemical effects by ions, is capable of preventing completely the growth of bacteria without necessarily killing them.

I have carefully repeated his experiments with bacil-

Time.	Current. Milliamperes.	Temperature. Pos. Pole.	Temperature. Neg. Pole.	Remarks.
	100	18 C.	18 C	Both arms of U-tube clear and of a pale yellowish-green color.
10 min.	36	21 C.	18 C.	Same as above.
15 "	32	23 C.	20 C.	Same as above.
45 "	32	24 C.	21 C.	Same as above.
75 "	47	25 C.	21 C.	Pos. arm beautiful green and clear. Neg. arm yellow and clear.
120 "	59	28 C.	22 C.	Pos arm becomes turbid. Precipitate. Neg. arm clear.
150 "	63	32 C.	23 C.	Same as above.
240 "	49	35 C.	24 5 C	Pos. arm more turbid, neg. clear.
20 hrs.	29-49	24 C.	24 C.	Heavy precipitate on animal membrane, grayish white, also in curve of U-tube. Pos. arm clear and yellow; neg. arm clear and light green.
21 "	48	24 C.	24 C.	Same as above.
24 "	45	24 C.	25 C	Same as above.



Fig. 4.—Effect of continuous current on bacteria. Germicidal substances at positive and negative poles, with cooling apparatus.

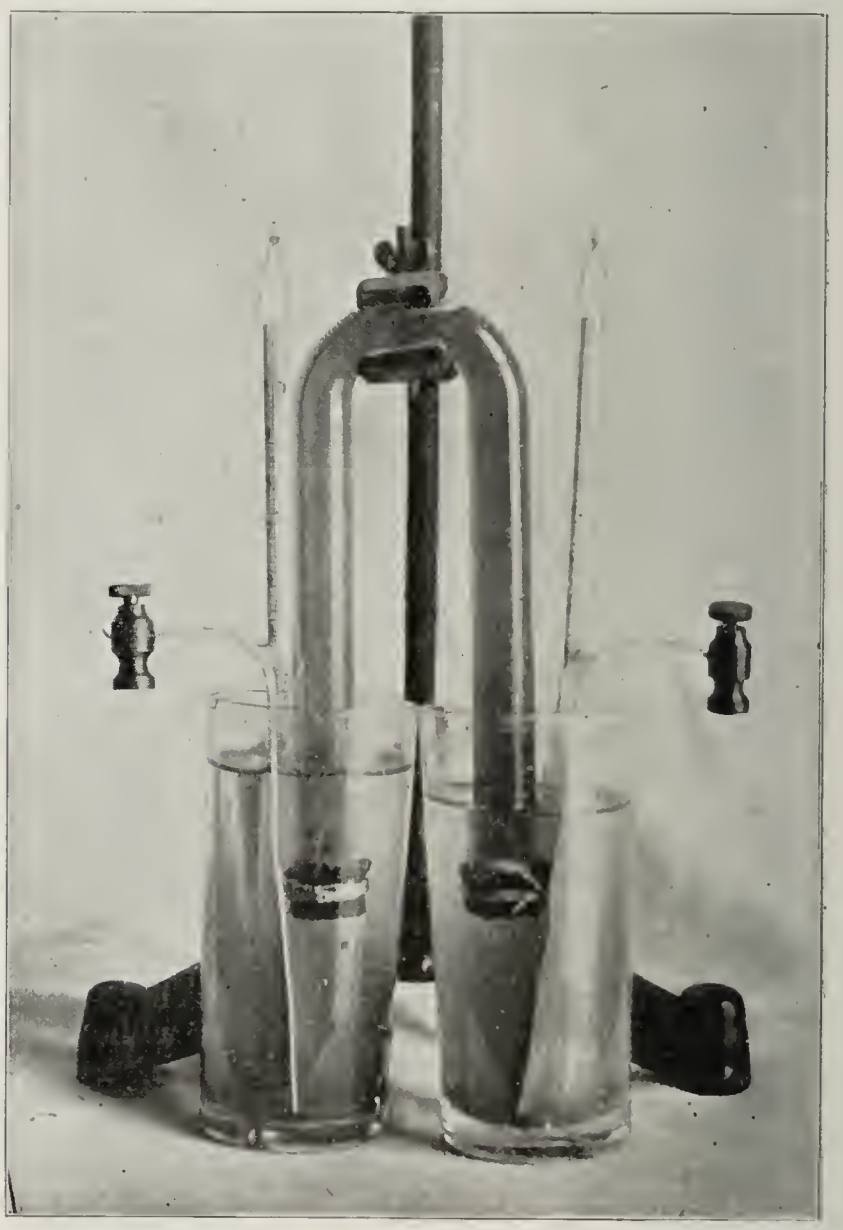


Fig. 5.—Effect of continuous currents. Du Bois-Reymond non-polarizing electrodes in zinc sulphate solution. Culture in U-tube closed by animal membranes. Exclusion of heat and electrolysis.

lus pyoeyaneus, using two glass tumblers 54 mm. wide by 100 mm. high inside diameter, containing a strong solution of zinc sulphate. Each tumbler was supplied with a zinc plate electrode, 40 mm. wide as in the photograph. These electrodes were amalgamated in the usual way by sulphuric acid and mercury. An U-tube of 16 mm. inside diameter, 150 mm. high and 42 mm. from center to center, was filled with bouillon, both openings being closed by tying animal membrane over them. The tubes were sterilized and inoculated with enough of a fresh bouillon culture of bacillus pyocyaneus to give it a faint greenish color. The membranes were again tied and the tube placed in the two tumblers containing zinc sulphate solution with thermometers (Fig. 5).

The reaction of the zinc sulphate solution remained acid in both tumblers during the whole experiment. The current as given represents the results of passing the regular 110-volt Edison current directly through the apparatus without any other resistance in series. The resistance of the apparatus, therefore, must have been between 1100 ohms (100 milliamperes) and 3440 ohms (32 milliamperes).

The turbidity gradually passing from the positive pole to the negative is due to electric osmose. When a current is sent through two different fluids which are separated by an animal membrane the liquid at the positive pole passes through this membrane towards the negative pole.

After the experiment was completed the U-tube was incubated for 12 hours and showed no growth, but neither did a control tube to which I had added enough zinc

sulphate solution to cause a similar turbidity. Both tubes when plated out on agar showed fair growth. It would appear from this that electric osmose of zinc sulphate solutions through the porous membrane was alone sufficient to prevent growth.

Such an arrangement of apparatus like the one used will not exclude the production of small quantities of antiseptic substances at the electrodes. Electric osmose causes such a turbidity of the bouillon, gradually passing from the positive to the negative pole, that we must also consider the deterioration of the culture medium in this experiment. I have passed the same current through another U-tube with bouillon for the same length of time (24 hours) and then inoculated the turbid bouillon with a similar quantity of a fresh pyocyaneus culture and found no growth after incubation.

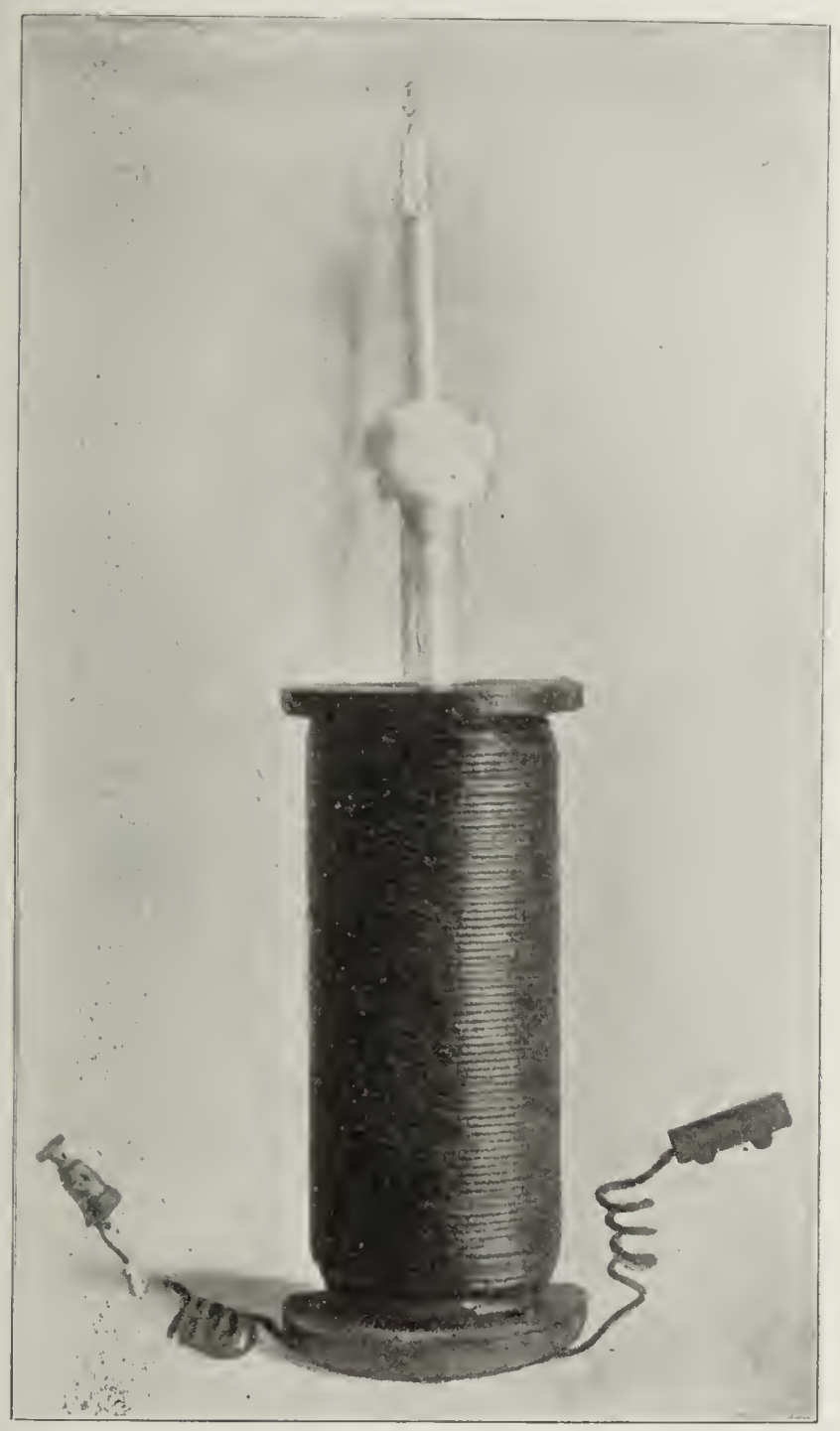


Fig. 6.—Effect of a magnetic field on bacteria. Culture within helix of 900 turns of wire. For currents of ½ to 3 amperes—1350 to 2700 ampere turns.

All this goes to prove that the continuous current itself is not bactericidal, nor even antiseptic, but that it can destroy bacteria only by heat or the production of bactericidal substances by electrolysis.

EFFECT OF A MAGNETIC FIELD ON BACTERIA.

A most remarkable contribution was made in 1891 by Spilker and Gottstein.[16] They claimed to have discovered that a strong continuous current, made to pass through a spiral coil of wire wound around a test tube containing a watery suspension of bacteria, will kill these. They distributed a few loopfuls of a fresh agar culture of the bacillus prodigiosus in sterile water, contained in a test tube of 250 c.c. and passed a current of 2½ amperes through this helix of wire around the tube, for 24 hours. The bacillus prodigiosus was said to have been killed. They then added a little nutritive gelatin to the water and found the same result. Stronger currents were effective in a shorter time, as follows: 5 amperes in 21 to 22 hours; 10 amperes in 4 hours, and 12.5 amperes in 80 minutes. They concluded that micro-organisms can be killed by the induction-electricity (?). When they added ferrum albuminatum to the suspension of bacteria—1 to 1000—they were able to kill the bacillus prodigiosus in from 5 to 30 minutes by a current of 12½ amperes passing through the helix.

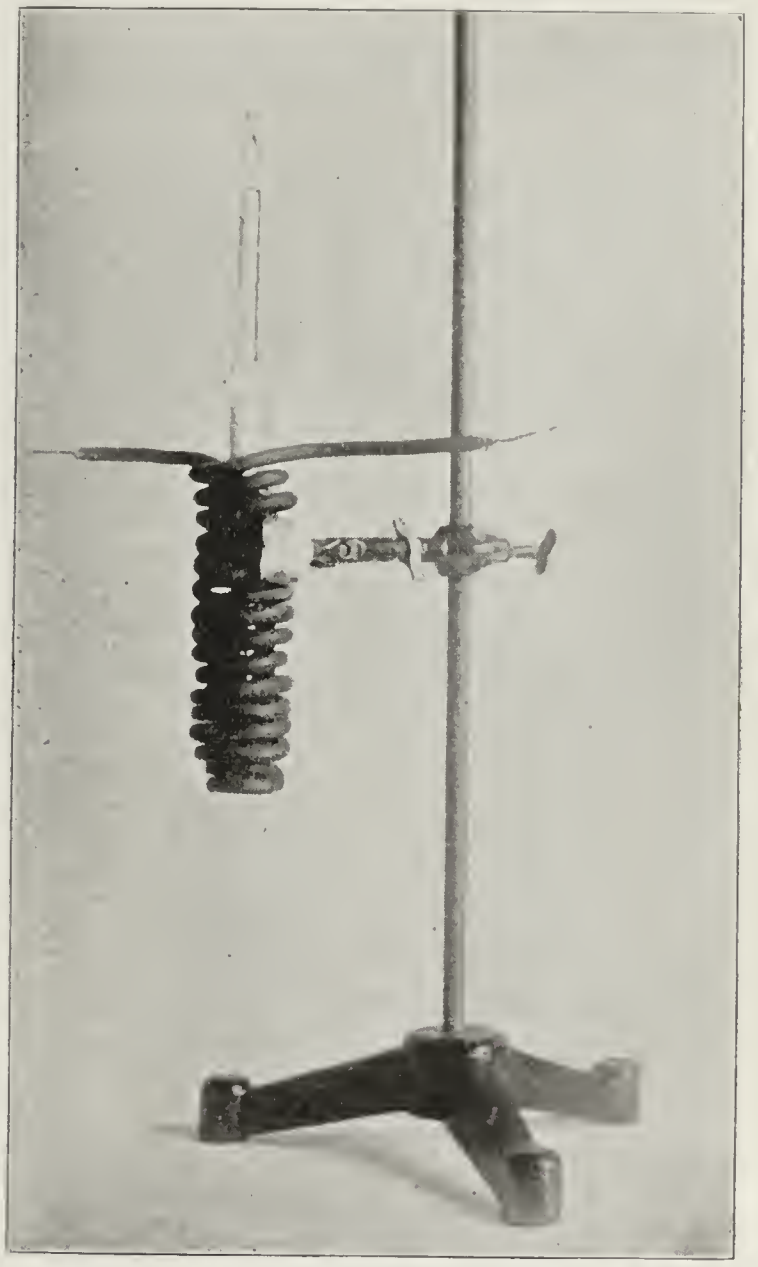


Fig. 7.—Effect of a magnetic field on bacteria. Culture within helix of 15 turns of wire. For currents of 12 amperes—360 ampere turns.

Kruger[12] and Friedenthal[18] repeated these experiments. Kruger thought the effect was negative or at least very slight. Friedenthal had only negative results.

Thiele and Wolf[17] used a solenoid 10 cm. long, consisting of seven layers of forty-four turns each, of a wire 2 mm. thick. A current of 7½ amperes (2310 ampere turns) for 8 hours had no effect whatever.

EXPERIMENTS.—I used a helix of wire 125 mm. long, outside diameter 70 mm., inside diameter 18 mm., with twelve layers of seventy-five turns each of No. 16 (B. and S. gauge) double cotton covered wire, that is, 900 turns of wire. The inside diameter is just large enough to

admit a common size test tube. The tubes were filled about three-quarters full with hydrant water, a thermometer was inserted and they were then sterilized as usual. Suspensions of the bacilli prodigiosus and pyocyaneus were made by stirring enough of a fresh agar culture into the sterile water to color it slightly.

a.—A tube with a suspension of bacillus prodigiosus was placed in the helix (Fig. 6) and a current of 3 amperes (2700 ampere turns) passed through it.

Time.	Temp.	Culture.
	19 C.	Good growth.
½ hour.....	41 C.	" "
1 hour.....	49 C.	" "
1½ hours.....	64 C.	" "
2 hours.....	65 C.	Fair growth.
3 hours.....	67.5 C.	Poor growth.
4 hours.....	68.5 C.	No growth.

The fluid was plated out on agar. No growth. Control tube showed good growth. The result here is evidently due to heat. Practically the same results were found with suspensions of bacillus pyocyaneus.

b.—The same experiment was repeated except that a current of only 1½ amperes was allowed to flow through

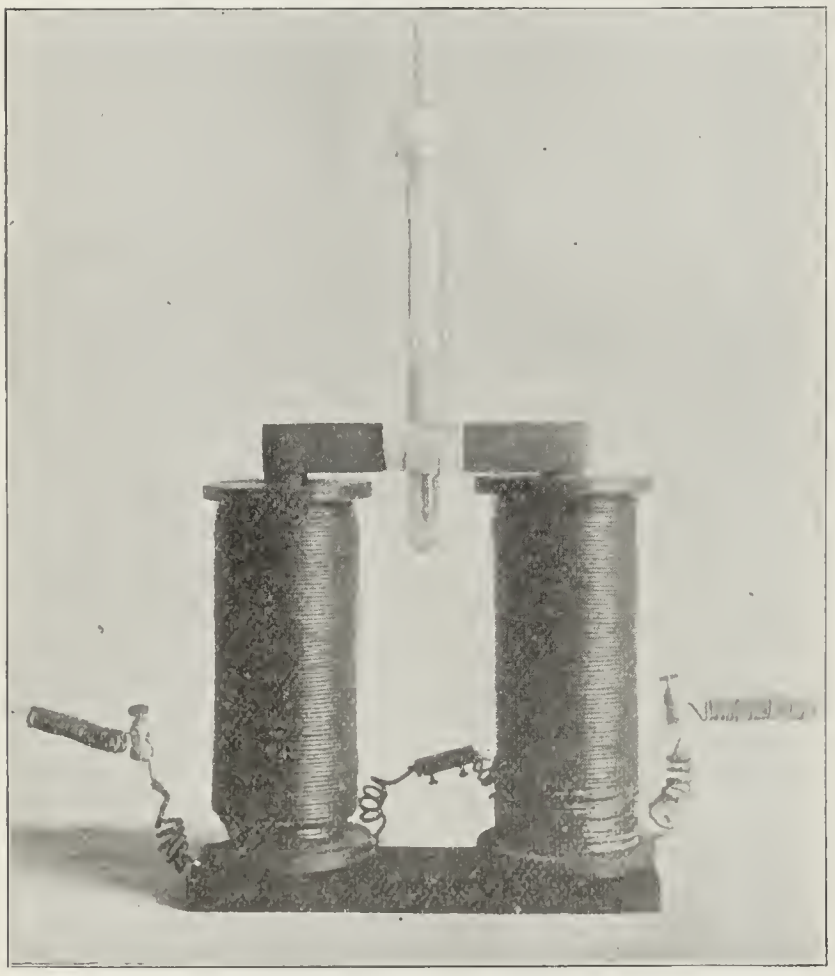


Fig. 8.—Effect of a magnetic field on bacteria. Culture between the poles of a powerful electro-magnet.

the 900 turns of wire of the helix (1350 ampere turns) to maintain a low temperature.

Time.	Temp.	Culture.	Control tube.
	19.5 C.	Good growth.	Good growth.
1 hour.....	25 C.	" "	" "
8 hours.....	32.2 C.	" "	" "
16 hours.....	35.5 C.	Fair growth.	" "
24 hours.....	40.5 C.	Good growth.	" "
32 hours.....	31.5 C.	" "	" "
56 hours.....	29.5 C.	Very good growth.	" "
62 hours.....	38 C.	" " "	" "
70 hours.....	33 C.	" " "	" "
78 hours.....	31.6 C.	" " "	" "
110 hours.....	33 C.	" " "	" "
141 hours.....	29 C.	Fair growth.	Fair growth.
180 hours.....	35 C.	Very good growth.	" "

c.—A few experiments were made also with a solenoid consisting of two layers of fifteen turns each of a very heavy, double rubber coated electric light wire (No. 12 B. and S. gauge) wound tightly around a test tube containing bacillus pyocyaneus (Fig. 7). The current used was 12 amperes (360 ampere turns) for 40 hours in both cases. The temperature ranged between 20 and 26 and a comparison with control tubes and plates after this time displayed no difference whatever. The same was true of the bacillus prodigiosus.

It is evident from this that Spilker and Gottstein's results must have been due to heat, because exhaustion of fluid and starvation of bacteria was prevented in their experiments by the addition of a small quantity of gelatin. Whenever I did this or added ferrum albuminatum, the prodigiosus grew markedly in the suspension during the long time of exposure to the current.

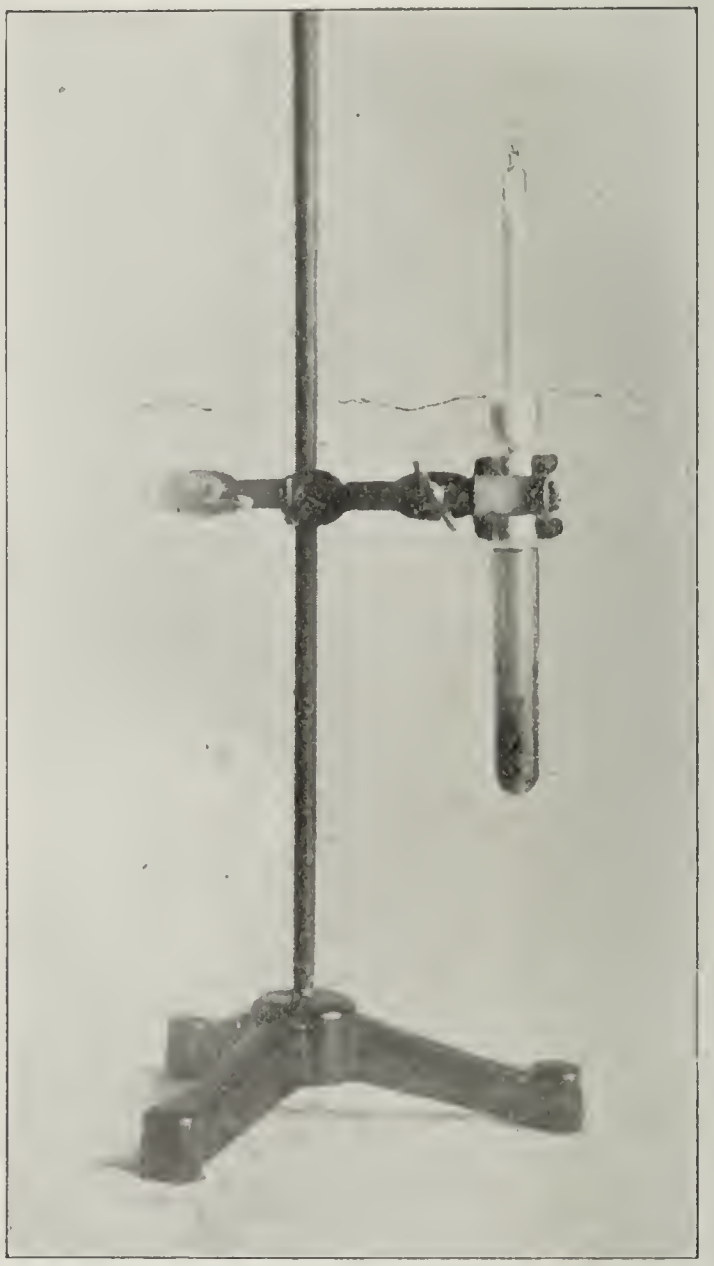


Fig. 9.—Effect of alternating currents on bacteria. Culture tube with platinum electrodes.

How they can speak of induction electricity here I can not understand. The bacterial culture is simply in the magnetic field of the helix of wire.

d.—Therefore, I have made a few more experiments to determine if a strong magnetic field may have any influence on the bacillus prodigiosus and pyocyaneus. A powerful electro-magnet with a coil of 900 turns of wire on each core (20 by 180 mm.), with two pole pieces approaching each other so as to hold the watery suspension of bacteria in a test tube, was energized by a current of 1 ampere (1800 ampere turns) for 200 hours, the temperature ranging between 20 and 28 C. When these were plated out they showed better growth than the control tube. The test-tubes were held between the poles of the magnet by cork (Fig. 8).

Finally I placed similar suspensions between the poles

of a powerful 110-volt Crocker-Wheeler dynamo for 4 days, and, if the temperature was kept below 30 C., the growth in the tubes agreed closely with control tubes.

EFFECT OF ALTERNATING CURRENTS ON BACTERIA.

Cohn and Mendelssohn[5] in 1879 report negative results with alternating currents.

In 1896 Marmier[19] reports that alternating currents of low frequency destroy bacterial toxins by the production of hypochlorites and chlorin.

The same year, Lortet[20] discovered that motile bacteria place themselves in parallel rows to the current. The current does not kill them except when antiseptic substances have been produced.

Heller[21] in 1897 reported that he was able to destroy bacteria by means of the alternating current obtained from the secondary of an induction coil, the primary of which received a current of 5 Bunsen cells. Bacteria were dead in 30 minutes, whereas mucor spores remained alive.

EXPERIMENTS.—An ordinary test-tube containing a fresh bouillon culture of the bacillus prodigiosus was supplied with a thick thermometer, to the mercury bulb of which were fastened two platinum electrodes, 10 by 50 mm., by a thin rubber band (Fig. 9). I passed the secondary current of a three-inch spark, Ruhmkorff coil, through this apparatus for 10 hours, taking cultures

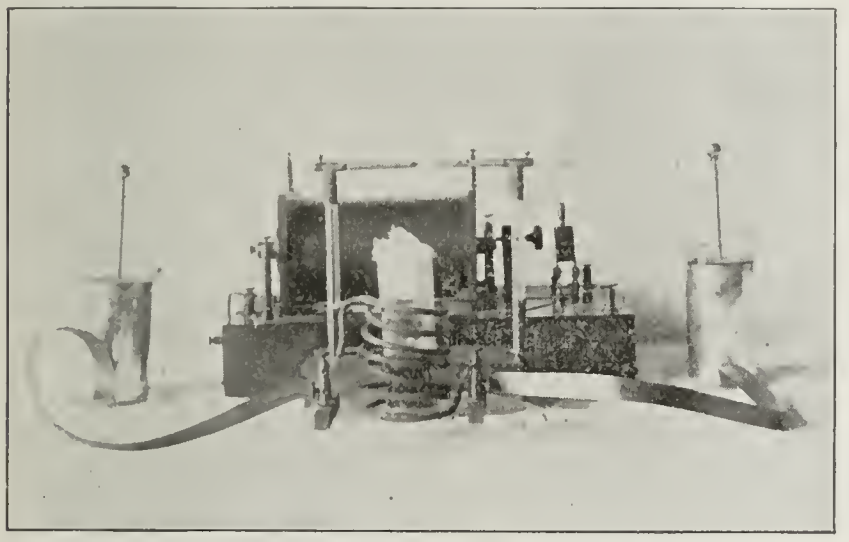


Fig. 10.—High frequency alternating currents.

every hour, with the result that the tubes inoculated grew better and better the longer the current passed, and developed a most beautiful pigment production.

A similar experiment was made with the apparatus shown in Fig. 3, with a three-day-old bouillon culture of bacillus pyocyaneus. The secondary of an eight-inch spark coil was employed, but the growth of bacteria and the pigment production was rather favored than hindered by the current.

The Lortet experiment was also repeated several times by means of a glass slide upon which a square coil was built by means of paraffin. The two platinum electrodes were fastened by paraffin to the slide, their ends protruding into the paraffin cell. The cell was filled with a suspension of typhoid bacilli in sterile water. The results were identical with those of Lortet, but early formation of gas bubbles does not allow of any extended examination. When the current was interrupted the bacilli showed the normal motility.

EFFECTS OF TESLA CURRENTS OR CURRENTS OF HIGH POTENTIAL AND HIGH FREQUENCY.

D'Arsonval and Charrin[22] in 1893 were the first to study the effects of high frequency currents on bacteria. A culture of the bacillus pyocyaneus was placed into a solenoid through which an alternating current of 800,000 oscillations per second was passed for 60 minutes. The green color of the culture disappeared.

The same authors in 1896[23] made numerous animal experiments with cobras, which were injected by virulent cultures of bacilli diphtheriæ and pyocyanei after the cultures had been treated with high frequency currents. They concluded that high frequency currents attenuated the toxins which could then be used for immunization by injection.

Marmier[24] repeated the experiments and was unable to detect any attenuation of toxins.

Bonome and Viola[25 26] found that high potential alternating currents decrease the virulence of streptococcus cultures, one to four days old, and make cultures 20 to 30 days old non-virulent, although the streptococci are not killed. The current only acts on the toxins, which are changed into antitoxins by high potential currents. The cultures were placed into U-tubes with platinum electrodes. The current was taken from a Tesla coil, through which the secondary current of a Ruhmkorff coil was passed.

Dubois[27] concludes that experiments with rabbits demonstrate the destructive action of high potential currents upon the vitality and virulence of streptococci.

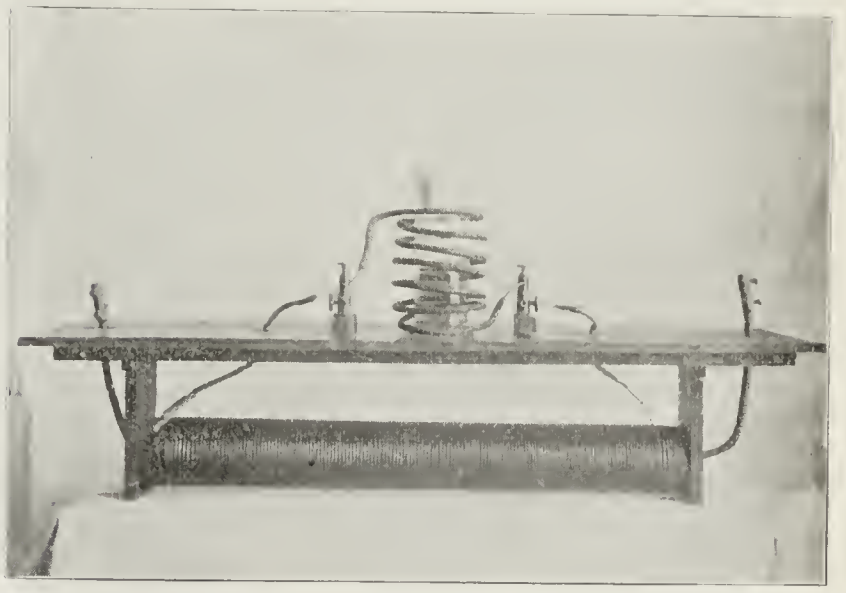


Fig. 11.—Tesla coil. Culture jar within secondary solenoid. The Tesla coil is immersed in boiled linseed oil for the experiment

Oudin[28] contends that Tesla currents are germicidal and antitoxic, as demonstrated by cures of lupus molluscum contagiosum and healing of large ulcers by simple local action without burns or injury to the epidermis. These currents represent a new form of transformation of electricity into light.

Krause[29] believes that the decolorization of the pyocyaneus and prodigiosus cultures within a solenoid is probably due to the formation of ozone and slight electrolytic changes in the culture medium, because these bacteria produce their usual pigments again when transplanted.

EXPERIMENTS.—*a.*—High frequency alternating currents. The secondary of a three-inch Ruhmkorff coil was connected to the inner coating of two Leyden jars, 70x160 mm., with a Hertz spark gap between zinc points of 10 mm. The outer coatings of the Leyden jars were connected to a solenoid consisting of seven turns of thick wire. Into this solenoid I placed a small museum jar, 42x130 mm., with a suspension of bacillus pyocyaneus in bouillon sufficient to give the bouillon a slight greenish tinge (Fig. 10). The rapid oscillatory discharges of the Leyden jars through this solenoid produce high fre-

quency alternating currents in the solenoid, probably many hundred thousand oscillations per second. The effect upon the bacterial suspension was entirely negative. The current was passed with interruptions for 6 hours. All the cultures taken grew well and the greenish color of the bouillon was not changed in the least.

b.—High frequency, high potential currents—Tesla currents. One of the secondary terminals of an eight-inch Ruhmkorff coil was connected to the inner coating of a Leyden jar and to the primary of a Tesla coil. The other secondary terminal was connected to the outer coating of the Leyden jar, and, through a spark gap of zinc points, to the other primary of the Tesla coil. The spark gap was placed between the poles of a powerful electro-magnet, protected by mica plates, to blow out the arc as soon as formed, so that the fundamental discharges occur in quicker succession as suggested by Tesla.[41]

The Tesla coils used consisted of a primary spiral of thick (No. 6 B. and S. gauge, 4 mm.) wire, the individual turns 10 mm. apart from each other and of a diameter of 40 mm. A thick rubber tube (6 mm.) surrounded the primary coil. Upon this rubber tube were wound 200 turns of a wire 1 mm. thick (No. 18 B. and S. gauge), about 1 mm. between each turn. The coil was fastened by rubber support to a board carrying the two primary and secondary terminals as shown in Fig. 11. The whole coil was immersed in boiled linseed oil. The arrangement of the apparatus is shown in Fig. 12.

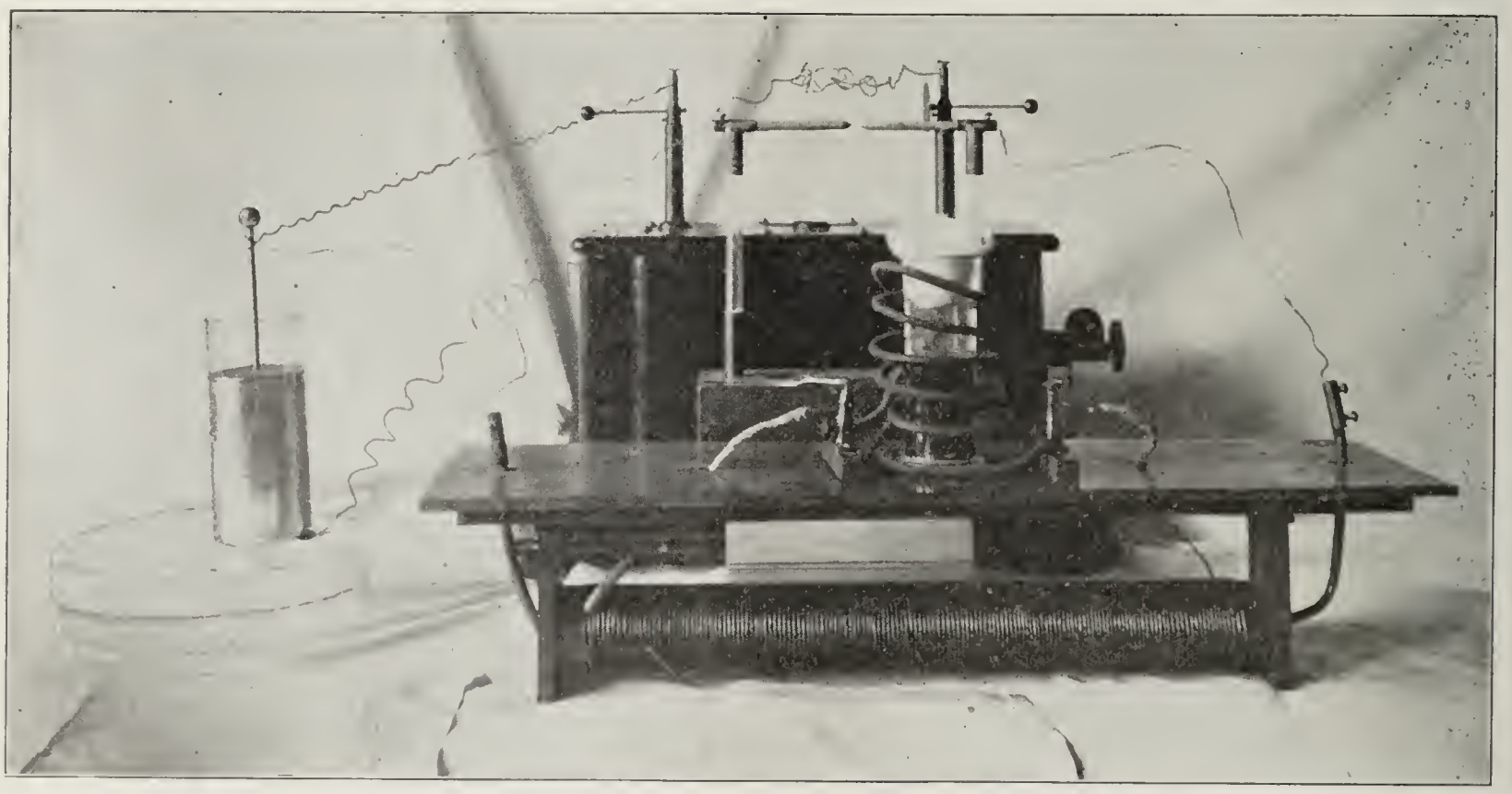


Fig. 12.—High frequency, high potential currents. Tesla currents.

In the former experiment a high frequency current was made to pass through a helix surrounding the bacterial suspension. The primary of the Tesla coil now receives the same current, and induces, in the secondary winding of the Tesla coil, currents of many millions of volts, that is, high potential and high frequency currents. We can draw a shower of sparks from one of the electrodes without any sensations of pain. A suspension of bacillus pyocyaneus was exposed within the same solenoid used in the foregoing experiment, only that it now was connected to the terminals of the secondary winding of the Tesla coil. The current was passed for one hour, and plates made from the bouillon culture in solenoid showed good growth. The same experiment was repeated with bacillus typhosus, coli communis, diphtheriæ, proteus vulgaris, staphylococcus aureus and micrococcus tetragenus, and, in all cases, the agar plates showed good growth.

When the terminals of the Tesla secondary are separated beautiful brush discharges appear. Agar suspensions of bacteria in plates exposed to these show no growth, but the strong odor of ozone betrays the cause of this result.

EFFECT OF ROENTGEN RAYS ON BACTERIA.

Berton[30] exposed bouillon cultures of bacillus diphtheriæ for 16, 32 and 64 hours without any effect upon growth or virulence.

Minck[31] exposed an agar plate which had been inoculated with one loopful of bacillus typhosus and exposed it for 3 hours at a distance of 10 centimeters from the tube. When incubated it showed no difference in growth from a control plate.

Wittlin[32] repeated Minck's experiments with bacillus typhosus, bacillus diphtheriæ, staphylococcus aureus and vibrio choleræ Asiaticæ and concludes that Röntgen rays have no influence upon the growth or life of bacteria.

Blaise and Lambuc[33] experimented with bacillus anthracis and found that 3 hours' exposure had no effect. They explain the favorable clinical results by phagocytosis which may be caused by the rays.

Bergonie and Mongour[34] use Röntgen rays in the treatment of tuberculosis of the lung because they believe phagocytosis is caused. They were unable to reduce the virulence of tubercle bacilli by exposing the sputum to the rays.

Muhsam[35] found that tubercular guinea-pigs were not improved by exposure to Röntgen rays.

Schiff[36] does not believe in any deleterious influence of *x*-rays upon tubercle bacilli in cases of lupus. He believes that the violent inflammation caused in the deeper layers of the skin by the rays are sufficient to produce unfavorable conditions for the growth of bacteria.

Rieder[37] was the first to report germicidal effects of Röntgen rays. He was unable to kill well-grown colonies of bacteria on culture plates. He inoculated agar tubes and plated them out. The open plates were covered

with a lead plate from which a square or circle had been cut out. After a one-hour exposure the plates were covered and placed in the incubator, with the result that the portion of the plate which had been covered by lead showed numerous well-growing colonies, whereas the portion exposed to the rays showed no growth. By various arrangements for control of experiments he excluded heat rays, light rays and electrical effects. He thinks that he can exclude chemical effects, because bacteria inoculated afterwards upon the portion exposed to the rays grow well. These experiments were repeated by others, partially with negative and partially with positive results. Rieder[38] explains the negative results by insufficient intensity of the rays.

Himmel[39] thinks that deeper and more extensive necrosis is produced in lupus than in normal skin.

Levy-Dorn[40] expresses the view that the generally accepted opinion that *x*-rays are bactericidal is wrong. Rieder's experiments were made with rays of great intensity, whereas, in the therapeutic application of the rays, any bactericidal properties of the rays are out of the question. He compares the bactericidal effect of the rays

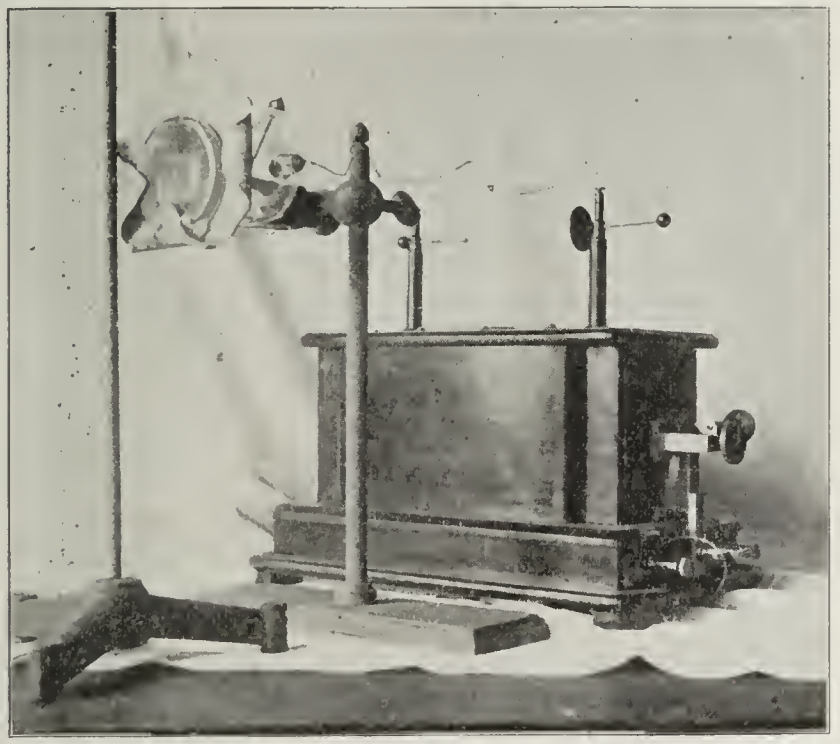


Fig. 13.—Effect of Röntgen rays on bacteria. Open Petri dish with agar culture. Perforated lead plate as cover. Exposed agar film directly to *x*-ray tube.

with that of an attempt to disinfect the intestinal canal with a few drops of creosote, and believes the positive cures of lupus, favus, and psoriasis and chronic eczema by the rays is not due to any direct bactericidal effect.

EXPERIMENTS.—*a*. Bouillon and hydrocele-fluid cultures in test-tubes of bacillus pyocyaneus, prodigiosus, typhosus, anthracis and diphtheriæ were exposed to Röntgen rays at a distance of 2 cm. from the tube for 2, 5, 10, 20 and 48 hours without any effect whatever upon pigment production, growth, motility or virulence.

A repetition of Rieder's experiments proved negative.

b. Suspensions of the same bacteria in agar were plated out. For the glass cover of the plate I substituted a lead plate 5 mm. thick, which had an oval window cut out in the center. The plate was then exposed to the rays, with its agar film towards the tube, at a distance of 20 mm.; for ½, 1, 2 and 4 hours (Fig. 13). When incubated the exposed portion of the agar showed just as many colonies as the non-exposed portions.

c. A serum plate was smeared thickly with sputum containing from 50 to 100 tubercle bacilli to the field. The plate was exposed without cover for 6 hours to the rays at a distance of 20 mm. from the tube. Three guinea-pigs were inoculated, of which one died in five weeks and one in seven weeks of acute miliary tuberculosis. One is alive yet, but is tubercular. It has enlarged inguinal glands, constantly elevated temperature and has continually lost in weight.

I conclude from this that Röntgen rays have no direct bactericidal properties. The clinical results must be explained by other factors, possibly the production of ozone, hypochlorous and nitrous acid, extensive necrosis of the deeper layers of the skin, and phagocytosis.

CONCLUSIONS.

1. A continuous current of 260 to 320 milliamperes passed through bouillon cultures kills bacteria of low thermal death points, in 10 minutes by the production of heat—98.5 C. The antiseptics produced by electrolysis during this time are not sufficient to prevent growth of even non-spore bearing bacteria. The effect is a purely physical one.

2. A continuous current of 48 milliamperes passed through bouillon cultures for from 2 to 3 hours does not kill even non-resistant forms of bacteria. The temperature produced by such a current does not rise above 37 C. and the electrolytic products are antiseptic but not germicidal.

3. A continuous current of 100 milliamperes passed through bouillon cultures for 75 minutes kills all non-resistant forms of bacteria even if the temperature is artificially kept below 37 C. The effect is due to the formation of germicidal electrolytic products in the culture. Anthrax spores are killed in 2 hours. Subtilis spores were still alive after the current was passed for 3 hours.

4. A continuous current passed through bouillon cultures of bacteria produces a strongly acid reaction at the positive pole, due to the liberation of chlorin which combines with oxygen to form hypochlorous acid. The strongly alkaline reaction of the bouillon culture at the negative pole is due to the formation of sodium hydroxid and the liberation of hydrogen in gas bubbles. With a current of 100 milliamperes for 2 hours it required 8.82 milligrams of H_2SO_4 to neutralize 1 c.c. of the culture fluid at the negative pole, and all the most resistant forms of bacteria were destroyed at the positive pole, including anthrax and subtilis spores. At the negative pole anthrax spores were killed also, but subtilis spores remained alive for 4 hours.

5. The continuous current alone, by means of DuBois-Reymond's method of non-polarizing electrodes and exclusion of chemical effects by ions in Kruger's sense, is neither bactericidal nor antiseptic. The apparent antiseptic effect on suspension of bacteria is due to electric osmose. The continuous electric current has no bactericidal nor antiseptic properties, but can destroy bacteria only by its physical effects—heat—or chemical effects, the production of bactericidal substances by electrolysis.

6. A magnetic field, either within a helix of wire or between the poles of a powerful electro-magnet, has no antiseptic or bactericidal effects whatever.

7. Alternating currents of a three-inch Ruhmkorff coil passed through bouillon cultures for 10 hours favor growth and pigment production.

8. High frequency, high potential currents—Tesla currents—have neither antiseptic nor bactericidal properties when passed around a bacterial suspension within a solenoid. When exposed to the brush discharges, ozone is produced and kills the bacteria.

9. Bouillon and hydrocele-fluid cultures in test-tubes of non-resistant forms of bacteria could not be killed by

Röntgen rays after 48 hours' exposure at a distance of 20 mm. from the tube.

10. Suspensions of bacteria in agar plates and exposed for 4 hours to the rays, according to Rieder's plan, were not killed.

11. Tubercular sputum exposed to the Röntgen rays for 6 hours at a distance of 20 mm. from the tube, caused acute miliary tuberculosis of all the guinea-pigs inoculated with it.

12. Röntgen rays have no direct bactericidal properties. The clinical results must be explained by other factors, possibly the production of ozone, hypochlorous acid, extensive necrosis of the deeper layers of the skin, and phagocytosis.

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LABORATORY OBSERVATIONS ON HYDROPHOBIA IN OHIO.*

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In the past five years several cases of suspected hydrophobia have been brought to my notice from various quarters of the State of Ohio, and I desire to lay before you a condensed account of them.

Case 1.—This case came to my laboratory at the Medical Department of the University of Wooster, Cleveland (now the Cleveland College of Physicians and Surgeons), in the winter of 1896, Dr. J. F. Hobson, Lakewood, Ohio, submitting it. Two weeks previously a dog, acting suspiciously, had bitten a boy in Lakewood; the dog was killed and buried, and the lad came to Dr. Hobson for treatment of the wound. His parents became anxious and alarmed, and had the dog's carcass exhumed, and it was brought to the laboratory frozen and in good state of preservation. Three rabbits and one dog were inoculated with an emulsion of the suspected animal's medulla, by the subdural method of Pasteur-Roux; none of these animals developed experimental rabies. But in the interval the boy's parents became more apprehensive and insisted on subjecting him to the preventive treatment. Accordingly, on my recommendation, Dr. Hobson sent the boy to the Chicago Pasteur Institute, where he was treated, and finally returned home with no further mishap.

Case 2.—This concerns the late Dr. F. A. Todd, who was first assistant physician at the Toledo State Hospital. While making his rounds Aug. 29, 1898, Dr. Todd was attacked by a large, strange dog, which bit and severely lacerated one of his thumbs. The wounded member was encouraged to bleed freely, afterwards treated with solutions of carbolic acid and formalin, and then dressed. The dog was soon after captured and killed, and Dr. H. A. Tobey, superintendent of the Toledo State Hospital, telephoned to the Pathologic Laboratory of the Ohio Hospital for Epileptics, Gallipolis, notifying me of the accident and seeking advice. At my suggestion the dog's carcass was at once shipped, reaching the laboratory, packed in ice, the afternoon of August 30. With an emulsion of the dog's medulla two rabbits were at once inoculated by the subdural method. Dr. Todd was advised by me, both in the first conversation by telephone and in several subsequent letters, to resort to the preventive treatment, and I again recommended the Chicago Pasteur Institute. Dr. Todd, however, seemed reluctant and even indifferent until September 12, when he telephoned me that the suspected dog had, previously to attacking him, bitten two other dogs, one of which was at large, and the other confined by a veterinarian, who had just informed him that it had developed paralytic rabies and had been killed. That evening Dr. Todd went to Chicago and began the Pasteur treatment on the following day. On September 17 both the inoculated rabbits showed symptoms of experimental rabies of the paralytic type, and the smaller one died September 18, the larger one September 19, of this disease. From the first of these two animals a second series of rabbits was inoculated, and these died of paralytic rabies after the usual incubation period. Dr. Todd had followed all the events up to the moment of subjecting himself to treatment with calm, intelligent interest, and, in response to his special request, and after consultation with Dr. Tobey, I informed him of the results of my experiments with the first series of rabbits—September 18. Even before this time he had suffered with pain and beginning inflammation in the bitten thumb, with pains in the back and abdomen, and had been melancholy and depressed. On September 27 the doctor developed pronounced symptoms of hydrophobia, and three days later he died of this disease after a most agonizing ordeal. Although every effort was made by Dr. Tobey and myself, no portion of the spinal cord removed in the autopsy on Dr. Todd, could be obtained, thus leaving the question of laboratory hydrophobia or street rabies open. There can be no doubt, however, as to the genuineness of this sad case, for the experimental inoculations in the rabbits were perfectly typical in their results; lately I have obtained additional confirmation by submitting a spinal ganglion of one of the rabbits, which had fortunately been preserved along with the spinal cord, to the Van Gehuchten-Nelis histologic test, here finding the characteristic ganglionic changes.

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

Case 3.—This case came to my laboratory at Gallipolis from Defiance, Ohio, Nov. 14, 1898. The dog, whose carcass was sent for examination, had bitten several school children, and the city authorities took the matter in hand, sending the children to the Chicago Pasteur Institute, and the dog to me for examination. I made subdural inoculations in three rabbits with absolutely negative results. In due time the children were returned home and no trouble was experienced.

Case 4.—A suspected dog, which had bitten several other dogs in Gallipolis last January, was brought to the laboratory within a few hours after being killed. Experimental inoculation of two rabbits proved negative, and none of the dogs developed rabies.

Case 5.—This was submitted by Dr. J. W. Long, Bryan, Ohio, March 5, 1901. Here a dog had bitten two men and one boy, after which it was killed and the head and neck expressed to the Pathologic Laboratory of the Ohio Hospital for Epileptics, reaching here March 6, in good condition. Three rabbits were at once inoculated with an emulsion of the dog's medulla by the intracerebral method of Leelainche-Morel, and another by the intranasal method of Galli-Valerio and Solomon. The cervical spinal ganglia of the dog were at once subjected to histologic examination, and the lesions of the Van Gehuchten-Nelis reaction were recognized, so that, thirty hours after the dog's head arrived I telegraphed Dr. Long of the positive indications of the histologic test and urged him to submit his patients to the Pasteur treatment, this time in the Pasteur Department of the Baltimore City Hospital; he did this at once. Between March 20 and 21 the three rabbits of the Leclainche-Morel inoculation died of typical paralytic rabies, and on March 22 the one subjected to nasal inoculation died in the same manner. A second series of inoculations in rabbits has since been positive. The ganglia of the first series of rabbits, including the cranial, spinal and sympathetic, have been carefully studied by the Van Gehuchten-Nelis method, all with typical results. This I shall endeavor to show you by the microscopic demonstration which you will find in the pathologic exhibit. The patients returned home after the full course of preventive treatment at Baltimore and up to the present moment are entirely well.

SUMMARY.

1. Four instances in which human beings were bitten by dogs suspected of rabies were tested by laboratory methods with positive results in two. All the patients were given the preventive treatment.

2. In three cases the patients were treated at the Chicago Pasteur Institute, and here the only one positive by laboratory test died of rabies in the midst of treatment, presumably because the inauguration of treatment was somewhat delayed and because the stage of incubation was remarkably short.

3. In the fourth case, conclusively demonstrated as rabies in the laboratory, the patients were promptly treated in the Pasteur Department of the Baltimore City Hospital, and they have given no evidence of the disease six months after having been bitten.

DISCUSSION.

Dr. Frank J. Hall, Kansas City, Mo.—I had a case of hydrophobia when I was not familiar with this method of differentiation and made a search at that time for the so-called "tubercles of Babes," but failed to find them. I did, however, find a great quantity of strongly pigmented leucocytes surrounding the vessels in the chord, in the brain and in the parotid gland. I wish to ask if these leucocytes have been observed by the reader, and if he considers them of any diagnostic importance, or are they observed frequently in this disorder? I had a large white bull-dog that had "gone mad" and, keeping it under observation until its death, prepared an emulsion from the medulla, and inoculated this material into the anterior chamber of the eyes of rabbits. The animals never showed the symptoms of hydrophobia and, therefore, we failed with that method. The eyes of the inoculated animals became very much swollen and became translucent as if injected with water, but aside from that, there were no changes at all. The certainty that my dog was a victim of hydrophobia was proven by the fact that a horse bitten at the same time that the three human beings were bitten, died of hydrophobia 42 days later.

Dr. A. P. Ohlmacher, in reply—Concerning the presence of pigmented cells, I will say that while I have had some experience in studying the histology of the hydrophobic condition, and have made an examination of the spinal cord from a number of experimental cases, I believe I have not seen these pigmented cells, or, if they have been seen, I have not thought that they had any special relation to the morbid process attending hydrophobia.

THE NEWER PATHOLOGY OF THE RETINA.

WITH SPECIAL REFERENCE TO THE CHANGES PRODUCED IN THE GANGLION CELLS BY CERTAIN TOXIC AGENTS.*

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In looking through the text-books of ophthalmology of fifty years ago we are struck by the extensive group of amblyopias and amauroses. Ruete describes thirty-seven varieties. The terms were convenient, for as we read in Faust

> Denn eben wo Begriffe fehlen
> Da stellt ein Wort zur rechten Zeit sich ein.

By the aid of ophthalmoscopy and of pathology this great category has been reduced more and more, until now there are but a few important classes of cases for which these terms are still considered useful. Prominent among them are the toxic amblyopias. These have gradually assumed greater and greater importance. The clinical symptoms produced by the various poisons and the character and degree of the visual impairment are now quite well known. Our knowledge, however, of the pathological changes upon which these depend, of the location of the lesion in the visual apparatus, is far from being established. It is our purpose to review briefly the recent studies of this subject and note the conclusions we may draw from them.

I must begin by directing your attention to the great advance made in the histology of the nerve cell through the recently discovered methods of selective staining of different portions of the cell substance, methods which are particularly associated with the name of Nissl. For, while the older methods of staining enabled us to recognize the general structure of the nerve cell with its nucleus and nucleolus and the Golgi-Cajal and Ehrlich methods exposed their numerous ramifications and connections, the intimate structure and composition of the cell is only now revealed to us by the Nissl method. This observer has shown that the cell body contains substances which react very differently to his stains. While portions of the substance remain colorless, other parts take on an intense stain. These are known as the chromatic substance and often called the Nissl bodies.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

While varying greatly in different forms of cells they are sufficiently constant under the same normal conditions to lead Nissl to regard them as indices of the normal or abnormal structure of the nerve cell.

The researches made by means of this method in the ganglion cells of the retina are not as yet extensive. Those that have appeared are important not only for their reference to the organs of vision but also in their bearing on general nerve histology.

Mann,[1] Bach,[2] Abelsdorff[3] and others have studied the retina under normal conditions, and Dr. Ward A. Holden[4] used the method to determine the effects of quinin and methyl alcohol. The most extensive and important work upon the subject appeared recently from the pen of Birch-Hirschfeld.[5] This observer first endeavored to determine the normal condition of the retina, the variations of the nerve cells in different species of animals, the effects of various hardening fluids and of different staining methods, and of postmortem changes. Next, he investigated the effect on the retina of protection from light or of exposure to various intensities of daylight and of the electric arc light.

It is not possible for me to enter into the details of these results, but it is necessary to state that they were definite and constant under the same conditions. His illustrations showing the normal appearance of the retina (the stain was thionin and erythrosin), as well as those of Abelsdorff are here shown.† You will see that the retinal ganglion cells contain the intensely blue Nissl bodies, between which there is the unstained substance. In the eyes which have been subjected to light the Nissl bodies are somewhat more diffuse than in those in which the eye has been kept in the dark. One drawing shows the effect of exposure for five minutes to a brilliant electric light; the Nissl bodies of many of the cells are almost entirely lost. In another eye treated in the same manner but allowed to recover for one hour in the dark the Nissl bodies are regenerated and show normal conditions.

QUININ.

Various theories had been expressed concerning the action of this drug on the retina. Obliteration of the caliber of the vessels through endovasculitis on the one hand, through irritative contraction on the other were assigned as causes. De Bono[6] in 1894 thought that its action was that of a plasma poison on the terminal retinal cells. It was Dr. Holden, as I stated before, who was the first to investigate its effect on the retinal ganglion cells by means of Nissl's method. His results showed that there were no histological changes in the vessels of the retina or nerves. He found a "constriction of the retinal vessels and particularly of the arteries followed by a highly albuminous serous exudation into the nerve fiber layer and a degeneration of the ganglion cells together with their axis cylinder processes which become the centripetal fibers of the optic nerve." The degenerative changes in the ganglion cells manifested themselves by the formation of vacuoles, wandering of the nucleus toward the periphery of the cells and disintegration and disappearance of the chromatic substance.

He states that "there is no way of determining exactly how far the degeneration of the ganglion cells and their axis-cylinders may be due to the direct toxic action upon them of the cinchonized blood, and how far the degeneration may be due to the indirect toxic action of quinin in constricting the retinal vessels, and thus reducing their nutritive supply." He inclines to the view that "the changes in the retina in quinin amblyopia are due chiefly to deficiency of nutritive supply, and, to a lesser degree, to alteration in the quality of the nutritive supply."

Birch-Hirschfeld* has repeated Holden's experiments on rabbits and on dogs. The results were uniform. The ganglionic cells showed slight decrease in size, blurring or obliteration of the outline of the cell and the formation of smaller or larger vacuoles. The most important change was in the chromatic substance. In most cases this was still to be seen as fine particles lying peripherally. The nucleus was sometimes swollen, sometimes shrunken, the nucleolus showed irregularity in form and was situated peripherally in the nucleus. The cells of the inner nuclear layer likewise showed signs of degeneration. Vascular lesions were absent.

In order to determine whether these changes were due to the direct toxic influence on the nerve cell or were the indirect results of contraction of the vessels, he determined the effect of experimental anemia on the retina by tying the common carotid. The results were marked, but sufficiently different to lead him to conclude that the ischemia produced by contraction of the retinal vessels does not suffice to explain all the changes found in quinin intoxication. He assumes that the additional factor is the direct action of the poison on the nerve cell. There was nothing to indicate that the retinal changes are secondary to nerve changes; on the contrary, the former were found before any changes could be seen in the nerve.

Drualt[7] also reported experiments on dogs. He obtained typical changes. "At the end of ten hours one can already recognize very advanced chromatolysis of the ganglion cells and in some even complete destruction of the chromatic substance."

He also describes the changes produced in the ganglion cells by cutting the optic nerve behind the entrance of the central retinal vessels. In this experiment he claims that the retinal ganglion cells disappear at the end of ten to twenty days.‡ He maintains that if the optic nerve is cut and quinin is injected subsequently at a varying interval that the degenerative changes will be similar in both eyes when the interval is short (two days), but that when the interval is long (six days) the degeneration will be very slight after the injection of quinin.[13] He concludes that as the cells lose their normal condition as a result of neurectomy they also lose their susceptibility to the poisonous effect of quinin. Inasmuch as vasomotor influences are unaffected he believes the poison must act directly upon the cell. It is probable that the early changes in the nerve cell, so long as they affect only the chromatic substance, are possible of repair; when the degeneration has attacked the body and the nucleus of the cell its function is probably permanently destroyed. Birch-Hirschfeld cites the view of Goldsheider and Flatau[14] that the Nissl bodies have no vital importance but are significant in that they reveal the earliest pathological changes in the cell.

† The illustrations were passed around.

* He criticises Holden's results on the ground that postmortem changes were not sufficiently excluded and that the method of killing the animal (by chloroform narcosis and bleeding to death) may in itself have been productive of certain changes. He killed his animals by a blow on the neck and the eyes were immediately removed.

‡ This is not in accord with Birch-Hirschfeld, who describes marked signs of chromatolysis 55 hours after the section; in five, ten and fifteen days these changes are more distinct, but he does not suggest the entire disappearance of cells.

Thus we see that Holden's experiments are on the whole confirmed. And we may now take it as an established fact that quinin causes blindness by its action on the retina and not on the nerve.

Parinaud[15] believes that the toxic action is on the entire neuron from center to periphery. This view is purely suppositional and without any experimental basis.

FELIX MAS.

DeSchweinitz[8] was unable to produce any change either in the nerve or in the retina in his experiments on dogs. Masius and Mahain in 1899† found marked atrophy of the nerve fiber layer, dilatation of the capillary vessels, thickening of the septa, atrophy of the optic nerve, with the formation of vacuoles in the nerve. The retinal changes were slight excepting some chromatolysis of the ganglion cells in the central fossa. They concluded that the lesions were primarily in the nerves, depended on vascular changes and that the retina suffered secondarily. Birch-Hirschfeld succeeded in experiments with this poison on rabbits. He was unable to find any ophthalmoscopic changes, but his cases showed varying degrees of change in the inner nuclear layer and in the ganglion cells, i. e., aggregation of the chromatic substance in lumps, or its disappearance, shrinkage of the nucleus and disintegration of the cell; the inner nuclear layer presented a hyperchromatic and shrunken condition of the nuclei. He maintains the degeneration and atrophy of the nerve fibers is secondary to the retinal changes.

Okamoto[9] recently reported slight swelling of the medullary sheaths, atrophy of the axis-cylinders and hyperplasia of the interstitial tissue.

Nuel[10] has likewise recently published the results of his experiments with felix mas. They are summarized in the following sentence: "Filicic optic neuritis is a parenchymatous neuritis characterized by a primary lesion and destruction of nerve fibers; only later are secondary changes produced in the interstitial tissue, first in the neuroglia and afterwards in the vessels and connective tissue. In certain parts of the nerves the subsequent changes assume exactly the characters that are considered pathognomonic of the neuritis called interstitial."

These views are in direct contradiction to those generally accepted by ophthalmopathologists and must await satisfactory confirmation. At present it appears probable that the changes produced by felix mas are to be found in the inner nuclear layer and the layer of ganglion cells as shown by Birch-Hirschfeld, and that the changes in the optic nerve are secondary.

BISULPHID OF CARBON.

This produces amblyopia of the alcohol-tobacco type; it was used by Birch-Hirschfeld in experiments on rabbits. The same poison has been found by Köster[16] to produce characteristic changes in the spinal ganglion cells. Birch-Hirschfeld's results were practically negative so far as the retina was concerned. This justifies the opinion that the primary changes are not produced in the retina but elsewhere, in all probability in the optic nerve.

ALCOHOL.

Holden in one case produced degenerative changes in the ganglion cells of the retina and some medullary sheaths of the optic nerve by means of methyl alcohol and he concluded that this form of amblyopia is due to "nutritive disturbances in the ganglion cells of the retina."

This view has recently been opposed by Gifford, chiefly on the ground of McCoy and Michael's case of optic neuritis from methyl alcohol. Birch-Hirschfeld criticises these objections because the case referred to stands alone among all in which no neuritis could be detected.

Birch-Hirschfeld's experiments were made on rabbits and chickens, and his results were definite. The early changes consist in the chromatic bodies of the ganglion cells losing their sharp definition and the substance of the cell taking up the stain, while the body of the cell becomes shrunken. Then the nucleus shrinks, becomes irregular and shows signs of degeneration. Finally the outline of the cell becomes indistinct and a shrunken nucleus alone marks the former location of the cell. The inner and outer nuclear layers likewise show degeneration, especially the inner. The retinal vessels were normal. The optic nerves showed no lesion excepting in one case—the one in which the retinal changes were most marked. In this there was a section of degeneration in the nerve but even here there were normal fibers among the degenerated ones. There were no interstitial changes in the degenerated portion of the nerve. Hirschfeld, therefore, concludes that experimental methyl alcohol amaurosis depends primarily upon lesion of the retina—first of the ganglion layer, later of the inner and outer changes in the optic nerve. He emphasizes the remarkable analogy between the optic nerve changes just described and the picture which the degenerated optic nerve of ethyl alcohol amblyopia presents. Neuritic changes were absent in the rabbit's nerve; he suggests that perhaps the period of intoxication in the rabbit (14 days) had been too short, and also cites Heilbronner's[17] observations as showing that the connective tissue changes in peripheral alcohol neuritis are secondary.

It is not possible to draw reliable conclusion as to the effects of ethyl alcohol on man from these results of methyl alcohol. Uhthoff[18] properly warns against accepting the results on animals as necessarily identical with those on human beings and especially the effects of the long-continued chronic poisoning as usually observed in man.

AUTHOR'S EXPERIMENTS.

In order to determine the effects of chronic alcohol poisoning the writer fed rabbits with absolute ethyl alcohol, pure methyl alcohol, commercial methyl alcohol and Jamaica ginger (made of 95 per cent. methyl alcohol).

I desire here to give in brief the results on four rabbits to which they were given in small amounts (5 to 10 c.c.) for a period of almost four months. The rabbits lost weight, but otherwise remained apparently healthy, and were killed by a blow on the back of the neck. The eyes were immediately removed and one of each animal hardened in 96 per cent. alcohol, the other in saturated bichlorid of mercury solution. The sections were cut and stained under the direction of the well-known neuro-pathologist, Dr. Stewart Paton, the director of the laboratory of the Sheppard-Pratt Hospital for the Insane. The effects of all four substances were similar. As yet it is impossible to state any specific differences.

The ganglion cells show marked signs of degeneration, but the inner nuclear and outer nuclear layers are likewise affected, especially the inner. Many ganglion cells show great shrinkage and atrophy; the chromatic sub-

† Cited by Birch-Hirschfeld.

stanee is broken down and granular. Other eells show no nuclei or nuclei very irregular in shape. In other cells again the ehromatic substanee appears fused so that it forms an almost complete ring around the nueleus, in which case the cells are more or less irregularly eontracted and the parts where the processes leave the eells are also shrunken. This ehange is suggestive of chronie eell degeneration. Some ganglion eells in which the eell body has disappeared, leaving a faint nucleus, suggest the aeute degeneration deseribed by Nissl.

It is very signifieant that the ethyl and methyl aleohols produee similar ehanges in ehronie poisoning. I shall not venture to say whether these ehanges in the retina are primary or secondary to optie nerve lesions, though I ineline to the former view. The question can not be answered until more extensive experiments whieh the writer has in eontemplation are eoncluded. But it must be admitted that in produeing these retinal ehanges by *chronic alcohol poisoning* we have made an important advanee in the solution of the same ehronie poisoning in man. I shall give a detailed report of these experiments elsewhere.

In eoneluding this paper I desire to point out the review given by Uhthoff[11] at the last International Ophthalmologieal Congress in Paris in August, 1900, on "Toxie Neuritis." He divided this into two groups: first those toxie amblyopias that present a eentral seotoma and normal periphery of the field; these are the partial retrobulbar forms due to aleohol, tobaeeo, bisulphid of earbon, arsenie, iodoform, stramonium and hashish. The seeond group shows ehanges in the blood vessels with seeondary isehemie neerosis, and in addition there is direet poisonous aetion on the nerve eell. He notes that the eonstriction of the vessel alone can not explain the affection, for ergot with its powerful eonstrictive aetion is not known to produee sueh destruetive ehanges.

Uhthoff is one of the most formidable champions of the neuritie theory, so far as the aleohol tobaeeo group is eoneerned. His arguments are based on the pathologie findings in his eleven eases of alcohol and tobaeeo blindness, in whieh the optic nerve was subjected to mieroscopie examination and in all of which, evidenees of neuritis beside the atrophy of the nerve fibers were found. He therefore refuses to regard the eondition as a simple degeneration.

Siegrist[12] has likewise recently written a strongly argumentative artiele opposing the view that the optie nerve lesions in alcohol and tobaceo amblyopia are due to primary retinal lesion with aseending degeneration. It is diffieult to harmonize the results of experimentation on animals and the pathologie findings of partial neuritie atrophy of the optic nerve in man.

At present the only possible way is to assume that, as Heilbronner, and reeently, Nuel, have endeavored to prove, the neuritie ehanges are seeondary to a primary degeneration of the nerve fiber. But it is wiser still to await the results of more extensive experimental and pathologieal researeh.

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ATROPHY OF THE RETINA.*

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It may be sometimes quite impossible to discover the cause of disease, and it is not always easy to determine whether a lesion is dependent upon some other morbid process, or of primary origin. I have hesitated to believe it possible for atrophy of the retina to come on as a primary condition, without any discoverable preceding inflammation, or even hyperplasia; but, it is certain that, whatever disturbances may have preceded the beginning of atrophic changes in the two cases herein reported, there was no manifest hyperemia before failure of sight. I am not sure that some occult inhibition of the functions of the vasomotor nerve force may not cause primary atrophy.

Miss M. B. J., aged 19, came to me July 12, 1882, with a note explaining that she had been unable to pursue her studies without headache. After suspending her accommodation, I found that, with +1/30 C. ax. 90° for each eye she saw 20/XX, Snellen. She returned home and got along satisfactorily with her studies until April, 1888, when I received a letter telling me she had suddenly experienced difficulty in reading at night, and could not distinguish the color of roses.

She returned to Louisville, when I found this difficulty had increased progressively until she was no longer able to read on cloudy days. Her fields were irregularly contracted, and she had no perception of either red or green. Her general health seemed to be perfectly good. The menstrual function was normal. Her sight was now reduced to 20/LXX, Snellen, in the right eye, and 20/C in the left. She remained with relatives in the city until June, when she was unable to see the test type, even at 10 feet with any glass. She could not differentiate colored lights. Ophthalmoscopic examination showed nothing definite. Her fields were extremely contracted, she had central scotomata in both eyes. She went with her grandmother to New England to spend the summer; and in August consulted Dr. Hasket Derby, of Boston, who found "the central vessels of the retina extremely small, with no abnormal appearances of the disc. She is unable to distinguish any test object."

The first week in September she returned to Louisville and I again mapped her field of perception. Both fields showed increased peripheral contraction, with central scotomata of irregular outline. She described everything as "smoky and blurred." In brilliant illumination, a book held before the face seemed "covered with a fine gray network." November, she was unable to distinguish any objects. On bright days everything

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

seemed so dark and indistinct, she felt as if she were in a dense fog. Looking at any bright light, she was annoyed with a gray network before her. Artificial lights seemed smoky, and she said "it seemed covered with a dark mosquito net."

The ophthalmoscope showed at this time, faint grayish striations in the region of the macula, and near the larger vessels around the disc. The larger retinal vessels were scarcely visible beyond the discs, while the latter seemed perfectly normal.

She has remained in this condition until the present time. No other member of this young lady's family has suffered with blindness in any form, although a large number of her close family relations have various kinds of optical defects, for which I have prescribed; yet, none of them have retinal, or choroidal disease. There was no evidence of hereditary blood taint, and no sign of toxemia. I felt obliged to consider this a case of primary atrophy of the retina, advancing in both eyes to the extinction of useful vision, probably due to excessive exposure of the eyes to the bright sunlight, as she was accustomed to read in the sun.

Miss H., aged 17, of Frankfort, Ky., consulted me on Nov. 12, 1892. She had been having headaches, so severe as to interrupt her studies at school. With accommodation suspended, she saw with +1/60 C. 90° = 20/XX in the right eye, and with +1/48 C. 90° = 20/XX in the left. There were no ophthalmoscopic signs of disease. She returned home and resumed her studies. March 6, 1895, amblyopia had appeared to a degree sufficient to make reading impossible. Sight in the right eye = 6/XVIII, and in the left = 6/IX. I was astonished to find that now no glass improved the sight. Her fields of vision were irregularly contracted, with comet-shaped scotoma in the field of the right eye. The left was obscured by a veil-like mist with incomplete central scotoma. She had no color perception in either eye. Ophthalmoscopic appearances at this time were great narrowing of the retinal vessels, the larger ones only being easily traced. Light grayish striations in different portions of the field seemed to occupy the vicinity of the contracted vessels. May 17, 1895, the retinal vessels were empty, and not visible except in the discs, and faded away within two millimeters of the papillæ. She had always enjoyed good health, and there had been at no time any sign of inherited blood taint or toxemia. The discs were at each examination perfectly distinct in outline, and apparently normal. March 5, 1900, she came with her sister, and on careful examination I found it very difficult to trace even the outlines of the larger vessels of the retina, even to the margins of the discs, while numerous pale grayish striations occupied the region of the macula, and, radiary streaks of gray following the direction of the closed vessels around the discs. The discs appeared entirely sound and normal. Both eyes appeared alike. The pupils were moderately dilated, and responded but slightly to concentrated light. She could see shadows of objects passed between the eyes and a strong light. Artificial lights appeared pale gray, and seemed covered with a heavy mist or fog. I could find nothing as to any probable cause of the atrophy in this case.

Drasche and Weinlechner Reach the Age Limit.—Professors R. von Drasche and Weinlechner took leave of their charge in the Vienna public hospital recently, as they had reached the age limit. The occasion was rendered memorable by tributes from their colleagues and pupils.

A CASE OF BLINDNESS FROM DRINKING BAY RUM, COMPARED WITH THE REPORTED CASES DUE TO METHYL ALCOHOL AND TO ESSENCE OF JAMAICA GINGER, ETC.*

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For some time the idea has been entertained that wood alcohol is the toxic agent in cases of amblyopia following the drinking of essence of Jamaica ginger and similar preparations. Dr. Hiram Woods thought of, but seems to have rejected the idea which Dr. Jackson more lately advocates.†

We will remember that reports of these cases began to appear nearly at the same time with reports of the cases due to wood alcohol. While bay rum and various essences have been long used as substitutes for whisky in prohibitory districts without accident, there have recently occurred several fatalities. I personally know this fact to apply in the Indian Territory, where the United States prohibition is very rigid. Within a year or two there have been several deaths in that country from drinking these things as well as wood alcohol. Ordinary wood alcohol has a characteristic odor and taste so disagreeable as to have formerly prohibited its use in pharmacy, but the more recent method of preparing it, under the name of "Columbian spirits," removes to a large degree its objectionable features, so that such use is possible. Its cheapness, too, recommends it as a substitute in part at least for ordinary alcohol, in such preparations as are sold at cheap price in country stores.

Moreover, it seems in some quarters to be considered non-toxic in this purified form. (Prof. J. H. Long, personal communication.) This is, however, refuted and shown to be dangerous by the reports of Gifford and of Patillo. Professor Long (same communication) states that it is rapidly coming into use in pharmacy, especially in making bay rum and kindred preparations. Dr. Harlan had a chemist demonstrate by analysis the presence of wood alcohol in the essences of ginger and peppermint drank by the patients whose cases he reports.

It is worthy of note that we know of no other substance which when swallowed selects for attack with such uniformity the optic nerve and retina. Those who record cases of blindnes due to this cause mention in all thirty persons who drank from one to two drams to an ounce or more of the substance, and were made sick by it. Fifteen, or 50 per cent., lost their sight. One of the first cases on record was published by the present writer in 1899. Four preceded and others have followed, till now fifteen or more are described in literature. A dozen or more cases from essences also are reported, a sufficient number to afford reliable data for comparison. An analysis of fifteen cases of wood alcohol blindness, and of twelve cases of blindness due to the essence of Jamaica ginger, etc., proper references to which are given in the appended bibliography, shows the striking identity of important symptoms.

In each group, unless the dose was large enough to produce coma, no unusual symptoms presented on the first day. Usually on the second or third day, sometimes later,

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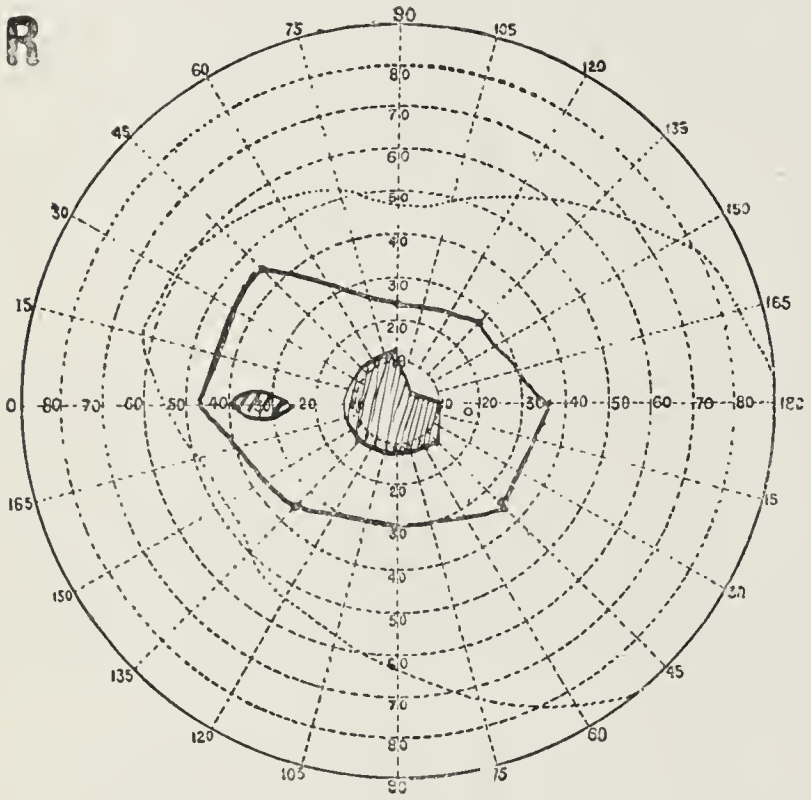
* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

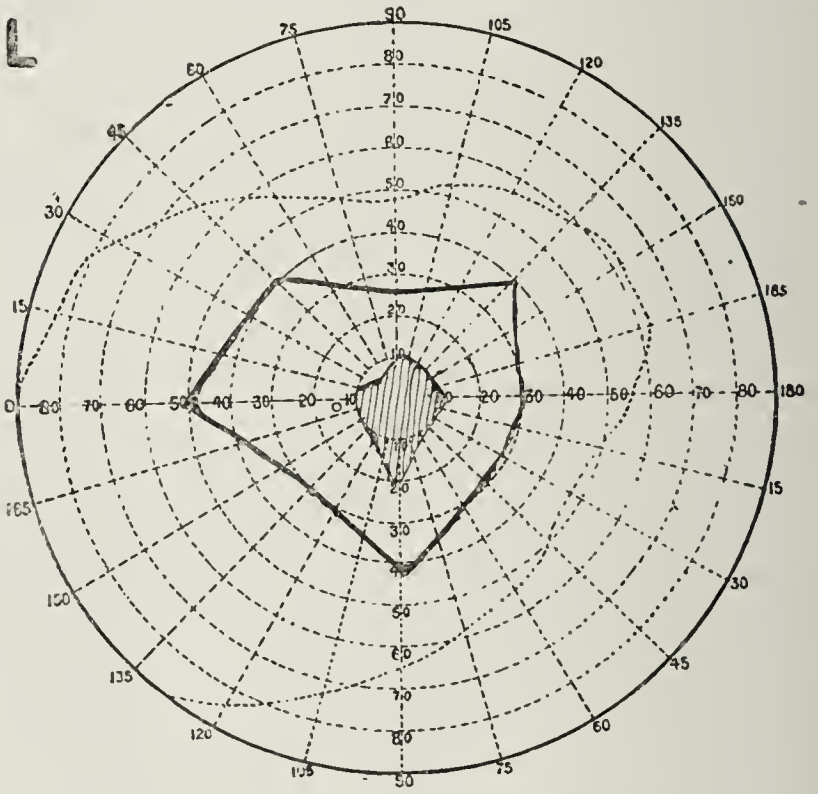
† Dr. Woods afterwards accepted this idea.

the almost constant history is of nausea, vomiting, headache and dizziness. Visual disturbances are delayed for a day or two longer. In about twelve to forty-eight hours blindness becomes total. In a few days some even useful vision is restored, only to be lost again in a short time. In every case where the field of vision was studied, a central scotoma was demonstrated, except once, namely, in Stieren's case of ginger poisoning. Narrowing of the field was equally characteristic. Atrophy of the papilla was universal, most pronounced in the temporal half and preceded in a few cases by a low grade of visible neuritis. In about half of each group the retinal vessels were narrowed, in the other half normal. Other symptoms are "excitement," "coma," "semi-coma," "depression," "coming and going of sight," "sensitiveness to pressure and to movement of eyeballs," etc. Only two cases recovered normal vision, one in each group.

The two cases following illustrate beautifully the clinical identity of the two classes of cases. The first is from my own practice.

William Leslie of Talcquah, I. T., aged 25 years, colored, was seen Oct. 23, 1900. His health and eyesight had been good until Sunday, Sept. 18, 1899, when he and





two companions drank a pint bottle of bay rum. Two of the men kept quiet and were in no way affected, but our patient, who drank more than the others, kept up vigorous exercises by riding a bucking pony all day. He went to bed that night and slept soundly. Next morning at sunrise he noticed an uneasy sore feeling about the eyes, and shortly afterwards a failure of sight. At 8 o'clock he vomited, and again frequently during the day. By night he was totally blind. During the two following days he felt "deathly sick," but by Thursday felt as well as usual, excepting that he was blind. He said that during the time that his eyesight was going from him, his central vision failed first while he was able still to perceive objects at a little distance from the blind area on either side. Three weeks later some vision surrounding a central dark spot returned, but was soon lost. He has remained without light perception ever since. There is slight lateral nystagmus. The pupils are dilated and rigid; tension is normal and media are clear. The retinal vessels remain of normal size. The optic discs are opaque, white and level with the surrounding retina. The edges are not furred, but the lamina cribrosa is invisible. There is, however, a slight but well-marked physiological cup. The nasal halves only of the discs retain a slight pinkish hue.

The other case occurred in the practice of Dr. E. C. Ellett of Memphis, to whom I am indebted for the notes and accompanying charts. O. L., male, white, aged 28, was seen Nov. 28, 1899. On April 6, 1899, while on a spree, he drank one-half pint of wood alcohol by mistake. Within three hours was comatose, and remained so on and off for four days (still intoxicated). When he recovered vision was reduced to perception of light. This improved, and about April 29 he could see to read a paper. It again became worse, and has remained so. Vision now counts fingers excentrically at five feet. The grounds show optic atrophy with cup 2 D. deep. The vessels are slightly narrowed. Central scotoma is as shown on charts.

The important point is that various substances liable to be drank may contain wood alcohol, and that we should be able to make a diagnosis from the symptoms, the most important of which are, at first, gastro-enteric disturbances when the dose is small, and coma when it is large, folowed by rapid failure of sight, which later improves, but soon relapses; contraction of the fields and absolute, usually, central scotomata, and sometimes total blindness. These are symptoms of retrobulbar neuritis, but the cases of retrobulbar neuritis of the text-books mostly recover; these do not. More than 90 per cent. permanently lose useful vision.

SYNOPSIS OF WOOD ALCOHOL CASES.

Mengin (Viger): 1879. Headache, vomiting, delirium, etc. Blind on second day. Improved, but finally totally blind. White atrophy. Vessels normal.

Kuhnt: 1899. Took one swallow. Headache, nausea, semi-coma. Blind on 5th day. Eyeball painful to movement and pressure. Pilocarpin. Recovery in one month. At first, discs pale; arteries narrow, normal later. A second case died of gastro-enteritis after having become blind.

McCoy and Michael: 1898. 120 c.c. Early total blindness. Improvement, then relapse. Two fingers, one eye; projected light, in other. Neuritis passing into atrophy.

Moulton: 1899. Half pint. Weakness, semi-coma. Blind in 24 hours. Improvement, relapse. V-fingers at 1 foot in L. E.; R. E. equaling L. P. Contracted field. Central scotoma. White atrophy. Narrow vessels. (Five men drank

about same amount; two died; one went blind; two recovered without eye symptoms.)

Callan: 1899. Notes not available.

Gifford: 1899. Two to three oz. Headache, vomiting. Totally blind 4th day. Improvement; central scotoma. Later totally blind. Atrophy. Narrow vessels.

Gifford: Another case was blind in 24 hours, and died in 48 hours.

Gifford: A case observed by Foster is described who drank a small amount. Blind in 24 hours. Wildly excited and soon died.

Patillo (also Casey A. Wood): 1899. Inhaled fumes four days. Nausea, etc. Blind on 6th day. Improvement and relapse. R. E. equaled fingers at 3 feet; L. E. equaled L. P. Central scotoma. Atrophy. Vessels: right, normal; left, contracted.

Patillo: Inhalation for two weeks. Headache, nausea, etc., for two days. Blind on third day. V. equaling fingers 1 and 3 feet for L. and R. E. respectively. Central scotoma. Atrophy. Vessels normal.

Raub: 1899. Two to five drams. Blind in 6 days. Improved, relapsed to total blindness. Atrophy.

Raub: 1899. Semi-conscious 4 days; then blind. Improvement. Final blindness. Atrophy.

Jackson: 1901. Coma 48 hours. Blindness on waking. Improvement. Relapse. Atrophy.

SYNOPSIS OF GINGER, ETC., CASES.

Thompson: 1897. One and a half quarts. Headache, nausea, etc. Blind on 5th day. Improvement; relapse. Fingers for R. E. at 3 feet; L. E. equaling 1/100. Central scotoma. Atrophy, especially papillo-macular.

Woods: 1899. Drank for 5 or 6 days; then blind. Improvement; relapse. Can see only large moving objects. Central scotoma, atrophy; vessels normal.

Woods: 1899. One or two pints. Nausea, etc. Blind in twenty-four hours. V. improved, then stationary. Fingers at 6 inches. Atrophy; furred papilla. Narrow arteries.

Woods: 1899. One pint. Coma, nausea. Blind in 48 hours. Improved to get about. Fingers R. E. at 10 feet; L. E. at 20 inches. Scotomata in contracted fields. Papillo-macular atrophy.

Woods: 1899. Six ounces. Headache. Gastro-enteric symptoms. Blind on 3d day. Papilla. At first normal; later atrophic.

Woods: 1899. Seven bottles. Vomiting, headache, etc. Blind on 3d day. Neuritic atrophy.

Woods: 1899. Twenty ounces. Ginger and peppermint. Nausea, etc. Blind in 48 hours. Eyeballs sensitive to touch or movement. Improvement. Finally blind. Neuritis followed by atrophy.

Stieren: 1901. Twelve ounces. Blind in 12 hours. Recovery after prompt and vigorous treatment, principally with pilocarpin.

Harlan: 1901. Fourteen bottles. Coma. Blindness 4th day, nearly total. V. varied some weeks, then total blindness.

Harlan: 1901. Three and a half bottles peppermint and lemon. L. P. 4th day. Under pilocarpin and stryehnin improved to 6/200. Atrophy. Fields small and irregular.

Dunn: 1901. Dunn's two cases, though seen late, had rather more than the average vision; but the nerves were atrophic with vessel changes.

NOTE: Since writing this paper, De Schweinitz has recorded (*Oph. Rec.*, June, 1901) a case due to inhaling wood spirits from varnish. This case also improved, but finally became totally blind with nerve atrophy and contracted vessels.

Gifford has also added another case. (*Oph. Rec.*, July, 1901.) Two or three drinks caused blindness on the fourth day. Treatment was begun immediately with iodid and pilocarpin, with recovery of final vision equaling nearly 20/20, with atrophic nerves and contracted fields. There were ophthalmoscopic signs of neuritis. It is worth noting that in this, the treatment was begun as in Kuhnt's and Stieren's cases within a few hours of the onset of blindness, and to this fact it is reasonable to attribute success. In most of the other cases rational treatment was begun late.

Dr. A. B. Hale, of Chicago, has kindly sent me notes of two cases due to inhalation from varnish. One of them was one of the cases reported by Patillo and Wood. The other undoubtedly is as yet an unrecorded case: "W. H., aged 40, worked seven weeks in open vats, then six days (July 8-14, 1899) in closed vats, and April 26, 1900, was in same condition as Grinette." (Patillo's 1st case.)

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DISCUSSION ON PAPERS OF DRS. FRIEDENWALD, REYNOLDS AND MOULTON.

DR. J. M. RAY, Louisville—I can not discuss Dr. Friedenwald's paper from a pathological standpoint, but from a clinical point of view I would like to make a few suggestions. The experimental investigations of Holden seem to point to the retina as the seat of the change resulting from the toxic influence of wood alcohol, but the changes observed with the ophthalmoscope, and the future history of the case, seem to point to the optic nerve as the injured part. The first case of methyl alcohol poisoning that I saw, was in 1896, and Dr. de Schweinitz informs me that it is the oldest case that he has heard of in this country. The case was reported before a local medical society, and the notes were laid aside for future reference and neglected. In that case, a woman, after being out with convivial friends returned home and shortly after retiring became thirsty. In looking around for something to satisfy her thirst she encountered a bottle marked "alcohol." Diluting this with water she drank it. The following day she suffered much from nausea and vomiting. This persisted, and the next day she noticed a blurring and dancing of objects. On the third day she was blind and I was called to see her. At the first visit, I found the patient blind, with semi-dilated pupils, and a fixed stare. With the ophthalmoscope, a hyperemic disc and a fuzzy retina surrounding, was all that could be discovered. The disc eventually became edematous, with the blood vessels full and the retina hazy, this haze gradually fading toward the periphery. The blindness remained absolute for three weeks; then peripheral vision began to appear, the edema disappeared, and vision became about 20/20. Then atrophy of the nerve head began to develop, and when I last saw the patient this was complete and only a little eccentric vision remained.

Two years ago I saw a second case: A colored woman drank of a decoction made by an "herb doctor;" this was followed by intense gastric disturbance and blindness. The ophthalmoscopic picture was identical with that noticed in case one, the change seeming to be the greatest in the nerve head, the retina being apparently secondarily implicated and the circulation not much changed. This case followed exactly the same clinical course, vision returning, improving for several weeks, and then gradual failure again, coincidental with the atrophic changes in the nerve head.

DR. HIRAM WOODS, Baltimore—There can be no question in regard to the identity of symptoms in the Jamaica ginger, bay rum and methyl alcohol cases, and that the toxic agent is the same in all. I am not familiar with any form of blindness which gives the clinical features that all these cases show; the intense gastro-intestinal symptoms, absolute blindness after

a few hours or days, gradual return of sight to some useful vision, quick and great variations in visual acuity, and then settling down either into a progressive and permanent atrophy of the nerve, or preservation of some peripheral vision with typical central scotoma. In one of my cases, the man who came under observation early, was in my office one morning unable to see light, but walked three squares to Dr. Harlan's office and saw well enough to select a chair and sit down in it. Before he left this office his vision had fallen again to light perception.

When I reported my Jamaica ginger cases there was but one on record, namely, Thompson's, published in the *Ophthalmic Record* in 1897. De Schweinitz, in his article in Norris & Oliver's "System," the cases of Thompson and myself, with one he observed, as the only ones then reported. My suspicions were excited as to methyl alcohol through a report given me concerning three cases of wood alcohol intoxication on the relief ship *Solace* during the war with Spain. Of those cases two died and one remained completely blind. I went to the Baltimore firm that made the extract of ginger used by my patients, and secured their formula. It called for 95 per cent. ethyl alcohol. I hope Dr. Harlan will have something to say about the analysis of the ginger obtained from this same firm. I think Dr. Moulton has explained the reason for using it in these preparations, namely, that the refinement of it has made it more economical for such use. Three of my cases came under observation within a few days after the blindness begun. In two there were marked, but not high grades of papillitis; just enough haziness around the edge of the papilla to show but not attract attention unless sought for. All these cases went on to total atrophy.

With regard to the position of the scotoma, of two cases, which I did not see, but notes of which were furnished me, one had a central scotoma finally, while the other had lost all vision except for 20 degrees up, down and out from central fixation. The entire visual field in each eye was lost. The lesion, I think, is usually regarded as an acute retrobulbar neuritis of toxic origin. Yet the occurrence of such a lesion from such a cause is not generally admitted. On the report of my cases (*Ophth. Record*, February, 1899) this was demonstrated by quotations from several authors.

DR. A. B. HALE, Chicago—In Chicago there are a number of men using a new shellac for coating the insides of large hogsheads. I have seen two cases in men who had been lowered into these barrels to apply the shellac; they inhaled the vapor from the alcohol and without any use of the poison in other ways have been seriously affected by it. I have learned recently that this shellac is made with methyl alcohol. These cases present a complete picture of optic nerve atrophy with no essential changes in the retina that could be made out, and it seems to me that we must assume that the nerve itself is as much affected as the retina until the pathologists can disprove it, and can show us why the retina does not show gross changes at first.

DR. CASEY A. WOOD, Chicago—I merely wish to draw the attention of the section to the fact that in these methyl alcohol cases we have another instance of the truth observed a long time ago that most cases of toxic amblyopia are instances of idiosynerasy. We know that not everybody who indulges in tobacco has tobacco amblyopia, and it is the same with methyl alcohol. Several cases that were reported by Dr. Gifford some time ago should be included in Dr. Moulton's list, although at the time it was not clear that they were due to methyl alcohol poisoning. Six men who had been drinking the same beverages developed toxic symptoms of various grades of severity, but only one of them showed any trouble with his vision. One died before the eye symptoms could have developed, while the other four showed no ocular disturbances.

DR. H. HARLAN, Baltimore—I have had no personal experience with the inhalation of methyl alcohol, but I expect the cases published are all right, because the men, in Baltimore at least, who work in the breweries drink as much beer as they crave and never have temptation to drink wood alcohol. In all these cases we must make allowance for the history, however, as it is difficult to get an accurate history from a man who has been on a debauch. However, the symptoms are so perfectly clear that they can hardly be mistaken. I can not help calling attention to a difference in Dr. Moulton's case where the man drinking it in the morning rode a pony all afternoon and had no trouble until the next day. That is an unusual condition.

In regard to my connection with the demonstration of the fact that it was wood alcohol in all the six or eight cases that Dr. Woods reported, I should say that the analysis, which was made by a careful chemist, has never been questioned, although it has been published in the drug journals and spread all over the country. I have no doubt that for the one case of blindness that has occurred there have been ten cases of death from the drinking of these preparations. When one case that I know of occurred in Chrisfield, Maryland, a prominent citizen remarked that it was very remarkable that blindness should occur, but that they thought nothing of death following its use, because it was nothing unusual for an oysterman to be found dead on the street after drinking these preparations. The pharmacists sell those preparations by the gross in some country districts. One storekeeper in Virginia, made blind by drinking essence of ginger, has instructed his lawyer to settle his case as promptly as possible and for what he can get, giving his reason that he knows of so many cases resulting in death from drinking this firm's preparations that if the knowledge of the suits becomes public there will be so many of them that the firm will be bankrupt and that nobody will get anything. So far as I know, one firm only, in Baltimore, has been guilty of using methyl alcohol in its preparations. Four suits for large amounts have been entered against this firm.

DR. EDWARD JACKSON, Denver—I have seen only two of these cases, and both at a very late stage: Dr. Thompson's case, and one that I recently reported. The clinical history though, and the symptom picture are now so perfectly distinct and characteristic that I think there could be very little question in an individual case as to the diagnosis. I know of no other condition quite similar to it. I think that disturbance of the circulation that has been referred to in connection with the other symptoms, might be of significance when we compare this affection with that produced by quinin. Quinin blindness usually does not come on immediately, but rapidly after the other symptoms have subsided, and there is great disturbance of the circulation.

Experiments point also to the essential likeness of the lesions in the two conditions. Dr. Friedenwald stated his side of the case as to the lesion probably being primarily in the retina very modestly. Uthoff reported that all the cases of toxic amblyopia examined showed changes in the optic nerve. But that they were all very old cases, and there are few conditions of such long standing where the microscope will throw any light upon the original lesion. On the other hand, all of the experimental work indicates that the retina is affected long before any signs appear in the optic nerve. As regards the cases Dr. Ray reported, it seems to me they also confirm the view that it was originally a retinal lesion. In the case he saw early there was some change in the retina, some noticeable edema he said. I remember also a case afterward reported by Dr. G. M. Gould at the First Pan-American Congress, as one of hereditary optic atrophy, in which I saw early not only a haziness of the retina, but some retinal hemorrhages. We must remember that the nutrition of the retina is closely allied to the nutrition of the nerve fibers; and it seems not improbable that there may occur both a retinal lesion, and in certain cases a retrobulbar neuritis. But the latter is probably secondary to the changes produced in the ganglion cells.

DR. R. W. MILLER, Los Angeles—I have had no opportunity of observing any pronounced case of blindness due to methyl alcohol, but recall a case that is interesting in this connection occurring during an accouchement period. The nurse, by mistake, used wood alcohol for bathing, instead of the product made from grain. The entire quantity used was six or eight ounces during a period of three or four days, grain alcohol having been used for previous baths. The fact was not noted until the nurse had finished her duties and gone home. The

first thing that attracted attention was an intense dermatitis. The patient experienced some nausea and anorexia, and slight impairment of vision. About ten days after the baths, she mentioned the dimness of vision, at which time the aid of the ophthalmoscope was invoked. No pronounced fundus changes were noted, although the discs appeared slightly paler than normal. Whether this apparent pallor was due to the action of the alcohol would seem somewhat doubtful. The fact that wood alcohol is not absorbed freely by the skin doubtless saved the patient's eyes from the usual pronounced toxic effect. It seems to me that in all cases in which wood alcohol or "Columbian spirits" is sold or dispensed, there should be a statute requiring that a poison label be placed upon the bottle or other container used.

THE INDICATIONS FOR OPERATION IN CALCULOUS NEPHRITIS AND URETERITIS.*

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Recent advances in the diagnosis of calculus conditions of the kidneys and ureters show that more than half the calculi that originate in the kidneys pass into the ureters before they occasion sufficient symptoms to make their presence known. This increased frequency of ureteral calculi, which a more accurate method of diagnosis has shown, and the numerous small calculi that are passed with but slight symptoms, make it probable that many such calculi remain throughout life in the urinary tract, neither producing notable symptoms, nor interfering with the function of the kidneys.

Although these calculi may remain quiescent in the ureter and give rise to no functional derangement, they may, on the contrary, entirely destroy the function of one kidney without the recognition of the fact by the patient. The onset of calculous anuria, especially unilateral anuria, so closely mimics in symptomatology the process of recovery, that the integrity of the kidney and ureter, after an attack of renal disturbance, could not be assured without operation, or, at least, the determination of the persistence of a bilateral urinary flow. Operation under such circumstances was imperative to exclude calculi and to guarantee the functional efficiency of the kidney and ureter. Delay without the determination of the absence or exact position and size of the calculi placed the patient in very serious danger of the loss of one kidney and left the diagnosis incomplete with no guarantee for the future.

It is the Röntgen method of diagnosis that has shown the greater frequency of ureteral calculi. Their detection does not, however, constitute an indication for operation. The increased ratio of ureteral to renal calculi is due to their detection and recognition. They must have existed in the same relative proportion previously. The absence of symptoms, that would lead to their recognition, shows how tolerant the ureters must be. It shows that these calculi may be allowed to remain in the ureter, under certain conditions, without grave danger. It therefore sanctions a conservative method of treatment, when that method is rendered safe by accurate knowledge of the condition that is present. The accuracy and detail afforded by the Röntgen method of diagnosis form this safeguard and the rational basis for a differentiation between the cases demanding immediate operation, and those in which an expectant conservatism under strict supervision will often result in the passage of a calculus and complete recovery. It makes it rational to leave to natural methods, what has been recognized as possible for nature to accomplish without injuring the kidney.

The differentiation between the cases that demand immediate operation and those in which a conservative, expectant line of treatment should be pursued, is based upon the results of the Röntgen method of diagnosis. The position and size of the calculi are determined by it, and when taken in conjunction with the symptomatology, furnish accurate data upon which the indications for operation can be based.

The accuracy of the Röntgen method of diagnosis has been demonstrated by the confirmed diagnoses in 165 cases which the author has examined by this method. The negative diagnoses have been found to be as accurate as the positive. The method, when properly employed, is so nearly absolute in its accuracy that its findings are safe data upon which to base operative procedures. Calculi, both multiple and single, bilateral and unilateral, have been found in 48 cases, while, contrary to all previous statistics, over 50 per cent. of the calculi have been found in the ureter. This of itself attests the accuracy of this method.

The wisdom of adopting an expectant, conservative line of treatment in appropriate cases where small calculi are found in the ureter has been shown by the passage of minute calculi, *per vias naturales,* in 3 (now 9) cases where this course has been advised and followed, and in 4 other cases, in which calculi that had been detected were passed before the meditated operation was performed.

The symptoms that should suggest this line of treatment in cases where small calculi have been located in the ureters are: a fairly constant dull ache in the lumbar region or along the line of the ureters, with recent and repeated attacks of more acute pain, with or without microscopic evidences in the urine of the presence and recent progression of a calculus. If the Röntgen picture also shows the shadow of an enlarged hydro- or pyonephrotic kidney, and tenderness can be elicited over the kidney and along the line of the ureter, they make more probable the subsequent passage of the calculus.

The dull, constant ache in the lumbar region, and, if detected, the shadow of the hydronephrotic kidney, can be considered as indicating the presence of functional activity in the kidney and of a *vis a tergo* that will eventually push the calculus through the ureter. The shadow of an enlarged kidney is also confirmatory evidence of the blocking of the ureter. The recent and repeated acute exacerbations of pain in the line of the ureter mark the steps in the progression of the calculus, and promise future attacks that will end in its expulsion. They are the results of the overdistention of the kidney and ureter, while the hydronephrosis is of the "flush tank" variety, the amount of urine fluctuating from time to time as the calculus is pushed along, or the dilation of the ureter permits the urine to pass it. The fluctuating size of the kidney often leads to the diagnosis of a floating kidney, as the change in size is mistaken for a change in position.

These symptoms, in conjunction with the localization of a small calculus or calculi in the male ureters by the Röntgen method, are sufficient indications for adopting a conservative, expectant course of treatment. They sanction a delay, since they furnish absolute knowledge regarding the position of the calculus, so that any urgent symptom can be met by immediate operation upon a

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lesion that has already been determined. During such expectant treatment the condition of the kidney must be carefully watched, by frequent urinalyses and quantitative estimations of the amount of urea.

The employment of all exploratory instruments in the male where there is no infection, is to be avoided. The segregator, the cystoscope, the vesical sound and the ureteral catheter are all valuable instruments in diagnosis, but their employment in aseptic cases is a question that is still *sub judice*.

Urinalysis can be considered only as giving confirmatory evidence. A normal urine is not incompatible with the presence of a calculus. A number of cases examined by the author and found to be subjects of calculi have had urines that were normal, while in others the slight amount of albumin present could have been considered hardly more than a physiologic variation. In others the negative diagnosis by the Röntgen method was proved by operation to be correct, and yet the urine showed marked morphologic changes.

Although this method of treatment is applicable to the female, the indications in these cases are not quite as definite. The ureters are more accessible in the female, and comparatively simple operations often hasten the passage of the calculi. Recent cases have shown that the Röntgen examination is capable of detecting, not only minute calculi in the pelvic portions of the ureters, but also phleboliths in the venus plexus of the broad ligament, in the veins of the vaginal wall, and in other pelvic veins. In one case, a phlebolith was found in the vaginal wall, in the second, 8 were found, as the operation showed, in the veins of the broad ligament. Although these phleboliths can be differentiated in most cases from ureteral calculi by their position and more general distribution, cases will occur in which the differentiation will be difficult. In such cases the expectant treatment may lead to the destruction of a kidney as the result of a complete unilateral anuria from the impaction of a calculus and the supposition that it is a phlebolith. In such cases the passage of urine from the ureter of the suspected side should be demonstrated by a cystoscopic examination, while the differential diagnosis can be made by using the wax-tipped ureteral catheter. The differentiation is, however, already made, and the presence of a calculus in the ureter assured, if, in addition to its shadow, the skiagraph shows an enlarged or hydro- or pyo-nephrotic kidney on that side.

The expectant treatment can be carried out as rationally and safely in the female as in the male. The indications for immediate operation are, however, greater, as there are simple and safe operations that will in the majority of cases hasten the passage of the calculus. This is more especially true of cases where suppuration exists, and as a consequence the danger of infecting the ureters can be neglected.

In the female, therefore, the presence of infection should be considered as an indication for operative procedures, or the presence of a calculus or multiple calculi, so situated that it is improbable that they will be passed *per viam naturalem*. Complete or unilateral anuria is, of course, a self-evident indication for immediate operation.

In the male the indications for operation are any form of anuria or threatened anuria, or the detection of calculi that are too large to pass, accompanied by symptoms that indicate serious injury to the kidney. The presence of suppuration and small calculi in the ureter are not necessarily indications for operation in the male. The gravity of the operative intervention should be carefully considered, especially where infection is already present. In many such cases it is possible to control the suppurative process by the administration of urotropin or some other urinary antiseptic, until the small calculi have passed. The graver risk of operation may be avoided, and, if operation becomes necessary, the patient will be in a better condition. The presence of multiple calculi does not always indicate operation. A patient recently examined by the author was found to have 6 calculi in the right ureter, just above the bladder. The symptomatology pointed altogether to a vesical calculus. The bladder had previously been explored, but no calculi found. Subsequent to the Röntgen examination the patient passed 2 of the calculi.

Besides the influence which this new method of examination has exerted upon the indications for operation, its accuracy has led to modifications in operative procedures. The field of operation has been limited, and the necessity for exploratory incisions into apparently healthy kidneys in the search for calculi has been obviated. Undoubtedly exploratory operations are valuable, and as necessary in many cases now as formerly, but the actual incision into the kidney is now only justified by the previous detection of a calculus by the Röntgen method, or some macroscopic pathologic lesion.

During the operation for the removal of a renal calculus, the necessary amount of trauma has been minimized. The calculus can usually be located in one or other of the calyces, or in the pelvis of the kidney. The necessary incision can thus be made directly upon the calculus and of just sufficient size for its removal. There is no longer need of splitting the kidney from pole to pole, or for diligent or prolonged search. The diagnosis is complete. The removal of the 1 or more calculi shown in the skiagraph assures the completeness of the operation and renders further search and the resulting trauma unnecessary. The danger that menaced the patient when a nephrectomy was necessary on account of calculus, or of any other form of nephritis, because the other kidney might be involved, is avoided, because all calculi in both kidneys and ureters can be detected or excluded. The hydronephrotic kidney, resulting from the blocking of the ureter by a calculus impacted at the pelvic brim, is relieved by an operation directly upon the ureter without opening and exploring the kidney and running the risk of a urinary fistula.

The operations for these ureteral calculi are direct, without the lumbar incision carried downward when the sound introduced through the kidney chanced to detect a calculus, or the obvious blocking of the ureter made it necessary to determine the cause.

Ureterolithotomy has been successfully performed in a number of cases in which the author has detected calculi in the ureters. It can be either transperitoneal, retroperitoneal, transcystic, after a suprapubic cystotomy, or the ureter may be opened through vaginal vault.

The precise localization of calculi in the ureters has rendered available, especially in the female, methods of operating directly through the ureters that were previously restricted to those cases in which it was possible to determine the presence of calculi in the ureter by digital examination, or by the employment of Kelly's wax-tipped catheters.

These methods consist in washing the calculi out by passing a ureteral catheter above them, by dilating the ureter with suitable conical bougies, and by crushing. All of these methods have served to dislodge small calculi. In addition may be mentioned massage or the

crushing of calculi situated over the pelvic bones, in suitable cases, where they can be reached.

All of these intraureteral methods may be employed as well in the male by a modification recently suggested.[1] The introduction of any of these instruments into the male ureters, after their passage through the urethra, is secured by guiding them into the ureteral orifices by an instrument or finger introduced through a suprapubic cystotomy wound. If these measures are not successful, the wound may be utilized for a transcystic ureterolithotomy.

One of the gravest problems of renal surgery is the determination of which kidney or ureter to operate upon and at what point, in cases of complete and sudden anuria. The necessity for immediate operation is urgent, delay is fatal, so too is operation upon the wrong kidney in many cases. The symptoms are often too misleading or absent to be of value. The previous history is unreliable. The value in such case, if due to calculus impaction, of the Röntgen examination, is readily appreciated. The calculus is detected and the operative procedure directed to the exact lesion. If the outlines of the kidneys can be shown, as is possible in most cases the enlargement of one or other kidney aids in determining which to operate upon first.

Before any operative procedure for the removal of a small calculus, detected by the Röntgen method, is undertaken, a thorough examination of the bladder with a Bigelow's evacuator should be made, with the patient under the influence of an anesthetic. This is essential, because such small calculi are liable to pass into the bladder between the time of their detection and the time of operation. The relaxation resulting from the anesthesia may also hasten their passage. The examination should be repeated at the close of the operation, as such small calculi can be crushed or pushed into the bladder during the manipulations of the operation.

The effect of the Röntgen method of examination upon the indications for, and methods of operating in cases of suspected renal or ureteral calculus have been very marked. The precision attained by this method has rendered a conservative method of treatment safe and rational where it would have been previously bad surgery. It differentiates between those cases that will recover under medical treatment, where calculi have been suspected, and those where the patient's safety depends upon immediate operative intervention. Small calculi which it shows are favorably situated, may be allowed to remain, to pass by nature's methods in cases where the other conditions justify such a course of treatment. The risk involved in the delay has been rendered less grave than the operative risks in many of these cases. The field of operation has been localized to the exact region of the lesion, and the operative trauma reduced to a minimum, as the calculi can be removed through smaller incisions without the necessity of further explorations and yet the completeness of the operation is assured. The possible presence of calculi in other portions of the urinary tract is eliminated as a complication of all renal operations. In exploratory operations, unless a calculus has been detected, incision into the substance of the kidney is contraindicated, unless for other obvious pathologic lesions.

1. Annals of Surgery, April, 1901.

Creation of a Medical School in Tonquin.—The French have established a medical school in Tonquin for the benefit of the natives. The faculty consists of two physicians, one assigned from the army, and the other a civilian.

ACUTE CHOLECYSTITIS AND CHOLANGITIS AS A COMPLICATION OF GALLSTONES.*

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In his treatise on gallstones Hans Kehr, whose experience in this special field has been such a rich and varied one, says: "Almost every case of cholelithiasis brings surprises of a remarkable sort. The pathological anatomy of this disease forms the foundation for its special diagnosis and treatment. Without an exact comprehension of the pathology, we can neither make a good diagnosis nor initiate a rational treatment." Stimulated by these words, it will be my purpose to add a contribution rather to the surgical pathology of this subject than to its treatment. The case which I desire to report, and which I will discuss in detail later, was one of the surprises of which Kehr speaks. It is, in brief, that of a girl 17 years of age, who was operated upon for gallstones, and purulent cholecystitis, in which the colon bacilli were found in pure culture, and who died three days after the operation, with symptoms of cholemia, whose liver showed evidences of a diffuse hepatitis and non-suppurative cholangitis, which undoubtedly disturbed the hepatic function to such an extent as to cause death. The history, in detail, is as follows:

J. R., aged 17, single, tin-polisher by occupation, was admitted to the service of Dr. Louis A. Greensfelder, in the Michael Reese Hospital, on Aug. 12, 1899. No history of previous illnesses. Family history negative. For the four weeks prior to admission she had been complaining of a pain in the lower posterior part of the chest. She had not felt as strong as usual, but not ill enough to remain in bed. Three days before admission, this pain became suddenly more severe, and moved around the right side of the chest to the right hypochondrium, in addition to its being felt in the back. Since this attack she had had fever, vomiting and constant pain, the latter increased by each respiratory movement. Bowels constipated. No appetite. The examination revealed a slight jaundice of the scleræ. The entire right hypochondriac and lumbar regions showed rigidity of the abdominal walls, and great sensitiveness to pressure, being most intense over the region of the gall-bladder. At this point one could feel a firm mass, about the size of an outstretched adult hand, not movable, and very sensitive. A diagnosis of gallstones was made.

On Aug. 14, 1899, Dr. Greensfelder made an incision along the right border of the rectus. Upon opening the peritoneal cavity, the tense and distended gall-bladder was exposed directly beneath the line of incision. Its surface was smooth and there were no adhesions. The serosa of the gall-bladder was stitched to the parietal peritoneum, and the wound cavity packed with gauze.

Aug. 16, 1899. The patient was again anesthetized (chloroform used in both operations). After the adhesions between the gall-bladder and abdominal wall were found to be firm, the exposed portion of the former was incised, and a quantity of glairy, clear fluid and pus escaped. With a forceps six faceted (mixed cholesterin and pigment) calculi were removed, and drainage tube inserted after palpating and sounding for other calculi in vain. At the time of admission (August 14) the patient's temperature was 100.4, pulse 120. Shortly after she had a soft, light yellowish, bowel movement. The following day her fever rose to 102. The examination of the urine showed the absence of sugar and albumin, and of any renal elements. Just before the first operation a twenty-four hour specimen of urine showed 2.1 per cent. of urea;

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

otherwise negative. After the operation her temperature remained 101; she passed eighteen ounces of urine with a small amount of albumin, and 2.6 per cent. of urea, and vomited only once. After the second operation (when gall-bladder was opened) the temperature still remained 101 to 102 during the first twenty-four hours. She was very restless, and passed a smaller quantity of urine. On August 18 she had a good bowel movement, and expelled flatus freely. Up to 3 p. m. her temperature varied from 101.4 to 102.4. Suddenly it rose at 3 p. m. to 103.2, pulse 128. Some twitching of the muscles of the face was observed. She then became wildly delirious, and later unconscious. A slight general icteric hue, which had been noted on the previous day (17th), now became very marked. At 5 a. m. on the 19th her temperature had risen to 105.4 (rectal), pulse 160; at 6:30 to 107.4, pulse 180, and just before death (at 7:35 a. m.) it rose to 108.2, pulse too rapid to be counted. In the twelve hours prior to death the prominent symptoms were twitchings, first of face, then of entire body, restlessness, delirium, rapidly increasing jaundice, decreased quantity of urine, high temperature (to 108.2), and pulse (180), and marked dyspnea. The abdomen was never at any time tense or tympanitic. Bacteriological examination of the pus taken directly from the gall-bladder at the time it was opened, on August 16, showed the presence of the colon bacillus alone in pure culture.

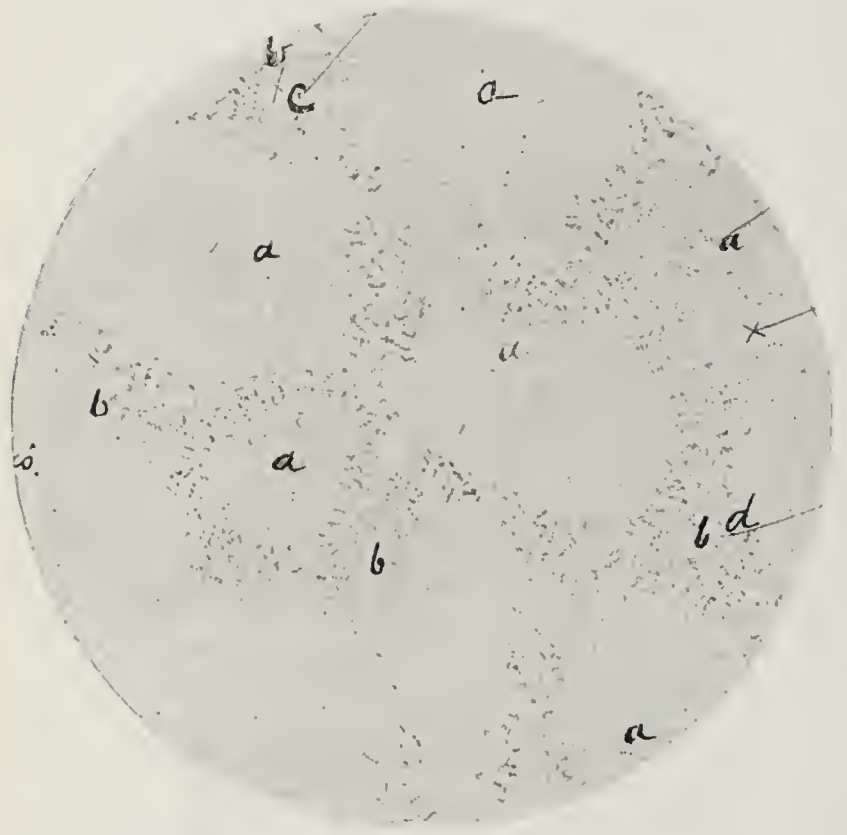


Fig. 1.—Section of liver, stained with carbol-fuchsin, showing extensive necrosis of parenchyma, due to colon bacillus; cholangitis complicating gallstone and purulent cholecystitis. *a*, Intralobular vein: *b*, bile vessel; *c*, infiltration and newly formed connective tissue around bile vessel; *d*, still preserved parenchyma: *x*, necrotic parenchyma. (Low power.)

The autopsy was conducted by the writer about three hours after death. Unfortunately, permission to perform a complete autopsy could not be obtained, so that we were obliged to confine the examination to the immediate vicinity of the wound. There were no signs of reaction about the latter. The gall-bladder was found adherent to the edges of the wound in the abdominal wall. After separation of the adhesions, inspection of the peritoneum covering the intestines, liver and parietes showed no evidences of any infection. It was smooth and shining. [The incision in the gall-bladder was one and one-half inches long, and the entire length of the viscus five and one-half inches. Its diameter at the widest portion one and three-fourths inches. The wall was greatly thickened, three-fourths of an inch.] The mucosa showed evidences of an intense inflammation, being covered by a greenish layer of mucus and pus. There was marked hyperemia and some scattered hemorrhages. At the neck of the gall-bladder, blocking the orifice of the cystic duct, and lying in a pouch-like diverticulum, was a gallstone the size of a small marble, separated from the remainder of the gall-bladder by a fold of mucous membrane. The cystic duct was filled with clear mucus, the hepatic and common ducts showed no changes. Their lumina were not increased. There were no evidences of any pressure having been exerted by the stone which had remained upon any of the bile ducts. The liver was somewhat enlarged, fairly firm. The cut surface was uniformly yellow; the lobules distinctly marked, each surrounded by a hyperemic zone. Cultures made from inoculations taken from the surface of the liver showed the colon bacillus in pure culture. Microscopically, sections of the liver stained with various solutions showed best of all in those stained with dilute fuchsin, a remarkable picture (see Figs. 1 and 2) Under low power one could see that only the peripheral zone of each liver acinus took the stains, the contrast between it and the lack of color of the remainder being very striking. Under a higher power one could see that there had been an extensive necrosis of the liver cells in two-thirds of each acinus, with marked nuclear fragmentation, etc. Around the interlobular bile vessels there were evidences of proliferative inflammation, and some round-celled infiltration between the columns of still living liver cells in the periphery of the lobule. The latter were loaded with bile pigment. We have thus extensive parenchymatous changes involving over two-thirds of each acinus, and of a necrotic nature. Few of the cells take the stains. In addition there is a well-marked cholangitis of the finest bile vessels.



Fig. 2.—Section of liver, stained with methylene blue, showing necrosis of parenchyma, due to colon bacillus; cholangitis complicating gallstone and purulent cholecystitis. *b*, Interlobular bile vessel; *c*, newly formed connective tissue and round-celled infiltration around interlobular bile vessel; *d*, bile pigment; *e*, necrotic liver cells showing nuclear fragmentation; *f*, still preserved cells in periphery of acinus. (High power.)

In reflecting upon this interesting case, the questions which arise are: Why should a patient die with symptoms of cholemia, or, as it is now more properly called, hepatargy, i. e., liver inactivity, whose only apparent complaint had been gallstones, complicated by a purulent cholecystitis? Before proceeding to answer these questions permit me to briefly review some of our knowledge

of the pathology of gallstone disease, in order that we may profit by our deductions.

1. Do the bile passages normally contain micro-organisms? In healthy animals Netter, Naunyn, Leubuscher, Gilbert and Girode found the bile free from micro-organisms. This is especially true for the bile in the gall-bladder, cystic and hepatic ducts; not so for that in the common ducts. On the other hand, Ehret and Stolz found that in a considerable percentage of the cases when bile was taken under all precautions from the gall-bladder of healthy guinea-pigs, dogs and cows, the bile contains micro-organisms. Yet they found that these were not present in sufficient number to cause a peritonitis.

In human beings, Fraenkel and Krause examined the bile in 130 cases at autopsy, and found it sterile in 105. In 11 cases of cholelithiasis examined during life it was sterile in 5. Mieczkowski made cultures from the bile of 15 persons during life. He obtained the bile during laparotomy by aspiration of the gall-bladder. It was found sterile in all cases. In 23 cases of gallstones operated upon by Mikuliez, the bile contained organisms 18 times; only 5 were sterile. The colon bacillus predominated, occasionally associated with the staphylococci and streptococci. He stated that we must regard every case of gallstones as infected. The micro-organisms may be very virulent and cause peritonitis, or they may be less virulent and be absorbed by the peritoneum. Miyake found micro-organisms in only one dog in 55 dogs and 21 rabbies whose bile he examined. From these various observations, made upon animals and human beings, both during life and at autopsy, we can conclude that in the majority of cases bile is sterile under normal conditions. This holds for the entire bile passages, with the exception of the common duct, close to the duodenum, where many investigators have found micro-organisms even when there is no obstruction to the flow of bile.

2. The next question which interests us is, whether bile acts as a bactericide or whether micro-organisms find it a good culture medium. Dominici and Rodet found that the organisms which cause infections of the bile passages thrive in bile.

Maly and Emich, Leubuscher, Röhman, Bates, Fraenkel and Krause, and Mieczkowski observed that both typhoid and colon bacilli develop well but slowly in human bile. If the bile is thick, it especially favors the growth of colon bacilli.

Ehret and Stolz maintain as the result of their experiments that fresh non-sterilized bile has bactericidal properties, confirming the observations of Mosse, and finding that it acts as a poor culture medium.

Mignot and Miyake found that the colon bacillus lives for many months in the gall-bladder. It decreases in virulence, but regains it again readily. Miyake found that bacteria like typhoid and colon bacilli, streptococci and staphylococci, which are usually normally present in the intestine, develop either very well or moderately well in the bile. He injected bacteria into the gall-bladder; they could be found 10 to 214 days later in pure culture, all other organs being sterile.

Talma, the latest writer on this subject, states that the bile acts mildly toward the colon bacillus as a bactericide, but much more strongly toward the diphtheria and typhoid bacilli. In the majority of cases the bile acts as a poor culture medium for the colon bacillus. The bactericidal action depends more upon the secretion of the gall-bladder than that of the bile ducts. There are many cases reported where living typhoid bacilli (Fütterer, Lauriac, etc.), were found in the gall-bladder months and years after an attack of the disease. Altogether we may conclude that bile contains a substance which inhibits the growth of the majority of colon and typhoid bacilli. The number of organisms has great influence upon their fate. The epithelium of the bile passages and the liver cells resist infection greatly. Bile acts as a poor culture medium.

3. The next question which we must try to answer is: How and when does infection of the bile passages occur?

This may occur either through the blood (descending or hematogenous), or be an ascending one along the common duct from the duodenum. The latter is far more frequent clinically. The hematogenous variety of infection through the systemic circulation undoubtedly is possible, as in typhoid, but it is comparatively rare. A number of experiments have been made by injecting large quantities of bacteria into the general circulation (Miyake, Cushing, Guarneri, Queri and Fütterer), but so long as there is no obstruction to the flow of bile, which might cause stagnation, the liver is able



Fig 3.—A, necrotic liver cells; B, cells in periphery of acinus, still healthy; C, newly-formed inflammatory tissue around interlobular bile duct; D, interlobular bile duct. (Low power.)

to excrete a large number of organisms through the bile.

Ferraresi and Guarneri found this to be true for the glanders bacillus; Corrado, Nicati, Oemler, Strauss and Chamberland, Oreste, Perniee and Alessi, Bernabei proved it for staphylococci and pneumococci; Friedlaender, anthrax, cholera and typhoid bacilli. Blaehstein, Letienne, Biedl and Kraus, and Menzel proved it for streptococci and colon bacilli.

The ascending variety, where the bacteria invade the liver and gall-bladder along the bile ducts, is unquestionably the most frequent. When the common duct is ligated above the ampulla, the same organisms are found inside of a few days in the liver and bile which are present in the duodenum and in that portion of the common duct distal to the ligature (Homan). This was found true for typhoid and colon bacilli. When these organisms were injected into the common duct below the point of ligation, they found their way very rapidly past the ligature into the liver. The bile which is stagnant above the obstruction (ligature) offers a favorable medium for the bacteria. Infection, with virulent material, when the flow of bile is not interfered with, is without serious consequences.

Even when the common duct is ligated between two ligatures (Ehret and Stolz), organisms multiply rapidly in the bile ducts above the point for a few days, but gradually disappear as the result of the bactericidal action of the stagnant bile. Aseptic foreign bodies introduced into the gall-bladder, on account of interfering with the normal muscular action of the organ, greatly favor the growth of bacteria. Under such circumstances Ehret and Stolz found a great increase in organisms from time to time. When the normal gall-bladder not containing any stones contracts, it can empty its secretion unhindered into the intestine. When the bladder can not contract in a normal manner, on account of the stones it contains, a certain amount of bile remains stagnant between the foreign bodies, and favors the growth of bacteria. Of course, foreign bodies may lie during an entire lifetime in the gall-bladder and never give rise to symptoms until the bile becomes infected, when the typical gallstone colic occurs. The frequency with which cholecystitis and cholangitis occur during typhoid is well recognized now as the result of a descending infection. We are now able to state from

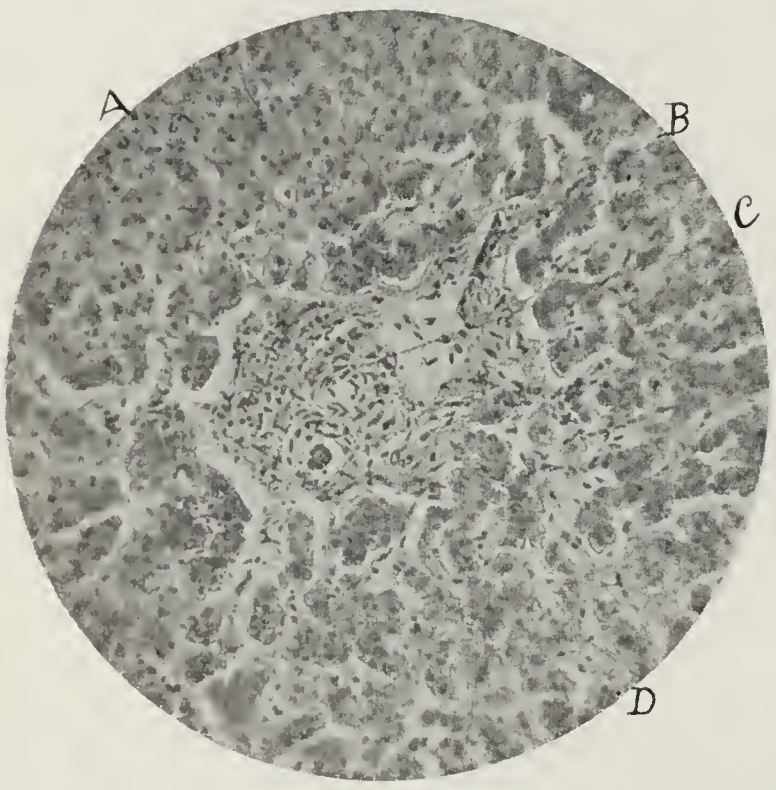


Fig. 4.—A, necrotic liver cells; B, cells in periphery of acinus, still healthy; C, newly-formed inflammatory tissue around interlobular bile duct; D, interlobular bile duct. (High power.)

experiments made by a number of reliable observers that any interference with the contractility of the gall-bladder musculature, or the presence of foreign bodies in the gall-bladder, or ligating the common duct, causes a marked increase in the number of micro-organisms in the bile passages. The ordinary infection in gallstones is almost invariably an ascending one, along the common into the cystic and hepatic ducts.

4. The next question of interest in this connection is: What is the relation between infection and gallstones, and what is the effect of infection of the bile passages (cholecystitis and cholangitis) upon the liver parenchyma?

Thermal, chemical or mechanical irritation of the gall-bladder, simple stagnation of the bile, do not produce gallstones, according to Miyake (whose experimental work on the artificial production of gallstones deserves the highest praise). When sterile foreign bodies are introduced into the gall-bladder there is a considerable increase in bacteria, and some incrustation of the bodies with a substance resembling gallstones. But when the bile is rendered stagnant (partially obstructing the cystic duct), and a virulent culture of colon bacilli injected into the gall-bladder, Miyake found in two animals typical gallstones, one year and ten months later, respectively.

Of prime importance in the formation of stones, then, is infection, usually with the colon or typhoid bacillus. These infective agents set up a catarrh of the gall-bladder and the bile ducts, and when the nuclei of the stones, which most frequently consist of masses of epithelium and fat drops, are allowed to remain in the gall-bladder, through some cause which favors bile stagnation, gallstones are formed. We thus have a complete confirmation of the theories of Naunyn.

When colon or typhoid bacilli are injected into the gall-bladder in small number (Talma), they soon find their way along the bile ducts into the liver, and cause extensive changes in the parenchyma and in the gall-bladder, exactly similar to those which are present in the case I have reported, namely, evidences of severe cholecystitis, necrosis of liver cells in the central portions of each lobule, and interstitial changes along the interlobular vessels.

Our observations of infection of the bile passages in the human beings has been confirmatory in every detail



Fig. 5.—A, Extensive round-celled (inflammatory) infiltration around interlobular bile vessel. (High power.)

of the work on animals. The latter has assisted us greatly in comprehending the former. Gallstones may remain in the gall-bladder for years without giving rise to the least suspicion of their presence. When an infection has been added, an inflammation of the gall-bladder is set up (cholecystitis), and the patient has a typical gallstone colic. The stones, unless they are very small, are rarely expelled, but are driven toward the neck of the gall-bladder. The serous effusion frequently changes to a purulent; in other words, there is simply a question of the degree of infection. Upon it depends the fact whether we have a serous, purulent or gangrenous cholecystitis. In 50 cases examined bacteriologically at the time of operation, Petersen found the colon bacillus either alone or associated with ordinary pus cocci in 46 cases. They were present even when the bile was clear and when there were no visible changes in the gall-bladder. The serous variety frequently subsides, but in the purulent the organisms may spread along the bile ducts into the liver, producing either a purulent or non-purulent cholangitis. The latter process is especially likely to occur when any cause for bile stagnation, for exam-

ple, stone in common duct, exists. The clinical picture of the cholecystitis usually predominates, so that the cholangitis, with its grave influences upon the liver parenchyma, is masked. The course of a cholangitis seems to be most acute with virulent colon bacilli, more chronic with staphylococci and streptococci (Quincke).

The symptoms of cholangitis complicating gallstones are that after one or more attacks of colic there is a more or less marked tendency to fever, icteric hue and dull pain in the liver region. The fever may be of the type described first by Charcot, and frequently misleadingly called hepatic intermittent fever. The more or less regular recurrences of chill, fever and sweat resemble malaria greatly. In this variety there may be multiple abscesses in the liver (purulent cholangitis). Later the clinical picture may be that of a septicopyemia, with endocarditis, etc. Pick noted during the attack a marked decrease in excretion of urea and an increased leucocytosis.

Symptoms of Cholecystitis.—This, as stated above, may be either serous, purulent or gangrenous. There is always pain over the gall-bladder, radiating to the shoulder, no icterus, as a rule, no enlargement of the liver. There is usually some fever, especially if there is pus present. It is not of the septic type, as in suppurative cholangitis. Generally a tumor can be felt, but where the process has existed for some time the gall-bladder may shrink so that none can be felt. When present it may be quite movable.

The non-suppurative form of cholangitis complicating gallstones is not characterized by as marked emaciation, rise of temperature or septic symptoms. The course is more prolonged and there is not apt to be much jaundice. Cholangitis is not so important of itself as that its sequelæ, abscess formation and parenchymatous changes in the liver, may be very serious.

The prognosis of cholangitis and cholecystitis depends upon the cause. Both are rarely found without gallstones. Typhoidal cholecystitis and cholangitis usually subside without any complications save adhesions of gall-bladder to adjacent organs. The appearance of these two complications in the course of gallstones should influence our prognosis greatly. The grave anatomic changes in the gall-bladder and larger bile ducts, such as adhesions, ulceration and greatly thickened walls, may cause symptoms sometimes classed as pseudo-relapse symptoms for years after an operation. The prognosis of the suppurative type of cholangitis is, of course, extremely bad. That of the non-suppurative is shown forcibly in the case I have reported above, and we should always be prepared for surprises of this kind. The necrosis of liver parenchyma as a result of the biliary infection results, first, in paralyzing the ability of the liver cells to get rid of bacteria and toxic products of the body, and, secondly, in reducing to a minimum the formation of urea or allied products.

The death of the patient whose history I have given, and the study of whose case has formed the basis of this paper, was undoubtedly due to that condition which was formerly called cholemia. It was given this name because it was thought that the blood contained bile in large amounts. We now know that it is a form of autointoxication, due to a lack of functional activity of the liver cells, so that toxic products are retained in the system. Hence, the name hepatargy or liver inactivity has been proposed to designate the group of symptoms chiefly of a nervous character, as in our case. They may develop gradually or suddenly, resembling greatly the symptoms of uremia or diabetic coma. The acute onset probably expressed, according to Quincke, the moment when the already incompetent liver is no longer compensated by the kidney and other organs. These symptoms are delirium, high temperature, muscular twitchings, or even general convulsions. They may be present in a lesser degree in some cases, and entirely disappear. Usually their onset precedes death by a few days. The condition is especially liable to occur when the common duct has been obstructed, so that toxic products can no longer be carried off by the bile. In our case there was no direct closure to be found, but it is well known that a permanent closure of the common duct can be caused by a marked, long-continued dilatation of the gall-bladder, as a result of displacement of the cystic duct by large stones, which are either present in it or in large diverticula. But it is not necessary to ascribe the hepatic intoxication to other causes than a disturbance of the liver cells, as the result of infection.

I believe that there is every reason to ascribe the nervous symptoms shown by our patient to auto-intoxication, or liver inactivity, interfering with the formation of urea and elimination of toxic products and bacteria by the liver cells and bile, and that it is an example of one of the results of infection complicating gallstones. The case teaches, first, that in every case of gallstones we must try to make an exact anatomical and pathological diagnosis, in addition to that of gallstones. Whenever pus is present in the gall-bladder, especially if the symptoms have been acute, our prognosis should be guarded. A purulent cholecystitis is almost invariably accompanied by a cholangitis, which, as in our case, need not be purulent. It may be said that whenever gallstones are accompanied by temperature we should think of a concomitant infection of the intrahepatic bile ducts, with its resultant pernicious influence upon the liver parenchyma. Such a change may cause sudden death through hepatargia.

In order to relieve a cholangitis which might exist in addition to a cholecystitis, it has been proposed, first, by Kehr, to drain the hepatic duct, for in some cases, even though the obstruction in the common duct has been removed, the sepsis continues. I believe that in our case the blocking of the cystic duct through the stone which lay in a diverticulum of the gall-bladder prevented the septic bile from flowing out through the abdominal wound.

In conclusion, I may say that the treatment of an empyema of the gall-bladder complicating gallstones, should never be one of delay. They should not be treated by internal means, but referred to the surgeon as soon as a diagnosis has been made. As soon as a diagnosis of gallstones in general is made, since we know the dangers of infection and carcinoma developing as complications, the surgeon should be consulted and the question of operation considered and in the majority of cases advised.

103 State Street.

Cerebral Syphilis.—Tschisch calls attention to the importance of diagnosing syphilis of the central nervous system when only the vessels are affected. Sclerosis of the vessels is first visible in the anterior branch of the temporal artery as it bifurcates in the temple at the edge of the hair, or 1 or 2 cm. below. Headache and sleeplessness are the earliest and most important of the prodromal symptoms, while vertigo is only rarely observed. All the other familiar symptoms of cerebral syphilis belong to the second period, in which the affection is already past remedy; such as the double vision and modifications in the reflexes.

DISSECTING ABSCESS OF THE ABDOMINAL WALL PRODUCING DEFORMITY SIMULATING POTT'S DISEASE.*

JAMES B. BULLITT, M.D.
LOUISVILLE, KY.

The ease whieh forms the basis of this report presents features whieh render it of suffieient interest, it is believed, to warrant its presentation to this Seetion. The patient was a lad of 16, who was taken siek in January, 1900, with a typical attaek of typhoid fever. He remained in bed six weeks, when, on getting up after the subsidenee of the fever, there was observed a eertain amount of inability to raise the left leg in drawing on the trousers. By the middle of May he developed a general antero-posterior eurvature of the spine from the saerum up with a lateral deviation with the eonvexity to the right side, and at this time was seen by Dr. Ap M. Vanee of Louisville. There was some fever at the time, though no reeord was kept, and there was a eertain fulness in the right loin which eaused a suspieion of a possible perinephritie abseess. He was put to bed, and when seen six weeks later was found to have improved very much. He had taken on flesh and the fulness in the loin had disappeared, but there was a deeided resistanee on the right side between the umbilicus and the anterior superior spinous proeesses of the ilium. This resistanee at this time was believed to be due to the matting together of the intestines as a result of loealized peritonitis from the typhoid ulceration. It was also eonsidered as possibly due to an appendieitis. At this juncture, in July of 1900, the boy was sent to the eountry, and after three weeks believed that he was entirely well, as all symptoms had disappeared; but after unusual exertion ineident to a long ride and the breaking down of the vehiele, a high fever oeeurred (105) and great pain was felt under the left costal border. After a few days an abseess pointed at the navel, broke spontaneously and diseharged a large quantity of thin pus filled with flaky white partieles. When seen by the writer, in January, 1901, about one year after the beginning of the attack of typhoid fever, the patient presented a sinus at the umbilieus whieh diseharged a thin watery pus. He stated that by irrigating the cavity with which this sinus communieated, several pints of water eould be retained and then ejeeted by making pressure over the left side of the abdomen. There was a marked kyphosis, lumbodorsal in eharacter, with a slight lateral deviation, the eonvexity looking to the right. The kyphosis at this time was not a general antero-posterior eurvature, as when first observed eight months before by Dr. Vanee, but was a sharper eurvature limited to an area of four or five vertebræ. My first impression of the eondition was that it was Pott's disease whieh had developed abscess with final rupture at the umbilicus; but it was found that the vertebral eolumn was entirely flexible for flexion and lateral movements, and that extension of the column was impossible only on aeeount of the thiekened, indurated and unyielding eondition of the left half of the abdominal wall. Palpation from the umbilieus to the loin on the left side gave the feel to the hand of a board implanted beneath the superfieial tissues. It seemed elear that the deviation of the spinal eolumn was due, as when first observed by Dr. Vance, to an effort on the part of the patient to relieve pressure from the abseess in front, and that this position afterwards beeame aeeentuated and habitual from the inability of the lad to return his body to an ereet posture after the abscess had discharged, because of the thickened and indurated abdominal wall. Unfortunately for the boy, and for this report, the patient has persistently refused any operative relief up to the present time, and continues with the deformity described and with the sinus diseharging a thin watery pus at the umbilicus.

Nevertheless, in the light of the experience of others, it is felt entirely justifiable to make a diagnosis in this ease of a disseeting abseess of the abdominal wall following and dependent upon typhoid fever. Such abseesses after typhoid fever are uneommon, but have been deseribed by several writers as hereinafter briefly summarized. This case, however, seems to be unusual in the development of a marked deformity leading to the easual diagnosis of Pott's disease of the spine.

It is well known that as a result of typhoid fever certain degenerative ehanges take plaee in many structures of the body and amongst others that the voluntary museular system suffers a degeneration of both a nuelear and a waxy type, as deseribed by Zenker as early as 1864. One result of sueh degeneration is an oeeasional rupture of the reetus abdominis musele.[1]

Further, abseesses may occur within the muscular struetures of the abdominal wall without any demonstrable eonneetion with any lesion of the abdominal eavity, as in a most interesting ease reported by F. Raymond in *Le Mercredi Medical,* Paris, 1891.[2] In his ease, at about the fourth week of typhoid fever, an induration and swelling developed in the abdominal wall below the umbilieus and to both sides of the median line. The patient died about one week thereafter and on autopsy there was found a large pouch eontaining about two tumblerfuls of pus without any odor. There was no traee of eommunieation with the abdominal cavity, the walls of the abseess eavity being absolutely intact and at the same time infiltrated, edematous and quite hard. Cultures upon various media demonstrated the baeillus of Eberth as being the only micro-organism present.

Other pyogenic organisms have been found in abscesses oeeurring during the eourse of typhoid fever and entirely diseonneeted with the abdominal eavity. It is reeognized that sueh organisms may find a ready portal of entrance into the eireulation at the site of the ulcerations resulting from the typhoidal proeess.[3]

On the other hand, it is readily eoneeivable that abscesses of the abdominal wall may result from inflammatory proeesses which have had their ineeption within the abdominal eavity and have been eommunicated to the structures of the abdominal wall itself as the result of inflammatory, uleerative or perforative lesions of the organs eontained within the cavity. While a number of sueh lesions might be mentioned as being possibly responsible for sueh pathologie eonditions of the abdominal wall, there are only two whieh will be mentioned here, namely, those oeeurring as the sequelæ of typhoid fever and appendicitis.

Coplin and Beven[4] report a case of an abscess of the abdominal wall whieh made its appearanee ten weeks after reeovery from typhoid fever. A hard, painful swelling appeared over the right lower portion of the abdomen, whieh gradually extended aeross the linea alba and upward to the umbilieus, at the lower margin of whieh a small prominence appeared which was resonant on percussion. This was laid freely open and a large amount of offensive gas eseaped. The floor of the

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

cavity was covered with a small amount of pus of a fecal odor. A sinus was discovered leading between the abdominal muscles, but was too tortuous to be followed with the probe. Fecal matter appeared on the dressings afterwards, and continued at intervals for three months. The area of the inflammatory deposit decreased but little during the whole of this time. Other complications developed and the patient finally succumbed to uremia consequent upon a nephritis. The postmortem examination showed that the abscess still existing was mural in location and did not communicate at the time of the postmortem with the intestinal wall or the cavity. There were points of localized peritonitis, evidently old, seated over various points in the intestine and forming adhesions. Upon opening the intestine many of them could be demonstrated as the original seats of typhoid ulcers. There were loops of intestine attached firmly to the abdominal wall immediately at the umbilicus, and, although it could not be demonstrated, it is to be presumed that the primary abscess originated from infection occurring through a perforation.

Dr. Ap M. Vance reports[5] the case of a girl of 9 years who, during the seventh week of typhoid fever, developed an abscess of the abdominal wall which discharged a large amount of pus spontaneously at the umbilicus. Five weeks later an incision was made from the umbilicus to both sides of the median line, discharging a large amount of pus of a very fecal odor. The abdominal wall from the ribs to the ilium had entirely separated from the parietal peritoneum, and this surface constituted the floor of the abscess cavity, which extended from the opening at the umbilicus back to the kidney region on both sides. No point of communication with the bowel could be detected. Recovery followed this free drainage.

Dr. Vance has personally communicated to me a second case of a practically identical kind occurring in a little girl. Recovery likewise occurred in this case after free incision and drainage.

Dr. Michie[6] reports a case of abdominal abscess developing during the fourth week of typhoid fever. Pain, swelling and tenderness appeared below and to the left of the umbilicus. The abscess was opened and drained, the patient making a prompt and complete recovery. The diagnosis was made of abdominal abscess having its origin in a suppurating gland of the mesentery.

George Westby[7] describes a patient of 21 years who was believed to have typhoid fever complicated with peritonitis and passing on to an abscess of the abdominal wall, which pointed to the right of and below the umbilicus. This was incised and three months afterwards apparent healing with closure of the sinus had taken place. A month later, however, the cicatrix gave way and there was an escape of fetid pus which was not fecal, however, at any period of the patient's illness. Efforts to bring about closure of the sinus were unavailing, so it was finally laid open by incision. In the course of laying open the sinus something was cut across which exactly resembled a very small intestine. This was recognized to be the appendix veriformis. As a result of the operation satisfactory healing took place.

It would seem certain in this case that the presence of the appendix in the track of the sinus in every probability bore a causative relationship to the persistence of the sinus; and further, that the original abscess, which is described a perityphlitic, was almost certainly of appendicular origin, whatever may have been the relationship of the alleged typhoid fever to the abscess formation.

Dr. W. W. Keen[8] relates a case which gives the reverse side of the picture. A young man of 17 years, two months after an attack of typhoid fever, developed pain in the right groin, followed by the formation of a soft oval tumor just above Poupart's ligament, and just to the right of the internal ring. It was believed to be a hernia resulting from the rupture of the muscles of the belly wall consequent on the hyaline degeneration following typhoid fever. It was, therefore, decided wise to wait until distinct regeneration of the muscle fibers had occurred before undertaking operation. After a week in bed, however, the tumor was found to be increasing in size and operation was undertaken immediately. Incision quickly opened an abscess with evacuation of 1½ pints of pus which was not fetid nor of any fecal odor. A probe passed upward 15 centimeters almost to the level of the umbilicus. It also passed downward towards the true pelvis, but did not reach it. The fingers introduced into the cavity discovered nothing except the ring through which the abscess had come and a very large cavity beyond. The author's impression was that instead of a hernia he had to deal with a typhoid abscess arising in the connective tissues between the iliac internus muscle and the iliac fascia; or it might have arisen from a perforation of the appendix by typhoid ulcer. Cultures from the scrapings of the abscess cavity demonstrated tubercle bacilli, but no other organisms. This suggested the possibility of a psoas abscess resulting from Pott's disease. Up to this time the man had not been aware of any trouble whatever with his back, and had never suffered any pain in this region; but nevertheless a very careful examination showed unquestionably that he had Pott's disease at the dorso-lumbar junction. All the symptoms were now perfectly explicable. It was evident that a man who had had Pott's disease for a period of time long enough to produce a psoas abscess containing 1½ pints of tubercular pus, had passed through an attack of typhoid fever and a relapse without having any infection in the abscess or the bones from the typhoid bacilli and without aggravating the Pott's disease in the slightest degree, and, indeed, without the patient's ever knowing that he had any disease whatever in the spine. In conclusion I submit the following considerations:

1. Abscesses of the abdominal wall without any connection with the abdominal cavity occur most frequently as a result of typhoid fever and readily heal after incision and drainage.

2. The larger dissecting abscessses of the abdominal wall communicate at their inception with some portion of the intestinal tract, occur most frequently as a sequela of typhoid fever or appendicitis, and result from an adhesion between the parietal peritoneum and a viscus, with perforation of the latter. After rupture such abscesses follow the course of fecal fistula, healing sometimes spontaneously or as a result of incision with drainage only after the communication with the intestine has become obliterated. This obliteration sometimes occurs spontaneously, sometimes must be brought about by operative procedure.

3. A dissecting abscess may produce symptoms and deformity simulating Pott's disease; on the other hand. Pott's disease with abscess appearing after an attack of typhoid fever may be confounded with abscess resulting from the typhoidal process.

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DISCUSSION ON PAPERS OF DRS. LEONARD, EISENDRATH AND BULLITT.

DR. F. D. SMYTHE, Memphis—I would like to report an interesting case along the line of work that Dr. Leonard has been doing so successfully. The patient, a gentleman 42 years of age, had suffered for two years with intractable cystitis. Examination of urine revealed the presence of pus, streptococci and gonococci, also an abundance of mucus. He was losing flesh rapidly. Suprapubic cystotomy was performed in order to afford him temporary relief. The opening in the bladder was permitted to heal after three weeks' duration. His general condition at this time was very much improved and he left the hospital. Within a few days he again reported with cystitis as bad as before operation. Whereupon an *x*-ray examination was made revealing the right kidney very much enlarged. A diagnosis of pyelitis and probable stone was made. The Roentgen ray did not reveal the presence of stone. Nephrectomy was performed and examination showed numerous abscesses in the kidney, also small cysts with an extensive involvement of the pelvis. Gonococci were found along with other germs by the pathologist. No stone was found in the kidney upon section. This patient suffered but little inconvenience as result of the removal of his kidney. He voided about the same quantity of water after the operation as he had done before and said that he felt as well as before operation with the exception of a slight pain attending the division of the nerves in the lumbar region. After two weeks he left the hospital suffering considerably from dyspnea. Examination revealed a mitral regurgitation of the heart. This was followed rapidly by swelling of the feet, puffiness under the eyes and marked pallor. I gave an unfavorable prognosis and advised him to return to his home in New Orleans, La. He had been the victim of a gonorrheal infection for six years and the trouble with the kidney, in my opinion, was the result of an ascending gonorrheal infection.

We frequently encounter gallstones associated with malaria and not infrequently cholangitis following typhoid fever. We have cholecystitis and afterward the development of gallstones. Gallstones, as a rule, are not attended with jaundice. Jaundice occupies a position rather too prominent as a symptom of cholelithiasis—when, as a matter of fact, it rarely if ever exists unless the common duct is obstructed. In four cases recently operated on where numerous gallstones were found jaundice was never a symptom. In two cases that were operated on that were remarkably jaundiced no gallstones were found. One case of chronic malarial infection with perihepatitis and adhesion of the liver to the peritoneum had almost complete obliteration of the gall-bladder, which was removed. No trouble was experienced afterward so far as the operation was concerned.

In cases of persistent jaundice we should be on the lookout for malignant disease of the pylorus or head of the pancreas. Operation on the gall-bladder is, as a rule, attended with very little risk and jaundice is not a contraindication to surgical operation. The technique of the operation I would suggest as being most satisfactory where the conditions justify the procedure is a complete closure of the bladder after incision of the fundus, removal of the gallstones and thorough cleansing. In all these cases we find a catarrhal condition of the bladder existing, and after removal of the gallstones, I wash out the bladder with nitrate of silver—weak solution—and if the walls are healthy close the incision in the gall-bladder as we would a wound in the intestine. The morbid fear of leakage of bile referred to by most authorities will not occur if the technique is properly carried out. I close the gall-bladder without any fear by running a silk suture through and through near margin of incision, and over this row of sutures put in another of seroserous and have never seen leakage follow the operation. Where the gall-bladder is extensively diseased, pus being present or obstruction of the common duct exists, cholecystostomy is the operation to be preferred, as closure of the bladder under such circumstances should not be expected to be followed by good results.

DR. G. MACGOWAN, Los Angeles—I wish to ask Dr. Leonard, and I want him to answer for the benefit of all of us, whether the Roentgen rays do accurately give us, at all times, and under all circumstances, in his experience, a fair shadow picture of a stone existing in the kidney or in the ureter. I wish to ask him further, whether, in the hands of an expert, himself even, the diagnosis has not been made of the presence of stone in the kidney and ureter, operation made and no stone found; or whether the diagnosis of the absence of stone has been made, an operation made by the surgeon, and a stone has been found in the ureter or kidney. I wish to call the attention of the Section, further, to a very serious question in the use of the Roentgen ray. It has been my extreme ill luck to have had under my care two, probably, of the most severe Roentgen ray burns that have ever taken place. One lasted, I think, eight months, another for over a year. In both cases healing finally took place only after thorough excision of all the tissues that presented the appearances of having undergone cell-destruction, and, in addition, the removal of a large area of apparently healthy tissue outside of this. These men became invalids. This led me to commission a lady in Chicago, who does that kind of work, to compile the literature of *x*-ray burns. I was appalled at the number of serious cases reported. I would like the Doctor to tell us whether such dangerous burns do not, sometimes, still occur.

Dr. Baldy says that when the report of the microscopist does not agree with your clinical judgment as to the presence of cancer in the neck of the uterus, remove it anyhow; and I say, when the Roentgen picture does not agree with your clinical judgment as to the presence of a stone in the kidney or ureter, cut anyway. But it is not always safe to cut, because the Roentgen picture shows a shadow, unless it is well defined, and occurs in several pictures, always in the same place. In one of my cases, the picture had been made by a man who was very competent. The screen, before, had shown in the kidney the presence of a dark shadow, and the skiagraph made contained one which my colleague pronounced as unquestionably that of a stone. We held the man under observation for two or three months, and treated him for tuberculosis. The shadow cleared up entirely; none appeared in the second picture, nor could any be seen by the screen.

DR. J. D. THOMAS, Pittsburg, Pa.—A patient, passing pus in his urine, was treated for cystitis, and was examined by me with a cystoscope and searcher. I failed to find a stone. In addition to that he had kidney symptoms. I cut down on the kidney and explored it thoroughly and failed to find a calculus. The wound healed kindly, but after a while he still complained of his bladder trouble and now on examining with the searcher I found a small calculus, which was crushed and passed without the pump, because it was not large enough to require the pump. During the operation on the kidney I think the calculus had been disturbed and passed down the ureter, into the bladder. In another case, with the Harris segregator, I found that in the urine from the right kidney there were pus-cells and blood cells, while the left kidney urine was normal. I had the Roentgen ray used, but as the skiagraph was not returned to me as soon as I expected it, I cut down on the kidney and removed a calculus as large as a peanut. The next day I received the skiagraph, but it did not show it. So I had the stone where the skiagraph did not show a stone. We may be mistaken with our diagnosis in all our methods. I am in favor of the skiagraph. It was possibly the fault of the operator. Another interesting case to me occurred about three or four weeks ago. A patient with symptoms of cystitis had been treated for about three or four years, and, in addition to that, he had pain almost continuously in the lumbar region over the right kidney. I used the Harris segregator and found that the urine apparently all came from the left kidney. There appeared to be no urine from the right kidney. For fear I

might be mistaken in my technic I waited for four or five days and repeated it and found the same conditions. I therefore presumed that the right kidney was so much disorganized that it was doing no work. I cut down on the right kidney and to my surprise found it almost normal. Now, that also demonstrates that one can not always depend on the Harris segregator, although I do think it is a good method for diagnosis in addition to our other methods of diagnosing.

With regard to closure of the gall-bladder after opening it, although I do not do a great deal of work in this line, I have closed the gall-bladder and dropped it into the abdominal cavity, and in one case, where I made a postmortem a month afterward, the patient dying from aneurysm, I found that one could hardly tell that this gall-bladder had been opened. It was closed with catgut, and at this point you could hardly tell whether it was opened or not, and that gall-bladder I presented before this Section two or three years ago. At that time the consensus of opinion was that it was not good treatment to drop it into the abdominal cavity. I believe it to be good practice to close the gall-bladder and drop it into the cavity, unless there is some special reason to attach it to the abdominal walls.

Dr. W. J. Means, Columbus—It seems that some investigators have found the coli bacilli in the bile passages. This could scarcely be said, however, of the typhoid bacillus which is known to be a frequent cause of cholangitis, and consequent biliary calculi. It is a well-established fact that normally the fluids of the body are inhibitory to the growth of bacilli. The bile is no exception to this rule. However, any of the fluids may become culture media under pathological conditions. One of the most interesting points discussed is what leads to the formation of stones in the gall-bladder. Primarily there must be infection. This may be brought about in several ways. Trauma, perhaps, plays an important rôle; changes in the normal conditions of the bile through disease and sedentary habits are another cause. Under these abnormal conditions, bacteria find lodgment and multiply. Clumps may form around which the constituents of the bile form. It has been my contention for some years that gallstones always produce some irritation and are a menace to health and life. The very fact that infection is the starting point presupposes an abnormal condition, and as long as the products of this infection remain there will follow more or less disturbance of the functions of the biliary apparatus. Granting that the symptoms are not pronounced, yet sooner or later an impression is made. It is my further observation that greater familiarity with the pathologic conditions of the biliary apparatus helps us to recognize and locate the origin of heretofore obscure phenomena. I have in mind a case operated a few months ago that illustrates my point. A lady, age 42, multipara, had been an invalid for several years, suffering from abdominal disturbances. A gynecologist looked after the generative organs and removed one ovary and tube. No relief followed. When she came under my care there was tenderness over the abdomen, most marked, however, above the umbilicus and in the region of the ascending colon. Neuralgic pains were frequent and severe in the region of the spleen and left kidney. There were no symptoms nor group of symptoms that pointed to the gall-bladder being the seat of the trouble. An operation for the purpose of making a diagnosis was made. The visceral organs were found healthy, except the gall-bladder; a calculus weighing two drams was found and removed. The patient made a good recovery, and has been free from pain and abdominal tenderness up to this time.

I am fully aware that one case does not establish a rule, but it is an illustration of the extensive trouble that can arise from the presence of a foreign body in the gall-bladder. The classical symptoms of tenderness over the gall-bladder, neuralgic pains extending up to the right shoulder, gastric disturbances and jaundice may be absent or masked by more general symptoms over the abdomen. It is my firm conviction that the teaching that calculi may remain in the gall-bladder for years without producing any disturbances is unscientific and fatal to many patients.

Dr. B. B. Davis, Omaha—Some time ago I examined all the cases of gallstone that came into my hands with an effort to determine what constituted the nucleus. I did not carry it out with sufficient correctness, I suppose, to arrive at any very definite conclusion. In several instances I found the clump of bacteria constituting the nucleus. The colon bacillus, I think, was the chief, and, in one case, the typhoid bacillus. The symptoms of gallstones occur so soon after an attack of typhoid fever that Dr. Cushing has come to the conclusion that in many cases typhoid bacilli clumping constitutes the nucleus around which the stones form. I have come to the conclusion that infection is the primary cause. There is no reason why, after the stones form, that this infection should not clear up so that the symptoms of gallstones pass away and that, again, reinfection takes place. I have been impressed by two or three cases comparatively recently, that it is very important that when we make the diagnosis of gallstones an operation should be advised as soon as possible. In one instance I advised such an operation. There was an attack of cholecystitis and the symptoms were quite alarming for a day or two. The woman arranged to go into the hospital and have the operation on the following day. Next morning she felt better and delayed the operation, living two or three months in comparative health, but all of a sudden was taken with sharp pains and went into a collapse. I was not called in until forty-eight hours after that, and then she was moribund. Upon a postmortem examination being made, we found about a dozen stones in the gall-bladder; one of them with rather a sharp corner had perforated the upper part of the cystic duct and bile flooded the abdominal cavity; the bile was infective, there being a peritonitis already established. I think we should operate in every case, with the idea that the contents of the bladder, whether we have acute cholecystitis or not, may infect the peritoneum. We should wall off just as carefully as if we were doing an appendicitis operation in the presence of pus; because we can not tell at the time in what cases there is an infection. Some have spoken of the so-called "ideal cholecystotomy"—the immediate closure of the gall-bladder. If we could tell in any particular case at the time of operation that there was absolutely no infection, no tendency for the clumping together of bacteria, no tendency for the mucus to form into little balls to act as a nucleus, it would be all right, but I had a sad experience in one case. I felt that I had nothing there except the stones: we had a practically normal gall-bladder; I closed it up. A few months after that she had recurrent symptoms and later she had several stones removed by operation. Since then I have made it a practice and expect to continue this practice of draining the cavity and keeping the drainage tube in until all indication of any infection has passed away.

Dr. W. L. Rodman, Philadelphia—In Philadelphia the accuracy of the *x*-rays in locating stones in the kidney, ureter, and in the bladder, is looked on as a very decided step in advance. We feel that occasionally a mistake may be made as was today mentioned, but it is rare, and while I have not had the privilege of having Dr. Leonard do work for me, I have heard several surgeons say that they have never known him to make a mistake. I have for three years had the services of a very excellent man and have not known him to make a single mistake. He has located very accurately stones in the kidney, ureter and bladder. I was present at one operation where there was seemingly a mistake made by the *x*-rays; at least the operator thought so; it was not a very satisfactory test in my judgment as the outline of the kidney substance was not clear to me; yet the case has been quoted as having been one in which there was a mistake made on account of the wrong interpretation given by the *x*-rays. I myself feel that it is a most valuable aid and one which we should not ignore. I should hesitate to cut into a kidney, unless I was very certain that the clinical signs overweighed the negative evidence furnished by the *x*-rays.

As to the question of burns, I think that has been practically eliminated by improved technic. I have not seen a single burn from *x*-rays in the last two or three years, notwithstanding that it is used two or three times a day in the Medico-Chirurgical Hospital by Dr. Kassabian. I have recently investigated this subject carefully, and wanted to subject my own daughter to a test of this kind, on account of the fact that the dentist

recommended it, because a temporary tooth had not been shed and he was not sure whether there was a permanent tooth in the maxilla, and did not care to sacrifice the tooth until he knew whether the permanent tooth was present and wanted to have an *x*-ray diagnostic photograph made for that purpose. Naturally, I hesitated to do this, but asked Dr. Fox, the ophthalmologist, whom I knew had been using this test on the face. He said: "I have never seen even a conjunctivitis following exposure. I have used it hundreds of times. You can go ahead and I assure you from my own experience and as a personal friend that you will take no risks." So I feel that the risk of burns has been practically eliminated.

DR. C. H. LEMON, Milwaukee—I recall two cases of abscess of the abdominal wall that occurred about two years ago. One case I saw in consultation with Dr. W. H. Earles, of Milwaukee, and the other while I was attending a clinic of Dr. Keen, in Philadelphia. I cite these cases because of their infrequency, and I think they ought to be brought to the attention of the profession. They show us another source than Pott's disease of the spine or abscess following perforation of the intestine as a cause of dissecting abscess of the abdominal wall. These two cases are identical. One was a woman about 55, and the other a negro, I should say about 35. Both cases gave a history of recurring appendicitis. In both cases there was entire absence of jaundice; the possibility of suppuration of the gall-bladder with rupture and dissecting abscess of the abdominal wall was not thought of by any of the gentlemen who examined either of the cases. In Dr. Keen's case the negro had stated to him that the swelling that was present in the abdominal wall was recurrent, that he had had the same swelling before, and it had disappeared. The swelling was in the right groin; it looked exactly like an abscess resulting from appendicitis; it pointed; it was quite prominent and Dr. Keen was perfectly satisfied in his own mind that it was an abscess the result of appendicitis. In our own case—Dr. Earle's—we had the very same experience. Now, gentlemen, in both of these cases when the abscess was opened it was found that it lead directly to the gall-bladder, and in both cases gallstones were turned out as large as the thumb. Dr. Keen laughed at his mistake, as we did also at ours, but in the absence of reports of similar cases, who would not make the same mistake? I have never seen cases similar to these cited in our literature. I thought while we were discussing inflammation of the gall-bladder and dissecting abscess of the abdominal wall that these cases would prove interesting and valuable, as suggesting another source for the formation of pus that appeared as an abscess of the abdominal wall.

DR. JOSEPH C. BLOODGOOD, Baltimore—Let me call your attention to the relation between gallstones and acute and chronic pancreatitis; an important fact which has not been brought out in the papers read this morning. I mention this relation because it is only recently that we have understood it. The literature on gallstones and pancreatitis needs more careful clinical observations. I trust that all who in the future observe cases of acute pancreatitis which have the usual misfortune to go on to autopsy, will have made a careful examination of the gall-bladder and ducts, so that our records will be more accurate in regard to the presence of gallstones in cases of acute hemorrhagic and suppurative pancreatitis. It will also be of importance and interest to have further records of those cases which clinically give typical histories of gallstone colic with and without jaundice, and yet when we operate we find no stones in the gall-bladder or its ducts, but we find an inducted pancreas, and a dark, thick inspissated bile; and such cases are always relieved by temporary cholecystostomy.

Opie has demonstrated that bile, when injected through the pancreatic duct into the pancreas, produces at once a very extensive acute hemorrhagic pancreatitis. Some of the animals died within twenty hours after the onset. In a few instances recovery took place. This demonstration seems to explain the cause of the hemorrhagic pancreatitis when associated with a small stone in the diverticulum of Vater. Anatomically we know that into this diverticulum both the common bile and the pancreatic ducts open. A small gallstone, smaller than the diameters of the diverticulum, may plug completely or partially the opening into the duodenum at the papilla, but on account of its smaller size it does not obstruct the orifices of the two ducts; so that the bile completely or partially dammed from the intestinal canal may pass from the common duct into the diverticulum and then through the pancreatic duct into the pancreas and produce acute hemorrhagic pancreatitis. Opie has proved conclusively that bile can produce such lesions, and without the aid of infectious agents. Clinically, he has observed the same possibility in the patient operated on by Professor Halsted. This patient, admitted in a moribund condition, died a few hours after the exploratory laparotomy. Clinically, the symptoms were intense epigastric pain, profound collapse, slight jaundice, and bile in the urine. At the autopsy there were found widespread, disseminated fat necrosis and a huge swollen pancreas with areas of hemorrhage within and without. In the diverticulum of Vater a small gallstone was found which plugged the orifice of the papilla, but did not prevent the bile from entering the diverticulum from the common bile-duct. The large pancreatic duct and some of its branches were bile-stained. This case seems to confirm Opie's experimental work. In the second case—of my own—in the same clinic a similar pathologic condition was found, except that the patient had survived the hemorrhagic stage, and when death took place there was a large peripancreatic abscess. In the literature many cases of acute hemorrhagic pancreatitis have been associated clinically with a previous history of gallstone colic, and at some of the autopsies gallstones had been found. It may be possible for the small stone to lodge in the diverticulum long enough to dam back the bile in the pancreatic duct, produce the hemorrhagic pancreatitis and then slip into the duodenum and be lost, so that at the autopsy the relation between the gallstone and the pancreatic lesion is lost sight of. Opie's experimental work and his one most positive autopsy-finding seem to prove without a question that a gallstone lodged in this position is one of the causes of hemorrhagic pancreatitis. Other causes there may be, but these are yet to be demonstrated. Surgically, this relation should be borne in mind, so that at the operation for hemorrhagic or suppurative pancreatitis the gallstone in this position should be sought for and removed, whenever the condition of the patient will allow this procedure. Flexner, in his work on "Experimental Pancreatitis," published in the "Festschrift" to Professor Welch, in 1900, has demonstrated that many substances injected into the pancreas produce pancreatitis, and states that "the element of infection plays an insignificant if not an entirely unessential part." The possibility that bile could be dammed back into the pancreas and produce hemorrhagic pancreatitis was not demonstrated or considered. Nor had Opie considered this possibility in his article of "Fat Necrosis" in the same publication.

The relation of gallstones to chronic pancreatitis is of more practical surgical interest, because the condition is cured by proper operative interference. Both Robson and Opie have demonstrated both clinically and experimentally that a stone lodged in the common duct just above the diverticulum of Vater, or completely plugging the diverticulum, produces obstruction, not only to the biliary, but to the pancreatic secretions, which in the pancreas leads to chronic interstitial pancreatitis. This lesion in the pancreas gives it a hard nodular form, often mistaken for carcinoma. Clinically, it is associated with great loss of strength and weight. The disease is rapidly cured by the removal of the stone. Every surgeon is familiar with the rapidity with which the emaciated jaundiced subjects improve after the removal of the stone. In some cases the stone is not found at the operation. It has probably passed into the intestine. Robson has demonstrated that such patients are relieved by cholecystostomy and drainages. This relieves tension, allows the absorption of the exudate, and the pancreatic duct becomes patent again. The chronic interstitial pancreatitis disappears; the general health and condition of the patient improves. This explains instances in the experience of every abdominal surgeon. Such patients have a history of recurrent gall-bladder attacks with more or less jaundice, and more or less loss of flesh and strength. At the operation no stone is found to explain the symptoms. If the pancreas is palpated it is found to be hard and nodular, almost like in carcinoma,

the bile dark and inspissated. If cholecystostomy and drainage for a few weeks is performed, the condition is entirely relieved. Robson reports cases which he thought at the operation might be carcinoma, relieved by this procedure. These observations would seem to indicate that we would better perform temporary cholecystostomy in all cases coincident with the removal of stones from the common duct.

Dr. Miles F. Porter, Fort Wayne, Ind.—I think a better conception of the essential nature of so-called gallstone colic and the essential factor at the bottom of jaundice will help us out of the trouble. Gallstone colic is not the result, it is not produced in all probability by the passage, of a stone. You will not have gallstone colic until you have your ducts or gall-bladder infected, and plugging of the common duct so as to entirely prevent the passage either of bile or pancreatic juice is one of the rarest things in connection with gallstones. The point I wish to make is this, that the pain of so-called gallstone colic has behind it infection and inflammation; that jaundice has the same thing in the vast majority of cases, and I think that the experience of most of us who have done work in this line will bear these statements out. All of us have seen cases—individuals—who have carried gallstones for a long time without symptoms until symptoms of infection arose.

Dr. C. W. Phillips, Rocky Ford, Colo.—Strictly speaking, there is no such thing as *x*-ray burn. This peculiar kind of burn or dermatitis is the chemical effect of electricity and is not due to *x*-ray penetration. We infer from what Monell says in his "Manual of Static Electricity," that the coil is more capable of producing this dermatitis than is the static machine. Now I would ask the question whether it has been the experience of anyone present who has been using the static machine to have had in his practice *x*-ray burns? In my limited acquaintance with the static machine I have not met with this misfortune, nor do I feel any fear of it. I will venture to offer the suggestion, that with the subject sufficient distance from the Crooke's tube, and with proper insulation, the so-called *x*-ray burns will occur quite infrequent, if they occur at all.

Dr. T. J. Maxwell, Keokuk, Iowa—I had occasion to operate on a lady who was taken violently ill after riding a distance in the cars. I saw her some four days after the attack. She had a tumor just above the umbilicus. I asked her how long she had had that. She said that she never had a tumor, that there was never anything the matter with her; that she always had a good appetite, regular bowels, and nothing the matter with her for years. I said: "Here is a tumor." She said she was taken suddenly ill after riding a distance in the cars and that she vomited, had pain and she felt something tear in her stomach. I operated and found that the stomach was attached to a large gall-bladder, larger than my fist, which had made a half revolution, carrying the stomach and duodenum with it, preventing all egress from the stomach and pylorus and I found in the gall-bladder 193 stones, one of them plugging up the cystic duct. I extracted them and curetted the gall-bladder, sewed it up and attached it to the peritoneum, so that it would not make another half turn, and she is now quite well.

Dr. A. C. Bernays, St. Louis—In my entire experience, now over twenty-five years, I have met with but three cases of acute cholecystitis, in which there were such symptoms as Dr. Eisendrath related. I mean by that, temperatures reaching 106 and in one case 107 F. In those cases it soon became apparent that there was a peritonitis and in all those cases I was called in by a general practitioner who recognized the extent of a peritonitis, which he did not refer, with any degree of certainty, to the gall-bladder, but that it was a hepatitis or a pancreatitis, or, in one case, the physician thought it was an appendicitis which had worked up behind the colon up toward the liver. I operated on all of these cases and succeeded in saving two. In the one case I found the gall-bladder gangrenous, looking like a gangrenous appendix, surrounded by adhesions, and I was enabled to remove the whole thing by scooping it out with my finger, leaving an enormous putrid cavity, which I treated by the open method—free drainage. The entire bladder, with the cystic duct, was gangrenous, but had been shut off by a wall of newly-formed tissue. In regard to the point made by Dr. Porter, I do not think that our attention is called to the existence of gallstones only when there is infection. It would be impossible for me to admit that, because I have operated on a great many cases of stone in the gall-bladder and stone in the common bile duct, where there was absolutely no inflammatory condition present and still the patient had jaundice and fever—the stone was in the common duct. It is true that the fever is not easily accounted for in these cases and I myself was surprised not to find some kind of infection along the bile tracts. On the other hand it is quite true that a patient may carry a gall-bladder more or less full of gallstones for years and that they will give no trouble until the patient has typhoid fever or until the patient has an ordinary pharyngitis—an angina or some other mild form of infectious disease—and then there will suddenly be pain and empyema of the gall-bladder, but I think the Doctor goes too far when he says that our attention will be called to these conditions only, or nearly always, first, by an infection. There is no doubt that the mere mechanical passages of gallstones will give rise to great pain and even to rise of temperature, and I think that the point brought out by Dr. Bloodgood is a very valuable one.

Dr. Leonard, in reply—I wish simply to emphasize the fact that there are calculi in the kidneys and ureters that will pass without operation. The detection of calculi is not always easy. The smaller calculi sometimes require a repetition of the examination. I have published my failures and also my successes in other papers. I have had one case of error through defective technic—it has been published. I missed the stone in the upper pole of the left kidney; I misread the plate. Mistakes are possible in the *x*-ray in reading the findings, as well as in other methods. In reference to the point raised in regard to one shadow hiding another: Recently a physician sent me a case for examination for calculus. The patient had lately passed a stone. He had the stone with him and asked me to put it on the plate, under his lumbar region and see if I could show it. He brought it to me in a little paper pill-box. I placed the stone in the box under the loin and both the box and stone showed distinctly in the negative through the lumbar shadow.

As to the word "opacity." Its meaning is different now since the discovery of the *x*-ray. The question is not whether one shadow is denser than another; it is whether the sum of shadows in one area is greater than the sum of the shadows in another. That is the reason why we can show the shadow of the kidney in the lumbar region. The negative diagnosis I have found to be as accurate as the positive.

We are dealing with an element in the *x*-ray about which we do not know any more to-day than when it was discovered. It is the *x*, the unknown still, and so long as we do not know what it is, it is difficult to tell the nature of all its actions. I myself do not believe that the *x*-ray itself is the agent which causes the burn. I believe that it is rather the effect of the electricity upon tissue. I myself have burns upon my hands and I seldom put them in the path of the *x*-ray. I get them from the induction effect of the current. In reference to the static machine, I have met a number of men lately who have used the static machine and they told me that they have had burns. While here in St. Paul, one of the exhibitors in the exhibition connected with the meeting told me that he had furnished one of the gentlemen who was exhibiting a static machine with a pair of rubber gloves when operating, because he could not keep the burns from his arms. I think that it is true that the static machine produces the burn as well as the coil. As Dr. Rodman says, it is in the proper use that we are to look for protection in using the *x*-ray. I have found that the introduction of a grounded screen of aluminum attached by some metallic connection with the ground has been a great protection. I have had a number of burns. I had two serious burns, but those occurred before I knew it was possible to produce them. It is as yet impossible to absolutely

protect from burns, no matter how careful and expert the operator may be. The danger is, however, very slight. At the present time I am using a 4-inch coil for my work—a coil which I have had constructed on special lines. I find it sufficient. The spark has volume and sufficient length to overcome the resistance of the tube. It is the volume in the secondary discharge that is essential to good *x*-ray work.

The point I would like to emphasize particularly in reference to my paper is that I have here a method which determines accurately the position and presence of calculi and the size of those calculi, making it possible for us to leave to Nature in selected cases what she often accomplishes. The fact that there are more ureteral calculi than we had supposed shows Nature's tolerance of them. The same is as true here as in the papers brought out on the biliary calculi. There we find calculi quiescent until some infection lights up and aggravates the condition present and shows the presence of the calculi.

DR. D. N. EISENDRATH, in reply—I agree with Dr. Porter, and in answer to Dr. Means, in regard to the fact that infection is, in the great majority of cases, the first symptom, or is the cause of the first symptoms of the presence of gallstones; a patient may have gallstones, as shown by Kehr and a number of investigators; they may go through an entire lifetime without having become aware of their presence, but when infection begins and the patient has a cholecystitis or cholangitis that causes, as Riedel has shown, an inflammation around the foreign bodies; there is contraction of the gall-bladder muscles and common-duct walls and, as a consequence, the patient has gallstone colic, but the stones are seldom expelled. As to the question icterus, we can distinguish between the two varieties of jaundice. There is the inflammatory jaundice which is of slight degree and which is almost invariably present during the course of gallstone colic and is known as the inflammatory icterus, in which there is a small amount of absorption of bile by the gall-bladder walls; and so-called obstructive icterus, in which the obstruction is caused by a stone, usually in the common duct.

I desire to relate some interesting experiments made by the Japanese investigator Miyake. He found that when he injected virulent colon bacilli in the gall-bladder of animals he produced no change, except a slight catarrhal change in the gall-bladder. If partial obstruction of the common or cystic duct is produced, particularly the latter, by passing across it a portion of the omentum to obstruct it, or ligating it incompletely in other words, and then, at the same time, one injects micro-organisms into the bladder, we have the two conditions now recognized to be essential in the gall-bladder infection plus obstruction to produce stones. These are the clinical causes. In two dogs, after the lapse of nine months, and twelve months, in another case, he produced gallstones which, upon analysis, had the typical composition of such calculi; that is, the experiments have proved what we have known since 1891, when Nauyn first proposed the stone-forming theory, that stones are not due to acid precipitation of bile, but that the colon and typhoidal bacillus and the resultant catarrh is the most frequent cause.

In regard to primary suture in gallstones, I think it is the general opinon of men who have had experience—from 400 to 600 cases each—as Mayo, Robson, Kehr and Riedal, that we ought to abandon it as a routine procedure. It is dangerous to close the gall-bladder in every case. It is better to do one of two things: either obliterate the gall-bladder entirely by cholecystectomy, or follow the procedure of the majority of surgeons and drain the gall-bladder, in that way getting rid of the infection. Peterson has shown in cholecystitis purulenta, that the examination of the bile escaping from the fistula shows at the end of ten days that the bile is sterile, so that by such perfect drainage we can obtain good results. In answer to Dr. Bernays, I would say that in our case there was positively no peritonitis. The condition of the liver and the slight obstruction caused by the stone which was lying in the diverticulum of the cystic duct, the lack of escape of fluid, and chiefly the condition of the liver, was the cause of death.

DR. J. B. BULLITT, in reply—I am familiar with some cases of empyema of the gall-bladder, which, through rupture, have produced abscesses of the abdominal wall. I purposely omitted this class of cases in my paper, for the discussion of all cases would lead us too far. I believe that the experience of the last few years has demonstrated that stone in the kidneys and ureters is of much more common occurrence than had before been believed. I believe further that the chapter of kidney surgery has expanded most wonderfully in this time and is destined to expand more rapidly and to be reckoned in the next decade in the brilliancy of its results with the surgery of the gall-ducts and appendicitis. I find that there has not been so much work done which will reflect so much credit on this particular chapter of surgery, and which will be of such benefit, as the light which has been thrown on this matter through the means of the *x*-rays, and of all those workers who have added their knowledge to this chapter in surgery, no one is entitled to as much credit as Dr. Leonard. I have, for several years, worked in the kindergarten of the *x*-ray and I think the difficulties to be encountered by one who undertakes examinations by these means are very great. Of all the operators in this country there have been comparatively few up to the present time who have developed a technic which is sufficient for making a positive and negative diagnosis. I believe the time is fast coming when the accumulating experience of men will prove that we shall have this safely at our command.

Dr. Bevan has laid stress on the fact that as far as the determination of kidney stone is concerned, the *x*-ray is more important than the operative exploration of the kidney. He has reported one, perhaps two, cases in which kidney stone had been expected, in which an exploratory operation had been made. The kidney had been incised and the pelvis explored. The kidney had been needled in all directions and no stone had been found. The symptoms persisting, the patient was afterward submitted to the *x*-ray and a very clear and distinct shadow of a stone was found. I have had a similar experience, although not with a kidney in situ, but one that had been removed on account of extensive destruction, from a large kidney stone in the pelvis of the kidney. Desiring to experiment with the shadows, I placed the kidney on a photographic plate and made an exposure and was very much surprised to find on developing that the shadow of a second stone was present on the plate. I exhibited this stone before the Surgical Society in Louisville and opened the kidney over the point indicated by the shadow and found there a second stone which had not been found at the time of the removal of the kidney. If this method of Dr. Leonard were followed, mistakes could not occur. If a patient is operated on after a stone has been determined in this way, it will not be possible to remove one stone and leave another in place.

Concerning the term "*x*-ray burn," we all know what we are talking about. All of the various types of apparatus are capable of producing burns. I have used the static machine, the Tesla coil and the induction coil. I have never produced a burn in anyone but myself and that was produced by means of the static machine.

Clinical Report.

ANKYLOSTOMIASIS—REPORT OF A CASE.

R. LEE HALL, M.D.
BALTIMORE, MD.

This being one of the few cases of ankylostomiasis to be reported in this country, I present it to the profession.

The patient, J. O'R., aged 38, an Englishman, was employed as a sailor on a vessel plying between Liverpool and cities in the United States. On his last trip the vessel touched a port in Mexico (Vera Cruz) a few days before entering any ports of the United States. Whether or not the man visited other ports or was subjected to circumstances conducive to the contraction of this disease could not be ascertained. He arrived in Baltimore about the last of September, feeling extremely weak and debilitated and suffering from some obstinate

intestinal trouble. In consequence of this general condition he abandoned his return trip to Liverpool, entered a sailors' boarding house, and after remaining there for three or four days was admitted (Oct. 2, 1901) to Bayview Hospital. The history gained elicited the fact that he had been suffering from general malaise and debility for about six months prior to his arrival in this city. He had commenced to lose appetite and energy the latter part of the spring, and this condition gradually developed into a general disability.

About a month ago his symptoms became more grave, a troublesome bowel disorder ensued, the discharges at times being tinged with blood. However, he was not compelled to abandon work until he reached this city in September. At the time of his admission to the hospital his condition was at once considered grave on account of the emaciation and anemia. A dry cough was noticed. His temperature on admission was 100 F. and varied between this point and 98 throughout the course of the disease. The evening temperature was about a degree higher than that of the morning, thus simulating a tuberculous condition.

The physical examination elicited the following: The face was emaciated and pale; the eyes were bright, pupils somewhat dilated, reacting normally to stimuli; conjunctivæ pale; tongue was coated white and the breath was offensive. Clavicles and ribs were prominent; skin free from eruptions, and very pale. Palpation and percussion elicited nothing abnormal. On auscultation a few sonorous, sibilant and mucous râles were heard distributed pretty generally over the chest. Respirations were 24 per minute. Dyspnea was quite marked at times. Heart sounds were weak, and pulse 100 per minute. No increased dulness was evident on percussion. A hemic murmur was occasionally heard over the apical region. There was no increased hepatic or splenic dulness. Pain points were evident over various portions of the abdomen on palpation. No lumps were found in the abdomen. The reflexes were normal. The whole body showed marked anemia and emaciation. There were no signs of edema. The urine was pale in color; specific gravity 1016, contained no albumin or sugar. The sputum was frothy, but contained no evidence of tubercle bacilli.

These symptoms suggested either amebic dysentery or tubercular enteritis. A microscopic examination of the feces was made, but nothing was found to confirm our suspected diagnosis. There was found, however, in addition to blood, certain strange-looking ovoid granular bodies, much larger than red blood corpuscles, the true character and source of which was not recognized, and in fact very little importance was attached to their presence.

The postmortem examination revealed, as will be noted below, that these bodies were the eggs of the parasite ankylostomum duodenale, the true cause of the disease. An examination of the blood was made two days after the patient's admission to the hospital, with the following results: red corpuscles, 2,500,000 per cubic millimeter; white corpuscles, 24,000; stained specimens showed a great increase in the polynuclear leucocytes and eosinophiles, the relation of the eosinophiles being 26 per cent. A small percentage of nucleated reds were found present, of the microblastic and normoblastic types. Poikilocytosis was absent. The general size of the red corpuscles was about normal; however, a few microcytes and macrocytes were present, the former predominating. A few days later the second examination showed a slight increased leucocytosis.

The pains in the abdomen were of a dull, nagging character, with an occasional paroxysm of great severity. About two days prior to death a final blood examination was made, with the following results: red corpuscles, 800,000 per cubic millimeter; white corpuscles, 29,600; hemoglobin, 11 per cent. Stained specimens at this time showed an increase in the nucleated reds. A slight poikilocytosis was now present, with some increase of microcytes. The most striking change was the increase of the polynuclear leucocytes and a decrease in the eosinophiles, the eosinophiles now only aggregating 3 per cent. A few lymphocytes and large mononuclear leucocytes were to be seen.

From this time on the patient rapidly failed. Respiration became more labored and gradually decreased in frequency, and he died on the evening of Oct. 19, 1901. An autopsy was made the next day by Dr. Yates, of the Johns Hopkins University. A brief summary of the findings being as follows:

Body was marble white in color, slight rigor mortis present 18 hours after death. Peritoneal cavity contained an excess of clear fluid, but the surfaces were smooth and glistening. The pleural cavities contained some turbid-looking fluid; no apparent congestion; some old adhesions to posterior chest wall. Lungs were edematous on the dependent portion; much black pigmentation of the tissue and old tubercular foci were present. The bronchi contained much frothy fluid, with no evident congestion of the mucous membrane.

The pericardial cavity contained a small amount of clear fluid. The blood clot in the heart was pale and tenacious; cut section of the muscle gave evidences of fatty degeneration. The valves were apparently normal. There were also evidences of fatty degeneration in the liver and kidneys. Extreme paleness of all viscera was present.

On opening the intestines about five or six inches from the beginning of the duodenum, a hemorrhagic-looking substance was found, small in amount. On close inspection of this substance there was revealed numerous small whitish worm-like bodies averaging from 7 to 16 mm. in length. As we opened the tract downwards the same condition existed until about 6 feet from the origin of the jejunum a more striking condition was encountered. These little worm-like bodies were now found to exist in great numbers. They were noticed to be in a living condition and many attached to the mucous membrane. They were thought to be the ankylostomum duodenale parasite which, after microscopic examination, proved to be correct. These parasites were abundant down to the colon and a few extended as far as the rectum.

The stomach contained no parasites. The entire intestinal canal was bathed in a tenacious mucus. The mucous membrane was pale, with here and there slight hemorrhagic areas. Along the free margin of the valvulæ conniventes greater hyperemia was noticed.

The microscopic examination of the bowel contents revealed large numbers of the previously mentioned ovoidal bodies. They were now recognized to be the eggs of the parasite, and the supposed granular condition was known to be various stages of segmentation. Had we been fortunate enough to have recognized the eggs found in the antemortem microscopic fecal examination a correct diagnosis would have been reached and proper treatment employed, resulting possibly in saving the man's life. This illustrates the necessity of making a thorough microscopic fecal examination in all intestinal disorders, when associated with marked anemia.

Quantity or Quality?—It is plain that the medical college which adopts as its motto, *quality rather than quantity*, must have either a large amount of virtue or a small amount of endowment, or some of both. The lower the standard of admission and the quality of teaching, the poorer it is, either in virtue or endowment. There is at present a rage for large classes in our literary colleges that is an ominous sign of education debasement. The college president who succeeds in swelling the numbers in the classes is held to be the most "successful." That Williams College thinks otherwise and prefers by elevation of her standards to lessen the mere number of her matriculants is a hopeful sign. A number of our medical colleges are like-minded, and in view of the fact of an already overcrowded profession, with a future lessened function, it is the clear duty of every physician to encourage those schools whose standards are in advance of others. Every established physician is asked by young men whether he should study medicine or not, and at which college he should matriculate. So long as the poor commercial college is advised so long will our present educational disgrace persist, and so long does the fault lie at our doors. We have the cure of our special evil in our own hands. We must starve the low-standard commercial medical college to death or to decency.—*American Medicine.*

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GUARNIERI'S VACCINE BODIES.

In 1892 Guarnieri announced that by inoculating vaccine lymph into the cornea of rabbits certain cell inclusions—"cytoryctes"—form, which he and others after him are inclined to regard as the causative agent of vaccinia. These experiments have been repeated by others and the results obtained have been interpreted variously, some regarding the bodies as parasites, others as the product of cellular degeneration. An exceedingly thorough and elaborate study was made by Hückel,[1] who reached the conclusion that the intracellular bodies in question were the products of a specific degeneration of the cytoplasm induced by the vaccine virus and by the vaccine virus only.

In the meantime the whole subject has been worked over again in what seems to be a most painstaking and critical manner by Wasielewsky[2] in C. Fraenkel's Institute in Halle, and from this article, which is the summary of work extending over eight years, the following conclusions seem to merit general notice: The so-called vaccine bodies appear regularly in the epithelial cells of the rabbit's cornea when active lymph is introduced into a small canal or pocket in the cornea. These bodies correspond to the bodies found in the skin in variola and vaccinia, bodies that do not occur in the healthy skin or in skin the seat of other lesions than those mentioned. From a careful review of the work of others, as well as from their own results, both Hückel and Wasielewsky are firmly convinced that these bodies can not be made to appear in the corneal cells by any other procedure. The vaccine bodies are not leucocytes or the products of leucocytes, and they do not spring from the nuclei of the epithelial cells of the cornea. There are many considerations that speak against their development as the result of specific toxic action on the protoplasm of the cells—Hückel's theory. Such specific toxic action affecting single parts of cells does not seem to be known outside of this possible case, and such rapid vacuolation and granular disintegration as are seen in the vaccine bodies do not occur in degenerative products. The vaccine bodies occur in dividing cells—an observation somewhat difficult to reconcile with the view that they are of toxic, degenerative character. The filtrate of vaccine lymph is inactive and it does not produce vaccine bodies in the cornea. On the other hand, the number, size, structure and distribution of vaccine bodies correspond well with Guarnieri's view that they are cellular parasites.

Wasielewsky shows that active vaccine may be obtained after successive inoculations from cornea to cornea through no less than 46 generations, a circumstance that points strongly to the proliferation of the vaccine virus at the points of inoculations. Careful microscopic and bacteriologic examination failed to show ordinary micro-organisms in the corneal inoculations, whereas the vaccine bodies occurred constantly from first generation to last. Hence Wasielewsky regards Guarnieri's view that the vaccine bodies themselves are the active agents of vaccine as very probably correct. Inasmuch as the causative agent of vaccinia is held back by filters there is no good reason to regard it as so remarkably minute that it can not be seen with the optical means at our command. On the whole Wasielewsky makes out a strong chain of presumptive evidence in favor of the etiologic rôle of the vaccine bodies. The fact that active vaccine, as shown by experiments both on calves and on children, was secured after 46 inoculations from cornea to cornea at intervals of a few days, vaccine bodies appearing in plentiful numbers in every cornea, certainly indicates the closest possible relationship between vaccine virus and vaccine bodies. At the same time Wasielewsky does not insist that his interpretation is definitive and unchangeable. Granting the parasitic character of vaccine bodies, too little is as yet known about them to warrant discussion as to their exact nature, whether protozoic or vegetable. Their possible relations to Funck's sporidium vaccinale[3] must be left in abeyance for the same reason.

1. Ziegler's Beiträge, Supplementheft ii, 1898.
2. Zeitschr. f. Hyg. u. Infectionskr., 1901, xxxviii, 212-318.

ANKYLOSTOMIASIS.

The report in this issue by Dr. Hall of a case of ankylostomiasis in a sailor, dying from this disease in Baltimore, shows the importance of careful examination of the feces in obscure cases of anemia associated with intestinal disturbances. Ankylostomiasis, or uncinariosis, is a comparatively unknown disease in the United States. In some of the new possessions, however, it is probably quite as frequent as in other countries, such as Egypt. According to Lieutenant B. K. Ashford[1] ankylostomiasis is the most general and most harmful disease—a veritable curse—in Porto Rico. Allyn and Beard[2], reporting a case in an Italian in Philadelphia, review some of the cases observed in this country, and they express the belief that it is more frequent than the few scattered reports seem to indicate[3]. The diagnosis is established by finding the ankylostoma eggs in the feces. The eggs are described by Manson[4] as beautifully clear and transparent, 55 to 65 by 32 to 43 mikrons in

3. See Journal A. M. A., Aug. 31, 1901, p. 582.
1. New York Medical Journal, 1900, April 14.
2. American Medicine, 1901, ii, 63-66.
3. See also Stiles, Texas Med. News, 1901, July; Thomas A. Clayton, Phil. Med. Journ., 1901, June 29; and The Journal A. M. A., 1901, Nov. 9, p. 1259.
4. Tropical Diseases, Revised, 1900, pp. 578 and 581-594.

size, oval, with delicate transparent shells, through which two or four light gray yolk segments can be seen distinctly. The ova are to be sought for soon after the feces are passed.

As indicated by the variety of names bestowed upon the disease (brickmaker's anemia, miner's cachexia, tunnel anemia) it occurs especially among laborers that come in close contact with dirt and soil. The disease is of extraordinary frequency in Egypt (Egyptian chlorosis), Ceylon, India and elsewhere, especially in tropical and subtropical countries. A very fatal epidemic among the laborers in the St. Gothard tunnel in 1880 called the direct attention of European observers to the disease and to the significance of the minute, blood-sucking parasite that causes it. Ankylostomum duodenale, or uncinaria duodenalis discovered by Dubini in 1838, inhabits the jejunum and adjacent parts of the intestine; it attaches itself to the mucous membrane and imbibes blood freely, producing a severe anemia by removing blood, the plasma alone being utilized by the worm; it is probable that it also produces a toxic effect. Dyspeptic symptoms and intestinal disturbances are also caused. The female worms produce a prodigious number of eggs, which hatch outside the body if kept warm in feces mixed with soil. Manson states that Grassi and Parona have estimated that 150 to 180 eggs per cubic centigram of feces indicate an infection of about 1000 worms, male and female; this gives an idea of the intensity of the infection.

The authors are not in accord as to the mode of infection. Many assume that the parasite enters the intestine "by chance," either in muddy drinking water or by way of mud and dirt adhering to the hands, food or eating utensils, while Looss[5] advances the theory that the larvæ enter through the skin. Placing a drop of suspension of larvæ upon the skin of an extremity an hour before amputation, Looss saw that the larvæ penetrated into the hair follicles. Looss claims that he became infected in this way. As larval suspensions dry on the skin an area of redness and burning results. Looss' theory makes infection of those who work in soil very easy. The reasons that would determine the localization of the mature worms in the jejunum seem very obscure, but not any more so than those that determine the wanderings of trichinella spiralis into the skeletal muscles. The prophylaxis of ankylostomiasis rests upon the prevention of mixing of fresh infected feces with earth. In the curative treatment the principal agents, according to Manson, are thymol and male fern. Thymol is now used more commonly than male fern, the quantity being three or four 10 to 30 grain doses on an empty stomach at intervals of an hour, preceded by a thorough emptying of the bowels, and followed by rest in bed and avoidance of alcoholics. "An equally efficient but safer drug is a desideratum."

5. See Editorial note, JOURNAL, 1901, July 13.

THE MEDICAL POLITICIAN AND THE MEDICAL STATESMAN.

In general public affairs the distinction between the politician—in the *fin-de-siècle* rather opprobrious meaning of the word—and the statesman, is not a difficult one to apprehend. Popular usage has determined the signification of "politician" to be "one who interests himself in public affairs for personal gain," while "statesman" still means "one who devotes his time and energies to the public weal," asking no reward but that satisfaction which comes from a sense of duty well done. In medical polity, which is coming to be an important department of medicine, the term "medical politician" has been for many years freely used in the opprobrious sense. That it has in large part been thus justly employed it is fruitless to deny. The facts are well known to all. The term "medical statesman" has up to this time not been found necessary. The need for it, however, is at hand, for a race of medical statesmen is already among us. They have been few, but are steadily increasing in number and influence. In the various states to-day pure-hearted physicians are cheerfully sacrificing time and means in the altruistic task of properly organizing the medical profession and of leading it towards its highest ideals of public and professional usefulness. These men ask no reward except the satisfaction of having accomplished good work. They are content with the respect of their fellows. Viewed from the standpoint of economics they are constructive statesmen, and the more honorable descriptive term should not be withheld. They are not "politicians" in the up-to-date American sense of the term. They should be honored, as well as very properly now are the pioneers in scientific medical research, in order that others whose tastes run in this direction may be encouraged to follow the same paths. Medicine in America to-day stands in need of just such a body of physicians.

No doubt, as was the rule in the past, designing ones in hope of personal enrichment in money or reputation, will attempt to pose as leaders in this branch of medical polity, but physicians can in a short time readily discriminate between him who works for the general good and him who seeks only self-advancement. The marks are not difficult to read, especially in the eyes of an educated profession. Everywhere physicians must see to it that the true statesmen of the profession are put to the front in those places in which they are so greatly needed. For instance, the secretaries of the state medical societies and the delegates to the House of Delegates of the American Medical Association should be carefully chosen from this class. The presidents of the state medical societies and many other officers in all descriptions of medical societies may appropriately be men who have attained eminence in practice or in scientific research, but the secretaries and delegates should be honest men of medical affairs.

Let us seek for and encourage the real statesmen among us. Let us put them where their talents will be

of the greatest service to medicine, and then let us support them heartily and loyally. In return for the loss of practice necessarily sustained by those who honestly execute the duties of such offices as demand continuous effort and time-consuming attention, the members of medical societies—who should be all eligible physicians—should freely put their hands in their pockets. Valuable time and fruitful endeavor must be compensated at least to the extent of insuring the livelihood of those who conscientiously give their time for the general good. Other callings with vastly less high ideals have long followed this policy with great benefit to themselves. Why should the physician refuse to do the same? Let us encourage a race of fairly-paid medical statesmen, and then medicine will shortly occupy a place in public esteem and sociologic influence that is otherwise absolutely unattainable. In South and Central America and on the continent of Europe, physicians frequently play the highest parts in public affairs, greatly to the benefit of the nation and to the standing of the profession of medicine. The same thing can be done in the United States if physicians are willing to follow the suggestions herein outlined. We must find a proper place for the term "Medical Statesman."

PROGRESS IN GLANDULAR SURGERY.

Recent advances in abdominal surgery have made certain supposedly hopeless medical conditions amenable to surgical treatment with very satisfactory results. Morrison's operation for the establishment of a collateral circulation to relieve the congested portal circulation, and so prevent the annoying ascites which is so marked a feature of hepatic cirrhosis, has in many cases afforded so much benefit to the patient as to constitute practically a symptomatic cure for some years. Jonnesco's suggestion of the removal of the enlarged spleen in cases of malarial cachexia has proved of great value in preventing the hitherto inevitable progress of the disease from bad to worse. Without serious risk in cases that are not too advanced patients are given a new lease of life. The indications and contra-indications for both these important operations are now in course of definition at the hands of surgeons in many countries and the prognosis and eventual limitation of applicability of the procedures to individual cases will soon be established.

When with serious degenerative conditions in these large abdominal glands, the liver and spleen became the favorable objects of surgical intervention, it was almost to be expected that kidney disease would also prove amenable to enterprising yet conservative surgery. There are two recent reports in this matter that are most encouraging. While in this country last year Mr. Reginald Harrison, the distinguished English genito-urinary specialist, mentioned in his lectures his favorable experience with operative interference in certain severe cases of acute nephritis. The anuria that sometimes develops during acute kidney disease, Mr. Harrison believes to be due to congestion of the organ. The pressure within the kidney capsule becomes so great that secretory activity is eventually inhibited. This condition which Mr. Harrison epitomizes as glaucoma of the kidney, can be relieved by slitting the renal capsule. The urinary secretion is at once re-established and unless the pressure within the kidney has been allowed to continue for so long that parenchymatous degeneration has set in, recovery from the hitherto usually fatal anuria is complete.

Another phase of surgical intervention in kidney disease, this time chronic, came up at the recent meeting of the New York State Medical Association. Professor Edebohls, of New York City, in discussing the subject of floating kidney, said that in his experience three cases of chronic nephritis had been relieved after the formation of adhesions for the anchorage of a prolapsing kidney. The relief afforded in one case three years after operation, amounts to a symptomatic cure. Not only has the albumin disappeared from the urine but the tendency to edema has been overcome and the general health has distinctly improved. After several years with almost constant loss of weight the patient has now put on flesh. The other cases are as satisfactory in their results, though not under observation for so long a time. Dr. Edebohls now proposes, in cases of chronic nephritis, to attempt their surgical relief by operation for the production of extensive kidney adhesions.

Dr. Edebohls' theory of the cause of the benefit that accrued to these patients is that the increased blood supply obtained by the kidney from the adhesions prevents further degeneration and encourages the formation of new portions of kidney substance. It seems to have been demonstrated experimentally by German observers that new islets of renal parenchyma may be formed even comparatively late in life. As we begin the new century we are probably in the presence of an unexpected but beneficent invasion of surgery into what has been hitherto deemed the exclusive domain of medicine. Further surgical intervention for the relief of glandular disease may be confidently looked for. The field is large and surgical success will be welcomed by the medical man for whom these cases have, as a rule, been obstinate to treatment and despairingly hopeless.

TRADES-UNIONISM IN MEDICINE.

Recently our news columns have contained reports of the forming of medico-business organizations in various parts of the country, their objects being to protect their members against dead-beatism—to coin a word. Some of them have adopted a rule of fining any member who professionally attends those who are blacklisted. It seems that it might be possible to devise a better method than this for self-protection. It has the unpleasant flavor of some of the tyrannous methods of trades-unionism, which as members of an honorable and learned profession we will do well not to adopt. All our humanitarian

traditions are against such a course and upon the proper maintenance of these depends much of our self-respect as well as the respect in which we are held by the public. No medical practitioner can profitably sacrifice his time and services for ingrates and dead-beats, and this alone ought to be sufficient to prevent any systematic breaking of any agreement by members of the organization. bu a fine for doing what might possibly be a necessary act of common humanity is not in accord with medical or any other ethics. These organizations would do well to repeal the regulation, which is more likely than not, if left unrescinded, to damage their future usefulness and possibly imperil their existence.

DESTROY CHINATOWN.

The Annual Report of the San Francisco Board of Health contains the following paragraph:[1] "Chinatown, as it is at present, can not be rendered sanitary except by total obliteration. It should be depopulated, its buildings leveled by fire and its tunnels and cellars laid bare. Its occupants should be colonized on some distant portion of the peninsula, where every building should be constructed under strict municipal regulation, and where every violation of the sanitary laws could be at once detected. The day has passed when a progressive city like San Francisco should feel compelled to tolerate in its midst a foreign community, perpetuated in filth, for the curiosity of tourists, the cupidity of lawyers and the adoration of artists." The Board of Health of San Francisco has made an honorable record in its fight against the plague and the unprincipled commercial interests backed by the state government. That it has had to make this fight is due to the existence of Chinatown which perpetuates a state of heathen barbarism in the central business section of an American city. It is a wonder that it has been tolerated so long; as it exists it is a pestilent nuisance endangering the health not only of the city but of the State of California and the whole United States. Its abolition ought not to be expensive; its proprietors obtain their present income by maintaining it as a nuisance, and with it redeemed and put to decent business uses they ought to be well repaid for any loss by an enhanced value of their real estate. So long as they permit it to be continued in its present condition it would be only decent justice to mulct them by heavy fines for keeping up a disease-breeding nuisance.

THE SPREAD OF EPIDEMIC CEREBROSPINAL MENINGITIS.

At the nineteenth Congress for Internal Medicine in Berlin, in April this year, Jäger called the attention to certain interesting conditions in regard to the spread of epidemic cerebrospinal meningitis. This disease has not figured to any extent in the ordinary statistical tables except when more marked epidemics appeared. Since it has become more or less common and in some places even a fixed custom to endeavor to establish an etiologic diagnosis of sporadic meningitis by means of the bacteriologic examination of the exudate obtained by lumbar puncture, it has been found that probably the majority of the cases of sporadic meningitis are caused by the meningococcus, that is, belong to the epidemic form. An exact statistical study is not possible as yet, but from the figures at hand Jäger points out the remarkable fact that epidemic cerebrospinal meningitis appears to be "exorbitantly widespread" in certain American localities, especially in New York, Boston and other cities. He speaks of the United States as the seat of endemic foci of the disease, whence it is carried to European seaports, which in turn become new centers of dissemination. He would explain the recent epidemics in Copenhagen on this score. Considerable numbers of cases have also occurred in Hamburg and Kiel. The evidence on which Jäger makes this deduction does not seem to be free from other equally reasonable interpretations. Granting that the germs may be transported across the Atlantic, it would seem rather singular if other seaports in Europe did not also become infected, if Jäger's surmises were true. He makes no reference to English ports, for instance. Certainly a more comprehensive investigation is needed before any such deductions as he draws may be warranted. As the matter now stands it would seem to be just as reasonable, if not more so, to trace the invasion of New York and Boston by meningitis to the importation of the infection from European ports.

1. Quoted in the San Francisco Bulletin of November 15.

POLITICS AND HEALTH OFFICERS.

It has been a pleasure during recent years to observe the excellent work that is being done in the way of preventive medicine by the health departments of several of our large cities, under the management of efficient and qualified health officers. The work done is worthy of the commendation and encouragement of all. That it demands special knowledge that can not be learned in a day is recognized by everyone who is competent to form an opinion, and is evident even to the laity when they take notice of the differences that exist between a competent and an incompetent administration. It seems to be a needed step further that politicians should come to recognize this fact. Just why political partisanship should be a qualification for such office would be a hard matter for them to explain, but they act too often entirely upon this presumption. Ordinary business common sense would condemn the spoils method here, but there is a moral argument that is still stronger against it. Shall the public health be endangered by inexperience, by the lack of interest and zeal that such a system entails? If officials were held duly responsible for the consequences of their acts, there would be a fearful score against those who by unfit appointments and political changes endanger the public health. These thoughts are suggested by the fact that there is in the city of Buffalo at the present time an active interest on the part of the medical profession in a proposed change in the health office there. Dr. Ernest Wende, who has held the position of health commissioner for ten years, has made an admirable record, but is likely to be removed on political grounds. The physicians, however, are strongly and righteously exercised about it and are doing what they can to have Wende retained. There

is no criticism of him personally, nor of his work; the only reason apparent is that he does not belong to the political party coming into power. Its leaders and the mayor-elect, who has the appointing power, will do well for themselves and their party if they disregard the unwholesome precedents of the party spoils system and keep a competent and efficient official instead of putting what may with absolute truth be called the vital interests of the city into untried hands. The time has pretty nearly arrived when politicians who sacrifice these for the sake of personal or party reasons will be considered public enemies and violators of a sacred public trust. There is no better opportunity than this for the mayor of Buffalo to demonstrate his fitness for his position and due sense of his official responsibility.

THE CANADIAN MEDICAL PROFESSION.

A Canadian journal[1] takes up the proposition to establish a branch of the British Medical Association in Toronto and does not look upon it altogether with a favorable eye. It complains of the small part Canadian physicians take in the medical progress of the world and sees but little stimulus to effort in the small and ill-supported provincial medical societies. It doubts, however, whether making themselves an appendage to the larger bodies of the mother country will be a remedy. It says that Canadians lack confidence in themselves; they are always looking to England, over-rating English medical qualifications as compared with their own, which really represent as high or even higher attainments, and generally accepting the subordinate position that seems to be considered proper. They are, our contemporary suggests, too content to "bask in the reflected light of British medical achievements" and not independent and enterprising enough to make a name for themselves. We would have hesitated to offer these criticisms ourselves for fear of hurting their feelings, and in repeating them here we do not wish to unqualifiedly endorse them. There are Canadians doing good work in McGill and elsewhere and we hope there will be still more. Some of the leading Canadian physicians have taken an active part in special associations on this side of the line, where they seem to find adequate stimulus and professional sympathy. There is much truth, nevertheless, in the statements made by our Canadian exchange that so long as the Canadian profession is willing to keep up a merely colonial spirit and play second fiddle to Great Britain in professional matters it will suffer not only in its proper self-appreciation but also in the appreciation of others. Its best scientific spirit and work can not be evolved so long as such a condition exists. Britain is too distant and too insular in many ways to have the best influence on the medical profession of half a continent, even admitting that two-thirds of that half is not inhabited. The American profession is closer in medical thought to the Canadian physician than is that of Great Britain, and it will be a pity if our brethren over the line persist in ignoring this fact. We may say there are no boundaries in science, but there is a certain affinity and influence in contiguity and like environment even in scientific matters, all the more when there are no racial or linguistic barriers. The suggestion that Canadian medical men intermingle more with their American professional confrères and look less humbly up to English medicine is one that perhaps they will do well to consider. It is in no way disparaging to British medicine—which we in this country duly respect and appreciate—to say that it can not in the nature of things influence so advantageously the profession of Canada as can that of the United States. Whether the Canadians realize this or not is less a matter of importance to us than to them. The best of their leading men do realize it and give evidence of it in the professional associations.

1. Dominion Medical Monthly, October.

Medical News.

CALIFORNIA.

French Hospital.—The contracts for building the new French Hospital, Los Angeles, have been awarded. The building will cost about $10,000.

Emergency Hospital.—Ground was broken, November 4, for the new Emergency Hospital, Los Angeles, which is to be erected at a cost of $50,000.

Personal.—Dr. A. W. Hitt, formerly of Chicago, has located in Geyserville.——Dr. Theodore F. Johnson, National City, has been appointed coroner of San Diego County, vice Dr. Horace P. Woodward, Escondido, deceased.——Dr. James W. Clark, Santa Rosa, sustained a fracture of the scapula and other injuries by being thrown from his buggy, November 17.

St. Elmo's Hospital Closed.—By order of Dr. Frederick W. Hatch, State Superintendent of Hospitals, the license of the St. Elmo Hospital and Sanatorium, San Francisco, has been suspended, on the ground that too much division of authority between the medical and business heads has existed and does exist, and on the further ground that proper and adequate care and treatment of insane persons is not possible under the present conditions.

GEORGIA.

Cornerstone Laid.—On November 1, with appropriate ceremonies, the cornerstone of the new building of the State Sanatorium, at Milledgeville, was laid.

Dr. A. C. Colson, Peyton, has located in Screven.——Dr. William D. Hoyt has decided to remain in Rome and has resumed practice.——Dr. Fred G. Barfield has opened an office in Savannah.

IDAHO.

New Doctors.—Out of eleven recent applicants for license to practice medicine, seven passed and were granted certificates.

Proposed Lewiston Hospital.—A favorable report has been made on the proposed establishment of a hospital at Lewiston, to be conducted by Catholic sisters, and it is expected that active work will soon be commenced on the building.

Unlicensed Practitioner Jailed.—M. A. Blatchly, who has been practicing in the vicinity of Idaho Falls, has been tried at Blackfoot for practicing medicine without a license, and sentenced to pay a find of $300 and to be confined in the county jail for six months.

ILLINOIS.

Personal.—Dr. James F. Dick, Mount Pleasant, has moved to Wolf Lake.——Dr. Robert W. Markley, Nunda, has located in Blackstone.——Dr. Henry O. Smith, Sycamore, has opened an office in De Kalb.

New Hospital.—J. Brynteson and P. H. Anderson, Rockford, have each donated $25,000, to be used in the erection of a hospital for the Mission Church, subject to the beginning of building operations before March 20 next.

Communicable Diseases.—Diphtheria is causing alarm at Evanston. Sixty cases have been reported in the last two months.——Typhoid fever is epidemic in Kankakee, where 75 cases are reported, and in the country around Ottawa.——Scarlet fever has appeared in Atlanta.——Smallpox is reported from Roseville, Roodhouse, Lukensville, and from two towns in Logan County.

Chicago.

Mercy Hospital Report.—During the last year $104,395.15 was received; and the hospital now has an indebtedness of $134,609.53. An amphitheater, buildings for nurses, and a laundry were erected during the year.

Personal.—Dr. Guy G. Dowdall, has located in Clinton, Ill. ——Dr. Edmund R. Moras, who was seriously injured in a street-car accident in 1896, which resulted in the amputation of his arm below the elbow, has been awarded $36.000 damages.

Decrease in Typhoid Mortality.—There is a marked decrease of typhoid mortality noted for the week, but the character of the water supply gives no assurance of a continuance of the present remarkable freedom from the impure water diseases.

Dunning Institutions' Investigation.—Drs. Frank Billings and Hugh T. Patrick are the medical members of the committee appointed by the president of the County Board to investigate the county institutions at Dunning. The committee has already commenced its work.

The general health of the city, as indicated by the mortality rate of 12.97 per 1000 per annum, remains good, although there is a continuous increase of the pneumonia germs found in the laboratory examinations. Influenza continues to spread, but is, fortunately, of a mild type, only two deaths from this cause being reported last week.

INDIANA.

Small Compensation.—Dr. James N. McCoy, Vincennes, who treated smallpox cases for the city for twenty days, sued the city for $650 and received judgment for $239.40, has compromised the matter for $100.

Dr. Adolf Wermuth, Fort Wayne, assistant professor of pathology at the Fort Wayne College of Medicine, has been forced to resign on account of failing health, and Dr. James B. McEvoy has taken up his work.

Smallpox is raging in Spencer County; Lincoln City and Gentryville are quarantined; Newtonville has 15 cases, and cases are also reported from Rockport and Little Pigeon.—— Three new cases have been discovered at Lafayette.

IOWA.

Smallpox has re-appeared in Council Bluffs, where two cases have been reported. The epidemic last winter has resulted in claims against the county of nearly $7000.

Physician Wins Suit.—Dr. William D. Middleton, Davenport, who sued for $170 fees for assisting at an operation, was awarded $150 by the jury. The defense was that the operation was not a success.

Personal.—Dr. Franklin W. Sells, Murray, has been appointed examining surgeon of the Keokuk & Western Railway, and will spend a portion of his time in Osceola.——Dr. Bruce H. Stover, Marengo, has located in Spencer.——Dr. Daniel W. Jackson, Villisca, has sold his practice to Dr. W. W. West, Hepburn.——Dr. J. Jackson Crider, Ottumwa, has located in Burlington.

To Regulate Osteopathy.—The State Board of Medical Examiners has nominated a legislative committee consisting of Attorney-General Mullan, Dr. Alexander M. Linn, Des Moines, Dr. John C. Shrader, Iowa City, Dr. Fred W. Powers, Reinbeck, to formulate a stringent bill to regulate osteopathy or shut it off entirely. Dr. John C. Shrader submitted a report on the examination of the Still College, holding the course was not up to the standard prescribed by the Board.

MAINE.

Board of Medical Registration.—The Board has passed on the papers of the eleven applicants examined at Portland, November 14, and has admitted eight to registration.

School Inspection.—Portland has inaugurated a system of daily school inspection. The physicians appointed for this purpose are Drs. Ralph F. Goodhue, Willis H. Kimball, Henry P. Merrill, Jr., Albion H. Little, William Cammett and Ralph W. Bucknam.

Personal.—Dr. Nathaniel H. Crosby, Monson, has changed his field of practice to Milo.——Dr. John F. Benjamin, Kenduskeag, has moved to Bangor.——Dr. Eugene M. McCarty, Woodfords, has located in Knightsville.——Dr. Percy E. Butler, late of Milltown, N. B., has located in Rolling Dam. ——Dr. A. A. Brown, Southwest Harbor, has moved to Monson.

MASSACHUSETTS.

Diphtheria is epidemic in Lowell; about 90 cases have been reported and an order has been passed appropriating $30,000 for a contagious-disease hospital.

Smallpox is epidemic in Roxbury and South Boston. There are now 250 patients in the isolation hospital and from 2 to 17 new cases are reported every day.——The disease has appeared in Taunton.

Gift to Newton Hospital.—The trustees of the Morse Hospital, Newton, have received from Holis H. Hunnewell a gift of $15,000 in Chicago, Burlington & Quincy Railroad Company 4 per cent bonds, without restrictions as to how the money shall be used.

MICHIGAN.

Free Vaccination.—The Board of Health of Marshall has instructed the health officer to vaccinate free of charge all individuals who were unable to pay.

Unlicensed Practitioner Flees.—An irregular practicing at Center Line, fled on hearing that a warrant had been issued for his arrest on the charge of practicing medicine without complying with the law.

Smallpox.—There are now 23 cases in the county hospital at Houghton.——Seven cases are reported from Elsie.——In several suburbs of Calumet public schools have been closed on account of the disease.

Personal.—Dr. Chauncey L. Barber, Lansing, has located in Calumet.——Dr. Lyston H. D. Pierce, Plainwell, expects to locate in South Africa, and leaves for the seat of war, December 11.

Comparative Morbidity.—For the month of October, compared with the preceding month, pneumonia, pleuritis, whooping cough and diphtheria were more prevalent; and diarrhea, intermittent fever, dysentery, cholera morbus, cholera infantum and inflammation of bowels were less prevalent. For the month of October, compared with the average for October in the 10 years, 1891-1900, scarlet fever, smallpox and measles were more than usually prevalent; and intermittent fever, dysentery, cholera morbus, remittent fever, diphtheria, erysipelas and cerebrospinal meningitis were less than usually prevalent.

Communicable Diseases.—Cerebrospinal meningitis was reported during October, at 4 places; measles at 30 places; whooping cough at 31 places; smallpox at 54 places; diphtheria at 85 places; scarlet fever at 186 places; consumption at 194 places; and typhoid fever at 233 places. Reports from all sources show cerebrospinal meningitis reported at 2 places less; measles at 5 places more; whooping cough at 11 places more; smallpox at 11 places more; diphtheria at 25 places more; scarlet fever at 59 places more; consumption at 1 place more; and typhoid fever at 22 places more, in the month of October, 1901, than in the preceding month.

MINNESOTA.

Grateful Patient.—By the will of John J. Lawless, of St. Paul, $10,000 is bequeathed to his physician, Dr. Charles E. Smith.

Personal.—Dr. Axcel C. Baker, Oronoco, has been appointed to the house staff of Wesley Hospital, Chicago.——Dr. David F. Rae, Pelican Rapids, has moved to Fergus Falls.——Dr. George H. Lowthian has moved from Dennison to Glenville.

Smallpox.—There have been 216 new cases discovered in sixty localities in thirty-four counties. The report of two weeks ago showed only 144 cases. Three hundred is a conservative estimate of the total number of cases at present in quarantine in the state. There are 7 new cases in Chanhassan township, Carver County, and 6 in the village of Barnesville, Clay County. In McCrea township, Marshall County, there are 10 new cases and Norman County has a total of 18 cases. Otter Tail County has a total of 17 new cases, 11 of which are in the village of Pelican Rapids. Polk County has a total of 14 cases, 10 of which have been discovered in Crookston. The village of Starbuck, Pope County, has a total of 18 cases and the village of Red Lake Falls has 39 cases, making a total for Red Lake County of 51 cases of the disease. There are 12 cases in Duluth.

MISSOURI.

Dr. George H. Rushby, who located in Millersburg last spring, has moved to Columbia.

The Coroner's verdict in the tetanus cases charging the St. Louis Health Department with negligence in the care and dis-

tribution of the city antitoxin was not unexpected. The report of the experts, Drs. Fisch, Waldron and Bolton was prepared with great care. There is no question as to the competency of the physician in charge, but the evidence shows that untrained helpers did much of the responsible work in drawing, preparing and labeling the serum, and proper tests were not made before distribution. Meanwhile the public press is urging the fixing of the responsibility and the end is not yet.

Tubereulosis Ordinanee.—As predicted, the City Council of St. Louis refused to pass the "tuberculosis bill" as presented by the Health Commissioner. It was urged by the committee of the Medieal Society that the proposed general registration of all tuberculous cases and disinfection of rooms would be inoperative and an injustice. A modification agreed upon by the medical members of the Board of Health and the Society's eommittee will shortly be presented. It substitutes care and thorough cleanliness for the so-called disinfection, and requires that the physieian shall notify the Board of Health of each advaneed case, where in the opinion of the physician cleansing of the apartment and enforced sanitation is indicated. In other words the physician is made responsible and can call on the Board of Health when needed.

St. Louis.

St. Louis Water Supply.—The question of the pure water supply grows in interest. It will be one of the topies in the Washington University lecture course this winter. There is reason to believe that St. Louis will have a pure water service second to none in the country. Two plans are proposed: one to build a large filtration plant and use the Mississippi River water, and the other, to convey the water from several great springs in the Ozark Mountains. Engineers are making reports on both propositions.

The hospital faeilities of St. Louis are being largely increased. The new City Hospital, on the site of the old one, is progressing somewhat slowly, but steadily. The Jewish Hospital in the western part of the eity is building, and near it will be the new St. Luke's. St. Anthony's on Grand Avenue, although new, is well patronized, and is one of the best and finest hospitals anywhere. Mount St. Rose, the new hospital for eonsumptives, is nearing completion and is almost a duplicate of St. Anthony's in size and construction. The Barnes Hospital, with its $1,000,000 endowment, has, for some doubtless wise reason, been held back by the trustees.

NEBRASKA.

Personal.—Dr. George R. Gilbert, dispensary physician at Union Pacifie headquarters, Omaha, has been transferred to Cumberland, Wyo., where he is to be surgeon for the coal department of the road.——Dr. Seymour H. Smith, emergency surgeon for Omaha and the bridge district, has assumed the duties formerly performed by Dr. Gilbert.

Complaint Filed.—Health Officer Rohde, of Lincoln, has filed a complaint charging Dr. Charles A. Shoemaker, a homeopathic physician, with violating city law, in the following language: that "while being a physician within the said city did wilfully neglect for more than twelve hours after obtaining knowledge of the same to report a case of eontagious disease, to wit: Smallpox, said case having the symptoms of smallpox."

Smallpox.—St. Dervin, Nemaha County, has 26 cases of the disease.——On account of the general re-appearance of smallpox the State Board of Health has issued a circular from which the following extracts are made: "Present indications threaten, for the coming winter in Nebraska, a more widespread and serious epidemie than has been known in the state for many years. It ean readily be controlled by proper quarantine and isolation. That it may be possible to loeate every ease promptly the State Board of Health demands of every practitioner of medicine in the state of Nebraska that he report by letter every case of smallpox eoming under his notice within twenty-four hours of his knowledge of said case, such report to be addressed to George H. Brash, M.D., Beatrice, seeretary of the board. It is further resolved by the board that failure to make such report shall be sufficient cause for the revocation of the certifieate to practiee medicine in Nebraska, of the party failing to make such report."

NEW JERSEY.

Smallpox.—Two new cases have been discovered in Newark.

Louis Leroy, B.S., M.D., of Newark, has been appointed State Bacteriologist of Tennessee, and has moved to Nashville.

City Hospital, Newark.—The new City Hospital, Newark, was formally opened, November 12, and turned over to the Board of Health by the Common Council. The hospital consists of a main building with wings and a home for nurses and attendants. It will accommodate several hundred patients and is fitted up in aecordance with the most modern requirements.

Tetanus in Camden.—Following the epidemic in St. Louis, nine deaths from tetanus in Camden have caused a panic among the parents of that city. Although vaccination was promptly forbidden, most careful investigation has thus far failed to disclose any connection between the vaccine virus employed and the tetanus which apparently followed the vaccination. Furthermore, no case of tetanus occurred after vaccination within the known incubation period of the disease.

NEW YORK.

Consumption Hospital Site.—The latest rumor from Albany regarding this much-discussed question is that the board of managers of the proposed state hospital for those threatened with eonsumption had made a positive decision in favor of the Ray Brook site, and it was highly probable the Board of Review would approve of this action. The Ray Brook site is midway between Saranac Village and Lake Placid, in the Adirondacks.

Proposed Union of New York Soeiety and Assoeiation.—In his inaugural address as President of the Medical Society of the County of New York, last Monday evening, Dr. Frank Van Fleet said that one of his avowed objects was to promote a friendlier feeling between the members of that Society and the forces now working in antagonism to them, to the end that the spirit of usefulness of the two bodies might be increased and that there might be a thoroughly united profession. With this objeet in view, he urged the Society to extend the olive branch and exhaust every honorable means to bring about a reconciliation between the Association and the Society. After the address the following motion, made by Dr. D. B. St. John Roosa, was unanimously adopted: Resolved, That the president of the Medical Society of the County of New York appoint a committee of five, of which he shall be chairman, provided a similar committee be named by the New York County Medical Assoeiation; that these two committees shall confer with referenee to the union of the two organizations and that this committee be requested to report to the Society at the stated meeting in January, 1902, or sooner, in order that this Society may, if desirable, make a recommendation to the Medical Society of the State of New York at its next annual meeting.

New York City.

Dr. Smith Ely Jelliffe has been appointed Visiting Neurologist to the City Hospital.

The new German hospital, Brooklyn, received about $2000 as the result of a benefit concert given at the Academy of Music, November 18.

Leetures on Orthopedie Surgery.—The trustees of the New York Orthopedic Dispensary and Hospital announce that the surgeon-in-chief, Dr. Russell A. Hibbs, will give a course of clinieal lectures on orthopedic surgery at the institution, on Monday and Thursday, 5 p. m., from Dec. 2, 1901, to Jan. 2, 1902 (both inclusive). The eourse will be free to the medical profession and students.

Woman's Hospital Anniversary.—The Woman's Hospital in the State of New York celebrated its 46th anniversary at the Berkeley School, November 21. Addresses were made by Dr. William M. Polk, dean of Cornell University Medical School, and by the Rev. Charles Cuthbert Hall, of Union Theological Seminary. The hospital expenses for the year were $67,966, and the subscriptions $358,368, about $250,000 short of the sum needed for an administration building and a new pavilion, which the governors have under consideration. In all, 836 indoor and 3830 outdoor patients received eare.

Buffalo.

Mortality.—The report of the Department of Health for October shows a mortality rate of 14.68 per 1000 per annum. Consumption was responsible for 42 deaths, typhoid fever for 11, and diphtheria for 13.

Dr. Lewellys F. Barker, professor of anatomy in the University of Chieago, addressed the Seetion on Pathology of the Buffalo Aeademy of Medicine, November 19, on "The Unveiling of the Cell." He emphasized that physiological chemistry is the scienee which underlies all branches of medicine.

Smallpox.—Twelve new cases of smallpox have appeared in a densely-populated Polish district of the city. As the cases were diagnosed as chicken-pox and there was no quarantine the

health authorities consider the condition grave, but are doing everything possible to avert an epidemic. One of the patients, a child who had not been vaccinated, died.

PENNSYLVANIA.

Dedication of Hospital Annex.—The Percival Roberts memorial annex to St. Timothy's Hospital, Philadelphia, was dedicated with appropriate ceremonies, November 16.

To Build Hospital.—Meyer Guggenheim, New York, has announced his intention to give $60,000 to the Jewish Hospital Association of Philadelphia, to be used for the erection of a hospital for private patients, which shall be known as the Meyer Guggenheim Private Hospital.

Personal.—Dr. Stephen E. Tracy, who recently completed a two years' term of service as resident in the Kensington Hospital for Women, Philadelphia, will locate in San Francisco. ——Dr. Francis B. Davison, Fleetville, has moved to West Pittston.——Dr. John Beattie, Philadelphia, has opened an office in Lebanon.——Dr. Joseph D. Thomas, Pittsburg, is seriously ill.

Smallpox.—Residents of Sharon Hill refuse to be vaccinated and protest against compulsory vaccination, braving a penalty of $25 thereby.——Chester has three new cases of smallpox.——Shamokin and Coal Township have ten new cases and one death.——Because of the prevalence of smallpox in various parts of the city, it has been decided by the Philadelphia Hospital authorities that general visiting to that institution shall be prohibited until the danger of the epidemic has passed.

CANADA.

Anthrax is quite prevalent near Brockville, Ontario.

Child Insurance and Infanticide.—The Quebec Provincial Board of Health has passed strong resolutions requesting the Government of the Dominion to prohibit child insurance, which they claim leads to excessive infant mortality in that province.

Lockjaw from Vaccine.—The public press reports two cases of lockjaw following the use of vaccine. One case comes from Halifax, N. S., and the other from Three Rivers, Que. The Provincial Board of Health of Quebec does not recommend any other vaccine than the glycerinated vaccine.

The National Sanitarium Association objects to Toronto submitting any by-law to the people in January as proposed for $50,000 for the purposes of a consumption sanitarium, claiming that they had bought a site for the above purpose and were going on with the work.

Montreal General Hospital.—The regular quarterly meeting of the Board was held last week. The report of the medical superintendent, Dr. von Eberts, stated that during the quarter 720 patients had been treated to a conclusion in the public wards of the hospital. Of this number 64 died, 32 of which deaths occurred within three days of admission, making the mortality percentage for ordinary hospital cases 4.65.

Royal Victoria Hospital, Montreal.—When Lord Strathcona and Lord Mountstephen built the Royal Victoria Hospital, they also endowed it and transferred 9000 shares of Great Northern stock as a nucleus of the endowment fund, which then paid a dividend of $20,000. Since that time the road has become such a money-maker that the dividends have been doubled, and the income of the hospital is now in the neighborhood of $40,000 a year from this source alone.

Inspection of Immigrants.—Dr. James Barclay, Montreal, has been appointed medical advisor of the new Immigration Board appointed in that city by the United States government. This Board will meet daily, and all immigrants destined for the United States will undergo inspection by them, and in addition undergo a medical examination by Dr. Barclay. The jurisdiction of this Board will extend from the City of Quebec to Niagara Falls. Trachomatous subjects will be debarred and returned to their native country.

Personal.—Dr. C. B. Keenan, Ottawa, has been appointed surgical pathologist to the Royal Victoria Hospital, Montreal, and is to have charge of the surgical work in the outdoor department. Dr. Keenan was formerly senior house surgeon at the Royal Victoria.——When landing at Digby the other day from St. John, Dr. Montizambert, the director-general of public health, being unknown to the quarantine officers, was obliged to submit evidence of recent vaccination. After exhibiting several scars which were satisfactory to the officers, the Doctor made himself known.

Smallpox is still on the increase at Ottawa. The order calling for compulsory vaccination has been rescinded by the City Council.——Smallpox is prevalent at St. Hyacinthe, Que., and the regular city physician being unable to care for all the patients, has had a physician appointed for each ward to assist him. Another order has been issued by the Quebec Board of Health insisting on compulsory vaccination.——The Canadian Pacific Railway Company, the Richelieu and Ontario Navigation Company and the Grand Trunk Railway Company have issued orders for a general vaccination of all their employes in the City of Montreal. ——There are eleven cases of smallpox in the Civic Hospital, Montreal.

Resignation of Dean Craik of McGill.—Robert Craik, LL.D., M.D., C.M., dean of the Medical Faculty of McGill, after a service of many years, has intimated his desire to retire from office. He will be asked to become a governor of the institution, this distinction being a rare one in the history of this famous university. Dr. Craik has been associated with McGill during the whole of his professional life, and has witnessed the development of the Medical Faculty from a mere school of thirty members to an important department of the University, with a total enrolment of over 500 students, in medicine alone. He matriculated in 1850 and was graduated M.D., C.M., in 1854, with the highest honors in his class. In 1889, on the death of Dr. R. Palmer Howard, he was appointed to the deanship. He holds the chair of hygiene and public health. Dr. Girdwood, professor of chemistry, is senior professor in order for the position, although the name of Dr. T. G. Roddick, M.P., has been mentioned in connection with the position.

LONDON LETTER.

The London School of Tropical Medicine.

At the opening of the third session of the London School of Tropical Medicine, Lord Brassey delivered an opening address in which he showed the great and rapidly-increasing importance of this new institution and the necessity for more funds. The Colonial Office has contributed $17,500, and the India Office $5000. The school was originally intended for the instruction of surgeons in the colonial and Indian services, but private students, missionaries and physicians have been admitted. The demand for instruction in tropical medicine is much greater than was anticipated. During the last session it has been necessary to refuse several students. About $500,000 is required to place the school in a satisfactory position. Dr. Patrick Manson said that the students were no callow youths, but men of experience, many of them with gray hairs. Enlarged laboratories, a lecture room and a museum were wanted. He appealed for funds on the strength of the work done by the students. One of them, Dr. George Low, discovered in the West Indies that over 11 per cent. of the inhabitants of Barbadoes were infected with filariæ and that by simple inexpensive measures the disease could be eradicated in a generation. Dr. H. E. Durham is going on behalf of the school to study diseases in the South Pacific. He accompanied Dr. W. Myers to Brazil to study yellow fever. Both contracted the disease, and Dr. Myers succumbed to it. The English government, in spite of its vast tropical possessions, is very niggardly beside the German government in encouraging research. The latter has sent medical expeditions to Brioni (Istria), Lussinpiccolo (Istria), German South West Africa, New Guinea, German East Africa and the Marshall Islands, and further expeditions are being planned. On behalf of the London School of Tropical Medicine Sir Francis Lovell, late surgeon-general of Trinidad, is about to undertake an expedition to the tropics to collect funds. He will apply to the British residents in the East and other tropical countries. He will go to India, Ceylon, Straits Settlements, China, Japan, New Zealand and Australia, and will probably return by the United States and Canada.

Typhoid Fever, the Destroyer of Armies, and Its Abolition.

At the United Service Institution, Dr. H. E. Leigh Canney delivered a lecture on this subject. Sir William Broadbent presided, and the lecture was well attended. Examples were quoted of the disastrous effect of typhoid fever on armies, for example, the recent Paardeberg outbreak. The following method of prevention was advocated as absolutely reliable and less likely to error and requiring less skill than filtration or chemical processes. The apparatus consists of a cylindrical copper boiler with a large heating surface below arranged in wedge-shaped pockets and a capacity of 50 pints, an iron stand, and a petroleum lamp, which burns with rapid and complete combustion under air pressure. The whole weighs 38½ lbs.

and measures 33 inches in height and 17 inches in diameter. The apparatus is constructed so as to allow of ready repair if shot through. Cloths are to be used to strain mud from the water. Fifty pints of water can be raised from 54 F. to the boiling point in 11 minutes, three-quarters of a pint of petroleum being consumed. One mule carrying 200 lbs., could transport the following supplies for the unit of 100 men. Two machines in cases with lamps and stands, 42 pints of petroleum (sufficient to supply 4 pints of boiled water daily for each of 100 men for 7 days), sugar, tea, meat extract, vegetable powder, saddle, 2 collapsible buckets and ropes. No water should be drunk not supplied by the "water section." The men working the water section should be specially trained. The advantages of the scheme are: 1, total immunity from water-borne disease which causes four-fifths of the mortality of invading armies; 2, absence of discomfort and inefficiency on the march from minor illness; 3, accessible tea, meat-extract, soup, etc., several times a day on the line of march; 4, enormous reduction of transport. In the discussion which followed the chairman, Major Firth, professor of military hygiene at Netley, Major General Lord Dundonald, Dr. Washbourne, Dr. Conan Doyle and others took part. The lecturer's scheme was highly commended.

Smallpox in London.

The outbreak of smallpox still continues. An average of 12.6 cases are admitted daily to hospital. There are 311 cases under treatment.

Plague.

No fresh cases have been reported in Glasgow or Liverpool since the last report to The Journal. The plague returns from India for the week ending October 12 and 19 show the number of deaths to have been 8551 and 8372. During the corresponding weeks of 1900 the mortality was only a third of this. In Egypt during the week ending October 27 there were only 2 fresh cases, and November 2, 2 cases. At the Cape only one fresh case is reported for the week ending November 2. In the Island of Mauritius, 85 fresh cases and 50 deaths occurred in the week ending November 7.

PARIS LETTER.

Two Cases of Sudden Death from Medullar Cocainization.

Professor Legueu, surgeon of the hospitals, has reported recently at the Society of Surgery two cases of death from medullar cocainization, which took place in his service at the Hotel Dieu. According to Dr. Legueu, no fault could be found with the manner in which the injection was made, nor with the solution used, which was analyzed. The only attenuating circumstance was the condition of the patients. The first one, who was operated for the rupture of the triceps tendon, had had an attack of apoplexy. He was stout and suffering from emphysema; moreover, the heart sounds were indistinct, and and there was atheroma of the arteries. Dr. Legueu felt that chloroform was hardly indicated, and decided unwisely, as he admitted, to use cocain. A little less than 2 cubic centimeters of cocain were injected. Just as Dr. Legueu was opening the articulation to remove the clots of blood, the patient complained of feeling oppressed, and asked to be placed in a sitting position. Hardly had this been done, when his face was convulsed, and he fell back dead, his complexion taking on a dark hue. An autopsy was not performed. The second case concerned a man 61 years old, suffering from strangulated hernia, dating from two days back. The condition was far from good, the pulse being at 140. Dr. Fredet, the chef de clinique, had been called, and he decided to use cocain. Only 1.5 centigrams were injected very slowly. The patient had already been prepared when the breathing began to be labored and vomiting took place twice. The face grew pale; the forehead was covered with perspiration, and notwithstanding two injections of ether death took place only twelve minutes after the injection. An autopsy was carried out. There were no signs of heart disease, but the right lung showed several infarcts of recent formation, about six to eight in all. The kidneys were diminished in size, but the capsule was easily removed. The cortical substance was, however, slightly diminished, not being more than 6 to 8 millimeters thick. The heart had stopped in systole, and as there were no signs of possible uremia, it may well be thought that death was due to syncope, caused by the action of the drug on the bulb. Dr. Legueu added that he considered two deaths out of 200 cases a rather large percentage, and he had decided for the present to refrain from using cocain. He considers that cocain may be sometimes indicated, but there are certain cases where it is best to abstain from its use.

Medullar Cocainization for Operations on the Head.

Such accidents as those described above do not seem to deter some operators from using larger doses, and Dr. Chaput of the Tenon Hospital, has been able to carry out recently operations on the arm and head. The doses used varied from 3 to 4 centigrams. In speaking of one of the operations on the arm, a disarticulation of the wrist, Dr. Chaput remarked that the patient complained of the pain, but did not cry out much. Of the three operations on the head and neck, one was for suppurating tubercular glands, another for removing the styloid process of the temporal, and a third for an abscess of the maxillar region. The dose given in this latter case was 4 centigrams and anesthesia of the chin existed after 14 minutes. Dr. Chaput admitted that analgesia was not complete, and said that it would be necessary to choose courageous subjects for such operations. One must admit that it does not seem quite clear why local anesthesia might not be used as well in such cases. Dr. Chaput recommends the following procedure before and after the injection. The patient should not eat before the operation; an hour before, he should be given an alcoholic mixture with 25 drops of tincture of digitalis and 20 grams of syrup of morphia. An elastic band should be placed around the neck before the injection. The injection should be made quickly, and immediately after 500 grams of saline solution should be injected under the skin of the thigh. All this, according to Dr. Chaput, would diminish noticeably all possible danger. He considers that anesthesia of the head should only be sought by this method when general or local anesthesia by other means are contraindicated.

Guinard's Modification of Tuffier's Technique.

Dr. Guinard claims to have found a means of suppressing all after-effects of medullar cocainization by using a solution of cocain in the rachidian liquid of the patient operated on. He described his technique at the recent Congress of Surgery. He collects 60 to 80 drops of this liquid in a sterilized bottle and adds 6 to 7 drops of a concentrated solution of cocain, about 1 centigram to 2 drops of water. The whole is then injected slowly. Dr. Guinard remarked that he had already carried out 50 operations with this technique, without a single accident. An article by Drs. Desfosses and Dumont was published on medullar cocainization. In a footnote they alluded to this modification of Dr. Guinard, and said: "Dr. Guinard would seem to have performed 50 operations." Dr. Guinard sent a paragraph to the *Presse Médicale* of November 13, in which he said this should be read as follows: "Dr. Guinard has performed over 70 operations without a single post-cocain accident." It is certainly a fact that medullar cocainization has caused a good deal of emulation, if not rivalry, among the surgeons who have employed it. Nothing of late has been heard from Professor Reclus, who showed himself so determined an adversary of its indiscriminate use. One finds that among the physicians of the hospitals as well as the men under them there is still a certain doubt as to its harmlessness, and the argument that they would not care to have themselves operated on in such manner would seem to plead in favor of reserving it for some few special cases.

Medical Knowledge Taught by Theatrical Plays.

There is a tendency on the part of playwrights in France to try to teach the public certain medical facts by means of the theater. Not long ago a play called *Les Remplaçantes* showed the evils of employing wet nurses. Still more recently a drama called *Le Baillon*, i. e., "The Gag," was given as a means of showing the results of professional secrecy. A young woman is brought up in ignorance of the fact that she is tuberculous. One lover finds it out before the marriage ceremony takes place and jilts her. Another, who is kept in ignorance, finds it out when it is too late. The unconscious victim of this disease is looked upon as a plague-stricken creature, and wonders why even children are not allowed to embrace her. She at last finds out the secret. The dramatic author, Brieux, has recently finished a play called *Les Avariés, avarié* meaning decayed, spoilt, and in it he shows the danger of luetic contagion in marriage. He is a member of the league against syphilis, recently founded by several prominent medical men, among them being Fournier, and their ideas on this subject are put forth in this play. The public censor forbade, however, the giving of the play before the general public, so a select audience was chosen and the piece read to them by Brieux. There is nothing wrong in itself in the play, but it is to be doubted whether such topics can well be placed before the general public.

No Case of Bubonic Plague as Yet in France.

There has been quite a discussion at the Academy of Medicine on the quarantine inflicted on the passengers of the

Senegal. Dr. Bucquoy, who was on board, made some remarks on the lack of serum on board the boat, to which is due the death which took place. According to Dr. Proust, who is one of the best-known hygienists in France, it is impossible to oblige any but emigrant ships to carry serum. According to Dr. Debove, there is no lack of funds, as the state has not used half the amount which results from sanitary taxes. Dr. Monod made the remark that so far no case of plague had been seen in France, whereas in England, Scotland, Italy and Portugal there had already been several.

Professor Debove Chosen as Dean.

Professor Brouardel, who had filled the position of dean of the Paris Faculty for fifteen years, has just resigned, and his place has been taken by Professor Debove, who was named professor of clinical medecine when Potain retired.

Correspondence.

Reception of Professor Senn and His Companions in Tokio.

TOKYO, JAPAN, Oct. 25, 1901.

To the Editor:—I hope by this correspondence that our American professional brethren will understand that we Japanese medical men appreciate what is being done now in the United States for the advancement of Medicine. We were pleased to have received a visit from Drs. Nicholas Senn, Daniel R. Brower, Jacob Frank and William M. Mastin, while they were encircling the globe.

On the evening of the 27th a dinner was given in honor of the distinguished guests by the members of the Medical Profession in Tokio, Dr. Mastin being, much to our regret, detained in Yokohama on business, and a large company assembled, dinner commencing at 6:30. The hall was beautifully decorated and on the *menu* cards the flags of the United States and Japan were crossed in amicable folds. Baron Hashimoto proposed the health of our visitors, which was drunk with enthusiasm, after which Dr. Kitasato, of bacteriological fame, delivered an address in German, of which the following is a short abstract:

"Meine Herren! Es ist eine Ehre für uns, dass wir heute den berühmten Chirurg aus Chicago willkommen heissen, ich meine Herrn Prof. Dr. Nicholas Senn. Wir Japaner sind den Herren Amerikanern sehr dankbar für die Civilisation unseres Vaterlandes, denn der erste, welcher das geschlossene Thor Japans geöffnet hat, war der damalige amerikanische Commodore Perry; seither sind wir so weit gekommen, dass auch Japan zu den civilisirten Ländern der Erdoberfläche gehört.

"Vor einigen Monaten haben wir hier zwei grosse Forscher unter den amerikanischen Medicinern kennen gelernt, nämlich die Herren Prof. Dr. Mitchell und Prof. Dr. Keen, und jetzt zum dritten Male ist unser hochgeehrter Herr Prof. Dr. Senn bei uns; es ist das Zeichen, welches auch die Medicin zwischen Amerika und Japan in nähere Verbindung bringt.

"Meine Herren! Sie gestatten mir also, dass ich mein Glas erhebe und ein Hoch ausbringe auf Herrn Prof. Dr. Senn. Herr Prof. Dr. Senn lebe hoch, hoch und noch einmal hoch!"

The next speech was delivered in English by Dr. S. Suzuki, Deputy Surgeon-General of the Japanese Navy. After referring to the many interchanges of amicalities between the United States and Japan, and to the recent courtesy of the U. S. Government in sending a fleet to the unveiling of the Perry Monument at Uraga, he expressed the hope that the medical relations between the two countries might become closer. Japanese students of medicine have hitherto generally gone to Europe for study, but in no country had medical science made such strides as in America, and it was an honor to them all to welcome so eminent an exponent of American science as Dr. Senn, whose works on various branches of surgery and on the military surgery during the late Spanish-American war were well known to Japanese students of military science. He hoped that the medical bonds between the two countries would be drawn closer.

Dr. Tomatsuri then rose and spoke of the time when Dr. Senn and he had been thrown together in Cuba and Porto Rico during the Spanish-American war, and was glad to have this opportunity of publicly recording his gratitude for the great kindness he had received from Dr. Senn at that time. He had done his best to introduce Dr. Senn and his friends to everybody present; but he was sure that Dr. Senn would not remember all their names. He therefore took the liberty of presenting him with a list containing the names of all the company present, and hoped that Dr. Senn would accept it as a reminder of his many friends in Japan. Dr. Senn, in reply, spoke first in English and then in German. He had been much pleased, as every traveler is, with the natural beauties of the country in which he was traveling. Since coming to Tokio, he had been not only pleased but impressed with the evident progress of medical science. He had visited medical colleges, institutes, hospitals, all of which seemed to be perfectly organized, but what had struck him most was the completeness of the laboratory accommodation attached to these institutions. The Red Cross Society, too, had impressed him very much, and as a foreigner he felt pround to stand before them with the badge of the Society on his breast. He should have a great deal to say to his medical friends in the United States about the progress of this Society, and he felt sure that the Imperial Princes and Princesses, Barons Ishiguro and Hashimoto and all the other ladies and gentlemen connected with the Society deserved much praise for their successful work of charity. The flags of Japan and America had often been crossed before in token of amity, but never before, he believed, on any occasion connected with the medical profession. He took it as a good omen for the progress of medical science in both countries, in the light of the rising sun by day, by the light of the twinkling stars by night. He concluded by expressing his warmest thanks to Surgeon-General Baron Saneyoshi and to Fleet Surgeon Tomatsuri, but for whose kindness he would have been unable to get the thorough knowledge of Tokio medical work which he had now obtained.

Then, speaking in German, after reiterating many of the sentiments expressed in his English speech, he regretted that the time was too short to enable him to make their better acquaintance as he would leave Yokohama the next day. The dinner came to an end about 8:15 p. m. After a short conversation in the drawing room, our guests took their departure to catch the 9:20 train for Yokohama. Professors Kitazato and Sato, Deputy Surgeons-General Totsuka and Suzuki, and Fleet Surgeon Tomatsuri, accompanied them as far as the depot. The party left Yokohama for San Francisco per *America Maru,* at noon, September 28.

DR. B. TOMATSURI,
Fleet Surgeon I. J. Navy.

"A Place to Clean the Teeth Needed in Railroad Car."

PITTSBURG, PA., Nov. 23, 1901.

To the Editor:—The communication of Dr. Henry D. Fulton in THE JOURNAL of November 9, on the needs of a proper place for cleaning the teeth in the toilet room of sleeping cars, and your own observations on the subject, in the same issue, are most timely and important.

While every traveler with any sense of refinement must have regarded this filthy practice with disgust, that is, the spitting and cleaning of the teeth in bowls that are used for washing the face, it is strange that no protest has been entered against it or remedy suggested. Surely the ingenuity of the modern car-builder could quickly devise a remedy if the public would only insist on it. I have not for many years used these bowls nor any other bowls in public places for washing purposes, but always wash with the running water from the spigot.

However, in the sleeping car this can not be done, as you have remarked, as the spigot is too near the bowl, and the water will not flow continuously. My method is simple, and is doubtless resorted to by many other travelers. It is the following: Take a clean towel and soak the half of it under the spigot of the drinking water tank, being careful to let no part of it touch the marble slab. The face and neck can then be washed very comfortably and refreshingly with this wet towel, which can be wrung out over the bowl and again saturated as

often as desired. Besides this, one has the delightful satisfaction of knowing that he is not being contaminated with filthy things.

Can you not bring Dr. Fulton's brief but forcible letter to the attention of the sleeping-car companies?

SAMUEL AYRES, M.D.

Cause of Asthma.

DEPEW, N. Y., Nov. 18, 1901.

To the Editor:—In your report of the meeting of the New York State Medical Association last month, you stated that my "idea is that asthma arises from an inability of the blood to carry the requisite quantity of oxygen," whereas I claimed that this abnormality of the blood causes but one variety of asthma, the asthmatic anematosis. The dyspnea in the other varieties of asthma, i. e., the asthmatic lymphocytosis and the asthmatic toxic leucocytosis, is due largely to a tubular obstruction from the disintegration of an unstable blood, which in the lymphocytic variety fills the air tubes with lymph and mucus; that together with the collateral engorgement of the lymph capillaries nearly closes the lumen of the air tube, while in the toxic leucocytic variety the glands in the larynx and air-tubes are enlarged, producing the wheeze and dyspnea.

Yours respectfully, G. N. JACK, M.D.

Married.

LOWERY H. BEAR, M.D., to Miss Zella Barnett, both of Vevay, Ind., November 12.

ROY L. CONNOR, M.D., Detroit, Mich., to Miss Daisy B. Wick, at Baltimore, November 14.

WILLIAM L. RENICK, M.D., to Miss Adah Roberts, both of Butte, Mont., November 12.

JOHN A. BADGLEY, M.D., Malta, Ill., to Miss Genevieve M. Wright, at Chicago, November 5.

GEORGE C. WEGEFARTH, M.D., to Miss Margaret Wiessner, both of Baltimore, November 14.

ANDREW HENDERSON WHITBRIDGE, M.D., to Miss Madeline Lavinia Gary, both of Baltimore, November 14.

ABRAM BARNES HOOE, M.D., to Miss Eliza Nutt Mitchell, at Irvington, Lancaster County, Va., November 12.

THOMPSON J. TAYLOR, M.D., Richmond, Ky., to Miss Long, Georgetown, Ky., at Irvine, Ky., November 11.

ALEXANDER GRAY FELL, M.D., Wilkesbarre, Pa., to Miss Rena Maud Howe, Green Ridge, Pa., November 14.

LESLIE C. BROCK, M. D., Smithfield, Va., to Miss Annie Lelia Minton, Everetts, Isle of Wight County, Va., November 6.

Deaths and Obituaries.

James F. Alexander, M.D., University of Georgia, Augusta, 1849, died at his home in Atlanta, November 14, after an illness of one month, aged 77. He was a native of South Carolina, but after his graduation located in Atlanta. He was an ardent secessionist and at the outbreak of the war went to the front with the Seventh Georgia Infantry. After six months' service he was assigned to hospital duty in Atlanta. He was prominent in the medical profession and served as a member of the local board of health for ten years, and as its president for several terms; he was also a member and some-time treasurer and president of the Medical Association of Georgia. While serving on the board of health in 1896, during the yellow fever scare, he opened the doors of Atlanta to the refugees, and his contention that the disease would not spread in Atlanta was shown to be correct.

Stuart Eldridge, M.D., Acting Assistant Surgeon, U. S. Marine-Hospital Service, on duty in the office of the United States Consul General, Yokohama, Japan, is dead. He was a native of New Jersey, lived in Waukesha, Wis., for several years, and was afterward connected with the Agricultural Department, Washington. In 1871 he went to Japan with General Horace Capron, and was afterward employed by the Japanese government, and organized hospitals at Hakodate and elsewhere. He was assigned to duty in Yokohama in 1894.

Levi L. Todd, M.D., University of Louisville, Ky., 1856, a member of the American Medical Association and one of the oldest and most esteemed practitioners of Indianapolis, Ind., died at his home in that city, November 16, from heart disease, aged 71. He commenced the practice of medicine in Paris, Ill., in 1858, and moved to Indianapolis in 1874. He was a member and at one time president of the Marion County Medical Society and a professor in the College of Physicians and Surgeons.

Dwight W. Day, M.D., University of Buffalo, N. Y., 1861, died suddenly from apoplexy while reading a paper before the Inter-County Medical Society at Eau Claire, November 19, aged 60. Dr. Day was a native of New York, served in the Civil war as surgeon in the Union army, at the close of the war located in Eau Claire and was at one time mayor of the city. He was prominent as a physician and was a member of the American Medical Association.

Zachary Taylor Harvey, M.D., College of Physicians and Surgeons, Chicago, 1883, died at his home in Council Grove, Kan., November 15, from paralysis, aged 49. He was a native of Illinois and practiced for a time in Brooklyn, Ill., but moved to Kansas in 1887. He was a member of the Golden Belt Medical Society, Kansas State Medical Society and of the American Medical Association.

Samuel Ashhurst, M.D., University of Pennsylvania, Philadelphia, 1861, died in London, November 12, from acute bronchitis superinduced by fog, after a short illness, aged 61. As Dr. Ashhurst was a man of independent fortune, he did not practice for pecuniary gain but his work was among his friends and the poor. He was prominent in philanthropic work of all kinds.

David C. Reynolds, M.D., University of Pennsylvania, Philadelphia, 1852, a practitioner successively in McVeytown and Lockhaven, but for the last 25 years a resident of Philadelphia, died at his home in that city from apoplexy, November 12, aged 71. He was the founder of the Commonwealth Provident Association and its medical director.

C. Juste Touatre, M.D., Faculté de Médecine, Paris, France, 1865, who retired from practice three years ago in New Orleans, and went to France to live, died last month in that country. He will be remembered as the author of a work on yellow fever, published by the *New Orleans Medical and Surgical Journal.*

Richard M. Phillips, M.D., Missouri Medical College, St. Louis, 1852, a native of Kentucky, but for more than twenty years a resident of Topeka, Kan., died at his home in that city, November 15, from heart disease associated with dropsy, after an illness of eleven months, aged 74.

James Irving Mareley, M.D., College of Physicians and Surgeons, New York, 1873, was suffocated in a folding-bed at his residence in Buffalo, November 13, aged 54. For several months Dr. Marcley had not been in active practice but had been connected with a furnace company.

Charles R. Stephens, M.D., Bellevue Hospital Medical College, New York, 1874, formerly a practitioner of Omaha, Neb., but of late years a resident of South Pasadena, Cal., died at Victor, Cal., November 14, from pneumonia.

Wilford J. Bates, M.D., Rush Medical College, Chicago, 1861, a practitioner of Ransom, Hillsdale County, Mich., died suddenly, November 16, from heart disease, while making a professional call at Sibley's Corners.

Agnes Turner, M.D., College of Physicians and Surgeons, Chicago, 1901, died at Epworth Hospital, South Bend, Ind., November 18, from nephritis following typhoid fever, after an illness of nine weeks, aged 39.

Henry A. Morgan, M.D., Medical College of Virginia, Richmond, 1850, died suddenly at Suffolk, Va., November 10,

from heart disease, aged 74. He moved to Suffolk from Gates County, N. C., ten years ago.

D. H. Parker, M.D., Medical College of Ohio, Cincinnati, 1873, died at his home in Medon, Tenn., November 14, after a lingering illness, aged 60. He represented Madison County in the state legislature in 1891.

Mortimer Bainbridge Ruggles, Jr., M.D., one of the resident staff of the Manhattan State Hospital, Islip, Long Island, N. Y., died from acute nephritis, November 15, aged 22. He was ill only one day.

James H. George, M.D., Medical College of the State of South Carolina, Charleston, 1876, a prominent physician of Linden, Marengo County, Ala., died at his home in that place, November 10.

George H. Marmion, M.D., University of Pennsylvania, Philadelphia, 1866, a specialist in diseases of the eye and ear, died at his residence in Washington, D. C., November 12, from apoplexy.

Alexander N. Simpson, M.D., Missouri Medical College, St. Louis, 1878, coroner of Mineral County, Colo., was found dead with a bullet wound in his back in his office at Creede, November 16.

T. O. Linthicum, M.D., College of Physicans and Surgeons, Baltimore, 1883, died near Corbins, Caroline County, Va., November 11, from fever, after an illness of several weeks, aged 45.

Andrew J. Stoner, M.D., Jefferson Medical College, Philadelphia, 1853, one of the pioneers of Decatur, Ill., died at the Jacksonville Hospital, November 13, after a short illness, aged 76.

L. A. Schaefer, M.D., University of Halle, Germany, 1869, one of the oldest practitioners at Schuyler, Neb., was run over and killed by a train at that place, November 15.

Guy Coulter, M.D., Jefferson Medical College, Philadelphia, 1889, a well-known physican of Columbus, Ohio, died at Grant Hospital after a short illness, aged 40.

Charles L. Hormanson, M.D., University of Pennsylvania, Philadelphia, 1881, died from Bright's disease, at Onancock, Va., November 16, aged 43.

Isaac K. Snell, M.D., College of Physicians and Surgeons, New York, died at his home in Brooklyn, November 13, aged 77.

Miscellany.

Sanatorium for Tuberculosis.—The Medical Society of St. Louis City Hospital Alumni on November 21, considered the following resolution offered at the meeting of November 7: Whereas, The provision, by state government, of sanatoriums for the reception and care of tuberculous persons has become an acknowledged necessity for the better protection of the public against tuberculosis in its various forms; and, Whereas, Several states already possess such sanatoriums while Missouri, although the fifth state in the Union in order of population, has taken no step toward providing for the establishment of such an institution, therefore be it Resolved, That the Society of City Hospital Alumni recognizes the urgent necessity for an adequate institution designed for the exclusive care and treatment, both hygienic and medical, of tuberculous persons in the State of Missouri, the said institution to be erected and maintained by the state government. 2. That this society shall at once, by correspondence and otherwise, seek to enlist the active co-operation of other medical societies and bodies, and of the public press throughout Missouri to the end that a sanatorium, commensurate with the importance of the object sought, be authorized by legislative action, the same to be erected in some suitable location in the mountainous part of the state. 3. That copies of these resolutions be transmitted to all other medical societies in the state, to medical colleges, to the medical press and the local daily press, to the governor, and members of the general assembly; and that a persistent agitation of this subject be maintained in order that public opinion may be so influenced as to secure favorable action by the next legislature toward the more effectual prevention and control by approved methods of one of the most destructive diseases to which mankind is liable.

DINNER TO DR. T. GAILLARD THOMAS.

About three hundred members of the medical profession assembled at a dinner at Sherry's on the evening of November 21, to commemorate the 70th birthday of Dr. T. Gaillard Thomas, Emeritus Professor of Obstetrics and Gynecology of the College of Physicians and Surgeons. Dr. Thomas was born on Edisto Island, near Charleston, S. C., on November 21, 1831, and was graduated in Charleston in 1852. Shortly after this he was resident physician at Bellevue Hospital, and later spent some time in the Rotunda Hospital, Dublin. Dr. J. W. McLane, New York, presided at the dinner, and many physicians of prominence were present to do honor to their distinguished and venerable guest. Among those who spoke were Dr. W. H. Welch, Baltimore; Dr. George B. Shattuck, Boston; Dr. S. Weir Mitchell, Philadelphia; the Rev. Dr. D. H. Greer, New York, and Judge Howland, New York.

An interesting incident was the reading of the following letter from Dr. John T. Metcalfe, who is in his 84th year:

"The infirmities you wot of forbid me to join in welcoming our friend Doctor Thomas to the 'Senate of the Seventies.' Let this be my tribute to an occasion that I rejoice to have lived to see, that from the summit of my ancestral years his course, in a life as open to me as to himself, appears as the day-dreams of my own youth. Zealous as an associate, faithful as a friend, in my declining years he has unfailingly sought to repay a debt that was never due by the devoted affection of a son."

In response to the many kind things said about him, Dr. Thomas spoke as follows:

Some men are born egotists; some achieve egotism; and upon some egotism is thrust. In the name of simple justice I declare that if I score a record in this line to-night, the surpassing kindness of those who surround these tables is entirely to blame.

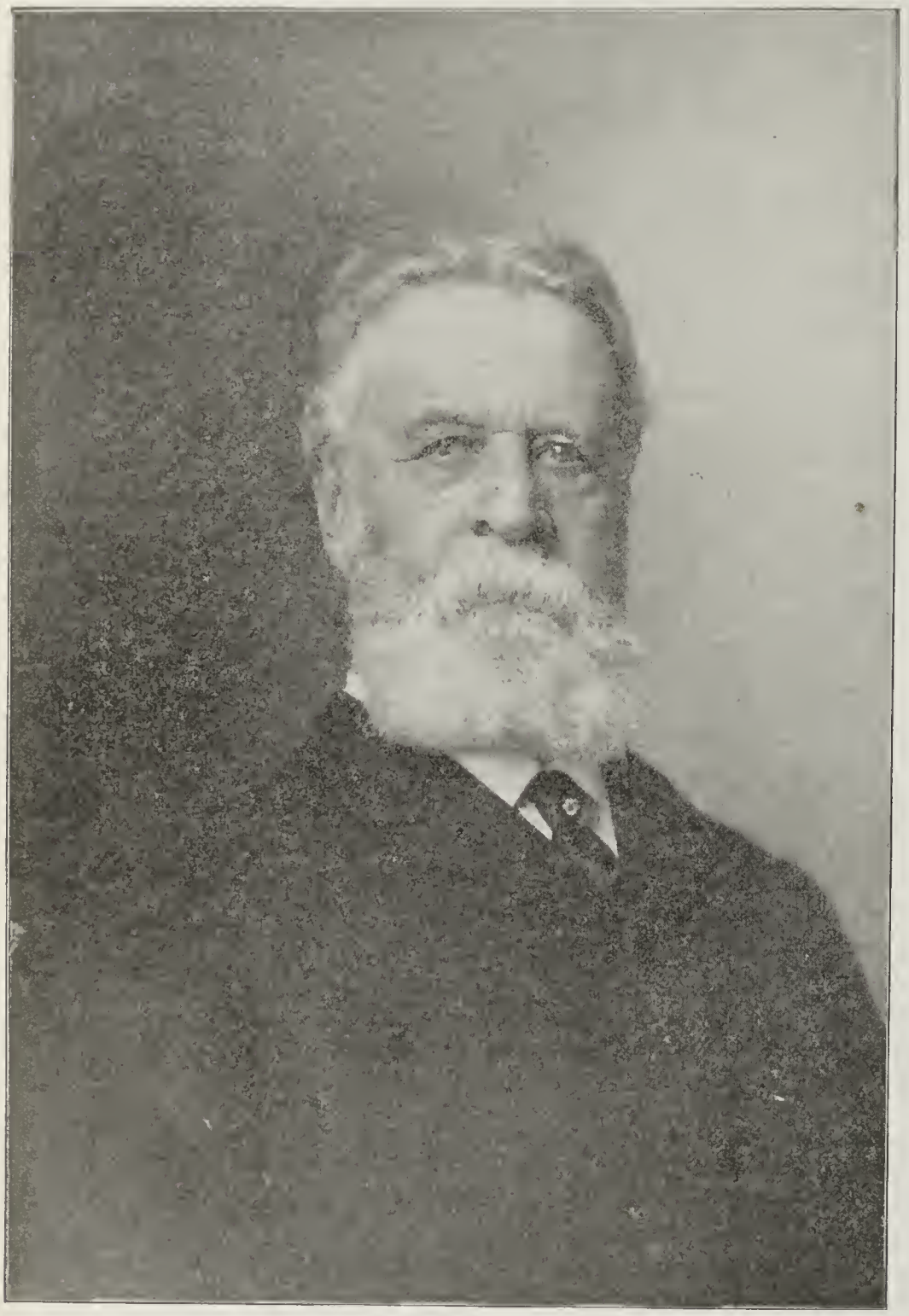
You entertain me at a most charming banquet; invite gentlemen whom princes would be proud to own as sponsors, to speak kindly of my past; and you make me happy by friendly glances which shall be forever engraved upon the tablets of my heart. Even this is by no means the full measure of your kindness to me. Deep down in the depths of the heart of every man of proper feeling, there lurks the desire to have at the close of his career the approval of the fellows of his guild, be that guild a common trade or one of polite learning. You who have borne to me the relation of brother practitioners and have striven beside me, shoulder to shoulder in the keen battle of life; and you, who as students, have judged me as teacher, writer and clinical lecturer, have to-night sealed my past career with the imprimatur of your approval! Than this, no act of yours could have conferred upon me more real pride and pleasure! Through the whole length of a laborious career, which has now reached a half century; in bright periods and in dark ones; in fair weather and in tempestuous; this approval has even been the beacon light upon which mine eyes have rested, the prize for which I have striven. Without it all other success would have been like Dead Sea fruit in my hands, and distinction would have been like dross. Thanks to you, this night will, with its pleasant memories, be ever cherished as the proudest era of my existence!

To-night I feel like an old man who looks into the eyes of his sons and thrills with satisfaction and joy that he has still a hold upon their affections. As I look from face to face I see no strangers here, I see the faces of those whose presence in the college halls has filled me with ambition and urged me on to effort; whose attendance in the hospital wards has brought forth, by their manifest interest, the best that was in me.

As I stand here I look backward down the dim vista of fifty years and see the disembarkation of a young physician of 21, from a coasting schooner from South Carolina, without one acquaintance in this great city, and with a purse no more plethoric than that which usually falls to the lot of the son of a clergyman of the Episcopal church. It is he who now thanks you for celebrating his arrival at threescore years and ten.

As I look I see dimly, like giants enveloped in a mist, the great physicians of the past: the tall, fine figure of the great Valentine Mott, with his classic features and beautiful face; the learned and eccentric John W. Francis; the courteous Delafield, and the erratic Martin Paine; later, the striking and attractive Willard Parker, John Murray Carnochan and Alonzo Clark; and later still, Van Buren, Markoe, Barker, Austin Flint, and the brilliant and accomplished John T. Metcalfe. All gone except the last, who, at the age of 83 years, lives in dignified retirement, surrounded by every blessing for which man can ask in his declining years.

And then my thoughts turn to men of my own period of life. Of these, there were ten young men who clustered as aspirants



DR. T. GAILLARD THOMAS.

for place around the College of Physicians and Surgeons and the University Medical College. They were George T. Elliott, Donaghe, Sands, Draper, Bumstead, Agnew, Otis, Loomis, Budd and myself. Of these ten, nine are gone, and I only remain to recall their names. Truly a half century appears like a long time when estimated by those who have fallen during its passage.

But as I continue my retrospective glance more cheerful reminiscences come to my mind in connection with the wonderful changes which this period has wrought in the science and art of medicine. The science of medicine, founded by Hippocrates in the little Greek Island of Cos, 400 years before Christ, is now 2300 years old! Did it ever occur to you that during the last half century, the fifty years in which you and I have been vouchsafed the great privilege of living, there has been done, for the advancement and growth of medicine, more than was done in the 2250 years which had preceded them? Think for a moment of the wonders which we have seen effected in and for medicine in that time! We have seen the "cellular pathology" of that most eminent of living physicians, Rudolph Virchow, proved true beyond question, and made the basis of a grand and imposing superstructure. We have seen pain annihilated by anesthesia, so that the human body could lend itself without sensation to the perfection of the surgeon's art; we have seen the vision of the physician so magnified in power as to penetrate the opaque walls of the body; and we have seen surgery, thus aided, lifted up from its lowly estate as a mechanic art and placed almost upon the level of an exact science. We have seen the primordial elements of disease, that bacterial host, invisible to the men of old, brought face to face with us by the miracle-working microscope, and by preventing their agency in the production of sepsis, we have minimized the death-rate of surgical operations, and almost stamped out puerperal fever. Working upon the same lines, we have succeeded in rendering impossible forever those appalling epidemics of the Plague, Yellow Fever and Cholera; those pestilences, which for our fathers "walked by darkness" in their gruesome work of decimating the nations of the earth. We have seen the entire field of gynecological surgery, the world over, revolutionized by the eminent labors of Marion Sims, our late associate, and we have seen practical medicine elevated and freed from previous doubt and uncertainty by the wonderful influence of clinical thermometry.

We have detected the true pathology of those obscure cases of so-called idiopathic peritonitis which, from the very dawn of time until our day, have filled year by year throughout the world, not thousands, but millions of graves, and we have experienced an honest pride in seeing a surgical remedy for appendicitis, their true cause, placed upon an enduring basis by McBurney, a son of New York.

Toward the close of the career of the great Napoleon, his followers designated three months "the hundred days of glory"; well may the votaries of medicine, in surveying the results of the last half-century, designate it our "fifty years of glory!" Remember that I have not been enumerating the great advances made in our noble art in modern times, but only giving examples of those which have made glorious these last fifty years. Will you not then join me in grateful thanks that our destinies have been cast in the most glorious and productive half-century for medicine that the world has ever known!

The man who has devoted fifty years of his life to any one subject must have had fixed in his mind some deductions which, upon such an occasion as this, should be worthy of mention. I venture to cite only two. First, as I have grown old in the ranks of medicine the conviction has been borne in upon me with yearly increasing force that the noble art of healing, that art which the Savior of the World delighted to practice, is destined to become in its full development, in spite of the flood of superstition and credulity which on all sides now assails it, one of the chief bulwalks of society; that the wonderful development which has marked the last half-century is a reliable harbinger of the future; and that the improved and developed medicine of that future will constitute one of the chief factors in shaping the progress and civilization of the world.

Do you ask me: "What shall be the sign when these things shall be fulfilled?" I answer: When, in the cabinet of the President of the United States, there shall be a Secretary of Hygiene, whose function it shall be to avail his country of all that concerns the public health. Then will a vigorous quarantine guard every harbor of our land, an active police hunt down those who adulterate our food; and well-appointed laboratories in every state keep careful watch over the water and milk supplies which are now annually responsible for millions of deaths!

Second, my respect for my brethren of the medical profession throughout the world—from the prosperous professor whose home is a metropolis, to the obscure practitioner who plies his arduous calling, trudging the highways with much of labor, and little of profit—has grown with my growth and strengthened with my strength. And the world at large would share my feelings if it knew, as I do, that any one of these men who was willing to barter honor for gold could by so doing exchange a life of labor and of small means for one of leisure and of luxury. In medicine, the diploma imposes honor upon the physicians, even as the gown does upon the priest; and, Glory be to God, the degradation of the one is as rare as is that of the other!

I must not detain you longer except for the purpose of thanking you for your exceeding kindness. But how am I to thank you for it when its very magnitude makes me bankrupt in thanks? In a few moments I shall leave this brilliantly-lighted hall and emerge into the darker streets below. When I do so, I shall take the initial steps that lead into that decade of man's life which an inspired writer declares will surely be attended by "labor and sorrow." Whether my journey in it be long or short, be assured that the memories of this night will serve to lighten that labor and give surcease to that sorrow.

My kind, good friends; my dear brothers, from the depths of my heart I thank you!

A Story by Telegraph.—From the Washington *News Letter Leaflet*, an eddyite publication apparently devoted to the exploitation of the remarkable healing abilities of its editor, we clip the following: Telegram 1.—Earlham, N. Mex., Aug. 11, 1901. *O. C. Sabin*, 1800 Belmont Avenue, Washington, D. C.: Treat son Earnest for fever. (Signed), ———. Telegram 2.—Earlham, N. Mex., Aug. 13, 1901. *O. C. Sabin*, 1800 Wyoming Avenue, Washington, D. C.: Fever yet; some better; treat parents for fear. (Signed), ———. Telegram 3.—Earlham, N. Mex., Aug. 15, 1901. *O. C. Sabin*, 1800 Belmont Avenue, Washington, D. C.: Earnest well; stop treatment. (Signed), ———. The use of identical methods for the alleviation of both fever and fear—and presumably fractures would receive the same "treatment"— illustrates the therapeutic possibilities of eddyism as accepted by the deluded minds of the followers of that cult.—*Medical Record.*

Official Tests of Drugs in Belgium.—The Belgian authorities publish in the *Bulletin de l'Hygiene Publique* the reports of the inspectors of drug-stores and pharmacies, without mentioning names. The *Semaine Médicale* quotes certain paragraphs from the latest report which explain the variable results obtained from prescriptions in many cases. It states, for instance, that reduced iron is almost always poor, containing sulphids and only 40 to 60 per cent. of iron instead of the proper 89 per cent. Tincture of iodin seldom contains more than 30 to 40 per 1000 of free iodin instead of the normal 70 per 1000. Similar inspection and reports might be of advantage in other countries, it adds. The medical corps and the pharmacists should be enlightened as to the actual composition of the substances they are using.

Official Inspection of Baby Farms.—The Berlin police department is to appoint at once ten women "helpers," whose duties are to visit the women in their district who board children under 4 years of age, and report any neglect or abuses. The "helpers" are to be paid about $120 each.

Societies.

COMING MEETINGS.

Indian Territory Medical Association, Muskogee, Dec. 3-4, 1901
Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Thumb (Mich.) Medical Society.—A new organization consisting of the physicians of Huron, Tuscola and Sanilac counties in the "Thumb" of Michigan is being formed by Dr. William Kerr, Bay City.

Arizona Academy of Medicine.—The annual meeting of the Academy was held at Phoenix, November 7. Dr. Ancil Martin was elected president; Dr. John W. Foss, vice-president, and Dr. Palmer, secretary-treasurer.

Clark County (Ind.) Medical Society.—At the meeting of this Society, held at the Reformatory Hospital, Jeffersonville, November 5, Dr. Davis L. Field was elected secretary, to succeed Dr. Jacob T. Davis, deceased.

Wabash Railway Surgeons' Association.—The annual meeting of the surgeons of the Wabash Railway was held in St. Louis, November 14. Dr. Smith A. Spilman, Ottumwa, Iowa, was elected president; Dr. John T. Rice, Attica, Ind., vice-president, and Dr. Christian B. Stemen, Fort Wayne, Ind., secretary.

Maine Academy of Medicine and Science.—The forty-seventh stated meeting of the Academy was held at Portland, November 11. The invitation to send a representative to the first Congress of Medicine for Egypt, was accepted and Dr. Samuel J. Bassford, Biddeford, appointed delegate. Dr. Edwin M. Fuller, Bath, was elected president and Dr. Charles W. Bray, Portland, trustee to succeed himself.

Medical and Chirurgical Faculty of Maryland.—The semi-annual meeting of this body was held at Elkton, Cecil County, November 19. Two sessions were held, the Faculty being entertained at lunch by the Cecil County Medical Society. The address of welcome was made by Dr. Joseph W. Wallace, Chesapeake City. Many papers were read. A discussion on typhoid fever was opened by Dr. William Osler, Baltimore.

Inter-County (Wis.) Medical Society.—The annual meeting of this Society at Eau Claire was saddened by the death of one of its members, Dr. Dwight W. Day, while reading a paper before the society. Dr. Olaf M. Sattre, Rice Lake, was elected president; Dr. Christian Midelfart, Eau Claire, first vice-president; Dr. E. Lewis Fletcher, Augusta, second vice-president, and Dr. Caroline Hedger, Eau Claire, secretary and treasurer.

Sangamon County (Ill.) Medical Society.—The annual meeting of this Society was held at Springfield, November 11. Dr. Lewis C. Taylor was elected president; Dr. Margaret Taylor Shutt, vice-president; Dr. Frank Fisher, secretary, and Dr. Percy L. Taylor, treasurer, all of Springfield. At the conclusion of the business meeting the members enjoyed a banquet in the tea-room of the Leland, at which J. Norman Dixon was toastmaster.

Southern Colorado Medical Association.—The first annual session of this Society was held at Canon City, November 12 and 13, with about 40 members in attendance. Dr. William A. Campbell, Colorado Springs, was elected president; Dr. Robert J. Peare, Canon City, first vice-president; Dr. Benjamin F. Cunningham, Cripple Creek, second vice-president; Dr. Cyrus F. Taylor, Pueblo, secretary, and Dr. J. A. Blunt, Pueblo, treasurer.

Medical Society of the City Hospital Alumni, St. Louis. This Society held its celebration November 4. More than one hundred sat down to a repast at Faust's. Besides the active local members of the Society, there were in attendance Dr. E. H. Gregory, St. Louis; Dr. Julius Kohl, Belleville, Ill., the oldest member of the Society, and Dr. T. Holland, Hot Springs, Ark. Brief addresses were made by Drs. Gregory, Kohl, Tuholske, Grindon and Lewis.

Washington County (Md.) Medical Society.—This Society held its annual meeting at Hagerstown and elected the following officers: Dr. Hamilton K. Derr, Hagerstown, president; Drs. Henry C. Foster, Clear Spring, and John M. Steck, Smithsburg, vice-presidents; Drs. W. Baker Morrison and W. Preston Miller, Hagerstown, secretaries, and Dr. Christian R. Scheller, Hagerstown, treasurer; Dr. C. L. G.

Anderson, Smithsburg, delivered an address from notes taken in the Spanish-American and Philippine wars.

Franklin County (Pa.) Medical Society.—This society, at a meeting held at Mercersburg, elected the following officers: Dr. P. Brough Montgomery, Chambersburg, president; Drs. Oliver P. Stoey, Roxbury, and J. W. Croft, Waynesboro, vice-presidents; Dr. John J. Coffman, Scotland, recording secretary; Dr. H. Clay Devilbis, Chambersburg, corresponding secretary; Dr. David Maclay, Chambersburg, treasurer, and Dr. H. G. Chritzman, Welsh Run, censor. After the business and scientific meeting a banquet was given at the Mansion House.

Birmingham (Ala.) Medical Library Association.—A meeting of the physicians of Birmingham was held November 9 for the purpose of considering the organization of a library association. Dr. John C. LeGrand was elected president; Dr. Dyer F. Talley, vice-president; Dr. William P. McAdory, secretary, and Dr. Robert V. Mobley, treasurer. It is the purpose of the Association to open a library, equipped with works bearing upon the medical and surgical professions, to be open to the members. All the leading periodicals bearing on these subjects will be taken.

Plant System Medical and Surgical Association.—The first annual meeting of the surgeons of the Plant System was held in Savannah, Ga., November 13 and 14, about sixty members being present. Papers were read by Drs. J. N. Baker, Montgomery, Ala.; A. L. R. Avant, Patterson, Ga.; J. E. Lee, and Robert P. Islar, Waycross, Ga.; and Julian C. Woodruff, Charleston, S.C. The latter city was selected as the next place of meeting, the second Tuesday in November, 1902. Dr. Charles R. Oglesby, Waycross, Ga., was elected president; Dr. Julian C. Woodruff, Charleston, and Dr. William R. Chalker, Lake City, Fla., vice-presidents; and Dr. James H. Lattimer, Waycross, Ga., secretary and treasurer.

California Northern District Medical Association.—The eleventh annual meeting of this body was held in Sacramento, November 12. Addresses of welcome were delivered by Hon. George H. Clark, mayor of Sacramento; Dr. James A. McKee, president of the Sacramento Society for Medical Improvement, and Dr. James H. Parkinson, chairman of the Committee of Arrangements. The following officers were elected: Dr. Charles R. Harry, Stockton, president; Drs. John T. Jones, Grass Valley, Moses W. Ward, Woodland, and Edward W. Twitchell, Sacramento, vice-presidents; Dr. Elmer E. Stone, Marysville, secretary, and Dr. Oscar Stansbury, Chico, treasurer. The proceedings closed with a banquet, over which Dr. Frank B. Sutliff, Sacramento, presided as toastmaster.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, held in Richmond, Va., Nov. 12, 13, 14, 1901.

(Continued from p. 1411.)

President Dr. Manning Simons, Charleston, S. C., in the Chair.

SECOND DAY—MORNING SESSION.

DR. E. G. WILLIAMS, Richmond, Va., reported a case of aneurysm of the abdominal aorta which was treated by injections of a solution of gelatin into the intercellular tissue with marked beneficial results.

Closure of Abdominal Incision; with Remarks on Ventral Hernia.

DR. I. S. STONE, Washington, D. C., read this paper. Ventral hernia following abdominal operations is generally due to wound infection and suppuration, with loss of fat and cellular tissue. Hernia may, however, result from imperfect wound coaptation, or may be a result of some accident after operation. It is not infrequently due to enteroptosis, which may prove an obstacle to success, which may defeat all attempts at relief, however well planned. In all ventral hernia the skin and peritoneum will be found united, a condition which doubtless began soon after the wound was closed. Wound infection will usually result in suppuration with loss of tissue, which leaves a space between the parts and also permits the sutures to become loosened. This space is filled with granulation tissue as healing progresses, but an important change has already occurred, namely, the peritoneum and skin are nearer together than before and the separation of the muscle and fascia has, perhaps, allowed the entrance of a wedge of peritoneum to enter and to still further separate the walls of the wound. It is easily seen that in this way a ventral hernia is practically assured before the wound has entirely healed, or, at least, before firm union has taken place. In fat subjects the greater liability of wound infection increases the danger of hernia, and in these we have the additional factor of greater intra-abdominal pressure. The author has had excellent results with both buried and through-and-through transfixion sutures. He prefers the latter because the material is sterilized with more certainty and the closure requires less time. He prefers to make the incision in or near the median line, does not avoid the muscle, but divides the fibers directly down to the peritoneum.

One of the precautions taken by the writer is to excise the long flap of peritoneum before placing the sutures. This excessive long flap is not well-nourished, and if allowed to remain favors a collection of blood or serum between it and the muscle in front. In any wound of from three to six inches in length a strip of peritoneum of one or two inches in width may be removed with advantage. This disposes of that portion of the peritoneum which has been overstretched during the operation and which has possibly been infected, and which is not well-nourished. The removal of the flap permits a perfect edge-to-edge coaptation and prevents, to some extent, the wedge of peritoneum, which is the beginning of a ventral hernia.

My First Abdominal Section.

DR. THAD. A. REAMY, Cincinnati, read a paper with this title. The operation was done in February, 1864, at the patient's house. She was 60 years of age; married; the mother of three children. The cyst removed proved to be multilocular, weighing with contents, 46 pounds. The incision was made in the median line, and was five inches in length. Adhesions to the parietal peritoneum were extensive and at many points comparatively firm. On their separation, which was done by the fingers, sponge and handle of a scalpel, considerable and persistent hemorrhage supervened. Before attempting to deliver the tumor it was tapped with an ordinary trocar, and patient turned upon her side to deliver the fluid into a vessel. The pedicle was ligated en masse by a heavy cord of shoemaker's thread (not silk). One interesting feature was the manner in which hemorrhage was controlled in this case. Regarding this point Dr. Reamy says: "The weather was cold, with an abundance of clean snow on the ground. I ordered some brought in. Compressing it with my hands into firm balls, it was held against the bleeding surfaces. The bottom of the pelvic cavity soon contained quantities of water from the melting snow, mixed with blood. This was sponged out and the compression with snowballs continued. In a comparatively short time, to my delight, the hemorrhage ceased; when I dried the cavity with sponges, and closed, without drainage, except what could be secured by the ligature already referred to, which was left protruding from the lower angle of the abdominal incision. The abdominal incision was closed by through-and-through sutures of the same material and size as that used for ligating the pedicle." Patient made an excellent recovery.

Some Avoidable Causes for Disaster in Appendicitis Work.

DR. ROBERT T. MORRIS, New York City, read a paper on this subject. Among other things, the author said: If we step out upon the street and get ten healthy policemen, and put half a yard of gauze into their abdominal cavities to-day, we shall find at the end of a week that "we did not get them in time." That is an excuse which is so often offered when we try to make a weak and poisoned appendicitis patient bear what strong men can not bear. If, in addition to the mechanical insult offered by gauze packing, we add the chemical insult of iodoform, we should have still fewer of these policemen in time. They would have what most house surgeons would call septicemia. The differential diagnosis between septicemia and dangerous iodoform poisoning is difficult to make, excepting on the objective evidence offered by the presence of

iodoform in the wound, the presence of free iodin in the urine, and a wound of healthy appearance while the patient is failing. In insidious iodoform poisoning the wound looks well while the patient does not. In septicemia neither the wound nor the patient looks well. That is a constant diagnostic difference. Gauze packing shocks the patient, lessens his natural resistance, and consequently interferes with his manufacture of phagocytes. Treatment of to-day should avoid interference with the patient's ability to furnish abundant leucocytes. Accessible statistics show us that we do not need to employ gauze packing in our appendicitis work.

Extensive and multiple incisions lessen the patient's ability to furnish leucocytes for the occasion when all of his natural protective powers need to be respected by the surgeon. A beginner needs a great deal of room at the patient's expense, but it is in the interest of the patient to work chiefly by the sense of touch through small incisions. In other words, to come as nearly as possible to letting the patient alone. Another approach toward the idea of letting the patient alone consists in rapid work without much exposure or handling of bowel. Almost any appendicitis operation, no matter what the complications, should be completed in from 15 to 30 minutes. Many a patient who is holding finely to his natural resistance at the end of 15 minutes has lost it at the end of 45 minutes. The idea that the surgeon must get all of the pus out of the peritoneal cavity is out of date. The leucocytes will attend to the matter more effectually. The principle is this: the bacteria and the leucocytes are at warfare with each other in any case of infection. The leucocytes may be almost on the point of winning, but not quite. If we step in and help the leucocytes by removing most of the pus, with its army of bacteria and toxins, the balance of power is transferred to the phagocytes, and they are competent to care for the case, as a rule, if the surgeon himself has not disabled the patient's resistance. It is a constant surprise to see how well appendicitis patients recover, and without post-operative complications if we make the way easy for them. The best way, of course, to avoid disaster is for the surgeon to do the operation before the bacteria have operated very much. Physicians sometimes overlook the fact that the patient is undergoing an operation all of the while that bacteria are at work upon the appendix, so that it really comes to be a question as to who shall be allowed to operate in the case, the bacteria or the surgeon.

President's Address.

Dr. Manning Simons, Charleston, directed attention to the deaths of Drs. Hunter McGuire, of Richmond, and W. D. Haggard, of Nashville, both founders of the Association, who had died during the year. These gentlemen were eminent in their profession, honorable and upright in their private lives, and their death is an irreparable loss to the Association. Speaking of medical societies, he stated that they are the natural outcome of the development of the science and art of medicine and surgery, and for this reason they have multiplied in recent years to fulfill the purpose of discussing propositions bearing on the promotion of more systematic observation and plans of operation, and of greater uniformity in the mode of publishing results, as well as for the consideration of matters on which the co-operation of corresponding societies is desired. To the wonderful development of medicine and surgery during the nineteenth century may be traced the increase of such organizations. Private scientific societies have originated chiefly during the past century, the demand for their existence being due to the necessity of increased organization of rapidly developing knowledge and the desire among workers for a common ground to meet, discuss and compare results and collect facts for future generalization.

With reference to qualifications, the speaker said that there should be some provision of a like kind for special examinations to determine the qualifications of those who desire to enter upon the practice of a specialty, and particularly that of surgery and gynecology. In these days of materialism it would seem out of season to speak of the sentimental aspect of medicine, but medicine has certainly had its sentimental side. The times have changed, and physicians have changed with the times. The demands of modern medicine have to a large extent divested the practice of sentiment that formerly surrounded it. It is a question to what degree specialism has led physicians into the paths and methods of ordinary business. Dr. Simons then discussed the relations of the patient to the doctor, and those of the doctor to the patient, saying that they have changed in conformity to the modernized methods of practice.

Second Day—Afternoon Session.

Results Obtained in Sixty Operations for Prostatic Hypertrophy.

Dr. Hugh H. Young, Baltimore, read a paper on this subject. Stimulated by the work of McGill, Belfield, and others, and having performed prostatectomy in ten cases without a death, the author encountered some cases of prostatic enlargement in very old men which seemed to be entirely beyond the reach of a radical operation. On account of these cases he began a trial of the Bottini operation, and the present paper reporting 60 cases is intended to show a comparison of the two methods, and the results he has secured. These cases were classified as follows: prostatectomies, 15; Bottini operations, 40; miscellaneous operations, castrations, etc., 5; total, 60. Taking the prostatectomies, 12 were suprapubic, and 3 perineal. The ages were 4 between 65 and 67, 2 between 60 and 65, 5 between 55 and 60, 2 between 50 and 55, and 2 between 48 and 50. The condition was fairly good in all but 3 cases. Calculus was present in 5 of the 15 cases, and 6 had led catheter lives. In 7 of the 15 cases the hypertrophy was very large; in 3 it was merely a small pedunculated middle lobe. In 11 cases complete enuclcation of the entire prostate was made. In some cases the tumor removed was extremely large. Results: 15 operations, with 2 deaths. Both of these deaths should not have occurred. One patient was undoubtedly septic, had pus kidneys, and should not have been operated until later. In the other case death seemed to have resulted from an infection of the breast after submammary infusion. Of the 13 cases still alive, 12 have gone for periods between six months and three and a half years since operation. Of these 12, 10 may be classed as cured, having no prostatic obstruction, and normal urination. Two are perfectly cured as far as the prostate is concerned, but suffer from cystitis and a contracted bladder, which render urination frequent, though much better than before operation. Taking the Bottini operations, 40 in number, 6 have not been followed. The 34 remaining operations were performed on 31 patients, 3 patients having 2 operations each. The ages were as follows: Over 80, 3 patients; between 75 and 80, 3 patients; all of the above cured. Between 70 and 75, 9 patients; between 65 and 70, 6 patients; between 60 and 65, 6 patients; between 55 and 60, 4 patients. In all, 18 patients over 67 years of age; whereas, among the prostatectomy cases, none were over 67 years of age. Of 15 cases over 70 years of age, all are alive and well.

In discussing the Bottini operation, the author brought out the point that the instrument devised by Freudenberg, while an admirable one, should have more than one blade, so that the operator might have choice as to the depth of cut which should be made in accordance with the size of the prostate. The beak of the instrument is much too sloping, so that several cases have occurred in which the beak has slipped into the urethra and caused dangerous hemorrhage, with sometimes death. In order to correct this and other defects, the author has devised an instrument which, like the Freudenberg instrument, but with four interchangeable blades, can be used according to the case, whether the prostate be large or small. With this instrument he has now performed nine operations, using in those cases all of the blades but one, and can testify to the great service of the ability to use some discretion in the size of the blade that is employed in accordance with the prostatic hypertrophy.

Suprapubic Prostatectomy.

Dr. Floyd W. McRae, Atlanta, followed with a paper on this subject, in which he advocated the early resort to this method of treating enlarged prostate rather than palliative

measures or the seemingly simpler operations of suprapubic fistula, vasectomy, orchidectomy, or the Bottini operation. His reasons were that the seemingly simpler operations are followed by mortality disproportionate to their magnitude; that the relief obtained from them is frequently slight and temporary; that the pathologic conditions were not infrequently aggravated, especially by the Bottini operation. He reported three complete prostatectomies done since May, 1901. The point of originality claimed for the operation is the method of draining. He puts in a retention catheter through the urethra, and closes the bladder and overlying tissues snugly around a parachute drainage tube made out of a soft rubber rectal tube with a single opening at the end, by making four longitudinal slits beginning about one-quarter to three-eighths of an inch from the end of the tube, each slit about an inch long and equidistant from each other, around the circumference of the tube. The four sections are then approximated above and below, by means of a small rubber band put through in the form of a Halsted suture with a large needle. As these sutures are drawn taut, the sections are approximated and the ends flared out somewhat like a parachute. When the bladder is closed, this tube is drawn up so that the flared portion is in firm contact with the anterior bladder wall. The overlying tissues are then closed snugly around the tube and one silkworm-gut suture is put through the tube flush with and through the skin to hold it in position. The flaring of the tube enables the surgeon to draw it firmly against the anterior bladder wall, and by means of the suture put through it and the skin it is prevented from protruding too far into the bladder, avoiding the disagreeable bladder contraction that always takes place if the tube is too long. By this method of drainage the outer ends of the catheter and tube are then put into a urinal which is kept between the legs when the patient is lying on the back, or in front of the thigh when the patient turns from side to side. The advantages claimed for this method of drainage are that the patient is kept absolutely dry and is allowed to turn freely in bed, lying on the back or either side. He reported three operations done by this method since May, 1901, together with a complete pathologic report by Dr. H. F. Harris, pathologist, Atlanta College of Physicians and Surgeons, of the specimens removed. The specimens proved to be "leiomyoma," and "leiomyo-adenoma," with increase of connective tissue as the result of chronic irritation. The irritation noticed in the large specimen evidently followed a Bottini operation done a few months previously, and was associated with phosphatic stone. The patient operated upon in May is now entirely free from bladder irritation, passes a good stream, projecting four and a half to five feet by measurement, when the bladder is moderately distended. Bladder holds, under ordinary conditions, eight ounces by actual measurement, and is capable of holding considerably more. Case 2 is still wearing a McGuire plug, but passes urine readily per urethram. Case 3 is practically well, the suprapubic opening closed, bladder clean, and urine passing freely through the urethra without residue.

Median Perineal Prostatectomy; Total Removal of the Prostate Gland.

DR. ALEXANDER HUGH FERGUSON, Chicago, referred to the work of Nicoll, Alexander, Syms, von Dittel, raising objections to each of the methods followed by those gentlemen. He then proceeded with illustrations and the exhibition of instruments to describe his own operation, which is as follows: "The patient is put to sleep with chloroform, and placed in the extra-lithotomy position. The prostatic depressor is inserted into the bladder through the urethra, and handed over to a trusty assistant. A sponge is pushed into the rectum to prevent the escape of liquid feces. The middle finger of the left gloved hand is then introduced into the rectum and pressed against the urethra at the junction of the membranous and prostatic portions; a long narrow-bladed knife is passed into the perineum through the raphe in the median line, two inches in front of the anus, until it reaches near to the tip of the finger in the rectum, and with one stroke all the structures are cut through to the prostate, without injury to the urethra, prostate, rectum, or anal sphincter. The surgeon should refrain from doing this in his first cases. The skin incision is now enlarged, if necessary, for the introduction of two fingers. Place suitable retractors, one on each side, into the wound, and by blunt dissection expose the prostate, and with the depressor in the bladder it is forced into the perineal wound. Open the capsule with knife or scissors in a transverse direction sufficiently to admit one or two fingers. Place the retractors within the capsule. This is important because traction made on them drags the gland still farther into the wound and holds it firmly while enucleation and extirpation are being performed. It is experienced that by traction from below and depression from above the prostate is fixed, within easy reach, for its entire removal. Enucleate with the finger and bite away the portions thus liberated with the prostatic forceps, until by piecemeal the prostatectomy is completed. No effort is made to save the posterior portion of the prostatic urethra. Indeed, injury to it can not be avoided when the entire gland is removed. While morcellement is in progress, it is advantageous to advance the retractors within the capsule, and introduce the middle finger into the bladder. The forceps can be rapidly thrust between the two fingers to the object to be removed by them, without any danger to the surrounding structures, for when the instrument is closed, its end is perfectly smooth and round. The lateral lobes can be reached to any extent without damaging the mucous membrane of the bladder, and prostatic projections of the middle lobe into the bladder are detected and removed without difficulty. Flush out the bladder very thoroughly with a weak antiseptic solution. A large stream of water must be used, for the ordinary irrigating toy generally used only does harm. Mop out with gauze any water that is in the bladder and wound, and introduce a drainage tube, surrounded with iodoform gauze, through the wound into the bladder. A couple of horsehair stitches closes the part of the skin wound not occupied by the tube, and at the same time prevent the gauze from coming out too soon. Remove the sponge from the rectum, place a comfortably firm dressing over the perineum, and let it be held by a T bandage. Now, attach a long rubber tube to the external end of the drainage tube, and the toilet of the operation is finished. If the patient's urine has been scanty or should he show depression or shock, then it is better to introduce two or three pints of normal salt solution, at a temperature not less than 115 F., beneath the skin, while he is still in the operating room, than to wait until he is taken to his bed."

(To be continued.)

SAN FRANCISCO ACADEMY OF MEDICINE.

Regular Meeting, held Oct. 22, 1901.

Dr. D. W. Montgomery in the Chair.

Epithelioma of the Upper Lip.

DR. D. W. MONTGOMERY presented a case in a man 62 years of age, who first consulted him November 8. His family and personal history were good. Fifteen years ago a growth had appeared on the vermilion border of the right side of the upper lip, where was now a scar. This scar, which was pliable, soft, and healthy-looking, lay a couple of lines from the right angle of the mouth, and was the result of an operation for the removal of the above-mentioned growth, about eight years ago. Soon after the removal of this growth, another appeared on the vermilion border of the left side of the lip, where there was now an immense ulcerated patch with raised rolled borders and deep induration. Within the upper border of this ulcer there was a large cutaneous horn which was of comparatively recent growth, and did not precede the ulcerated surface. Within the last two or three years another growth had appeared on the vermilion border of the upper lip to the right of the median line, but well removed from the above-mentioned scar. This growth, previous to commencing treatment, was oval, well circumscribed, raised, indurated and had a surface dotted with milky spots. Neither of the growths on the upper lip were either painful or particularly tender. The patient was

This treatment had already had a marked effect on the smaller growth to the right of the median line which was flattened out and looked much better. He thought the larger ulcer was also improved, but not so markedly as the growth to the right of the median line.

Congenital Dislocation of the Hip.

Dr. H. M. Sherman presented a case in a boy. In 1897 he had reported some 15 cases of bloodless reposition of congenital dislocation of the hip, but that, of the whole, only two had remained in place. The boy presented was one of the two, and he had a practically normal hip, though not an anatomically normal joint. The manipulation was in most particulars that of Lorenz. The leg had been lame and the joint stiff for some months after the operation, but had gradually improved. Curiously the leg of the dislocated side was now longer than its mate by 1.75 cm.

Bone Filling with Amalgam.

Dr. J. Henry Barbat reported a case. The patient's trouble began in 1886 with pain in the left ankle followed by ulceration and the gradual breaking down of a portion of the shaft of the tibia, which he operated upon in 1898 by removing all diseased bone, but the result was not successful, and he sought relief from the author in September, 1899, who found after curetting thoroughly that he had a cavity measuring nearly 5 cm. long, over 2 wide, and fully 3 deep. After the cavity was thoroughly cleaned out and dried copper amalgam was pressed against the bottom and sides until the whole surface was covered, leaving a hole which was partly filled with dental cement, the top being covered with more amalgam. The cement was used to lessen the weight of the filling and was completely covered with amalgam. The skin was sewed over the filling and dressings applied. The immediate results following this were very good, the pain ceasing and the patient being able to walk around without crutches for the first time in several months. The wound did not completely close, however, and in August, 1900, the amalgam was removed and the bone found in good condition, except at the upper end of the cavity, which was curetted and the cavity filled with formalin gelatin, and after one month it showed a clean, healthy granulating surface, into which the skin had dipped down until the cavity has been covered entirely with new skin and the patient was discharged cured in January of this year.

Removal of Tongue, with Result.

Dr. E. Rixford presented a case as an example of remote result after excision of the tongue. The patient at the age of about 42 came to Cooper College Clinic in the summer of 1900 with a typical epithelioma of the tongue. Operation was advised, but he put it off for some time. He finally came back and the doctor removed the left half of the tongue back as far as the fauces. Recurrence took place, and on March 17 last he removed the entire tongue by Kocher's method, opening the neck on both sides to remove enlarged glands and to tie the lingual arteries at their origins. Some of the glands showed metastases, but many others showed only inflammatory enlargement. He performed a tracheotomy on acount of the deep dissection and the embarrassment to breathing. The patient took the tube out himself on the fourth day and left the hospital on the seventh and went home. He was rather ingenious in the manner of taking food, but was obliged to confine himself to liquids. He took a quantity into the mouth and then throwing his head back was able to swallow it. His general health was good and he had no pain, and no evidence thus far of recurrence. He talked rather well, having learned to substitute labial for lingual mutes. The tongue was removed at the hyoid bone, leaving the epiglottis. The floor of the mouth was rather interesting, owing to the form of the cicatrix. The tumor was atypical squamous epithelioma of the tongue.

Gallstones, with Gangrenous Intestine.

Dr. Rixford also reported the following case: A large man, 53 years of age, weighing 225 pounds, had had more or less trouble in the abdomen for eight years; three years ago he had a very severe attack of gallstone colic in which he passed a number of stones. Since then he had had more or less pretty continuous pain in the abdomen just below the xyphoid. One morning he had sudden pain below the umbiliens, so severe as to cause him to take considerable doses of morphin. He had no chill, but vomited after taking the morphin; pulse 90, temperature 99. Next day pulse was 100, and temperature 100; spasm of abdominal muscles especially in region of appendix; local tenderness very great. The third day, pulse was 120, and temperature 100 in the morning, 128 and 100.5 in the evening. On fourth morning pulse was 144 and temperature 100. He was brought to the hospital and prepared for operation. Examination showed great tenderness over lower half of the abdomen, more on the right side, leucocytosis 11,400, expression anxious and indicative of great suffering. There was apparently peritonitis most likely from the appendix, though jaundice was present and there was a history of gallstones. There was complete obstruction of the bowels, there having been no passage of feces or even of gas since the onset of the pain, three days previously. Under anesthesia the abdomen bulged noticeably on the right side, and a definite tumor could be felt in this region. Incision in the right semilunar line showed a loop of the small intestine gangrenous for ten or twelve inches, the gut being deeply congested for perhaps a foot on either side. This condition of the bowel could not have been produced by any hernia or internal strangulation, but only by obstruction to the blood supply, probably the superior mesenteric artery. The gall-bladder contained a number of calculi. In order to remove the piece of intestine, the mesentery was cut across—it did not bleed opposite the gangrenous portion—and the loop of bowel was simply hung out of the wound in the dressings in the expectation of removing it as soon as adhesions had made the peritoneal cavity safe, and the remainder of the wound was closed. This course was chosen in preference to a resection of the bowel, because in the first place the patient was in poor condition to endure a longer operation, and secondly, because there was no line of demarcation between sound and diseased intestine. The intestine was removed in 24 hours and an attempt made to wash out the ends of the intestine with salt solution, and a pint or more of strong solution of magnesium sulphate was injected into distal and proximal ends with the result of removing from the proximal end a quantity of fluid feces. Soon after the patient rapidly sank and died. The autopsy made by Dr. Ophuls accounted for all the symptoms and showed the reasons for difficulty in this diagnosis, and that the prognosis was necessarily unfavorable.

The case was of particular interest because of the condition of the intestine, which was shown to be due to thrombosis not of the mesenteric artery, but of a principal radical of the portal vein.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Oct. 23, 1901.

President, Dr. Christian Fenger, in the Chair.

Trional Fatalities.

Drs. Archibald Church and E. B. Hutchinson contributed a joint paper on this subject. The authors detailed an interesting case of trional poisoning, which terminated fatally.

Dr. Church stated, in discussion, that nearly twenty cases of death from this drug, administered in so-called medicinal doses, could be found in recent periodical literature; yet one of the most recent text-books on therapeutics states that trional may be given in doses up to 60 grains in twenty-four hours. In none of the cases that have terminated fatally has more than 30 grains within twenty-four hours been administered. Death followed the administration of 20 grains of trional in one case in two doses. In the case reported by them, the dosage never exceeded 30 grains within twenty-four hours. He is not using trional so frequently since this unfortunate experience.

Dr. Harold N. Moyer thought trional was less toxic than sulphonal, which is markedly toxic. He mentioned one case

of sulphonal poisoning that recovered. The majority of cases of sulphonal and trional poisoning that have presented hematoporphyrin in the urine in considerable quantities, have died. There is no question as to the grave toxemias that result from the use of these drugs. The reports of fatalities are sufficiently numerous to warrant him in his own practice in not using trional or sulphonal as hypnotics, and he has not employed them for more than a year and a half.

Dr. Sanger Brown said he had given trional, sulphonal, phenacetin, and that order of drugs a thorough trial, but was soon convinced that they were far inferior to chloral, hyoscyamus, hyoscin, etc., and he had adhered to the latter.

Dr. A. W. Baer expressed the hope that the members would look over the death certificates and find out how many people have been killed by taking the coal-tar products.

Colpeurynter in Obstetric Practice.

Dr. Joseph B. De Lee said that Carl Braun in 1851 invented the colpeurynter, though hollow tampons, usually pig's bladders, had been used before this by Chiari, Stein and others. Grenser modified Braun's bag, and many others have been devised. Up to 1883 the bags were put in the vagina, then Schauta recommended them for the uterus. Then in 1887 Maurer recommended that traction be put on the tube so as to exert pressure on the cervix from within. The mode of application is simple: After careful antisepsis the bag is filled with sterile water or antiseptic solution, all air gotten out, the bag then emptied, folded into a narrow roll, inserted in the vagina or uterus, and filled with a Davidson syringe; traction is applied or not as indicated.

Indications.—1. Induction of premature labor; claimed to be safer and surer than others; has been used with success by writer in contracted pelves, placenta previa, eclampsia, nephritis, hyperemesis. 2. To hasten delivery, as in eclampsia, premature detachment of placenta, heart disease, etc. It evokes pains, softens the cervix, dilates same gently and firmly from above and makes delivery possible in a short time. 3. To prepare the parts for rapid delivery, e. g., after symphysiotomy, version, or before forceps deliveries in primiparæ, thus the child is like a second twin and the birth is rapid and without injury to the parts. 4. Stenosis and rigidity of the cervix, vagina and perineum. 5. Weak pains; if a cause can not be found, or is not removable, the bags are of real service in evoking strong contractions. Almost always weak pains are a symptom of some underlying cause: 6. In "dry labors" the bag, put inside the uterus, replaces the bag of waters almost perfectly, and may save many hours of labor. 7. In transverse presentation to keep the shoulder from wedging into the pelvis while waiting to be able to do version, and in contracted pelvis for the same purpose, the metreurynter is valuable. 8. When the cord prolapses with the head it may be pushed as high as possible into the uterus and the cervix stopped with a rubber bag. The writer suggests putting a stout drainage tube alongside the cord to save it from pressure. 9. During pregnancy, to lift up a heavy uterus causing hyperemesis, and to replace a retroflexed, incarcerated uterus, filling the colpeurynter with water or mercury. 10. In placenta previa; perhaps the most valuable of all.

Maurer in 1887 used intra-uterine colpeurysis, with traction, and drew attention to the value of the procedure. Dührssen put it on a scientific basis. Bag is placed inside uterus, on fetal surface of placenta and constant traction made on tube. The hemorrhage is stopped by the pressure of the placenta against the open sinuses, pains are evoked, the cervix is dilated gently and evenly, and time is given to rally the patient from collapse, to send for counsel and help. When the bag is passing through the cervix, all preparations are made for delivery, for version, etc. As soon as the bag has passed the external os, which is easily determinable, it is rapidly drawn through the vulva and further proceedure instituted, which may take the form of forceps, version, another bag, or perhaps even expectancy. The writer is convinced that extended use of the metreurynter in placenta previa will reduce maternal and fetal mortality to about almost nothing.

Anterior Vertex Presentations; Their Complications and Treatment.

Dr. Gustav Kolischer called anterior vertex presentations those presentations in which the fetal head passes through the pelvis slightly deflected, so that the anterior part of the cranium represents the lowest point of the skull. In cases of pendulous abdomen, where the fetus is the possessor of a struma, anterior vertex presentations are most likely to occur. Some authors claim that uniformly round heads, especially combined with a flat or uniformly contracted maternal pelvis, furnish the majority of these presentations. By means of external examination the resistance, which is formed by the fetal back, is closer to the median line, and not quite as distinct as in normal occipital presentations. Should the anterior vertex presentation persist for any length of time, the elongation of the occiput can be palpated through the abdomen. Internal examination shows that the anterior and posterior fontanelles are on the same level, or that the large fontanelle is even lower situated than the small one. If the head has just passed the pelvic brim, the sagittal suture is encountered toward the promontory, and just behind the symphysis we find an ear or the squamous suture. If the head has descended into the median plane of the pelvis, we find the sagittal suture in one of the oblique diameters, while both fontanelles are still located in the same plane. If normal rotation (occipito-anterior) has taken place in an anterior vertex presentation, the small fontanelle is found just beneath the symphysis, while the large fontanelle can be very easily reached in the perineal region. This is due to the deflection in which the fetal head is held.

If abnormal occipito-posterior rotation takes place in cases of anterior vertex presentation, the glabella rests against the symphysis, while both fontanelles are easily accessible. In cases of occipito-posterior rotation and normally fleeted head, the large fontanelle lies beneath the symphysis. Once in a while, if the entire fetus is in an oblique position, the small fontanelle can be located higher up than the large one, although the head is kept in normal flexion. In such cases the differential diagnosis could be made by careful and exact external examination, which will reveal the presence of an oblique position of the fetus. As to the frequency of anterior vertex presentation, comparative statistics from recent sources show that it occurs in about eight per cent. of all head presentations.

The descent of the abnormal presentation may vary: Either the head in descending becomes inflected and rotates normally, or it descends to the pelvic floor in a deflected attitude, in which case either normal or abnormal rotation may occur, or the complete descent of the head becomes checked by oblique or transverse presentation. Of course, if normal flexion and rotation occur, the ultimate delivery will in no way differ from any other normal occipital presentation. But if the deflection is not corrected, the passage of the head through the pelvic outlet will be more difficult. If in a deflected attitude of the head the occiput rotates anteriorly, the occipital tuber rests against the pubic arch, and constitutes the point around which the head has to roll in order to pass through the outlet. Thus, the head passes with a larger diameter through the outlet as in normal cases. If occipito-posterior rotation takes place, the glabella rests against the symphysis, and the extrication of the head will be more difficult because it has to be performed from a deflected attitude. Furthermore, we must consider the fact that, as in all cases of deflection, the occiput is elongated, so that the mento-occipital diameter becomes considerably enlarged, thus increasing the difficulty in delivering the head. If an anterior vertex presentation terminates in an oblique or transverse presentation, the whole affair takes on a more serious aspect in primiparæ, and in cases of slightly contracted pelvis, a transverse presentation of the head will, as a rule, not be overcome by the natural forces, even if the head should be normally inflected. One of the above-mentioned presentations, combined with anterior vertex presentation, may be considered an absolute obstacle to spontaneous delivery in primiparæ. The author dwelt at length upon the complica-

tions connected with the class of presentations under discussion.

In all cases of forceps operations in anterior vertex presentation, he thinks the Walcher's posture can be used to great advantage. On account of the unfavorable diameter in which a deflected head has to pass through the vulva, and on account of the enlargement of the mento-occipital diameter, the perineum is always in great danger, and episiotomy has quite frequently been resorted to.

Occipito-Posterior Positions; Their Diagnosis and Treatment.

Dr. Charles E. Paddock stated that a proper appreciation of presentation and position of the fetus in the latter part of pregnancy or the beginning of labor is as necessary as it is to make a diagnosis in any branch of medicine. That this fact is not deemed of sufficient importance is proven by the number of neglected cases which are daily brought to the hospitals or come under the care of the consulting obstetrician. Occasionally the position can not be definitely determined, but such cases are very rare. Familiarity with abdominal palpation will soon place the physician in a position where it will not be necessary for him to be in doubt. The internal examination is hardly necessary to confirm the position or presentation, and unless the os be dilated it amounts to very little, as a rule.

The advantage of making a correct diagnosis of the position of the child in utero is necessary to the correct treatment of the case, and in vertex presentations, when the head is about to engage posteriorly, or has already done so, the condition should be considered pathologic, and the diagnosis should be made early. We have sufficient clinical evidence to establish this fact, and while cases where the occiput is in one of the posterior quadrants of the pelvis, or gravitating that way, are not desirable ones, the author feels that much can be done to correct this position, and thus shorten the labor, alleviate suffering, and lessen the fetal mortality. Authorities differ regarding the relative frequency of the different positions of the vertex, but most agree that the occiput engages in right oblique to a large extent, about 30 per cent. of the cases being occipital right posterior, and about 4 per cent. of this 30 per cent. failing to rotate anteriorly and engaging in the hollow of the sacrum. According to Naegele, who has probably given this subject more attention than anyone else, the head lies in the right oblique in 99 per cent. of all cases. Admitting the frequency of the occiput occupying a posterior position, and knowing the dangers which may result before the case has terminated, it has been the author's experience that the head does not engage as easily in this position as in the anterior one. In O. L. A., for instance, the head enters the pelvis with both parietal bones on the same level, that is, the biparietal diameter of the head passes through a pelvic diameter parallel with and about equal to one of the large oblique diameters. In O. R. P. position, however, this does not occur, and the head passes through a much smaller diameter.

While it may not be possible to correct every case by posture, the number of successful ones is so large that every case diagnosed as O. D. P. before labor should be treated as follows: Caution the woman to lie upon her right side at night, and at all times when she is lying down. Each night and morning she should assume the knee-chest position for ten minutes. If the head be above the brim, in but very few cases will this treatment fail. In this position the anterior wall will be lower, the fetus rotating on its long axis, and the dorsum, being the heavier, naturally will seek the most dependent part of the uterus. The knee-chest position allows the head to settle away from the brim. In taking this position, the abdomen must be entirely free of tight clothing. Take another case, when the diagnosis has been made after labor has commenced, but the head still above the brim, the same treatment is often beneficial. The object of position in these cases is not only that anterior rotation may be favored, but a more perfect flexion of the head may be maintained. If flexion is not secured, we have the sinciputal end nearly on a level with the occiput; entering the pelvis in this way, labor is delayed, and when the head settles down, the sinciput coming in contact with the pelvic floor rotates forward and the occiput engages in the hollow of the sacrum, or we get a deep transverse in arrest which calls for artificial correction. While we speak of the occiput rotating posteriorly, we probably should say the sinciput rotates anteriorly. Hart's law: Whatever position of the fetal body first strikes the resistance of the pelvic floor, whether it encounters this structure behind or in front of the median transverse line it is directed forward, inward and downward under the arch of the symphysis. When the occiput is engaging slowly and the lateroprone position has failed, often much good will result by placing the patient in the Walcher position.

There is still another class of cases where the head has engaged in the brim, the os dilated, but no progress being made. In this class the treatment to be first attempted is one which will nearly always succeed. To illustrate, he reported a case seen by him in consultation during the past week. Mrs. M., white; iv-para; previous labors normal, in labor at term. Labor had progressed for twelve hours, with os fully dilated, membranes ruptured, and head wedged into brim. Forceps delivery had been attempted. In making an examination per vaginam he found the large fontanelle almost on a line with the small one; in other words, the head was not flexed. He continued pressure with his two fingers upon the sinciputal end, and after two pains only, he had the satisfaction of feeling the sinciput recede, and the occiput descend. Labor terminated in one-half hour.

In recapitulation, the author said that: 1, a proper diagnosis of position and presentation should be made early; 2, that occipito-posterior positions are frequent; that these positions result in a great fetal mortality and maternal morbidity; 3, that this position can be corrected and labor shortened.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Prescription Writing—Continued.

III. Nouns of the fourth declension, as previously stated, have the ending *us* and do not change in the genitive. Practically the only noun of the fourth declension in common use is "spiritus."

Referring again to our prescription, the directions to the druggist it will be noticed are written in the Latin. The word *misce* means, when translated, "mix thou." The word *fiat*—meaning "may be made"—is in the subjunctive mood, therefore, in the above, *mistura* is in the nominative case the subject of *fiat*. If a number of capsules were ordered instead of a mixture then *fiat* would have to be changed from the singular to the plural, as follows: *fiant capsulæ*, capsulæ being in the nominative case, plural, the subject of fiant.

The directions to the patient are of extreme importance, and this is where the physician should express himself concisely, clearly and positively. It should be stated how the medicine should be taken; that is, whether in water or otherwise, and whether the water should be hot or cold when the medicine is poured into it. For instance, we know that sulphonal, to produce the best results and promptly, should be dissolved in hot water, while if chloralamid is dissolved in hot water it is easily decomposed. It should also be stated definitely whether the drug should be given before meals or after meals on account of the liability of producing a gastritis, or whether it should be given at night or in the morning. We know that it usually takes from twelve to twenty hours for the lapactic pill to act and consequently it is better to give it upon retiring, while magnesium sulphate will produce much better effects if given upon rising in the morning with the patient in the upright position. We urge the physician to be positive with patients as to the promptness of taking the medicine. If it is a matter of indifference to the physician

it will soon be of greater indifferenee to the patient. In writing out the ingredients it is much better to write them in full and not abbreviate. In this way mistakes upon the part of the druggist will be obviated. While there can be no objections in abbreviating some of the terms, a few illustrations taken from Wilcox may serve to show how mistakes may arise:

Acid. hydroe. (may be Acidum hydrochloricum or Acidum hydrocyanicum).

Ext. col. (may be Extractum colchici or Extractum colocynthidis).

Hyd. chlor. (may be Hydrargyrum, Hydras, Hydrochloras or Hydrocyanieus).

Sulph. (may be Sulphur, Sulphid, Sulphate, or Sulphite).

In this connection it does not come amiss to mention the importance of writing plainly and legibly. More than one case is on record where suits have been instituted against druggists for improperly eompounding a prescription, who in turn tries to shield himself behind the hieroglyphies of the physician. A physician of prominenee in a large city, who writes an unusual number of preseriptions, has the reputation of writing so illegibly that only one druggist in the entire city dares to attempt to compound the prescription, and even he at times has to inform the patient that it will take some time to fill the preseription in order that he may quietly consult this physician eoncerning the ingredients involved.

Eczema.

When eczema is present dependent on digestive disturbances, with constipations, etc., present, Stelwagon in *Amer. Text-Book of Ther.*, reeommends the following in eonjunction with local applieations:

R.	Magnesii sulphatis	℥i 32	
	Aeidi sulphurici dil	℥ii 8	
	Ferri sulphatis	gr. vi	36
	Aq. menthæ pip. q. s. ad	℥vi 192	

M. Sig.: One tablespoonful is to be taken in a glass of water one-half hour before breakfast and if neeessary upon retiring at night.

In some eases he advises the addition of sulphur in proportion of drams 4 (16.) to the 6 ounees (192.) to the above mixture to increase its activity.

The following saline mixture is also of service for the same purpose:

R.	Sodii sulph. gran	℥x 40	
	Sodii bicarb	℥iv 16	
	Sodii chloridi	℥ii 8	

M. Sig.: Keep well elosed, take one or two teaspoonfuls dissolved in a glass of water one-half hour before breakfast.

He further states that many patients ean not properly bear the salines and under sueh circumstanees he advises the following as a stomaehic laxative tonie:

R.	Sodii salieylatis	℥ii 8	
	Ext. rhamni purshianæ flu	℥iss 6	
	Tinet. nucis vom	℥iv 16	
	Tinct. eard. comp. q. s. ad	℥iii 96	

M. Sig.: One teaspoonful to be taken after each meal in water.

For local medication to the skin, lotions, oils, ointments, paints or plasters may be used. He states that the most useful preparations are those containing zinc oxid, talc, boric aeid and stareh, combined sometimes with salicylic acid, carbolie acid or camphor. He reeommends sometimes for such local application, the following:

R.	Acidi salicylici	gr. ii-v	12-30
	Aeidi borici	℥ii 8	
	Zinci oxidi		
	Talci veneti, āā	℥iii 12	

M. Sig.: Cleanse the parts well with water and apply locally onee or twiee a day.

The following is used as a lotion in the erythematous and papular varieties:

R.	Aeidi borici	℥ii 8	
	Acidi earbol	℥ss-i 2-4	
	Glyeerini	℥ss 2	
	Alcoholis	℥ss 2	
	Aquæ q. s. ad	Oss 256	

M. Sig.: Apply loeally twiee a day.

Or:

R.	Calaminæ		
	Zinci oxidi, āā	℥iss-ii 6-8	
	Glycerini	℥ss 2	
	Alcoholis	℥ss 2	
	Liquoris calcis	℥ii 64	
	Aquæ q. s. ad	Oss 256	

M. Sig.: Apply locally.

If the itching is too troublesome, from one-half to one dram (2.-4) of earbolic acid may be added to the above or grains 2 to 8 (.13-.15) of thymol.

Treatment of Acute Rhinitis.

This is the time of year when a great many patients eomplain of inability to breathe through one or both sides of the nose or perhaps one side is closed only to become free when the other side becomes elosed. In such cases the indieations are to decrease the eongestion and consequently the size of the turbinated bodies. In such cases the following is used a great deal internalls:

R.	Quininæ sulphatis		
	Sodii salieylatis, āā	gr. iii-iv	20-25
	Camphoræ monobromatæ	gr. ss	03

M. Ft. capsula No. 1. Sig.: One sueh to be taken four or five times a day.

To soothe the inflamed Schneiderian membrane Maekenzie recommends the following in the form of an inhalation:

R.	Tinct. opii eamph	℥ss 16	
	Tinet. benzoini co	℥i 32	

M. Sig.: Put one teaspoonful to the pint of hot water and use as an inhalation three times a day.

The temperature should be raised to near the boiling point and the vapor inhaled for fifteen minutes at a time, six deep inspirations being made in eaeh minute.

We might again state the efficiency of adrenalin to relieve the local congestion.

Treatment of Hemorrhoids by Zinc Chlorid.

The following is recommended by Julie, as noted in *Am. Medicine.* The parts should be thoroughly washed and an ointment of iodoform and vaselin applied to the hemorrhoidal mass; 15 minims of the following solution is then injected into the base of the mass:

R.	Zinei ehloridi	gr. viiss	5
	Cocainæ hydrochlor	gr. iii	20
	Aq. destil	℥v 20	

M. Sig.: Use as advised above.

He states that patients do not complain of the pain, but the next day a slight inflammatory nodule is produced which disappears on the fourth or sixth day. He does not believe that thromboses are liable to occur, espeeially if care is taken when making the injections to distribute the liquid.

Tracheo-bronchitis in Children.

The following is reeommended by Markan, in *Med. Press and Circular,* in cases in whieh irritation and eough is proportionately greater than the inflammation:

R.	Syr. aurantii (flores)		
	Syr. codeinæ, āā	℥i 32	
	Tinct. aconiti	m. xii	75
	Aquæ	℥ii 64	

M. Sig.: One teaspoonful daily for a child of three months, to be increased according to the age of the ehild.

Treatment of Acute Albuminuria After Scarlet Fever.

The following is recommended by Otto Maier, in the *Post-Graduate*:

R.	Piloearpinæ hydrochlor.	gr. i	06
	Infusi digitalis	℥iii 96	

M. Sig.: One teaspoonful every three hours.

He also recommends that a hot bath be given daily and a diet consisting of milk and iee eream. To promote elimination by the bowels give the following:

R.	Hydrarg. chloridi mitis	gr. iiss	15
	Pulv. jalapæ	gr. ivss	28

M. Ft. ehart. No. i. Sig.: One such to be taken twiee a week.

Treatment of Acute Articular Rheumatism by Massage with Petroleum.

Sarafidis, as noted in *Amer. Medicine*, states that he has cured fifty cases of acute articular rheumatism by massage of the extremities with petroleum. Either crude petroleum or the ordinary oil may be used. Massage should be carried on in the direction of the venous circulation and practiced for ten minutes daily. If erythematous papules should appear, discontinue the treatment for a day or two. He claims to have perfected cures in five to seven days, and that by this method the temperature is lowered and the serous membranes thus protected from inflammation. No cardiac or visceral complications have been observed; the treatment can be carried on in the presence of an interstitial nephritis, under which circumstances sodium salicylate would be contra-indicated. The same holds true of its administration to pregnant women.

Medicolegal.

Three Hundred Dollars for Injury to Knee.—The Supreme Court of California holds, in the personal injury case of Sheyer vs. Lowell, that not only was an award of damages of $300 clearly not excessive, where the party suing was laid up with a badly injured knee and under the constant care of physicians for two months, and at the time of the trial, nearly a year later, had not entirely recovered, but that the evidence would have supported a verdict for damages greater than $300.

Medical Examiner a General Agent—Fraud of.—The Supreme Court of Tennessee says, in the case of Bennett vs. the Massachusetts Mutual Life Insurance Company, that it is true that the medical examiner of a life insurance company is not a general agent of the company in the broad sense of the term, but one whose duties are confined to a single feature or department of the business, but in that department he is a general agent. Then, it holds that the insured may maintain an action to have the contract of insurance rescinded, and to recover the premiums which he has paid, on the discovery that the answers made in the application are not true, and are not as made by him, but were fraudulently made by the examiner, where in case of the death of the insured the company would have a prima facie case for avoiding the policy for such false statements and it would be hard for others to show the fraud. In such a case, oral evidence, it holds, is competent to establish the fraud, and admissible to show that the contract as written is not the contract as made by the parties. It also suggests that, whatever may be the rights of third persons growing out of the matter, it will not lie in the mouth of the company upon the one hand to confess its fraud, and on the other to say that, "You are estopped to rely upon that fraud, because you have not more promptly discovered it."

Right to Have Hand Examined by Physicians.—In Louisville & Nashville Railroad Company vs. Simpson, where the Court of Appeals of Kentucky has reversed a judgment for damages against the company, the party who brought the action claimed that her hand had been injured in a collision, and that she was permanently crippled; that because of the injury she could not close two or more of the fingers of that hand by voluntary exercise of its muscles. No other permanent injury was claimed, nor was the injury to that member apparent to an ocular inspection. On the trial she showed the hand to the jury, demonstrating she claimed how far she could close the fingers by the use of their muscles. She declared that the leaders and joints of the fingers were stiff and enlarged. One of her witnesses (her physician) testified that he could not tell by an examination of the hand whether it was permanently injured or not; that he would have to rely upon the statement of the patient. She submitted her hand to his examination while he was testifying. Subsequently the company introduced two physicians as witnesses, who testified that they could tell by an examination of the hand, without reference to what the patient said, whether it was stiffened as claimed, and whether such injury was permanent. But she declined to permit the witnesses to examine her hand, and the trial judge overruled a motion to compel her to do so. The Court of Appeals holds that this was reversible error. It says that to permit the party suing to testify that the member was injured and that the injury was permanent, and to deny other competent witnesses, who were especially skilled in treating such injuries, an opportunity to examine the hand and to demonstrate, if they could, that it was not in fact injured at all, was an abuse of the discretion lodged with the trial judge.

Malpractice Liability for Negligence in Amputation.—The Court of Appeals of Kentucky says that it appeared, in Alexander vs. Menefee, that it was necessary to amputate some distance from the wrist the arm in question, the wrist having been broken by a discharge from a shotgun. The complaint, in substance, was that the physician who was employed to treat the arm performed the operation without the assistance of another surgeon or physician to aid in administering anesthetics, as a result of which the party suffered much during the operation, and did not remain quiet or unconscious, and thereby the operation was not performed as it should have been; that one of the arm bones was cut shorter than the other, which prevented healing of the wound, and rendered it impossible for the flesh to cover the bone in such a manner as to heal. Other defects and unskilful actions were alleged, the result of which, it was alleged, caused the arm to remain sore, and caused the bones to protrude through the skin and become entirely uncovered, and would cause the bones to decompose; that it would be necessary to have the arm resected, etc. The answer was a complete traverse of all the averments in the petition which showed a right to recover damages. The trial resulted in a verdict and judgment for $1500 damages against the physician, which the Court of Appeals of Kentucky affirms. It deems it unnecessary to recite the evidence introduced, and says that, as the jury had the witnesses before them, as well as an opportunity to view the condition of the arm, it is not, therefore, disposed to hold that the verdict of the jury was contrary to law, or not sustained by sufficient evidence. Nor is it inclined to the opinion that there was any error in refusing to permit the physician, who was a competent and skilful physician and surgeon, there being no claim that he was not such, while, instead, it was substantially alleged, or at least the action was prosecuted upon that idea, and the recovery was sought, not upon the ground of incompetency, but upon the ground of negligence. Furthermore, the court says that there was proof tending to show, and from which the jury was authorized to conclude, that the treatment was not such as a reasonably careful physician in that neighborhood ought to have given.

Liability for Injury to Pregnant Passenger.—The Court of Civil Appeals of Texas, in St. Louis Southwestern Railway Company of Texas vs. Ferguson, affirms a judgment for $1000 damages in favor of a husband for injuries alleged to have been negligently inflicted upon his wife by causing an engine or train to collide violently with the car in which she was seated as a passenger, in the making up of a train. At the time she was about six months advanced in pregnancy, and within a few days thereafter gave premature birth to twins. The trial judge instructed the jury that the railway company was not an insurer of the personal safety of the woman while she was a passenger on its train, but owed to her the duty to exercise that high degree of care for her reasonable personal safety which a very prudent person would use under the same circumstances about the same matter; and a failure of the company, if any, to exercise such degree of care, would be negligence. This the company contended was erroneous. As a correction, it asked that a special instruction be given to the effect that it was not intended by the general charge to require of the company to exercise any greater care with reference to this passenger than to any other person; that, there being no evidence to show that the company had notice that she was pregnant, it could not be required to exercise any greater care of her than of an ordinary passenger; and, therefore, that, if the jury found from the evidence that the company exercised the care required of railway companies, in making

up its train, it should find for the company. It was insisted that, without knowledge of the delicate condition of the woman, the degree of care imposed by law upon the railway company was that due to all persons in usual and ordinary physical condition, and not such as might have been due to one "in the light of attending circumstances." But while there was no evidence that the company's servants in charge of the train and cars in question at the time of the coupling complained of had knowledge of the peculiar condition of this passenger, the court nevertheless holds that the judge's charge must be sustained, and that his rejection of the special charge requested was correct. It holds that the judge gave the proper standard of care, and says that the degree of care so prescribed, in its judgment, must be exercised by the carrier of passengers in the light of an imputed, if not actual, knowledge that the aged, the infirm, and those in delicate condition may and do constantly travel on the passenger trains of the country. Humanity is heir to many ills and destructive conditions requiring notice and peculiar care, and those commonly and constantly engaged in their transportation for hire ought not to be heard to say in excuse for their negligence, "We were without notice of the fact."

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, November 16.

1 *The Outbreak of Tetanus in St. Louis. A. C. Abbott.
2 *The Present Status of the Bottini Operation as a Method of Treatment in Obstructive Hypertrophy of the Prostate Gland, Derived from a Summary of 888 Operations by 48 Operators. Orville Horwitz.
3 *Bovine Tuberculosis and Milk Supplies. H. L. Russell.
4 *Some Points on Intracranial Neoplasms Considered from the Neuronic Standpoint. F. Savary Pearce.
5 *Neurasthenia. Jay G. Roberts.
6 Surgery of Pulmonary Abscess, Gangrene and Bronchiectases, Following Pneumonia. Daniel N. Eisendrath.

Medical News (N. Y.), November 16.

7 The Making of a Modern Medical School: A Sketch of Rush Medical College. John Edwin Rhodes.
8 *On the Nature of the Process of Fertilization. William J. Gies.
9 Infantile Pleurisy with Effusion. W. T. English.
10 *Tendon and Muscle Transference and Arthrodesis in Infantile Paralysis. E. H. Bradford.
11 The Management of Acute Gonorrhea. Louis Broter.

New York Medical Journal, November 16.

12 An X-ray Stereoscope. Louis A. Weigel.
13 *On a Case of Sarcoma Treated by the Roentgen Rays. Carl Beck.
14 *Devitalized-Air Toxemia, a Prime Cause of Tuberculosis. (Concluded.) Charles Denison.
15 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
16 Pyopericarditis. Herbert O. Collins.
17 The Daily Medical Inspection of Schools. D. S. Lamb.

Boston Medical and Surgical Journal, November 14.

18 *Medicolegal Examination of Blood Stains. Edward S. Wood.
19 The Correction of Old Lateral Displacements of the Nasal Bones. J. L. Goodale.
20 Cleft Palate. J. S. Stone.

American Medicine (Philadelphia), November 16.

21 *Infection in a General Surgical Sense. Daniel N. Eisendrath.
22 *The Bacteriology of Otitis Media: A Summary of Recorded Observations and a Laboratory Study of 76 Cases. (Concluded.) John Funke.
23 *The Vexed Question of Vaccination: What Is the Best Method of Securing Immunity from Smallpox? Charles Good.
24 Granular Lids. J. G. Huizinga.
25 A Case of Lupus Vulgaris. P. R. Egan.
26 When Should the Oculist Be Consulted? Fred D. Lewis.
27 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Medical Record (N. Y.), November 16.

28 *Pathology and Treatment of Migraine. William H. Thomson.
29 *The Present Position of Ophthalmic Science and Art. D. B. St. John Roosa.
30 *The Official Relation of the Medical Profession to Private Charitable Institutions. Enoch V. Stoddard.
31 Nasal Obstruction and Ear Disease. A. C. Bardes.
32 *Butyric and Acetic Acids in the Contents of the Stomach and Tests for Their Detection. Mark I. Knapp.
33 *Gangrene Following the Use of Carbolic Acid. John G. Sheldon.
34 Food as an Etiological Factor in Disease. George Merriman.

Cincinnati Lancet-Clinic, November 16.

35 Rectal Alimentation and Medication. E. E. Armstrong.
36 *A Study of the Indications and Contra-Indications of Heroin. G. W. Wood.
37 Gonorrhea. L. J. O'Brien.

St. Louis Medical Review, November 16.

38 *The Professional Obligation of the Railway Surgeon. Chas. A. Bishop.
38½ Masked Malaria. W. A. Haley.
39 *A Discussion on the Proposed Municipal Legislation in Regard to Tuberculosis. F. A. Glasgow.

Virginia Medical Semi-Monthly (Richmond), October 25.

40 An Operation for Tubal Pregnancy Complicated with Appendicitis and Fibroid Tumors of Uterus. Pugh U. Brown.
41 Three Cases of Cataract Extraction Where Absolute Glaucoma Existed in the Opposite Eye. John Dunn.

Medical Age (Detroit, Mich.), November 10.

42 *Medical Registration in Michigan. B. D. Harison.

Medical Fortnightly (St. Louis), November 11.

43 Minute and Foreign Bodies Superficially Wounding the Eye. A. C. Corr.
44 Rectal and Anal Fistulæ. Carl E. Black.
45 Diseases of the Lungs and Pleura. (Continued.) Albert Abrams.
46 Diagnosis in Diseases of Infancy and Childhood. John Zahorsky.

American Practitioner and News (Louisville, Ky.), October 1.

47 *Preputial Divulsion Versus Circumcision in the Young. John B. Enright.
48 The Management and Treatment of Typhoid Fever. G. L. Barr.
49 Opposing the Routine Regimen Adopted in the Management of Chronic Bright's Disease. Leon L. Solomon.

Annals of Surgery (Philadelphia), November.

50 *Genital Tuberculosis, with Special Reference to the Seminal Vesicles. Hugh H. Young.
51 *Cervical Ribs. Frederick Kammerer.
52 Skin-Grafting in the Treatment of Complete Stenosis of the Larynx. Andrew J. McCosh.
53 Anorectal Transplantation. John D. Rushmore.
54 *Acute Intestinal Obstruction Following Appendicitis. Lucius W. Hotchkiss.
55 Foreign Bodies Accidentally Left in the Abdominal Cavity. (Concluded.) August Schachner.

Dominion Medical Monthly (Toronto), October.

56 *A Case of Transplantation of the Ureter for Cure of Utero-Vaginal Fistula. A. Lapthorn-Smith.
57 Notes on Practice in Midwifery. R. E. McKechnie.
58 Cases in Practice: (a) Lightning Stroke; (b) Three Cases of Nervous Disease in Children. A. F. McKenzie.

New York State Journal of Medicine (N. Y.), November.

59 Intrathoracic New Growths. Alexander Lambert.
60 *Surgical Malposition of the Gall-Bladder. E. D. Ferguson.
61 *Complete Uterine Prolapse. Frederick H. Wiggin.
62 *The Present Status of the Infectious Theory of Malignant Neoplasms. George Blumer.
63 *Prostatic Obstruction to Urination: Notes on Its Remedy by Enucleation of the Diseased Parts. J. W. S. Gouley.
64 *A Reconsideration of the Pathogenesis of Concomitant Strabismus. Alvin A. Hubbell.
65 *Appendiceal Fistula. John B. Deaver.

Archives of Pediatrics (N. Y.), November.

66 *Milk-sugar in Infant-Feeding. A. Jacobi.
67 *Adenoma of Both Adrenals in the Newborn, Associated with Retrogressive Changes in the Adrenals of Marchand. Aldred Scott Warthin.
68 Infantile Scurvy and Marasmus. Francis Huber.
69 An Unusual Case of Spasmus Nutans. Samuel Amberg.
70 A Case of Severe Secondary Anemia in a Child of Two Years. L. E. La Fetra.
71 Report of a Case of So-called Von Jaksch Anemia. Charles Herrman.

Chicago Medical Recorder, November.

72 *The Surgery of Pulmonary Abscess, Gangrene and Bronchiectases, Following Pneumonia. Daniel N. Eisendrath.
73 Gastric Surgery. Carl Beck.
74 *The Open-Air Treatment of Consumption. Homer M. Thomas.
75 Trional Fatalities. Archibald Church and E. B. Hutchinson.
76 Brain Tumor. John A. Robison.
77 The Use of the Colpeurynter in Obstetric Practice. Joseph B. DeLee.
78 Occipito-posterior Positions: Their Diagnosis and Treatment. Charles E. Paddock.

79 Anterior Vertex Presentations; Their Complications and Treatment. Gustav Kolischer.
80 Epidemic Cerebrospinal Meningitis; Meningeal Hemorrhage; Intussusception; Diaphragmatic Hernia. Isaac A. Abt.
81 Congenital Heart Lesion. Wm. J. Butler.

The Physician and Surgeon (Detroit and Ann Arbor, Mich.), September.

82 An Historic Sketch of the Appendix Vermiformis. Robert C. Bourland.
83 Gastroenterostomy and Intestinal Resection. William Fuller.
84 *Modern Methods in Country Practice. Ernest W. Tonkin.
85 Placenta Previa. Samuel K. Smith.
86 Asthenopia—Accommodative and Muscular. Calvin R. Elwood.
87 *Hyperacidity of the Stomach Contents. D. Murray Cowie.
88 Some Remarks on the Pathogenesis and Treatment of Gonorrheal Arthritis. Richard Leuschner.
89 Circular Rupture of the Iris. Ovidus A. Griffin.

Colorado Medical Journal, September.

90 The Problem of the Age Is Life—Development Is Conservation of Energy. B. C. Arbogast.
91 Report of the Committee on History of Medicine in Colorado. C. D. Spivak.
92 Early Surgeous of Colorado. Charles A. Powers.
93 Physiology of the Kidneys. C. B. Van Zant.
94 The Microscopic Examination of Urine in Nephritis. W. H. Bergtold.
95 The Etiology and Pathologic Anatomy of Chrouic Nephritis and Amyloid Kidney. J. A. Wilder.
96 The Remote Phenomena Which Would Prompt Us to Look for Disease of the Kidney. J. Tracy Melvin.
97 Etiology, Symptoms and Treatment of Acute Nephritis. H. B. Whitney.
98 Renal Functions and Life Insurance. C. G. Hickey.
99 Report of Three Fatal Cases of Chronic Nephritis, Illustrative of Clinical Types of the Disease; Brief Reference to Treatment. B. B. Frankle.

Medical Dial (Minneapolis), November 1.

100 Psychology of Neurasthenia. Jas. G. Kiernan.
101 Some of the Emergencies of Labor and How to Manage Them. Edward J. Wilson.

Columbus Medical Journal, October.

102 Cystitis. Thomas G. Youmans.
103 Diagnosis of Typhoid Fever. Starling Loving.
104 Treatment of Typhoid Fever. Clovis M. Taylor.

Denver Medical Times, November.

105 Home Treatment of Insanity. Hubert Work.
106 *A Comparative Climatic Study of the Arid and Semitropic Southwest, and Its Relations to Tuberculosis. Wm. Winthrop Betts.
107 *History of the Colorado Fuel and Iron Company's Hospital. R. W. Corwin.

Southern Medical Journal (La Grange, N.C.), October.

108 Acute Intestinal Auto-infection. John M. Batten.
109 Leading Physicians. S. Scruggs.

Medical Council (Philadelphia), November.

110 Disorders of the Sexual Functiou in Mau. A. H. P. Leuf.
111 Winter Diseases. T. H. Line.
112 Carbolic Acid in Surgical Cases. C. Kendrick.
113 A Teratism of the Acephalic Variety. D. S. Hanson.
114 *Somnambulism. Herman Gasser.
115 *Unjust Food Laws. G. M. Randall.
116 Hydrophobia; Its Symptoms and Treatment. William Alexander Armstrong.

Medical Times (N. Y.), November.

117 A Systematized History of the Insane for Sixty Years. J. Howe Adams.
118 The Lesser Known Signs and Symptoms of Aortic Aneurysm; with Their Treatment. M. E. Fitch.
119 Hysteria in Children. William Wormley.
120 The Management of the Puerperal State. R. O. Tucker.
121 Bullous Urticaria. P. F. Barbour.

American Medical Compend (Toledo, Ohio), November.

122 *Why Is the Present Epidemic of Smallpox Likely to Continue? W. C. Chapman.
123 Rectal Reflex Neuroses. William M. Beach.
124 The Relatiou of the Echinococcus to Hydatids. D. E. Haag.
125 Intestinal Hemorrhage iu Typhoid Fever Controlled by the Use of Adrenaliu Chlorid Solution. Geo. S. Williams.
126 Reflex Neurosis from Disturbed Pelvic Mechanism. Byron Robinson.
127 *Postpartum Hemorrhage. H. M. Jump.
128 Severe Neurasthenia Dependent upon Anemia. Isaac Mayhugh.

Southern Practitioner (Nashville, Tenn.), November.

129 *Legislation—Its Limitations In the Prevention of Disease and Crime. John Bell Keeble.
130 A Clinical Report on Gude's Peptonmangan. Samuel Wolfe.

Hot Springs Medical Journal, November 15.

131 The Necessity of Exact Diagnosis in Certain Operative Prostatic Diseases. Louis E. Schmidt.
132 *Syphilis in the Innocent. J. B. Shelmire.

Texas Medical Journal, November.

133 *The Drug Habit: Its Treatment. M. K. Lott.
134 Camp Life for Consumptives. C. H. Wilkinson.

New England Medical Monthly (Danbury, Conn.), November.

135 Observations in Practical Surgery; Certain Questions on Procedure. Franklin Staples.
136 Some Notes on Tuberculosis. Arch. Dixon.
137 Re-amputation of Leg—Osteoclasis of Elbow—Sequestrotomy of Knee. Thomas H. Manley.
138 Two Cases of Bright's Disease and Their Treatmeut. C. H. Sangster.
139 The Health of the American Girl, as Imperiled by the Social Conditions of the Day. George J. Engelmann.
140 A Contribution to the Therapeutics of Pepto-mangan (Gude). Ludwig Pohl.
141 Collargolum and Unguentum Credé. Arthur De Voe.

Atlanta Journal-Record of Medicine, November.

142 Legislation and Its Limitations in the Prevention of Crime and Disease. John Bell Keeble.
143 *Heredity and Acquired Characteristics as Social Questions. R. R. Kime.
144 Anemia. Wm. Buchanan Conway.
145 *Continued Malarial Fever. J. R. G. Howell.
146 Rupture of the Choroid, with Report of a Case. Dunbar Roy.
147 The Fallibility of Scientific Evidence in Medical Jurisprudence. T. S. Hopkins.
148 Foreign Body in the Vagina. Carroll W. Downey.

Nashville Journal of Medicine and Surgery, October.

149 Acute Dysentery. A. E. Cox.

AMERICAN.

1. **The Tetanus Outbreak in St. Louis.**—The recent cases of tetanus following the use of antitoxin in St. Louis are discussed by Abbott, who notices the puzzling questions connected with them, especially as regards the origin of the infection. It is not easy fully to understand how the poison was introduced into the antitoxin, though neither the oxygen in the serum nor the antiseptic can certainly be said to destroy the possibly existing spores. But admitting this, the question arises: Were these originally introduced in sufficient numbers to account for the accident, or did they lie dormant in the serum until its injection into the susceptible human being? If the serum contained the bacilli or spores in such numbers as to have produced the disease, it most certainly would have developed in some of the very susceptible animals employed for the standardization of the antitoxic strength of the serum, but this, we are told, did not occur. So far as evidence will permit, Abbott thinks that the facts point more to a toxic origin for the accident, though there are obstacles to the establishment of this hypothesis. The question arises whether it is possible for the horse to give a serum in the incipient stages of the disease on August 24, when it succumbed only in the early part of October. We do not know the length of the incubation period of tetanus and can not positively say that it might not be five weeks in horses, though this is not the case in man. It is possible, he thinks, for a very small quantity of undesirable toxin to be introduced into the serum which might multiply in it and he thinks that so far as tetanus is concerned, however, the detection in such products as antitoxic sera is a matter of comparative simplicity. After the St. Louis experience, he would not regard anyone justified in distributing serum, until all doubt in the matter had been cleared away. This can be done in several ways: by very careful observation of the horse under treatment, by the occasional prophylactic use of tetanus antitoxin on the animal, by keeping the serum for a reasonable length of time after it is prepared and before it is distributed, the horse being under observation and, finally, by a special test directed to this point in which there is injected into a highly susceptible animal not the fraction of a dose used on human subjects, but the full human dose. If, after this, the animal exhibits no signs of tetanus, one is justified in assuming that the serum is free from anything capable of causing the disease. When we consider the thousands of injections that are annually admin-

istered with this very rare undesirable result, we must regard the deplorable accident of St. Louis as an exceptional one, which could not have been foreseen and might fall to the lot of any of us.

2. **The Bottini Operation.**—The cases of prostatic hypertrophy may be divided, according to Horwitz, into three groups: 1. Those in which the enlargement does not produce obstruction nor inconvenient symptoms. 2. Where there is a constant residual urine associated with disturbance of the function of urination and the patient is obliged to employ the catheter, but nevertheless requires no other treatment and may live to old age in comparative comfort. 3. Those who sooner or later suffer from what is called "the breakdown in catheter life," the catheter being used with great difficulty and pain and grave secondary complications being the result of the reduction of their resisting power, and loss of sleep. He believes that prostatic hypertrophy begins in early age, but that the obstructive symptoms do not appear until later when the growth has attained a considerable size. He reviews the history of the operation for this condition and especially remarks on the Bottini operation, which he thinks is the most successful method, attended by the greatest number of systematic cures and with the least mortality, viz., 4.5 to 7 per cent. The objections that have been made to it by various writers that it is uncertain and dangerous to perform, that the operation is done in the dark, that relief is but temporary, etc., he thinks are contradicted by the experiences of numerous observers. He has had thirty-six cases under his care and there was a tendency to recurrence of the obstructive symptoms in but three instances, making a second operation necessary. In each of these cases there was marked improvement in the physical condition. He is inclined to think that in the three cases the incisions were not made of sufficient length at the time of the first operation. This, however, is not serious as the operation is easily repeated and it is far better to do too little than too much. In the three years that have elapsed since his first operation there have been no complications of any kind in any case. In one case where he had the opportunity to perform a suprapubic cystotomy in a patient who had submitted to the Bottini operation seven months before, he found that all the obstruction had been removed and that there was a deep furrow in the median line of the middle lobe. Other evidences of this sort are noticed.

3.—See abstract in THE JOURNAL of September 14, p. 714.

4. **Intracranial Neoplasms.**—Pearce argues for the neuronic theory in explanation of brain tumors and their symptoms and believes that some form of electric energy is the cause of the continuation of life processes after birth and that the neuron theory accords with this. His argument is rather elaborate and can not be given in detail.

5. **Neurasthenia.**—Roberts describes the symptoms, causes, pathology, diagnosis, prognosis and treatment of neurasthenia. He lays special stress upon the disuse of anything like morphin, which he thinks has sent many of these unfortunates to death.

8. **Fertilization.**—The history of our knowledge of fertilization is first noticed by Gies with details as to Loeb's investigation, and in conclusion he reports his own experiments with enzymes. The chief experimental results of the work are given as follows: 1. Extracts of the spermatozoa of the sea-urchin, which have been made by the ordinary methods for the preparation of enzyme solutions, do not possess any power of causing proliferation of the ripe ovum. 2. No evidence could be furnished of the existence of a zymogen in spermatozoa. 3. Extracts of fertilized eggs, in the earlier stages of development, were likewise entirely devoid of segmental activity. 4. Enzyme seems to be excluded from the catalytic substances which Loeb and others have thought may influence the initial divisions of the ovum after the introduction of the spermatozoön, although it is possible that the conditions of these and previous experiments were unfavorable to the manifestation of activity on the part of fecundative ferment. It seems more probable, however, that Loeb's theory of the influence of spermatic ions in fertilization affords the true explanation of the phenomena in question.

10. **Tendon Transference and Arthrodesis in Infantile Paralysis.**—Three cases are first noticed by Bradford which illustrate the three methods of treatment, viz., mechanical, muscle and tendon transference, and the stiffening of the joint in cases of infantile paralysis. In the severest cases where all the muscles are affected, operative surgery seems to be useless. The application of an apparatus with the aid of a cane seems to be the only resource. When, however, as is more common, some muscle function remains, an advantage can be gained by the employment of non-paralyzed muscles. The muscles frequently left which retain some power are the sartorius, the adductor group, and the hamstrings. The transference of the sartorius to the rectus is a measure usually employed without difficulty, the only obstacle being the abnormal position of the sartorius, which is often nearer the hamstring at its lower attachment. A curved incision at the lower end of the femoral will bring to light the attachment of this muscle, which should be entirely freed, brought up and transplanted into the firm sheath of the extensor cruris. When it is found to be weak, the outer hamstring or adductor can be detached and brought forward, and inserted into the fascia and extensor cruris. Where the adductor group is completely paralyzed, the problem is difficult. Whether the transference of the glutei can in any way be accomplished to supplement adductors is uncertain, but may be possible, as is also the shortening of the paralyzed adductors that they may act as a cord to check extreme abductation. In paralytic disabilities of the knee where all the muscles are paralyzed, making transference impossible, arthrodesis is to be resorted to only where no mechanical treatment is possible. In paralysis of the muscles controlling the action of the feet, the combined employment of arthrodesis and tendon transference is of great value. Where all the muscles are paralyzed in the front of the foot, the tendo Achillis can be split and a portion transferred and attached to the paralyzed peroneus tertius or to the tibialis anticus, or both. The procedure is not difficult and is performed by making an oblique incision on the outer side of the leg, securing the tendon of the tibialis anticus and the peroneus tertius above the anterior annular ligament, following them well up to the muscular origin of the leg. A portion of the tendo Achillis is cut off and passed obliquely forward and stitched to both the cut tendons. Where the gastrocnemius is paralyzed, several procedures have been recommended, such as the insertion of the tibialis postieus and one of the peronei, or the splicing of the tendo Achillis; the latter has not proved of as great value as the other. Success in this operation depends not only on care in the performance, but also on the quality of the strength of the muscles which can not always be readily determined before operation. The peculiar anatomical condition of the foot must be considered. Tendon transference is of value for the purpose of preventing the dropping of the front of the foot, or where the muscles have been weakened. Where either the extensor proprius pollicis, anterior tibial, of peroneus tertius are unparalyzed, they can be transferred to either side and in this way give power for raising the front of the foot. Much will depend on the strength of the muscle and the length of the foot. If any of the muscles of the toes remain unparalyzed, it is possible to utilize the extensor communis digitorum by uniting a paralyzed anterior tibial or peroneal muscle or muscular fascia to the extensor communis digitorum. In this way in many cases the dropping of the front of the foot may be prevented. In many of the older cases distortion develops from the adapted shortening of the soft tissue. Valgus and varus deformities are established and aggravated by the abnormal strain brought on various portions of the bone. Here simple tendon transference is not sufficient to prevent relapse after a correction, and arthrodesis of the mid-tarsal articulation is of special value. This operation is easy. An external incision is made and the articulation between the os calcis and the cuboid laid bare, the peroneal tendons being pulled aside. The cartilaginous surfaces of the os calcis and the cuboid are

removed with a chisel and if any abnormality in the shape of the bone has taken place, this can be removed, as the incision can be enlarged or another incision made on the inner side, and the scaphoid and astragalus ankylosed in the same way. This, with proper correction, does not interfere with the up-and-down motion of the foot, but does interfere with the twist which it is desired to prevent. In cases without muscular strength of any of the muscles of the leg, front or back, an ankylosis between the tibia and the astragalus can be performed, but the advantage of this over a proper appliance is not manifest and the operation hardly recommends itself for this reason. A partial operation to strengthen the ligaments on either side of the ankle by shortening relaxed ligaments is of advantage. The percentage of complete success from these different procedures in a large number of cases is yet to be accurately determined by further clinical investigation. Where these measures have been carried out, benefit is evident in suitable cases and it is desirable to call attention to the advantage of a combination of arthrodesis and tendon transference, i. e., to the employment of one or both with or without suitable apparatus in proper cases, and to emphasize the fact that the surgeon has, in the management of this disability difficult of treatment, an opportunity for the employment of surgical judgment, anatomical and physiological knowledge, and the exercise of trained skill with the expectation that in a large percentage of cases benefit will follow his properly directed efforts.

13. **X-Ray in Sarcoma.**—Beck's article is a fully illustrated report of a case of sarcoma of the leg treated by the *x*-ray, which he thinks shows decidedly the influence of the *x*-ray on this disease. He thinks the danger of dermatitis, which is one of the risks of the strong application required, should not be regarded as having great weight in malignant cases. The fear of using the strong current may be responsible for the failures.

14. **Devitalized Air Toxemia.**—In this conclusion of his paper Denison argues for the need of better air supply in the building up of resistance to tuberculosis. He thinks tuberculosis is mainly a result of a common predisposition and that the medical profession has been trying to put the cart before the horse and has assumed an accompaniment to be a prime cause. What we should do is to determine the per capita need of air in ventilation in order that predisposition to tuberculosis may be prevented. If we could have an invention of an automatic deficient ventilation-indicator built into the side of the room to announce by sound or visible index the degree of deficiency, and if set at liberal gauge for purity and freshness of air it would help to eliminate tuberculosis from the earth.

15. **The Lane Lectures.**—In this tenth lecture Morris continues the subject of eczema in its various varieties in infancy, puberty, adult age, menopause an senility. The trade eruptions, mycosis fungoides, which has the appearance of eczema but is really one of the most formidable diseases in dermatology, psoriasis, pityriasis rubra, are described and also malignant diseases of the skin generally, including the one just mentioned; among these latter he merely mentions the ordinary skin cancers and sarcomas. The last condition which he describes is acanthosis nigricans, another rare disorder at present incurable.

18. **Blood Stains.**—Wood's article gives the detail technique of the examinations of blood stains for medicolegal purposes, the guaiacum and hemin chemical tests and the sodium tungstate test, microscopic examination and the agglutination test.

21. **Infection.**—Eisendrath points out the special modes of infection, illustrating it by the surgical anatomy of the hand and showing how tendon sheaths are special localities for the spread of the infection, and also points out the channels in which the suppuration follows in other parts; the difference between streptococcal and staphylococcal infection, methods of treatment, necessity of free incision, etc. He summarizes in conclusion as follows: 1. Ample incisions to lay bare every portion of the infected area, and counter incisions to relieve the collateral edema. 2. General anesthesia and a bloodless method of operating whenever possible. 3. The disinfection of an infected wound with strong antiseptics, etc., is of little avail, and may do great harm. 4. Most dependence should be placed on free drainage and moist dressings, with the use of mild antiseptics. No powder should be used until granulation is well established. 5. Absolute rest and elevation of the infected area. 6. After-treatment by secondary suture and early active and passive motion. 7. General treatment: strychnin, whisky and attention to the excretory organs.

22. **Otitis Media.**—The continuation of Funke's article gives a list of over 60 cases examined, and offers the following conclusions based on personal observation and a study of the literature: 1. There is no specific organism of otitis media. 2. Acute otitis media is not invariably mono-microbic as is commonly held. There may be but one organism, but with it are frequently found various associated bacteria more or less influential in the outcome of the case. 3. The organisms commonly found, in the order of their frequency, are pneumococcus, streptococcus, pyogenic staphylococcus, and the bacillus of Friedlaender. He is strongly inclined to believe in a definite grippal otitis due to the influenzal bacillus, which, however, quickly becomes associated with other organisms. 4. Diphtheria bacillus is more commonly present than is usually believed, either as an original infecting agent associated with streptococcus or pneumococcus or as a secondary infection carried to the already infected ear. 5. It is reasonable to believe, as his observations show, that it persists over varying periods of time in the discharges and may constitute a center of danger, as in its prolonged persistence in nasal localities, etc. Its frequent association with the bacillus pseudo-diphtheriæ has the same significance here as elsewhere—a factor not as yet fully determined. 6. The streptococcal infections are more serious and persistent than pure pneumococcal infections, but both are usually supplanted by the staphylococci sooner or later. 7. There is a true pneumobacillary otitis usually acute and quickly converted into a mixed infection. Its gravity depends on the character of the secondary infection. 8. Chronic suppurative otitis media is practically always a sequence of the acute. 9. Like the acute it possesses no specific organism. 10. Unlike the acute it is practically always polymicrobic. 11. Its polymicrobic character may be evinced in any of three ways: (*a*) A mixed infection of pathogenic organisms; (*b*) one or more recognized pathogenic organisms (usually pyogenic staphylococci) with one or more bacteria usually regarded as saprophytes; (*c*) The usual pyogenic and pathogenic bacteria are absent, and the discharges are maintained throughout by the activity of the organisms that commonly lead a saprophytic existence. 12. While anaërobic organisms may play an important part in chronic suppurative otitis media, Funke's observations have not established their constant presence as maintained by Rist. 13. The fetor met in the cases here reported can be explained by the presence of bacillus pyogenes fetidus without anaërobic organisms. 14. All clinical and collated bacteriologic data indicate that otitic inflammations present different bacteriologic findings in different localities. According to Moos the otitis complications of the influenza epidemic of 1890 were due to the pneumococcus in Vienna (Weichselbaum), and to the streptococcus in Strasburg, in Griefswald and in Bonn (Ribbert). 15. The literature establishes the existence of a primary tubercular otitis, but all observers agree as to the impossibility of routine demonstration of the bacillus in the discharge. 16. For the demonstration of the tubercle bacillus in suspected cases, he would recommend the examination of tissue obtained by the curette.

23. **Vaccination.**—The questions raised as to the efficiency of the different forms of vaccine lymph, glycerinated tubes, points, etc., are noticed and reviewed by Good, who argues in favor of the value of the glycerinated lymph and suggests a government commission to investigate the subject offering the following points as desirable for solution: 1. Does one attack

of smallpox give absolute immunity? If not, for what time is immunity accorded? 2. How soon after an attack of smallpox can vaccine vesicles be produced by careful vaccination with a good virus? 3. Should a person be considered not immune if, having had an efficient vaccination some few years before, a revaccination produces vaccinal possibilities? 4. The importance of carrying out control tests with one species of virus from four to six weeks after the original vaccine had apparently taken. 5. What kind of lymph is it most safe to rely upon, and what is the most approved technic?

27.—See also title 15, above.

28. **Migraine.**—Thomson's article is largely an argument for the autotoxic origin of migraine, more especially intestinal auto-intoxication. He says migraine is one of the penalties exacted for neglect of the means provided by Nature to assist the portal circulation and keep it free and active. The treatment which he recommends is largely dietetic and antiseptic, with special attention, of course, to elimination, etc.

29. **Ophthalmic Science and Art.**—Roosa's article is a review of the progress of ophthalmic science and art. He points out the importance of the ophthalmoscope as modified by Loring, the use of the ophthalmometer as left by Javal, advances in the treatment of trachoma, and myopia, the questions of strabismus in which the progress, he thinks, has been comparatively slow, and the satisfactory progress in the treatment of cataract and glaucoma.

30. **Private Charitable Institutions.**—The object of Stoddard's article, as he states, is to call the attention of the profession to the responsibility of medical officers in formulating and establishing well adjusted systems of education and training in institutions which have the care of the youth and adolescent and to the cultivation of the vast field of observation which, under systematic and combined effort, is capable of yielding a most valuable harvest of knowledge.

32. **Gastric Acids.**—The existence of hyperchlorhydria is doubted by Knapp, who offers the term organacidia gastrica as a substitute, the designation of the condition of the stomach due to the presence of large quantities of organic acids. He points out the importance, as it appears to him, of the search for butyric and acetic acid, and the value of a discovery which he has made as to the effect of butyric acid and monocalcium phosphate upon congo paper and upon dimethylamidoazobenzol. He describes his test for butyric and acetic acid, for the details of which the reader is referred to the original. The symptoms of organacidia gastrica, which he proposes to describe in a future article, are, he thinks, due to the presence of volatile organic acids, and the symptoms of hyperacidity are due to the presence of acid combinations together with volatile media, such as alcohol, aldehyde and acetone.

32. **Carbolic Acid Gangrene.**—After reporting a case, Sheldon discusses the condition and asks why it should occur in one case and not another, which he thinks is hard to explain. Levi's explanation for the fact that it more often follows dilute solutions than strong ones because of the failure to produce eschar is not, he thinks, satisfactory.

36. **Heroin.**—Ten cases of the employment of heroin, mostly cases of bronchitis, tuberculosis and Bright's disease, are reported by Wood, who finds that it has its decided advantages in chronic coughs and in no cases has he noticed any tendency to the formation of the heroin habit.

38. **The Railway Surgeon.**—Bishop gives the opinions of a lawyer as regards the duties of the railway surgeon, calling attention to their ethical side, especially in regard to the holding of communications sacred. The surgeon sent to see a patient and doing nothing more than simply examining and reporting on his case has no right whatever to use for the benefit of the railway company anything he may learn in treating the case or that may be communicated to him as a physician as regards the patient's history previously, etc., or anything other than the actual condition for which he examined him. He also advises the railway surgeon to absolutely ignore on the witness stand that he is employed by either party in the case.

39. **Tuberculosis Legislation.**—Glasgow protests against the proposed legislation in regard to tuberculosis in St. Louis requiring the disinfection of every case lasting over ninety days. He maintains that this measure would produce hardship, add greatly to the expenses of the patient or the city, and says that tuberculosis is not contagious in the ordinary sense of the word. If the health department is looking for contagious diseases to report, there is a class of contagious diseases, admitted by all to be contagious, which causes more misery and ill-health than consumption. Let it cause these to be reported and then regulate them. Fumigation such as is proposed moreover would be annoying and harmful to many suffering from tuberculosis and would cause more deaths than it would save lives.

42. **Medical Registration in Michigan.**—Harison gives an interesting history of the work of the Michigan Board of Registration, showing the thoroughness with which the law has been executed, and the economy of management, and gives his correspondence with a district attorney who does not consider the clause in the law stating that it shall be "the duty of the prosecuting attorney to prosecute violation of the law on information furnished by the records of the county clerk," as mandatory.

47. **Preputial Divulsion.**—Enright argues against the practice of circumcision for overgrown prepuce and favors the use of divulsion in all cases where there is not too great redundancy. He says, where the prepuce is narrow, divulse it, especially in children where the absence of a diseased condition is the rule.

50. **Genital Tuberculosis.**—After reporting and discussing a case, with an analysis of the literature, Young sums up the operative indications as follows: Epididymectomy with high resection of the vas deferens is the operation of choice. Castration should be confined to cases where the testicle proper is involved or the scrotal disease is extensive. Double castration, if possible, should be avoided, a portion at least of one testicle being left, even at the risk of local recurrence. Operations upon the seminal vesicles and prostate need be done only after the removal of the testicular foci has failed to arrest the progress of the disease in these organs, and it has spread to the bladder. Serious involvements of distant parts, pulmonary, urinary, osseous, etc., do not contra-indicate operation, especially since the more exact methods of using cocain have made general anesthesia unnecessary. The remarkable disappearance of extensive tuberculosis of the prostate seminal vesicles, bladder, kidneys, lungs, etc., that may follow removal of the testicle seems abundantly proven.

51. **Cervical Ribs.**—The case reported by Kammerer occurred in a woman aged 35, and apparently began in the left supra-clavicular region, producing pain and weakness in the arm which ceased for a time but afterwards returned. The *x*-ray revealed a cervical rib on that side with no evidence whatever of anything of the kind on the other side. The operation performed was the removal of a large portion of the bone and was followed by gradual improvement and almost complete recovery. He remarks in regard to the technique that no mention is made in the literature of difficulties, but he finds the operation is either very easy or rather difficult. In his case there was considerable embarrassment from the close proximity of important organs, arteries, etc.

54. **Acute Intestinal Obstruction.**—Three cases are reported by Hotchkiss following appendicitis and successfully operated on. He thinks that these indicate the great value of certain procedures under certain conditions. 1. The great utility as well as necessity of the free use of decinormal salt solution injections either subcutaneous or into the veins or rectum, both during and after the operation as a preventative of shock. In two or his cases the depression was so extreme that he thinks the patient could not have survived without this measure. 2. The great value of free incision into the over-

distended coils of gut; (*a*) in order to relieve upward pressure upon the diaphragm, and the disturbance of respiration and circulation dependent upon it; (*b*) to relieve the congested intestinal vessels and diminish the size of the enormously distended coils so that they may be handled without injury, the obstruction more easily dealt with and located, as well as to drain away from the interior of the gut a great quantity of stagnant fluid before it can reach the absorbing surfaces of the intestine below the obstruction. 3. The practicability and desirability of closing the abdominal wound without attempting to drain the peritoneum, and the leaving within the cavity sufficient saline solution to float the intestines and assist, perhaps, in their rearrangement. Measures which are essential in post-operative treatment are: 1. The persistent and intelligent use of the stomach tube with lavage. 2. The early and if necessary repeated administration of saline purges in concentrated solution and introduced through the stomach tube if they can be retained in no other way. 3. The use of the rectal tube for the relief of gas and the patient and persistent use of high enemata. These three measures patiently and intelligently employed with absolute abstention from morphin are the tripod on which rational and effective treatment is based, and on the intelligent use of which the life of the patient often absolutely depends.

56.—See abstract in THE JOURNAL, xxxvi, p. 711.

60.—Ibid, November 16, p. 1338.

61. **Complete Uterine Prolapse.**—Wiggin describes this condition as a reducible hernia through the pelvic floor, the sac being formed by the inverted vagina, containing besides the uterus, tubes and ovaries, a large portion of the small intestine, the bladder and rectum. It is caused by separation of the tendons of the muscles forming the pelvic floor where these unite in the median line, occurring usually during parturition. The malposition of the bowel is more or less increased by lifting heavy weights and by defecation, and perhaps is hastened by added weight of the small intestines which find their way to the lowest point. The complete form of this does not, as a rule, appear until late in life, but it causes much discomfort for many years before and the unsatisfactory permanent results of the various operations are due largely to the failure in recognizing the fact that the vaginal wall is practically a hernial sac with other contents than the uterus and appendages, and that consequently simple repair of the external perineal body, and the removal of a larger or smaller portion of the vaginal walls of the uterus itself would not correct the greatest trouble, malposition of the small intestines. The treatment requires, according to him, an operation to obliterate the hernial sac in the inverted and stretched vaginal wall and a restoration of the damaged perineal structures to their normal position as nearly as possible. His method is as follows: The patient is placed on a bed the end of which is raised six inches. Tampons moistened with glycozone are put in position. The parts are treated until all ulcerations are healed, the general condition being carefully looked after. A laparatomy is then performed in the Trendelenburg position to aid in drawing the bowels out of the way. They are usually found more or less attached to the peritoneal lining of the vaginal wall by adhesions which must be broken up. The uterus, which is usually small, is found and pulled upward by bullet forceps, thus drawing upward also the attached vaginal wall. When this has been accomplished a needle armed with kangaroo tendon is passed through the fibers of the uterus about the point of attachment to the round ligament, and is carried up and down the broad ligament in the form of a purse-string suture, the needle being finally made to emerge at the point of entrance, so that when the two ends of the sutures are drawn upon, the broad ligament on that side is forced up and drawn together so that the excessive length is done away with, and the uterus has a new point of attachment near the insertion of this ligament to the pelvic brim. The same process is repeated on the opposite side, the abdomen is flushed with saline solution, a quantity of which is left in, and the abdominal wound closed rapidly in the usual manner. The patient is again placed in a bed the foot of which is slightly raised, and after the wound has healed and the patient fully recovered, four or five weeks later, a new operation is performed to bring together the separated tendons of the perineal muscles with submucous sutures of catgut or kangaroo tendon. It will be found that at the time of the second operation, after the first one has been properly performed, that the redundant vaginal walls have practically disappeared. He has performed this a number of times in aged women and found it well borne, as it can be quickly done and involves no serious hemorrhage. Two cases are reported illustrating the results. He thinks spinal cocainization will perhaps be found particularly suited to this class of cases.

See also THE JOURNAL of November 16, p. 1338.

62.—See abstract in THE JOURNAL of November 9, p. 1266.

63.—Ibid. November 16, p. 1338.

64. **Concomitant Strabismus.**—Hubbell explains strabismus as primarily an abnormal condition of the oculo-motor nerve centers. There is no such thing as a muscle-shortening or elongation at its outset. Such conditions are the result, not the cause, of strabismus. By keeping this point in mind that it is primarily an abnormality of innervation—a vice of the controlling nerve centers—we should be saved from many errors of treatment.

65.—See abstract in THE JOURNAL of November 9, p. 1266.

66. **Milk Sugar.**—Jacobi's article is largely polemic, defending his recommendation of cane sugar in infant feeding against the criticisms of Huebner. He points out that the amount of milk-sugar in human milk varies at given periods and in different persons, and that laboratory combination tests of the theoretic preparation are not reliable. There are dangers of inordinate feeding with milk-sugar producing an excess of lactic acid. Among other things rickets has been thus explained by its chemical action.

67. **Adenoma of Both Adrenals in the Newborn.**—The interesting features of this case are summed up by the author as follows: 1. The presence of adenomatous hyperplasia in both adrenals, probably also in the left adrenal of Marchand, associated with retrograde changes in the right adrenal of Marchand, would suggest a congenital anomaly or defect in the development of the adrenal *anlage* from the Wolffian body. (The three-lobed left lung is also evidence of anomalous development.) 2. Suppression of the urine and death from uremia caused by toxic acute parenchymatous degeneration of the kidneys in this case. He describes the diagnosis of adrenal hemorrhage from adenoma and gives the following characteristics of the latter: 1. Absence of evidence of hemorrhage in or about the capsule. 2. The presence of a narrowing peripheral zone of apparently normal cortical tissue, beneath which there is usually a deep brown line separating the living and necrotic tissues. 3. The central portion composed of reddish-brown necrotic tissue without signs of extravasation or organization and showing on microscopic examination the remains of dead cells with blood-pigment in the capillaries between the cells.

72.—See abstract in THE JOURNAL of November 16, p. 1342.

74.—Ibid., p. 1341.

84. **Modern Methods in Country Practice.**—The elaborate paraphernalia recommended for diagnosis, etc., are remarked upon by Tonkin, who says that the country physician should be able to make all the more ordinary microscopic and chemical examinations of the blood, urine, pus and stomach contents. Any ordinarily intelligent patient can understand why the country physician could not make skiagraphs of fractures or thorough ophthalmoscopic examinations, but he would not understand the necessity of sending sputa, blood, or pus away for examination. The microscope is a necessary part of the physician's outfit and for sputum examination no other apparatus is necessary. Blood examinations are unnecessarily neglected. We do not require an exact count of the red and white cells. Any extensive leucocytosis may be at once detected by examining a thin film of blood under the ordinary

cover glass. Pernicious anemia is characterized by the striking variations in the size of the red cells and the presence of nucleated red cells of extensive size and by the tendency of all the colored cells to stain dark brown with eosin. Chorosis is differentiated by the red cells taking the red stain only slightly. The Hammerschlag's specific gravity method should be enough to estimate the hemoglobin and he gives the figures and the method. A chemical analysis of the stomach contents may not be required, but ordinarily the test meal can be used by the ordinary country doctor. He also describes a contrivance for intracellular infusion of saline solution which is easily devised, consisting of a pint or quart bottle with a two-holed rubber cork, one carrying a small glass funnel, the other a glass tube at right angles with the cork to which is fastened three or four feet of rubber tubing with a slim aspirating needle. Place some sterilized absorbent cotton in the mouth of the funnel to act as a filter, leaving the cork loose enough to permit of escape of air. When the bottle is full, fit the cork down tightly and pour the solution into the funnel until it runs from the needle, allowing it to run until the funnel is empty when the apparatus is ready for use. The saline solution can easily be made by putting 50 grains of pure salt to the pint of water. The rate of infusion should not exceed one ounce per minute for a patient weighing 135 pounds.

87. **Gastric Hyperacidity.**—This term, which is confused sometimes with hyperchlorhydria, implies simply an excess of acids whether due to total HCl., free HCl., acid salts or fermentation acids. Hyperchlorhydria is of more limited signification, implying a definite group of symptoms brought about only by an excess of free hydrochloric acid. Cowie has experimented on the stomach analyses of a large number of patients with different forms of insanity and offers evidences in favor of the neurosis theory and the theory of anatomical changes in the gastric mucosa. He reviews the relation of starch digestion to hyperchlorhydria, its frequency, which he finds much less than that of hyperacidity, its symptomatology and diagnosis. He thinks in all cases showing hyperchlorhydria it is of importance to recognize whether it is a functional neurosis or whether it is due to anatomic changes. In the absence of tissue bits we remain in uncertainty unless clinical symptoms point directly to a so-called nervous basis.

106. **The Arid and Semitropic Southwest.**—Betts' article is a description of the climatic features of Southern Utah, Arizona, and Southern California as compared with other western localities like Denver and Salt Lake City. He finds that there are many advantages in Salt Lake climate with its absence of extremes, and also in Southern Utah and portions of Arizona, which are not yet fully utilized by health seekers and physicians. He thinks the ideal climate for consumption is one which will stimulate the greatest possible outdoor life. Hence a mild, dry climate of moderate altitude, with a high percentage of sunshine, low wind rate and comparatively free from sources of tuberculous infection, best meets the requirements.

107.—See abstract in THE JOURNAL of July 13, p. 137.

114. **Somnambulism.**—The theory brought out here by Gasser is that there is a circulation in the nervous system of some sort which he thinks gives the only comprehensive interpretation of the facts of the functions of the organism in the various conditions of consciousness, etc.

115. **Unjust Food Laws.**—Randall argues for the use of formaldehyde in food preservation and disinfection, and thinks that the prohibition of its use may do more harm than good. He thinks that it is the one agent that will solve the harmless sterilization of milk, and quotes Foulerton in support of his view.

122. **Smallpox.**—Chapman, from his analysis of the facts, thinks that the three causes now operating over the country most likely causing the continuance of the present epidemic of smallpox are the following: 1. Mistaken or tardy diagnosis. 2. Failure to enforce quarantine. 3. Inattention to vaccination, either in the insertion of the virus or the lack of observation of the patient afterward.

127. **Postpartum Hemorrhage.**—After reporting several cases in his own experience, Jump says they have taught him in connection with what he has learned of the experience of others: 1. That there should always be plenty of hot water ready for use in case the delivery should require it. It is a good plan to add a little turpentine to the hot water when using it to control uterine hemorrhage. 2. Never again to administer quinin or any other drug for the purpose of hastening labor. He finds there are other physicians besides himself who consider quinin as the possible cause of postpartum hemorrhage. Another thing he never insists on is the patient's remaining in bed, nor does he care what position she gets into until it is time for the head to be delivered, and he makes as few examinations as possible. He finds that in slow labors if the patients will kneel on the floor and lay their heads upon the bed for a few minutes this position tends to relieve the parts and to induce strong pains. If he finds labor so tedious as to endanger the life of the baby or the health of the mother, he gives an anesthetic and uses forceps. 3. As a prophylaxis immediately on the termination of the second stage, he administers a teaspoonful of a mixture of one part of tincture of capsicum and ten parts fluid extract of ergot. This seems to produce a permanent contraction quicker than does ergot alone.

129.—See also title 142.

132. **Syphilis Insontium.**—Shelmire believes that syphilis contracted innocently is more common and important than is usually supposed, and reports several cases, all but one in physicians, in which it was thus acquired.

133. **Drug Habits.**—Lott recommends an apparently rather heroic method of treatment in morphinism by hydrobromate of hyoscin. He gives 1/100 of a grain and follows it by 1/200 of a grain from thirty minutes to an hour for from twenty-four to forty-eight hours, until the patient has taken from 40 to 60 doses, sometimes decreasing or omitting a dose, closely watching the pulse and respiration. The object is to secure hyoscin intoxication. When that is reached, as is shown by the restlessness, dilated pupils, dry throat, hallucinations, etc., he gives only enough to keep it up for from twenty-four to forty-eight hours. The patient is allowed water freely and is closely watched by the nurse, and if necessary a little dose of morphin may be given or strychnin, nitroglycerin or digitalis for the heart. At the end of the first stage of treatment the patient comes out from under the drug and no longer craves his usual dose, and then he begins the second stage with pilocarpin in 1/8 gr. doses, repeated every hour until its physiologic effect is secured. Then the time is lengthened between the doses, but they are kept up long enough to eliminate the drugs that have been stored in the body; in other words, until the last vestige of hyoscin symptoms has disappeared. There will be likely to be some diarrhea and pain in the knees, elbows, etc., and sometimes cramps. For these he gives subgallate of bismuth for the diarrhea and sometimes bromids or similar sedatives. Then under the stimulation of wholesome nutritious food at the end of a week, the patient begins to reach the normal condition.

142.—See also title 129, above.

143. **Heredity and Acquired Characters.**—Kime believes in the heredity of acquired characters and offers the following as a plausible, practical and consistent statement: "Acquired individual, permanent characteristics, produced through natural or perverted functions of the body become hereditary in character. The earlier in life such characteristics are acquired, the greater the tendency to transmission, and when carried through successive generations, tend to become permanent hereditary characteristics." He refers to various evidences in favor of this view, among them those of Talbot and Wolff on Jews, and as deductions from the above upholds the right of the State to interfere with whatever customs, etc., may lead to defective heredity. It is our duty to have proper legislation and registration to prevent the propagation of criminals, insane, inebriates and disease.

145. **Continued Malarial Fever.**—Under this name Howell describes a fever which may occur with or without chills, and

is slightly remittent in character, the pulse following the temperature and proving a valuable guide. If it does not come down with the temperature, it indicates that the disease is not progressing favorably. In rare instances the disorder may have a sudden onset. The tongue is atypical, the edges are red and the border has a light colored coat; the center is covered with a brown coating, and strawberry spots show on the white border. In the latter part of the disease the tongue becomes dry and cracks, and there is anorexia, constipation, scanty urine from the beginning with some albumin as the disease progresses, some headache and backache are present, not the photophobia or hebetude of typhoid. Physical examination shows an enlarged liver and hypertrophied spleen. After the seventh day there is usually tympanites throughout the abdominal cavity, but no rose spots are present. His treatment has been largely the use of calomel in the beginning with magnesium sulphate, giving quinin for four or five days and reducing it gradually or discontinuing it at the end of that period. When the quinin has been stopped, and sometimes before, he begins with a 4-ounce mixture composed of one-half ounce of dilute nitro-muriatic acid, and three and one-half ounces of elixir of lactopeptin, and gives one teaspoonful every four hours while the patient is awake, so long as the bowels are not too much irritated by it. He controls the fever with phenacetin in small doses and cold water. He uses a careful diet and specially recommends buttermilk and beef tea made with Mosquera's beef jelly. He does not express a positive opinion as to the nature of the disease.

FOREIGN.

British Medical Journal, November 9.

Prognosis in Relation to Disease of the Nervous System. Judson S. Bury.—Bury reviews some of the elements which he thinks essential factors in the determining of prognosis: 1. As regards the attacking agent, our knowledge of the various agents is too limited to help us much; a few points in the nervous system seem to be fairly certain; there is good evidence that irritation of the sensory nerve may lead to muscular atrophy, the absence of thyroid secretion seems to be the cause of impaired brain function in myxedema. We are daily acquiring more knowledge in regard to poisons producing nervous diseases such as alcohol, lead, arsenic, and those produced in the body. By analogy we reason the existence of action of other toxins. Two striking features may be noted, viz., the selective action of poisons and the immunity which is sometimes the direct result of that action. Syphilis is especially noted as regards both these points and it is remarked that since we have to speak with great caution about the course of disease or its production by this toxin of which we know so much, hence there is need of greater care in speaking of the action of poisons whose effects are known so little as those which we assume to be the exciting agents of such disorders as multiple sclerosis, Landry's paralysis and many other conditions. The prognosis in relation to the morbid anatomy is next considered. The mere size of the lesion appears to often have very little effect on the prognosis of the disease. Portions of the brain may be extensively damaged while other parts like the medulla afford very little space for any abnormal growths or disease without serious involvement. Lugaro claims that some parts of the nerve cells are more seriously involved than others, and that the lesion of chromatic substance is reparable while those of the other parts of the cell are less so, but Bury considers this statement in its fullest application somewhat doubtful. The nature of the lesion is also hard to determine and he is inclined to believe that each poison has its own point of attack and that the earliest change in each disease has its own peculiarities unknown to us at present, but which if visible and thoroughly recognized would enable us to diagnose the condition and foretell its developments. The only manifestations of disease are symptoms, and how they are to be interpreted is a question; the difficulties are increased by the fact of idiosyncrasy. The sudden changes that may occur in serious nervous diseases like the brightening up, for instance, in tubercular meningitis which has been observed, and the temporary improvement from direct irritation in insanity are mentioned. The necessity for care in the forming of judgment is emphasized. He says it is difficult to understand how the ups and downs which are such marked features in the clinical history of chronic nervous disease can be explained on the hypothesis of primary progressive degeneration of neurons owing to exhaustion of their specific vital energy, and apart from the direct action of toxins circulating in the blood. Assuming that the poison is the most common exciting cause of nervous disorders, prognosis will vary with knowledge of the proper treatment for its elimination. In most cases we know neither the nature of the poison nor the method in which it is introduced into the circulation and treatment is purely empirical and often fails. We employ massage, baths, purgatives, alteratives, and place the patient under the best hygiene conditions and yet often without producing any immediate results. We need also remedies for counteracting the effects of poisons, and here we must hope for fresh discoveries regarding the effects of glandular extracts and the nature of toxins and their antitoxins. The influence of one disease upon another is worthy of renewed investigation; also further studies are necessary to establish the influence of one part of the nervous system on another, the value, for instance, of the sensory impulse in maintaining a proper nutrition of motor neurons as affording an explanation of the beneficial effects of massage, passive movements, and galvanism. Proof of this and other facts which may be derived from a study of the pathology and history of symptoms give us hope for the future and suggest that further study, clinical, pathological and chemical, will do much to improve the prognosis of many nervous disorders.

Local Treatment in Diseases of the Upper Air-Passages. Sir Felix Semon.—In this second lecture Semon takes up the local manifestations of general systemic diseases, particularly tuberculosis, and thinks that we should avoid as much as possible the word "cure" when speaking of the chances of treatment. In systemic disease the process is not purely local and though we relieve the manifestation we can not promise that the arrest will be a permanent one. Secondly, in no case is there greater need of individualization in treating disease on its own merits than in laryngeal tuberculosis, and the situation and extent of the local disorder will have to be carefully considered. If there is only infiltration without broken surface, he advises to leave matters alone. If there is ulceration the question of its situation and extent are of paramount importance and the local treatment will have to vary according to the amount of ulceration and its effects on diseased portions of the larynx. Sometimes energetic treatment will yield gratifying results in single ulcers, but no general rule can be laid down. In ulcers of the epiglottis, mucous membrane over the arytenoid cartilages and elsewhere, the difficulties are greater and treatment less satisfactory. Local treatment is legitimate and if intralaryngeal measures fail and dysphagia be excessive, or a subglottic ulceration spread to the posterior wall of the larynx, external operation may be considered. But the external wound in these cases is apt to become infected and a second extensive operation become necessary. Where the whole or nearly the whole of the mucous membrane of the larynx is one mass of ulceration with perichondritis and chondritis or caries, palliative measures alone are suitable and nothing has given him so much satisfaction as the insufflation of orthoform. The patient's general health and pulmonary condition are also to be taken into consideration. If local treatment is determined on it must be efficiently carried out. In syphilis of the larynx he has for a long time ceased to include local treatment as the routine measure in his methods. That means he does not exclude it, but would not make daily applications in addition to constitutional treatment, which last he relies upon. In affections of the upper air-passages due to disease of the central nervous system, he adheres to the use of electricity, especially in functional aphonia, and he also advocates prophylactic tracheotomy. In cases of bilateral well-developed paralysis of the abductors where suitable treatment fails in widening

of the glottic space, he would fully explain the situation to the medical adviser or the patient himself and his family and let them share the responsibility of the operation. In local manifestations depending upon local disease of the correlated areas Semon refers at length to the influence nowadays believed to be exercised by the state of the nose on inflammatory disease of the larynx and pharynx. While admitting this to a certain extent he thinks it is overestimated and the worst of it is that the theory is carried into practice, and useless nasal operations performed. In affections of the upper air-passages supposed to exert an influence on the other organs of the body, he says that the original sound principle has been hounded to death by being exaggerated. There is no doubt that there is a certain amount of influence, but the so-called nasal inadequacy has not the importance that is claimed for it. It is perfectly unintelligible to him how a slight degree of obstruction in the nose proper, especially on one side, can have such a distressing effect upon the middle ear which he has often seen ascribed to it. Unless the Eustachian tube is involved he sees but little possibility of ear trouble. He looks upon the endeavor to improve the labyrinth disease by removing a crest from the nasal septum with feeling much akin to those which animate him when he sees primary inflammations of the larynx treated by way of the nose. Nasal reflex neuroses are, he thinks, the most unsatisfactory subjects in modern medicine. The idea of the late Professor Hack has been exaggerated and carried to extremes by his followers. All that we can say is that in a number of cases physiologic reflexes are produced from the nose just as a reflex cough is sometimes produced from the external auditory meatus. The typical affection of nasal reflexes of the neuroses is hay fever, and the treatment of pathologic conditions of the nasal mucous membranes in many cases relieves it. Similarly, genuine bronchial asthmas are complicated by nasal polypi or may be relieved by removal of the latter. Hack's doctrine could never have obtained the popularity it has if there had not been something in it, but the mistake which his enthusiasm led him to make, has been exaggerated by his adherents and this is still being done. He tabulates the experience of various observers as to asthma and nasal irritations, and criticises severely Dr. Dundas Grant's views. The local symptoms and symptoms of obscure origin are noticed. The morbid readiness to discover disease, this desperate effort to find in every case and at any price a local explanation which has been in the ascendant of late years is, he believes, unsound, retrogressive, and greatly to be deprecated. We must keep in mind the necessity of proper proportion being observed between the gravity of the disease and that of the interference; the latter part of his article is a protest against the views and practices of certain authors.

Some Symptoms Produced by Tumors of the Optic Thalamus. J. Mitchell Clarke.—Clarke reports a case of brain tumor associated with marked intention tremor in the left arm and to a less degree in the leg, and involving the right optic thalamus, extending backwards and downwards into the subthalamic region, where it invaded the opposite side and pressed on the right internal capsule and the crura cerebri. It also involved the subthalamic region, red nucleus, aqueduct of Sylvius, and flattened and displaced the quadrigemina. Section showed degenerated tracts from the right hemisphere and well-marked and definite degeneration in the left cerebellar peduncle, which was not present on the right side. He thinks that the tremor especially occurring with tumors in the optic thalamus and those of the corpora quadrigemina and to a less degree the cerebellum, the balance of evidence is in favor of their being due to implication of the superior cerebellar peduncle, the course of events being that the tumor first affects the peduncle and later in the course of growth presses upon and more or less destroys the pyramidal tract in the internal capsule, crus or pons, and that thus the tremor appears first, but later disappears owing to the occurrence of more complete paralysis and of spastic contraction. Further investigation is required as to the implication of what special fibers of the superior cerebellar peduncle and tremor is due.

The Lancet, November 9.

The Personal Factor in Tubercuiosis. Dyce Duckworth.—The principal point in Duckworth's article is the identity of scrofula with tubercle and the individual predisposition of the patient. He maintains that we should pay due regard to the personal factor in tuberculosis and if we do this we will probably do more to avert the disorder from humanity than by any other course. Our modern pathologists discredit this too much and lay too much importance to the parasite itself. He also protests against too free estimation of cures in tuberculosis. The local disorder simply becomes quiescent and there may be recrudescence and relapse at any period during the patient's lifetime.

Freezing-Point of Blood and Secretions as an Aid to Prognosis. Alexander Ogston.—Ogston reports a number of cases in which cryoscopy was applied for diagnostic purposes and which, in his opinion, showed the value of the method. He thinks the high freezing point is probably a symptom of disease and the lower freezing point in some of his cases are purely owing to hepatic renal disease. It is his opinion that one of the most important fields of cryoscopy would be its power of indicating otherwise undetectable disease of the liver, at least in the practice of the operating surgeon.

The Sanatorium in the Treatment of Phthisis. T. Clifford Allbutt.—The sanatorium treatment of tuberculosis is discussed by the writer, who sums up the chief questions he propounds in the following: "1. Can mixed infections be recognized from fever curves? 2. Can we distinguish between economical (*wirtschaftliche*) healing and complete (*wissenschaftliche*) healing? If so, what is the mean term of residence for the economical healing of early cases? How long in certain active cases, say from 6 to 8 per cent., is a febrile patient to be kept to bed in the reasonable hope of recovery? For instance, in a public sanatorium are we justified in retaining patients who have been confined to bed for six months, five months, or even for four months? 4. What estimates of improvement and what rules of prognosis can be based upon physical signs alone? 5. Is multiple tuberculosis, for instance, in lung and testicle too hopeless a condition for a public sanatorium? How far is it comparable with an equal extent of mischief in one organ? 6. Of what use, if any, is massage? 7. Of what use, if any, is hydrotherapy? 8. Are special pulmonary exercises appropriate at certain stages of progress; and if so, when, and under what conditions? 9. Must we repair the body at the expense of the life of the mind? Can we not give even some educational value to the sanatorium besides the medical drill of it?"

Archives Generales de Med. (Paris), August.

Pseudo-Neuralgic Variety of Rheumatic Spondylosis. H. Forestier.—There are three varieties of spondylosis, the ankylosing, simple and pseudo-neuralgic. The spine is more or less rigid in all three, but in the latter variety the patient stands erect, while there is marked stooping in the others. The pseudo-neuralgic pains are acute, lancinating and bilateral. Gonorrheal antecedents are liable to induce a tendency to ankylosis. A general douche-massage on a sloping table with two masseurs working on the spine is the final touchstone which differentiates the curable simple and pseudo-neuralgic spondylosis from the variety with ankylosis.

Diazo-Reaction in Typhoid Fever. E. Sacquepee.—The diazo-reaction was negative in only 17 of the 567 cases of typhoid fever which Sacquepée has collected, including 23 personal observations. Its final disappearance indicates speedy defervescence. It may vanish without warning at any time, but its persistence in spite of the downward temperature curve is an indication of some complication or of an associated disease such as peritonitis or tuberculosis.

September.

Diagnosis of Tuberculous Meningitis. Marcan-Mutzner.—Two cases are described showing that there may be mononucleosis of the cerebrospinal fluid in the absence of tuberculous meningitis, and that the latter may be accompanied by a polynucleosis.

Presse Medicale (Paris), October 23.

Gummatous Lesion in Frontal Lobe Simulating Lesion in Rolandic Region. G. Dieulafoy.—A man of about 40, with a history of old syphilis but otherwise in good health, suddenly developed Jacksonian epilepsy in the night with other symptoms of a gummatous lesion so advanced that death ensued in a few days. The symptoms plainly localized the lesion in the region of Rolando but the autopsy disclosed that it was in the first convolution of the left frontal lobe. Lepine has witnessed three similar cases and Lowitz and Chipault have also published a case each in which the supposed site of the lesion was trephined. The region of Rolando was found intact and the autopsy later revealed the tumor in the frontal lobe. There were no peculiarities in the Jacksonian epilepsy in these cases to differentiate the frontal from the Rolandic type, but there is no record of the crural type of epilepsy in these frontal cases, and this may possibly prove a point to remember in the differentiation.

October 30.

To Avoid the By-Effects of Spinal Cocainization. Guinard.—The water used in the solution of cocain is probably the cause of the headache, hyperthermia, etc., observed sometimes after spinal cocainization. Guinard has completely avoided all these by-effects by using the patient's own cerebrospinal fluid as the vehicle. He draws 60 to 80 drops of the fluid into a receptacle while 6 or 7 drops of a concentrated solution of cocain in the proportion of 1 cg. of cocain to 2 drops of water are automatically added to the cerebrospinal fluid as it flows. The mixture is aspirated into the syringe and reinjected into the subarachnoid space at once. Fifty operations performed under spinal cocainization by this method were not followed by a single post-cocainic incident in any case.

Four Cases of Tetanus Cured by Intracerebral Injections of Antitetanus Serum. Letoux.—The conditions of success are early injection of as much as 20 c.c. of the serum for each hemisphere. Letoux injects it in the most prominent portion of the frontal eminence, with a needle 6 cm. long. The injection required seven to twenty-seven minutes. The serum does not cure the nerve cells already affected by the poison, but it protects the others against it. Subcutaneous injections have no action on the poison except as it is passing from the primary wound to the nervous axis. Consequently they are only useful as a preventive measure, while intracerebral injections are curative.

Compress Method of General Anesthesia by Ethyl Chlorid. A. Malherbe.—Two to four grams of ethyl chlorid are poured on a compress which is then applied to exclude the air over the mouth and nose of the subject. Narcosis is complete in twenty to forty seconds, and lasts three or four minutes, with no stage of excitement. It can be prolonged by new applications of the chlorid, thus enabling operations of fifteen to twenty minutes to be performed with ease. For longer operations, Malherbe supplements the chlorid with chloroform.

Vaselin Subcutaneous Prothesis. Delangre.—Suppuration around the mass of paraffin was observed in 3 out of 17 cases in which paraffin had been injected into the tissues for cosmetic or utilitarian purposes. Among the cases cured by this means was one of vesico-vaginal and one of entero-vaginal fistula, and the restoration of a lower lip after extensive resection during the extirpation of a cancer.

Aid to Diagnosis of Cerebral Compression. Vidal.—In the lack of any definite local symptom or anamnestic data on which to base the diagnosis, in a case of generalized epilepsy, Vidal had the patient inhale amyl nitrite. The intense congestion of the brain which it induces entails an epileptic seizure in such cases when there is any obstacle to the free expansion of the brain. In this case the immediate fulminating seizure confirmed the diagnosis of cerebral compression, and hemicraniectomy disclosed several tumors in the dura mater. Their ablation was followed by complete cure of the epileptic symptoms.

Surgical Diagnosis by Means of the Blood. T. Tuffier.—During the last two years Tuffier has had the blood examined in 60 dubious cases to determine the existence of suppuration, tumors or internal hemorrhage, and he announces that information can thus be obtained, of the greatest value to the surgeon. In one case for instance, osteo-sarcoma had been diagnosed, but the blood indicated suppuration, and Tuffier followed the latter indication with success. In all cases of suppuration, irrespective of their extent or localization, the blood shows hyperleucocytosis of the polynuclears, with increased numbers of red corpuscles and diminution of the hemoglobin in them. In case of tumors of connective tissue origin, such as sarcomata, there is also a polynuclear hyperleucocytosis but much less extensive than in case of suppuration. In the latter the white corpuscles attain three and four times their normal proportion. In case of tumors of epithelial origin, the hyperleucocytosis involves the mononuclears, at least in the first stages of the neoplasm before it is complicated by infectious processes. This mononucleosis accompanying cancer is characterized by the decrease in the amount of hemoglobin contained in the red corpuscles, while the number of the latter is not diminished. In case of anemia from hemorrhage the total number of reds is diminished but their composition is unchanged. It is possible thus to differentiate a cancer from an ulcer of the stomach, and a cancer of the uterus from a hemorrhagic metritis. Equally important information can be derived by centrifugalization of the cerebrospinal fluid after a traumatism. The presence or absence of figured elements in the fluid will establish the existence or absence of an intrameningeal hemorrhage. In a number of dubious cases Tuffier found this measure a most important means of differentiation, otherwise impossible.

November 2.

Abdominal Surgery After Bullet Wound. Reynes.—A young man of 30 was shot in the abdomen and although the general condition was excellent, pulse and temperature normal, with no signs of hemorrhage or incipient peritonitis, laparotomy was done seven hours after the wound. Extensive hemorrhage was found proceeding from injured mesenteric arteries, and eleven perforations of the intestines with stercoral filtration. The anesthesia was done with A.C.E. and the operation lasted three hours. Recovery was smooth and rapid.

Semaine Medicale (Paris), October 23.

Treatment of Pannus with Radiating Heat. J. Hamburger.—The patient lies on the operating table. A few drops of a 3 per cent. solution of cocain are instilled and the eyeball held immovable by an assistant. The thermocautery is then approached close to the eye without actual contact with the tissues, thus submitting the pannus to the radiating heat. The vessels nourishing the pannus are then sectioned with the tip of the thermocautery and after instillation of atropin and insufflation of iodoform a light dressing is applied. The vascular injection rapidly disappears, the exudate is resorbed and the cornea regains its transparency.

October 30.

Ventroscopy During Operations by the Vaginal Route. Dmitri de Ott announces that one of the great disadvantages of the vaginal route can be entirely obviated by using a small incandescent lamp no larger than a walnut, which can be introduced into the abdomen through the vagina. If the outer wall of the abdomen is seized with forceps near the umbilicus and lifted up, it is possible by the brilliant illumination afforded by the little lamp to see not only all the small pelvis, but the appendix, cecum and even parts of the stomach, liver and gall-bladder. The round ligaments and the posterior wall of the bladder are especially visible. The lamp can be permanently fastened inside the abdominal cavity by inserting it in the concavity of the retractor applied at the upper angle of the incision. By this means the light does not shine into the operator's eyes while the cavity below is brilliantly illuminated. The Trendelenburg position enables better oversight of the abdominal cavity. De Ott always tampons the opening between the vagina and the peritoneal cavity before raising the pelvis, in order to filter the air that rushes in as the intestines sink down toward the diaphragm.

Cure of Incontinence of Urine by Epidural Injection of Cocain. Albarran and Cathelin announce that they have succeeded in improving or actually curing fifteen patients of incontinence of urine by one to several injections of 1 c.c. of a 2 per cent. solution of cocain. The only two cases which resisted this treatment proved to be incontinence resulting from tuberculosis of the urinary organs. They also found that equally good results were obtained from the injection of 15 to 20 c.c. of artificial serum. A single injection was sufficient to cure nocturnal incontinence in three children.

Allg. Wien. Med. Zeitung, September 10.

Lavage of the Stomach for Nervous Vomiting. A. BENDERSKI.—A dozen and more cases are related all improved and a number permanently cured by rinsing out the stomach with warm water as a method of treatment for nervous vomiting. The benefit invariably derived should recommend lavage of the stomach as the first step always in such cases.

Berliner Klin. Wochenschrift, October 21.

Physostigmin as a Remedy for Paralysis of the Intestines. C. VON NOORDEN.—Veterinarians have long appreciated and utilized the alkaloid derived from the Calabar bean—eserin, as a means of inducing tetanic contraction of the relaxed intestine, with consequent anemia and evacuation of its contents. Physicians have always been timid in regard to it, and it has never been applied on man for this purpose although it has proved so successful in subcutaneous injections in horses, in experiments on animals and in ophthalmology. Von Noorden now reports five cases in which rapid action was necessary on account of threatening heart failure or other cause. One patient was a physician who had for years exhibited symptoms of a heart defect, controllable by digitalis. Eight days after a radical operation for inguinal hernia, extreme tympanites developed and the forcing up of the diaphragm interfered with the respiration and heart action. Physostigmin was administered three times during the day in 0.5 mg. doses. Flatus passed abundantly during the night and the abdomen was apparently normal the next day. In another patient the abdomen was distended by gas to a circumference of 84 cm. Prompt relief was obtained by administration of 0.75 mg. physostigmin four times during the day. The patient was a woman of 53. The results were equally prompt and satisfactory in two cases of typhoid fever. The physostigmin was given in the form of the salicylate, in a powder, rejecting every sample that had turned red. Atropin is an antidote to physostigmin. Fraser has reported that it will save animals after ingestion of 3.5 times the smallest fatal dose.

Subacute Weakness of the Heart in the Course of Cardiac Defects. C. A. EWALD.—A remarkable case is described only to be explained by the assumption that a long-existing cardiac defect—still in the stage of symptomless compensation—suddenly became complicated by a myocarditis. The heart action was intensely disturbed by this combination, but under the influence of heart tonics and sedatives, the removal of the obstacles to the peripheral circulation, possibly supplemented by an inherent tendency to recovery, the morbid process retrogressed without entailing any essential injury of the heart muscle. During the course of two years the condition of the patient grew constantly worse until it seemed absolutely hopeless. He had been kept under the influence of morphin for nine months, and the edema had required draining for three weeks. The sputum had been frequently hemorrhagic and of the color noted in case of thrombosis and embolism of the lungs. Recovery was rapid after it once commenced, and was complete except for the indications of the previously existing compensated cardiac defect.

October 28.

Influence of Retention of Bile on Secretory Functions of Stomach. S. SIMNITZKY.—This article reports the results of 81 examinations of the gastric functions in 7 cases of catarrhal icterus, 1 of Weil's disease with liver colic, 3 of hypertrophic cirrhosis of the liver and 1 of icterus from compression of the bile duct by a neoplasm in the pancreas. The research was conducted at Botkine's internal clinic and at Pavloff's laboratory of physiology at St. Petersburg. It conclusively demonstrated that the retention of bile increases the secretory functions of the stomach. Hyperacidity was evident in every case and it subsided parallel to the diminishing retention of bile. The hyperacidity was due almost exclusively to uncombined hydrochloric acid, showing an exaggeration of the secretion. As the retention of bile diminished, the chemistry of the stomach returned likewise to normal, while on the other hand, the hyperacidity returned with recurring retention of bile. Experiments on dogs confirmed these clinical findings. The secretion was increased both during the first and later hours after a meal, showing an exaggeration of both the "psychic" and the "chemical" secretion. He found in sixty tests on 3 dogs with gastric fistulæ made according to Pavloff's method, that the nature of the food had a certain influence on the secretion in case of artificially induced stasis of bile. After ingestion of milk the secretion increased 100 and 400 per cent. over the normal secretion in such circumstances. After a meal of cooked whites of egg it increased over 200 per cent., while the cooked yolks of egg caused an increase of 50 to 400 per cent., accompanied, however, by nausea, vomiting, thirst, diarrhea and loss of appetite. In normal conditions the amount of hydrochloric acid secreted varies very little during the hours after a meal, but in case of retention of bile the first intense hypersecretion rapidly diminishes after the first hours, indicating exhaustion of the glands after their first excessive activity. This is an important fact to bear in mind in treating such conditions, so as to avoid playing into the hand of the morbid process.

Centralblatt f. Bakteriologie (Jena), October 8.

Influence of Heat on Tubercle Bacilli in Milk. C. BARTHEL.—Tubercle bacilli in fresh milk can be killed by heating to 176 F. for even one moment. But the same heat applied to milk that had been standing until it was slightly sour, failed to kill the bacilli even in five minutes. In testing milk, therefore, the acidity of the samples should be that of normal milk in order to obtain results that can be compared.

October 15.

Bacteriology of Typhoid Pneumonia. A. DIEUDONNE.—Stuehlern has published two cases of typhoid lobar pneumonia and Dieudonné describes another. All were differentiated by the hemorrhagic character of the sputa. The typhoid bacilli were found in the sputa late into convalescence as in the case of plague pneumonia.

Centralblatt f. Gynaekologie (Leipsic), October 5.

The Eclampsia Question. K. A. HERZFELD.—In looking over the reports of 18,000 dissections at the Vienna Institute of Pathology during the last ten years, 81 cases of eclampsia were found. In 38 the record described indications of chronic nephritis, in 25 of parenchymatous degeneration of the kidneys and in 18 compression of both ureters. Compression of the ureters was observed in the majority of cases of eclampsia in primiparæ, first exhibited during the dilating stage with a fetus at term. In 32 out of the 81 cases a hemorrhagic hepatitis was mentioned, with compression of the ureters in 4; in 28 there was parenchymatous degeneration of liver and kidneys with likewise compression of the ureters in 4. In 21 cases no macroscopic alterations were noted in the liver but compression of the ureters had occurred in 10. Chronic Bright's disease with more or less severe changes in the heart was found in 46.6 per cent., bilateral compression of the ureters in 22.3 per cent. and acute nephritis, etc., in 31.1 per cent. The conclusion from these data seems evident that in the majority of cases of eclampsia there is an existing predisposition from some lesion or affection of the urinary system. This assumption is further sustained by the fact that the cases in which eclampsia appears in the early stages of pregnancy are considered the most severe. They are almost inevitably cases of pre-existing severe nephritic processes, an important point for the prognosis. Eclampsia is not a uremic process; it seems to be rather an intoxication of the maternal organism from the waste products of its own and the fetal metabolism.

Previously existing disturbance in the uropoietic system hinders the elimination of these waste products and favors their accumulation in the blood. Another fact noted by Herzfeld was that compression of the ureters had been noted in every case in which the eclampsia had commenced in a primipara at the dilating period of delivery. It was never found in a pluripara nor in a primipara in whom the eclampsia had commenced during the early stages of pregnancy or postpartum. Consequently, when in presence of a primipara in eclampsia, commencing during the dilating period of delivery, compression of the ureters and anuria can be assumed with almost certainty, and delivery should be hastened. Cesarean section is the most rapid and sparing means of delivery under these circumstances.

Plastic Method of Treating Vesico-Vaginal Fistula. N. Wolkowitsch.—Eight very extensive and practically inoperable cases of vesico-vaginal fistula were cured by mobilizing and drawing down the lower portion of the uterus and suturing the side of the cervix over the defect. The uterus has a tendency to rise and resume its former position with the exception that the anterior lip of the cervix is fastened a little lower than normally. The bladder was evacuated and irrigated through a very small high incision in a few of the cases. It was found that systematically repeated distension of the bladder proved successful in developing the faculty of retention.

Dermatologische Zeitschrift (Berlin), October.

Connection Between Tabes and Preceding Mercurial Treatment. Neisser.—Only 53 per cent. of the cases of tabes observed by Neisser had received previous mercurial treatment. In 41 per cent. a single course of mercurial treatment had been followed, and several courses in only 5 per cent. These figures show the lack of any connection between preceding mercurial treatment and the development of tabes later.

Etiology of Eczema.—Bockhart, Bender and Gerlach presented communications on this subject at the recent Naturforscher Congress, describing their research and establishing that the staphylococci are frequently found numerous in the skin in health, collected in the follicles. The vesicles which develop over the follicles contain the germs from the first, and in a later stage the staphylococcus is found almost in a pure culture in all the vesicles. The staphylococcus produces two quite different toxins, staphyloplasmin and staphylotoxin. The staphylococci always induced impetigo in the numerous tests, while injection of the products of their metabolism invariably induced eczema. The inoculations were made by the scientists on themselves.

Roentgen Treatment of Hypertrichosis. Holzknecht.—Permanently favorable results follow Roentgen treatment of hypertrichosis in elderly individuals with a close and heavy growth of hair. Young persons with a finer growth of hair are not treated by this method, as the benefits derived do not counterbalance the harm done by the atrophy of the skin.

Deutsche Med. Wochenschrift (Leipsic), October 31.

Functional Test of the Liver. H. Strauss.—The relations of the liver to processes of neutralization of poisons and to the combustion and utilization of albuminoids and carbohydrates have been studied at Senator's clinic during the last two years with a purpose to determine some simple clinical test of the functional activity of the liver by the composition of the urine. Eight patients with liver affections, after a test dinner, repeated twice, were given 20 gm. of sodium butyrate. Investigation of the urine afterward showed an increase in the elimination of volatile fatty acids in six cases. The two negative cases were one of carcinoma of the liver and one of occlusion of the common bile duct. The tests of the function of the liver in respect to the albuminoids were fruitless, but important results were obtained in respect to the metabolism of the carbohydrates. These tests were based on previous research conducted by Sachs under Strauss' directions, which demonstrated that frogs deprived of their livers were less tolerant to levulose than intact frogs. The subject was investigated thoroughly on 29 patients with liver affections and 58 presumably healthy persons. The test was the administration of 100 gm. of levulose fasting. The urine emitted during the four following hours was investigated by Trommer's, Selivanoff's and the fermentation tests and polarization. The results proved the existence of levulosuria in 90 per cent. of the liver patients, and in 10 per cent. of the 58 healthy subjects. It is possible that the latter included some cases of mild, latent liver affections responsible for the few positive results. This alimentary levulosuria appeared generally in the first and second hours, more rarely in the second and third, and amounted to a proportion of at least 1 per cent. of the total levulose which had been ingested. The three cases of liver affections in which the test was negative included one of atrophic cirrhosis of the liver accompanied by severe diarrhea, which possibly hindered the absorption of the levulose, and one of acute cholelithiasis. The conditions were evidently very different from those entailed by a chronic affection. The third was a cyst in the liver which had been stationary for nine years and ample compensation had probably developed. The results of this research establish that in levulose we possess a means by which we can test the functional capacity of the liver in a certain direction more effectively than by any other method known to date. The results are the more remarkable as we know that healthy subjects and also diabetics, tolerate levulose better than dextrose, and von Mering has demonstrated that dogs deprived of the pancreas are able to form glycogen out of levulose even after they have lost the faculty of forming it out of dextrose.

Elimination of Typhoid Bacilli in the Urine. Schueder.—Typhoid bacilli may be eliminated in enormous quantities in the urine of typhoid fever patients. In 671 tests of the urine instituted by Schueder on 22 patients the bacilli were discovered in the urine in 22.7 per cent. Most of them were severe cases with complications on the part of the kidneys, indicated by albuminuria, but they were occasionally found in the milder forms. This elimination of bacilli through the urine may occur at any time during the disease or convalescence. The latter occurs most frequently and the bacilli can be detected in the urine weeks after final defervescence. Nineteen other writers have already reported similar findings and noted the coincidence of albuminuria. Their tests were positive in 177 out of 599 cases of typhoid fever. The urine, therefore, must be considered capable of imparting infection and also the water in which typhoid patients or convalescents bathe, as millions of bacteria may be discharged into the water if the patient happens to urinate during the bath.

New Standpoint for the Treatment of Albuminuria. Edel.—Diuresis is promoted by improving the conditions of the circulation. This is proved by the increase after changing from the vertical position all day to the horizontal at night, by the lesser albuminuria in the afternoon and after the administration of diuretics, etc. All such factors promote diuresis by improving the conditions of the circulation, and the increased diuresis abolishes the albuminuria. Edel has been treating albuminuria on these principles, stimulating the circulation by mountain climbing and other physical exercises, supplemented by respiratory gymnastics, and has found this treatment very effective as an adjuvant in the cure of albuminuria.

Natural Means of Defense Against Angina in Scarlet Fever and Diphtheria. L. Kuert.—The movements of the muscles in swallowing are an effective aid in the defense of the throat against infectious processes. Kuert therefore recommends the sucking of candy, etc., as a preventive and curative measure in scarlet fever and diphtheria.

Jahrbuch f. Kinderheilkunde (Berlin), September.

Etiology of Chorea Minor. T. Froelich.—In the history of 47 cases of chorea minor at Christiania acute rheumatism was noted in 31.9 per cent.; some other infectious disease in 8.5 per cent., and infection of an unknown nature in 34 per-cent. No infectious antecedents could be discovered in 25.5

per cent. The girls outnumbered the boys by 39 to 8, and the manifestations of the affection were more pronounced in them.

October.

Inhalations of Oxygen for Children. E. Hagenbach-Burckhardt.—Cyanosis is immediately relieved by inhalations of oxygen. It has proved so valuable in cases of diphtheric stenosis in the writer's experience at Basle that a large amount is kept in the diphtheria ward constantly ready for use. The general condition of the children usually improves rapidly after the relief of the cyanosis by the inhalations. It has been the means of saving life in certain cases and also in a few instances of heart disease in adults.

Mitteilungen a. d. Grenzgeb. (Jena), viii, 4 and 5.

Operative Treatment of Phlegmonous Meningitis. O. Witzel.—The possibility of successful surgical intervention in cases of phlegmonous meningitis is demonstrated by Witzel's experience with four patients. Two were cured and two were improved but succumbed later to the recurrence of the meningitis. He found it necessary to resect the skull until sound arachnoid was reached. The phlegmonous process is liable to extend between the convolutions of the brain in a zone of cloudy infiltration. The entire process and the zones of infiltration should be covered with an absorbing and aspirating tampon. Even very extensive defects in the skull can easily be remedied by inserting a screen of silver wire in a secondary operation, as he has demonstrated again and again. The drawback of the necessity of this secondary intervention is but a trifle in comparison to the importance of success in the primary intervention. The tampon must be applied in such a way that its removal later will not mechanically injure the brain nor entail a breach in the wall of granulations around the meningeal space. He accomplished this by working a long strip of gauze between the dura and the surface of the brain, arranging it in concentric circles like a wreath about 4 cm. wide, around the edge of the gap in the bone, between the surface of the brain and the skull. A second, flat tampon is laid over the open space in the center. This is changed in a few days before granulations form. The wreath portion should be left undisturbed for about fourteen days. If it is twisted like a rope as it is being removed, it comes away without bringing any of the granulations with it.

Muenchener Med. Wochenschrift, October 29.

Development of Affections of the Organs After a Contusion. Jordan.—This article was prepared at the request of the committee of organization of the recent Naturforscher Congress. The conclusions of the extensive investigations of the subject in various clinics, etc., are that a single contusion can be incriminated in the development of a tumor only in a very small percentage of cases. Only a minimal importance can be ascribed to trauma in case of carcinoma. Sarcoma occurs more frequently than carcinoma after traumatism, but the proportion is still very small. Preceding trauma to be a conclusive factor in the development of a tumor, must have been accurately observed by a physician and its topography recorded, and the tumor must correspond exactly to the site of the incriminated contusion. The interval between the time of the trauma and the development of the tumor must coincide with the period of evolution of the tumor. There must also be proof furnished that an incipient tumor had not already existed at the spot. As these conditions are rarely possible of realization, it is practically impossible to adduce clinical evidence in regard to the causal connection between the trauma and the tumor. The conditions are more favorable in case of surgical tuberculosis and a causal connection can be assumed when the injury is conclusively proven, when the lesion develops at the point of the contusion and when the first symptoms develop immediately after the injury or after a reasonable interval, not exceeding a few months. An unmistakable causal connection can be accepted when osteomyelitis develops at the point of the contusion immediately after the trauma, within a few days to two weeks at farthest. The myelitis may develop in a subacute or chronic form and the abscess may not appear for several months, but the first symptoms must develop within the first few weeks to denote any connection with the trauma. As the consequences of a slight contusion are transient, a long period of incubation for an osteomyelitis excludes the possibility of its dependence on the trauma. The question as to a causal connection between a contusion and appendicitis can be decided in the affirmative when the cecal region was involved in the traumatism and when the manifestations of appendicitis appear in an acute form in a previously healthy person, immediately after the trauma. In case the subject had had previous attacks of appendicitis, or symptoms in the right iliac fossa had indicated some chronic inflammatory changes in the appendix, fatal perforation following upon the contusion must be attributed to the trauma as the causal factor.

Therapeutische Monatshefte (Berlin), October.

Sea Air for Nervous Affections. Ide.—When sea air is ordered for a neurasthenic patient he usually rushes down to the seashore, spends all his time on the beach, frets more or less over the expense and returns after two or three weeks to make up by extra work for the brief holiday. The result is an exaggeration of the nervous trouble. The sea is too exciting for such patients at first. They should be gradually accustomed to the air and surroundings, but if these precautions are observed, there is nothing to compare with the effects of sea air in nervous affections. Its effect on the skin is like that of hydrotherapy, but it has the advantage of oxygenating the system at the same time. Ide advises that such patients should stay at a house some little distance from the beach, with quiet, sunny rooms sheltered from the wind. After thoroughly resting from the fatigue of the journey they should seek sheltered spots out of doors and after three or four days walk down to the beach several times a day, resting afterward each time, warmly covered. If there is little sleep or appetite the walks must be restricted and the patient should rest in bed several times a day or permanently. The sea air makes such demands on the metabolism that the stays on the beach should not be allowed to increase the metabolism beyond what the powers of digestion and assimilation are able to keep pace with. The patient should always rest for an hour before each of the principal meals of the day. As the strength increases four to six hours a day can be spent on the beach. Long trips and excursions should be carefully avoided. Ide's remarks apply more particularly to the resorts on the coast of the North Sea.

Treatment of Fever in Pulmonary Tuberculosis. A. Meyer.—A temperature of 37.3 C. (99 F.), is fever. A tuberculous patient with this temperature should go to bed and not get up again until he has been free from fever for three days. Meyer has known cases in which the patients stayed thus in bed for six months and more, and then regained complete health. Reclining is not sufficient. The patient must be actually in bed. He practices in the Riviera and advises his patients not to open their windows at night during inclement weather; fluid food as long as the temperature is over 38.3 C. (101 F.), as in case of fever from any cause, with several quarts of milk, raw eggs beaten up with wine, eggnog, etc., eight times a day with soups of all kinds, etc.; no antipyretics. Most hydrotherapeutic measures are too fatiguing, but a cold water bandage around chest and back is an excellent aid in reducing the fever.

Therapie der Gegenwart (Berlin), October.

Uric Deposits in the Body and Means of Dissolving Them. W. His, Jr.—A drug to be effective in dissolving out the deposits of urates in the body must be able to form a combination with uric acid which is more readily soluble than the acid itself and its alkaline salts. It must pass unchanged through the body and exhibit its dissolving powers at the points where they are needed. It must be harmless even in protracted use. The alkaline salts and diamins have proved their inefficiency considered from this standpoint, but nuclein and thymus acid and formaldehyd have demonstrated that they are able to pass undecomposed through the organism and appear unchanged in the urine, where they form exceptionally soluble

compounds with the uric acid and glycocol. They have not yet been applied to dissolve gouty tophi and deposits in the joints. Stimulation of the circulation by local applications is the best method known to date for this purpose. Neither the alkalies nor the diamins have proved effective in this respect. Urotropin comes very near to fulfilling the conditions of the ideal drug to dissolve uric deposits as it gives off formaldehyd in the urine. But even as much as six grams are inadequate to fasten the total uric acid in the urine of a single day, much less to dissolve already formed concrements. Its dissolving power is unquestionable, but its action is too weak for practical results.

Buttermilk as Infant Food.—Salge and Heubner report that after extensive tests their experience has confirmed the assertions of the Dutch physicians in regard to the way in which healthy and sick infants thrive on buttermilk. It must be less than twenty-four hours old, made from sour cream, mixed with sugar and flour and brought to a boil three times. It represents 714 calories to the liter. The stools are very fine but scanty. The weight shows a regular upward curve. Salge found it especially beneficial as the first food after dyspepsia and acute intestinal disturbances, in atrophy, and for supplementing nursing.

Manipulative Treatment of Wry-Neek. Lorenz.—The bloodless method of treating deformities of the hip-joint, etc., which has made Lorenz's name so familiar, has been applied to the treatment of wry-neck with complete success in a number of cases he reported at the recent Naturforscher Congress.

Operative Treatment of the Lungs. Garré.—The best results have been obtained in cases of echinococcus of the lungs —90 per cent. cured. Garré reports 18 cures in 22 patients with gangrene of the lungs, and 17 cures in 35 cases of bronchiectasis. Lenhartz has reported 4 successes in 4 cases of bronchiectasis and 11 in 23 of gangrene. The gangrene was nearly or quite total in the unsuccessful cases. Incision and drainage are mentioned in the 47 cases of surgery of the lung that have been reported.

Chlumsky's Absorbable Magnesium Button.—The new intestinal button is made of pure magnesium after the pattern of the Murphy button with some slight modifications. It remains unaltered in the intestines for four weeks except that the outer surface becomes softer. The inner part then dissolves in about 10 days and the remainder in 14 to 16. The dissolving can be hastened or retarded by making the button thinner or thicker.

Hospitalstidende (Copenhagen), September 25.

New Method of Differentiating and Treating Caneer. Howitz.—The success obtained by freezing the tissues in the treatment of ulcus molle and of lupus, suggested that it might be of use in the treatment of cancer. Howitz therefore experimented with it and found his anticipations more than fulfilled. He reports eight patients with cancer of the uterus and vagina and two with cancer of the breast, treated by first curetting away as much of the malignant growth as possible, and then spraying with ethyl chlorid. He found that sound tissues turn rapidly white under the spray while the cancerous masses show little if any change in color. By this means it is possible to differentiate malignant disease and locate the outer limits of its extension. After the cancer has been curetted the tissues turn white under the spray but much slower and less completely than in case of sound tissue. Rapid freezing of the tissues is therefore a favorable sign for the prognosis. In numbers of cases in Howitz's experience, the microscope has confirmed the non-malignant character of a suspicious neoplasm which turned promptly white under the spray. Copious suppuration follows the spraying, then the surface granulates and normal epithelium forms. After a carcinoma of the uterus has been sprayed in this way, the uterus, if fastened by adhesions from the affection in the parametrium, regains its movability, possibly owing to retrogression of some inflammation of the uterus. This fact may prove important as an indication for extirpation of the organ, as it indicates the possibility of a permanent cure after ablation. Menstruation returns more or less to normal, the patients gain in weight, partly from the removal or destruction of the malignant masses and partly from the superabundant feeding which he always institutes as part of the treatment. He makes an earnest appeal to physicians to test this simple, absolutely harmless, inexpensive and effective method of treating malignant disease. He first curettes thoroughly, and, if necessary, cauterizes with the Paquelin and tampons with gauze. After an interval of a few days he applies the freezing spray for one to five minutes, then rinses and dries the surface of the neoplasm. He repeats this refrigeration every third day at first, later with longer intervals. Whenever a suspicious patch appears he curettes anew. Recovery was impossible on account of the advanced stage of the cases in which he has tried the method to date, but the condition of the patients was immeasurably improved and life prolonged.

October 9.

New Points of View for Treatment of Intestinal Occlusion. Sandelin.—Instead of seeking for the point of occlusion by bringing the intestines into the incision, Sandelin recommends making it large enough to insert the entire hand, and then feel around inside the abdominal cavity until the site of the trouble is found and the condition of the mesentery determined and straightened. When the site of the occlusion is found, the intestine can be brought up into the incision and treated as necessary. This internal palpation prevents the prolapse of any loop of the intestines and materially reduces the danger of collapse, paralysis and peritonitis.

Gazzetta Degli Ospedali (Milan), November 3.

The Blood in Tuberculosis. Mircoli.—It has been Mircoli's experience that tuberculous patients who expectorated blood were more easily cured than those who had no hemoptysis. He has also noted that in the early stage of tuberculosis there seems to be a tendency to hemorrhage outside of the respiratory passages, a kind of tuberculous hemophilia. He found in tests on man and animals that tuberculin diminishes the coagulability of the blood, but that 0.1 per cent. of Maragliano's antitoxin added to the tuberculin arrests this influence on the coagulability. The serum in the early stages of tuberculosis is very hemolytic.

Toxicity of the Excretions in Tubereulosis. Santini.—The pyogenic microbes play a prominent part in the toxic manifestations of tuberculosis, Santini has established by special research. This fact is a new proof of the importance of microbian associations in tuberculosis. Maragliano announces that he has succeeded in reproducing on animals lesions analogous to the tubercular in every respect, by means of the tubercle toxins alone.

Sodium Cacodylate in Tubereulosis. Evoli reports that he has derived great benefit in pulmonary tuberculosis from the administration of sodium cacodylate. Maragliano has not found it any more effective than other preparations of arsenic or any substance which tends to increase the auto-defense of the organism, by stimulating the production of larger amounts of antitoxin.

Treatment of Tubereulosis by Nascent Iodin. A. Cavazzani.—The injection of an iodid into the blood of animals causes the generation of nascent iodin in the lungs when the animals are afterward forced to inhale the fumes of essential oil of turpentine. After thorough experimental confirmation of this fact, Cavazzani applied it to the treatment of pulmonary tuberculosis in the clinic, and now reports numerous complete cures from this nascent iodin method of treatment during ten years of experience. This simple and effective treatment has no inconveniences except that it requires months and sometimes a year or so before the cure is complete. Some of his patients have been completely cured for more than six years. He mentions that at first the symptoms become aggravated under this treatment. He applies it in both acute and chronic cases and has thus cured patients whose tuberculosis dated from several years.

The Heart in Chronic Deforming Rheumatism. RONCAGLIO.—Examination of thirty patients with chronic rheumatism, between 55 and 74 years old, showed endocarditic symptoms in only two, and in these the lesion was limited to the aortic ostium. This difference in its action on the heart is another proof in favor of the essential difference between acute articular rheumatism and the chronic variety.

New Patents.

Patents of interest to physicians, etc., November 5 and 12:

686,028. Catamenial sack. Adelaide Cortland, Pittsburg, Pa.
685,989. Seat for relieving piles. Peter Kendrick, Trenton, N. J.
685,894. Hot-water bag. Mortimer S. Williams, Newton, Mass.
686,578. Forceps. David F. Bowersox, Aaronsburg, Pa.
686,270. Inhaler. Wm. B. Dewees, Salina, Kan.
686,670. Dermal steaming apparatus for the head. Michael J. Fitzgerald, Boston.
686,281. Stomach pump. Waite Gerry, Ventura, Cal.
686,451. Hypodermic injector. Wm. M. Haynes, Sherman, N. Y.
686,616. Apparatus for testing strength and relative action of the external muscles of the eyes. Rudolph N. Johnquest, Ansonia, Coun.
686,332. Device for storing and administering serums. Herbert F. Prescott, Detroit, Mich.
686,338. Surgical safety appliance. Avery W. Ready, Jersey City, N. J.
686,535. Pocket eye-tester. Henry D. Reese, Abbeville, S. C.
686,638. Massage glove. Reuben E. Saffold, Rochester, N. Y.
686,425. Invalid lifting and moving device. Heinrich Sommerfeld, Canton, Kan.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Nov. 7-13, 1901, inclusive:

Walter K. Beatty, contract surgeon, from duty at the General Hospital, Presidio of San Francisco, Cal., to Fort Huachuca, Ariz., for post duty.

Perry Lee Boyer, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Woodstock, Va., to Washington, D. C., reporting on arrival to Col. W. H. Forwood, president of the Faculty of the Army Medical School, for the prescribed course of instruction.

Alfred E. Bradley, captain and asst.-surgeon, U. S. A., from Fort Snelling, Minn., to Manila, P. I., via San Francisco, Cal., for assignment in the Division of the Philippines.

Peter J. A. Cleary, lieut.-col. and assistant surgeon-general, member of a promotion board at San Antonio, Tex.

Rudolph G. Ebert, major and surgeon, U. S. A., member of a promotion board at Vancouver Barracks, Wash.

Henry L. Gilchrist, lieutenant and asst.-surgeon, U. S. A., member of a promotion board at Vancouver Barracks, Wash.

Joseph B. Girard, lieut.-col., deputy surgeon-general, relieved from duty as chief surgeon, Department of the Columbia, and will proceed to Honolulu, H. I., to relieve Major Blair D. Taylor, surgeon, U. S. A.

James D. Gleunan, major and surgeon, Vols., from the Division of the Philippines to San Francisco, Cal., reporting on arrival to the Adjutant-General of the Army for orders.

Herbert G. Gunn, contract surgeon, leave of absence from the Department of California extended.

Francis J. Ives, major and surgeon, U. S. A. (promoted from captain and asst.-surgeon, U. S. A.), to report in person to Col. Calvin DeWitt, assistant surgeon-general, president of the examining board convened at the Army Medical Museum Building, Washington, D. C., at such time as he may be requested by the board, for examination to determine his fitness for promotion, and upon the completion thereof to return to his proper station, or to the place of receipt by him of this order.

George W. Joan, lieutenant and asst.-surgeon, U. S. A., recently appointed and now at Danville, Ky., to Washington, D. C., for the course of instruction at the Army Medical School.

Frank R. Keefer, captain and asst.-surgeon, U. S. A., member of an examining board at Fort Monroe, Va., vice Capt. Alexander N. Stark, asst.-surgeon, U. S. A., relieved.

Franklin M. Kemp, captain and asst.-surgeon, U. S. A., former orders amended so as to direct him to proceed from the U. S. Military Academy, West Point, N. Y., to Manila, P. I., by the first available transport from New York City, N. Y., for assignment in the Division of the Philippines.

James S. Kennedy, captain and asst.-surgeon, U. S. Vols., from Fort Sam Houston, Tex., to Manila, P. I., via San Francisco, Cal., for duty in the Division of the Philippines.

Henry S. Kilbourne, major and surgeon, U. S. A., member of an examining board at San Francisco, Cal.

John S. Kulp, captain and asst.-surgeon, U. S. A., member of an examining board at the Army Building, New York City.

Clarence J. Manly, lieutenant and asst.-surgeon, U. S. A., from duty in the Philippines to San Francisco, Cal., reporting on arrival to the Adjutant-General of the Army for orders.

Charles F. Mason, captain and asst.-surgeon, U. S. A., member of a promotion board at San Antonio, Tex.

Raymond F. Metcalfe, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Buffalo, N. Y., to Washington, D. C., to attend the session of the Army Medical School.

Robert M. O'Reilly, lieut.-col., and deputy surgeon-general, from Fort Monroe, Va., to San Francisco, Cal., for duty as chief surgeon, Department of California.

James M. Phalen, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Chicago, Ill., to Washington, D. C., to attend the session of the Army Medical School.

Edwin W. Rich, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Winthrop, Mass., to Fort Totten, N. Y., for duty at that post.

James F. Hall, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Lowell, Mass., to Washington, D. C., to attend the session of the Army Medical School.

Allen M. Smith, captain and asst.-surgeon, U. S. A., from the Division of the Philippines to Baltimore, Md., as attending surgeon and examiner of recruits at that place.

Blair D. Taylor, major and surgeon, U. S. A., on being relieved from duty at Honolulu, H. I., by Lieut.-Col. J. B. Girard, will proceed to Fort Snelling, Minn., for post duty.

Frank H. Titus, major and surgeon, Vols., recently appointed and now at Portsmouth, Ohio, to proceed to Manila, P. I., via San Francisco, Cal., for duty in the Division of the Philippines.

Robert S. Woodson, captain and asst.-surgeon, U. S. A., from the Division of the Philippines to San Francisco, Cal., reporting on arrival to the Adjutant-General of the Army for orders.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended Nov. 16, 1901:

Pharmacist J. Cowan, ordered to the Boston Navy Yard.

Surgeon G. T. Smith, detached from the *Amphitrite*, and ordered to the *Puritan*, when commissioned.

P. A. Surgeon R. S. Blakeman, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Hartford*.

Asst.-Surgeon E. G. Parker, detached from the *Hartford*, and ordered home to wait orders, upon reporting of relief.

Asst.-Surgeon W. L. Bell, detached from the Naval Hospital, Cavite, P. I., and ordered home to wait orders, when relieved.

Asst.-Surgeon L. W. Bishop, detached from the *Independence*, and ordered to Naval Hospital, Cavite, P. I.

Asst.-Surgeon H. C. Curl, detached from the Naval Hospital, Cavite, P. I., and ordered home to wait orders.

Asst.-Surgeon G. M. Mayers, detached from the Pensacola Navy Yard, and ordered to the Naval Hospital, Cavite, P. I.

P. A. Surgeon C. M. DeValin, detached from Naval Hospital, Portsmouth, N. H., and ordered to the *Rainbow*.

P. A. Surgeon S. G. Evans, ordered to the Naval Hospital, Portsmouth, N. H.

Asst.-Surgeon W. H. Bell, detached from the *Franklin*, and ordered to the Naval Hospital, Norfolk, Va.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Nov. 16, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Oct. 27-Nov. 3, 1 case.
Indiana: Evansville, Nov. 2-9, 2 cases.
Kansas: Wichita, Nov. 2-9, 1 case.
Louisiana: New Orleans, Nov. 2-9, 7 cases.
Massachusetts: Boston, Nov. 2-9, 22 cases, 3 deaths.
Michigan: Detroit, Oct. 27-Nov. 2, 1 case.
Nebraska: Omaha, Nov. 2-9, 4 cases; South Omaha, Nov. 1-8, 2 cases.
New Jersey: Nov. 2-9, Camden, 3 cases; Newark, 29 cases, 2 deaths.
New York: New York, Nov. 2-9, 10 cases, 1 death.
Ohio: Cincinnati, Nov. 1-8, 1 case.
Pennsylvania: Allegheny City, Nov. 2-9, 2 cases; New Castle, Oct. 1-31, 4 cases; Norristown, Nov. 2-9, 10 cases, 1 death; Philadelphia, Nov. 2-9, 72 cases, 8 deaths; Pittsburg, Nov. 2-9, 1 case.
Tennessee: Memphis, Nov. 2-9, 1 case.
Utah: Salt Lake City, Nov. 2-9, 2 cases.
Vermont: Burlington, Nov. 2-9, 1 case.
Wisconsin: Green Bay, Nov. 2-10, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Oct. 19-26, 2 cases.
Belgium: Antwerp, Oct. 19-26, 3 cases; Ghent, Oct. 11-18, 2 deaths.
Brazil: Pernambuco, Sept. 6-30, 116 deaths; Rio de Janeiro, Sept. 15-Oct. 4, 205 deaths.
Canada: Nov. 2-9, Halifax, 7 cases; Quebec, 25 cases.
Colombia: Bocas del Toro, Oct. 22-29, 3 cases; Panama, Oct. 27-Nov. 6, 125 cases.
Egypt: Cairo, Oct. 7-14, 1 death.
Great Britain: Oct. 19-26, Liverpool, 1 death; London, 180 cases, 6 deaths
India: Madras, Oct. 5-11, 2 deaths.
Italy: Naples, Oct. 12-19, 31 cases, 1 death.
Russia: Moscow, Oct. 12-19, 4 cases, 4 deaths; Odessa, Oct. 19-26, 3 cases; St. Petersburg, Oct. 12-26, 4 cases.
West Indies: Curacao, Oct. 19-26, 4 cases, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Sept. 15-Oct. 13, 11 deaths.
Mexico: Vera Cruz, Oct. 26-Nov. 2, 23 cases, 10 deaths.
India: Bombay, Oct. 8-15, 1 death; Calcutta, Oct. 5-12, 20 deaths; Madras, Oct. 5-11, 40 deaths.
Java: Batavia, Sept. 14-Oct. 5, 286 cases, 183 deaths.

PLAGUE—FOREIGN AND INSULAR.

Philippines: Manila, Sept. 7-28, 3 cases.
Brazil: Rio de Janeiro, Sept. 15-Oct. 13, 19 deaths.
India: Bombay, Oct. 8-15, 179 deaths; Calcutta, Oct. 5-12, 12 deaths.
Russia: Odessa, Nov. 10, present.

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Original Articles.

CLINICAL OBSERVATIONS IN PERICARDITIS.*

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CHICAGO.

Pericarditis is essentially a secondary process occurring in the course of some general infection. The local manifestations may be so slight as to escape observation and the general symptoms to which the local disease may give rise may be obscured by the constitutional disturbance of the primary general infection. It happens, therefore, that the diagnosis of pericarditis is more often made at the autopsy than clinically.

Dry or plastic pericarditis may occur without symptoms, and unless careful auscultation be made daily in the course of rheumatic fever, pneumonia, etc., the chief diagnostic sign, the pericardial friction rub may escape detection.

With effusion, pericarditis may cause an irregular remittent or intermittent type of fever, usually of moderate degree; respiration is often hurried; the pulse frequently quickened and altered in rhythm and quality, and there may be nervous disturbance. However, these same general symptoms may be present as the result of the general infection of which the pericarditis is only a part, and unless careful physical explorations of the heart are made daily or at least often, even this ordinarily easily recognized type may remain undiscovered clinically.

My friend, Dr. Preble, will write under etiology, of the frequency of the disease, and naturally of the different infective types. He will show that the acute disease, as it occurs in pneumonia, is recognized usually in the postmortem room and not clinically.

The following case illustrates this point:

CASE 1.—G. H., male, aged 38, a laborer, was admitted to ward 8, Cook County Hospital, March 13, 1898. The illness began four days before admission with a chill, followed by fever, pain in the left lower chest aggravated by breathing and cough, general bodily aching and discomfort, and headache. The cough increased and he expectorated a tough, blood-stained sputum. There was constipation and loss of appetite. He had used alcohol and tobacco to excess.

On examination it was found that the lower left lobe was consolidated and there was bronchial breathing and moist râles heard over the affected lobe of the lung. It was noted that the cardiac area of dulness was somewhat increased, but no adventitious sounds were heard on auscultation. The urine contained a trace of albumin, and many hyalin and granular casts. The patient was slightly delirious. The temperature was 102 F., the pulse 120, regular and soft; the respirations 44.

The observation on the evening of the day of admission showed a pleuritic friction over both lungs in the mammary region. There was moderate cyanosis. The delirium was more marked. The pulse was quicker and weaker.

The patient died within thirty hours of admission, with the clinical diagnosis of left pleuro-pneumonia, right pleurisy, myocarditis and nephritis.

The autopsy revealed: Left lobar pneumonia; pericarditis, with 100 c.c. of sero-fibrinous fluid and the pericardial layers covered with fibrinous exudate; right cardiac dilatation; acute endocarditis; double fibrinous pleuritis; cloudy swelling of kidney; fatty degeneration of liver and acute splenitis.

In acute rheumatic fever, pericarditis is probably not so fatal as in pneumonia. This type is most often recognized clinically. This has placed rheumatism in the front rank as a cause of pericarditis. Occasionally, and especially in children, the rheumatic infection may be localized entirely in the pericardium, or more often the articular disturbance follows upon the local pericardial infection.

When so beginning, it may be ushered in by all sorts of symptoms.

It may occur suddenly and acutely with precordial pain or post-sternal or epigastric distress, or with dyspnea, in which the respiration may run to 50 or more per minute. In a child the writer has seen the respirations increased to 100 per minute, and this the first symptom or sign. The pulse is usually increased in frequency, but never at the beginning in proportion to the respiratory movements.

Again, the acute process may be ushered in by a few days of premonitory languor, anorexia, constipation, restless sleep, and slight disturbance of temperature, circulation and respiration.

In one case the writer has recently seen, in a boy of 7 years, the premonitory signs last named were, to the attending physician, suggestive of typhoid fever or malaria. Blood examinations excluded both of those infections and then a careful physical exploration of the chest revealed pericarditis with effusion.

When pericarditis occurs in the course of rheumatic fever, the most careful daily scrutiny is often necessary to recognize the onset. If preliminary observations have been made the local infection is usually easily recognized by the appearance of the pericardial friction rub, or by the presence of the effusion. The not unusual hyperpyrexia of rheumatic fever, with the associated delirium or other nervous disturbance, the rapid and often irregular respiration and the rapid heart action, may obscure the general symptoms of the accompanying pericarditis.

* Read in a Symposium on Pericarditis at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section.

Endocarditis is not an infrequent condition in rheumatism with pericarditis, and acute myocarditis may also occur coincidentally. The infection of all three cardiac structures at one and the same time usually manifests itself in very profound general and severe local symptoms. The following case is one of rheumatic pericarditis, beginning, probably, primarily in the pericardium and subsequently in the joints.

CASE 2.—J. G., aged 22, single, American, engineer's helper, was admitted to Cook County Hospital, April 2, 1901. No history of rheumatism in the family. Patient had rheumatism 7 years ago. Typhoid fever 8 years ago and pneumonia when 7 years of age. Contracted gonorrhea, Jan. 5, 1901, and still suffers from it.

About March 12, patient was seized with sharp oppressive pain in the region of the heart, with dyspnea and inability to lie down because of a sense of smothering. Local hot mustard applications modified the pain. The next day the right knee became painful and swollen. Later the left knee, ankles, wrists and the smaller joints of the hands became involved. The pain in the heart region ceased after the first day and did not recur.

In about two weeks he became so much improved that he rose from the bed, but within 24 hours became speedily worse and was obliged to return to the bed and remain there on account of swollen, painful joints.

On admission, pulse 106, respiration 40, temperature 102 F. The skin was covered with sweat, the face flushed, the lips and nails cyanotic. The knees, ankles, wrists and some of the smaller joints of the hands swollen and tender to the touch. Fluctuation easily elicited in the right knee.

The thorax: Respirations rapid and shallow; chest bulging perceptibly in left mammary region; pulsation waves could be seen over the whole precordia, but most marked at the left fourth and fifth ribs. The apex-beat could be felt in the fifth interspace in the nipple line. Dulness extended over the whole precordia, from 2 inches to the right of the sternum to 2 inches to the left of the left nipple and to the level of the second left rib above. The outline of dulness was classical for pericardial effusion, a truncated triangle with the base downward. The dulness was marked in the right fifth interspace, obliterating the usual lung resonance at the angle formed by the liver, heart and lung. The wide extent, too, of dulness to the left, far beyond the normal relations of the apex to the left heart border, was noted. The lines of dulness shifted somewhat with the position of the patient.

On auscultation a to-and-fro friction murmur was heard at the second right rib and at the fifth left rib and the apex of the heart. A loud systolic murmur was heard at the apex, which was transmitted into the left axilla and heard plainly at the angle of the left scapula. A soft diastolic murmur was heard at the second right interspace near the sternum and was transmitted down the sternum. The second pulmonary sound was accented. Resonance was good over the whole left lung, excepting as noted in relation to the heart. There was dulness over the right lower thorax from the sixth rib downward, and lessened vocal fremitus, resonance and respiratory murmur in the same area. A few moist râles were heard over both lungs.

The liver and the spleen, not palpable. No glandular enlargements.

Slight, whitish, urethral discharge, in which a few gonococci were found in stained cover-glass slip.

The urine: Specific gravity, 1014; acid; albumin present; no casts.

Under the use of salicylates, alkalies, digitalis, ice bag to precordia, diluent drinks, milk diet, and absolute rest, the patient rapidly improved so that two weeks later all evidences of articular inflammation were gone. The pulse had fallen below 90, the temperature was practically normal (the highest temperature at any time was 102.8 F.) and the respirations to 28 to 30.

The outline of heart dulness had completely changed. The apex-beat was just within the nipple line and the left border of dulness just outside the nipple, while the dulness in the right fifth interspace was much less. Friction could still be heard at the fourth and fifth left interspace. The endocardial murmurs remained as before. There was doubtless an associated endocarditis, but this was implanted upon an old endocarditis, for the patient was told during the rheumatic attack which occurred 7 years ago, that the heart was involved.

The acute, rapid and benign course of this case is characteristic of the rheumatic form of the disease, as compared with that which occurs in some of the other infections. Not only was resolution rapid, but from the moment the patient was under the influence of antirheumatic medication, he became much less uncomfortable.

Pericarditis, usually with effusion, occurs like pleurisy in chronic nephritis. The associated uremic symptoms may mark the general symptoms due to the pericarditis, especially if there be myocardial changes, with accompanying pulse changes, altered respiration and disturbed sensorium due to uremia.

The following case is representative of this class:

CASE 3.—W. B., aged 40, carriage painter, married, was admitted to Cook County Hospital, June 18, 1900. Has suffered frequent attacks of articular rheumatism since he was 21 years of age. Had gonorrhea twice. Family history not obtainable.

Present illness began about May 1, 1900, with impaired vision, while he was at work. Dyspnea was soon after noticed and soon became especially aggravated when exercising or when lying down. Edema of the feet and legs gradually developed. He rose three or four times at night to urinate. Lost in strength and endurance; appetite became poor. Bowels were constipated. Had no severe headache and did not lose consciousness.

On admission, patient is poorly nourished and pale. Is restless in bed and remains in a semi-recumbent posture. Hands tremble. Facial expression indicate suffering and at the same time is apathetic. Mind clear, but perceptions slow. Skin cold and dry. Respirations rapid, superficial; expiration prolonged. Face puffy; eyelids edematous. Pupils equal, pupillary reflexes normal. Mouth dirty, teeth, tongue and post-pharynx covered with dry, clotted, dark blood. Radial pulse small and weak; radial arteries thickened.

Chest: Symmetrical. Resonance over right lung normal. Dulness over lower left chest, from a line on the level with angle of the scapula and nipple above, downward; upper line of dulness changes with position of patient. Vocal fremitus diminished over area of dulness; respiratory sounds diminished over area of dulness. No râles; no friction.

Heart: Apex-beat at sixth rib just inside nipple line. Dulness begins above at third rib—on the right half inch to right of the sternum, on the left one and a half inches to left of the nipple. No adventitious sounds were heard. The valvular sounds weak and faint.

Liver not palpable. Spleen not palpable. Edema of feet and legs.

Urine: Specific gravity, 1010; acid; much albumin and many hyaline and granular casts were found.

The respirations ranged from 26 to 30; the pulse from 88 to 100. The patient's chief complaint was dyspnea and fatigue. There was no pain and no cyanosis. He grew more and more apathetic and weaker, and died in coma on the second day after admission.

The clinical diagnosis was chronic nephritis, myocarditis with dilatation of left heart, right pleurisy with effusion, and uremia.

The autopsy revealed: Sero-fibrinous pericarditis, with a good deal of bloody fluid; both layers of pericardium covered with a layer of fibrin; left pleurisy with effusion; chronic myocarditis, with hypertrophy of heart, and chronic interstitial nephritis.

The form of the cardiac dulness and the relation of the apex-beat to the left border dulness should have made a diagnosis of pericarditis possible in this case.

Pyo-pericarditis, when due to the ordinary pyogenic cocci, presents the same difficulties in diagnosis as in pneumonia or other severe infections. This is true because the general infection produces such profound constitutional disturbance that the local condition may be overlooked.

The following case is illustrative of the point:

Case 4.—F. S., aged 54, Polander, laborer, widower, was admitted to ward 4, Cook County Hospital, March 31, 1900. Patient says he was never ill before. He denies venereal disease. He takes alcoholic drinks in moderation.

About February 14, six weeks ago, the present illness began with a chill, followed by fever and sweat. There was dyspnea and soreness in the front of the chest. He coughed much and expectorated considerable yellowish sputa. There was backache and later swelling and soreness of the ankles. Three days ago a diarrhea commenced and has continued. He has had no appetite. Has lost in weight and strength.

On admission the patient is much emaciated. The face is flushed, the skin is hot and dry. Pupils equal and contracted. Lips parched. Tongue dry and brown. Breath offensive. Pulse 120 per minute, weak and regular.

Thorax: Large and symmetrical. Respirations 26 to 30 per minute; shallow and regular. Hyperresonance over both lungs. Moist râles heard over both lungs, greatest in number over posterior inferior portions. Respiratory murmur somewhat exaggerated but less loud over lower right lung behind. Expiratory sound prolonged everywhere.

Heart area obscured by overlying lung. Apex-beat not felt. Heart sounds are faint. No murmur and no friction rub heard. Liver not palpable. Spleen not palpable.

Skin of body and legs covered with small pustules varying in size from a pinhead to a pea. Left wrist and both ankles swollen and tender. Slight urethral discharge; cover slip preparations show intracellular, biscuit-shaped diplococci. Fluid withdrawn from fluctuating swelling over left external malleolus, showed the presence of pus. Cover slip, stained preparations and cultural tests proved the presence of staphylococcus pyogenes aureus in the pus from the abscess and also from the blood.

The Widal test was negative. A blood count showed 15,200 leucocytes per cu. m., polymorphonuclear leucocytes predominating.

The urine was reddish; acid; 1017; much albumin present; many granular casts, and a few red blood cells.

The patient's temperature was remittent in type. In the evening of the first day it reached 104.4 F. The pulse and respiration increased. The patient became delirious, had hiccough and became very weak. He died on the third day, the pulse reaching 140 and the respirations 56 per minute.

The clinical diagnosis was septico-pyemia, with chronic nephritis and chronic myocarditis.

The autopsy revealed: Sero-fibrinous pericarditis; a quantity of dark straw-colored fluid in pericardium; visceral and parietal layers covered with fibrin; recent adhesions between layers of pericardium and between pericardium and pleura; osteomyelitis of sternum; double fibrinous pleuritis; healed tuberculosis of both apices; left heart hypertrophy; calcareous degeneration of aorta; beginning cirrhosis of liver; miliary abscesses of spleen and kidney; chronic parenchymatous nephritis; purulent cystitis and urethritis, and purulent arthritis.

Tubercular pericarditis is much more common than is generally supposed. Of cases which come to autopsy probably 10 per cent. of all cases, acute and chronic together, will be found to be tubercular. Tubercular infection of the pericardium occurs probably in three ways. In tubercular septicemia, through the lymphatics or by direct extension from the mediastinal lymph glands, neighboring pleura, spinal column, etc.

Clinically it may occur as a dry or sero-fibrinous form. With tubercular processes recognized elsewhere in the body, or with the discovery in the pericardial fluid of tubercle bacilli microscopically, culturally, or by animal test, the diagnosis could be made. Otherwise the form of infection would not be recognized, and in practice it is not.

The following interesting case is one showing the difficulty of recognizing the etiologic infective bacterium:

Case 5.—G. T., aged 29, single, colored, stone mason, was admitted to ward 4, Cook County Hospital, Oct. 2, 1899. The patient says there is no tuberculosis in the family. Father died of heart disease, mother and seven brothers and four sisters living and well. Had gonorrhea last year from which he made a good recovery. Denies syphilis. Has had measles, pneumonia, and malaria.

Five years ago had typhoid fever, and during convalescence suffered from right femoral thrombo-phlebitis, with gangrene of both great toes, so that amputation of toes became necessary. At the same time he suffered from ulcers of both legs. The right leg was worse than the left. There has been more or less edema of the right leg since the attack of phlebitis, and ulcers of the leg have usually been present.

The present illness began four weeks ago, with severe pain in the left costal margin in the splenic region. The pain became so severe that he was obliged to give up work and was sent to Cook County Hospital, where he remained a week in ward 22. The pain becoming less, he left the hospital. He attempted to work but was obliged to stop on account of general weakness. He had several slight chills during the next few days with fever, and five days ago a severe chill occurred, lasting a half hour. Some fever resulted, but no sweating. He feels weak, but there is no pain. The appetite is good and the bowels regular.

Examination: Large, well-nourished, healthy-appearing man. Expression natural, mind clear. Eyes, ears, nose, mouth and throat negative. Submaxillary cervical axillary, supratrochlear and inguinal lymph glands slightly enlarged and palpable.

Thorax, large, roomy. Expansion symmetrical.

Heart: Relative dulness increased; pear-shape with base downward, extending from the left second costal cartilage downward and outward to one and a half inches to left of the left nipple, and on the right to one inch to the right of the sternum. The right fifth interspace was flat on percussion. The apex-beat could be indistinctly felt in the fifth interspace just inside the nipple. There was friction to and from, a rub heard at the base of the heart and also along the left border near the nipple. There was slight bulging of the chest and somewhat lessened expansion of the left upper chest, but no impulse waves could be seen in the pericardium.

There was slight dulness over the lower right lung behind, with lessened respiratory murmur in the same area and also in the left infraclavicular region. Otherwise the lungs were negative. The pulse was soft, compressible, regular and 100 per minute.

The abdominal wall was rigid. The spleen not palpable. The liver extended, apparently below the costal margin in the mid-axillary line, but the edge was not palpable.

The lower extremities were edematous, the right more dropsical than the left. There were scars of healed ulcers on both legs and an unhealed varicose ulcer of the right leg. The right long saphenous vein was varicose and contained several phleboliths. There were stumps of amputated toes and deformities of the remaining toes. The condition of the lower extremities was the result of the typhoid fever of seven years before and had no relation apparently to the present illness. The temperature was but slightly increased.

On the third day an operating needle was inserted to a depth of one and a quarter inches in the fifth left interspace, one and a quarter inches to left of sternum; 10 c.c. of blood-tinged serum was obtained.

The urine: Amber color; acid; specific gravity 1023; no albu-

min; no casts; no bile. The centrifuge deposit revealed a few hyaline casts.

The patient became gradually worse objectively, although he expressed little feeling of discomfort. The temperature ranged from 99 to 103 F., with the minimum temperature usually in the morning and the maximum in the evening. The pulse was feeble, often irregularly intermittent and later presented the characteristic pulsus paradoxus. The respirations were shallow and ranged from 30 to 40, but the patient did not complain of dyspnea. There was a moderate amount of cough, and a little muco-purulent sputum. Repeated examinations of the sputa from day to day did not reveal tubercle bacilli.

A blood examination revealed 5,200,000 reds, 5750 white cells, and 88 per cent. hemoglobin (Fleischl).

It was noted on the fifth day that the precordial bulging was much greater and that dulness was increased. It extended above to the second rib on the right, to two and a half inches beyond the right border of the sternum, and on the left, to five and a half inches beyond the left nipple. The apex-beat could not be located. The heart sounds were very feeble and distant. No friction sound could be heard. There was relative dulness over the left infraclavicular and over the left scapular region. Broncho-vesicular breathing and a few moist râles could be heard in the same regions. The veins of the neck were distended, especially during inspiration. The patient was inclined to lie on the left side and was most comfortable with the head considerably elevated.

October 17, it was noted that the precordial bulging was greater. The dulness extended as high as the first rib, and six inches to the left of the nipple; on the right, dulness extended three inches beyond the right edge of the sternum at the fourth rib, and extended obliquely outward and downward just below the right nipple. The apex-beat could not be located. No friction was heard. The heart sounds were very feeble. The left lung dulness was the same as previously noted, but there were more râles, both moist and dry. The right lung gave negative findings. The pulse was feeble, especially during inspiration. The veins of the neck were much distended. Widal's test made at this and at subsequent periods, in the dilution of 1 to 10, showed loss of motility and incomplete clumping of the bacilli. This reaction was doubtless due to the attack of typhoid of seven years ago.

At this time the temperature was irregular in type, but lower on the average than when first admitted. It ranged from 97 to 102 F., but no longer followed the physiologic morning remission and evening exacerbation type.

The patient was still fairly comfortable. He made no complaint of pain, but had some dyspnea. He lay upon the left side with the head elevated. Cough was troublesome, but there was but little sputa. There was no left recurrent laryngeal nerve paralysis. The pupils were equal. The mind was clear.

November 2, a small trocar was inserted in the chest, through the fifth interspace, one and a half inches to the left of the sternum, and 1260 c.c. of brownish, slightly turbid fluid was withdrawn. This fluid contained a large amount of albumin. The specific gravity was 1020. Microscopically, there was found many red cells, a few polymorphonuclear leucocytes and large granular flat cells. Stained cover slips showed groups of short, thick, evenly-stained bacilli. Cultures revealed a pure growth of colon bacilli. Careful tests were made to differentiate from typhoid bacilli.

After the tapping, the patient expressed relief from a suffocative feeling which had been oppressing him for a few days. After tapping, it was noted that the bulging of the chest was less and the dulness somewhat decreased, although dulness still extended above to the first rib, five and a half inches beyond the left nipple and to the right border of the sternum. The dulness decreased more on the right than on the left or above.

The pulsations of the heart could be felt over the whole precordia, but the exact point of the apex-beat could not be located. It was, however, apparently not outside the left nipple line. A loud to-and-fro friction rub could be heard plainly over the precordia, loudest at the base of the heart and along the sternum. Relative dulness remained about the same in the left infraclavicular and scapular regions and dry and moist râles could be heard. The radial pulse was stronger and the pulsus paradoxus had disappeared.

The temperature remained as last noted. The respirations were not diminished and soon after increased in frequency. A blood count made November 8 showed 5,200,000 red cells, 4200 white cells and 90 per cent. hemoglobin (Fleischl).

It was noted that the signs of a gradual increase of the fluid in the pericardium were returning, and on November 11, 1050 c.c. of fluid was again withdrawn. This was turbid and reddish, alkaline in reaction, specific gravity 1022, and contained much albumin, a few polymorphonuclear leucocytes and red cells. No bacteria were found in this fluid in stained specimens and culture media inoculated remained sterile.

The tapping again relieved the patient's dyspnea and the pulse became stronger. He complained from this time on of weakness, the appetite was gone, he was apathetic, and usually lay half asleep, often muttering incoherently. When roused the mind was clear. Fluid gradually accumulated again in the pericardium, bringing more subjective distress, especially dyspnea.

The urine now contained much albumin and many hyaline and granular casts. Edema of the legs increased and the face became puffy. Friction rub was heard over the right chest, behind and in front. Moist râles increased in the left upper lobe and became numerous in both lungs posteriorly. The patient died suddenly November 23, fifty-two days after admission. The clinical diagnosis was pericarditis with effusion, right pleuritis, hypostatic congestion of both lungs, and nephritis.

The postmortem revealed the pericardium greatly distended with a clear straw-colored fluid; pericardium greatly thickened and adherent posteriorly to both lungs; pericardiomediastinitis, the whole surface of visceral layer covered by numerous large villi and nodules. In addition there was: Hypertrophy of the heart atelectasis of the left upper lung; adhesive pleuritis on the right side, adhesive peritonitis about liver and diaphragm; passive hyperemia of liver and spleen; tuberculosis of peribronchial, peripancreatic, retroperitoneal mesenteric and mediastinal glands, and finally edema of lungs. This case was reported by Dr. H. Gideon Wells.[1]

Here the pericarditis was the result of direct extension of tuberculosis from the mediastinal glands. Clinically it was impossible to diagnose tuberculosis.

To Dr. Robert H. Babcock was assigned the subject of adherent pericarditis, and I shall therefore leave to abler hands the clinical aspects of that form of pericarditis. The foregoing illustrations of pericarditis of several varieties, etiologically considered, present clinically, as far as the heart and pericardium are concerned, practically the same signs and symptoms.

CARDINAL SIGNS.

The cases further illustrate the importance of the three cardinal signs of pericarditis, namely, 1, the pericardial friction rub, 2, the form or outline of the precordial dulness, and 3, the position of the apex-beat, especially in relation to the left border of the precordial dulness.

The pericardial friction rub is doubtless present in every case of pericarditis in some period of its course. It is practically the sole local sign in plastic pericarditis. It may not be recognized in pericarditis with effusion, although it is probably present in every case at any early stage of the disease, and in cases which recover after the disappearance of the effusion. It may be present, too, during the stage of effusion.

I shall not discuss its character or the means of differentiating it from endocardial or pleuritic murmurs.

1. The Pathology of Active Tuberculosis of the Pericardium, JOURNAL A. M. A., May 25, 1901, p. 1451, vol. xxxvi, No. 31.

This is fully discussed in many good text-books on medicine and diagnosis.

The form of the outline of dulness in pericardial effusion is also characteristic. The pear-shape outline with the base downward; the dulness, even in the early stage of effusion, in the fifth right interspace, close to the sternum, obliterating the resonant angle formed by the lung, heart and liver; the dulness over the sternum extending to or above the second rib, together with the outline of the left border dulness, all these are easily recognized and almost pathognomonic. It is true that a greatly enlarged heart, with all its chambers dilated from myocarditis, and a weak diffusible apex-beat may present an outline of dulness which so nearly resembles that of pericarditis with effusion that it may be impossible to differentiate between them, without puncture. The limits of this paper will not permit the discussion of many of the interesting points concerning the precordial dulness of cardiac, vascular, lung and pleural diseases, and especially as compared with pericarditis.

The location of the apex-beat in pericarditis with effusion is characteristic. When it is perceptible it will always be found that the left border of dulness is relatively far removed from it, as it is not in any other cardiac disease.

In large effusions it may be obscured and at other times the right ventricle may strike the chest wall in the region of the nipple, or undulatory waves may be seen as the only evidence of the heartbeat against the chest wall. However, it matters not how the apex beat or the impulse of some other part of the heart against the chest wall be ascertained, it will be found that the point of contact of the heart against the chest wall is always relatively far removed from the left border of precordial dulness, as compared with the relations of the apex-beat to the left border dulness in all other conditions.

OTHER SIGNS.

Some of the other signs of pericarditis have been named in the reported cases. They are as follows: The relatively rapid respiration and dyspnea; the signs of compression of the left lung, evinced by the left interscapular and subscapular dulness and bronchial breathing; the rapid heart action, the pulsus paradoxus, and the asymmetry in size of the pulse of the radials; the irregular type of temperature; the paralysis of the left recurrent laryngeal nerve; the unequal pupils; the disturbed mental state of the patient, and still other phenomena. These are not so characteristic as the three cardinal signs first named, but are important and significant when present.

Pericarditis is an easily recognized condition. Frequent careful systematic examination of the precordium should be made in all infectious diseases, and if this is done pericarditis will not escape one. The diagnosis will then be made during life and not at the post-mortem table as is unfortunately now the case in at least 50 per cent. of the cases of pericarditis which autopsy reveals.

100 State Street.

Treatment of Eczema.—Spiegler recommends painting the patch with equal parts of caustic potash and distilled water for a minute at most, and then cauterizing with equal parts of nitrate of silver and distilled water. The dressing then applied can be left undisturbed until complete recovery. This method of treatment is applicable only to chronic, limited, circumscribed eczema with no signs of inflammation.—*Derm. Cbl.* from Kaposi's Festschrift.

THE PATHOLOGY AND PATHOGENESIS OF PERICARDITIS.*

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PHILADELPHIA.

The ancients supposed disease of the heart to be incompatible with life, the heart being the center of life. Galen, in the second century after Christ, observed pericarditis in the lower animals and inferred its occurrence in man. Before this knowledge had been gleaned, all peculiarities of the structure or appearance of the heart were supposed to denote attributes of character. Thus, Haller speaks of the "hairy hearts" of Leonidas, Lysander and Aristomenes, as indicative of great bravery, those "hairy hearts" undoubtedly being viscera covered with stringy fibrin.

ETIOLOGY.

The disease is now known to be of frequent occurrence. It is most common in adolescence and early adult life, between the ages of 15 and 30. It occurs in childhood and in infancy, and rarely in the fetus. It also occurs in late adult life, and sometimes in senility. Knopf saw pericarditis 10 times among 459 cases of diseases of childhood, occurring between 1 and 11 years of age.

It is more frequent in men than in women, probably because they are more exposed to its causes. Concerning the relative frequency authors vary. Barthez and Rilliet observed it in 21 men and 3 women. Bamberger gives the ratio as 38 to 25, and Sibson at 35 to 28. All classes of society are liable to the affection, and it is not known that occupation or social condition has any predisposing tendency toward it.

It is customary to divide the cases into two classes: 1. Primary or idiopathic; 2, secondary or metastatic.

1. As all cases depend upon infection, and so far as we know, all the lesions depend upon the local operation of infectious agents, idiopathic pericarditis signifies nothing more than that the infectious agents having entered the circulation through some undiscoverable lesion, have produced their first visible changes in the pericardium. Inasmuch as such an accident must be much less frequent than the entrance of bacteria through recognizable lesions, primary pericarditis is extremely rare. Most writers of experience report that they have seen one or two cases of primary pericarditis, but all agree that it is very rare. Bauer in von Ziemmsen's Handbook states that out of the 3000 autopsies which occur yearly in Munich, he sees only two or three cases of idiopathic pericarditis.

2. Secondary pericarditis, on the other hand, is not infrequent and is a common complication of the infectious diseases. It occurs chiefly by hematogenous metastasis, but may also result from lymphogenic metastasis from contiguous infectious processes, and from internal and external traumatisms.

Traumatism as a cause of pericarditis may be disposed of in a few words, as it is of importance only as it affords an avenue of entrance for micro-organisms, or produces conditions favorable to their colonization in the tissue. External punctured and incised wounds are harmless, if performed under aseptic conditions. Ordinary wounds of the pericardium, if infected, produce a localized form of inflammation, not analog-

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* Read in a Symposium on Pericarditis at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section.

ous to the usual forms. The extent and character of the lesions will, however, vary according to the nature of the infectious agent introduced.

Internal traumatic lesions are not uncommon. Foreign bodies in the esophagus and stomach may perforate the pericardium. Tuberculous vomica may rupture into it; abscesses of the spleen, liver, lung, heart wall, mediastinal glands, etc., may burrow into it. Empyemas sometimes form fistulous communications with it, and echinococcus cysts and aneurysms of the aorta sometimes rupture into it. Abscesses and other morbid conditions of the mammary gland and skin sometimes descend and invade the pericardium. In all of these conditions the morbid anatomic picture will vary according to the circumstances of the case, none of them conforming to the descriptions later to be given of the true clinical pericarditis.

Lymphogenous metastasis may occur in many of the local contiguous affections mentioned in which no actual traumatic lesion exists. In this manner, disease of the mediastinum, pleura, etc., may occasion pericarditis.

Hematogenous metastasis is seen in nearly all of the infectious diseases, but especially in the following: 1, rheumatism; 2, pyemia; 3, septicemia; 4, pneumonia; 5, chorea; 6, endocarditis; 7, other acute infectious diseases; 8, tuberculosis; 9, scurvy; 10, blood diseases, and 11, malignant disease.

Rheumatism is more liable than any other of the infectious diseases to be succeeded by pericarditis. The percentage of cases given by various writers differs widely. Bauer attributes this to the variation in the characteristics of rheumatism as it occurs in different places. The highest percentage of cases is given by Williams, who thinks it is 75 per cent. The following table gives the percentages of various authors:

Williams, 75 per cent.; Leudet, 22; Bamberger, 30; Chambers and Thompson, 20 to 30; Bauer, 16 to 20; Ball and Sibson, 20; Wunderlich, 19; Duchus, 16; Latham, 5, and Teller, 4.7 per cent. The occurrence of pericarditis is rare in subacute rheumatism and is said not to occur in chronic rheumatism. It therefore is to be looked for in the acute forms, and in gonorrheal rheumatism. The disease is more liable to occur in the polyarticular forms than in the monoarticular forms, and it is said to be most frequent in those cases in which the inflammation wanders quickly from one joint to another. Pericarditis may be the first expression of rheumatic infection, preceding the articular symptoms, or it may succeed them. The usual time for its occurrence is between the 6th and 14th days.

Pyemia is frequently accompanied by pericarditis, the relations of the two processes being so clear that no further mention of it need be made.

Septicemia is also frequently complicated by pericarditis. The statistics of Kirke and Willigk showing 5 out of 91 cases.

Pneumonia is liable to be accompanied by pericarditis in something over 7 per cent. of the cases. Leudet saw it 6 times in 83 cases.

Chorea is not infrequently complicated by pericarditis, Roger having observed it in 5 out of 71 cases, and Olivier in 1 out of 30 cases.

Endocarditis is quite frequently complicated with it. This is both because the two conditions are liable to depend upon the same cause, and because of the likelihood of metastatic infections in endocarditis.

Various other infectious diseases in which the occurrence of pericarditis does not take place with any regularity must also be mentioned. Among these are scarlet fever, smallpox, relapsing fever, measles, erysipelas, gonorrhea, syphilis, dysentery, cholera, typhoid fever, vaccinia, cerebro-spinal meningitis and diphtheria.

Tuberculosis may lead to pericarditis both by metastasis, continuity of tissue, and the rupture of vomica into the cavity. The lesions occasioned may be either local or general, and the exudation is nearly always purulent. Indeed, Birsch-Hirschfeld states that the majority of cases of pericarditis with chronic purulent exudation are tuberculous.

Scurvy is usually associated with hemorrhagic extravasations into the tissue and upon the serous membranes, and is nearly always accompanied by superficial lesions of the mouth and skin, which favor the entrance of bacteria into the circulation. Both of these conditions, together with the general vital depression that exists in scurvy, favor the development of pericardial infections, so that pericarditis with sero-sanguinolent, and purulent exudates are common. The effusions that can occur under these conditions may be enormous. Sometimes, in scurvy, pericarditis may be endemic and Koch is satisfied that it is identical with the *morbus cardiacus* of the ancients.

Blood diseases with diminished vital resistance, such as hemophilia, hemorrhagic diathesis, purpura, leukemia, diabetes, etc., may also be complicated with pericarditis. For the same reason the disease also occurs in alcoholism, cirrhosis of the liver and in nephritis. It is in chronic nephritis that pericarditis is most apt to occur, its development usually coinciding with the first symptoms of uremic blood poisoning. The frequency of its appearance is given by Taylor as 33 per cent.; by Bamberger, 14; by Rosenstein, 7, and by Frerichs, 4.5 per cent.

Malignant disease, as in carcinomatous invasion of the pericardium from primary disease of the mammary gland, esophagus, thyroid gland, etc., may by invasion of the pericardium lead to the diminution of its vital resistance, the occurrence of an unusual quantity of sero-sanguinolent exudation, and so predispose to the occurrence of infections, should bacteria in any way reach the tissues.

BACTERIOLOGY.

There is no specific micro-organism of pericarditis. The manifold conditions in which the disease occurs, and the varied morbid anatomic appearances which it presents, suggested this before experimental research in bacteriology proved it.

In the sero-fibrinous form of the disease, the study of numerous cases has revealed the presence of streptococci, staphylococci, pneumococci, bacillus pyocyaneus, the bacillus of Friedländer, and the bacillus tuberculosis.

In the purulent form, streptococci, staphylococci, bacillus coli communis, bacillus of Friedländer, and the tubercle bacillus have been found.

The hemorrhagic form is apt to be tuberculous, so that the tubercle bacillus may be found, together with other accidental organisms.

In the pyo-pneumo-pericarditis, and in fetid pericarditis, with communications with the lung, esophagus, etc., numerous saprophytic micro-organisms may be found.

MORBID ANATOMY.

It is customary to divide pericarditis into numerous forms according to the peculiarities of the exudate. The forms usually described being as follows:

1, Pericarditis sicca; 2, sero-fibrinosa; 3, purulenta;

4, adhesiva chronica; 5, hemorrhagica, and 6, tuberculosa.

Concerning the frequency of occurrence, the best figures obtainable seem to be those of Breitung, who collected 324 cases of pericarditis among the autopsies of the Berlin Charité, between the years 1866 and 1876, and found the following distribution:

Pericarditis sero-fibrinosa, 108; hemorrhagica, 30; purulenta, 24; tuberculosa denteropathia, 24; tuberculosa idiopathia, 2; adhesiva partialis, 111; adhesiva totalis, 23, and ossificans, 2 cases.

It is an error to think of these names as referring to distinct forms of the disease. They are for the most part stages of the same process, and a description of the morbid process will make this clear. The first expression of the inflammatory process is found in redness and dryness of the surface of the pericardium—pericarditis sicca—upon which the vessels stand out with unusual distinctness. The natural glaze of the surface is lost, and the two surfaces, parietal and visceral, when they come in contact, rub one against the other with an unnatural degree of friction, which is painful to the patient, and which gives the well-known friction-sound to the ear of the auscultator. It may be that a few flakes of fibrin appear upon this dulled surface, and are rolled into threads by the incessant movements of the heart.

The disease may advance no further than this, and terminate in perfect recovery, but usually the excitant by which the disease is produced occasions further changes, and the inflammatory hyperemia is succeeded by a period of transudation, in which in most cases a clear serous fluid is poured out into the sac. Almost immediately a deposition of fibrin takes place from the fluid upon the surface of the membranes, chiefly, however, upon the heart itself. It forms a more or less coherent membrane which can readily be stripped off, leaving a fairly healthy surface behind. The membrane is, however, almost immediately changed in appearance by the movements of the heart, which tend to gather the sticky material into irregular forms. Upon the right ventricle, and especially upon its inferior and right surfaces, and upon the right auricle, the combined pressure and movement of the heart roll up the fibrin into threads of rounded form, which, after a time, give that part of the organ a shaggy, villous appearance—*cor villosum*. The left ventricle which has a different movement, and is freer of pressure, usually presents a reticulated membrane which is not unlike a piece of omentum upon its surface. As the accumulation of serum and precipitation of fibrin go on, the pericardial sac becomes distended, its base being broad, the precordial area tending to bulge it. The quantity of accumulated exudate usually reaches one-half to one pint, but it is not rare for it to reach a quart. Corvisart and Louis mention cases with exudates of 1000 and 1200 grams. Montagne found one with 1850 grams of exudate, of which he withdrew 1000 grams by puncture. Gosselin once saw 2000 c.c. of fluid in the pericardium. The largest serous accumulation that I have seen recorded is that of Corvisart, who found 8 pounds of serum in one case.

If the bacteria upon whose activity the pericarditis depends are of markedly chemotactic influence, the exudate may be more or less purulent from the start. How often this is the case it is difficult to conclude from the number subsequently found to be purulent, and it is usually supposed that it is not uncommon for the sero-fibrinous exudate to become purulent in consequence of further changes in the local conditions. In 39 cases studied by Louis, the exudates were: Serous, 9; purulent, 7; sero-sanguinolent, 10, and sero-purulent, 13.

The purulent exudates are apt to be larger than the sero-fibrinous exudates. Martin has seen 3¼ pounds of purulent matter, and Alonzo Clark, 1 gallon of sero-pus in the pericardium. In cases of purulent exudation the pericardium is still found to be covered by the fibrin as previously described.

Should general conditions, such as the existence of scorbutus, or of local conditions, such as extremely active inflammation, exist, blood may be added to the exudate, whether previously serous or purulent. It is chiefly in scorbutus that bloody effusions occur, and it is almost inconceivable to what extent the pericardium may be distended. Andrea has seen 2 pounds of blood in the pericardial sac, and in scorbutic cases Kyber has found as much as 10 liters of bloody fluid.

The terminations of the process will depend upon its severity and the extent of damage done. When the disease does not advance beyond the stage of congestion, the return to the normal is a very simple matter. So soon as the membrane becomes covered with fibrin, however, new conditions present themselves and it is well-nigh impossible for recovery to take place without leaving marked changes behind.

The deposition of fibrin upon the already diseased surface is shortly succeeded by the degeneration and destruction of its covering endothelial cells. The connective tissue of the sub-endothelial layer of the pericardial membrane now begins to grow, and into the spaces of the fibrinous deposit a delicate, well-vascularized granulation tissue grows, extending as the fibrin melts away. Transmigrated leucocytes penetrate the tissues and aid in the removal of the fibrin.

The result of the presence of this growing tissue is that contiguous surfaces of the membrane are apt to grow together by firm fibrous unions, and that upon surfaces not in contact, more or less regular connective tissue indurations, and callous formations form. The length of time required for the formation of these adhesions is probably considerable. Their duration is permanent, though in the course of time the influence of traction may modify them.

While the absorption of the serum from sero-fibrinous exudates presents no great difficulties, the case is different when the exudate is purulent, for the burrowing tendency of the pus must be considered. Purulent exudations may be absorbed. They may, however, burrow in various directions and discharge externally. The usual seat of pointing is the precordium. Fabricius saw a purulent pericarditis point in the 2d left intercostal space. Wyss saw the pus penetrate a rib and be discharged externally. Rich reports a case that bored through the sternum and presented as a subcutaneous enlargement the size of an apple on the anterior chest wall. Sometimes the pus burrows down the back simulating the descending abscesses of Pott's disease; rarely it points sub-phrenically. One of the interesting terminations is into the lung, the pus being discharged through the bronchial tubes. This occasions what is known as a pneumo-pericarditis or a pyo-pneumo-pericarditis. In these cases, not only is the pus discharged into the bronchial tubes, but there is an opportunity for the purulent effusion in the pericardium to receive saprophytic bacteria from the lung and become fetid.

The purulent inflammation also leads to great thicken-

ing of the membrane. Horn has reported an interesting case of extraordinarily thick pericardium and Nunier has seen the membrane thickened and callous, with imbricated scales like a pineapple.

After evacuation of the pus there is usually some residual exudate, and in cases which terminate by resorption, the residuum is prone to undergo calcification. A most interesting case is reported by Drummond in which there was an extensive bone-like deposit between the layers of the muscular tissues of the heart—"a thick bone-like mass ran across the whole left ventricle, penetrating the entire wall of the heart like a wedge and reaching into the cavity of the left ventricle." Variot observed a case in which the left ventricle was covered by a solid hard plate of chalky matter on its whole anterior surface. Other cases of calcification have been observed by Ticssier and Richards.

PROGNOSIS.

The effect of pericarditis upon the heart is of great importance. No considerable disease of the epicardium is possible without involvement of the heart. The superficial layers of muscular fibers usually show cloudy swelling, later hyaline or fatty degeneration. In cases with purulent exudate the pus may also gradually work its way between the muscular bundles.

The changes that thus take place during the height of the disease predispose to acute dilatation of the heart, and a fatal termination of the disease may thus be brought about. If this does not occur, and if the patient recovers from the pericarditis, the regenerative cicatricial processes that go on lead to fibroid interstitial changes in the wall of the heart. If many adhesions form and interfere with the action of the heart, a very marked hypertrophy of the organ may occur to compensate for the embarrassment.

The tuberculous disease of the pericardium differs from the form described in that it is essentially chronic and purulent from the beginning. A proper description of the various pictures presented by this disease is made impossible by the time allotted to this paper.

Syphilitic pericarditis has been observed by Orth and by Lancereux, who observed gummatous formations in the pericardia of syphilitic children.

ETIOLOGY OF PERICARDITIS.*

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The etiology of pericarditis has been discussed so often and by so many that it is indeed difficult to present a discussion of it to a body of this character in such a manner as to arouse interest. For this reason it seemed better to disregard the extensive literature upon this subject and utilize the reports of three hundred cases as a text, dwelling upon some points of interest presented by them and drawing attention to some things in which they differ from generally accepted statements. The cases in hand consist of 80 cases ending in recovery and 220 ending in death, of which 190 were examined postmortem; 244 of these cases are acute pericarditis and 56 are of the chronic form with partial or complete obliteration of the pericardial sac. The cases are derived in part from the records of the Cook County Hospital, where many of the cases were seen personally and in part from private records.

The immediate exciting cause of the pericardial inflammation is usually unknown and apparently undiscoverable by our present methods. We know that there are certain diseases in which pericarditis frequently occurs as a complication, but whether the irritant causing the inflammation is a bacterium or a toxin is still uncertain. For example, the pericarditis accompanying the chronic diffuse nephritis may be of toxic origin; some authors, indeed, speak of it as a uremic pericarditis, or it may be of bacterial origin as others believe. So also the pericarditis of rheumatism may be due to a bacterium, or may be as some suspect the joint inflammations to be, of toxic origin. In a limited number of cases bacteria have been found in the exudate, pus cocci, pneumococci, tubercle bacilli, bacillus pyocyaneus and others, but in many cases the exudate is sterile. In many cases the irritant body reaches the pericardium through the lymph channels, or by direct extension, but doubtless there are numerous cases, apparently of this sort, which are really hematogenous.

It has been customary to divide the cases of pericarditis into two groups, primary and secondary, meaning by the former cases in which there is no manifest disease, to which the pericarditis appears as a complication. Most authors state that careful attention to etiology has reduced the primary cases to a vanishingly small group. This is doubtless true, but there is no apparent reason why the pericardium should so differ from other serous membranes that it does not become the seat of a primary inflammation. Of the cases which went to autopsy there is but one which could in any way be regarded as a primary pericarditis, and even in this case there was an old adhesive pleuritis, which might easily have been tubercular or the remains of a former pneumonia. This fact might be regarded as strong evidence against the existence of a primary pericarditis. There are 12 cases with 3 deaths in which the diagnosis of pericarditis alone is made. It is impossible to say how many of these cases should be regarded as examples of primary pericarditis, but in all the pericarditis was the prominent clinical feature and in several careful search for some cause failed to reveal any. Although there are no examples of pericarditis following injury of the pericardium in this series, such cases occur and in them the relation of cause and effect is too manifest to require any discussion.

Let us first take up the 244 cases of acute pericarditis or rather the 232 cases left after deducting the 12 cases already mentioned, grouped according to the primary disease and in the order of relative frequency.

First come 79 cases of pericarditis with acute pneumonia of which 73, i. e., 92.4 per cent. ended fatally. In 55 of them it is stated what lobes were involved in the pneumonia. In 23 cases the pneumonia was in the right lung, 21 in the left, and 11 times both lungs were involved. The percentages do not differ very greatly from those given by Aufrecht, Grisolle and Huss as to the relative frequency of the right, left and bilateral pneumonia, as shown in the following table:

	AUFRECHT, GRISOLLE, HUSS. Per cent.	PERSONAL. Per cent.
Right-sided pneumonia	52.0	23 cases, i. e., 42
Left-sided pneumonia	35.2	21 cases, i. e., 38
Bilateral pneumonia	12.8	11 cases, i. e., 20

* Read in a Symposium on Pericarditis at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section.

The right-sided pneumonia is complicated less often and the bilateral pneumonia more often than should be expected. More detailed consideration derives some interesting facts. According to Juergensen's figures, pneumonia is limited to one lobe in 65.75 per cent. of the cases, but in this series there are only 20 monolobar pneumonia, i. e., 36 per cent., which is approximately but one-half the normal number; there are 22 bilobar cases, i. e., 40 per cent., nearly twice the percentage given by Juergensen, 22.35 per cent.; there are 9 cases with 3 lobes involved, 16 per cent. as compared with 8 per cent., and 4 cases with 4 lobes involved 8 per cent. as compared with less than 2 per cent. The danger of pericarditis developing as a complication of pneumonia increases with the extent of the pneumonia and is relatively greater with left than with right-sided pneumonia. The various lobes are involved in about the normal percentages. In the 55 cases there were 107 lobes involved and the percentages correspond very closely to those of Juergensen as nearly as his figures can be utilized.

The following table shows this clearly:

	JUERGENSEN.	THIS SERIES.
Right lower	....29 per cent	25.23 per cent.
Right middle	...14 per cent.	14.94 per cent.
Right upper	....18.7 per cent.	16.82 per cent.
Left lower	.....25.4 per cent.	26.16 per cent.
Left upper	.....12.3 per cent.	16.82 per cent.

The most marked exception to the rule occurs in cases in which the right upper lobe alone is involved. Normally these cases make up 12.15 per cent. of the whole, but to this series they contribute but 2 per cent. This may be looked upon as compensation for the greater danger of cerebral complications which characterizes the R.U.L. pneumonia. Another important exception is the pneumonia of the entire left lung, which normally occurs in but 8.54 per cent. of all cases, but in this series makes 22 per cent. of the total.

When only a single lobe is involved, the especially dangerous lobes are the right middle and the left upper. The right middle furnishes 5 per cent. of the unilobar pneumonia complicated by pericarditis and only 1.77 per cent. of all pneumonia, the left upper 20 per cent. and 6.96 per cent. respectively. The most probable explanation of this is that the pericarditis results from direct extension from these lobes, both of which lie in closest anatomical relation to the heart.

The frequency with which pneumonia is complicated by pericarditis can not be definitely stated, for the statistics vary from a fraction of 1 per cent. to 8 or more per cent. Probably the figure given by Chvostek, 5 per cent., is about right, i. e., about 1 pneumonia in 20 is complicated by pericarditis. Utilizing the figures derived from this series of cases, we may say that with one-lobed pneumonia the chances of complicating pericarditis is 1 in 40; with two-lobed pneumonia, 1 in 10; with three-lobed pneumonia, 1 in 10; with four-lobed pneumonia, 1 in 5; with pneumonia of entire left lung, 1 in 8.

Next in point of frequency come the cases which present clinically an acute articular rheumatism or the effects of such an attack in an endocarditis. These cases number 65, of which 37 are accompanied by inflammatory changes in the joints with or without endocarditis and 28 are free of articular changes, but show old changes in the endocardium and fresh changes in the pericardium.

The most marked contrast between these cases and the pericarditis complicating pneumonia is the mortality. Seventy-three of 79 cases of pneumonia with pericarditis ended fatally, while in this group there are fifteen deaths and most of these were due to endocarditis or cardiac insufficiency.

Let us consider first the 37 cases presenting acute joint changes, of which 11 showed also an endocarditis. This is in rather marked contrast to the figures of Sibson, who has an elaborate paper upon pericarditis in Reynold's "System of Medicine." Sibson had 63 cases of pericarditis, of which 54 presented endocardial changes also. This is a much higher percentage than these cases give even if we take all 65 cases together yielding 39 cases of endocarditis. This is probably due to the fact that these cases are nearly all adults and the bulk of them males. The same rule holds for pericarditis and endocarditis, the danger of these complications is greatest during the first two decades of life; the younger the patient, the greater the danger of cardiac complications. Sibson found that one-half of the male and more than one-half of the females were under 20.

Sturges, in 100 fatal cases of heart disease in children, found 54 of rheumatic origin and all but 6 of these showed also a pericarditis.

In this series there are 56 males and 9 females, which would indicate a very great predisposition on the part of male patients. This inference can not, however, be made, because of the very great excess of male patients in the hospital. Sibson, however, finds in his series of 35 males and 28 females, which is in proportion to the number of cases of acute articular rheumatism as 1 to 4 and 1 to 6 respectively, and finds that beyond 21, males are attacked three times as often as the females. These figures differ from those of the Commission of the British Medical Association, which examined the reports of 655 cases of acute articular rheumatism, in 111 of which there was a pericarditis, 56 males and 55 females.

There is no invariable relation between the number of joints involved or the severity of the changes, but in general the more numerous and the more severe the joint changes, the greater the danger of pericarditis developing.

Sibson, Ball, Wunderlich, Leudet, all place the percentage of cases of acute articular rheumatism developing pericarditis at 20 per cent., the British Commission at 16.94 per cent., Bamberger and Eichhorst place it at 14 per cent. and Latham as low as 7 per cent. With few exceptions, of which Stokes, Graves, West, Trousseau and others have reported examples, the joint changes precede the pericarditis by about 10 days to 2 weeks; 6 to 10 days (Hughes), 14 days (Bamberger), 11 days (Sibson).

Chronic rheumatism and gonorrheal rheumatism rarely excite pericarditis, but examples of both have been recorded by various authors.

Of the 65 cases of pericarditis of rheumatic origin, 39—i. e., 60 per cent.—were accompanied by endocarditis, a figure somewhat lower than that of Sibson, who found the combination in 54 of 63 cases—i. e., 85.7 per cent. This is from 3 to 4 times the normal percentage of endocarditis—namely, 20 per cent. Of the cases in which the endocardial lesion is specified, two-thirds are of a single valve and one-third combined aortic and mitral. This is the normal relative frequency of univalvular and bivalvular endocarditis. Of the single valve lesions, the mitral are three times as common as the aortic. A case of combined rheumatism and endocarditis is very apt to be further complicated by a peri-

carditis, but this danger is no greater for aortic than for mitral endocarditis.

The third group, consisting of 26 cases, is made up of pericarditis developing in the course of a nephritis. The frequency with which this complication occurs is variously stated by various authors, Rayer putting it as low as .5 per cent. and Buhl as high as 35 per cent. Probably the correct figure is about 15 per cent.; this is the figure obtained by Meier from 321 autopsies on patients with nephritis. Sibson puts the figure at 8.4 per cent. for England, 10.4 per cent. for Germany and 3 per cent. for France. While it may occur with any form of nephritis, it is particularly apt to occur with the chronic diffuse nephritis with contractions. This is the form of nephritis in all of these cases. Sibson states that he found pericarditis twice in 15 cases of acute Bright's disease not following scarlet fever, and no cases with the nephritis following scarlet fever; once in 62 cases of large white kidney; 23 times in 162 cases of granular kidney; twice in 22 cases of amyloid kidney. It has been justly regarded as a serious complication as is shown by the fact that 22 of this series ended fatally, 21 being examined postmortem.

The explanation of the relation of pericarditis and nephritis has been a matter of dispute ever since the relation was noted by Bright in 1827. Theoretically, we can imagine three possible relations, 1, an acute infection exciting both pericarditis and nephritis; 2, an acute infection in a nephritic, exciting a pericarditis, and 3, pericarditis developing in a nephritic patient without any manifest cause except the nephritis. This last group is the one which concerns us and all of the 25 cases belong here.

The older writers, like Bright, Traube, Wagner, Bartels, believed that the pericarditis was of toxic origin and excited by the altered state of the blood. Kéraval tried to excite pericarditis by injection of urea, carbonate of ammonia and the like into the pericardial sac of healthy animals, but failed to obtain any results. He, however, retained the opinion that the pericarditis was of toxic origin. More recently Beco produced slight pericarditis in 3 rabbits, and marked in 1, by ligating the ureters. He does not, however, think that this proves the uremic origin of the pericarditis. Still more recently Chatin examined the pericardial fluid and the toxicity of the blood serum in four cases, and in all found the fluid sterile and the toxicity of the serum low.

Lécorché and Talamon, noting the frequent association of the pericarditis with inflammation of the lungs, pleura or endocardium, thought the pericarditis an infection. With the exception of one case by Bosc, in which the pneumococcus was found, the fluid has been found sterile, four times each by Banti and Chatin, once each by Beco, Merklen and Dessy.

The next group is the tubercular group, consisting of 24 cases, all ending in death, and 20 subjected to autopsy. In 6 of these the pericarditis is a part of an acute miliary tuberculosis; of the other 14 cases the lungs were the seat of a chronic tuberculosis in all. Three times empyema, once right and twice left, was present. Many of the cases showed also a chronic inflammation of the pleura, in a few the bronchial, mediastinal and mesenteric glands were involved. Of the four cases not examined postmortem one was a tubercular pneumonia, two were combined tuberculosis of pericardium and pleura, one was a tuberculosis of lung, pleura, pericardium and peritoneum.

There are 11 cases grouped as sepsis, 10 of known origin and 1 kryptogenetic, all ending fatally. In 5 cases the original infection is remote from the pericardium, twice an osteomyelitis and three times a cellulitis. In 5 cases direct extension may be assumed, once from a right-sided pyo-pneumothorax with gangrene of the lung, once from a subphrenic abscess secondary to a carcinoma of the stomach, twice from suppurative mediastinitis and once empyema probably of pneumonic origin.

Then come six cases of aneurysms of the ascending or transverse aorta, four with acute pericarditis and two with rupture of the aneurysm into the pericardial sac. There are four cases of typhoid associated with pericarditis, three ending in death and autopsy and one recovering. Lastly, there are seven cases in which tuberculosis, pleuritis, endocarditis, myocarditis, aneurysm and nephritis are so combined as to make it uncertain which factor is most important in determining the pericarditis.

There are 56 fatal cases of chronic pericarditis, all with autopsies, and in 37 of them one can infer the cause with a fair degree of certainty. The uncertainty of the clinical diagnosis of adherent pericardium has led to the exclusion of all purely clinical cases. Cases in which a positive clinical diagnosis of concretio cordis can be made are so few that they may be neglected for purposes of this sort. Of the 37 cases in which the cause seems clear 19 are found associated with chronic diffuse endocarditis, 11 with tuberculosis, 5 with chronic diffuse nephritis and 2 with aneurysm of the aorta.

Of the 19 cases associated with endocarditis, which in all cases was chronic, although in a few there was an acute exacerbation, 10 were upon both the aortic and mitral valves, 5 on the mitral alone, 3 on the aortic valves alone and 1 on the mitral and tricuspid. These figures are of interest when one recalls the figures as to the relative frequency of the various valvular lesions given by Sperling from the Virchow Institute. According to these combined aortic and mitral lesions make up but one-quarter of the entire number, yet in more than one-half of the 19 cases of combined endocarditis and obliterative pericarditis, the endocardial lesion was double. The danger of pericarditis is six times as great with a mitral and aortic endocarditis as with either lesion singly. I believe this fact can be utilized in the clinical diagnosis of concretio cordis. Obliterative pericarditis was found three times with simple aortic endocarditis and five times with simple mitral, i. e., 3 to 5, a relatively high figure, for normally simple mitral is four times as common as simple aortic endocarditis. The danger of pericarditis is proportionate to the extent of the endocarditis, and aortic endocarditis is more often accompanied by pericarditis than is mitral endocarditis. This differs somewhat from the cases of acute pericarditis where it did not seem to make any difference whether the endocarditis was aortic or mitral.

All of the 11 cases of obliterative pericarditis associated with tuberculosis showed a chronic tuberculosis of the lungs; most of them showed in addition an obliterative pleuritis either unilateral or bilateral, and in a few instances there are tubercular foci elsewhere in the body. Three of the cases showed also an acute diffuse miliary tuberculosis. It is manifest from this that tuberculosis is by no means so potent a factor in the production of the obliterative pericarditis as has been generally stated. When one recalls the very large num-

ber of patients suffering from pulmonary tuberculosis these few cases appear very insignificant. Sepsis, especially the attenuated form known as acute articular rheumatism, when accompanied by endocarditis, is a much more potent factor.

There are four examples of concretio cordis accompanied by nephritis. In none of these is there any manifest cause of the pericarditis except the nephritis, and while it is generally stated and generally true that pericarditis accompanying nephritis is an advance courier of death, this is not always so, as was illustrated when speaking of the acute pericarditis, and we must assume the nephritis as the cause in these cases. It is, of course, possible that the concretio cordis came from some other cause and the nephritis is superimposed.

In two instances the obliterative pericarditis was associated with an aneurysm of the aorta. In 19 cases the process which excited the old pericarditis could not be determined at all, or at least not with certainty. In 9 of the cases the immediate cause of death was an acute croupous pneumonia, and neither history nor autopsy cleared up the questionable cause of the pericarditis. In four cases the death was due to cardiac insufficiency. In the other cases endocarditis, tuberculosis and chronic nephritis were combined in various ways, and in such manner as to prevent any safe guess as to which, if either, caused the pericarditis. The most noteworthy fact in these cases is the large number of deaths caused by pneumonia—9 out of 19.

CONCLUSIONS.

1. Cases of acute pericarditis clinically primary occur, but are rare.

2. Diseases to which pericarditis appears as a complication are in order of their frequency; pneumonia, 34 per cent.; rheumatism, 28.36 per cent.; chronic diffuse nephritis, 11.2 per cent.; tuberculosis, 10 per cent.; sepsis, 4.7 per cent.; aneurysm, 2.6 per cent.; typhoid, 1.7 per cent.

3. The more extensive a pneumonia the greater the danger of this complication.

4. The danger is somewhat greater with left than with right-sided pneumonia.

5. Where only one lobe is involved the danger is least with a right upper-lobed pneumonia, and greatest with a right middle or left upper-lobed pneumonia.

6. With a unilobar pneumonia the chances of a pericarditis are 1 in 40; with a bilobar or trilobar, 1 in 10; with a quadrilobar, 1 in 5, and with a pneumonia of the entire left lung, 1 in 8.

7. The mortality of pneumonia with pericarditis is 92.4 per cent.

8. Rheumatic pericarditis is complicated by endocarditis in 60 per cent. of the cases, i. e., three to four times the normal rate of cases of endocarditis.

9. The danger of pericarditis complicating rheumatism is the greater the younger the individual, and is somewhat greater with males than with females.

10. So far as acute pericarditis is concerned, the site and extent of the endocarditis is apparently of no importance.

11. Pericarditis appears as a complication of all forms of nephritis, but particularly the chronic diffuse nephritis with contraction.

12. It is an extremely ominous thing, for 22, i. e., 84.6 per cent. of the cases died.

13. It is still uncertain whether the pericarditis is toxic or infectious.

14. Tuberculosis excites only one-tenth of the cases, and when one considers the extreme frequency of tuberculosis, pericarditis must be regarded as a rare complication.

15. Pericarditis may be a part of a generalized acute tuberculosis, but is more often the result of a chronic tuberculosis of the lungs or mediastinal glands.

16. Septicemia and pyemia contribute a very considerable number of cases of pericarditis. The primary focus may be remote or close to the pericardium.

17. Aneurysm of the aorta causes 2.6 per cent. of all the cases, a very high figure when one recalls the comparative infrequency of aneurysm.

18. Typhoid fever, which is rarely complicated by inflammation of the serous membranes, other than the peritoneum, contributed 4 cases, which is 1.7 per cent.

19. The cases of obliteration of the pericardium are due to the following causes arranged in order of importance; endocarditis, tuberculosis, chronic nephritis, aneurysm.

20. More than one-half of the cases, in which the cause was clear, were due to endocarditis, or rather to some cause common to both the endocarditis and the pericarditis, and more than one-half of these cases showed a combined aortic and mitral endocarditis.

21. Relatively six times as many cases of obliteration of the pericardium occur with aortic and mitral endocarditis than with either lesion singly.

22. Tuberculosis causes but few cases of obliterative pericarditis.

23. Pericarditis, accompanying nephritis, is not always fatal, but may apparently end in the formation of adhesions.

[Remainder of papers in the Symposium, with the discussion, will follow next week.]

THE EXTRACTION OF CATARACT WITHOUT IRIDECTOMY.*

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Until very recently I have performed all extractions of cataract by the combined method, that is to say, with iridectomy, and in a considerable percentage of cases the iridectomy was performed as a preliminary operation from four to six weeks before the extraction was undertaken. This plan was adopted for the reason that I believed the prognosis was better, especially with preliminary iridectomy. For the past few years, prompted by the favorable reports of other surgeons, I have done the simple extraction, but with a few exceptions only in selected cases. The grounds for selection were the absence of any noteworthy pathological history, or discoverable indication of pronounced uveal disease; a promptly reacting iris, a pupil which dilated readily to at least large medium under a mydriatic; and a lens with more or less well-defined sectors and without transparent anterior cortex, that is to say a ripe cataract. A long history of asthenopia, preceding the failure of vision from incipient and immature cataract, a more or less discolored iris, sluggish in its reaction to light and shade, and to mydriatics, white patches on the lens capsule, a dark or brownish lens, injected conjunctiva and swollen caruncles associated with headache, and a protracted ripening of the cataract, furnished a group

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

of conditions which excluded the case from any attempt at simple extraction. Many of the excluded cases came under observation in their early history when it was still possible to study the existing intraocular conditions in one or both eyes. Chorioidal disease associated with vitreous degeneration was frequently found. The degeneration of the lens in this group of cases usually began with a granular, outlined nucleus and disease at the posterior pole, probably of the posterior capsule, to be followed by peripheral spicules and the tardy ripening or opacification of the entire lens; or the anterior cortex remained for an indefinite period translucent and became amber colored. The participation of the uveal tract in this chronic disease process was indicated by the sluggish iris which did not respond fully to the mydriatic and by a chronic dilatation of the anterior perforating ciliary vessels. To attempt to dislodge the lens from the diseased posterior capsule, to force it through the small pupil of an inelastic iris, prone at best to inflammatory reaction from its association with the general uveal disease, thus causing an inevitable traumatism, was regarded as unwise surgery. The compound operation, often with preliminary iridectomy, was therefore adopted in the group of cases more or less accurately described in the foregoing remarks.

TECHNIQUE OF SIMPLE EXTRACTION.

Even in favorable cases the technique of simple extraction is of signal importance. With rare exceptions where the result has been in any respect disappointing it could be traced to wanting docility upon the part of the patient or to a fault on my own part in some detail of the operation. I have not always found it possible to accurately carry out in all its details my own conception of the rigid mechanical and mathematical requirements of a perfect technique. A variety of circumstances are lurking unseen to trip the most wary. A most carefully selected knife for some unaccountable reason proves faulty and disappointing at the critical moment; the slightest change in the location of the cornea in relation to the source of light presents annoying reflexes and adds materially to the deceptive conditions due to the optical or refraction effects of the curved surface of the cornea, and as a result the counter puncture is not exactly as designed; any too vigorous effort to correct the position of the eye by means of the fixation forceps may distort a readily yielding globe, not only producing changed optical conditions in the cornea, which may be deceptive as to the exact location of the knife, but causing the iris to fall in front of its edge. When the possible action of the patient is added to these it is obvious that the realization of a perfectly correct technique is not always obtainable.

The knife I prefer is ground hollow, 2 mm. wide and 28 to 30 mm. long, and I carefully select one with a point not so finely drawn as to be invisible when held before the dark surface of the iris. A too fine point is often responsible for the faulty counter puncture. The puncture and counter puncture are made exactly at the clear limbus, the width of the knife blade above the horizontal meridian of the cornea. The section is then carried upward without deviation to the upper border of the cornea where it is made to dip slightly backward to secure a conjunctival flap. The section is made while the lids are held apart with a soft spring speculum, the eye being fixed with toothed forceps grasping the conjunctiva and subconjunctival tissue at the lower end of the vertical meridian of the cornea near the limbus. An anchor or T-shaped capsulotomy is then made and the speculum removed. The upper lid is raised by an assistant either with the finger or an elevator; the posterior lip of the wound is supported firmly by a horn spatula and the lens caused to present by pressure with the finger below, exerted through the lower lid, which is made to follow the escaping lens with a to and fro movement to secure the escape of any tardy remnants of cortex which may be scraped off by passing through the pupil and wound. No effort is made to immediately replace the prolapsed iris except by a gentle stream of warm sterile physiological salt solution from a fine pointed pipette. If the iris does not return the lids are closed gently and a light rotary massage with the tip of the finger, exerted through the upper lid, and a moment's rest permitted. If any tendency to prolapse remains it will usually be found to be due either to a faulty corneal section, which is shown by a tendency of the wound to gape, or by the collection of fragments of cortex behind the iris, or possibly by a rupture of the suspensory ligament above and the presentation of vitreous at that point behind the iris. In either of the last named conditions gentle pressure backward and downward upon the iris with the round surface of the spatula will often reduce the vitreous or cause the imprisoned fragments of lens cortex to present in the pupil.

In every case where subsequent prolapse of the iris actually occurred or when the tendency to prolapse was manifested by a distortion of the pupil and adhesion of the periphery of the iris to some portion of the wound during convalescence, the tendency was obvious at the time of the operation. Exceptions to this rule are furnished by one case in the following reports when the prolapse was produced on the fifth day, by straining in the attempt to urinate. The operations, with few exceptions, were made under cocain and usually with a dilatation of the pupil by atropia. A solution of salicylate of eserin was uniformly instilled after the last sterilization of the eye and immediately before the corneal section was made. The effect of this is to maintain for an hour or more the contraction of the pupil, and a lessening of the probability of prolapse during the most critical period of convalescence, after which the atropia dilatation is resumed. Irrigation of the anterior chamber for the purpose of washing away any remaining cortex was studiously avoided except in the earliest operations. I prefer to trust to the absorption of small flakes of cortex rather than risk the rupture of the suspensory ligament by protracted efforts for their removal by manipulation or the occurrence of striped keratitis from the irritation of the fluids used in washing out the anterior chamber.

AFTER TREATMENT.

If the iris did not promptly return after the delivery of the lens, or if the pupil manifested any tendency to distortion in the direction of the wound the dressings were not applied immediately. If the tendency to prolapse increased, a narrow iridectomy was made and the case classed with the compound operations. There was cause for regret in every case when this rule was neglected. After thorough irrigation with warm boracic acid or salt solution the conjunctival flap was carefully replaced, the lids of both eyes closed and fixed by strips of isinglass plaster, placed in the form of the letter X.; over these a moist square of gauze and a pad of cotton. This was in turn fastened by a strip of isinglass carried from temple to temple and a second strip placed diag-

onally from the center of the brow downward and outward to the cheek. A knit bandage with tapes was then applied over the eyes and while the tapes were held firmly at the temples by an assistant the ends were carried backward and forced between the pillow and occiput without raising the patient's head and tied in

Name, Age, Volume.	Operation Notes.	Convalescence.	Prolapse.	Remarks and Vision.
1, L. D., age 66 . .	10, 10, '92—Operation smooth.	Without incident. 11, 30, 92—secondary, leaving a large round, cent. p. 5, 15, '93—V. = 6 IX. +12 ⊃ +1 C. 180°.	None	3, 29, '97 +14 S. V. = 6/VII 1/2.
2, N. Y., age 68. . .	11, 17, '99—Smooth upward section; then patient behaved badly. Lens extracted with loop; some loss of vit. and prolapse of iris.	11. 8—wound healed kindly. Ether administered on second day and prolapse excised and eye did well.	Prolapse excised on sec-day.	Notes incomplete: good vision.
3, E. A., age 75. Morganian Cat., xiii, 204; illiterate; blind fourteen years.	11, 5, '94—Lens escaped in capsule on completion of section and iris folded itself in upper angle of Ant. Ch., leaving a gibbous pupil, clear and black.	11, 7, '94—no reaction; pupil still gibbous. 11, 14—pupil changed to a flaring coloboma up as after a broad iridectomy. Conj. catarrh. 11, 21—tear duct washed out. 1, 14, '95—Iris is now unfolding itself from above and appears below upper limbus.	None; pupil ovoid.	1, 14, '95—V. = 6/IX.
4, J. C., age 59, Farmer.	10. 23, '99—smooth extraction, small conj. flap; eye closed with pupil slightly ovoid.	10, 25—eye quiet, no reaction. 10, 28—A. C. filled with blood clot and blood on dressings. No pain. Patient thinks he injured eye in the night. 11, 20—blood slowly absorbed, leaving gray capsule. Capsulotomy, leaving clear pupil. 11, 22—no reaction.	None	11, 24, '99—+10 ⊃ +3C. ax. 180°. V. = 6/VI.
5, M. A., age 66 . .	5, 29, '99 - conj. flap; iris punc. by knife point but disentangled and smooth section made; clear, black central pupil, slight distortion up and out.	No reaction until seventh day. Slight iritis with flushed eye and two synechiæ with strong band across, pupil oval. Capsulotomy with bent keratome. No reaction. 6, 30—capsulotomy.	None.	6, 30; +10 D. V. = 6/VI.
6, C. L., age 66, O. S.	5, 17, '99—operation smooth; conj. flap; clear black pupil, but ovoid, with tendency to prolapse; eserin instilled and light dressing; in an hr. pupil central and nearly round. Eye dressed as usual.	First dressing 16 hrs. after operation; no pain, no puffing of lids. Eye not opened. On 2d day eye opened and iris prolapsed into wound, filling entire section. Spec. introduced, eye washed. Cocain and broad iridectomy made, leaving clear wound and moderate coloboma. No reaction, eye healed without incident.	Prolapse on second day excised.	Much opaque cortex on 2d d.; prob. post. which prob. coll'ct'd behind iris, causing prolapse; 6, 19, capsulot'my; V. = 6/XII.
7, C. L., age 66, O. D.	11, 13, '99—conj flap; opr smooth; pupil clear and black, slightly ovid; upper rim drawn slightly upward, tending to prolapse.	Eye recovered without reaction, but upper margin of pupil drawn upward, but entangled in wound, which is smooth.	None, but pupil ovoid.	11, 30, '99; +10 ⊃ +2 C. ax. 170°. V. = 6/IX.
8, A. G., age 70; high grade imbecile.	10, 9, '99—ether anes.; conj. flap; profuse bleeding into A. C.; central round pupil.	No incident, but capsule gray.	None	12, '99; +10 ⊃ +2 C. ax. 90°, V. = 6/IX.
9, J. T., age 70. . .	3, 6, '99—Operation smooth; conj. flap; round, central pupil.	No reaction.	None	3, 15, '99; secs time on watch; 4, 19, '99, +2 ⊃ +3 C. ax. 165°. V. = 6/XII.
10, A. W., age 67. .	11, 28, '98—smooth extraction; pupil black, slight notch above.	No incident; some cortex in capsule above and below, clear black center.	None	V., no record.
11, S. R., age 58; coal worker.	11, 28, '99—operation smooth; central, round, clear pupil,	12, 9—eye white.	None	12, 9, '98; sees time on watch; 12, 16, '98, +8.50 ⊃ 5.50C. ax. 180°. V. = 6/VII—1/2.
12, L. C., age 65. . .	11, 4, '98—Operation smooth; large conj. flap. (Paralysis.)	11, 18, '98—eye healed without reaction, round central pupil; but on eighth day lost power over left arm, which spread to complete paralysis of left arm and leg. Sees time on watch.	None	P. round, black, reacting to light: sees time on watch; sent home without glass.
13, R. W., age 49. .	10, 10, '98—too small section; pupil central but slightly ovoid upward.	10, 14—eye red; much opaque cotex and gray membrane; 12, 12—secondary.	None	2, 23, '99; +10 ⊃ 5 C. ax. 25°. V. = 6/V.
14, A. H., age 74. .	12, 13, '97—conj. flap; smooth sect.; patient squeezed and ext. lens immediately after capsulotomy; clear black pupil; slt. tear in upper rim.	12, 17—some conj. injection and delicate adhesions to capsule; 12, 27—eye white.	None	V, no record.
15, M. B., age 60. .	11, 15, '97—Operation smooth; round, central pupil; clear.	11, 17—no reaction; 11, 24—gray membrane; 1, 3, '98—secondary.	None	1, 10, '98; +10 ⊃ +2 C. ax. 135°. V. = 6/VI.
16, T. W. K., age 60	Some loss of vitreous.	Periphery of iris adherent. Hemorrhage in A. C., oval pupil.	None	V. = 6/LX.
17, L. A. H., age 66; O. S.	Tough capsule; some cortex remains; 11, 1, '97.	Mild iritis with synechia on eighth day. Much opaque cortex; 1, 10, '98—capsulotomy.	None	1, 26, '98; +10 ⊃ +2 C. ax. 90°. V- = 6/VI.
18, A. R., age 49; eye had been injured.	11. 15, '97—small nick in extreme periphery of iris while making sec.; eye squeezed by patient, suddenly extruding lens after capsulotomy; round, central, black pupil; no tendency to prolapse.	11, 17—A. C. restored; eye not red; 11, 22—says he "banged" his eye in the night; small cyst of conj. above section; bandage; 11, 26—small synechia capsule; 1, 3, '98—capsulotomy; 1, 7—marked reaction and iritis; cold compresses.	None	4, 4, '98; +10 ⊃ + 2C. ax. 180°. V- = 6/IX.
19, G. H., age 50; O. S.	10, 18, '97—tough capsule; soft cortex; hard nucleus; cort. removed with spoon; round, cent., black p.	No incident; 11, '97—secondary; central pupil; 11, 8, '97 +6 ⊃ +4 C. ax. 90°. V. = 6/XXX.	None	1, 12, '98; +10 ⊃ +2 C. ax. 180°. V. = 6/XII.
20, R. McN., age 68	3, 29, '97—large amount of soft cortex delivered with a spoon; some retained; bead of vitreous presented, but none lost; round, central pupil, upper half black.	4, 2—A. C. restored; eye too red; opaque cortex fills pupil; 4, 5—pain, gray point in cornea at inner angle of wound; later a gray membrane hung from this; conj. chemotic and c., but slowly subsided, leaving a slight pouting of wound at inner angle, pupil drawn toward it; iris tucked into angle but not prolapsed into wound as far as can be seen.	None	1, 14, '97; +10 ⊃ +2 C. ax. 150°. V. = 6/LX. 4, 19, '97; V. = 6/XX.
21, O. S., I. S., age 55; washerwoman	12, 14, '96—tough capsule; lens ext. in capsule with loop; no vit. lost.	12, 16—A. C. restored and eye quiet; stri. keratitis along border of section above; 4, 26—capsulotomy.	None . . .	1, 14, '97; +10 ⊃ +2 C. ax. 150°. V. = 6/LX. 4, 19, '97; V. = 6/XX.
22, O. D., I. S., age 55	5, 31, '97 - extraction simple, no notes	Iritis, synechia, gray capsule	None	7, 16, '97; +13 = 6/XV. Capsulot'y advised; but did not return.
23, T. B, age —; O. S. Comp. ext., V. = 6/VI. Iris fell before K.	3, 22, '97—Operation smooth; central, round, clear pupil.	No incident; 4, 26, '97 - capsulotomy.	None	4, 30, '97; +9. V. = 6/IX.
24, O. D.. P. C, age 51.	11, 16. '98—iris fell before knife at extreme periphery, making small opening; otherwise opr. smooth; large amt. wht. flocculent cortex.	No incident	None	11, 25, '98; +9 ⊃ 2 C ax. 60°. V. = 6/XV. 1. 4, '97; +11 ⊃ +1 C. ax. 30°. V. = 6/XII.
25, J. McG., age —; O. S. fell before K. and made iridectomy.	10, 9, '96—lens found app. dislocated, when capsulotomy was attempted; ball soft, but lens presented by pressing on ball below and was delivered easily; clear, blk., cent., rd. pupil; no tendency to prolapse.	No incident; 11, 13, '96—capsulotomy	None	11, 23, '96; +10 ⊃ +1 C. ax. 180°. V. = 6/XII.
26, J. McD., O. D..	2. 3, '96—smooth extraction; central, round, clear pupil; counts fingers.	No incident until fifth day; some injection of conj., and on seventh day slight synechia to capsule.	None	2, 28, '96; +12. +1 C. ax. 115°. V. = 6/XII.
27, O. S., J. P. R., age 52.	11, 25, '95 - operation smooth; small rupture in upper rim of pupil by escaping lens; no tendency to prolapse; small, clear, central pupil; round, except small notch above.	Recovery without incident.	None	4, 5, '96; +10 ⊃ + 1 C. ax. 180°. 4, 29, '96; +11 ⊃ 1 C. ax. 15°. V. = 6/VI. 2, 6, '99; not poss. by ordinary observ. to tell operated eye. V. = 6/V.

Name, Age, Volume.	Operation Notes.	Convalescence.	Prolapse.	Remarks and Vision.
28, O. D., G. W. H., age 58; O. S., opr. on by Dr. Norris at Wills' Hosp. 4 yr. ago. V. = 6/XXI.	12, 16, '95—Smooth extraction; no incident; round, central pupil.	12, 30, '95—eye shows some conj. injection; no iritis Sees time on watch.	None	12, 30, '95; later V. = 6/VI. Returned in '97 with opaque capsule and reduced V. Secondary oper. fol. by panophthalmitis and loss of eye.
29, O. S., J. J. Connor, age 51.	11, 25, '95—smooth, round, clear central pupil.	Without incident; 3, 24, '97—capsulotomy. V. = 6/21. .	Nouc	+11 = 6/VI,
30, Mr. Hart. . . .	Feb., '96—operation smooth; central, round, clear pupil.	Small hemorrhage on fifth day in A. C., but rapidly absorbed.	None	+13 ⊃ +1 C. ax. 10°. V. = 6/V.
31	Operation smooth; central, round pupil.	Catheter necessary; tried to escape it by getting out of bed on the fifth day; pain in eye while straining to urinate causing prolapse of iris.	Prolapse while straining to urinate 5th d.	V. = 6/XII.
32, O. S., Mrs. C. L. W., age 61.	5, 14, '00—smooth operation; clear, central, round pupil.	5, 16, '00—A. C. restored; 5, 21, '00—eye getting white; some adhesions between caps. and iris pupil; dilates irregularly.	Noue	6, 15, '00; +11 ⊃ +2.50 C. ax. 1. V. = 6/VII −1/2
33, A. O., age 68. . .	11, 19, '00—opr. smooth, except upper rim of p. caught in removing cystotome; spec. removed; lens app. settled back, and in escaping was preceded by small amt. of very fluid vit, leaving part of lens at inner side p., deeply placed; eye closed, fearing greater loss of vitreous.	11, 20, '00—A. C. restored; 11, 23—eye doing well, no reaction, some swelling of conj. flap; outer half of pupil clear and black. 11, 26, '00—eye almost white, but much bulging of conj. flap and app. gaping of wound under it; pupil round; compress bandage; 1, 18, '01 cataractus mass slowly absorbing; 3, 15—cortex almost disappeared.	None	6, 15, '91; +11 ⊃ +2.50 C. ax. 10°. V. = 6/VII—1/2.
34, O. D., R. F., age 57.	11, 19, '00—smooth; lens extrac., leaving some soft cortex; patient turned eye strongly downward, rupturing the susp. and causing a gush of fluid vitreous; eye closed with round, central pupil.	11, 21—eye doing well; 11 23—some pain in night and morning; hemorrhage in A. C.; 11, 26—eye almost quiet; large, dark blood clot in lower angle of A. C.	None	1, 2, '01; +10.50 ⊃ +4 C. ax. 180°. V. = 6/V ?
35, Mrs. S. W., age 70.	11, 19, '00—smooth; conj. flap; anchor section in cap.; lens delivered, leaving much soft cortex, which was removed with spoon.	11, 26, '00—without incident; some pouting of conj.; white band in capsule; central, round pupil; 12, 10, '00—band cut in two.	None	12, 17, '00; +9.50 ⊃ +1.50 C. ax. 130°. V. = 6/VI.
36, O. S., J. L., age 67.	12, 3, '00—(dull knife) pupil remains oval, up and out.; a few flakes of cortex in A. C.	Without incident.	None	12, 21, '00; +10 ⊃ +1.75 C. ax. 180°. V. = 6/VI.
37, M. P., age 68. .	Opr. smooth; small conj. flap; large quant. of soft cortex fol. a large lens; small, central, round pupil.	3, 1, '01—Capsulotomy	None	V. = 6/VII½.
38, D. W., age 64. .	4, 1, '01 Opr. smooth, small amt. of gray cortex in a central, round p.; slight tendency to become irreg. at pupillary margin; becomes entirely round on stroking with lid.	Iris adherent; capsulotomy; sees time on watch; pupil oval.	None	4, 15, '01; V. = 6/IX. Before discharged sud. attack of Iritis, fol. by steamy cornea and increased tens.
39, J. P. R., age 54, O. D.	Feb., '99 operation smooth; central, round black pupil.	Eye recovered without reaction; clear, round pupil . .	None	Mar., '99; +10 ⊃ +1 C. ax. 180°. V. = 6/V.
40, R. F., age 57. . .	5, 6, '01—ether anesthesia; operra.. smooth; central, round, p,, gray cap.	Recovery without incident; round. central pupil; small gray band diagonally across it.	None	5, 27, '01; +11 S. V. = 6/XV.
41, R. W., age 50; O. S.	Operation smooth; central, round, black pupil.	Recovery without incident.	None	+11 ⊃ +3.75 C. ax. 150° V. = 6/VII.

front. The operations were invariably performed on the bed the patient was to occupy subsequently so that the necessity of moving from operation table to bed was avoided. These details I believe to be important since the inevitable muscular tension due to raising the head while applying the roller bandage, or in moving the patient to the bed, favor the reopening of the wound and consequent prolapse of the iris. It is probable that most prolapses occur at this juncture.

The following morning the bandage was removed and the lids inspected. If there was no swelling or undue discharge the isinglass strips were not disturbed. The bandage was reapplied and allowed to remain for twenty-four hours. The dressings were then removed, the lids gently opened, the eye irrigated with warm boracic solution, a drop of atropia instilled and after inspection the bandage reapplied, omitting the isinglass strips from the lids if the anterior chamber had refilled.

The tabulated histories of 41 cases, all occurring at the Wills Eye Hospital, are included in the report. The following is a summary: The operation was smooth, that is to say, without noteworthy incident in 31 cases, and complicated in 10. Convalescence progressed without incident in 22 cases. It was complicated as follows in 19, prolapse of the iris in three, namely, Cases 2, 6 and 31 of the series.

CASE 2.—The patient behaved badly; the lens was extracted with the loop with slight loss of vitreous, but eye closed with a nearly round pupil; wound healed promptly, but the iris was found prolapsed on second day and was excised. On discharge from the hospital, V. = 6/XII.

CASE 6.—Operation smooth, but pupil ovoid. Eserin was instilled and a light dressing applied. In an hour pupil was black, central and nearly round. On second dressing iris was found prolapsed and was excised. There was much opaque cortex, the collection of which back of the iris while still transparent at the time of operation had become opaque, its swelling probably accounting for the tendency to prolapse. V. = 6/XII at time of discharge from the hospital, with some gray capsule.

CASE 31.—Operation was smooth, leaving a clear, round central pupil. It was found necessary to empty his bladder with the catheter during convalescence. In trying to escape this on the fifth day during the absence of the nurse from the ward he sought the urinal and while straining to urinate felt a sudden pain in the eye. A small prolapse of the iris into the nasal end of the wound was found. Although the eye was white before the accident, it became red and convalescence was protracted. V. = 6/XII at time of discharge from the hospital. It will be observed that in two cases the prolapse was foreshadowed at the time of operation by the ovoid pupil and a tendency to prolapse. In one of these the patient acted badly. It would have been better to have performed the iridectomy in both cases at the time of extraction.

In the third case the prolapse was obviously due to the patient's imprudence. The pupil was oval in five cases from adhesion of the periphery of the iris to some portion of the wound. In the remaining 30 the pupil was round and central. Conjunctival catarrh occurred in three cases. Iritis, usually of a mild type, but resulting in adhesions to the capsule and a somewhat protracted convalescence, occurred in eight cases, commencing usually from the sixth to eighth day of convalescence. In all of these the capsule became gray and secondary operation was required. Notable loss of vitreous occurred in but one case and then was due to the want of self-control by the patient. There was slight

loss in two other cases, in neither of which did it lead to any notable modification of the result. There was hemorrhage into the anterior chamber three times, twice from injury, once without obvious reason. In the traumatic cases both recovered without permanent injury; in the third case the hemorrhage was profuse, quite filling the anterior chamber and the patient recovered with V. = 6/LX.

The nasal end of the wound became infected in one case, but prompt treatment arrested the progress of the ulcer, but left the periphery of the iris adherent to the wound at that point causing a slightly ovoid pupil.

Secondary operations were performed in 14 cases. An exceptionally favorable result was obtained in one patient. Both eyes were operated upon at different sittings resulting in both in central, round, freely acting pupils and V. = 6/V in each eye. He enjoys binocular vision both for distance and in reading. But one loss is to be recorded. The patient left the hospital with V. = 6/ VII ½, but returned in two years with vision sunk to 6/XV due to a gray capsule, following "a cold" in his eye. A capsulotomy was performed followed by no reaction and V. rose to 6/VI. He received his discharge from the hospital on the fifth day with the eye white. He returned the following day with the eye flushed and painful. There was a gray point at the site of the corneal puncture which was rapidly followed by purulent panophthalmitis and loss of the eye.

The visual results were as follows: V. = 6/V in 5 cases; 6/VI in eight cases; 6/VII ½ in 5 cases; 6/IX in seven cases; 6/XII in seven cases; 6/XV in 2 cases; 6/XX in 1 case; 6/LX in 1 case; good in 2 cases; no record in 2 cases; total, 40 cases.

The acuity of vision in many of the cases was recorded at the time of their discharge from the hospital. It is probable that later study would have shown better vision. In some instances when V. = 6/XII secondary operations were not attempted since that vision was sufficient for gross pursuits and further risk was not deemed advisable.†

TEMPORARY CLEARING OF A CATARACTOUS LENS.*

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The writings of Risley, Jackson, de Schweinitz, Weeks, Knapp, Pyle and others, have introduced into the management of partial lens opacities considerations which make the old and easy classification of incipient and ripe cataracts unsatisfactory to the observer, and unjust or cruel to the patient.

A few clinical truths seem to have been firmly established. We know that the situation of early opacities is of prognostic importance; that senility is neither the only nor the most important factor in etiology of so-called primary senile cataract: that the uveal tract, especially the choroid, should be minutely studied; that "spontaneous cures" now and then occur from absorption, with or without capsule puncture, or from luxation; that hygienic, optical and medicinal care are of importance, and seem to retard progress of lens-clouding: that ripening operations are unreliable, and probably entirely unnecessary: that if the opacity interferes with vision to a great degree, and is non-progressive, extraction of so-called immature cataracts is often a safe procedure. All these things must be considered in every case of partial lens-clouding. But there is coming up in late years another question which has, at present, a greater social than scientific aspect. I mean the usefulness of the alleged cures for cataract without operation. I am not aware of any well authenticated observations, from men whom we instinctively believe, tending to prove that massage, electricity, or "absorbing drops" can be depended upon to give results obtained by inventors of the method, when used by others. Yet patients sometimes bring us accounts of alleged cures. We attribute them to the use of atropia or eserin, to a faulty diagnosis or intentional deception. Doubtless one or another of these explanations covers the great majority of such cases. Yet we know that lens opacities often follow or accompany other eye lesions which resolve. Fuchs speaks of clouding of the lens as a symptom of choroiditis, while Dr. Risley's paper, published in 1889, impresses the fact. A few reliable reports of clearing of lens-clouding are found. At the meeting of this Section a year ago such cases were mentioned and are recorded in The Journal, American Medical Association, of Dec. 15, 1900. Dr. Bates of New York saw two cases cured, and one greatly improved under treatment by Dr. James E. Kelly. Save that the patients said they were made to drink a great deal of water, no clue is given to the treatment. A still more important observation was that of Dr. Ring of Philadelphia. He saw lens opacities disappear in a specific patient under iodid of potassium. Such cases suggest the question: Is there a kind of lens-clouding which improves as the underlying cause, probably choroiditis, gets better? If, following out the reasoning in Dr. Weeks' paper a year ago, "the development of cataract is due to a departure from the normal in the nutrition of the lens," and if "hyperplastic or degenerative changes" are thus brought about, will these changes in the lens improve as the cause of malnutrition disappears? Consensus of opinion is against such occurrence. Dr. Risley,[1] discussing the papers of de Schweinitz and Weeks, after tracing the etiologic connection between choroiditis and cataract, said: "I argued that if I could arrest the cause by treatment, I could probably arrest the progress of the opacity. . . . We never see the slightest disappearance of an opacity in the lens. When an opacity is formed in the lens, you can rest assured it will remain there." Dr. de Schweinitz in his paper[2] quotes Alt: "The choroidal disturbance yields, but the formation of the cataract goes on undisturbed in its slow and steady progress." In his remarks, Dr. Risley traced the association of choroiditis with commencement of lens opacification. He argued that the rest, obtained by partial exclusion of light, caused the disease of the choroid to subside. Thus the lens opacity becomes non-progressive. It seemed to me, after reading these papers, that the case herein reported was sufficiently important to go on record. It is not one of spontaneous recovery without operation, for it eventually came to operation; but extensive old choroidal disease existed when lens opacities were first noticed; there was a quiescent period of nearly five years during which the choroidal disease remained inactive, and the lens opacities non-progressive, or nearly so. It was impossible to secure rest to the eyes, almost unremitting near work continuing. The cataract, seen

† I wish to acknowledge the efficient aid of Dr. E. S. Saylor in collating the histories, and in preparing the accompanying table of cases.

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1. The Journal A. M. A., Dec. 15, 1900, xxxv, p. 1532.
2. Ibid., Dec. 8, 1900, p. 1467.

after an interval of eighteen months, was apparently mature. In six months more it partially cleared, and an area of recent choroiditis was found. With increased exposure to light, through this partial clearing, and at least a moderate participation in work as possible causes, there was renewed advance of opacification, though no new chororoidal disease developed.

Mrs. E L., 72 years old, first consulted me April 9, 1890. She had been nearsighted all her life, and was wearing —9 D. for near, with occasional use of —16 D. for distance. The latter gave about 4/200 in each eye. Without glasses Mrs. L. read Jaeger 1, at two and a half inches with the right, at a perceptibly shorter distance with the left eye. Her reading lenses increased this distance to 5 inches. Beyond this, she could not read. Mrs. L. has devoted her life to literary work. Her capacity for work is almost incredible, considering the condition of the eyes. Preferring to work without glasses, her reading and writing have been done at such distance as, to use her own words, "seriously to interfere with the integrity of her nose." I could not improve vision, her —16 D. correcting all the myopia. Fundus of each eye showed large but old and limited choroidal atrophies, mostly in the neighborhood of the papilla. The foveal region was good. The left lens showed an axial nuclear opacity, rather a central deep cloud than spoke-like striations. In the lower and external periphery of both right and left lenses there were opaque streaks. Over two years—to August, 1892—passed before my second examination. A central deep cloud in the right lens was the only change observable. In July, 1893, distant vision was the same as three years previous. The left eye had lost near vision from 1 to 6 Jaeger. The central haze noticed in right lens a year before, and the opacities of the left lens seen at the first examination were unchanged. So was the fundus in each eye. After July, 1893, I did not see Mrs. L. until Dec. 31, 1894. Her daughter, a physician, had reported to me from time to time. Her reports were that her mother was doing constant work; that it was useless to try to stop her; that the left eye was practically blind, and that Mrs. L. was not coming to the city to see me until she was ready for operation. She came, however, for examination the last day of the year, 1894. No change was noticed in the right lens. The left eye had only l.p. January 1, 1895, full homatropin dilatation revealed a thin rim of red reflex at the equator. The rest of the lens had lost its transparency. Its color was reddish-yellow or amber, much darker than is ordinarily observed. No sector reflex was obtainable by oblique illumination, nor iridic shadow. I was careful to exclude an anterior vitreous opacity. Operation, though urged, was postponed until the summer, on account of the expected absence of Mrs. L.'s daughter. Six months later, in June, 1895, I went to the country home of Mrs. L. prepared to operate upon the left eye. A letter from her daughter to the effect that her mother's eye was free from conjunctivitis or other contra-indication was the only news since the examination on January 1. Mrs. L., on meeting me, wanted to know if cataracts ever cleared up. I made the orthodox reply, and went on with my preparations. She then told me that for some time she had been seeing better with the left eye, and counted my fingers at four feet. Ophthalmoscopic examination showed the fundus clearly. The axial opacity seen in the beginning and the inferior external striations on the equator were unchanged, but between the central cloud and equator the lens substance was transparent. Under homatropin a careful examination was made of the fundus. A small extravasation was found a little to the foveal side of the papilla, and below the horizontal meridian. This was subretinal. The vitreous showed a number of small muscæ. The latter and the extravasation were new. It seemed reasonably clear that an acute choroiditis had ensued which I had had no chance of observing; that the reddish-yellow lens opacity was secondary to it, and that this opacity had cleared with recovery of the choroiditis. The right eye had not changed. Three days later in my office with dilated pupil, the left eye had 10/200 d.v. with correcting glass, against l.p. six months previous, and read 4 Jaeger. I now watched the case as regularly as I could. With undilated pupil, after two months, the fundus was less clearly discernible. On June 16, 1896, definition was difficult even with dilated pupil. Vision was reduced to counting fingers at 18 inches. More hard work was in contemplation, and on July 14, 1896, I removed the left lens with iridectomy. At the time a faint outline of the fundus was discernible, through dilated pupil. There was less opacity than in January preceding. The color of the nucleus after removal was dark red. Considerable soft substance was left, the anterior chamber becoming filled with it. This was soon absorbed. A capsulotomy was done in October, 1896. Ultimate result was, and still is, 20/30 distant vision with +2 Sph. ⊃ with —7 Cyl. Ax. 90°. Plus 7 Cyl. Ax. 180° enables her to read and write at ordinary distance. The right lens has undergone no change since 1896.

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DISCUSSION ON PAPERS OF DRS. RISLEY AND WOODS.

Dr. F. C. Hotz, Chicago—The subject which Dr. Risley brings before us is one that has been under discussion for a great many years. It is a debated question of the simple or combined extraction of hard cataracts. We know the simple extraction was abandoned at its time on account of the frequent losses by suppuration of the cornea and the place of incision was selected which was less susceptible, but making an incision too far in the periphery made it difficult to extract the lens without an irideetomy. Since we know the true nature of suppuration, and since we know how to prevent infection during operations, the peripheric incision has been abandoned and the cut placed again in the cornea, but not so far as previously. The advocates of a return to the simple operation have sometimes been so very bitter in speaking about those favoring the combined extraction that it is really refreshing to listen to such a paper as we have had this afternoon and to hear from a gentleman known to be so conservative, and who always listens to and studies both sides of a discussion. In passing before my mind the papers and discussion published on simple and combined operations I have often wondered whether it was worth while spending so much time and brain matter trying to settle the question of which operation should be done. I think if we get down to actual facts the results in both operations are about even and the apparent advantages of the one method are counterbalanced by some advantages in the other.

The combined operation is applicable to all cases; the delivery of the cataract is easier and the removal of cortical remains can be done more thoroughly. The simple operation can not be done under certain conditions, as rigid iris and posterior synechiæ; it leaves the pupil round and mobile, but always exposes the eye prolapse of the iris with all the serious consequences of this accident. If one has lost an eye successfully operated on, by this accident one may well ask himself the question whether the advantages of the circular pupil are so important as to subject the eye to any chances. Our first duty toward our patients is to employ the safest method, and as long as we can not prevent the occurrence of prolapse of the iris I personally favor the combined operation.

Dr. C. F. Clark, Columbus—I select my cases, and prefer always the simple extraction when I can do it, but I have such deep admiration for anything that Dr. Risley does or says upon such a subject that I was rather surprised at one point in his remarks. I have for years followed the plan of thoroughly irrigating the anterior chamber and have never had occasion to regret it. There must be some inconsistencies in the technique by which different men obtain their results; this is probably due to the personal equation, for I find a great many men opposed to this method. I use the pipette with salt solution and get out very thoroughly all the cortex I can after using the cystotome to outline the central portion of the capsule, which I remove as often as possible, stirring up and removing as much of the cortex as I can before removal of the lens and then irrigate again. I obtain good results and see no reason why irrigation should not be done. If there is any strong argument against this method based upon experience with it it would be a great pleasure to me to hear that argument.

Dr. Edward Jackson, Denver—I think there is no contest between the simple and combined extractions. The question is: Shall we ever do a simple extraction, and if so in how many cases? I do not know of any one who would not do an extraction with iridectomy in certain cases. I do the simple extraction largely because I believe it is the simpler operation. It presents the difficulties of a new operation to one not familiar with it. But beyond that I think it does not present any greater difficulties than the combined extraction. Furthermore, I do it because I think it gives better visual results. By that I do not mean that the average of vision as tested with the test card is essentially different from that obtained after the combined extraction. But there seems to be the same difference between the results of simple extraction, and an extraction with an iridectomy of considerable size, as between the vision with correcting lenses when the eye is under a mydriatic and when it is not. You may get as full vision under a mydriatic, but anyone who has experienced it knows that it makes a great deal of difference in the comfort with which he sees the same letters. I think the amount of light which does not contribute to perfect vision, entering the eye after extraction with iridectomy, is on the average very much greater than after simple extraction. I have had a number of persons who after simple extraction did not habitually use their glasses for distant vision. They had small pupils and saw well enough without them, although they had required at the test case just as strong glasses, 10 or 12 diopters, as is usual. That is not the most important result, to be aimed at for itself; but it indicates somewhat the practical value of the resulting vision. I would like to add, as contraindications to simple extraction, special prominence of the eyeball, and the habit on the part of the patient of nipping the eyelids together. In such cases there is great danger of prolapse. Among negroes, particularly, with strong lids and prominent eyeballs, the danger is very much greater than among Caucasians.

As to the matter of irrigation, I agree with Dr. Clark that I have never seen any reason to regret having used it, though I have seen the irrigator do harm when it was awkardly used. For five years, however, I have used it in but few cases, and now I find myself going to operation most frequently without my Lippincott syringe. This is because I think the cases have cleared up as well without as with irrigation.

Dr. J. L. Thompson, Indianapolis—It is useless to consider whether we will do simple or combined operations. That has been argued over and over, but it is my opinion that the gentlemen will come back to combined operations as they get fewer cases to operate on. We know what a beautiful thing it is at first, but when we have a prolapse a few days afterwards, we wish we had made an irideetomy. I have never lost a case after a preliminary irideetomy. We have a great many farmers to operate on in my neighborhood and from their life in the bright sunshine they acquire the habit of squinting the lids so that it is difficult to avoid doing an iridectomy even while making your corneal incision. We should never attempt to do a simple extraction on a colored woman—with the man it is all right—but with the woman their natural tendency is to yell immediately after an operation just as it is after a baptism.

Dr. Hiram Woods, Baltimore—I would like to ask Dr. Risley to say something about the use of eserin immediately after the operation. There has been considerable discussion over the question whether the contraction of the pupil by eserin does not give a larger surface of iris to be washed out by the secretion of aqueous humor and for that reason it has been proposed to use atropia. I notice that Dr. Risley used eserin in all his cases. When I saw the title of Dr. Risley's paper I looked over my last fourteen cases of simple extractions and found that I had one hernia. Atropia was used always before operation and nothing afterwards. The eye is inspected on the second day, and atropia used if the corneal wound has closed without protrusion of iris. The crucial feature, it seems to me, in the question of simple extraction is careful study of the eye condition before operation.

Dr. Risley, in closing—As stated in the paper, I abandoned irrigation because I thought it was harmful. I am, however, free to admit that the correctness of this opinion, like many others we adopt as the result of daily observation, is difficult to demonstrate. It is nevertheless true that since abandoning irrigation in perfecting the toilet of the eye I have had less trouble from prolonged redness of the eye and fewer cases of striped keratitis. Dr. Jackson remarked that he was no longer careful to have the irrigation syringe at hand, a fact which may possibly be explained by some doubt in his mind also as to its necessity or expediency.

In answer to the inquiry regarding the use of eserin, mentioned in the paper, I will say that I always operate for extraction with a dilated pupil. At the beginning of the operation a few drops of eserin solution, ½ gr. to the ounce, are instilled. The effect of this is to keep the pupil contracted for an hour or more at the most critical period for the occurrence of prolapse of the iris. After the wound is closed and the anterior chamber partially restored, which probably occurs in most cases within the first hour, the atropia reasserts its sway over the pupil.

I was much interested in Dr. Wood's paper. I regard his case as an excellent demonstration of the correctness of the views expressed in my paper, to which he referred, "the etiology of incipient cataract." I have not always found it easy to say that a given gray opacity was situated in the posterior cortex of the lens, since disease of the anterior portion of the vitreous, directly back of the lens, may present much the same appearance. Disease of the uveal tract with vitreous haze may be associated with opalescence and swelling of the lens and peripheral spicules of opacity. I have again and again seen the opalescence, and swelling of the lens, together with the vitreous haze clear up under treatment, with great improvement of vision, but I have never seen an opaque spicule disappear, a statement which, as I remember the statement in Dr. Wood's paper, is borne out in the history of his case.

Treatment of Stammering.—An editorial in *Medicine* for September states that all that is necessary to cure stammering is to teach the patient to breathe correctly. In the majority of cases the stammerer is simply affected with a want of promptitude in the vocal mechanism. He attempts to speak when there is no air passing through the larynx, and consequently no voice. It is only after a number of grimaces and false starts that he finally brings into action the muscles of respiration and succeeds in passing a column of air through the larynx. All that is necessary is to teach him to properly vocalize, namely, to expire evenly, producing a tone with the larynx to which is superadded a position of the oral mechanism necessary to produce the sound required. Attention should never be directed to the mouth, always to the respiration. It is a mistake to suppose that stammering will be outgrown. When patients recover it is due to their conscious efforts to overcome the defect, rather than to any natural tendency to its disappearance.

THE ENUCLEATION OF THE EYE IN TWO MINUTES BY A NEW METHOD, WITH DEMONSTRATION.*

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The realization of the occasional need for simplifying this operation and of making it quicker, whilst at the same time preserving an equally good stump, led to the development here described.

The classical enucleation is that of Arlt where the conjunctiva is incised around the periphery of the cornea and dissected back, in fact deliberately turned back so as to expose the tendons, which are raised on the scissors and snipped in the succession, of one lateral and then two recti in the vertical plane preceding the nerve section. Bonnett also dissects the conjunctiva, raises the tendons on a hook and cuts all of the recti before severing the nerve. Knapp follows Arlt, with the exception that he does all his dissection on the hook. Arlt's procedure is deservedly the classical one, and will probably be the one followed in nearly every suitable case by nearly every operator inasmuch as the scissors find the tendons as well as the hook and cut them in addition. If the preliminary dissection of the conjunctiva as a separate step made all around the cornea in the above operations could be dispensed with, and Arlt's use of the scissors to find and cut the tendons at the same time be made to go a step further and include the conjunctiva too, would it not be an improvement? We call his operation the classical one because after his circular severance of the conjunctiva he gets his forceps fixed in a rectus tendon with one hand whilst with the other the scissors find and snip accurately and quickly the tendons that many operators probe for with a hook first, find, lay the hook down, take up the scissors, cut and so on for each tendon separately.

It is only in the intact eyes that my operation is applicable, but in them the operation differs in the elimination of the preliminary dissection of the conjunctiva in the above common operations. So far as I can find, only the method known as the Vienna method can be urged as identical. That it may be compared I will quote in full the description of it written by Kollock,[1] of Charleston:

"The conjunctiva is opened near the outer or inner margin of the cornea and dissected away over the attachment of the rectus muscle, which is caught up and divided. The scissors are then passed rapidly around the ball, dissecting it from the orbital tissue until the nerve is reached and divided. The arms of the speculum are opened and pressed back into the orbit, to force the ball from the socket. The conjunctiva, muscles and orbital tissues are then easily divided by rotating the ball." "A careful reading of this will show that the nerve is divided before any muscle but the internal or external rectus. These explanations of the methods heretofore used will, I trust, show that the following description has some points about it that differ from the conventional."

The technique that I hope saves time and injury is in detail as follows: A curved needle with a strong double thread is passed well into the scleral tissues to give a stout hold on the eyeball. The conjunctiva was snipped vertically over the insertion of the internal rectus. The lower blade of a half-curved pair of scissors is passed under the tendon and is raised into view.

The tendon, capsulo-bulbar fascia, trabeculæ, subconjunctival connective tissue and conjunctiva, incised at one time, not quite to the end of the scissors. The lower blade, still in the capsular space, is advanced under the superior rectus and a similar cut made, the superior oblique and tissues over it next. The lower blade of the scissors is now carefully shifted downward and inserted under the inferior rectus, which with the inferior oblique is similarly divided. The bulb can now be rotated outward, and one cut for the nerve and one for the external rectus and tissues over it completes the operation.

There has been no preliminary dissecting up of conjunctiva, no feeling around with a hook, no indefinite snipping in a bloody, obscure field. All operations done with clean, clear cuts are better than if done with a multitude of small piecemeal ones.

If it is possible thus to obtain a similar result with an operation that eliminates a great deal of disturbance of the tissues, it thereby is valuable where, by reason of panophthalmitis we hesitate to enucleate because of the creation thereby of an immense absorbing surface. In cases where a prolonged waiting on phthisis bulbi is our patient's only chance for relief, as we decided because of this fear to create a large absorbing area, the old conjunctival dissection and hooks produced a danger to the meninges; this clean cutting will render possible to enucleate without such danger.

The element of speed is another point I want to call your attention to, and it can be shown to be valuable in some emergencies by a private case. This was a case of absolute glaucoma of two years' standing, that had been treated by hypodermics and a prescription of "papine." The patient came from the interior of the state where the local physicians could not obtain a consultation with an ophthalmologist.

When I found that the morphin or some other cause had given her a functional heart disease, viz., an intermittence varying from one in four to one in thirty, according to the time of the last dose of papine, we saw that a long operation would be unsafe. In the first stage of anesthesia holocain was dropped on the conjunctiva and just before incising, the suprarenal extract. This hurried the sensory paralysis and provided against blood obscuring the field. Instead of the thread, an artery forceps was fastened to the stump of the cut internal rectus tendon, and here the anesthetist made me stop, as the pulse was intermittent and thready. Repeated attempts to proceed had to be abandoned, and only by the most careful watching with the phonendoscope over her heart and one tube in the anesthetist's ear and the other in mine, could we decide to proceed. The eye was taken out in about one and a half minutes, as near as we could decide, and in about ten cuts of the scissors. The patient revived in a few minutes, and she left for home on the fourth day relieved.

The urging of the necessity of preserving the conjunctiva as a factor of importance in the fitting of an eye, can be met by stating that this operation makes a stump that practical demonstration has shown is as good as that of other operations. The curved scissors properly used cut the conjunctiva at about the same distance from the cornea that the preceding operation of a distinct dissection of the cornea does. In this operation the distance from the cornea of the conjunctival cut varies with the nearness of the recti muscles, which is 5 to 8 mm.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

1. Amer. Text-Book of Dis. Eye, Ear, Nose and Throat, p. 571.

CONCLUSIONS.

1. The method causes so much less traumatism than others that it is available where enucleation has to be done with least possible injury.

2. Where grave reasons obtain against anesthesia a quick operation is the only one that can be considered.

3. Cosmetic considerations are met as well as by other procedures.

4. An operation done quickly, with a few clean cuts, deserves comparison with the same thing most of us have seen the general practitioner take an hour of hacking and probing to do.

THE ROLE OF THE ENDOTHELIUM IN INFLAMMATION.*

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It would certainly be superfluous before a body of representative pathologists to give a review of those publications which from time to time for the last forty years have considered the exact position the endothelial cells should occupy as regards their origin and classification. Indeed, the discussion began somewhat earlier, for Henle in a paper on the distribution of epithelium in the human body, written in 1838, noted certain facts which seemed to him to presage a change of ideas regarding the cells that line serous cavities. Not only has the discussion continued until the present time, but it is by no means ended; its very existence furnishes a good illustration of the unity of the sciences pertaining to medicine, for investigators in single branches are unable to harmonize the results of their own researches with those made in other departments; it is also often apparent that there is not entire unanimity of opinion among the authorities of certain special branches. However, as concerns some discordant ideas harmony has been attained, as for instance the agreement between embryologists and pathologists that the word "endothelium," since its introduction by His, has been applied to cells that differ in origin and therefore in the properties with which they are endowed. Most pathologists show a willingness to accept for the present the views advanced by Kölliker and Waldeyer, that the endothelium of the serous cavities differs from that of the blood channels, and that the former is more closely allied to epithelium; this is shown by the frequency with which they refer to the lining cells of serous membranes as epithelium. The usage, unfortunately, is not universal, and it is so far from being so that this consideration must embrace the cells for which the term "endothelium" was originally devised. Some anatomists as well as some pathologists, even though they accept the idea of a different origin for the two sets of cells, insist upon referring to them from the morphologic standpoint alone, and for all the cells use the word "epithelium." Although this may be advantageous by reason of its simplicity, it is nevertheless a retrogression; it is certain to confuse him who is unable to cast off at will those conceptions of the cells that concern other properties than those of morphology.

The attempt of the student to co-ordinate the perspectives of some subjects exposed to his mental vision by teachers in different lines is often distressing; for example, the difficulty with which he labors to arrange in their proper connection the facts obtained in the necropsy room and the laboratory relating to Hodgkin's disease, with the clinical features of that malady. The task is certainly as great to arrange for a proper comprehension, ideas of cells that have a morphologic unity, that however differ in genesis and in the varied activities of pathologic processes. Therefore, if for no other than purely pedagogic reasons, the difficulties should be removed as far as possible. It is doubtful whether this can be accomplished by having for certain cells various terms to designate at one time their morphology, at another their eventual fate or genesis. There is less need of new terms than there is for some leading mind to arrange a conformity of nomenclature. Of terms we have a plenty; to the previously acquired terms endothelium and epithelium, embryology has added "mesothelium" and pathologic histology "perithelium." The obstacles to a clearer understanding of the entire question are about to be augmented by the present tendency among embryologists to regard the vascular endothelium as different in origin, not only from that of serous cavities, but also from that lining the lymphatic channels.

However great these differences of opinion as to the genesis of certain of the so-called endothelial cells may be to the embryologists, it is altogether possible that the importance of these questions for the processes accompanying disease has been overestimated. At least, it is not unreasonable to conclude that the laws of specificity of cells that have found such a universal application to other structural elements would be equally applicable to endothelium. No matter how loosely this is done, it means that when in the course of embryonic development cells are differentiated to line certain channels or to cover certain surfaces, those cells are provided with a function or quality that they will always manifest even under widely varying circumstances. It also means that if such cells are provided with other functions, that these also are retained, and that the functions which form the basis of differentiation are not readily exchanged for others. It also means that when such cells revert to an embryonic condition as so often happens in pathologic processes, a reversion that Adami considers a degeneration, they never attain such a degree of prematurity that subsequent differentiation is possible with other functions and different qualities. In other words, the characteristics which the cells possess when once differentiated are always retained; endothelium remains endothelium and the embryonal endothelial cells is by no means analogous to the cell of the embryo destined for specialization into endothelium. With the acceptance of these propositions, the importance for pathologic processes of questions dealing with the genesis of this or that set of endothelial cells is greatly lessened. This remains true, notwithstanding the perplexity or interest such questions may possess for our confrères, the embryologists. Minot said in the Middleton Goldsmith lecture before the New York Pathological Society, in support of the term mesothelium for the cells lining serous cavities, "We do not have, however, at first a true differentiation of mesothelial and mesenchymal cells; all are undifferentiated, and we can readily demonstrate that the cells are interchangeable;" further, "We find that the mesothelium constantly gives off cells which join the mesenchyma, and we find later that the mesenchymal cells may take on an epithelial arrangement around any of the body cavities, which arise within the mesenchyma itself." That such an interchange of cells is possible during developmental periods is very interesting, but its import-

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

ance to the pathologist would be paramount if it was firmly established that such reciprocation took place subsequent to a time when the differentiation of the endothelial cells to line the body cavity was completed.

It must be admitted that the changes which the endothelial cells may undergo in inflammation comprise all the retrogressive processes except that of sudden actual destruction, and all the phenomena included under the terms regeneration or proliferation except those of tumor growth. It must also be accepted that the behavior of these cells in inflammation, their proneness to resist, or their likelihood to suffer great damage, is quite in proportion to their differentiation. The useful knowledge of these cells is such as will enable us to forecast what is likely to happen to the endothelium of a certain region during an inflammation of that part caused by irritants of a certain kind or intensity; such an ability can only be obtained by a knowledge of the changes that have already been noted. Therefore, I shall content myself by a few brief references to certain observations of changes in these cells, trusting that this or that phase of certain researches will not command your attention to the exclusion of broad and fundamental notions of endothelium in general, such as its function, resistance to irritants, and its degree of differentiation.

As the explanations of various physiologic and pathologic problems crowd in upon us from the domains of physics and physical chemistry, the interest in the hypothetical selective power of the endothelium of small blood vessels lessens; it grows more improbable—to use the words of Thoma—that "the endothelium lining the capillaries represents a secreting membrane which transforms nutrient material brought to it and gives off metabolic products." It is quite likely that the same causes that bring about alterations in the character and quantity of the transudate also produce such modifications in the walls of the capillaries as will allow of its passage outward.

Adami has emphasized the important part the endothelial cells play in inflammation, especially the power they possess of absorbing non-motile bacteria and acting as phagocytes; he also calls attention to the alterations they suffer in shape; the nucleus as well as the cell body becomes larger; the former contains more chromatin and the cell projects into the lumen of the vessel. It is clear from the context that he has reference to vascular endothelium and particularly that of the capillaries. Borst in producing peritonitides in guinea-pigs and rabbits with streptococci and colon bacilli, found that the endothelial cells lining the cavity underwent granular swelling, desquamation and became entirely filled with bacteria. This would seem as though the cells were undergoing destruction. On the other hand, Wallgren, who participated in the great work carried out by Professor Homén upon streptococcus infections, found that "the diminution of the streptococci in the free peritoneal fluid shortly after the injection is due not only to a reabsorption and phagocytosis, but also to an accumulation of cocci in the wall of the cavity, where they lie partly free, partly enclosed in leucocytes or endothelial cells." He believes one of the means of defense possessed by the peritoneal cavity is in certain functions of the endothelial cells lining that cavity. Lemaire, among others, has noted the phagocytic action of the endothelium lining the capillaries of the liver against colon bacilli, and Mallory has found the same organisms in clumps of cells of endothelial origin in the mucous coat of the bladder. It is altogether likely that these organisms, if not dead at the time of their incorporation, are deprived of their motility. Broden has described phagocytosis of the bacillus of tuberculosis and the intracellular digestion of leucocytes that contain such bacilli, by the endothelial cells of the peritoneum. The phagocytic action of endothelium described by Mallory, in which the endothelial cells of blood and lymph channels and of the pleural serous membranes incorporate and digest red blood corpuscles, plasma cells and leucocytes, has a very wide bearing. It has been more than once suggested that certain forms of leucocytes have their source in the endothelium, and, if this be confirmed, it can not be held surprising that parent and offspring should exhibit some likeness. This warfare between endothelium and other cells, described by Mallory, recalls that recently depicted by Dominici in a study of the changes in the bone marrow and spleen of the rabbit following inoculation with the bacillus typhosus. So far as the rabbit is concerned the reaction in the spleen is apparently one of cellular destruction; the cells destroyed are produced in the bone marrow; the destroyers originate in the spleen and the conflict is one between leucocytes.

A great part of the knowledge pertaining to the behavior of the endothelial cells in inflammation has been derived from the fierce controversy as to the origin of fibrin in acute inflammation of serous surfaces waged by Neumann, Grawitz and their pupils on the one hand, with Orth, Marchand and their followers on the other. It is quite appropriate to refer to the recent works of Abramow, Herxheimer, Gaylord and Saltykoff in this connection. The contention of the Neumann and Grawitz faction that fibrin was produced from a peculiar degeneration of connective tissue seems to have been definitely disproved. All of the observers find proliferation of the endothelium as a prominent feature of the process, and some, that it may take place by direct division. The new cells may form an unbroken row between the fibrin and the serous coat, or the fibrin may be almost surrounded by newly produced endothelium. Often the rows of cells occur double, one covering the under surface of the fibrin and one the outer surface of the serous coat, with a cleft between them. Rather than recognize that such subfibrinous rows of endothelium were regenerated from the cells of the serous coat, Neumann traced them to the endothelial cells of lymph channels, even although he admitted that such a replacement was contrary to the specificity of the cells derived from the lining of the celom. Saltykoff, who used material from necropsies, found in three of sixty cases many layered formations that resembled stratified epithelium; similar appearances have been described by Sultan in a case of chronic periorchitis, and by Heinz from the injection of iodin into the pleural cavities in animals.

It seems to be universally accepted that the fibrin ferment may arise in part at least from the destruction of endothelial cells. Hauser, Graser, Birch-Hirschfeld, Abramow and others have described these cells staining poorly, located at the centers of areas of coagulation, and Saltykoff has noted fibrin within the cells and continuous with the threads which enclosed and covered them. Many authorities have alluded to the analogy between the fibrinous inflammations of serous surfaces and the croupous or diphtheric inflammations of mucous surfaces, in the necrosis of superficial cells and the formation of fibrin that is observed in both. There is a disposition to consider both, as designed to protect the underlying tissues and to fulfill in this manner the general

plan of adaptation that obtains in the inflammatory action. The cohesion between fibrinous exudates and serous membranes is sometimes remarkable for its strength; before the close and intricate meshwork of the as yet unorganized exudate can be broken, the underlying connective tissue will tear; this intimate union is due to the interweaving of threads of fibrin among the endothelial cells (Saltykoff). Other retrogressive processes than the coagulation necrosis that accompanies the formation of fibrin, do not seem to affect the endothelial cells to any great extent in inflammation. It is true that fatty metamorphosis of the cell, karyorhexis, cloudy swelling or an appearance of granules in the cell body have been described as well as hyaline degeneration, but these changes as they affect endothelium have not formed the basis of any considerable study. The endothelial cells of blood vessels are often found in sections, lying loose in the channel, where they form clusters of spindle-shaped cells that are very liable to be mistaken for emboli.

When the endothelial cells of serous membranes do not suffer necrosis they undergo a lively proliferation. Borst, studying organization of thrombi in the peritoneal cavity, found evidences of multiplication on the second day; Büttner, producing peritonitis by cultures of the staphylococcus aureus, found karyokinetic figures in these cells at the end of twenty-four hours, and Maximow, in his work on the healing of ovarian wounds, detected on the second and third days numerous dividing nuclei in the covering cells of that organ, which are supposed to retain many of their embryonic qualities. Heinz and Abramow have made similar observations. Roloff found foreign bodies covered by endothelium in fourteen hours, and Hinsberg after two days. In these respects the early and active multiplication of the endothelium of serous membranes is very similar to that which takes place in the blood vessels and the heart following the formation of thrombi.

Many observations have been made of the formation of giant cells by endothelium in both blood and lymph channels and in serous membranes. After Orth described them in the omentum in 1887 many others noticed them; previous to this Meyer, Buhl and Wagner described them in the pleura and pericardium, and the last named observer noticed some with twenty to thirty nuclei; all of these belong to the class of foreign-body giant cells; Marchand and Herxheimer have emphasized the great resistance of the giant cells, for they seem to escape destruction for longer lengths of time than the adjacent endothelium. Herxheimer gives reasons for their origin in the serosa endothelium that are sufficient to convince the most skeptical; he says: "It is made certain that the giant cells are derived from the covering cells and not from the connective tissue by finding them on both sides of the retained row of endothelium, in the midst of such, or in direct continuity with the endothelium with which they correspond in tinctorial peculiarities, both of nuclei and cell body." He believes that they are produced by the coalescence of separate cells. In this faculty we find another correspondence of properties between the endothelium of the serous membranes and that of the vascular apparatus, for it has been repeatedly affirmed that the endothelium of blood vessels may form giant cells.

In his well-known study of the histology of typhoid fever, Mallory has brought forward facts concerning the proliferation of endothelium that have fully as wide an application as those dealing with phagocytosis. He found that the toxin in this disease caused multiplication of endothelium lining blood and lymph channels in the intestine, lymph glands, bone marrow, spleen and some other organs; the newly produced cells may accumulate at the points of their formation or they may be carried to distant places.

To impress you with the broad bearings that the results of Mallory's researches have upon pathologic processes in general, allusion may be made to a case reported by v. Notthaft as pseudo-leukemia in which the clinical details and the gross anatomic changes were those of lympho-sarcoma. In the histologic examination, proliferation was found in the endothelium of the lymph channels in the skin, where the new cells had often assumed a cubical form; a proliferation of the endothelium of the capillaries of the spleen had also taken place, and, in the lungs, liver, kidneys and pancreas, a similar process is described in capillaries supposed to belong to the lymphatic system. The cells lining all these channels were usually cubical, and among these giant cells were frequent; the channels were irregularly dilated. Formations resembling the tubules of glands were abundant in the lymph glands. The nodules that resembled tumors were composed of polymorphous cells and in these giant cells and cell inclusions were numerous. Largely from the evidences of proliferation of the endothelium of such varied localities as the spleen, lymph glands, blood and lymph channels, v. Notthaft debars the diagnosis of tumor in favor of an infection. Yet another citation to illustrate the significance of such processes as Mallory has described: In a case of splenomegaly, Boivard, working under the guidance of Prudden, found proliferation of the endothelium of the sinuses in the spleen, perisplenic and mesenteric lymph glands, and of the perilobular lymph channels in the liver. He refers to the classification of this disease by the French authors as primary endothelioma, a position which Herzog has recently taken in a consideration of two cases before the Chicago Pathological Society. Boivard excludes tumor growth in the following words: "We are driven to regard the process as a hyperplasia of the spleen, characterized by an unusual development of endothelial cells and the transformation of a considerable part of the organ into dense connective tissue." If the diffuse nature of the process in the spleen could lead Boivard to exclude tumor, as seems altogether reasonable, it may be that certain other diffuse growths, characterized at present as endotheliomas, may in time be removed from this category. These references serve to indicate a possible connection between tumor growth from a multiplication of endothelial cells and other widely varying conditions ensuing from the same process. Mallory has strongly emphasized the bestowal of malignant qualities upon cells by toxins.

Of much less significance, but none the less interesting, are certain other results of the proliferation of endothelium. There have been observed in various situations, usually, however, adjacent to serous membranes, rows of cells that form gland-like channels or tubules; these formations have not infrequently led to the apprehension of tumor, on account of their great resemblance to similar formations in cylindrical celled carcinoma. They have been noticed either in human tissues or in experimental work upon animals by Apel, Paltauf, Marchand, Orth, Graser, Gaylord and Heinz. Saltykoff saw them between masses of fibrin and the original serous coat. Ribbert, in the "milk spots" of the pericardium, and Herxheimer, in a case of chronic fibrinous pericar-

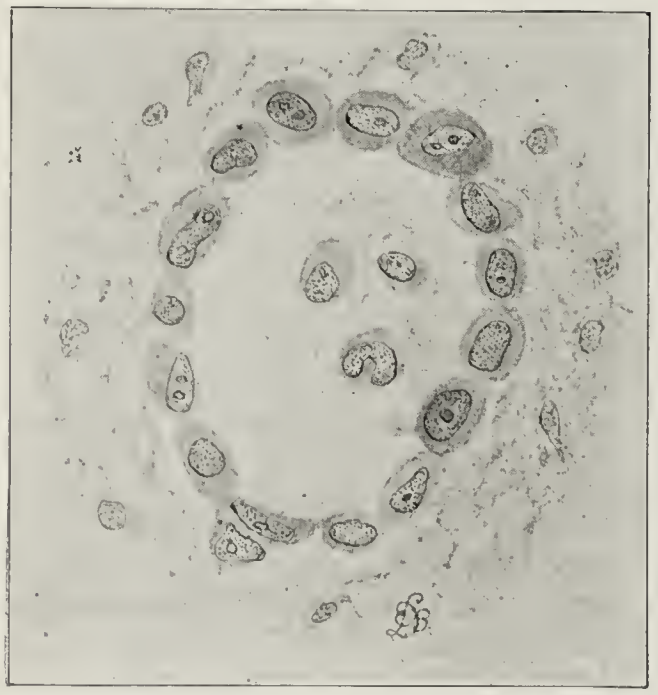
ditis, by means of serial sections have traced their connection with the cells of the adjacent surface. Ribbert believes the appearance of tubules is due to cross sections of clefts. Riese has noted such tubules with cystic formations in organized deposits on the Fallopian tube, and Nagel in similar conditions of the ovary. In some tubules of this sort that I have described in reporting a case of carcinoma of the Fallopian tube, the nuclei of the cells were much poorer in chromatin than is customary with nuclei of carcinoma cells. There is no question



Tubules formed by endothelial cells. From the posterior surface of the uterus.

of the analogy between such activities of endothelium in the organization of fibrinous exudates and the proliferation of the endothelium of blood vessels to line lacunar spaces in thrombi that are undergoing organization (Welch).

Other illustrations of the disposition of endothelium to cover surfaces are furnished by Maximow, who found that wounds of the ovary when left unclosed became lined by cells from the surface, and by the recent reports



Tubules formed by endothelial cells. From the posterior surface of the uterus.

of cysts of the spleen by Ramdohr and Schmidt. The last named authors relate, in separate articles, altogether seven instances in which the spleen was covered to a greater or less extent with vesicles of various sizes filled with clear fluid. In some cases the spleen appeared as though besprinkled with dew drops, in other cases the cysts were limited to certain areas and some were encountered the size of cherries. These were all explained by the growth, through defects in the capsule, of the covering endothelium.

The ability of endothelium to form connective tissue or the active participation in cicatrization of the endothelium of certain regions, are questions that have formed the basis of many researches and many polemics. Without doubt, the older belief that this capacity was inherent in all varieties of endothelium owed its general acceptance, in a measure, to the accounts published fifteen to twenty-five years ago dealing with the organization of thrombi. That the endothelium of blood vessels should possess such a property, perhaps met with the more ready welcome, since it was so thoroughly in accord with the prevailing ideas as to the genesis of the cells. With the entrance of controversies as to the origin of the endothelium of certain situations among the embryologists, it is but natural that the endothelial or epithelial nature of certain of the cells in question should be reflected by pathologic problems. So far, the endeavor has been to separate the endothelium of serous membranes from other forms, and it is with these cells that contrary opinions have been agitated. The prolonged interest in these questions is largely to be attributed to ignorance of the exact methods by which fibers are formed normally; with the definite proof of the secretion theory or of their direct production by fibrillation of cells, or of the conditions under which either of these processes occur, will come a seasonable time for investigations to determine how this or that group of cells may share in the development of pathologic fibrous tissue.

It is generally accepted that endothelial cells may assume certain embryonal properties in inflammation and assist in the formation of granulation tissue, but there the trail is lost; differences between embryonal cells of diverse geneses as they occur in this tissue are not sufficiently marked, that the subsequent behavior of separate forms is readily traced. Büttner, in some experiments with peritoneal endothelium, found the intercellular bridges or prickles previously described by Kolossow, but there are no statements or illustrations in his report that would lead one to infer that they are retained as the cells undergo changes. Although there is no consensus of opinion as to the rôle endothelium plays in the growth of cicatrices, yet some recent works, such as those of Muscatello, Heinz, Hinsberg, Büttner and Herxheimer, point strongly to the necessity of divorcing the lining of the pleuro-peritoneal cavity from other forms of endothelium, at least so far as some of its qualities are concerned. Certain observers who concluded from experiments that the endothelium of serous membranes was directly concerned in the production of organized adhesions, have recently moderated their statements as to such an eventuality (Graser, Marchand). Büttner, who repeated Roloff's study of the encapsulation of sterile silk ligatures introduced through the peritoneum, was unable to confirm the conclusion of his predecessor as to the versatility of the lining cells. When masses of fibrin in fibrinous exudates are replaced by connective tissue, the organization always proceeds from the point of their anchorage and this is true in spite of the fact that such masses may have been completely covered over by newly produced endothelial cells from the edges. Even Neumann, who has insisted so strongly upon the "fibrinoid degeneration" of connective tissue, does not believe that the lining cells of the pleura or peritoneum may develop into fibroblasts. Thus gradually and from various sources, as before stated, an agreement has been reached that the lining of the serous cavities—pleura, peritoneum, pericardium and tunica vaginalis—is clearly allied to epithelium.

No doubt some of the work leading to the universally admitted formation of fibrous tissue by the endothelium of blood vessels needs repetition with modern methods of experimentation and technic; inquiry into the behavior of these cells in processes of disease has not possessed the stimulus of a vigorous dispute relative to their origin. Indeed, there are some facts to indicate that our conception of these cells may undergo modifications fully as radical as those already suffered by our views of the serosæ endothelium; investigators have been more occupied with the demonstration that changes peculiar to this or that disease affected certain coats of the vessels to the exclusion of others, or that some one layer was first involved, than with the histogenesis of the lesions. The tissue between the endothelium and the inner elastic membrane—the subendothelial connective tissue—has received very little attention from pathologists; the word intima with quite a uniform disregard of the subendothelial tissue which is also intimal, has become in a sense synonymous with endothelium, and endarteritis with proliferation of the endothelial cells. Although this part of the intima is insignificant in certain vessels, in others it contains numerous fusiform and stellate cells and it is altogether possible that in processes of disease it may be greatly augmented in localities where normally it is made up of a single layer of cells. Langerhans as long ago as 1866 called attention to occasional "granulation cells" in this layer and to their possible pathologic consequence. More recently Hektoen has emphasized the passive part the endothelial cells play in the development of subendothelial, intimal tubercles in tuberculous meningitis, and these he ascribes to a proliferation of cells. Heubner has located the process in syphilitic disease of the arteries in the same position, the subendothelial tissues; although he attributes the accumulation of cells in this region to a proliferation of the endothelium, there are not wanting opponents to this explanation who account for the excess of cells by an infiltration (Köster). Diamond has recently reopened the question of tuberculous meningitis, and in a number of cases found the subendothelial cells forming the intimal tubercles to consist in large part of plasma cells. From these allusions it is evident that the worn expression "thickening of the intima," may in time come to possess another purport than that which it has carried so long of proliferation of the endothelium. If there are to be wide differences of opinion with regard to the behavior of the endothelium of the vessels in such inflammations as syphilis and tuberculosis, and especially in reference to its ability to form connective tissue, the share the endothelial cells take in the more chronic processes accompanying arteriosclerosis must remain mere conjecture; for the opportunities to determine the histogenesis of a chronic inflammation diminish as does the amount of granulation tissue which develops in its course. Briefly, we are forced to the conclusion that there is ample room for further proof of the production of fibrous tissue by the endothelial cells lining the blood vessels. Many interesting questions must remain untouched, such as the effect of the inflammatory process upon the cells lining lymph channels and the large joint sacs, and problems dealing with endothelial cells that are differentiated for special functions, such as those lining the channels of the blood forming organs. It will be necessary to have the results of more inquiries than are as yet available to obtain comprehensive impressions of the cells of some of these locations. Sufficient has been said, I am sure, to relegate to the endothelial cells an important place in inflammatory reactions, and to call to your notice some fields that offer attractions for investigation.

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DISCUSSION.

DR. H. G. WELLS, Chicago—Dr. Lemaire demonstrated the action of two different cultures of the colon bacillus. He injected a mild colon culture into the general circulation of rabbits and found that in a short time the endothelial cells of the hepatic capillaries became filled with the bacilli, while the

colon bacilli rapidly decreased in the circulating blood. When he injected a fatal dose of a virulent culture he found that the endothelial cells in part were destroyed, and after a short time the colon bacilli, multiplying in the cells, escaped into the circulation and rapidly increased in number. He found if he injected an antitoxin serum for this colon bacilli and at the same time injected a virulent culture, the number of bacilli in the peripheral circulation sank exactly as when he injected the non-virulent or mild colon bacilli; therefore, he concluded that the effect of the antitoxin is to stimulate the endothelial cells, and immunity, in this case, is due to direct endothelial stimulation by the antitoxin itself. This is based on the similarity of the effect of the virulent cultures accompanying the antitoxin, and non-virulent cultures without antitoxin. Since reading his article I have wondered if that conclusion was warranted, and I bring up the matter at this time hoping someone will speak on the point as to whether the subject of immunity, at least in some cases, is due to stimulation of the endothelial cells or not. I understood Dr. Le Count to say that endothelial cells were characterized by not entering into the formation of tumors. I wish he would make that clear.

DR. E. R. LE COUNT, in reply—I do not believe that Lemaire is sustained in the position he has taken entirely, because we do not know that these bacilli that were incorporated into the endothelial cells of the capillaries of the liver were not dead at the time of incorporation. Further, as regards the production of immunity. You will remember I called attention to the fact that the endothelial cells may give origin to leucocytes, and in the phagocytic properties that the endothelial cells have been found to possess, there was a resemblance in this respect between parent and offspring. It is supposed that immunity may be due in part to the production of anti-bodies, or substances that are in solution; that there is extra-cellular digestion, so to speak; these substances are the product of leucocytes. I do not think it unlikely that the endothelial cells, at least in certain regions, may show a further resemblance to leucocytes in that they also may furnish some of the substances that bring about extra-cellular destruction of bacteria. Personally, I have very little faith in the ability of a flat cell to secrete anything. If the diffuse nature of the process in the spleen in splenomegaly sufficient to exclude tumor, it may be that certain other growths characterized at present as endotheliomas may be in time removed from this category. I have in mind particularly the diffuse endotheliomas of the serous surfaces, of which there are only a few cases on record. One case reported recently by Pollmann occupied in the pleura and peritoneum both. True, it is supposed to have had its origin in the vascular endothelium, and not the serosa, and this fact might explain this tumor as a healed diffuse inflammatory process, such as occurs in both situations. I also had reference to diffuse meningeal sarcomas as have been observed in the cerebral and spinal meninges. The cases of this sort have been collected by Dr. Weaver, 11 in number, and are reported in the third volume of the *Journal of Experimental Medicine*. It is very significant that in 6 of the 11 cases there was no primary tumor reported.

FEAR AS AN ELEMENT OF NERVOUS DISEASES AND ITS TREATMENT.*

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Fear as an element of disease has become so very prevalent and common that its study deserves more than a passing notice. While its universal prevalence is recognized to some degree at least in nearly all forms of disease, yet it is in the departments of neurology and psychiatry that we find its most serious effects and disastrous consequences. Fear is defined by Gould as an emotion of dread, an apprehension the feeling of which in its intense manifestations is called terror or fright. Generally speaking, fear is the expression of a desire on the part of the individual to escape or ward off whatever may seem to threaten evil or work harm to his well-being. It therefore conforms to the instinctive power immanent in man and animals of self-preservation. As such it exists normally in every individual in varying degrees of intensity and subject more or less to the higher inhibitory power of self-control; hence its manifestation depends not so much upon the excitation that causes it as the receptive and restraining power of the recipient. The most casual study of the affective capacity of human beings teaches us that the power of emotional receptivity and power of restraint differs enormously in different persons, so that one can witness the most terrible sights or pass through extreme degrees of danger without apparently producing any special manifestation of fear or dread, while another person subject to the same experiences will be completely overcome by them. In the former case the emotion or fear was controlled by the will or inhibitory power, while in the latter both these elements were weakened or even paralyzed. The foundation of all fear has for its basis a presentiment of danger. This excites or stimulates the emotions through the various avenues of the internal and external senses which in turn responds by a conscious sense of fright or dread presenting every degree of fear and often resulting in a series of reflex motive phenomena in which the whole central nervous system is involved. Its clinical manifestations therefore vary considerably and may be both objective and subjective, involving the motor, sensory, reflex, trophic, secretory, visceral and psychical nervous mechanisms in varying degrees. The more common symptoms of fear are pallid or flushed face, dilated pupils, profuse perspiration, general tremor, with chattering of the teeth, general muscular weakness, so that the knees seem unable to support the body, the voice becomes weak and tremulous, the heart violently palpitates, the respiration becomes rapid and labored, vertigo supervenes, followed by syncope, paralysis and sometimes death. In some cases, however, many of these may be absent and the fear may be almost entirely confined to psychical disturbances which are only known to the patient. The element of fear is so common and universal that there are few persons who have not some besetting fear. With many it is an idiosyncrasy, and by avoiding the object of fear no distress is experienced. But in the great majority of persons a certain apprehension that the dreaded thing will occur or be encountered is constantly before them, which is thus aroused by mere thought or memory of the object or condition, and often where there is no prospect of danger whatsoever. So common and prevalent is this apprehension of danger that it pervades all the ramifications of our business, professional and social life. More especially do we find its pernicious influence affecting those who inherit or acquire a neurotic tendency. Consequently, the nervous, unstable and imaginative, those who by virtue of their faulty organization, suffer more severely from its effects than the phlegmatic and those whose sensibilities are less keen and susceptible. Fear under certain conditions and circumstances and within certain limits may therefore be said to be a physiologic function similar in all respects to that of its opposite attribute joy, but when it reaches an extreme degree and goes beyond the prescribed limits it ceases to be a normal condition, but becomes a pathologic factor. The term fear and morbid fear or patho-

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

phobia bear the same relation to each other as health and disease or physiology and pathology, hence they may be used synonymously. It is said that normal fear has as a stimulus something which experience has taught is to be dreaded, while morbid fear may have an external stimulus that to a given individual arouses a dread at once unreasonable and quite out of proportion to the real danger. Morbid fears present no specially distinctive feature as to external manifestations, but the sense of uncontrollable dread seems stronger.

Morbid fear may sometimes proceed from within and be of purely psychic origin, in which case the external evidence is greatly modified and subdued, but the internal emotion is attended with marked mental dread or fear amounting to almost despair. In such cases the attention and imagination enormously augments its intensity and at times tortures the patient to such a degree that he loses control of himself and becomes almost mentally alienated during the paroxysms. Moreover, the emotion of fear under certain conditions proves stimulating, so that the frightened subject under its action seems to take on new strength and perform feats that would otherwise have been impossible without the unusual stimulus attending it. On the other hand, fear more often entirely overcomes the inhibitory power and renders the will powerless, so that all the vital functions are temporarily checked or held in abeyance. The emotion of fear may therefore be stimulating, inhibitory or paralyzing to the vital functions according as the stimulus is strong or weak and the reaction active or indifferent.

Fear is sometimes induced without any apparent cause and the subject of it may acknowledge this, yet they feel its influence as strongly as if the actual cause was known. The character of the stimuli producing them, however, is very various and corresponds to the conducting paths associated with the various senses.

Morbid fear, or pathophobia, comprehends almost as many varieties as there are diseases; for instance, one person fears that he has heart disease, another that his lungs are affected, a third that he has liver complaint, a fourth that his sexual organs are impotent—indeed, all the various functions and organs of the body may thus be attacked in the mind of the patient.

Students of medicine are especially prone to attacks during the early part of their college course, and from their reading treatises on pathology they arrive at the conclusion and become convinced that they are suffering from a certain disease.

These temporary attacks of morbid fear are, however, usually due to errors of diet, and can usually be effaced by appropriate means of treatment. As an element of nervous disease, however, morbid fear not only appears in a more serious aspect, but often becomes the most troublesome and difficult of all complications. More especially is this true of neurasthenia, in which affection it at times presents all its various phases. Indeed, we have good reason to believe that morbid fear, when presenting its more serious degrees, is an essential element of psychic neurasthenia. Unfortunately, there seems to be no unanimity of opinion as to what the term implies or signifies. Hence, we find it used synonymously with the term, imperative concept or idea, obsession, impulsion, besetment and fixed ideas. According to one authority, morbid fear is an emotional neurosis, a fixed or fleeting idea, which is the commencement of an impulsion or impulsive act. Another authority claims that "the subject of an irresistible impulse is the victim of an imperative concept or idea in the great number of cases, if not in all cases. These are described by various authors as imperative, dominant, automatic or fixed ideas, besetments or obsessions. They are lesions of the will very common among the insane, and far from uncommon in people who are not known to have any mental defect." Still another author states that "morbid fear is a fixed idea, anguishing, obsessive, that leads its victim to apprehend not only the attack of the malady, but even to suffer from it, so to speak; such is the power of auto-suggestion that the pathophobic patient can truly imagine that he feels the pain and even mimic the symptoms (to some extent at least) of the disease he fears he is suffering from." According to Tuke, "imperative ideas are morbid suggestions or ideas demanding notice, the patient being painfully conscious of their domination over his wish and will," a condition, as Dr. Angell[1] says, "very different from that produced by the fixed idea or delusion of the insane mind." In one case (imperative idea) the psychical reaction in feeling is against the idea; in the other (fixed idea) it is in harmony with it. "Gould's Dictionary" defines an obsession as an imperative idea, a dominant delusion or besetment. According to the French and German authors, the term obsession includes the idea of antagonism and thus more clearly than imperative idea defines the conscious struggle of the ego against its acceptance. The conscious and even painful resistance of the mind is an essential element in the condition. Therefore, the terms imperative idea and obsession are identical, both involving conscious resistance of the will. The consensus of opinion, therefore, strongly favors a real discrimination between an imperative idea or obsession on the one hand and a fixed idea or delusion on the other. Regis also recognizes a distinction between a fixed idea and an impulsion. According to this author, "the fixed idea is only the commencement of the impulsion and not actually identical with it." "As regards the impulsion itself, conscious and rational as it is in neurasthenia, it is a very complete syndrome, in which the unresistable act is only the last term of a morbid process of which the fixed idea is the starting point and the anxious emotion the intermediate stage." Morbid fear, however, when carried to an extreme degree, leads to impulsive acts. Admitting that technically these various terms can be strictly differentiated, all authorities agree that the difference is largely one of degree rather than of kind, and it is the degree combined with their persistency that indicates their true nature and character as well as seriousness. Moreover, all authorities agree in the main that morbid fear and its allied states are not only identical in their essence and character, but that they rarely exist singly, and are usually multiple or exist in combinations. The tendency, however, has been to create for each a special designation or name, but as they are simply the reproduction carried to a pathological extent of the ideas, sentiments or tendencies common to mankind there is no limit to their special manifestations. For all practical purposes they are recognized as having for their basis a presentiment of dread or fear which amounts to a more or less intense feeling of anxiety, which irresistibly forces itself upon the sufferer at times, dominating his every thought, word and deed.

Regis[2] has divided them into three classes, viz., 1, those characterized by indecision, of which all kinds of

1. Journal Nervous and Mental Diseases, August, 1900.
2. Manual Mental Medicine, p. 262.

morbid doubts are typic; 2, those characterized by all kinds of morbid fears; 3, those characterized by morbid propensities or irresistible tendencies. Each of these are again subdivided. For instance, "Ball" has divided the first class, or doubters, into five subdivisions, according to the nature of their predominating ideas. Hence we have: 1. "The metaphysicians, who are especially haunted by abstract questions of all kinds, such as doubts concerning heaven, hell, the world, the deity," etc. 2. "The realists, who constantly revolve in their thoughts the lower and base details of objects, such for example as the conformation of the genital organs, copulation," etc. 3. "The scrupulous, whose doubts pertain to forms of religion, such as accusing themselves of committing the unpardonable sin, or of some theft," etc. 4. "The counters, whose doubts are manifested under the form of irresistible enumeration." Such patients never get through counting different objects, such as doorknobs, the houses on the street, or their numbers, etc.

The second class, or those suffering from morbid fears or phobias, is divided into three subdivisions: 1. Those who have a morbid fear of all kinds of objects, or rupophobia. Its expression is extremely varied and may involve such articles as glass, knives, pins, guns, thunder, flowers, besides certain kinds of food and drink. 2. Those who have a morbid fear of places or elements; agoraphobia or disease, pathophobia. Such patients are morbidly fearful of high places, bridges, streets, churches, theaters, rivers; besides a dread of all kinds of diseases, such as heart disease, liver disease, cancer, syphilis, paralysis and insanity. 3. Those who have a morbid or irresistible propensity to steal, lie, cheat, drink, blaspheme, set on fire, abuse the sexual organs, homicide or suicide. This includes such conditions as kleptomania, dypsomania, pyromania, nymphomania, etc. All of these various states are ably shown by Regis to be due to lesions of the will, and are often associated with neurasthenia as well as insanity. In a limited degree they are commonly present in health; indeed, very few of us escape the presence of doubts, fears or impulses as isolated sudden thoughts, but which are controlled by the dominating power of inhibition. For instance, it is a common experience for persons looking from a height to be tempted to jump down, or in walking on the street are suddenly seized with a desire to count the houses or numbers on the doors, etc. These sudden impulses are easily resisted or controlled; but when they appear as a complication of nervous diseases they are often morbidly persistent and get beyond the control of the will. In their exaggerated forms they therefore constitute a serious symptom and may become the dominant feature of a grave form of insanity. In all cases, however, where their presence can be demonstrated, they are to be regarded as marks of true degeneracy, often remaining latent for years, to be brought to the surface by some sudden or severe shock to the nervous system, such as trauma, or severe mental and physical strains, beside excesses of all kinds. Moreover, there can be little doubt that certain crimes are due to such sudden impulses which arise in the minds of persons who are not ordinarily regarded as insane, and which the subjects are wholly unable to resist. Hence, they are truly irresponsible and should be given the benefit of the doubt.

Treatment.—If morbid fear and its allied states have for their underlying cause a faulty nervous organization involving both the physical and mental constitutions, it follows that their treatment must necessarily take cognizance of both mind and body. To accomplish this successfully it is essential that the physician be allowed the full care and control of the conduct and life of the patient. This, I believe, can best be done by isolation of the patient, and preferably away from his home. By removing the patient from his accustomed environment we do much to bring about a disassociation of the morbid ideas. As a rule the home life of the patient furnish the two extremes of indulgence and irritability, which proves a most fruitful soil for the cultivation and development of the etiologic factors underlying the morbid ideation. Isolation, if too prolonged, however, may defeat its own purpose by the patient becoming too readily accustomed to the new associations. A frequent change is therefore sometimes demanded and proves of great value in breaking up, as it were, the continuity of the morbid fear. Having isolated the patient we are then prepared to put in force another powerful therapeutic agent, viz., suggestion. When this agent is used aright it includes all the influences and possibilities of a strong and appropriate personality. Its judicious employment is even more difficult than isolation, tasking to the utmost the keen insight, knowledge, ingenuity, tact and judgment of the physician. In its essence it embraces all the influences included in the term hypnotism; for, the substance of this is none other than suggestion. Its successful practice depends entirely upon the physician's ability to influence the mind of the patient, and the first step in the process is to gain his full confidence, a task not always easy. Dr. Gray says: "It requires more tact and knowledge to play upon the mind than upon the finest piano that was ever constructed." Not all physicians can use this mighty power of suggestion with success, but with many it is one of the most powerful agents they have at their command. As the cultivation and development of morbid fear depends upon an abnormal psychical as well as physical organization, the psychical treatment to be effectual must be directed toward the dissolution of the pathologic mentalization and the substitution in its stead of a healthy mental process of ideation. For this purpose the peculiar mental traits and characteristics of the patient must be studied as well as the cause, nature and character of the morbid fear. This will also suggest the birth of the new or healthy idea to be established. The essential qualities of this newly acquired idea should embody the inspiring influences belonging to hope, progress and cooperation with sufficient force and power as to impress upon the mind of the patient the certainty of ultimate recovery. This plan, therefore, embodies an educational scheme, the special object of which is intended to restore to the will its normal control of the emotions and intellect, at the same time teach the patient to become more self-confident, self-dependent, and self-reliant, without which all methods of treatment prove futile. Oftentimes the revelation on the part of the patient of the nature of his morbid ideation or fear and its corresponding disturbance in consciousness will relieve the mental stress and cause it to fade away. In many cases it is necessary to take charge for a long time of the distempered mind, and by constant advice and oversight direct its activities into a normal and healthful channel. Sympathetic interest, tempered with wise counsel, will often do much toward its relief. To aid us in the accomplishment of the purpose set forth, the judicious use of massage, electricity, hydrotherapy, special diet and the use of drugs such as iron, quinin, strychnin, kola, bromids, hypnotics and stimulants are used with great advantage. More especially is electricity of great

service, one author preferring the faradic current, another the galvanic, and still a third the static form or franklinization. It is seldom, however, when this agent is used intelligently that we do not obtain, if not a cure, certainly a temporary and sometimes a lasting alleviation.

Measures that are directed toward the relief of the physical conditions associated with morbid fear pertain largely to the removal of the cause. If the general health is depressed or found suffering from any toxic condition such as lithemia, auto-infection and similar states, the use of the salicylates, alkalies and saline cathartics, with proper diet, are often attended with marked relief. In the practical therapeutic realm of neurology and psychiatry no symptom at times offers more obstinate resistance to all kinds of treatment than morbid fear; but in the majority of cases, if the principles referred to are intelligently, persistently and scientifically applied, much can be done towards its permanent alleviation.

In conclusion, I desire to acknowledge my indebtedness to the recent able articles by Dr. Thompson[3] of Vermont, and Dr. Angell[4] of Rochester, N. Y.

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TEN CASES OF INFECTIOUS MULTIPLE NEURITIS, WITH TWO DEATHS.*

W. A. JONES, M.D.

MINNEAPOLIS.

From the 15th of February to the 15th of March, 1901, there was an unusual series of cases of multiple neuritis in the city of Minneapolis. As near as I can learn there were probably from twelve to fourteen cases under observation, ten of which it was my fortune to see. This series includes the general types, but does not consider the forms of neuritis involving one extremity only, of which there were several.

The onset of the disease, as well as its occurrence at a time when influenza was epidemic and when other diseases of irregular type were prevalent in the city, suggests that the influenza bacillus was responsible for cases of neuritis, especially as six of the ten occurred within one week and three or four of the six within two days. During this period the number of deaths resulting from typhoid fever was greater than former health reports had shown. There was also an increased number of pneumonias and mild bronchial infections, as well as a large increase among the exanthematous diseases.

Case 1.—Miss N——, aged 27, domestic, family history good—the father, five brothers and six sisters living and well; the mother died at 67, of a chronic stomach disorder. The patient was ill at 17, and spent three successive summers at some hot springs in Norway. For the past seven years she has been well, except for occasional menstrual pains and constipation, with resultant headaches.

On the morning of March 10 she awoke with headache, general lameness and diminished power in all her extremities. She could not get up from the bed or a chair without great effort, but once on her feet she was able to go about and do the ordinary work of a cook. The grasp in both hands was feeble, and she was unable to lift more than two or three pounds; there was no loss of sensation; coördination was good; knee-jerks were preserved; there was no evident tenderness of nerve trunks. She made a practically complete recovery in three weeks without remaining in bed. At the end of five weeks she recovered her strength, and resumed her heavy work.

Case 2.—Mr. B——, aged 52, seen in consultation with Dr. F. A. Dunsmoor, February 20; mother and father living at advanced ages; one sister living, a nervous invalid. The patient is a tall, spare man, long of bone, but has a muscular system of great vigor. He is an esthetic neurotic, and suffers from headaches brought on by fatigue. He has always been an active and fairly successful business man. During the month of February he was under annoying business strain, but was as well as usual on the morning of February 17. During the day he felt unusually weak, walked with difficulty in the afternoon, and in the evening was unable to get about. The following morning he was decidedly weaker, and later in the day his arms and legs were practically helpless, yet he could feebly move his fingers and toes, flexion and extension being preserved. If placed on his feet and supported, he could walk short distances. At this time he complained of no pain, but experienced a tingling in the fingers and soles of the feet. He was not incoördinate, as far as could be demonstrated. The loss of power gradually increased until it completely involved all of the extremities. The knee-jerks were abolished. For ten days his condition was unchanged, except that he suffered pain in the calves of the legs, in the thighs and over the lower part of the back. There was no anesthesia, but rather a hyperesthesia of the toes and fingers. When an attempt was made to place him in a reclining-chair, he became cyanosed and exhibited a few general convulsive movements. His improvement dated from this time by a return of the smaller movements of the hands and feet. Although there was some atrophy of the interossei muscles, the muscles of his arms and legs were flabby. Improvement was rapid in spite of a partial reaction of degeneration. The extensor muscles of the back and thighs were the last to recover, as was shown by his inability to get out of bed or rise from a sitting position without the "climbing up" method of the progressive atrophies. He resumed his business May 1, ten weeks after the onset of the neuritis. His knee-jerks are present although not active, and he is able to walk several blocks, complaining only of fatigue and heaviness of his feet.

Case 3.—Mrs. McD——, widow, aged 40; occupation, nurse; seen by Dr. F. E. Strout, who referred her to me March 6, 1901. Her general physical condition was good in spite of years of hardship. She was moderately neurotic in appearance and history. She had been working very hard for four weeks before this illness, and was sleeping badly. On the morning of March 5 she awoke as well as usual. On attempting to rise from a chair she fell to the floor, but rose immediately without assistance. During the forenoon she complained of pains in the back, and down the legs. The following day there was diminished power in the hands and arms and a feeling of heaviness in the legs. She could stand and walk if placed on her feet. There was no Romberg sign; the knee-jerks were present and normal. She complained of a dulness of sensation on the outer side of the thighs and over a small area in the lower dorsal region. There was some difficulty in swallowing, coughing and sneezing; the breathing was decidedly diaphragmatic. All of these symptoms cleared up in three or four days, leaving no disturbance of sensation, and no respiratory incon-

3. Journal of Medicine and Science, September, 1900.
4. Journal Nervous and Mental Disease, August, 1900.

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veniences, although she could not elevate her tongue or maintain an upright position of the head and neck. On March 9 a facial paralysis appeared in the lower right face, and extended rapidly until it became bilateral, involving all of the muscles. On the next day a Babinski great toe phenomenon in the right foot was present. At no time was there a rise in temperature, or continued pain or tenderness of the nerve trunks.

The patient was confined to bed for four weeks, and although never absolutely helpless, she was unable to help herself in turning or moving. She began to improve in two weeks, and in six weeks was up and about with a limited extensor paralysis of the thighs and back. The paralysis of the left face cleared away in two months, and at the present time the paralysis on the right side is disappearing. Her general muscular strength is good, and she has resumed her work. The urine was examined occasionally, but contained no abnormal products.

CASE 4.—Mrs. J——, aged 35; mother of two children. Her parents are living and in good health, although the mother is a neurotic. The patient also is a neurotic. An illness ten years ago, accompanied by pain in the back of the neck, confined her in bed for a month. Following this she was weak and tremulous in the extremities for nearly a year, but made a good recovery. In February, 1901, she had an attack of influenza of mild type. She made what she thought was a good recovery. At least she was able to attend to her household duties, which were unusually burdensome, but she admitted that the fatigue which followed was unnatural. I saw her March 10, in company with Dr. Strout, her attending physician.

She complained of pain in the back of the neck, behind both ears and down the sciatic nerves. There was diminished power in all the extremities, and an inability to turn the head and body from side to side, but she could stand upright if placed on her feet. There was also slight embarrassment in coughing, swallowing or sneezing. There was no loss of sensation, no marked tenderness over the nerve trunks after the first few days, and no rise in temperature. One week after the onset of the polyneuritis the left face became paralyzed, but this and the respiratory disturbances cleared away in ten days. The knee-jerks were abolished. She made rapid improvement, and is now able to go down town, and walks with ease. The right knee-jerk has returned, but the left is absent. The left leg is weaker than the right, and fatigue causes a tremor of the hands.

CASE 5.—Miss L——, aged 33; seen in consultation with Dr. T. S. Roberts, March 8. The patient is of neurotic stock, and has a history of previous nervous attacks, simple and functional in character. About March 1 she complained of vague disturbances of sensation and power, and was sleepless and nervous. She apparently recovered in two or three days, thus suggesting that the attack was hysterical. On March 4 the symptoms returned, and with them a weakness of the extremities, back and thighs. She was unable to keep her head from falling forward or backward, and she could not rise from the bed or a chair, but could stand and walk if placed on her feet. There was also a transient difficulty of swallowing. On March 11 a bilateral paralysis of the face appeared. There were no disturbances of sensation, and no tenderness of the nerve trunks of importance. The knee-jerks were normal. She improved rapidly, and is now practically well, although there is still a tendency to fatigue on overexertion. The facial paralysis has disappeared.

CASE 6.—Miss H——, aged 23; seen with Dr. H. K. Read April 3; a strong, healthy girl with a good family record. During the latter part of February and the early days of March, 1901, she was exposed to street draughts from the doors of a department store where she was employed. She complained of the usual symptoms of influenza, headaches, pain in the bones, cold hands, clumsy and awkward fingers. She could not execute quick or fine movements of the fingers, such as writing, tying parcels or adjusting box covers, neither could she stand on her toes or the ball of the foot in reaching shelves. The diminished muscular power increased until all the muscles of the arms supplied by the brachial plexus, except those supplied by the musculocutaneous nerve, were involved. Power in the legs also diminished until the patient was practically helpless, but she could walk if placed upright. There was no disturbance of sensation. The deep reflexes were decidedly diminished, and partial reaction of degeneration was present. After four weeks there was some muscular atrophy in the hands and legs. At this writing she has gained rapidly, particularly in the right arm, the left arm being still weak and its movements limited. She can go up and down stairs with but little assistance, but she can not rise from a sitting position. There was slight tenderness over the nerve trunks.

CASE 7.—Mrs. G——, aged 22; seen in consultation with Dr. Matchan March 14; a decided neurotic of neurotic history and parentage; has never been seriously ill before. During the early part of February, 1901, her menses had ceased, and she sought and gained relief through the kind offices of an abortionist. The menses appeared February 27. Three days later, after becoming chilled, she noticed that her wrists and hands were weak. She was unable to pick up small articles or to execute fine movements. The following day her arms grew worse, and in attempting to get up from a chair she fell to the floor. The loss of power became complete in all extremities on the third day, and was associated with a left facial paralysis and a difficulty in swallowing, coughing and sneezing. Abdominal respiration was present, and there was a paralysis of the muscles of the neck supplied by the cervical plexus. She complained of grinding, aching pains, but there was no loss of sensation, and no bladder or rectal disturbance. There was marked tenderness over the nerve trunks and muscles. It was difficult to estimate the amount of pain and tenderness, as the patient was decidedly hysterical; yet I believe there was some pain. There was an occasional rise in temperature, which was probably due to incidental conditions rather than to the neuritis. The facial paralysis and the respiratory distress disappeared in about one week. I saw her March ——. She had slightly improved, and can now raise and lower her hands and use both arms, although recovery of the left is not as far advanced as in the right. She can elevate her trunk, and can extend and flex the toes and feet. There is atrophy of all of the muscles in the four extremities, and reaction of degeneration is still present.

CASE 8.—Mr. S——, married, aged 37, Burbank, Minn. I saw him in consultation April 7, with Dr. Alex. Ridgway and Dr. Christian Johnson, the latter of whom reported the case in detail in the *Northwestern Lancet* for May 1, 1901. The patient is an active, nervous man, in good health usually, except for slight attacks of muscular rheumatism after severe labor and exposure. The parents were of nervous temperament.

About the middle of February, after working hard on his farm, he came to Minneapolis, from which place he

drove to his home, a distance of one hundred miles. The weather was severe, and he suffered from exposure. On February 27 he had a "splitting headache," and in the evening was exhausted. On the following morning, February 28, after working a short time, his legs became weak, and his power in the arms diminished. On March 1 he was unable to get up or dress himself. The evening of the same day he was completely helpless; his breathing was labored and wholly abdominal; there was severe pain and tenderness over the plexus and nerve trunks, with paresthesia. Tactile sensation is preserved and areas of hyperesthesia and thermohyperesthesia are present, but no anesthesia. The reaction of degeneration is marked in practically all of the muscles, and the knee-jerks are abolished. The bladder and rectum are not involved in the paralysis, and there has been no rise in temperature or pulse.

At this time, June 1, Dr. Johnson writes me that the patient has recovered motion in the trunk muscles, the biceps of the left arm and the right extensor femoris, as well as slight motion in some of all of the regions involved. The patellar reflexes are nearly normal.

The following two cases are of an apoplectic type, and so rapid was the onset and progress of the disease that the diagnosis may be questioned; they were among the first cases seen. I did not make a diagnosis until later, after a study of the milder forms.

Case 9.—Miss S——, aged 26, bookkeeper; seen in consultation with Dr. W. A. Hall March 4; family and personal history good; typhoid six years ago, from which she fully recovered; has worked steadily for years, but has been well. On the afternoon of March 3, she spoke of a soreness and stiffness between the shoulders, but continued her work until evening. At 7 p. m. there was a rapid loss of power in the right hand and arm. At 3 a. m. the following day she wakened, and found both arms powerless. She became alarmed and sent for her physician. Later in the morning she lost power in the legs; there was embarrassment in coughing and swallowing, and the breathing was abdominal. At noon she was moved to the hospital, and soon afterward had a temperature of 100° F. As there had been no rise in temperature before, it is probable the rise was due to the journey. At no time was there pain, disturbance of sensation or tenderness of the nerve trunks. When I saw her, forty hours after the onset of the disease, she was unable to speak above a whisper, could breathe only with the head lowered, and was unable to swallow. The saliva accumulated in the mouth to such an extent as to require constant removal by cotton plungers. During the same afternoon she became cyanosed, but was temporarily revived by oxygen inhalations. She grew worse rapidly, however, and died at midnight, having lived less than sixty hours from the onset of the disease.

Case 10.—Mrs. McN——, aged 40; patient of Dr. E. S. Kelly; a person of large frame and overfat, but with a good personal, and a negative ancestral, history. During February, 1901, she had an attack of influenza, accompanied by fever and pains of moderate severity. She recovered in ten days. On March 4, in the evening, she had a paresis of the right hand and arm, which disappeared in a few hours. The following day, or twenty-four hours later, there was a return of the paresis in the right arm, and a partial loss of power in the left leg. The third day all extremities were helpless, except slight movements of flexion in the fingers and toes; the breathing was diaphragmatic, and swallowing was difficult. There was no loss of sensation, and no pain. Death occurred on March 7, three days after the onset of disease.

I regret that no autopsy was permitted in either of these cases, although I am convinced that they were fulminating forms of multiple neuritis.

Contrast these cases with the ordinary types of polyneuritis due to overwork and exposure, and secondary infection, with a weakness beginning in one extremity, gradually extending, and accompanied by marked tenderness and severe pains, anesthesias, changes in the skin and nails, atrophy of muscles, prolonged paralysis and slow repair. One or two of the cases cited correspond to the usual descriptions found in the text-books. The majority, however, are not typical, as is shown by the prominence of the motor symptom; the ability to stand and walk, even though the patient is unable to rise from the recumbent or sitting position; the frequent absences of trunk pains, tenderness, paresthesia and anesthesia; the evident involvement of the cervical plexus, as demonstrated by the inability to control the muscles of the neck and the implication of the phrenic nerve; the minimum muscular atrophy and the rapid improvement in most of the cases.

Many of these cases, notably the two that were fatal, and a few of the others in which the typical pains, anesthesia and tenderness were not present, suggest Landry's paralysis, and yet is it not probable that many of the cases reported as Landry's paralysis are cases of multiple neuritis, in which the infection or inflammation of the nerves of the extremities extends to the sacral, lumbar, brachial and cervical plexus, and from there to the roots of the cranial nerves? If the patient dies within a few days, the presumption seems clear that death is due to the implication of the vagus; should he live for weeks or months it is fair to presume that the degeneration of the nerve trunk extends beyond its superficial origin, to the cells from which it springs.

Rowden, in the *Lancet* (London), recently reported a case of Landry's paralysis in a child, in which the symptoms began by a progressive, symmetrical motor paralysis of the neck, arms, forearms, chest and legs; with the sensation not involved until within a few hours before death, and then only slightly; with no rigidity, twitching, pain or spasm; and with the mental functions unimpaired and no bladder or rectal disturbance. Although this case is supposed to be one of descending type, I believe it could more wisely be classed as multiple neuritis.

The treatment of the foregoing cases was mainly symptomatic. Free elimination was established, salicylate of soda in full doses was given; strychnia and iron, to overcome the anemia which was marked in all of the more profound cases. Faradism, massage, salt baths and forced feeding completed the care and treatment.

DISCUSSION.

Dr. Hugh T. Patrick, Chicago—Such a remarkable series of cases should not be allowed to pass without comment. The idea suggested to me primarily by the paper was the close similarity of the symptoms in some of these cases to the disease known as Landry's paralysis and to inferior encephalitis. Although the discovery of the neuron as a histological entity has added nothing to our knowledge of the physiology and pathology of the nervous system, I think it is sometimes of value as an aid in the expression of our ideas on these subjects. When a motor neuron is affected by a certain poison, it is reasonable to suppose that the motor cell, with its long process, the motor nerve fiber, is acted upon as a whole. In the cases reported by Dr. Jones it is reasonable to suppose that those individuals, or their motor neurons, were particularly susceptible to the poison of influenza, and that such poisoning would

be very apt to cause symptoms which could be partly explained upon the theory of peripheral disease and partly upon that of central or nuclear disease. Probably a combination of the two was present. The term multiple neuritis is convenient, but I regard it as a misnomer. Certain neurons are peculiarly susceptible or vulnerable to the action of certain poisons, and the poison in Dr. Jones' cases must have particularly affected certain parts of the motor system. The process is one of poisoning, not inflammation at all. I have seen three cases, one of them being still under observation, which I think showed very graphically the intimate relationship between this peripheral nerve degeneration and the acute nuclear affections. Two of my cases, which came to autopsy, presented the symptom of weakness of the lower face, neck and shoulders, with some impairment of power in the arm, but with very little involvement of any motor structures below the shoulders and no sensory disturbance to speak of. In one of the cases, I have thus far examined 800 sections from the medulla and pons; they show nothing but what could be interpreted as the result of an intoxication acting upon the nervous structures. I think we would be better able to understand the so-called acute multiple nuclear affections, Landry's paralysis and myasthenia gravis, if we looked upon them as forms of intoxication having an affinity for the neurons of certain individuals or, as I think it is better expressed, toxic paralyses due to the peculiar susceptibility of certain neurons to certain poisons.

DR. HAROLD N. MOYER, Chicago—In continuation of Dr. Patrick's remarks, I would emphasize the conception of the neuron as applied to this class of lesions. It is sometimes impossible to distinguish between peripheral and nuclear lesion. In the cases which we have just heard reported I think some were peripheral while others were nuclear. A pure peripheral lesion is really one that is extra-nervous in its origin. The nerves are liable to the same conditions as are other organs. For example, they may be the seat of cloudy swelling and exudate, with edema in the sheath and consequent pressure symptoms. That, to my mind, is a clear conception of a peripheral nerve lesion. With a nuclear lesion the body of the cell is involved, including the neuro-axon.

DR. W. A. JONES, in reply—I agree with Dr. Patrick that multiple neuritis is not a very good name for the disease under discussion—that intoxication neuritis or infection neuritis is perhaps better. My belief is that the more profound infections of this type are associated very soon with a central lesion, and yet some of these cases, although comparatively severe, showed a remarkable and rapid recovery. One or two of my cases have recovered completely, and the rest have so far recovered that we may call them practically cured. Those cases, I think, were not of central origin. The axis cylinder or the outside of the neuron was probably only partially implicated and the repair was very rapid. It seemed to me that those cases which resembled Landry's paralysis illustrated the uncertainty of Landry's pathology, and I think we should classify them under one general head and not attempt to divide them into different types.

THE INCREASING STERILITY OF AMERICAN WOMEN.

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CORRECTION OF DIVORCE STATISTICS.

In my recent paper on *Sterility*[1] I have introduced the subject of *divorce* as one of the factors correlated with sterility and parallel with it in a general way. In reviewing the article at my leisure I find some very palpable statistical errors in my discussion of this subject. and whilst the result remains the same and the subject is in itself of no especial interest to the profession, these errors must be promptly remedied lest they lead to farther mistakes and entanglements. Divorce records are believed by statisticians to fall far short of scientific accuracy, and in collating these uncertain data I have repeatedly placed incompatible figures side by side (Table 4 of this paper) comparing the ratio of *"divorces to marriages"* with that of *"divorced to the married;"* the relative proportion in the different states and countries is practically the same, but this is incidental and the error of such comparison is so patent that it must *apparently invalidate all that has been said; actually nothing is altered* as far as the increase of divorce and my comparison between divorce and sterility among different groups is concerned; nevertheless, I desire to correct the error by recalling all statistical data on divorce contained in my recent paper and will here present the correct figures and comparisons.

In that admirable work on "Marriage and Divorce." Carroll D. Wright* says: "It has been exceedingly difficult to arrive at a reasonable, legitimate conclusion for a comparison between divorces granted and some other condition or status . . . the comparisons made in a few states between marriages celebrated and divorces granted is worth simply what it has been given for, but it is essential for a just consideration of the whole matter that a comparison should be made between the married couples existing and the divorces granted." This I have done, and in addition I have presented the ratio between divorces granted and marriages performed in the same year (Rhode Island), and also the ratio between divorced persons and married persons, using whichever seemed to serve the purpose best. Approximately the same errors must occur by use of the same method in different states and among different classes of our population, so that regardless of the precise accuracy of the data the *relative values* and the *relative ratio of increase or decrease* can not be questioned.

CORRECTED TABLE IV.—DIVORCE.

A.—RATIO OF DIVORCES TO MARRIAGES.[1]

	Registration Year.			No. of Divorces to 100,000 Marriages.	No. of Marriages to One Divorce.
Indiana	1900	....	....	17,000	5.7:1
Rhode Island	1898	1899	8.0:1	12,000	8.2:1
Ohio	1899	....	....	9,174	10.9:1
Michigan	1898	....	....	8,928	11.2:1
Connecticut	1899	....	....	6,330	15.8:1
Massachusetts	1898	....	....	5,347	18.7:1

B.—RATIO OF DIVORCED TO MARRIED COUPLES.[2]

		No. of Divorces to 100,000 Married Couples.	No. of Married Couples to One Divorce.
Michigan	1874	306	326
Michigan	1894	418	240
United States	1880	203	490
United States	1890	540	185
Switzerland	—Mostly for 1885.—	195	513
Denmark		184	543
France		80	1,250
Germany		77	1,300
Sweden-Norway		27	3,704
New South Wales		26	3,846
Russia in Europe		11	9,090
Italy		10.6	9,434
South Australia		10.4	9,615
United Kingdom		8.6	11,600
Canada		1.6	63,000

C.—INCREASE OF DIVORCE AS EXEMPLIFIED BY RHODE ISLAND.[1]

Year.	No. of Marriages.	No. of Divorces.	No. of Marriages to One Divorce.
1890.	3195	294	13.1:1
1891	3320	275	12.1:1
1892	3502	296	11.8:1

1. "The Increasing Sterility of American Women." THE JOURNAL A. M. A., xxxvii, p. 891.

* Special Report of the Commissioner of Labor in the United States, 1889, revised 1891, p. 147.

Year.	No. of Marriages.	No. of Divorces.	No. of Marriages to One Divorce.
1893	3544	301	11.8:1
1894	3271	280	11.7:1
1895	3497	373	9.4:1
1896	3327	363	9.2:1
1897	3137	372	8.4:1
1898	3278	400	8.2:1

The sixth paragraph after Table 4 in the original paper presents correctly the relative frequency of divorce among the various groups of our population and strikingly shows the parallelism between divorce and sterility. But, strictly speaking, the figures indicate *not the ratio of divorce,* but the proportion of *divorced to married* persons, highest among *negroes,* 0.67 per cent.; next among *native Americans,* 0.61 per cent.; less among *Americans of foreign parentage,* 0.5 per cent., and least of all among *foreigners,* 0.3 per cent.

Whilst this does not accurately represent the ratio of divorees to marriages, as stated in the paper, it does practically and it likewise represents the relation of these groups toward each other as far as sterility and miscarriage are concerned, and inversely their relative position as to fecundity.

No words of mine can more clearly indicate the correlation of the factors named than does the proportion of divorced to married among these groups and to demonstrate this parallelism I have introdueed the subject of divorce; to this extent it is of interest to the medieal observer, and I have desired to place the facts correctly before the profession, fearing that the comparison of ineongruous elements originally made must necessarily prejudice the reader against any deductions therefrom.

As sterility has increased, so has divorce, and we see this demonstrated whether we compare the ratios of divorce to marriage in earlier or in recent years; this increase is well shown in Table 4, Part C, and I have seleeted Rhode Island because the vital statistics of this state in many respects, especially in all that relates to marriage and divorce, are more carefully kept than is customary in this country. The data given must be taken for what they are worth; absolute precision can not be claimed, but they do positively show what even the faulty tables of my original paper indicated, the same steady inercase in the ratio of divorce as in that of sterility and the noteworthy parallelism of both.

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APPENDICECTOMY—SURGICAL HISTORY. (1758-1888).

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Mestivier, in 1758, was the first to record a case of lesion of the appendix. Eight years later, in 1766, De La Motte refers to a ease which he found on making an autopsy. Laennee, in 1803, by his studies on the peritoneum made some headway. But no one seemed to have remarked the signifieance of his discoveries. In 1824 Lonyer-Wildermay reported a fatal ease of peritonitis and gave the perforation of the vermiform appendix as the cause. Husson and Dance, in 1827, gave a detailed description of the diseases of the cecum. Both Lonyer-Wildermay and Melier believed that the diseases of the cecum and appendix were separate and distinct. Melier, in 1827, reported four cases, three of which were perforations of the appendix with fulminating peritonitis. He considered the causes, character and consequences of appendicitis; he even antieipated the possible advantages of operation. He says: "If it were possible to establish, with eertainty, the diagnosis of this affection we could see the possibility of euring the patient by an operation. We shall some day perhaps arrive at this result." Ferrall, in 1831, gave it as his opinion that phlegmonous tumors were not prineipally due to the appendix or peritoneum, but to the retro-cecal connective tissue. But it is due to Dupuytren that the doctrine of the cecum was so long held. In his writings (about 1833) no mention of the appendix in this connection is made. Copeland, in 1834, was the first to elaim that the appendix may be the primary cause of serious trouble.

Burne, 1837, made a clinical distinction between the cecum and appendix; but he agreed with his contemporaries that the eeeum was the prime cause of the trouble of the right iliac fossa. In 1839 he changed about and claimed that the cecum played but a minor part in causing disease. Albers also caught a gleam of truth. From this time on many cases have been reported showing the important part played by the appendix vermiformis in disease. Grisolle, 1839, made mention of a case of gangrene of the appendix, as did also Berard in 1840, who reported a ease of gangrene of the appendix: death resulted from partial peritonitis. The crural artery was found to be obliterated. Becqueral, 1841, reported a ease of lumbrocoids found in the peritoneal cavity, having eome from a perforation of the appendix. A case of death from a similar cause is reeorded in the *Transylvania Medical Journal* in 1849. In the *Quarterly Journal of Medicine and Surgery,* 1843, there appeared an account of a man who died at the age of 88. whose appendix vermiformis was found to contain 122 robin shot. During life this man never had any symptoms indicating disease of this organ. It appears that he was excessively fond of game, and that the shot found in the appendix was supposed to have been contained in the game. Dr. Willard Parker seems to have been among the first, if not the very first, to realize that an operation was necessary in cases where the appendix was affeeted. He believed the earlier the operation was performed the greater the chances for recovery. His first case was in 1843. He simply made an ineision and evaeuated the cavity. This was not reported, however, until 1867. Nelson, 1846, reported a case of inflammation of the appendix vermiformis from gallstones lodging in it. Hancoek,[3] in 1848, described a ease he cured by operation. Thurman[4] about the same time (1848) reported a case of hernia and enlargement of the vermiform appendix with fecal abscess and fistula; the patient made a complete recovery after discharging a small piece of bone. The same year saw the publication of Shaw's[5] case of hernia of the vermiform appendix. Alford, in 1854, was probably the first man to make a primary operation for appendicitis. He was followed by Howe, in 1860. Elliot.[8] in 1859, reported a case of ovarian tumor with ulceration of the appendix vermiformis. Gerlach's[7] publication, in 1859, cleared up the darkness that for years had gathered around this subject. Pepper,[10] in 1867, reported a case of healing from perforation of the appendix; but in process of healing, the appendix had been converted into a fibrous cord. In 1873, Bonteeon[11] reported three cases of abscess and pelvie peritonitis

1. From Registration Reports or Vital Statistics of the various States, collected by Rev. S. W. Dike.

2. Figures originally presented by Prof. Wilcox, of Corneil, reproduced in the Victorian Year Book, 1894, and the Registration Report of Michigan, 1894, with additions by Dr. Wilbur, of Lansing: to these I have added the number of married coupies to one divorce in order to present a means of comparison between the ratio of divorces granted to married couples existing in a given year, and of divorces granted to marriages celebrated in the same year.

from perforation of the appendix vermiformis, relieved by operation. In one case the cavity of the abscess was evacuated through an incision. Five days later typhoid fever set in, and the patient died. Autopsy developed a perforation of the intestine; the appendix was adherent, but, otherwise, indicated a perfect recovery. In another case he aspirated the abscess before making an incision. He claims that this use of the aspirator gave certainty to the diagnosis and enabled the operator to make a bolder use of the knife. Dr. Bontecou did not excise the appendix in any of his cases. After evacuating the pus he injected the cavity daily with a solution of carbolic acid. He says: "I have seen but few cases recover, and those were treated at an early stage by leeching, poulticing and opium given in some form in decided doses, and by physiological rest to the bowels." These were his conclusions after having had twenty cases. He agreed with Dr. Parker as to the advisability of an early operation. Bontecou appears to be the first to observe and record the association of appendicitis and typhoid fever. F. R. Noyes[12] reported in 1875 a death from a raisin seed in the appendix. Gouley,[13] 1875, reported a case of perityphlitic abscess due to perforation of the appendix. The patient had also an inguinal hernia. The abdomen was incised to the seat of the abscess. The cavity was cleaned out and packed with lint. The patient recovered and had no more trouble from the hernia. The patient in this case had swallowed a broken tooth two years previous to this attack, but no signs of the tooth were found during the operation. Mason, 1876, reported a case of perityphlitis with perforation of the appendix; he decided to operate. After benumbing the skin with ice he introduced a No. 3 trocar attached to the aspirator and then passed a bistoury alongside the trocar. The patient seemed to do well for several days after the operation, but then began to sink and died 74 days after the operation. A partial autopsy revealed a perforation near the junction of the appendix and caput coli. The wall of the abscess surrounded and bound down the caput coli and appendix. Sanns, 1880, aspirated an abscess supposed to be appendiceal. Noyes, in 1883, collected 100 cases in which an operation had been performed; 90 of these were in the United States. Barlow and Godlee[16] made, Sept. 16, 1885, an exploratory operation to determine the cause of an abscess in the right iliac fossa. Pus was found about the appendix, which proved to be the seat of the disease. The pus was evacuated, but the appendix was not removed. Hall,[17] on May 8, 1886, at 11 p. m., in operating upon a case in which he had diagnosed strangulated hernia, opened what he supposed to be a hernial sac of the scrotum, found the vermiform appendix, which he removed, enclosed in exudates and extensively swollen until it resembled a normal testicle in size and shape. An existing perforation was supposed to be due to tuberculosis, which was far advanced. H. B. Sands,[18] on Dec. 30, 1887, diagnosed a case as acute septic peritonitis caused by perforation of the vermiform appendix. He opened the abdomen and evacuated a pus cavity, trimmed the margins of the perforation off in the appendix and sutured them with silk. The appendix in this case was not excised. McBurney,[19] on May 23, 1888, removed the appendix in a case in which Dr. W. K. Otis had diagnosed appendicitis. This is the first case in which an operator deliberately planned for and did remove a diseased appendix. Lister's great discovery of the principle of asepsis gave surgeons great encouragement to interfere in cases that had been previously thought hopeless. Then it remained for the magic hand of Lawson Tait to perfect appendicectomy as he has all other operations upon the abdominal viscera.

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Clinical Reports.

INTRACRANIAL RESECTION OF THE SECOND AND THIRD BRANCHES OF THE FIFTH NERVE

FOR THE CURE OF NEURALGIA, FOLLOWED BY PARALYSIS OF THE FACIAL NERVE.

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HISTORY OF THE CASE—By Dr. Newmark.

The patient, who is now 59 years old, had been suffering from neuralgia in the right side of the face for several years, and had undergone much medical and surgical treatment elsewhere before he applied to me for relief in 1897. His pain was chiefly in the area of distribution of the third branch of the trigeminal nerve. Five years before, an operation had been performed on his right lower jaw and had afforded him some alleviation; a second operation two years after the first was of no avail.

His pain raged in the lower jaw and shot into the tongue. He was repaid for even most cautious attempts to take food with paroxysms of pain; he could not swallow his saliva without enduring agony; also, his sleep was seriously disturbed by his sufferings.

There was an area of diminished sensibility to touch on the right half of the chin and lower lip, a consequence of the section of the mandibular nerve which had been previously practiced. To cold and heat also this area, as well as an adjoining part of the cheek, presented a reduction of sensibility. A gentle touch applied to a point on the right side of the lower lip or to one in front of the auditory meatus would provoke an attack of pain. The paroxysms were attended with twitching of the muscles on the affected side of the face.

The sensitive points were cocainized, and while they remained insensible, paroxysms were not excited from them. This procedure, however, although often repeated, did not benefit the patient materially. Numerous other measures were tried; also many drugs and applications of electricity.

As some writer having alleged that he had once cured trigeminal neuralgia by unremittingly passing a galvanic current through the head for about an hour, this tedious remedy was patiently essayed. Such efforts having been unsuccessful, surgical treatment was indicated. Two peripheral operations had been done in vain. The implication of the tongue showed that the trunk of the third branch of the nerve at least would have to be severed; and an occasional irradiation of the pain into the area supplied by the second branch, made it appear advisable to proceed even more radically. The extirpation of the Gasserian ganglion was accordingly suggested as offering the best prospects of permanent relief. This operation was undertaken on Sept. 8, 1897.

Memorandum of the Operation—By Dr. Sherman.

The operation was that called the Hartley-Krause. The opening in the skull was made by chiseling. The exposure of the second and third branches of the trigeminus was uneventfully accomplished. A small nick had been unintentionally made in the dura, and the loss of cerebrospinal fluid through this permitted the dura to collapse somewhat and gave easier access to the nerves. The only disadvantage was the need of pretty constant sponging.

The nerves were cut at their foramina of exit and pulled from the ganglion. The third branch brought a portion of the ganglion with it; the second broke close to the ganglion. No attempt was made to get the first branch. The opening in the dura was sutured, and the wound closed by replacing the flap, less the bone. Healing was aseptic.

In view of the resultant facial paralysis, it is pertinent to state here that at no time during the operation was any tissue handled roughly, nor was any tissue cut beyond those specified in the descriptions of the operation. The flap was, of course, folded down over the zygoma, but no pressure was made by this on the facial nerve, nor could it have been so made; and the assistant who held this flap, Dr. S. J. Hunkin, is positive that no pressure was so made. Moreover, the integument in front of the ear did not show any abrasion or contusion after the operation.

At present (August, 1901), there is quite a depression above the zygoma, and that process itself is prominent. The scar up in the hair is linear. The right eye is constantly open, and the lower lid is semi-everted; the natural wrinkles and folds are absent, and the cheek flops. He loses some food and more drink out of the corner of the mouth. He describes to me his general condition as being better than it was three and a half years ago. He is a laboring man and is able to do light odd jobs.

Memorandum of the Result—By Dr. Newmark.

When the patient recovered from the anesthetic, he was free from pain, and on Jan. 9, 1901, he declared that he had not suffered since. But there is an alloy to the satisfaction at this result. After the operation, it was observed that the right side of the patient's face was completely paralyzed, all the branches of the facial nerve being involved, and the paralysis has not abated a whit.

The anesthesia resulting from the section of the trigeminal branches occupied the areas of the second and third branches of the fifth nerve in the right side of the face, and in the right half of the mucosa of the tongue, cheek, and hard and soft palate. At first the mucosa of the right nasal passage and the right half of the tip of the nose seemed slightly affected in regard to sensibility, but this was not observed a few days later. Taste was abolished on the anterior two-thirds of the right half of the tongue. The muscles supplied by the third branch of the trigeminal were, and are, paralyzed.

The anesthesia has diminished in degree in the course of the years that have elapsed since the last operation; but it has not appreciably receded. In the supra-orbital region, especially, it is less profound than formerly. In the temporal region the sensibility to cold is affected more than touch. Pin-pricks provoke pain throughout the affected area, even on the chin where sensation is most diminished. The patient says he does not feel his food when it lodges in the right side of his mouth, and investigation reveals the same condition of sensibility in the buccal mucosa as existed there three years ago. He also says that when being shaved he distinctly feels the scraping of the razor on the cheek.

We have found it impossible to explain why the facial nerve became paralyzed.

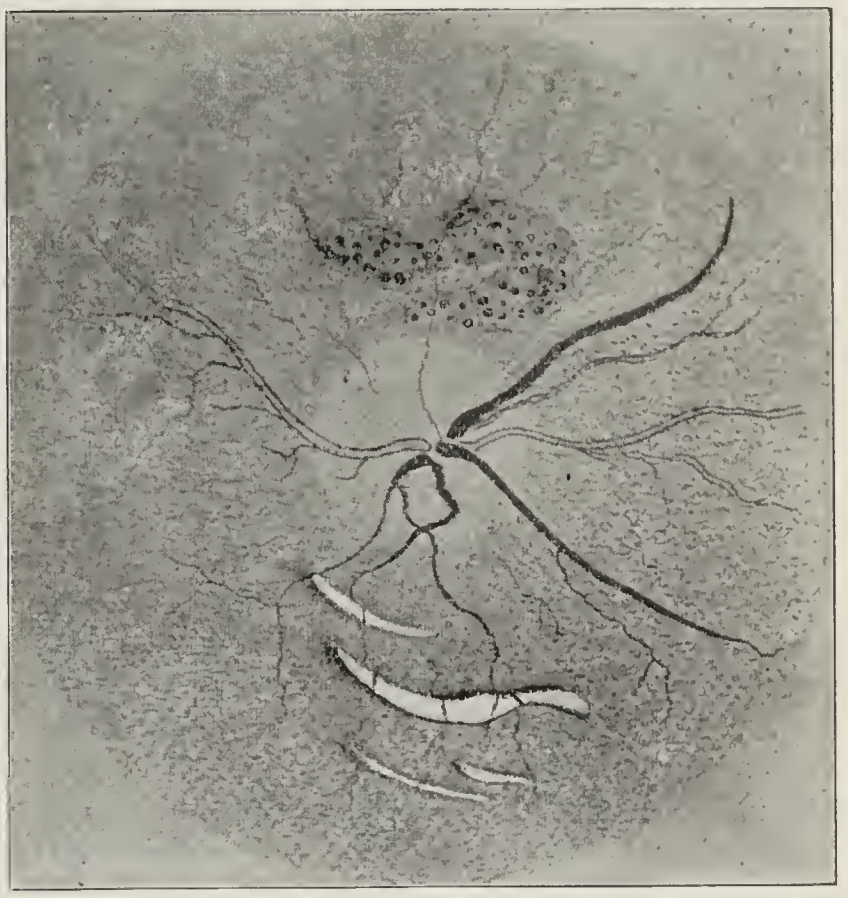
MULTIPLE RUPTURE OF THE CHOROID.*

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Johnny T., aged 11, while playing ball, Sept. 30, 1901, about 2:30 p. m., was struck in the left eye by a small hard rubber-ball. His playmate threw the ball at a distance of 25 or 30 feet. The blow was of sufficient force to knock the patient to the ground. Patient became sick, turned pale, and vomited three or four times; sickness lasted until 5 p. m., after which time he became drowsy. Vision of injured eye was entirely lost at time of accident. On October 1 pupil was dilated, some pain and tenderness on gentle pressure; he could see a little better than the day before. On October 2 he consulted me; vision was not so distinct as on the previous day; he



could see only the shadow of a hand passed before the eye. Pupil was dilated, long axis in 60th meridian. Tension was lowered. Ophthalmoscopic examination showed the fundus to be clouded and the sight of the lesion obscured from view. After two or three days more the lesion could be definitely outlined, which is shown in the accompanying cut. Patient's vision at the end of the 5th week was 1-3. On the temporal side of the eye, in the illustration, are shown four crescentic or sickle-shaped rents in the choroid. The white streak is the sclera. The margins of the crescents, especially the largest one, are discolored, due to disturbance of the pigment. The retinal vessels pass over the site of the lesions, which show that there is no rupture in the retina.

On the other side of the papilla, beginning near its margin, is a peculiarly shaped area showing changes in the pigment of this portion of the fundus.

* Reported to the McLean County Medical Society, Nov. 7, 1901.

Meteorologic Factors in Dissemination of the Plague.—Rosanoff publishes a historical study of the plague in *Botkine's Gazette*, in which he endeavors to establish a causal connection between the dissemination of the plague and the prevailing winds.

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SELF-DIGESTION OF TISSUES.

If the liver of a healthy animal is removed under aseptic precautions and so preserved as to exclude bacterial action, it will be found that after a considerable time, from a few weeks to a few months, the tissue softens and disintegrates. Examination of the residue shows that it contains in large amounts substances that are associated with the results of digestive processes, such as leucin and tyrosin, in earlier stages albumoses. Attention was first directed to this phenomenon of self-digestion, or *autolysis,* by Salkowski. As will be observed the products of digestion are analogous to those obtained by trypsin digestion, as characterized by leucin and tyrosin, rather than those resulting from pepsin action. Other observers, however, have shown that this latter ferment is present in the tissues normally, notably in muscles, but under ordinary circumstances the alkalinity of the tissues prevents the pepsin from producing any changes.

Martin Jacoby[1] followed up this work and showed that self-digestion was a perfectly normal and constant property of tissues during life. It is by no means limited to the liver; apparently it occurs likewise in all functionating cells. However, during life the products of the self-digestion are removed by the circulatory fluids as they are formed, so that they do not collect as in dead organs, hence are less prominent. In these columns attention was recently called to the part played by fat-splitting ferments within the tissue cells in fat metabolism.[2] Quite probably an altogether similar set of ferment activities accomplishes proteid metabolism. However, for lipase a reversible action has been shown, so that it is quite clear how the fat is split into diffusible substances that enter the cell and there recombined under the influence of the same ferment. As yet we lack proof that enzymes which decompose proteids can also build them up, but there is every reason to believe that such is the case. Granting this, our knowledge of proteid metabolism is as clear as it now is concerning fat, and we may consider that the enzyme present in the tissue cells is continually acting to combine digestion products into proteids, and to break the proteids down again as necessary to establish chemical equilibrium. These steps we see completely in intestinal digestion and absorption of proteids. Within the intestinal canal proteid is split up by trypsin. As the absorbed products of the splitting can not be found in the blood leaving the intestines they are evidently recombined in the walls of the intestine. Here is a complete analogy with fat absorption pointing decidedly to a reversible action of the trypsin.

Auto-digestion undoubtedly plays a prominent part in pathological processes, *e. g.,* the absorption of necrotic tissue. Petry[3] has demonstrated autolysis in a carcinoma of the breast, and the disintegration and softening within tumors is well known. Because of the similarity in the accumulation of leucin and tyrosin in acute yellow atrophy of the liver, and in phosphorous poisoning, with the results of auto-digestion Jacoby thought that here might be a direct explanation of the processes of this obscure disease. He experimented and found that phosphorous poisoning did increase autolytic processes markedly, but he did not particularly clarify the situation.

Conradi[4] has found that the products of autolysis have a decided bactericidal effect, probably due to certain of the aromatic groups derived from proteid. This may be of some importance, particularly as a possible explanation of the difference in susceptibility of certain organs to certain infections, *e. g.,* muscle and tubercuIosis.

1. Zeitschr. f. Phys. Chem., 1900, xxx.
2. Journal A. M. A., Nov. 9, 1901.

PROPHYLAXIS OF VENEREAL DISEASE.

The report of the committee appointed by the Medical Society of the County of New York to suggest methods for the prophylaxis of venereal disease is an interesting document. It was presented in abstract at the last meeting, November 25, of the Society, and we are enabled to give its salient points by anticipation. Each of the usually suggested methods for the repression of prostitution and its inevitable consequences is discussed, and the preventive measures that can be applied with promise of success, considering the ethical temper of our people, are especially dwelt on. The committee has not been led into impracticabilities, either by the difficulty of the subject or by the urgent need for action that is felt by every medical man who considers seriously the dangers to public health at present pharisaically overlooked.

The committee, in this investigation, shows that at least 150,000 cases of venereal disease were under treatment in the borough of Manhattan during the year 1900. These statistics emphatically point out the dangers to public health from this too commonly ignored source. As to methods of limitation and suppression, the committee is very frank. Legal regulation of prostitution seems inadvisable, not only because of the opposition that any question of even qualified toleration of vice arouses among English-speaking people, but especially because all methods of legal regulation hitherto attempted have proved failures. The general trend of the sentiment of specialists against this form of attempted limitation of venereal disease was very evi-

3. Zeit. f. Phys. Chem., xxvii, 1899, 398.
4. Beitr. z. Chem. Phys. u. Path., 1901, i, 193.

dent at the International Congress for Venereal Diseases, held at Brussels two years ago.

Segregation of prostitutes in one part of the city smacks too much of quasi authorization, or at least toleration, of vice to be well borne by our people. On the other hand, the committee considers that domiciliary segregation is not only advisable but absolutely necessary. Immoral persons must not under any circumstances be allowed to live in the same house with those who lead moral lives. Especially where there are families with children, prostitutes must not be allowed to ply their trade. To accomplish the much-desired end no new legislation is needed, but only the judicious and not too stringent enforcement of existing laws. All external signs of prostitution must be suppressed. Significant red lights, red curtains and the like, street soliciting, window tapping, etc., must be effectually done away with.

The most important prophylactic measure that medical men can bring about is the education of the public with regard to risks of venereal diseases and the difficulty and uncertainty of their cure. High schools and colleges should be advised to give special instruction with regard to the dangers of venereal disease. Family physicians should express themselves candidly, and young men should be told that sexual indulgence is not necessary to health and may involve serious infection with enduring disease. The transmission of syphilis should be made a penal offense. The statute could not often be enforced, but at times it would inflict deserved punishment, and its presence on the statute book would of itself be a striking educational measure. Because of recent revelations in the social conditions in New York City with regard to procurement for prostitution, the committee advises legislation raising the age of consent and the enactment of severer punishment for procurers.

The committee considers the powers at present conferred upon the City Board of Health are sufficient to enable that body to take due measures for the protection of public health against the spread of all contagious diseases, and especially of venereal diseases. The Board of Health must be aroused to a sense of its responsibility in the matter, and much can be accomplished without waiting for further legislation. As prompt cure, or at least suppression, of the contagion as soon as possible is eminently desirable, all hospitals that receive state aid should be required to have arrangements for the treatment of venereal diseases. On the other hand, all advertisements of preventives, etc., that encourage vice by promising impunity should be absolutely suppressed.

In a word, the committee concludes that the careful humane enforcement of existing laws is the best prophylaxis for venereal disease possible under present conditions. The recommendations are such as can be endorsed by physicians and ought not to arouse opposition on the part of those who have not been able to conscientiously support the methods of regulation that have sometimes been recommended.

THE PROPHYLAXIS AND TREATMENT OF RHEUMATIC ENDOCARDITIS.

Existing evidence points strongly to the fact that acute endocarditis is an infectious disorder of varying degree of severity, dependent probably upon a multiplicity of different micro-organisms. Of the diseases with which acute endocarditis is associated or that it complicates, acute rheumatism is the most common, although it must not be overlooked that the inflammation of the endocardium may be an accompaniment of any one of a number of other infectious processes, and possibly it may be the sole obvious manifestation of such a process. While there is as yet no agreement as to the bacteriology of acute rheumatism, it is generally admitted that the disease is of bacterial origin, and it is to be inferred that the primary morbid process and its secondary complications are dependent upon the same etiologic factors. Now, while we have in the salicylates an almost specific remedy in the treatment of acute rheumatism, it appears that they are inadequate to prevent the development of complicating endocarditis and likewise of exerting any curative influence upon the developed disorder. It is, therefore, a matter of no little importance to be possessed of a means capable of fulfilling these latter indications, and some observations recorded by Dr. Richard Caton[1] should prove of interest and value in this connection.

For a period of more than fifteen years, covering an experience of upward of 500 cases of acute rheumatism, Dr. Caton has pursued a plan of treatment that has yielded satisfactory results. For the rheumatism, salicylates with an occasional cholagogue are administered, and a light diet permitted. The entire body with the exception of the head is clothed in flannel and the patient is kept strictly at rest in bed for several weeks. Any lingering pains can be dissipated by the use of small local blisters.

During the period under consideration the endocardium was involved in 92 of the cases of rheumatism. In those in which it appeared probable that the endocardial inflammation had commenced and that one or more valves were acting imperfectly, the lesion being only of brief duration, absolute physical rest was enjoined for at least six weeks. Sleep was encouraged, pain and mental excitement were avoided, and the diet was simple and unstimulating. In order to stimulate the trophic and reparative process in the heart, without impairing the vitality or increasing the mechanical activity, a succession of small blisters was applied to the wall of the chest between the clavicle and the nipple. For the purpose of stimulating absorption and removal of the material effused into the substance and upon the surface of the inflamed valves, sodium iodid was administered. Of 61 of the cases in which a murmur and other signs of valvulitis existed at the time of the patient's admission, 41 left the hospital with apparently sound hearts, while in 20 the signs of valvular disease persisted. Of

1. Edinburgh Medical Journal, October, 1901, p. 335.

31 of the cases in which the bruit and other signs of valvulitis developed while the patient was under observation, 28 left the hospital with apparently sound hearts and three with valvular disease. With reference to the employment of the plan of treatment outlined it is pointed out that it is of no use unless begun early, within the first two or three weeks at least. Further, after apparent recovery has taken place the patient should for some three months refrain from arduous muscular effort and from anything that puts strain upon the heart.

GENERAL DECREASE OF BIRTH-RATE AND DEATH-RATE.

While so much is being said about the increasing sterility of American women and the decline in the birth-rate in this country, it is worth while to look around and see others as we see ourselves. Mr. William E. Curtis has recently compiled the statistics, as to this point, of a number of European countries as a piece of newspaper correspondence and the figures he gives are interesting. Taking the last twenty-five years for his study, he finds that the annual number of births per 1000 of the population has fallen from 36 to 29.3 in England and Wales, from 35.6 to 30.5 in Scotland, and in Ireland from 26 to 22.9. Other European countries have also suffered; the births per 1000 have decreased from 40.1 to 35.9 in Germany, from 30.9 to 26.2 in Sweden, from 36.4 to 32 in Holland, from 26.1 to 21.9 in France, and in less proportion in still other European countries. Only in Norway has there been an increase, and that only one-tenth of 1 per cent. It seems evident that a decrease of human fertility is one of the tendencies, or, rather, conditions of modern civilization, and that, as a rule, the higher the civilization and the more extensive the culture among the general population the greater this decrease. The exceptional state of affairs in Norway, so far as it exists, is probably correlated with a greater retention of primitive habits of living among the inhabitants; possibly also some racial factor may exist, as in Denmark, another Scandinavian country, the decrease was only eight-tenths of 1 per cent. In Sweden, on the other hand, the decrease was above the European average, so that this factor is not universally valid. In Italy the decrease was also very slight, seven-tenths of 1 per cent., but it is particularly a land where the proletariat, from climatic and other reasons, might be expected to multiply. For Russia no figures are given; its birth-rate is undoubtedly high and may not be decreasing. In the greater part of our own country we have no accurate birth records, but it is certain that we are not behind Europe as regards a declining birth-rate. It is not probable, however, that the real figures, could they be obtained, would be as formidable as some alarmists have tried to represent them, nor does a declining birth-rate necessarily indicate immoral practices as some have strongly suggested. The higher standards of living cause late marriages and a larger proportion of celibates, and while there are other legitimate causes, this alone is sufficient to reduce the birth-rate to an appreciable if not to a very considerable extent.

As regards national welfare, a declining birth-rate is not by any means a neeessarily bad symptom. Taking the figures referred to again we find that parallel with the decrease in the ratio of births there has been a corresponding decrease in the death-rate. Thus in England and Wales the death-rate has fallen from 22.2 in 1874 to 18.3 in 1899; in Scotland from 23.2 to 18.6, in Germany from 26.7 to 21.5, in Holland from 22.7 to 17.1, and in other countries in varying proportions; in Hungary the decrease has been as great as 15.6 per 1000. These indicate that the increase of population need be but little affected by the lessened number of births; in England and Wales, for example, the excess of births over deaths in 1899 was still 11 per 1000, in Germany 14.6, in Holland 14.9, in Sweden 9.6, etc. Only in two countries are the statistics actually discouraging to any extent, namely, in France with an excess of births over deaths of only eight-tenths of 1 per cent., and in Ireland with its increasing death-rate of 17.6 against 17.3 in 1874 and excess of births of only 5.3 per 1000. We would almost be inclined to doubt these latter figures were it not for the fact that Ireland has been steadily drained for many years of its most productive population and the possibility that the increase of deaths may be due to its larger proportion of aged people. In France the condition may be fairly said to be alarming at the present time and its statesmen do well to seriously consider the situation.

In this country we are not so badly off. The census bulletins show a slight decrease, nine-tenths of 1 per cent., in the percentage of native whites from native parents, and a somewhat larger increase, 2.3 per cent., of those of foreign parentage, the constant disturbing influence of immigration being noticeable in all of our statistics of population. In many of the states the native-born Americans of pure-native parentage form but a small proportion of the whole, and the total of the foreign born in the population (10,460,085) in 1900 was greater than at any previous period of our history. It will be many years before population in this country reaches such an equilibrium as will enable us to fairly judge its increase from natural causes or before we have sufficiently reliable vital statistics to do so. In the meantime we may reasonably assume that on the whole we are not very much worse off than our neighbors as regards reproductiveness and that our death-rate is as low, and from indications even lower, than with the most of them. We must also bear in mind that what reliable vital statistics we have are confined to a few of the older political divisions where the disturbing elements of immigration and emigration, especially the latter, are most in evidence, and hence are not a safe index of conditions in the country as a whole.

THE EXCLUSION OF THE CHINESE.

The Chinese Exclusion Act is to be up before the coming Congress, and for sanitary reasons it is to be hoped that it will be re-enacted. In China they have settled the Malthusian problem by the use of almost every possible method of disregard of sanitation, and in this country they maintain to the fullest extent their oriental habits and traditions. As successful evaders of wholesome regulations they have hardly any equals, excelling in this respect every other foreign element in our population. This fact makes any restricted immigration of Chinese laborers under proper safeguards an impossibility; any restrictive measure must necessarily be a wholesale one. There is a great deal of wasted sentiment on this subject, and it is a hard fact that we have to meet, but we must protect ourselves. That this is a Christian country and we regard them as heathen, should not make us altruistic to our harm. The nation, like the individual, should care for and protect its own home.

THE SHIFTY ZOOPHILE.

We are still receiving communications from the antivivisectionists who, having failed in refuting Dr. Keen's charges of garbling and misrepresentation, are endeavoring to raise new issues in their attacks on the medical profession. The latest received is not signed by any individual, but instead, in typewriting, "Editor, *The Animals' Defender.*" It is strange how these people hesitate to come out openly under, or over, their own signature. In this case the animals' defender wants us to give him, or her, some notoriety by entering into a controversy about experimentation on human beings. Just what this defender of animals has to do with the defense of human beings against savages known as physicians we do not know. THE JOURNAL has treated these antivivisectionists with all due courtesy in the past, but declines to open new subjects till their controversial morals have improved and they acknowledge what all the world can see, that their misrepresentations and garbling of quotations have been amply demonstrated by Dr. Keen. It is a pity that would-be reformers have so often such unsymmetrically developed consciences, and that the good cause of humanity to all living beings, not excluding mankind, should be injured by cranky extremists and utterly unscrupulous advocates.

ON THE DEFINITION OF INSANE DELUSION.

The definition of an insane delusion is one of the stumbling blocks of medical experts, second only to that of insanity, a definition of which in a complete and satisfactory way is an impossibility. The fact that false beliefs are held by a large proportion of mankind, and that some of the most utterly irrational are persistently maintained, by apparently intelligent persons in other respects, confuses jurists and the public, and is sometimes used to obscure actual evidence of mental disorder. It is important that physicians, at least, should have clear ideas on this subject and be able to give a reason for the faith that is in them when called to testify as to the value of such indications. In a recent paper[1] C. H. Hughes discusses this subject and offers what in his opinion is the correct criterion of an insane delusion. Taking as his text a recent contested will case in which the sanity of a deceased believer in eddyism was challenged, he points out that only false beliefs due to an existing condition of brain disease can properly be called insane delusions. It is not the mere perversion of the intellect, but the morbid element that is evidence of insanity. "Insane delusions," he says, "are subjective errors of judgment of entirely false judgments brought about by a mind involved in disease implicating the brain. The insane mind may momentarily assent to the unreality of a delusion, but immediately reasserts it." This is probably as satisfactory a definition of an insane delusion as can be given; it covers the conception, but, with every other definition of the kind, it does not always materially aid in the diagnosis. It is perfectly possible to suppose, for example, a person at a spiritualistic seance accepting and interpreting the phenomena according to his mental morbidity, while the others about him are merely exercising the credulity of the average believer. The differentiation of the psychopathic from the non-psychopathic beliefs is, therefore, still sometimes a problem for the expert, and, as Dr. Hughes points out, all the other stigmata, physical as well as mental, must be studied. Delusions are, therefore, not in themselves the first or exclusive criteria of insanity; they are evidence only in connection with other symptoms of a diseased brain by which their pathologic character can be determined.

1. Alienist and Neurologist, October.

THE TETANUS CASES IN CAMDEN, N. J.

The Board of Health of Camden, N. J., where a recent epidemic of tetanus after vaccination has occurred, has sent out a circular giving the facts of the case. Samples of all the different makes of vaccine employed have been tested by the State bacteriologist of New Jersey and found free from tetanus germs, which fact alone shows that the vaccine matter itself was innocent in these cases. The history of each case of tetanus, moreover, has been carefully collected. In every case vaccination was practiced in a cleanly and correct manner, the subsequent infection being due to the patients' own neglect or that of their parents, and their omission to present themselves to the attending physicians to receive proper attention. One case of tetanus occurred in a boy who had not been vaccinated, but had received a gunshot wound, thus showing that the infection is not confined to any particular source. A still further evidence of the innocuousness of vaccine matter itself is noted by the fact that in no case did it appear until long after the usual incubation period, as in every case the tetanus occurred not less than three or four weeks after vaccination. It developed also with every make of vaccine employed. Animal experiments also demonstrated the freedom of the vaccine from tetanus germs; in no case was tetanus produced on a susceptible animal. Moreover, during the past three weeks a very large number of persons were vaccinated in Philadelphia and elsewhere with vaccine from the same sources as that used in Camden, and no tetanus followed. The only reason for the epidemic that can be assumed is the atmospheric and telluric con-

ditions that have existed. There had been a long period of dry weather, with high winds, so that tetanus germs have been constantly present in the atmosphere. It is noticed that in all cases after a careful examination that the patient was exposed by the scab being knocked off or removed, infection resulting, and frequently by the children picking the scab with their dirty fingers. Facts then would seem to exonerate the vaccine from the accusation of having produced tetanus in these cases. It may be possible that a vaccination wound offers a specially favorable nidus for tetanus germs, more so in fact than an ordinary cut or open wound. The number of cases following vaccination would make this seem possible, if not probable—hence the need of more care for complete asepsis and the prevention of any possible contact with infected matter in such cases. It is unfortunate, however, that there has been any such coincidence of tetanus and vaccination, since the occurrence of these cases will be used to the utmost by anti-vaccinationists without regard to the actual facts in the case.

INDIGESTION AND SIN.

A prominent surgeon who holds certain eccentric opinions in regard to dietetics is reported to have said that "total depravity is often nothing more than total indigestion." There is less wisdom in this statement than some might think; it is one of those utterances that catch the vulgar and is consoling to those who have good digestions, but who do not feel otherwise safe as to their salvation. Dyspepsia may make a man unpleasant in some ways; it is apt to aggravate any existing sourness of disposition, but in its more pronounced forms it has, at least, a tendency that leads its victims to appreciate the vanity of earthly things. The Frenchman's recipe for happiness—"a good stomach and a bad heart"—agrees better on the whole with the natural depravity of mankind, as we see it in daily life. If we sum up and average human villainy, we will probably find that the dyspepties have not been the greatest criminals, and if we were to poll the sufferers from gastric symptoms we would not find among them any undue proportion of depravity. In fact, it is the cheerful happy-go-lucky individual that creates the most trouble; he is the one who yields to all the pleasant vices; he does not pay his debts, but lets the other fellow walk and worry and he cultivates egoism generally. The smooth, calculating villain is also a non-dyspeptic, and if we take the mass of pleasant, benevolent-looking visages we would probably find that they do not necessarily attend any special corresponding virtues, but often simply mean that the wearer has been good to himself. They may also mean a sort of dementia; this is perhaps as often as not the signification of the look of peace and content so coveted by female Eddyites and such. The strenuous life that we talk of and that most of us are obliged to live, is not specially conducive to placid looks, and still less so with the more or less abdomino-visceral disturbance that is often its accompaniment. The opinion quoted as co-relating total depravity and indigestion may be taken as a sample of statements that are more epigrammatic than sensible.

Medical News.

COLORADO.

Health Department Needs.—The Denver Health Department has asked for a $60,000 appropriation for 1902.

Found Not Guilty.—An irregular physician of Ouray, tried on the charge of practicing medicine last April, without a license, was found not guilty in Judge Stevens' court, November 15. The case will probably be taken to the Supreme court.

Trainmen Instructed in First Aid.—One of the resident surgeons of the Union Pacific Railway in Denver has commenced a course of instruction for trainmen on first-aid. The first lecture included shock, the application of temporary dressings, and temporary hemostasis.

Physicians Must Register.—Dr. Seymour D. Van Meter, secretary of the State Board of Medical Examiners, has issued an ultimatum to the physicians who have not complied with the state law which makes necessary the recording of their certificates with the county clerk. He will have the licenses revoked of those who fail to obey the order in a reasonable time.

Outdoor Sanitarium.—The Rocky Mountain Industrial Sanitarium, organized in Denver last spring, is now in operation. On a ten-acre tract, five miles from Denver, fifteen or twenty patients in the early stage of consumption are, under the plans of the promoters, virtually taking care of themselves. The rules of the institution compel a continuous outdoor life to be maintained summer and winter. Each patient is provided with a roomy tent, plenty of warm clothing and blankets, and a small stove to be used only in extremely cold weather. Experience has proved that with proper food and clothing, and a life in the open air and sunshine, artificial heat is unnecessary, and becomes absolutely unbearable to the patients, who without exception are gaining rapidly. The co-operative idea has already been put into force, for many of the patients are supporting themselves wholly or in part by doing the work on the premises.

ILLINOIS.

Addition to Peoria Hospital.—The addition to the Cottage Hospital, Peoria, erected by John C. Proctor at a cost of more than $140,000, is now complete and will be formally dedicated and opened in a few days.

Rock Island County Medical Society has been incorporated at Rock Island by Drs. Carl Bernhardi and George G. Craig, Rock Island, and Dr. Lewis D. Dunn, Moline, not for profit, but for medical and scientific research.

Smallpox is increasing throughout the state, but especially in the central and southern portions, despite the efforts of the State Board of Health. Springfield has 4 cases; at North Alton the public schools have been closed on account of 9 or 10 cases; Carlyle reports one case; Clayton has two cases and the public school has been ordered to be closed.

Personal.—Dr. Robert E. Calhoun, Chesterville, has moved to Arcola.——Dr. James H. Pittman, Roseville, has opened an office in Camp Point.——Dr. William D. Nelson, Jr., Marietta, is about to locate in Canton.——Dr. George H. Fricke, Park Ridge, who has practiced in that village for thirty years, has sold his practice to Drs. Charles A. Dodson and Charles M. Noble, and has moved to Chicago.——Dr. Charles P. Spann has disposed of his interests in Thebes and will move to Alto Pass or Murphysboro.

Chicago.

Mercy Hospital has purchased for $20,000 property on Prairie Avenue and expects to extend the hospital to cover the 98 feet of frontage thus secured.

The Hospital of the Sisters of the Holy Family of Nazareth has negotiated a loan of $150,000 to complete their new hospital building just erected at a cost of $400,000.

People's Hospital and Training School, to conduct a hospital and training school for nurses, has been incorporated at Chicago by Drs. I. C. Gary, Gordon G. Burdick and George W. Webster.

Charity Hospital Not Liable.—Judge Chytraus, in a suit for $25,000 damages brought against the Presbyterian Hospital on account of injury alleged to have been the result of a mistake in medicine made by a nurse, instructed the jury to find for the defendant on the ground that a hospital chartered for the purpose of receiving and treating patients without charge is not liable for the carelessness or negligence of its servants, providing it has selected those servants with due care.

IOWA.

Dr. J. W. Crofford, Lamoni, has been taken to Fort Madison to serve out his sentence of thirteen years' imprisonment for criminal abortion and murder in the second degree.

Dubuque detention hospital for contagious diseases is to be erected immediately at a cost of $1500. The plans provide for a one-story frame building 60 by 24 feet, with two wards and four private rooms.

Smallpox Bill Paid.—Dr. Charles H. DeWitt, Glenwood, who rendered an account of $1150 for caring for smallpox cases in Mills County last winter, but was obliged to sue the board of supervisors, as they reduced the bill to $900, has settled the case out of court, and will receive the full amount of his claim.

The Insubordination of Dr. Pray.—The State Board of Medical Examiners has referred the case of Dr. Gilbert L. Pray, Lake City, to the State Board of Health for action. Suit had been brought against him to revoke his certificate, but it was shown he was competent and recognized the smallpox cases in Lake City, but failed to report them. The case is, therefore, one for the action of the health board by criminal prosecution. He has repeatedly refused to report smallpox cases.

Smallpox.—Dr. E. W. Burke, Iowa Falls, informs us that there are seven well-developed cases of smallpox in that city. ——Laporte is quarantined on account of the diseases; churches and schools are closed and public meetings prohibited.——At the Musquakie Indian Reservation, Tama County, there have been 35 deaths out of 65 cases.——Sioux City has now about 50 cases of the disease.—It is reported that there are about 30 cases in Waterloo.——Six cases are reported from Flint River township, Des Moines County, two from Marion County, one from Charles City and four from Reed township, Clayton County.——At Ida Grove there are 28 cases.——In Denison 13 cases have been discovered.

KENTUCKY.

Dr. De Vault Guerrant, Richmond, has located in Stoops, Madison County.

Smallpox is increasing in Bath County.——At Roe's Run a case has been reported.——Several cases have been discovered at Red Lick, Madison County.——At Jackson, Breathitt County, there are from 60 to 75 cases owing to violent opposition to vaccination.——Two cases have developed in Lexington.

The Doctor Wins.—The judgment of the Henderson Circuit court in the case of Dr. W. W. Walker against the city of Henderson was reversed by the Appellate court, with instructions to enter a judgment for appellant for the fair value of services rendered. Dr. Walker was placed in charge of the county pesthouse during the smallpox epidemic of 1899. He sued to recover on a contract for services at the rate of $15 per day.

Dr. and Mrs. Henry Martyn Skillman, Lexington, celebrated the fiftieth anniversary of their marriage, October 30. Dr. Skillman has practiced in Lexington for fifty-four years, was probably the first physician who administered chloroform in the West, and is the only living member of the faculty of the medical department of the old Transylvania University. He was president of the Kentucky Medical Association in 1869, and has been a member of the American Medical Association for more than forty years.

MARYLAND.

The Medical and Chirurgical Faculty of Maryland now has 680 active and 17 honorary members.

Students Enrolled.—Of the 656 students enrolled at the Johns Hopkins University 227 are candidates for the degree of M.D. and 25 are physicians in attendance.

Baltimore Mortality.—For the week ending November 23 there were 200 deaths, 21 being from pneumonia, 17 from consumption, 8 from cholera infantum, 3 from typhoid fever and 2 from diphtheria.

Personal.—Dr. G. Herbert Beckley has located at Reisterstown, Baltimore County.——Dr. C. H. Ohr, the oldest past grandmaster of masons in the world, is ill at his home in Cumberland.——Dr. Jackson Piper, Baltimore, sailed for Europe November 23, and will be gone all winter.——Dr. Remsen, President of Johns Hopkins University, was given a reception at Bryn Mawr College, Pennsylvania, November 22.

The Instructive Visiting Nurse Association of Baltimore, designed to provide trained nurses to visit in their homes the sick poor who can not or should not be sent to a hospital, and to instruct their families and friends in simple, necessary rules for the care of the sick, reports 9766 visits during the year for nursing, 2192 visits for advice and instruction, and 1236 new visits. From June to September, inclusive, 3112 visits were made. Mrs. William Osler is secretary of the association.

State Board of Health Report.—The annual report of the State Board of Health contains the reports of the secretary, Dr. Fulton, of the chemist and bacteriologist, of local health officers, etc. Dr. William H. Welch, President of the Board, calls attention to the fact that in it, for the first time in the history of the state, is presented an approximate account of a year's losses through death and an accurate exhibit of the relative importance of preventable causes of death. He calls attention particularly to "the overshadowing importance of tuberculosis," and suggests that Maryland single it out "for direct attack." He calls attention to the inadequateness of the inspection of animals and meat at the abattoirs. That the epidemic of smallpox which has been steadily increasing in the United States since 1898 has inflicted no great injury on Maryland, is due, he thinks, to the high estimate by the people of vaccination and the vigilance of the local authorities, especially those adjacent to infected areas in neighboring states. The present burial permit law went into effect in June, 1900. Dr. Fulton points out that tuberculosis heads the list of mortality with 12.7 per cent., pneumonia having 5.9, infantile diarrhea 10.2, and typhoid fever 4.5 per cent. The ratio of deaths from preventable diseases to total mortality is 39.4 per cent. The book contains the reports of 35 out of 43 organized local boards of health. The chemist reports 173 examinations of water. The bacteriologist reports 1137 examinations for typhoid, tuberculosis, diphtheria and malaria.

MICHIGAN.

Passive Criminals.—Dr. Fred R. Belknap, Niles, thus characterizes physicians who fail to report suspected cases of dangerous communicable diseases.

War on Quacks.—The Wayne County Medical Society has appointed a committee to co-operate with the prosecuting attorney in prosecuting all physicians who practice without legal graduation and registration.

Battle Creek Sanatorium Exempt from Taxation.—The Circuit court has decided that the Battle Creek Sanatorium is a charitable institution and as such is exempt from taxation. The institution sued the city for $5245.35 taxes paid under protest and has received a verdict, with interest. The case will probably be carried to the Supreme court.

Smallpox is said to exist at 87 places in the state, and 1500 cases of the disease are known to exist.——In the logging camps of Kalkaska County, it is prevalent, and a pesthouse is being built.——A death has occurred at Yuma.——Floodwood is strictly under quarantine.——Houghton County has more than 30 cases.——Cases are reported in the Upper Peninsula, from Metropolitan, Niagara, Escanaba, Bay de Noc and Indian town.——Dr. Albert B. Simonson, of the Calumet and Hecla Mining Company, has the disease and is quarantined at his home in Calumet.

NEW YORK.

Smallpox has appeared in Olean and Corning.

Emergency Hospital for Utica.—The Ravine Hospital, Utica, is being put in shape to care for contagious diseases.

State Hospital Site.—The board of trustees of the State Hospital for the Care of Consumptives, after inspecting many sites, believe that Raybrook, on the west side of the Adirondacks, is the best suited for the proposed institution. While Gov. Odell has not finally approved of this site it was learned that he thought it the most available of those inspected.

Buffalo.

Free vaccination dispensaries have been inaugurated by the Health Department, one in the heart of the Polish district, the other in the Italian tenement house district.

The Retention of Wende.—Mayor-elect Knight gave a hearing to those desiring the retention of Dr. Ernest Wende as Health Commissioner. A petition of over 300 prominent physicians, together with a business-men's and bankers' petition, was presented. Dr. Wende, however, we hear has not been retained.

For Examining Bullets.—Herbert M. Hill, city chemist and professor of chemistry at the University of Buffalo, and Dr. Herman G. Matzinger, of the New York State Cancer Laboratory, have each been awarded $150 for examining chemically and bacteriologically the bullets used by the assassin of the late president.

Marine Hospital Needed.—The International Seamen's Union, which was in session in Buffalo, has passed resolutions petitioning the surgeon-general of the Marine-Hospital Service and Congress to increase by better hospital facilities the service in Buffalo. At present there is no district marine hospital in Buffalo, but a ward is leased for the care of seamen in one of the hospitals.

Smallpox Situation.—Nine new cases of smallpox were reported November 27 at Buffalo. A free dispensary for vaccination was opened in the Polish district, but this not sufficing the police have been instructed to assist in compulsory vaccination. Buffalo finds herself with an isolation hospital inadequately heated and improperly equipped. Only a few patients can be accommodated, and should the number of cases increase the city will find itself in a bad plight.

New York City.

Dr. Charles Walsh, Brooklyn, while walking in Fifth Avenue, slipped on the ice, and falling sustained a fracture of the right patella. He was taken to the New York Hospital.

Appointments.—The Commissioner of Corrections, Brooklyn, has appointed a physician at the Kings' County Penitentiary at a salary of $900 a year. The Board of Health has appointed eleven additional medical inspectors of schools.

X-Ray Laboratory Donated.—The late Edward N. Gibbs, of Norwich, Conn., left by his will, instructions to equip a laboratory for experiment and use of *x*-ray apparatus for Bellevue Hospital Medical College. This is now completed and is known as the "Edward N. Gibbs X-Ray Laboratory of the University and Bellevue Hospital Medical College."

Longevity.—Dr. A. L. Wood read before the last monthly meeting of the Hundred Year Club a paper on "The Influence of Water Upon Health and Longevity." He said that for the last twenty years he had used distilled water freely, and in the past year had drank about a gallon a day. His own robust appearance, together with certain physical feats that he performed, were offered in proof of his views regarding the benefits to be derived from taking water in this way.

NORTH DAKOTA.

New Licentiates.—The State Medical Board announces that ten of the recent applicants for licenses were successful.

Smallpox.—The city school at Mayville has been closed on account of a case of smallpox.——Grand Forks has a case of confluent smallpox.——Fargo has had a fright, because a blind pencil-vendor's boy, after going about town all day, was found to be ill with smallpox.

Personal.—Dr. Olaf Th. Sherping, Enderlin, will locate in Fergus Falls, Minn.——Dr. James Halliday, Reynolds, has decided to locate in Osnabrock.——Dr. William L. Grant, St. Thomas, has moved to Grand Forks.——Dr. William B. Coyle, Lakota, has taken into partnership Dr. James W. Wells, St. Paul, Minn.——Dr. William D. Wagar, Crary, has located in Michigan City.——Dr. William C. Langhorst, Steele, has moved to Chicago.

OHIO.

Children's Hospital on Fire.—Nine sick children narrowly escaped being burned to death in a fire which damaged the Children's Hospital, Cleveland, November 20.

Dr. David H. Miller, Newark, has been prosecuted by the city health officer for failing to report a case of smallpox, the patient being his wife. The home of Dr. Miller has been quarantined.

The "Doctor" Disappeared Under Fire.—Dr. Giuseppe A. Purpura, Cleveland, the Italian whom the State Board of Medical Examiners suspected of practicing under a false diploma and whose case was still under consideration, suddenly left Cleveland and numerous unconsoled debtors.

PENNSYLVANIA.

The Shamokin Board of Health has elected the following officers for the ensuing year: Dr. J. W. Bealor, president; C. F. Heim, secretary; Dr. Richard H. Simmons, medical inspector, and Francis Hoover, health officer.

The Rights of Consumptives.—The right of consumptive immigrants to land in this country has been denied by the United States Circuit Court in Brooklyn, N. Y., in the case of Thomas Boden, an alleged or supposed consumptive of Philadelphia, who is held at Ellis Island, and will be deported unless the decision of the court is overruled.

Personal.—Dr. Samuel C. Brietenbach, the oldest physician in Roxborough, is seriously ill with pneumonia.——Dr. Isaiah J. Wireback, Monessen, has located in Uniontown.——Dr. David H. Warner, Lebanon, has been appointed municipal physician.——Dr. Charles W. Jennings, Danville, has been appointed one of the resident staff at the Harrisburg Hospital, to succeed Dr. John Howard.

Scarlet Fever.—Shamokin had 88 new cases of scarlet fever reported in November.——In York City, 14 cases are reported by one physician.——The disease is epidemic in Freeport, where 34 cases exist.——In Mifflin township, the villages of Whittaker, Homeville and Bellwood are alarmed because of the prevalence of the disease.——A serious epidemic has broken out at Munhall near Pittsburg, where 20 cases have been reported in the last few days.——The schools in East Fallowfield township have been closed on account of the disease.——There are so many cases at Canonsburg that the public schools have been closed.——The schools at Natrona have been closed on this account.

SOUTH DAKOTA.

Personal.—Dr. Robert L. Murdy, Aberdeen, has been appointed surgeon for the Milwaukee road, vice Dr. Samuel J. Coyne, deceased.——Dr. George MacMurphey, Elkton, will locate in Ortonville, Minn.

Canton Hospital Accepted.—The Asylum for Insane Indians at Canton, erected for the government at a cost of $53,500, and intended to accommodate all the insane Indian wards of the government, is completed and has been accepted.

Compulsory Vaccination in Yankton.—The Yankton County Board of Health has ordered that after Jan. 1, 1902, no child or student be admitted to any school or college within the county without a physician's certificate of successful vaccination.

Smallpox is making its appearance in the Black Hills.——Nine cases are reported from the vicinity of Gayville and the same number from Garrettson.——The public schools at Hot Springs have been closed on account of a case in the family of a janitor.——Gayville has been quarantined on account of the disease.

TENNESSEE.

Personal.—Dr. Plummer Haynes, Nashville, has located in Lynnville.——Dr. James K. P. Blackburn, Lynneville, has moved to Oklahoma City.

Smallpox is prevalent at Liberty, where several cases have developed and the public school has been closed; at Dresden, where three cases are reported; at Savannah, where there are six cases, and at Pittsburg Landing.

Anti-Cocain Crusade.—The Chattanooga authorities are making energetic efforts to put a stop to the illegal dispensing of cocain by druggists. The first-fruits appeared when, in the first case, the druggist was fined $25 for the offense.

Knoxville City Hospital.—The following became members of the staff of the new city hospital: Consulting—Drs. John M. Boyd, Michael Campbell, Chalmers Deaderick and John M. Kennedy; medicine—Drs. Benjamin D. Bosworth, William R. Cochrane, William Delpuech, Charles P. McNabb and David H. Williams; surgery—Drs. Benjamin B. Cates, Thomas Ap. R. Jones, Henry J. Kelso, Samuel R. Miller and Walter S. Nash; gynecology—Drs. James M. Black, James S. Garrard, Samuel M. Miller and Robert P. Oppenheimer; eye, ear, nose and throat—Drs. Claudius M. Capps, Charles H. Davis, John H. Kincard, and Benjamin F. Young; diseases of children—Dr. Ernest R. Zemp; dermatology—Drs. W. S. Austin and James F. Scott, Jr.; obstetrics—Dr. Samuel L. Jones; pathology—Dr. W. R. Lockett.

TEXAS.

Anti-Expectoration in Austin.—An ordinance has been introduced in the city council making expectoration on the sidewalk an offense punishable by a fine.

Medical Examiners' Meeting.—The next meeting of the Board of Medical Examiners for the State of Texas will be held at Waco, beginning on Tuesday, May 13, 1902.

Personal.—Dr. Herbert E. Stevenson, El Paso, has been appointed state quarantine officer at that point, vice Dr. Charles F. Norton, transferred.——Dr. Bruce Wallace, Houston, was thrown from his buggy, November 22, and seriously hurt.

The Boyd-Brumby controversy in Houston has been ended by the city council, which at its meeting, November 25, created the office of chief medical inspector and appointed Dr. Brumby thereto. Dr. Boyd still holds office as Health Officer.

Plague Quarantine Raised.—On November 18, following advices of Surgeon-General Wyman, United States Marine-Hos-

pital Service, State Health Officer Tabor raised the quarantine against Glasgow and Liverpool.

WASHINGTON.

Contagious Diseases.—Two cases of smallpox have developed at Farmington.——Colton has formed a board of health, which promises strict quarantine of all cases of smallpox in the town until the disease is stamped out.——The Dalles has an epidemic of diphtheria.

Personal.—Dr. Irwin A. Stiles, of the Northern Pacific steamship *Olympia*, has given up the sea and will locate in Tacoma or Seattle.——Dr. Dunlop Moore, U. S. Marine-Hospital Service, who has just returned from Alaska, has been ordered to the Philippine Islands.

Northern Pacific Training Nurses.—Chief Surgeon Courtney, of the Northern Pacific railway, has made a new departure by opening a training school for nurses in connection with the railway hospitals. Preference is given to daughters or female members of families of employes. The headquarters will be at Brainerd, Minn.

"Not Guilty, But Don't Do It Again."—A "doctor" of Spokane charged with practicing medicine without a license as required by the law of 1901, was found not guilty, the law was declared constitutional, and the defendant was warned that, should he practice without first having taken the required examination and procured a license, he would be prosecuted.

CANADA.

Surgeon-Captain Keenan has been presented with the Cross of the Distinguished Service Order, a decoration only eclipsed in value in so far as military decorations are concerned, by the Order of the Indian Empire. Dr. Keenan was the surgeon to the Strathcona Horse in South Africa.

Ottawa's Death Rate.—The total number of deaths in Ottawa for the past civic year, as shown by the Medical Health Officer's report, was 1273. The report shows a slight increase over last year, which totaled 1146. The largest number of deaths among adults was caused from tuberculosis, 125 in all. Next came pneumonia with 102; heart disease, 88; convulsions, 72; old age, 73; diphtheria, 65; scarlet fever, 52.

Toronto Orthopedic Hospital.—In the Third Annual Report of this hospital is shown that during the three years of its existence the receipts have arisen from $2,601.52 to $6,444.83 in the second year and $12,343.23 in the third year. So great have been the demands upon this hospital that a new site has been secured and improvements are now under way which will cost $30,000. When completed the new building will accommodate 60 patients.

A Dowieite Sentenced.—Eugene Brooks, an elder of Dowie's Christian Catholic Church in Zion, was, on November 27, found guilty and sentenced to three months' imprisonment without hard labor for aiding and abetting a man who was recently found guilty of manslaughter at Victoria, B. C., who had failed to provide his infant children suffering from diphtheria with proper medical attendance. The Appellate Court of British Columbia has determined that medical attention is a necessity of life.

Smallpox.—St. Michael's Hospital, Toronto, is under strict quarantine owing to a case of smallpox having inadvertently gained access to its wards.——Toronto has just opened a new smallpox hospital. It cost $5,000 and has accommodation for 25 patients.——In the Province of Quebec there are 81 places where smallpox has broken out, and in all there have been 340 cases. There are at present 32 cases in the Civic Hospital in Montreal. Four inspectors have been appointed in Montreal to watch all trains as they come into the city. In Quebec City 88 houses have been placarded since the beginning of the outbreak, and there are at present 23 placarded and quarantined.

Toronto Sick Children's Hospital.—The 26th annual report of this institution shows that since the foundation of the hospital 43,204 children have been treated and that 20,000 have been restored to full health. During the past year 770 were cared for in the indoor departments and 5500 in the outdoor departments. Of the indoor patients 530 were cured, an increase of 147 over 1900, while 154 were improved and 44 unimproved and 42 died, a decrease of six as compared with the previous year. Seven of these died within three hours of their admission, eight within six days, five within two weeks and twelve within the month. There is at present a deficit of $13,000 on this hospital.

A Toronto Judge on Hospital Fees.—One of the leading surgeons of Toronto recently sought to recover from a hospital patient the moderate fee of $30 for an operation for appendicitis. The judge decided in favor of the patient, thus delivering himself on the question of charging hospital patients any fee: "The public has a right to assume that the treatment is free. These institutions are supported by charity, donations, grants, etc., and therefore the presumption is, at least so far as the public wards are concerned, that all treatment is to be free. The right to pay depending upon the ability to pay is not recognized in law. If patients have to pay then it is not a public institution. Doctors on the staff can not recover unless they first notify the patient of the rules and regulations of the hospital."

FOREIGN.

Sir William MacCormac Dead.—A cablegram announces the death of this celebrated English surgeon, December 4. A full report will be given in next issue.

Plague in Russia.—Advices from Vienna state that the bubonic plague is alarmingly prevalent in many cities in Southern Russia.

Scientific Prizes at Budapest.—The Budapest Medical Society has conferred its endowed prizes this year on Hoegyes, Lenhossek and Schaffer for their work on internal medicine, anatomy and neurology. The prizes average 800 kronen.

Smallpox in London.—On November 30, there were 420 cases under treatment. Up to that date 116 persons had died of the disease and 233 had recovered. The exceedingly high mortality is due to the fact that London is the "worst undervaccinated city in the civilized world."

Vienna Medical Club.—This club was organized for social purposes exclusively, but it has now been transformed into a scientific society, the "Gesellschaft fuer innere Medizin," with three presiding officers of the three medical clinics of the university, Nothnagel, Neusser and von Schroetter.

Honors to Baccelli.—A committee has been formed at Rome to present Baccelli with a gold medal in token of appreciation of the great success of his endovenous injections of sublimate in arresting and curing foot and mouth disease in the southern countries of Europe. The government pays the expense of this treatment of cattle in Italy.

Semi-centennial of the Ophthalmoscope.—Helmholtz presented his ophthalmoscope to the Koenigsberg Medical Society Nov. 13, 1851. The semi-centennial anniversary was celebrated at Berlin by a collection of historical exhibit of ophthalmoscopes in the ophthalmic clinic at the Charité, besides numerous meetings, etc., devoted to the subject. About 120 specimens were collected from various countries.

Statues to Pasteur.—The little mountain town of Arbois was the home of Pasteur's youth and he always sought it on his vacations. The town recently unveiled a fine statue of its illustrious son. Paris is also erecting a statue to Pasteur to be surrounded by six groups, each sculptured out of a single block of marble, the pediment to consist of twenty-five such blocks. It was originally designed for the Medicis Place, but the proximity of the underground railway suggests the possibility that the foundations may not be strong enough for such a weight, and the statue will probably be erected in the Place de la Sorbonne. It is proposed to print Pasteur's life in pamphlet form and distribute it among the children of France as the most imperishable monument that could be offered him.

Deaths in the Profession Abroad.—The entire number of the last *Brazil-Medico* is devoted to eulogies of Professor F. de Castro of Buenos Ayres, who died November 11. The funeral procession included more than two thousand mourners, from the President of the republic of Brazil to weeping charity patients. De Castro's principal works were on heart disease, propædeutic medicine and sanitary subjects. His native city, Bahai, has ordered a memorial tablet to be placed on the house where he was born in 1857, and named the street from him.——The death of Professor S. E. Sosa is announced from Mexico, and also of Dr. F. Semeleder, who accompanied Maximilian to Mexico as his body physician, and settled there after

the emperor's death.——The professor of laryngology, Dr. E. de Rossi, recently died at Rome.

Nobel Prize for the Founder of the Red Cross.—The committee appointed by the Legislature of Sweden and Norway to confer the Nobel prize of $50,000 to be awarded to the person who has done the most to promote peace, passed over the apostles of arbitration and the writers and artists who have portrayed the horrors of war. The choice, we are told, wavered between Frederick Passu, the aged pioneer of the idea of universal peace, and Henri Dunant, the founder of the Red Cross, finally deciding upon the latter. Dunant was born at Geneva, Switzerland. He served as a volunteer assistant in the field hospitals during Napoleon's campaign in Italy, in 1859. Amidst the desolate scenes of the battle of Solferino he conceived the idea of an international organization to relieve the sufferings on the battle-field. He published a book, "Memories of Solferino," which was translated into many languages and prepared the soil for the germination of the idea of the Red Cross Society. He devoted all his energies and means to the realization of this ideal, and is now living in poverty in his old age. The prize endowed by the City of Moscow, to be awarded at the international medical congresses, was also bestowed on Dunant.

Correspondence.

The Enforcement of Medical Laws.

Lawrenceburg, Ky., Nov. 23, 1901.

To the Editor:—The editorial and original articles in the issue of The Journal of November 16, discussing the enforcement of medical laws, are worthy the attention and approbation of every member of the profession in America. As a Kentuckian, I appreciate the tribute you pay to the profession of Kentucky in its effective work in ridding the state of quacks. Individually, however, on account of my recent experience in dealing with a quack, I am not so enthusiastic and feel that my efforts in protecting the profession and the public will hardly be so "strenuous" in the future as they have been in the past. Your suggestion that "what is needed to enforce the medical laws is a well-organized state society with its branches ramifying into every county and with a paid attorney of its own, to act for the profession, independent of, or as an assistant to, the public prosecutors" is good as far as it goes, but I would go one step further and suggest that the state society create a fund by collecting a small annual assessment fee of its members not only for the purpose of paying its attorney but to meet the expenses of adverse judgments, damages, costs, etc., that may accrue from litigation.

As indicated by The Journal, and by Drs. Happel and Harison, the co-operation of the county and state societies is absolutely essential for the enforcement of medical laws. Individual effort counts for naught, besides incurring great annoyance, public opprobrium, loss of time and most probably the expense of defending a civil suit for damages by the quack who is instigated by some envious member of our profession, as the following personal experience forcibly illustrates:

In April, 1899, while passing the street, my attention was attracted by the "spiel" of a quack announcing the virtues of his remedies, consisting of an "electric belt," which he offered for sale, and bottles of a nostrum which he gave to each purchaser of a belt. This mere announcement you will note by referring to the laws regulating the practice of medicine in Kentucky clearly brought the quack within the jurisdiction of the medical practice act. It occurred to me to consult the prosecuting attorney and to learn if there was a legal way to dispose of this faker. After consulting the statutes he informed me that there was a way of instituting legal process, but refused to act unless I assumed all responsibility of the warrant causing his arrest; this I did. The quack was arrested and finally brought to trial; however, he was not incarcerated in the meantime but released on his own recognizance. A hung jury resulted from the first trial, and he was released on the second trial. However, his easy escape is easily accounted for by a most remarkable condition of affairs. Out of six local physicians three testified in favor of the quack, claiming, in their opinion, that he was not engaged in the practice of medicine within the meaning of the medical practice act. What is more remarkable still, one of the three physicians who testified favorably to the quack instigated him to bring a civil suit for damages against me for $5,000 and admitted under oath on the witness stand that he had been in communication with the quack relative to employing counsel for him. The mere fact that a physician had caused the arrest of the quack, especially when the latter was supported by one-half of the local physicans, was sufficient to prejudice the jury. The jury's verdict against me was $500 and costs and the trial judge, notwithstanding he admitted the verdict was a gross outrage, refused to set it aside. I appealed the case, but it was affirmed with damages. The judgment, damages, costs and attorney fees stand me out something more than $800. However, the State Society at its last meeting appointed a committee to aid me in the case, which collected by private subscription from the members $115. While this was duly appreciated I would have preferred it had come from the Society as a body. The State Society refused to appropriate any of its funds to aid the case. The State Board of Health could not afford aid, as it was in debt and it did not have sufficient appropriation from our liberal legislature to properly conduct its own affairs. Aside from the above assistance mentioned I have fought this quack alone and suffered the humiliation of having three out of six local physicians go on the witness stand against me. Henceforth, I propose to give quacks a wide berth, unless I can secure the co-operation of the county and state societies.

George E. Davis, M.D.

Bismuth Poisoning.

Philadelphia, Nov. 26, 1901.

To the Editor:—I was greatly interested in the Editorial entitled "Intoxication with Bismuth," published in the issue of The Journal for November 23. I have long been aware of the fact that bismuth applied to sore surfaces may exert a toxic and even a fatal effect. Several years ago there was a patient in the Woman's Hospital here with an extensive burn of one arm, over which bismuth subnitrate had been thickly dusted. The powder had united with the secretions of the ulcerated surface and formed a thick "cast" like that of plaster of Paris. The patient developed acute stomatitis characterized by great pain, tenderness and swelling, and broad bluish lines along the edges of the teeth and the inner borders of the lips. I have no record of the case, and can only state that the patient fell into a state of profound asthenia and died from what I regarded as bismuth poisoning. The United States Dispensatory (18th Ed., p. 275) states that the insoluble preparations of bismuth "when applied in large quantities to extensive wounded surfaces are capable of yielding so much bismuth by absorption as to produce a poisoning which is characterized by acute stomatitis, with a peculiar black discoloration of the mucous membrane, usually beginning upon the borders of the teeth, but spreading over the whole mouth, followed by an intestinal catarrh, with pain and diarrhea; in severe cases, desquamative nephritis, as shown by albuminous urine and epithelial tube casts, may also occur." Although the authority for this statement is not explicitly stated, it is evidently taken from Kocher, who wrote upon the subject in 1882, and who is quoted in the paper on bismuth poisoning by Dreesmann, upon which the editorial above referred to was based. Yours truly,

Frederick P. Henry, M.D.

Prescription Writing.

Vermillion, S. D., Nov. 25, 1901.

To the Editor:—The subject of "Prescription Writing," taken up by The Journal, is undoubtedly a timely one and I would suggest that the series of articles be reprinted and published in pamphlet form so they may be more convenient for reference.

For my part, I was fortunate enough to have some knowledge of Latin before studying medicine, but I find that things will easily slip the memory and I would take great pleasure in getting these timely articles in such a form that they could have a place on my desk.

No one who has ever looked over the prescriptions filed in the drugstores will doubt the necessity of a more thorough knowledge of prescription writing, as many of the prescriptions are a sight to behold!

With thanks to THE JOURNAL for its many and helpful hints, I am, yours fraternally, THOS. CRUICKSHANK, M.D.

Proposed Union of the N. Y. Associations and Societies.

NEW YORK CITY, Nov. 30, 1901.

To the Editor:—I noticed, in the last number of THE JOURNAL, a communication stating that the Medical Society of the County of New York has expressed a desire to effect a union of the Medical Society of the State of New York with the New York State Medical Association.

I believe that nothing will give greater pleasure to the members of the New York State Medical Association than to give the heartiest help in furthering the union of the whole profession in the State of New York. Yours sincerely,

E. ELIOT HARRIS.

Married.

ARTHUR M. BUTZOW, M.D., to Miss Mary A. Arens, both of Chicago, November 27.

JOHN R. TUTTLE, M.D., to Miss Zine Beouy, both of Wheeling, Ind., November 20.

HENRY C. MANARY, M.D., to Miss Mary E. Johnson, both of Lincoln, Neb., November 21.

JAMES BOZEMAN BAIRD, M.D., to Mrs. Annie Raine Mynatt, both of Atlanta, Ga., November 21.

DONALD M. CAMMANN, M.D., to Miss Sophie E. Spencer, both of New York City, November 26.

MILFORD J. WHITESIDE, M.D., to Miss Molly Mabel Harris, both of Rochester, N. Y., November 20.

JOHN M. CHILDERS, M.D., Wattensaw, Ark., to Miss Leona James, of Little Rock, Ark., November 21.

ARTHUR E. SWEATLAND, M.D., Shepherd, Mich., to Miss Rose L. Altenberg, of Little Rock, Ark., December 4.

ARTHUR R. ELLIOTT, M.D., Chicago, to Miss Hannah Salisbury Fisk, at Milwaukee, Wis., November 21.

JAMES MCFADDIN DICK, M.D., Salisbury, Md., to Miss Louise Upshur Sudler, at Fairmount, Md., November 20.

WILLIAM PEYTON TUCKER, M.D., Washington, D.C., to Miss Katherine Norman, of St. Joseph, Mo., November 20.

DAYTON JOSEPH LONG, M.D., Piedmont, W. Va., to Miss Mabel Helen Shook, of Westernport, Md., November 27.

FREDERICK ROWLAND MALONE, M.D., Greensboro, Caroline County, Md., to Miss Mattie Hughlett Maylor, at Trappe, Talbot County, Md., November 20.

Deaths and Obituaries.

James Polk Jackson, M.D. St. Louis Medical College, 1868, and College of Physicians and Surgeons, New York, 1873, died at his home in Kansas City, Mo., November 22, aged 56. He was a member of the American Medical Association. He established a hospital for employes of the Wabash and Missouri Pacific railways at Kansas City in 1881, and was continuously in the service of these and the Kansas City, Fort Scott and Memphis roads for many years. He filled the chair of surgery in University Medical College until 1899, when he was forced to withdraw from active teaching and became professor emeritus of that branch. The trustees of the college at a meeting held November 24, adopted the following resolutions: Whereas, It has pleased almighty God in His wisdom to remove from among us our brother in the midst of an eminent career; be it Resolved, That Dr. James Polk Jackson was a man who in his professional duties was ever faithful, conscientious, striving always to impart the latest known developments of medical science and in the most impressive manner; that our friend through his kind, sympathetic, self-respecting and reverent nature endeared himself to all who were so fortunate as to come within his influence. Resolved, That Kansas City has lost a citizen of noble type, whose heart's desire and efforts were for the uplifting of the city. Resolved, That we tender to the afflicted widow of our brother and to the immediate friends our heartfelt sympathy for the loss of one who ever held home as a sacred place and that these resolutions be embodied in the archives of the institution and a copy sent to the bereaved wife, to the daily press and to the medical journals.

Patrick S. O'Reilly, M.D. Washington University, St. Louis, 1861, died November 19, at Bay St. Louis, Miss., aged 57. He was the brother of the late Dr. Thomas O'Reilly, and was for years one of the best-known practitioners in St. Louis. He was a member of the American Medical Association. He had been ill for a long time, his illness dating from a Fourth of July accident, but the immediate cause of death was apoplexy.

John Hammond Lovatt, M.D. Sydenham College, Birmingham, England, 1861, died suddenly, aged 60, in Florence, Kan., November 23, where he had resided since 1887, two years after his arrival in America. In 1879 he was appointed a surgeon in the English army, and served for five years in India, Africa and Australia. In 1885 he was appointed a surgeon of the City Hospital at St. Louis, Mo., and served two years.

John C. Swaving, M.D. University of Giessen, Germany, 1849, a native of Vianen, Holland, but for 35 years a resident and esteemed practitioner of Pottsville, Pa., died at his home in that place, November 25, after a long illness, aged 79. At the outbreak of the Civil war he entered the Union service and served throughout the war. His service included a month's imprisonment in Libby Prison, Richmond, in 1865.

Elijah T. Collins, M.D. Medical College of Ohio, Cincinnati, 1840, died at his home in South Charleston, Ohio, October 23, aged 84. He was a native of Clark County and had practiced medicine for more than half a century. He was a member of the county and state medical societies. He leaves an estate valued at more than $100,000.

Peter Faling, M.D. Albany (N. Y.) Medical College, 1854, one of the best-known physicians in western New York, and a member of the New York State and Niagara County medical societies, was found dead in his office at his home in Gasport, November 23, aged 68. Death was probably due to an overdose of morphin.

Philo H. Banks, M.D. Jefferson Medical College, Philadelphia, died November 23 in a hospital at New Orleans, La., from typhoid fever contracted while in the employ of the British government's transport service between New Orleans and South Africa.

Thomas Langley Barnes, M.D. Missouri Medical College, St. Louis, 1851, a native of North Carolina, raised in Carthage, Ill., a veteran of the Blackhawk war, and a resident of California since 1854, died at his home in Ukiah, Cal., November 15, aged about 90.

Charles H. Hamilton, M.D. Bellevue Hospital Medical College, New York, 1869, president of the Board of Health of Newton, N. J., and town physician, died at Roosevelt Hospital, New York, November 19, two days after an operation for appendicitis, aged 54.

John J. Fanset, M.D. University of Minnesota, 1896, who immediately after graduation located in Milbank, S. Dak., died at his home in that city, November 16, from pulmonary tuberculosis, after an illness of eighteen months, aged 29.

Jefferson C. Cawood, M.D. Jefferson Medical College, Philadelphia, 1859, one of the best-known physicians of Tennessee, died suddenly at his home in Knoxville, Tenn., November 28, while going to dinner with a party of friends, aged 71.

Ebenezer S. Johnson, M.D. a prominent physician of Maine, died at his home in Farmington, November 21, from

heart failure following pneumonia, after a brief illness, aged 61. He had practiced in Farmington for 35 years.

Arthur W. Downing, M.D. Jefferson Medical College, Philadelphia, a prominent physician and citizen of Northampton County, Va., died at his home near Bridgetown, November 21, after a short illness, aged 86.

Richard E. Edes, M.D., late assistant surgeon U. S. Navy, A. B. Johns Hopkins University, Baltimore, and M. D. Harvard University Medical School, 1895, died at Jamaica Plain, Boston, Mass., November 25, aged 32.

J. W. F. Best, M.D. University of Maryland, Baltimore, 1858, an old practitioner of Anne Arundel County, Md., and a surgeon in the Confederate army, died at his home in South River, Md., November 16.

Thomas F. McLean, M.D. Queen's University and Royal College of Physicians and Surgeons, Kingston, Ontario, 1863, a practicing physician of Conant, Fla., died suddenly at Montreal, November 17.

Charles F. Paine, M.D. University of Pennsylvania, Philadelphia, 1866, an old and respected resident of Troy, Pa., died November 14, from paralysis while on his way home from Philadelphia, aged 53.

Robert F. Bullen, M.D. Rush Medical College, Chicago, who, soon after his graduation found business life more attractive than the practice of medicine, died November 14, from heart disease, aged 54.

Joseph C. Searborough, M.D. University of Michigan, Ann Arbor, 1898, died from pneumonia at his home in Prescott, Ariz., November 22, after an illness of three days, aged 29.

William George Wright, M.D. College of Physicans and Surgeons, N. Y., 1876, of Brooklyn, N. Y., was found asphyxiated from illuminating gas in his room, November 22.

William H. Snyder, M.D. Albany (N. Y.) Medical College, 1839, one of the oldest practitioners in New York State, died November 19, at the home of his son in Troy, aged 87.

William T. Witherington, M.D. Vanderbilt University, Nashville, Tenn., 1879, a practicing physician of Paragould, Tenn., died at a hospital in Memphis, November 18.

William R. Putney, M.D. University of Pennsylvania, Philadelphia, 1858, of New Canton, Buckingham County, Va., died suddenly November 21, at an advanced age.

Samuel I. Fox, M.,D. University of Nashville, Tenn., 1860, died recently at his home in Wills, Texas. He was a native of Kentucky, and formerly resided at Danville.

Edward Jones, M.D. Barnes Medical College, St. Louis, 1901, who had been in failing health for some time, died suddenly at Scottsdale, Texas, November 4.

Louis B. Pacetti, M.D. University of Maryland, Baltimore, 1873, died suddenly of Bright's disease, in Baltimore, November 20, aged 51.

Book Notices.

DISCIPLES OF ÆSCULAPIUS. By Sir Benjamin Ward Richardson, M.D., F.R.S. With a Life of the Author by His Daughter, Mrs. George Martin. In Two Volumes. Vols. I and II. With Portraits and Illustrations. Cloth. Pp. 424. Price, $8.00 net. New York: E. P. Dutton & Co. 1901.

This biographical work will be welcomed by all who love to learn of the old masters in medicine and surgery, and of the work they did. It is written by one who had the happy faculty of telling what he had to tell in a pleasant manner whether by voice or by pen. As a preface or introduction, is given a brief biographical sketch of the author, Sir Benjamin Ward Richardson, by his daughter. He was born in 1828 and entered Anderson's College, Glasgow, as a student in 1845, having among his fellow students one who afterwards gained renown as an African explorer, Dr. David Livingstone. During these student days he had the privilege of being one of the first in his country to witness the use of an anesthetic in a surgical operation. In 1854, after having practiced in various parts of England for short periods under different men, he moved to London. There he built up a large practice. "Sometimes I would see as many as 200 patients a day," he writes. He was one of the leaders among medical men in the cause of temperance and from his persistent labors in its behalf made not a few enemies. He was a great advocate of preventive medicine and with this in view established the *Sanitary Review and Journal of Public Health*, and later the *Social Science Review*. He was knighted in 1893 and died in 1897.

The two volumes contain the "Lives of 44 of the world's most famous physicians and surgeons; those who laid the foundation of medicine. Here is the list: William Harvey; John Keats, an Æsculapian poet; William Gilbert, Thomas Wakley, Benjamin Rush, Andreas Vesalius, Herman Boerhaave, Antony Van Leeuwenhoek, William Cheselden, Antonio Scarpa, Richard Wiseman, Ambrose Paré, John Mayow, John Arbuthnott, John Snow, John Brown, Richard Mead, John Baptist Morgagni, René Théophile Hyacinthe Laennec, William Hunter, Joseph Priestley, John Freind, Edward Jenner, Sir Francis Bacon as a Master of Physic, Alexander Monroe, William Cullen, Joseph Black, Benjamin Bell, John Hunter, William Hewson, Matthew Bailie, John Moore, Thomas Willis, Sir Kenelme Digby, Sir Thomas Browne, Thomas Sydenham, Erasmus Darwin, John Locke, Robert Boyle, Marcellus Malpighi, John Howard, William Alexander Greenhill, John Abernethy, and Thomas Young.

Some of these can hardly be classed among physicians and surgeons. While he studied medicine and was looking forward to a medical career until a little while before he died, John Keats can hardly be classed as a "Disciple of Æsculapius." Leeuwenhoek was not a physician, being noted mostly for the making of lenses and microscopes. His discovery of the capillary circulation, however, entitles him to a place among the "Disciples;" and so with several others who were not physicians, such as Joseph Priestley, etc.

Our Benjamin Rush is called the "American Sydenham," "a great as well as a conspicuous character, worthy of his time, and one of the elect of history." The author recognizes him as being a man of many-sided greatness, of high moral character, a true patriot, an orator, a philanthropist, reformer, molder of thought and a great physician. The views expressed of Rush are such as to please the most ardent admirer of the great patriot physician and show that the author fully appreciated the man and his work. The sketch of the founder of *The Lancet* is a notable tribute to a great medical reformer. During the first few years of Richardson's life in London, Wakley and he were great friends, but later with the former's connection with the *Medical Times and Gazette* there was not the same cordial feeling as before, although the two were still friends. The analysis of "Religio Medici" in the biography of its author, the erratic but versatile genius, Sir Thomas Browne, should be read by all who are interested in that peculiar book.

These biographies or lives are, as a rule, complete and contain all that is known of the subjects. Some are but brief sketches, but all contain analyses of their work and its influence on medical knowledge and medical thought. As viewed by Sir Benjamin Ward Richardson they will be found to be not only intensely interesting, but instructive also, as with two or three exceptions each of these biographies calls attention to some fact in the history of the development of our science. In fact, the history of the lives of a few dozen men, such as those in this book, is a history of medicine up to 50 to 75 years ago, Mundinus, Versalius, Harvey, and Morgagni for instance. What a rich harvest has resulted from the seed which their labors produced! The two volumes make a noble monument to one of the noblest among the disciples of Æsculapius of the nineteenth century.

AN AMERICAN TEXT-BOOK OF PATHOLOGY, for the Use of Students and Practitioners of Medicine and Surgery. Edited by Ludvig Hektoen, M.D., Professor of Pathology in Rush Medical College in Affiliation with the University of Chicago; and David Riesman, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic; Instructor in Clinical Medicine, University of Pennsylvania. With 443 Illustrations, 66 of them in Color. Pages, 1245. Price, $7.50. Philadelphia and London: W. B. Saunders & Company, 1901.

The Chairman of the Section on Pathology and Bacteriology of the American Medical Association in his address at St. Paul, which address appeared in our issue of November 30,

used the following words: "The possibilities for careers in pathology and bacteriology in this country are rapidly equaling in opportunity and reward those of older countries and of other sciences in this country." The present volume is an evidence of the truth of this statement, for it shows that not a few Americans have not only chosen for themselves these careers but that they are utilizing the opportunites offered and are already making for themselves the reputation that is no small part of the reward that comes to laborers in science. Many of the collaborators are men who are devoting their entire time to the teaching of pathology and to investigations in this field and whose work is already well known. We may truly call this book American. For while, as a matter of course, a large part of the facts here recorded are obtained from non-American sources, chiefly German, it is a pleasure to note the numerous references to the original work of Americans. No book with which we are acquainted gives such a good idea of what has been done in America along pathological and bacteriological lines as this one. Heretofore a cause of no little annoyance to the honest worker has been the indifference of the continental writers to the American product, which has too often been entirely unnoticed or damned by the terse comment: "nichts neues." There is also a feeling of interest as one looks at the illustrations and finds that they are for the most part original—again an American flavor—and not the time-honored reprints whose features are so familiar.

A rather strange subdivision is that of Diseases of the Breast. We do not question Dr. Warren's ability to handle this topic or the way in which he has treated it, but where the assignment of topics is by systems rather than by separate organs it is a little out of place to make a separate chapter of twelve pages on Diseases of the Breast.

The book would be much handier if in two volumes. The one volume which with its index and advertisements contains nearly 1300 pages is too bulky.

We do not hesitate to pronounce this one of the best, if not the best, text-books on pathology and our wish would be that as it goes through succeeding editions the number of collaborators might grow smaller and that more and more of the work might be done by the capable editors or at least by a smaller corps of assistants, giving to the book greater unity and uniformity of excellence.

Pediatrics. The Hygienic and Medical Treatment of Children. By Thomas Morgan Rotch, M.D., Professor of the Diseases of Children, Harvard University. Third Edition, Rearranged and Rewritten. Illustrated by Numerous Engravings in the Text and by Colored Plates. Cloth. Pp. 1021. Price, $6.00. Philadelphia and London: J. B. Lippincott Co. 1901.

There is no branch of the practice of medicine of more importance than that which pertains to the management of children and the diseases to which they are subject. The physician who makes himself master of pediatrics will have a knowledge that will reach the heart, and assist him in obtaining the confidence of the most important member of the average family—the mother—and thus be the greatest aid in successfully establishing himself in the opinions of those who can make or mar his success. This is realized by every practitioner after a few years' practice—but often too late. The work before us is one that is a pleasure to recommend to those who desire a book to aid them in obtaining this knowledge. It is scientific, it is practical and will be found as helpful to the "busy practitioner" as to the student.

While the title page indicates that this is a third edition, yet it is practically a new book. The order in which the subjects were treated in former editions has been changed and much of the matter practically re-written, not a little being entirely new. Pediatrics has kept pace with the rapid advances made by other branches of the medical sciences, and this book represents this advanced knowledge. It is much more thoroughly illustrated than were the former editions, the illustrations not only being excellent ones but of remarkably practical value. Many are in colors. There is no padding and, while concisely written, clearness of expression has not been sacrificed to brevity.

Much attention is given to the anatomy and physiology of early life in the first division, which is devoted to normal development. The author's method of dealing with the subject of infant feeding—the most practical and important subject connected with pediatrics—is deserving of high commendation. The various tables for the preparation of foods, modification, sterilization, etc., of milk will be found most helpful. The paragraphs on Artificial Foods should be read by every physician in general practice, especially those who are in the habit of recommending the ready-made foods. The consideration of the diagnosis, the pathology and the treatment of the various diseases of children are in accordance and in harmony with the latest scientific methods and practice. The book is worthy of the highest commendation as a practical and scientific work in the management of children in health and disease.

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, Other Than Drug-giving, Useful in the Treatment of the Sick. Edited by Solomon Solis-Cohen, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic. Volume I. Electrotherapy. By George W. Jacoby, M.D., Consulting Neurologist to the German Hospital, New York City. In two Books. Book I, Electrophysics—Apparatus Required for the Therapeutic and Diagnostic Use of Electricity. With 163 Illustrations. Cloth. Pp. 242. Book II, Diagnosis; Therapeutics. Illustrated. Cloth. Pp. 323. Eleven volumes. Price, $22 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This system treats of the methods to be employed in the treatment of the sick, other than by the administration of drugs. The first two volumes by Dr. George W. Jacoby, of New York, are devoted to electrotherapy. The first volume enters into the discussion of electrophysics and apparatus. The value of this volume is very much enhanced by illustrations, which serve to aid the student and the general practitioner in grasping the mechanism of the different kind of batteries, etc., although there are quite a number of useless illustrations. The second volume is devoted more especially to electrotherapeutics and contains several well-written articles on electrodiagnosis and on the treatment of many diseases as well as on the use of the current in cautery work. Skiagraphy and the Roentgen ray receive the proper attention in the first volume. There has probably never before been published so practical a work upon this subject of electricity, which at the same time is concise and complete. Dr. Jacoby deserves credit for the work contained in the first two volumes of this series.

Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S., Fellow of the Royal College of Surgeons. Edited by T. Pickering Pick, F.R.C.S., Consulting Surgeon to St. George's Hospital; and Robert Howden, M.A., M.D., C.M., Professor of Anatomy in the University of Durham. A Revised American, from the Fifteenth English Edition. With 780 Illustrations, Many of Which Are New. Cloth. Pp. 1257. Price, $5.50 net. Philadelphia and New York: Lea Brothers & Co. 1901.

This new century edition of "Gray's Anatomy" looks almost like a different book when compared with the older ones. It has been thoroughly revised, and about 60 new illustrations added, replacing some of the old wood-cuts. The newer processes of picture-making have enabled the publishers to produce differences in shading to represent curves, cavities and portions more remote, which art is an excellent aid in descriptive anatomy.

A Manual of the Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P., Senior Physician to, and Lecturer on Medicine at Guy's Hospital. Cloth. Pp. 1028. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This book has not been received as well in this country as it deserves, but the fact that six editions have been called for shows that it has been quite popular in England. There is no attempt to cover the subjects treated in an exhaustive manner, but rather to give a short yet practical account of all the medical diseases encountered by the general practitioner. Several of the chapters have been rewritten for this editon and much new matter added, making the work accord with the present-day knowledge.

A Compend of Human Physiology Especially Adapted for the Use of Medical Students. By Albert P. Brubaker, A.M., M.D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College. Tenth Edition, Revised and Enlarged. With Illustrations and a Table of Physiologic Constants. Cloth. Pp. 270. Price, $0.80. Philadelphia: P. Blakiston's Son & Co. 1900.

The high number of editions which this compend has gone through may be regarded as an index of the amount of information it contains. In this edition the author has revised various portions of the text and added new paragraphs.

Miscellany.

San Francisco Plague Report.

CASE 48.—Chinese, male, 37 years of age, residing at 809 Stockton St., was seen, October 19, by Dr. White, M.-H. S., City Bacteriologist Dr. Kellog, Dr. Ryfkogel and Dr. Evans. The man gave a history of being ill one week with prostration and a swelling, which was very evident on the left side of his neck. Temperature 102.5 F. at time of examination. A clinical diagnosis of plague was concurred in by the physicians present. Blood secured from an ear puncture showed the presence of numerous bipolar bacilli. The man died shortly after and an autopsy revealed general plague septicemia with enlargement of the glands on the left side of the neck; the surrounding edema was extensive, extending even to the larynx and glottis. Intestines were almost completely covered with the omentum, which was poor in fat. Appendix was normal; no fluid in cavity. Liver was visible about 1½ inches below costal border. Diaphragm attachments were on left fifth interspace; right, same. Lungs nearly met in median line; pericardial sac contained about 25 c.c. of slightly turbid fluid. Both lungs adherent at apex, no increase of fluid in pleuræ. Surface of heart was covered with fat, veins moderately dilated; the branch separating the ventricle showed numerous small hemorrhages. The right ventricle and auricle contained fluid blood. Walls of left ventricle were thicker than normal, of a dark red color and very firm. Endocardium of left heart was smooth and transparent and no thickening. A few small plaques were in aorta just above valve and near coronary opening, but they were too small to be of any consequence. Valves of heart were normal. The left lung was large and firm; pitted on pressure; crepitated freely throughout; surface was pinkish-brown color. Cut surface was poor in blood; pressure caused slight amount of blood, some serum and much air to exude. Right lung was same as left. Capsule of spleen was smooth, of a bluish slate color, showing irregular areas of capsular thickening and numerous sub-capsular nodules; organ enlarged nearly double, very soft. Cut surface was brownish-red in color, rich in blood, pulp bulging. Liver about normal in size; lower border rounded, surface smooth and glistening, color a dark-red interspersed with irregular small areas of light yellow; organ firm in consistency, cut easily without grating, cut surface rich in blood, normal except for some congestion. Fibrous capsule of left kidney stripped easily, exposing a light-red surface showing a few stellate veins; cut surface rich in blood; contrast between cortex and pyramids well preserved. Intestines were not distended, vessels of omentum dilated, mesenteric glands not enlarged. Peritoneum was normal. Stomach was normal in size; vessels of outer surface dilated. Mucosa was very much injected and hemorrhagic, in places covered with a mixture of mucus and blood. Trachea and larynx were removed en masse, also esophagus; trachea and larynx were very edematous; the larynx showed several hemorrhagic areas. Smears from the neck glands and spleen showed the plague bacillus in large numbers. Animals inoculated with emulsions of the glands and spleen died of typical plague infection.

CASE 49.—Chin Feu, Chinese, male, seen October 22 by Drs. White and Curry, M.-H. S., and City Bacteriologist Dr. Kellog, at the old Palace Hotel on Jackson Street (Chinatown). He had some trouble of the left hip-joint resembling tubercular disease and also some dulness at the apices of both lungs. He had a temperature of 101 F. and a very painful bubo in the left femoral region; pulse 120 and compressible. A clinical diagnosis of plague was made and the case seen several times afterwards. On one of these occasions, October 23, Dr. Ryfkogel made a blood count, finding a leucocytosis of 17,000. The highest temperature range in this case observed was 102.5 F.; the temperature gradually dropped, the man's health and strength improved, and the bubo gradually disappeared by resolution without signs of suppuration and he was discharged from quarantine on November 4.

CASE 50.—Fong Shing, Chinese, male, aged 35 years, died at Waverly Place and Clay Street, Oct. 30, 1901. Autopsy revealed body of a well-developed, well-nourished Chinese male. Ocular and buccal mucosa injected; cervical, epitrochlear, popliteal, left inguino-femoral and axillary glands not enlarged. The glands of the right femoral region were very much enlarged and the swelling was covered with a black tarry ointment. Over the lower chest and abdomen was a discrete, impalpable, fairly numerous petechial eruption varying in size from a pin-point to a pin-head, the larger being less distinct than the smaller and apparently older and constituting about 40 per cent. of the entire eruption. Sections of some of these petechiæ showed sharply-defined hemorrhages without surrounding edema or induration or dermal elevation or insect puncture of the skin. The heart was 11 cm. from base to apex and 9.5 cm. transversely. Epicardium of right posterior surface showed 15 to 20 small hemorrhages. Left ventricle distended by firm dark blood-clot. Two old nodules were on free border of mitral valve; heart muscle showed a distinct myositis; heart otherwise normal. Left lung was somewhat adherent to chest wall; apex showed an area about 2 cm. in diameter of caseous tubercle. Otherwise the lung crepitated throughout and contained no cavities, but was edematous. The right lung was tubercular in upper lobe and showed in one place a soft caseous tubercle about 3 cm. in diameter. Elsewhere the lung crepitated and showed no tubercular infection. Intestines were injected. The lower 1½ ft. of the ileum showed enlarged solitary follicles and a hemorrhagic mucosa; Peyer's patches were not involved. The spleen measured 16x7x3.25 cm. Trabeculæ and Malpighian bodies were distinct; pulp not bulging; consistency very friable. Stomach contained about 250 c.c. of dark yellowish-brown fluid and some solid vegetable matter. Liver measured 7x10x24 cm. Surface was smooth; there were four sub-capsular yellowish areas 3 to 5 cm. in diameter and 1 cm. thick, which on section were shown to be necrotic. Section of the liver showed some cloudy swelling. No abscesses or nodules. Gall-bladder normal. Right kidney was surrounded anteriorly and posteriorly by a well-marked hemorrhagico-gelatinous edema, most marked posteriorly. The kidney measured 9x5x3.5 cm. Capsule was slightly adherent but stripped without loss of cortical substance; cortex at thinnest part measured 0.5 cm.; vessels injected, pyramids dark, and vessels stood out prominently. The pelvis of the kidney had a few surface cysts, no hemorrhages, otherwise same as right. Both suprarenals were normal. Incision over the right inguinal and femoral regions showed a hemorrhagic and gelatinous peri-glandular infiltration, with enlargement of the lymph glands, which was most marked in the femoral region. The largest gland measured 3x1 cm. The cortex of this gland showed a few distinct hemorrhages. The sheath of the femoral vessels and the intermuscular fascia were hemorrhagic in numerous small areas. The right iliac and lumbar glands were distinctly enlarged and decidedly hemorrhagic. The abdominal hemorrhagic condition extended up about the diaphragm and over the spinal column. The bladder mucosa was injected about the neck, the urethral mucosa showed a small amount of some matter resembling an admixture of pus and semen. The fossa navicularis had four small ulcers. The epididymis and the testicles on both sides seemed free of any venereal disease. Stained smears from the bubo and the blood showed numerous characteristic bipolar bacilli. Anatomic diagnosis: bubo-septicemic plague, tuberculosis and gonorrhea. Animals inoculated with glandular tissue from the bubo died of typical plague infection.

CASE 51.—Mar Hea, Chinese, male, aged 35 years, barber by occupation. Died Nov. 4, 1901, at 22½ Waverly Place. The autopsy revealed the body of a Chinese male, of middle age. Pupils moderately contracted, rigor mortis slight. Two or three spots simulating subcutaneous hemorrhages about the neck and one on the anterior superior spine of the ileum, left (probably counter-irritation marks). Fat of abdominal wall was scanty; muscles dry. Omentum covered intestines, very poor in fat. Appendix was normal. No fluid was in abdominal cavity. Heart muscle was very soft, cut easily, showed

beginning fatty degeneration. Aorta contained several small plaques. Valves were normal. Left lung was rather small, of a mottled red and dark appearance, crepitated throughout, but was more resistant than normal. Pleura had not lost its luster, cut surface of lung moderately rich in blood, pressure caused air, blood and serum to exude. Right lung was same as left, except for a small tubercular scar in upper lobe and one small broken-down tubercle. Spleen was very friable; enlarged about one-third, surface of a bluish-red color and showed indistinct subcapsular nodules. Capsule very tense, organ very soft and cut easily, and presented marked appearance of septic infection. Left kidney capsule stripped easily, exposing a smooth reddish-yellow surface in which the venæ stellatæ were quite prominent. Cut surface was rich in blood; cortex normal in breadth. Contrast between cortex and pyramids had disappeared. Right kidney was same as left. Liver was rather small, firm in consistency; capsule glistening; cut easily and cut surface rich in blood; it showed areas of indistinct structural appearance, beginning degeneration. The intestines were injected. There was no enlargement of the lymph nodes in any region. Stained smears from the spleen showed myriads of pest bacilli. Anatomic diagnosis: Fatty degeneration of the myocardium; acute nephritis; small tubercle of left lung; acute septic spleen due to plague infection. Animals inoculated from the spleen died promptly of typical plague infection.

Burlesque Number of a Medical Journal.—The burlesque number issued by the *Muenchner Med. Wochenschrift* in honor of the anniversary of the Munich Medical Association, founded sixty-eight years ago, is just received. The make-up of the journal is the same as usual, except that the word "without" is inserted before the list of distinguished names which always adorns its cover as having promised their co-operation, and "entirely unsuited for" before the sub-head, "the General Practitioner's Organ." The advertisements include one for a resident physician for a watering place; "sole duties to say good morning to the resorters individually and sign the reports issued by the managers." A woman doctor advertises for a young colleague as assistant in cases requiring muscular strength, especially obstetric cases. The news column mentions the new titles of "Vaginalrath" and "Geheimerintestinalrath," similar to the present titles of "Sanitätsrath," etc. It is also stated that one of the Nobel prizes has been bestowed upon Professor Winer, of Giessen, for his discovery that the sensation of hunger is due to a rhythmic vibration of the stomach walls, and that these vibrations can be arrested by paralyzing the walls by the local application of his ventriculograph. This abolishes the sensation of hunger, and the organism, by a sort of auto-suggestion, feels itself satisfied and ready for physical exertion. Stations are to be established in the poorer quarters for free treatment with the ventriculograph, and it is expected to solve the social problem. A letter from an old physician, a thoroughly trained classical scholar, expresses approval of the new official regulations admitting to the medical course without a classical training. He candidly admits that the hours spent over the classics are wasted. Of what possible use to a general practitioner, he asks, is a knowledge of Greek and Latin, history or higher mathematics. He can learn by rote a few terms to impress patients with, and that is sufficient. The classics contain nothing of especial interest for the physician; Æsculapius and Galen are not used as text-books. He never finds equal-sided triangles in the human body; the extraction of square and cube roots he leaves to the dentist. Modern languages might occasionally be useful to a physician trying to practise in a large city, but even then he has to depend on the interpreters at the hotels to steer the patients to his office. The student should enter upon the medical course with his head entirely empty, allowing room for the accumulatiaon of medical lore, instead of its being crowded with useless rubbish as according to the present methods. The "practical year" now exacted of every student in Germany, should precede instead of following the medical course. The student would then be able to ascertain exactly what knowledge he would need in his practice and thus be able to study only those things which will be of use to him.

Connection Between General Paralysis and Syphilis.—Under the heading "Nosologic Proof of the Causal Relations Between Syphilis and Progressive Paralysis," Muratoff reports in *Russky Archiv Patalogie*, xii, 1, a case in which the incipient symptoms of progressive paralysis appeared simultaneously with tertiary syphilitic manifestations in the spinal cord, cortex and ventricles. Parasyphilitic symptoms were also observed.

Osteopathy Treatment.—What is the kernel of therapeutic truth in osteopathy? Simply that the more or less judicious movements of diseased parts cure such parts. This fact is demonstrated by the position of the Ling system in Swedish medicine, by the cures wrought among us by the imported masseurs and their imitative rubbers, and by the great popularity of osteopathy among the laity. What is the harm of it? The harm of it is its indiscriminate application as a "cure-all"—a system of cure—by its enthusiastic but poorly educated leaders. What is the profession doing to reclaim this lost territory to its own? With us the little done is left to the untrained or the imported. Nothing is done to popularize the method, and this remedy of undoubted therapeutic value is wholly neglected in our smaller communities. The time is ripe for a well-officered and well-equipped school of massage and physical culture.—N. W. *Lancet*.

Antisepsis versus Asepsis.—Lucas-Championnière, president of the French Association of Surgery, in his address at the meeting in October, deplored the too general neglect of antisepsis for the less reliable asepsis. His conclusions are the following: 1. Moderation in the use of antiseptics in the surgery of the abdominal viscera; in the intestine, stomach and kidney, antiseptics are less useful and more injurious than in other operations. 2. Antiseptics should be used in all laparotomies where there is the least apparent presence of sepsis. 3. For all operations outside of the abdomen, antiseptic surgery is the only certain procedure. 4. In hospital work, antiseptic surgery remains the only method which gives sufficient guarantee of definite security in all operations. He adds: "As for myself, the use of carbolic acid, hydrogen peroxid, and in a small measure, iodoform appear to answer the chemical desiderata."

International Congress of Life Insurance Examiners at Amsterdam.—Among the communications presented we note that Weill-Manton would postpone every candidate for life insurance with an existing focus of tenderness in the region of the appendix or a previous history of the kind, who has not been operated. An operation removes the obstacle to acceptance, after an interval varying according as the operation was performed "hot" or "cold." Burger would exclude all cases of purulent chronic otitis of the middle ear when complicated by inflammation of the attic or antrum, when it is tuberculous or cholesteatomatous or accompanied by a lesion of the bone, facial paralysis, vertigo or cephalalgia. All other varieties can be accepted as extra hazardous risks. Acceptance should be postponed until after recovery from acute otitis. Bilateral deafness, severe auricular vertigo and also permanent perforation of the tympanum require an increased rate. Crocq proclaimed that the absolute extinction of the knee-jerk should exclude the candidate, and its partial abolition should entail more careful scrutiny of the other functions of the nervous system. If exaggerated, the candidate should be refused if evidences of an organic lesion can be discovered. If merely a functional neurosis exists, the prognosis varies with the individual case. Insurance should be refused in case of the abolition or pronounced weakening of the pupil reflexes, Argyll-Robertson's sign and inequality of the pupil, Babinsky's sign and a tendency to clonic contraction on the part of the tendons. Moritz and Poels would reject all applicants in the early stage of arteriosclerosis. The insurance should be limited to a certain age in case of established arteriosclerosis, and the candidate refused if the heart shows signs of weakness. In case of heart disease, long survival is possible in case of perfect compensation that has lasted for five years at least, with the heart affection latent during this period. Compensation is more liable to be permanent in case of insufficiency than in case of

stenosis. The prognosis of aortic lesions is more favorable than of mitral and pulmonary and of lesions of the pericardium than of the endocardium and pericardium. After 50 years of age the candidate should be rejected. Stokvis excludes persons with a renal affection, but does not consider extrarenal albuminuria a contraindication. He noted an extrarenal cause in 60 per cent. of 21 candidates exhibiting albuminuria. Statistics show that the mortality from affections of the bladder or prostate is only 1.5 per cent. of the general mortality, and six-sevenths of these deaths occur after 60. In determining the existence of a renal lesion, permanent albuminuria is less significant than the concomitant symptoms, hypertrophy or dilatation of the heart, polyuria, pollakiuria, etc. In functional albuminuria of cardiac origin, the condition of the heart is the principal element in the decision. Periodical functional albuminuria is no contraindication to acceptance. Siredey definitely rejects all diabetics under 35. After this age if the general appearance is good, all the organs sound, with the apices normal, and the candidate does not live in contact with consumptives, he can be accepted with an increased premium. In case of nervous diabetes, resulting from emotions, trauma, over-exertion, excesses, the age and general appearance are less reliable for the prognosis. Candidates of this category should be postponed for six months and not accepted unless a later examination is more favorable.

Should Students in the Upper Grades Be Enlightened in Regard to the Dangers of Venereal Diseases?—This subject has been under discussion in the newly-organized French Society of Moral and Sanitary Prophylaxis. Fournier, in an article in the *Gaz. Hebd.*, No. 20, strongly advocates the necessity of special instruction in this line. The age between 16 and 19 affords a large percentage of all cases of venereal diseases, and youth should be enlightened in regard to their dangers. This instruction could be imparted without offense to morality by one of the teachers or by a physician, and all the scholars over 16 in educational institutions should be thus enlightened.

Societies.

COMING MEETINGS.

Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Harrisburg (Pa.) Academy of Medicine.—The sixth anniversary of the Academy was held, November 22. The orator of the evening was Dr. William Osler, Johns Hopkins University, Baltimore, who spoke on "Pulmonary Tuberculosis."

Tri-County Medical Society of Montery, Santa Cruz and San Benito Counties (Cal.).—A meeting of physicians was held at Salinas, November 20, for the purpose of forming a tri-county organization. Dr. Edward C. Thomas, Salinas, was elected temporary chairman, and Dr. Pope, Watsonville, temporary secretary.

Medical Association of Hawaii.—The meeting of this Association was held at Honolulu, November 4, when the following officers were re-elected: Dr. W. E. Taylor, president; Dr. H. C. Sloggett, vice-president; Dr. A. Gorgon Hodgins, secretary and treasurer, and Drs. Robert P. Meyers and Charles B. Cooper, executive committee.

Petersburg (Va.) Medical Faculty.—The annual meeting and banquet of this organization was held November 22. Dr. Daniel W. Lassiter was elected president; Dr. Frank W. Hains, first vice-president; Dr. William Shippen, second vice-president; Dr. Robert D. Mellwaine, corresponding secretary, and Dr. Joseph D. Osborne, recording secretary.

Mahaska County (Iowa) Medical Society.—The organization of this Society was perfected at Oskaloosa, November 20, by the adoption of a constitution and by-laws, and the election of the following officers: David A. Hoffman, president; Dr. Joseph T. Coveny, vice-president; Dr. Lewis A. Rodgers, secretary, and Dr. Samuel W. Clark, treasurer, all of Oskaloosa.

Inter-Urban (West Superior, Wis., and Duluth, Minn.) Medical Association.—The annual banquet and meeting of this body was held at West Superior, Wis., November 20. Dr. William E. Ground, West Superior, was elected president; Dr. Alfred E. Walker, Duluth, vice-president; Dr. Patrick G. McGill, West Superior, secretary and treasurer, and Dr. George H. Conklin, West Superior, censor.

Middle Tennessee Medical Society.—The fifteenth semi-annual convention of this Society was held in Fayetteville, November 21 and 22. Dr. George W. Moody, Shelbyville, was elected president; Dr. Leonidas L. Sheddan, Williamsport, vice-president, and Dr. Frank B. Reager, Shelbyville, secretary and treasurer. A proposed amendment to the constitution that the Society be made a branch of the Tennessee Medical Association was postponed. The next meeting will be held in Lewisburg.

Western Surgical and Gynecological Association.—The twenty-first annual meeting of this Association will be held at the Great Northern Hotel, Chicago, on Wednesday and Thursday, December 18 and 19, 1901. The following papers will be presented:

An Old Shoulder Luxation, with Report of a Case; Illustrated. J. Rudis-Jicinsky, Cedar Rapids, Iowa.

The Operative Relief of Impaired Function of the Elbow-Joint Due to Epiphyseal Displacement. G. G. Cottam, Rock Rapids, Iowa.

Complete Dislocation of the Astragalus, with Presentation of a Case. Wm. Jepson, Sioux City, Iowa.

Some Internal Injuries of the Knee-Joint. M. L. Harris, Chicago, Ill.

Treatment of Dislocation of Clavicle Through Open Wound. J. E. Moore, Minneapolis, Minn.

Etiological Factors in Production of Tumors. Geo. Halley, Kansas City, Mo.

A Consideration of the Different Surgical Procedures in the Removal of the Fibro-myoma of the Uterus. Joseph Eastman, Indianapolis, Ind.

Myomectomy: Its Place in the Treatment of Fibro-myoma of the Uterus. O. Beverly Campbell, Chicago, Ill.

Management of Fibro-myoma of the Uterus Complicated with Pregnancy. Miles F. Porter, Ft. Wayne, Ind.

The Present Status of the Electrical Treatment of Fibro-myoma of the Uterus. Franklin H. Martin, Chicago, Ill.

Two Cases of Cysts of the Broad Ligament Complicated with Myxoma. Edw. Hornibrook, Cherokee, Iowa.

Diffuse Sarcoma of the Uterus. D. S. Fairchild, Clinton, Iowa.

The Misleading Significance of Ovarian Pain. C. Lester Hall, Kansas City, Mo.

The Use of the Gall-Bladder as a Suspensory Ligament for a Prolapsed Liver. A. F. Jonas, Omaha, Neb.

Heart Suture. B. Merrill Ricketts, Cincinnati, Ohio.

A Simple Method of Extension in Fracture of the Metacarpal Bones, and Oblique Fracture, Simple or Compound, of the Forearm. W. W. Grant, Denver, Colo.

Some Observations Made in Europe. J. P. Lord, Omaha, Neb.

SYMPOSIUM ON PROSTATECTOMY.

(*a*) A General Review of the Subject, with Special Reference to Total Extirpation of the Gland Through a Median Incision in the Perineum. Alex. Hugh Ferguson, Chicago, Ill.

(*b*) Symptoms, Signs, Diagnosis, Prognosis and Palliative Treatment: (*a*) Massage; (*b*) Aspiration; (*c*) Catheterization; (*d*) Dilatation, and (*e*) Cystotomy. Lewis Schooler, Des Moines, Iowa.

(*c*) The Etiology and Pathology of Prostatic Hypertrophy and Suprapubic Drainage as a Method of Treatment. A. C. Bernays, St. Louis, Mo.

(*d*) Suprapubic Prostatectomy. C. H. Mayo, Rochester, Minn.

(*e*) The Indications and Limitations of the Bottini Operation. Louis E. Schmidt, Chicago, Ill.

The Operation of Selection in Retroversion of the Uterus. J. Clarence Webster, Chicago, Ill.

Hemostasis of the Broad Ligament. Henry P. Newman, Chicago, Ill.

Septicemia and Its Treatment. J. W. Macdonald, Minneapolis, Minn.

How Shall We Treat Sepsis Following Labor and Abortion? W. O. Henry, Omaha, Neb.

Non-malignant Neoplasms of the Larynx, with Report of Cases. J. B. Murphy, Chicago, Ill.

Stricture of the Esophagus. B. B. Davis, Omaha, Neb.

Intestinal Obstruction from Meckel's Diverticulum, with Report of a Case. A. E. Halstead, Chicago, Ill.

Personal Experience with Contused, Gunshot and Stab Wounds of the Abdomen. J. E. Summers, Jr., Omaha, Neb.

Traumatic Perforation of Intestines Without Injury to Abdominal Walls, with Exhibition of Specimen. R. Harvey Reed, Rock Springs, Wyo.

The Immediate Effects of Intestinal Exposure. A. W. Abbott, Minneapolis, Minn.

Case Reports.—(*a*) Fibroma of the Abdominal Wall; (*b*), Double Vagina and Uterus. C. E. Ruth, Keokuk, Iowa.

Some Clinical and Pathological Phases of Stones in the Kidney. A. H. Cordier, Kansas City, Mo.

Our Hospitals. H. D. Niles, Salt Lake City, Utah.

Spina Bifida. Van Buren Knott, Sioux City, Iowa.

Ruptured Tubal Pregnancy with Complications; Report of a Case. E. C. Dudley, Chicago, Ill.

New Operation for Wandering Kidney. E. Wyllys Andrews, Chicago, Ill.

Tri-State Medical Association of Mississippi, Arkansas and Texas.—The eighteenth annual meeting of this Association was held in Memphis, Tenn., November 19, 20 and 21. Dr. William Britt Burns, Memphis, Tenn., delivered the Address in Medicine, and Dr. Joseph P. Runyan, Little Rock, Ark., the Address in Surgery. The following officers were elected: Dr. James B. McElroy, Stovall, Miss., president; Drs. H. L. Sutherland, Rosedale, Miss., William C. Dunnaway, Little Rock,

Ark., and L. A. Yarbrough, Covington, Tenn., vice-presidents; Dr. Richmond McKinney, Memphis, Tenn., secretary, and Dr. Marcus Haase, Memphis, Tenn., treasurer.

Boston (Mass.) Medical Society.—The fifth annual banquet of this Society was held at Young's, November 19. Dr. Rufus K. Noyes was elected president; Dr. William A. Butman, secretary; Dr. Warren F. Gay, financial secretary, and Dr. Israel J. E. Shapira, treasurer. The president gave an interesting talk on the evolution of medical science and of the medical practitioner. Henry Canning, one of the oldest pharmacists in the city, spoke entertainingly on the relations between the pharmacist and the physician, and Dr. Patrick F. Kelleher, who, besides being a physican, is also a member of the Suffolk bar, gave with the aid of a manikin a very interesting demonstration of his new obstetrical axistractor.

NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, held Nov. 12, 1901.

Dr. Malcolm McLean in the Chair.

Cancer of the Ovary.

Dr. W. S. Stone gave the history of the patient and exhibited specimen. Mrs. B., admitted to the General Memorial Hospital, Oct. 14, 1901, age 47; married 26 years; ii-para. Last child was 23 years ago. Both labors and childbeds were normal. No miscarriages. She has always menstruated profusely every month, 12 to 15 days, and accompanied by pains on the right side of the lower abdomen. Her general health has failed, and lately there has been a brownish vaginal discharge between the periods. Upon admission to the hospital she was very pale and somewhat emaciated. The cervix was rather large, hard and nodular. External os admitted one finger; internal os, the tip of the finger. The uterine body felt enlarged, and slightly retroverted and turned to the left. There was behind and to the right a rather hard, globular mass, which felt to be about the size of a grape fruit. It was close to the uterus and seemed to be adherent to it, as they both moved together slightly. A diagnosis was made of cancer of the uterine body, either with a separate tumor, or with a cancerous involvement of the right broad ligament.

An operation was made Oct. 19, 1901. The uterus and tumor were removed from above. The tumor was found to be a separate affair, and presented the only difficulty in the operation because of its firm union with the rectum. The patient quickly rallied from the operation and made an uneventful recovery. The uterus was considerably enlarged and extremely hard. There presented in the left horn a small, ragged growth, which in the fresh state was very soft and brain-like. Its histological structure was that of an adenoma, or the so-called malignant adenoma, or, perhaps, better, an adeno-carcinoma. The tumor was a solid one of the right ovary, and measured in its fresh state 8 by 9 centimeters. Its cut surface was rather homogeneous in appearance, and its outer surface, although slightly irregular, conformed in general to the ovarian shape. There were some softened areas, which proved histologically to be necrotic tissue. In many places, however, it presented the typical picture of carcinoma. A portion of its surface that had been adherent to the rectum was in a condition of almost purulent inflammation, as shown by the small, round-cell infiltration. The right tube, as well as the left tube and ovary were normal.

Dr. Herman J. Boldt said that the specimen exhibited by Dr. Stone showed the relationship that had been pointed out a number of times by various writers between malignant disease of the body of the uterus and malignant disease of the ovary and, for that reason, he had always advised performing a radical operation for cancer of the uterine body and removing the ovaries because of the not infrequent involvement of these glands.

Dr. J. Riddle Goffe believed, too, that the specimen seemed to show a relationship between cancer of the body of the uterus and cancer of the ovary. The disease was more extensive in the ovary than in the uterus, and, to that extent, the inference would be that it began in the ovary. He was inclined to think, however, that there were two spontaneous foci here, with no relation between them whatever.

A New Operation for Retroversion of the Uterus.

Dr. J. D. Bissell gave a description of a new operation for retroversion of the uterus, and presented a patient upon whom he had performed the operation. The procedure adopted is as follows:

The abdomen is opened in the median line. If pelvic adhesions exist they are broken up and the attached organs are freed, and if the tubes or ovaries are diseased they are removed. The uterus is then grasped at the fundus with the vulsellum forceps and pulled upward. In order to form an exact idea of the extent of relaxation in the round ligament, a suture, on a small round-pointed needle, is first passed from behind forward through the round ligament at a point one-half an inch from its attachment to the uterus; the same suture is again passed, but in an opposite direction, through the round ligament at a point about one inch from the first insertion. A similar procedure is followed on the other side. When these temporary sutures are tied the round ligaments become looped and an exact idea is formed as to the amount of round ligament to be resected. If the tension on the ligament is found to be too great the section is made inside the loop. If not sufficiently taut the section is made outside the loop. Another preliminary but essential step is to pass a suture immediately under the round ligament about one-half an inch and to the outer side of the loop. This, when tied, completely encircles the round ligament and prevents its end from retracting when the section is made. It also facilitates the handling of the ligament when introducing the permanent sutures. The same step is taken on the other side of the loop about one-quarter of an inch from the uterus, but the latter is not so essential as the former. A section of the round ligament is then made inside or outside the loop as is found necessary. The temporary suture forming loop is then cut and this section of the round ligament is dissected away from the broad ligament. The artery of the round ligament is grasped and tied, if severed. The next step is the insertion of the permanent sutures and the adoption and adjustment of the raw surfaces. The first suture is passed on a round-pointed needle from above downward through the center of the round ligament, and then through the other cut end, from below upward. Two other sutures of the same size are passed, one on each side, but only half-way through the ligament, which serve, when tied, to keep the ends in exact position. The sutures in the round ligament are not tied until the raw surface of the broad ligament made by cutting away the resected portion is disposed of. This raw surface is parallel with the course of the round ligament, but is sewed together with No. 1 catgut on a line at a right angle to its original direction. The suturing of this surface should be done before the round ligament sutures are tied and in the following way: With a tissue forceps grasp the broad ligament on the under surface midway. A suture is passed at this point and continued along the denuded edge to the middle of the opposite side. It will be found that the suturing of the broad ligament in this way brings the ends of the round ligament into close apposition. The permanent sutures that have been passed through the ends of the round ligament are then tied and the operation completed.

The following is a brief history of the first case operated on. Mrs. S., 30 years old; operation September 3; curettage and abdominal section. There was complete retroversion, slight adhesion about the right ovary and tube. Symptoms before operation were "pulling and dragging in the bones of the back," pain through the pelvis of such a character as to prevent her from walking or standing with ease; more or less tenseness of the bladder. Menstruation was very free, sometimes lasting twenty days. Two and a half months after operation the uterus is found in perfect position. She had menstruated twice, eight days at each period. She is relieved of all pain and discomfort.

Dr. W. Gill Wylie had examined Dr. Bissell's patient and he found the uterus in good position. The broad ligament was shortened and pulled the uterus up and forward. He preferred this operation to the operation attaching the uterus to the anterior abdominal wall, which he does not now do except

very rarely in women past the menopause. Beyond the required skill to get the ends of the round ligament together he could see no special objection to the operation. His preference, however, was for the Alexander operation, attaching the cord near the end of Poupart's ligament, where we get firm union by white fibrous tissue of the cord and Poupart's ligament. He thought that Alexander's operation covered the field.

Dysmenorrhea, with Special Reference to Its Occurrenee in Nulliparae.

DR. WILLIAM R. PRYOR, in this special topic for discussion, thought that we may classify these cases according to their symptoms or according to the local pathology, although the latter is but little understood. Confining his remarks to dysmenorrhea not due to disease of the ovaries and tubes, he stated his belief that many of the cases were due to errors of development and others to changes which take place with advancing years. In the first class of cases he found usually associated with dysmenorrhea errors or irregularities in development of other parts of the body. We could understand how this would be so in the light of our knowledge that the endometrium was not a mucous membrane, but a part of the great lymphoid chain. Conditions similar to the congenital ones may be brought about by sterility, for an organ which should have two years' rest from a routine menstruation and receive those benefits which follow the essential structural changes incident to conception and delivery, must undergo some modification in its structure. We find these changes associated with and not caused by various distortions of the cervix and of the body of the uterus. He was in the habit of taking a little broader view than the one laid down in our books. He tried to build these patients up if they needed it. If plethoric patients, he regulated the diet to meet that condition; if gouty he treated that, etc. His local treatment was based upon the supposition that he had to deal with a malformed or degenerated endometrium. This was sometimes hypertrophied and sometimes atrophied. He always, if he operated at all, performed a curettage in such a way as to promote the formation of a new histologieal endometrium. If the cervix was hypertrophied, he either amputated or incised along the lines of Simpson, Sims, or modification of Dudley. If the cervix was merely stenosed, incision was sufficient. He said it was needless to go into the technique of these several operations or their particular indication. So far as nonoperative cases were concerned, he got the best results from gelsemium and cannabis indica if the flow was too free, or with hyoscyamus if hysteric symptoms were marked. He always avoided the administration of the coaltar derivatives and of the opium compounds. If the patient was married he expected in the line of treatment conception, which he believed to be the radical eure. The wearing of stems and repeated dilatations he considered mischievous.

DR. HERMAN J. BOLDT shared, to a great extent, the views expressed by Dr. Pryor, and treated patients suffering from dysmenorrhea variously. Many times patients suffer from dysmenorrhea when no pathologic condition can be found in the pelvis, and he was at a loss to account for the causation of such cases.

DR. HENRY C. COE said that while he was inclined to agree with Dr. Pryor in believing that so-called "obstructive" dysmenorrhea could not always be explained satisfactorily by reference to the mechanical theory, he could not subscribe to his statement that disease of the endometrium was the only cause, for it seemed to him that the evidence, both clinical and anatomical, was opposed to that view. Often in these cases the vigorous use of the curette fails to show the presence of a hyperplastic endometritis, and even when the anteflexed uterus was examined after removal intra vitam or at autopsy, such marked evidences of disease as would account for the painful symptoms is seldom found. On the other hand, all had had experience with the Dudley operation and have seen the dysmenorrhea eured by permanently straightening the canal. He would emphasize the fact that many cases in which painful menstruation was apparently due to flexion were by no means as simple as would appear from the results of examination. He thought the subject was too broad to be discussed only from the standpoint of mechanical obstruction or disease of the endometrium.

DR. W. GILL WYLIE said that he held the same views regarding dysmenorrhea to-day that he held seventeen years ago, when this subject was the text of almost his first paper. He then took the ground that the real cause was dysmenorrhea due to imperfect development; that the membrane, especially in the young women of the better class, was not nourished sufficiently to become a normal lining membrane; that it was deficient in blood supply, weak and feeble, and the easy prey of disease; therefore, when the function of menstruation began it could not be performed normally. He confessed that he was unable to state just what the exact pathologic condition was, that it was a chronic form of endometritis, causing excessive hyperesthesia. His definition of dysmenorrhea was that it was a pain just before or during the menstrual flow and his own test for the condition was as follows: If a multiparous woman complains of pain before menstruation, or after it begins during the flow, the uterus will, as a rule, be found abnormally small, especially about the cervix and at the os internum, and if active disease be excluded, you will always find present an anteflexion. He did not think that any mere mechanical act of opening the canal would have much to do in overcoming the difficulty. The patient he placed in the Sims position, and a small silver probe, the same kind that Dr. Sims used, was passed. If that woman was suffering from dysmenorrhea, almost without exception the passing of that silver probe will cause pain, especially when the probe reaches the os internum; at this point the tissues are extremely sensitive. He considered this test almost pathognomonic. Given such a case in a woman who is well, whose general health is fair, with an atrophied and extremely imperfectly developed uterus which does not extend to the ovaries and other generative organs, it was his experience, that if you thoroughly divulse and produce a fair amount of dilatation and splitting the muscular tissue and tearing them, good results would follow. He was satisfied that one-quarter to one-half an inch separation of the blades of the dilator, with not less than 200 pounds pressure, would accomplish good results. The old method of claiming that one to one and a half divulsion was wrong and was only apparent and not actual unless the whole muscular structure at the os internum was torn through. He never used violent mechanical power. After divulsing the canal he ran over the surface of the endometrium with a curette if indicated, and then placed in a hard-rubber drainage tube the size of a lead-pencil; this tube has a somewhat bulbous conical end with a slot, which takes up fully one-third of the caliber of the tube; it has a round button-shaped end in the vagina. In some cases he thought that curettement was very useful and essential where there are pathologic conditions to deal with, but, in many instances, curettement does not bring away very much. He claimed that even a thorough divulsion would not give lasting results, relief being experienced but a short time. His experience had taught him that when we dilate and use a hard-rubber drainage tube, keeping the os internum open for a week or more, a great many cases would be cured, but a large percentage would not be cured. By accident he found that the tube could be left in through one menstruation and then, as a rule, should be taken out. In obstinate cases the tube could be left in through two menstruations without danger and the patient could go about. In very many cases of imperfect development this operation would give results which lasted three, four and even six months; but in typical severe cases there was likely to be a return of the trouble. One should give time for the organ to grow, and so in these extreme cases the proeedure may have to be repeated three times. He said that if to-day he got 10 cases of dysmenorrhea in patients all under 23 or 24 years of age, he would expect to eure not less than 9 out of the 10. He had treated several hundred of these eases without the slightest accident or serious consequences from the use of the tube so far as he knew. Formerly he used gauze in the vagina to keep the drainage-tube in place, but a hard rubber Albert Smith pessary was much better and was essential when the

tube was worn during menstruation. This method had been of much value to him in caring for women who were sterile; in such cases, uncomplicated by occluded tubes, gonorrhea, etc., good results frequently follow this treatment. He had used this method during the past twenty years, and the only change he had made was in perfecting his method.

Dr. J. Riddle Goffe said that the imperfectly developed uterus as one of the principal causes of dysmenorrhea had been one that has dominated his treatment, and his experience justified him in assuming that in all cases where dysmenorrhea began with the first menstruation, they were invariably cases of imperfect or faulty development. There was another class of cases, women, nulliparæ and multiparæ, who had been free from pain in the early history of menstruation and later develop dysmenorrhea. These patients were the victims of some pathologic lesion and almost invariably, in his experience, it had been due to an infection from gonorrhea, either an endometritis, salpingitis or an ovaritis, and sometimes all three together. When the latter condition existed the method of procedure was clear and the results in the hands of all present had been, he thought, satisfactory in the way of cure so far as the dysmenorrhea was concerned.

In the first class of undeveloped uterus there was a lack of development not only of the uterus itself, but also of the tubes and ovaries and of the whole circulatory apparatus. To accomplish a permanent result the treatment must be continued throughout a long period of time, one or two months, and, in extreme cases, dilatation and curettage under an anesthetic, followed not by the use of the hard tube, but of the gauze pack. If a patient comes to his office suffering from dysmenorrhea she will usually be found to be sterile, and he always insists that she shall place herself under his care for at least three months. Then, under careful antiseptic precautions in the office, he dilates the cervix and makes an application of pure carbolic acid to the internal os and the interior of the uterus. If, after two or three treatments, he finds no indications for any change of treatment he continues to treat her twice a week for three months. At the end of that time he tells her that he does not wish to see her again for three months and it had been his experience in a number of cases to find that when she again returns she will give a history of having skipped a period and it eventuates that she is pregnant. If, though, she still complains of pain, he continues to treat her for another three months. If the first course of treatment is without benefit he advises a more radical treatment, and, under an anesthetic, he thoroughly dilates the internal os, curettes the interior of the uterus, and, instead of using a hard-rubber tube, he packs the uterus with gauze, which acts as a foreign body and so stimulates contractions. The uterus being a muscular body, is developed by exercise, and in the efforts of that organ to expel the gauze packing the walls of the uterus in all its muscular structures are strengthened and developed and the circulation improved. The gauze is left in place for four days, at the end of which time in all cases he finds more or less of the gauze expelled from the uterus, which shows that there has been strong muscular contractions. His object was not only to develop the muscular structures, but also to stimulate the circulation not alone of the uterus, but of the entire generative apparatus.

Dr. W. Evelyn Porter believed that the form of drainage to be used in these cases should be judged according to each individual case. If there was a large uterus he agreed with Dr. Goffe that sometimes the mere packing that organ with gauze would be productive of good results, but the objection was that there was not sufficient drainage which was so essential, as, in nearly every instance, there was more or less increase in the secretion which must be drained; therefore, he had found that when the gauze was left in a sufficient length of time to produce the desired effect that it obstructed rather than drained. He had had a few cases where the slot in the drainage tube referred to by Dr. Wylie had become obstructed by blood clots and mucus, and, in order to overcome this obstruction, he had had made a stem with a device for flushing out the slot without the necessity of its removal.

Dr. Hiram N. Vineberg said that in the slighter degrees of arrest of development, where we meet with a long, narrow cervix and a moderately sized body sharply anteflexed, dilatation and curettage were of decided benefit, and in this class of cases he had found the employment of the cervical stem gave better results than where dilatation and curettage alone had been employed. It was his custom to remove the tube and irrigate the uterine canal with a glass catheter and then reintroduce it and leave it in for one week or ten days. In this class of cases he had several times performed the Dudley operation with a fair amount of success. No treatment had been of service in that other class of cases where the uterus was found in the form of a congenital retroversion of about the second degree. If these patients marry, menstruation almost always ceases, which is different from what we expect; the stimulation of married life seems to have the opposite effect; menstruation ceases or else occurs once in five or six months. In some cases he had found the intrauterine application of galvanism had been productive of good results, 25 milliamperes being used; sometimes these patients will remain well for two or three years.

Dr. Joseph Brettauer was astonished at Dr. Wylie's statement that he had cured 9 out of 10 of these cases, for he had been so far decidedly unsuccessful, even when using the method described by him. About two years ago he saw a book entitled "Nase und Weibliche Geschlechts-organe," by Fliess, in which was reported a number of cases of dysmenorrhea cured temporarily and permanently by the application of cocain to certain parts of the nose. No explanation was needed as to why the book did not impress him greatly at the time, but when, however, one year afterward an article appeared in the *Wiener Klin. Wochenschrift*, corroborating in substance what Fliess had maintained for several years, he decided to go into the matter seriously. The observations described in the latter article were made at Chroback's clinic in Vienna, and knowing from personal connection with this clinic the conservative spirit with which it was directed, doubt was out of the question. According to Fliess, the anterior half of the lower turbinated bone and the tuberculum septi of the nose were the points which were in some way connected with the genital organs, and this was proven by the cocain test, followed in proper cases by cauterization. The speaker's personal experience so far was limited, and not uniformly satisfactory. The cases of dysmenorrhea in which other efforts had failed were benefited by the application of cocain to the nose, but, so far, his successes were fewer than the failures; still he was of the opinion that the subject deserved close attention and trial.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Regular Meeting, held Oct. 21, 1901.

The President, Dr. Parker Syms, in the Chair.

Dr. Heinrich Stern exhibited a new percussion mallet, and demonstrated its action upon a patient. It is actuated by a spring after the manner of the well-known dental mallet, and a plexímeter, in the form of a small disk, is permanently attached to its distal end. Aside from the convenience of having hammer and plexímeter in one piece, an advantage claimed for this instrument is that its strokes are uniform in both force and duration.

Dr. J. W. S. Gouley presented a new retractor that he had devised for use in connection with enucleation of the prostate. The instrument is introduced with the beak looking upward, but after it has reached the bladder it is reversed.

Fibroid Tumor of the Fallopian Tube.

Dr. J. Riddle Goffe exhibited a rare specimen. The tumor was upon the left tube, about three-fourths of an inch from the horn of the uterus. It had been taken from a young woman who had suffered for many years from dysmenorrhea. The fimbriated extremity of the other tube was found sufficiently open to admit the thumb, and protruding from this opening was a cyst of Morgagni. Dr. Goffe said that he had only found one case of this kind on record, and that had occurred in the experience of Jacobs, of Brussels.

Dr. A. Palmer Dudley said that he had seen only one fibroid tumor of the Fallopian tube in his whole experience,

though he saw no reason why the same conditions which give rise to fibromata in the uterus should not produce fibromata of the tubes. These tumors were just as apt to occur in the young woman as in those near the menopause.

DR. FREDERICK HOLME WIGGIN said that he had never before seen a case of this kind.

DR. A. BROTHERS said that this had also been his experience, but he had met with two fibroids of the ovary.

Spasmodic Affections of the Larynx.

DR. EMIL MAYER said that rachitis stood at the head of the list of causal factors, but other common causes were dentition, enlarged glands, inflammation of the air passages, disturbances of digestion and an excess of lymphoid tissue. Unless the attack was due to direct cerebral irritation the prognosis was good. Death sometimes occurred from asphyxia, heart failure or cerebral compression. Attention to the diet and general hygiene of the child would do much towards ameliorating the condition, and chloral and the bromids would be found useful in the treatment of the attack. While laryngeal spasm was much less frequent in adults it might arise in connection with hysteria, chorea, epilepsy, tetanus, hydrophobia and tabes. A very interesting form of spasm of the larynx was that known as laryngeal vertigo or laryngeal epilepsy. Asthma, excessive smoking, hypertrophy of the uvula and of the lingual tonsil, and tabes were among the prominent causes. The attack simulates an epileptic seizure, but may be differentiated therefrom by the tongue not being bitten in laryngeal vertigo, and by the absence of involuntary defecation, of headache and by an almost entire absence of muscular spasm. The speaker described stammering as the result of the inco-ordination of the three mechanisms of speech, the respiratory, the vocal and the aural. For some reason, as yet not satisfactorily explained, fully 95 per cent. of stammerers are males. By gentle and persistent effort physiologic voice sounds should be taught, and the extrinsic muscles brought into proper action. In this way a cure could usually be effected.

DR. FRANCIS J. QUINLAN said that upwards of 85 per cent. of cases of spasmodic affections of the air-passages occur in children. He was disposed to minimize the effect of intestinal disorders. A most careful search should be made for accumulations of lymphoid tissue, for hypertrophied tonsils and for other abnormalities of the upper air-passages.

DR. WILLIAM M. LESZYNSKY said that the spasmodic affections of the larynx which are of special neurologic interest arise in patients who are the subjects of hysteria, chorea, epilepsy or locomotor ataxia. The laryngeal spasm, occurring in local affections of the larynx, was usually the result of direct irritation of the terminal nerve distribution in the larynx itself. The type seen by the neurologist, however, was usually due to some form of irritation of the pneumogastric nerve or the recurrent laryngeal branch, and was either of central or reflex origin. Children were more predisposed to spasm, on account of their inherent reflex irritability. It had also been frequently noted that spasm of the glottis in children bears a close relation to tetany, which is so commonly associated with rachitis. In the more severe forms of hysteria, spasm of the glottis might occur in violent paroxysms, and the patient might appear to be on the point of death by suffocation. It was usually accompanied by other spasmodic or convulsive symptoms. Although of very rare occurrence, it was not without danger, and on account of the condition threatening life, tracheotomy had been performed. A subcutaneous injection of apomorphin, however, generally proved successful in relieving the spasm. The so-called laryngeal epilepsy, or laryngeal vertigo, was a very rare condition, and might be classified as a reflex neurosis. It was characterized by a paroxysm of coughing, followed by sudden dyspnea, syncope, and slight convulsive movements, the patient falling unconscious for a short time. It occurred chiefly in males between 40 and 50 years of age.

DR. J. H. WOODWARD spoke of laryngismus stridulus, a spasmodic affection of the larynx only found in children. It was closely associated with rickets, and was best treated by the bromids and tonics, together with hygienic measures.

DR. C. E. QUIMBY alluded to a form of spasmodic affection of the larynx commonly observed in persons who had indulged a good deal in drinking before retiring at night. He said that his experience had led him to believe that this was dependent upon cardiac exhaustion.

DR. A. C. WAY, Perry Center, remarked that he had found attacks of spasmodic croup yield very promptly to injections of nitroglycerin.

DR. D. S. DOUGHERTY said that, as a result of a statistical inquiry that he had been conducting, he had been astonished at the very large proportion of croupy children who are troubled with adenoids of the pharynx. To show the necessity for a thorough search for the cause, reference was made to an obstinate case of spasmodic laryngitis that had been the rounds without relief; after thorough cocainization and patient examination he had discovered a small medal wedged in between the arytenoids and the epiglottis; the removal of this foreign body cured the child.

DR. M. E. VARNEY, Saratoga Springs, said he wished to add his personal testimony to that of Dr. Way regarding the efficacy of nitroglycerin in spasmodic laryngitis.

DR. H. W. BERG spoke in favor of treating cases of laryngismus stridulus with bromids just as one would do in a case of epilepsy.

Report of the Committee on Vaccination.

DR. FREDERICK W. LOUGHRAN presented the report of the committee on vaccination. Although the work of the committee thus far had been tentative, and the Association took no definite action upon the report at this time, certain suggestions and recommendations were embodied in the report. The more important of these were the following: 1. All boards of health in cities and towns should furnish the means for vaccination and revaccination. 2. The state should have authority to enforce vaccination during the prevalence of smallpox. 3. No child should be admitted to school who had not been vaccinated within five years successfully, or who could not produce a certificate from a reputable physician, stating that vaccination had been twice performed, and that vaccinal insusceptibility exists. 4. The inmates of state asylums and members of the National Guard should be required to be vaccinated. 5. All corporations or firms having in their employ ten or more persons should be required to see that all such employes have been properly vaccinated, or are provided with a certificate as already mentioned. 6. The penalty for the violation of such vaccination laws should be a fine of $50 to $100, or an equivalent term of imprisonment, this penalty not to stand in lieu of vaccination.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fourteenth Annual Meeting, held in Richmond, Va., Nov. 12, 13, 14, 1901.

(Concluded from p. 1482.)

President Dr. Manning Simons, Charleston, S. C., in the Chair.

THIRD DAY—MORNING SESSION.

Foreign Bodies in the Esophagus.

DR. JOHN W. LONG, Salisbury, N. C., stated that this accident occurred usually in children and lunatics. It is always possible when a patient is under an anesthetic, and even food may become impacted in the esophagus. The presence of a stricture, pouch, or malformation increases the liability to this accident. A foreign body in the esophagus carries with it both immediate and remote dangers. If lodged high up, there will be dysphagia, retching, and sometimes suffocation, as in a case seen by the writer two years ago, in which an inch screw entered, point downward, the upper end of the esophagus of a 3-month infant, and impinged upon the trachea. When the foreign body is lodged lower down, the danger is more remote and less easily remedied. Unless removed, foreign bodies almost invariably penetrate or ulcerate into some important viscus, as the pericardium, aorta, mediastinum, the pleura.

Gunshot Wound of the Abdomen.

Dr. John C. Wysor, Clifton Forge, Va., reported a case of gunshot wound of the abdomen; the 38-caliber ball entered about three-quarters of an inch above the left anterior superior spine of the ileum. Patient was anesthetized fifteen hours after the receipt of the wound, having been transported a long distance. The author first enlarged the wound in the skin, and with his finger as a probe followed the track of the bullet until he felt the opening in the peritoneum. He then made an incision in the median line below the umbilicus which was afterwards extended from a little above the navel to near the pubes. The omentum was very short, not reaching as low as the umbilicus, and the coils of intestines presented immediately under the incision. The first knuckle picked up showed two perforations, which were immediately cleansed and closed with Lembert sutures, using fine chromicized catgut and he continued to close the openings as he came to them, until he had sewed up nine perforations. Following the gut still further, he found a portion seven or eight inches in length in which there were six more perforations. As some of these openings were very close together, he feared that in repairing them he might constrict the gut, or that there might be subsequent sloughing. He therefore excised that portion of the intestine, doing an end-to-end anastomosis by means of a Murphy button. Recovery was uninterrupted.

Penetrating Wounds of the Abdomen.

Dr. E. D. Fenner, New Orleans, gave in detail the histories of six laparotomies for penetrating wounds of the abdomen and statistical tables of 152 cases operated on at the Charity Hospital.

Nephro-Ureterectomy.

Dr. J. Wesley Bovee, Washington, D. C., detailed a report of two cases. The first one was a nephrotomy followed by incomplete nephro-ureterectomy for pyonephrosis, adrenal tumor and pyo-ureter; extraperitoneal operation; recovery. The second case was nephrotomy followed by complete nephro-ureterectomy for pyonephrosis and pyo-ureter; extraperitoneal operation; recovery. After narrating these two cases the author dwelt upon the indications for nephro-ureterectomy, saying that the principal reason for this operation is tubercular disease of both these structures.

Dr. George H. Noble, Atlanta, read a paper in which he spoke of and advocated the use of adhesive straps for the prevention of laceration of the perineum in forceps delivery. He also described a method of removal of fibroid tumors through the vagina by continued spiral incision.

Report of Case of Hepatotomy for Biliary Obstruction.

Dr. W. E. B. Davis, Birmingham, Ala., read this paper. The case was the fourth in which he had performed this operation, the first having been done in October, 1898. The operation is indicated in cases of obstruction with enlarged liver, where the gall-bladder or ducts can not be isolated, or the patient's condition from exhaustion and cholemia will not permit of a protracted search for the bladder or ducts, and is intended to bridge the patient over for a radical operation. It will be only exceptionally called for, but is the only available procedure in such cases. The bile will escape from an incision in the liver as it does in a cholecystostomy, and after the patient's condition has improved, the stone may be removed from the duct. The operation will be less frequently called for, as the surgeon's experience increases in choledochus operations, as he will then be better able to locate the bladder and ducts so much changed. The operation should also be resorted to in hepatitis before it has reached the stage of pus formation, if the liver does not rapidly become smaller after drainage of the gall bladder or ducts.

Third Day—Afternoon Session.

Dr. Joseph Taber Johnson, Washington, D. C., detailed two interesting cases in which attempts were made to produce abortion. In one case a medical man attempted to produce abortion at about the tenth week of gestation by inserting into the uterus a No. 8 flexible bougie. Some difficulty was experienced in getting it to pass the internal os, but after persistent effort the instrument was pushed up nearly its entire length, leaving perhaps two inches protruding into the vagina. The bougie was supposed to be coiled up in the uterus. Its expulsion was prevented by a cotton tampon pushed high up in the vagina. A physician informed the writer that when he removed the tampon the fetus and a portion of the membranes came away. He was unable, however, with the most diligent search to find the bougie, and finally came to the conclusion that it must have slipped out without the patient's knowledge, during one of her many visits to the closet in the night. The second day after the abortion, the patient had a severe chill, followed by a considerable acceleration of pulse and temperature, with gradual but steady increase of abdominal pain and distension. Dr. Johnson saw the patient in consultation, made an abdominal section, and removed the bougie from the peritoneal cavity.

The second case was one of ruptured umbilical hernia, in which several feet of intestine had been out on the surface of the abdomen and covered with unsterilized cloths and bandages for at least seventeen hours. The patient had had the hernia for fifteen years, and was 57 years of age. The intestines were very dark and very cold and dirty. A thorough cleansing and warming with hot salt solution succeeded finally in getting them and the adjoining skin of the abdominal wound into a tolerably fair condition. About a pound of omentum was removed, which bled in a number of places, from which adherent clots had been detached. The tight rim encircling the protruding gut was incised above and below, and the three feet of intestine returned to the abdominal cavity, which was subsequently filled with hot salt solution. A rather long and difficult operation was then performed for the radical cure of an old umbilical hernia in a very fat abdominal wall. The woman gave every promise of getting well for seven days, then she suddenly grew weak, and collapsed and died on the eighth day apparently of a general septic peritonitis.

Dr. Southgate Leigh, Norfolk, Va., reported a case in which he did a plastic operation for loss of base of the bladder. He also narrated a case of ovarian cyst in a negro woman which was complicated by a fibroid tumor of the uterus.

Hernia of the Ovary.

Dr. William P. Matthews, Richmond, Va., reported this case. The patient, Miss E., aged 17, 5 feet, 6 inches high, weight 145 pounds, strong and robust, was born with a swelling in each inguinal region which did not occasion any alarm or produce any inconvenience until she reached her 14th year, when they began to enlarge and at intervals became so tender as to confine her to bed for two or three days. Pressure on them produced pain and nausea. She never menstruated. The author operated for the relief of the hernia, following the Bassini method. The sac was firmly adherent to the internal ring and to the adjacent part of the canal. The sac was opened and a tumor enclosed in several layers of fascia was exposed, carefully dissected out and examined. It proved to be an adenoma of the ovary, though it looked more like a testicle than an ovary. The specimen consisted of four distinct parts: 1. An oval flattened body, 6 cm. long, 3 wide, and 1.3 thick. 2. A cystic tube, 5.2 cm. long, one end of which was dilated. This was joined in part to the body by fibrous connective tissue. 3. Parallel and beneath was another tube which entered the body. 4. Perpendicular to this latter tube was a third tube which also entered the body. Upon section the body showed a grayish-red surface, with one white well-isolated tumor. The microscopic examination was made by Dr. G. Baughman, which accompanied the paper. Examination revealed absence of the uterus. The ovary was removed and the parts closed in the usual manner, and the patient left the hospital in three weeks.

Inquiry into her family history revealed interesting facts. Her great-grandmother was an only daughter. She was twice married, and bore children in each union. Of the female descendants of the first marriage there were eight that were

never unwell in their lives, and all lived to be over 20 years old. Of the second marriage there was one of the two daughters who was never unwell. Two aunts of the patient have never menstruated, and one has a double reducible inguinal hernia. Five first cousins of the patient have never menstruated, and two of these are ruptured just as she was. One sister of the patient has never menstruated, and has a reducible hernia in the left side, an irreducible on the right. One fact he learned is that these women who have never menstruated have hardly any hair in the axilla and on the pubes and are not troubled by any unpleasant odor from the perspiration.

Dr. George S. Brown, Birmingham, Ala., read a paper in which he described a modified Hodgen's splint for the treatment of fractures of the thigh. He also demonstrated the application of this splint on a negro.

Dr. Charles P. Noble, Philadelphia, read a paper on "The Treatment of Procidentia Uteri."

The following officers were elected for the ensuing year: President, Dr. W. E. B. Davis, Birmingham, Ala.; first vice-president, Dr. J. Wesley Bovée, Washington, D. C.; second vice-president, Dr. John W. Long, Salisbury, N. C.; secretary, Dr. W. D. Haggard, Jr., Nashville, Tenn.; treasurer, Dr. F. W. McRae, Atlanta, Ga.

Cincinnati, Ohio, was selected as the place for holding the next annual meeting, the second Tuesday in November, 1902. Dr. Thaddeus A. Reamy was selected as the Chairman of the Committee of Arrangements.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

PRESCRIPTION WRITING, IV.

(Continued from p. 1486.)

NECESSITY OF CARE.

The necessity of avoiding ambiguity has already been dwelt on to some extent. Every prescription, however, should be carefully read by the writer in order that due care may be taken to avoid omissions or mistakes in the size of the dose given and to review carefully the directions to the patient. The young physician experiences no little difficulty in calculating properly and quickly the doses of each ingredient if he writes a compound prescription, and especially is the difficulty increased if he desires to express the amounts in the form of the metric system.

In calculating the size of the dose many things must be taken into consideration which include some of the following important points:

1. The age of the patient.
2. The form of administration, if given by the month.
3. The frequency of administration.
4. The idiosyncrasy of the patient.
5. The action of each ingredient individually and combined.
6. Whether the ingredients are fugitive or cumulative in action.
7. The methods of administration.
8. The avoidance of incompatibility.

AGE OF THE PATIENT.

Narcotics and opiates should be administered to children with great care. There can be no doubt that opiates are prescribed a great many times in treating the summer diseases of children where other and milder preparations would be of far greater service. While children and infants are very susceptible to the action of opiates, on the other hand they can withstand the effects of cathartics in much larger doses, comparatively speaking, than can adults. For instance, infants only a few months old may be given the mild chlorid of mercury in doses of gr. 1/10 (.006) to gr. 1/6 (.01) every hour until several doses are given if necessary, which is practically equal to the dose given an adult. In prescribing for the aged, however, extreme care must be observed in the administration of cathartics. Cases have been reported in which cerebral hemorrhage and consequent hemiplegia have resulted from prescribing too large doses of active cathartics. Such results are to be expected when arteriosclerosis is present in a marked degree and when the cerebral arteries, lacking the proper resiliency, give way to the undue pressure produced by the overstraining at stool as a consequence of the purging.

ADMINISTRATION PER OS.

In speaking of the second point, the age also of the patient must be borne in mind. Children can not swallow a capsule, and it is with difficulty that they can be induced to take medicines which are unpleasant to the taste. Therefore, in prescribing liquid preparations for children a palatable vehicle should be prescribed, and when prescribing it in the powder form the same observance as to palatability must be carried out. For illustration, instead of prescribing quinin sulphate for children, some other preparation of quinin devoid of this objectionable taste should be used, such as the tannate of quinin, which will be readily taken by the patient. Euquinin is also a tasteless preparation. It is not uncommon to have requests from adults not to give them medicine in capsule form owing to their inability to swallow the capsule.

(To be continued.)

Treatment of Scarlatina in Its Graver Forms.

M. Arviragnet, in *Presse Médicale*, recommends hydrotherapy rather than antithermic remedies for the reduction of temperature. The temperature of the bath may range from 64 to 68 F. for adults, and 77 F. for children. In the latter case, if applications are to be long continued, cold packs are better borne. In the cardio-bulbar forms, with irregular heart action and respiration, and a tendency to syncope, the best results are obtained by injections of caffein from grs. iii (.2) to grs. vii (.45), or spartein sulphate grain 1/2 (.3), or strychnin sulphate gr. 1/60 (.001). In the hemorrhagic forms, in addition to the preceding measures, ergotin, iron, rhatany and hamamelis are advised. The following combinations are sometimes administered:

R.	Acidi gallici	gr. xv'	1
	Syr. aurantii	ʒi	32
	Aq. destil.	ʒii	64
M.	Sig.: One teaspoonful every hour or two.		

M. H. Roger, as noted in *N. Y. Med. Journ.*, obtains good results from the employment of calcium chlorid in hemorrhagic scarlatina:

R.	Calcii chloridi (crys.)	3i-3iss	4-6
	Tinct. cinnamomi	3i	4
	Spts. vini gal.	ʒi	32
	Syr. aurantii	3x	40
	Aq. destil q. s. ad	ʒiv	128
M.	Sig.: The above to be taken in divided doses in twenty-four hours.		

To Control Hemorrhage.

The following combination has been employed to check hemorrhage from any cause:

R.	Tinct. hydrastis Tinct. viburni, āā	3iii	12
	Tinct. hamamelidis Tinct. castaneæ (chestnut), āā	3vi	24
M.	Sig.: Take 15 to 20 drops before each meal in sweetened water.		

Treatment of Dental Caries.

The following is recommended by *Jour. des Pract.* as a disinfectant in treatment of dental caries:

R.	Formaldehyd	3v	20
	Spts. geranii	3iiss	10
	Alcoholis (80 per cent.)	3v	20
M.	Sig.: Apply locally.		

Treatment of Influenza (La Grippe).

The following are Huchard's formulæ to be employed in treatment of la grippe:

℞. Quininæ sulphatis.
Extracti cinchonæ, āā.....3ss 2|
Extracti aconiti rad.....gr. iss |09
M. Et divide in pil. No. xx. Sig.: One, three times a day.

When pulmonary catarrh and inflammation is present in such cases, he prescribes the following:

℞. Pulv. ipecacuanhæ comp.....3ss 2|
Pulv. scillæ.....3ss 2|
Quininæ sulph.....3ss 2|
M. Et divide in pulv. No. xx. Sig.: Four or five daily.

For the gastric pain and vomiting the following:

℞. Sodii bicarb.
Mag. calcinatæ.
Bismuthi salicylatis, āā.....gr. v |30
Misce et fiat chartula No. i. Sig.: One such powder every four or five hours.

Agalactia (Deficiency of Milk).

℞. Tinct. nucis vom.....3iv 16|
Calcii glycerophosphati .....gr. xv 1|
Elix. calisayæ .....℥iv 128|
M. Sig.: One tablespoonful three or four times a day in water.

Treatment of the Convalescent Stage of Diphtheria.

Yeo states that there can be no doubt as to the value of strychnia as a cardiac tonic. He recommends it in the following prescription form:

℞. Ferri et quin. citratis .....gr. lxxx 5|30
Liquoris strychinæ.....3ss 2|
Acidi hydrochlor. dil.....m. lxxx 5|30
Aq. chloroformi q. s. ad.....℥viii 192|
M. Sig.: Take two or three tablespoonfuls twice or three times a day an hour after meals.

For children the following is advised:

℞. Syr. ferri phosphatis.....℥i 32|
Calcii hypophos .....gr. xlviii 3|20
Quininæ sulphatis .....gr. xxiv 1|66
Liquoris strychninæ .....m. xlviii 3|20
Acidi phosphorici dil .....m. xxiv 1|66
Aquæ q. s. ad.....℥iv 128|
Misce, fiat mistura. Sig.: One or two teaspoonfuls, according to age twice or three times daily.

As a disinfecting mouth wash the following:

R. Pot. chloratis pulv. .....3ii 8|
Glycerini boracis .....℥i 32|
Acidi borici .....3ii 8|
Glycerini acidi carbol.....℥i 32|
Aq. menth, pip. q. s. ad.....℥xii 384|
Misce, fiat gargarisma. Sig.: To be taken and mixed with equal quantity of hot water and used.

Prevention of Abortion.

Horrocks, as noted in *Med. Record*, recommends the following precautions for the prevention of abortion: Avoid overstrain, shock and fright. Operations should not be performed if they can be avoided; especially should the extraction of teeth be avoided. Avoid using instruments about the uterus and cervix, and too hot douching. Pessaries should not be worn after the fourth month. Purging should not be resorted to nor should enemata with turpentine or glycerin be used. Cessation from coitus aids gestation to progress to full term. Uterine displacements should be remedied if possible and tight lacing prohibited.

Drugs which have any tendency to ecbolic action should not be administered to a pregnant woman. The following drugs are included in this list: Ergot, savin, digitalis, quinin, lead. We might add that large doses of aloes by producing a congestion of the female organs of generation may be considered in the above list. Syphilis if present should be treated in the parents and very often small doses of mercury may be advantageously given throughout pregnancy. Overnursing must be avoided. The administration of alcohol should be carefully guarded and in most cases avoided altogether. High pyrexia from any cause must be reduced and controlled by cold baths.

Medicolegal.

Crime Against Nature—Evidence.—The Supreme Court of Illinois holds, in Kelly vs. People, that the statutory provision that "the infamous crime against nature, either with man or beast, shall subject the offender to be punished by imprisonment in the penitentiary for a term not more than ten years," covers the offense committed by the mouth, although the common-law crime against nature does not. Nor does it seem to think that any distinction is to be drawn between cases in which the accused is charged with using his mouth upon another, and in which he uses the mouth of another upon himself. Furthermore, the court, while not unmindful of the fact that the crime is of a class easily charged and difficult to disprove, and that it should therefore be established with clearness, sustains a conviction in this case upon the uncorroborated testimony of a boy between 6 and 7 years of age. Consent on the part of the boy, it says, could not be presumed, he being incapable of understanding the nature of the act. He was incapable of committing a crime.

Admissible Evidence of Physician in Injury Case.—The Supreme Court of Illinois says, in City of Salem vs. Webster, a personal injury case brought by the latter party, that objections were made to the testimony of physicians as to what the party suing said to them while being examined and treated in describing his feelings and detailing the nature and location of his pains and sufferings. But it holds that the evidence was admissible, because as to such matters the opinions of the physicians must necessarily be formed and guided by statements of the patient. Moreover, one of these physicians was near by when the accident in question happened, and, with another person, picked the injured man up, and carried him to his house. He was allowed to state that the man at that time cried out with pain, and described the pain in his back. What was stated, the court goes on to say, was not a recital of any past event, but the natural expressions of suffering. The physician took the man right into his own house, close by, and immediately administered to him as a physician. The physician heard the accident, and was at the spot almost immediately, and was guided by the groans of the man to the place where he lay. The evidence, the court holds, was admissible as the natural expressions of suffering, if not as a part of the res gestæ, or essential circumstances of the case.

Physician's Opinion Evidence of Permanent Injury.—Supreme Court of Illinois says, in Donk Bros. Coal & Coke Company vs. Peton, that the physician who treated the latter party after he was injured testified that he found a fracture of both bones of the leg, one at the ankle-joint and one about two inches above the ankle-joint; that the smaller bone was broken right at the ankle-joint, and that the man would "never have a permanent ankle-joint." Notwithstanding this, it was contended that there was no evidence of a permanent injury on which an instruction could be based that if the jury found from the evidence that the man's injuries were permanent, they might take that fact into consideration, and award him such damages as, from the evidence, they might believe was just and right, and such as would compensate him for his injuries. The Supreme court, however, does not agree with the contention, but holds that if, in the opinion of the physician as thus testified to, the man would never after the injury have a perfect ankle-joint, the court could not say that there was no evidence of a permanent injury, and that, therefore, the instruction was not erroneous on the ground contended.

Things Patient May Rely on—Conflicting Evidence.—In the case of Schoonover vs. Holden, which was brought to recover for the alleged negligent treatment of a lateral dislocation of the knee-joint, the attention of the Supreme Court of Iowa was called to the following instruction asked in behalf of the physician sued: "It is the duty of the party injured

to use all reasonable efforts on their part, so far as possible, to prevent damages from resulting therefrom. And, if they do not do so, they can not recover for such damages or injury as they might have thus prevented. Upon this branch of the case you [the jury] are instructed that you may take into consideration the knowledge, if any, the plaintiff has shown to have had of the injury complained of; her knowledge, if any, as to the condition of her limb after the defendant had told her that it was reduced, and whether or not she made any efforts to determine whether her conclusions were correct, and, if she did, whether or not she acted upon the knowledge she had thus obtained, by calling other physicians, and having the dislocation complained of in the case reduced." But this instruction, the Supreme court holds, was properly refused, because it required the patient to determine whether the physician attending her was giving her injury necessary treatment. She had the right to rely upon his professions of skill as a physician, without calling others in to determine whether he really possessed it or not, and she was not bound to call other physicians unless she was fully aware that he had not been and was not properly treating her injury. Besides, the court makes the point that the physician himself said that his treatment was the usual treatment in such cases, and that the evidence conclusively showed that the patient was assured by him that he had reduced the dislocation, and that she was receiving approved treatment. There being a conflict in the evidence on all material questions affecting the right to recover damages, including the want of care on the part of the patient, the court says that, under the well-established rule in such cases, it can not disturb the verdict rendered in favor of the party suing, and so it affirms a judgment thereon against the physician sued.

Specialist Allowed His Bill for "First" Treatment.—In the case of Williams vs. the Griffin Wheel Company, an action brought by a physican and surgeon against a corporation, for services rendered as an eye specialist to an employe of the company who had been injured while at work for it, the Supreme Court of Minnesota affirms an order denying the company a new trial after judgment was obtained against it. The physician suing did not receive instructions or authority to render the services directly from the company, but through another physician, who was authorized to employ a specialist on this particular occasion for "first" or primary treatment. The company declined to pay the bill on the ground that the value of services other than those authorized—that is, further or subsequent services—was included. The case was tried by a jury, and the court is of the opinion that there was evidence which warranted a finding that the services for which compensation was claimed were, under the peculiar circumstances of the case, first or primary, and that no part thereof could be called further or subsequent services, although the testimony as to what could properly be designated first or primary services in such a case—a very severe injury to the eye—was very meager, and was all given by the physician suing. Objection having been made to his being asked a question which called for his opinion or conclusion as to the party for whom and on whose faith and credit he rendered the services, the court holds that the objection should have been sustained. It says that his opinion or belief that the faith and credit of the corporation were pledged for the payment of his bill, and that it was responsible for the same, was not proof that the liability existed. The conclusion that it did was to be deduced from what transpired between the parties and upon the facts as to the employment, not what he thought or believed. But the testimony as to the company's liability for first or primary services subsequently becoming practically conclusive, the court holds that the overruling of the objection was error without prejudice. The court adds that there was no testimony that the first or primary services in this case did not exceed $15 or $20 in value, as argued by counsel; that the other physician referred to, who testified that he was not qualified to say what "first" services were in such a case, went no further than to testify as to the value of the services performed the first day by the physician suing.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, November 23.

1 *On the Advantages of a Trace of Albumin and a Few Tube Casts in the Urine of Certain Men Above 50 Years of Age. William Osler.
2 Modification in the Methods of Operative Surgery Resulting from Laboratory Research. Joseph D. Bryant.
3 *Vesical Emergencies; Their Surgical Management. Eugene Fuller.
4 Leucoplakia. John V. Shoemaker.
5 Pelvic Inflammation in the Female; Its Diagnosis and Management by the General Practitioner. Abram Brothers.
6 Cyst of the Appendix Vermiformis. William C. Wood.

Boston Medical and Surgical Journal, November 21.

7 *An Investigation of the Boston Ice Supply. Hibbert W. Hill.
8 *Lesions of the Bladder During Abdominal and Vaginal Hysterectomy. Charles G. Cumston.
9 *Suggestions for the Improvement of Training Schools for Nurses. Richard C. Cabot.
10 Some Deductions Concerning Milk Modification. R. C. MacDonald.

American Medicine (Philadelphia), November 23.

11 *Experimental Yellow Fever at the Inoculation Station of the Sanitary Department of Havana, with a View to Producing Immunization. John Guiteras.
12 A Case of Perforating Typhoid Ulcer; Laparotomy; Recovery. Wm. L. Rodman.
13 *A New Constituent of Bone. William J. Gies.
14 *Ovarian Pregnancy: Is It an Explanation of Ovarian Hematomas? N. Stone Scott.
15 Suggestions Concerning the Use of the Metric System in Prescription Writing. Francis P. Morgan.
16 *Annular Pancreas. Theo. Tieken.
17 *Epidemic Meningitis—The History of an Outbreak. James McKenty.

Philadelphia Medical Journal, November 23.

18 Historical Note on Smallpox. James Tyson.
19 *The Characteristics of Genuine Vaccinia; Experience with Glycerinated Lymph and Some Statistics of the Present Smallpox Epidemic. William M. Welch and Jay F. Schamberg.
20 Prophylaxis of Smallpox in Cities. Richard A. Cleemann.
21 *Technique of Vaccination. Frederick A. Packard.
22 Notes on the Smallpox Eruption, Its Clinical Features and Differential Diagnosis. William T. Corlett.
23 *Some Experiences with Blood Examinations. John B. Deaver and Edward K. Moore.
24 *The Supraorbital Reflex in Facial Paralysis. Joseph Sailer.
25 *The Present Status of the Bottini Operation as a Method of Treatment in Obstructive Hypertrophy of the Prostate Gland, Derived from a Summary of 888 Operations by 48 Operators. (Continued.) Orville Horwitz.
26 The Surgery of Pulmonary Abscess, Gangrene and Bronchiectases Following Pneumonia. (Concluded.) Daniel N Eisendrath.

Medical News (N. Y.), November 23.

27 *Traumatic Stricture of the Esophagus. F. E. Bunts.
28 *"What Is the Use of Making a Diagnosis in Nervous Diseases, Since Nothing Can Be Done Anyway? Theodore Diller.
29 A Preliminary Note on the Sterilization of Catheters: A Bacteriological Study. C. B. Nancrede and W. H. Hutchings.
30 *Hygiene and Hygienic Legislation. W. Scheppegrell.
31 *On Primary Sarcoma of the Liver: Critical Observation and Contribution of Two New Cases. Bindo De Vecchi and Guido Guerrini.
32 Note Upon a Case of Pretended Expectoration of Myriapods. Allen J. Smith.

Medical Record (N. Y.), November 23.

33 *Is Rabies a Specific Disease? D. E. Salmon.
34 *Some Facts Learned in the Management of Typhoid Fever in Central West Virginia. W. W. Golden.
35 *Rupture of Urethra; Report of Cases. James R. Hayden.
36 Operation for Caries of the Mastoid Secondary Opening of the Lateral Sinus, and Ligation of the Internal Jugular Vein. Julius Rosenstirn.
37 *The Value of the Widal Reaction in the Diagnosis of Typhoid Fever in Children. Milton Gershel.
38 A Case of Actinomycosis. Leonard Weber.
39 A Case of Multiple Unilateral Cranial Nerve Paralysis. Philip King Brown.
40 Hallucination of Snakes. W. Moser.

41 A Personal Experience with Mushroom Poisoning. E. A. Blount.
42 Case of Torsion of the Spermatic Cord. A. B. Atherton.

Cincinnati Lancet-Clinic, November 23.

43 *Some Anomalies of the Uterus. B. Merrill Ricketts.
44 *Some Causes and Remedies for Ignored Syphilis. M. L. Heidingsfeld.

St. Louis Medical Review, November 23.

45 Report of the Commission Appointed to Investigate the Cases of Tetanus in St. Louis, Following the Administration of Diphtheria Antitoxin. B. Meade Bolton, C. Fisch, and E. C. Walden.

Virginia Medical Semi-Monthly (Richmond), November 8.

46 *Presideutial Address Before the Medical Society of Virginia. J. R. Gildersleeve.
47 *Delusions in Medicine. S. W. Dickinson.
48 *Past, Preseut and Future of Cancer. Stuart McGuire.

Annals of Gynecology and Pediatry (Boston), November.

49 Treatment of Extrauterine Pregnancy, with Cases. Francis D. Donoghue.
50 Early Prophylaxis in Obstetrics. William A. Howe.
51 Chronic Lacerations of the Perineum. J. G. Carpenter.
52 Hygienic Measures in the Treatment of the Catarrhal Diseases of the Upper Air-Tract in Children. Carolus M. Cobb.

The Post-Graduate (N. Y.), November.

53 The Treatment of Chronic Purulent Inflammation of the Middle Ear. James F. McKernon.
54 On the Home Treatment of Pulmonary Tuberculosis. Leonard Weber.
55 Clinical Bacteriology. Hermann Lenhattz.
56 Report of Clinic. Drs. Stubbert and Lloyd.
57 Notes from the Clinics. Dr. Lusk.

Journal of Mental Pathology (N. Y.), November.

58 *On the Prophylaxis and Treatment of the Recidivist Criminal. Jul. Morel.
59 *The Regicides. E. Regis.
60 Acute Delirium. B. I. Semidalow and V. V. Veidengammer.
61 On the Duty of the State in the Matter of the Preventiou of the Birth of Crime and of Its Propagation. Louise G. Robinovitch.

Clinical Review (Chicago), December.

62 Umbilical Heruia; Varicocele; Lymphangioma; Lateral Curvature of the Spine; Exteusive Hypertrophy of the Conuective Tissue; Monarticular Inflammation of the Knee-Joint; Ulceration of the Tongue; Synovial Tuberculosis of the Knee-Joiut; Sprain of Lumbar Muscles; Dislocatiou of the Shoulder Joint; Relapsing Appendicitis. N. Senn.
63 Some Observations on the Treatment of Lobar Pneumonia. W. H. Washburn.
64 Clinical Lectures Upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Journal of Medical Research (Boston), November.

65 Upon the Occurreuce of Oxyphenylethylamin in Pancreatic Digestion. R. L. Emerson.
66 *Metabolism in Diabetic Coma, with Especial Reference to Acid Intoxicatiou. Elliott P. Joslin.
67 *The Diagnosis of Glanders by the Strauss Method. Langdon Frothingham.
68 Flagella Staining with Night Blue. Letchworth Smith.
69 Four Cases of Acute Hemorrhagic Meningo-myelitis in Cocker Spaniels, with More Remarks on the Etiology of Myelitis. Philip King Brown and Wm. Ophuls.
70 Composition of Zygadenus Frumenth and Zygadenus Venenosus. M. Vejux-Tyrode.
71 *Degeneration of the Islands of Langerhans of the Pancreas in Diabetes Mellitus. James H. Wright and Elliott P. Joslin.
72 Nature of the Fats and Allied Bodies in Chylous Urine. A. E. Austin.

Richmond Journal of Practice, October.

73 The Mosquito. Ennion G. Williams.
74 How to Prevent the Spread of Contagious Diseases. Edward M. Magruder and Lyman Skeen.
75 Questions and Answers Regarding Syphilis.

Journal of Mental and Nervous Diseases (Nyack, N. Y.), November.

76 *The Separate Localization in the Cortex and Subcortex of the Cerebrum of the Representatiou of Movements and of Muscular and Cutaneous Sensibility. Charles K. Mills.
77 On Certain Studies with the Ergograph. August Hoch.
78 *The Stadia of Mental Disease. Theodore H. Kellogg.

Medical and Surgical Monitor (Indianapolis), November 15.

79 Some Surgery of the Kidney. J. H. Carstens.
80 A Study in the Evolution and Psychology of Sex. N. E. Aronstam.

Therapeutic Gazette (Detroit, Mich.), November 15.

81 Irritable Senile Urination and Its Treatment—A Clinical Lecture. John H. Brinton.
82 A Statistical Study of Venereal Diseases Taken from the Case-books of the Genito-urinary Dispensary of the University Hospital. H. M. Christian.
83 *Treatment of Rheumatism and Allied Disorders. D. K. Coverley.
84 *The Use of Veratrum Viride in Pneumonia. T. G. Stephens.
85 *Appendicitis, with Special Reference to Diagnosis and Treatment. W. H. Mitchell.

New Yorker Medicinische Monatsschrift, October.

86 *Bericht über einen Fall von Raupenhaar-Entzündung des Auges. R. Deuig.
86½ Ueber Puerperalfieber. L. A. Ewald.
87 Myelogeue Leucaemie mit Lungen-, Larynx-, und Pharynx-Tuberculose. Arnold Sturmdorf.

Peoria Medical Journal, November.

88 General Practitioner and Specialist. R. E. Lewis.
89 Bony Union in Intracapsular Fracture of Neck of Femur—Report of Cases and Presentation of Specimen. E. B. Montgomery.

American Journal of Surgery and Gynecology, November.

90 Woman's Hospital Reports. Emory Lauphear.
91 *A Résumé of the Latest Literature on Tuberculosis of the Peritoneum. Wallace Neff.
92 Syphilis and the General Practitioner. O. L. Suggett.

Medical Times and Register (Philadelphia), November.

93 Endometritis. F. R. Burnham.
94 Beta-eucaiu as an Anesthetic. John Moir.
95 A Clinical Report of Gude's Pepto-mangan. Samuel Wolfe.
96 Gout and Rheumatism. W. H. Walling.

Memphis Medical Monthly, November.

97 *On the Occurrence of Leucocytosis and So-called Dust Granules iu Continued Malarial Fevers and Malarial Cachexia. Wm. Krauss.
98 Shall We Make a Diagnosis of Tuberculosis Known to the Patient? Llewellyn P. Barbour.
99 Narcotics in Pediatrics. Wm. Britt Burns.
100 Coucerning a Fulminating Form of Phlegmon of the Pharynx and Larynx. C. Hodlmoser.
101 Typhoid Fever and Its Treatment. G. C. Morris.
102 Unique Case of Renal Calculi. R. J. Heald.

American Journal of Obstetrics (N. Y.), November.

103 *Indications, Technique, aud Remote Results of Salpingostomy and of Resection and Ignipuncture of Ovaries; with Records of 104 Cases. A. Goldspohn.
104 *Report of a Case of Acute Pancreatitis aud Fat Necrosis. Edward J. Ill.
105 *Some Observations on the Surgery of the Spleen. Lewis S McMurtry.
106 Indications for the Combined Vagino-abdominal Operation for Hysterectomy. Rufus B. Hall.
107 *Gallstone in the Common Duct. L. H. Dunning.
108 Some Forms of Disease Involving the Uterine Appendages Augustus P. Clarke.
109 Management of Face Presentations. Magnus A. Tate.
110 *Retrodisplacements of the Uterus in Young Girls and Unmarried Women—Their Frequency and Best Methods of Treatment. Herman E. Hayd.
111 *The Mechanical or Combined Plastic and Mechanical Treatment of Retrodeviations of the Womb. Marcus Rosenwasser.
112 A Report of Ten Cases of Cesarean Section performed at St. Michael's aud St. Barnabas' Hospitals of Newark, N. J. Charles L. Ill.
113 *Diseases and Injuries of the Cervix Uteri and Their Treatment. J. W. Hyde.
114 *Persoual Experience with Uterine Fibromyomata. Henry D. Ingraham.
115 Some Rare and Odd Cases and Experieuces in Pelvic and Abdominal Surgery; the Lessons They Teach. C. C. Frederick.
116 *Early Operations in Appendicitis, and Method. Joseph Price.
117 *Sarcoma of the Breast. Edwin Ricketts.
118 *Cornual Pregnancy; Rupture in the Fourth Month; Operation; Recovery; Remarks. Miles F. Porter.
119 *An Interesting Case of Tubo-abdominal Pregnancy. William H. Humiston.
120 Tubal Pregnancy; Case Operated in the Eighth Week, Immediately Before the Occurrence of Rupture. Marcus Rosenwasser.
121 *Galvanism as a Remedy for Uterine Hemorrhage. Edwin Walker.

Iowa Medical Journal (Des Moines), November 15.

122 Medical History of the 49th Iowa Volunteer Infantry. J. Fred Clark.
123 *Impoverished Blood aud Its Relation to Insanity. J. W. Wherry.

124 Acute Intestinal Obstruction. D. C. Brockman.
125 Adrenalin in Uterine Hemorrhage. Edward Hornibrook.

Medical Summary (Philadelphia), November.

126 The Home Treatment of Nasal Catarrh. (Continued.) Edwin Pynchon.
127 Typhoid and Typho-malarial Fevers. A. J. Mann.
128 About "Typho-malarial" Fever and a Hint as to Amenorrhea. Geo. H. Candler.
129 The Modern Treatment of Syphilis. M. Shellenberg.
130 On the Significance of Symptoms and Signs in Disease. Thomas H. Manley.
131 Scarlet Fever. M. G. Price.
132 Hydrophobia: Its Symptoms, Treatment, Etc. (Continued.) Wm. Alexander Armstrong.
133 For Wounds with Sanious Discharges, Fetor of Ulcers, Cancers, Etc. Wm. A. Armstrong.

Oklahoma Medical News (Oklahoma City), November.

134 Talipes. L. A. Riely.
135 A Few Remarks About Vesico-vaginal Fistulæ. Arch D. Jones.
136 A Few Remarks on the General Practitioner Concerning the Teeth. Wilhelmina Short.
137 Laparotomy. W. E. Dicken.
138 Christian Science. Delos Walker.
139 *A Clinical Stury of Potassium Bicarbonate in the Treatment of the First Stage of Lobar Pneumonia. Ira B. Bartle.
140 The Etiology of Paretic Dementia. Frank P. Norbury.

AMERICAN.

1. **Albumin in the Urine.**—Osler shows that a minute quantity of albumin in the urine with a few casts is not necessarily a matter of serious import. They are danger signals which may be of use in guiding the patient to better methods of living and, therefore, their occurrence indirectly serves to prolong his life. The points on which one should lay special stress as indicative of serious disease are: 1. Persistent low specific gravity of the urine, 1008 to 1012. 2. The condition of the heart and arteries—marked sclerosis of the peripheral arteries, with the apex-beat of the heart an inch or two outside the nipple line, and a ringing and a highly accentuated aortic second sound. 3. The presence of albuminuric retinitis. A trace of albumin and a few tube casts are simply warning to the engineer to go slow, for the pace is too rapid for the state of the track.

3. **Vesical Emergencies.**—The methods of meeting conditions of urinary retention are especially noted by Fuller, who advises as regards the use of the catheter, the filiform bougie, etc. A soft rubber catheter can never produce harmful trauma, but the hard metal instruments can do so and are never recommended for constant use by any progressive physician. Where prostatic obstruction is so great as to require this instrument, a prompt resort to radical surgery should be insisted on. As regards the perineal incision, which is usually chosen, he warns against the too short incision and gives the details of the methods of managing cases of retention due to stricture complicated by extravasation and perineal gangrene, which have already been published by him in his work. Where prostatic obstruction occurs in cases not amenable to catheterization, prostatectomy should be immediately performed.

4. **The Boston Ice Supply.**—This article gives a review of the various sources of the ice supply of the city of Boston, including artificial ice, and their bacteriologic and other possibilities. Hill sums up by saying that, on theoretical grounds, the danger of infection through ice, either natural or artificial, is almost *nil*. There is but one presumably authentic case on record of transmission of typhoid fever through ice. In this country but one case has been attributed to ice, and in this the evidence was indefinite. Snow ice apparently contains a large number of bacteria, but clear ice is much less contaminated. Artificial ice may contain near its center or bottom about as many bacteria as the average natural ice, but the bacteria present, excepting in very rare instances, are practically harmless. Dirt is found in both natural and artificial ice, usually more abundant in the former.

8. **Wounds of the Bladder.**—The accident of wounding the bladder is rare. Cumston has had but one case in 300 abdominal sections and one out of 74 cases of vaginal hysterectomy. The cases are reported and in neither was the result bad. The anatomy of the parts is carefully described, and the abnormalities, especially displacements, compressions, etc., of the bladder by tumors are detailed. The technique of the treatment of the bladder injury is given according to the various authorities. The author's method is as follows: Two layers of sutures are employed, the first of which includes the mucous membrane alone; for this fine catgut should be used. The second and superficial layer of sutures includes the muscle. If the bladder is deeply seated, and if the abdominal walls are very thick, the mucous membrane may first be united by interrupted sutures of fine catgut, but if the wound in the bladder is easily accessible, a running suture is to be preferred. As to the superficial suture, it should always be done with a running Lembert's suture. In some cases, especially if the wound in the bladder is a long one, these two layers of sutures may be reinforced by a third layer of Lembert's suture. This method has two advantages: In the first place the mucous membrane is brought into better apposition and it is easy to understand that these two layers of suture would more completely occlude the opening than the technique recommended by Guyon and others. The drainage of the bladder can be accomplished by free urethral drainage or directly from the ureters, and he thinks that in cases of very large openings into the bladder made occasionally during operation, permanent catheterization of the ureters might possibly be of value. As ordinarily practiced permanent drainage of the bladder is usually employed, and he suggests care in choosing of the catheter, the precautions to be employed and the duration of the drainage. He would change every four or five hours in the female, but if we desire to use permanent catheterization the Pezzer instrument is about the best. When the permanent catheter is used and not changed, it usually becomes occluded by salts, and if the Pezzer sound has been used it is better to use the ordinary catheter after its removal rather than to reendeavor to introduce another instrument of the same description. He has found that after suture of the bladder following suprapubic cystotomy, five or six days' drainage is usually enough, but others have advised a longer period. If the sound should be left without removal for a week or ten days, it is better to use intravesical injections of 1 in 2000 solution of either lactic acid or phosphoric acid every other day to prevent the deposit of urinary salts. He thinks permanent drainage is necessary to prevent distension of the organ, and to allow solid union of the wound. If septic complications should occur, the abdomen should be opened, and thorough irrigation with saline solution and the permanent catheter should be carefully watched to see that the drainage is perfect.

9. **Nurses' Training Schools.**—Cabot suggests putting nurses' training schools on a sound basis, the students helping to pay the salaries of paid instructors. Nursing should be taught by nurses, medicine by physicians. The preparation for private nurses should be in private families and by private nurses. There should be a better balanced curriculum containing liberal as well as purely technical studies.

11. **Yellow Fever.**—An account of the experimental work with yellow fever by inoculations for immunization is given by Guiteras with details of cases, temperature charts, etc. The result was that the cases thus produced were not found to be invariably mild, as a history of the experiments has shown. The charts that are published give us facts in regard to the early stages of the disease which were not previously known, but Dr. Guiteras thinks the cases are the average ordinary yellow fever cases. While the object of the experiments was not to confirm the mosquito theory it nevertheless is useful for this end, as it shows that all forms of yellow fever from the mild to the severe, hemorrhagic, uremic, etc., can be produced, which is opposed to the belief that there must be some other means of communication. They also seem to show the exclusive rôle of the Stegomyia and the innocuousness of fomites.

13. **New Substance in Bone.**—The constituent discovered

by Gies—the osseomucoid—is apparently the same as the mucoid in tendon cartilages and other connective tissue. It shows that ordinary compact bone like other forms of connective tissue contains the mucin substance and also, contrary to Young's deduction, that in the process of ossification the connective tissue matrix is not completely removed. It also makes it easier to understand the accumulation of mucin in various pathologic forms in osseous tissue shown by numerous observers in recent years.

14. **Ovarian Pregnancy.**—The literature as regards ovarian pregnancy is discussed by Scott, who suggests the possibility of ovarian hematomas being thus produced. A case is reported with careful macroscopic and microscopic examination and he sums up as follows: Hematomas of the ovary are comparatively common, and we have no explanation for their occurrence. Ovarian pregnancy is a proven possibility. Continued development of the ovum in ovarian pregnancy causes changes in the organs and tissues such as to render the demonstration of its ovarian origin impossible. The most natural consequence of the early death of the ovum in ovarian pregnancy is its gradual transformation into an ovarian cystic tumor, added to this retrograde changes obscure its origin, and a hematoma is the final result.

16. **Annular Pancreas.**—Abnormalities in the anatomy of the pancreas are discussed by Tieken, who describes the varieties and reports a case. As regards the genesis of annular pancreas the following is suggested: If the ventral and dorsal diverticula did not unite as they normally do, but develop independently, there would be pancreatic tissue on either side of the intestine, and as growth proceeded the bowel soon would be completely surrounded by glandular tissue. In the semi-annular type, the condition might be due to an overdevelopment of the head, which sends out processes, partially surrounding the bowel; if this hypertrophy should continue until the processes meet on opposite sides of the duodenum, there would be a true annular pancreas, and there is no reason why this could not occur. Some of these malformations can not be detected during life and do not produce pathologic conditions of a serious nature. Accessory pancreas may be a factor in the production of deviations of the intestines or may become the seat of tumor formation, and the semi-annular type, according to Genersich, is of some practical importance on account of the possibility of its producing duodenal constriction. The annular pancreas, however, is capable of producing conditions which may become of great importance, as shown in the case reported here, where obstruction of the bowel was marked, and led to great dilatation of the duodenum. After the obstruction has become a little more pronounced it is easy to see the consequences that might result. If tumor should develop in the head of the pancreas, there will be early stenosis of the bowel and probably occlusion of the bile ducts as well, and this might lead to a suspicion of hour-glass contraction of the stomach. The accumulation and decomposition of food in the duodenal sacculation is another possibility which might produce serious results. Tieken concludes by saying that annular pancreas is of interest from a practical as well as from a pathologic standpoint, and should be taken into consideration in all obscure cases of tumors and obstruction at or near the pancreas.

17.—See abstract in The Journal of September 14, p. 711.

19. **Genuine Vaccinia.**—The characteristics of genuine vaccinia in its typical form are first given by Welch and Schamberg, who ask what constitutes successful revaccination. They think that in many cases it may be modified decidedly from the earlier form, but there are certain false vaccinia conditions which claim attention. The raspberry excrescence is one and is utterly devoid of protective power. The authors' experience with the glycerinated lymph has been favorable and they see no reason why it should not be relied on. It is possible that there may have been a difference of quality in the products from various sources giving reason for unfavorable results that have been reported by certain authors. The fault is mainly in the preparation of the glycerinated lymph. The whole lesion is curetted, bringing away lymph, vesical walls and broken-down tissue. He thinks the unpleasant results sometimes observed from the use of this form of vaccine matter may be due to the method by which it is obtained. In cases of infants, if there is no smallpox about, we can wait until the age of three months, but during an epidemic no age is a contra-indication to the performance of vaccination, nor are other diseases a contra-indication. If the child is successfully vaccinated in infancy and again at the age of puberty, the immunity will probably be permanent, though infection is common enough to warrant revaccination whenever smallpox is epidemic. The quality of the vaccine is far more important in their opinion than the quantity. Therefore, one good vaccination cicatrix should be as efficient as several.

21. **The Technique of Vaccination.**—Packard is also a believer in the glycerinated vaccine. He notices the importance of sterilization and prefers a scarificator for the reason that it would be likely to be used for this alone. He has been in the habit of using a point just below the head of the fibula when he does not vaccinate on the arm. The only thing that would make him vaccinate elsewhere would be varicose veins at his point of preference. The advantage of this location is that it is subject to less friction and, therefore, safer from contamination. He also favors the use of shields. The celluloid shield allows the patient to inspect his arm and derive more or less amusement therefrom, and also permits the radiation of heat and avoids the poulticing effect. He removes the shield as soon as a specific local lesion has been produced and has the arm dressed either with boracic acid or aristol, one dram to the ounce of ointment. In spite of all care, some arms will be sore and in cases where there is a surrounding edema or cellulitis he thinks the rational treatment is to surround the arm with an antiseptic pad of gauze soaked in 1 to 3000 bichlorid of mercury solution. Another point of great importance is proper judgment whether or not the vaccination has been successful.

23. **Blood Examinations.**—Deaver and Moore's experience covers the subject of parasites, serum, hemoglobin and blood count examinations. They find it sometimes difficult to detect the malarial parasite soon enough to get a prime diagnosis, especially in the irregular and atypical cases and a single negative examination can not be considered decisive. There is very little direct benefit derived from cultures taken from the blood in bacteremia, and in suspected malignant endocarditis the results have usually been negative. They are opposed to disturbing or painful examinations that do not promise positive benefit. The sources of error in the Widal reaction are noted and they call attention to the fact of its occurrence in tuberculosis and also for years after typhoid fever. The positive Widal is never of very much value to the surgeon, however it may be to the physican. They are not in a position to judge of the negative serum reaction in various infections such as tropical dysentery, colon, paracolon, proteus, etc. They are also skeptical as to gelatin and calcium chlorid in preventing hemorrhage. Sugar in the blood is more a matter of curiosity than of value. Justi's hemoglobin test for syphilis has proven very satisfactory in the cases where used. In doubtful cases it is well worth a trial. They do not consider any low percentage of hemoglobin a positive contra-indication to surgery in active suppurative conditions or after hemorrhages. The erythrocyte count, as an index of resistance, is of value and is as well a guide to the severity of the affection. Leucocytosis is both the most valuable and most disappointing part of the subject of these blood examinations. Their experience with the leucocyte count is given in a paper published in the *Philadelphia Medical Journal*, June 1, 1901, and they say that, though at times it is very valuable, it is often very disappointing. In conclusion, they object to the unfounded claims that have been made for the procedure, and deplore unfortunate results that may follow misapprehensions from such statements.

24. **Supraorbital Reflex.**—This reflex, which consists of a slight but distinct contraction of the orbicularis palpebrarum

when the supraorbital nerve or its branches is struck a slight blow, is noticed by Sailer, who thinks it is a true sensory motor reflex. It may in certain cases extend to other muscles at a considerable distance from the supraorbital nerve.

25. **Bottini Operation.**—In this continuation of Horwitz's article in this number, he claims that the value of the Bottini operation as a prophylactic measure is based on an experience of 14 patients on whom he operated between the ages of 49 and 61 when they were just beginning to suffer from the effects of prostatic obstruction. In each case the operation was successful and the effects have been permanent. A number of cases are reported showing the good results.

27. **Traumatic Stricture of the Esophagus.**—The treatment of this condition is discussed by Bunts, who calls attention to the value of its diagnosis and its frequency due to the drinking of lye by children. The prognosis depends on the extent of injury of the mucosa and the rapidity of contraction. Most cases pursue an unfavorable course. He has treated eight cases from this cause and has devised a set of double-bulbed olive-shaped bougies which have given him much satisfaction. The bougie has an upper bulb a size larger than that of the lower. This enables one to follow the advantage gained by the passage of the first by the immediate passage of one a size larger. He speaks of the necessity of great gentleness and care in the use of these bougies. On inserting it is best to have the patient sit upright, in a straight-backed chair, the head thrown back somewhat, in order to straighten the line of introduction of the bougie. Instead of passing it directly back in the median line, it is probably better to pass it into the pyriform sinus at the side of the larynx, which affords a funnel-like aperture that will allow the bougie to slide into the esophagus without encountering the bodies of the cervical vertebræ or the cricoid cartilage. Force should never be employed. The cases are reported in detail. He thinks the use of his method will, in many cases, render the performance of gastro-enterostomy and retrograde dilatation unnecessary even in the most serious cases.

28. **Diagnosis in Nervous Diseases.**—The value of a correct diagnosis in many of the nervous diseases as a guide in the conduct of the physician, avoidance of needless expense to the patient, etc., is noted by Diller. He reports instances of tabes and paresis where an early diagnosis saved much trouble. Many nervous diseases, moreover, are curable and an early diagnosis is of importance.

30. **Hygienic Legislation.**—Scheppegrell's article is a history of a contest between him and the local authorities in New Orleans and, as the result, the passage of an antispitting ordinance over the mayor's veto.

31. **Primary Hepatic Sarcoma.**—According to De Vecchi and Guerrini the cases of primary sarcoma of the liver reported are so numerous that probably many of them are wrongly diagnosed. After reviewing critically 45 cases they come to the conclusion that the majority of these should be excluded from the list of primary tumors, and the following is the statement of their results: Ten cases which are reported probably are not sarcoma; namely, the cases of Naunyn, Lancereaux, West, Roberts, Lee, Pepper, Koltmann, Tooth, Hall, White, Maisenbach and Henschen. The case of Naunyn probably is one of proliferation of Glisson's capsule; that of Lancereaux one of fibroma; West's case is very doubtful, and Roberts' probably a fungous hematode; the cases of Lee, Pepper, Koltmann and White are carcinomata; Tooth's case is a leucemic or a tubercular lesion, Maisenbach's a myxoma and Henschen's a cystic telangiectatic carcinoma. Seven other cases must probably be excluded also, namely, those of Frerichs, Wagner, Block, Ledue, Pellacani, Parker and Burnett, since sarcomatous nodules were found in other parts of the body, to-wit, in the skin, intestines, eyes, spinal cord, etc. Eight further cases (Warren, Warshawski, Hutyra, McKee, Axtell, Knoch, Krasnobajew) they have not been able to investigate thoroughly; probably some of these would also have to be excluded. They report two cases of primary sarcoma which came under their observation in which they considered the neoplastic tendency to be attributable to a preceding cirrhosis.

33. **Rabies.**—Salmon's paper is a discussion and convincing analysis of the statistics, combating the statements of Dulles and others who argue that hydrophobia does not exist.

34. **Typhoid Fever.**—Golden gives certain particular points derived from his experience with typhoid in West Virginia. The course is usually atypical, and constipation is more common than diarrhea. An unduly high temperature at the beginning is frequently seen. Relapses are exceedingly common under the best management. The mortality is small, not exceeding 6 per cent. He notices certain houses which in spite of re-adjustment of water supply, plumbing, etc., seemed to be infected with typhoid. He holds to the milk diet. In cases where he has varied from it or seen it varied, he thinks the results have been bad. In cases of well-nourished patients with high temperature, he would keep them down even to a pint of milk a day with plenty of water and very small doses of alcohol frequently administered. Abortive cases he has learned to disbelieve in. Tympanites is usually controlled by diet, but an enema of saponified water, holding in emulsion 1 dram of oil of turpentine, will usually control it and he makes this a routine treatment. Of internal antiseptics he has faith in thymol, but the Woodbridge treatment is generally condemned in his section.

35. **Rupture of the Urethra.**—After reporting three cases, Hayden says that treatment is operative or non-operative according to the nature and extent of injury which, as a rule, can be readily ascertained by a careful study of local conditions: If there is marked hemorrhage from the meatus with a complete retention of urine, or difficult and painful urination and bloody urine, associated with difficulty or inability to enter the bladder with instruments; and, also, if there is a fluctuating perineal tumor, with perhaps a rise of temperature, then immediate perineal section and bladder drainage are indicated. If, on the other hand, hemorrhage is slight, urination free, but somewhat painful, the urine tinged with blood, or containing light bloody flakes, and catheterization normal, except perhaps causing some pain at a localized spot, which feels slightly roughened or thickened, and little or no perineal tumefaction, then catheterization, irrigation, and urinary antiseptics should be resorted to, the patient in the meantime being kept in bed, and carefully watched for the first sign of urinary extravasation, in the event of which external urethrotomy with vesical drainage should be immediately resorted to. Partial suture of the urethra must always be employed in case of complete rupture, in which the divided ends of the canal are widely separated; otherwise it is not essential. Complete suture of the damaged canal is, in the writer's opinion, contra-indicated, as it prohibits the free bladder and urethral drainage, which is so essential for the contused and infiltrated condition of the tissues in these cases.

37. **Value of the Widal Reaction.**—The following are the conclusions of Gershel's article: 1. The main facts concerning the Widal reaction in children are the same as those that hold true for adults. 2. In 84 cases of typhoid fever in children, ranging from one and a half to fourteen years of age, 81 cases gave a positive result. 3. In 115 cases that were fevers other than typhoid, the positive reaction was never obtained. 4. The reaction did not occur later in children than in adults, as is claimed by some writers, but on the other hand, somewhat earlier. However, too much stress on this point should not be laid. 5. The Widal test is of greater importance in children than in adults, owing to the frequent atypical character of the disease in the former, and the greater frequency of cases resembling pneumonia and meningitis. 6. As pointed out by Morse, the reaction will be of service in establishing the frequency of typhoid fever in children.

43. **Uterine Anomalies.**—The anomalies of the uterus bicornis, uterus didelphys bipartitus, etc., with their consequences and possibilities are described by Ricketts, who reports a case of double uterus and one of uterus rudimentarius

bicornis of his own observation. He gives in conclusion an extensive bibliography of the subject.

44. **Ignored Syphilis.**—Heidingsfeld reports his observations on this point in 21 cases out of 134 in which the patients denied any previous infection whatever. He thinks that in many cases it was due to the negative character of the history; patients are sometimes very slow in making admissions. In other cases the disease must have been recognized and there are still other cases where there had been a faulty diagnosis made. He insists on the importance of thorough diagnosis in every case and in the distrust of negative history in some instances. In many of the cases, too, there is extra-genital infection which also plays a part in the causation.

46. **Medical Education.**—This address by Gildersleeve reviews the subject of medical education, medical ethics, corporation practice, organization of the profession, reciprocity between the states, etc.

47. **Delusions in Medicine.**—Dickinson's article is an interesting review of the various medical superstitions that have existed, from early fetichism and enchantments down to christian science and osteopathy. He does not believe in the materialistic tendencies of modern medicine as the cause of the present growth of these delusions, but rather that they are proof of medical advancement. These frauds take up cast-off ideas and distort them. When public faith is lost in them they will have to revolutionize their systems to meet the changed conditions.

48. **Cancer.**—McGuire reviews cancer, its causation, pathology, etc., as to the various theories of the same, and holds that there is very little possible good in any treatment except by early and correct diagnosis and thorough operative measures.

58. **The Recidivist Criminal.**—The questions of heredity, environment, etc., of the criminal are discussed by Morel, who says in conclusion: "1. For the benefit of public health, the government should care for the young degenerates and take them away from the evil influence of their parents. 2. When these degenerates attract attention by their acts or conduct, they should be investigated and reported on officially, as well as professionally. 3. As far as possible, they should be placed in medico-pedagogic institutes directed by competent authorities. 4. Parents should have the privilege of placing in medico-pedagogic institutes children whose low intellects require special care; the children should be cared for up to the age of 18 years. 5. The question of vengeance should give way to that of ameliorating the condition of the offenders. The degenerate can not be held responsible, but should be cared for by society."

59. **The Regicides.**—Regis goes over the history of numerous assassins of prominent individuals, whom he divides into two categories: 1. Those suffering from a special form of insanity haunted by the idea that they have suffered a special injury for which they seek reparation. 2. Those who make attempts on persons under the influence of some variety of insanity are not cognizant as to their acts. Among the first of these he includes Mariotti, who attempted to assassinate Freycinet; Perrin, who fired a blank cartridge in front of President Carnot's carriage, and others. The true regicides may attempt to kill through religious or political fanaticism and are, in his opinion, always of a mystic temperament misguided by religious or political delusions, think themselves called on to act the part of judge and martyr and kill some great person in the name of God, the country, liberty, or anarchy. The fact that the individuals who survive end in becoming insane is, he thinks, in favor of his view. He believes that they should not be treated as responsible individuals or executed as such.

66. **Diabetic Coma.**—The case reported is offered because of the extreme grade of acidosis; because di-acetic acid was apparently absent for several months before death; because of the various facts which developed in the examination of the urine, stools, vomitus, and contents of the gastro-intestinal tract, relating chiefly to the absorption of sodium bicarbonate, the estimation of urea, the increasing percentage of ammonia, to the total nitrogen excreted, the unusual amount of acetone as compared with B-oxybutyric acid, the diminution of chlorin in the urine and its presence in the feces, and the excessive excretion of potassium. The patient, a boy of 15, improved very remarkably under dietetic diet and the administration of sodium bicarbonate, but died suddenly of a complication possibly due to an irregularity in diet, though its nature is not exactly stated. The case is analyzed with great care and the author thinks it furnished more than the usual amount of evidence to the already accumulated facts showing that diabetic coma is the result of acid intoxication.

67. **Glanders.**—Strauss' method of diagnosis of glanders consists in injecting the suspected bacilli into the abdominal cavity of guinea-pigs, where it produces peculiar suppurative results in the scrotal peritoneum. It has been experimented on by Frothingham, who considers it the most valuable test at our command. The positive test means everything; the negative test nothing, though several negative tests are of great value. He thinks the best results can be obtained when three or four guinea-pigs are used for each test, each pig receiving an injection of from .5 to 1 c.c. of the suspension, a small portion of which usually remains in the subcutaneous tissue, the rest being left in the peritoneal cavity.

71. **Diabetes and Degeneration of the Islands of Langerhans.**—Nine cases of diabetes are reported, in two of which there were marked pathologic changes in the islands of Langerhans which Wright and Joslin consider to be strongly in favor of the hypothesis that lesions of these structures are important factors in the pathology of the disease. Whether marked lesions of the islands of Langerhans will be found to be always associated with glycosuria, as Opie seems to hold, must be determined by further observations.

76. **Separate Localization.**—Mills reiterates his former view of the separate localization in the cortex and subcortex of the movements and of muscular and cutaneous sensibility, not admitting that the Rolandic and adjacent regions are sensori-motor as had been held by Munk, Hitzig, Bastian, Starr, and others. He reviews the evidences as to their functions and states that a separate and extensive sensory zone exists, which includes the gyrus fornicatus, precuneus, and postparietal convolutions, possibly also the hippocampal convolution as held by Ferrier. His arguments are given in detail and he thinks an analysis of the cases which seem to contra-indicate his view will show the incorrectness of the deductions from them. Owing to the fact that motor and sensory regions are co-terminous and frequently overlap, every case should be excluded in which the lesion described extends even for the fragment of an inch outside the particular motor or sensory region specially involved.

78. **Stadia of Mental Disease.**—Kellogg recognizes four stadia in mental disease: the incubatory period; that of active mental disturbance; that of reactive exhaustion, and the convalescent period, all except the third lasting on an average for a number of months. He sums up his paper as follows: "The vast majority of attacks of mental disease have but four simple stadia. The main stadium acutum is constituted chiefly of the maniacal, melancholic, or stuporous states, which are mere symptom-complexes alternating or replacing one another, though sometimes mistaken for separate attacks of insanity. Mental disease must be regarded as one continuous pathologic process with periodic fluctuations, so constant that remissions and intermissions are to be viewed as part of the morbid phenomena. The diversified curricula of insanity and the artificial variety of its forms described by modern writers may in great measure be reduced to clinical simplicity by the law of the stadia, conjoined with the maniacal, melancholic and stuporous states, as here rightly assigned to the position of symptomatic syndromes, rather than independent forms of alienation. In fine and in fact the law of stadium and rhythm and of the dominant states of expansion, depression and stupor are the only stable data

capable of any wide purpose for the logical unifaction of the multiform manifestations of mental disease."

83. **Rheumatism.**—The various drugs that have been tried as specifics for rheumatism—the salicylates, salophen and aspirin—are noticed by Coverley, who finds that the latter is in his opinion the most serviceable anti-rheumatic and anti-neuralgic that we can have in this class of patients. Chemically it is acetyl salicylic acid forming crystals soluble in alcohol and insoluble in water. Its taste is acid and not disagreeable. It remains unchanged in the stomach, giving rise to no irritation but the alkaline media of the intestines; salicylic acid is gradually liberated in the nascent state and its absorption is probably responsible for the efficiency of the drug. Its prompt elimination is readily accounted for by the profuse sweats and increased action of the kidneys with the fall in temperature.

84. **Veratrum Viride.**—This drug is recommended by Stephens in the treatment of pneumonia. Out of 54 cases thus treated he had 50 recoveries. The 4 necessarily fatal cases were in patients of advanced age and under unfavorable constitutional conditions. The preparation that he uses is the Norwood tincture which is most uniform in its action. The veratrum treatment of pneumonia does not require any intricate formula. The medicine can be reduced infinitesimally and given with precision. The reduction of blood pressure should be made gradual and not in excess. Veratrum is contra-indicated in fatty degeneration of the heart, gastritis and peritonitis. He says that we are not often called to see a case of pneumonia during the rigor or algid stage, but usually in the stage of fever. If the patient is seen during the subjective symptoms and the temperature is appreciably elevated during the algid stage, the treatment may commence and the duration of the attack be aborted. He prescribes veratrum with the compound syrup of squills or syrup of tolu and wine of ipecac in the proportion of one to two of the latter, giving ten drops for the beginning dose and increasing as required.

85. **Appendicitis.**—The salient points summarized by Mitchell are as follows: "1. It seems fairly clear that appendicitis should be usually treated as a medical disease, unless suppuration, gangrene, or perforation occur. 2. We are never justified in advising an operation while the appendix is inflamed, just to prevent complications. 3. If accurate diagnosis and skilful medical treatment were applied in every case, these complications would be infrequent and the death-rate greatly diminished. 4. In recurrent appendicitis it is our duty to advise removal of the appendix between attacks. 5. Imagine yourself in your patient's place, and treat him as you would wish to be treated yourself."

86. **Conjunctivitis from Caterpillar Hairs.**—The first account of this cause of ophthalmia was given by Pagenstecher in 1883. Other observers, especially from the Bonn Clinic, have since reported more cases. Natanson is apparently the only previous non-German observer of this cause of conjunctivitis. Denig, after a few remarks, reports a case observed by him in New York. The species of caterpillar was defined by him as that of the "tussock moth," Orgyia pudibunda, but other species are also dangerous, especially what he calls the "procession caterpillar," "bramble caterpillar" and the "Keiferspinner." In the case described there was slight blepharospasm and reddened and swollen conjunctiva of the under lids. The whole extent of the inflamed tissue of the inner lid and the conjunctiva and the connective tissue were strewn with small blackish hairs, which appeared to be encapsuled in small bullæ. These blebs varied from day to day and sometimes were large enough to be seen with the unaided eye. Similar nodular swellings have also been observed in the iris by penetration of the cornea. The inflammation due to this cause is a tedious one, on account of locality a dangerous one, and there is the possibility of hairs getting on the mucous membrane of the throat and respiratory apparatus. As regards therapy he would warn against wiping the eyes, and after cocainization he washes out the eye with an indifferent sterilizing fluid so as to get rid of the larger number of hairs; little bundles can be removed with pincers. A salve should be employed later and cocain applied to relieve the pain.

91. **Peritoneal Tuberculosis.**—Neff offers the following conclusions as a result of a discussion of the literature and a consideration of the subject: "1. Tubercular peritonitis is a surgical disease, and should be treated surgically, not medically, for the simple reason that when treated medically patients die, but when treated surgically a cure is effected in a large proportion of cases, and a marked improvement follows in all. 2. The proper treatment is abdominal section rapidly and carefully performed. 3. Danger from operation is very slight, the mortality being less than 3 per cent. 4. Of the many theories advanced to account for the cure in these cases, the antitoxin theory of Gatti seems to be the most rational. It is not unlikely, however, that the good results attained are due to a combination of several of the various causes assigned. 5. Sepsis is not apt to occur on account of the pathological changes that have taken place in the peritoneum. 6. Tuberculous infection of the wound does not occur. 7. Antiseptics are useless, and drainage should not be employed if it can be avoided, as it is apt to leave a permanent fistula. 8. Most of the deaths after the operation have been due to a general tuberculosis or tuberculosis of some other organ. 9. The successful treatment of this disease depends upon the diagnostic ability, good judgment, technic and skill of the man behind the knife."

97. **Malaria.**—Krauss describes a special form of malarial infection in which he has examined the blood and which shows special symptoms and peculiarities. As opposed to typical malaria, we have a remittent type of fever, a rather indefinite tongue which may be dry and red like typhoid, or white, broad and flabby. In the latter case we have the parasite within the red corpuscles if examination is made at the proper time. The fever is simple and refractory to quinin. It differs from typhoid in the quick invasion, early prostration, sweaty skin, absence of bowel symptoms and eruption, failure to immunize, non-fatality, absence of Widal reaction, hunger instead of anorexia and clear intelligence even in the severest stages. The blood findings are distinct. There is a marked leucocytosis often for days after the suspension of quinin, and the presence of a great number of so-called dust granules. These at first were thought to be embryons, but are too large and behave more like protoplastic substance of the polyleucocyte when we use the polychrome stain. Krauss called attention to these bodies and their relation to the indefinite malarias, about eight years ago, calling them extra-corpuscular parasites on account of the similarity of their staining reaction to that of malarial plasmodia. Shortly after, Müller's hematokonea, which are quite similar to these, appeared in the literature. Krauss suggests the possibility of these continued fevers having a pathology giving the same blood changes to those found in cachexia, and secondly, the similarity with sepsis as to the clinical history of leucocytosis. This fever has been spoken of as a septic fever by Witherspoon, Preble and others. He has satisfied himself that given a case with dry red tongue and the group of symptoms mentioned, very few if any plasmodia will be found and quinin can do no good. That it depends on malarial infection seems hard to dispute; it occurs principally in the early autumn, and when repeated more or less latent malarial infection is apt to have taken place. How sepsis can follow purely malarial infection is not clear. It seems to be a matter of autosepsis due to the possible toxins in the body.

103.—See abstract in THE JOURNAL of September 28, p. 808.
104.—Ibid.
105—Ibid., p. 856.
107.—Ibid., p. 857.
110.—Ibid., p. 855.
111.—Ibid., p. 856.
113.—Ibid.
114.—Ibid., p. 859.
116.—Ibid., p. 858.
117.—Ibid., p. 854.

118.—Ibid., p. 853.

119.—Ibid.

121.—Ibid., p. 855.

123.—**Impoverished Blood.**—The condition of the blood as a cause of insanity is insisted upon by Wherry, who tabulates the averages of examinations of 324 cases including various forms of mental disease which were taken in the order of their admission, and not selected.

139. **Pneumonia.**—Bartle offers his opinion as to the value of bicarbonate of potassium in the early stages of pneumonia, that is, not depending on it exclusively, but in combination with strychnia and proper dietetic treatment and with care as to the bowels. He reports cases in which he found giving .8 gram of bicarbonate in capsules every four hours of value. The result of the treatment is that pneumonia is apparently aborted; the drug relieves congestion by dilating the peripheral vessels, as he holds, and reduces the temperature by alkalinizing the blood. After the stage of consolidation sets in, he does not consider it of much use, but in the first few hours of the disease it has proven to be of great value.

FOREIGN.

British Medical Journal, November 16.

Two Cases of Post-Operative Thrombosis of the Mesenteric Vessels Followed by Death. A. Ernest Maylard.—The author reports two cases, both in females of similar age, in which there was a thrombosis of the mesenteric vessels occurring after an operation; one a case of gastric jejunostomy and the other of excision of one-half of the thyroid gland. The symptoms are discussed and the diagnostic points especially noted. Maylard thinks that the following symptoms occurring within a few days after operation may be taken as suggesting post-operative thrombosis of the mesenteric vessels, and all the more so when the operation is not one involving the intestines. "1. The onset of intra-abdominal pain, gradual or acute, but more or less constant, and possibly of a colicky character. 2. Neither tenderness on palpation of the abdomen, nor distension nor rigidity of the parietes in the earlier stages. 3. Possibly diarrhea with or without blood. 4. Possibly vomiting, but not of the usually acute obstructive character. 5. Rapidity of pulse. 6. Undue and inexplicable restlessness and excitability. 7. Any pre-existing symptoms of cardiac or vascular disease may be considered to attach additional weight to the significance of the other symptoms." He remarks that in searching the literature he has found no record of cases of thrombosis of the mesenteric veins following or dependent on operation.

Removal of Great Lengths of Intestine. Alexander Blayney.—A case in which 8 ft. 4 in. of the ileum were resected is reported and the literature of similar operations reviewed. Several American cases are not included. The most striking feature of the subsequent history of the cases that survived is that whereas some showed symptoms of intestinal disturbance, especially in a tendency to diarrhea, in the one where the greatest length of intestine was removed (Ruggi's) these symptoms were absent. In seven cases which showed subsequent disturbance the length of the intestine removed was over 200 c.c., with two exceptions, one of these being a case of contracted kidney, and in 14 surviving cases, which showed no intestinal disturbance, the length of the intestine removed was under 200 c.c. with one exception and in this case it only exceeded about two inches. Therefore, 200 c.c. seems to be about the danger limit as regards this particular disturbance. Children must be considered as not like adults in this respect, as in Ruggi's case the patient was only a little over 8 years of age. The explanation suggested is that as in animals where no intestinal trouble follows intestinal resection marked hypertrophy of the intestine was found to have taken place; it is easy, therefore, to suppose that such a hypertrophy will occur in undeveloped children sooner than in adults, or possibly Ruggi's case had an abnormally long intestine. If we accept Treves' measurements of 22 ft. 5 in. as the total length of the small intestine and take 200 cm. or 6 ft. 6.5 in. from this, we find that somewhat less than one-third is the limit beyond which we can not safely go in removal, and thus Senn is the most accurate of experimenters as regards his deduction in reference to man, for it was he who asserted that resection of over one-third of the small intestine was likely to be accompanied by strong digestive disturbances probably terminating in death.

After-Care of Cases Operated on for Perforation of the Stomach.—The operation for gastric perforation is like that for strangulated hernia, one for which every physician must be prepared to operate in emergencies; hence, arises the importance of knowledge of its after-treatment. The main questions are those relating to food, position occupied by the patient and aperients. As to food it must be of almost a necessity liquid and such as to require no gastric digestion. For twenty-four hours nothing but water or water containing some substance which is not a food, such as perhaps a little addition to the water in the way of carminatives, a little chloroform water or a little very weak tea without sugar or milk. He thinks milk is probably one of the worst things to be given to invalids. It contains proteids and therefore undergoes digestion in the stomach. This holds good whether it is buttermilk or koumiss. Aerated drinks have moreover the possible objection that the gas may force its way through the wound; though there is little cause to fear this, it is best to be on the safe side. The food should not be too stimulating; meat extracts are therefore inadvisable. Alcoholic drinks are also contra-indicated. The food that best meets the requirements of these cases is in Gilford's opinion grape sugar combined with some flavor. Raisin tea, made by pouring boiling water on one-half its bulk in chopped raisins, stewed for one-half hour and filtered, and next to this decoction of malt; though when given too freely this may produce diarrhea. After these in from one to three days a mixture of cream and water is added to the list and these three preparations may be continued until the end of the first week or longer. Generally, however, he adds a little starchy food to the cream, but such as contains not more than a trace of proteid. It is probable that fresh wounds of the stomach heal as quickly as do those of the face, but it is best not to assume that union is complete until the end of the first week. At the end of the week if the patient has done well solid food may be commenced, such as lunch crackers well chewed and sometimes a little bit of scraped fat from cold soft pork. After a few days the diet is still further varied, but still keeping in mind the foods which undergo intestinal rather than stomach digestion. Repeated rises of temperature and tenderness over the region of the stomach must be regarded as warning for precaution in feeding. The appetite then becomes the safest criterion. The position of the patient should be regulated by physiologic requirements and the position of the ulcer. The supine position on the back is not a good one; as the natural position is more or less on the right side, it is well that the head and shoulders should be well raised. In case of ulcers on the posterior surface the patient should be first placed well over on the right side, and should afterwards assume the sitting-up position or the shoulders be raised and the patient turned slightly to the right. Where the ulcer is low down on the anterior wall it may be then best for the patient to be lying on his back. In the case of ulcers of the lesser curvature the higher the patient can sit up with comfort the better. The passage of liquids over the wound may not be so harmful and may often be an advantage. Plain hot water, peppermint water, or water with a very little carbolic acid added may even be good. Nothing requires more judgment than the use of aperients, and it is well to refrain from irritating the stomach by aperients where there has been a limited peritonitis. Aperient enemas may be used twenty-four hours after operation and repeated if relief is obtained. In some cases where there is no peritonitis and the lower part of the abdomen is out of order it may be necessary to use drugs; of these magnesium sulphate and calomel are probably the best.

Improved Incision in Laparotomy for Prevention of Post-Operative Hernia. Arthur H. Buck.—The causes of

post-operative hernia are first noticed, and the author concludes that division of an aponeurosis without supporting muscle is bad, and the division of the muscle in the direction of the fibers can not be satisfactory if it involves division of the motor nerve fibers unless supported by other uninjured muscle or aponeurosis. He therefore operates by dividing the anterior layer of the sheath of the rectus an inch or more from the inner edge of the muscle, upwards and downwards to the same extent as the skin incision, taking care not to injure the muscle fibers themselves; then enucleation of the muscle from the sheath outwards, division of the posterior sheath, together with transversalis fascia, subperitoneal fat and the peritoneum. As soon as the peritoneum had been incised, the forefinger was introduced and the following structures divided up and down as far as necessary; in the whole length of the incision, the transversalis fascia, subperitoneal fat and peritoneum, and above the level of the fold of Douglas the posterior layers of the muscle sheath. To close the abdomen the above structures can be readily united by a continuous suture, the necessary parts being retracted to help the operator. The rectus is allowed to slide back in its natural position, thereby completely covering the line of suture. The anterior layers of the sheath are united by a similar continuous suture. The suprapubic wound is closed in the usual way. The advantages of this method he thinks are the simplicity, the involvement in the incision of only aponeurotic structures afterwards supported by a strong uninjured muscle, no division of nerves, the improbability of hernia and the great reduction in the period of convalescence.

Journal of Tropical Medicine, November 1.

Beri-Beri and the Heart. Arthur Stanley.—The action of beri-beri on the heart is stated by Stanley, who sums up his conclusions as follows: 1. Beri-beri has a marked degenerative action on the heart muscle, which frequently causes fatal circulatory failure. 2. In this respect beri-beri resembles other toxemic diseases, such as diphtheria, influenza, and alcohol and arsenic poisoning, which often causes peripheral neuritis, and also other toxemic diseases, such as typhoid fever, plague, and acute rheumatism, which do not or rarely give rise to peripheral neuritis. 3. Beri-beri and diphtheria are the diseases par excellence in which sudden fatal heart failure occurs. 4. The heart muscle degeneration is not a secondary result of neuritis of the vagus. 5. The heart muscle degeneration takes place as a rule before skeletal muscle degeneration, and is the result probably of direct action of the toxin, and not a secondary result of nerve change. 6. Sudden heart-failure does not indicate a sudden lesion, but rather is the result of a gradually-increasing heart weakness from cardiac muscle degeneration, which may be precipitated by any sudden exertion, but more frequently is the result of the principle of "all or nothing"—the transition from "all" to nothing being necessarily rapid. 7. The cardiac physical signs in beri-beri closely resemble those found in diphtheria, and are of paramount importance in prognosis and treatment.

The Lancet, November 16.

Impressions About Chloroform and Ether. William Mitchell Banks.—The author disbelieves in the value of the Hyderabad Commission reports and asks what benefit has been derived from these liberal experiments on dogs and the details that they involve. Indeed, he can not see where experiments on animals has helped us in this matter, but he hopes that no lying antivivisectionist will misconstrue his meaning, for though the experiments did not help, he is glad they have been done to relieve his mind of thinking something was left undone. No charge of cruelty can be made, as the animals simply passed away without pain. The simple and all important keynote is plenty of air and plenty of anesthesia. The speculation as to whether death comes from the heart or lungs by chloroform is not important. We know that chloroform is infinitely the more dangerous in animals, and to a certain point is a depressant as ether is a stimulant. In order to have the student grasp the difference between the action of these two he speaks of their victims as the white man and the blue man. The white man is being poisoned by chloroform and is always in a dangerous way. His heart is working very feebly and at any moment may give out. The blue man ought not to have been allowed to become blue, but still he is not in such straits as the other. If he can get a little air into his lungs it would be very hard to kill him. In his own experience he has only had two deaths, both from chloroform, but the number of hair-breadth escapes is fearful to consider. In the majority of cases, however, the man dying from chloroform does not suddenly collapse; he has been in a dangerous way for some time before, and the anesthetist had not been able to recognize the early signs of danger and avert it in time. There is a kind of anesthetist who drains out his chloroform by the drop and keeps the surgeon in constant hot water, and by the time the anesthesia has been attained the patient has inhaled a large amount of the anesthetic and goes deeply under. There is another kind who seems utterly unaware that he is dealing with a poison that will kill of itself if only enough be given. Some patients take their chloroform very quietly with a somewhat shallow breathing and the anesthetist does not see when the patient is completely under so that he can stop his anesthetic. The great secret is to keep the patient on the balance, just on the point of coming out. It does not matter if he does cry out occasionally, he will not remember anything about it afterwards. Another important matter is the ability of the anesthetist sometimes to recognize whether the patient is breathing fully and freely or only getting into his lungs air filled with chloroform. He can not see the contra-indication of the tongue forceps; if there is any safety by holding the tongue, a little discomfort lasting a few hours afterwards should not be considered. The dangerous time in giving chloroform is the struggling period. Let the patient get a few good gasps of air when taking the anesthetic in these cases and then administer the anesthetic, taking care to follow the movements of the head and he will probably sink quietly and safely back on his pillow. The great dangers of chloroform are: 1. Absolute overdosing of the patient up to the poisoning point when there is no necessity of it. 2. An omission to allow the patient to be constantly and freely getting abundance of air into his lungs. 3. Violent repression during the stage of excitement, combined with the continued dosing of chloroform. A good chloroformist should rapidly appreciate the leading characteristics of his patient and act accordingly. The slightest shade of pallor should be noted and the patient at once revived. The danger is greatest between six and ten minutes from the time the anesthetic is commenced. The anesthetist's eyes should not be taken off the patient's face for a minute; upon the slightest difficulty in breathing the tongue should be instantly brought out. With regard to ether the great point is to keep the larynx free from frothy sticky mucus. The jaws should be forced open with a gag and the mucus swabbed out. Two difficulties about ether are: 1, it is not so easy to take or so easy to give as chloroform, but it ought to be more often used, and 2, as the author says, that in special operations, especially in those of the anus and urethra, it seems impossible to get the muscular action subdued in certain people by ether. In these, chloroform is indicated and is required in the full amount. More people are sick under ether, but when a bad sickness lasting for a long time occurs, chloroform is the cause. Ice and small mustard poultices over the epigastrium seem to do as much good as anything else. In reviving collapsed patients there is but little use in electricity; artificial respiration should be resorted to, and Banks is sure that he has seen good from the subcutaneous injection of ether and strychnia. In ether suffocation, mop out the mucus and not leave the head hang down, but quite the reverse. Failing with other methods he would open the larynx, blow air into the lungs while also using the Sylvester method. There is a small and very simple trick which is an effective means of rousing up a patient from a weak fainting condition if used sufficiently early, namely, rubbing his nose and lips vigorously up and down with a rough

towel, which some of his pupils have come to call a "dry shave." He saw a clever anesthetist keep a most feeble woman safe through a prolonged operation by continuously bringing her to the surface by this means, never allowing her to get faint. As regards administration, he believes in a little stimulant sometimes before anesthetization and insists on absolute silence, and after he has everything quiet he tells the patient to count with him up to 100, beginning to count slowly and then singing the numbers in a drawling tone and then a sort of chant. This seems to lull the patient to sleep. No bronchitic or asthmatic subject should be given ether, and he thinks chloroform the best anesthetic for old people. He always examines the patient's heart before operation, but it is really of no great value, as the real danger comes from dilatation or fatty degeneration, which can not be discovered by the usual perfunctory examination. Valvular disease need not be taken into account. The presence of albumin and sugar in the urine is a matter of importance, not often looked for. If it exists the patient should be treated with the smallest possible amount of anesthesia, and, if possible, local anesthesia used. As regards the safest position, he thinks there is no doubt that the recumbent position on the right side is the best, the upright position the worst; he attributes to this the safety of chloroform in obstetrics. Coroners' inquests with their publication of distressing deaths during anesthesia have caused many deaths in nervous patients. He wishes they could be dispensed with. In conclusion he remarks on the necessity of the teaching of anesthesia, which every student ought to have instead of so much useless biology, anatomy, physiology and materia medica, and a skilled anesthetist in the hospitals attached to the medical school should be the one to teach the students.

Bulletin Medical (Paris), October 5.

The Seashore in Local Tuberculosis in Children. Poisson.—In his address on the Conservative Treatment of Local Tuberculosis, prepared by request for the recent French triennial congress of gynecology and pediatrics, Poisson remarked that when a child is only lightly affected with tuberculosis it recovers spontaneously if taken to the seashore. When local treatment is necessary the seashore is the indispensable adjuvant, and when surgical intervention is required, sea air is the best of all treatment as a preliminary and sequel to the operation. When tuberculosis is certain or merely suspected, the child should be taken to the seashore as soon as possible, and arrangements should be made for a protracted sojourn, long after recovery. Hydrotherapy is useful as a general measure, especially baths of mother-water for glandular affections. Injections of iodoformed ether in case of a suppurating lesion, not communicating with the outer air, will prevent the spontaneous opening of the lesion and dry up the suppuration at its source. About 10 to 20 gm. of 5 per cent. iodoformed ether are sufficient. Camphorated naphthol should be used with great caution. The amount injected should never surpass 1 gm. A good formula is 5 gm. of beta-naphthol and of camphor to 100 gm. of warm distilled and alcoholized water. Ambulatory treatment of the surgical cases is liable to entail a vicious attitude and does not prevent ankylosis. The sclerogenic method of treatment has proved very successful in many cases, especially when preceded by several weeks of immobilization. It is particularly valuable in torpid arthritis and osteo-arthritis. Comby stated that he had witnessed a number of complete cures under the influence of sea air, including the peritoneal and pleuro-peritoneal varieties. Some persons believe that sea air has a tendency to increase the frequency of meningitis, but the statistics at the Pem-Bron sanitarium show no more than the average proportion. Hallopeau reported the prompt cure of ten children with cutaneous or ganglionary tubercular manifestations by the application of potassium permanganate, either in a 50 per cent. solution or in powdered form after scarification.

Osteomyelitis in the Newly-Born. L. D'Astros.—In the majority of the eleven cases of osteomyelitis in new-born infants which d'Astros has observed, the femur was the site of the lesion. In several, the lesions were multiple. In one case intra-uterine infection was evident; in 4 spontaneous recovery occurred without suppuration; in one suppuration was observed in one bone but not in the others affected. The lesion assumed a chronic character in 2, one child dying a few months later with pneumonia which had been preceded by spasm of the glottis recurring five to ten times a day for four months. The other chronic case healed after curetting the focus, but rachitis developed later, probably due to the disturbance in the bone marrow due to the early lesion.

October 9.

Diagnosis by Means of the Blood. E. Calmette.—Review of all the works on the subject published this year.

Treatment of Eclampsia.—Pinard states that he has seen fatal cases of puerperal eclampsia run their course without a trace of albuminuria. Tarnier said in 1873 that no woman on a milk diet ever has eclampsia, and Pinard's experience fully confirms this view. He has never witnessed any benefit from lavage of the blood. The issue of the eclampsia depends upon the condition of the patient's liver. When eclampsia develops, the noble elements of the liver are destroyed and the resulting hepato-toxemia is not influenced by any obstetric intervention, which is more dangerous than it is useful. Dilatation is especially difficult, owing to the tetanic contractions. The infants born of mothers in eclampsia are degenerates, with incontinence of urine, umbilical hernia, etc., and either die soon or are weaklings. Ollive, on the other hand, proclaims that he has invariably witnessed the disappearance of the eclamptic seizures after venesection followed by transfusion of salt solution, the so-called "lavage of the blood."

Abnormal Presentation a Sign of Degeneracy. R. Larger.—An abnormal position in the uterus is the result of the abnormal movements of a degenerate fetus. An abnormal fetus assumes an abnormal position or has it forced upon him. Experience shows that in families of degenerates the children born in abnormal presentation differ most from the normal standard, during early childhood at least. It is more than probable that they differed from the normal standard also in the intra-uterine life. Larger mentions as instances of abnormal presentation as a sign of degeneracy, the historic cases of Nero, Richard III and Louis XV. Mechanical conditions may favor an abnormal presentation but they are unable to create it alone. Premature birth is likewise a sign of degeneracy, either physical or moral or both, but there are numerous exceptions to this rule.

Thyroid Medication for Children. Ausset.—Besides its remarkable efficacy in myxedema, thyroid treatment has accomplished wonders in infantilism, especially in those cases in which the thyroid function has been impaired in consequence of tuberculosis, rachitis or syphilis. The favorable results of thyroid medication in rachitis indicate that the thyroid gland plays a larger part in its production than has been hitherto credited. The benefits derived from the phosphates in rachitis may be due to the fact that they supply what is lacking in the thyroid gland. Arrested development of the sexual organs is another indication for thyroid treatment, and possibly also sclerodermia, hemophilia, chronic rheumatism and tetany dependent upon some functional disorder in the gland. Children are peculiarly susceptible to intoxication from thyroid medication, and consequently it should always be closely supervised, with especial care in respect to the heart and kidneys, commencing with very small doses and frequently suspending. Manufacturers should state on the label whether the extract is derived from young or adult animals and give the date of its preparation and exact amount of fresh gland represented by each tablet.

October 16.

Influence of Vicissitudes on Evolution of Tuberculosis. Lannelongue.—Animals submitted to moderate cold and slight variations in temperature after inoculation with tuberculosis did not show any difference in the course of the disease. But abrupt and marked changes in temperature, which had no effect on healthy animals, accelerated the course of the tuberculosis in a remarkable degree. The guinea-pigs in some

of the tests were kept at 38 C. for nine hours and then placed out of doors during spring and summer weather.

Cacodylic Medication in Bronchitis with Asthma. P. GALLOIS.—Fifteen elderly patients with chronic bronchitis accompanied by severe asthma, were remarkably relieved and improved by cacodylic medication. Gallois gave 0.1 gm. of sodium cacodylate three times a day in rum, syrup and water, flavored with peppermint.

Bulletin de la Soc. Med. des Hop. de Paris, October 24.

Toxic Polyneuritis. M. SOUPAULT.—Three women employed in a dye-house in cleaning gloves became affected with a typical, peripheral polyneuritis. Their work consisted in keeping the gloves immersed in the cleansing fluid with one hand while they scrubbed them with the other. The fluid seemed to be a mixture of petroleum ether, gasoline and benzine. A few instances of intoxication from the use of benzine have been recorded, but nothing of the kind has been published in regard to petroleum or its compounds. The benzine used in rubber factories is liable to affect the workers in it. After half an hour they become excited and gay; this is succeeded by a period of depression and finally the subject falls an inert mass. She revives after being carried into the fresh air and rubbed with alcohol. The intoxication subsides in about fifteen minutes and nothing but a severe headache remains. After the first time the workers gradually become accustomed to the benzine as a rule, and remain in the same occupation for seven to eleven years and more. Occasionally an employe has to abandon the work entirely. These accidents are less severe, the purer the benzine that is used, but the large establishments have a special service organized for the care of workwomen thus affected.

Treatment of Syphilitic Myelitis by Intraspinal Injection of Mercury. SCHACHMANN.—In the writer's experience at Bucharest he noticed that cutaneous syphilitic lesions healed more rapidly when in immediate contact with the mercurial application, under a Vigo plaster for instance, than elsewhere, during the course of general mercurial treatment. He conceived the idea that syphilitic lesions of the spinal cord might be favorably influenced by intraspinal injection of the solution of mercury. He reports four cases thus treated, one in detail. This was an old syphilitic with severe primary and secondary manifestations which yielded to mercurial treatment. Later, symptoms of myelitis developed and in spite of vigorous mercurial treatment the patient, a man of 29, was unable to walk without assistance on both sides, knee-jerk exaggerated, spinal trepidation extremely intense, predominating on the left side and causing inability to stand. This was the condition after 30 injections of mercury benzoate, which cured the lumbar and girdle pains but had no effect on the myelitis. He was treated then by injection of 1 c.c. of a 1 per cent. solution of mercury benzoate, the needle inserted into the opening in the last sacral vertebra. The needle was connected with a double bulb which allowed the aspiration of a corresponding amount of cerebrospinal fluid immediately preceding the injection of the mercurial fluid and without removing the needle. After twenty-three of these epidural injections in the course of twenty-five days the patient is able to get out of bed and walk up and down the room alone, erect, without looking at his feet, without much fatigue, always ready to recommence; appetite good; he sleeps sound, has no pain; the sphincters function normally; reflexes normal and very slight trepidation. This improvement could be traced day by day. The first injections caused restlessness, slight rise of temperature and insomnia, but these by-effects had all completely subsided by the fifth injection. They were never severe and consequently Schachmann considers them trifling and that this epidural mercurialization of spinal syphilitic lesions which do not yield to treatment by other measures, is a harmless and most effective method. He suggests that it might prove useful in case of non-syphilitic lesions. Jaboulay has reported a case of syphilitic myelitis which he treated by injecting quite a large amount of potassium iodid into the subarachnoid space. The patient died. Jacob of Leyden's clinic has also reported three similar cases with one improvement. Toulouse found that reducing the amount of salt in the food enhanced the action of potassium iodid in a case of cutaneous syphilitic lesions, resulting in the prompt cure of the hitherto rebellious lesions, but the coincident symptoms of general paralysis were not affected by even this magnified action of the specific treatment.

Bulletin de la Soc. de Pharmacie de Bordeaux, August.

New Method of Integral Destruction of Organic Matters. G. DENIGES.—The oxidizing action of the salts of manganese in a nitric medium has a destructive action on organic matters, and supplemented by the subsequent simultaneous action of sulphuric and nitric acids, will reduce any anatomic specimen in a few hours without the slightest loss of any minerals contained. This method of destruction is peculiarly valuable for forensic research and toxicology in general. It will destroy even the cacodylic molecule. The mixtures are heated in a vessel covered with an inverted glass funnel.

Nord Medical (Lille), November 1.

Intoxication from Thyroid Treatment. G. CARRIÈRE.—Summoned to six different urgent cases of sudden angina pectoris, pulmonary edema or symptoms of acute asystolia, Carrière discovered that each of the patients had been taking thyroid extract to reduce obesity, without the advice of a physician and merely on the recommendation of some druggist or friend. The symptoms in each case were violent and alarming, but the suppression of the thyroid medication banished them completely and permanently.

Progres Medical (Paris), October 26.

Syphilitic Gingivitis Simulating Mercurial Stomatitis. BURET.—Eight and fourteen months after a course of specific treatment, the two syphilitics whose cases are described exhibited a typical gingivitis. The interval had been too long for it to have been due to the preceding mercurial treatment and it was promptly cured by renewal of the treatment, confirming its syphilitic nature.

Revue Hebd. de Laryngologie (Bordeaux), October 26.

Slow Evolution of a Cancer of the Larynx. E. KRAUS.—Schwartz was able to collect 108 cases of cancer of the larynx last spring. The survival averaged two years, and only 2 patients lived for three years and only 1 for four after the tracheotomy required. Kraus removed a tumor in the larynx of a man of 78 which proved to be a lobulated epithelioma of stratified pavement epithelium. It recurred very soon, but under continual administration of Fowler's solution the general health constantly improved and the patient coughed up three pieces of his tumor at different times. The tracheal wound was closed and the patient breathed exclusively through the throat as the remainder of the tumor seemed to shrivel. His voice returned and he was in good health when he died from an intercurrent pneumonia five and one-half years after the tracheotomy. Kraus is inclined to believe that the uninterrupted administration of the arsenic had something to do with the successful resistance of the organism to the epithelioma in this case.

Centralblatt f. d. Grenzgebiete (Jena), October 31.

Relations Between Dupuytren's Contraction and Internal Affections. W. NEUTRA.—In the dozens of works on this subject that have appeared in the last few years some authors describe one thing and others another as Dupuytren's contraction and great uncertainty prevails not only as to the etiology and anatomy but also as to the diagnosis. Trauma seems to be a causal factor only in the predisposed. The disposition is rheumatism or gout according to some opinions, diabetes according to others. A few instances have been reported in which syphilis might have been incriminated. A hereditary predisposition is evidenced by the cases in which Dupuytren's contraction was observed in a family through several generations, although the rheumatic or gouty taint alone may have been the inheritance predisposing to the contracture. Nutritional disturbances from constricting bandages have been noted in certain cases and alcoholism in two. Arteriosclerosis is incrim-

inated by Baehr alone; Anderson considers contraction of the palmar fascia an infectious process. Various kinds of nervous affections have been noted in the etiology, spastic muscular contraction, ulnar neuritis, trophic disturbances due to spinal processes, spastic spinal paralysis, tabes and syringomyelia. The latter has been observed in several cases. The coincidence of the contraction with cerebral affections, progressive paralysis and epilepsy, has also been noted. A number of authors express the opinion that the contraction is the result of trophic disturbances, without specifying the etiology. Similar processes have been observed in horses' feet. Dupuy operated on a horse to cure a contracture of this kind; its recurrence later enhances the resemblance to Dupuytren's contraction. Ledderhose considers it a keloid process, a kind of callus formation. The claw-hand so frequent in syringomyelia is the result of apparently a somewhat similar process, and also the joint affections in tabes and syringomyelia, in which alterations occur in the joint ligaments resembling those in the palmar fascia. Lane and others mention the discovery of similar alterations in the joint ligaments accompanying Dupuytren's contraction.

Deutsche Med. Wochenschrift, November 7.

Differentiation of the Meat of Various Animals by the Biologic Specific Serum Reaction. Uhlenhuth.—The serum of animals previously injected with the specific blood, produces a specific turbidity when added to the serum of the same kind of animal from which the blood was originally derived. This biologic test has proved useful in forensic medicine and Uhlenhuth now proclaims that it is equally effective in differentiating meat from the various animals from which the blood was derived. The research at Loeffler's Institute of Hygiene, which is described in this communication, demonstrated that it was possible by this means to differentiate horse, dog and cat meat, fresh or salted and smoked. Cooking of course coagulates the albumin and renders the test impossible. The dissolving of the meat in water, to make the fluid extract for the tests, can be hastened by adding a little chloroform. The fluid must be filtered perfectly clear.

Functional Test of the Liver. H. Strauss.—Alimentary levulosuria is a valuable means of determining a functional disturbance in the liver as announced in the preceding issue, reviewed last week. It is possible that the reason why levulose behaves so differently from its isomere dextrose, in case of pathological conditions in the liver, may be that the organism has some other means of taking care of dextrose outside of the liver, which is not the case for levulose. Frogs deprived of their livers were still able to elaborate glycogen out of dextrose in Sachs' experiments, while no glycogen was formed when levulose alone was administered. Strauss has collected 49 cases of liver affections in addition to his own series of 50 cases, tested for alimentary dextrosuria. The test was positive in only 2 per cent. In most of the tests of alimentary glycosuria that have been published, cane sugar was used, and the probabilities are that the glycosuria observed was predominantly a levulosuria. In 8 personal tests Strauss noted alimentary levulosuria in 4, dextrosuria in 1 and saccharosuria in 1, with negative results in 2. He does not ascribe a primary importance to the liver affection in the pathogenesis of glycosuria and diabetes. He also believes that we overestimate the primary importance of chronic alcoholism in the pathogenesis of diabetes. Transient acute alcoholism may diminish the tolerance for grape sugar, but chronic alcoholism is unable primarily to effect this.

Endoscopy of the Esophagus and Stomach with Flexible Instruments. Kelling.—Mikulicz demonstrated that it is possible to bring the buccal cavity and the esophagus into a straight line. Kelling utilized this suggestion for endoscopy of these organs by inserting a flexible instrument and inflating the esophagus. He has thus visually inspected the esophagus and stomach in 134 patients and been able to formulate a correct diagnosis, absolutely impossible by any other means, except in the cases of strictures and foreign bodies. He has also been successful in inspecting the abdomen by inserting a Nitze cystoscope through an opening made for the purpose with a trocar, inflating the abdomen with filtered air. Kelling demonstrated on a dog the technique of this procedure at the recent Naturforscher congress. He says that it is painless, harmless, and can be done "ambulant."

The Committee for Cancer Research.—Various veterinarians and professors of anatomy reported at the seventh meeting of this committee that they had never seen nor heard of a cancer on a wild animal. Baelz from Tokio stated that cancer was very rare among the Japanese. It could not be a question of climate, as malignant disease was comparatively frequent among the Europeans and other foreigners residing there. The skin of the Japanese is more resistant; secondary syphilitic exanthemata are extremely rare. When cancer occurs it affects the esophagus most frequently, the stomach next. Instances were related of carcinoma in animals, horses, cattle, cats, pigs, rabbits, rats and mice. A case of carcinoma of the liver in a hen has been reported, and of carcinoma of the ovary in other fowls. Cancer is unknown among cold-blooded animals. Horses as a rule have more innocent tumors than other animals, most frequently sarcoma and melanosarcoma. Schuetz states that he has never seen the latter kind of a tumor in cattle, but round-celled sarcomata are frequent. He suggests the possibility of a single parasite for these various tumors and that it develops differently on different animals. No evidence has been presented to date which excludes the possibility that malignant disease is caused by a single agent.

Muenchener Med. Wochenschrift, November 5.

Tardy Meningitis After Injury to the Skull. K. Fujisawa.—A child of 10 fell from a second story, injuring the left temporal bone with consequent vomiting, convulsions and loss of consciousness, but apparently recovered completely. A year later meningitis developed and at the autopsy an old traumatic encephalitic focus of yellow softening was discovered which had evidently existed without causing symptoms. The base of the brain had been fractured at the time of the traumatism and, over a year later, infection by pyogenic micro-organisms through this fissure, induced the meningitis.

Neuritis Caused by Occupation. L. Hoeflmayer.—A professional neurosis usually develops on a neuropathic basis, but the neuritis in the cases described occurred in robust men, compelled to use the right arm in planing or polishing, etc. It affected the region of the brachial plexus and simulated rheumatism in the shoulder and arm, most severe at night, and induced by certain movements of the arm. Antirheumatic remedies had no effect and there were no signs of myositis. The pains and tenderness on pressure were localized at the points where the nerves involved were accessible. All recovered after treatment by rest, heat and galvanization. Application of leeches to the most sensitive points also proved useful in some cases. Quinin and phenacetin relieved the pains at night and rendered morphin unnecessary. The neuritis was cured in the course of eight or nine weeks, but the patients were advised to seek some other occupation for the following six to twelve months.

Treatment of Osteomalacia by Castration. Eberhart.—Up to the present time no process in the ovary has been discovered typical and specific for osteomalacia, and yet there is evidently some connection between the organ and the disease. Castration has been successful in 83.1 per cent. of the cases in which it has been applied. It should always be preceded by phosphorus treatment, and be considered the last resort. The peculiar pains, the gait and the weakness of the iliac psoas are early signs of the affection. Recurrence has been known as late as seven years after castration.

Diagnosis of Fetal Syphilis. Hecker.—Out of 62 fetuses histologically examined by Hecker, only 26 per cent. proved to be exempt from syphilis and 53 per cent. were unmistakably syphilitic. Nearly half of the latter number had been recognized as syphilitic at the autopsy, but the other 29 per cent. showed no clinical nor anatomic syphilitic manifesta-

tion, and yet the microscope revealed typical syphilitic lesions. The kidney was affected in 90 per cent. of the cases, as disclosed by the microscope. Macroscopically, the spleen and bones were most frequently involved. The kidney is the easiest to examine, as the nuclei take the stain well after maceration, which is not the case with the liver. Cellular infiltration of the smallest cortical arteries is evidently the first stage of interstitial inflammation in these cases. Another certain sign easy to recognize and comparatively frequent, is the infiltration of the larger vessels in the spleen and interstitial inflammation of the thymus. Microscopic examination of the fetus may often prove necessary to determine the existence of syphilis in the family.

Bactericidal Action of Fluorescent Substances. TAPPEINER.—THE JOURNAL has mentioned Raab's discovery that certain fluorescent substances have a marked bactericidal action when exposed to the light, but not in the dark. It seems to be connected in some way with the property of fluorescence. Tappeiner reports further experiments in this line which show that fluorescing acridin and chinolin red, etc., will kill ciliated epithelium from the frog in two-thirds of an hour, while in the dark the epithelium lives for one and one-half to six and one-quarter hours. Frogs were injected with eosin and kept for two to four days in the dark. Fragments of their stained epithelium retained their vitality for more than twenty-four hours in the dark, while they died in a few hours after exposure to the light. Tests with cultures on media that had been mixed with a fluorescent substance, showed that the bacteria flourished when they were kept in the dark but development was arrested when the culture was exposed to the light. Tests with frogs and mice injected with fluorescent substances are now under way and will be reported later. They have already shown that the empty skull of a freshly killed frog allows the passage of the light so as to kill a 1 to 1000 culture of paramecium in a solution of eosin in seventy-five minutes, while similar cultures lived four hours and more when kept in the dark. Glass tubes filled with a 1 to 4000 eosin culture of the paramecium or a 1 to 20,000 acridin culture were introduced under the skin of guinea-pigs exposed to the sun. The paramecium died in one hour under these conditions. The skull of the frog and the skin of the guinea-pig therefore allow the light to pass through them enough to induce fluorescence with its consequent bactericidal action. In all the tests the sunlight was filtered through a solution of copper vitriol to exclude the heat rays.

Wiener Klin. Wochenschrift, November 7.

Remarkable Effect of Electricity in Chloroform Narcosis. S. JELLINEK.—If an electric current of high tension is sent through a rabbit, with the electrodes in the throat and rectum, it is either killed at once, paralyzed or injured in some way so that it does not long survive. Jellinek has found, however, that the effect is different when the rabbit is in chloroform narcosis. It is merely aroused immediately from the profound anesthesia, and no injurious after-effects could be discovered in any of the tests. When the anesthetized rabbit has ceased to respond to external stimuli of any kind, the application of the alternating current for the fraction of a second will revive it and the animal springs up, rolls over and jumps around, with consciousness completely restored. The control animal either dies in the deep narcosis or recovers consciousness after a comparatively long interval. None of the rabbits aroused by the electricity exhibited any pathological symptoms or lesions at any time afterward that could be ascribed to the electricity.

Cataract in Diagnosis of Diabetes. S. KLEIN.—Posterior polar and cortical cataract usually accompanies pigmented retinitis. When it occurs alone and no affection of the choroid can be discovered, it is an invariable sign of some disturbance in the metabolism. In Klein's experience this disturbance has always proved to be diabetes, and he has thus been enabled to diagnose diabetes at an early stage when no other symptoms indicated its existence. The disturbances in the current inside the lens, which are the cause of cataract formation in diabetes, must be quite different in their nature from those causing senile involution and cataract in the absence of a choroid affection or known anomaly in metabolism. Choroid cataract is in itself a complicated cataract and its foundation on some disturbance in the metabolism explains the unfavorable result of attempts to operate in such cases. Of course diabetes may develop later in a person with a senile cataract or vice versa, but posterior polar combined with posterior cortical cataract is characteristic of diabetes.

Acute Iodism Simulating Mumps. K. FUERTH.—Regulation doses of potassium iodid were prescribed for a healthy woman of 52 on account of some eye trouble. After a few weeks a syndrome developed compelling the diagnosis of mumps. It subsided on the suspension of the iodid but recurred a few weeks later with the same fulminating intensity after a single dose.

Grece Medicale (Syra), September.

Discovery of the Tomb of Esculapius. J. SVORONOS.—Twenty years ago the excavations at Epidaurus revealed a very beautiful temple with a subterranean labyrinth with no entrance. Archeologists were unable to determine the purpose of the building nor to whom it had been dedicated if really a temple. The building was distinguished by a dome, but no reference could be found to it in any writings. Svoronos believes that he has solved the mystery and that the structure is the tomb of Esculapius. He has found a coin of Epidaurus with a representation of the temple surmounted by a statue of the goddess Hygeia. Similar subterranean labyrinths found in other temples and in Egypt were always tombs. When heroes were deified the priests kept their burial place a secret, and this probably occurred in the case of Esculapius. who was buried here and the ornate temple was erected to his honor after he had been made a god. These assumptions have been confirmed by Svoronos' recent discovery of a work by Rouphinos, who lived in the fifth century, at a time when Christianity was dispelling the old traditions in regard to mythology. He describes the temple of Esculapius at Epidaurus and mentions the dome and the statue of Hygeia.

Vratch (St. Petersburg), November 2.

Influence of Metals on Blood. ILYASHEFF.—The conclusions of extensive clinical and experimental research are summarized by Ilyasheff in the announcement that salts of the heavy metals, copper, mercury and manganese, administered in small amounts by the mouth, have no appreciable influence on the amount of hemoglobin or on the number of the reds. Salts of iron, however, under the same conditions always have a marked effect in increasing the number of reds and the amount of hemoglobin. It is evident that iron not only stimulates the functions of the blood producing organs, but directly aids in the production of hemoglobin. The influence of the iron is first manifested in the increased number of red corpuseles; the increase in the hemoglobin is a later phenomenon. The eosinophile cells also increase to a remarkable proportion under the influence of iron. This is not observed in animals nor in other conditions in man. The cosin granules contain iron and apparently in a stable organic combination. as they give the iron reaction with ammonium sulphate only after twelve to twenty-four hours.

Cronica Med. Mexicana, November.

Ether to Control the Pain in Burns. B. BELTRAN.—pain of an extensive burn of the second degree vanished in thirty seconds by the clock after the burned part had been wrapped in cotton and enough ether poured on the cotton to thoroughly impregnate it. Even after the ether had all evaporated, the pain did not reappear. This experience was repeated in another case, and Beltran calls attention to this method of permanently relieving the pain in such cases.

Nordiskt Med. Arkiv (Stockholm), October 26.

Defect in the Septum of the Heart. A. JOSEFSON.—A man 24 years of age was brought moribund to the hospital with staphylococcus septicemia. Certain symptoms indicated

ulcerative endocarditis and a mitral defect. At the autopsy an opening 5 by 3.5 cm. in size was found in the septum between the two sides of the heart. The diameter of the lumen of the pulmonary artery was normal. The defect was evidently congenital. The rear mitral valve-flap was slit; Rokitansky noticed a similar slit in 5 out of 24 cases of a defect in the septum. The wall of the right ventricle was remarkably thick but otherwise normal. The patient had never been very strong, but had for years satisfactorily filled a position as gardener, requiring much hard work. He had no rheumatic nor infectious antecedents and the family was healthy. He had never exhibited cyanosis and no one had suspected any heart trouble, although he complained occasionally of shortness of breath. Josefson has been able to find only six cases in the literature of pure septum defect, and in all of these there was some alteration in the pulmonary artery. All were men between 32 and 45. In the rare cases of direct communication between the aorta and the pulmonary artery the patients all die young.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS. A Practical Exposition of the Methods, Other Than Drug-Giving, Useful in the Prevention of Disease and in the Treatment of the Sick. Edited by Solomon Solis Cohen, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic. Volume III—Climatology. Health Resorts, Mineral Springs. By F. Parkes Weber, M.A., M.D., F.R.C.P. (Lond.), Physician to the German Hospital, Dalston; With the Collaboration for America of Guy Hinsdale, A.M., M.D., Secretary of the American Climatological Association, etc. In Two Books. Book I—Principles of Climatotherapy—Ocean Voyages—Mediterranean, European and British Health Resorts. Book II—Mineral Springs, Therapeutics, etc. Illustrated with Maps. Pp. 336-420. Price for the complete set, $22.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Especially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D. Philadelphia; John B. Murphy, M.D., Chicago; Alexander D. Blackader, M.D., Montreal; H. C. Wood, M.D., Philadelphia; T. M. Rotch, M.D., Boston; E. Landolt, M.D., Paris; Thomas G. Morton, M.D., Philadelphia; Charles H. Reed, M.D., Philadelphia; J. W. Ballantyne, M.D., Edinburgh, and John Harold, M.D., London. Volume III. Eleventh Series, 1901. Cloth. Pp. 303. Price, $2.00. Philadelphia: J. B. Lippincott Co. 1901.

ATLAS AND PRINCIPLES OF BACTERIOLOGY and Text-Book of Special Bacteriologic Diagnosis. By Prof. Dr. K. B. Lehmann, Director of the Hygienic Institute in Wurzburg, and R. O. Neumann, Dr. Phil. and Med., Assistant in the Hygienic Institute in Wurzburg. Authorized Translation from the Second Enlarged and Revised German Edition. Edited by George H. Weaver, M.D., Assistant Professor of Pathology, Rush Medical College, Chicago. Parts I and II. With 632 Figures on 69 Lithographic Plates. Cloth. Pp. 511. Price, $2.50 per volume. Philadelphia and London: W. B. Saunders & Co. 1901.

DISEASES OF THE INTESTINES. Their Special Pathology, Diagnosis and Treatment, with Sections on Anatomy and Physiology, Microscopic and Chemic Examination of the Intestinal Contents, Secretion, Feces, and Urine, Intestinal Bacteria and Parasites; Surgery of the Intestines; Dietetics, Diseases of the Rectum, etc. By John C. Hemmeter, M.D., Ph.D., Professor in the Medical Department of the University of Maryland. In Two Volumes. Vol. I. With Many Illustrations, Some of Which Are in Colors. Cloth. Pp. 742. Price, $5.00. Philadelphia: P. Blakiston's Son & Co. 1901.

A TREATISE ON SURGERY. By American Authors for Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A.M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo. Third Edition, Enlarged and Thoroughly Revised. With 692 Engravings and 64 Full-page Plates in Colors and Monochrome. Cloth. Pp. 1408. Price, $7.00 net. New York and Philadelphia: Lea Brothers & Co. 1901.

A MANUAL OF VOLUMETRIC ANALYSIS. Treating on the subjects of Indicators, Test-Papers, Alkalimetry, Acidimetry, Analysis by Oxidation and Reduction, Iodometry, Assay Processes for Drugs with the Titrimetric Estimation of Alkaloids, Estimation of Phenol, Sugar; Tables of Atomic and Molecular Weights. By Virgil Coblentz, Ph.D., Pharm.D., F.C.S., Professor of Chemistry in the New York College of Pharmacy. Illustrated. Cloth. Pp. 181. Price, $1.25. Philadelphia: P. Blakiston's Son & Co. 1901.

TYPHOID AND TYPHUS FEVERS. American Edition of Nothnagel's Encyclopedia. By Dr. H. Curschmann, of Leipzig. Edited, with additions, by William Osler, M.D., Professor of the Principles and Practice of Medicine, Johns Hopkins University. Handsome octavo of 646 pages, illustrated, including a number of valuable temperance charts and two full-page colored plates. Cloth, $5.00 net. Philadelphia and London: W. B. Saunders & Co., 1901.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Writers. A New Edition, Completely Revised and Rewritten. Edited by Albert H. Buck, M.D., New York City. Volume III. Illustrated by Chromolithographs and 676 Half-tone and Wood Engravings. Cloth. Pp. 861. Price, $7.00 per volume. New York: William Wood & Co. 1901.

A TEXT-BOOK OF PHARMACOLOGY and Some Allied Sciences (Therapeutics, Materia Medica, Pharmacy, Prescription-Writing, Toxicology, etc.) By Torald Sollmann, M.D., Assistant Professor of Pharmacology and Materia Medica in the Medical Department of Western Reserve University, Cleveland, Ohio. Illustrated. Cloth. Pp. 894. Price, $3.75 net. Philadelphia and London; W. B. Saunders & Co. 1901.

A TEXT-BOOK OF MEDICINE. Begun by the late Charles Hilton Fagge, M.D., F.R.C.P., Sometime Physician to Guy's Hospital. Completed after his death and since revised or re-written by Philip Henry Pye-Smith, M.D., F.R.S., Fellow of the Royal College of Physicians. Fourth Edition. In Two Volumes. Vol. I. Cloth. Pp. 1123. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

AN AMERICAN TEXT-BOOK OF PATHOLOGY. Edited by Ludvig Hektoen, M.D., Professor of Pathology, Rush Medical College, Chicago; and David Riesman, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic. Handsome imperial octavo of 1245 pages, 443 illustrations, 66 of them in colors. Cloth, Price, $7.50. Philadelphia and London: W. B. Saunders & Co., 1901.

"FIRST-AID" to the Injured and Sick. An Ambulance Handbook. By F. J. Warwick, B.A., M.B., Cantab., M.R.C.S., L.S.A., Associate of King's College, London, and A. C. Tunstall, M.D., F.R.C.S. Ed., Surgeon-Captain Commanding the East London Volunteer Brigade Bearer Company. Cloth. Pp. 232. Price, $1.00. Philadelphia and London: W. B. Saunders & Co. 1901.

THE SURGICAL TREATMENT OF DISFIGUREMENTS AND DEFORMITIES OF THE FACE. By John B. Roberts, A.M., M.D., Professor of Surgery in the Philadelphia Polyclinic, Second Edition, with a Chapter on the Reconstruction of Syphilitic Noses. Illustrated with 62 Figures. Cloth. Pp. 72. Philadelphia: The Philadelphia Medical Publishing Co. 1901.

"OUR ACCURSED SPELLING." What to Do with It. Max Mueller, LL.D.; Wm. D. Whitney, LL.D., L.H.D.; S. S. Haldemann, LL.D., L.H.D.; Francis L. March, LL.D., L.H.D.; Wm. T. Harris, LL.D.; Hon. Joseph Medill, and T. R. Lounsbury, LL.D. Paper. Pp. 142. Price, $0.25. Edited and Published by E. O. Vaille, Oak Park, Chicago.

A LABORATORY HAND-BOOK OF URINE ANALYSIS AND PHYSIOLOGICAL CHEMISTRY. By Charles G. L. Wolf, B.A., M.D., Instructor in Physiological Chemistry, Cornell University Medical College, New York. Illustrated. Cloth. Pp. 203. Price, $1.25. Philadelphia and London: W. B. Saunders & Co. 1901.

TRANSACTIONS OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION Thirty-fourth Annual Session, held at Jackson, April 8, 9 and 10, 1901. With the Roll of Members and Reports on Medical Topics. Cloth. Pp. 264. Published by the Association. Oxford, Miss.: Globe Printing Office. 1901.

STUDIES OF THE INTERNAL ANATOMY OF THE FACE. By M. H. Cryer, M.D., D.D.S., Professor of Oral Surgery, Department of Dentistry of the University of Pennsylvania. Cloth. Pp. 176. Price, $1.50 net. Philadelphia: The S. S. White Dental Mfg. Co 1901.

TWENTY-EIGHTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN for the Fiscal Year Ending June 30, 1900. Cloth. Pp. 272. Lansing, Mich.: Wynkoop, Hallenbeck, Crawford Co. 1901.

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, U. S. A. Authors and Subjects. Second Series. Vol. VI. G—Hernette. Cloth. Pp. 1051. Washington: Government Printing Office. 1901.

TRANSACTIONS OF THE MICHIGAN STATE MEDICAL SOCIETY for the Year 1901. Volume XXV. Cloth. Pp. 575. Detroit: Published by the Society. 1901.

TRANSACTIONS OF THE RHODE ISLAND MEDICAL SOCIETY, 1900 Vol. VI, Part II. Paper. Pp. 277. Providence: Snow & Farnham. 1901.

TRANSACTIONS OF THE MAINE MEDICAL ASSOCIATION, 1901. Vol XIV. Part I. Paper. Pp. 222. Portland: Stephen Berry. 1901

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Nov. 14 to 20, 1901, inclusive:

Robert A. Anderson, captain and asst.-surgeon, Vols., having tendered his resignation, is honorably discharged from the service of the United States.

Bailey K. Ashford, lieutenant and asst.-surgeon, U. S. A., from Fort Slocum, N. Y., to Havana, Cuba, for assignment in the Department of Cuba.

David Baker, lieutenant and asst.-surgeon, U. S. A., is relieved from duty on the transport *Meade*, and from the Division of the Philippines, to proceed to Fort Slocum, N. Y., for duty at that post.

George E. Bushnell, major and surgeon, U. S. A., member of a board at Denver, Colo., to determine the fitness of certain persons for appointment in the U. S. Army.

Charles B. Byrne, lieut.-col., deputy surgeon-general, member of a board in St. Paul, Minn., to determine the fitness of officers of the Army for promotion.

Walter C. Chidester, lieutenant and asst.-surgeon, Vols., honorably discharged as a captain and asst.-surgeon, Vols., of date Nov. 1, 1901.

Harvey A. Eberle, captain and asst.-surgeon, Vols., from duty at Fort Totten, N. Y., to accompany troops to be sent to the Philippine Islands on the transport *Crook*, to sail from New York City, N. Y., about December 1, 1901.

William J. Enders, contract surgeon, now at Philadelphia, Pa., to proceed to Fort Delaware, Del., for post duty.

Clyde S. Ford, lieutenant and asst.-surgeon, U. S. A., having reported to the Surgeon-General, as required by previous orders, is assigned to duty at the General Hospital, Washington Barracks, D. C.

John D. Hall, lieut.-col., deputy surgeon-general, leave of absence for one month granted.

Luther S. Harvey, captain and asst.-surgeon, Vols., leave of absence for one month granted, with permission to apply for an extension of twenty-five days.

Frank R. Keefer, captain and asst.-surgeon, U. S. A., member of an examining board at Fort Monroe, Va., vice Lieut.-Col. Robert M. O'Reilly, deputy surgeon-general, relieved.

John S. Kulp, captain and asst.-surgeon, U. S. A., from New York City, N. Y., to San Francisco, Cal., for duty as post surgeon at that place.

William C. LeCompte, contract surgeon, from Fort Niagara, N. Y., to San Francisco, Cal., for duty with troops en route to Manila, P. I., for subsequent assignment in the Division of the Philippiues.

Robert W. Morgan, contract dental surgeon, leave of absence on certificates of sickness extended two months.

Edward R. Morris, major and surgeon, U. S. A., relieved from duty in the Department of the Lakes, to proceed to San Francisco, Cal., for duty at the model camp to be established on Angel Island, San Francisco, Cal.

Edward B. Moseley, major and surgeon, U. S. A., member of a board at Denver, Colo., to determine the fitness of certain persons for appointment in the U. S. A.

Elbert E. Persons, lieutenant and asst.-surgeon, U. S. A., member of a board in St. Paul, Minn., to determine the fituess of officers of the Army for promotion.

Henry I. Raymond, major and surgeon, U. S. A., previous orders amended so as to direct him to report to the commanding officer of troops to be sent to the Philippine Islands on the transport *Buford*, to sail from New York City, on or about Jan. 15, 1902, and on arrival at Manila, P. I., to report for assignment in the Division of the Philippines.

Ira A. Shimer, lieutenant and asst.-surgeon, U. S. A., from duty in the Department of Cuba, to post duty at Fort Niagara, N. Y.

Henry D. Snyder, captain and asst.-surgeon, U. S. A., from duty in the Division of the Philippines to New York City, to enter upon duty as attending surgeon and examiner of recruits in that city.

Benjamin L. Ten Eyck, captain and asst.-surgeon, U. S. A., now on sick leave, is relieved from duty in the Department of the East and will proceed to Fort Wayne, Mich., for duty.

William H. Wilson, captain and asst.-surgeon, U. S. A., is relieved from duty in the Department of California to report for transportation to the Philippine Islands for service in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ended Nov. 23, 1901:

Surgeon L. L. von Wedekind, ordered to the *Cincinnati*, December 2.

Medical Inspector L. G. Heneberger, commissioned medical inspector from Oct. 29, 1901.

P. A. Surgeon H. H. Haas, commissioned P. A. surgeon from Dec. 28, 1900.

Surgeon H. L. Law, retired, additional duty as examining surgeon at Marine-Recruiting Station, Buffalo, N. Y.

P. A. Surgeon H. D. Wilson, detached from Naval Hospital, Norfolk, Va., ordered home and granted three months' sick leave.

The leave granted Surgeon John W. Ross, U. S. Navy, retired, is extended one month. From Circular Letter, Department of Cuba, dated November 11.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the fourteen days ended November 14, 1901:

Surgeon A. H. Glennan, granted leave of absence for one month from November 16.

Surgeon L. L. Williams, granted leave of absence for three days.

Surgeon G. N. Magruder, granted leave of absence for fifteen days from November 15.

Asst.-Surgeon John McMullen, granted four days' extension of leave of absence, Nov. 2, 1901. Upon being relieved by Asst.-Surgeon C. C. Pierce, to proceed to Baltimore, Md., and report to the medical officer in command for duty and assignment to quarters.

Asst.-Surgeon H. C. Russell, granted leave of absence for two days.

Asst.-Surgeon Dunlop Moore, granted leave of absence for six days.

Asst.-Surgeon C. C. Pierce, relieved from duty at Key West, Fla., and directed to proceed to Mullet Key Quarantine and assume command of the service, relieving Asst.-Surgeon John McMullen.

Hospital Steward G. H. Brock, upon being relieved by Hospital Steward Edward Rogers, to proceed to Detroit, Mich., and report to the medical officer in command for duty and assignment to quarters.

Hospital Steward Edward Rogers, relieved from duty at Detroit, Mich., and directed to proceed to Cincinnati, Ohio, and report to medical officer in command for duty and assignment to quarters, relieving Hospital Steward G. H. Brock.

A. A. Surgeon Jay Tuttle, department letter of Oct. 4, 1901, granting A. A. Surgeon Tuttle leave of absence for thirty days, revoked.

Hospital Steward and Chemist Henry Gahn, granted leave of absence for twenty days from November 11.

Hospital Steward G. H. Brock, granted leave of absence for four days from November 12.

Hospital Steward S. W. Richardson, relieved from duty in connection with the Pan-American Exposition, and directed to report to medical officer in command at Buffalo, N. Y., for temporary duty.

Hospital Steward E. B. Scott, relieved from duty at Washington, D. C., and directed to procced to Baltimore, Md., and report to medical officer in command for duty and assignment to quarters, relieving Hospital Steward F. A. Southard.

Hospital Steward H. R. Mason, upon expiration of leave of absence, to report to medical officer in command at San Francisco, Cal., for duty and assignment to quarters.

Hospital Steward F. A. Southard, upon being relieved by Hospital Steward E. B. Scott, to proceed to New York City, and report to medical officer in command for duty and assignment to quarters.

Hospital Steward M. H. Waters, relieved from duty at Washington, D. C., and directed to procced to Boston, Mass., and report to medical officer in command for duty and assignment to quarters.

P. A. Surgeon M. J. Rosenau, detailed to represent the service at meeting of the New York State Association of Railroad Surgeons at New York City, November 16 and 17.

P. A. Surgeon H. S. Cumming, granted exteusion of leave of absence on account of sickness for thirty days from October 30.

P. A. Surgeon J. B. Greene, granted leave of absence for twenty-one days from November 23.

Asst.-Surgeon H. G. Russell, bureau letter of November 2, granting Asst.-Surgeon Russell leave of absence for two days, ameuded so that said leave shall be for seven days.

Asst.-Surgeon F. J. Thornbury, to proceed to Port Townsend, Wash., and report to medical officer in command for temporary duty.

Asst.-Surgeon Dunlop Moore, to proceed to Honolulu, H. I., and report to medical officer in command for duty.

Asst.-Surgeon J. M. Holt, relieved from duty at Chicago, Ill., and temporary duty at Cairo, Ill., and directed to proceed to St. Louis, Mo., and report to medical officer in command for duty and assignment to quarters.

Asst.-Surgeon L. P. H. Bahrenburg, relieved from duty at Honolulu, H. I., and directed to proceed to Chicago, Ill., and report to medical officer in command for duty and assignment to quarters.

A. A. Surgeon V. B. Gregory, granted leave of absence for seven days from November 12.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Nov. 23, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Nov. 3-10, 1 case.
Illinois: Chicago, Nov. 9-16, 1 case.
Indiana: Evansville, Nov. 9-16, 2 cases.
Kansas: Wichita, Nov. 9-16, 5 cases.
Kentucky: Lexington, Nov. 9-16, 2 cases.
Louisiana: New Orleans, Nov. 9-16, 4 cases, 1 death.
Massachusetts: Boston, Nov. 9-16, 28 cases, 3 deaths.
Michigan: Graud Rapids, Nov. 9-16, 1 case.
Nebraska: Omaha, Nov. 9-16, 4 cases.
New Jersey: Camden, Nov. 9-16, 1 case; Newark, Nov. 9-16, 18 cases, 1 death; Passaic, Nov. 9-16, 3 cases.
New York: New York, Oct. 9-16, 8 cases, 3 deaths.
Ohio: Cincinnati, Nov. 8-15, 1 case; Zanesville, Sept. 3-Oct. 3, 1 case.
Pennsylvania: Lebanon, Nov. 3-17, 6 cases; Norristown, Nov. 9-16, 16 cases; Philadelphia, Nov. 9-16, 50 cases, 12 deaths.
Rhode Island: Newport, Nov. 9-16, 2 cases.
Vermont: Burlington, Nov. 9-16, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Oct. 26-Nov. 2, 2 cases.
Belgium: Ghent, Oct. 19-Nov. 2, 7 deaths.
Brazil: Rio de Janeiro, Oct. 12-19, 50 deaths.
Canada: Quebec, Nov. 9-16, 41 cases; St. John, Nov. 9-16, 4 cases.
Colombia: Cartagena, Oct. 19-Nov. 2, 7 cases, 7 deaths; Panama, Oct. 29-Nov. 5, 100 cases.
France: Paris, Oct. 19-Nov. 2, 9 deaths.
Great Britain: Glasgow, Nov. 1-8, 1 case; Liverpool, Oct. 19-26, 1 death; London, Oct. 26, Nov. 2, 464 cases, 14 deaths.
India: Madras, Oct. 12-18, 1 death.
Italy: Naples, Oct. 26-Nov. 2, 28 cases, 1 death.
Nova Scotia: Halifax, Nov. 9-16, 6 cases.
Russia: Moscow, Oct. 19-26, 2 cases, 2 deaths; Odessa, Oct. 26-Nov. 2, 2 deaths; Warsaw, Oct. 12-19, 2 deaths.
Spain: Corunna, Oct. 26-Nov. 2, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Oct. 13-20, 3 deaths.
Mexico: Vera Cruz, Nov. 2-9, 24 cases, 10 deaths.
West Indies: Curacao, Oct. 26-Nov. 2, 2 cases, 1 death.

CHOLERA.

India: Bombay, Oct. 18-22, 4 deaths; Karachi, Oct. 12-18, 60 deaths.
Straits Settlements: Singapore, Sept. 28-Oct. 5, 2 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Nov. 4, 1 case, 1 death.

PLAGUE—FOREIGN AND INSULAR.

Philippine Islands: Manila, Sept. 14, 3 cases.
Africa: Cape Colony, Oct. 12-19, 4 deaths.
Brazil: Rio de Janeiro, Oct. 13-20, 15 deaths.
China: Hongkong, Oct. 7, 3 cases, 2 deaths.
Great Britain: Glasgow, Nov. 8, 3 cases, 2 deaths; Liverpool, Oct. 19-26, 5 cases, 2 deaths.
India: Bombay, Oct. 15-22, 179 deaths; Karachi, Oct. 13-23, 23 cases, 15 deaths.
Mauritius: Oct. 24, 71 cases, 37 deaths.

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Address.

THE SURGICAL TREATMENT OF BILIARY CALCULI, WITH SPECIAL REFERENCE TO HEPATOTOMY.

PRESIDENT'S ADDRESS, DELIVERED AT THE FOURTEENTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS, HELD AT CLEVELAND, SEPTEMBER 17, 18 AND 19, 1901.

W. E. B. DAVIS, M.D.

BIRMINGHAM, ALA.

INTRODUCTION.

For the distinguished honor conferred on me at our last meeting in my election to the Presidency of this Association, numbering among its members so many leaders in gynecology and abdominal surgery, I beg first of all to return my most profound thanks. The Association occupies a unique position among our national special societies. It has overcome difficulties and accomplished results scarcely equaled and not excelled by any other special organization in this country. Its foundation was a necessity, it being admitted even by the members of the American Gynecological Society that that society was not sufficiently representative. Dr. Marion Sims, who, in 1880, in his presidential address urged the increase of the limit of membership from 60 to 100, which was done in 1884, said: "It is not to be denied that there is a very large element of discontent among men who are our equals in everything, and who might be organized into a formidable rival national association. Dr. Theophilus Parvin in his address, in 1893, made this statement: "These words"—Dr. Sims'—"were prophetic, the prophecy is history and there is a formidable rival national association. The association numbers many able members and has done very creditable and useful work." It was after our Association was established and its success assured that the Gynecological Society began a general and active canvass for Fellows and increased its membership from 58 to 94. Its Fellows were able men—leaders as a rule—and as a society it gave prestige to American gynecology, but there were many of their peers who had not been encouraged to become members, and, on the contrary, a number of distinguished and able workers had been denied this privilege.

The following from the presidential address of Dr. Robert Battey, in 1888, testifies to the above: "In the past, America has been, in a sense, the home of gynecology. To-day no country can boast of so large a number of intelligent workers in this department of the healing art. In our vast country the number of medical practitioners who devote themselves exclusively to gynecology is quite large, whilst those who make it a leading pursuit are to be counted by thousands. Surely out of this army of gynecological specialists one hundred men can be found who might worthily occupy places as working Fellows in this Society. Why is it, then, our seats remain year by year scarcely more than half filled? When I say to you in all sincerity that if I myself were to-day outside, instead of inside the ranks, distrust would forever bar me from becoming an applicant at your doors except upon special invitation, I can but feel that I am verging toward the true explanation of our forty-two vacant chairs. Diligent workers in medical science are, with an occasional exception which but proves the rule, modest gentlemen, not at all inclined to push themselves where they are not wanted. It is this class of members which we especially desire, and it is this class, too, who are least likely to make application for the Fellowship without some advance on our part which would give probable assurance of welcome."

It was natural for some men who were invited to come into our Association to prefer the older and well-established organization, hallowed by the names of so many of our distinguished countrymen and also for a number of our members to go into that society. The great majority, however, preferred the new organization, projected on a broader plane, and would not yield to inducements to give it up, and, as a result, this Society has increased in number and influence, and no one can deny that it is a representative American Association of our foremost gynecologists and abdominal surgeons. Its thirteen volumes of transactions are in every way highly creditable to American gynecology. They are not excelled by the published work of any other American society and reflect the greatest credit upon our members and especially the ability of our scholarly secretary, to whom we owe so much for the present high position this organization occupies. He has been its sculptor, and in the language of our first president, Dr. Taylor, "Upon the obelisk of the Association, erected by the earnest work of its members, there will stand in imperishable letters the name of William Warren Potter." I wish that time would permit my mentioning the names of those noble, earnest workers who joined Drs. Potter and Vander Veer in projecting and establishing this great Association.

The Association's first president, who served a second term, closed his last address in these words: "The recent advancement in all departments of science and the wonderful practical application of newly acquired facts, disarm incredulity and we dare place no limit upon the

possible acquisitions of the near future. The Utopias of to-day may be the familiar dwelling-places of to-morrow; and, actuated by the noble sentiment which so characterizes our profession, of seeking the truth for the truth's sake, we may be sure of grand additions to our knowledge and skill, and I can utter no better benediction than the hope that this Association may bear its full share of making these acquisitions." To-day I am able to state with much pride that many of the mooted questions in abdominal and pelvic surgery have been made clearer by our Fellows and that they have added materially to our store of knowledge.

The need of specialism in the profession and of special societies for the promotion of the several specialties have been ably and most exhaustively treated by our foremost men. The national special societies have wielded a wonderful influence in the profession and have added greatly to our reputation abroad. Our medical literature has been enhanced in every way through them. They have been incentives to higher aims and better work in all departments. As individual societies they should be encouraged, but their union into a national congress or association is not conducive to the best interests of the American profession. The greatest and most influential organization of the United States should be the American Medical Association. Both the specialists and the general practitioners of this country should belong to that Association and take pride in their membership and exert their best energies in behalf of its meetings, as urged by our fellow, Dr. Wright. Many of our ablest men, as claimed by him, have been conspicuous by their absence. Failure to be an active contributor to the work of this national organization should be a justly deserved reflection on a prominent physician, whether he be a general practitioner or a specialist. Several years ago there was some reason for the want of interest in the organization, as there was too much politics and too little scientific work. However, for the past few years the scientific work of the Sections has been of a high order, and a great deal has been accomplished in the time allowed. With the adoption of the new organization providing for the House of Delegates to take charge of all business matters and questions of a judicial or personal nature, more time will be provided for scientific work, the Sections having as many sessions as provided for the meetings of our national special societies. The special societies, composed as they are of leaders in the several specialties, are under obligations to the American profession to assist in the better organization of these Sections. Many of the members of these societies are officers and active working members of the Sections of the American Medical Association and can accomplish this result. There must be one class of membership for the Section that can be held by only those who are recognized as teachers and leaders in order to make membership very desirable and sought after. I would suggest that this class be known as Fellows and that they pay, in addition to the annual dues of the Association, $5 annually for Section dues, which fund should be expended in the publication of the proceedings of the Section. The officers and authors of papers should come from the Fellows. All members would have the privilege of taking part in the discussions and thus an opportunity would be provided for the ordinary or Association members to show themselves worthy of a fellowship. Such an organization of the Sections with volumes of Transactions, publishing a list of the Fellows, would give stability and a permanency to the Section work that could scarcely be had in any other way. With the House of Delegates for the general association and the Roll of Fellows and Association Members for each of the Sections, we would become the most scientific and influential medical organization the world has ever known.

The American Association of Obstetricians and Gynecologists has it in its power to so organize the Section of Diseases of Women, and the members of this Section, I believe, could induce the leaders in the other Sections to adopt the plan outlined or something after that plan. It is not enough that we should succeed as specialists and that our special societies should succeed, but they should prove a source of strength to the entire profession which can be best subserved by strengthening the American Medical Association, making it not only a power in scientific work, but giving it the prestige which will enable scientific medicine to receive due recognition from our national government. If our Fellows accomplish as much, they will have rendered the medical profession an invaluable service.

I now come to the subject which I have selected for discussion:

THE SURGICAL TREATMENT OF BILIARY CALCULI, WITH SPECIAL REFERENCE TO HEPATOTOMY.

Biliary calculi being found in from 2 to 20 per cent. of autopsies, the frequency increasing with age, makes the subject one of vast importance. Cases are now quite properly studied according to the location of stones and the resultant pathologic conditions. In every case, if the diagnosis could be made, the stones should be removed, in view of the multiform changes they are capable of producing. Fortunately for the patient, in a large proportion no trouble or symptoms ever occur. Hence, the diagnosis during life could be made only by an abdominal section, as the *x*-ray is not capable of demonstrating their presence except in a very small per cent. of cases.

The correct surgical management of gall-bladder and cystic duct calculi was first planned and put into practice in 1878, by that surgical genius from Alabama, who did so much to advance gynecology—the immortal Marion Sims. There has been little improvement on his original operation. Bobbs, of Indiana, in 1867, opened a gall-bladder containing calculi, but it had become attached to the abdominal parieties and his operation was nothing more than the incision of a simple abscess, as has been conclusively shown by Joseph Eastman. Cholecystostomy, with the attachment of the walls of the gall-bladder to the peritoneum and deep fascia of the abdominal wound is ideal and attended by less than 1 per cent. mortality. Only a small per cent. of fistulæ will follow this technique, while 40 per cent. has been the result of attaching the gall-bladder to the skin.

Much has been claimed within the past five years for cholecystendysis, with or without drainage of the abdominal cavity. While this operation has something to commend it, being simple and obviating the disagreeable discharge of bile, for from three to four weeks, from a fistula, yet its field is limited when the etiology and pathology of cholelithiasis are given due consideration. Stagnation of bile with altered epithelium and infection from the typhoid or colon bacillus, as found in many cases, where there is no evidence of infection from the character of the fluid in the bladder, would contraindicate its closure. If stones should be found, where an examination of the gall-bladder is conducted through

the abdominal incision made for the relief of pelvic disease or other abdominal trouble, cholecystendysis might be performed with advantage. I would advise strongly against the operation as performed by Kelly. The first incision in the abdomen should be closed and the opening made as in the classic cholecystotomy. Cases in which calculi would be found by this method are not associated with inflammatory changes and are the ones that go through life without symptoms referable to the gall-bladder, being found at the autopsy or in the dissecting room.

Cholecystectomy—first recommended in 1882 by Langenbuch—is indicated in gangrene of the gall-bladder, multiple or perforating ulcers, stricture of cystic duct, phlegmonous cholecystitis, empyema with great danger to the walls of the viscus, and malignant disease. It should not be done as a rule in chronic cholecystitis, when the bladder is too small to attach to the abdominal wall, notwithstanding it is recommended by Robson and others. Drainage with tube and gauze is to be preferred. It should never be completed until the common duct has been thoroughly explored and found to be patent. In the majority of cases it is advisable to trim off the diseased portion of the bladder from the liver instead of removing the entire viscus, and drain with gauze. The mortality of this operation is from 3 to 25 per cent., according to the condition Being called for in serious inflammatory and malignant diseases makes its mortality larger than cholecystostomy.

On November 25, of last year, Hans Kehr[1] had performed 547 gallstone operations, with the following results: 204 conservative operations on the gall-bladder (cystostomies, cystotomies, cystendyses) with 4 deaths; 121 cystectomies, with 4 fatal cases, and 97 choledochotomies, with 6 deaths. The mortality was 47 per cent. in gallstone diseases complicated with carcinoma of the liver, of the gall bladder, of the choledochus or the pancreas, or if there existed diffuse purulent cholangitis, peritonitis or cirrhosis of the liver.

Since 1890 the surgery of the common duct has attracted wide attention. Schloth, in 343 cases of biliary calculi, found 2.6 per cent. in the duct. Fenger estimates that from 2.6 to 15 per cent. of cholelithiasis are choledochus cases. Mayo Robson thinks from a surgical standpoint 20 per cent. would not be too large an estimate, which corresponds with Kehr's experience. At the Indianapolis meeting of this Association, Dr. Joseph Eastman, Indianapolis, stated that he had operated on thirty-three cases of cholelithiasis and had never found a stone in the common duct and rather questioned the reported cases of others. I replied to him that he would probably find one in his next operation, as some surgeons reported less than 3 per cent. in the duct. Three days after I returned to my home, I was called to a woman, from Indianapolis, who had been having for years attacks of recurring pain in the epigastrium extending to lumbar and lower dorsal region, with rigors and fever, followed by tenderness over liver. She had slight jaundice, which deepened at time of attacks—clearly a case of movable choledochus stone. Her Indianapolis physician had made the diagnosis of stone in the duct, but the patient had declined to consult a surgeon at that time.

Courvoisier estimates that in two-thirds of the cases there is but one stone. Mayo Robson's experience shows a much larger proportion of multiple calculi in the duct. In about two-thirds of the cases the stone is in the duodenal end of the duct, and, of the remaining third, the stones are divided about equally between the hepatic and middle portions of the duct. Fenger's valuable studies on movable choledochus stone have been extremely helpful.

In a small per cent. only of cases can the stone be pressed from the duct into the duodenum or manipulated into the gall-bladder, but this should be attempted when it seems at all possible—especially where the gall-bladder has been opened, and after the stones have been removed from the bladder and the cystic duct.

Choledochotomy *without suture* is called for in the large majority of common duct stones. Suture of the duct may be practiced in the absence of marked cholangitis, if the patient's condition has not been rendered serious by much suffering and protracted jaundice and if the duct is enlarged. Gauze drainage should be resorted to in all cases, it matters not how carefully the stitching of the duct has been carried out. The time required for suturing the duct adds very greatly to the gravity of the operation in cholemia of long duration, and it would be contrary to surgical practice elsewhere to suture when "offensive muddy bile" escapes from the duct. Kehr refers to several cases which recovered after the giving way of the duct sutures, when death seemed imminent before the offensive discharge appeared. When there are extensive adhesions in the locality of the duct, the wound in choledochus should be left open and gauze used, even though the patient's general condition would warrant a protracted operation, in order to relieve the cholangitis, which may extend if the duct is closed. Kehr insists that the surgeon must be guided by the pathologic condition as to suturing or draining. He says tampon in all cases, "but never suture if the bile is muddy and cholangitic symptoms have preceded." Morrison's pouch, which will hold nearly a pint of fluid, makes drainage in this location entirely satisfactory. The lumbar stab is preferred by some surgeons, but the entire safety of transperitoneal drainage has been abundantly demonstrated.

Unquestionably choledochotomy *with suture* is being more and more supplanted by the open treatment of the duct and the mortality is being correspondingly lowered. Kehr, who has done more gallstone operations than any other surgeon, claims that he first advised the open treatment of the duct, but we know that he is in error, as the operation has been advocated in this country since the early part of 1892, at which time experiments were conducted by me on lower animals and reported to the American Medical Association. At that time and for some years afterward it was admitted by surgeons that the operation would succeed on normal organs with normal bile, but not otherwise. I afterwards induced pathologic changes in the biliary passages and demonstrated that the operation was successful in infected cases. Experimental and clinical experience demonstrates conclusively the safety of the operation.

Courvoisier is credited with the first choledochotomy, which was done in 1890, the duct being sutured. Marcy, however, reports a case in which he sutured the duct, in 1889. For a few years after this in a limited number of cases where the duct was inaccessible or where it was found impracticable to suture, it was drained, but the operation was regarded as being very incomplete and unsatisfactory. McBurney was the first to advocate the removal of stones impacted in the duodenal portion of the duct through incision in the duodenum.

1. Prof. Kher's Introduction to the American Translation of his book on Gall-Stone Diseases.

Kehr's record of 97 choledochotomies with 6 deaths is remarkable and is due to his having drained in extreme exhaustion and cholemia and where there was marked cholangitis. Much of his success, he claims, is due to his great experience in operating, which has enabled him to better master the technique. He says he now does choledochotomies in a half-hour which formerly required two or three hours. As but few operators can have this great clinical experience with gallstone disease, I would advise those who only occasionally operate for cholelithiasis to induce pathologic changes in the biliary reservoir and passages in dogs and by operative procedures to correct them. Dexterity in operating and greater familiarity with this class of surgery may be had in this way.

At the Indianapolis meeting, two years ago, I reported two cases in which hepatotomy had been done in obstruction to the biliary passages, and at the Pan-American Medical Congress, in Havana, presented the abstract of a paper on this subject. The operation is indicated in cases of obstruction with enlarged liver, where the gall-bladder or ducts can not be isolated, or the patient's condition from exhaustion and cholemia will not permit of a protracted search for the bladder or ducts. It will be only exceptionally called for and the cases will be fewer as the surgeon's experience increases in choledochus operations; he will then be enabled to better locate the bladder and ducts so much changed by inflammatory processes. After the patient has been relieved of cholemia by the escape of bile from the incision in the liver, an operation with less danger may be done for the removal of the obstruction in the duct. In addition to the above indications I think the operation should be resorted to in hepatitis before it has reached the stage of pus formation, if the liver does not rapidly become smaller after drainage of the biliary reservoir or the ducts. My attention was first attracted to the value of the procedure in a case in which the amount of pus removed was not more than one-half ounce, but in which the division of the biliary canals resulted in the escape of large quantities of bile for many weeks.

The patient was seized with violent pain over the region of the gall-bladder and required a hypodermic of morphin, ¼ grain, before being relieved.[2] The liver was tender and extended an inch and a half below the margin of the ribs. The skin was slightly discolored. There was nausea and some vomiting; temperature was 102 in the afternoon, on the next day 99.5 in the morning and 100.5 in the afternoon; the pulse was less than 100. The daily temperature remained the same for a week, everything pointing to an abscess of the liver. On October 28, 1898, one week after the attack, the abdomen was opened and the right lobe of the liver aspirated, not more than one-half ounce of pus being removed. I made an incision and with the finger searched for this small cavity; in so doing a wound of considerable depth and great size, perhaps two inches in length, was produced. There was very profuse hemorrhage, which was controlled by iodoform gauze packing. The liver tissue gave way under the packing, making the wound much larger. The patient stood the operation well. A large quantity of bile was discharged through the gauze, necessitating the frequent change of dressings. The bile continued to pass in large quantities for three weeks and in small quantities for another two weeks, about the amount usually discharged in a case of cholecystostomy. The liver rapidly decreased in size, and the patient is in better condition now than for several years. The extensive wound of the liver evidently assisted in his recovery by severing the small biliary canals and emptying the liver.

I did a hepatotomy on the following case with choledochus stone:[3] Mrs. S., of Shelby county, aged 28 years, consulted me in December, 1898. She had suffered from attacks of epigastric pain and fever for four months. There was some tenderness elicited by pressure over the liver, the margin of which extended to midway between the ribs and umbilicus. There was no enlargement of the gall-bladder. Several attacks of pain would occur in a day or a week, coupled with slight jaundice. There would be nausea and some vomiting. The chills and fever simulated malaria. The diagnosis of a stone, loose in the common duct, was made. Operation was advised as soon as the present attack was over. In a few days, however, she was seized with violent pain in the right hypochondriac region, with fast pulse, 130 to 140, temperature 103, and vomiting. The peritonitis was localized. It was decided to perform a drainage operation to bridge the patient over, and subsequently the operation to remove the stone. There were extensive adhesions to the under surface of the liver which were partly separated. There was no pus around the liver, but great bleeding occurred, which was controlled by gauze packing. The right lobe of the liver was aspirated, and it was thought that some pus was removed, but a more thorough examination showed that this was incorrect. Free incision was made in the right lobe, which was followed by considerable bleeding. Iodoform gauze was packed in the liver wound. There was considerable discharge for some days, of a dark bloody fluid, not a great deal of bile. The liver returned to its normal size in a few weeks, but there was occasional recurrences of epigastric and subscapular pain with fever, showing that the stone was still in the duct. The spleen became very much enlarged four months after the operation. About two months later, when the patient had decided to have the radical operation for the removal of the stone, it was passed. Patient was entirely relieved.

Hepatotomy was done in the following case[4] for the relief of cholemia in obstruction of hepatic ducts: Mrs. H., of St. Clair county, was referred to me by Dr. J. W. Ash, Springville, Ala., December, 1898. The patient was aged 60. Six weeks previously, without great pain, she rapidly became jaundiced. The jaundice gradually became more intense. Liver extended almost to umbilicus. There were no nodules to be made out. The patient's condition was extremely unpromising, and no encouragement was given the family. An exploratory operation was done December 31 and the gall-bladder was found empty and quite white. No stone could be made out in the common duct. A thorough investigation of the under surface of the liver was not made, owing to the very critical condition of the patient and the size of the liver. However, it was evident that the obstruction was in the hepatic duct or its branches. The bladder was attached to the abdominal incision more to anchor the liver than otherwise. An incision was made in the right lobe and the bleeding was free, but controlled by iodoform gauze packing. The patient lived five days and died from exhaustion. I had hoped to sever some of the biliary canals and thus drain the liver till the patient

2. Wounds of the Liver and Biliary Tract. Vol. xii, Trans. American Assn. of Ob. and Gynecologists.

3. Ibid.

4. Ibid.

was somewhat relieved of cholemia. There was a free discharge of very dark colored bile. The autopsy revealed a large malignant nodule in the transverse fissure, which completely obstructed the branches of the hepatic duct. The biliary canals throughout the liver were very much distended.

In July and August of this year, 1898, I conducted a number of experiments on dogs to determine the value of incisions in the liver in relieving biliary obstruction.[5] Five dogs were killed and the liver injected with fluid either through the gall-bladder, the common duct having been tied, or through the common duct. Incisions were then made in all parts of the liver, with the result that streams of the fluid would issue from the bile canals and there was general oozing of the fluid from the wounded surfaces of the organ if much force were used. Six dogs were anesthetized and the liver injected as above and this fluid with blood would flow as a rule freely when much force was used in injecting the fluid. Four had the common duct tied and after twenty-four hours the same experiment was conducted under anesthesia with similar results. In nine the common duct was ligated and gauze packed around the field of the gall-bladder and ducts. After from twenty-four hours to a week the liver would be incised in one or more places and as a rule the bile escaped satisfactorily through the gauze. It would be very dark after prolonged obstruction. Two of the dogs died, and the others were killed in from five days to two weeks after the second operation. Before killing them and while under the anesthetic, fluid was injected through the bladder or duct, and would flow from the wounds which had been made in the liver at the second operation, and also from incisions made at that time. Five had the gall-bladder removed and cystic and common ducts ligated, but as gauze was not used at the time of the operation to wall off the general cavity, they died in from twenty-four to forty-eight hours from shock and from the escape of bile from the liver where gall-bladder had been removed—the obstruction in the duct forcing bile from the liver.

Other experiments were conducted, but they added nothing to the above. While, as I have stated, the field for hepatotomy in gallstone diseases is very restricted, yet in those few cases it offers the surgeon much assistance in bridging the patient over till in better condition for a radical operation.

As we advance in the surgery of the ducts the field for cholecystenterostomy grows smaller. Certainly it should not be done, leaving a stone in the duct. Malignant disease and agglutination of the duct call for it. The Murphy button makes the operation quite simple.

5. Experiments were conducted at the Birmingham Medical College, and I was assisted by Dr. R. E. Hogan, Assistant Professor of Gynecology and Abdominal Surgery.

Treatment of Hypertrophic Rhinitis with Zinc Chlorid.—A few drops of a 10 per cent. solution of zinc chlorid injected under the mucous membrane, is an effective means of curing hypertrophic rhinitis in those cases in which the swollen mucous membrane is smooth, soft and easily depressible, and by its distention over the lower turbinals obstructs the nasal passage. When it is thick and resistant this method has no chance of success. Viollet reports in the *Gaz. Hebd.* of August 18, that he has thus cured 5 out of 8 patients, the improvement unaltered for more than a year to date. His experience is much more extensive, but he omits those not scrupulously traced. His failures were due to his ignorance at first of the conditions of success as above described.

Original Articles.

THE ROLE OF THE MYOCARDIUM IN PERICARDITIS.*

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Pericarditis is a condition of danger in any one or all of the following ways: 1, as a focus of infection; 2, as a cause of mechanical or reflex disturbance of the heart action; 3, as a starting point for a spreading inflammatory lesion.

As a focus of infection its danger is greater than is that of pleurisy or possibly even of peritonitis. The exudations of the pericardium are habitually more hemorrhagic or purulent than are those of the pleura in similar or the same infection and the clinical indications of general infection are also significant of a more virulent process.

The mechanical dangers are usually of little consequence, and, as has been found in the case of endocarditis, wider knowledge gives evidence that the circulatory disturbances of pericarditis are occasioned by changes in the heart muscle to a much greater extent than by mechanical or reflex disorders of the organ. The association of endocarditis with pericarditis is especially common in childhood, and either process may be the primary or they may occur simultaneously. The resulting condition is generally a heart so crippled that the continuance of life beyond the time of adolescence is purchased at the price of the extremest watchfulness. Fortunately, this association is not a very common one.

I hasten to explain that my reference to the two conditions, endocarditis and pericarditis, in such a way as to indicate that they constitute a pathologic entity, is largely out of deference to usage now somewhat antiquated. There are cases that we may on this ground term endo-pericarditis, but the essence of the malady is a "pancarditis" and its dangers are proportioned to the completeness with which the whole of the heart is involved. There are cases of pericarditis with very slight involvement of the underlying muscle, cases with considerable muscular disease and slight endocarditis, and finally, instances of severe involvement of all three. The last are the cases that have customarily received the name endo-pericarditis.

The myocardial element has not been unrecognized by the pathologists, but clinicians are only beginning to realize its significance. Chronic myocardial disease as a cause of clinical symptoms does not constitute a new conception. The degenerations have long been looked upon as important clinical conditions; of these, curiously enough, fatty degeneration has until recently fairly monopolized the clinician's attention, though the far more important condition is fibroid degeneration or inflammation. This may be independent of any other cardiac disease or it may be associated with endocarditis or pericarditis. The independent form is of greatest interest at the present time because its development is less clearly known, and its existence is less certainly recognizable. This independent myocardial fibrosis, or myofibrosis cordis, however, is not a matter of special interest in our discussion.

* Read in a Symposium on Pericarditis at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section.

Of more importance is the fibrosis accompanying chronic pericarditis or endocarditis. In these cases the myocardium becomes affected by direct extension or in consequence of circulatory disturbances. The terminal result of this condition, as in independent myofibrosis, must always be cardiac dilatation, if intercurrent disease have not prematurely terminated life. Before, however, this terminal condition has developed, clinical signs of failing circulation may arise as obscure indications of the myocardial weakness associated with the pericardial disease.

I shall not allude to the physical signs of simple pericardial disease, such as frictions, mammary or costal retraction, etc., but would recall the symptomatic and physical evidences of muscular incompetency in cases of combined pericardial and muscular disease. As in the independent myofibrosis, there may be a gradual loss of vigor, a premature senility, a tendency to irregularity of the heart to a peculiar grayish pallor, to gastric disturbances, etc., but all of these indications are less prominent than in the independent form because chronic pericarditis is more frequent at an early age, when the senile type of clinical manifestations are unlikely to occur.

The best evidences of myocardial association with pericarditis are therefore those derived from physical examination. First of all I wish to insist that marked hypertrophy of the heart develops in a surprisingly short time in acute cases. In a recent case in a boy of 9, I found such rapid enlargement of the heart that it seemed impossible that the enlargement could be other than dilatation. The autopsy, however, showed practically no dilatation and very great thickening of the walls. This enlargement, however, is not true hypertrophy; it is largely degenerative, and the clinical signs would indicate this. The pulse is weak and of low tension—out of all proportion to the degree of enlargement of the heart. The slapping, irritable impulse of Martius accompanied with a weakened and quick pulse is of prime importance in indicating myocardial association with the pericardial disease.

What I have just said refers especially to acute cases. The chronic cases are attended with less pronounced signs of myocardial disease, but it may be said with considerable emphasis that peripheral congestion or cyanosis, the peculiar enlargement of the liver that has been termed pericardial cirrhosis of the liver, the occurrence of dropsies and marked irregularities of the heart, are always indicative of associated myocardial trouble and therefore of grave prognostic significance.

I do not wish to be understood as saying that myocardial disease always accompanies pericarditis. In a strict pathologic sense there is probably always some involvement of the muscle of the heart, at least to the extent of slight sub-pericardial infiltration, but in a clinical sense the heart wall is often unaffected. It should, however, be recognized that even such slight myocardial disease may occasion striking signs and symptoms. Thus, Fisher has found great disturbance of the heart action and of the sounds—a Flint's murmur—when there was only a moderate sub-pericardial disease. In this connection I wish also to recall that Romberg has found in simple endocarditis thrombosis of the myocardial vessels and myocardial degeneration. This contribution is of very great importance, for in no other way could the marked disturbances of the heart's action be explained in cases of endocarditis with anatomically trivial lesions. I would couple this with what occurs in pericarditis. The symptoms of the latter are largely the result of the underlying myocardial disease.

We are thus forced to the conclusion of Jürgensen that pancarditis is the diagnosis of the future, its type may be endocarditic, pericarditic, or myocarditic, but the immediate result and the final prognosis are to a large extent dependent upon the degree of involvement of the myocardium. A few dangers, such as general infection, embolism or mechanical interference with the heart by extensive effusion, are independent of the condition of the heart wall, but, these conditions excepted, the important criterion for prognosis is the condition of heart muscle.

ADHERENT PERICARDIUM.*

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CHICAGO.

It is so manifestly impossible in the few minutes allotted to me to consider this subject in its entirety, and so many of the points bearing on this subject have already been considered by preceding speakers, that it seems best to restrict my remarks to the clinical aspects of this disease.

We meet with adherent pericardium in two forms: 1, as a result of pericarditis interna which has led to a more or less complete and firm union of the two layers of the sac, without adhesion to the surrounding structures; 2, as a result of pericarditis interna et externa which has caused adhesion not only between the pericardium and epicardium, but also between the sac and the contiguous structures, as the chest wall, diaphragm and lungs.

In this second form there is often such an extensive development of fibrous tissue within the mediastinum, with consequent union of all the structures therein contained, that the condition has been termed chronic adhesive or fibrous mediastino-pericarditis. In some cases this proliferation of fibrous tissue is not limited to the mediastinum, but invades the pleural and peritoneal cavities in the form of a general serositis.

Not only is the capsule of the liver thickened, but the connective tissue hyperplasia invades the organ, becoming especially marked in the interior of the lobules and in the fissure. In time this fibrous tissue undergoes contraction and the liver becomes reduced in size and hard, very much as it does in hepatic cirrhosis. The once enlarged and chronically congested organ shrinks, becoming dense and thin bordered, more or less granular, but still fairly regular in outline, excepting that its notch is greatly exaggerated. According to Eisenmenger, it is by the contraction of the connective tissue within the fissure of the liver and consequent compression of the portal vessels that the shrinkage in the size of the organ leads to ascites, the same as does the atrophy in Laennec's hepatic cirrhosis.

Finally, the adherent pericardium may exist without chronic inflammatory changes in the endocardium or myocardium, but in most instances it is associated with valvular disease, or with chronic myocarditis.

SYMPTOMS.

These depend not only on the extent and situation of the pericardial adhesions, but also upon the co-existence, or not, of other lesions as valvular defects. If the two layers of the sac alone are adherent, and particu-

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larly if the adhesions are limited in extent, cardiac hypertrophy may be the only effect and the circulation is carried on so adequately that no symptoms are produced. If, on the contrary, the two surfaces of the pericardium become adherent, while the heart is in a state of dilatation from acute myocarditis, or in consequence of valvular disease, and if the organ is therefore not able to return to its previously small size, the effect upon the circulation is eventually disastrous and symptoms due to stasis declare themselves.

If the pericarditis was external as well as internal and led to fixation of the sac to some of the surrounding parts, the heart is held more or less firmly as in a vise and is hampered in its work. Its systoles are less effectual than normal, since the fixation of its walls serves to hold the cavities in a state of distension, and its contents are imperfectly discharged. Stasis inevitably results. If to this condition is united a valve lesion, as mitral regurgitation, the effect is particularly bad and symptoms are not long deferred. It is for this reason that chronic, adhesive mediastino-pericarditis is so likely to prove a serious affection. In all cases there is much difference in the severity and manifestation of symptoms. In one individual these are referable chiefly to stasis within the pulmonary vessels, shortness of breath on exertion, cough due to bronchial congestion and a marked disposition to attacks of bronchitis. In another case palpitations either with or without dyspnea are called forth by effort and excitement occasioning much discomfort and it may be alarm. In these cases the pulse is apt to be persistently rapid, it may be irregular and the cardiac impulse is exaggerated in force and extent. In a few cases without co-existing valvular defect, the disturbance of circulation is not pronounced, being shown only by digestive disorders lasting for years, and attributed to simple dyspepsia or to chronic gastritis, but rarely to their proper cause on account of the obscurity of the pericardial lesion and the difficulty or impossibility of its diagnosis.

In most cases there is nothing to distinguish them from ordinary instances of mitral disease or from cardiac dilatation. Physical examination usually discloses enlargement of the liver from passive congestion. This enlargement is generally greater than one would expect from the cardiac findings, and I have been impressed by the obstinacy of this hepatic engorgement under treatment. It is not only difficult to reduce its size by ordinary means of treatment, but the congestion of the organ displays a striking tendency to recur as soon as treatment is abandoned.

I have had under observation for several years a female patient whose mitral valve leaks and whose enormously enlarged heart is apparently completely encased in fibrous tissue that binds down the organ on all sides, so that no amount of rest in bed or digitalis seems to reduce its size in the least. The liver has always been greatly engorged, extending for a long time nearly to the crest of the ileum, and requiring the daily use of saline laxatives to relieve the patient from pain and discomfort. For the past year the organ has been gradually diminishing somewhat in size and growing in thinness and hardness. This patient has displayed remarkably little dyspnea on effort, but is greatly annoyed by the pounding and tumultuous action of the heart, this sensation being specially noticeable in the epigastrium. Of late she has had a great deal of cough, difficult mucous sputum and upon several occasions slight hemoptysis. She has to be extremely careful in her diet, and her urine and menses have become scanty.

Another female patient with pronounced mitral insufficiency has pericardial adhesions that bind down the left side and base of the heart, fixing the apex beat immovably in place far to the left and downward, but the border of the right heart is apparently free from adhesions. Whereas the left ventricle never varies in size under any conditions, the right heart, as shown by the area of cardiac dulness, becomes dilated with the greatest ease and rapidity. The liver, which is persistently enlarged, fluctuates somewhat in size in accordance with the state of the right heart, but even when at its smallest always extends from 2 to 3 inches below the inferior costal margin, no matter how vigorous may be the onslaughts upon it by means of epsom salts. This patient's symptoms are not of the digestive organs, but are those of shortness of breath and a rapid pounding action of the heart and general weakness. The urine remains fairly abundant and the menses are too profuse and protracted. She is always promptly benefited by absolute rest in bed, a milk diet, catharties and digitalis, although this last never materially slows the heart.

When in all such cases compensation finally gives way the breakdown is complete and irreparable. Symptoms of stasis declare themselves everywhere, but do not differ materially from those of cardiac asystolism from any other cause.

The most interesting class of cases are those whose clinical features resemble a case of atrophic cirrhosis of the liver in its terminal stage. These are the cases of chronic fibrous mediastino-pericarditis. They not infrequently pursue a latent course for many years, and even after symptoms have set in are not recognized as pericardium until they come to autopsy. This applies particularly to cases in which the pericardial synechia is unassociated with valvular disease. Not only is there chronic engorgement of the liver, but the contraction of the fibrous tissue interferes at length with portal circulation and induces serious symptoms.

The patient's attention is first attracted by an increase in the size and firmness of his abdomen. In some instances icterus accompanies, or even precedes, this increase of girth. At length, driven to seek medical advice, he is discovered to have ascites usually without edema of the lower extremities. The physician examines the heart and urine, detects no heart disease and discovers no albumin, but perhaps some bile. The case is put down as one of hepatic cirrhosis. The following is an illustrative case:

Not long ago I saw in consultation a man of 55, who had been intensely jaundiced for nearly two years, and in August, 1900, was tapped for ascites. This had rather speedily recurred, and had been reduced by apocynum cannabinum for a time, but had again been drawn off the morning of the day I saw him. He had suffered from articular rheumatism eighteen years before, but experienced no shortness of breath or other discomfort since. The thin bordered, dense, slightly granular feeling liver extended in the median line nearly to the umbilicus and from one costal arch to the other, being lost beneath the ribs just outside the right mammillary line. Owing to the recent paracentesis, the peritoneal cavity was free from fluid and there was no edema.

The cardiac area was somewhat increased to the right and downward, the sounds were clear and strong and free from murmurs. The apex beat was rather tapping in character, in the 5th left interspace within the nipple line, and there was not very well marked epigastric pul-

sation. In the 5th and 6th interspaces between the apex beat and sternum, and also in the sulcus between the ensiform appendix and left costal cartilages, a systolic retraction could be perceived both by palpation and inspection. Furthermore, when the patient was instructed to draw a full slow breath, the right external jugular could be seen to bulge out during the inspiration. This distension was also palpable. Pulsus paradoxus could not be determined. I had no hesitation in making a diagnosis of pseudo-cirrhosis of the liver, secondary to adherent pericardium. Such cases may run a protracted course, requiring repeated tappings, and the patients succumb to exhaustion, if not to the effects of stasis.

DIAGNOSIS.

Under some circumstances this may be one of the easiest of matters, in other cases it is one of the most difficult. Diagnosis is difficult, if not impossible, when the sac is adherent to the heart, but not to the neighboring structures. The signs then relied upon are, inspiratory distension, instead of normal inspiratory collapse of the external jugulars, or other superficial veins; diastolic collapse of the cervical veins, known as Friedreich's sign; pulsus paradoxus, a by no means constant or reliable sign; and the detection of cardiac hypertrophy for which no adequate cause can be discovered. When the pericardium is adherent to the chest wall or diaphragm other signs are often developed that render diagnosis easy and certain. These are, a systolic retraction of one or more interspaces in close proximity to the apex beat or of the epigastrium; fixation of the apex, so that its gravitation from side to side with the turning of the patient's body or its descent during inspiration is prevented, or much restricted; a systolic retraction followed by a diastolic rebound of the chest wall that, by some authors, is considered pathognomonic; a systolic sinking or drawing in of the 10th and 11th intercostal spaces below the inferior angle of the left scapula, and occasionally of the right, known as Broadbent's sign. These are all very significant and much more frequently discovered than are those previously mentioned. In some instances auscultation detects friction sounds of a fine crackling or creaking character along the sides or apex of the sac, which sounds are synchronous with cardiac contractions and are sometimes elicited only during inspiration. A fine creaking sound is heard in some cases at the base of the heart upon the body of the sternum, while the patient slowly raises and lowers the arms. The detection of such pleuro-pericardial, or even strictly pleural friction sounds, furnish indirect or corroborative evidence of the existence of an adherent pericardium, and, taken in connection with cardiac hypertrophy and hepatic engorgement, would render the diagnosis extremely probable, even in the absence of more distinctive signs.

Finally, in some cases in which positive signs can not be obtained, the diagnosis of this condition is rendered possible by a process of exclusion, together with the history of a previous rheumatic attack, and the discovery of an hepatic enlargement for which no other predisposing cause can be ascertained. The elaboration of this subject as well as the prognosis and treatment will have to be left to the speakers that follow.

Isolation Hospital.—Colorado Springs, after a fruitless endeavor to combine with El Paso County in the erection of an isolation hospital, has decided to build one for the city alone, at a cost of $2000.

TUBERCULAR PERICARDITIS.*

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AIKEN, S. C.

This is a disease much more prevalent than has heretofore been generally accepted. A great many cases of obscure heart trouble in the anemic when we find no valvular disease, and when there are no marked, but certain masked symptoms of the disease, is due to tubercular pericarditis. Especially is this true if the patient later begins to lose weight and assume a cachectic appearance.

Tubercular pericarditis generally progresses insidiously. It is communicated to the pericardium through the lymphatics, arterial or venous systems, and from that tends to extend to the peritoneum and other serous membranes. It is difficult to diagnose the disease as tubercular pericarditis in contradistinction to the non-tubercular pericarditis, unless it is secondary to a demonstrable tubercular lesion. However, if we are in doubt we can examine some of the aspirated fluid for the tubercle bacilli. If our search were negative we could not be positive that the disease was not tubercular, for the bacilli are very hard to find. It would then be necessary to inoculate a guinea-pig with the fluid, observing precaution of asepsis and if, after death, the glands are found to contain bacilli the diagnosis would be tubercular pericarditis.

The exudate is generally of the plastic, fibrinous, cheesy, or purulent form.

The symptoms of tubercular pericarditis are those that we would expect from an enlarged and adherent heart, together with the general symptoms of malaise and more disturbance of the general system than is found in the simple pericarditis, or that secondary to rheumatism or one of the exanthematous diseases.

CASE 1.—Male, white, aged 19, had been under my care for phthisis. The disease started in the apex of the right lung and progressed to stage of cavity, which was on the right side, behind second rib. Case was quiescent; the cavity was contracting; expectoration lessening rapidly, and he had stopped having an afternoon fever and night sweats.

The case was progressing satisfactory until the patient suddenly complained of pain in left side, became short of breath; his pulse rose to over 160; temperature became high and there was dulness over whole of left side. Upon careful examination the voice sounds were found and some râles at the apex of the left lung. The area of heart dulness was greatly enlarged and the sounds indistinct; the to-and-fro friction sounds, so significant of pericarditis, were audible. There was slight bulging of the intercostal spaces, but there did not seem to be enough to aspirate, and as the patient was tubercular it was not necessary to examine the fluid. The patient gradually became worse from the general tuberculosis and died from tuberculous diarrhea. The valves remained good throughout the illness and the brain was clear. In the last week only did the urine show marked albumin.

The interesting points in this case were the sudden involvement of the left lung and pericardium, when the case was apparently progressing favorably. At first it seemed possible that pneumonia was developing, and it was only after careful examination that pericarditis was diagnosed. There was not the large amount of fluid which we generally expect to find in the tubercular pericarditis, and it is to be regretted the more on that account that a postmortem was not permitted. Tubercle bacilli were found in the sputum.

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* Read in a Symposium on Pericarditis at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section.

Case 2.—This patient was seen at St. Luke's Hospital through the kindness of Dr. Beverly Robinson. He entered March 19, 1901. Male, aged 38, American laborer.

Family history is negative.

Past history: He does not remember diseases of childhood, but has never been sick in bed since that time. No rheumatism, no tonsillitis. Drinks tea, coffee and much beer and whisky. No gonorrhea. Had chancroid several years ago, no other venereal disease.

Present history: Four months ago, after a debauch, he began to have pain in his right side, which was shooting in nature and increased on deep inspiration. No coughs, chills or vomiting. This pain lasted for a month, then he began to cough and raise small amounts of blood-stained mucus. This was accompanied by some fever, worse in the afternoon, and he also suffered from a great weakness, though he did not go to bed.

Two weeks ago he began to have similar pain in his left side and the cough grew worse. Very slight expectoration. At the same time he had pain in the cardiac region, and began to suffer from palpitation. Has been short of breath at times during the sickness, but he is not troubled with it now. Feet do not swell; eyes normal; urine normal, no stomach symptoms. Appetite is poor; bowels regular. Chief complaint is pain on both sides. He did not expect to remain in hospital, but only wanted something for the pain.

Examination: Rather large frame; well nourished; skin and mucous membranes of fair color; tongue broad, moist tremulous, slightly coated; pupils normal.

Heart: Right border 2¼ inches from median line; apex beat not felt; dulness in fifth space, 5¾ inches from median line. Pulsation of the whole left chest was felt. Heart action very rapid, 172. A superficial, high-pitched, systolic murmur was heard between nipple line and sternum in third, fourth and fifth left intercostal spaces; modified by pressure of stethoscope. No further murmur detected. Pulse very rapid, 172; it was regular, very small and weak. Lungs: Right lung had diminished motion; below clavicle vocal fremitus increased. Dulness increasing to flatness extended posteriorly up to spine of scapulæ. Feeble vocal and respiratory sounds; some bulging of intercostal spaces. Right chest at ninth dorsal spine, 17¾ in.; left chest, 19¼ in. Left side marked dulness near sternum in fourth interspace, clear fluid was found in ninth intercostal space. Rest negative.

Liver: Dulness begins in fourth space middle clavicular line, extends 2 inches below free border of ribs; edge felt at this level, firm, flexible, not sharp. Spleen felt 1½ inches below free border.

Inguinal and epitrochlear lymphatic nodes enlarged. Knee-jerks present; more marked on right side; no ankle clonus; some blueness of finger nails.

Patient improved greatly, and on April 25 some fluid was drawn from the pleura of the right chest for examination. A guinea-pig was inoculated with it on the same day, and on May 19 was killed and tubercle bacilli were found in the characteristic cheesy pus from the enlarged lumbar gland. Miliary tubercles were found in the great omentum, liver, spleen, kidney, lungs and on the abdominal parietal peritoneum.

Condition May 26: Patient is comatosed; breathing, Cheyne-Stokes in character. Right pupil reacts to light; the left pupil is oval in outline and does not react to light. No apparent paralysis of ocular muscles; only slight rigidity of back of neck. Paralysis of right hand and arm, skin cold and somewhat blue; no response to pin-prick over area of right hand, arm and right side of chest. Knee-jerk very slight on either side; no ankle clonus. No tubercle bacilli found in sputum or in fluid from pleura, although that they were present in the latter was proven by their presence in the guinea-pig.

Sanitary Progress in Spain.—Since the Spanish authorities appointed Dr. A. Pulido to be at the head of the national health department, a number of reforms have been instituted in regard to public hygiene. A decree that went into effect October 31 enforces compulsory declaration of all cases of certain infectious diseases. The list includes leprosy and tuberculosis.

CARDIAC LESIONS AS OBSERVED IN THE NEGRO, WITH SPECIAL REFERENCE TO PERICARDITIS.*

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In that class of colored people who come as patients to my outdoor clinic, syphilis, tuberculosis, and gonorrhea in a great measure constitute the trinity of diseases. It must then follow that renal, pulmonary and cardiac lesions are quite frequently observed, and constitute a field rich and ripe for the student of clinical medicine and physical diagnosis. In studying cardiac lesions in the negro, I have found that their classification and relative frequency does not correspond to those in the whites, as described by our text-books on physical diagnosis. Briefly, I shall direct your attention to these lesions and as they occur in the negro.

Our text-books teach that mitral regurgitation is the most frequent of all cardiac valvular lesions, and that in 50 per cent. of cases it follows as a sequel of endocarditis, the results of acute inflammatory rheumatism. This rule, however, does not hold good in the colored race. From the 25,000 negroes that have come under my observation at the clinics during the last five years, I have had ample opportunity to reach conclusions. These conclusions justify me in stating that aortic lesions are much more common than mitral, aortic regurgitation standing first.

When we consider the vascular changes in aortic regurgitation, the accompanying arteriosclerosis; when we reflect that syphilis, alcoholic abuse, muscular strain, improper food, faulty elimination, etc., play a leading rôle in the pathology of both aortic insufficiency and arterial sclerosis, it can readily be seen why the negro should become subject to lesions arising in and around the aortic valves. The classis corbovis reaches its highest degree of development in the negro with aortic regurgitation, and also in interstitial nephritis. In every postmortem that I have witnessed where aortic regurgitation had been diagnosed during life, where a general atheroma, a well-marked arteriosclerosis, a calcareous degeneration of the aortic valves and arch of the aorta, with evidence of previous atheromatous patches, where there was the contracted kidney of interstitial nephritis, and the large hypertrophied ventricle, the typical corbovis has been found. The youngest subject with the above-described conditions was a colored boy 16 years of age. He had a well-marked syphilis, also tuberculosis during life. Vascular changes are so great in the negro race that Dr. Osler informed me last year, while I was visiting the wards at Johns Hopkins University Hospital, that he had observed it so commonly in the negro that they had named one of the wards Corrigan's.

Syphilis and tuberculosis are boon companions, the mighty monarchs in the production of all classes of cardiac lesions arising so frequently in the negro. A marked feature in aortic regurgitation with the accompanying arteriosclerosis is the absolute absence of dropsical symptoms. I have seldom observed it. Angina pectoris is quite common. Sudden death is the rule. I note that one of our modern text-books on practice says that aortic regurgitation, considered as a whole, is the

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least dangerous of all valvular lesions, and one in which a favorable prognosis may be given. My experience with this lesion both in the whites and the blacks has made me skeptical as to prognosis. The majority of my patients with this condition have died suddenly. It is exceedingly fatal in the negro, death coming on suddenly before symptoms of failing compensation become manifest. Broadbent, Sampson, Cheadle, Sibson, in fact nearly all the authorities on diseases of the heart with the exception of Walsh, agree that aortic regurgitation is the most fatal of all cardiac lesions.

With reference to frequency aortic stenosis stands next to aortic regurgitation in the negro. I have frequently found them co-existing. The "hoo-chee" or steam tug murmur denoting stenosis and incompetence, I have often demonstrated to the entire satisfaction of my class and to physicians who were inclined to doubt this important auscultatory physical sign. The same conditions that operate in producing regurgitation at the aortic valves are found in stenosis. The integrity of the heart muscles is taxed to its utmost in these conditions.

The myocardium and endocardium, in fact the whole cardio-vascular system suffers the brunt of specific infection; in proportion to the degree of infection, the constitutional symptoms will be manifest. Text-books state that the murmur of mitral regurgitation is the one found to be most frequently musical. In the negro this is not correct. I have recorded 8 musical murmurs, 7 were at the aortic valves with unmistakable physical signs of aortic regurgitation, the murmur occurring with diastole and not with systole. In aortic regurgitation the high blood tension, the tumultuous action of the heart, the arteriosclerosis and the calcareous degeneration in the aorta are physical conditions conducive to musical murmurs. The venus hum in acute febrile conditions is much more frequent in the colored race than in the white.

Let us now touch upon mitral regurgitation. A close review of my cases shows that it does not occur as often as aortic regurgitation and aortic stenosis. Much has been written of late about the murmur of mitral incompetency. Two types have been well defined, especially so by Broadbent. One in which the mitral valve is incompetent from structural changes due to inflammatory action extending from the endocardium, the incurable mitral. The other due to dilatation of the ventricle, occurring in anemia and acute febrile disorders, the curable mitral. These two types are seen quite often at the outdoor clinic.

While we recognize that endocarditis following acute rheumatism is the most frequent cause of mitral regurgitation in the white, I have in the majority of cases failed, after the most careful examination, to elicit a history of a previous rheumatism in the negro. In those cases in which the symptoms and physical signs were well marked, where their previous health had been good, I have in the great majority of cases found an active syphilis operating; an acute syphilitic infection, if you please. My observations force me to the conclusion that acute syphilis has more to do with the production of mitral regurgitation in the colored race than inflammatory rheumatism.

Syphilis in the negro is quite often precocious. It is not an uncommon thing to see the classic stages merge rapidly one into the other, the chancre, the bubo, the eruption, the mucous patch in the throat, the periostitis, and the syphilitic fever existing simultaneously. This precocious syphilis is an index of active systemic infection and intoxication. The entire cardio-vascular system becomes overwhelmed, consequently syphilitic endocarditis, myocarditis in the production of mitral regurgitation. In this class of patients I have found the prognosis good. Remove the cause by eliminating rapidly the specific poison and your patient makes a fairly satisfactory recovery.

In that class of patients where symptoms of failing compensation are out of proportion to the physical signs, the prognosis is grave. A general anasarca comes on rapidly. The pericardium, the thorax, the peritoneum becomes filled with an enormous quantity of transudated serum. The patient literally drowns in a sea of self-generated fluids.

What is the pathologic significance in these cases? Quite often a history of a recent syphilis with an acute parenchymatous nephritis can be obtained, the cardiac it seems being secondary to the renal lesion. Tuberculosis will in the majority of cases be engrafted upon this specific history. I have often seen tuberculosis develop just as these dropsical symptoms were becoming manifest and run its course rapidly. The postmortem showed cavities in the lungs, marked degenerative changes in the endocardium and myocardium, and the kidney of diffuse parenchymatous nephritis. General anasarca, whether it be due to cardiac or renal lesions, is much more pronounced in the colored race than in the white.

Text-books are exhaustive in describing the physical signs and symptoms of mitral stenosis. Broadbent describes the three classic stages in detail. After a most careful and searching examination I have yet to find it in my clinical work in the negro. I have had it suggested to me that I had confused it with aortic regurgitation. The physical signs of aortic regurgitation with the accompanying arteriosclerosis are so well marked and defined in the negro that the most superficial observer could recognize it if he had any knowledge whatever. Pain in the chest, shortness of breath, palpitation of the heart, with the physical signs of diffuse apex beats are very often expressive symptoms of a previous aortitis, a chronic endocarditis and dilatation. The triple infection of gonorrhea, tuberculosis and syphilis make that class of negroes who attend the outdoor clinic ideal subjects for the study of valvular lesión of the heart, also pulmonary and renal lesions.

Now, with reference to the latter clause of my subject, a special reference to pericarditis, I have not the time in this paper to give it the thoughtful consideration it demands. I wish, however, to call your attention especially to pericarditis occurring in the negro during an attack of pneumonia. Pneumonia with him, as most of you know, is quite fatal. Given an acute attack of lobar pneumonia, a close physical examination will reveal an existing pericarditis. Its absence in the negro during an attack of pneumonia is the exception and not the rule. Purulent pericarditis is much more common than is generally supposed and I fear often goes unrecognized. I have observed it in the negro varying from the ages of 8 to 75 respectively.

A colored girl 8 years of age with rickets, with Hutchinson teeth, with saddle-shaped nose, and with a history of hereditary syphilis, came under my observation during the summer of 1899. A diagnosis of bronchitis and malarial fever had been made by another physician before I saw her. The apex beat could not be found. Upon auscultation the heart sounds were distant. Inspection showed marked bulging of the precordia. The

percussion note was absolutely flat over the whole apex area; dyspnea was marked. Temperature ranged from 102 to 104 F.; sweats and rigors as of a general sepsis were present. Aspiration revealed pus. She died the following day. No autopsy could be had.

A colored man 76 years of age was brought to my clinic during the spring of '98. He had suffered a severe attack of la grippe in the previous January. Physical signs and symptoms were characteristic of pericardial effusion. He had no fever. I aspirated with a small needle and withdrew pus. Symptoms of suffocation were so urgent that an operation was immediately decided upon. An incision was made and about a teacupful of pus evacuated. He died in a few hours. The relatives would not permit autopsy. These two cases are cited only as examples of purulent pericarditis in the negro which frequently come under my observation. I can not touch here upon adherent pericardium.

The following are the cardiac lesions in the negro in the order of their frequency: 1. Aortic regurgitation in the negro is the most frequent, the most dangerous of all valvular lesions; 2, aortic stenosis is next in frequency; 3, mitral regurgitation next; 4, mitral stenosis has not been diagnosed from physical signs and symptoms; 5, tuberculosis and syphilis act both as exciting and predisposing causes in the production of muscular and valvular lesions; 6, syphilitic history in mitral regurgitation is more frequently found than is a rheumatic history, and 7, the murmur of aortic regurgitation most frequently musical.

SOME POINTS IN THE TREATMENT OF PERICARDITIS.*

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In the beginning of my pathologic experience in hospital service, it was a surprise to me to find how frequently evidences of former pericarditis occurred. Later, as my clinical experience increased, I found how easy it was to overlook this disease, and how in letting it go unrecognized, inadvertently good treatment was frequently practiced by the absolute rest given the patient. The primary disease being under surveillance, the secondary was of necessity under conditions favorable for recovery. This experience suggests our only real available means of prophylaxis, viz., good care of the patient during the continuance of the primary disease, anticipating the fact that pericarditis is usually a secondary affection.

It then behooves us in the treatment of rheumatism, acute infectious fevers and septic processes, to keep ever in mind the possibility of pericarditis as an aftermath, and govern ourselves accordingly, by insisting upon absolute rest and quiet until this danger is passed. This is the limit of prophylaxis, except in rheumatic affections, when the liberal use of salicylates will do much toward rendering assistance in obviating this complication.

GENERAL TREATMENT.

Pericarditis should be regarded and so treated, as a serious disease, even if the symptoms are slight. Each case, it is true, must be treated upon its individual merits, but in a general way all must come under the absolute rule of enforced rest and quiet surroundings. The active business man, the busy housewife, the restless child, one and all, must be put under favorable conditions for the rest treatment.

I recognize how easy it is for us to lay down rules in such cases and how easily the patient can break them. Just recently one of my patients took upon himself, during the progress of convalescence, the responsibility of leaving his room to direct some simple household measure. An attack of dyspnea with marked dysphagia followed, throwing him back into bed and prolonging his stay in his room. It is as difficult to control an active business man as it is a child. The child we can confine to his bed for a prolonged period, but the man frequently takes the reins himself and suffers accordingly.

To reiterate enforced rest is necessary because it curbs the symptoms and places the patient under the most favorable conditions for speedy recovery.

DIET.

It is important to be especially careful of the diet of the patient. Milk is the most suitable diet—in fact, "It is," as said by Gibson, "absolutely indicated." Especially is this true where dyspnea is a feature. Hemmeter says: "I have noted several deaths in patients suffering from cardiac disease, shortly after a full meal, and a meal that was apparently enjoyed." I know in my own experience, while teaching clinical medicine, of such a case.

In giving milk it is better to follow the rule of giving a small quantity every two or three hours rather than load the stomach with a larger quantity less frequently. This is a simple matter, but very often ignored, and because of the gastric disturbances occurring in pericarditis, are prominently set forth after over-indulgence; it is possible to guard them as leading symptoms of disease of the stomach. Two cases, diagnosed gastritis, have come under my observation in consultation which were cases of pericarditis.

The irregular heart action was attributed to dyspepsia, whereas the passive congestion inducing gastric disturbance was due to the pericarditis. Careful dieting will overcome this feature, while at the same time it will promote the nutrition of the patient, which must be maintained.

SYSTEMIC TREATMENT.

The etiologic factor is to be considered in the systemic treatment of pericarditis. In cases due to rheumatism it is especially important to give the salicylates, as before stated under the head of prophylaxis. By so doing we are at least giving every assistance toward resolution, coming within the therapeutic possibilities of these drugs.

It is well to remember that most all cases of rheumatic pericarditis get well, if we will let them alone. Keep them at rest and carefully meet indications as they arise.

SYMPTOMATIC TREATMENT.

Our therapy is to be directed more especially toward giving the patient comfort, relieving him from the distress of pain, promoting sleep, and being watchful of the little things which contribute so much to success in internal medicine.

Pain is usually the most striking symptom calling for relief. Sometimes a blister over the pericardium will be sufficient, or if it continues, cold applications, cold cloths or an ice bag used as needed. The continued cold has proven of service to me, not only in relieving pain, but also in promoting resolution by seemingly ar-

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resting effusion. Hot applications may be suggested in these few cases, where cold is not tolerated. The hot water bag, when the dysphagia is not sufficient to require the patient to remain in a sitting posture, or the use of hot cloths, or dry heat in other forms as suggested by the needs of the case, will be of benefit.

Morphin may be given where these means fail, or for that matter it is good treatment to give it at once, if the symptoms are distressing. I have given it for several days at a time, guarding it with proper cardiac support.

The patient is usually restless and, if a man, it is with more or less difficulty that we curb this feature, unless we use the bromids in moderation. The bromids are best given in the form of bromid of soda. This should be given during the day, usually commencing about noon, again at 4 or 6 in the afternoon and at bedtime. I find this is very frequently sufficient to quiet the patient, and usually promotes sleep at night.

Sleep is of great importance and should be watched carefully, as insomnia in one of my cases of rheumatic origin became an alarming complication. Cerebral symptoms, with hallucinations, delusions and fear of death, were conspicuous. Under such circumstances trional is indicated; it will promote sleep, and does not interfere with the heart's action. I used in the case just mentioned the combination of trional with sulfonal, the former promotes sleep quickly, while the latter is slow in action, but its effects are prolonged.

The heart may need to be helped, especially if the action is labored or irregular. In this case strychnia may be given, or if further stimulation is necessary, digitalis with strophanthus. I have used digitalis and strophanthus in a diuretic menstruum, believing free diuresis will assist in relieving the laboring heart. It will also assist in relieving cardiac distress, to flush the bowels with a free saline purgative.

To properly care for the effusion is one of the prime essentials of treatment. Caution in procedure is one of the lessons which the young men should learn, for I believe meddlesome interference causes more trouble than completely ignoring the effusion as a factor in treatment. The tendency of the effusion is to be absorbed, hence we had better let it alone. Be watchful, but only interfere when the indications are pronounced.

If the effusion is moderate, unless septic, it will be absorbed, and even if large, the chances are that with cautious use of diuretics and purgatives, it will disappear. I have frequently noticed in cases of delayed absorption that if we give calomel in small doses repeated for a prolonged period, the effusion can be relieved. The same holds true in pleurisy.

If we have to deal with renal complications it is imperative that we be exceedingly cautious. Baginsky recommends the application of ichthyol ointment over the pericardium, to facilitate absorption. He says that it is especially serviceable in children.

The local use of leeches and blisters act well in some cases and turn the tide in delayed absorption, but as a rule they are of little service.

SURGICAL INTERFERENCE.

In this day of improved surgical technique paracentesis is more frequently resorted to, in order to relieve the burdened heart where effusion is extensive. The indications for interference are, according to Osler, "dyspnea, small, rapid pulse, dusky anxious countenance," and we will add, the physical signs of extensive effusion.

Gibson says: "The considerations which have to be borne in mind in connection with paracentesis cardii are the determination of suitable cases, the selection of the most favorable site for operation and the best method to be adopted." He recommends as the most suitable site the fifth intercostal space just inside the mammillary line.

The aspirator is recommended, but as these questions are largely surgical, I prefer to have the surgeon assume the responsibilities in such cases. Even surgeons, however, do not agree as to the best means of operation or the most favorable site.

Brentano[1] maintains that tapping is dangerous, and holds there is no accurately determined and fixed space where the pericardial sac can be tapped without risk. He says the heart is lifted upward and forward against the chest wall by the effusion. He resects the fifth costal cartilage, punctures the pericardium, then incises, etc. He irrigates, in purulent cases, with a hot normal salt solution. "Where previous cardiac disease has existed operative interference is contra-indicated," he says.

The surgical technique and mode of management of purulent cases, as before stated, are features wholly within the province of surgery and as such are receiving notable attention. Ogle and Allingham[2] prefer to enter the pericardial sac from below through the diaphragm, and give in detail the steps of the operation. Roberts, in 1899, compiled statistics of the cases treated by surgical means, and, considering the gravity of such cases, the report shows encouraging results.

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DISCUSSION FOLLOWING THE SYMPOSIUM ON PERICARDITIS.*

DR. DE LANCEY ROCHESTER, Buffalo, N. Y.—I think that if we carefully study this question that we will find that rheumatism, pneumonia and chronic disease of the kidneys are the chief factors in producing pericarditis, and if we try to analyze a little bit more carefully I believe that we will find that, in all those diseases, the active factor is a toxemia. It seems to me that the toxemia is the active factor rather than the infecting organism themselves and, therefore, in pneumonia, in rheumatism, etc., it strikes me that the toxemia should be given the first rank in the production of pericarditis. This toxemia causes, in most cases, a very powerful effect upon the muscular tissues, especially the myocardium. We know that in cases of pneumonia resulting in death that the fatal result when not due to the complications, or to the great involvement of the pulmonary structures, is due to the giving out of the heart, i. e., the myocardium; this explains why so many cases of pneumonia that have a pericarditis associated are fatal; the toxemia present attacks the heart muscle, which is already embarrassed by the pericardial involvement. In pericarditis a most important factor, so far as the prognosis is concerned, is the involvement of the myocardium.

In regard to the diagnosis of pericarditis, we know that in cases associated with pneumonia, ordinarily there is a very marked change in the ratio between the pulse and the respiration: in cases of pericarditis this change in this ratio is not maintained, the pulse increasing in frequency. A careful study of the precordium will indicate to us whether the myocardium or the pericardium is involved. The study of the pulse in its relation to the respirations is very important in studying pneumonia in connection with pericarditis. In rheumatism we have commonly the pulse decidedly frequent, soft and without any of the variations associated with respiration excepting the increase in frequency; but, in rheumatism, with the increase in temperature, one should look out for involvement of the feet, or other structure; it should also make us sus-

1. Progressive Med., March, 1900.
2. London Lancet, March, 1900.

* For the other papers in this Symposium, viz., those of Drs. Billings, McFarland and Preble, see issue of December 7.

picions of involvement of the heart structures. With these points regarding the pulse and the respirations I think we have a guide as to the association of the pericarditis. Either one of them being present should direct our attention to the cardiac region. In addition to that, instead of pain, substernal distress is much more pronounced, as a rule, than the pain. Then, too, the presence of the friction rub and the position of the apex beat, i. e., the position where we feel the apex beat, is of value.

In regard to the treatment of this condition there are two things that have been spoken of. If toxemia is to be recognized as the bottom of the cause of the pericarditis, then all our efforts should be directed toward the relief of that toxemia, and the avenues for relief here are the skin, bowels and kidneys; the lungs can not aid us. If we can stimulate the activity of the skin, bowels and kidneys we will aid in relieving the toxemia and overcoming the process of pericarditis. Sweating is very important and a valuable aid in keeping down the condition of toxemia and preventing pericarditis. In cases of pneumonia, the kidneys may be made to act very freely by the giving of large quantities of water and not by the administration of the diuretics, for the reason that the kidneys are, to a certain extent, inflamed and should not be stimulated by diuretics. Calomel is better than salts in keeping the bowels open; it also opens up the liver and so assists in relieving the toxemia.

So far as the local treatment of pericarditis is concerned, in the early stages of congestion I think we get better results from the local use of leeches. I think that leeches are thrown aside too much when they could be of great value. Again, we can use the wet or the dry cups. I have seen postmortem the local value of dry cupping. It should be done thoroughly and not only the skin raised up, but the skin and subcutaneous tissue should be well brought up into the cups until the skin is blue or purple and then you will get good results from the dry cupping.

Dr. James J. Walsh, New York City—We can accomplish very little by treatment. The story told of the Irish surgeon, Corrigan, of water-hammer-pulse fame, has its application today almost as much as in its own time. It is related that one of his assistants failed to notice the existence of a pericarditis in a patient and was profuse in his apologies for his negligence when Corrigan pointed it out. Corrigan said in his own dry way, "It's just as well that you didn't discover it; for, had you found it you surely would have treated it. Treatment usually does as much harm as good."

Even in our time, however, despite the advances in diagnosis, pericarditis is sure to be missed some time. Dr. Billings' cases are as good a proof of this as we would well have. It is no sign of negligence when in a complicated case a pericarditis fails of recognition. Mistakes of diagnosis, however, in this matter are mainly due to failure to suspect the presence of a pericarditis and so neglect to elicit the physical signs.

The important question for the diagnosis of pericarditis is the knowledge of conditions that should arouse suspicion of the presence of an inflammation of the pericardium. The most important index of pericarditis is the pain that usually occurs in the precordium. Another is the tenderness that is usually present whenever there is an effusion into the pericardium. If the rule is made of eliciting dulness in the heart region by reasonably deep percussion, there will usually be at least a suspicion aroused of the presence of pericarditis in all cases where it exists. Almost more important for the diagnosis of pericarditis than palpation of percussion is inspection. If patients are examined in a good light, distinct bulging of the rib interspaces will often be noticed. Besides, there is a wavy impulse communicated to the tissues of the precordium. Unfortunately, however, it is not the custom to examine patients' chests in a good strong light.

There is no pathognomonic sign of pericarditis, but the finding of an apex beat well within the outline of heart dulness is almost pathognomonic. Sometimes it is impossible to feel the heart impulse while the patient is lying on the back. Sometimes such patients are asked to sit up and lean far over. This is an extremely uncomfortable position, besides being a little dangerous if the pericardial effusion is large. It is much better to have the patient turn over into the prone position and then by drawing up the knees assume a limited genupectoral position. In this way palpation and percussion are possible and the heart is thrown forward against the chest wall and the impulse can be easily felt.

Dr. H. B. Sears, Beaver Dam, Wis.—I wish to relate an extreme case of adhesive pericarditis which occurred in the practice of Dr. F. Shimonek and myself. The patient was a member of one of the Wisconsin regiments engaged for some time in the Southern States. While South he suffered from malaria, also had an attack of acute inflammatory rheumatism. On returning to his home in Wisconsin, he began to suffer from dyspnea and impaired digestion. The heart's action became very feeble and irregular, with imperceptible apex beat, showing wave-like motion in intercostal spaces over entire precordia.

The liver gradually enlarged, reaching down to the umbilicus. Ascites, with edema of the lower extremities, supervened and tapping became necessary on account of the dyspnea and general discomforture. He was tapped at intervals of two weeks at first, gradually shortening to five or six days during the last year. The tappings extended through a period of five or six years, giving a total of 283 tappings and about 5000 pounds of fluid removed. A sudden chilling resulted in suppression of urine, uremic coma and death. Postmortem showed pericardium obliterated, myocarditis, with degenerative changes and thinning of heart walls. Heart was adherent to pericardium throughout, also to pleura, diaphragm and sternum, between which and the heart there was a calcareous deposit the size of a tea-plate. It seems a great wonder that the heart continued to act under such extreme bondage. And yet, the patient was about each day, enjoying his pipe, his record of tappings and his daily morning tonic of a half onion for breakfast.

Dr. James B. Herrick, Chicago—Dr. Babcock has referred to the value of the pulsus paradoxus and I agree with him that it is not pathognomonic. Yet, in three cases, two going to autopsy, it seemed to me that this sign was of considerable value from a diagnostic standpoint.

In one of my cases of adherent pericardium there was paralysis of the vocal cord on the left side; this I regarded as due to the recurrent laryngeal nerve becoming involved in the adhesions. At the postmortem it was found that just where the nerve wound about the aorta, it was caught in firm adhesions, and the nerve gave both macroscopic and microscopic evidences of degeneration. There was also some pressure from an enlarged left auricle, for there was present a marked mitral stenosis. Cases of recurrent nerve paralysis due to pressure from an enlarged auricle have been noted by Ortner. Osler also makes reference to a case, and recently at the German Congress of Internal Medicine Kraus reported a case, though he differs as to the explanation of the production of the paralysis.

It is very important that we should examine cases of suspected pericardial effusion behind. The signs in the posterior left chest are often quite striking. Dulness behind, and bronchial breathing may clearly hint at the existence of a pericardial effusion with compression of the lung. So marked may the signs in the axillary and infrascapular regions be that we may be in doubt as to whether there is consolidation or fluid in the pleural cavity, and not a few mistakes have been made by puncturing the left axillary space and obtaining fluid, which at the postmortem was found to have come from the pericardium and not from the pleural cavity.

Dr. Carl Beck, New York City—I am sorry that I was not present at the reading of all the papers on this subject. In reference to the differential diagnosis of adherent pericarditis, as spoken of by Dr. Babcock, I should like to call attention to the value of the fluoroscope, which would show the diaphragm in close contact with the pericardium during its excursions. I should like to ask Dr. Babcock as to the advisability, in cases of adherent pericarditis, of approaching the adhesions with the surgeon's knife. We are no longer afraid of the pericardium. I had great pleasure in seeing a boy, a few months ago, recover after opening and draining the pericardial cavity. Just as 25 years ago we were afraid to open the pleural cavity so now do we seem to be afraid to open the pericardial cavity

and, it may be, the work of the surgeon in the treatment of pericardial effusions and their consequences will be somewhat similar to what it has been in pleuritis.

Dr. Frank D. Smythe, Memphis, Tenn.—Pericarditis accompanies the pneumonia in almost every case in the negro; but this is not so in the white. In this connection I should like to bring your notice to some interesting cases under observation during the past year. Three cases were seen in consultation with Dr. Jones; two had an endocarditis, with mitral insufficiency, as a result of gonorrhea; the other was a case of pyocardium referred to me by a neighboring physician as a case of pleurisy with effusion which should be tapped. An examination revealed an enormously enlarged precordial dulness and I called Dr. Jones in consultation. He concurred with the diagnosis. We opened and found pus, withdrawing one-half a pint. This patient slowly improved. Another case was seen in my surgical service; it was one of pyocarditis due to rupture of an abscess of the liver into the pericardium. Shortly after the evacuation of the pus the patient died.

Dr. Robert B. Preble, Chicago—I have of late been particularly interested in symptoms arising from recurrent laryngeal nerve because of their frequency in certain cases of aortic aneurysm; exactly similar symptoms are seen in pericarditis also. The left recurrent laryngeal nerve passes downwards into the thorax, and then curving around the arch of the aorta ascends to the larynx. This brings the nerve into close anatomical relation to the pericardium and symptoms of irritation or of paralysis result. This nerve sends branches, some to the heart—to the cardiac plexus—some to the esophagus, and some to the larynx. When this nerve is irritated, symptoms arising from any one or all of these branches appear. It is not possible to say why in any given case the symptoms are limited to one branch rather than distributed over all; thus we may have esophageal symptoms, laryngeal symptoms or cardiac symptoms like those of the angina pectoris in varying degrees. This explains the dysphagia occasionally seen, although in some cases direct pressure on the esophagus is the cause. I was interested in Dr. Jones' statements regarding the lesions of the aortic valve; they were at variance with the commonly accepted statements. Aortic lesions are generally stated to be less frequent than mitral lesions and I believe that this is true. One must distinguish two forms of aortic insufficiency, one the result of an endocarditis, such as complicates rheumatism, pneumonia, or sepsis; the other form of aortic insufficiency, more common, but less generally recognized, is met with either as a primary inflammation of the aortic valves or secondarily by extension from an inflammation beginning on the aorta, a primary aortitis. Syphilis is a common cause of such primary aortitis, and while syphilitic changes in the smaller arteries are usually delayed for years, the aorta and its valves are frequently affected early. Such syphilitis aortitis is characterized by just the symptoms dwelt upon by Dr. Jones, retrosternal pain, angina pectoris and sudden death, a group of symptoms which are not a part of aortic endocarditis such as occurs complicating the various septic diseases. I believe that the great frequency of syphilis in Dr. Jones' patients accounts fully for the differences between his and the general experience.

Influence of Food on the Re-establishing of the Movements of the Heart.—At the International Congress of Physiology held at Turin in September, Prevost and Batelli reported experiments which demonstrated that dogs could be revived more rapidly and effectually after asphyxiation from ligature of the trachea, if not fasting. Simple massage of the heart was sufficient in most cases to restore the heart action, without artificial respiration, when the dogs had been fed on mixed food, the carbohydrates predominating. Fats proved the least effective in this respect. The respiratory movements first appeared in all the tests after massage of the heart and artificial respiration. Much later the dilated pupil contracted and then in turn the knee-jerk, the corneal and nasal reflexes made their appearance, and lastly the inhibiting reflex of the superior laryngeal.

COMPLETE RECOVERY FROM DOUBLE NEURO-RETINITIS,

CLINICALLY RESEMBLING ALBUMINURIC RETINITIS, IN A CASE OF PROLONGED HEMATURIA WITH SYMPTOMS OF BRIGHT'S DISEASE.*

C. A. VEASEY, A.M., M.D.
PHILADELPHIA.

The notes of the following somewhat unusual case are deemed of sufficient interest to merit their isolated report.

Mrs. C. H. P., aged 35 years, was referred to me in May, 1899, by her physician, Dr. Hassell, for the examination of her eyes. The following history was obtained: Eight months previously she had suddenly discovered that she was passing bloody urine. This had occurred without any pain or premonition whatever, so that she was naturally much startled, and at once sought medical advice. From that time, however, until the time of my examination, urine had been passed upon but few occasions that it did not contain considerable blood. The exact amount of blood could not be accurately determined, but it was sufficient to make the urine a dark red, and quite thick. For several months the patient had been losing flesh (about 20 pounds altogether), and when I first saw her she was quite weak, very pale, suffered from attacks of vertigo, dyspnea, tinnitus aurium and intense constant headache. The lower lids were puffy, and at times there was a slight edema of the legs. She also complained of pain in the back, and physical examination showed moderate cardiac hypertrophy. Her family history was good and her health had been excellent until the appearance of the hematuria. There had been no convulsions, nausea or vomiting, except when the latter accompanied an occasional attack of migraine, of which there was a clear history.

Two weeks before coming to see me she had observed some diminution in the visual acuity, with increase in the vertigo and headache, and greater dyspnea. The vision of the right eye equaled 6/7.5; of the left 6/5. There were no external ocular changes. With the ophthalmoscope the right eye showed a clear media, an oval disc with its edges everywhere veiled, the veins full and slightly tortuous, especially in the immediate neighborhood of the disc above and below where they, as well as the arteries, were covered with exudate. There were five small feathery hemorrhages along the blood vessels in the neighborhood of the disc, and one on the surface of the disc near its outer border. In the macular region was noted the typical whitish stellate figure, so often observed in nephritic lesions.

In the left eye practically similar conditions were found, perhaps a little more marked in the disc and its immediate neighborhood, and slightly less marked in the macular region. The pupil of each eye reacted perfectly, and the fields were slightly contracted both for form and color, but there were no scotomata.

Repeated examinations of the urine showed large quantities of blood corpuscles and albumin. No tube casts were found at any time, but it must be remembered that on account of the great admixture of blood with the urine their detection would have been difficult had they been present. In order to ascertain whether the blood had its origin from the bladder or from the ureters or kidneys, both ureters were catheterized

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

by Dr. Richard C. Norris, and the urine obtained from each contained blood, though the specimen from one side was somewhat clearer than that from the other. No tubercle bacilli could be found in any specimen.

The examination of the blood showed a uniform moderate reduction of the hemoglobin and red cells, together with a slight increase of the leucocytes—in other words, the conditions usually found in a mild secondary anemia, such as accompanies any wasting disease. The clinical conditions, therefore, were apparently those of an albuminuric retinitis in a patient whose general appearance was that of one suffering from some chronic nephritic lesion, whose urine contained large quantities of blood and albumin, and whose blood presented such changes as are usually found in those affected with some wasting disease.

Recovery was naturally very slow, but under a strict milk diet and the administration of Basham's mixture, and such other drugs as occasion demanded, clear urine was occasionally voided. These periods became more and more frequent, sometimes two or three days passing without any hematuria, the clear urine containing very little albumin, and the patient beginning to gain in weight. Simultaneously the ocular symptoms began to disappear. The small hemorrhages were first absorbed, the swelling of the nerve heads slowly subsided, and the stellate macular figures gradually diminished in intensity, until at the expiration of nine months from the time of my first examination the ophthalmoscope revealed no intra-ocular changes. The nerves were healthy in appearance and normal in color, the edges well defined, the vessels were unchanged and there were no traces of the minute hemorrhages previously noted, the macular regions giving absolutely no indications of the previously existing conditions. Vision in each eye equaled 6/6, and the fields were normal.

From a study of the symptoms and course of the affection the most plausible explanation seems to be that the patient at first had an acute inflammation of the kidneys, which ran into a chronic state, at the expiration of eight months producing the intra-ocular lesions previously described. What bearing the hematuria had upon the condition, whether it was a factor in the production of the nephritis or vice versa, or occurred merely as a coincidence, can only be surmised.

It certainly must be an extremely infrequent occurrence to have neuro-retinal lesions of the character and severity of those above described clear up so thoroughly that not a trace of the former condition can be found. In a paper before the American Ophthalmological Society in 1886, Bull analyzes 103 cases and states that at the time visual improvement was taking place in 32 cases while under constitutional treatment, the retinal changes became perceptibly less marked; but he had never in any case seen any signs of absorption in the peculiar glistening stellate exudation at the macula, and that he did not remember ever to have seen a case in which the retinal exudation was entirely absorbed. In this analysis all cases of albuminuric retinitis due to pregnancy or scarlet fever were excluded, as the retinal lesions in this class of cases had been seen frequently to disappear entirely. On the other hand Leber refers to the absorption of the exudation which takes place in those cases of retinal disease which are cured, or brought to a standstill; and Gowers, in his well-known work on "Medical Ophthalmoscopy," states that occasionally the retrogression may proceed until the retinal changes almost or quite disappear, and that this is especially the case when the affection comes on in the course of the chronic kidney disease which results from an acute attack, in which considerable improvement in the retinal affection is often obtained. It seems that the latter remarks apply particularly well in explanation of the somewhat unusual case here reported.

DISCUSSION.

Dr. William H. Wilder, Chicago—This subject is an extremely interesting one because the general practitioner always wants to know of what prognostic significance this optic sign of albuminuric retinitis is. I think it is pretty generally accepted that when it does appear it almost signs the death warrant of the patient. There are very few cases of typical albuminuric retinitis that are not of grave prognosis, and most of them terminate fatally in about two years. I do not recall that I have ever seen a case run beyond that. I have seen a case, however, that occurred in a patient that I watched very closely where the retinal lesion improved decidedly before the termination of the case in death. The vision had fallen to 5/200 with marked stellate appearances around the macula and with hemorrhages, but the vision improved to 20/40 and remained there until death, with a corresponding diminution of the white plaques and hemorrhages. I have seen a similar appearance in a case of diabetic retinitis. In Dr. Veasey's case I should expect grave developments to occur within a year or so.

Dr. Hiram Woods, Baltimore—My attention was called a year ago to the paper of Marcus Gunn by Dr. de Schweinitz, whom I had asked to see a small boy 9 years old that consulted me because of loss of vision in the right eye. There was marked venous engorgement and small hemorrhages with, starting out from the fovea, a number of white streaks. The case had no albuminuria and eventually got well, except that a small scotoma in the inferior temporal field remained. Gunn described several cases of this kind and believed them due to a certain pegging down of the retina near the fovea, and that the white streaks were exudative, but not of a degenerative character found in albuminuric cases.

Dr. E. C. Ellett, Memphis—I would like to mention briefly a case of what might be almost termed recovery from albuminuric retinitis. The patient was a young woman whose Bright's disease lasted over a period of fifteen years. Within two or three years of the probable onset of this she developed a typical albuminuric retinitis. There was no ocular treatment, but under the care of her attendant the condition became very much better and the ocular condition passed into what might be called atrophy of the retina, that is, there was a very marked thinning of the retinal vessels, almost an obliteration, but the condition of the nerve was good and the central vision became very good, although the field was contracted. A case almost identical with this, following an albuminuric retinitis of pregnancy, was seen in Dr. Jackson's service at the Will's Eye Hospital about ten years ago, when I was resident surgeon there. The subsequent history of my case was that the patient died, but without any recrudescence of the eye symptoms.

Dr. C. A. Veasey, Philadelphia—The case referred to by Dr. Woods could hardly be mistaken for this condition, because in that class of cases the swelling is in the character of lines more than in blotches and there is not the typical stellate figure nor albumin in the urine. I can not say that the condition was due to kidney disease, as nothing short of an autopsy will show that; but I believe it was a case beginning as an acute nephritis, becoming chronic and later setting up those retinal conditions which have been described by Leber and others.

Soluble Bougies for Treating the Lachrymal Duct.—Steinitz uses a 1 to 5 per cent. protargol, or a 1 per cent. colloid silver, soluble bougie in the treatment of rebellious cases of suppuration of the lachrymal duct. He has been very much pleased with the result in six cases rapidly cured by this means, as he describes in the *Klin. Monatsblaetter f. Augenheilkunde*, 1900, p. 343.

THE VALUE OF EXCISION OF THE SUPERIOR CERVICAL SYMPATHETIC GANGLION IN GLAUCOMA.*

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CHICAGO.

The history and modus operandi of this operation, as well as its intended and desired range of purpose, are all familiar to you, hence these points do not merit repetition here.

In order to obtain as complete American statistics as possible, the writer has sent out several hundred question blanks to men of repute and experience. However, the returns are a trifle meager, yet of such great importance on account of their uniformity, that a fair and just estimate may be had as to the real merits of the operation in question. There have been only 14 operations performed in America for glaucoma; in addition, several have been done for optic atrophy and Basedow's disease. If there are any more operations for glaucoma the writer has failed to get the report, though every effort was made to obtain same.

First, let us take a brief review of the physiology of the superior cervical sympathetic ganglion and nerve with reference to the eye. It supplies: 1, the iris with dilating fibers; 2, the blood vessels of the eye with vasomotor fibers; 3, the unstriated muscle of Tenon's capsule; 4, the trophic and nutrition fibers of the globe proper; 5, the lymphatic vessels and channels are under the immediate control of the sympathetic fibers.

Any constant or interrupted irritation of this ganglion or its fibers gives rise to: 1, vaso-constriction; 2, circumbulbar muscle contraction; 3, an increase in the elements of the aqueous humor, hence an active interference with the intra-ocular interchange of fluids; 4, a dilatation of the iris, therefore an interference of the filtration angle; 5, finally, an increased intra-ocular tension.

Now, what takes place when this ganglion is removed? 1, contraction of the iris; 2, relaxation of the circumbulbar muscle; 3, vascular dilatation; 4, lower intra-ocular tension; 5, a decrease in the elements constituting the aqueous.

These points have all been proven by experiment many a time, hence beyond any question of doubt.

If these facts hold true for a normal eye, then the same results obtained, if possible, in any form of glaucoma ought to be productive of good; and, what is more, the extirpation of this ganglion, if the foregoing facts are absolutely true, is in certain forms of glaucoma the only permissible operation of to-day. This, for the reason that it prevents enucleation of the globe in glaucoma absolutum and possibly hemorrhagicum.

In every instance of glaucoma the extirpation of this ganglion has achieved some good, though the results have been more or less permanent. Yet the good of this operation has not impressed itself upon operators at large.

A certain element of doubt always attends the removal of this ganglion. To absolutely recognize the ganglion or its fibers is often a matter of great difficulty. The ganglion may vary greatly as to position, size, shape, color and texture; and, unless one is familiar with its so-called eccentricities he is not absolutely sure of having removed it. However, if you apply the galvanic or faradic current and watch its action upon the iris, which is well known, you can not go astray. This one difficulty may have been the reason for a failure in some cases. No less an authority than Byron Robinson says: "The sympathetic ganglia of the neck are very perplexing, to say the least. The only way to become familiar with these ganglia is to hunt for them in the anatomical room."

The superior cervical sympathetic ganglion, as well as the middle, has been removed for epilepsy, Basedow's disease, optic atrophy and trifacial neuralgia. These operations have been mostly performed by foreign surgeons. Yet, the experience and the careful study of the data will go to show that the sphere of this operation is limited to glaucoma and Basedow's disease. It is of doubtful utility in trifacial neuralgia, even if reported by Joubalay. The experience of such men as Angelucci, Coover, Black, Burghard, Ball, Dodd, Williams, Jonnesco, Demicheri, are the warrant for the foregoing statement.

The true etiology and pathology of any variety of glaucoma can never be established unless the sympathetic cervical ganglion and the lenticular ganglion are taken into consideration. Nor can any cure for glaucoma be advanced in the future unless these ganglia are reckoned with. Perhaps another Sterling will unravel the problems as to the pathology of these organs.

Before giving an analytical review of the statistics the writer has gathered, he wishes to offer the following as the probable cause for the failure of sympathetectomy in certain forms of glaucoma. This cause he thinks is in the overlooking of the lenticular ganglion. Judging from its makeup, position and function, it must play an important part whenever the sympathetic nerves of the eye are in question. This ganglion supplies all the nerves of the intrinsic eye muscles—both motor, sympathetic and sensory. It receives sympathetic filaments directly from the superior sympathetic ganglion as well as crossed branches of the sympathetic fibers which accompany the branches of the fifth nerve to this ganglion. The excision of the cervical ganglion then leaves intact the sympathetic fibers coming with the fifth nerve to the ciliary ganglion. The questions which the writer puts to himself and which form the basis of experiments now being carried on, are:

1. What is the effect on the eye when you stimulate the lenticular ganglion after the removal of the superior cervical sympathetic?
2. What is the effect when both ganglia are removed?
3. What is the effect upon the eye after the removal of the superior cervical sympathetic ganglion, section of the third and fifth nerves intra-cranially and the stimulation of the lenticular ganglion?

If these experiments yield any positive data, then the rationale of the operation in question will be strengthened and we can arrive at a more logical conclusion as to its real value.

In studying the statistics, only the salient questions will be taken up. In answer to the question, "For what forms of glaucoma did you operate?" the following was received: Chronic simple glaucoma, 9; glaucoma absolutum, 3; sub-acute glaucoma. 1; hemorrhagic glaucoma, 1; total, 14.

Of these operations two were bilateral, thus leaving twelve individual cases. Briefly, now, as to the success of these twelve individual cases as given by the respec-

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tive operators we have: Success, 6; improvement (ending in failure), 3; failures, 3.

This certainly is a good showing, especially when two failures are not to be considered. For, in one case the diagnosis lay between optic atrophy and glaucoma—balance in favor of optic atrophy. In the other, such atrophic changes had already taken place that the case was a desperate one from the start, though a temporary improvement followed the operation. Such is the opinion of the respective operators in each of the cases just mentioned. Furthermore, the record of success is good in that it prevented enucleation in three cases of glaucoma absolutum. Thus, deducting the two cases above detailed as failures, we have six successes and four failures in a series of ten cases—counting the double excision as a single operation.

For the next question of importance, "For which forms of glaucoma do you advocate the operation?" the reply was: 1, hemorrhagic glaucoma; 2, glaucoma simplex; 3, glaucoma absolutum.

In the hemorrhagic and absolute forms of glaucoma the operation prevented enucleation and removed pain, hence a justifiable procedure. In the chronic forms of glaucoma it was done after an iridectomy had failed to relieve the downward tendency of the glaucoma. Yet, the greatest percentage of failures comes from this class of glaucoma. In a few cases only did the extirpation of the ganglia in chronic glaucoma suffice, as in the majority a subsequent iridectomy had to be made. Therefore, as far as this variety of glaucoma is concerned, it must be held *sub judice.*

In considering the immediate effects of the operation, i. e., within 24 to 48 hours, the report gave the following: 1, marked reduction of tension in each individual case; 2, immediate contraction of pupil; 3, immediate relief from pain if same was present prior to operation.

On these three points there was no variance. The only condition which varied was the improvement of vision. In a few the acuity and field of vision was greatly improved, but the greater majority retained about the same amount of vision as prior to the operation—excepting the recorded failures, in which, though, there was a temporary gain.

In only one case was the reduction of tension delayed longer than 48 hours. Then in one case a previous double iridectomy prevented pupillary manifestations, i. e., maximum contraction. However, there is a great uniformity of results, as can be noted from the remarks made.

The next important question was: "Can it replace iridectomy or sclerotomy?" To this all gave a very guarded answer, which is perfectly correct. For the enthusiastic feature of the operation has passed away and bare facts are at hand. Yet each operator looked upon the operation as worth trying when other procedures failed.

As to the acuity of vision, the results again are similar. In Ball's case, e. g., the vision rose from light perception to counting of fingers at seven feet in 32 days; in the other from light perception to fingers at four feet within three months; in the third from nil to fingers at four inches, the time not given, however.

Coover, in his case of glaucoma simplex, reports a decided gain in vision lasting four months, with a subsequent failure. He admits, however, that his case was a desperate one from the beginning.

Mullen, of Houston, Texas, reports an increase in the field of vision in his case of non-inflammatory glaucoma, though finally it receded to a point the same as before the operation.

Melville Black, of Denver, likewise reports a decided increase of vision in his case of subacute glaucoma.

In Gradle's case of chronic glaucoma, in which a double iridectomy had been made, though it failed to check the downward progress in one eye, the excision of the ganglion retained the same field of vision for at least fifteen months, and this eye is apparently better than the other now.

Huizinga's case was not a clear-cut glaucoma, but rather an optic atrophy, hence his negative result can not be considered. This is what he himself reports. In the writer's two cases of chronic glaucoma the acuity of vision was not improved, but the same amount was retained as was present prior to the operation; the time elapsed is about two and one-half years for each case.

The excision of the ganglion twice prevented an enucleation in glaucoma absolutum for the writer, and Ball also reports a case where it obviated an enucleation. So we can see from these three cases that the operation has a sound basis for this form.

In none of the reported cases was any after-treatment, i. e., medicinal, employed, so the real value of the operation is brought to light. However, it seems more rational and more in accordance with the views of operators to follow up the operation with myotics for at least a certain length of time, if not continually.

There is no question but that the amount of success depends in a certain measure upon the stage of the disease. If there is no central vision or even light perception, not much in the way of visual improvement can be hoped for, though the other existing symptoms are surely allayed. As to the untoward effects following the excision, none have been reported. Yet there are some, such as flushing of the face on the same side, dysphagia and slight ptosis. These after-effects, however, are only temporary. With this rather hasty review of the subject as it stands before you, permit the writer to give a summing up of the most pertinent facts:

1. Sympathetectomy is a justifiable operation.
2. Though the excised ganglion shows changes, yet the true relationship between it and glaucoma is an open question.
3. It is not the *sine qua non,* but a most valuable adjunctive procedure.
4. It is always indicated when an iridectomy or sclerotomy in any form of glaucoma has failed.
5. Iridectomy is still the classical treatment for certain forms of glaucoma, i. e., chronic and acute.
6. It is the preferable procedure in glaucoma absolutum and hemorrhagicum.
7. Operate only on one side—affected side.
8. Employ the suitable medicinal treatment after the operation.
9. Do not extirpate the ganglion in acute inflammatory forms of glaucoma.
10. There probably is a close connection between the ciliary, superior cervical sympathetic and glaucoma. What it is, experiments will show.
11. Extirpation of the ganglion is indicated whenever there is increased tension not controlled by any other measure.
12. The results depend in a great measure upon the condition of the case.
13. Primary extirpation may have to be followed by an iridectomy.
14. It is indicated in those cases of glaucoma which already have extremely poor vision and where any interference with the eye proper might result unfavorably.

15. It is to be considered at all times when other operative measures are refused, irrespective of the form of glaucoma.

16. The excision of this ganglion has varying effects upon the fundus oculi—none detrimental, however.

The writer having been a very great enthusiast concerning the value and future of sympathetectomy in nearly all forms of glaucoma, has, after three years of close study, experiment and following up his cases, been compelled to give the foregoing conclusions, which certainly are very conservative. To think that it will ever entirely supplant other operative procedures in glaucoma is a question and could not receive the support of him who is at all an acute observer.

The following is the list of operators and the number of their cases irrespective as to the form of glaucoma: Ball of St. Louis, 3; Coover of Denver, 1; Black of Denver, 1; Huizinga of Chicago, 1; Gradle of Chicago, 1; Mullen of Houston, Texas, 1; Suker of Chicago, 4. The double operations are counted as single cases.

In conclusion, the writer wishes to express his gratitude to Drs. Ball of St. Louis, Coover and Black of Denver, Mullen of Houston, Texas, Huizinga and Gradle of Chicago, whose cases have formed the basis of this paper.

100 State Street.

DISCUSSION.

DR. CASEY WOOD, Chicago—It is only fair for me to say at the outset that I have not had a case myself in which the superior cervical ganglion has been removed; I was merely called in consultation in a case with Dr. Huizinga. Those of us who approach this matter in a conservative fashion have the right to ask certain questions. First, is the operation a dangerous one? If so we must not compare it with the simpler operation of iridectomy and give it the same importance and prominence. If there is any procedure or remedy in acute or subacute glaucomas I believe it is an irideetomy done in the sclera with removal of a wide segment of iris. I do not think we should be justified in resorting to an operation of a kind which can only be done by an expert surgeon, requiring special skill where a simpler one, devoid of risk, will probably be as effective. As to the chronic form of glaucoma I am one of those who think that many of the cases are not pathologically kin to acute glaucoma. I believe that we often have to deal with an optic nerve trophy associated with physiologic cupping. Of course there are two camps fighting each other on this subject, but I am certain the case I saw with Dr. Huizinga is one of that kind, and that, consequently, one had no right to expect a brilliant result from the operation and, as a matter of fact, we did not get it.

DR. MELVILLE BLACK, Denver—I should be inclined to say that the operation of sympathectomy is not a difficult one in the hands of a skilful surgeon or even in the hands of an oculist who has seen it done a few times. There is no special danger connected with the operation if the operator knows his anatomy. My case was one of subacute glaucoma in a negro, 35 years of age. The superior and middle cervical ganglia were removed. The man was rendered myopic by the operation temporarily. The pupil contracted down to the size of a pin's head and the symptoms absolutely subsided at once. Up to the present there has been no return of the symptoms of glaucoma, and that eye is equally as good as the other. The operation was done December 24, 1900, and the time has not been sufficient to determine what its ultimate results will be; the one case does not make me think it is going to take the place of iridectomy. Still, if I had glaucoma I should prefer to first have the ganglion removed to having an iridectomy done. I think the operation only has its place where eserin will reduce the tension and improve the vision.

DR. WILLIAM H. WILDER, Chicago—I am scarcely prepared to give a report as yet on the case which is under observation in my service at the infirmary. During the last year my colleagues and myself have had three cases, one done in the service of Dr. Fisher, one in that of Dr. Woodruff, and the one I have recently done. The results were very gratifying in the case of Dr. Woodruff. On the first examination the field was slightly improved, not only for white but for colors. In my own case the vision has improved from 20/70 to 20/50; the tension is normal and the pupil, which returned to normal size, responds readily to light. It is difficult to pass judgment on an operation the statistics of which are so meager, but possibly there is a field for this operation. I can hardly agree with Dr. Black that it is a simple operation. It may be simple on the cadaver, but almost a nightmare confronts one when one gets to cutting back of the large vessels in the neck. I was glad to have Dr. Schaeffer assume the responsibility of operating in my case. The operation appeared simple enough in his hands, but I should not like to attempt it without going over the topographical anatomy quite frequently.

DR. C. F. CLARK, Columbus—What symptoms in other organs have developed after this operation?

DR. SUKER, in reply—We have a flushing of the face on the side operated on and there is a possibility of having an enophthalmos which is persistent.

REPORT OF A CASE OF A PECULIAR FORM OF CARCINOMA OF THE SKIN OF SLOW GROWTH.*

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We can conceive of several conditions under which a carcinomatous tumor of the skin may have a history of long duration. A growth may be innocent in its character in the early history of its development, and change after many years of duration to a carcinomatous type. A known epithelioma may remain stationary, or nearly so, for years, apparently neither increasing nor decreasing, after which it increases more rapidly; this will give a long history to the tumor. Then again, carcinomatous cells may be encapsulated, according to some observers, which may prevent their extension for many years. The case we have to report had a duration of 35 years, and did not present the usual appearance of a carcinoma either clinically or microscopically. The patient was seen by a large number of medical men, some of whom were skilled diagnosticians, and yet no one hazarded a diagnosis of carcinoma from the clinical history and appearance. Hence, I think that it is of sufficient importance to warrant its report.

I first saw this patient in January, 1896, and have seen him at various intervals since that time. The only difference in appearance in the five years is in an extension of the growth. This extension has been extremely slow, but perhaps not quite so slow in the last year as in the previous four. The patient is now 54 years old, and has been from his early manhood a periodical drinker. His sprees last from two or three days to as many weeks; while the periods free from drink are from two or three weeks to a year. He seems quite well preserved for a man with such habits. During his sprees the tumor fills with blood to a greater extent than usual, and is followed with more or less breaking down of the tumor tissue. As his wife expresses it: "The sore always looks worse when he is on a spree."

Family History.—Father died of dysentery at 77 years of age, after three weeks of illness. Mother died

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Cutaneous Medicine and Surgery, and approved for publication by the Executive Committee of the Section: W. T. Corlett, L. Duncan Bulkley and W. L. Baum.

of consumption when 35 years of age. Her disease was contracted 8 or 10 years before death. He had 4 brothers, 3 of whom are living and well; 1 was serofulous and died in ehildhood. He had 2 sisters, one of whom is living and healthy; 1 died of quick consumption when 15 years old, after an illness of one year; but only one week in bed. No other relatives had consumption.

History of the Tumor.—About 35 years ago the patient first observed it on the back, between the shoulder blades and just to the right of the spine. It was then about the size of an ordinary pea; elevated above the surrounding skin, and nearly the color of a ripe strawberry. It grew gradually, but very slowly, and did not ulcerate or break the epidermal covering for the first fifteen years of its existence. At that time the growth was no larger than a five-cent piece. The skin was at that time broken, leaving an elevated raw looking surface, which had very much the appearance of spurious granulation tissue, and it bled quite freely. The growth continued to inerease very slowly. There seemed to be a constant attempt on the part of nature to heal, which resulted in a partial eovering of epithelium in very thin

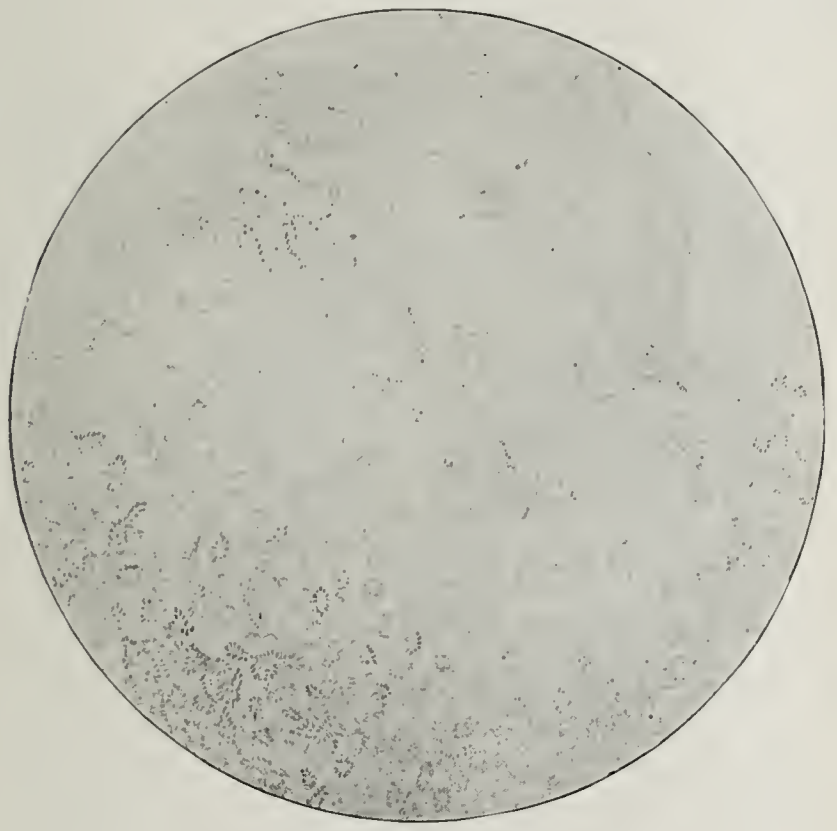


FIGURE 1.

layers; this was over only part of the growth at a time. Beneath this thin eovering eould be plainly seen very fine blood-vessels, branching out in various directions. The entire growth was full of blood, and the slightest touch was sufficient to cause bleeding. The tissue making up the mass was quite friable and could be easily scraped out. There was no subjective sensation in the growth. The history given me by the patient and his wife, as well as my observation of it for the last five years, would indicate that the character of the growth has not changed sinee ulcerative proeesses were begun at least.

The shape of the tumor was irregularly oval and measured 2½ by 3 inehes in diameter. It was elevated about ⅛ inch above the surrounding skin, aud its edges terminated abruptly. It was quite movable with the skin, free from induration, solitary and painless. About a third of it had no epidermal eovering, but looked more like large spurious granulation tissue than anything else. Another third had a very thin eovering of epithelium with the tiny blood-vessels quite apparent just beneath, while the remaining portion had a thicker epithelial covering with no blood-vessels visible, but a thin skin resembling the normal, with the pathologic tissue beneath. These different portions can be seen in the photograph upon close inspeetion.

A small pieee was exeised from the lower edge of the growth for mieroscopie examination. This was sent for examination to Dr. Frank J. Hall, who has eharge of the

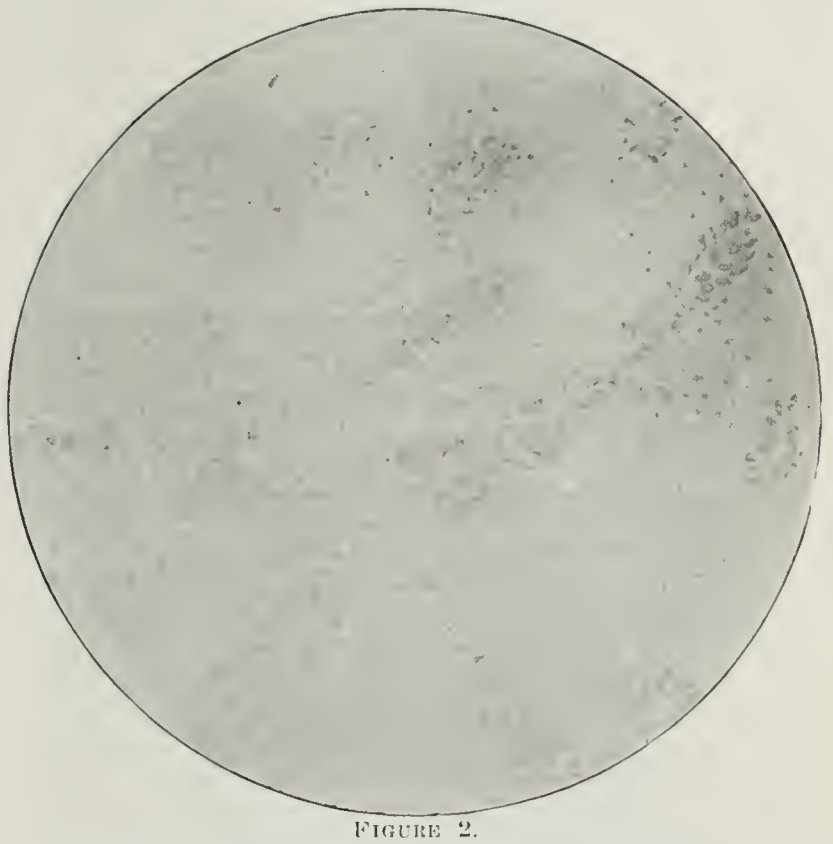


FIGURE 2.

pathologic laboratory of the Kansas City Medical College. To him is due the credit of ascertaining the histology of the growth.

The excised portion was hardened in 4 per cent. formalin and embedded in celloidin. It was cut thirty micra thick, stained with Delafield's hematoxylin, counter-stained with eosin, and mounted.

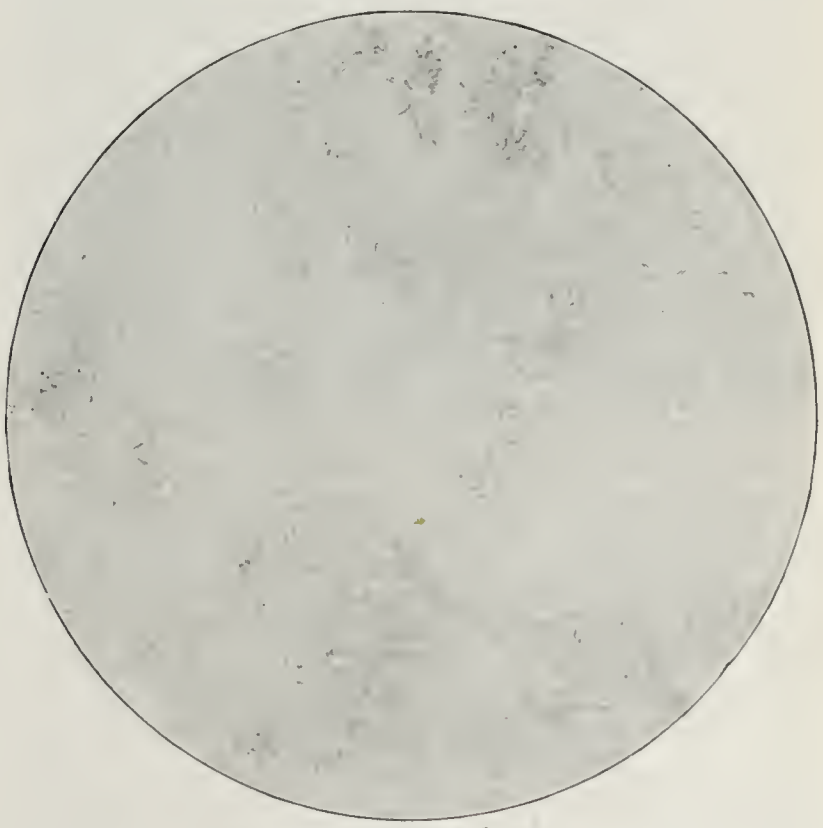


FIGURE 3.

Microscopic Appearances.—With a magnifying power of fifty diameters, the tissue is seen to be made up of elosely assembled, irregularly shaped masses of deep stained eells, separated by a poorly nucleated but richly vaseular stroma. The eells composing the masses were short spindles, with a very scanty protoplasm and homogeneously staining nuclei. The nucleolus was not of the

vesicular character, so prominent in the epithelial cells of typical carcinoma. No nucleolus was observable in any of the cells examined. All in all these cells resembled more closely the cells of the first or cylindrical cell layer of the stratum Malpighii. Some of these cell masses show a peculiar space in their centers filled with some amorphous matter which retains the hematoxylon. These spaces remind one most strongly of a lumen rather than areas of necrosis, since the cells surrounding these spaces are in a perfect state of preservation. The masses of cells containing these central spaces occupy the deepest portion of the tumor. In no instance is there any evidence of even an attempt at cornification or other degenerative process to be found. All the cells in these masses are practically of the same size, and have their nuclei approximating a vertical position to the peripheral line. The basement membrane, if there be sueh, surrounding these cellular areas, is extremely poorly developed. An examination of the specimen, ineluding



Photograph taken in January, 1896.

the skin surface at the edge of the tumor, reveals some interesting points. The surface epithelium is well developed, the papillæ are very long and seem to have a tendency to assume a position parallel to the surface of the epithelium. This is shown by the fact that in sections cut vertically a great many papillæ are cut transversely, the interpapillary epithelium being reduced to two or three rows of cylindrical cells. In a few places the interpapillary epithelium was seen to project downward in the form of a very slender column, and to communicate with the cell masses constituting the tumor. Hence we conclude that this tumor has its origin in the epidermis and that furthermore the cylindrical cells alone proliferate. This feature sharply separates this tumor from the ordinary cutaneous epithelioma, since in the latter we find all the layers of the epidermis represented. It is also noticed that sweat glands projecting among the epithelial masses showed no signs of participating in the tumor formation. Sebaceous glands were not observed. Hair follicles were atrophied. We believe that this case is one quite similar to, if not identical with, those described by Krompecher,[1] as "Carcinoma Epitheliale adinoides." It is probably the same growth, described by Brooke,[2] as "epithelioma adinoides cysticum," and by Fordyce,[3] as "multiple benign cystic epithelioma." In all these, except Krompecher's paper, the finer structures at least are not sufficiently described to be sure of the identity of this case with theirs.

One photograph was taken in January, 1896, the other January, 1901.

The three figures illustrating the arrangement of the cells were drawn for me by Dr. W. H. Trimble, associate in pathology in the Kansas City Medical College. Fig. 1 shows the appearance of the cell arrangement at the edge of the tumor under low power. Fig. 2 shows a portion of the same as Fig. 1, under high magnification. Fig. 3 shows a field nearer the center of the tumor.

Treatment.—The patient refused to have the growth excised, and therefore an arsenical paste was used to destroy it. We used the following paste:



Photograph taken in January, 1901.

℞. Ac. arsenious ..... gr. vi
Hydrarg. sulphurat rub. 3ii
Cocain hydrochlor. .....gr. i
Ung. rosæ .....℥ss
Ft. paste.

This was spread on cloth and applied to the growth each day for four days in succession, after which the destroyed tissue was given time to slough. There was still a considerable part of the growth not destroyed and we used a pyrogallic acid ointment next (℥ss to Ung. Rosae ℥i). This gave more pain than the paste, and did not destroy the pathologic tissue as well, so after a few days we returned to the former treatment. This was used four successive days again, and then allowed to slough. There was still some of the growth to be seen, and another four applications were made, after

1. Ziegler's Beiträge, Jan. 28, 1900.
2. British Jour. Dermatol., vol. iv, p. 269.
3. N. Y. Med. Jour., June 9, 1900, p. 889.

which we seemed to have a clean ulcer ready to heal. Healing took place rapidly. The surface formerly covered by the tumor is now covered by soft cicatricial tissue. It will be watched with a great deal of interest for some time to see if the growth will recur.

301 Rialto Building.

DISCUSSION.

Dr. M. L. Heidingsfeld, Cincinnati—Judging from the appearance of the drawings, and they bear evidence of having been carefully and well executed, I am impressed that this case in question is not a true epithelioma. There is some down growth of the epithelium, but a good wall of connective tissue separates it from the underlying structures; the lowest layer of columnar cells are well preserved, and perfectly arranged; there is no marked hypertrophy on the part of the sweat and sebaceous glands. In fact, we have none of the characteristic ear-marks of an epithelioma, and inasmuch as nearly all the essential features of this form of new-growth are lacking, I would deem it proper to be somewhat guarded as to whether this case can be classed with the epitheliomas.

Dr. H. G. Anthony, Chicago—Clinically, this might be classed as blastomycetic dermatitis. I do not wish to be understood as saying that this is a case of that kind; the histological structure does not quite suggest that, but what I say is simply this: That where a case clinically suggests blastomycosis, mention should be made of the fact that the tumor has been examined for blastomyces.

Dr. William Frick, Kansas City, in closing—Of course, being a case of mine, I am very much interested in it, and I reported it because it was not an ordinary picture of epithelioma. In fact, I do not wish to call it an epithelioma; we called it a carcinoma of a peculiar type, a proliferation of the lower layer of these cells. It certainly is not like an ordinary epithelioma.

RHINOSCLEROMA.*

CHARLES W. ALLEN, M.D.

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NEW YORK CITY.

My intention is merely to report two cases of rhinoscleroma which have come under by observation, because of the great rarity of the affection in this country, and also because of an unusual clinical course pursued by the first one.

Mrs. L. M., 64 years of age, was born in Hungary. She was first seen in 1889, when the diagnosis of rhinoscleroma was made from the clinical appearances and history. An attempt by Dr. Lustgarten to confirm the writer's opinion through a bacteriologic culture failed. No tissue was allowed to be excised for microscopic examination. At this time an operation was advised as the only means of arresting the progress of the disease. The incurability by drug medication was pointed out, as well as the probability that the growth would soon reach an inoperable stage. The patient, however, would not entertain the suggestion of an operation. The appearances presented at that time are shown in Fig. 1 of the accompanying illustrations. The history given was, that for sixteen years a nodule, the size of a small bean, had been present in the upper lip midway between the vermilion border and the nasal orifice. There was never any pain, and no treatment had been instituted.

Two years before the patient came under my observation the nodule began to increase in size, especially toward the nose, and by a gradual growth invaded the cavity of the left nostril, pushing up the ala. The growth occupied the whole thickness of the lip and extended from just above the vermilion border to well within both nostrils. Beyond the portion which is raised above the *niveau,* there is, as it were, a subdermic, firm plate which can be distinctly felt passing to the right and left. Toward the left, it extended to the labio-nasal fold and on the right, not quite so far. The complexion is sallow, often yellowish, and the general health is not always good; she suffered with frequent headaches and indigestion. The appearances at this time are shown in this photograph taken for me by Dr. Piffard, I think in 1890. I reported the case and showed this photograph (Fig. 1) at the New York Dermatological Society in 1892. Since the patient's history has been so well given by Dr. Jackson,[1] I will not consume more time in dwelling upon it. I show



Fig. 1.—Rhinoscleroma, first seen in December, 1889.

you now this excellent colored drawing which accompanied his article (Fig. 2), illustrating the changes which had occurred up to this time. Dr. Politzer saw the case in 1891. Since this time the patient has been at various times under my care and about three years ago I had the picture made which I now show (Fig. 3). The period between these two last pictures is about five years.

During the past three years the progress has been more rapid. On Dec. 9, 1899, I was called to see her, and found that the growth had increased considerably since the last picture was made, the central portion was of a dark bluish-red color, and occupied by an ulcerating area. There was some fever, general malaise, lack of appetite and considerable local pain. Within the fortnight this whole central mass, including the

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1. Jour. Cutaneous and G.-U. Dis., Oct., 1893.

soft gum and under surface of the nose, broke down in a gangrenous slough and was cast off, leaving denuded the bones of the upper jaw and nasal septum. For a

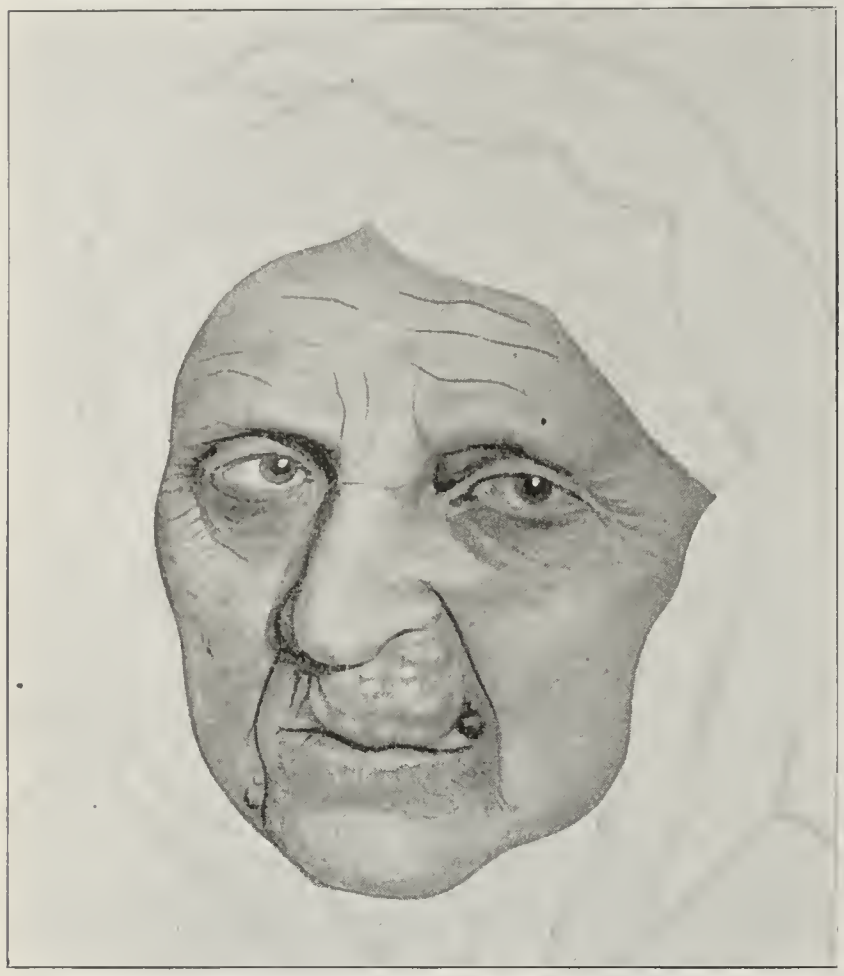


Figure 2.

time the general condition of the patient was such that an unfavorable prognosis as to her life was made. On April 15, I saw the patient last; the exposed bones



Fig. 3.—Rhinoscleroma.

had then become wholly covered with neoplastic tissue of waxy appearance, in all probability of the same nature as the original tumor.

The patient now, for the first time in my observation of her case, extending over eleven years, desired an operation for cosmetic effect. The reason for this will be better appreciated by looking at the painting which shows the condition as it was about two months ago (Fig. 4). As may be seen, however, any surgical procedure of a radical nature is out of the question.

The other case, which is illustrated in the photographs, is also one upon which a previous report has been made, so I need not go into the history in detail.

The patient, I. T., male, aged 49, a native of Galicia, came to me about three months ago. His breathing through a tracheotomy tube, which he has been compelled to wear since 1891, was labored; he was weak and emaciated, and only able to walk a few blocks from home. Speaking only in a whisper and very indistinctly his history was obtained with difficulty.

Nineteen years ago he had noticed a small growth



Fig. 4.—Sloughing in rhinoscleroma.

upon the right side of the nose, the size of the tip of his little finger. For thirteen years, he says, this swelling remained almost stationary and gave no inconvenience.

In 1891, however, which appears to be, according to his story, three years before there was marked increase in the size of the nose, he passed ten weeks in the Mount Sinai Hospital on account of "asthma," and here a tracheotomy was done. This difficult breathing dates back a number of years. Six years ago patient says he was injured on a street railway, and from this date the nasal growth made rapid headway. The present dimensions and appearances are better appreciated from the accompanying photographs (Fig. 5) than from any description I could give. The nares are almost totally occluded. The skin surface is studded with horny and sebaceous plugs of great size, penetrating deeply into the tissues between greatly dilated veins. The color is for the most part a dusky

brownish-red. At times there appears to be an increased congestion.

The appearance of the pharynx and fauces is striking. The uvula is absent and at its site is a round opening,



Fig. 5.—Rhinoscleroma.

which would admit a quill into the nasal pharynx. This latter is otherwise shut off by longitudinal bands of glistening, firm cicatricial tissue. Similar bands



Fig. 5.—Rhinoscleroma.

occupy the lateral aspect of the fauces, giving an appearance somewhat like the opened gills of a fish.

I began treatment with a general tonic course and then gave potassium iodid, but stopped the latter after several attempts, the patient seeming to possess an idiosyncrasy against it. There has been some general but no local improvement.



Fig. 5.—Rhinoscleroma.

It was only after my paper was finished to this point that I learned that this patient's history had already been written, and I have since received, through the



Fig. 5.—Rhinoscleroma.

courtesy of Dr. W. Freudenthal, New York, a copy of his excellent report.[2] I refer to this paper for fuller clinical history. I think, however, that it is well to keep track of these cases and report upon their subsequent course.

2. N. Y. Med. Jour., Feb. 1, 1896.

In Case 1, it is not without interest to note the retrogressive changes, especially in view of the statement so often made by writers that the disease shows no tendeney to break down. Jackson says, "The eourse is without tendency to ulceration or softening." Winfield says, "Tumors never suppurate except as a result of improper or meddlesome treatment." Unna, in his "Histopathology," says, "It is entirely painless and shows absolutely no tendency to spontaneous breaking down." On the other hand, Zeissl[3] has reported an instance in which a considerable portion of the nose broke down in an ulcerative process. The long duration of the process of evolution is well illustrated in both cases.

I would not propose ehanging a clinical name now so well established, despite its inadequacy to describe the whole condition. A name to do this would have to be something like rhino-labio-palato-orbito-pharyngo laryngo-scleroma, and even then it would not cover every case. It seems, however, to be stretching a point to call the affection rhinoscleroma during the years which may intervene between the time of onset in some mucous membrane, or in the throat and the appearance of clinical signs upon the nose. The term glioscleroma might be more generally appropriate. Kaposi has already used this term, calling the affection granulation sarcoma.

It is probably to be regarded as an infective granuloma of bacillary origin. In the last case Von Frisch's capsule bacillus was found in abundance and cultivated. Its similarity to Friedländer's pneumo-bacillus is striking, as several observers have pointed out. It is from its description, 5 microns long and 2 microns broad, and occurs singly or in groups within cell protoplasm. A Mikulicz cell, whieh a recent writer, Marschalk, regards as a specific element of connective tissue origin and the result of a special degeneration caused by their presence may contain bacilli in large number.

DISCUSSION.

DR. J. NEVINS HYDE, Chicago—I have seen rhinoscleroma only in Vienna, never in this country.

DR. D. LIEBERTHAL, Chicago—I have seen a case of rhinoscleroma in Chicago and I am keeping track of it. He is not an American, but hails from Moravia, a territory included in the Slav belt, where this disease occurs.

DR. L. E. SCHMIDT, Chicago—The reason we see so little of rhinoscleroma is probably because a large number of the cases go to men who treat diseases of the nose and throat. I know that this is true in Vienna, as I saw many cases in Stoerk's clinic. Furthermore, Kaposi has frequently made the same remark.

DR. C. W. ALLEN, in reply—In answer to the question I would say that I do not remember having seen anything in the literature bearing upon the etiology, but we regard the disease as one caused by a bacillus. There have been some inoculation experiments, usually negative except one where the culture bacillus was inoculated in the eye and a growth occurred which seemed to be of the same general nature and was regarded as a positive finding, but until it is reproduced in the human being I suppose we can not accept it as absolute proof. Being a disease of such long duration it is probably a disease of long incubation and probably it exists as a very slight affection for many years. So we have the same difficulty in tracing the origin as we do in leprosy. We never have had, so far as I know from the literature, any instance of the disease occurring in two members of a family, where it would point to contagion or infection, and there has never been anything pointing to heredity, so far as I know.

3. Wiener Med. Wochenschr., 1880, p. 621.

THE ROLE OF THE MAST-CELLS IN ACUTE AND CHRONIC INFECTIONS.*

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BUFFALO, N. Y.

In discussing the relation of the mast-cells to infections, it will be proper first to consider what knowledge we have of their composition and their various properties that may have a bearing on this question.

It has been maintained that their granules are composed of mucin, on the ground that the metachromism displayed by these granules with thionin and other dyes is similar to that shown by mucin. This seems to be the principal argument for the theory, although some also state that mast-cells are numerous in mucous membranes during catarrhs and in tumors containing mucin.

In the writer's experience, while the mast-cells may be abundant in inflamed mucous membranes, they are few or wanting in tumors containing mucin and in the umbilical cord. They may be much increased in structures where mucin seems scanty, as in scirrhous carcinoma. However, since chemists state that there are certainly a number of varieties of mucin, the granules of mast-cells could not be expected to conform to the staining reactions of all mucins.

Variations in the number and size of the granules are common. The writer has twice seen relatively enormous granules, once in the wall of the fallopian tube in pyosalpinx, once in hypertrophic rhinitis.

What undoubtedly appear like granules free in the tissues are often observed. They may be only sections of the long and sinuous processes which many of these cells possess.

The matrix around the cells frequently stains in the same manner as the granules, though more faintly. Such pictures are unquestionably sometimes due to the action of reagents; they are of interest as indicating the soluble and diffusible nature of the material composing the granules. Ehrlich and Lazarus[1] cite Unna's descriptions of these stained zones about mast-cells as evidence for the secretory nature of the granules.

Usually it seems to be taken for granted that mast-cells are capable of ameboid movement, but it does not appear that such movement has actually been seen. The highly irregular outlines which they not rarely show, no doubt resemble those of moving amebæ. Their occasional presence between the epithelial cells of the skin, argues for their having ameboid movement. A case of myelogenic leukemia has recently been described, the peritoneal fluid of which was rich in mast-cells, which were supposed to have migrated into it.[2]

Evidences of phagocytosis are not often found. Unger also ascribed an important function to these cells in transporting droplets of fat in the active mammary gland.[3] Concerning their origin and manner of multiplication, little evidence is at hand. Mitoses seem not to have been observed. Bäumer who found mast-cells numerous in the lesions of an artificial urticaria, believed they originated from the connective tissue cells of the adventitia of the vessels. The connective tissue cells, not the mast-cells, showed mitoses. The abundance of mast-cells about the vessels when they are present at all, and their increase in hyperemic conditions, are well known.

Concerning their occurrence in normal and pathologic

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

tissues,[5] so much has been written that it will be necessary to adhere closely to the subject of their behavior in the infections. However, their wide distribution among animals and at all periods of life must be noted, as indicating that they have important functions in the normal organism. It is remarkable that they are numerous in the tissues of the rat and rare in those of the nearly related rabbit and guinea-pig. Coen found that they quickly appeared in the skin of the rabbit or guinea-pig in which they do not usually occur, after irritation with iodin.[6]

Mast-cells are uncommon in pus and in muco-purulent discharges. Although it does not appear that any special search has been made for them in acute infectious diseases, the histologies of the infections have been so carefully worked out that they could certainly not have been overlooked. Upon reading recent studies of acute infections of all sorts, one finds that while mast-cells are frequently present in and around the lesions, they have not been seen in such numbers or so arranged that any specific relation has been ascribed to them; as, for example exists for eosinophiles in acute trichinosis. The writer's experience would lead him to adopt a similar view. An exception to this opinion is found in an article on the changes in the tissues produced by experimental bubonic plague, where mast-cells were found in the diseased lymph-nodes in such numbers as to lead the author[7] to believe they perform an important rôle in plague.

In chronic infectious diseases, especially tuberculosis, mast-cells are usually present in the zone of reactive inflammation about the lesions, where they may be numerous. The lesions themselves do not contain them in large numbers, if at all. There is nothing to show that the infectious element causes this increase. The writer has more often found mast-cells very numerous in such material as scrapings from chronic endometritis, uterine myoma, or carcinoma of the breast or lip, than in the vicinity of tubercles or gummata. It should be noted that in myelogenic leukemia the blood contains an increased number of mast-cells, if leukemia be regarded as an infectious disease. Turk has claimed that the parasites described by Löwit[8] for leukemia are mast-cell granules.

In general it may be said that where mast-cells become increased, plasma-cells are likely to be present and in much larger numbers than the mast-cells. This parallelism is not close, however. The writer's impression is that plasma-cells appear to be more definitely connected with infectious processes than mast-cells. The formation of tumor-like masses, often seen with plasma-cells, has been described for mast-cells only in urticaria pigmentosa.[9] The writer has recently had an opportunity to secure a striking confirmation of Unna's observation in a case of urticaria pigmentosa.

It appears from the preceding that evidence is at present lacking to prove that mast-cells have any special relation to infections in general or to any particular infection. But it must be said that the subject has not yet received the study that it deserves. The facility with which these cells may be demonstrated, the large size of their granules, and the exhibition of characteristic reactions by the granules make them a promising field for research.

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SOME INVESTIGATIONS UPON ANTIVENENE.*

JOSEPH McFARLAND, M.D.
PHILADELPHIA.

The investigations of the last decade upon immunity to the infectious diseases have led to the discovery of many important and interesting facts. Among the most instructive of these we may mention the successful immunization of animals to serpent's venom achieved by Wolfenden, Phisalix and Bertrand, and Calmette, and the discovery in the blood of the immunized animals of a specific protective substance, first demonstrated by Phisalix and Bertrand, and elaborately studied by Calmette and Fraser.

THE METHOD OF IMMUNIZATION

adopted by Calmette consisted in the administration to horses of progressively increasing doses of cobra venom, slightly modified by heat, until the animals attained a high degree of immunity and antivenene appeared in large quantity in the blood.

COMPOSITION OF VENOM.

It has been well known for many years that the venom of serpents is not a simple poison, but one composed of several distinct poisonous proteids of different physiologic action. In their great monograph upon the subject, Mitchell and Reichert concluded that every venom contained two important poisonous proteids, one of which they regarded as a peptone, the other as a globulin. The former was a nervous poison, whose chief physiologic action was upon the center of respiration, upon which it acted so destructively that nearly all cases of venom intoxication die from more or less rapid failure of the respiration. The globulin they found to be an irritating substance with a marked local action upon the tissues, which it devitalized and disorganized, causing extensive extravasations of blood, necrotic and gangrenous changes, and leading to death from the local injury done. Wolfenden agreed with Mitchell and Reichert except that he regarded their peptone as an albumose, and since the time of these investigations it has been generally accepted that the activity of venoms depends upon the presence of these two bodies, and that the difference in the symptomatology of snake bite depends upon the different proportions in which these active principles are present in the venoms. Thus, the venom of the cobra—*naja tripudians*—contains much of the nervous poison, and but little of the irritative poison, hence cobra bites are apt to cause comparatively little local damage, though they may prove fatal. On the other hand, the venom of the rattlesnake contains relatively less of the nervous poison, and a large quantity of the irritative poison, so that the bite of this snake is apt to be followed by extensive local damage, though usually not fatal.

Calmette found that when venoms were heated to 70-85° C., the irritative poison was precipitated, the nervous poison almost unchanged. The heated poison could be introduced into animals without pain, and

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without tissue disorganization. It was the fatal element of the venom, and suggested itself for the purpose of immunization. All of his antivenene experiments were, therefore, performed with this nervous poison which he secured from cobra venom—the most active venom that could be obtained.

C. J. Martin has taken exception to Calmette's antivenene on the ground that it is an antidote for the nervous poison in the venom, but not an antidote for the irritative poison, and, therefore, is probably not useful or indicated in the bites of those serpents whose venom depends principally upon the latter. He found it inefficient in the treatment of the bites of Australian snakes, whose venoms all contain large quantities of the irritative poison. A literary controversy followed the publication of Martin's views, but it is uncertain whether Calmette succeeded in overthrowing all of his objections.

ITS ACTION.

We must, in consequence of these facts, view the antivenene as being antidotal chiefly against the nervous poison of the venom, the peptone of Mitchell and Reichert—the albumose of Wolfenden. A simple experiment suffices to demonstrate the perfect protection which the antivenene affords against the venom. According to Calmette's recommendation, an inoculation of a quantity of venom that will prove fatal in about twenty minutes is made into the marginal vein of a rabbit's ear, and this at once followed by the appropriate quantity of antivenene. Instead of dying at the expiration of the twenty minutes, the rabbit lives and shows no symptoms. If this curative effect is accomplished by 2 c.c. of the antivenene—the strength made by Calmette—it is said to contain 2000 units.

The protection I have found to be exactly as Calmette asserts and the antivenene is equally active against cobra, rattlesnake and other venoms, when such venoms are heated so as to remove the contained globulin. If the venoms are injected into the ear vein without being heated, the protection afforded is less certain, and if the viper and rattlesnake venoms are injected beneath the skin, still less certain. I did not find that the antivenene afforded complete protection against the local effects of crotalus venom, though it seemed to lessen them.

SOME IMMUNIZATION METHODS.

In some experiments which I was permitted to perform through the kindness of H. K. Mulford Co., I began the immunization of the animals according to the principles laid down by Calmette, beginning the treatment with cobra venom heated to 80 C. to precipitate the globulins. After a short time it occurred to me that if my serum was ever to be used for treatment, it would probably be in this country, where the irritative venoms of the rattlesnakes, moccasins and copperhead snakes are to be combated, and that a serum to have the desirable protective efficacy should protect not only against the nervous poison contained in the heated venom, but also against the irritative globulin as well. I therefore determined to abandon Calmette's method, give up the use of cobra venom, and confine my endeavors strictly to the immunization of the animals with the most irritative venom I could obtain, administered in its natural condition. I therefore began to work with unmodified crotalus venom.

Three horses were used for the experiments, two of them dying early in the treatment. I found that while they bore the initial injections of heated cobra venom without inconvenience, they responded by a violent local reaction to each injection of crotalus venom. The injections were made into the subcutaneous tissue of the neck and each was followed by a very considerable swelling of the tissues, succeeded in every case by an infection resulting in a good-sized abscess and slough. Sometimes enormous areas of skin and subcutaneous tissue became gangrenous and exfoliated, leaving lesions that required considerable time for cicatrization. One horse died from an exceptionally severe local lesion.

After pursuing this mode of inoculation until the death of the one horse and the condition of the others persuaded me that it could not be further continued, and proving that the injections were followed by no local or general immunity to the irritative poison, I decided to try the effects of the injection of the unmodified venom into the venous circulation. The appropriate dose of venom was much diluted with water and slowly introduced into one of the superficial veins, where it was at once further diluted by the blood. This mode of administration was not followed by any local lesion, and produced no symptoms of long duration. In nearly every case the injections were succeeded by a febrile reaction, and for a time—usually less than 12 hours—the horse seemed depressed and weak, and refused to eat. After the lapse of this period the animals seemed well, ate and drank normally, though it must be said that their condition was continually below par. It is quite probable that they might have remained in better shape if the administrations had been less frequent and each dose smaller. This fact, however, only became apparent after the experiments were at an end and the results obtained subjected to careful consideration. During the experiment the matter was left to the discretion of Dr. E. M. Ranck, the veterinary surgeon in charge of the animals. The venom seemed to increase the susceptibility to infection. This probably depended upon the alteration in the germicidal action of the blood, pointed out by Professor Welch and Dr. Ewing, in 1892, at the First Pan-American Medical Congress. Not only was this diminished action shown by the tendency to local inflammations and necroses, but also by a tendency to general infection, for while I lost the first horse in consequence of destructive superficial lesions, the second animal died of pneumonia.

As the doses of venom were increased, the immediate physiologic effects became more and more marked. The venom was slowly injected into the vein, but about the time the total quantity entered the circulation the horse would become unconscious and fall suddenly to the ground. After a few minutes in this condition, with marked cardiac and respiratory disturbance, consciousness gradually returned. The functions re-established themselves and the animal would pull itself together and get up again. After witnessing this phenomenon several times, the horses were supported by "slings" before the injections were given in order that no injury might result from the fall. No serious damage seemed to occur in consequence of the momentary extreme depression, and after a time we came to look upon it without fear.

The early injections of modified cobra venom need not be considered. The treatment of the animals is, therefore, to be divided into these three periods: 1. In which crotalus venom, modified by heat, as suggested by Calmette, was injected subcutaneously. 2. In which unmodified crotalus venom was injected into the subcutaneous tissues. 3. In which unmodified crotalus venom was injected into a vein. The following table (Horse 592) shows the complete treatment of the horse that survived longest and finally yielded to antivenene. The

second table (Horse 774) shows a horse begun at once with intravenous injections. It died of pneumonia. The third horse was begun with subcutaneous injections of unmodified crotalus venom, but died from the effects of the superficial lesions caused by the fourth or fifth injection, so that it is not worth while to introduce his brief treatment.

SCHEME OF THE IMMUNIZATION OF HORSE 592.

1. Heated crotalus venom used for immunization, as suggested by Calmette:

May 30, 1899, 0.01 gram venom; slight local swelling.
June 7, 1899, 0.01 gram venom; slight local swelling.
June 16, 1899, 0.01 gram venom; slight local swelling.
June 21, 1899, 0.1 gram venom.
June 26, 1899, 0.15 gram venom.
July 1, 1899, 0.15 gram venom; slight local swelling.
July 10, 1899, 0.15 gram venom.
July 15, 1899, 0.15 gram venom.
July 19, 1899, 0.20 gram venom.
July 26, 1899, 0.30 gram venom.
Aug. 8, 1899, 0.50 gram venom.
Aug. 15, 1899, 1.00 gram venom.
Aug. 30, 1899, 1.00 gram venom.
Sept. 11, 1899, 1.50 gram venom.
Sept. 19, 1899, 2.00 gram venom.
Sept. 27, 1899, 2.50 gram venom.
Oct. 7, 1899, 3.50 gram venom.

2. Unheated crotalus venom given subcutaneously.

Oct. 17, 1899, 0.50 gram venom.
Nov. 4, 1899, 1.00 gram venom; became ill and had a slough; first test failed.
Dec. 5, 1899, 0.50 gram venom; ill.
Jan. 12, 1900, 0.25 gram venom; ill.

3. Unheated crotalus venom given intravenously.

Feb. 24, 1900, 0.10 gram venom.
March 6, 1900, bled A; tests showed no positive protective power.
March 14, 1900, 0.10 gram venom; ill after injection.
March 27, 1900, 0.25 gram venom; ill after injection.
April 10, 1900, 0.30 gram venom; ill after injection.
Bled B; showed positive protection against crotalus and cobra venom.
April 18, 1900, 0.50 gram venom; ill after injection and unconscious for a short time.
May 9, 1900, 0.75 gram venom; ill after injection and unconscious for a short time.
May 31, 1900, 0.75 gram venom; ill after injection and unconscious for a short time.
July 10, bled C; lessened protective power.
July 10, 1900, 0.50 gram venom; ill after injection; fell unconscious.
July 30, 1900, bled D; lessened protective power.
Sept. 12, 1900, 0.27 gram venom; ill; fell unconscious.
Oct. 16, 1900, 0.50 gram venom; fell unconscious. Some of the venom accidentally caused a periphlebitis of the jugular region, with a large slough from which the horse died.

SCHEME OF IMMUNIZATION OF HORSE 774.

Feb. 24, 1900, 0.005 gram crotalus venom intravenously; very ill.
March 14, 1900, 0.005 gram crotalus venom intravenously.
March 27, 1900, 0.01 gram crotalus venom intravenously; very ill.
April 5, 1900, 0.0133 gram crotalus venom intravenously; very ill.
April 18, 1900, 0.02 gram crotalus venom intravenously.
May 9, 1900, 0.04 gram crotalus venom intravenously.
May 31, 1900, 0.10 gram crotalus venom intravenously.
June 20, 1900, 0.20 gram crotalus venom intravenously.
July 12, 1900, 0.33 gram crotalus venom intravenously; ill.
Aug. 1, 1900, 0.25 gram crotalus venom intravenously; ill; recovered from the injection in about two hours.
Aug. 17, 1900; 0.33 gram crotalus venom intravenously; ill; would have fallen but was supported by slings; recovered from injection in about two hours.
Aug. 20, 1900; developed pneumonia and died a few hours after the nature of the disease was determined.

Much interest attaches to the fate of horse 592, and the circumstances of its death are very instructive. After attaining a high degree of immunity, and tolerating the venom injections from May 30, 1899, to Oct. 31, 1900, and having received many intravenous injections and having recovered perfectly from all of the early superficial lesions, the horse gradually began to decline in condition so that it became necessary to diminish the doses of venom very considerably. The reduction in the dosage was followed by a positive gain in vital condition, and I was in hope that health was again regained when the accident occurred that provoked death. In giving the intravenous injection, Oct. 16, 1900, the needle slipped and permitted the escape of some of the venom into the perivascular and subcutaneous tissue. How much of the venom entered these tissues, and how much entered the vein is not known, but the result of the accident was the immediate occurrence of a large subcutaneous edema which by pressing upon the trachea threatened to cause death from suffocation. Tracheotomy was performed, but the damage done was too great to be borne and the animal died. Thus I think it is proven that from this whole course of treatment, no immunity to the local irritation of the venom was developed, but that the horse, even though able to endure the venom introduced into its circulation, was unable to endure its local action.

The blood of the animals was examined from time to time as the routine work permitted. Horse 774 never yielded any useful serum. The other animal, 592, developed marked antitoxicity, with the presence of a useful quantity of antivenene, but as is usual in antitoxic horses, the antivenene gradually diminished.

The method of testing the antivenene was that already outlined, as having been invented by Calmette. The determination of the dose of unmodified venom that would kill a rabbit was difficult.

SUMMARY OF THE TESTS MADE TO DETERMINE THE FATAL DOSE.

These tests are not put down in chronological order, but according to size in order that the result of diminution may be apparent. Absolute accuracy was not attained, but it was thought that the doses selected were reasonably accurate. The solutions used were 1 per cent. aqueous solutions of the dried venom, protected from decomposition by the addition of a small amount of carbolic acid. Adult rabbits (2 kg.) only were used for the experiments.

CROTALUS VENOM.

1.00 c.c.	standard	venom	sol.	inject.	into	ear-vein	Rabbit:	died.
1.00 "	"	"	"	"	"	"	"	"
1.00 "	"	"	"	"	"	"	"	"
0.75 "	"	"	"	"	"	"	"	"
0.75 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	lived.
0.50 "	"	"	"	"	"	"	"	"
0.50 "	"	"	"	"	"	"	"	died.
0.25 "	"	"	"	"	"	"	"	"
0.25 "	"	"	"	"	"	"	"	lived.

These tests show the difficulty met with in endeavoring to locate the fatal dose. My conclusion was that it was only safe to experiment with doses large enough to eliminate doubt as to the consequence of venom injection and after the early tests in which 0.5 c.c. was used as a test dose.

COBRA VENOM.

1.00 c.c. 1 per cent. aqueous cobra venom sol.; died in 2 min.
0.20 " " " " " " 15 "
0.20 " " " " " " 1 "
0.10 " " " " " " 2 "
0.10 " " " " " " ? "

The agkistrodon contortius (copperhead snake) yielded a feebler venom than the crotalus.

TESTS.

1 c.c. 1 per cent. aqueous solution dried venom; rabbit died.
1 c.c. 1 per cent. aqueous solution dried venom; rabbit lived.

I found that the preservation of venom in the dry state is almost permanent, as some crotalus venom, which I secured through the kindness of Mr. Thompson, keeper of reptiles at the Zoological Gardens of Philadelphia, after having been dried for more than ten years, was as strong as that freshly obtained.

TEST.

0.50 c.c. 1 per cent aqueous solution, injected into the ear-vein caused the death of the rabbit in 6 minutes.

Solutions of the dried venom in 1 per cent. carbolic acid keep almost indefinitely, especially if kept cold. I made a solution of this kind on February 21, 1900, testing it March 12, 1900, April 18, April 23 and October 3, 1900, without finding that it had changed appreciably. On the other hand, I found that when aqueous solutions were not protected by the addition of the antiseptic, they lost virtue, so that in 48 hours they were worthless. This difference, of course, depends upon the destruction of the venom by saprophytic bacteria.

I have no doubt but that it would have been much easier to accurately estimate the minimum fatal dose of any venom modified by heat. It was my desire, however, to protect against the other principle of the venom—the one precipitated by heat—therefore, I desired to work with unmodified poison. It is true that by injecting the venom into the vein I inhibited the action of this principle by excessive dilution, so that after all, all the protection that my antivenene afforded was probably against the nervous poison. However, concerning the blood of horse 592, the following tables will show what tests I made, and with what success.

The venom was always mixed with the serum before injection into the ear vein—this procedure differing from the method of Calmettte.

HORSE 592.

The serum was examined at five different periods during immunization, i. e., trial, A, B ,C and D bleedings.

In making the tests the animals chosen were adult rabbits of approximately equal size (2 kg.). Each received a known fatal dosè of venom, which, except in the instances stated, was mixed with the serum tested, and injected into an ear-vein. As the serum sent me by M. Calmette was protective in doses of 2 c.c., I used that dose as a standard for comparison.

1. Period when no protective power was demonstrable; trial bleeding.

TESTS.

0.5 c.c. standardized crotalus venom + 4 c.c. serum; rabbit died.

CONTROL TESTS.

0.50 c.c. standardized solution; rabbit died.
0.50 c.c. standardized solution; rabbit died.
0.25 c.c. standardized solution; rabbit died.

2. Period of uncertain protection; bleeding A.

TESTS.

1.0 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit died.
1.0 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit lived.
0.5 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit died.
0.5 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit lived.

CONTROL TESTS.

0.5 c.c. standard solution; rabbit died.
0.5 c.c. standard solution; rabbit died.

3. Period of complete protection against crotalus venom.

TESTS.

0.75 c.c. standardized crotalus venom + 1 c.c. bleeding B; rabbit lived.
0.75 c.c. standardized crotalus venom + 1 c.c. bleeding B; rabbit lived.
1.00 c.c. standardized crotalus venom + 2 c.c. bleeding B; rabbit lived.
2.00 c.c standardized crotalus venom + 2 c.c. bleeding B; rabbit lived.

CONTROL TESTS.

0.75 c.c. standardized crotalus venom; rabbit died.
0.75 c.c. standardized crotalus venom; rabbit died.
1.00 c.c. standardized crotalus venom; rabbit died.
2.00 c.c. standardized crotalus venom; rabbit died.
2.00 c.c. standardized crotalus venom; rabbit died.

Partial protection against cobra venom.

TESTS.

0.1 c.c. standardized cobra venom + 2 c.c. Calmette's serum; rabbit lived.
0.1 c.c. standardized cobra venom + 2 c.c. serum B; rabbit lived.
0.1 c.c. standardized cobra venom + 2 c.c. serum B; rabbit died later.

CONTROL TESTS.

0.1 c.c. standardized cobra venom; rabbit died.
0.1 c.c. standardized cobra venom; rabbit died.

4. Period of decline of protective value.

TESTS.

0.1 c.c. standardized cobra venom + 2 c.c. serum C; rabbit died.
0.1 c.c. standardized cobra venom + 2 c.c. serum D; rabbit died.

CONTROL TEST.

0.1 c.c. standardized cobra venom; rabbit died.

HORSE 774.

As this animal stood the immunization very badly and was ill or supppurating most of the time before its death, only once was blood taken for examination; bleeding A.

TESTS.

1.0 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit died.
1.0 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit lived.
1.0 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit lived.
1.0 c.c. standardized solution of crotalus venom + 2 c.c. serum A; rabbit died.

CONTROL TESTS.

1.0 c.c. standardized solution of crotalus venom; rabbit died.
1.0 c.c. standardized solution of crotalus venom; rabbit died.
0.5 c.c. standardized solution of crotalus venom; rabbit died.
0.5 c.c. standardized solution of crotalus venom; rabbit died.
0.5 c.c. standardized solution of crotalus venom; rabbit died.
0.5 c.c. standardized solution of crotalus venom; rabbit died.

From these tests it may be inferred that the serum was possessed of a feeble protective power. The tests are too few to be conclusive, but as the serum was lacking in the desired protective power, and as the horse died subsequently, it was not deemed worth while to pursue the matter further.

In some cases not included in the tables, the injected mixture failed to enter the vein, or only part of it entered. In these cases the invariable result was the formation of a large superficial necrosis, and sometimes the loss of most of the ear.

CONCLUSIONS.

From these experiments I think it is safe to say that:

1. It is not difficult to produce immunity to the nervous poison contained in serpent's venom, as shown by Wolfenden, Phisalix, Bertrand and Calmette.

2. This immunity when carried to a high degree is associated with a marked antitoxic power of the blood.

3. It is very difficult if not impossible to produce immunity to the irritative poison of the venom.

4. Antivenene does not protect very powerfully against the irritative poison.

5. Antivenene protects against the nervous poisons of various venoms.

6. Immunity to the unmodified venom is better secured by intravenous than by subcutaneous injection.

7. Calmette's method of immunization with the modified venom is greatly to be preferred to the method of immunization to the unmodified venom as tried in these experiments, because of the modicum of danger and suffering to the horses used.

8. Calmette's antivenene is more useful for the treatment of the bites of cobras and colubrine serpents than for those of vipers, etc.

9. As the antivenene protects against the chief death-dealing element in the venoms, it is of great use in the treatment of all serious bites, and should be used whenever possible.

10. The neutralization of the nervous poison of the venom by antivenene will enable the individual to devote all his vitality toward overcoming the local injury done by the irritative globulin in the venom.

11. All individuals—certainly not all horses—are not equal in their resisting power against venom. Two of my three horses succumbed quickly to the venom injections.

12. The antivenene producing power varies in different horses.

13. The quantity of antivenene in the blood varies from time to time, according to circumstances.

A CASE OF LOCALIZED AMNESIA.*

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The following case illustrates one of those interesting phases of abnormal psychologic experience, which have been occasionally noted in actual life, and which have as often been made the subject of novels. When used in literature they are looked upon as the invention of an imaginative mind, yet observations of scientific men have shown even more novel and seemingly impossible instances than are portrayed in books. The cases of Macnish, Sidis, Azam, Dufay and others have been made the subject of much comment, and the works of Azam, Ribot, Binet, Sidis, Richet, Tuke, Maudsley and writers of this class have helped to lift the clouds that surround our conceptions of consciousness and personality. The following case of amnesia presents such very peculiar features that it has been thought of sufficient interest to warrant its presentation.

Charles W. was born in Eastern Pennsylvania in 1860. His father and mother became separated, though keeping up a communication with each other. In 1884, the son, hearing of his father's death and knowing that the latter had some property in the West, where he had lived, set out to investigate. Traveling west from Chicago, he had gone but a short distance when the train was wrecked. That was seventeen years ago. He remembers at the present time that there was a crash, that he felt himself hurled through space, and then—nothing. In February of this year he became unconscious and after twenty-four hours, when he awoke, the seventeen years between the accident and the present had been completely obliterated and he had gone back to the time of the accident. He thought that he was 24 years of age, as he had been at that time, and he recognized neither his wife nor his own children; in fact, he had no knowledge of ever having been married and had also forgotten his business and his friends. He was an entire stranger in the city where he had lived for a long time, and the trolley cars upon which he had ridden for years, and the electric bells which he had used repeatedly, were as strange to him as upon the first time that he saw them.

WHAT HAPPENED IN THE SEVENTEEN YEARS.

The first five years after the accident are lost. Mr. W. has no remembrance of anything that happened, neither is there any one known who can tell of his life during that time. Twelve years ago he first came to Pittsburg; there he met his present wife, and two years later they were married. She has supplied the information as to the details of his life up to the present time. We present only that which has a bearing upon our subject. At no time during these twelve years did he give any information concerning his previous life. Insistent questioning on the part of his wife always failed to reveal anything. He had, however, always remembered his name; that point should be especially noted. Shortly before his oldest child was born, nine years ago, he wandered away one Sunday afternoon and did not return until Monday evening. This was exceptional with him, for he never went out, other than to work, unless his wife accompanied him. He was a total abstainer, therefore alcohol could not have been responsible for this action. His only answer as to where he had gone, was that he had been out riding.

About a year later, eight years ago, while painting a house with his brother-in-law, he suddenly stopped work and went away without saying anything by way of explanation. Two days later a postal card was received from him, written at his mother's house, so he wrote, and telling his wife that he would be home in a day or so. This is the first knowledge his wife had that his mother was living, but ever afterward he remembered her. The memory of his mother seemed to have come to him suddenly, and, acting impulsively, he had instantly gone to visit her.

During these years he worked in succession at farming, running a sawmill and painting. He was at times afraid to come home, his wife states, and seemed constantly downhearted and worried. So moody did he become that she was afraid to leave him alone with the children.

He was always affectionate, was a kind husband and a good father. He suffered much from sick headaches, the pain of which would make him almost frantic. He would often moan in his sleep, but was never somnambulistic. While conversing he would often stop in the midst of a sentence and commence anew without seeming to realize it. He had an attack of painter's colic several years ago, but the exact time is not known. Some time ago he began to have violent pains over the right hepatic region, and this region began to swell up, "long strings of corruption," as his wife styled it, being passed through the mouth. The condition was relieved somewhat by free action of the bowels and kidneys, but it recurred monthly for a time; later the intervals became longer and the suffering less in intensity with each attack. The pain, however, was present between the attacks, and to such an extent that no one could sleep with him on account of his restless tossing from the pain.

Dr. S. G. Small, his physician at that time, diagnosed the condition as one of hepatic abscess. The slightest

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touch over the liver region caused intense pain. The last attack was on February 23, 1901, and he was walking the floor of the dining-room, suffering intensely, when a daughter who was in the room accidentally overturned the lamp. Mr. W. tried to catch it as it fell, but as he reached for it murmured, "Oh, my head," and fell to the floor unconscious. He was put to bed and Dr. Small summoned, but all attempts to revive him remained futile. About 4 a. m. he awoke for an instant, but again went to sleep. He awoke some time in the morning, asking, "Am I much hurt?" His wife wonderingly replied in the negative, and he then inquired as to what hospital he was in and asked whether she was the nurse. Upon being told by her that she was his wife he resented it by saying that he was not in the mood for joking.

After sending for the doctor, in obedience to his request, she asked him whether he wanted to see his children. "I'm not married," he replied. "It's a nice thing for a man 24 years of age to wake up and be told that he is the father of four children." "But you are not a young man," persisted his wife. Finally a mirror, pictures taken of him at various intervals, his marriage certificate, and the various exclamations of the four children who were brought in, convinced him of the truth of her statements. He did not recognize the doctor, to whom he insisted that he felt entirely well. No further evidence of hepatic abscess was present and he had not the slightest feeling of pain, being able to stand quite severe blows where formerly the merest tap was excruciatingly painful. The next day he came under the care of the writer.

PRESENT CONDITION.

I found a man of spare build, 5 feet 9 inches high, weight 132 pounds, spanning 5 feet 11 inches from the tips of one hand to the other. His head was 22 inches in circumference and 12.5 inches from glabella to inion. The long bones were all well formed, but his chest was slightly carinated. His musculature was under-developed, the dynanometer showing 42 on right side and 40 on the left. Both deep and skin reflexes were about normal. His pupils were wider than normal and reacted slowly to light. All ocular muscles functionated normally. His head and face are asymmetric, ears badly set and protruding, but not very badly formed. His lips are thin and compressed, his teeth uneven and irregular, and the palatal arch is very high. Upon the right side the labial folds are much slighter than upon the left, and he shows traces of a former right facial palsy; however, no history of it can be obtained. He gives a totally negative family history and all his children are healthy except Ruth, who is 7½ years old and did not speak until she was 6 years of age. She was born with "the cord around her neck," the mother says. She is choreic and when sent to school last fall she was sent home by the teacher with a note saying that as she constantly slept in school, she had better be kept at home. She is a middle-grade imbecile.

This patient presents nothing pathologic upon examination of his various organs. Sexually he is normal, his wife having again become pregnant recently. His childhood, which he now remembers, reveals nothing abnormal. Attention, judgment, perception are all good. He has a high moral sense, never smoked or drank, has been a steady church-goer, and is now considerably worried for fear of having done something wrong in the five years after the accident, as his actions during that time are totally unknown to every one whom he now knows. His memory for recent events and for those up to 1884 are perfect. Close questioning by myself and also by various members of the Pittsburg Academy of Medicine, before whom he was presented, failed to detect any error or lapse in his story.

At the present time he passes his former friends in the street without recognizing them, and is much embarrassed when accosted by any one. He must be closely directed else he will miss his way on the street. When going to consult the doctor he stood outside until noticed, not finding any knocker and never, so far as he knows, having seen an electric bell before. The same is true with all the modern improvements he sees.

On account of his illness of the last two years he had been compelled to quit work and his wife had opened a small grocery store. He had spent his time, as far as able, in delivering goods in the neighborhood or in taking orders for the store. He is now ashamed of the condition that he finds his "new" family in. In going over the books, something he had never done before, he rebuked his wife for the careless way in which they were kept. He did not remember the customers that he had daily called on for orders.

He has spent much time picking up the details of his old life, relearning it from his wife's lips. His memory seems to be very retentive, but his wife says that formerly he was very forgetful. Being anxious to better things, his friends secured for him a position at his old trade. He found that he did not know anything about it, but his employers were kind to him and he began to relearn it, but only able to earn the wages of an apprentice, while formerly he had been able to command one of the highest salaries in the city at his trade. He began to have heavy depressing dreams. It seemed that their central idea was one of being declared insane and being sent to an asylum—the comments of his friends, the strangeness of his life and the unfortunate newspaper notoriety given him worrying him very much. On March 8 he left home at 8 a. m. for work. He did not return until 9 p. m., staggering like a drunken man, weak and exhausted, and declaring that he found himself at 5 p. m. in Greensburg, about 30 miles away from his home, and took the next train home. He had no recollection of going there nor can he give any reason. Information reached us later of his having stopped at a wholesale house in the morning and of his ordering some goods for his wife's store. The salesman reported that he seemed dazed and confused at that time. The next day, his wife not knowing this, she gave him $25 with which to buy groceries. He left home and did not return. No trace of or word from him has since reached us, and he seems to have entirely disappeared from the face of the earth.

This is then Mr. W.'s history. We shall make a few remarks concerning his condition, not, however, going into detail, as what we might say would be only a rehash of the writings of Ribot, Binet, Sidis and others.

EXPLANATION OF CONDITION.

What constitutes memory? It is plainly the consciousness or recognition of events and impressions. These must be retained or reproduced, but unless recognized by our conscious ego would not be remembered, psychologically speaking. Impression and reproduction are the two essential elements of memory, but, unless we can localize, we are not conscious of the first two. Studies in amnesia or loss of memory have shown that it is first confined to recent events, and embraces, in turn as it progresses, ideas, sentiments, affections and actions.

In the present case the amnesia may be called localized after the classification of Boris Sidis, because it embraces a definite period of time. We have with him similar alterations of personality to what we see in somnambulism and petit mal, where we find the presence of certain automatic acts, but without the other factors of conscious personality. A difference, however, lies in the fact that in one case memory localizes the acts, in the other it does not; but in both cases we have the impressions of acts or ideas and their reproduction. Mr. W.'s loss of memory was not complete, and it is rare to find a complete amnesia. His remembrance of his name, his retention of the automatic acts of speech, walking, etc., are examples.

We see also in the sudden remembrance, eight years ago, of his mother's name and address, an interesting example of an impression present in the subconscious mind, welling up, becoming recognized by his conscious ego and becoming a conscious memory. It is probable that in these seventeen years many other old memories were revivified, but were not localized for any period of time, or were not strong enough to be actively remembered.

The patient's condition during these seventeen years was not, from what we can gather, a normal one. His moodiness, his fits of abstraction amounting at times to a condition of distraction, reveal this. He would often sit when talking to someone, staring intently into space as if he wanted to look through them, as they expressed it. This was particularly noticeable in recent years, after his attacks. The picture, which I will pass around, taken after one of these attacks, shows vividly his abstracted, staring look and an ocular paralysis, which is not present now.

Were these periods of changed personality, of transient duration, so slight as not to be recognized? Were they simply conditions of alternated personality, unnoticed by his ego, in which subconscious memories were active? No one can say. We know that the conscious and the subconscious are ignorant of each other. It seems as if the lower consciousness is able to arise to the surface and take charge of things, the individual showing no signs of having once known the other—the conscious ego. Professor James' case of Rev. Ansel Browne and Osgood Mason's case of Alma Z. shows this.

It may be that Mr. W.'s case is an example of dual personality, often seen as a manifestation of epilepsy. The fragmentary account, as given to us, of his previous life, seems to indicate the presence of psychic automatism at times. Those temporary attacks of abstraction and his frequent stopping in the midst of a sentence are very much like petit mal. Consider in this light the latter period of his history, when observed by us. His wandering to Greensburg, awaking there unconscious of how he had come, his mind a perfect blank concerning the five or six hours which had preceded; this is similar to what we observe in procursive epilepsy. His second wandering, no knowledge of his whereabouts for the last eight weeks having been obtained, might be the result of another alteration in personality similar to what had happened before in his history.

Consciousness is not a simple matter; in fact, we do not have a single consciousness, but states of consciousness, just as we do not have a will but volitions. It must not be supposed that we can sharply divide organic from psychic memory. All stages of transition exist, from the purely subconscious to the conscious. With Mr. W. we seem to have a sudden transition, due to cerebral shock, with just as sudden a change to his primitive memory, after a lapse of seventeen years. This was almost a complete change from conscious to subconscious memory. But it is extremely probable that he presented transient changes in the intervals, so slight in intensity, so short in duration, that he was not cognizant of them, except, as in dreams, for the time being.

HYPOTHESES.

Two hypotheses have been given to show the cause of such amnesias: 1, "the registration of anterior states being effaced;" 2, "the conservation of anterior states persisting, their power of revivification by association with the present being destroyed." Mr. W.'s case seems to show the truth of the latter hypothesis. If the registration of anterior states were effaced, would they so suddenly recur after a lapse of seventeen years? Is it not more probable that they were suddenly revivified by being associated in some way with the present and the memory of the seventeen years at the same time becoming disassociated? We see that the semi-organic memories, i. e., speaking, walking, etc., remained intact, they were permanent, automatic, while personal impressions were entirely inhibited. In his case they were not destroyed but were simply suspended, as they returned in full intensity after an absence from consciousness of seventeen years. This is what is called by Sidis a dissociation of moments of consciousness. It is according to his views a dissociation, not of individual cells where impressions are supposed to be stored, but of the cellular groups or memory as we all know is not a simple state but a very complex one. We have in addition to this dissociation, a disaggregation of the cells, a breaking up of cellular complexes.

Amnesia has also been explained physiologically in accordance with the neuron theory. The cells which are joined by their terminal processes unite to form groups, then systems, communities, clusters and constellations. The more complex these associations are the more unstable it is. When amnesia is complete we have a retraction of terminals and of fibers down to the final ones in the nerve cell itself. This hypothesis, founded on the retraction theory of the neuron, not yet proven itself, must wait before it can be accepted. In fact, we have no adequate explanation of these processes.

No one has proven that cells receive and store impressions. We accept the hypothesis of idea-association centers on the path between the sensorial gateways and the motor centers, without it having been proven, though from the destruction of certain parts of the brain causing aphasia and the like, we are almost warranted in doing so. Many of us believe in the vibratory theory concerning the receiving of impressions, but the fact remains that the exact nature of these processes remain unknown and perhaps unknowable. Wernicke's recent hypothesis and his sejunctive state, which figures in it so prominently, is also ingenious but not conclusive.

Attempts were made to study Mr. W.'s psychic processes during the time that he was under observation, but with no results. His dreams never revealed anything of his past, forgotten life, and his entire waking period was dominated by the fear that his strange experience would lead to his incarceration in an insane asylum. Attempts to suggest to him proved unavailing, yet his mental equipoise was increasing, calm was succeeding anxiety, and his weight had increased eight pounds in six weeks. Then he suddenly vanished from all the life he had known.[1]

1. Later.—September 2, 1901, Mr. W. came back to Pittsburg.

DISCUSSION.

DR. T. D. CROTHERS, Hartford, Conn.—This is one of the very rare and unusual cases we sometimes hear of, and it has been studied with a great deal of care. These patients are examples of a subconscious state, and offer a promising basis for new fields of study. They furnish the outline of a new phase of psychologic study which will receive more attention in the future than it has in the past. Dr. Mayer's case is a phenomenal one in many particulars.

DR. J. H. MCBRIDE, Los Angeles, Cal.—Pennsylvania seems to be a paradise for cases of this order. In the Mary Reynolds case reported by Weir Mitchell there was a number of times in a long life a complete amnesia of her previous personal history, with the development of a new and different consciousness, during which a restless and aggressive personality took the place of the former quiet and retiring one. The case of the clergyman Ansel Bourne, of Rhode Island, is interesting in this connection. He disappeared suddenly, and some months later was found running a little shop in a village in Pennsylvania, to which state he went when his old consciousness was so suddenly swept away. While in Pennsylvania he seems to have had no recollection of his home, family or previous life, but very suddenly one day his old consciousness returned to him and he was greatly alarmed to find himself in strange surroundings. Professor James hypnotized him and reproduced the amnesic state, and while hypnotized he failed to recognize his wife and friends and could not recall his name or residence.

DR. C. EUGENE RIGGS, St. Paul—About five years ago at the Salpêtrière, I had my attention called to a case of dual consciousness which had existed practically during the life of the patient. At certain times she was an ignorant and uncultured woman; at others she was educated and refined. These two striking contrasts in her mental condition were very interesting. Some years ago one of my medical friends in this city sent me a case of nocturnal epilepsy. The patient was a commercial traveler who spent most of his time on the road. After one of these epileptic attacks he would go from town to town, take orders from his customers, write letters to his firm, and yet be absolutely unconscious afterwards of what he had done, nor were those with whom he came in contact during one of these spells aware that he was not in his normal condition.

DR. HAROLD N. MOYER, Chicago—We have recently had in Chicago a case strikingly similar to the one described by Dr. Mayer. Unfortunately, we were not able to get the early history of the patient. About three or four years ago she had a sickness, the nature of which I was not able to learn, and upon her recovery there was complete loss of memory for a period of about four years preceding her illness. When I saw her she had no recollection of the last eight years of her life. It was found impossible to re-educate her, as she was utterly incapable of registering impressions for a period longer than a few seconds. Her mental condition corresponded perfectly to what you would expect from a person who had lost the power of registering mental impressions. Her reasoning powers were not affected only in so far as she was unable to register impressions and retain them.

DR. W. A. JONES, Minneapolis—Dr. Mayer's paper has recalled two or three cases that have come under my observation. The first case occurred in London, and it was looked upon as one of those cases of mysterious disappearance. The man disappeared from home, assumed another name, engaged in another occupation, and after a number of months returned. He was unable to recall anything that had occurred during his absence from home. Dr. Ferrier regarded it as a case of epilepsy of a peculiar type. A man in Omaha, with a neurotic family history, suddenly left home, and when he regained his former mental condition, which was several months afterwards, he found himself at work in a lumber-yard. His hands showed the effects of hard labor. Subsequently, he became an Eddyite lecturer, and he continued at this work until he had trouble with his board of managers. He has since renounced Eddyism and gone back to his original business. A young man in Minnesota suddenly left home. He found himself on a steamer in mid-ocean. Subsequently, he borrowed a large sum of money, which he spent in London, and returned home. He was then sent to a hospital for the insane, where he is still an inmate.

I recall a man coming from Iowa who was supposed to have epilepsy. He suffered from attacks of temporary unconsciousness, which he described as coming on with a peculiar sensation; his head apparently was lifted from the shoulders, and he could watch it as it gradually disappeared. Following this sensation, he had periods of partial consciousness lasting for hours or days. Suddenly his head would appear as a speck in the distance and gradually approach and settle on his shoulders, and then he returned to his normal state. We subsequently discovered that this man was under indictment in Iowa for having made away with a large sum of money, and that he had left town to escape arrest. In some of these cases it is pretty difficult to decide whether the person is suffering from an improperly received and improperly discharged impression, or whether he is an example of a peculiar type of degenerate, and is clever enough to assume these abnormal conditions. Some of these cases are no doubt genuine, while others are open to question.

DR. F. SAVARY PEARCE, Philadelphia—Last year, while investigating the subject of deaf-mutism, I saw a report that a man in Pittsburg who had been deaf for a long time had had his hearing suddenly restored. In order to verify the report, I sent an inquiry to the editor of the *Pennsylvania Medical Journal* (See August, 1900, issue), and was informed that a man, 69 years of age, who since twelve years of age had been a deaf-mute following ear disease; had fallen from a ladder and sustained a slight shock. Shortly after this he began to speak well and intelligently and his hearing was restored in one ear. The question arises whether he had been malingering all these years. Since then I have seen the same case reported in the January, 1901, Number of the *American Annals of the Deaf* by a layman. The man is no longer a deaf-mute. This whole subject again brings up the theory of the possible motile activity of the neurons. Usually an injury forms part of the history of these singular cases, and there is no doubt that injuries frequently cause great disturbance in the nervous system, whether we understand the mechanism of the changes that occur or not. The so-called neuron theory will satisfactorily explain away normal association and co-ordination of nerve force; and certainly offers a beautiful explanation of the phenomena cited to-day, i. e., some forms of amnesiæ, certain double conscious states, and restored hearing and speech as in the case I mention.

DR. EDWARD E. MAYER, in reply—Many of the cases cited by the gentlemen who took part in the discussion seemed to be

His wife had gone to the Union Station to seek work as a car-cleaner, having had difficulty in supporting herself after their savings had gone. There she met a man who had just stepped off a train. He held out a piece of paper and asked her if she could direct him to the address. It was one of my letterheads, which he had found in his pocket. She then recognized him and took him home. He had left home on the 9th of April. Upon the 11th, he found himself in a hotel in Wheeling, W. Va., was asked to register and, confused, wrote down a name, which he retained till his return. His own name and all recollection of the past were forgotten. He wandered around, found work as a painter, and at last determined to seek me out and try to find out who he was. His employers dissuaded him from leaving for some weeks, he claims, after finding my address in his pocket. He is depressed and moody, reticent and suspicious, does not recognize me and refuses to allow me to examine or interrogate him. Formerly he was friendly and loquacious. Since he has returned home (till November 4) he has had three attacks, in which he feels dazed, like he was walking on air, voices appear muffled to him, and he says that he does not feel like the same man at those times. This condition lasts about two days, but does not prevent him from working (painting). He has a constant headache and looks badly. Is much emaciated, restless, and very downcast. His wife is worried at his statements, but does not notice anything wrong. His memory is as it was before he left, but he does not remember what happened from April 9 to 11. This looks very much like a phase of epilepsy, but I have not seen any of these attacks myself, and only have his statements of them. He refuses to see me or any other physician and further questioning by me at his home elicited nothing additional to what is noted above.

true examples of ambulatory epilepsy or somnambulism, and not, properly speaking, cases of localized amnesia. In my case the length of the period of amnesia, namely, seventeen years, is remarkable, as well as the sudden onset from a severe psychic shock with the sudden return of his original conscious memory. This seventeen years' lapse was in my mind not epileptic. Suggestion was tried upon him in all different ways, with no result in bringing out any details. In answer to Dr. Crothers, I would say that all memory of his previous occupations had been entirely lost.

THE TREATMENT OF FRACTURES OF THE FEMUR WITH THE AMBULATORY PNEUMATIC SPLINT.*

WALTER B. METCALF, M.D.
CHICAGO.

The treatment of fractures of the femur has from time immemorial been an ungovernable condition, never fully under the control of the surgeon. The condition has been a source of anxiety to the surgeon and not an infrequent source of deformity to the patient. The injury has invariably resulted in shortening, which varied in amount from three-fourths of an inch to three and one-half inches, and in rare cases even more, with an average disability of twelve weeks' being the time offered by the Standard Accident Insurance Company as a cash settlement at the time of the accident. Heilfrich, in his book on fractures published in 1900, gives an average time for healing as thirteen and one-half months, with 34 per cent. able to work and 66 per cent. unable to work. In view of these facts I report the following case:

April 6, 1901, Mr. A. G. B., age 34, married, weight 205 pounds, height 6 feet and 1 inch, sustained a fracture of the left femur while bowling, caused by muscular contraction in the effort to throw the ball. The fracture was complete, there being free mobility at the point of injury. Little care was used in moving him to his home, and as a result the tissues surrounding the fracture were very much mutilated. The ecchymosis and extravasation that followed involved the limb from below the knee to the crest of the ilium. Forty-eight hours after the accident the circumference of the injured limb at the junction of the middle and upper third was fourteen inches more than the right one at the same point. The amount of fluid at this time about the knee joint was enormous. In fact, the whole picture of the injured limb at this time was of as severe an injury as I have ever seen of a thigh, barring one requiring an amputation. Dr. Buford, who examined the limb at this time, confirmed the severity of the injury. On the third day after the accident, with the assistance of Dr. J. G. Hughes, a pneumatic splint was applied. the limb was measured and showed one and one-half inches of shortening. It was impossible at this time to get complete extension because of the great swelling. A gentle massage of the limb was kept up at frequent intervals; which was easily done while the splint was on. By the fifth day the swelling had subsided enough so that the foot was brought down in perfect position.

Twenty-four hours after the application of the splint, the patient was free from pain, and could move himself about in bed with perfect ease. Two weeks after the application of the splint he was about the house. The next week he was going about the street, and in less than four weeks after the application of the splint he was at his office; he was sleeping without his splint, and was able to get into a bath-tub unassisted. Measurements made by Dr. W. H. Vary, Dr. J. G. Hughes, Dr. Ochsner and the author, show that there is no shortening in the injured limb.

The following advantages are gained from experience with the pneumatic splint: 1. It can be applied without assistance. 2. Fractures can be reduced without an anesthetic. 3. Patient can move about freely in bed, after its application. 4. Gives free access to compound fractures without removal of splint. 5. Reduces the time of disability over one-half by American report. 6. Prevents shortening. 7. Prevents angular deformity. 8. Changes our pathology. 9. No complete circular constriction to impair the blood supply to the limb. 10. Massage can be given to the entire limb without removing the splint.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: W. J. Mayo, H. O. Walker, and A. J. Ochsner.

REMARKS ON THE TRAUMATIC NEUROSES.

HUGH T. PATRICK, M.D.
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CHICAGO.

I think we are agreed in understanding traumatic neuroses to mean functional disturbance of the nervous system caused by traumatism. In the present state of society this traumatism is generally accidental. We are doubtless also agreed that in the symptomatology of the traumatic neuroses there is nothing pathognomonic of injury by violence and that a case of traumatic neurosis generally presents a picture of hysteria, neurasthenia or hypochondria, or, what is more frequent, a combination of two or all three of these neuroses. A certain admixture of melancholia is far from rare.

In the diagnosis of any neurosis the most essential step is not the recognition of a neurosis, but the exclusion of organic disease. For this a single examination will not always suffice, as a combination of the two is very common, and the former may so obscure the latter as to make its prompt and positive recognition impossible. Sometimes it is exceedingly easy. When organic change is undeniably present, it is still important to determine the presence of functional trouble, as this must necessarily have great influence on prognosis and treatment.

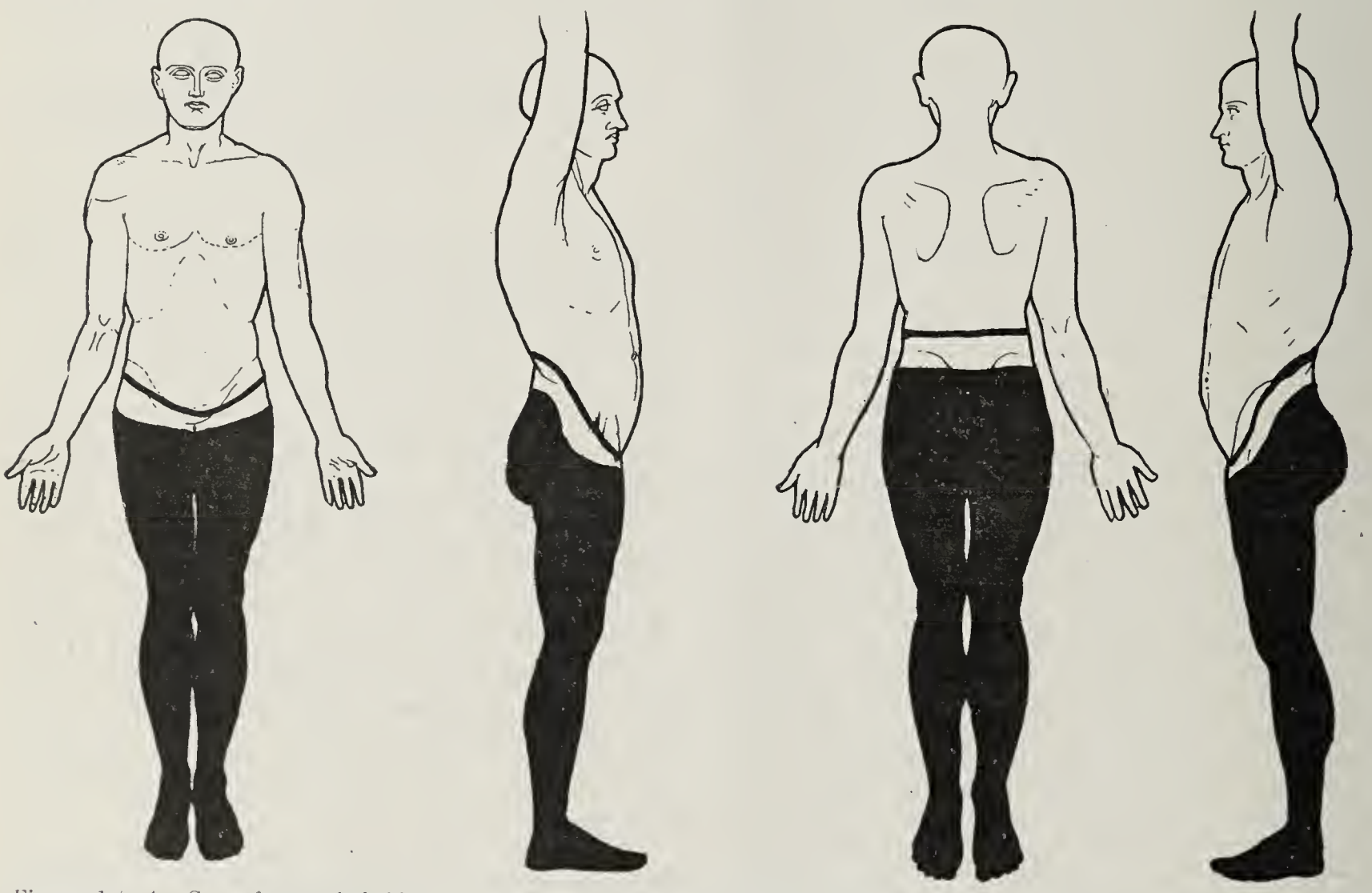
In my experience incorrect diagnoses are ordinarily made because of failure to recognize: 1, that pain, tenderness, paresis or paralysis, hyperesthesia, anesthesia, incoördination, tremor, dizziness, tachycardia, syncopal attacks, vomiting, loss of weight even to emaciation, impaired speech, convulsions and poor vision, are not necessarily indications of organic disease, no matter how continuous or how long continued the symptoms may be; or 2, that atrophy, reaction of degeneration, incontinence of urine or feces, retention of urine (generally), loss of deep reflexes, bedsores, Babinski's sign, ocular or facial paralysis, optic atrophy or neuritis, hemianopia, glossy skin, rapid (five or six per second) and uniform ankle clonus, impaired pupillary reaction, semi-erection of penis, and anesthesia corresponding exactly to a peripheral nerve or spinal segment, indicate organic disease.

In addition, it may be remarked that the nature and general extent of an accident, presence, absence or location of external lesions and even the duration of unconsciousness are most unreliable data upon which to base a diagnosis.

There are certain symptoms which demonstrate beyond a peradventure the presence of functional disease. They are, on the whole, such signs as belong to hysteria, the symptoms of neurasthenia and hypochondria being so purely subjective as not to be demonstrative. The catalogue of these distinctive traits is rather long and I shall take time to speak of only two, as they may be elicited at a single examination and their purport grasped even by a layman.

1. The anesthesia or hyperesthesia of a traumatic neurosis may ordinarily be shown to be limited by a sharply-cut border. On anatomical grounds this is impossible in organic affections. The distribution of one sensory nerve always encroaches upon the territory of the adjoining nerves. Obviously, then, when sensory nerves are paralyzed, the transition from anesthetic to normal area will be more or less gradual. This overlapping of sensory supply applies even to the two halves of the body, the nerve filaments of one side crossing the median line a short distance. Hence, in hemianesthesia from organic disease, some impairment of sensation is demonstrable beyond the middle line, while, on the anesthetic side, sensation is better close to the median line. In nearly every organic case it is impossible to determine exactly where anesthesia ends and normal sensation begins. In functional disease, the distance between complete anesthesia or analgesia and normal sensation is often no more than 1/16 or 1/32 of an inch. To bring this out, considerable care and patience are sometimes necessary, but, once demonstrated, the proof of functional disease is conclusive. Naturally, the patient must not see the procedure. The best way is to touch or prick alternately the anesthetic (or analgesic) area and the normal surface, at first wide of the dividing line, then closer, finally narrowing the distance down to the minimum. It is astonishing how close a pin prick which is not felt at all may be to a line where sensation is perfect. The demonstration is often facilitated by a little suggestion; for instance, using throughout the examination the expressions "up there" and "down here," or "over there" and "over here" to convey to the patient the idea that the pricks or touches are considerably separated, even when they have become very close together.

2. The line of demarcation between normal sensation and anesthesia rapidly shifts. This demonstration also requires a little care. The border line having been definitely determined (of course, unseen by the patient), it is lightly marked with a pencil, and the examiner directs his attention elsewhere—to heart, lungs, eyes, etc., for five or ten minutes. He then returns to the anesthetic region, the patient still blindfolded, and repeats the former examination for determining the limit of the area. Or he may locate it by simply approaching it by slow, successive touches or pricks rather close together. The dividing line will still be found to be sharply defined, but to have moved one to six inches from its former location. Evidently such shifting can occur only in functional disease. Figures 1 to 10 are taken from illustrative cases.

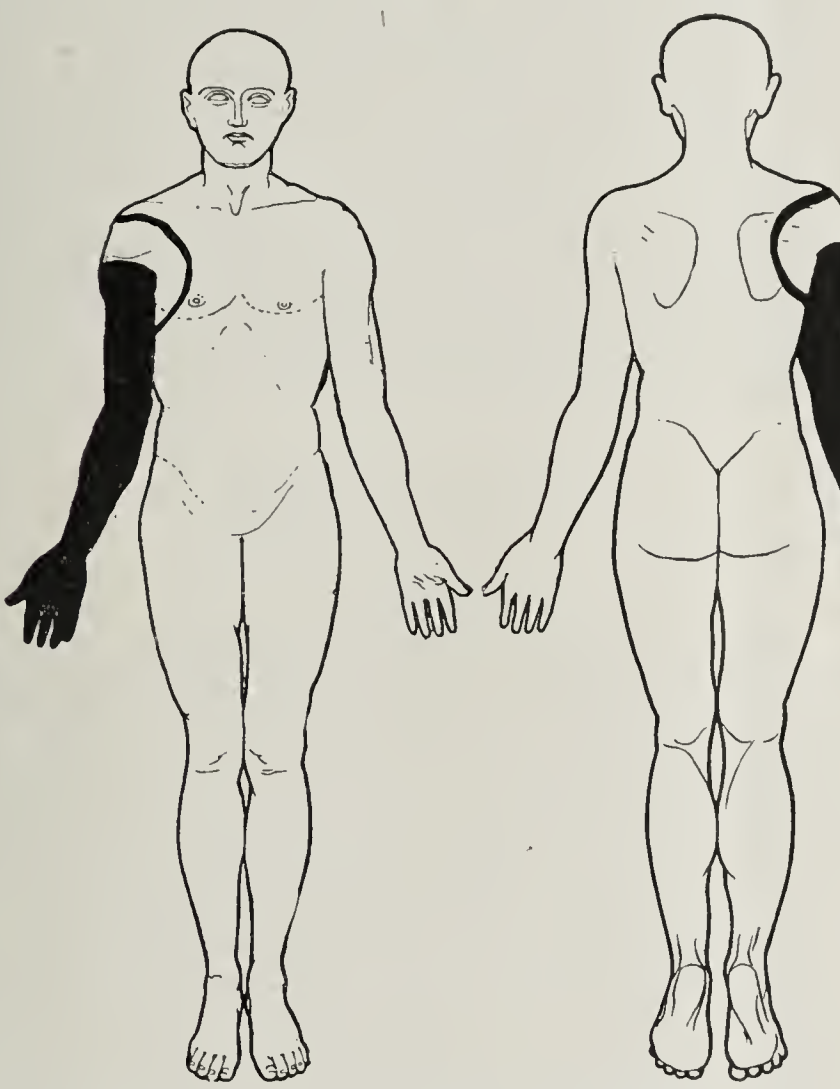


Figures 1 to 4.—Case of general shaking up and bruise of back in railway accident. Black indicates area of complete anesthesia and analgesia. Line indicates extent to which border shifted within ten minutes.

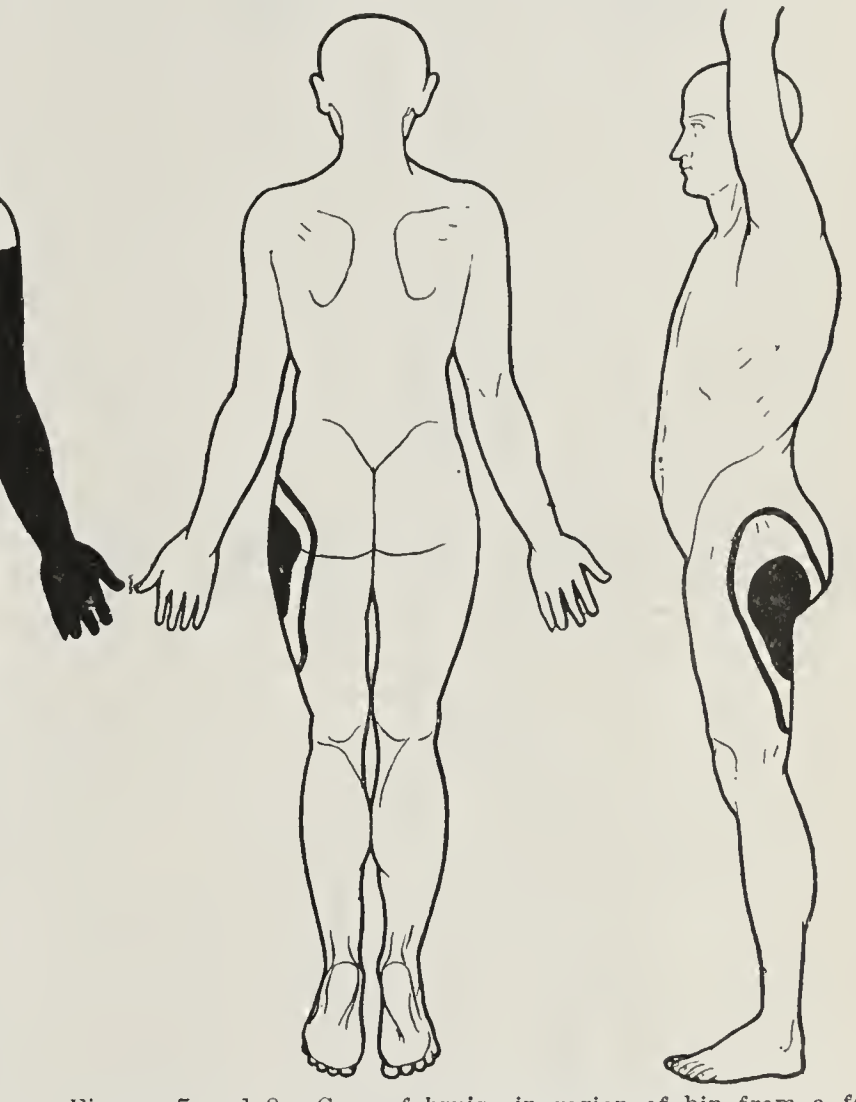
As before stated, these two striking traits of functional sensory disorder pertain to hyperesthesia as well as anesthesia and are particularly useful in the examination of the tender backs or spines so very frequent after accidents. The tender spot or the extent of a tender stretch is exactly located, defined and marked. After ten minutes or more the back is re-examined. The observer begins at the upper or lower end of the spinal column and with a finger or rubber-tipped pencil, progresses downward or upward, as the case may be, pressing successively over the spinous processes as he proceeds. In due time he reaches the tender ones, but they are not where they were. That is, they are not the same ones.

Let us suppose that the first time the 8th, 9th and 10th dorsal spines were tender; it will now be the 6th, 7th and 8th, or the 10th, 11th and 12th. Sometimes the shifting is much greater than this. In any event, it shows that the tenderness is purely functional and not caused by injury of the spinal cord, membranes, nerve roots, vertebræ or ligaments.

I can not too earnestly insist upon the importance of an early and positive diagnosis, because then may be early instituted the correct treatment. Prompt and proper treatment is quite as important in functional as in organic cases. A traumatic neurosis is never produced complete and at once by an accident. It were as natural for people to be born like Athene springing from the head of Jove perfect in the plenitude of her powers. Hysteria is never born—it develops; neurasthenia can not be produced in a day; hypochondria is a thing of growth, and a traumatic neurosis is always the product of evolution. Once evolved, it is a hard-grained disease, difficult to manage and often of serious prognosis, but if detected in the germ the growth may be effectually checked and the patient saved years of suffering.



Figures 5 and 6.—Case of injury to arm by machinery. Black indicates anesthesia, and line the extent to which it shifted during examination.



Figures 7 and 8.—Case of bruise in region of hip from a fall. Black indicates area of hyperesthesia; the line shows border of hyperesthetic area a few minutes later.

The mere fact of accident or injury never of itself causes a neurosis—be the injury of whatsoever part of the body, and be it fracture, dislocation, laceration, burn, scald, scratch, contusion, hemorrhage, strain, sprain, electric shock, or that much abused, indeterminate derangement called concussion. To the physical ictus of a traumatism is nearly always added a simultaneous mental shock, but of vastly greater effect than this are a thousand and one autopsychic and heteropsychic influences. Nothing short of painstaking study will reveal the countless multitude and immeasurable effect of these little forces. To a well-balanced and normally indifferent person it is almost incredible how often and how intensely one of these patients will repeat to himself the possible consequences of a trifling injury; how he will review all the minutiæ connected with the accident and as minutely scan the future; how he will scrutinize, classify, analyze and synthetize his symptoms. Equally remarkable is the weight he gives to the opinions and advice of his lay friends, and even to the literature of almanac and quack advertiser. Not at all remarkable is the importance attached to the dictum of his physician, but most remarkable is the fact that all his observations, all that he hears and all his conclusions tend to make him worse and to convince him of the gravity of his condition. All this, slowly or rapidly, in accordance with his plasticity, educates him into an abnormal condition. Pretty soon this process of educational evolution becomes automatic, subconscious if you please, and with this stage is already reached the stage of difficult treatment. When the patient says, and thinks, that he has got the accident pretty well out of his mind, that he is trying to "throw it off," that it might have been worse; when he tends to make light of some of his symptoms, but always mentions them; when he makes strenuous efforts to overcome trifles; when he settles into a cheerful resignation; when he does these things but fails to improve, we may be sure that in his innermost consciousness the conception of irreparable injury is ever with him and is slowly crystallizing him into a state of invalidism.

In this connection I need only mention the diabolical effects of litigation, particularly deferred or prolonged litigation. Not only is the patient compelled to specify every pain, distress and disability, and to do this repeatedly, but he must hear the recital of witnesses as to the dire disaster and its deplorable effect upon him. Under the circumstances it is only human nature to emphasize, not to say exaggerate, all symptoms. Furthermore,

he, his friends and lawyers instinctively combat any circumstance or statement tending to minimize his suffering. And finally, he is taught and teaches himself to look upon the future as one long valley of the shadow of death, ending only in death itself, for on the blackness of the future depends the brightness of the verdict.

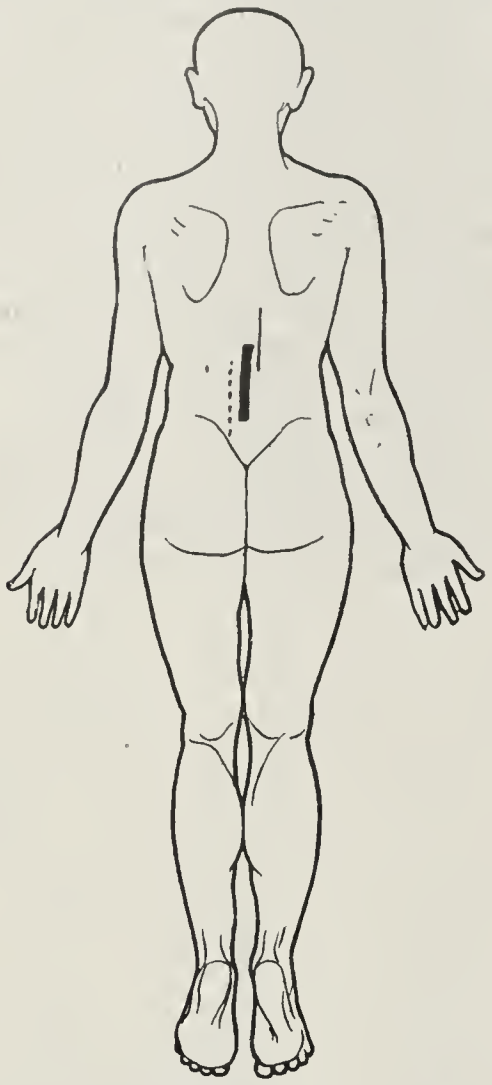


Figure 9.—Case of general bruising—thrown from buggy by collision. Heavy line indicates tenderness along spine. Light line indicates same when examined from below upward; dotted line when examined from above downward. Light and dotted lines are to be thought of as occupying the median line.

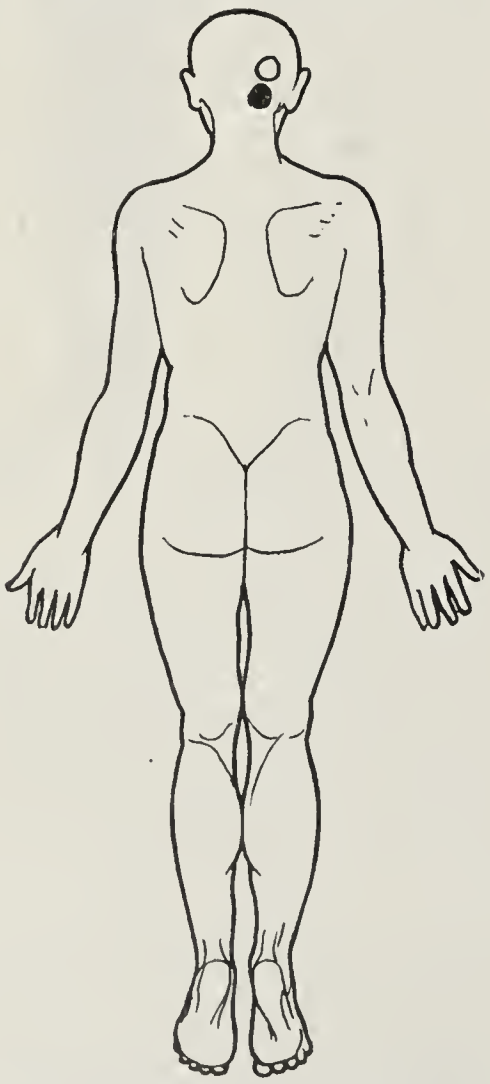


Figure 10.—Case of railway accident. Black spot indicates location of excessive tenderness, circle shows place to which it shifted within a few minutes.

How important, then, is the prophylactic treatment of these poor people. They are to be protected from ignorant doctors, foolish friends, designing lawyers and their susceptible selves. It is our duty—since it is generally within our power—to give them this protection; protection from ignorance by being not ignorant; protection from friends, first by perfectly understanding the case, then by clear and positive statements to the patient, and, last, by preventing or combating the officious suggestions of meddlesome well-meaners; protection from litigation by promoting prompt and definite settlement; protection from the patient himself by getting him out and at work as soon as possible, by begetting a wholesome and cheerful frame of mind and by getting the accident and all that pertained to it completely out of his life.

Because of the foregoing, in every case in which the question of "damages" arises or the possibility of litigation is present, the physician should advise both sides alike to make an immediate and final settlement.

A consideration of the treatment of the fully developed neuroses would carry me quite beyond a reasonable time limit. The proper methods to be employed may readily be inferred from the foregoing remarks and from our knowledge of the best means of handling the fundamental neuroses, but the successful employment of these methods requires the utmost tact, patience and energy—in short, the finest of medical technique.

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NOTES ON SMALLPOX.

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WHEELING, W. VA.

I can not believe that there are many physicians who any longer entertain a doubt as to the genuineness of the mild smallpox that has prevailed to so general an extent during the past two years. The many valuable papers on this subject recently printed in THE JOURNAL should convince even Dr. Happel, whom we may honor as the leader of the doubters, and whose papers have no doubt led many inexperienced physicians into error.

Having served for eleven years as Health Officer of Wheeling, and observed several hundred cases of smallpox of every possible variety, and through a period of nearly thirty years, I wish to give my opinion, in the most emphatic way possible, that our recent smallpox, of which this city has had about eighty cases, was no new disease. In every outbreak of smallpox extremely mild cases occur, cases that are atypical and calculated to deceive physicians of limited experience. In the recent epidemic there occurred very many such cases, very few typical ones, and some unusual varieties, which defied positive diagnosis by the most experienced, unless watched closely for days. In my experience these most resembled varicella; but whereas the vesicles of varicella dry up in four or five days at most, that of even these mildest cases of smallpox ran a course at least twice as long.

Last November smallpox was brought to this city by colored convalescents from an infected camp of men working on a new railroad near Clarksburg. Within a few days fourteen colored men were taken down with it, all of whom contracted it from the same origin, in a saloon and gambling room conducted by a colored man, and patronized almost exclusively by colored men. All

were treated by me in the Municipal Hospital. Not one had ever been vaccinated, and yet there were all grades of severity exhibited. One man was in the hospital but six days, and was dismissed within ten days of the first appearance of the eruption, not having more than twenty vesicles on his whole person. Had this been an isolated case no physician could possibly have made a positive diagnosis, unless the history should have determined it. Yet in this same group of cases there was a confluent case, with a temperature of 108.5°, observed by myself at 4 p. m., and by the nurse at 8 p. m., taken in the mouth with a thermometer whose correctness I have verified. This patient recovered. Later I had a hemorrhagic case, which recovered. Were these last two cases variola vera? Even Dr. Happel would say, "Yes." So, therefore, were all the others, which represented all degrees of severity, although nearly all were very mild.

How was it in other localities? Called 70 miles away to determine the nature of an eruptive disease in an infant, I found a well-marked case of smallpox concerning which two physicians had differed; one called it chicken-pox, which it in no way resembled. A week later it proved fatal, and both parents contracted smallpox.

Dr. A. Wilson and myself were called to a mining town in Ohio, to determine a dispute between physicians and advise concerning an outbreak of an eruptive disease. We were taken to the house of one miner lying dead, after an illness of but three or four days. The appearance of the body and the history of the case left no doubt that the man had died of malignant smallpox. On the street we met another miner, just from his work in the mines, with an abundant variolous eruption, at about the tenth or eleventh day, and yet never ill enough to stop work for a single day. We found that fifteen cases had occurred, a number of the patients adults, and all had passed as varicella until a death aroused suspicions. Did the dead man have variola vera and all the remainder have varicella? A number of these cases were typical in appearance, although quite mild. In over thirty years' practice I have seen but one case of chicken-pox in an adult. I therefore hold that any acute eruptive disease in the adult that in any way resembles either chicken-pox or smallpox, should receive the same sanitary care as the latter disease, until its true nature is determined by close observation and time.

My observations here lead me to the conclusion that but little infection attends these very mild cases of smallpox. The primary fever is mild, sometimes passing unobserved; the secondary fever is often absent, and in many cases the eruption is very sparse, and it dries up without passing through the usual stages. As a consequence, a patient is less apt than in severe cases to convey the disease to exposed persons. Otherwise this city must have had hundreds of cases, for a number of patients strolled through our streets, frequenting saloons and other crowded resorts, for two to ten days after the eruption appeared. One man slept in a family of five, three of whom were unvaccinated children, for eleven days after the appearance of the eruption, and spent every evening at a social club-house. Not a single case resulted. One colored barber shaved his patrons for two days, and another for five days after the eruption appeared, and no case resulted. It is scarcely possible that all persons thus exposed had been vaccinated.

Only one of my patients made any claim to having been vaccinated, and I found no evidence of it in this case, one of my worst, which was in the hospital four weeks.

But one death in 76 cases occurred, and this patient was an infant. Why were the cases so mild? Dr. Hyde, in his paper in *Popular Science Monthy,* expresses the belief that the mildness of the cases in our recent epidemic was due to an immunity acquired by our people by inheritance, several past generations having been vaccinated. His own language is: "When it (the smallpox) gathered to itself the added power by which it was enabled to spread from community to community, its extension was not through a population virgin of protection by previous vaccination, or the children of the vaccinated." That a degree of immunity may be conferred by inheritance I am not prepared to deny, although this theory would be difficult to prove. The facts in reference to our recent epidemic can not be correctly held to support it in any way. After this smallpox entered the country from Cuba, it extended rapidly through the former slave-holding states, attacking chiefly the colored race, many thousands of whom were its subjects. These colored people in this city and state, and I think all through the South, are emphatically "virgin of protection by previous vaccination." Neither the present nor past generations of them have been vaccinated at all generally, and hence there was no modifying influence by inheritance. And yet, so far as my personal observation extended, the cases were quite as mild in the colored race as in the white. My very mildest case was in an unvaccinated black man.

Again, if there has recently been any such modifying influence by inheritance, as Dr. Hyde claims, it should have shown itself just as distinctly five or more years ago. But such was not the case. In 1895 and 1896 nearly 300 cases of smallpox occurred in this city and vicinity, but the cases were by no means of such mild type as those recently observed, and quite a number of deaths occurred.

No one has yet satisfactorily accounted for the mildness of our recent cases of variola. Has any explanation been presented of the recent mildness of typhoid fever, diphtheria and scarlatina? I am quite sure that none of these diseases occurs in this locality with the same virulence as in former years. No inherited modifying influence can account for this fact, and I think we will have to search further before we can explain why our late smallpox has been so mild.

As a sanitary officer, I have encountered much opposition to vaccination, not a few parents withdrawing their children from the public schools rather than have them vaccinated. In view of this fact, which is true of every community, and considering the very little suffering and very low mortality from smallpox at present, I have very seriously doubted the wisdom of communities going to great trouble and expense in the sanitary care of this disease, virtually to protect a limited number of ignorant or bigoted persons. The mortality has been nowhere greater than 2 per cent., which is much less than that of whooping cough, the suffering from which also is so great. We can do little, and we actually do nothing, to limit the spread of the latter. Why interfere with the former, against which each family can with certainty protect itself by vaccination?

Permanganate Treatment of Noma.—A. A. Kissel reports most encouraging success with local treatment of noma, supplemented by exceptionally nourishing food and strict hygienic measures. The lesion is curetted and then irrigated with a hot solution of potassium permanganate, concluding by dusting with iodoform. His statistics published in *Khirourgia,* x, 56, confirm the benefits of this treatment.

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A QUESTION OF PRIORITY.

We are reasonably deferential to European medicine in this country, and it may be at times unreasonably so. A few noted advances in surgery have been credited to us, such as anesthesia, certain matters in abdominal surgery, etc., but as a rule only after controversy and the refutation of the assertions of the aggressive European claimants and their partisans. Brown-Séquard used to complain that Germans were constantly rediscovering French contributions to science, and in this country we may with some reason hold all Europe in a like way, as trespassing upon our own preserves of credit for additions to surgical methods and advances. One of the latest of these is to be found in Mr. Buckston Browne's article in the London *Lancet* of November 23, abstracted in this issue, in which he claims suprapubic prostatectomy as peculiarly a British contribution to surgery and gives all the credit of its origination and introduction to a British surgeon, McGill, suggesting, therefore, that it be henceforth called by his name. A review of the history of the operation shows that the removal of a prostatic obstruction to urination in an elderly man through a suprapubic incision was first performed by Dittel in Vienna in 1885, though several years earlier Billroth had removed a large myoma from the bladder of a boy by the same route. Dittel's incision was made for drainage, not for prostatectomy; the operation was not repeated by Dittel, though he did on subsequent occasions "decapitate" a middle lobe as an incident in suprapubic lithotomy. Dittel's patient died on the seventh day.

Belfield of Chicago attacked the prostate through a perineal incision in 1885; at the autopsy of a case successfully operated seven months earlier, he found that the obstruction was a tumor which could have been readily removed by suprapubic cystotomy—a fact which, he says, "induced the adoption of that incision in subsequent operations." Accordingly in June, 1886, and again in October of that year, he made a suprapubic cystotomy for the purpose of removing prostatic obstacles to urination, making a complete success in the second patient. These were unquestionably the first suprapubic prostatectomies ever planned; both were executed and recorded in society transactions[1] before the operation had been performed by anyone else, excepting only the Dittel case above mentioned.

In September, 1886, Kummell in Hamburg attempted to destroy prostatic outgrowths by sinking the cautery into them, operating through a suprapubic incision; and some months later he removed a prostatic tumor by the same route. McGill in Leeds made his first suprapubic prostatectomy in April, 1887, removing a tumor as large as a bean; upon his experience with three cases, he advised the operation as a routine measure—advice which Belfield refrained from giving. Belfield, however, stated that the suprapubic incision was often insufficient and advised the addition of the perineal boutonnière as a means of access to the prostate.

The work of McGill and his colleagues at the Leeds Infirmary was certainly the chief agency in calling the attention of surgeons to the feasibility of suprapubic prostatectomy. But when Mr. Buckston Browne calls it an "English operation" and "McGill's operation" he appears as an attorney urging a partisan argument rather than as the recorder of surgical progress. The operation was first advised, deliberately planned, and successfully executed by Belfield of Chicago and as the logical result of previous experience in perineal prostatectomy.

There are good reasons against the application of the names of individuals to a special operation or disease, not the least of which is the multiplication of synonyms which it entails through national or local pride. Some disorders like exophthalmic goiter thus carry three or four names in as many different countries. With this general objection there is a special one of injustice in attaching the name of McGill to the suprapubic operation of prostatectomy. If the operation must have a name it should be that of Belfield, who rationally conceived, carried out and published the method before anyone else. Dittel's operation was an accident.

1. Med. Rec., Aug. 21, 1886: and JOURNAL A. M. A., March 12, 1887.

ON THE EXISTENCE OF PATHOGENIC AGENTS TOO SMALL TO BE SEEN.

Studying a destructive epidemic disease among chickens, Lode and Gruber[1] of Innsbruck made the observation, which was confirmed by frequent repetition, that the specific cause, whatever its nature may be, passes through Berkefeld or Chamberland filters. Filters of this kind, it is well known, keep back all bacteria that are visible with our present means of magnifying microscopic organisms. A few years ago Loeffler and Frosh showed that the virus of foot and mouth disease also passes through such filters, the filtrates being virulent. Recently Beijerinck has demonstrated that the cause of a disease that produces spots on tobacco leaves is a contagium that passes through porcelain filters. In these interesting cases two possibilities have been considered: Either the apparently sterile filtrate contains in solution an unusually active poison or the unknown agent is so small that it passes through the pores of a filter that retains the smallest visible known

1. Centralbl. f. Bacteriologie, 1901, xxx, 593-604.

bacteria. The first possibility seems to be excluded in the case of the disease described by Lode and Gruber because of the repeated reproduction of the disease experimentally in a series of animals, indicating that the cause is one capable of multiplication. Here at least the assumption that the agent is so minute as to pass through the pores of the filters seems the more reasonable. Abbe of Jena has calculated that elements only one-tenth to one-fifth times smaller than the smallest known bacterium, the bacillus of influenza, fall below the range of visibility with the most perfectly constructed apparatus for magnification now made. As pointed out by Lode and Gruber, this second assumption is not free from difficulties. The pores of the filters are in reality much larger than the bodies held back. The real factor at work is attraction, and it seems peculiar that it should fail to operate when the limits of the visible is reached.

If there are several pathogenic organisms that possess the power of passing through porcelain and similar filters, it would be quite reasonable to assume that there exist in nature innumerable saprophytic and other forms of similar character. But of such forms we know absolutely nothing, although it might be expected that they would have made their existence known by the formation of deposits, pigments, gas and other products in the fluids which are passed through the filters and then remain free from bacteria as far as known. If these mysterious serums pass through filters it would seem to indicate that they exist in a different form from that of the ordinary, dense bacterial bodies, perhaps as semifluid protoplasmic masses. Lode and Gruber also suggest that in these instances the virus may be not corporeal in the ordinary sense, but a substance in solution and nevertheless endowed with the power of reproduction, which acts somewhat after the manner of enzymes and is not thereby itself consumed. But it is difficult to comprehend such substances because we are unable to compare them with known analogues. Of course it lies near at hand to offer the suggestion, as has been done before, that other diseases of infectious character but unknown cause, such as syphilis, measles, smallpox and carcinoma, are also caused by organisms which hitherto have escaped observation because they are too small to be seen. The existence of diseases of this character among animals, with which it is comparatively easy to make experiments, will undoubtedly prove to be of great aid in solving the important problems suggested in the foregoing.

THE TOE PHENOMENON OF BABINSKI.

Slight irritation of the sole of the foot is ordinarily followed by plantar flexion of the toes, particularly the four smaller; while with more marked irritation transitory plantar flexion is followed by dorsal extension, particularly in the great toe, associated with flexion of the foot, leg and thigh, and at times also of other muscles. Under certain abnormal conditions it has been found, particularly and earliest by Babinski, that slight irritation of the sole of the foot causes not plantar flexion, but dorsal extension. Under such circumstances lesions of the pyramidal tracts have almost always been found and the symptom has been considered pathognomonic of this condition. The phenomenon has, however, been observed also in connection with epileptic seizures, in cases of strychnin poisoning, in other diseases attended with exaggeration of the reflexes and also in healthy infants; while, on the other hand, it has been found wanting in cases presenting undoubted pyramidal lesions. In explanation of this reflex it has been suggested that, as a result of a lesion of the pyramidal tract, fibers are damaged that normally inhibit the action of the extensors that takes place in association with that of the flexors on irritation of the sole of the foot.

For the purpose of clearing up a number of disputed points in connection with this subject, Dr. Herman Schneider[1] undertook a study of the toe reflex in a large number of cases of various forms of disease of the nervous system and as a result of this investigation he concludes that the normal movements that occur in response to irritation of the sole of the foot are the result of two reflexes, having different seats in the central nervous system. The one, consisting in isolated plantar flexion upon slight irritation, is a cortical reflex, while the other, consisting in dorsal extension of the toes, with combined movement in the leg, on active irritation, is a spinal reflex. Failure of plantar flexion on slight irritation, with dorsal extension of the toes—that is, preservation of the spinal reflex—constitutes the Babinski sign. That this can be induced with much greater facility than normally is invariably dependent upon general exaggeration of the spinal reflexes.

The Babinski sign may be developed by interruption of the pyramidal tract, with resulting abolition of the cortical reflex. This interruption may also take place at the beginning of the tract in the motor cortex, as in cases of epilepsy. Normally, only the varying degrees of irritation necessary for the development of both reflexes allow of their differentiation. If in consequence of general exaggeration of the spinal reflexes—as by strychnin, diseases attended with exaggeration of the reflexes without a pyramidal lesion—or of conditions that increase the difficulty of developing the cortical reflex, such as mental diversion, stupor, edema, the spinal reflex can be developed as easily as the cortical reflex, or more easily, the latter may be suppressed by the dynamic preponderance of the former and appear to be entirely wanting. In this way a typical Babinski sign may be developed in the absence of a lesion of the pyramidal tract, by varying the exciting factors of each reflex. It is not possible to separate with certainty this Babinski sign attended with suppression of the cortical reflex from that associated with destruction of the cor-

1. Berliner Klin. Wochenschrift, 1901, No. 37, p. 946.

tical reflex. It is also not possible in the presence of general exaggeration of the reflexes to make a diagnosis of a pyramidal lesion from the presence of the Babinski sign alone. On the other hand, persistence of this sign without destruction of the cortical reflex is rare; a single plantar flexion in the midst of a series of dorsal extensions excludes a true Babinski sign, and as the true Babinski sign is frequently, almost always, associated with a lesion of the pyramidal tract, the sign can be employed practically as a means of differentiation between the lesions of the pyramidal tract and clinical conditions simulating them.

TYROSINASE, A FERMENT PRODUCING A PIGMENT RESEMBLING MELANIN.

When the freshly drawn juices of certain plants are allowed to stand for a short time exposed to air their color turns to an intense black. It is by such a process as this that the lacquers used in oriental countries are produced. Bertrand found a few years ago that this change in color is due to the action of an oxidizing ferment, laccase, upon a substance that is oxidized with great readiness, laccol, and which is chemically a member of the aromatic series. Laccase has since been shown capable of oxidizing many other aromatic substances. Similar oxidizing ferments seem to be present in many and varied forms of plants, among them the mushrooms. In mushrooms Bertrand found, besides a ferment resembling laccase, one whose oxidizing power was limited to a specific action on tyrosin, and therefore called tyrosinase. Beet roots and the dahlia also contain tyrosinase.

Otto v. Fürth and Hugo Schneider[1] have recently investigated the occurrence of tyrosinase in the animal kingdom, and the relation it bears to the production of melanin. It was found to be a regular ingredient of the hemolymph of insects, and probably explains the darkening of the juices of such animals when exposed to air. In the blood of certain crayfish a similar but less active ferment was found. Most interesting was the observation that the lining membrane of the ink sacs from which the cephalopods throw out their inky secretion, is able to produce a black color when placed in a solution of tyrosin. A chemical study of the black pigment obtained by allowing tyrosinase to act upon a solution of pure tyrosin showed it to correspond in many respects to the ordinary melanins. Most important in the eyes of these investigators is the fact that the ratio of the carbon, hydrogen and nitrogen in this artificial pigment is the same as the ratio of the same elements in the group of pigments usually considered as melanins, including the black pigment of hair, skin, choroid and melanotic tumors, the sepia pigment of cuttlefish, and also the artificial pigments produced by decomposition of proteids. They suggest that tyrosinase is present wherever pigments are found in the tissues, and that the pigments are produced by action of this ferment on tyrosin. They account for the presence of tyrosin by the observation of Salkowski that tyrosin is one of the products of the self-digestion of tissues. Hence, in the production of melanin a double ferment process may occur; by an autolytic ferment an aromatic substance is derived from proteid, and this substance is converted by the tyrosinase into melanin. Against this simple explanation we must place the following fact: All analyses have shown that these various melanins, with the single exception of that from the choroid, contain sulphur in considerable proportions, as high as 10 per cent. in some cases. As tyrosin contains no sulphur it alone can not be the source of these melanins. This difficulty seems not to have occurred to v. Fürth and Schneider. However, the entire subject of pigment formation is so obscure that these observations are of greatest interest, and that so resistant and unalterable a substance as melanin can be produced by a ferment is in itself striking. In addition, it illustrates the wide possibilities of the newly reopened study of enzymes and their activities.

1. Beiträge z. Chem. Physiol. u. Pathol., 1901, i, 229.

PHYSICAL CULTURE AND MEDICINE.

At the present time perhaps more than at any former period in our modern civilization the public has grasped the idea of physical culture and its advantages. The notion that symmetrical development of the body is a safeguard against disease and a cure for existing disorders is widespread and, as Dr. Newman points out in a recently published paper,[1] is being exploited in all quarters as the grand cure-all to the disparagement of drugs and doctors. The injustice of it is, as he says, that so broad a truth, taught for so many years by our profession, should just now "be hailed as a new discovery and the credit given to mercenary outsiders." The fault is nevertheless largely our own; while we have prescribed exercise, massage, etc., in a general way we have left the details and even the oversight of them to others as unworthy of our attention. In this we not only sacrifice our own interests but those of our patients by allowing them to fall into the hands of those who, while recognizing a valuable principle that we too much ignore, are yet too ignorant and narrow to be of use in the times of real danger. Medicine suffers in public estimation and gross quackery thrives, as anyone can see by scanning their advertisements and the special publications of these extra medical practitioners. It is high time, as Newman says, that the medical profession gave more attention to the physical education and development of the patients and practiced its methods. The public has the notion that the practice of medicine is merely the giving of drugs and there is danger of this getting into our laws through ignorant judicial decisions and exceptions in the legislative enactments regarding the practice of medicine. This popular delusion should be counteracted by the general utilization by

1. Plexus, November, 1901, pp. 223-228.

our profession of whatever is scientifically and therapeutically of value in every method of physical training. We should not merely recommend physical exercises, massage, etc., but should follow up our advice and see that these are administered according to our recommendations and by operators in whom we can depend if we have to trust them out of our own hands.

It is not as a business proposition that these recommendations are made; the medical profession is, as the author of the address quoted puts it, about as money-wise in its practice "as would be a liquor-dealers' association for the promotion of total abstinence;" it is a part of our duty as guardians of the public health and as upholders of scientific truth against the attacks of charlatanry and general dangerous impositions. We should equip ourselves with every aid for this grand work, and while the advice here quoted was given especially to those starting out in their medical careers, it is none the less suitable to many others who are not yet too old to learn. A further suggestion made is that there should be thorough instruction given in all departments of physical culture in medical schools, so that the graduate can not only know how to personally direct treatments, but to instruct his patients in what is safe and advantageous to be left to them to do, and it is none the less worthy of being adopted. It is to be hoped that the time will come when this suggestion will be thoroughly followed out by all our medical colleges.

FEEING THE NURSE.

Evidently things are getting in bad shape in England, if we are to believe the statement made by a correspondent in a recent number of *The Lancet*. There are rumors that there is a division of the fee among some of the members of the profession here, but this division is between the surgon or the consultant and the family physician of the patient. On the other side, however, they seem to have gone one better and a division of the fee is made with the nurse. According to the correspondent, certain medical men over there are paying sums from a shilling to half the confinement fee, or more, to the nurses in attendance, who, to use their own words, make their living from "following the doctors." This tipping of the nurses is done with the hope that the recipient of the fee will recommend the doctor to future patients and, in other words, act as his drummer. As *The Lancet* editorially comments, the probability is that things are not quite as bad as this correspondent makes them out to be, even in England, where tipping is such a common every-day and every-where affair.

AWARDS OF THE NOBEL PRIZES.

Of the five awards of the Nobel prizes four are of interest to the medical profession, namely, the award to Dr. Henri Dunant, originator of the Red Cross; that to Professor Roentgen, discoverer of the *x*-rays; that to Van't Hoff, the chemist, and that to Behring for the discovery of antitoxin. No one will contest the merits of the first, nor of the second and third, though Roentgen's discovery was an accident and had been very nearly achieved by other scientific workers. It is a pity, however, that the award for the discovery of antitoxin had to go to one whose scientific and medical merits are marred by the unscientific and commercial spirit that led him to seek exclusive patent rights for his discoeries. Had Kitasato, his co-worker and co-discoverer, been remembered, it would have given more general satisfaction to the medical profession. Van't Hoff, it will be remembered, was in this country last spring and delivered a course of lectures at the University of Chicago, receiving at the same time the degree of LL.D. from that institution.

THE ETIOLOGY OF HAY FEVER.

The popularly accepted theory of the etiology of hay fever places the responsibility for this annoying disease upon vegetable pollen. The exact manner in which pollen causes hay fever does not seem to be cleared up. Recent investigations by Heymann and Matzuschita[1] are calculated to throw some doubt upon the correctness of the pollen theory, because in a careful examination of the nasal contents of several hay fever sufferers, they failed to find much if any pollen present. They point out further that in certain experiments by Blackley and others only temporary irritative phenomena were induced by the introduction into the nose of much larger quantities of pollen than ever can take place under natural conditions, because the quantity of pollen in the air at the most suitable season and in the most suitable places is not very great. Heymann and Matzuschita made the observation that the number of streptococci in the nasal secretion of hay fever patients greatly exceeds that in the secretion of normal persons. Often streptococci were present in pure cultures in the case of hay fever sufferers. Now, the bacteria found upon pollen in nature did not at all support the plausible inference that pollen might serve as the carrier of the streptococci; for streptococci were never found on free pollen. While there are not enough data on hand to permit the assignment of an etiologic rôle to the streptococci found in the nasal cavities of hay fever patients, these observations certainly tend to compromise the pollen theory of hay fever and should stimulate to renewed investigations of this interesting malady.

INSURANCE AGAINST MALPRACTICE SUITS.

According to the ruling of the State Insurance Commission of Minnesota, general casualty indemnity companies may write contracts insuring physicians against loss from damage suits for malpractice. This is a new feature of insurance, but it seems to have become prominent elsewhere than in Minnesota. A test case in Massachusetts was the ground of the state official's decision; he is said to have expressed the opinion that such protection is needed not so much by inexperienced and unskilful physicians as by the best and most successful ones as a safeguard against blackmail. In some sections damage suits against physicians and hospitals have become so frequent that the practice of medicine, and more especially surgery, has become so perilous to the pocket

1. Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxviii, 495-499.

that some good operators have thought of giving up practice. The general public has a natural prejudice in favor of an alleged injured person and many unjust verdicts have been given by juries. It has also been considered contrary to public policy to put any limitations to such prosecutions or even to permit insurance against them. It would, however, be still more against public policy to allow honest surgery to be discouraged by facilitating or encouraging blackmail, and this is what the popular prejudice tends to do. A surgical operation or the medical treatment of a case depends for success on too many contingencies beyond the personal control of the practitioner to make their outcome a certainty in any particular case. An unfortunate outcome is, therefore, as it was held in the Massachusetts decision, to be considered an accident in the absence of proof to the contrary, and therefore is legitimately insured against by a casualty insurance company. It is possible that this will be a more frequent recourse of physicians, especially surgeons in some sections, if malpractice suits continue as popular as they have been in the past. The question seems to have been a new one in Minnesota, and it is satisfactory that the supposed legal objections at first raised to this kind of insurance were found invalidated by good legal precedents. Would it be practicable and advisable for the state societies or the AMERICAN MEDICAL ASSOCIATION to take up this work, and such profits as may accrue be kept in the profession, and not be allowed to outside companies?

CAMP-FOLLOWERS OF SCIENCE.

It was prophesied when the *x*-rays were first discovered that they would be exploited by quacks, as there is just that element of mystery and semi-miracle in them that takes in the credulous. We could not well anticipate their real therapeutic value, and we can not say that it has even yet been fully demonstrated. It does appear, however, that they have a certain decided influence on living tissues, and the suggestion is a natural one that this can be applied to a therapeutic end. The success of the Finsen light treatment is also suggestive in this connection. Following out this idea some physicians have experimented with the therapeutic application of these rays and have reported encouraging results in cases of superficial malignant growths, while not claiming any more than logical scientific deduction can allow. There is, however, a class of men, few of them it is satisfactory to say, in the regular medical profession, who are a sort of camp-followers of science, seeking opportunities to pick up something out of new discoveries, or old ones still prominent in the public eye, that they can utilize for personal profit or notoriety. Some of these are comparatively innocent in their methods; they are mere vulgarizers, incompetent ones often, of scientific facts. Others, however, are less unobjectionable, and some recent instances of this will occur to anyone. One or two of the latest have originated in Chicago and have lately taken up space in the daily papers throughout the country, and also, it is reported, in Europe, with alleged claims to cure deep-seated cancers and to destroy all germs by the *x*-ray. It is easy to report cures of anything the existence of which depends upon one's personal diagnosis and statement, if one is unscrupulous enough, and that sort of thing finds many believers. It is another thing, however, to demonstrate them to scientific observers; therefore this kind of discoverer utilizes the daily press which finds his alleged achievements well suited to its sensational needs. What the *x*-rays can do in therapeutics has yet to be shown; the little we know is promising, but no man can truly say that anything more than a limited utility has been proved for them. Simple faith is a beautiful thing in some ways, but in alleged science of the newspapers and especially in the announcement of this sort of medical progress, a healthy skepticism is a better thing. The credulity that formerly exercised itself on ghosts and immaterial things is in this age of discovery lending itself to the fables of pseudo-scientists and often with even worse results.

Medical News.

ARIZONA.

The Territorial Board of Medical Examiners met at Phoenix, November 6, and examined eight candidates.

Dr. Henry J. Otto, of New Orleans, La., has located at Prescott.——Dr. Charles H. Jones, Tempe, who became a member of the Local Board of Health at the time of the smallpox epidemic, has resigned, as the objects for what his services were required have been carried out.

Sanitary Regulations.—Florence has passed an ordinance prescribing regulations for the prevention, limitation and quarantine of contagious and infectious diseases and especially smallpox.——Prescott protects its health by an ordinance prescribing reports of all cases of typhoid fever or tuberculosis: the disinfection of rooms occupied by consumptives; prohibiting expectoration on the ground or sidewalks; regulating the sale of second-hand goods and providing that goods which have been in possession of consumptives be fumigated, and further providing penalties for violation of this ordinance.

A Mecca for Consumptives.—Governor Murphy, in his annual report, insists that the time has come to afford some protection to that part of the population under his jurisdiction in normal conditions of health, and that measures should be taken to separate the consumptives and invalids who visit the territory in the hope of isolation from the residents who are well. He says that Arizona has become a veritable Mecca for consumptives and tuberculous invalids. The dry, salubrious climate of the territory has made it a sanitarium of world-wide reputation, and the southern portion is fast becoming an asylum for the unfortunate people afflicted with pulmonary ills. North and northeast of Phoenix have arisen villages of tents, populated by health seekers who spend their days on horseback and their nights where the unconfined and life-giving air can best reach them. He maintains that, while in the interest of humanity no restraint should be placed on the sick seeking health in Arizona, a law should be adopted that would require segregation and isolation of the afflicted for the protection of the well.

CALIFORNIA.

Communicable Diseases.—Smallpox has appeared near Churntown, where three cases are reported.——Scarlet fever is epidemic at Fruitvale and the public schools have been closed.

Hospital Staff.—The following have been elected on the regular visiting staff of St. Luke's Hospital, San Francisco, for the ensuing year: Drs. Curtis G. Kenyon, Harry M. Sherman, and Charles B. Brigham, surgeons; Drs. Washington Dodge, Clark J. Burnham and George H. Evans, physicians; Drs. Samuel G. Boyd and Charles A. von Hoffmann, gynecologists.

A "strange disease" resembling smallpox is puzzling those physicians of the Centerville district who try to diagnose it as anything except smallpox. Dr. Harry W. Emerson, health officer, declared it to be modified smallpox.

CONNECTICUT.

The State Board of Medical Examiners, at its November session in New Haven, examined 25 applicants for license to practice, three of whom were women.

Litchfield County Hospital.—The new county hospital at Winsted is now practically completed except the furnishing. It will be ready to receive patients by the first of the year. The total cost of the hospital, not including the land, will be about $75,000, of which $30,000 has been provided by the state.

Mortality and Morbidity.—During October 1062 deaths occurred in the state, an annual death-rate of 14 per 1000. Of these 173, or 16.3 per cent., were from infectious diseases. Infections disease cases were reported as follows during the month; Smallpox, 2; measles, 5; scarlet fever, 208; diphtheria, 176; whooping cough, 44; typhoid fever, 156; and consumption, 7 cases.

DISTRICT OF COLUMBIA.

The hygienic laboratory of the Marine-Hospital Service will soon be erected, as the $36,000 authorized to be expended for this purpose is now available and the contract is about to be let.

Dr. William A. Warfield, Washington, has been made surgeon-in-chief of the Freedmen's Hospital. He has been holding the office temporarily since the resignation of Dr. Austin M. Curtis.

Mortuary Statistics.—For the year ended June 30, there were 6087 deaths in the District, 3430 white and 2657 colored, The annual death-rate was 21.83 per 1000, for whites 17.82 and for colored 30.73. Both rates are in excess of those for the preceding year. The report urges strongly the desirability of medical inspection in the public shools.

GEORGIA.

Smallpox has broken out in a negro settlement ten miles from Athens, where 18 cases are reported.

State Sanatorium Trustees.—Dr. Eugene Foster, Augusta, has been appointed chairman of the Board of Trustees of this institution, and Drs. William S. Elkin, Atlanta, and George D. Case, Baldwin, members of the board.

Mental Science Healers Indicted.—Mrs. Helen William Post, Col. C. C. Post, her husband, and Charles F. Burgman, her son-in-law, have been indicted by the Federal grand jury in Macon, Ga., for using the United States mails for fraudulent purposes in their "mental science absent treatment."

Medical Legislation.—The Macon Medical Society has appointed a committee, Drs. Edward G. Ferguson, Nathaniel T. Carswell and Robert B. Barron, to prepare bills for the legislature, covering the following points: The plan is to have all coroners in Georgia practicing physicians. All proprietary medicines brought into the state must be labeled so that the public can know the ingredients and the proportion of each ingredient. Lunacy juries shall consist of three physicians appointed by the ordinary; one physician must examine the subject on a separate day, and all three shall examine him on the fourth day and make a verdict. No poisonous drug or narcotic, such as morphin, etc., shall be sold without a physician's prescription.

ILLINOIS.

St. Joseph's Hospital, Elgin, will be ready to open the latter part of this month.

New Hospital for Macomb.—The sisters of St. Francis have purchased five acres of land on the outskirts of Macomb, on which to erect a Catholic hospital and sanatorium.

Alton Children Must Be Vaccinated.—The health officer of Alton, acting under authority of the State Board of Health, has issued notice that all children shall be vaccinated without delay.

Brokaw Hospital Completed.—The addition to Brokaw Hospital, Bloomington, has been completed and accepted by the trustees. About a dozen rooms thus far have been furnished by Bloomington citizens and are ready for occupancy.

Marshall Must Go.—Judge Moffatt of Bloomington has dissolved the injunction issued at the instance of Dr. James A. Marshall, house physician at the State Reformatory, Pontiac, to restrain the board of trustees of the institution from ousting him from his position.

Magnetic Healer Found Not Guilty.—A magnetic healer of Lincoln, a graduate of the Chicago School of Psychology and the American School of Magnetic Healing, who was tried for violating the state law regulating the practice of medicine and surgery, was found not guilty by the jury.

Scarlet fever at Washington has closed two rooms of the public school.——The disease is spreading rapidly at Georgetown and the schools will not be re-opened until all danger is past. There are now more than 40 cases with 4 deaths.——Scarlet fever is epidemic at Clinton and the closing of the public schools is being considered.

Smallpox is spreading among the colored people near Rush City. It is said that there are 20 cases in that district.——Smallpox is declared to be present in Alton. The risk of communication of the disease was, as usual, greatly increased because the disease was diagnosed as chicken-pox.——Roseville has four cases communicated by an itinerant evangelist who had no faith in medicine.

Personal.—Dr. George A. Zeller, Peoria, at present serving in the Philippines, has been appointed superintendent of the hospital for the incurable insane at Peoria.——Dr. Festus Burnham, Mason City, has been appointed physician-in-charge of the Illinois Hospital for the Incurable Insane, Peoria.——Dr. William H. Maley, Galesburg, has been appointed alumnus member of the board of trustees of Kave College.——Dr. Harry R. Lemen, Upper Alton, now serving in the Philippines, will resign in May and resume practice.——Drs. Frank C. Becker and Gustave J. Bergener, La Salle, have sold their practice.——Dr. Carl J. Koontz, Galesburg, assistant examiner for the Galesburg division of the Burlington Volunteer Relief department, has been made chief examiner for the St. Louis division, with headquarters at Beardstown.——Dr. Guy G. Dowdall has purchased the practice of Dr. R. C. Fullenwider at Clinton. Dr. Fullenwider has established himself at La Salle, where he will practice.

Chicago.

Examination for Interneships at Dunning.—The competitive examination held under the auspices of the Civil Service Commission for positions on the resident medical staff of the Cook County institutions at Dunning, will be held December 16.

Damage Verdict Set Aside.—In the case of Dr. Edmund R. Moras, who was awarded a verdict of $36,000 against the West Chicago Street Railroad Company, for the loss of a hand, a new trial was granted November 30, on the ground that the verdict was excessive and gave evidence of prejudice against the defendant in the minds of the jurors.

Personal.—Dr. Fenton B. Turck has been made a corresponding member of the French Association of Urology.——Dr. Anthony K. Warner has returned from a three-months' tour of Europe.——Dr. Fred S. Crocker has resigned from the faculty of the Chicago Eye, Ear, Nose and Throat College.——Dr. John M. Moore has been awarded $10,000 damages in his suit against Oliver Sollitt, for slander.

Coroner's Cases.—The report of the coroner for the year ended November 30 showed that 4844 deaths had been investigated; 2479 inquests were held and in 1445 cases the coroner's physician made the investigation. The physician made 910 autopsies. Suicide caused 385 deaths; railway accidents, 290; falls, 206; homicide, 103; drowning, 135; asphyxiation, 60; lightning, 12; horses, 10; hydrophobia, 8; heat, 38; elevator accidents, 27; suffocation, 29; tetanus, 15; poison, 51; machinery accidents, 20; shooting, 11; and scalds, 43.

Strict Hospital Rules.—Under the new rules for the governance of the employes and internes of the Cook County Hospital, employes are prohibited from having any business relations involving patients or the dead with solicitors, undertakers or claim agents. Friends of weak, discharged patients are to be notified when the patients are discharged. Alcoholic patients are to be barred. Detailed records of property possessed by the patients are to be kept by a custodian under bonds. History sheets of each case must be carefully kept.

Chicago Lying-in Hospital and Dispensary.—The annual meeting of the Board of Directors of the Chicago Lying-in Hospital and Dispensary was held December 6. It was decided to broaden the scope of the work, and to this end the Board of Directors was increased to nine members, the Woman's board increased to twenty-seven, and the Medical board arranged so that its members are to be chosen from the three best known of the Chicago medical colleges. The physicians who are to have charge of the medical affairs are as follows: Dr. Joseph B. De Lee, of Northwestern University Medical School; Dr.

Frank B. Earle, of the College of Physicians and Surgeons, and Dr. J. Clarence Webster, of Rush Medical College.

INDIANA.

In Memory of Dr. Todd.—The Marion County Medical Society, at its last meeting, adopted resolutions testifying to the loss sustained by the Society in the death of Dr. Levi L. Todd.

Kile Memorial Opened.—On December 5, the Kile Memorial building, an addition to the Home Hospital, Lafayette, erected with funds contributed by Peter Kile, was dedicated with appropriate ceremonies.

Medical Staffs Announced.—The Indianapolis Board of Health has announced the staffs for the city hospital and the city dispensary. In selecting men for the staffs the effort has been made to treat the Indiana Medical College and the Central Medical College with equal consideration, and other schools outside the city have been given ample representation.

Personal.—Dr. Clarence V. Ward, Indianapolis, has located in Greenfield, and Dr. Clay L. Ward at New Palestine.——Dr. John M. Washburn, Kewanna, has moved to Pulaski.——Dr. Albert J. Buxton, Emporia, has changed his location to New Castle.——Dr. Oscar Heller, New Palestine, has decided to locate at Ridgeville.——Dr. John T. Shields, Seymour, has moved to Vernon.——Dr. Andrew J. Boswell, who recently moved to Elkhart from Fort Wayne, has decided to locate in South Bend.——Dr. John L. Masters, Indianapolis, lecturer on diseases of the eye, ear, nose and throat in the Central College of Physicians and Surgeons, has resigned.

November Mortality.—There were 2402 deaths in the state in November, an annual rate of 11.6 per 1000. In October there were 2614 deaths, a rate of 12.2 per 1000. In November, 1900, there were 2854 deaths, a rate of 13.8 per 1000. From important causes the deaths were: Consumption 293, typhoid fever 156, diphtheria 43, scarlet fever 6, pneumonia 206, cerebrospinal meningitis 13, influenza 10, cancer 88, diarrheal disease 56, puerperal fever 15, violence 106. The cases of smallpox reported were in the following counties: Spencer 54, Randolph 1, Switzerland 10, Jefferson 27, Adams 18, Gibson 13, Pike 1, Dearborn 6, Kosciusko 5, Wabash 5, Marshall 6, Warrick 17, Marion 3, Vanderburg 19, Perry 15. Total 193, two of which died.

IOWA.

Smallpox.—Ida Grove now has 70 cases; Pocahontas, 7 cases; Eldora, 2 cases; Stuart, 5 cases; Blackhawk County, 33 cases; Perry, 3 cases; Council Bluffs, 9 cases; Sioux City, 86 cases, and Des Moines over 100 cases.

Personal.—Dr. Alfred H. Eddy, Cherokee, has located in Oskaloosa.——Dr. Allen L. Bryant, Marshalltown, will move to McCallsburg.——Dr. Louis F. Kelling, New Liberty, has moved to Ely.——Dr. Charles E. Todd, Cherokee, has moved to California.

Children Must Be Vaccinated.—On recommendation of Dr. Nicholas C. Schlitz, city physician of Des Moines, it has been ordained that no child will be allowed to enter public or private schools in that city after Jan. 1, 1902, without evidence or a certificate of successful vaccination.

KANSAS.

Diphtheria has appeared at Whitewater. Several cases have occurred and one patient has died. The public schools have been closed.

Failure to Report Contagious Disease.—On complaint of Dr. Corban E. Judd, city physician of Topeka, a physician of that place has been charged with failure to report a case of scarlet fever within twenty-four hours as provided for by law.

Smallpox.—Secretary Swan of the State Board of Health estimates that the smallpox epidemic last winter cost the state from $75,000 to $100,000.——The State Boards of Health of Kansas and Missouri have agreed to co-operate this winter in the enforcement of quarantine regulations.——Topeka has a case of smallpox.

Personal.—Dr. William H. Fayette, Nickerson, is about to make his home in Oklahoma.——Dr. W. Plily Boal, McArthur, Ohio, has located at Ames.——Dr. Robert S. Magee, Topeka, has been seriously ill with sepsis caused by a cat-bite.——Dr. Horace G. Welsh, Hutchinson, has taken possession of his new hospital.——Dr. William J. Van Eman, Leavenworth, is alarmingly ill with blood poisoning, which has already necessitated the amputation of the right index finger.

KENTUCKY

Measles in epidemic form prevails in Covington, from 800 to 1000 cases of the disease are reported, and several deaths have occurred. The health officer has recommended that the public schools be closed.

Dr. Clark Acquitted.—Dr. W. E. Clark, Sturgis, who was convicted two years ago and sentenced to ten years' imprisonment for causing the death of a young woman by a criminal operation, was given a new trial and was acquitted, November 30.

State Board of Health.—The State Board of Health held a meeting in Louisville, December 21, the object being to consider the smallpox question. The secretary, Dr. J. N. McCormack, was instructed to issue an appeal to every county board of health to erect an eruptive hospital and be prepared to take care of smallpox should it occur. Smallpox is reported in ten counties, Bath, Breathitt, Fleming, Knox, Union, Crittenden, Owen, Washington, Fayette and Bell counties. Dr. McCormack stated that two-thirds of the population of the state outside of the cities had not been vaccinated within the time prescribed by law, and it is the intention of the Board to do all in its power to have every person in the state vaccinated. It is his belief that the situation is extremely critical. The State Board also held a joint meeting with the County Board of Health and the representatives of the city health authorities to make some arrangements in regard to the inspection of cattle and other live stock brought to the new stockyards in Louisville. The matter was referred to a committee which is to appear before the Fiscal court to make definite arrangements for the appointment of an inspector and the fixing of his salary. As the stockyards are located outside the city it is necessary for the Fiscal court to act.

LOUISIANA.

Senses Hospital.—The annual benefit performance of the French opera for the Eye, Ear, Nose and Throat Hospital will be given December 18.

Appointments.—Dr. D. Urban Maes, New Orleans, has been elected resident physician and surgeon of the Touro Infirmary for a term of one year.——Dr. George S. Bel, New Orleans, has been appointed a member of the Charity Hospital board.

To Guard Against Plague.—A conference between the Louisiana State Board of Health and the quarantine authorities of Mobile Bay was held recently in the offices of the Health Board and a new set of regulations to govern vessels coming from plague-stricken ports was adopted.

State Medical Board Election.—The State Board of Medical Examiners met at New Orleans, November 20, and elected Dr. A. Feltus Barrow, St. Francisville, president; Dr. John D. Trahan, Lafayette, vice-president, and Dr. Felix A. Larue, New Orleans, secretary and treasurer. The board will meet to hold examinations for license to practice medicine, May 1 and 2, 1902.

MARYLAND.

New Doctors.—The State Board of Medical Examiners has announced that 23 of those who took the November examination have passed.

Baltimore.

Mortality.—For the week ended November 30 there were 167 deaths, of which 19 were from consumption, 14 from pneumonia, 4 from diphtheria, 3 from typhoid fever and 2 from scarlet fever.

Emergency Boxes.—The Health Department is placing at all police stations tin boxes containing simple medical and surgical supplies, needles, bandages, cotton, etc., and a few staple remedies for use by the health wardens in emergency.

Personal.—Dr. William R. Rogers, assistant resident surgeon at the Maryland University Hospital, has resigned, and will go to Bristol, Tenn., to take charge of his father's business interests. Dr. George W. Hemmeter will succeed him.——Dr. A. G. Watson celebrated the twenty-fifth anniversary of his marriage November 26.

Smallpox.—The first case of smallpox in Baltimore since June 6 was discovered at the City Hospital, November 25, and sent to Quarantine Hospital. All the inmates of the hospital were immediately vaccinated and the building disinfected. The disease is supposed to have been contracted in Philadelphia.

Analysis of City Water.—President Ira Remsen, of the Johns Hopkins University, has made a careful analysis of the city water and fully confirms the statement recently made by

the Health Department, that it is impure and unfit for drinking without boiling. The report is to be made public this week.

The Book and Journal Club held its first meeting of the season November 27. There are about 100 members who pay $5 each yearly, the whole of this sum going to the purchase of new books and journals for the medical library. Dr. William Osler, chairman, entertained the Society over an hour with a description of 100 or more old medical classics purchased by him last summer and presented to the library.

A department of orthopedic surgery has been established at the University of Maryland Hospital under Dr. R. Tunstall Taylor as chief and Drs. Smith, McKin and Riely as assistants. Dr. Taylor will use the children's ward and also will utilize the Hospital for Crippled Children, of which he is chief surgeon. The new department is equipped with the newest apparatus for the most modern treatment of deformities, joint and bone diseases, including a large and powerful *x*-ray machine. Dr. McKim is at present abroad studying.

MASSACHUSETTS.

Smallpox in Boston.—For the week ended November 30, 112 cases of smallpox were reported with 8 deaths, making a total since August of 280 cases with 27 deaths. From November 30 to December 2, 24 new cases were reported.

Franklin County Hospital Appointments.—The medical staff of the hospital met at Greenfield and made the following assignments: December—Dr. Frank H. Zabriskie, attending, and Dr. Howe, alternate; January—Dr. George A. Cooke, Montague, attending, and Dr. Enoch G. Best, alternate; February—Dr. Mary P. Dole, attending, and Dr. Percy G. Davis, Deerfield, alternate; March—Dr. William L. Severance, attending, and Dr. Edwin C. Thorn, Deerfield, alternate; April—Dr. Frank W. Nolan, attending, and Dr. Clara M. Greenough, alternate.

Personal.—Dr. C. B. Adams, who has recently located in Pittsfield, will take charge of the pathologic department of the House of Mercy.——Dr. Paul H. Provandie, Melrose, chairman of the local board of health, has been appointed associate medical examiner for the district, which includes Melrose, Stoneham, Wilmington, Wakefield, Reading and North Reading.——Dr. E. L. Sawyer has purchased the practice of Dr. Charles R. Whitcomb, Roslindale, Boston.——Dr. George W. Dow, Lawrence, has been appointed medical examiner to succeed Dr. Octavius T. Howe.

MICHIGAN.

New Emergency Hospital.—The new emergency hospital to be erected in Detroit for the Detroit Emergency Hospital Association and the Michigan College of Medicine, will have a frontage of 120 feet. It will cost more than $40,000, and will accommodate 110 private patients, in addition to the wards.

Comparative Morbidity.—For the month of November, compared with the preceding month, influenza, pneumonia, pleuritis, diphtheria, smallpox, whooping cough, erysipelas and measles were more prevalent; and diarrhea, typhoid fever, inflammation of bowels, dysentery, cholera morbus and cholera infantum were less prevalent.

Dangerous Communicable Diseases.—Including reports by regular observers and others, cerebrospinal meningitis was reported present during November at 1 place; measles at 27 places; whooping cough at 33 places; smallpox at 92 places; diphtheria at 96 places; typhoid fever at 166 places; scarlet fever at 182 places, and consumption at 198 places.

Smallpox.—At Escanaba, 4 new cases have been reported.——At Sturgeon Bay, there are 16 cases; at Sevastapol, 26 cases, and at Wells several cases.——Muskegon is on the verge of an epidemic; nine cases have been reported.——The country around Alma has several suspicious cases.——At Interlocken a riot was threatened because several patients were removed by the health officer, from a lumber camp to the village.

Personal.—Dr. H. L. Burdeno, Delray, will locate in Dearborn.——Dr. Clark H. Fenstermacher, Marcellus, has gone to Sargent, Neb., where he will resume practice.——Dr. Samuel B. Snyder has removed from Fulton to Kalamazoo.——Dr. Louis Fleckenstein, Port Hope, has purchased the practice of Dr. T. Bennett Scott, Vernon.——Dr. Edward A. Smith, Bay City, has located in Fairgrove.——Dr. S. Edwin Cruse, for the past few years stationed at Quinnesec in charge of the Cundy Mine employes, has resigned and will practice in Iron Mountain.——Dr. J. H. Cole, of the Manistique Hospital, has been appointed chief surgeon of the Manistique and Northwestern Railway, vice Dr. Edward B. Patterson, resigned.——The physicians of Tecumseh met November 26 and passed resolutions expressive of grief and sympathy regarding the death of Dr. Lemon Barnes.——Dr. Norman J. Cramner, Fennville, has moved to Laeota.——Dr. Edward B. Patterson, Manistique, is about to make a tour in Europe.

MINNESOTA.

Diphtheria is epidemic in Forest Prairie and a number of deaths have occurred in the country between Eden Valley and Watkins.——Kimball has had a death from the disease, and the public schools have been closed.——The Health Commissioner of St. Paul has closed Assumption parish school on account of the prevalence of the disease.

Personal.—Drs. Carl J. and Madge Holman have moved from St. Clair to Mankato.——Dr. George J. Hanley resigned as health officer of Cass Lake and will be succeeded by Dr. Ray F. Whetstone, now a resident of Argyle.——Dr. James B. White, Montgomery, has removed to Faribault.——Dr. J. D. Brown, Fergus Falls, has gone to Turtle, Beltrami County, to take charge of a lumbermen's hospital there.——Dr. H. C. Stuhr, McIntosh, has purchased the practice of Dr. Ray F. Whetstone, Argyle.

Smallpox Bulletins.—Dr. Thomas F. Rodwell, Walker, found one case among the Cass Lake Indians, and quarantined the patient.——The disease is prevalent through Norman County, where 76 cases are reported.——Jackson is said to be "honeycombed" with smallpox.——Chaska has 13 cases of smallpox and the public schools have been closed.——Beltrami County has 14 cases, Clay County 14 cases, Carver County 14 cases, Kittson County 12 cases, Marshall County 11 cases, Renville County 12 cases, Minneapolis 6 cases, and St. Paul 1 case. In all 260 cases were reported during the fortnight ended December 5, an increase of 44 over the previous report.

MISSOURI.

Personal.—Dr. J. B. Darey, Coloma, has located at Bogard.——Dr. Jasper N. Haynes, Eldorado Springs, has moved to Nevada.——Dr. W. Pernell Hall, Nickellton, has located at Lingo.

Hospital Sunday and Saturday Association.—The Hospital Saturday and Sunday Association of St. Louis made its ninth annual collection, November 30 and December 1, and collected $11,712,23 for the sick poor of the city.

Levering Hospital.—Mr. A. R. Levering has agreed to give the city of Hannibal a hospital to cost not less than $25,000 on the following conditions: The building shall be known as "The Levering Hospital"; its conduct shall be absolutely non-sectarian and non-political; and its management shall be vested in a board of control consisting of nine residents of Hannibal.

St. Louis Medical Society Sustained.—The St. Louis Court of Appeals handed down a decison December 3 in the mandamus suit of Dr. W. H. Henderson Mayfield, of the Mayfield Sanitarium, against the St. Louis Medical Society, denying a peremptory writ. The court, in its opinion, stated that the proceedings of the Committee on Ethics of the Society, which found that Dr. Mayfield had violated the rules of the Society and had him expelled, were not malevolent or biased, but were animated by a spirit of fairness and justice; that the relator was bound to the regulations of a member in the Society, and that the Committee on Ethics had the power to try the doctor, and that such bodies may advocate what rules they please, and they will bind the members. Dr. Mayfield was expelled, according to the Court of Appeals, from membership of the St. Louis Medical Society for securing and publishing letters commending his professional work, certificates of his skill and success as a doctor, which was done by issuing pamphlets to the public. Charges that he violated the medical Code of Ethics were preferred against him and the Committee on Ethics was appointed to investigate the case.

NEW YORK.

Measles is epidemic in Dunkirk. In three wards there are nearly 100 cases.

Dr. F. C. Curtis, of the State Board of Health, has gone to Rochester to investigate an outbreak of skin disease which has puzzled the local health authorities of that city.

Personal.—Dr. Fred W. Smith, Richfield Springs, will locate in Utica.——Dr. Strother W. Rice, Carthage, is about to move to St. Regis.——Dr. William H. Jessup, Buffalo, has located in Newark.

Field for Young Physician.—The removal of Dr. Benjamin W. Stearns to Binghamton from Long Eddy, leaves that field

open to some energetic young man to take up a practice of $2000 a year, with no competition in less than eight miles.

State Consumptive Hospital Site Settled.—Governor Odell has ended the long controversy over the site of the State Consumptive Hospital. The institution will be located at Raybrook in the Adirondacks. This decision will give general satisfaction.

Buffalo.

Dr. William J. O'Donnell has been appointed to the staff of St. Mary's Maternity Hospital.

Dr. Lorenzo Burrows, Jr., has been appointed ophthalmic examiner for the New York State School for the Blind at Batavia.

The Smallpox Situation.—Smallpox still continues, but on the whole it is confined to the infected Polish District, although two or three cases have appeared in widely separated localities.

New Health Commissioner.—Mayor-elect Knight has announced the appointment of Dr. Walter D. Greene, the present assistant health commissioner, to succeed Dr. Ernest Wende as health commissioner.

Hospital Overcrowded.—The Buffalo State Hospital for Insane has been much overcrowded, and to relieve this congestion 120 patients, principally New York County patients, will be transferred to the Willard State Hospital and Manhattan State Hospital.

New York City.

Legacy to the Metropolitan Hospital and Dispensary.—By the will of the late Dr. Henri Guilbault, the Metropolitan Hospital and Dispensary of New York, 248 E. 82d Street, receives $3000.

Colored Nurses Graduate.—On December 6, the Colored Hospital graduated a class of trained nurses. In the afternoon they gave a practical demonstration of their proficiency, and in the evening the graduating exercises were held, the feature of which was the address by Dr. T. Gaillard Thomas.

Protection Against Malpractice Suits.—The executive committee of the New York County Medical Association has had under advisement for some time past the problem of how the members of that Association may be best defended against suits for malpractice. The committee announces that it is prepared to submit to the Association, at its meeting on December 16, the outline of a plan. While conceding that this work should be done by the State Association, many of the members in New York County are disappointed with the apparent disinclination of that body to take up this important work.

Personal.—Dr. William H. Guilfoy, for seventeen years connected with the Health Department, has been appointed registrar of records to succeed Dr. Roger S. Tracy, resigned. The appointment was the result of a competitive examination and the salary of the position is $4000 a year.——Dr. Edward Livingstone Tradeau has been appointed a member of the board of trustees of Columbia University.——Dr. Ralph A. Hayt is about to take a six-months' trip through South America.——Dr. John H. Telfair has been made house-surgeon of the Williamburg Hospital, and Dr. Charles Lubrecht ambulance surgeon.

Tenement House Commission.—The physicians of New York City are naturally interested in the work of the Tenement House Commission, and will watch with interest the effect of the first law drafted by that body. It is now announced that Robert W. De Forest, who has in the past been so closely identified with this work, has been selected by Mayor-elect Low to be the first Tenement House Commissioner. He is quoted as believing that "The extreme of the law is the extreme of injustice," from which it is inferred that he will endeavor to administer it conservatively, and yet keep so close to its spirit as to secure better sanitary conditions for the tenement dwellers, who constitute more than one-half of the population of Greater New York. Many physicians believe that in this field a vast deal can be done toward effectively limiting the spread of pulmonary tuberculosis.

OHIO.

Communicable Diseases.—Measles is epidemic in Springfield and Cincinnati; scarlet fever in Columbus; diphtheria in Cambridge and smallpox in Magnetic Springs.

Akron City Hospital Staff.—The officers and medical staff of the City Hospital were re-elected November 26. In addition, Dr. H. I. Cozad was elected pathologist; Dr. W. S. Chase, bacteriologist, and Drs. J. A. Hulse and G. W. Stauffer, anesthetists.

Personal.—Dr. Stephen A. Cunningham, Marietta, is dangerously ill from a septic wound of the hand.——Dr. Claude N. Chrisman, Dayton, has gone to Missouri, where he hopes to regain his health.——Drs. L. J. Spickard, Columbus, and R. G. Bazelle, Rock Camp, have joined forces and will practice in Ironton.——Dr. Thomas W. Walker, Steubenville, is critically ill.——Dr. Albert Hathaway, Nettle Lake, has located at Edon.——Dr. Guy McFall, Sandusky, has settled in active practice at Detroit.——Dr. Kennon Dunham, Cincinnati, has left for a year's study abroad. The greater part of his stay will be in London.

PENNSYLVANIA.

Donation to German Hospital.—On "donation day" at the German Hospital, Philadelphia, the friends of the institution gave more than $10,000 in cash and supplies.

Personal.—Dr. Harry W. Dechert, Tamaqua, has been appointed deputy coroner for the Orwigsburg district.——Dr. Francis B. Davison, who has practiced for many years at Fleetville, has moved to West Pittston.

Smallpox in Philadelphia.—The epidemic of smallpox in the city has assumed serious proportions. During the last week, 113 new cases were reported. More than 1000 homes are under quarantine, the municipal hospital is overcrowded and no other hospital will receive smallpox cases. It is said that in the last three months 800,000 individuals have been vaccinated. The mortality for the week from the disease was 14.

Tetanus and Vaccination.—The State Board of Health and Vital Statistics of Pennsylvania has transmitted the following resolutions adopted at a regular meeting held at Harrisburg, November 21: "Resolved, That in view of the very natural public apprehension in regard to the possibility of tetanus following vaccination, as illustrated by recent cases of this accident in a neighboring state, this Board desires to state its conviction founded upon a careful study of the history of vaccination and of the cases referred to, that it has yet to be demonstrated that vaccine virus ever contains or becomes contaminated with the germ of tetanus. When such occurrences as those referred to take place, it is because, owing to carelessness, usually on the part of the person vaccinated, the germs of tetanus have gained access to the wound on the arm as they may to any other wound, abrasion or scratch upon the surface. Resolved, That there is no reason for dreading, or abstaining from vaccination, because of these recent cases. This is sufficiently demonstrated by the fact that more than half a million persons have been vaccinated in and around the City of Philadelphia within the past few months without the occurrence of a single case of tetanus. Resolved, That, inasmuch as new cases of smallpox are being reported to the Board daily from all parts of the state, the present would be a most unfortunate time to interrupt the general vaccination which is now in progress. Resolved, That this Board condemns in the strongest possible terms, the use of any material or medicament administered by the mouth as a substitute for vaccination, and that any physician furnishing a certificate of successful vaccination based upon the administration of any such substance or remedy, lays himself open to prosecution for violation of a state law. Resolved, That this Board reaffirms its previous declaration of confidence in the value of vaccination as a preventive or modifier of the severity of smallpox, and its belief that the possibilities of serious results following its performance must be looked upon as infinitesimal in comparison with the inestimable advantages derived from the same.

CANADA.

Appointment.—Dr. R. Boulet of the Ophthalmic Institute, Montreal, has been appointed director of the dispensary of the eye and ear department of the Hotel Dieu Hospital.

Samaritan Hospital, Montreal.—At the last regular monthly meeting of the Board, the surgeon-in-chief, Dr. Lapthorn Smith, announced that the work at this institution during the past summer was the heaviest since the hospital was opened by Lady Aberdeen eight years ago. It is expected that every bed will be occupied from the present time until spring; and as evidencing the purely charity work of this hospital, there is only one private patient in the wards at the present time.

Quebec Licenses to Practice.—The College of Physicians and Surgeons of the province of Quebec has decided to issue licenses to all physicians who present university diplomas,

without further examination. This action of the College applies only to those who come under the operation of the statute of the Quebec Legislature, known as the Roy law, which was adopted two years ago. The courts have rendered several decisions recently adversely to the College, holding that the College was bound to give licenses to those who came under the operation of this law.

Compulsory Vaccination at McGill.—Owing to the extensive outbreak of smallpox in the province of Quebec, compulsory vaccination is ordered at McGill University, and the authorities have decided to enforce the requirements of the Public Health Act in this respect. Vaccination is going on in the Medical Building, daily, and it will take a few days to complete the entire number as there are over 1200 students in the various departments at McGill.

Charitable Bequests.—By the will of the late Mr. W. E. H. Massey of Toronto, 1000 shares of stock in the Massey-Harris Manufacturing Company, valued at $100 per share, has been willed to various charitable and religious objects. Victoria University, Toronto, gets five-twentieths of this amount. One-twentieth is to be handed over to the Sick Children's Hospital, Toronto, to endow and maintain a cot in that institution. One-twentieth is left to the Trustees of Boston University, Boston, Mass., and one-twentieth to other charities in Toronto.

Death While Administering Chloroform.—A man aged 53 years recently died at the Western Hospital, Toronto, while undergoing an operation; as the house surgeon who was administering the anesthetic had not fulfilled all the requirements of the Ontario Medical Law entitling him to practice his profession, the death caused some little comment. A coroner's jury investigated, when it was found that no blame was attached to the young doctor in question, although the cause of death was set down to chloroform poisoning through anesthesia. The jury strongly recommended that in hospitals in the city where operations were performed, a specially appointed and competent anesthetist should have charge of this work.

Toronto Clinical Society.—This society held its regular meetings on November 6 and December 4. At the former meeting, Drs. George A. Bingham and J. T. Fotheringham reported a case of thyroidectomy in a female aged 30 years. This condition of enlarged gland, etc., had continued for four or five years, during which time she decreased in weight from 167 to 120 pounds. Dr. Bingham performed the operation through an incision extending from the left mastoid process to the sternum, closing up the cavity which remained by quilting with several rows of catgut sutures. Both gentlemen were very much impressed with the use of the ice bag to the precordia for subsequent tachycardia. Dr. J. Algernon Temple reported a case of Paget's disease of the nipple and showed the fresh pathologic specimen. The disease occurred in an unmarried woman aged 45 years, and a year prior to the operation no growth could be found in the breast. Dr. Temple removed the entire breast with all the fatty tissue clean down as far as the pectoral muscle. In the above two cases the patients made good recoveries. At the December meeting an interesting case of blastomycosis in a man of 50 years, an engineer, was shown by Dr. Graham Chambers. The lesions were situated on the nose, upper lip, cheeks and backs of the hands and fingers. Although Dr. Chambers had not as yet demonstrated the fungus under the microscope, he believed he had made the correct diagnosis. The lesions are undergoing marked improvement under large doses of iodid of potash. Dr. A. J. Harrington reported a case of mushroom poisoning from a very small raw piece of the fungus, with recovery. His treatment practically amounted to two hypodermic injections of atropin. The president, Dr. J. F. W. Ross, showed two specimens of ectopic gestation occurring in a woman at the same time. One was advanced to three and one-half months, while the other was about six weeks. The patient made a good recovery from the operation, although she nearly collapsed while on the table. Dr. Rose stated that he had had four cases of ectopic gestation following on a previous operation for the same condition.

FOREIGN.

Plague at Rio de Janeiro.——Four new cases of the plague and one death were reported at Rio de Janeiro, on December 3.

Prof. W. His, Jr., has resigned his chair at Leipsic since his appointment to be medical superintendent of the city hospital at Dresden.

Deaths Abroad.—Dr. K. von Liebermeister, professor of internal medicine at Tübingen, Niemeyer's pupil and successor.——Dr. A. Villard, professor of clinical medicine at Marseilles.——Dr. G. Chiarleoni, professor of obstetrics at Palermo. ——Dr. A. Maseras, professor of medical pathology at Manila.

Insurance Company's Consumptives' Home.—The German insurance company "Berlin," has erected at Lichtenberg a home for consumptive policy-holders. The expense of total maintenance is much greater than the payment of the individual indemnities, and the institution is thus exclusively for the benefit of the inmates.

LONDON LETTER.

Plague in Glasgow.

All fear of immediate extension of the outbreak of plague has now practically ceased. There have been no new cases during the last three weeks, and the hotel where the original patients were employed has been thoroughly disinfected and is to be reopened. The Local Government Board of Scotland has intimated approval of the order of the local authority making plague a notifiable disease within the city until Dec. 31, 1902. Dr. A. K. Chalmers, the medical officer of health, has issued a circular dealing with the relationship of ships entering and leaving the port, and with the conditions which they must adopt in order to avoid prolonged detention in quarantine. He advises that continuous efforts should be made to destroy rats on board ships, and advises for this purpose sulphur fumigation when the holds are empty.

Pestis Minor in London.

A case of "pestis minor" has occurred. A man aged 24, a lighterman on the Thames engaged in unloading merchandise from the Baltic, applied to the West London Hospital with lumps in his groin. Three weeks previously he fell and hurt the lower ribs on the right side. To this he ascribed the subsequent swelling of the glands. By November 4 he had to cease work. There were severe headache, a temperature of 101 F., furred tongue, injected conjunctivæ, enlarged spleen, swollen inguinal glands and some enlargement of the cervical and axillary glands. In either groin two or three glands could be felt, one of which was as large as a walnut. The overlying skin was not red, but exquisitely tender. The bacteriologic examination made by Dr. Klein negatived true plague. The disease was probably pestis minor—a specific form of glandular enlargement which occurs when plague threatens or is actually prevalent. In pestis minor the plague bacillus is only occasionally found, and then in an involuted form. Rats have been destroyed in enormous numbers; from September 23 to October 27 14,610 were killed, making a total up to that date of 75,424.

Plague in India—Commission's Report.

A valuable report on the outbreaks of plague in India in recent years has been issued. In November, 1898, a commission was appointed by the Indian Government to investigate, 1, the origin of the outbreaks; 2, manner in which the disease is communicated; 3, effects of curative serum; 4, effects of preventive inoculation. The members of the Commission were: Dr. Fraser, professor of materia medica in the University of Edinburgh; Dr. Wright, professor of pathology in the Army Medical School, Netley; Mr. A. Cumine, senior collector in the Bombay Presidency, and Dr. M. A. Puffer, president of the Sanitary, Maritime and Quarantine Council of Egypt. The report is very voluminous and exhaustive, covering over 400 pages of a bulky "blue-book," apart from appendices. The most important part is that dealing with Haffkine's anti-plague inoculation. The following are the conclusions: 1. Inoculation diminishes the incidence of plague attacks, but the protection is not absolute. Plague has attacked persons who have been inoculated as often as four times in the course of the two years previous to the attacks, and as many as 8 per cent. of the inoculated population may suffer from plague. 2. Inoculation diminishes the death-rate of those attacked. Here again the Commission has been unable to state the effect numerically. 3. Inoculation does not appear to confer any great protection within the first few days. 4. The protection conferred by inoculation certainly lasts a considerable number of weeks, possibly a number of months. The Commission recommends accurate standardization of the vaccine for the attainment of the best results, stringent precautions against contamination, and encouragement of inoculation whenever possible. With reference to the serum therapeutics, especially the serums of Yersin and Lustig, they say that though the success is in no way comparable to that obtained in the serum treatment of diphtheria yet the method, as in other infectious diseases, is the only one which holds out a prospect of ultimate success. As to the measures for the suppression of plague in

India the Commissioners say that while all have not been beneficial every possible experiment has been tried and every possible effort made to restrict and eradicate the disease. They point out that increased communications now render the spontaneous disappearance of plague less probable than formerly.

Smallpox in London.

The outbreak of smallpox is still increasing. The number of patients under treatment which had been 172, 180, 284 and 297 in the preceding weeks, has risen to 368 according to the last weekly return. The number of cases is still increasing, for there are 402 in hospital. In connection with the present epidemic the history of previous ones is of interest. The Registrar-General's returns, which commenced in 1838, show that the disease appeared in London in epidemic forms at intervals sometimes as short as 2 years, sometimes exceeding 5 years, until the great epidemic of 1871-72, when no fewer than 10,671 deaths occurred. The next epidemic occurred in 1876-78 with 4704 deaths, one in 1881 with 2367 deaths, one in 1884-85 with 2665 deaths. Then a great change was made in the method of isolating cases. Up to this time the hospitals were situated in London, but in 1884 hospital ships were established 18 miles down the Thames River. Only milder cases were sent to the ships. Subsequently all cases were sent as no ill-results occurred from the practice even in the most acute. In the three years, 1886-88, only 42 deaths from smallpox of London residents occurred; in 1889 not one; in 1890 and 1891, 11.

Royal College of Surgeons: Annual Meeting of Fellows and Members.

The annual meeting of the Fellows and Members was held at the College. The president presented the annual report. The usual annual resolution which has been passed for the last 17 years that the members should have a voice in the government of the College was passed. The College is governed by a Council consisting entirely of Fellows who are elected only by Fellows. The members, who number 16,000, have no voice in the matter whatever. However, as the Fellows are much the most highly educated section—the consultants of the surgical profession—this oligarchy of ability has its advantages. With true English conservatism the resolution passed at the annual meeting, the only opportunity that the members ever have of expressing any opinion in the government of the College, is always ignored by the Council.

London Fogs.

The reputation of the terrible London "pea-soup fogs" which turn day into night, is well known. They result from the suspension in the atmosphere of minute particles of carbon the result of the incomplete combustion of coal. At a recent meeting of the "Coal Smoke Abatement Society," Sir William Broadbent moved a resolution that "the pollution of the air by coal smoke is injurious to the public health and vitality, destructive of works of art and vegetation, and demoralizing to the inhabitants of a great city." Comprehensive as was this indictment it was not exhaustive. Every fog is a death warrant to a number of sufferers from bronchitis and heart disease. No one can live in London to a certain age without having his lungs speckled with carbon. The suburb of Kew, where are the celebrated botanical gardens, was once comparatively pure. Now, owing to the metropolitan extension, it is invaded by fog. During the prolonged fog of 1891 leaves fell in the palm houses in Kew Gardens and were swept away by the bushel. This was the result of the withdrawal of light. In addition, there was a deposit on the glass houses which resembled brown paint. It was calculated that this deposit was equivalent to the distribution of 6 tons of solid matter per square mile in the course of a week. This Society makes observations of offending shafts in which the production of smoke exceeds the legal limit and compels the owners to abate the nuisance. Since its foundation in March, 1899, it has carried out 2750 observations of offending shafts, made 1690 complaints and secured the imposition of fines amounting to $3500.

Correspondence.

Appendicectomy—Surgical History.

PHILADELPHIA, Dec. 9, 1901.

To the Editor:—In the interesting article appearing in last week's JOURNAL, contributed by Dr. B. Merrill Ricketts, of Cincinnati, upon "Appendicectomy—Surgical History," to which is appended a bibliography of the subject, from 1758 to 1888, there occurs a notable omission, that has doubtless not escaped the observation of some of your readers, and for supplying which I feel assured that Dr. Ricketts will be the first to thank me in the interest of accuracy and in justice to American surgery. By referring to THE JOURNAL I find that in Vol. x, on page 733, Dr. Thomas G. Morton of Philadelphia published an article entitled "The Diagnosis of Peri-Cecal Abscess and Its Radical Treatment by Removal of the Appendix Vermiformis." In this communication, Dr. Morton refers to a case, which had been diagnosed by two physicians as one of appendicitis, in which view Dr. Morton concurred and promptly operated by celiotomy and extirpation of the diseased appendix. This operation was performed on April 23, 1887, and therefore antedates the cases both of Sands (Dec. 30, 1887) and McBurney (May 23, 1888). The case operated upon by Morton had been reported by the undersigned, to the College of Physicians of Philadelphia, at its meeting one June 1, 1887 (Transactions of the College of Physicians, 3 Series, Vol. ix, page 183). The statement appearing in Dr. Ricketts' paper (p. 1534) that McBurney's patient (May 23, 1888) was "the first case in which an operator had deliberately planned for and did remove a diseased appendix" would be likely to convey a false impression, if attention were not at the same time directed to this case which had been correctly diagnosed and the operation of removal of the appendix deliberately planned and the plan successfully carried out by Morton more than a year before the date assigned by Ricketts, as that of the first operation of its kind. It perhaps should be stated that Dr. Morton was led to decide upon extirpation of the diseased appendix by his experience in a similar case a few months previously. On Feb. 21, 1887, he had performed a celiotomy for Dr. E. R. Stone, of this city, upon a woman suffering with pericecal abscess, in which the appendix was found to be extensively diseased. In this case also he ligatured the appendix at its base and removed the organ; but in this patient the diagnosis of appendicitis had not been positively made and removal of the appendix decided upon previous to the section. This case has also been reported (Transactions of the College of Physicians, Vol. ix, p. 189). The subject of the other operation was a young man who made a perfect recovery and is now engaged in active business life. References to this now celebrated case will also be found in THE JOURNAL for July 25, 1891 ("On Appendicitis with Peri-Cecal Inflammation" by Dr. Thomas G. Morton) and also in the Transactions of the Philadelphia County Medical Society for Dec. 14, 1887 ("Treatment of Peri-Cecal Inflammation" by Thomas G. Morton, M.D.)

Very respectfully yours, FRANK WOODBURY.

The Army Canteen.

HARTFORD, CONN, Dec. 6, 1901.

To the Editor:—The American Public Health Association is composed of many very practical men, and it is reasonable to suppose that they knew what they endorsed by vote at a recent session. The following resolution was offered and considered in a committee, then unanimously passed in the general session of the Association:

"Resolved, That this body deplores any action in curtailing the operation of army canteens or post exchanges and in the interest of general and military sanitation and temperance recommend their establishment *as formerly existing in the United States.*"

The spirit interests have circulated this resolution very widely as evidence that the canteens, with beer and spirits, are needed to keep the army temperate and sober. The "anti-canteeners" are using the same resolution to demonstrate that the public health doctors want no change, but recommend the establishment of the canteen "as formerly existing in the United States," which was originally without beer or intoxicants. The zeal of the authors of this resolution is more pronounced than their accuracy of statement; as a result the Association is placed on the fence, to come down on the side most convenient.

Very truly yours,

T. D. CROTHERS, M.D.

Married.

JOHN MARDER M.D., Venice, Ill., to Miss Ella Sommer, at St. Louis, November 23.

AUGUST W. SEIDLER, M.D., to Miss Mary C. Shields, both of Baltimore, November 24.

SHERIDAN A. LOCKWOOD, M.D., to Myrtle E. Spencer, M.D., both of Portland, Oregon.

JOSEPH J. MALLOY, M.D., Dublin, Texas, to Miss Halcomb, Ciseo, Texas, November 27.

HARRY CHILES HUGHES, M.D., to Miss Mary MeMahon, both of Baltimore, November 26.

BENJAMIN JAUDON, M.D., Palmyra, Mo., to Miss Susie R. Berkley, of Henderson, Ky.

NORMAN E. JOBES, M.D., to Miss May Heller, both of Indianapolis, Ind., December 7.

GEORGE L. PORTER, M.D., to Mrs. Norma Forrest, both of Trenton, Tenn., November 26.

BASIL T. BENNETT, M.D., to Miss Mabelle Harbert, both of Trenton, Tenn., November 26.

ROBERT B. ARMSTRONG, M.D., to Miss Helen Chase, both of Papillion, Neb., November 27.

ELMER E. BARR, M.D., Whiting, Neb., to Miss Flora Dahlberg, of Creston, Iowa, November 27.

ANDERSON WATKINS, M.D., to Miss Mary Hammond, both of Little Rock, Ark., November 30.

RUSSELL G. FLOYD, M.D., to Miss Jennie Setzer, both of Eureka Springs, Ark., November 27.

CHARLES B. FORMAN, M.D., to Miss Lala Blankenship, both of Attalla, Ale., at New York City.

JAMES CLINTON MOORE, M.D., Warrior, Ala., to Miss Willie Wallis at Talladega, Ala., December 5.

EDWIN MARTIN BULLWINKEL, M.D., to Miss Helene E. Weber, both of Brooklyn, N. Y., November 26.

DANIEL B. CLIFFE, JR., M.D., to Miss Martha Elise Jones, both of Franklin, Tenn., November 28.

C. DAVE SADLER, M.D., Baltimore, to Miss Ethelind L. Pittman at Whittaker's, N. C., November 27.

WILLIAM S. CUFF, M.D., Hancock, Minn., to Miss Edna A. Stewart, of Litchfield, Minn., November 28.

JOSEPH J. MEREDITH, M.D., St. Louis, Mo., to Miss Georgia Ella Muffley, of Ironton, Mo., November 28.

HILLIARD WOOD, M.D., Nashville, Tenn., to Miss Martha Louise Wood, of Sparta, Tenn., December 11.

ALBERT C. CRAWFORD, M.D., Baltimore, Md., to Miss Mary L. L. Page, of Virginia, at Baltimore, November 29.

JOHN MAIRS THORNE, M.D., McKeesport, Pa., to Mrs. Caroline Hartje Reineman, of Pittsburg, Pa., December 2.

FRANK B. FLORENTINE, M.D., Saginaw, Mich., to Miss Effie B. Ashelby, Jacksonville, Ill., at Chicago, November 28.

COUNCIL H. MAXWELL, M.D., Calvary, Ga., to Miss Catherine McDougall McIntosh, of Jacksonville, Fla., November 27.

JAMES A. ANDREWS, M.D., Eustis, Neb., to Miss Lulah Katherine Trott, of Kearney, Neb., at Omaha, November 27.

EDMUND A. MUNOZ, M.D., Baltimore, captain Fifth Regiment M. N. G., to Miss Lena Custis Wise, at Baltimore, December 7.

PERRY BROMBERG, M.D., Nashville, Tenn., to Miss Daisy D. Kleeman, of Clarksville, Tenn., at Hopkinsville, Ky., November 28.

J. PAGE MASSIE, M.D., Richmond, Va., to Miss Cynthia Mundy, daughter of Dr. John C. Mundy, of Allen's Creek, Va., November 27.

Deaths and Obituaries.

Sir William MacCormac.—In our last issue a brief announcement was made of the death of Sir William MacCormac, which occurred suddenly at Bath, England, from heart disease. As one of the greatest British surgeons of the day, his career calls for a rather more extended notice. William MacCormac was born Jan. 17, 1836, at Belfast, Ireland. The son of a physician, he followed his father's profession, and received a general and professional education at Belfast, Dublin and Paris. Though he held honorable professional positions before, his first general prominence was due to his observations during the Franco-German war of 1870, which he published in a work that has been translated into the German, French, Spanish, Italian, Russian and Japanese languages and made him the great authority at the time on military surgery. His subsequent service in the Turko-Servian war enlarged his experience in this line, and his recent connection with the surgical history of the Boer war is so recent as to be known to all in the medical profession. His standing with his confrères can be judged by the fact that he was several times elected president of the Royal College of Surgeons, and the honors he received from his own and other governments are almost too numerous to mention. His connection with the International



SIR WILLIAM MACCORMAC, F.R.C.S.I., F.R.C.S. ENG., ETC.

Medical Congress of 1881, to which he acted as Hon. Secretary-General, and to the success of which it is said he contributed more than any other man, brought him the honor of knighthood; he was made a baronet and surgeon-in-ordinary to the Prince of Wales in 1897. Besides his European honors, his work as a surgeon was recognized in this country by his election to the honorary fellowship in the American Surgical Association. At the time of his death he was consulting surgeon and emeritus lecturer in clinical surgery at St. Thomas' Hospital, the institution with which he was an active medical teacher for twenty years; his services and name were in demand in other hospitals and in various official positions. His death at the comparatively early age of 65 has deprived Great Britain of one of its most brilliant authorities in surgery. His best known works are "Notes and Recollections of an Ambulance Surgeon," 1871; "Antiseptic Surgery, Its Principles and Practice," 1880; and "Surgical Operations," 1885. His addresses, contributions to composite works, and separate articles would make an extensive list.

Josiah Abbott, M.D. College of Physicians and Surgeons of the Western District of New York, Fairfield, 1840, a veteran of the Civil war, in which he served as assistant surgeon of the 13th Heavy Artillery and as surgeon of the 119th U. S. Volunteer Infantry, who had practiced for half a century in Rindge and Winchendon, Mass., died at his home in the latter place, November 27, from paralysis, after an illness of only a few hours, aged 90.

David S. Perkins, M.D. Jefferson Medical College, Philadelphia, 1883, a member of the American Medical Association, formerly of Cleveland, Ohio, but for the last three years a resident of New Mexico, and medical director of the Montezuma Hotel, Las Vegas Hot Springs, died at El Paso, Texas, November 30, after an operation for tuberculosis of the liver.

Moses Marshall, M.D Ensworth Hospital Medical College, St. Joseph, Mo., 1885, a prominent physician of Easton, Mo., died at his home in that place, December 2, from blood poisoning from a wound on the hand by the fin of a catfish, after an illness of ten days, aged 48.

J. C. Munday, M.D. Tulane University, New Orleans, La., 1872, who had practiced in Lake Charles, La., until last winter, when, on account of ill-health, he removed to San Antonio, Texas, died at his home in that city from tuberculosis, November 24, aged 55.

James S. Bibby, M.D. Bellevue Hospital Medical College, New York, 1875, a practitioner of Paterson, N. J., for twenty-five years, died at his home in that city, November 28, from pneumonia, aged 58. He was a member of the Passaic District Medical Society.

J. R. Barkley, M.D. Memphis (Tenn.) Hospital Medical College, 1892, a resident of Woodburn, Miss., who was kicked in the knee by a horse and brought to the King's Daughters' Hospital, Greenville, Miss., for treatment, died there, November 30, aged 35.

John W. Brock, M.D. Starling Medical College, Columbus, Ohio, a member of the Noble County Board of Pension Examiners and a prominent physician of Caldwell, Ohio, died at his home in that place, December 3, from acute brain disease, aged 51.

David McDill, M.D. Rush Medical College, Chicago, 1887. Burlington, Iowa, died at the United States Military Prison, Fort Leavenworth, Kansas, where he was appointed surgeon a year ago, from apoplexy, December 4, aged 41.

Patrick J. McKenna, M.D. Tulane University, New Orleans, La., 1888, died as the result of fracture of the skull received by a fall from a railway train, at the Keogh-McKenna Hospital, Salt Lake City, Utah, November 29.

John C. Hartt, M.D. Long Island College Hospital, Brooklyn, N. Y., 1892, died at Kings County Hospital, Brooklyn, November 24, from skull fracture received in a fall from his horse six days previously, aged 40.

Charles B. Osborne, M.D. University of Buffalo, N. Y., 1890, coroner of Seneca County, N. Y., died at his home in South Waterloo, N. Y., December 2, from acute nephritis, after an illness of one week, aged 54.

Charles S. Essig, M.D. Jefferson Medical College, Philadelphia, dean of the dental department of the University of Pennsylvania, died at his home in Wallingford, Pa., from pneumonia, December 2.

Magruder Muncaster, M.D. University of Maryland, Baltimore, 1883, formerly of Washington, D. C., died at Rockville, Montgomery County, Md., November 28, from Bright's disease, aged 42.

Johnson G. McCullough, M.D., the oldest practicing physician in Belmont County, Ohio, died at his home in Bellaire, November 15, from paralysis, after an illness of three weeks, ager 75.

Adolph Wermuth, M.D. Fort Wayne (Ind.) College of Medicine, 1898, died at the residence of his parents in Fort Wayne, Ind., November 27, after an illness of fourteen days, aged 23.

Charles W. Ballard, M.D. Washington University School of Medicine, Baltimore, 1847, died at his home in Braidentown, Fla., November 27, from heart disease, after a short illness, aged 75.

Daniel Vortner Sevier, M.D. University of Louisville, Ky., 1854, who spent an active life in the practice of medicine in Franklin County, Ala., died at his home in Russellville, recently, aged 78.

I. Newton Evans, M.D. Jefferson Medical College, Philadelphia, a member of Congress for three terms, died suddenly at his home in Hatboro, Pa., November 3, from heart disease, aged 74.

Levi Hasseltine, M.D. Castleton (Vt.) Medical College, a practitioner of Bristol, Vt., for more than thirty years, died at the house of his son in Pittsford, Vt., November 26, aged 82.

James E. Gibbons, M.D. Washington University School of Medicine, Baltimore, Md., 1868, a physician of Baltimore, died suddenly from heart disease, December 2, aged 58.

T. Hampton Cook, M.D. Medical College of Ohio, Cincinnati, 1880, died at his home in Scio, Ohio, November 25, from cancer, after an illness of two years, aged 50.

John A. Elliott, M.D. Memphis (Tenn.) Hospital Medical College, 1886, died at his home near Bonicord, Tenn., November 26, from consumption.

George R. Edwards, M.D. University of Wooster, Cleveland, Ohio, 1883, died from Bright's disease, at his home in Los Angeles, November 28.

Edwin Davis, M.D., ensign and assistant surgeon U. S. Navy, a native of Louisville, Ky., died at Las Vegas, N. M., November 15.

C. L. Broaddus, M.D. University of Nashville, Tenn., 1899. died suddenly from heart disease at Wallonia, Ky., December 1. aged 40.

Henry C. Houghton, M.D. New York University, 1867. died suddenly at his home in New York City, December 1. aged 64.

O. C. Brittain, M.D. Atlanta (Ga.) Medical College, 1886. died at his home in Franklin, Ga., November 23, aged 64.

Carl Schenck, M.D., died from consumption at his home in Franklin, Ohio, November 27, aged 31.

Books Received.

THE SURGICAL AND MEDICAL HISTORY OF THE NAVAL WAR BETWEEN JAPAN AND CHINA, During 1894-1895. Translated from the Original Japanese Report, Under the Direction of Baron Saneyoshi. F.R.C.S. Eng., Director-General of Medical Department of Imperial Japanese Navy, by S. Suzuki, M.R.C.S. Eng., L.R.C.P. Lond., Deputy Inspector-General of Hospitals and Fleets, Imperial Japanese Army. Cloth. Pp. 544. Tokio: Printed by Tokio Printing Co., Ltd. 1901.

If there was ever any question as to the standing of Japan as a civilized nation the edition of a work like this would help to settle it in the affirmative. This handsome volume contains an account of the medical side of the naval operations during the Japanese-Chinese war and is the first elaborate contribution to the medical history of extensive naval operations in war under modern conditions. In fact, the battle of Yaru, as the Japanese spell it, though we have been used to call it Yalu, is the most extensive conflict of which medical records are available in which ironclads and modern weapons were employed. Our Spanish-American war gives us very little medical history of this kind, as the casualties on the American ships were so few. If we could get the Spanish side of it this would probably be different, but circumstances will probably forever forbid that. The volume contains an elaborate history of all the cases discussed and classified, including shell wounds, splinter wounds, powder burns, shock, steam burns, bullets, collision injuries, etc. The volume is instructively illustrated and translated by Dr. Suzuki into generally excellent English; only here and there a slip shows its foreign origin. It is in all respects a valuable contribution to the

medical history of naval warfare. It also covers the medical conditions of the Japanese fleet during the Chinese-Japanese war, discussing also such diseases as kakkê or beri-beri, which the Japanese authorities do not regard as infectious, but rather as a dietetic ailment. As the Japanese medical men have probably had a larger experience with it than any others, we must respectfully regard their opinion, even though it may not be our own. It is not stated in the work that it is a government publication, but we take it that this is the case, and if so, it is a credit to the government which sends it out.

Dictionary of Philosophy and Psychology, Including Many of the Principal Conceptions of Ethics, Logic, Aesthetics, Philosophy of Religion, Mental Pathology, Anthropology, Biology, Neurology, Physiology, Economics, Political and Social Philosophy, Philology, Physical Science, and Education, and Giving a Terminology in English, French, German and Italian. Edited by James Mark Baldwin, Ph.D. (Princeton), Hon. D.Sc. (Oxon.), Hon. LL.D. (Glasgow), Stuart Professor in Princeton University. With the Cooperation and Assistance of an International Board of Consulting Editors. In Three Volumes, with Illustrations and Extensive Bibliographies. Vol. 1. Cloth. Pp. 644. Price, $5.00. New York: The Macmillan Co. 1901.

This is the first volume of a work that, while not professedly medical, is one that any physician who reads and thinks can profitably utilize. The relation of psychology to medicine ought to be apparent enough to prove this statement without argument. This work, however, covers not only the subjects usually included in a dictionary of philosophy with psychology as an included branch, but those of biology, neurology and psychiatry which have in these later days come to be also in the cognizance of the student of human mentality. It is an encyclopedia dictionary not only of philosophy but also to a great extent of physiology and psychologic pathology. Its usefulness to the physician therefore is obvious; it can be of aid to him in his professional work as well as in his general culture. The consulting editorial staff includes names as well known in medicine as Exner, Ziehan and Morselli, and among the contributors those of Adolph Meyer, Hodge, Minot and others; they ought to be assurance that our science is adequately represented. There is no work like it in our language, no other that attempts to so fully cover the terminology of biologic, physiologic, mental and moral science as this does, or that more satisfactorily succeeds in its aim. The medical subjects are generally handled in a way that will prevent their losing their utility by soon falling behind the times and the work will long be a standard work of reference. The bibliographic references appended to each subject treated at length, materially add to its value. There is hardly any other work not strictly medical, that can be more sincerely recommended as an addition to the physician's library.

A Text-Book on Diseases of the Ear, Nose and Throat. By Charles H. Burnett, M.D., E. Fletcher Ingals, M.D., and James E. Newcomb, M.D. With Numerous Illustrations. Cloth. Pp. 734. Price, $5.00. Philadelphia and London: J. B. Lippincott Co. 1901.

This work on co-related branches has been written by leading specialists and teachers in their respective departments of otology, rhinology and laryngology. Each of the triad of subjects is introduced by a concise, yet thorough, description of the anatomy and physiology of the parts. It seems almost needless to say that the treatment is up to date in every respect. The mechanical make-up of the book, with regard both to material and workmanship, is beyond criticism. By means of large, well-filled pages, with a clean and clear type, the publisher has been enabled to bring the three allied subjects, thoroughly considered, within the limits of a conveniently sized treatise. It is certainly one of the best text-books on these branches before the profession, and as such we unhesitatingly recommend it.

Irregularities of the Teeth and Their Treatment. By Eugene S. Talbot, M.D., D.D.S., Professor of Dental and Oral Surgery, Northwestern University, Woman's Medical School. Fourth Edition. With 580 Illustrations. Cloth. Pp. 546. Price, $5.00. Philadelphia: F. A. Davis Co. 1901.

This fourth edition of Dr. Talbot's work, which is slightly altered in its title, has been thoroughly revised and in some portions at least is almost a new work. The last edition was received by the scientific world with much favor and it seems likely that this present edition will be even more satisfactory. The principal changes have been made in the first portion where he discusses the general principles of degeneracy and its causes. It is here almost an entirely new work; the latter part also has been revised, contains a much larger number of illustrations and statistical tables, and a great deal of new matter scattered throughout the text. There is no dental work that we know of which is more scientific than the present one, though in its form and general composition it is less difficult and technical than many pretentious works. The general make-up of the book is greatly improved over the previous volume.

Text-Book of Nervous Diseases, Being a Compendium for the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D., Professor of Nervous Diseases in Cornell University Medical College. Fifth Edition. With 244 Illustrations. Cloth. Pp. 633. Price, $3.50 net. New York: William Wood & Co. 1901.

This work, which has been much enlarged during the successive editions through which it has passed since its first appearance, has been revised and somewhat added to in the present one. The chapter on myelitis has been rewritten; a chapter on general paresis has been added, including this, as is proper, among the nervous diseases falling wholly as much to the specialty of neurology as to psychiatry. The author's experience with this disorder is of interest in that he shows a large proportion of Hebrews among his private cases, in this matter agreeing with a recent English observer who has called attention to this prevalence. The chapter on myelitis has been completely rewritten and though the author does not speak of the other changes that have been made, they seem to be such as add to the value of the work. The book is one that will undoubtedly continue to meet with the general favor that it has thus far received by the profession.

Diseases of the Respiratory Tract—The Nose, Pharynx and Larynx. By P. Watson Williams, M.D. Lond., Physician in Charge of the Throat Department at the Bristol Royal Infirmary; Physician to the Bristol Institute for the Deaf and Dumb. Fourth Edition. Illustrated. New York, London and Bombay: Longmans, Green & Co. 1901.

The rapid passage of this work through three previous editions bespeaks its popularity. This last edition contains over 400 pages of text besides an appendix of useful formulæ. It has nearly 250 illustrations, 37 of which are exceptionally fine plates, some of them colored, the others adapted to the stereoscope, which instrument the author has had slipped into a pocket in the cover of each volume. Its use, however, adds but little of practical value to the cuts. A feature of the fourth edition is the amplification of the sections on diphtheria and the diseases of the nasal accessory sinuses. If any special adverse criticism is to be offered it would be that many of the sections on treatment, as for instance, that on hypertrophic rhinitis deal with the subject too much in outline, without sufficient attention to details of method to be of service to the general practitioner and beginner on the one hand, or on the other, to the laryngologist already versed in technique of one or more methods.

Miscellany.

Gelatin Treatment of Aneurysm.—Brilliant success is reported from the subcutaneous injection of 175 to 220 gm. of a 2 per cent. solution of gelatin, repeated ten times in the course of two months, in case of a large aneurysm of the arch of the aorta and of the innominate artery. There was no local reaction, but the temperature rose, and five times a transient albuminuria was observed. The patient had entirely lost her dyspnea by the end of the treatment and could run and climb a mountain and do physical work. The relief was so marked that although the injections were painful, yet the patient clamored for them each time.—*Med. Obosrenye*, August.

Early Signs of Arteriosclerosis.—Cherchevsky states that in normal conditions the diameter of the aorta varies at different times. It becomes dilated if the region over the arch

is struck a few blows with the percussion hammer, while it shrinks in size if the blows are struck in the epigastric region. In case of arteriosclerosis it is impossible to produce these variations in the diameter. The aorta retains the same outlines at all times. Another sign of incipient arteriosclerosis is the lowering of the point in the back where the aortic sounds are most distinct. The subject sits astride a chair with arms crossed. In normal conditions, the maximum distinctness is perceived at the spine of the left scapula. In case of arteriosclerosis, the maximum is perceived at a point on a line between the angle of the scapula and the spinous process of the seventh dorsal, much lower than normal. Cury has been studying this sign which was first pointed out by Friedmann, and found it 89 times in 89 cases of arteriosclerosis, while he only noted it six times in a large number of presumably healthy persons, and 2 have since developed arteriosclerosis.

Mikulicz's Experiences with Carcinoma of the Stomach.—Out of 100 patients treated by resection, 17 per cent. are radically cured; 20 are still living, six months to more than eight years after the operation. The mortality was 37 per cent., and 25 per cent. in the last few years. The average survival is about a year, and patients succumb then usually to some internal, less painful and less distressing metastasis, in the ovary, bone or elsewhere. In 143 cases treated by gastro-enterostomy the mortality was 31.5 and 26 per cent. The patients survived five and a half months on an average, about thirteen and a quarter months after the first symptoms of the disease. Gastrostomy and jejunostomy proved to be merely palliative interventions, undertaken from humane reasons. The mortality after exploratory laparotomy was only 4.5 per cent., and the average survival was twelve months. Mikulicz concludes from these experiences on a total of 447 cases of carcinoma of the stomach observed during the last ten years, and all but 127 operated on, that resection and exploratory laparotomy are the preferable operations, while gastro-enterostomy is indicated only in case of stenosis of the pylorus with stagnation.

The Violet Cure for Cancer.—A paragraph has been going the round of the press, describing how a tumor of a tonsil, the diagnosis of which was "made certain by microscopic examination of a small portion removed," was "cured" by the application of a number of fomentations made from an infusion of green violet leaves. The patient, in gratitude of her recovery, has had printed some leaflets describing the mode of preparation and application of this infusion. We can fully enter into her feelings. She had suffered greatly for four months from a throat affection which was relieved by no treatment. She grew steadily worse and her life was despaired of. The diagnosis of "cancer" seemed to be confirmed by microscopic examination. Within a week of the application of infusions of violet leaves much of the swelling had disappeared and all pain had ceased, and in a fortnight the "cancer" of the tonsil had entirely disappeared. Overjoyed at her own recovery she hastens to make known to other sufferers the marvelous and simple method of treatment, ignorant that already many hopes of recovery have been founded on similar unsubstantial basis. The whole importance of the story depends on the accuracy of the diagnosis of epithelioma. All who are familiar with the clinical signs of a malignant disease of the tonsil can easily believe that it is not difficult to mistake deep-seated inflammation of the region for a malignant growth. As to the microscopic examination, the arrangement of the epithelium of a normal tonsil may easily resemble the epithelial down-growths of an epithelioma, and the resemblance is still more striking when chronic inflammation is present. The history of the case points to a very natural error of diagnosis. The violet leaf, by the way, figures not infrequently among the recipes of the old Anglo-Norman writers whose manuscripts are preserved in the British Museum. In modern pharmacopeias the violet is noted for its cathartic and emetic qualities, or, to speak more accurately, the Viola tricolor or pansy possesses these useful attributes. The dog violet also is vaguely recorded, in an old edition of Balfour's "Botany" (1854), to have been at some time or other prescribed for "skin disease." In the age of the Plantagenets monkish medical writers treated most diseases with the violet, whether dog, pansy, or sweet March they do not state. Intermingled with a multiplicity of other ingredients the modest flower was used to treat "a streytness of the hert," an illness akin, we may suppose, to dyspepsia. It was said to be good also for the stone, and if a broken fragment of bone had to be expelled from the flesh the violet, with other herbs, was considered most useful. Into these old medical mixtures the violet was always introduced in "a good handful" and we are at liberty to suppose that its pleasant perfume, in an age when contrasts were much insisted on, was supposed to work wonders against noisome suppurative ailments.—*London Lancet*, Nov. 23, 1901.

Societies.

COMING MEETINGS.

Western Surgical and Gynecological Association, Chicago, Dec. 18-19, 1901.

Seaboard Medical Association of Virginia and North Carolina.—The next annual meeting will be held in Norfolk, Va., December 17-19.

Tri-County Medical Association of Iroquois, Ford and Vermilion Counties (Ill.)—The annual meeting will be held at Paxton, December 30.

Des Moines Pathological Society.—At the annual meeting of this Society, held November 26, the following officers were elected: Dr. Crayke S. Priestley, president; Dr. Alva P. Stoner, vice-president; Dr. John F. McKitrick, secretary, and Dr. A. Raymond Amos, treasurer.

Eastern Oregon District Medical Society.—The physicians of Umatilla County and Eastern Oregon met for organization at Pendleton, November 27 and elected the following temporary officers: Dr. J. L. Miller, Pendleton, president, and Dr. T. M. Henderson, Pendleton, secretary.

Tyler County (Texas) Medical Association.—A meeting of the practicing physicians of Tyler County was held at Woodville, November 19, when an association was organized, to be known as the Tyler County Medical Association. Dr. William P. Chapman, Woodville, was elected president, and Dr. M. F. Bledsoe, Rockland, secretary.

Duluth-Superior Academy of Medicine.—At the annual meeting of the Academy held at the West Superior Hotel, the following officers were elected: Dr. William E. Ground, Superior, president; Dr. Alfred E. Walker, Duluth, vice-president; Dr. Patrick G. McGill, Superior, secretary and treasurer, and Dr. George H. Conklin, Superior, censor.

New Castle County (Del.) Medical Society.—At a recent meeting of the physicians of New Castle County, at Wilmington, it was decided to organize a county medical society. Drs. Joseph W. Bastian, James A. Draper, Jr., Wilmington, and Harry G. M. Kollock, Newark, were appointed a committee to prepare a constitution and by-laws, and to report at a subsequent meeting.

Northern Central Illinois Medical Association.—This Association held its twenty-eighth annual meeting at Dixon, December 3 and 4. Dr. John Ross, Pontiac, was elected president; Dr. Jane Reid Keefer, Sterling, first vice-president; Dr. William O. Ensign, Rutland, second vice-president, and Dr. George A. Dicus, Streator, secretary and treasurer. The next meeting will be held in Streator.

Minnesota Valley Medical Association,—The annual meeting of this Association was held at Mankato, December 3. The following officers were elected: Dr. William J. Mayo, Rochester, president; Drs. Franklin A. Dodge, Le Soeur, W. J. McCarthy, Madelia, and Edward W. Benham, Amboy, vice-presidents; Dr. Edwin D. Steel, Mankato, secretary, and Dr. George F. Merritt, St. Peter, treasurer.

Grand River (Mo.) Medical Society.—This Society met at Brookfield, Mo., December 5, and several papers of interest were read and discussed. The following resolution was adopted: "Resolved, That the Grand River Medical Society endorses the plan of medical organization as adopted by the American Medical Association and recommended to state and county societies; and that this society urges the Medical Association of the State of Missouri to adopt the plan at its earliest convenience." The following officers were elected: President, George W. Goins, Breckenridge; vice-president, Dr. Cantwell, Meadville; secretary, J. B. Eure, Brookfield; treasurer, J. L. Burke, Laclede, and curator, B. N. Stevens, Chillicothe.

Fox River Valley (Ill.) Medical Association.—The seventy-third semi-annual meeting of this Society was held at Aurora, November 26. Hon. Charles Page Bryan, minister to Brazil, and Dr. Daniel R. Brower, Chicago, were guests of honor. The following officers were elected: Dr. George E. Allen, Au-

rora, president; Dr. George J. Schneider, Elgin, vice-president, and Dr. Henry J. Gahagan, Elgin, secretary and treasurer.

Davenport (Iowa) Clinical Society.—Further steps toward the organization of this Society were taken at a meeting of physicians, and a banquet was held in the Kimball House, November 26, at which Dr. Clarence T. Lindley presided and Dr. Edward S. Bowman acted as secretary. There will be three grades of members, active, associate and honorary. Associate members will be medical students to whom no admission will be charged. The Society will embrace physicians of Davenport, Rock Island and Moline and of the adjoining counties. It is one of its purposes to establish a medical library.

UNIVERSITY OF CHICAGO MEDICAL CLUB.

Second Regular Meeting, held in the Hull Physiology Laboratory, Nov. 4, 1901.

DR. SIDNEY KUH presented the results of observations made in collaboration with Dr. Albert B. Hale. See "Mirror-Writing and the Inverted Image," THE JOURNAL A. M. A., No. 21, vol. xxxvii, p. 1380.

Law of the Innervation of the Frog's Leg.

DR. HENRY H. DONALDSON presented the following findings as evidence of an apparently simple law controlling the distribution of the medullated nerve fibers to the different segments of the leg of the frog (Rana virescens):

The data which are represented by the number of medullated nerve fibers in the various nerves of the leg are furnished by the investigations of Dr. Dunn, part appearing in a paper published under the title of "The Number and Size of the Nerve Fibers Innervating the Skin and Muscles of the Thigh of the Frog (Rana virescens brachycephala, Cope)," and part from a second investigation still in manuscript. In all both legs of three frogs have been examined. In the case of the first two frogs the observations apply to the innervation of the thigh and of the remainder of the leg, whereas in the third case the observations apply to the thigh, shank and foot of each leg.

It was shown, in the first place, that the number of medullated nerve fibers going to the thigh could not be determined by merely subtracting the number below the branches to the thigh from the total number above the branches, because some of the nerve fibers divided, and hence the number actually found in the branches was in excess of the number which had been estimated. In each one of the cases, six in number, this excess was determined and credited to the splitting fibers. With these data the attempt was made to find an hypothesis which should express the number of fibers actually observed to go to the different segments of the leg.

Tentatively, the simplest hypothesis was formulated, namely, that the ventral root fibers were distributed according to the weight of muscles in the different segments of the leg, and the dorsal root fibers according to the area of the skin. To test this hypothesis it was necessary to know, in the first place, the relative weight of the muscles and relative areas of skin in the several segments. By previous investigations these proportional weights and areas had been determined as follows:

TABLE 1.

	Relative Weight of Muscles. Per cent.	Relative Area of Skin. Per cent.
Thigh	64.0	36.5
Shank	24.3	24.9
Foot	11.7	38.6
Total	100.0	100.0

Fortunately the frog's leg does not change in form as it increases in size, and hence these percentages expressing the relative development of the different parts are independent of absolute size of the leg. To apply these percentages, it is necessary to know the relative abundance of the ventral root fibers and dorsal root fibers in the nerve supplying the thigh. This was determined at the level of the dorsal and ventral roots, where it was found that for every 100 ventral root fibers there were present 176 dorsal root fibers. Applying this ratio to the total number of fibers entering the thigh, it was possible to calculate the absolute number of ventral root fibers and the absolute number of dorsal root fibers there present, according to this ratio.

Next, the ventral root fibers were distributed according to the percentage of them called for by the weight of the muscles in the different segments of the leg, and similarly the dorsal root fibers were distributed in accordance with the area of skin. The numbers thus determined for each segment were added together, thus giving the total number of fibers which were, by hypothesis, to be expected in each segment of the leg. The next step was to determine the percentage value of these totals, and it was found that the proportion of the total number of fibers going to each segment was as follows:

TABLE 2.—Proportion of the total number of fibers to each segment of the leg.

	Per cent.
Thigh	46.3
Shank	24.6
Foot	29.1
Total	100.0

This gives us a statement to the effect that 46.3 per cent. of the total number of fibers entering the leg would be found distributed to the thigh and 24.6 per cent. to the shank and 29.1 per cent. to the foot. In each case it is to be remembered that the number of branching fibers is credited to the number which enter the segment of the limb and that the percentage is based on this sum. Under these circumstances the results are found to be as follows:

TABLE 3.

Frog.	Segment of leg.		No. of Medullated Fibers Observed.	Calculated.	Differences Based on Observed No. Absolute.	Per cent.
B	Thigh	r	2623	2542	+81	+3.0
"	"	l	2600	2580	+20	+0.7
C	"	r	2814	2862	—48	—1.7
"	"	l	2777	2860	—83	—3.0
II B	"	r	3508	3449	+59	+1.6
II "	"	l	3481	3446	+35	+1.0
II B	Shank	r	2130	2119	+11	+0.5
II "	"	l	2108	2106	+ 2	+0.1
II B	Foot	r	2497	2508	—11	—0.5
II "	"	l	2486	2492	— 6	—0.2

The very close approximation thus exhibited between the calculation and the number observed, completely supports the original hypothesis, and this leads to the formulation of the law in the following terms:

If the dividing fibers in each segment of the leg are taken into account, then the observed number of medullated fibers innervating a given segment of the frog's leg is equal to the number calculated on the hypothesis that the efferent fibers are distributed in proportion to the weight of muscle and the afferent in proportion to the area of the skin. It is to be noted in conclusion:

1. That this law at the moment is applied to the frog's leg only, and is not extended to higher vertebrates.

2. That although in the terms of this hypothesis the afferent fibers are distributed according to the area of the skin, yet this is by no means equivalent to the assertion that the afferent fibers are all cutaneous fibers, for we have every reason to think that very many of these fibers are distributed to other portions than the skin.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, held Nov. 7, 1901.

Dr. Herman Knapp, Vice-President, in the Chair.

The Causation of Multiple Neuritis.

DR. M. ALLEN STARR presented a paper on this topic. Speaking of arsenic, he said that arsenical multiple neuritis had often resulted from the use of toilet powders containing this substance, as well as from the inhalation of arsenic from colored wall-paper. He had himself seen a remarkable case exemplifying the latter source of arsenical poisoning. Ar-

senic had also been found in beer, having found its way into that beverage through the use of glucose made from sulphuric acid derived from pyrites containing arsenic. In these days when copper is so extensively used for electric purposes it was not unreasonable to find arsenic poisoning in workers who use copper containing arsenic as an impurity. In some factories, notably those making copper for electric purposes, it is found necessary to expel the arsenic from the copper. This is done by the application of heat, and although the fumes are conducted to the tops of tall chimneys the workmen are very apt to suffer from arsenical neuritis. Workers in potteries are apt to be affected by the lead used in the manufacture of these goods, and it should not be forgotten that lead is also an ingredient of the glaze found on earthenware kitchen utensils, and that in this way it sometimes gets into food. With the modern methods of making mirrors the danger of mercurial poisoning is largely eliminated, and it is rare indeed that multiple neuritis arises from the medicinal use of mercury. This metallic poison is, however, used in England for producing the gloss on silk hats, so that persons engaged in this industry may fall victims of mercurial poisoning.

Turning from this class of cases to those resulting from poisoning by non-metallic substances, Dr. Starr said that prominent among this group of etiologic factors stood alcohol, and it should always be borne in mind that it was not alone the quantity of alcohol imbibed but the individual susceptibility to the effects of alcohol that must be reckoned with. Coal gas was well known to give rise to neuritis, but it was not so generally known that the same is true of natural gas, and that neuritis has become much more common in districts making a general use of this gas for fuel. Now that the manufacture of rubber tires had become such an important industry in this country it behooved physicians to be on their guard for cases of multiple neuritis arising in rubber workers from inhaling the fumes of bisulphid of carbon. Neuritis may also arise from the use of certain drugs of the coal-tar series, notably from antipyrin, acetanilid, sulfonal, trional, and chloretone and trional.

Another important class of cases of multiple neuritis includes the neurites arising from toxemia, familiar examples of which were to be found in connection with diphtheria, grip, typhoid and typhus fever, scarlatina, measles, mumps, whooping cough, smallpox, pneumonia, gonorrhea, puerperal and other forms of septicemia. Some of the cases of neuritis thought to be directly dependent on typhoid fever were no doubt the result of the free use of alcoholic stimulants during the course of that disease. Neuritis may also arise in connection with various dyscrasias, such as rheumatism, gout, diabetes and arteriosclerosis. It is probable that syphilis is not generally a factor in the causation of multiple neuritis. There were in addition to the foregoing a certain number of cases of multiple neuritis that, because of our lack of knowledge, must still be classed as idiopathic.

DR. C. L. DANA said that he preferred to divide cases of multiple neuritis into three broad classes: 1, those due to toxic causes; 2, those dependent upon dyscrasias, and 3, those resulting from infection. Cases belonging to the third class were characterized clinically by motor phenomena, while those dependent upon dyscrasias were largely of the sensory type. Most persons afflicted with neuritis are neuropathic, and often a so-called alcoholic multiple neuritis was the result of a very moderate indulgence in alcohol together with the excessive use of tobacco. According to his own statistics, alcohol was the cause of two-thirds of all the cases of multiple neuritis, though in the class of women found in our hospitals tea-drinking is an important causal factor.

DR. B. SACHS deplored the growing tendency to diagnose cases of multiple neuritis as alcohol upon a very slender basis of fact. This diagnosis should not be made unless the neuritis coexists with other symptoms of chronic alcoholic poisoning. He had seen multiple neuritis in children living in the swampy districts of Long Island, and proved to be suffering from malarial poisoning. In only one instance had he met with syphilitic multiple neuritis, and in this one the diagnosis had been made purely by exclusion, and its correctness had been confirmed by the results of treatment. He was surprised that Dr. Starr seemed to think diabetic multiple neuritis so rare, for he had not found it so.

DR. FRED PETERSON remarked that in cases of alcoholic multiple neuritis there was often a peculiar mental state characterized by a loss of the sense of time and place. He reported, as an example of the uncertainty of action of chloretone in tablet form, a case in which a young girl had swallowed without appreciable effect 25 five-grain tablets of chloretone.

DR. JOSEPH COLLINS thought diabetic multiple neuritis was comparatively common; it had certainly been so in his experience at the City Hospital. He had met with several cases of tuberculous neuritis, and had seen three cases in which investigation had seemed to prove that the neuritis had resulted from lead poisoning, the lead having been taken into the system through the use of snuff that had been packed in a leaden casing.

DR. HERMAN KNAPP thought the term neuritis had been used in this discussion without any histologic basis for the implied existence of an inflammatory process. While it was true that an optic neuritis could be actually seen after the grip, it was not true that tobacco gave rise to any such inflammation in the eye, for, in cases of tobacco amaurosis one sees with the ophthalmoscope no evidence of inflammation, but only of an atrophy.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held Oct. 28, 1901.

The President, Dr. N. P. Dandridge, in the Chair.

Fetal Chondrodystrophy.

DR. ALBERT FREIBERG presented this case. It was noticed soon after birth that the child's thighs and legs were much bent and that they were apparently tender on manipulation. The same could be said of the upper extremities, although in less degree. An examination of the child showed none of the evidences of rickets in its classical form. There was no beading of the ribs; there was nothing abnormal in the formation of the skull and the tenderness of the long bones was not confined to the epiphyseal regions, but well marked over the diaphysis in each case. The child did not present any of the characteristics of congenital syphilis. It cried almost incessantly during the first two weeks of life, but afterwards seemed comfortable. The child disappeared from his observation and was not seen for several months, and then at the Jewish Hospital. Without having accurate measurements upon which to base the statement, it appeared to him that the child's extremities had not, at the time of the second examination, grown to a degree commensurate with the growth of the trunk. Aside from this he could see no change of importance. There seemed to him no doubt but that in this case there existed the rather unusual condition known as achondroplasia, or by the better term of chondrodystrophy. It is the condition which is now considered responsible for many of those examples of onanism with great deformity found in anatomical museums; it is a condition which runs the greater part of its course during intra-uterine life, for at birth the activity of the process has for the most part come to an end. The disease affects chiefly the long bones, therefore those developed from cartilage. Bones developed from membrane are rarely affected. Anatomically the disease consists of an interference with the activity of the epiphyseal cartilages. The periosteum retains its osteoplastic activity. It follows, therefore, that while the length is greatly reduced, the transverse diameter of the bone is practically normal. In rickets we have the bones of normal length with curvatures not much accentuated until they have borne weight; in chondrodystrophy, on the other hand, the bones are shortened, thicker than normal, and often greatly curved even at birth. According to Regnault, it is possible by the examination of the skeleton of the adult to say whether the condition which produced the deformity was rickets or chondrodystrophy. In chondrodystrophy the bone is shortened, thickened, and all of its normal prominences are exaggerated, but the bone is not

necessarily curved at all. In rickets the curvature of the bone is not accompanied as a rule by shortening. We are familiar with this fact clinically. According to Turner the essential anatomical change is located at the epiphyseal line. The columnar arrangement of cells normally present here in growing bone is defective or even absent; there is a fibrous ingrowth of periosteum at this point, so that cartilage cells can not develop into the normal osseous areolæ. The epiphyses increase, it seems, by irregular and excessive growth of the perichondrium. The periosteum continues to grow, and the bone is therefore much thickened and of irregular shape. Turner believes that the condition of rickets in utero is unknown and he therefore objects to the terms congenital and fetal rickets, it would appear, with much reason. The clinical importance of these cases of chondrodystrophy lies in recognizing the nature of the disease and its prognosis. It has been essayed to treat the condition by thyroid medication, but without result. These patients seem condemned to the condition of dwarfism, and it is well that the parents should be informed of this at not too late a period. If any attempt is made to overcome the deformity of the bones and particularly if the operative method is chosen, it should be made clear that they will be lengthened only, inasmuch as the curves are straightened, and they will nevertheless continue to be shorter than normal. It is otherwise conceivable that the shortening might be attributed to the fractures or osteotomies as the case may be.

Gunshot Wound of the Abdomen.

Dr. N. P. Dandridge said that the young boy came into the Cincinnati Hospital June 9, 1901, having shot himself only a few minutes before with his father's pistol. The pistol was a 32-caliber. There was an abdominal wound of entrance and a wound of exit, and the wing of the ileum was furrowed by the ball. The boy was brought into the hospital, and was considerably shocked, but not profoundly so. The pulse was accelerated, but not irregular, and was quite perceptible. Operation was decided upon at once, and the boy was on the table within an hour after the accident. The intestines were taken out and three wounds in the small intestine were at once discovered, two of these being within 3 or 4 inches of the point of entrance of the bullet. The loop containing the wounds was taken out and sutured. Upon further examination it was discovered that there was an opening into the stomach on the anterior wall and also one on the posterior wall. In the stomach was quite a quantity of semi-digested food, and there had been a slight amount of leakage from that organ. The wound on the posterior wall was smaller than that on the anterior and there was no eversion of the mucous membrane in this perforation as there was in the wound of the anterior wall. Four other perforations were discovered in the intestines, making seven wounds of the intestines, besides the wounds of the stomach. The point at which the bullet passed out of the abdominal cavity was not discovered. I make mention of this fact because I think from the sequela of the case that perforation of the large intestine may have occurred. The boy made a satisfactory recovery. The temperature on the day after the operation was 102, and after that ran along at about 100 until the 16th day, when it suddenly went up to 103, and there was a discharge from the external wound of a quantity of foul pus. Two days after the accident there was a discharge of blood from the bowel, which continued for several days. A sinus persisted at the point of entrance. This was opened up and a portion of the bone that had been injured by the passage of the bullet curetted. The wound then healed up promptly and the boy left the hospital on the 40th day after the injury. He is in perfect health and does not suffer from the wound.

Cardiac Specimens.

Dr. O. P. Holt presented a specimen of tumor of the ventricular wall of the heart, situated near the apex. The tumor was about the size of a small lemon, and microscopic examination showed that it was completely surrounded by muscular tissue. Examination also showed the mass was an organized blood clot; there was thrombosis of the anterior coronary artery and the latter was also very markedly sclerotic. The hemorrhage could be readily traced to the rupture of this artery. The symptoms of the case were those of organic incompetency of the mitral valves. The case was from an adult male, aged but 31. The pathological report was made by Dr. H. J. Whitacre.

Dr. G. A. Fackler presented, in this connection, a specimen of acute suppurative myocarditis in which the condition was unsuspected during life, the symptoms having been masked by a pneumonia.

Dr. J. E. Greiwe presented a specimen of diseased heart in which there was a fibrous ring completely surrounding the aortic ring and extending up into the aorta. The beginning of the aorta was the seat of incipient aneurysm. The case was interesting in connection with Dr. Holt's, showing two distinct phases of relative incompetency, yet both dependent upon underlying arterio-sclerotic processes.

MEDICAL SOCIETY OF RUSH COLLEGE.

Regular Meeting, held Nov. 4, 1901.

Pathological Specimens.

Dr. Ludvig Hektoen presented the following two specimens: 1. Stricture of membranous urethra, ascending gangrenous inflammation of the entire urinary tract: The stricture was located a few centimeters from the meatus. Owing to the obstruction great dilatation of the bladder, the ureters and the renal pelves had resulted, followed by a violent necrosis and gangrene of the entire mucous membrane, which presented a rough, shreddy and dirty grayish appearance. There was present in characteristic form the necrosis of the apices of the medullary pyramids seen in recent dilatation of the renal pelvis and attributed generally to pressure. At the autopsy (Dr. Wells) the turbid, foul urine in the bladder was covered by a layer of liquid fat, which probably came from the extension of the destruction to the fat at the hilum of the kidneys. No other source for the fat was found. The patient entered the Cook County Hospital in coma and died soon after so that exact facts as to the previous occurrences were not obtainable.

2. Healed ulcerative endocarditis of the aortic valves: Two specimens were presented of hearts, in each of which one aortic valve showed a large rounded perforation, with smooth but thick and sclerotic margins, about 1 cm. in diameter, situated in the substance of the valve between the line of closure and the base. There was in each case general sclerosis and deformity of the aortic valves, the result of endocarditis, and in one case an acute destructive process was engrafted upon the chronic. The size, the location, the character of the margins of the perforations as well as the several scleroses of the valves led to the conclusion that it concerned healed ulcerative processes, which probably had caused valvular aneurysm with perforation, and that the specimens afforded anatomic evidence of the healing of ulcerative endocarditis, a possibility the occurrence of which is supported by clinical observations.

Two Cases of Ocular Paresis Presenting Unusual Clinical Pictures.

Dr. F. C. Hotz said that paralysis of any ocular muscle causes a deflection of the visual line of the affected eye (strabismus) and diplopia, which is especially noticeable when the eyes are turned in a direction requiring the co-operation of the affected muscle. Under ordinary circumstances these symptoms (strabismus and diplopia) make correct diagnosis an easy task. But the diagnosis becomes a perplexing problem if the patient prefers using the affected eye, perhaps because it has much better vision than the other eye, or for some other reason; for as soon as the affected eye is made to look straight the other eye will show a marked strabismus. In these cases the diplopia tests are exceedingly valuable for the diagnosis. To illustrate, he described the following cases:

Case 1.—Salesman, 37 years, presented himself with a marked convergent squint of the right eye and homonymous diplopia, which had come on about two weeks ago; cause unknown. Apparently paralysis of the externus of the right eye;

but the double images came together when the light was moved to the right, and they separated when it was moved to the left. Homonymous lateral diplopia indicates paralysis of the externus and the separation of the images towards the left points to the externus of the left eye as the affected muscle. The diagnosis was confirmed by the fact that the abduction of the right was normal, while the abduction of the left eye was greatly restricted.

CASE 2.—A workman, age 38, was struck over the left eye and six weeks later began to see double. The left eye is straight, the right eye is turned down and in. It looks as if the right eye could not be turned up—paralysis of its superior rectus or inferior oblique—but the diplopia test shows the image of the right eye above and to the right of the image of the left eye, the images separating in the upper field and coming together in the lower field. This test plainly shows that the downward movement of one eye is restricted, hence that the affected muscle is one of the depressors—inferior rectus or superior oblique. Homonymous images point to the superior oblique and the image of the left eye, being lower, points to the left eye. Hence the correct diagnosis is paralysis of the superior oblique of the left eye.

Epitheliomata.

DR. WILLIAM H. WILDER showed a man, 71 years of age, who, seven years before, had had an epithelioma removed from the lower lip. A short time ago, epithelioma developed in the upper inner part of the right orbit, involving the eyeball. The case is under treatment by Dr. Pusey with the *x*-rays.

He also showed a case of a man, 51 years of age, from whose right cornea he had removed an epithelioma. Recovery of perfect vision followed the operation. He also showed two specimens of epithelioma of the cornea, one of which was situated on the limbus and the other wholly within the cornea.

Sarcoma of Iris.

DR. A. B. HALE presented a case of a young woman of 22, from whom he had removed a sarcoma of the right iris. The tumor was detected less than three weeks after symptoms of pain had appeared and had been promptly excised—seemingly in a capsule. The microscope confirmed the diagnosis, and the history of the case, together with the subsequent behavior of the eye, which was now, six months after the operation, perfectly normal, indicated a primary sarcoma of the iris without recurrence. (Microscopical specimens were exhibited.)

Dr. Hale also demonstrated an eyeball enucleated 60 hours after a penetrating wound with a piece of steel from a hammer. The path of the foreign body through the lens to a bed in the choroid anterior to the equator was plainly visible. The eye had shown no inflammatory reaction, but an *x*-ray photograph was positive. He acknowledged the progress made during recent years in diagnosis and treatment without the destruction of the eyeball, of such cases, but in view of this patient's age, namely, 77, and the unavoidable danger from delay, enucleation had been promptly done with the full consent of the patient.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting, held Nov. 12, 1901.

Ectopic Pregnancies.

DR. J. HENRY BARBAT exhibited some pathological specimens. The first specimen was one of a "Tubal Pregnancy Resembling Appendicitis," in a woman 19 years of age, who menstruated at the regular time, but suffered unusual pain in the lower part of the abdomen. After flowing the regular number of days she ceased for four days and then began again, the flow coming on with sudden pain in abdomen; vomiting and tenderness over the right side; bimanual examination was negative; uterine scrapings did not show any decidual cells. The day after curetting laparotomy was performed and the appendix found coiled under the cecum and presenting a peculiar thickening near the distal end, which was cicatricial due to an appendicitis obliterans. The right ovary and tube were palpated and found normal, the left ovary was normal and the left tube, which could only be felt for about three-fourths of its distance, was apparently free and did not feel larger than the right. No blood was found in the pelvis, so the abdomen was closed. Occasional attacks of pain followed the operation, and two weeks subsequent an exceedingly tender mass was detected on the left side of the uterus. The patient had slight flow ever since the curetting and another laparotomy was performed when the pelvis was found full of blood clots with the left tube distended at its distal end and bleeding through a rupture close to the fimbriated extremity, which was removed close up to the uterus. A fetus, at least seven weeks old, was found in the blood clots. Recovery was uneventful. The case illustrated the difficulties which sometimes present themselves in ectopic pregnancy, and showed how much suspicion must be attached to a renewal of the menstrual flow after it had stopped for several days, especially if it continued and was accompanied with pain and tenderness in the abdomen.

The second specimen was also one of "Tubal Abortion" and was the result of operation on a woman 28 years of age who forty days after her last menstruation, flowed for two weeks. This ceased for three or four days and then began again; she had intermittent attacks of pain which, on one occasion was so severe that it made her feel faint. Physical examination revealed a mass three inches in diameter in the cul-de-sac, very tender and evidently connected with the right side of the uterus. Tubal abortion was the diagnosis and operation done the next morning. The pelvis was filled with a soft boggy mass, strongly adherent to the posterior wall of the uterus, and which proved to be the right tube, and was removed, leaving about one inch of normal tube. The left tube was adherent and thickened at its middle, occluding its lumen and so was removed also. The patient went home at the end of three weeks perfectly well.

The specimen from the right tube proved to be a tubal pregnancy in the seventh or eighth week and had been extruded from the end of the tube with the placenta and a large clot of blood, which was still strongly adherent to the fimbriated extremity.

President's Address.

DR. GEORGE H. EVANS, the retiring president, read a paper in which he made some recommendations for the future policy of the Society. The work done by the Society during the past year, which was very satisfactory, was then reviewed. The plan of having two or more papers, taking up different phases of the same subject, was commended, but it was to be hoped that in the future more attention would be paid toward getting clinical reports. The increase in membership had been satisfactory. The membership at the present time being 37 per cent. of the entire regular registration of the county, which the writer thought was a larger proportion than existed in any large city in the country. The membership could be increased very materially if the method by which applicants gained entrance was changed. Membership should depend either on a majority vote of the Society or on the vote of the Committee on Admissions alone. The co-operation of the smaller local societies could also increase the membership. There should be no rivalry between this body and any other local societies, for their purposes were not identical. Membership in the others should be contingent on membership in the County Society. All methods whereby membership could be increased, should be urged, for it was only through the thorough organization of the County Society that the beneficent objects of the reorganization plan of the American Medical Association can be consummated and the profession united into "a compact organization reaching into every county in the Union." Harmonious action between this Society and the Committee on Reorganization of the State Society was urged. Attention was called to the value of the library, which was not used by the members as much as it should be. A great many additions had been made during the year, but more journals, especially foreign ones, were needed; also such textbooks as were beyond the reach of some of its members. The writer thought that a larger proportion of the funds should be used freely for this purpose. A change in the constitution

should be made, providing for a standing committee on public health, which should take up measures looking toward the education of the laity in such matters. This he thought was clearly one of the duties of medical societies which had been too much ignored in the past. Such a committee could also undertake an investigation of the milk supply, after the plan of the Milk Commissions of the Philadelphia Pediatric Society and the New York County Medical Society. Such work was needful. A committee of medical legislation should be also created. The state medical bill which recently passed the legislature had been strongly opposed, and such legislation should have an active committee in the Society to protect and father it; for those whose selfish interests were adversely affected by this bill would undoubtedly be interested and watchful for an opportunity of seeing it repealed or amended. Medical charities and medical contract work should engage the serious attention of the Society, for their effects had proven pernicious.

The following officers were elected for the ensuing year: President, John C. Spencer; first vice-president, R. L. Rigdon; second vice-president, M. Krotozyner; recording secretary, W. F. Barbat; treasurer, F. R. Dray; librarian, Vard H. Hulen.

DENVER AND ARAPAHOE MEDICAL SOCIETY.

Regular Meeting, held Oct. 22, 1901.

The President, Dr. H. G. Wetherill, in the Chair.

Tuberculosis in Colorado.

Dr. S. E. Solly, Colorado Springs, spoke on this subject. He said the first case of tuberculosis originating in Colorado was brought to his attention some years ago by Dr. Meigs, of Philadelphia, who had a patient, a miner, under his treatment in the Philadelphia Hospital. He himself has seen only one case. It was in a boy, 17 years old, who lived in Colorado for seven years. There was no tuberculosis in his family. He had no doubt that the disease in this case originated in Colorado. He had seen in consultation a child that suffered from meningitis and tuberculosis of the lungs. Neither the neighboring children nor the parents suffered from tuberculosis. He knows of another case, a plumber, who hired a helper suffering from consumption of advanced stage. The plumber slept with his help in the same bed. Eighteen months after the first hemorrhage he died. Dr. Solly recited several other cases of tuberculosis, originating in Colorado, which were mentioned to him by Drs. Strickler, Nash and others. He is convinced that tuberculosis can develop in Colorado. He believes the germ of tuberculosis is omnipresent, and can be developed under favorable conditions. No matter that indigenous cases are but few in Colorado, it is still a question to which the profession should devote a great attention. He believes registration to be a good thing, but the disease spreads not alone from private houses, but from hotels, workshops, offices, etc. All efforts should be directed toward educating the people in matters of public and private sanitation.

Dr. J. N. Hall said that he reported five cases of tuberculosis originating in Colorado some five years ago. Since that time he has seen fifteen cases during his service in the County Hospital, the clearing house of consumptives.

Dr. Wm. P. Munn related the history of three cases originating in Colorado: A man in perfect health who developed tuberculosis of the spine and then of the lungs after his tuberculous nephew sojourned in his house for one year. The other was a young woman who developed tuberculosis during her pregnancy. The infection in her case was traced to carpets bought of a tuberculous patient. The third case was a woman who worked in a store in proximity to two men suffering from tuberculosis. As to prophylaxis, every man has a right to seek a place where his health will be restored, but society has a right to demand of him to conform to conditions which tend to lessen the danger of infection.

Dr. G. E. Tyler had seen during the last three years about 10 cases of tuberculosis originating in Colorado. While filing the mortality statistics of Colorado he noticed that the majority of the indigenous cases originate not in large cities, but in mining camps. He made some investigations and ascertained that these cases begin as miner's consumption and become eventually tubercular. It is said that it is caused by the material used in blasting.

Dr. C. B. Richmond said that during the early period in Colorado the miner worked at the surface. Now a depth of 2000 feet is reached. The miner passes eight hours underground, eight hours in the saloon and eight hours in a small, dirty and ill-ventilated room. It is lack of oxygen that causes trouble in the tenement houses as in the camps.

Dr. E. P. Hershey related a case in which direct exposure could not be traced. A lawyer in opulent circumstances with no bad habits came down with what was at first believed to be typhoid fever, but proved eventually to be rapid consumption.

Dr. Leonard Freeman encountered a case of tuberculosis of the testicle in a ranchman, which developed in Colorado.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

PRESCRIPTION WRITING, V.

(Continued from p. 1556.)

The frequency of administration, which is the third important point mentioned above, will be more conveniently considered later along with the fugitive and cumulative action of drugs.

Idiosyncrasies Toward Drugs.

As a rule male patients bear larger doses of medicine than female. However, in either sex idiosyncrasies are manifested when certain drugs are given. For the sake of illustration, mention may be made of certain untoward symptoms produced by the following drugs:

Quinin sulphate produces very readily, in some individuals, the pronounced ringing in the ears, in others nausea, and in others again it produces a marked eruption over the body. The hydrobromate of quinin is sometimes tolerated in such cases as the above, and by giving the bisulphate hypodermically the nausea can be eliminated. We speak of giving the quinin bisulphate hypodermically because it is the most soluble salt of the alkaloid, being soluble in about 15 parts of water.

Potassium iodid can not be tolerated by certain susceptible individuals, as it causes headache in some, and in others the marked eruption on the skin even though given in small doses. It may be accompanied by other symptoms of iodism.

Strychnin sulphate induces occasionally an increased degree of nervousness; susceptibility is rare when we consider that in the form of nux vomica it is given as much or more than any other drug in the pharmacopeia.

Arsenic also has to be carefully administered and the patient closely watched on account of poisonous symptoms developing in certain cases after the use of even very small doses of the drug. Vomiting may occur, due to its effect upon the stomach. Arsenic is better tolerated when prescribed in the form of Fowler's solution and given well diluted in water.

Cocain, when applied locally to the membranes of the nose or mouth, even in dilute solutions, will cause dizziness and fainting in some cases, whereas 10 per cent. solutions may be applied several times in others with scarcely more than a full sensation in the head.

Opium may act in various ways. This may be due to the fact that it has many alkaloids, the three most important of which are codein, morphin and thebain, each having an entirely different action. As Brunton puts it, they form a chain, at one end of which is a convulsant and at the other a powerful hypnotic. Thus, some susceptible individuals may be peculiarly influenced by the convulsant and others by the powerful hypnotic.

Chloral is another drug which although physiologically a

sleep-producer will in certain cases bring on delirium and general cerebral excitability.

The administration of iron in its different forms may produce a sensation of fulness in the head which is an unpleasant feeling to the patient.

Dwelling a little longer on the idiosyncrasies, it will be of interest to relate the action of some of the foregoing drugs on animals as contrasted with their action upon the individual. This is due in the majority of cases to the lack of development of the nerve centers and nervous system generally in animals. The general class of emetics will not produce vomiting in the rodent animals. A rabbit is not susceptible to effects of morphin, it being capable of withstanding thirty or forty times the amount of the human adult dose. Atropin exercises no influence on the heart of the rabbit. In birds, in which the temperature is much higher than in mammals, morphin produces no hypnotic action, but it has a marked antipyretic effect. Snails are said to withstand much larger doses of strychnin than man, easily explained, however, on account of the low developed nervous system in that molluse.

(To be continued.)

Treatment of Stricture.

It has been recommended by Bazy, in *Med. Rec.*, to apply the following in treatment of stricture:

R.	Potassii iodidi	3i	4
	Lanolini		
	Ung. aq. rosæ, āā	3iv	16

M. Sig.: Apply for five minutes daily to the perineo-bulbar region.

Treatment of Alopecia Areata.

Laboraud, in *Jour. des Pract.*, recommends that the head be shaved, followed by frictions with a medium toothbrush moistened with the following:

R.	Hydrarg. chloridi corros.	gr. iii	20
	Acidi acetici	gr. xxx	2
	Alcoholis	℥v	160
	Etheris (officinalis)	℥i	32
	Saponis (coal tar)	℥i	32
	Salol	gr. viiss	5

M. Sig.: Apply locally with friction.

In case of increased activity, at any point, the part should be touched with a pledget of cotton moistened with the following:

R.	Acidi acetici	gr. xi	70
	Chloralis hydratis	gr. lxxv	5
	Etheris (officinalis)	℥i	32

M. Sig.: Apply locally.

Treatment of Goiter.

Dr. A. Meyer, as noted in *Deut. Aertzt. Ztg.*, states that since iodin has been recommended in sclerosis of the middle ear, he thought he would give it a trial in this affection. The patient had besides ear trouble, an enlarged thyroid gland the size of one's fist. While no improvement could be noticed in the ear affection, the goiter at once began to diminish until it disappeared altogether. He then tried it in another case with as good results. The 10 per cent. iodipin was given in teaspoonful doses three times a day. No untoward effects from its administration were noticed.

Treatment of Simple Chancre.

The following is recommended by Hallopeau and Lereddi, according to *Amer. Med.:* The chancre should be washed with hot sodium bicarbonate solution. All crusts and pus should be removed and the surface cauterized with the following:

R.	Alcoholis (60 per cent.)	℥iiss	10
	Acidi carbol.	gr. xv	1

M. Sig.: Apply locally every second day.

Or

R.	Zinci chloridi	gr. xxx	2
	Aq. destil	℥v	20

M. Sig.: Apply locally and repeat in two days.

The dressing should be completed by an application of iodoform, bismuth, salicylate or bismuth subgallate. If phimosis exists, the patient should be instructed to inject an antiseptic wash between the prepuce and the glans several times a day, and especially after urinating. For this purpose, solutions of corrosive sublimate, 1 to 200, may be employed. The washings should be followed by an injection of liquid vaselin saturated with iodoform.

Treatment of Otorrhea.

The following is recommended by Botey, as stated in *N. Y. Med Jour.*, for the treatment of otorrhea:

R.	Ferri chloridi	℥ss	2
	Alcoholis	℥i	4
	Aq. destil	℥i	4

M. Sig.: Three or four drops to be instilled into the external auditory meatus two or three times daily.

Treatment of Tonsillitis.

The following is advised by Dantzler in *Med. Record:*

R.	Tinct. guaiaci ammon.	℥vi	24
	Tinct. cinchonæ co.	℥vi	24
	Pot. chloratis	℥ii	8
	Mellis	℥vi	24
	Acaciæ, q. s.		
	Aq. q. s. ad	℥iv	128

M. Sig.: A teaspoonful used as a gargle in a little water three or four times a day, and swallowed one-half to one teaspoonful three times a day.

Orthoform to Mitigate Odynophagia.

Dr. S. Solis-Cohen, Philadelphia, states that for temporary relief of the pain attending inflammatory and ulcerative affections of the throat, orthoform applied in various ways is probably the best agent now at our command. For two years he states that he has been using lozenges containing from grain 1/8 (.008) to grain 1 (.06) each of orthoform in cases of acute and subacute sore throat (tonsillitis, pharyngitis) whether of rheumatic or other origin, and in cases in which pain in swallowing has been caused by ulceration or infiltrative conditions involving the epiglottis and arytenoid eminences. In some cases adrenal extract has been used at the same time. He states that this treatment has afforded such relief as to enable the patient to eat with comparative ease. The improvement has been especially noticeable in cases of tubercular laryngitis in which he prescribed the orthoform lozenges ten minutes before meals; it permitted the patient to take the food with a minimum discomfort. The advantage of the lozenge over insufflation or other methods of application is that the patient can himself make use of the analgesic agent.

Medicolegal.

Liability of Physician in Local Option Territory.—The Court of Criminal Appeals of Texas says, in McLain vs. State, that the legislature, as it holds that it had a right to do, has provided that for medicinal purposes intoxicants can only be sold upon a prescription certifying that a regular physician signing the prescription has personally examined the party to whom the prescription is given, and that he is actually sick; and he must certify these matters upon his honor. This is the character of prescription required by the legislature. There is no kind of prescription authorizing the sale, except that provided by statute, and it is not a prescription until it has complied with the law. Where a sale occurs, an illegal prescription is no protection to the seller or the physician, because in that event the physician makes himself a party to the sale by giving an illegal prescription by means of which the law is evaded. As in misdemeanors all are principals, so, when a physician gives an illegal prescription under which a sale occurs, he is as much responsible for the sale as is the seller. Whenever a sale in a local option territory is brought about by means of an illegal prescription, the physician and seller are both liable. Each is required to know the law; each is required, in order to bring about the sale, to comply with the terms of the law; and, in failing, both are liable for the punishment prescribed for illegal sales. The court adds that it is not discussing the attitude of the physician who gives a false

certificate, though in exact terms of the law. He may be guilty of the sale. In this case the court holds that a prescription was properly excluded because not in conformity with law, having omitted the expression "personally examined," and the certificate upon honor, required by the statute.

Mental Soundness of Eddyites.—The Surrogate's court of New York County holds, in re Brush's will, that, however opposed the teachings of "christian science" may be to the beliefs or notions of others, being founded on the religious convictions of those professing them, the court can not say that those persons who hold them are mentally unsound, the truth or falsity of a religious belief being beyond the scope of a judicial inquiry. Thus, the court says it has often been asked to pass upon the falsity of spiritualism, and to hold that a follower of that faith, which, like Eddyism, is contrary to the convictions of most men, was of necessity laboring under an insane delusion; but it has uniformly refused so to declare or hold. The only question which concerns the court, in determining the testamentary capacity of a "christian scientist," is as to the effect of the belief in it on, say, his or her mind, the belief itself not being any evidence of insanity. Did it unseat her judgment, dethrone her reason, and thus deprive her of capacity to make a will? If it did; if, by reason of the effect of this belief on her mind, she became the victim of insane delusions, from which her will resulted, then the will must be set aside. But, in this case, the court is of the opinion that the decedent was of sound mind at the time she executed the will contested.

Opinion Evidence on Survivorship—Presumptions.—In the case of Southwell vs. Gray a husband and wife were found dead in the same bed at their home. The Supreme Court of New York, special term, Erie County, says that death in each case was due to natural gas poisoning. Both were alive on the preceding night. It was assumed that the inhalation of poisonous gases, which escaped during the night from a stove in the room, burning natural gas, effected their death. Upon the trial an effort was made to establish that the husband died first. Evidence was given as to the physical condition in life of each of the deceased persons, the postmortem appearance and condition of the bodies, and the position of the bodies when found with reference to the stove and the windows and walls of the room, and a hypothetical question embracing the facts so testified to was submitted to several physicians for their opinion as to who survived. The physicians called by the one side expressed the opinion that the husband died first. An equal number of physicians called by the other side testified that it was impossible upon such data to express an opinion upon the subject of survivorship with any reasonable certainty. The court, after careful consideration, but without discussing the reasons assigned by the various medical witnesses for their answers to this question, reaches the conclusion that it would be mere conjecture, surmise, and speculation to essay the decision of survivorship in this case upon such testimony. Wherefore, it holds that the case must be determined upon the assumption that there was no proof to decide which of these individuals predeceased the other. Under such circumstances the civil law, the court goes on to explain, indulges in presumption based on age and sex to aid in determining the survivorship of persons perishing in a common disaster. The common law, however, recognizes no presumptions on the subject. In the absence of evidence, the fact is assumed to be unascertainable, and a rule of distribution has been adopted whereby property rights are disposed of as if death occurred simultaneously.

X-Ray Photographs—Notice of Taking.—The Supreme Court of Wisconsin holds, in the personal injury case of Mauch vs. the City of Hartford, that the rule in regard to the use of ordinary photographs upon the trial of a cause, for the better understanding by the jury of the evidence or the merits of the case, applies to photographs taken by the aid of *x*-rays. Whether a photograph is proper or not in any particular situation upon the trial of a case is a matter within the sound discretion of the trial judge, and his determination can not be disturbed if there was any reasonable ground therefor. Here, a surgeon who qualified as an expert as regards taking *x*-ray photographs, testified to having examined the bones of the injured party's arm, wrist and hand by the *x*-ray process, and taken two photographs thereof which correctly represented such bones. The witness produced the photographs, and they were offered and received in evidence against the city's objection. The ground of the objection was that the photographs were not taken upon notice to the city or its counsel. The Supreme court, however, says that it knows of no rule rendering notice of the taking of a photograph, to be used by one party on the trial of a cause, to the adverse party, so that the latter may be represented at the time of such taking, essential to its reception in evidence. The use of photographs in the trial of causes for some purposes, and among them that of exhibiting for the better understanding of the jury particular objects, is permissible where there is some substantial reason therefor. The purpose of exhibiting a photograph to court and jury is to enable them to more clearly understand the appearance of a particular locality or object material to the litigation than could ordinarily be expected from mere oral descriptions and explanations, such purpose is legitimate and warrants the court, in the exercise of its discretion, in permitting the use thereof in evidence. That situation exists where it is necessary for a non-expert to understand the complicated structure of the human anatomy and the existence in the human body of foreign substances, or of any abnormal condition. That has been several times recognized by courts since the discovery of the *x*-ray process of laying the human frame bare to the eye and transferring the appearance thereof by the photographer's art, as in ordinary cases of photographing objects. It is the duty of courts to use every means of discovering the truth reasonably calculated to aid in that regard. In the performance of that duty, every new discovery, when it shall have passed beyond the experimental stage, must necessarily be treated as a new aid in the administration of justice in the field covered by it. In that view courts have shown no hesitation, in proper cases, in availing themselves of the art of photography by the *x*-ray process.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), November 30.

1 *The Diagnosis of Gallstones and Their Aberrances. Charles G. Stockton.
2 *Features Determining Permanency of Cure in Radical Operations for Hernia. A. J. Ochsner.
3 *The Neurasthenic Spine. Robert W. Lovett.
4 *Some Thoughts on Rheumatism and Rheumatic Simulants. James J. Walsh.
5 Diagnosis of Diseases of the Urinary Bladder. John R. Wathen.
6 Shall Massage of the Stomach Be Recommended? A Study of Six Cases. (To be concluded.) Mark I. Knapp.
7 *Tuberculosis of the Sacroiliac Joint, Its Diagnosis and Treatment—Demonstration of a Patient with Sacrocoxalgie Fruste (Delbet). C. O. Thienhaus.

Philadelphia Medical Journal, November 30.

8 Splanchnoptosis. (To be continued.) Byron Robinson.
9 A Case of Pistol Shot Wound of the Stomach, Liver and Transverse Colon, in a Pregnant Woman. Recovery and Delivery at Term. Andrew B. Gloninger.
10 *The Present Status of the Bottini Operation as a Method of Treatment in Obstructive Hypertrophy of the Prostate Gland, Derived from a Summary of 888 Operations by 48 Operators. (Continued.) Orville Horwitz.
11 *The Early Recognition and Management of Arterial Degeneration. Louis F. Bishop.
12 A Case of Poisoning with Oil of Cedar. J. T. Clegg.

Boston Medical and Surgical Journal, November 28.

13 One's Health in Egypt. (To be continued.) F. Gordon Morrill.
14 Hernia Epigastrica and Fatty Tumors in the Epigastrium. Howard A. Lathrop.
15 Abscess in the Posterior Mediastinum in Connection with Pott's Disease. Joel E. Goldthwait.
16 *Pathological Lesions in Rheumatoid Arthritis. C. F. Painter.

17 A Case of Papillary Adenocystoma of the Thyroid Gland. Harry C. Low.

Medical News (N. Y.), November 30.

18 *Courvoisier's Law. Richard C. Cabot.
19 Report of a Case of Diaphragmatic Hernia. H. D. Howe.
20 *Some Observations, General and Technical, Made at the Craig Colony. Smith E. Jelliffe.
21 Recent Epoch-making in Medicine—Annual Oration Delivered Before Michigan State Medical Society. Samuel Bell.
22 Deformity Arising from Injury to the Lower Epiphysis of the Tibia. B. E. McKenzie.
23 *Dangers to Public Health and Morals, Especially to Young Persons, from Quackery, as Promulgated by Public Advertisements. E. Stuver.

Medical Record (N. Y.), November 30.

24 *Vaginal Cancer. W. Roger Williams.
25 Various Methods of Infant-Feeding—Breast Feeding—Bottle Feeding. Louis Fischer.
26 *On the Presence of Typhoid Bacilli in the Blood of Typhoid-Fever Patients. Albion W. Hewlett.
27 *A Device for Irrigating the Male Bladder. U. S. Bird.

New York Medical Journal, November 30.

28 *State and Individual Prophylaxis of Tuberculosis During Childhood, and the Need of Children's Sanatoria. S. A. Knopf.
29 *The Blood in Infancy and Childhood. Gertrude U. Light.
30 The Daily Medical Inspection of Schools. (Continued). D. S. Lamb.
31 Frost-bite of the Cornea, Due to Excessive Application of Cold in the Treatment of Mild Mucopurulent Conjunctivitis in the Newborn. E. L. Meierhof.
32 *Cholecystectomy for Gallstones. C. L. Gibson.
33 Fifty Years of Medicine: A Retrospect of Progress During the Past Half Century. T. Gaillard Thomas.
34 How Do You Use Quinin for the Prevention and Cure of Malarial Disease, and What Other Treatment Do You Employ? (To be continued.) W. P. McIntosh and P. M. Ashburn.

Cincinnati Lancet-Clinic, November 30.

35 Catching Cold. Dudley S. Reynolds.
36 *Neuralgia of the Rectum. Geo. J. Monroe.
37 The Physician in His Relation to the Prevention of Tuberculosis. C. O. Probst.

St. Louis Medical Review, November 30.

38 *The Development of Railway Surgery and Other Topics. G. G. Cottam.
39 Acute Intestinal Obstruction. S. A. Spilman.

American Practitioner and News (Louisville, Ky.), November 15.

40 Uses and Abuses of Arsenic. F. C. Simpson.
41 Rupture of the Uterus. Nevil M. Garrett.
42 British Congress on Tuberculosis. Benjamin Floyd.

Northwestern Lancet (Minneapolis), November 15.

43 *Hemorrhoids. Arthur T. Mann.
44 Observations on Canadian Surgery. W. J. Mayo.
45 A Report of the International Congress of Nurses. Cornelia Coleman.

Pediatrics (N. Y.), November 15.

46 *A Peculiar Outbreak of Diphtheria and the Results of Its Investigation. Marshall O. Leighton.
47 *Some Clinical Aspects of the Recent Epidemic of Diphtheria in Essex County, New Jersey. Richard C. Newton.
48 The Bloodless Reduction of Congenital Hip Dislocations. Walter G. Stern.
49 Complications and Sequelæ of Typhoid Fever. J. M. Krim.

Kansas City Medical Record, November.

50 Report of a Case of Grave Anemia. J. S. Triplett.
51 Hasty Summary of a Few Things That May Be Learned on an Examination of the Blood. M. P. Overholser.
52 Report of Fifteen Operations for Inguinal Hernia—Bassini Method. W. J. Frick.

International Medical Magazine (N. Y.), November.

A SYMPOSIUM ON THE TREATMENT OF APPENDICITIS.

53 *Seven Practical Questions on This Important Subject.
54 President of the American Medical Association Advises Conservative Course Except in Threatening Cases. John A. Wyeth.
55 *When in Doubt, Operate. Roswell Park.
56 *Prompt Operation Nearly Always When Practicable. Robert T. Morris.
57 *Cathartics and All Food by Mouth to Be Avoided in Severe Cases. A. J. Ochsner.
58 *All Cases Should Be Operated Sooner or Later. J. B. Murphy.
59 *An Internist's Views as to When Operative and When Non-Surgical, Treatment Is Best. Charles G. Stockton.
60 *In Mild Cases and Certain Stages of Severe Ones, Wait, But Watch. De Forest Willard.
61 *Removal of Appendix Best, Except When Symptoms Declining. Edwin Martin.
62 *Colonic Lavage in Early Stages. Fenton B. Turk.
63 *Immediate Operation Best in Most Cases, with Important Exceptions. Maurice H. Richardson.
64 Some Practical Points in the Treatment of Appendicitis. A. J. Ochsner.
65 The Differential Diagnosis of Scolecitis (Appendicitis). A. L. Benedict.
66 Medical Aspects of Appendicitis. Willis E. Ford.
67 Diagnosis of Appendicitis from Inflammation of the Gall-bladder. Gwilym G. Davis.

Dominion Medical Monthly (Toronto), November.

68 Appendicitis. J. C. Davie.
69 Recognition and Treatment of Tuberculosis. C. J. Fagan.
70 Labor Following Amputation of the Cervix. Russell Thomas.

Canadian Practitioner and Review (Toronto), November.

71 *Tumor of Hair, Weighing 1 lb. 7 oz., Two Feet in Length, Removed from the Stomach of a Woman, with Recovery. Herbert A. Bruce.
72 Intestinal Obstruction from a Surgical Standpoint. J. P. Rutherford.
73 The Fear of Death. David C. Wilson.

Merck's Archives (N. Y.), November.

74 Neurasthenic Urethritis: Its Preventive and Curative Therapy. J. M. Thompson.
75 *Stypticin in Uterine Hemorrhage. H. J. Boldt.
76 An Index of Diseases Alphabetically Arranged, with Their Modern Treatment. (Continued.) G. Bjorkman.
77 *Brief Notes on Thiocol and Dionin. Jas. B. Johnston.

Albany Medical Annals, December.

78 Address, Albany College of Pharmacy. Willis G. Tucker.
79 A Smallpox Epidemic in an Orphanage. F. C. Curtis and Henry L. K. Shaw.
80 Clinical and Pathological Notes. A Case of Nutmeg Poisoning. E. E. Hinman.

The Ophthalmic Record (Chicago), November.

81 *On the Prevalence of Trachoma in the State of Illinois. Wm. H. Wilder.
82 Central Fistula of the Cornea Persisting Several Years. H. V. Würdemann.

Medical Herald (St. Joseph, Mo.), November.

83 An Exhibition of Specimens, Illustrating the Causes of Uterine Hemorrhage. Palmer Findley.
84 Syphilis. Charles G. Geiger.
85 Some Aspects of Syphilis. P. I. Leonard.

Cleveland Medical Gazette, November.

86 *Coal-Tar Antipyretics in Children. J. B. McGee.
87 *The Conservative Treatment of Appendicitis. S. P. Wise.
88 Centennial Address to the Eastern Ohio Medical Association at a Recent Meeting in Steubenville, Ohio. J. F. Purviance.

Fort Wayne Medical Journal-Magazine, November.

89 Is It Advisable to Await Reaction from Shock in Severe Injuries Before Operating. Miles F. Porter.

Occidental Medical Times (San Francisco), November.

90 *Perineal Prostatectomy—A New Operation. George Goodfellow.
91 Perineal Prostatectomy. Professors Macios and Gonzales.
92 Address, San Joaquin Valley Medical Association. H. W. Taggart.
93 Hematology and Its Relation to Diagnosis. Jackson L. Martin.
94 The Management of Miscarriage and Abortion. W. W. Cross.
95 Some Surgical Adjuncts. E. Harbert.
96 The Cardio-vascular System in Diabetes. G. E. Ebright.
97 The Palliative Treatment of Chronic Prostatic Hypertrophy. John C. Spencer.

Medical Mirror (St. Louis), October.

98 Rotary Lateral Curvature and Pott's Disease of the Spine: Differential Diagnosis and Rational Treatment. Daniel W. Marston.
99 Headaches, Their Causes and Treatment. L. H. Warner.

Nashville Journal of Medicine and Surgery, November.

100 The Development and Control of the Sexual Instinct. J. W. MacGuillan.

Western Medical Review (Lincoln, Neb.), November 15.

101 Nebraska's Medical Pioneers. II. Dr. Luther J. Abbott. H. Winett Orr.
102 Rotary Lateral Curvature and Pott's Disease of the Spine: Their Diagnosis and Treatment. Daniel W. Marston.
103 Obstetrical Practice. W. H. Wilson.
104 Three Protective Points in the Management of Labor. A. B. Somers.
105 Cirrhosis of the Liver. W. R. Lavender.
106 *Diagnosis and Treatment of Appendicitis from a Practical Standpoint. O. Grothan.

107 Two Cases Presenting Unusual Features of Bone Disease. F. A. Long.
108 So-called Follicular Pharyngitis. H. L. Burrell.
109 Meningitis. I. R. Swigart.

Journal of Medicine and Science (Portland, Me.), November.

110 Facts Pertaining to the Pulmonary Invalid in Colorado. Herbert A. Black.
111 The Prevention of Disease. F. J. Robinson.
112 Sanatoria in Honor of President McKinley. S. A. Knopf.

Southern Illinois Journal of Medicine and Surgery (Metropolis), November.

113 The Code of Ethics of the American Medical Association. A. C. Ragsdale.
114 The Passing of Czolgosz. Benj. O. Jones.

Pacific Medical Journal (San Francisco), November.

115 Report of the Special Health Commissioners. ,

Medical Examiner and Practitioner (N. Y.), November.

116 *Tremors Considered from the Standpoint of Life Expectancy. J. K. A. Wertheim Solomonson.
117 Examination of Eyes in Relation to Life Expectance. I. De Lantsheere.
118 *On the Admissibility of People Who Have Lived in Tropical Countries. C. L. Van Der Burg.
119 *Diseases of the Ear, Considered from the Standpoint of Life Insurance. H. Burger.
120 Report of the Commission on Universal Medical Blank. E. Poels.
121 *The Limits of the Acceptibility of Risks. Dr. Floerschutz.
122 The Reflexes in Their Relation to Life Expectancy. J. Crocq.

Medical Bulletin (Philadelphia), November.

123 Eczema. John V. Shoemaker.
124 Pneumothorax. Professor Hayem.
125 Diabetes Mellitus. John V. Shoemaker.

Alabama Medical Journal (Birmingham), November.

126 *A Plea for Gonorrheics. James E. Dedman.
127 Address, Tri-State Medical Association of Alabama, Georgia and Tennessee. Ira Landrith.
128 *Legislation and Its Limitations in the Prevention of Crime and Disease. John Beel Keeble.
129 *Heredity and Acquired Characteristics as Social Questions. R. R. Kime.
130 Ozone in Tuberculosis. J. D. Gibson.
131 Maternal Impressions. R. C. Bankston.
132 Clinical Observations on Hedonal. S. Heichelheim.

Georgia Journal of Medicine (Savannah), November.

133 For a Crusade Against Deafness. M. M. Stapler.
134 *The Clinical Examination of the Blood in Diagnosis. L. B. Cook.
135 A Clinical Report of Thirty Cases of Acute Lobar Pneumonia with Twenty-nine Recoveries. E. D. Newell.
136 The Successful Treatment of Anemia, with Effect Shown by Increase of Red Corpuseles and Hemoglobin. H. P. Loomis.
137 Report of a Case of Ruptured Ectopic Gestation Successfully Operated Upon in a Tenement House. Abram Brothers.
138 Osteomyelitis Involving the Metacarpal Bone of the Middle Finger. N. Senn.

AMERICAN.

1. **Diagnosis of Gallstone.**—Stockton reports a number of cases showing the difficulties in diagnosis and calls attention to the fact that cholecystitis is often mistaken for gastralgia. We must remember the curious signs of transient pyloric obstruction that follow adhesions of the liver and gall-bladder, and the lower end of the stomach, and that jaundice is far from a necessary accompaniment of cholelithiasis. It may offer important evidence as to the location of the stone, but when present, is often the result of angiocholitis and, when intermittent, probably depends on the presence of a stone in the terminus of the cystic duct, or of a stone free in the choledochus. When a steadily-increasing and persistent jaundice is met, it is safe to attribute the cause to outside pressure, exercised on the common duct by growth in the head of the pancreas and elsewhere, and not by stone in the biliary ducts. Osler's rules for differentiating between jaundice from gallstones and that produced by a growing tumor are sound, but we must remember that stone may be thus situated without the presence of the phenomena. If asked to name the chief symptoms of gallstone disease Stockton would say that these are: 1. Paroxysmal pain; 2, tenderness below the junction of the ninth rib and cartilage; 3, vomiting; 4, ague-like fever; 5, jaundice; 6, the formation of tumor; 7, collapse; 8, the passage of calculi in the stools.

2. **Hernia.**—The following points are laid down by Ochsner as essential for permanency of cure: 1. The wound must heal primarily so that there be no cicatricial tissue as a point of weakness. 2. The stitches must not be drawn tightly so as to produce pressure necrosis. During the healing of every wound there is a certain amount of edema for the first few days and if the stitches are drawn very tightly, pressure necrosis will be produced and cicatricial tissue, which is always weakening, will follow. It is best to just have the stitches drawn tightly enough to bring the surfaces barely in apposition. 3. The edges of the surface to be united must be free from fat and other unstable tissue. 4. The tissues should be manipulated with the greatest care during the operation, so as not to injure them. 5. The wound should be supported by broad rubber adhesive plaster strips which aid materially in securing a desirable condition of rest. 6. The patient should be kept in bed for two or three weeks so as to give the wound an abundance of time to become firm. 7. After the operation, abnormal intra-abdominal pressure should be eliminated. We should protect against constipation and obstruction to urinary passage, and meet the condition of obesity by proper systematic dieting and exercise. Considering the four chief forms of hernia separately, he says: I. In inguinal hernia it is specially important to secure subsequent union throughout between Poupart's ligament on the one side and the tissues of the internal oblique and transversalis muscles on the other. In the upper portion of these tissues the defect occurs in cases of recurrences. 1. In order to secure this condition, the portion of the sac contained in the inguinal canal must be removed well up into the peritoneal cavity, so that no portion of it can be interposed between the layers. In ordinary cases the entire sac should be removed; in congenital hernia the lower portion of the sac may be left to make a tunica vaginalis. In very large hernias with thick adherent sacs, it is well simply to resect the portion in the inguinal canal, making sure that none will be interposed between the layers. 2. For the same reason it is important to dissect away all portions of fat, loose connective tissue and muscle that might become interposed, special care being taken to expose the ledge formed by Poupart's ligament. It is well to resect any portion that reaches beyond the internal abdominal ring. II. In femoral hernia the opening through which the sac protrudes is a perfect ring, consequently, it is not necessary to do anything beyond dissecting out the entire sac well up into the peritoneal cavity, permitting the stump to retract so as to leave the ring perfectly free. It is better not to meddle with the ring as all the methods devised for closing have a percentage of recurrences. III. Ventral hernia following laparotomy. Here permanency of results depends on the care with which all the anatomic layers are dissected out and the corresponding ones united. He has found it most satisfactory to insert silkworm-gut sutures down to, but not through, the peritoneum, from three-fourths to one inch apart and to leave these untied until the layers have been united separately with chromicized catgut sutures and then to tie the silkworm-gut sutures over all, being especially careful not to tie them too tightly. IV. Umbilical hernia. Mayo's method is recommended, which consists in overlapping of the edges of the hernial ring, preferably from above downward, from one and one-half to two inches, after removing the hernial sac and disposing of its contents according to the conditions found. It is necessary to dissect back the fat so that the strong connective tissue of the two layers may become strongly adherent. Usually the upper edge of the ring is slipped beneath the lower one at a distance of one and one-half to two inches and sutured in place with from three to five chromicized catgut stitches, then the lower edge of the ring is drawn upward and sutured in place. It is remarkable how firm a closure this method will accomplish. Ochsner has used it so far in 11 cases with success.

3. **The Neurasthenic Spine.**—Lovett's paper reviews the painful affections of the spine in which the subjective symp-

toms are out of proportion to the objective signs, and where organic disease can not be found. While the range of severity is great, the type is pretty uniform. He groups them into four classes: 1. Irritation of the spine due to faulty attitude. 2. Those due to severe traumatism. 3. Those due to slight traumatism. 4. Spinal invalidism, understanding by this the neurasthenic conditions which appear to be more an impression of a general disturbance of nervous function than a local affection. The treatment of the groups is given as follows: 1. By correcting the faulty position, treating the muscles, stimulating local circulation, etc. 2. In cases due to severe injury, recumbency and support are required in addition to orthopedic methods. Fixation of the spine is the first requirement. 3. In cases due to slight injury, while supporting apparatus may be of value, massage, douches and hot air are most likely to be of use, with exercise later in the case. 4. The local measures for spinal invalidism are much the same as those submitted above; but the principal thing is to build up the patient and the case comes properly under the care of the neurologist. The essential of treatment seems to consist in the progressively increasing use of the spine under proper conditions without too much regard to the subjective symptoms.

4. **Rheumatism and Rheumatoid Simulants.**—Walsh discusses the different types of rheumatism, or what is called rheumatism, such as gonorrheal and septic arthritis and acute rheumatoid arthritis which must be considered as of microbic origin, toxemic arthropathies, and arthritic neuroses. Here he calls attention to the effect of flat-foot in producing symptoms of rheumatism in the calf of the leg and in the toes, also joint injuries which are apt to be aggravated more or less at times with changes of the weather. These cases are not rheumatism, but are due to the interference with the lymph paths and premature senility of the parts. Occupation neuroses such as brachialgia are noticed, in those engaged in telegraphy, typewriting, etc., the effect on the leg by the use of treadles, the motorman's arm, baseball-players' "glass arm," etc.

7. **Sacro-Iliac Tuberculosis.**—Thienhaus describes the condition of tuberculosis of the sacro-iliac joint, showing the way in which abscesses may point and the complications to which they may lead, and the difficulties in diagnosis, etc., that may occur. The treatment he thinks advisable is rest to the part if it can be applied in the early stages. Schedes' or Delbet's radical methods are also considered, with their advantages and disadvantages.

10. **Bottini Operation.**—Horwitz concludes his article in this number, giving a lengthy table of the experiences of 50 operators covering several hundred operations. From the results obtained from the list of cases tabulated he draws the following conclusions: "1. There is less fear on the part of the patient to submit to the operation than there is to any other surgical procedure so far suggested for the relief of prostatic hypertrophy. 2. The principal advantages to be derived from the method of treatment are: A short time only is required to perform the operation, which is attended with little shock and usually slight loss of blood, convalescence is rapid, and the mortality is lower than that by any other radical measure. 3. Cures result in the large majority of cases, especially if the operation is undertaken early. Marked improvement may be looked for in a vast number of cases, where otherwise individuals would be condemned to suffer, as the danger attending any of the other radical methods of treatment would be too great to warrant their employment. 4. Failures occur in but a comparatively small percentage of cases, want of success being due to the pathological changes and complications which have taken place. Especially is this true in those instances where an incurable cystitis exists. 5. The operation is contraindicated when a valve-like formation exists, or where there is a greatly increased overgrowth of the three lobes, associated with tumor formation, giving rise to a pouch, above and below the neck of the bladder. 6. It may be employed with benefit, and safety, as a palliative measure in cases of prostatic hypertrophy of long standing, associated with cystitis, when the general health will be improved and constipation, which is usually associated with this condition, relieved, mitigating the prostatic spasm of the urethra, and rendering the insertion of the catheter easy and painless. 7. Pyelitis, when present, adds greatly to the danger of the operation, but is not always a contraindication to its employment. 8. The character of the growth has but little bearing on the result of the operation. 9. The operation may be employed as a safe and satisfactory means of causing a suprapubic fistula to close, which so frequently follows a suprapubic cystotomy when the prostate gland is hypertrophied. 10. In suitable cases it is not only the best radical measure thus far devised for the relief of prostatic hypertrophy, but is attended by the smallest mortality. 11. The operation is especially indicated in the beginning of obstructive symptoms due to hypertrophy of the prostate gland and may be regarded as a prophylactic method of treatment. 12. The operation is capable of producing a symptomatic cure in a great number of cases of various conditions and configurations of the prostate gland due to hypertrophy, as is shown by the disappearance of prostatic spasm, the restoration of the function of the bladder to its normal condition, and the improvement of general health. 13. When operating early, before the prostate has become much enlarged, the safest method to pursue is to perform a preliminary perineal cystotomy, introducing the 'perineal galvano-cautery incisor' of Chetwood, so as to make the incision in the prostate. 14. In some instances a prolonged preparatory treatment is necessary before the operation can be safely undertaken. 15. In cases of prostatic obstruction, which have existed for a lengthened period, where there is chronic cystitis, the physical condition of the patient being below par, both local and constitutional treatment must be persisted in for months after the operation before the great benefit derived from the procedure can be insured, which treatment would be ineffectual unless the obstruction had first been removed."

11. **Arterial Degeneration.**—The popular notion of the chief danger of arterial degeneration is that of the rupture of the blood-vessel. This is incorrect, according to Bishop, as such accidents rarely do damage excepting in the brain. The danger of establishment of secondary heart disease and kidneys, or the interference with brain circulation, producing thrombosis, is far more to be dreaded. It is the disease that belongs to the most useful, active members of the community. Most such cases, if early recognized, are found in successful young men who work under mental tension and combine their work with a certain amount of dissipation. The management must consist more in hygienic measures than in drugs. Syphilis is more often the cause than is likely to be believed, and here, on account of the general good effect on high arterial tension, the iodids will be found useful. Alcohol should be limited or suppressed. Digitalis is important and iron as in anemia, but in the early stages either of these may not be so useful. If any chronic intoxication exists the cause must be removed. An especial type is mentioned of neurasthenia in persons who have been living a strenuous life and carrying undue responsibility. The bromids here are of the greatest value. The influence of arterial degeneration on the organs of special sense is mentioned. The rupture of a small blood-vessel into the eye in a person past middle life who is suffering from the strain of overwork is a sign that should not be neglected. The importance of attention to early diagnosis in these cases is shown by the fact that change of mode of life, and proper treatment will in many cases bring about an arrest of the conditions.

16. **Rheumatoid Arthritis.**—The confusion of this condition with osteo-arthritis is dwelt upon by Painter, who points out the differences and illustrates them by skiagraphs. He discusses the various forms, and especially Bannatyne's theory as to its bacterial origin, but thinks that this is not proven, for the following reasons: "1. Failure to satisfactorily demonstrate the organism itself, and the equally significant fact that the lesions found in the joint tissues are not such as are produced by any bacterial cause. 2. That the 'chronic' stage in the disease does not present lesions, either gross or histological, which are at all derivative from the 'acute' stage, and that therefore we

must exclude from rheumatoid classifications any disease with hypertrophic bone lesions. 3. It is suggested, though not proven, that the changes in rheumatoid may be due to faulty metabolism, the absorption from the digestive tract of toxins, or some chemical product of intestinal digestion, which ought not to be thus absorbed, if all tissues were properly performing their functions."

18. **Courvoisier's Law.**—Courvoisier's law is that when the common duct is obstructed by stone, dilatation of the gall-bladder is rare, but when obstructed by other causes, this condition is common. This was announced in 1890 and confirmed by Mayo Robson two years later. It appears, according to Cabot, to be pretty fairly established by statistics, but has, as yet, not been generally noticed in American medical literature and he calls attention to this fact. The explanation of the non-dilatation of the gall-bladder with stone in the common duct is considered by Courvoisier to be due to thickening of the bladder from chronic inflammation, which tends to the formation of stone, involving the common duct. It is, in the great majority of cases, contracted or atrophied and incapable of distension. This is possible, on the other hand, when the common duct is blocked by cancer of the pancreas or other outside causes; the walls of the bladder are then thin and easily distensible, so that the backing up of bile behind the obstruction readily distends them. The facts are explainable also by Fenger's theory of the ball-valve action of stone in the common duct, which releases the bile and thus prevents distension. The value of the law is in the diagnosis of cases of chronic jaundice with or without enlargement, and if Courvoisier's law will enable us in these cases to distinguish curable from incurable, operable from non-operable, lithogenous from non-lithogenous cases, its importance is obvious. Cabot thinks that it can be relied upon to an extent rarely possible in a matter so uncertain as physical diagnosis.

20. **Craig Colony.**—Jelliffe gives his impressions from a three months' visit at Craig Colony, showing how the isolation of epileptics in settlements by themselves has improved them. The elimination of all excitement and notice as to their attacks has an effect in the diminution of their frequency. Good food, open air, labor and sociability are also important factors. The patients there received their first chance to learn to work, and though they can not do full workmen's tasks they learn to be of some use in the world. The tact and judgment of the attendants go a long way. Quiet and steady work and pleasant surroundings seem to have a direct effect on the frequency of the fits. The advantages to medical science of the institution are noticed and he thinks that it is the greatest opportunity any country has ever had for studying the disease in its hereditary, causative and therapeutic aspects. It makes life bearable for most of its inmates, and some it strengthens and cures. He hardly knows which to admire most—the breadth of mind that evolved Craig Colony, or the conscientious, wise and energetic administration of its affairs.

23. **Quack Advertisements.**—Stuver reviews the various evils of quack advertisements as they appear to him, and offers his summary in the following: 1. The great life-saving discoveries have been made by quiet, unobtrusive men. 2. Quacks and charlatans have never made any great discoveries in sanitary science, but, on the other hand, have always opposed scientific progress and investigation. 3. Quackery flourishes best in an atmosphere of ignorance, credulity, and pseudo-science, and is promulgated by boastful, arrogant pretensions, and public advertising. 4. Antivaccinationists, antivivisectionists, christian scientists, *et id omne genus*, by opposing preventive sanitary measures and scientific investigations, facilitate the spread of contagious and infectious diseases, oppose the stamping out of diseases already established and impede investigations as to the causation, prophylaxis and cure of disease. 5. The newspapers, which derive a large part of their revenue from advertising, nearly always espouse the cause of the so-called commercial interests, regardless of the fact whether they are supported by truth and justice, or are opposed to the best interests of the public. This is well illustrated by the recent occurrence of bubonic plague in San Francisco. 6. The boastful pretensions and misrepresentations of quack advertisements (patent medicines) lower the public regard for truth and fair dealing and encourage falsehood and duplicity. 7. The bold and shameless introduction of advertisements, calling attention to and suggesting vile, immoral and even criminal acts, debases and demoralizes the young, and leads to disease, crime and degeneration."

24. **Vaginal Cancer.**—According to Williams, from an analysis of the statistics, this form, though the most common of all primary vaginal neoplasms, furnishes less than 1 per cent. of all cancers. It is difficult to explain its origin by any theory of irritation, and he reviews the development and anatomy of the organs and mentions especially certain small bodies which were discovered by Davidsohn and are considered as aberrant offsets of cervical glands. He suggests that foreign elements of this kind furnish the germs, whence cylinder-celled glandular cancers of the vagina arise, and Wolffian and Müllerian "nests," which are of common occurrence, may also play a part. There are two varieties of this cancer mentioned: 1. Where the new formation does not progress much beyond the initial stage and the ingrowing cells preserve their normal form and their mutual relations are but little altered, the columns fail to penetrate deeply and the malady progresses slowly, and dissemination is exceptional. This is the tubular variety. With the more common type, the lobular form, the changes are more rapid, as other parts are secondarily affected. Several instances of vaginal cancer developing from hyperplastic lesions, leucoplasia, ichthyosis, etc., have been reported. In a few cases kraurosis has been known to have a similar termination. The symptoms and characteristics are pointed out and it is remarked that, as in cancer of the uterus, the dissemination of the disease in the internal organs and distant parts is not very common. The disease appears usually in the adult in post-meridian life, but in many cases it occurs at an earlier age than is common with cancer in general. In 76 cases Williams found it began between 20 and 30 years in 12, and it has been reported at a very early age, but such cases are to be looked upon with suspicion. The average age of onset is only 40 years, while that of the onset of mammary and uterine cancer is found to be 44 and 48 years respectively. Nulliparæ are as prone to the disease as multiparæ, and the mean fertility does not seem to have been affected, the average of births being a little above the usual. In diagnosis it should be remembered that secondary cancer of this part is much more common than primary and neighboring organs from which the disease has originated must be looked for. The microscope must distinguish between the sarcomatoid growths ,and septically infected and sloughing myomatous tumors are to be generally determined by careful digital examination. Other disorders which may cause trouble in diagnosis are syphilis, tuberculosis, and chronic inflammatory affections, and he has seen one case of vaginitis verrucosa mistaken for cancer. The surgical treatment is an open question. In most cases of active or rapid and insidious progress this is impracticable with any prospect of advantage, and even the most favorable cases are apt to be disappointing as regards results. Pregnancy does not seem to be affected by the existence of vaginal cancer, though it affects, of course, the chances for the mother's and the child's life. The only surgical intervention likely to be required would be for the conservation of a viable fetus. Cesarean section is the operation usually indicated and its results are favorable as regards the child, though the maternal mortality is likely to be considerable.

26. **Typhoid Bacilli in the Blood.**—Hewlett reports twenty-four cases of examinations, and says that to attempt generalizations from these would not be justifiable, but nevertheless suggests that, in the great majority of cases of typhoid fever, there is an infection of the blood by the bacilli during the early attack of the disease. This is not, however, properly a septicemia, for the number of bacilli present is ordinarily very small. During the third week of the disease, or when the temperature begins to fall, bacilli are no longer to be obtained

in blood cultures, but appear again at the onset of relapse and disappear with its disappearance.

27. **Obstruction of the Bladder.**—Bird's method consists in doing away with the catheter and using a bulb syringe in connection with a fountain syringe. The use of gentle, slowly increased, and regulated pressure will cause the liquid to enter the bladder and the rest is easy. The bulb and discharge tube of a bulb syringe are connected to the tube of a fountain syringe; a hard nozzle guarded by a soft-rubber tip supplants the catheter. He thinks the advantages of the method are that there is greater safety from infection, less pain and nervous reaction and that better results are obtained by the use of the bulb syringe in connection with the fountain syringe.

28. **Tuberculosis in Children.**—Knopf reviews the causation, prognosis and treatment of tuberculosis in children. He finds but little evidence of direct heredity and holds that the majority of cases are infected from without and not from within. The frequency of tuberculosis in childhood is noticed, the dangers of expectoration in the neighborhood of children and also the fondling and kissing by tuberculous parents. The ideal way to solve the question of transmission of parental tuberculosis would be separation, but this is impracticable. He dwells on the hygiene of children's nurseries and playgrounds, objects to their visiting menageries and speaks of the importance of school inspection, separation of tuberculous children from other children in schools, the restriction of reproduction by tuberculous parents, necessity of cleanliness, exercise, hydrotherapy, etc., and the prevention of child labor.

29. **Blood in Infancy.**—The three specific characteristic factors of blood in infancy are first noticed by Light: 1. The blood of infants tends constantly to embryonic characteristics when the clinical balance is disturbed. 2. Such disturbances produce blood changes out of proportion to the exciting cause, as measured by the adult standard. 3. Lymphocytosis is pronounced; the spleen tends to enlargement and splenomegaly has not the signification in childhood that it has in adult life. The presence of nucleated red corpuscles also has not the grave significance that it has in later life, but karyokinesis in the circulating red cells is rare and of serious import. The leucocytic count is higher in the early years. The exact age at which lymphemia ceases is not known. Polymorphonuclear elements, according to Engel, average 60 per cent. in normal children of the tenth year. From 2 to 10 per cent. of eosinophilia is probably normal in early years and an increase in acid-staining cells has not the same signification in early life. The clinical determination of abnormal states in infancy must proceed, therefore, with the ill-balance of the normal type in mind. The development of children must be taken into consideration. The different types of blood changes found in diseases like gastro-intestinal disorders, typhoid, pneumonia, tuberculosis, scarlet fever, etc., are remarked on. Leukemia seems to have been rare according to the New York statistics, but a number of cases have been reported from other localities. The existence of von Jaksch's anemia seems to be questioned by the author.

32. **Cholecystectomy.**—The various deductions in regard to cholecystectomy for cholecystitis and cholelithiasis are summed up by Gibson as follows: "In properly selected cases it is an extremely simple and safe operation. It is a curative operation, doing away with subsequent attacks of cholecystitis, and, more remotely, of renewed stone formation. It eliminates the disagreeable possibilities of long-continued biliary and mucous fistulæ. It is indicated in certain technical conditions, such as atrophic or (for drainage) inaccessible bladder, obliteration of the cystic duct, or impacted stone in the cystic duct, and in hemorrhagic conditions of the gall-bladder. It is a prophylactic measure against the development of carcinoma on the site of long-standing irritation. It offers the prospect of a shorter and easier wound-healing and convalescence. It is not to be employed indiscriminately, but has its proper limitations and contra-indications."

36. **Neuralgia of the Rectum.**—The conditions of neuralgic pain in the rectum are numerous. Monroe holds that we can not have simple neuralgia there without some causal pathologic condition. Coccygodynia, which is of the same nature, is included in his consideration of the subject, and he is inclined to think that it is always due to some local cause and that it is not purely hysterical. The treatment of rectal neuralgia, of course, must depend on the local disease if it can be found, whether it be fissure, ulcer, fistula, enlarged prostate, uterine or ovarian disorder or floating kidney. Constipation must be attended to. He has seen two cases cured by dilating urethral strictures. He usually gives the patient once in ten days 10 gr. of calomel in grain doses every two hours and follows this with one or two teaspoonfuls of phosphate of soda dissolved in a full glass of hot water and then after this gives 30 gr. of sulphate of quinin in 5 gr. doses four or five hours apart, using an enema of a quart of warm water twice a day, to which a teaspoonful of Merrell's liquid hydrastis or Pond's extract has been added. The sacral and coccygeal regions are also painted with tincture of iodin once a day. He has obtained good results from sulphate of strychnin, 1/40 gr. three times a day, combined with five drops of Fowler's solution. These patients are frequently debilitated and need to be built up, and he has followed the practice of divulsing the sphincter in nearly all cases so that no overlooked fissure can escape. In conclusion, he cautions the physician to question and look for specific disease and to investigate closely until absolutely certain that the condition does not exist.

38. **Railway Surgery.**—Cottam reviews the statistics of railway injury, showing how the aggregate number of casualties has increased with increased business and mileage, and the consequent growth of railway surgery. He alludes particularly to the civil malpractice question, the misuse of legal remedies and suggests medical insurance against blackmailing suits, calling attention to what has already been done in Minnesota in this regard. Were reputable practitioners admitted to associations paying a fixed membership fee and assessments to meet the requirements, the blackmailer or false claimant would be less likely to try to meet a united profession than a single individual against whom he thinks he may succeed.

43. **Hemorrhoids.**—The method for suturing hemorrhoids claimed as original by Mann and which he considers avoids the possibility of hemorrhage, guards against stricture, and shortens the period of convalescence, is described by him as follows: Clamp the hemorrhoid in the usual way, and with scissors cut it off just above the clamp. Wipe the surface clean. Now, with a catgut suture, begin at the top and pass the needle through the base just beneath the clamp and tie it. This holds the top secure. The needle is then passed through at a distance of one suture hole lower down, then it is turned and passed back through the first suture hole, or near it, and pulled tight. It is now carried by the second suture hole to the distance of one more and thrust through. Then it is turned and passed back through the second suture hole, pulled tight, then carried by the third suture hole to the distance of another and returned at the third and so on. Each turn is pulled tight as it is taken. All the threads pass beneath the clamp, and every part of the stump is held tight by a loop of the suture. Hemorrhage now seems impossible. Stricture is avoided by leaving sufficient mucous membrane between the hemorrhoidal masses removed. Three masses are as many as it is usually necessary to remove, and it is practically never necessary to remove more than four. If one does not wish to use a continuous suture, but tie as he goes along, the interrupted suture may be inserted beneath the clamp. No space should be left between the sutures because of possible hemorrhage from vessels not controlled by the sutures. To insure closure of the raw surface for healing by first intention, a second suture is tied once beneath the clamp at the top, the clamp is removed and the suture is brought down as a continuous over-and-over suture. The healing is by first intention and only a few instruments are required; the ordinary pedicle clamp, and a short round moderately-curved needle will ordinarily suffice. The superficial suture should last in position

about 7 to 9 days; the deep suture may be more quickly absorbed. If the superficial suture absorbs too quickly, there may be a slight surface left to be covered over with epithelium later.

46. **Diphtheria.**—A peculiar epidemic of diphtheria in Montclair, N. J., has been traced to a dairy where one or two milkers had suffered from a slight inflammation of the throat not sufficient to be diagnosed as specific diphtheria. A bacteriologic examination, however, showed diphtheria bacilli in the exudate. Other cases ceased to appear after the dairy was closed. The men had become infected by taking milk bottles away from an infected house and had themselves infected the milk probably through their respiration. The cases all occurred on this one dairy route and some curious associations of the milk with the existence of the disease are noted. One patient confessed to drinking milk habitually and liked the top of the bottle early in the morning, while another person closely associated with her never uses milk. The milk drinker had the disease.

47. **Diphtheria.**—Newton reviews the same epidemic, calls attention to the importance of the human breath as a source of infection and thinks that this has not been given sufficient attention by the profession as the cause of this disease.

53-63. **Appendicitis.**—The opinions of various prominent physicians on this subject are collated by the editor. A number of questions were propounded. As regards mild or moderately severe attacks, Wyeth, Roswell Park, Stockton, DeForrest Willard, Edwin Martin, Turck and Maurice Richardson would rely on emptying the bowels and quiet unless symptoms become more severe. Park would err on the side of operation rather than otherwise. Morris, Ochsner and Murphy would operate early. In severe cases, in the early stages, nearly everyone would operate. Ochsner would in some instances act as in the former case if no safe surgeon was at hand. DeForest Willard would operate as soon as the diagnosis is reasonably certain. Turck would wait for perfectly clear diagnosis before operating. During the active stage of a moderate attack most would watch the condition to be ready for operation. Dr. Morris would operate anyhow. Ochsner would use exclusively rectal feeding, no nourishment or cathartics by the mouth. In very severe attacks during the active stage operation is the rule, though Ochsner would consider the same treatment as before. Of course, if the patient has collapsed, stimulants will always be required or possibly operation might be impracticable. When the case is subsiding after expectant treatment and there is a brawny, tender swelling over the cecum, Wyeth, Park, Ochsner, Murphy, Stockton, Willard, Martin and Turck would wait. Morris would operate, as also would Richardson if the patient is not in a favorable condition for waiting. The only case in which Park would advise against operation is where the patient is moribund and the case hopeless. Morris would do so if a competent surgical operator is not at hand. Ochsner would advise against operation where the infection has extended beyond the appendix and has not produced definite circumscribed abscesses. Murphy would operate in any case where the serious condition of the patient did not forbid it. Stockton and Martin and Richardson rather agree with Murphy and Park. Wyeth is conservative. He would let the patient alone if the acute symptoms subside in a mild attack. Most would operate during the interval between the first and second attacks. Some would prefer to wait until the third or fourth attack and would operate when convalescence seems to be complete.

71.—See abstract in The Journal of September 14, p. 713

75. **Styptiein.**—Boldt finds that this substance (cotarnin hydrochlorate), which is derived from narcotin, one of the alkaloids of opium, is specially useful in certain forms of uterine hemorrhage. His former experience was published in the *Medical News* of April 8, 1899, and since that time he has tried it on a number of additional patients under various conditions, such as profuse menstruation in virgins, bleeding after full-term delivery with pelvic inflammation and in atypical bleeding after confinement caused by retention of the decidua, also during the climateric period when no pathologic condition can be found. Where it is caused by inflammation of the uterine mucosa either alone or with chronic neoplasms this drug, like all others, fails, and this statement holds good when retroflexion or version accompanies the endometritis. It is also useless in endometritis fungosa, though it is of benefit in some cases of simple endometritis. In one case of irregular uterine hemorrhage of unknown cause he had a satisfactory result follow the use of the drug. He has also found it useful in bleeding caused by para- or peri-metritic exudates and better in this respect than other remedies. In typical bleeding associated with subinvolution it is of great value and in a few instances bleeding during pregnancy has been controlled without any uterine contraction having been caused. He has not found it especially valuable in controlling hemorrhage from fibromyomatous tumors or from malignant growths. If quick action of the drug is desired it is best to give it in 2 or 3 grain doses in sterile water injected with antiseptic precautions into the buttock and repeated after four or six hours. Two or three injections should suffice, after which the remedy can be given by the mouth in capsules or tablets. He has given injections as high as 5 gr. without any bad results.

77. **Thiocol and Dionin.**—Thiocol (guaiacol-sulphonate of potassium) has been used by Johnston in various bronchial disorders with great success, but he has found it of no special use in cough arising from pathologic conditions of the pharynx, nasopharynx or tonsils. He gives large doses, 45 grains, three times a day. In typhoid fever he finds it an ideal intestinal antiseptic tending also to diminish bronchial complications. It may be prescribed in cinnamon water or pancreatic essence 5 grains to each fluid dram. Dose, one teaspoonful three times a day, two or three hours after meals if it is intended to act on the intestinal mucous membrane. This will be about 7.5 grains to the dose and it is sufficient in these cases. Dionin (ethyl-morphin hydrochlorate) must be placed as an intermediate between morphin and codein in therapeutic power. Johnston finds it efficient as an analgesic in gynecologic cases in .25 grain dose, but in severe conditions involving pain, morphin is superior. Dionin does not constipate and has none of the co-existing by-effects of morphin and is preferable to morphin, codein or heroin for use in expectorant mixtures in his opinion. He mentions a case of severe delirium in pneumonia which was controlled completely by this drug. He dissolves 2 to 4 grains in 2 ounces of essence of pepsin, and gives it in teaspoonful doses.

81. **Trachoma.**—The dangers of trachoma are especially mentioned by Wilder, who gives a map showing its prevalence in the different parts of the state of Illinois, where its distribution appears to be very unequal, as it prevails mostly in the southern and central portions. There is a marked increase noticeable of late years in the reception of cases in the Illinois Eye and Ear Infirmary from different parts of the state. He thinks it is the duty of the medical profession to endeavor to educate the community on the subject and to prevent the spread of the disease through ignorance, which seems to be the main cause.

86. **Coal-Tar Antipyretics in Children.**—McGee thinks that for fever in children, small doses of aconite or phenacetin are of use. Phenacetin he thinks the safest coal-tar preparation, though he has also found kryofin efficient and safe. In whooping cough he prefers quinin; in influenza he finds small doses of phenacetin as efficient as in the adult.

87. **Appendicitis.**—Wise argues for conservatism in appendicitis and believes in the use of opium in these cases. He holds that the tolerance in each individual case should be estimated and the dosage regulated accordingly. When called early to see a patient, a saline cathartic should be advised and opium should be deferred until the bowels are evacuated.

90. **Perineal Prostatectomy.**—Goodfellow considers his technique in this operation original. He operates with the patient in an exaggerated Simon position, enters the mem-

branous urethra and bladder on a lithotomy staff, and by using pressure above the pubic bone, forces the viscus downward, and then enucleates the prostate. The after-treatment is simple, consisting of daily irrigations of the bladder with passage of good-sized sounds for ten days or two weeks where the condition of the bladder demands it. In uncomplicated cases a part of the urine will be passed in the natural way in forty-eight hours, and no further treatment is called for other than the introduction of sounds until all danger from contraction is over. If a single incision is found insufficient to remove the gland, the high incision can easily be made, and the prostate extracted by the combined method. He thinks in cases where there is acute suppurative cystitis, a perineal opening is necessary even in high cystotomies, and that suprapubic drainage alone is dangerous.

106. **Appendicitis.**—Grothan believes in a rather conservative practice. In catarrhal appendicitis—that is in the great majority of cases—he would not operate, but would rely upon opium and anatomic and physiologic rest of the parts. In suppurative appendicitis he would operate, but as a rule he waits for adhesions to shut off the peritoneal cavity. If temperature is high, pulse rapid, and vomiting persistent, it is better to err on the side of early operation. In acute perforating and fulminating appendicitis, operate as soon as the diagnosis is made, and see to it that the diagnosis is made early.

116. **Tremors.**—Solomonson's conclusions are as follows: "1. A direct question as to the presence of a tremor should be included in every examination blank. 2. The search for the existence of tremor should include at least: (*a*) The inspection of the outstretched fingers and hands. (*b*) The inspection of a few straight lines drawn by the applicant. (*c*) Some trials of the applicant's handwriting. (*d*) The inspection of the lips and of the tongue, as well during rest as when in motion, the extension of the tongue and the contraction of the lips. (*e*) The inspection of ocular movements. 3. In the description of a tremor, it should be mentioned whether it is rapid, moderate or slow, or at least whether it is vibratory or oscillatory. Then, whether present or absent during passive and active rest, in motion, or the tendency to motion, whether it stops or increases through one of these circumstances, and, finally, what parts of the limbs are affected." He describes in his article the various forms of tremor and gives tracings illustrative of the different types.

118. **Tropical Residence.**—The insurance companies should, according to Van Der Berg, as regards tropical residence, arrange applicants into three different categories: 1. Those who are about to move to warmer countries; 2, those who live in them; 3, those who have returned. The various diseases met with in the hot climates are noticed, the deductions having been drawn from experience with the Dutch colonies in Asia. He thinks the following conclusions may be deduced from his study: 1. The insurance of people returning from hot countries needs a special examination: (*a*) We must find out how the change of climate has been borne. (*b*) We must look for the symptoms of tropical diseases. 2. The insurance companies should entrust the examination of such people to physicians who have lived in the tropics, and preferably to those who are acquainted with the region they inhabited. In this matter especially, experience and practice are of the greatest usefulness. Often one may recognize at first sight whether the person to be examined has suffered from a disease of the liver, from chronic dysentery, from psilosis, beri-beri, or malaria. These first impressions must be controlled by a careful examination. Those who have seen few of these diseases do not possess this intuition, which seems to me to be of great importance. Nowadays physicians can everywhere be found who are competent to examine people entering into one of the three classes indicated at the beginning of the report.

119. **Ear Disease in Life Insurance.**—Burger, after a discussion of the various conditions and complications of ear disease, offers the following conclusions: "I. It is to the interest of life insurance companies to pay greater attention than has been done heretofore to the condition of the ears of applicants. II. In acute inflammations of the external and middle ears we must await the termination of the disease before granting insurance. III. In the same way, in some very severe cases of chronic external otitis the insurance should be postponed. IV. It is possible to admit without trouble the various forms of chronic catarrhal otitis. V. Chronic suppurative otitis media must always be declined if we observe the certainty or the probability of: 1. An inflammation of the attic or of the mastoid antrum. 2. A tubercular or cholesteatomatous affection. 3. A bony lesion. 4. A paralysis of the facial nerve, or 5, when otitis is accompanied with vertigo or cephalalgia or by considerable stenosis of the external duct. VI. Other cases of suppurative otitis media need not necessarily be declined. VII. As to the possibility of their being accepted with an increased premium, each case must be examined by a competent specialist and judged separately. VIII. When the suppuration has entirely ceased, there is no objection to acceptance. A permanent perforation of the tympanum alone constitutes an impairment of the risk. IX. Chronic suppurations healed by the radical cure may be accepted under an increased premium, notwithstanding the large bony losses, or the permanent retroauricular opening following the operation. X. Bilateral deafness is important, and severe cases of aural vertigo should require an increased premium. XI. It is highly desirable that the university teaching of otology, until now much neglected, should be improved and extended and that otological diagnosis should be required for the final examinations."

121. **Life Insurance Risks.**—Florschutz's article is chiefly in relation to tuberculosis and life insurance risks. He believes in predisposition and thinks that signs of it can sometimes be discovered. Underweight for the stature and age indicate a sickly tendency and insufficient nutrition, hence deficient resistance to disease.

126. **Gonorrhea.**—Dedman holds that gonorrhea is not usually treated on rational or scientific principles, but that its serious nature is overlooked, and that it is responsible for a considerable percentage of mortality reported. The patients are dismissed too early. He says the physician should impress the patient with the gravity of his disease and its pathologic possibilities, avoiding routine treatment and remembering that every case has its own pathologic peculiarities and must be treated individually. Let us employ every diagnostic means at our command to be thoroughly convinced that the patient is well before we dismiss him, remembering that it is these apparently cured cases that do more subsequent damage than all others combined, not only to the patient himself, but to his wife.

128. This article has appeared elsewhere; see The Journal of November 30, 142, p. 1489.

129.—Ibid., 143, p. 1494.

134.—See abstract in The Journal, xxxvi, p. 1726.

FOREIGN.

British Medical Journal, November 23.

Action of Iodids on the Heart and Circulation. Ralph Stockman and Francis J. Charteris.—The authors have investigated the action of the iodids on the heart and blood vessels, which is of interest on account of their extensive use in aneurysm, arterioselerosis and cardiovascular degenerative changes. Most authors attribute to the iodids a depressing action on the circulation, while a few deny this. Stockman and Charteris have made systematic observations on blood tension and pulse rate of numerous patients taking potassium or sodium iodids. The observations were made with the von Baseh's sphygmomanometer and Gartner's tonometer, which detect and record slight changes in the arterial tension. The doses were usually 15 to 30 or 40 grains, a few patients, however, taking much more, up to 180, and one man suffering from spinal sclerosis took 300 grains per day. Some of the patients had healthy circulatory systems and were taking iodids for chronic rheumatism, sciatica, facial paralysis, etc. Others suffered from renal or cardiac disease, aneurysm, arterio-

sclerosis, bronchitis, etc. One patient suffered from severe iodinism, the others had it but slightly. Observations were taken regularly during the iodid administration, but in no case did any fall in the blood pressure occur or any change in the rate or rhythm of the heart. Even the man who suffered from severe iodinism maintained his arterial tension unimpaired, though he said he felt very depressed and ill. The depression seemed partly due to coryza and partly to the action on the nervous system. "The result of the observations is to show that potassium or sodium iodids, given to men by the mouth in therapeutical doses, do not modify the physical conditions of the circulation, and that therefore they neither directly weaken the heart nor dilate the arterioles. The therapeutic effects must be due to some other mode of action, and this is probably true also of some of the rarely occurring poisonous effects. It is sometimes observed, for instance, that iodids quicken and weaken the pulse, and this has been specially frequent in goiter; sometimes also their administration is followed by emaciation. There is good reason for believing that in neither case is this a direct effect, but is due to increased formation or alteration of the iodin-containing thyroid secretion, which has a powerful action on the circulation and on metabolism." The authors also have repeated and checked a considerable amount of experimental work on the action of iodid upon the circulation in animals. They notice a decided difference in the effect of iodid of potassium as administered by the veins, where its action as a cardiac depressant is very marked, while sodium iodid given in the same way produced very little, if any effect. A small, carefully guarded dose of the potassium salt caused a transient rise of blood pressure, with slowing of the pulse and increased size of the waves. When given by the stomach the depressing effect on the blood pressure is only observed after enormous doses, and is never very evident in man. It is an effect of potassium common to all potassium salts and seems to be due to the large amount of potassium salt striking the heart at once and in a certain concentration, for if the solution is very dilute and injected slowly so that it mixes well with the blood this effect does not appear. Although the blood pressure may sink to nothing, the heart muscles and nerve ganglia may not be killed, but may recover rapidly as the blood washes the poisonous salts out of the heart. Death may occur, however, from asphyxial convulsions brought on by overwhelming action. They have never seen the fall of blood pressure from dilatation of the arterioles mentioned by Sée and Lapicque. A number of experiments were also made on the hearts of frogs isolated, but they did not throw much light on the action of iodids on the heart and circulation of man and mammals. Iodids and iodin exert a very depressant effect on the muscles of the frog, no trace of which could be observed in mammals. They conclude, therefore, that sodium or potassium iodid, when given to man by the stomach in the ordinary dose, has no depressing effect on the action of the heart, blood pressure or arteries.

The Lancet, November 23.

The Etiology of Beri-Beri. Patrick Manson.—The importance of beri-beri is first considered, and Manson shows that it is not only endemic in the tropics, but has appeared in certain institutions on the British Isles, for instance the Richmond Asylum in Dublin. He also mentions a confusion in names, that is, other disorders have received this designation and it is possible that the term beri-beri covers more than one form of peripheral neuritis. There is a large and almost unworked field for the bacteriologist in the tropics. We should first, therefore, have a clear conception of the term we are discussing, and what he considers to be understood by the term beri-beri is a form of multiple peripheral neuritis occurring endemically and epidemically, characterized, as compared with other forms, by proneness to edema and to implication of the neuro-muscular system of the central organ of circulation; by complete absence of trophic skin lesions, of paresis of the muscles of the head and neck, of marked implication of the senses of sight, hearing, taste and smell and of the mental faculties. In common with alcoholism and arsenical neuritis there are locomotor disturbances, paresthesias, and hyperesthesias, with atrophy, and generally after the beginning, absence of patellar tendon reflex and of the superficial reflexes, the sphincters being intact. The patient complains principally of sweating, palpitations and breathlessness, weakness and numbness of the limbs, and swelling of the legs. Fever and diarrhea are far from being prominent features. The intensity and duration may be varied; either trifling and of only a week or two's duration, or may prove rapidly fatal, or last in varying degrees of intensity for months. Paresis may be the leading feature or muscular atrophy or anasarca, or there may be rapidly fatal paralysis of the right heart and diaphragm and respiratory muscles. It occurs generally in limited epidemics, in particular houses, etc., or it may spread over large areas only attacking limited foci therein. It occurs at sea on board ship, where it is apt to be rapidly fatal. The postmortem results are those ordinarily found in multiple peripheral neuritic degeneration of the peripheral nerves or ascending degeneration of the neuron and involving the corresponding intracranial cells. No immunity is conferred by an attack and the mortality ranges from 5 to 50 per cent. In some epidemics only a few are affected, in others almost everyone may be a victim. There are two theories of its causation: 1. The dietetic, which has been advocated by many writers, who generally attribute the disease to prolonged and uniform rice diet. The facts that support this are largely from Japanese experience, but epidemics elsewhere show exceptions. It has occurred in other countries with elaborate diet where there is no lack of nitrogenous food. In the prisoners of the Dutch colony of Java there seems to be some evidence that it follows the use of decorticated rather than non-decorticated rice. Another theory which Manson thinks more plausible is the germ theory, which is quite compatible with Japanese experience, and that the disorder has its origin in the toxin elaborated by a germ in the blood or tissues. In his opinion, the best supported theory by facts is that the diseases is purely an intoxication produced by toxins elaborated by germs whose nidus is located outside the human body, and he parallels it with alcoholism. The cause can be transplanted from place to place and therefore can not be of climatic or meteorological nature, and when so transplanted can multiply. This has been shown by numerous facts, by the transportation of Japanese to different localities where they have carried the disease with them, and it is not unknown on ships in the London docks. We can not, however, say what the toxin is, but its persistency in certain buildings and ships is certainly remarkable. The analogy with alcoholism is used by him largely in his reasoning. In conclusion, he enumerates several points that investigators in the etiology of beri-beri must be careful to attend to: "1. The diagnosis: they must avoid mistaking other forms of peripheral neuritis for that of beri-beri. 2. They must bear in mind the possibility that the disease may not have been contracted at the place in which it is declared. 3. That the toxin which produces an outbreak of beri-beri may have been imported as such and not manufactured, so to speak, locally. 4. They must carefully differentiate between predisposing or favoring conditions, such as overcrowding, heat and moisture, bad food, etc., and the actual direct cause. 5. Finally, they must recognize that the actual cause must correspond in its geographical distribution with the geographical distribution of the disease."

Twenty-five Years' Experience of Urinary Surgery in England. G. Buckston Browne.—In his second lecture Browne takes a more favorable view of the prospects of the prostatic patient than is commonly held. Why prostatic enlargement occurs, he says, can not be stated, but he would advise plain living, foot exercise, and very moderate sexual indulgence after 50 years of age as a prophylactic. He describes at length his method of conducting aseptic catheterization, and he maintains that there are no cases of prostatic disease where it is impossible to pass a catheter into the bladder. The India rubber catheter is the safest of any and will often work when all others fail. The worst cases are those where the distension has become chronic, and no surgeon should treat such as out-patients. Catheter life does not disqualify from

active life. He knows many instances of men active in the professions and even sailors and sportsmen who were in that condition. The complication of stone in the bladder is a serious one, and is mentioned at length. Browne puts little faith in castration or vaseetomy. The only thing to do for a prostatie patient whose suffering can not be mitigated by the treatment is to open the bladder suprapubically in order to explore digitally for stone or tumor and at any rate to obtain rest for the organ. He emphasizes the importance of opening the bladder in such cases upon the point of a staff. When the prostate is large so that the organ often comes up well above the pubes, unless the staff is employed, it is possible to incise the prostate and not the distended bladder, and thus cause serious trouble. It is a curious fact, he says, how many cases turn out to be really cases of calculi hiuden away in one of the many pouches to which such cases are subject. If a stone is found and the intravesical prostate is not very large it had better be left alone, but if it is large and there is no stone he thinks it would be good policy to attack the growth. He credits the operation entirely to McGill of Leeds, maintaining that Belfield's previous operation was practically an accident. The special points of technique are quoted from McGill. As for total extirpation by enucleation he considers the phraseology misleading. The prostate can no more be enueleated without the use of the knife than can a piece of the intestine. It is absolutely one with the urethra and bladder. This treatment has been used in error and by surgeons who have been fortunate in only meeting with the simpler or adenomatous form of prostatic enlargement where large masses are easily shelled out. He also maintains that he has shown that the bladder may recover its power fully even after long depending upon the eatheter. Therefore, the operation is not contraindicated. He sums up his views, which were first expressed in 1893, as follows: "1. I believe that suprapubic prostatectomy should never be undertaken at the outset of catheter life unless regular auto-catheterism is difficult or well-nigh impossible. In cases of real difficulty I have seen several patients where vasectomy has been performed, and there has been no lessening whatever of the catheter difficulty. It must be understood that I believe that cases where regular catheterism is impracticable are very rare, and it is for these only that I would recommend suprapubic prostatectomy. 2. Prostatectomy should never be undertaken as long as the ordinary catheter life is a tolerable one. 3. If catheter life becomes intolerable, suprapubic cystotomy should be resorted to. By means of this proceeding the bladder can be thoroughly explored and any stone removed, which in these cases may easily have escaped detection by the more useful methods of examination. The prostatie growth can be fully examined and removed if the operator think it right to do so. If he deem removal inadvisable he can leave the patient with a suprapubic tube for permanent after-wear with the certainty that he will have materially improved the condition of the patient. Finally, should the operator decide to remove the prostatie obstruction there is a very good prospect, but not a certainty, of the power of natural micturition being restored to the patient. I would therefore strongly recommend all prostatie patients and their advisers to be content with the catheter life as long as it is tolerable, and in the vast majority of eases, with reasonable care, it will remain tolerable into extreme old age—until the end comes probably through other channels. I believe that, as Mr. Jonathan Hutchinson once said to me, 'good surgery may often be combined with bad praetice.' The work of the world is not always done by those who are completely well. It is not wise for the elderly to run grave risks only on the chance of obtaining complete comfort. There is much truth in what Thomas Hardy says of one of his most fascinating heroines: 'In considering what she was not he overlooked what she was and forgot that the defective can be more than the entire.'"

A Note on Neisser's Test for Diphtheria Bacilli. L. COBBETT.—This author holds Neisser's method extremely valuable in distinguishing diphtheria from pseudo-diphtheria, but it is not infallible. It fails in a small proportion of cases to show the polar bodies of true diphtheria bacilli and shows minute or doubtful polar bodies in a few cases of Hofmann's baeillus. This fact, however, detracts very little from the value of the stain as a differential test because the exceptions to the general rule are so few. A good positive reaction is evidence that the bacilli are diphtheria bacilli; a definite negative reaction is valuable evidence but not alone conclusive, while a poor or doubtful reaction is not of much value either way. He describes his acetie acid modification of Neisser's stain, consisting in an application of a drop of 5 per cent. acetie acid to one edge of the cover slip and drawing the fluid under the glass by means of a small piece of filter paper placed on the other side. If the bacilli are watched while the acid is entering under the cover slip one sees first a current of fluid sweeping up loose baeilli and hurrying them away. A blue cloud next appears and blurs out everything for a second, then passes on, leaving the field bright and clear and the diphtheria bacilli showing the polar bodies as when stained as Neisser recommended, only the bodies are not brown, but blue. The Hofmann bacillus does not as easily decolorize as the diphtheria, and at the middle of each half a good deal of blue usually remains. With the diphtheria bacilli the stain is instantaneous and the pieture revealed is not inferior to that of the Neisser specimen stain in the usual way. The method is so quick that it takes no appreciable time and can therefore be applied to every preparation having a micro-organism with the remotest resemblance to diphtheria.

Bulletin de l'Academie de Medecine, November 19.

Five Cases of Rupture of the Spleen in Malarial Subjects. BOINET.—The spontaneous rupture of the spleen during an attack of intermittent fever or pernicious malaria is possible. It is favored by the softening, the enormous enlargement of the organ, the congestion and the rapid increase in the body of the spleen which is liable to distend and burst the capsule. Sometimes the eapsule is thin and normal in aspect, or it may be thickened and have lost its elasticity. Adhesions between the spleen, stomach and diaphragm drag on the organ or interfere with its movements, and thus favor rupture from slight traumatism. The alterations, hypertrophy and friability of the large spleens noted in chronic paludism were the predisposing causes in four of the cases related. In one the rupture occurred immediately after eating a hearty meal, with no external traumatism. Most of the ruptures were star-shaped, but in one case the spleen ruptured in a dozen placees during an acute, comparatively recent malarial infection; no signs of traumatism could be discovered and an operation in time might have saved this patient.

Bulletin de la Soc. Med. des Hop. de Paris, November 14.

Methylene Blue in Treatment of Uleero-Membranous Stomatitis. A. SIREDEY.—The affections of the throat caused by tho spindle-shaped bacillus and spirillæ, have lingered for months in all the cases that have been reported. Siredey had occasion to treat a young man with this affection, the symptoms of a staphylo-palatine stomatitis predominating. He first painted the lesions with iodin, but found that they did not take the stain and the application had no effect. Remembering that these micro-organisms stain well with methylene blue, he treated the lesions by applying ehemically pure methylene blue in powdered form on cotton wrapped on a stick, which he rubbed well on all the lesions. No inconveniences were observed except the blue stain of the saliva. The stomatitis was completely cured by the end of eight days; the blue had been applied six times.

November 21.

Serotherapy of Typhoid Fever. E. CHANTEMESSE.—For many years Professor Chantemesse has been making a special study of this subject, and in 1892 he succeeded in producing an antityphoid serum which had a preventive action. It was not curative as it had no antitoxie action, and it was impossible to make an actual antitoxin until 1897, when he suceeeded in isolating the true, soluble typhoid toxin, and at once began to apply it for the production of an effeetive serum for clinical use. He now reports the results of its applieation in 100

cases of severe typhoid fever. As the mortality in typhoid fever varies so much in different epidemics, he has collected the records of the cases at the same hospitals during the same periods treated by other methods. He found that the mortality of the 371 cases that were treated in nine Paris hospitals between January 1 and October 10, 1901, ranged from 12.28 to 56 per cent., and averaged 29 per cent. He found incidentally, that 404 cases of typhoid fever in children at a children's hospital terminated fatally in 10 per cent. In his 100 cases every patient treated before the tenth day recovered, and all the others except 6. Two of these did not receive this treatment until after the twenty-first day; one died of pneumonia and another from the consequences of a pre-existing extensive gangrenous eschar. These 100 patients treated with the serum were all in the nine hospitals mentioned except 10 in his private practice. They were all "gravement ou serieusement" affected. As a general rule, the injection was followed a few hours later by a slight febrile reaction as in case of antitoxin treatment of diphtheria. In twenty-four to thirty-six hours after the injection the general health shows marked improvement; the diarrhea is arrested, or at most, persists only two to four days after the injection. The influence on the pulse and blood pressure is most marked, and the slower radial pulse immediately after the injection, is one of the most constant and most significant signs of improvement. It usually accompanied the fall of the temperature. The condition of the pulse twenty-four hours after the injection indicates whether the disease is yielding slowly or rapidly and whether a second injection is required. Three injections were made in some cases, but usually one or at most two are ample. With the injection of serum, cold baths to reduce the temperature are needed only for a short time. The serum has an evident diuretic effect. The polyuria may reach 3 or 4 quarts a day, and it keeps up after the temperature has been normal for days, but the chlorids are scanty until recovery is well under way. When the kidneys were sound before the typhoid infection, the albuminuria induced by it vanishes after the injection. Chantemesse urges that the patients should be made to drink copiously, a glass of water or tea every hour at least, in some form. The blood changes after the injection and assumes the characters it presents during normal convalescence, returning gradually to normal. Complications were rarely observed. Perforation of the intestines occurred only in 3 cases, never in any patient injected before the ninth or tenth day. Otitis media was observed in 3 and slight phlebitis of the saphena in 2. Clinical experience therefore has fully confirmed the results of experimental research in respect to this serotherapy of typhoid fever. It has proved to be preventive, anti-infectious and antitoxic. He injects the serum at the elbow, as he thinks the venous network is so extensive at this point that the serum is more rapidly absorbed than from the skin of the abdomen. There were no after-effects except a very slight erythema was observed in 2 cases. When possible to apply the injection at an early stage of the disease, in vigorous adults, able to take cold baths, 10 to 12 c.c. of the serum was the average dose. The reaction is brief, and complete apyrexia may follow in seven or eight days. If there is still slight fever at this time, the injection is repeated, the dose ranging from 4 to 10 c.c. according to the height of the fever. In case the disease is only five days old, or the intoxication is extremely profound or of long duration, it is better to commence with 6 to 8 c.c., ready to recommence a few days later. When the reaction to the injection is very pronounced, he suspends all food and administers water alone. Milk and the juice of raw meat are peculiarly beneficial in typhoid fever. Strict care of the mouth is the most effective means of preventing complications on the part of the lungs. The cold bath should be used freely, and should not be omitted to reduce the febrile reaction after the injection. He urges the injection of the serum on a presumptive diagnosis without waiting for certainty. It can do no harm and may possibly ward off an impending attack as in diphtheria. But the resemblance ceases here. In diphtheria the serum suppresses or diminishes the intoxication and the microbes are dislodged from their haunts in the throat. In typhoid fever, on the other hand, the microbes are in the inaccessible internal organs. They can be dislodged only by phagocytosis. The immunization of the horses whose serum is effective, was commenced five years ago. The animals die if the vaccination is carried on too vigorously. The expenses of the long and costly researches were defrayed partly by the Pasteur Institute and partly by the municipal authorities of Paris. A number of temperature curves are reproduced. In some the temperature makes an even downward slope after the single injection. In all there was a constant drop of the temperature after the injection.

Echo Medical (Lille), November 17.

Cure of Lead Colic by Epidural Cocainization. Delearde.—The pains were immediately arrested in two cases of lead poisoning described by Delearde, after the epidural injection of 0.03 gram of cocain dissolved in 3 c.c. of water. With the abolition of the pains the characteristic obstinate constipation was relieved also. Each patient had an alvine discharge the same day, the first for a long time, in spite of repeated purgatives.

Journal de Med. de Paris, November 3.

Spontaneous Resorption of a Cataract. Trousseau.—A woman of 55 was operated on to relieve a severe attack of acute glaucoma. Iridectomy was done at the same sitting on both eyes, which had become affected in turn. A few months later a cataract began to develop in one eye, rendering it completely blind by the end of three months. Soon after this the cataract commenced to disappear, and in four months there was scarcely a trace of it left. Reuss reported a similar case last year; an elderly patient with glaucoma found that the cataract had been completely re-absorbed. He was able to collect 33 cases of spontaneous resorption of a cataract, and in more than half of them there was some complication—glaucoma in 7. Pathologic and especially glaucomatous eyes seem to be peculiarly favored with spontaneous disappearance of the cataract.

Presse Medicale (Paris), November 6.

Generalized Enterococcus Septicemia. J. Hulot.—The enterococcus should be considered as important a factor in pathology as the streptococcus and the pneumococcus. In a case of generalized septicemia induced by it, the symptoms developed in three weeks, commencing with gastro-intestinal phenomena, prostration and headache. The liver became painful and albumin appeared in the urine. Death occurred in dyspnea after defervescence. The liver presented the appearance of an old injury; possibly the enterococcus had determined lesions there before they had become generalized. The general affection was evidently the consequence of bad hygienic habits and the pressure of a corset.

Sodium Salicylate. A. Martinet.—Besides its influence in rheumatism and the uric diathesis, sodium salicylate is distinguished by its remarkable influence on the modification of the secretion of bile. It is the most active remedy at our disposal against insufficiency of the liver functions and is the cholagogue par excellence. Owing to its depressing action on the heart and brain, most marked with impermeability of the kidneys, it is contra-indicated in case of excessive susceptibility of the nerve centers, of organic affections of the heart and complete or relative impermeability of the kidneys. These contra-indications are not absolute in case the patient can be supervised two or three times a day.

November 9.

Treatment of Gastric Stasis by Dry Evacuation of the Stomach. Mathieu.—Occasionally the stomach may have to be irrigated, but usually aspiration of the contents is sufficient to relieve the symptoms which characterize Reichmann's disease. The empty stomach is thus evacuated by dry aspiration in the morning. Immediately afterward, 40 to 100 gm. of meat ground to a powder and stirred into a half or two-thirds of a liter of milk, are injected. This treatment has proved extremely successful except in cases complicated by

malignant disease. Mathieu's experience indicates that every case of stasis of the contents of the stomach or Reichmann's disease, which is not improved by this treatment, demands surgical intervention without delay.

Semaine Medicale (Paris), November 6.

Treatment of Diabetes Mellitus. R. Lepine.—Diabetics can be classified as those with and those without diacetic acid in the urine. As long as there is no diacetic acid in the urine, the glycosuria may be diminished or disappear entirely on an appropriate diet and medication. In case of the presence of diacetic acid in the urine the glycosuria is a subordinate element and every effort should be made to banish this acid from the urine. If it persists in spite of this, the prognosis is almost invariably fatal. In treating diabetes it is well to commence by keeping the patient under observation for a few days in order to learn his habits of life. Whether glycosuria is due to a hyperglycemia or to an exaggerated permeability of the kidney, the ingestion of albuminoids must be restricted. Fats, like the proteids, may be a source of oxybutyric acid and its derivatives, diacetic acid and acetone. Lepine has one patient who excretes diacetic acid in increased amounts every time after ingestion of cream. Diaceturia may be diminished by an abundant carbohydrate diet, but this increases the glycosuria and is thus impracticable. Glycerin has been advocated as theoretically indicated in diaceturia, but has not established its claims in practice. Schwarz states that gluconic acid, that is, partially oxidized glucose, has a marked effect in diminishing diaceturia. He has recently published in the *Prag. Med. Wochenschrift*, July 25 and August 1, the account of a young man affected with severe diabetes and pulmonary tuberculosis. He fell into a comatose condition three times in the course of six weeks, with increased acetonuria and dyspnea. The first time, about 70 gm. gluconic acid were administered in a pint of water, neutralized by sodium bicarbonate, after he had lost consciousness. As much as 140 gm. of the latter were also given by the mouth or rectum. He revived at once and his condition remained satisfactory for three weeks, when another attack supervened, arrested in the same way by gluconic acid. Three weeks later a third attack occurred, and as there was no gluconic acid on hand, it was impossible to control it and the patient died. In this case the gluconic acid had evidently saved the patient twice. It seems to serve not only as a food to replace the sugar, but also as a direct curative agent. The case indicates that gluconic acid should be given a trial not merely in coma but also as a preventive measure beforehand. Until gluconic acid has been fully tested, large doses of sodium bicarbonate are the chief resort. It has saved a number of lives in Lepine's experience. One case required intravenous injection of two liters of a solution of sodium bicarbonate.

Bilateral Simultaneous Auscultation of the Lungs. Bourget.—It is remarkable what delicate differences can be discovered between the two lungs when each ear is provided with a separate tube and funnel for auscultation. The funnels should be placed on symmetrical parts of the lungs. In healthy lungs the sounds blend into one uniform tone, but in case of a lesion in one lung, the difference between the sounds is striking and is most readily perceived by this comparative, simultaneous auscultation.

Centralblatt f. Chirurgie (Leipsic), November 9.

Silver Netting to Close Defect in Trachea. Grosse.—A girl of 12 suffered from recurring inspiratory dyspnea from a tracheotomy performed nine years before. The walls of the trachea were drawn in during inspiration and the child could get only five to ten minutes' sleep at a time. A piece of silver wire netting, 2 cm. wide and 3 long, was bent to fit the throat and sutured with albumin bronze wire over the defect, outside of the mucosa. The trachea was stretched by this means and held in its normal position. The netting healed into the tissues without reaction and respiration became normal at once and has remained so for the fifteen months since the intervention.

November 16.

Present Status of the Glove Question in Surgery. Heile.—A single anthrax bacillus may cause the death of a mouse, but in man a certain quantity is required before infection can be induced. This quantity varies with the resistance of the organism and Heile calls it the "infection coefficient," as it varies with every individual. He reports tests with thread gloves which showed that when the hands were much contaminated, the animals all died after protracted operating on them, whether gloves were used or not. But when the hands were scraped and considerable numbers of the germs removed, wearing gloves made a great difference in respect to the survival. Over 45 per cent. of the 34 rabbits in the tests remained alive. Other tests showed that changing the gloves four times during the course of an operation also aided in reducing the number of bacteria in the wound. The more closely woven gloves allowed only 5 per cent. of the germs to pass into the fluid while the old style of loosely woven gloves allowed the passage of 30 per cent. Tricot gloves absorb fluids and bacteria and retain them. They do not allow the passage of any more bacteria than normally alight on the hands or gloves from the air in operating. A number of further tests are reported which show that the entrance of spectators into an operating room immeasurably increases the number of germs. Other tests proved that in changing dressings which have dried on or become adherent from the secretions of the wound or the pus, particles of the dried secretions are flung around and alight on the instruments, and on the blouse aprons of the operator and assistants. The bacteria continue their development on these aprons undisturbed for hours, and thus the wearer of the apron is carrying a dangerous focus of infection around with him. Even fifteen vigorous and separate disinfections of the hands in the course of three days, failed to destroy all the prodigiosus bacteria in the tests described. The best plan therefore is to refrain from contact with septic matters by wearing rubber gloves during septic operations on infected tissues. When this is not possible, thread gloves should be worn during aseptic operations. Rubber gloves are not only unsuitable in aseptic operations, but absolutely dangerous, as there is danger of some slight rip or tear and the hand perspires so freely in them that thousands of bacteria are poured out on the surface of the skin.

Deutsche Med. Wochenschrift, November 14.

Improved Technique for Stethoscopy to Determine the Outlines of Internal Organs. E. Reichmann.—Supplementing the ordinary methods of percussion and auscultation Reichmann uses a round stick about 7 cm. long by 1 cm. in diameter. The top is flat, the lower end rounded. The space between is cut out like a screw thread; only the grooves are circular, horizontal and parallel instead of spiral. The rounded end is placed on the skin and the forefinger applied to the top, holds it upright firmly pressed against the skin. The fingers of the other hand—not the nails—are rubbed up and down over the grooves while listening through the stethoscope. The sound of the rubbing is very distinct, even when the stick is held a little from the skin, but the moment it is applied over the edge of some internal organ the sound becomes muffled. It is possible by this abrupt change in the sound to locate the outlines of the internal organs with remarkable precision.

Muenchener Med. Wochenschrift, November 12.

New Points of View in the Treatment of Albuminuria. P. Edel.—The decrease in the albumin during the afternoon in cases of cyclic albuminuria is due to the midday meal. If the hour of the meal is changed, the hours of diminished albuminuria vary with it. When the kidneys show marked albuminuria, and under the most favorable conditions for its production, the administration of potassium acetate will completely arrest it while the organism is under the influence of the drug. This effect on the albuminuria parallels the diuretic action of the acetate. Hot baths have the same influence as diuretics; the urine becomes clearer and more abundant, while the proportion of albumin diminishes. The same

effect is produced by assuming the horizontal position, probably owing to the more favorable conditions for the circulation. Dietetic treatment of albuminuria, alkaline waters, vegetables, etc., probably owes its success to the increased diuresis which it induces. These assertions are the conclusions of much research, the particulars of which are given in tabulated form.

Laryngeal Tuberculosis and Pregnancy. A. KUETTNER.—Seven cases have been published of pregnancy occurring with laryngeal tuberculosis, and Knettner has collected 15 more. His conclusions from these and 10 or 12 other cases less carefully observed, are that tracheotomy should be postponed until required to prevent suffocation. It should be done as a preliminary to delivery in advanced cases, or at least, should be done during delivery at the first symptoms of suffocation. The earlier the pregnancy is interrupted, the better the chances for the mother. None of the children were born at term, but all were alive and 3 are still living. The mothers all died within two months after delivery, in the cases followed. In 12 of his cases there were no, or minimal, signs of tuberculosis on the part of the lungs; in 3, pulmonary tuberculosis was evident before the pregnancy. In 2 cases the laryngeal tuberculosis appeared in the sixth month, and in 12 in the first half of pregnancy.

Serum Treatment of Basedow's Disease. MOEBIUS.—Serum from animals deprived of their thyroid glands was applied in the treatment of three cases of Basedow's disease, with marked improvement as the result. No albuminuria was observed. Meat from such animals might prove as effective as the serum, Moebius suggests.

Wiener Klin. Wochenschrift, November 14.

Influence of Diet on Course of Epilepsy. H. SCHLOESS.—A medical writer in the time of Trajan called attention to the unfavorable influence of a meat diet on the course of epilepsy. Schloess, after considerable study of the subject, found that an exclusive milk and vegetable diet had as little influence in diminishing the number of the attacks as a meat diet in increasing them. Depriving epileptics of salt in their food during the administration of the bromids, always reduced the number of the seizures. The psyche is not affected by this measure, but the patients lose in weight and become weak. Fats and acids and the moderate use of alcohol, as much as a liter of light beer during the day, had no influence in increasing the number of the seizures.

Juvenile Tabes. H. V. HALBAN.—Tabes can not develop without preceding lues; this statement of Halban's is based partially on the development of tabes in three cases of juvenile syphilis, inherited or acquired in infancy. The symptoms were about the same in all three and the cases were distinguished by the remarkable absence of subjective disturbances. The patients applied to the physician for some other reason than the incipient tabes, which he at once recognized. The youthful nervous system probably reacts differently to syphilitic intoxication than the adult.

Revista Med. del Uruguay (Montevideo), September.

Surgery of the Lung. J. H. OLIVER.—Only seven cases of tubercular cavities in the lungs communicating with an abscess in the costal wall, have been reported in the literature according to Oliver. In three the cavity was an operative surprise, as the intervention had been undertaken merely for the relief of the external abscess. In these cases there was no communication between the abscess, the cavity and the air passages. Tuffier has stated that only 13 survived out of 26 cases of tubercular cavities he has operated on and only one for more than five years; two died the second or third year; the others were followed for only two or three months. Only one of Hahn's four or five patients has survived ten years. The mortality was 20 per cent. in the cases of cavities communicating with an external abscess, and the ultimate results are no more favorable than in the other categories. Oliver reports a case diagnosed and operated on as a "shirt-stud" tubercular abscess. The tubercular cavity below was not found until at a second operation. The symptoms of the disease vanished after the intervention, and complete clinical recovery has persisted to date, more than eight and one-half years after the intervention. The patient has been a carpenter and is now working in the dust of a tobacco factory, with no recurrence of the old symptoms, not even after a severe intercurrent attack of la grippe.

Books Received.

BERICHT Ueber die in der Züricher Chirurgischen Klinik in den Jahren 1881-1900 Behandelten Fälle von Offenden Wunden des Abdomens. Inaugural-Dissertation zur Erlangung der Doktorwürde der Hohen Medicinischen Fakultät der Universität Zurich, vorgelegt von George Howard Hoxie, aus Cambridge, New York, U. S. A., Genehmigt auf Antrag der Herrn Prof. Dr. Krönlein. Paper. Pp. 54. Tübingen: Druck von H. Laupp, Jr. 1901.

ANATOMY IN ITS RELATION TO ART. An Exposition of the Bones and Muscles of the Human Body with Especial Reference to Their Influence Upon Its Actions and External Form. By George McClellan, M.D., Professor of Anatomy of the Pennsylvania Academy of Fine Arts. Illustrated by 338 Original Drawings and Photographs Made by the Author and Expressly Prepared for This Work. Cloth. Pp. 133. Price, $10.00. Philadelphia and London: W. B. Saunders & Co. 1901.

AN INTRODUCTION TO THE CHEMICAL ANALYSIS FOR STUDENTS OF MEDICINE, PHARMACY AND DENTISTRY. By Elbert W. Rockwood, M.A., M.D., Professor of Chemistry and Toxicology in the College of Medicine. Illustrated. Cloth. Pp. 255. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1901.

TRANSACTIONS OF THE MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND; 103d Annual Session, Held at Baltimore, April, 1901; also Semi-Annual Session, Held at Towson, Md., November, 1900. Paper. Pp. 108. Baltimore: The Deutsch Company.

AN INTRODUCTION TO THE BACTERIOLOGICAL EXAMINATION OF WATER. By W. H. Horrocks, M.B., B.Sc., Lond., Assistant Professor of Military Hygiene in the Army Medical School, Netley. Cloth. Pp. 300. Price, $3.68 net. Philadelphia: P. Blakiston's Son & Co. 1901.

OFFICIAL LIST OF THE COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE. Also List of U. S. Marine Hospitals and Quarantine Stations. July, 1901. Paper. Pp. 24. Washington: Government Printing Office. 1901.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Volume XIX. Edited by Richard H. Harte, M.D., Recorder of the Association. Cloth. Pp. 514. Printed for the Association. Philadelphia: William J. Dornan. 1901.

MEMOIRS AND LETTERS OF SIR JAMES PAGET. Edited by Stephen Paget, One of His Sons. With Portraits and Other Illustrations. Cloth. Pp. 438. Price, $5.00. New York and Bombay: Longmans, Green & Co. 1901.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY for 1902. New Revised Edition. Leather. Price, 30 patients per week, $1.25; 60 patients, $1.50. New York: Wm. Wood & Co. 1901.

SIXTH AND SEVENTH ANNUAL REPORTS OF THE CHICAGO BUREAU OF CHARITIES, for the Fiscal Year ending Oct. 31, 1900, and for the Seven Months Ending May 31, 1901. Paper. Pp. 48.

REPORT OF THE SURGEON-GENERAL, U. S. NAVY, Chief of the Bureau of Medicine and Surgery, 1901. Paper. Pp. 328. Washington: Government Printing Office. 1901.

REPORT OF THE MEDICAL COUNCIL OF PENNSYLVANIA, 1899. Paper. Pp. 140. State Printer: Wm. Stanley Ray. 1899.

Queries and Minor Notes.

DENTAL CARIES IN PREGNANCY.

PHILADELPHIA, Nov. 14, 1901.

To the Editor:—Kindly give me information in regard to the literature, essays, etc., pertaining to the subject of the preventative treatment of caries of the teeth occurring in pregnancy and lactation. S. L. F.

ANS.—The principal literature on the subject is to be found in the files of dental journals. There is little to be found in textbooks.

NOTICE OF CHANGE OF RESIDENCE.

CHARLOTTE, W. VA., Nov. 23, 1901.

To the Editor:—Recently, I changed my residence from Point Creek to this city to practice my profession. Will you please advise me if I would be doing anything ethically wrong to insert a card in the daily papers notifying my friends and patients of the change? H. G. N.

ANS.—It is always a good plan when one is in doubt to err on the right side. The fact of making the inquiry shows that our correspondent's conscience is pricking him a little. It would be much better to send a card announcing his removal to his patients rather than to insert a card in the newspapers.

ENGLISH DISTINCTION OF DR. AND MR.

ELK RIVER, MINN., Nov. 30, 1901.

To the Editor:—Will you kindly explain why some English physicians bear the title of "Mr." and others that of "Dr."? Conan Doyle, the novelist, is Dr. Conan Doyle; Sir Joseph Lister, the eminent surgeon, is Mr. Lister. Why is the distinction?

C. Q. S.

ANS.—Generally speaking, those who are designated "Mr." are supposed to be snrgeons, and "Dr.," physicians. No one has a right to the title "Dr." unless he holds a Doctor's degree. The M.D. degree is conferred in Great Britain and Ireland only by Universities, and is preceded by the bachelor's degree. The right to practice is conferred by varions bodies, among these being the Royal College of Snrgeons, the Royal College of Physicians of London, and the Royal College of Physicians of Edinburgh. These grant L.R.C.P. or S., M.R.C.P. or S., F.R.C.P. or S. degrees, which do not carry with them the title of "Doctor." Arthur Conan Doyle, the anthor, received the M.B., C.M., in 1881, and the M.D. from the University of Edinbnrgh, in 1885. Joseph (now Lord) Lister received the B.A. degree in 1847, the F.R.C.S. and M.B., in 1852, and varions other degrees since then, but not the M.D. nntil it was conferred (honoris cansa) by Trinity College, Dnblin, in 1879. After this Lister was entitled to the title "Doctor."

The Public Service.

Army Changes.

Movements of Army Medical Officers nnder orders from the Adjntant-General's Office, Washington, D. C., Nov. 21-27, 1901, inclusive:

Roger P. Ames, captain and asst.-snrgeon, Vols., leave of absence for two months granted.

Bailey K. Ashford, lientenant and asst.-surgeon, U. S. A., former orders, relieving him from dnty at Fort Slocum, N. Y., and assigning him to dnty in the Department of Cuba, revoked.

Alexander F. Bacon, contract dental surgeon, now in Washington, D. C., to proceed via Tampa, Fla., to Havana, Cnba, for dnty in the Department of Cnba.

David Baker, lieutenant and asst.-snrgeon, U. S. A., former orders so amended as to relieve him from duty on the transport *Meade*, and from further dnty in the Division of the Philippines, to assign him to dnty in the Department of California.

James L. Bevans, contract snrgeon, from duty at the General Hospital, San Francisco, Cal., to Decatnr, Ill., for annulment of contract.

Marshall M. Clond, lientenant and asst.-snrgeon, U. S. A., from Fort Sill, Okla., to post duty at Fort Leavenworth, Kan.

Peter C. Field, lientenant and asst.-surgeon, U. S. A., from Fort Slocum, N. Y., to duty at Fort Robinson, Neb.

Arthnr C. Heffenger, contract snrgeon, now at Portsmouth, N. H., is assigned to dnty at Fort Constitution, N. H.

Edward F. Horr, captain and asst.-surgeon, Vols., leave of absence for two months granted.

Thomas A. Marshall, captain and asst.-snrgeon, Vols., recently appointed and now at Bedford City, Va., to proceed via San Francisco, Cal., to Manila, P. I., for dnty in the Division of the Philippines.

John A. Mnrtagh, lientenant and asst.-surgeon, U. S. A., from the general Hospital, Presidio of San Francisco, Cal., to report to the commanding officer at Fort Columbns, N. Y., for temporary dnty with troops sailing for Manila, P. I., on the transport *Buford*, abont Jan. 15, 1902. On arrival at Manila, he will report for assignment in the Division of the Philippines.

Henry Page, lientenant and asst.-surgeon, U. S. A., member of an examining board at Fort Monroe, Va., vice Lient.-Col. Robert M. O'Reilly, depnty snrgeon-general, U. S. A., relieved.

David M. Roberts, contract snrgeon, from temporary dnty at Fort Bliss, Tex., to dnty at Fort Sam Honston, Tex.

Erle H. Sargent, contract snrgeon, from Vanconver Barracks, Wash., to San Francisco, Cal., en ronte to Manila, P. I., for assignment in the Division of the Philippines.

Albert H. Simonton, contract snrgeon, from Fort Robinson, Neb., to Birmingham, Ala., for annulment of contract.

Charles F. Williams, contract snrgeon, relieved from duty at Fort McPherson, Ga., to accompany the First Battalion of the 27th Infantry en ronte to the Philippine Islands, and to report at Manila, P. I., for assignment to dnty in the Division of the Philippines.

APPOINTMENTS, PROMOTIONS, RETIREMENTS, ETC.

Regular Army Appointments.—To be assistant-surgeons, with the rank of first lieutenant, dating from Oct. 12, 1901: Wilfrid Turnbull, of Pennsylvania. Dating from Oct. 30, 1901: Walter C. Chidester, of Ohio; Reuben B. Miller, of Illinois; Charles A. Ragan, of Tennessee; William R. Eastman, of Virginia; George W. Jean, of Kentucky; James F. Hall, of Massachnsetts; Raymond F. Metcalfe, of New York; Edwin W. Rich, of Massachusetts; Perry L. Boyer, of Virginia, and James L. Palmer, of Illinois.

Promotions.—Major Valery Havard, snrgeon, to be deputy surgeon-general, with the rank of lientenant-colonel, Oct. 24, 1901; Captain Ogden Rafferty, asst.-surgeon, to be surgeon, with the rank of major, Oct. 24, 1901. The following-named assistant-snrgeons were advanced to the grade of captain, Oct. 26, 1901, by reason of having served five years: Basil H. Dntcher, Leigh A. Fnller, Franklin M. Kemp, George A. Skinner, and Carl R. Darnall.

Retirements.—Lieutenant-Colonel Ezra Woodrnff, depnty snrgeon general, Oct. 24, 1901.

Wholly retired, for disability not incident to the service: First Lieutenant Henry E. Wetherill, asst.-snrgeon, Oct. 16, 1901.

Resignations.—First Lieutenant Clarence B. Millhoff, asst.-snrgeon, Nov. 5, 1901.

Volunteers, Appointments.—To be surgeons, with the rank of major: John C. Greenewalt, of Pennsylvania, Sept. 20, 1901; Captain George B. Lawrason, asst.-snrgeon, Oct. 10, 1901; Captain Charles B. Nichols, asst.-surgeon, Oct. 31, 1901; Captain Charles H. Andrews, asst.-surgeon, Oct. 31, 1901; Captain Matthew Leepere, asst.-snrgeon, Nov. 5, 1901, and Frank H. Titus, of California, Nov. 5, 1901. To be assistant-snrgeons, with the rank of captain: Lnther S. Harvey, of Florida, Aug. 12, 1901; Edwin M. Trook, of Indiana, Sept. 21, 1901; William P. Baker, of Oklahoma, Oct. 2, 1901; Josiah M. Ward, of North Carolina, Oct. 10, 1901; Frank L. R. Tetamore, of New York, Oct. 10, 1901; Edward N. Bowen, of Massachusetts, Oct. 23, 1901; Luke B. Peck, of Massachusetts, Nov. 5, 1901, and Harry A. Eberle, of Ohio, Nov. 8, 1901.

Honorably Discharged.—Captain Frank P. Kenyon, asst.-surgeon, Oct. 23, 1901, and Major Ernest K. Johnstone, snrgeon, Nov. 2, 1901.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending Nov. 30, 1901:

Asst.-Surgeon J. J. Snyder, ordered home and granted three months' sick leave.

Asst.-Surgeon Edgar Thompson, detached from the Naval Hospital, Chelsea, Mass., and to duty at the Charleston Exposition in charge of the exhibit of the Medical Department of the Navy, and in attendance on the Marine Guard and the Marine Recrniting Rendezvons.

Medical Director R. C. Persons, commissioned medical director from Nov. 3, 1901.

Medical Inspector E. H. Green, commissioned medical inspector from Nov. 3, 1901.

Surgeon N. H. Drake, detached from dnty as member of the Medical Examining Board, Naval Laboratory, New York, and ordered home to wait orders.

Surgeon A. C. H. Rnssell, ordered to duty as member of the Medical Examining Board, Naval Laboratory, New York, December 4.

Asst.-Snrgeon D. G. Beebe, resignation accepted, to take effect Nov. 30, 1901.

Asst.-Snrgeon Edgar Thompson, commissioned a P. A. snrgeon from April 19, 1901.

Dr. J. B. Buchanan, appointed an asst.-snrgeon in the Navy from Nov. 23, 1901.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plagne have been reported to the Snrgeon-General, U. S. Marine-Hospital Service, dnring the week ended Nov. 30, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Nov. 10-17, 1 case.
Illinois: Chicago, Nov. 16-23, 4 cases.
Indiana: Evansville, Nov. 16-23, 2 cases.
Lonisiana: Nov. 16-23, New Orleans, 10 cases, 1 death; Shreveport, 3 cases.
Massachnsetts: Nov. 16-23, Boston, 37 cases, 4 deaths; Cambridge, 3 cases; Chelsea, 1 case; Everett, 1 case; Newton, 1 case; Somerville, 1 case.
Minnesota: Minneapolis, Nov. 9-23, 5 cases.
Missonri: St. Joseph, Sept. 1-Oct. 31, 80 cases.
Nebraska: Omaha, Nov. 16-23, 4 cases.
New Jersey: Camden, Nov. 16-23, 1 case: Jersey City, Nov. 19-26, 9 cases; Newark, Nov. 18-25, 25 cases, 2 deaths.
New York: New York, Nov. 16-23, 6 cases, 1 death.
Ohio: Nov. 16-23, Ashtabnla, 1 case; Cincinnati, 3 cases.
Pennsylvania: Allegheny City, Nov. 16-23, 2 cases: Lebanon, Nov. 16-23, 2 cases; Norristown, Oct. 12-Nov. 23, 39 cases, 5 deaths; Philadelphia, Nov. 16-23, 46 cases, 7 deaths.
Tennessee: Nashville, Nov. 16-23, 1 case.
Utah: Salt Lake City, Nov. 9-23, 4 cases.
Vermont: Bnrlington, Nov. 16-23, 1 case.
Washington: Tacoma, Nov. 9-16, 1 case.
Wisconsin: Green Bay, Nov. 17-24, 6 cases.

SMALLPOX—FOREIGN.

Argentlna: Buenos Ayres, Sept. 1-30, 93 deaths.
Brazil: Pernambuco, Oct. 1-15, 74 deaths.
Canada: Nova Scotia, Halifax, Nov. 16-23, 10 cases.
Colombia: Cartagena, Nov. 4-11, 3 deaths; Panama, Nov. 11-18, 125 cases.
France: Nice, Oct. 24-31, 2 deaths; Paris, Nov. 2-9, 4 deaths; St. Etienne, Oct. 18-31, 1 case.
Great Britain: Glasgow, Nov. 9-16, 1 case; London, Nov. 2-9, 297 cases, 19 deaths.
Russia: Moscow, Oct. 26-Nov. 2, 16 cases, 2 deaths; Odessa, Nov. 2-9, 5 cases, 2 deaths; St. Petersburg, Oct. 26-Nov. 9, 4 cases, 1 death; Warsaw, Oct. 26-Nov. 2, 1 case.
Spain: Malaga, Oct. 26-Nov. 2, 4 deaths.
Uruguay: Montevideo, Sept. 21-Oct. 12, 161 cases, 15 deaths.

YELLOW FEVER.

Brazil: Pernambuco, Oct. 1-15, 1 death.
Mexico: Merida, Oct. 26-Nov. 2, several cases; Valladolld, Oct. 26-Nov. 2, several cases; Vera Cruz, Nov. 9-23, 41 cases, 12 deaths.

CHOLERA.

India: Bombay, Oct. 22-29, 1 death; Calcutta, Oct. 12-26, 55 deaths; Madras, Oct. 19-25, 40 deaths.
Java: Batavia, Oct. 12-19, 25 cases, 20 deaths.

PLAGUE—FOREIGN AND INSULAR.

Great Britain: Liverpool, Nov. 7, 1 death.
India: Bombay, Oct. 22-29, 191 deaths; Calcntta, Oct. 12-26, 36 deaths; Karachi, Nov. 13-20, 20 cases, 9 deaths.
Rnssia: Odessa, Oct. 31-Nov. 9, 1 death.
Hawalian Islands: Honoluln, Nov. 8-10, 1 death.

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Original Articles.

THE EVALUATION OF ANTHROPOMETRIC DATA.*

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CHICAGO.

The term anthropometric data may be applied to the numerical results of all observations on the structure or functions of man, i. e., such observations as: weight, height, and bone lengths in general; girth of head, body or limbs at the different levels; lateral or dorso-ventral diameters of trunk at different levels; facial measurements, including facial angles; cranial measurements; pelvic measurements; strength tests; acuteness of vision, of hearing, of feeling, and of taste; time of sense-reaction; pulse rate; blood pressure; respiratory rate; expansion of chest; lung capacity, and amount of tidal air; number of corpuscles per unit volume of blood: percentage of hemoglobin of blood, etc. These are the more important groups of anthropometric data.

A glance at the wide field covered by such data makes it evident that a very large proportion of the research work done by medical men involves the recording of numerical data. There may be cited, for example, the following lines in which such data are recorded: the medical examination of school children; medical examination of army and navy recruits; insurance examinations; medical examination for certain positions in the civil service; medical examinations in college, Y. M. C. A. and private gymnasia; bone measurements in surgical practice; certain facial measurements, in ophthalmology; pelvic measurements, in obstetric practice; cranial measurements, in criminology and in hospital practice in mental diseases; many of the problems of pedology, pediatrics and orthopedics; and finally, clinical diagnosis and pharmacology; in short, almost every department of medical practice requires, at least, the occasional use of anthropometric data.

In these various fields of work great quantities of data have been collected and are being collected without being put to any use. The collection of such data is likely to be looked upon as a part of the routine in taking a case history; and, though in some instances valuable for subsequent reference, such instances are rare and the enthusiasm of the physician gradually abates as he finds that the accumulating statistics are never used. The result is that the statistical work is wholly dropped or reduced to the minimum in the case of the private physician or the specialist; while it is continued in a most mechanical and perfunctory manner by those conducting medical examinations in public institutions.

In those fields, e. g., criminology and pedology, where the anthropometric data have been carefully collected and properly utilized, general truths of very great value have been discovered. There is no reason to doubt that if the other fields were properly worked, they would prove equally fruitful. The whole difficulty rests with the methods which are in vogue for handling the accumulated data. The recorded data have only a potential value. One may make thousands of observations, but he can draw no conclusions from them until he groups and summarizes them.

This last-mentioned process is an essential one and may be called the evaluation of anthropometric data.

OLD METHODS.

In evaluating anthropometric data, it has been generally customary to group the individuals into classes and to find the arithmetrical mean or the average of the measurements or other data for each class. This involves the tabulation of the observations on the individuals of each class so that similar observations stand in vertical columns. The tabulation of the statistics is a long and wearisome task, but when one remembers that when the tabulation is complete, the work is only just begun and that every spare hour for weeks and months must be devoted to the exhausting work of adding columns of figures, he does not wonder that busy clinicians and medical examiners in the various institutions become discouraged in their attempts to get anything of value out of the statistics which they have so carefully collected.

The object of this paper is to outline a short and yet mathematically accurate method of evaluating the data —a method so simple that any school boy can apply it with small chance of error, and so easy that the oft-interrupted and preoccupied practitioner can use it at odd moments and while he is resting.

THE NEW METHOD.

The Belgian astronomer and anthropologist, Quételet,[1] was first to call attention to the fact that the arithmetical mean or average is of less value than the median value. The *median value* is that value which is so located in the whole series of observations of a single measurement of any group that there are as many below it as above it; i. e., that the number of values which it exceeds is equal to the number of values which exceed it. For a concrete case, suppose we wish to find the height of nine men taken at random from any audience.

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Physiology and Dietetics, and approved for publication by the Executive Committee.

1. Anthropometrie, ou mésure des diff. facultés de l'homme, Bruxelles, 1870.

Let their heights be 162, 164, 166, 168, 170, 172, 174, 176, 187 em. The average is 171 em., but the median or middle value is 170 cm. Which of these results is the more valuable? It so happened that there was a very tall man among those ehosen and his height raised the average 1 cm. above the median value. Had there been a very short man instead, the average would have fallen below the median value. If a large number of individuals are observed, the chanees are that there will be as many very short men as very tall ones so that the average will approaeh thc median as the number of observations increase. For a small number of observations, then the median must be coneeded to have more value than the average. But how shall we determine this median value?

In the first plaee the data must be reeorded upon cards. Case data which are largely anthropometrie, as in physical examinations in the army, navy or the gymnasium, may be recorded at onee upon cards. Most clinicians record data upon elinical history sheets and file them alphabetically or otherwise. Any numerical data, first recorded upon elinical history sheets and which it may be desired to use, may be copied upon cards in order that the files shall not be disarranged.

The cards eontaining the data may be grouped as desired. Let us suppose that a sehool medieal examiner has recorded upon cards the height, weight, head girth. chest girth, lung capaeity, acuteness of vision and of hearing, for 10,000 school children. Each individual is represented by a card. The individuals may be grouped first as to sex. Let eaeh sex be grouped as to age, and each age as to nationality, or soeial position of parents. Suppose there are 314 boys of 16 years representing families which had been for several generations in America. Sueh a group of individuals could be looked upon as a homogeneous group. How shall we determine their median girth of head? Let us arrange the eards in groups, putting in one pile all whose head girth is 50 cm. or fraction of a centimeter; in the next group, cards which bear a reeord of 51+cm. and so on, the result being as shown in the following table:

Girth of Head of 16-year-old American Boys.

Measurement.	50+	51+	52+	53+	54+	55+	56+	57+	58+	59+	60+	61+
No. of observations .	1	3	13	28	34	73	69	52	26	11	3	1

The total number of observations being 314, we have only to locate and determine the value of the 157th measurement from either end. Adding the observations from left to right (1+3+13+28+34+73=152) we find that the middle individual must be in the group whose head girth is 56+cm. This may be called the Median Group. Moreover, the middle individual is the 5th one in this group from the left or the 64th from the right. Now the 69 individuals of this median group have head girths ranging from 56 cm. to 57 cm. and aecording to fundamental biologie laws, they will be practically evenly distributed through this 1 eentimeter. The 5th individual from the left must then have a head girth of 56 5/69 cm. or 56.072. This is the solution complete, and it could be easily obtained in twenty minutes, whereas to copy the numbers in columns and add them would require hours of the most fatiguing toil.

If it is desired to reduce this simple process to a mathematieal formula, that can be readily done:

Let n = the total number of observations (314); m = the number of observations in the median group (69); l = the sum of the observations at the left of the median group r = the sum at the right; a = minimum value of the median group (56 cm); d = arithmetrie difference in the minimum values of the groups d = 1 cm. in above, and m = median value to be determined.

Then:

$M = a + [d\ (n \div 2 - l) \div m]$.

$M = 56 + [1\ (314 \div 2 - 152) \div 69] = 56\ 5\text{-}69 = 56.072$ cm.[2]

THE SIGNIFICANCE OF THE RESULTS.

But this question of the median value is broader than a simple statistical problem—it is based upon fundamental, biologic and mathematical laws. One eould hardly follow the steps in the above presentation without noting that the number of observations for each separate value increases progressively from the two extremities toward the middle of the series where the maximum is represented by one large value or by two large and nearly equal values. Franeis Galton[3] called espeeial attention to this and published figures to illustrate this law of distribution of values. The law may be formulated thus: Any structural dimension or functional property of any species of living thing tends to approximate a fixed standard or middle value, while the others will progressively shade down to a maximum in one direction and to a minimum in the other. This may be called the *law of distribution of biologic data,* understanding, of course, that it is the distribution of data concerning any one structural feature or funetional property within any one species of plants or animals.

Table 2 shows the distribution of head girths of 1071 youths from 16 to 19 years old.

Table 2.—Head-girth, Boys 16–19.

Measurement. . . .	51	52	53	54	55	56 56.46	57	58	59	60	61	
No. of observations-	4	23	59	108	224	257	230	110	38	16	2	1071
Coeff. $(a+b)^{10}$. . . .	1	10	45	120	210	252	210	120	45	10	1	1024

The distribution of these measurements illustrates the above formulated law. The computed median value is 56.46 cm. Note that of the 1071 observations, 711 of them fall within 1.46 cm. below and 1.54 cm. above the median value, while the 360 remaining observations "progressively shade down to a maximum (61 em.) in one direction (110—38—16—2) and to a minimum (51 cm.) in the other." Figure 1 shows the 1071 cards distributed in the different groups as indicated in Table 2.

Table 2 shows a third series of values, viz., the coefficients of a binomial raised to the tenth power. If the expression a+b were squared—$a^2+2ab+b^2$—and this multiplied by a+b and so on to the tenth time, an expression of eleven terms would result and the eoeffieients would be 1—10—45—120, etc., as shown in the table. The sum of these coefficients equals 1024. If one compares this series of eoefficients with the series of observations in the line above them he notes a remarkable parallelism. Now this is not the result of a rare chanee: it is in conformity to a natural law. It transpires then that the law of the distribution of biologic data is the law of the series of binomial coefficients. The corres-

2. E. W. Scripture, Psychological Review, vol. ii, p. 376, under title, "Practical Computation of the Median," gives the formula: M=a+[l—r÷2 m.]. Subjecting Scripture's formula and my own to repeated tests, I find that the former is less accurate; i. e., both formulæ are approximations, but the one given above is the closer approximation and gives results within .2 of 1 per cent. of the real median while Scripture's formula often varies as far as 1 per cent. from the real median.

3. Natural Inheritance, London, 1889.

pondenee of these series is made graphic in Figure 2 where the values are plotted in the form of a curve. Even with a thousand observations, the eurve of distribution corresponds very nearly to the binomial curve: if there were ten thousand measurements it is certain that the two eurves would be perfeetly coincident.

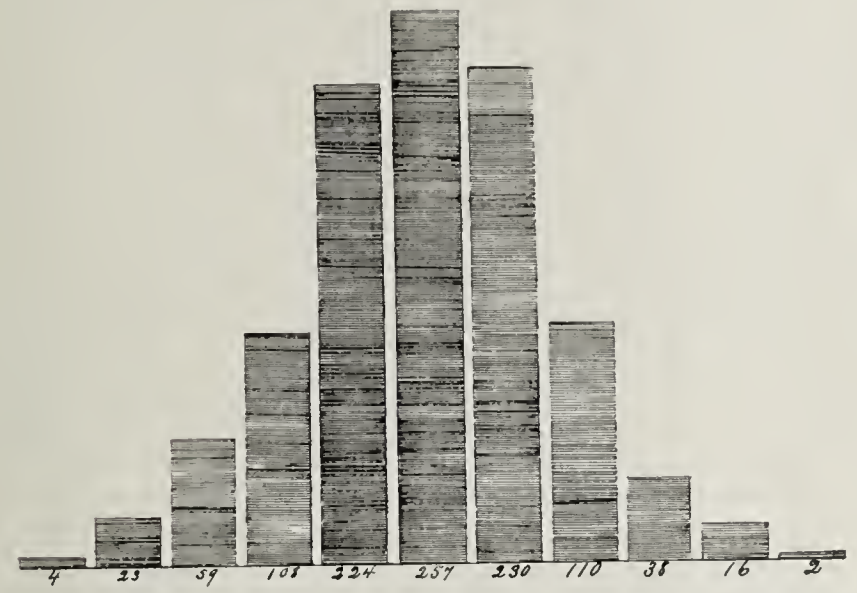


Fig. 1.—Showing the 1071 cards grouped as to the size of head-girth; the middle stack shows that 257 boys had a head-girth equal to 56 cm., but less than 57 cm. See Table 2 for other facts regarding figure.

The odd powers of a binomial 1st, 3d, 5th, 7th, etc., have an even number of terms and two equal maximum eoeffieients instead of one maximum eoeffieient. This feature of the binomial series also eorresponds to something very frequently found, namely, that there is no one pile that is elearly the maximum pile, but that there are in the middle of the series, two maximum piles of fairly equal size.

What is the signifieance of this remarkable coineidenee between the eurve of binomial coefficients and that of the distribution of biologie data? This is a problem the solution of which belongs to the biologist rather than to

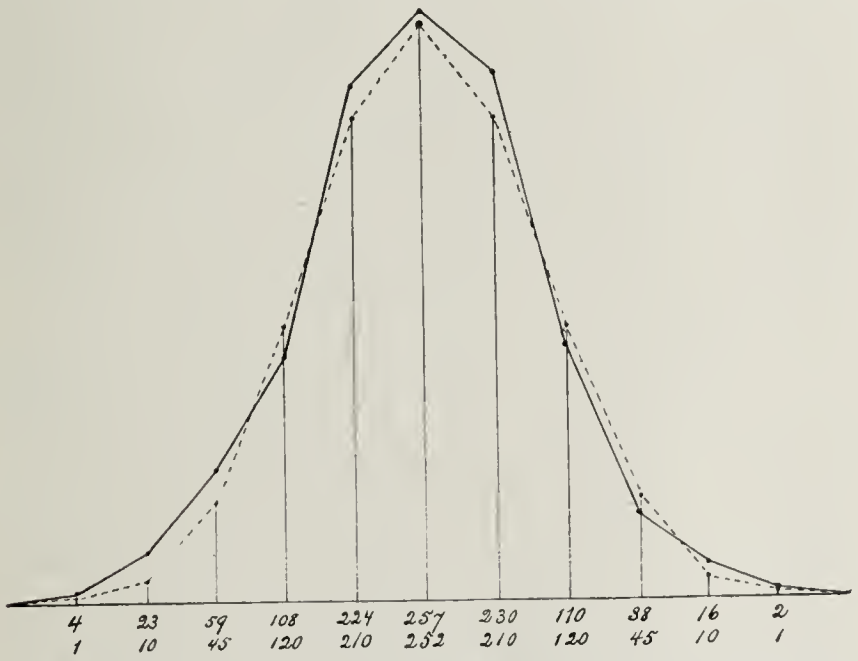


Fig. 2.—Showing the relation between the curve of biologic distribution and that of the binomial coefficients. The former is represented by the continuous line plotted from the upper line of figures and represents the distribution of 1071 boys with reference to girth of head; the median girth being 56.46 cm. The curve of binomial coefficients is represented by the dotted line and is plotted from the coefficients of $(a+b)^{10}$. This set of coefficients being chosen because their sum (1024) most closely approximated the number of individuals represented in the biologic distribution curve.

the mathematician. By way of suggestion, simply, the reader may be reminded: 1, that the prineipal biologic factor in determining speeific charaeters is heredity; 2, that heredity involves a double influence—the father plus the mother—whieh may be represented mathematically as a+b; 3, that when a value is influenced by a series of variable factors it is found in mathematics that it would vary as the product of these factors. The only way heredity ean act in a series of influences is in the series of sueeeeding generations whieh may be represented as a+b, a+b, viz., the paternal, (a), and maternal, (b), influences of the successive generations. The total influenee of heredity could then be represented by $(a+b)\times(a+b)\times(a+b)$ to the nth power. If the eoefficients of this product be plotted they will deseribe the curve shown in Figure 2. If the numerieal data arising from the measurement of any one feature of the lineal descendants of the nth generation of an original father and mother (a+b) be grouped as in Table 2 and the numbers plotted, the eurve will elosely approximate or actually eoineide with the binomial.

SUMMARY.

1. The eolleetion of anthropometric data is almost universal in the practice of medieine. In the ease of certain special lines of work these data are of fundamental importance.

2. Anthropometric data have a potential value, but no practical value as sueh. Only through some proeess of evaluation can the potential value be made practical and form the basis of general conclusions.

3. That method of evaluation whieh involves the use of arithmetieal average is both time wasting and inaecurate, while the method based on Quételet's Median value is aeeurate, and is quiekly and easily applied.

4. The median value is the value represented by the median measurement of a series of measurements; that is, that measurement which has as many values above it as below it.

5. The above described method of evaluating anthropometrie data should be of value to all surgeons, pathologists, physiologists, and psyehologists; to medieal examiners in schools, gymnasia, insurance eompanies, the army and the navy; and to criminologists, neurologists, and anthropologists.

DISCUSSION.

DR. JOHN MADDEN, Milwaukee—Some one has said there is a divinity in the mathematieal equation. Surely there is a divinity in mathematical preeision as applied to anthropology as everywhere else. While Professor Hall was reading his paper it occurred to me that the mean measurement that is obtained after examining many hundreds of thousands of children should be kept in mind. That I suppose is the purpose of the measurement, to aseertain what a healthy, normal child of a definite age should measure and weigh and what he should be like. I presume that if we measured a great many million children we would get a definite mean. I do not know whether the mean measurement obtained west of the Rocky Mountains would hold good for the whole country, but the practical applieation is that if a ehild is brought to you and he has the marks of being abnormal you have at onee at your fingers' ends the mean measurement of a normal boy at his age, and you measure him just as you would measure with a rule and square. If he does not vary from the established mean he is considered a good speeimen. If, on the other hand, he does vary; if there is a certain group of measurements in which he does not correspond to the mean measurement, you have the full line of aneestry, environment and other considerations to investigate and put yourself in possession of accurate knowledge to enable you to do what is possible for the ehild. In a paper which I have just written I have touched upon this subject, and it seems to me that something of what the Doctor has shown this afternoon should be in the books of the schools so that from the time the ehild enters school until the time that he goes out into the world it should be know what he has been. Then when we come to do anything for him, should he be a degenerate, we can put our finger upon the ease. We ean

tell whether the trouble is in his environment, heredity or disease. While the beauty and the interest of the mathematical demonstration appeal to me, nothing appeals more forcibly than the importance of the measurement itself from a practical standpoint to be used every day by the physician.

DR. H. S. DRAYTON, New York City—I consider the work of the anthropologists and ethnologists, especially their custom of measuring brains and skulls, as vastly inferior to the method illustrated by Dr. Hall. Taking 150 or more crania of different races, measuring them by tape line and calipers in certain regions, and then striking a general average by dividing the aggregate measurements by the number of specimens, has been a procedure that scientific men appeared to be well satisfied with. This modern method, however, with its mathematical accuracy and differential applications, as shown us by Dr. Hall, demonstrates very definitely the crudity of old procedures, and discounts their statistical value.

DR. HALL, in reply—I think possibly I did not emphasize sufficiently that the whole object of this method is to accomplish what Professor Madden had in mind—the application of it by the men who are in position to collect large masses of data for statistical tables—showing in tabular form the evaluations for various groups of individuals, these to be published for the use of medical school examiners over the country. We are now in possession of considerable data, but we are only in the beginning because there has not been enough accurate and scientific grouping done. The average of 20,000 St. Louis children does not signify very much. The children should have been grouped first in various nationalities, and according to social conditions, besides being grouped according to ages. We want the practical application and not the theoretical.

THE EDUCATION OF THE DEGENERATE.*

JOHN MADDEN, M.D.
MILWAUKEE, WIS.

Those nerve cells which are most active, develop most in increasing length and complexity of their dendritic branches. The development takes place during physical as well as mental activity, and the education of one cell group, directly stimulated, leads to the education of more or less remote cell groups, by reason of dendritis contact. No matter, then, whether we reach the brain through the avenues of mental or physical activity, we shall have made a commencement in the education of the child just as soon as we can make him do something. If he be defective in mental development, in the development of the cells of the higher centers of the brain, and it is found that they can not be directly stimulated, then we must try to reach them indirectly, stimulating those of the motor area by muscular exercise. "If we wish to hasten the maturity of the brain, we must decide whether the formation of the myelin sheath can better be hastened by stimulation of the senses and intellectual work, or better, by muscular exercise. The latter way seems the more natural. We must, therefore, to begin with, consolidate the motor nerve paths which develop first, and after that seek to develop the portion of the brain concerned with intellectual work. Modern views show a tendency to confirm what the great philosophers of Greece already recognized, viz., that children ought to begin to read and write only with the tenth year. The conviction is again slowly maturing that our children begin too early, that it is injurious for the development of the brain to be fettered to the school desk when only 5 or 6 years old. The conviction is slowly making its way that no more time should be devoted to intellectual work than to muscular exercise. The modern education of youth, however, resembles more an artificial hot-house culture than a natural training of the human plant."[1] Muscular activity alone develops intelligence, the more complicated and varied the movements, and the greater the period of time over which they are extended—up to the age when development ceases—the better will the individual be educated on his purely mental side. Everyday observation confirms this view. The skilled mechanic of no book learning is generally a man of superior intelligence, a man of accurate judgment, good reasoning powers, and good morals. Here in America the mechanic, native born, has almost always a good, common-school education and is a diligent reader. In England, however, it is not uncommon to find skilled laborers devoid of book learning, yet men of no little intellectual force. The children, too, of such men often display intelligence of a high order and become brilliant scholars. They are, indeed, sometimes pointed out as exceptions to the rules of heredity, by those who fail to see the unity of physical and mental stimuli in brain development.

Often, indeed, some simple muscular movements are all that the unfortunate defective can be taught to carry out; it is the one breach which can be made in the wall which separates him from the ordinary physical and mental activities of mankind; but through this single avenue some development is generally possible. Said Dr. Martin W. Barr,[2] chief of Pennsylvania Training School for Feeble-Minded Children: "The motto of the schools—'We learn by doing; the working hand makes strong the working brain'—shows manual training to be the basis of the scheme of development, varied for each grade to suit the intelligence."

In the Elmira Reformatory equally good results are obtained in reaching the higher centers from the physical side. The defectives are divided into three classes: 1, those who are intellectually weak, but have powers of self-control; 2, those who are bright, but lacking in self-control, and 3, those who are weak, and also lacking in self-control. Great benefit has resulted to them from physical training, especially to those of the second class. Nearly all graduate with sufficient self-control from the manual trades' department to be put into the trades' school. The history of one particular case, No. 6.361, is given. He was a dangerous criminal who was made a good citizen by this system of manual training.

That "Satan can find something still for idle hands to do" is an old saw with a new interest; for we now understand that it is not so much the fault of the idle hands as the undeveloped brain resulting from that idleness. This, then, is our brief upon which we ask that every district school have the apparatus and instructors to educate the physical as well as the mental side of our children; not only for the reason that normal children need the physical education, but because certain defectives, certain incorrigibles may be educated and made useful through muscular activity when all attempts at education through merely mental processes fail.

But the work of our schools should go further than this. Just as it is the physician's duty not only to cure members of a family already afflicted with disease, but to make the conditions such that no others shall contract it, so the teacher shall do what he may to lessen the number of defective members of society; for, after all, where and during what period of life can matters relating to personal hygiene, which has so much to do with

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Physiology and Dietetics, and approved for publication by the Executive Committee: Drs. James Weir, Jr., Winfield S. Hall and Elmer Lee.

NOTE: This paper is a part of one chapter of a book which will soon be published under the same title.

insuring a sound body and a sound progeny, be better and more thoroughly inculcated than with the impressionable youth of the common schools? And it is encouraging to note that school men are alive to the importance of this question. Two years ago there came from a man who assumed the right to speak authoritatively on the subject, the edict that our youth were not being properly instructed in regard to the effects of alcohol upon the human system, that it is not a poison as is generally taught, but may, indeed, be the only food remedy which, under certain circumstances, will save life. As the alcohol question is by far the most important factor in the teaching of personal hygiene in our schools, this verdict aroused an enormous amount of discussion. This man went before the assembled school superintendents of the country and made an indirect plea for alcohol, teaching that it was a food and not a poison except when taken in excess. This he has reiterated in the columns of the lay press. So great was his influence that the School Superintendents' Association appointed a committee of seven of their members to inquire into his indictment of anti-alcohol teaching in our schools. It is encouraging to know that this committee utterly repudiated the indictment. Not only this, but they recommended, "that the scope of the investigation be so enlarged as to cover not only the topics already suggested, but the whole field of personal hygiene." This they declared after previously extinguishing the special plea for alcohol as follows: "The question of the supposed food value of alcohol is a technical one for medical—not for chemical—experts to determine and not one which needs to concern the man and woman who are engaged in the work of public instruction of children and youth. For them it is enough to know that its use as a beverage is injurious and that all authorities agree in deprecating the formation of the drinking habit, and in commending all practical efforts, through public instruction, to promote the cause of temperance."

Moreover, schools could greatly contribute toward the study of degeneracy by gathering statistics of all children who attend them. For instance, they could have written, with little trouble, in books prepared for the purpose. each child's status when he entered school. Let them cover such questions as physical development and state of health; whether parents are living and their condition of health; whether any brothers or sisters are dead, ill, or in any way mentally or physically incapacitated; whether the race from which he descends is long or short lived; and, if notably short-lived, what has been the chief cause of death; whether any relatives near or remote were insane, imbecile, tuberculous, syphilitic, or alcoholics; what the occupation and habits of the parents; what their social status; and lastly, what is the child's environment? Knowledge of this kind would be of enormous advantage, not only to the teacher, but to society at large, for each individual would then have a tangible record and any shortcomings on his part in more mature years could be traced to their proper causes and adequately treated.

Very valuable statistics of the social and moral status of the parents of industrial and reformatory school inmates are gathered in England and Scotland by those who are officially appointed to collect contributions from the parents for the inmates. These collectors see the parents in their homes at stated intervals, for a period of years, and learn, as far as it is possible for an outsider to learn, the real character and surroundings of the offender's immediate ancestors. "It was stated by Mr. McDonald, one of those agents, in reply to a question of the Royal Commission, that only 6 per cent. of the children in the industrial schools had homes fit to live in. Mr. McDonald's experience related to the parents of Scotch children; in some parts of England the percentage of parents of respectable character is somewhat higher than Mr. McDonald's estimate."[3] Analysis of fifty parents of the industrial school pupils are given. "In the fifty cases 648 summonses were served—an average of 13 summonses for each person—43 warrants were issued and 94 commitments to prison made out. Of the 94 commitments to prison only 7 were actually imprisoned: 1 served six terms; 1 five terms; 2 three terms, and 1 of them one term of imprisonment."[4] These statistics are valuable as far as they go, but an inquiry into the ancestry for two or three generations back would make them much more valuable in determining the relative influence of heredity and environment as the cause of wrongdoing .

Here, again, we come face to face with these important factors in the production of social defectives. What can be done to check the evils of bad heredity and bad environment? Should man but use the same intelligence in dealing with this question that he displays in the breeding of domestic cattle the question would be promptly solved, so far as heredity is concerned; but he will not—he never will. That sympathy which Mr. Sutherland calls a "natural morality" is opposed to it; the general recognition of "liberty" and man's "natural rights" will never permit it. Indeed, the right to marry, the right to procreate his kind, no matter what his misfortunes may be in the inheritance of a debased mind or body, is a right which society will not infringe until altruism becomes as firmly implanted in the human breast as egoism is now. When the whole race becomes so unselfish, so self-sacrificing, that even its degenerate members recognize the wrong they do to society in propagating their kind, and voluntarily give up this fundamental right, then will improvement by suppressing the birth of defectives be possible. Do you suggest that these be compensated by the state, for giving up their right to marry, that the state shall give them an equivalent in money? If you think such a scheme possible, it is quite likely you underestimate man's procreative desires.

A writer[5] describing the life of the southern mountaineer tells the following anecdote: "I saw a boy once, astride a steer which he had bridled with a rope, barefooted, with his yellow hair sticking from his crownless hat, and in the blubbering ecstacy over the fact that he was no longer under the humiliation of accepting $75 a year from the state. He had proven his sanity by answering one question. 'Do you work in the field?' asked the commissioner. 'Well, ef I didn't,' was the answer, 'thar wouldn't be no work done.' I have always feared, however, that there was another reason for his happiness than balm to his suffering pride. Relieved of the ban of idiocy, he had gained a privilege—unspeakably dear in the mountains—the privilege of matrimony."

A recent writer[6] suggests that the hereditary social defective be gently chloroformed into a more perfect world; but where will you stop? Who is wise enough to say that this is a bad specimen which must be destroyed root and branch, while this, his brother, is not quite so bad, and, therefore, shall live and propagate his kind? Some have advocated mutilation to make procreation impossible. Curiously enough, it is the male only which is to be treated thus. Why the unsexing of the

female for the same cause has not been advised by these writers is not apparent. However, this operation would undoubtedly be as strenuously opposed as death itself.

Not only is such radical legislation as that suggested above never likely to be enacted, but mild, conservative laws, looking to the prevention of fraud in making the marriage contract, are opposed, as we see in the proceedings of various state legislatures every year.

To curtail the production of defectives by actual destruction of those who are so unfortunate as to be born, by mutilation, or by harsh laws, seems, then, practically impossible; we shall act much more wisely if we turn our attention to improving the environment which is the wellspring of so much vicious humanity. Shall we kill the degenerate offspring of the alcoholic, and never lift our hands or voices against the thing which is producing the degeneracy? How much of the sum total of degeneracy would be abolished by the abolition of alcoholic beverages? The question is not easy to answer; but it is entirely safe to say that alcohol is responsible for more degeneracy than all other causes combined.

Speaking again of the parents of pupils in the reformatory schools in England, Morrison[7] says: "As a rule parents who go to prison are hopeless drunkards; the remainder escape by payment of the fines. A large number of the parents are engaged in highly paid employments; in many cases it is not poverty which hinders them from fulfilling their parental duties, it is simply vicious habits of life. At the very least eighty of every hundred of them are addicted to vicious if not criminal, habits; the children came into the world in a polluted moral atmosphere, they are contaminated from the very earliest infancy without being aware of it; and, although their status is normal as far as the number of their parents is concerned, it is in the highest degree abnormal when the character of these parents is taken into consideration."

McKim[8] quotes as follows: "Of all hereditary taints, alcoholism is undeniably the most frequent and among criminals it is found almost always alone or in connection with other taints. It is the most common cause of degeneracy, and our prisons are peopled mostly with degenerates or with the children of drunkards. When in the ancestry of any criminal we can not find insanity, or epilepsy, or hysteria, we shall find nine times out of ten that alcohol has been the cause of all the trouble. The other taints may often skip a generation, but this is rarely the case with alcoholism. Alcohol is a poison that pardons not."

But what need to pile up evidence to prove the responsibility of alcohol as the chief factor in the production of degeneracy? The evidence is endless. It may be found on every hand. Look to the defective individuals in your own neighborhood; are they not the children of alcoholic parents, of an alcoholic father, at least? The one imbecile in my own vicinity is the son of a one-time alcoholic father. His coming cured the father of his vicious appetite; but what a price to pay! A young woman who has two score of babies to care for in a kindergarten tells me of a case of alcoholic stupidity in the person of a little lad, the offspring of a beer-drunken father and mother. He sits for hours, seeing nothing, doing nothing, apparently conscious of nothing. She has as yet been unable to arouse him to any kind of activity. This young woman was one of a class to listen to a few talks on the subject of exhaustion in children; and the keen interest she takes in this subject of inherited weakness in the children of alcoholics shows how much good could be accomplished by giving instructions of this kind to teachers.

Start wheresoever you will in the study of this subject of dealing with the hereditary criminal, with the incorrigible, with the defective of society, and when the evidence is all in, the overwhelming responsibility of alcohol stands out as the greatest, most important factor of degeneracy. If you are honest with yourself, no matter what your personal prejudices may be, you will accept this conclusion, for the evidence warrants it. The fight against degeneracy is a fight against alcohol; for let us remove this cause, because it is the most tangible and can be removed if we but will do so, and we shall see that our work is well towards completion.

Where the child is uncontaminated by heredity, viciousness is easily cured. A simple removal from evil surroundings is all that is needed to make good instruction immediately effective. Let the child be well fed; let him be properly clothed; let him have an abundance of room to move about, preferably a large field with forest, lake and stream near by, insuring an abundance of fresh air and exercise. Are not these ideal conditions for a proper education? Let the teacher, in co-operation with parent or guardian and physician, determine through what avenue the child's brain may best be reached to begin cell development, and let that avenue be chosen as the most available to reach the highest degree of development, the most useful education of which he is capable. When the degree of faulty development is such that it is not proper or profitable to deal with him in company with his more normal fellows, the child should be removed to an institution whose particular function is the education of defectives of his class. It is only with those who are faulty in a minor degree that we speak here; those who give much trouble accomplish little in the common schools, and are liable to become criminal in more mature years from lack of proper handling in the common schools. Let the school be a real "brain conditioning house," and do not urge the boy, do not irritate him with the, to him, detestable intricacies of Latin grammar, if he has a love for chemical experiments, for planting things and watching them grow, or for making things with saw and plane; do not blight his love for the free outdoor life of a herdsman or a farmer, to make a poor lawyer or a worse minister. Let there be teachers enough to give the pupils individual attention, and let the teachers be wise enough to see all the differences in the characters developed. No teacher can properly supervise the instruction of more than ten pupils. It is poor economy to put fifty or sixty or more pupils under the care of a single instructor. Their characters will never be known; their hopes, their aims, their ambitions, their secret desires, the knowledge of which is so important to insure the best results—the knowledge, indeed, of which is so absolutely necessary if the school is to be in fact a "brain conditioning house"—can not be known to him. Moreover, the instructor should constantly have in mind the child's heredity, what has been the mental and physical bias of his ancestors, and this he can not do when he has half a hundred or more to deal with. Nor is it possible for him to impress his own individuality upon so many. What the teacher actually is, what the pupils know him to be, what his ideals are and how closely he lives up to them, are matters of prime importance to pupils in this their imitative age; but the teacher's personality loses its force in direct ratio to the number among which it is distributed.

While the utmost freedom should be granted to defectives at school, they should nevertheless be held strictly accountable for their conduct. Less, very much less, should be forgiven in their conduct than in the con-

duct of the normal child. There is, on the contrary, a disposition in society to regard the offenses of these not as faults, but as symptoms of disease, to be condoned and forgiven on the ground of hereditary lack of self-control. Nothing could be more mischievous. One of the first things one of this class needs to learn, is that because of this lack of self-control he must be the more careful to avoid all occasion for giving offense through committing a wrong act. Once let him understand that he is regarded as the unfortunate victim of circumstances, and he will cast all self-control and efforts at self-control to the winds at once, yielding wholly to his vicious impulses. A youth of this kind under the author's care for a number of months improved in his conduct as soon as he was given to understand that he would be held strictly accountable for what he did. He had an alcoholic relative whose irresponsibility he had often heard asserted by a medical man, and drew the natural inference that when he, too, did wrong it was the disease and not himself that was at fault.

CONCLUSIONS.

Finally, the writer wishes to say a few words for the sake of emphasizing some of the propositions stated in this paper. They are these: Education is not merely the imprinting, the photographing of ideas upon the cells of the brain; it is a definite, biologic process, attended by development of the cells in a tangible way, the increasing of their bulk, the increasing of the number, length and complexity of their dendritic fibers, and that the brain which has the most cells thus developed, in all of its parts, belongs to the best, most widely educated individual. Man is born with many millions of cells which never become educated, which remain in the embryonic state, without axis cylinder and without dendrites. Certain individuals are born with deficient cell development, constituting them social defectives, degenerates, incorrigibles, criminals by heredity. The problem of reforming these is to bring about such cell development as will give them the normal individual's sense of right, the normal ethical sense, as will give them sufficient power to control their vicious impulses, and make proper conduct possible. The education of any group of cells leads to the development, though in a less degree, of all cells with which these come in contact; so that if the individual may be taught nothing more than a few muscular movements, at first, those will assist him in obtaining a more general education.

Heredity is the most potent influence in determining the characteristics of the individual. Degenerate ancestors can not produce sound, healthy progeny. Next to heredity, environment is the most potent influence determining conduct; because man, especially in his youth, is imitative in the highest degree. Degenerative changes in the individual of one generation, caused by the habits of a vicious environment, are transmitted by heredity to the progeny of the subject of acquired degeneracy Here they become a permanent heritage. Removing lesser degenerates from a vicious environment may so far restore them to the normal condition as to eliminate the degeneracy in the course of generations.

As it is not likely that heredity will ever be controlled by society through legislative enactment or otherwise, all efforts at eliminating degeneracy must be directed through two channels—education and change of environment.

In education the value of physical training must be recognized as equally important with or more important than mental training. Indeed, physical training must be regarded as the sole avenue, in many cases, through which the undeveloped brain cells may be reached; and, under all circumstances, cell development, through coordinated muscular movements, should go hand in hand with development through purely psychic channels.

As alcohol is admitted, by all competent authorities, to be the cause of by far the greater part of degeneracy, incorrigibility, criminality, the first step toward eliminating these conditions should be directed against the drinking of alcoholic beverages. The ninety million gallons, or more, of alcohol consumed annually by the people of our country, destroys more brain cells, produces more defectives and criminals than many times all other causes combined.

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DISCUSSION.

DR. WINFIELD S. HALL, Chicago—It has been clearly demonstrated in this country that the mental development can be very greatly modified through physical development. In the case of the more pronounced examples of arrested development both mind and body are involved. In all such cases a successful result is reached only through the avenue of physical development. Hence physical development is absolutely essential and, in fact, must precede mental development in all cases of arrested development. Even in a normal child I believe that physical development is an essential preliminary to the broadest and most liberal mental development. Statistics all over this country and England show that to be the case. Another point is the influence of alcoholic heredity on these degenerates. It has been shown that a vast majority of the degenerates are from parents one or both of whom are addicted to the use of alcoholic beverages. This has been shown over and over again in the work at the Elmira Institute. These two points are as firmly established on statistical bases as any two facts in the whole realm of statistics.

DR. H. S. DRAYTON, New York City—I think the term "degeneracy" covers a broad margin of defect. We go among those who have to do with the insane and find a great variety of opinion as to what constitutes insanity. So broad indeed is the margin in which unbalance of mind exists that most people—I do not include the present audience, of course—appear to have some of the elements of "degeneracy" in their organisms. Dana wrote a paper on the topic and said that the stigmata of degeneracy were very broadly distributed. The Lombroso school describes some 30 or 40 somatic features that point to psychic defect. Should we try ourselves by these it strikes me that few of us would pass an examination. As to the influence of education on degeneracy it strikes me that experiments made in different institutions of this country and Europe tend to show that scarcely any young person can be found who is not susceptible of improvement to a considerable degree. This fact was emphasized by an experiment made at the Perkins' Institution for the Blind near Boston when under the management of Dr. Samuel G. Howe. An assistant to Dr. Howe tried an experiment with an idiot—a boy so low in sense defect as to be called "the oyster." In whatever posture he was placed he would lie until moved. He seemed without sense or sensibility. The assistant, not knowing what was best to be done, sat down beside that wretched being and read Greek for some hours every day, his idea being to obtain if possible some expression of attention or interest. After reading in this way for some three months he stopped one day and turned away, when he heard a semi-grunt, the first indication of anything like attention. Later, the "thing" added a slight movement to the grunt. Dr. Howe was so gratified with the small result that he had the work

continued, and in the course of a year or two "the oyster" was actually trained to be of service to himself and the institution. The incident warrants us in not despairing of improving the state of average "degenerates."

Dr. James Putney, Charleston—I have had some experience in the oversight of the people in our county workhouse, and on inquiring into the cause of the conditions I have very frequently learned that the parents or grandparents of the subjects were drunkards. Most of the fathers or grandfathers were drunkards and some of the mothers.

Dr. Madden, in reply—Of great importance is the so-called "crossed education" in which Professor Scripture of Yale University has shown that teaching one hand to become dexterous, rapid and strong, a large percentage of the same kind of education is given to the other hand although it may not be used at all. Not only this, but if a certain number of muscular movements be carried out with the one hand we may instruct the other hand to this same work in 30 to 40 per cent. of the time required to instruct the first hand. It has been found too, that not only when one arm was exercised did it increase in size, but also the other arm increased in size although it was not exercised. I believe we come nearer to appreciating what an education is when we look at it from a biological standpoint and we say that giving an education consists in developing the nerve cells, giving to them axis cylinders and dendrites, and the more dendrites the better the education, from the biologist's standpoint.

As to what is degeneracy, I think the word is very much overworked. When a man ceases to act in harmony with his environment and his conduct is not in accordance with the best interests of society, and does this through some defect in his nervous organization, especially if the fault is congenital, he is termed a degenerate. Our living in the midst of an evil environment may be constantly acting out of harmony with it in doing good. Of course, such a one would not be called a degenerate. One inheriting a vast fortune might be possessed with an altruistic notion that it was his duty to give it away, and in its disposal he might exhibit many eccentricities; still he would hardly be called a degenerate, so long as his acts contributed to the happiness of others. In spite of the fact that he might show an abnormal nervous make-up, it is very likely that he would be called a philanthropist. If a beggar applying to such a philanthropist for alms, in being refused should knock the eccentric philanthropist down, the latter would stand a chance of being called a degenerate. It is not so easy to define a degenerate; we recognize him much easier than we define him.

THERAPEUTIC INDICATIONS SUGGESTED BY THE CONDITION OF THE BLOOD.*

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We are in the age when a better understanding of pathology and bacteriology has shown the absurdity of many pseudospecifics and of symptomatic treatment. We realize more and more the "phusis" of Hippocrates, the "archeus" of Paracelsus, the "pneuma" of Hoffmann, the "anima" of Stahl, and the "vis medicatrix naturæ" of later writers, which power Hahnemann so well demonstrated with his multiple dilutions of nothing, allowing disease to recover without interference. Also, we recognize the uselessness of attempting to cure or even to stay organic disintegration or obliteration.

While acknowledging the above, I think we have become too pessimistic therapeutically, and while we are directing our energies and remedial agents to the etiology and pathology of disease, we have forgotten to better, or correct, or aid the normal metabolism of the body.

Too many books on practice and too many teachers instruct carefully in the etiology, pathology, symptomatology, diagnosis, and prognosis of a disease and then briefly delineate a specific treatment, or say there is no treatment of any avail. The student thus learns to treat the disease by name only and does not treat the disease plus the individual who has it. Thus it is that many an unscientific practitioner of to-day, treating the patient and not making or caring to know the diagnosis in a doubtful case, continues to be in as great or greater demand than the physician who carefully makes the diagnosis, scientifically treats the disease, but forgets the man who has the disease.

Rather than ramble over the list of functions of the whole man, I propose to limit my remarks to a consideration of the blood, believing that in it may lie the wavering balance as to whether the patient survives or succumbs to a disease.

We can not properly treat any diseased organ or disturbed function unless we first know the physiology of that organ, and then the pathology of the disease or condition, the symptoms and signs showing us the degree to which this pathology has extended and giving us the prognosis for our treatment. Next, we must know the etiology to remove it if we can. The plan of treatment thus reached is rational and scientific, but in initiating it and carrying out such treatment it will often not be successful and will rarely be Asclepiades' *"tuto, cito, et jecunde curare"* unless it is modified to fit the man himself.

I trust I may be pardoned if for a moment I speak of the physiology of the blood. The gross constituents of the blood, viz., the plasma and its contained gases, the red corpuscles and the white corpuscles, have normally a certain slightly variable relationship to each other, and how easy it is for this relationship to become abnormal and react to the disadvantage of the whole life process.

While the specific gravity of the blood has a wide range of from 1040 to 1070, variations beyond these limits may have a wider significance and influence than we have previously considered. A much more variable property of the blood is its alkalinity, which is so readily increased by food and so constantly lessened by muscular exertion.

The range of from four to five millions of red blood corpuscles per cubic millimeter varies physiologically with the nutrition, the manner of life, and with age. The physiological diminution after meals is probably due to the destruction of the red corpuscles for the production of the bile pigment, while the decreased number of red cells in females during menstruation is probably due to the direct loss.

In normal conditions transportation to a more rarefied atmosphere will increase the number of red cells, showing that there is a surplus of red cells lying somewhere ready to be poured into the blood stream if there is a demand for them.

Studying the red corpuscles from a clinical and a diagnostic standpoint, we must take into consideration the osmosis that takes place through the stroma of the red cell, as we know that when they are large and well rounded the blood plasma is of low specific gravity. On the contrary, if these cells are shriveled and crenated we know that the plasma is concentrated and of high specific gravity. A large number of nucleated red blood corpuscles, except in embryonic life, shows that there is

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. Thomas Hunt Stucky, Leon L. Solomon and N. S Davis, Jr.

something wrong with the early life of the corpuscle, it not having completed its usual cycle to maturity.

Ninety-five per cent. of the contents of the red corpuscle is hemoglobin, which is a very unstable compound, being readily set free by bile acids circulating in the blood, or by poisons such as potassium chlorate. The coloring matter thus set free circulates in the plasma and is deposited in the organs or passes off by the urine. Many disturbances of the system as well as poisons may set free this hemoglobin. This is, of course, notably true in profound malaria.

Only 4 per cent. of this hemoglobin is hematin, and in this hematin is found the iron which is the element c oxygen and carbonic acid exchange. This constant change seems to do no injury to the blood corpuscles, but as the hemoglobin is the origin of the bile pigment and as bile is constantly present, the red cells must constantly die or be destroyed, hence new corpuscles must be formed. Though the average life of a corpuscle is not known, it is estimated by some authorities as fourteen days.

The principal origin of the red corpuscles in the adult seems to be the red bone marrow, and it is interesting to note that after severe hemorrhage the nucleated corpuscles of the bone marrow are increased in number and many appear in the blood stream.

The spleen, which may be an originator of red cells before birth, certainly becomes a reservoir for them during life, and under requirements of the blood may give up some of this reserve supply to the blood stream.

How the red corpuscles meet their death or are disintegrated for bile pigment products is not quite known, but physiologists tell us the histology of the spleen is admirably adapted for storing red corpuscles, and here they are probably principally destroyed, the splenic vein always containing more hemoglobin than is found in any other part of the circulation. This hemoglobin is then taken by the blood stream directly to the liver and is there manufactured into bile pigments.

So much for the physiology, as far as we now know it, of the red blood cell. Now, what do we know of the white corpuscles? Under the microscope we find various types of white blood cells, the simplest classification of which is into the following: 1, lymphocytes, which are similar to the cells found in the lymph glands, contain nuclei, and are not capable of ameboid movements; 2, the mononuclear leucocytes, which are large corpuscles and have ameboid movements; 3, the transitional leucocytes, which are the transitional stage of the mononuclear to the polynuclear leucocytes, and 4, the polymorphous or multinucleated leucocytes, which are large corpuscles with several nuclei and very active ameboid movements.[1]

It seems clear that the mononuclear leucocyte develops into the polymorphous leucocyte, but whether the lymphocyte is an earlier stage of the mononuclear leucocyte is not known. It seems proved that the lymphocytes develop in the lymph glands and lymph follicles in the so-called germ centers of adenoid tissue that multiply by karyokinesis and are then poured out into the blood plasma.

Huber[2] thinks that the leucocytes may have various origins, which he separates by the staining properties of the granules, the neutrophile developing in the blood from mononuclear leucocytes, which have their origin in the spleen or bone marrow. The eosinophile leucocytes he thinks in all probability come from mononuclear cells which are found in the bone marrow, and they may also develop from connective tissue, while the leucocytes with the basophile granules, he says, probably enter the circulation from the connective tissue of certain regions.

The duties of these leucocytes seem to be first to protect the body from pathogenic bacteria by phagocytosis, while Howell[3] says that the lymphocytes seem to aid in the intestine in the absorption of peptones and fats.

We know little or nothing of the life history of these cells, but believe that as they normally disintegrate, they probably furnish some proteid material to the blood. We know little or nothing of the diminished number of white cells, but we do know something of an increased number, or leucocytosis, by which term we mean a temporary increase in the number of white cells. This temporary increase normally occurs after each meal at the very time when the red cells are less in number, the red cells perhaps disintegrating to form more bile while the white cells are poured out to aid in the absorption of the nutriment. Anything that irritates or stimulates the lymph glands must increase the number of white corpuscles in the blood.

We have not paid enough attention to the blood plasma or to the possibility of its being modified in disease, especially in anemias. When we consider the variations of the red blood corpuscles under the microscope caused by differences in the density of the surrounding fluid, we realize how very important in many cases a knowledge of the character of the plasma would be. When we study the physics of osmosis and the physiologic action of absorption and excretion, we should also consider the character of the blood plasma. Chemistry shows us that through an animal membrane there will be an exchange of solutions if the osmotic pressure of the two fluids is dissimilar; the salt, more or less slowly, depending upon its character, will pass from the stronger solution into the weaker, and water will pass from the weaker into the stronger until the osmotic equilibrium is established, at which time the solutions are said to be isotonic. Certain membranes of the body, notably true of the intestines, allow water to pass through freely by this osmotic force, but will retain the salts until an equilibrium is established. Again, we find that membranes may be permeable to one salt and not to another, these salts, then, having slow absorption. Such is true of the cathartic salts in the intestine, which tend to cause osmosis of water and are very slowly absorbed and hence produce watery purging.

We have not time to consider the elements of the blood plasma, but it may be noted that calcium salts in the blood favor coagulation, possibly a clinical indication for calcium in bleeders and the blood plaques or platelets seem to have to do with the coagulation of the blood.[2]

The variations in the character of the plasma must cause variations in the rapidity with which certain fluids or salts may be absorbed, or possibly may affect the absorption of the nutritive products of digestion, and hence there can be such a condition of the plasma that it can not absorb the materials or salts which are necessary for the growth of the cells and the nutrition of the body. Here we come to the question as to why, when there is sufficient iron in the food it may not in certain cases be absorbed, as in chlorosis.

My reason for this discussion would not be evident if I did not speak for a moment of the physics of the

1. Huber's Histology, p. 173.
2. Ibid., p. 176.
3. American Text-Book of Physiology.

blood and therefore the importance of the consideration of the blood in its totality as well as in its component parts.

A normal adult has one-thirteenth of his body weight in blood; in other words, a man weighing 170 pounds should have 13 pounds of blood. This proportion, of course, is not true in the obese and is not true in children. We undoubtedly generally forget that, roughly speaking, from nine to fifteen pounds of the adult weight is constantly in motion, and while I do not wish to revert to the English and Italian physical medicine of the 17th century, we should perhaps recognize the force that it takes to move this weight and how important it is in weak conditions for the individual to be in a horizontal position and not be compelled to propel the whole of this weight against the force of gravity.

At any given time one-fourth of this blood is in the heart and larger blood vessels, one-fourth in the liver, one-fourth in the muscles, and the remaining fourth is distributed among the various internal glands and organs. In hyperemia of the brain or internal congestions, we undoubtedly have a disturbance of this normal distribution of the blood, which by various well-recognized physical methods we more or less successfully bring back to the normal condition. I also venture to say that there can undoubtedly be too much blood at the surface of the body giving a feeling of warmth to the skin, as in some neurotic women. These patients always complain of heat, and probably have a diminished amount of blood in the glands and digestive organs, and hence their imperfect nutrition.

We are now in the age of a better understanding of the vasomotor system and recognize the opening and shutting of the arterioles and the consequent flooding or anemia of the capillaries as a very important element, not only in diseased conditions, but in the normal welfare of the individual. When we consider that we can cause anemia of the brain by hot sitz-baths, and that even slight irritations of the stomach, or intestines can cause dilatation of the abdominal vessels, which vessels can hold all the blood of the body if they become paralyzed; when we know that we can cause serious cerebral congestion by cold baths and chilling of the body; when we know that we can cause peripheral anemia enough to produce gangrene with continuous large doses of ergot, and that with nitro-glycerin we can cause sufficient dilatation of the blood vessels to produce anemia of the brain and fainting, we have a power presented to us which I do not think we sufficiently consider or sufficiently utilize to the advantage of our patients.

In the first place we are not careful enough in fever processes to keep the blood at the surface of the body where it cools and keeps down the temperature, and therefore saves the waste which high temperature will cause. We have all seen a profuse early sweat abort or prevent the chill in a malarial paroxysm when we have had no time for previous curative treatment. This, of course, simply means the dilatation of the surface blood vessels, thus preventing the chilling and the consequent internal congestions.

The condition of vasomotor ataxia plays an important part in many functional disorders, notably true in neurotics and neurasthenics. When the blood should be at the surface, the surface vessels are contracted and there is too much blood in the internal organs, perhaps notably the brain, as at night, causing insomnia; when there should be anemia of the surface, there is a flushing of the skin in these cases, giving sleepiness in the daytime and perhaps an imperfect digestion, constipation, and other functional disturbances. This condition of vasomotor ataxia seems to be present in marked degrees in most cases of hysteria.

In considering these displacements of the blood we come to the study of the cause of contraction and dilatation and find that the principal vasomotor center is in the medulla oblongata, which, as well as the peripheral vessels, is readily stimulated by various substances. In the normal individual the thyroid gland seems to furnish a vasodilator, while the suprarenals furnish a vasocontractor element. Possibly these two secretions regulate the peripheral vasomotor system. If either of these functions is disturbed we have varying symptoms, depending upon which one is in predominance. I feel firmly convinced that it is not at all necessary to have a developed Graves' thyroid disease for us to have an increased secretion of the thyroid. I believe that neurotics and possibly hysterical cases have an increased secretion from this gland, and that various of our functional disturbances, such as palpitation, cerebral irritability, insomnia, sweating, nervousness, hot flashes, muscular weakness due to lack of blood-vessel tone, can be due and is due to this increased secretion.

On the other hand, I feel that continued high tension of the arteries, with the consequent chronic endarteritis, gouty and atheromatous conditions, can be due in later life to the diminution of the thyroid secretion and the predominance of the suprarenal secretion, causing the contraction of the peripheral blood vessels.

In the condition of persistent vasodilatation, due, as I think, to hypersecretion of the thyroid, we should spend a great deal of care in toning up the peripheral blood vessels by teaching them to open and shut, by various cold water applications, douches and sprays, and insisting upon a quiet mental as well as physical life to prevent the pounding of the heart weakening these dilated blood vessels. Massage and graduated physical exercises will increase the muscle-tone, which will contract the blood vessels of the muscles, which vessels contain one-fourth of the body's blood.

On the other hand, in the condition of too-high tension of the blood vessels, our aim should be to relax, and I trust I will not be accused of going back to the Methodists in the first century when I say these conditions need such treatment as will relax the blood vessels and increase elimination. Too high tension calls for exercise, warm baths, free catharsis to reduce the amount of fluid so that the tension will not be as great, dilatation with small doses of thyroid gland daily, nitroglycerin in small doses, as 1/400 three times a day, or small doses of chloral.

So much for the gross chronic conditions, but how much more carefully we ought to watch the condition of the blood vessels and the surface of the body in acute conditions in which the blood or life-power of the patient is endeavoring to correct the pathology present.

Why try to make a patient sleep with some hypnotic when strychnia is being given, when the omission of the evening dose of strychnia may be sufficient? Why continue to push alcohol, a vasodilator, when the patient is failing from peripheral collapse? Why impede the activity of the phagocytes with large doses of quinin in infections that normally produce leucocytosis? Now, let us return to the finer details of the blood in the different conditions.

1. *Plasma.*—This can be either increased or diminished in amount. Briefly, the cause of the diminution

may be hemorrhage, profuse watery diarrhea from any cause, profuse sweating, as seen in the prostration from pilocarpin, or profuse diuresis, as seen in diabetes. It may be relatively diminished in amount in conditions of shock and collapse, where there is a vasomotor paralysis, and may be relatively diminished in conditions of chronic vasodilatation, as occurs in Graves' thyroid disease, where there is too much secretion of vaso-dilating stuff, and in Addison's disease, where there is probably diminished secretion of vasocontracting stuff.

The symptoms of acute hemorrhage we well recognize, but perhaps we do not consider that the symptoms of the diminished amount of plasma from all these causes will always be the same, viz., low blood pressure due to imperfect filling of the vessels; poor heart action, it becoming rapid and irritable, due to the imperfect filling of its cavities, and from the diminished pressure, imperfect nutrition through its coronary arteries; thirst due to the demand for more fluid to fill up the blood vessels; more or less dyspnea due to the impaired circulation; cerebral excitement perhaps soon followed by sleepiness due to anemia of the brain. The skin is moist and cool when the plasma is rapidly diminished, but it may become dry and harsh and even shriveled in chronic loss of plasma, as in diabetes.

In any of the acute conditions in which this diminished amount of plasma occurs the indications for treatment are always the same, viz., to stop further loss, to transfuse in serious conditions, in any method which seems best, the normal saline solution. In less serious conditions to give plenty of warm, non-irritant fluids either by the stomach or perhaps better by the large intestine, and then to contract the peripheral vessels and thus relatively increase the amount of plasma either by strychnin, atropin, or digitalin hypodermically as we should not forget that in these conditions of diminished blood pressure the stomach does not absorb drugs with readiness, if at all. I reiterate that whatever be the cause, or whatever be the condition treated, or whatever be the acute or chronic, inflammatory or organic process, if this condition of diminished plasma occurs, these symptoms will develop, and the treatment is that of th condition of diminished plasma plus whatever treatment the causative disease calls for.

The plasma is increased in amount in conditions of simple plethora where there is diminished excretion as in uremia, and relatively in chronically contracted blood vessels, as in arteriosclerosis and gout. The symptoms are high tension; flushed face; more or less dyspnea due to congested pulmonary circulation; slow heart, due to the increased peripheral resistance; digestive disturbances, due to a congested portal circulation, which predisposes to the formation of biliary calculi.

When for any reason we have diminished excretion or a contracted state of the blood vessels, these symptoms will supervene, and whatever the treatment is for the condition causing it, we must also treat this increased amount of plasma by increasing elimination, dilating the peripheral blood vessels, and diminishing the ingestion of food.

Very probably the plasma has its specific gravity diminished in anemia and in impaired alimentary absorption, giving the tendency to hemorrhages and to edemas. We already treat this condition sensibly by increasing the excretion from the bowels by proper laxatives, correcting any alimentary disturbance that is present, and contracting the blood vessels with digitalis.

The specific gravity of the plasma is probably increased in gout; hence the tendency to urate deposits in the joints and other parts of the body, and the tendeney to the formation of urinary calculi. The treatment of this condition is a modification of the food ingested, with the intake of large quantities of water medicated in any way that may seem best, and the adoption of any measures that promote the peripheral circulation, dilate the vessels generally and prevent them from being so permanently contracted that they will not absorb more water and thus dilute the plasma.

2. *Red Blood Corpuscles.*—These are perhaps never increased sufficiently to cause comment. They may be normal in number, but useless for oxygen exchange after certain poisons have been received into the system, sueh as potassium chlorate, carbonic oxid gas, and perhaps in chronic malarial poisoning. In this condition the corpuscles so affected are useless to the metabolism. Any method that will hasten their discharge from the system and encourage the formation of new corpuscles, would be good treatment. Hence in certain cases, perhaps, it is advisable to do venesection and then infuse salt solution.

Our greatest interest in red corpuscles, of course, lies in their diminution. They are diminished, and our patient is anemic, as we call it, in the various anemias, chlorosis, in chronic impairment of any function, and in acute disease, especially in acute infections. We ean have an acute loss of red blood corpuscles, of course, from hemorrhage, but I wish to emphasize the fact of the acute loss in malignant infections, which cases dying suddenly with symptoms of acute anemia I have termed *medical shock.* The treatment of chlorosis due to impaired alimentary chemistry, and of essential anemia due to the migration of the colon bacillus, according to Adami, it is unnecessary to discuss, but I do not think we are careful enough to give treatment to promote the formation of red blood corpuscles during acute feverish processes, especially when due to infection.

We have long recognized the advantage in diphtheria of giving iron, and it has been lauded in erysipelas, but I wish to state my belief that every case of typhoid fever will do better with the tincture of the chlorid of iron than without it.

Whether or not the blood corpuscles are themselves occasionally attacked by germs other than malarial as seems to occur in malignant infections, any fever that is prolonged any length of time, by interfering with nutrition, will impair the output of red blood corpuscles, and our patients will weather these acute conditions better, come out of them less prostrated, have less anemia, and shorter convalescence by giving the tincture of the chlorid of iron during the acute process. We not only furnish a stimulant to the blood-forming organs perhaps, but we add hydrochloric acid to the stomach when the amount is normally diminished.

3. *White Corpuscles.*—These perhaps are never diminished except relatively at such times as perhaps when a normal leucocytosis should be present. When they are chronically increased in number, we have the condition of leukemia, which condition, though at first functional, we as yet are utterly unable to stay. We have not yet discovered drugs or any treatment that will diminish the secretion of an internal gland, or will stop the output of white blood corpuscles.

The white corpuscles are increased daily, physiologically, as previously stated, for phagocytic work in infections of all kinds. The infections that typically cause a large amount of leucocytosis are those which

cause associated glandular swellings. These are typically diphtheria, erysipelas, scarlet fever, and septicemia. We also find some leucocytosis in rheumatic fever, cerebrospinal meningitis, and occasionally in typhoid fever. In acute tuberculosis and in chronic tuberculosis, leucocytosis does not occur unless there are some dammed-up pus formations. In pneumonia the leucocytosis may reach an excessive amount, disappearing gradually after the crisis, and the prognosis is often based upon the amount of leucocytosis.

These leucocytes must be like the armies of a nation, there being a standing army for police duty, and perhaps there is always military law for all invading bacteria, but in rapid attacks of virulent bacteria a reserve army can be called out or produced, and perhaps, if necessary, there is also a second reserve.

Bacteriological study having showed this leucocytosis in infections to be protective, is it perhaps not our duty in such conditions to promote this condition? Hence, perhaps the nucleins or thymus gland preparations should be given in all acute infections, as diphtheria, scarlet fever, typhoid fever, pneumonia, and perhaps tuberculosis.

In the period of convalescence from any acute disease we find a condition of vasomotor ataxia. The patients are hot when they ought to be cold, cold when they ought to be hot, sleepy when they should be awake, awake when they should be asleep. The least indiscretion of food causes internal disturbance and congestions, the same lack of blood-vessel tone is perhaps the cause of the obstinate constipation, not enough fluid being excreted into the intestine or too much of the fluid in the intestine being absorbed. The least cerebral excitement causes a rise of fever, showing that the vasomotor regulation of heat loss and heat production is badly managed, in other words, a vasomotor ataxia exists. Anything that educates the peripheral vessels to again react normally, such as massage, electricity, gentle exercise, sponging, and baths will improve all of these conditions which, though multiple in manifestations, are due to but a single cause, i. e., vasomotor ataxia.

I fear this paper will be considered erratic, but perhaps it will stimulate more consideration of the general condition of our patients while we are scientifically treating the etiology and pathology of the disease present.

TREATMENT OF NEURASTHENIA.*

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CHICAGO.

In inviting your attention to a brief consideration of the treatment of this disease, I do not hope to present anything especially new, with the possible exception of the application of prolonged cold, the marked beneficial effects of which I have noted in two patients.

Everything in the treatment of neurasthenia depends upon the diagnosis. In too many instances the conception of neurasthenia in the physician's mind is very like that which obtains in hysteria, namely, that it is a term which is to be applied to any anomalous symptom for which there is no other explanation. Again, many practitioners do not clearly differentiate between hysteria, neurasthenia and hypochondria, grouping them all together under the first or second of these terms. To be sure, they all belong to the functional nervous group, but the treatment of these different conditions varies greatly, and the successful handling of an individual case depends largely upon the fundamental distinctions in these three conditions. Rest, which is imperatively indicated in neurasthenia, is certainly disadvantageous in many of the milder forms of hysteria. In hypochondria we are dealing with a pure psychosis, in which the patient has delusions, or imperfect conceptions regarding his health. The treatment for the most part that would be applicable in neurasthenia and hysteria is not appropriate for an hypochondriac.

To my mind, the central point in the diagnosis of neurasthenia is the presence of the fatigue symptom; without this I can not understand a diagnosis of neurasthenia. The fatigue symptom is difficult of definition. It consists essentially of fatigue upon exertion, which ordinarily, in a well person, would cause no such sensation. This may vary from a condition so severe that even two or three movements of the arms, such as bringing them up to the head, will cause such extreme fatigue as to incapacitate the patient for making another movement with the upper extremities, to such a slight decrease in the capacity for exertion as to be scarcely noticeable. It would be as improper to make a diagnosis of neurasthenia without this fatigue symptom as it would be to speak of a case of chorea without the characteristic disorderly movements.

The portion of the body in which the patient experiences the greatest amount of fatigue has given rise to special division of neurasthenia, such as spinal, sexual, psychical, etc. Such divisions are quite useless, as a close analysis in most cases will reveal the general character of the symptoms, a certain few of them only being accentuated by the patient. The latter's subjective statements ought not to furnish a basis for classification. The fatigue symptom may involve the sensory side of the nervous system as well as the motor; a certain mental incapacity is usually complained of, in some very markedly, so that they will come to consult you to learn whether they are becoming insane. A very common statement among these patients is that they are suffering from failing memory. A very brief conversation with them develops the fact that they have mistaken a failure of attention for a failure of memory. They will read something, and an hour afterward will recall the fact of the reading, and, to their surprise, they are not able to recollect the subject matter. They at once jump to the conclusion that this is loss of memory, while in fact there was merely a want of attention while they were reading. This is startlingly impressed upon their minds, and many of them can distinctly recall a number of instances of that kind extending over weeks. A graphic description of this mental state is to say that such patients "remember that they have forgotten." It is evident that this is very different from the true loss of memory, such as we have in the organic affections of the brain.

Another distinguishing symptom in neurasthenia is that the pains which are spoken of as such by the patient are in reality a sense of distress or discomfort—sometimes graphically spoken of as a misery, rather than a pain. In part, they are the outgrowth of the fatigue symptom, especially the pains in the back, which are due to the extraordinary use to which the back muscles are put in maintaining the upright position.

Neurasthenia is to be distinguished from hysteria by the absence of anesthesia, a failure of the inversion of the color perception of the retina and a want of the pe-

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culiar psychical manifestations of hysteria. There is some similarity in the morbid introspection of neurasthenia and hysteria, but, as a rule, the peculiar characteristics of hysteria are readily distinguished from those of neurasthenia. In hypochondria the purely delusive character of the malady is easily differentiated from the underlying nerve weakness which is characteristic in neurasthenia. The neurasthenic always has a tendency to exaggerate his symptoms, but they are not cut out of the whole cloth as they are in hypochondria.

The term "essential neurasthenia" has been employed to distinguish the primary form of the disease, and that is the sort of neurasthenia of which we shall speak in our remarks upon treatment. Every case of convalescence from an infectious disease is really one of mild neurasthenia, and many of the symptoms which attend constitutional diseases and the chronic infections, such as tuberculosis, are clearly neurasthenic in character. I do not call such cases neurasthenia; hence, the diagnosis depends upon the exclusion of underlying constitutional states—anemia, chlorosis, tuberculosis, inflammations of the gastro-intestinal tract, etc. If such cases are rigidly excluded, it will be found that the number of primary neurasthenias is comparatively small; but we must still recognize that such a primary weakness of the nervous system is possible without coexisting involvement of other organs, and in which the alteration in nutrition, which is almost always found in well-marked cases of neurasthenia, is secondary to the nervous involvement.

This close distinction between secondary and primary neurasthenia is vital from the standpoint of treatment. In the presence of an adequate cause, if that be not removed recovery will not take place.

Another variety of neurasthenia is the congenital form, to which the term neuropathy has been given. These patients are, so to speak, born tired, there being a congenital deficiency in the protoplasmic activity of the nerve cells. But little can be done with the congenital form of neurasthenia. It seems to be dependent upon a biochemic deficiency for which treatment will do nothing.

In the treatment of neurasthenia, therefore, we would refer to only two varieties: those in which the disease is acquired and those which are primary. The underlying defect is in all cases a nutritional disturbance. Many would refer these cases to uric acid diathesis, whatever may be meant by such a term. I have long since abandoned a treatment of functional troubles based upon a uricacidemia. I am confident that I can not recognize such a condition, and a treatment based upon such theoretical consideration has proven most fallacious in my hands. In those cases in which it was successful, the effect of the treatment could as well have been explained upon some other theory as that of an excess of uric acid in the blood.

At the beginning of the treatment of a case of neurasthenia, the most important thing is to obtain the full confidence of the patient. He should be told frankly that his condition is curable, and that his recovery depends largely upon himself; unless he will put himself absolutely under the direction of the physician for a period of from three to six months, it is better not to undertake the treatment of the case. If the patient will agree to a careful regulation of his habits and diet, then you may enter on the treatment with some hope of success. The simple diagnosis made in the office, followed by a prescription, without further directions to the patient, simply results in his drifting from physician to physician, without obtaining the slightest relief. The disease finally becomes chronic and fixed, or else there is that natural amelioration which usually takes place. In most of the acquired forms of neurasthenia, the clinical history shows a gradual invasion of the malady marked by an increase in the fatigue symptoms, which deepen for a period of months, sometimes approaching a year, and, at the end of that time, there is a gradual change for the better; hence, neurasthenia can be generally spoken of as a self-limited disease, having a natural tendency toward recovery even without treatment.

Next to obtaining the full control of these patients, it is of the utmost importance that persistent suggestion be employed—not hypnosis. The patient should be instructed to avoid, under all circumstances, talking over his ailments with any one excepting his physician. If he is asked about his health, he is to be instructed to make some indifferent reply, or to state that he is better. Under no circumstances is he to be allowed to discuss with any one of his symptoms, treatment or subjective state. This regulation relieves him somewhat from counter suggestions. The physician should then undertake a careful regulation of the life of the patient, making him keep a record of his sleep, food, appetite, bowel movements, baths and exercise. This should be looked over carefully by the physician twice, or at least once a week, and such corrections or additional directions given, as may be needed.

Rest is the sheet anchor in the treatment of neurasthenia. In the more severe cases we should employ the rest cure of Weir Mitchell; but we should remember that there are many hysterics and neuropaths who do very poorly, or, indeed, may be harmed by the rest treatment, even in a modified form. Neurasthenics, however, are all benefited by rest. In only severe cases, in which there is a profound disturbance of nutrition, should complete rest be employed, and, oddly, it is found to be more efficient with women than with men. As a rule, neurasthenia in men rarely requires the full rest treatment, but what I have elsewhere spoken of as a modified rest treatment may be employed with great advantage.

My patients are required to remain in bed many hours more than they have been in the habit of doing; they are directed to remain in bed until noon, and their hours at the office are sometimes restricted to two each day providing they can not avoid some direction of their business. As a rule, the rest which is prescribed is to be taken in a recumbent position. Frequently it is best that one of these patients should be enjoying some light exercise, preferably associated with mental diversion, or else be flat upon their backs. Either one of these is better than that the patient should spend his time moping around, as so many of them do.

In this connection I can not speak too highly of the value of golf in improving the nutrition of neurasthenics. It seems to furnish just the amount of exercise which they need, and, above all, it is taken in the open air. This improves the appetite, and the amount of exertion may be so carefully increased that there is never any strain upon the patient, and, as his nutrition improves, he gradually acquires an increased capacity for exertion. Any exercise that is ordered for the neurasthenic should always fall short of causing fatigue, no matter how slight the exertion may be.

Associated with the rest, the patient should be placed on a modified diet, which should invariably in neurasthenia without complications be a mixed one. Idiosyncrasies in the matter of diet are very common in neuras-

thenics, and should be carefully considered. Milk and eggs, where they are digested, will be found of special value. If milk does not agree with the patient, uusually mixtures of cream and water, or cream, water and milk, will be easily digested. As a rule, neurasthenics take too little water, so that they should be directed to take a glass of water at certain hours in the day; this will tend to relieve constipation. It is a singular thing that most neurasthenics have no proper sense of thirst.

Drugs, as a rule, are of little value in the treatment of neurasthenia. The judicious administration of strychnia is of some value. The patient feels the stimulating effect of the treatment, which produces a sense of well-being, and this produces a favorable mental state, so that its liberal administration in the first few weeks of the treatment is often useful. If it is given, it should be employed in large doses; a twentieth, or fifteenth, or even a twelfth of a grain is well borne by many of these patients. A few of them, however, can not take strychnia at all. Cannabis indica is a drug which is also of some value in producing a sense of comfort and well-being in the patient. It should not be continued for any length of time, and it, like strychnia, is probably dependent for its good action upon the effect which it has upon the mind of the patient. In cases of extreme agitation and failure to sleep, a few large doses of the bromids may be useful at the outset of the treatment.

Hydrotherapy in some form is exceedingly valuable, the most important being the application of a sheet wrung out of cold water each morning as the patient gets out of bed. If this is done promptly, and the patient vigorously rubbed after the application, producing a quick reaction, the benefit is very marked.

In two of my patients, during the past winter, I have had them exposed to an outdoor temperature for several hours at a time, following, in this, somewhat the plan that is now employed in the outdoor treatment of tuberculosis. In one case this was a modification introduced in the course of an ordinary rest cure, and I was astonished at the beneficial results. There was an immediate improvement in the appetite, the patient slept better, and the general effect on the nutrition was very pronounced. This exposure to cold was brought about by raising the windows, turning all the heat off in the room and carefully protecting the patient by heavy blankets and hot water bags in the bed. Another patient spent most of her time in the house and was under a modified rest cure. This patient was put on an open veranda, carefully protected from the weather. On several days the thermometer registered near the zero mark. The colder the days the greater was the benefit. This innovation in the ordinary rest cure treatment I believe to be of great value, but, of course, it is only applicable during the winter season.

Treatment of Sinusitis by Hydrotherapy.—Zangger states in a communication to the *Corr. Blatt.* of August 15, that acute catarrh of the frontal sinus, rebellious to medicinal measures, has been invariably relieved and cured in his experience by an energetic sweat bath. The profuse perspiration induced is followed by increased absorption on the part of the tissues and the catarrhal condition in the sinus is improved. He thinks that the same measure might be applicable in case of suppuration, and would apply it before resorting to surgical intervention. The sweat bath is repeated every other day for two to five times, as indicated by the symptoms. He has also obtained excellent results from it in pleuritis and tubercular adenitis.

A SIMPLE OPERATION FOR THE RADICAL TREATMENT OF HEMORRHOIDS.*

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PROFESSOR RECTAL DISEASES, CHICAGO POLICLINIC.
CHICAGO.

Hemorrhoids are usually described as bluish-red vascular tumors occurring in the thickened mucous membrane of the anus. They are generally considered to be varicose dilatations of the hemorrhoidal vessels, brought about by obstruction to the blood current and by chronic inflammatory processes. According to the investigations of Reinbach,[1] however, a hemorrhoid is a true angioma, whose development, which may begin in early childhood, depends on a new formation and cavernous metamorphosis of the blood vessels, and may be quite independent of any obstruction to the blood flow.

As the pathology of hemorrhoids seems to be a more or less disputed question, and, since there is such a great variety of methods advocated for their treatment, which is probably due, in part at least, to the various conceptions of their pathology, I submitted to Dr. W. A. Evans specimens of these tumors for histologic and pathologic examination, hoping thereby to arrive at some definite

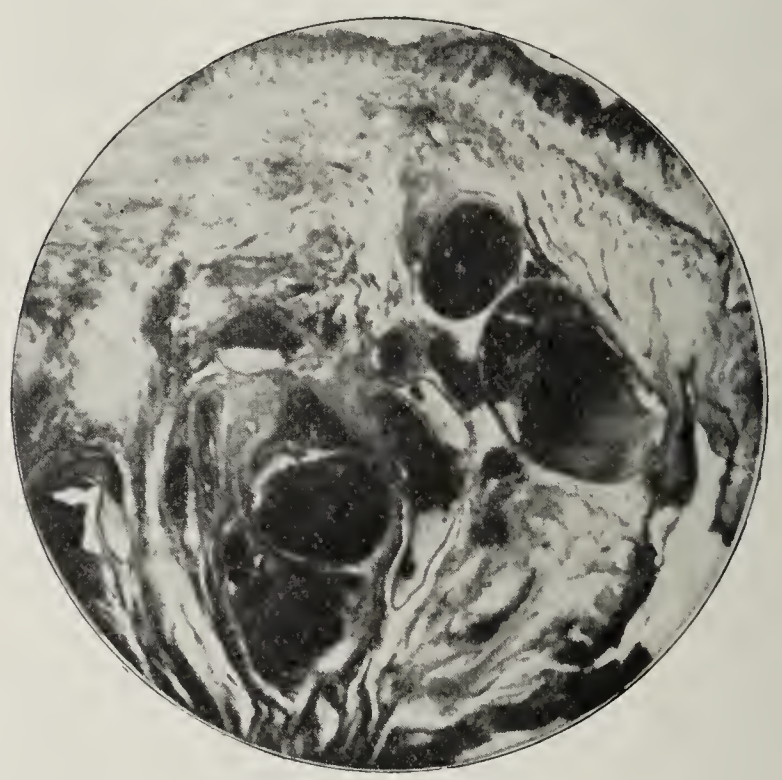


Fig. 1.—Photo-micrograph of hemorrhoid under low power, showing enlarged blood vessels and blood lakes.

conclusion as to the best means of treating this ailment. His report, together with the clinical observations which I had made, confirm, in a great measure, the pathology of this affliction as observed by Reinbach (Figs. 1 and 2). Hence, it seems that we should adopt or devise some method of operative procedure whereby we can remove the diseased structure—the angioma—and at the same time facilitate the reconstruction of the crippled mucosa and submucosa. That method is surely not to be found in the ligature, clamp and cautery, Whitehead's or many other operations I might mention.

In fact, it seems to me that it would be a physical impossibility to do a radical operation on a well-defined case of internal hemorrhoids by either the ligature or clamp and cautery, and, at the same time, preserve the contour of the anus. Furthermore, I should think that the same criticisms might be easily sustained with reference to the Whitehead operation, and also the method

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section · Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

1. Ziegler's Pathology, p. 323.

of excision as practiced by Allingham, as well as those methods of suturing where the hemorrhoid is seized with a pair of forceps, its apex cut off and the edges sewed together, as in Earl's operation. This procedure embodies the same principles and therefore is subject to the same criticism as that of the ligature or clamp and cautery method. Marey's operation, where the hemorrhoidal mass is dissected, tied and cut off and the edges of the mucous membrane brought together with suture, is, from a theoretical standpoint, ideal, but its objections are: 1, the danger of suture infection; 2, painful swelling, and 3, hemorrhage and the formation of a blood clot at the site of the original hemorrhoid. Only recently a medical friend of mine came near losing his life from suture infection following this operation, and a few days ago one of our leading surgeons, Dr. Carl Beek, recited to me a case in which his patient had much edema and painful swelling following this method. Similar criticisms might be submitted with reference to the submucous ligation as practiced by Ricketts.

Consequently, after carefully studying all of the above methods and many more, it occurred to me that the most rational way of treating this condition would be by everting the pile-bearing area and removing an ellipse

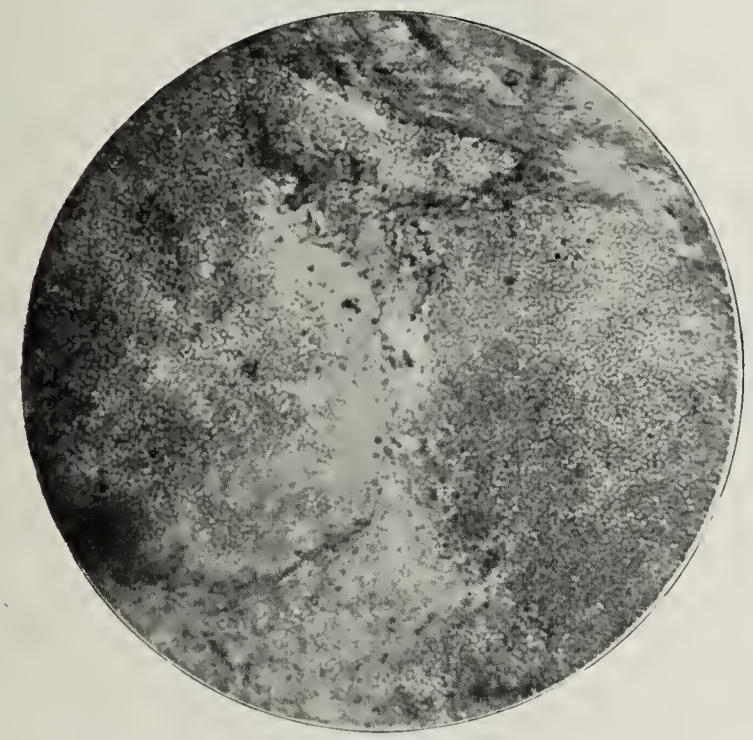


Fig. 2.—Photo-micrograph of hemorrhoid under higher power, showing blood lakes separated by thin wall of fibrous tissue and endothelial lining of blood vessels, only.

from the apex of each tumor commensurate with its size, then dissecting out the angioma, when the remaining walls of the tumor would collapse and, if the ellipse had been carefully and intelligently removed, would practically cover the denuded surface when the bowel was in a passive state. This gave rise to the origin of the method presently to be described, which seems to me the most rational of all methods for the radical treatment of this malady.

Given, for the purpose of illustration, a case of well-defined internal and external hemorrhoids. The second night before the operation administer from 2 to 5 grains of calomel in broken doses, in combination with subnitrate of bismuth and pepsin. The following morning give one-half ounce of Rochelle or Epsom salts. At 9 o'clock the night before the operation shave the anus and give a bath and a colonic flushing. At 7 o'clock the following morning give an enema of from one-half to one pint of cool water and operate two hours later. This method of preparation gives a clean field in which to operate.

The patient, being anesthetized with either a local or general anesthetic, is held upon the operating table in the lithotomy posture by means of a Clover crutch. The sphincter is then gently and carefully divulsed with the fingers, and the rectum irrigated with an antiseptic solution, usually bichlorid of mercury 1 to 3000, followed by normal salt solution. Each anal quadrant is now grasped at the muco-cutaneous junction with a pair of T forceps (Fig. 3). These are held by an assistant. By means of these instruments the anus is everted and the internal tumors exposed (Fig. 4). Now seizing

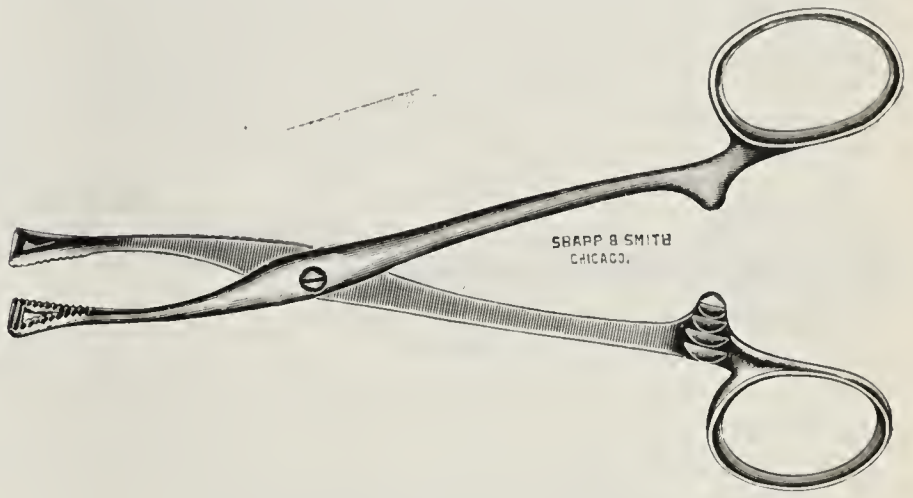


Figure 3.

with the full hand the forceps attached to the posterior quadrant, fully evert it, and with a pair of seissors sharply curved on the flat (Fig. 5) remove an ellipse from the apex of the hemorrhoid commensurate with the size of the tumor. This permits most of the blood in the tumor to escape. All of the angimatous tissue is now carefully removed, when the remaining wall collapses. This leaves a very small area, if any, of denuded surface (Fig. 6). Each quadrant in regular order is

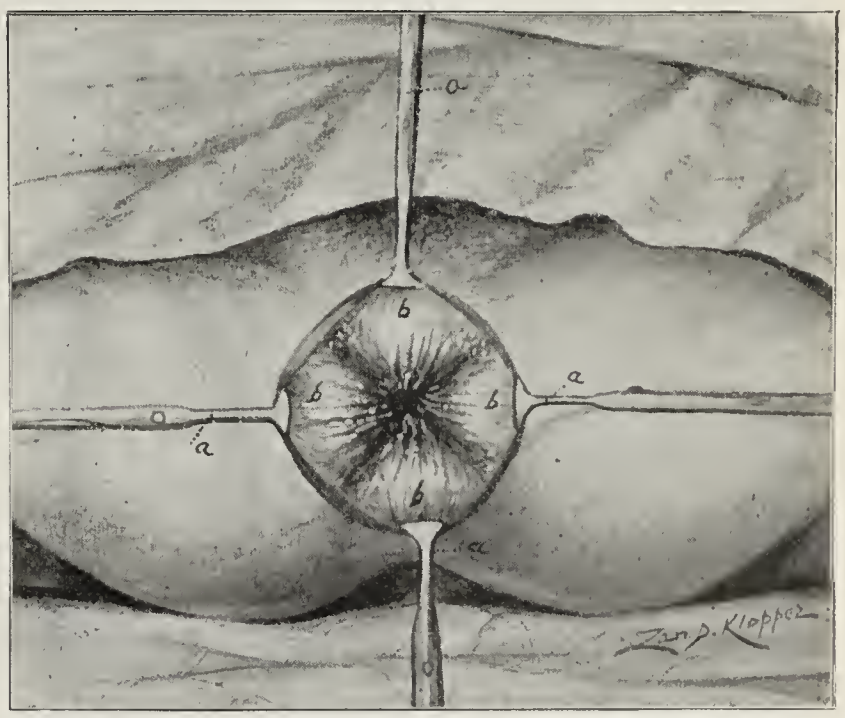


Fig. 4.—Diagrammatic; illustrating the application of the T forceps (*a*), to the muco-cutaneous junction and the exposure of the hemorrhoids (*b*).

treated in like manner. A stream of hot sterilized saline solution—115 to 125 F.—flows over the field continuously during the operation. Any spurting vessels are caught with a pair of forceps and thoroughly twisted. Should this fail to control the hemorrhage, throw a ligature around the vessel and ligate it; so far I have not found this necessary.

The T forceps are then removed and all external tumors and tabs of skin cut off with a pair of straight scissors, care being taken not to make an incision in the

muco-cutaneous junction, when it can be avoided, as this is the most sensitive point around the anus. This same precaution should also be observed when removing the internal tumors. The field is then dusted with some antiseptic powder and a rubber-covered tampon introdueed through a bivalve speculum.

The tampon is allowed to protrude about 1.5 inches beyond the anal orifice. Gauze is carefully wrapped around the protruding portion and packed close to the anus. The anchoring string of the tampon is wrapped around a piece of gauze held close to one side of the tube, and woven in with the other dressings, so as to prevent the tampon's slipping into or out of the rectum. Over this is placed gauze, cotton and a T bandage which is made quite taut. The patient is then placed in bed.



Figure 5.

By operating in this manner there are no tender and obstructive stumps to slough, nor nerves caught and squeezed, producing most excruciating pain, as there are when the ligature method is used; neither are the nerves and tissues painfully burned, as when the clamp and cautery are employed. In lieu of this, a fibrinous exudate is deposited over the operated field, which exudate is neither destroyed nor disturbed upon removal of the dressings. Moreover, the danger of stricture is obviated, as the normal caliber of the bowel is left practically covered with mucous membrane. Neither is the anal orifice contracted, as it necessarily is after either of the above operations.

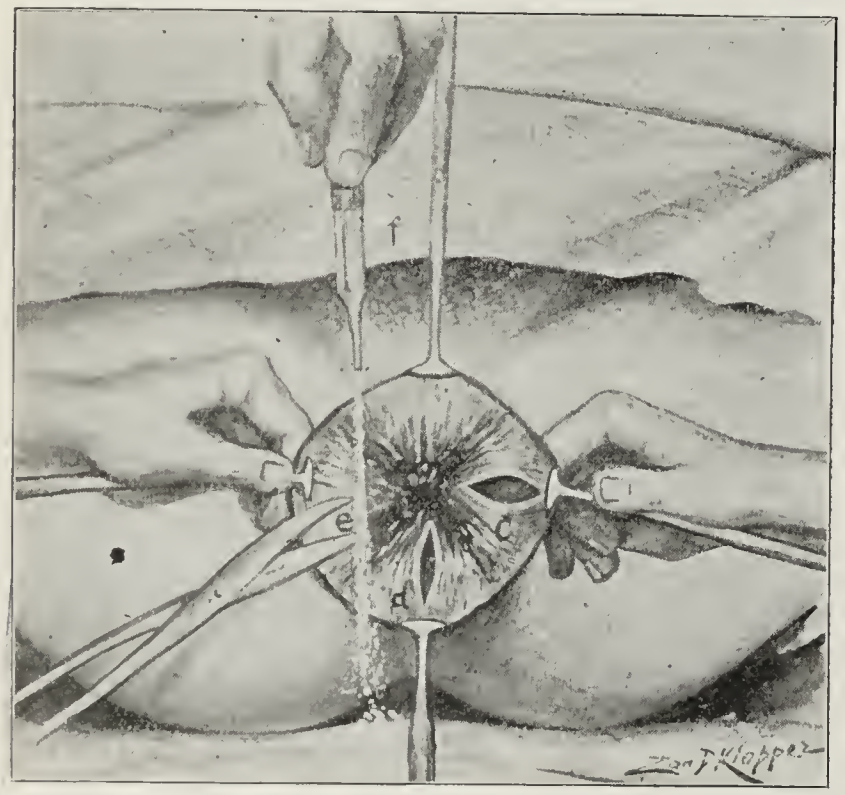


Fig. 6.—Diagrammatic: illustrating method of operating. (*e*) Shows the removal of an ellipse from the apex of the hemorrhoid: (*f*) hot saline solution flowing over the field of operation.

At the end of forty-eight hours the patient is given a cathartic and the tampon removed. Removing it is easy and painless. The movement of the bowels is also painless, and there is, as a rule, little or no bleeding.

From this time on until convalescenee is well established, the parts should be washed or irrigated twiee a day with an antiseptic solution, and dusted with some antiseptie powder. After the bowels have moved, the patient is instructed to keep them soft for two or three weeks. For this purpose Apenta water is very palatable and effective. Should the patient eomplain of pain or an aehing sensation, a hot sitz bath of twenty minutes' duration is given. As a detergent, small pieces of wet cotton or cottonoid are used. Paper and other hard and rough substanees are interdicted.

I prefer the rubber dressing to the gauze and other porous materials because: 1. It is neater. 2. Its removal is painless. 3. As the tender granulation sprouts can not penetrate it, as they do the gauze and other porous dressings, they are not broken off during its removal, neither is the fibrinous exudate disturbed. Henee, the healing process is greatly enhanced. 4. Another advantage, and one of no little moment, is that there is but little or no pain during the first and subsequent movement of the bowels.

This method of procedure, which I have now employed in 138 cases, in 29 of which loeal anesthesia was used, has been by far more satisfactory than any method previously used. It is very quickly and easily performed. Patients suffer little or no pain, and they are out of bed in a week and often in less time.

As evidence of the advantages of this method of operating over that of any other of which I have knowledge, I will briefly append a few cases.

CASE 1.—Dr. P. had large internal and interno-external hemorrhoids. I operated on him Wednesday, February 19, at the Chicago Hospital. The following Wednesday he came into my office and was examined by Dr. J. M. Mathews, of Louisville, Ky., who spoke very flatteringly of the result. On this day, which was just one week after the operation, besides attending to his regular practice he walked five miles.

CASE 2.—Dr. G., of Montana. I operated on him for large internal hemorrhoids at the Chicago Policlinic Hospital, on Wednesday, March 11. On the following Monday he resumed his work at the Policlinic and on Wednesday, just one week after the operation, he assisted me in operating on Dr. R.'s wife for the same trouble.

CASE 3.—Mrs. R. She is the patient referred to in Case 2. I operated on her March 18, and she was up on the fifth day attending to her household duties.

CASE 4.—Col. H., of Pittsburg. Very large external and internal hemorrhoids. I operated on him at the Passavant Memorial Hospital on March 4. Two of the internal tumors were so large that I made two elliptical incisions in each. He left the hospital at the end of one week.

CASE 5.—Mrs. H. had been operated on for hemorrhoids three years ago by one of our leading surgeons with the ligature method. They returned. I operated on her on Monday, March 4. Her husband, who is a physician, removed the dressings at the end of 48 hours. I saw her on the following Friday, the fourth day after the operation, and she was up.

CASE 6.—Mrs. P., of Caldwell, Kansas, weighed 235 pounds. She had very large internal and small external hemorrhoids. I operated on her at the Passavant Memorial Hospital, March 25, Dr. D. H. Galloway administering the anesthetic. Only eight minutes were consumed in putting her to sleep and completing the operation. She left the hospital and returned home at the end of one week.

CASE 7.—Mr. L., of Canada. I operated on him at the Chicago Policlinic Hospital for internal hemorrhoids, March 27. He was up and left the hospital before the end of the week.

CASE 8.—Dr. C., of Galesburg, Ill., was operated on Friday, May 3, at the Chicago Policlinic Hospital. He was up on the following Tuesday, the fourth day after the operation, attending the clinics and went home before the end of the first week.

Were it necessary I could cite case after ease fully demonstrating the advantages of this method of operating. The photo-micrographs were made by Dr. Carl Theodor Gramm, Chicago.

Columbus Memorial Building.

ANATOMICAL TREATMENT OF FRACTURES OF THE FEMORAL NECK.*

C. E. RUTH, M.D.
KEOKUK, IOWA.

In the Association JOURNAL of August 28, 1899, I published a report of 17 cases of intracapsular fracture of the neck of the femur treated according to the method advocated and practiced first by Prof. T. J. Maxwell thirty years ago. It is what I have seen fit to denominate the anatomical method, and is the only method, to my knowledge, that entirely neutralizes the displacing tendencies of muscular action and weight.

Of the 17 cases reported 5 recovered with no discoverable shortening whatever on careful and repeated measurements, 7 gave one-half to three-fourths inch shortening, 3 with one inch shortening, and 2 cases with useless flail-like limbs in which the treatment was abandoned after a few days of trial for lack of co-operation on the part of patient and friends. One death occurred from complications after union had been secured.



Fig. 1.—Muscle pushing itself or other soft parts between the fragments.

Fourteen cases, ranging in age from 25 to 86 years, have obtained union with useful limbs, in no case exceeding one inch of shortening. Union was therefore secured without perceptible shortening in 35 per cent. of cases in which the treatment was continued with anything like regularity.

Slight eversion of the foot was noticed in one case, owing to the lateral pull being too slight and directed too nearly straight outward, instead of the heavy incline upward sufficient to control the tendency to eversion. In two cases of negative results in which treatment was abandoned after a few days, we have the usual outcome of non-treatment, while the amount of shortening obtained in the other cases is much less than the average of those treated by simple extension or other device.

Case 17 was 60 years of age, and so feeble that but little hope was entertained of saving her life; yet she recovered without shortening, and now walks without crutch or cane, without limp or halt. I am convinced that in my earlier cases I could have secured union with less shortening had I known better how much weight was required to overcome muscular action and weight displacement.

The notoriously bad results following fractures of the femoral neck makes apology for this paper unnecessary.

The following cases I wish to report and offer as additional evidence:

CASE 18.—Dr. D., aged 28, was thrown 15 feet from a cart in August, 1894, and sustained a fracture of the right femoral neck. Shortening existed of two inches with eversion and external rotation, treated with extension, counter and lateral extension four weeks. Result, union with one-half inch shortening. Walks without limp in any manner perceptible. Physician, C. A. Runyon, Elvaston, Ill.

CASE 19.—Mrs. Nancy M., aged 68 years, in 1892 sustained a fracture of the left femoral neck. No union was obtained. Two inches of shortening exists with a useless limb, treated by the old sand-bag method, and eight pounds of extension. In November, 1899, she fell and fractured the right femoral neck. Two and a half inch shortening was found on examination. She was treated by extension, counter and lateral extension, and recovered in six weeks with seven-eighths inch of shortening. Can bear weight on the limb and walk with crutches as well as before fracture of the right femur. The left leg still dangles, as it has for the past nine years. This patient would have been confined to the bed or chair the rest of her life had she been treated for the second fracture as she was for the first. Physician, C. A. Runyon, Elvaston, Ill.



Fig. 2.—Course and relations of psoas and iliacus to hip-joint, with thigh flexed at right angles to the trunk.

CASE 20.—Mrs. F., aged 88, sustained intracapsular fracture of the left femoral neck in 1894, and was treated by Dr. H. A. Kinnaman and reported by me in my former paper as Case No. 11. She recovered with a useful limb with one-half inch shortening. She fell Jan. 11, 1900, and sustained a fracture of the right femoral neck. Treatment was not begun for ten days, but was by extension, counter and lateral extension. The treatment was intermittent, owing to the patient being

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

intolerant of restraint. The result was union in four weeks with about one inch shortening. She died two months later of intercurrent malady, nature not determined. Physicians, Drs. Gray and C. E. Ruth.

Case 21.—Tim H., aged 80 years, habits intemperate. Fractured the left femoral neck by a fall on the sidewalk, Nov. 27, 1899. Treated as above. Union was obtained in five weeks; position and motion perfect; shortening one-half inch. Examined and measured leg, April 25, 1900. January, 1901, still well with good use of leg. Physicians, R. H. Fegers and C. E. Ruth.

Case 22.—Mrs. Obediah H., aged 70. Sustained a fracture of the right femoral neck from a fall in January, 1901. Eight days later I was called, and treatment was begun as in the above-mentioned cases. Union was obtained in four weeks without discoverable shortening.

Case 23.—Boy 10 years old fell twenty feet and sustained a fracture of the femoral neck. Treatment as in the former cases, with scarcely demonstrable shortening. Union was secured in four weeks. Physician, A. Ives.

The above physician has had two other cases, 73 and 86 years of age, in which union was secured, but death resulted from exhaustion or complications, and as I have not the histories, can furnish no farther report of them.

Case 24.—David B., aged 60 years, April 10, 1900, was thrown from an ore wagon in a runaway, and thrown down the mountain thirty or forty feet. Examination under chloroform revealed fracture of the femoral neck. Treatment as in the former cases for six weeks. Union was obtained with one-half inch of shortening. He has for several months been driving the ore wagon, and walks with very little limp. Occasionally complains of some pain in the hip in bad weather. Physician, C. M. Tinsman, Adin, Cal.

Case 25.—Mrs. Elizabeth F., aged 86, sustained fracture of the right femoral neck in January, 1900, with shortening, eversion and backward displacement of the trochanter major. Treated by Buck's counter and lateral extension. Union was obtained with no perceptible shortening. The fractured leg gives as good service as before the injury. Physician, Dr. F. A. S. Rebo, Alexandria, Mo., assisted by Dr. W. A. Rebo, of Canton, Mo.

The first indication in the treatment of all fractures is correct adjustment; second, immobilization; third, overcoming muscular action which would tend to disturb the normal relations. We should be careful to eliminate all our own errors before blaming Nature with our unsatisfactory results. In these cases there is no muscular effort or influence acting on the upper fragment. The position of the lower fragment will depend upon the position of the patient, the kind of retaining force, and his own muscularity; for muscular action is of more importance in determining results of fracture here than anywhere else in the body. This is due to the great number of powerful muscles passing over the fracture line to be inserted somewhere beyond, and which must exert a powerful displacing force.

The position, at least for a time, that must be taken by these cases is upon the back, and the displacement is known to be upward, backward and outward rotation, with all the internal displacement of the lower fragment which the muscular tissues will permit.

The pronounced tendency to eversion and external rotation is increased greatly by the external rotary power of the psoas and iliacus, which was neutral or else an internal rotator now must be a pronounced external rotator, because the insertion into the back and internal portion of the upper end of the femoral shaft and lesser trochanter throws the line of action internal to the point of resistance, whereas it was formerly external. The result is that we have the following muscles acting to produce the following results:

Those pulling nearly directly upward and tending to shorten the limb by over-riding the fragments, are the sartorius, rectus, gracilis, semi-tendinosus, semi-membranosus, long head of the biceps, vertical portion of the abductor magnus.

Those pulling very strongly inward as well as upward are the adductor magnus, except vertical portion; adductor longus, adductor brevis, pectineous, gluteus maximus, gluteus medius and gluteus minimus.

Those which pull almost directly inward and rotate outward are the pyriformis, obturator intermus, gemellus, superior and inferior, obturator externus, quadratus femoris, lower half of gluteus maximus.

Those which pull inward, upward and rotate inward, are the tensor vaginæ femoris and the anterior portions of the gluteus medius and minimus.



Fig. 3.—Fracture of neck of femur in Case 2. At 72 years of age, used 20 years afterwards. No perceptible shortening. Physician, Prof. T. J. Maxwell, Keokuk, Iowa.

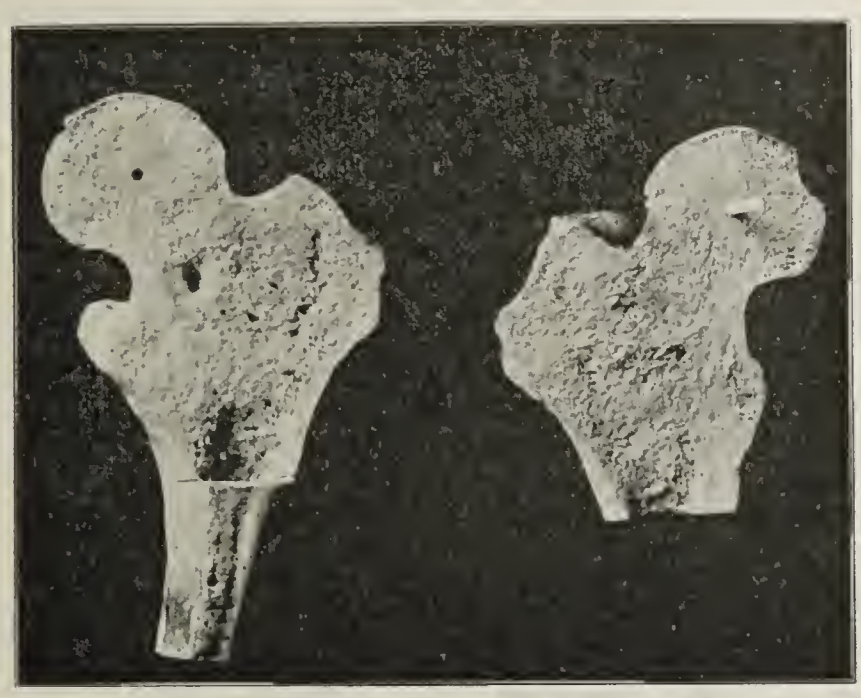
Those formerly internal rotators exerting a strong upward pull and now external rotators, often drawn directly between the fragments, and absolutely preventing approximation of the bony parts, psoas and iliacus (Fig. 1).

It will thus be seen that the external rotary force greatly predominates over the internal because of the conversion of internal rotary force of the psoas and the iliacus to external, besides the power of the limb's weight to accomplish the same ends. Lastly, we have the important displacing force weight tending to carry the upper end of the lower fragment behind the line it should occupy because its old attachment support is gone. Posterior displacement and external rotation are only limited by the Y ligament.

Adjustment of the fragments is best accomplished by flexing the thigh upon the abdomen to relax the psoas

and the iliacus, bringing them above the fracture line, thereby preventing them from being permanently caught between the fragments (Fig. 2).

This position also relaxes nearly all the external rotators or changes them into abductors; then make vertical traction on the shaft of the femur, which now stands at right angles to the trunk, while moderate evasion is being maintained; next abduct to the normal line and make extension in the long axis of the trunk, while an assistant makes traction one-half to two-thirds as strong outward, slightly upward and forward from the upper end of the femoral shaft. These manipulations should be made by firm, steady traction, not by jerks, which is to become continuous by Buck's extension with a weight of from ten to twenty pounds, according to the muscularity of the patient, with elevation of the foot of the bed enough to counteract the tendency of the patient to slide down to the foot. This means an elevation of from six to fifteen inches. A binder's board, or other splint material, should now be molded to the upper inner aspect of the thigh, over which a band of adhesive plaster four to six inches wide should pass outward, upward and sufficiently forward that the weight over the pulley



Figs. 4 and 5.—Vertical section of femoral neck fractured 20 years before. Case 2 of former report.

shall overcome the internal pull of all the rotators and adductors, and at the same time raise the lower fragment to its normal level and maintain it there. It must entirely overcome the tendency to external rotation.

The weight on this lateral pulley will be from five to fifteen pounds, according to requirements. The side of the bed corresponding to the injured side of the patient must be raised enough to prevent the individual from being drawn out of position toward the lateral pulley. Patients so treated will have absolutely no pain whatever after spasmodic muscular action is entirely overcome.

The claim has been persistently made that bony union can not be expected. In Case No. 2, treated by Dr. T. J. Maxwell in 1881, bony union was secured, as proven by postmortem specimen which I now present you (Figs. 3, 4, 5). This patient was 72 years of age when he sustained the fracture. He made a good recovery without perceptible shortening, and had good use of his leg for twenty years.

The specimen shows the line of union very distinctly. There was slight eversion, but not sufficient to cause the patient any marked annoyance. This case is sufficient to forever settle the question of Nature's ability to repair these injuries if given a chance.

The figures I herewith present will show the actions of the psoas and iliacus muscles in fractures of the femoral neck; and as some might question the correctness of the photographs, I will illustrate by models to which I have attached artificial muscles (Figs. 1, 2 and 6).

The only essential illustration difference between the action in life and on the model, however, is the anterior portion of the capsular ligament will probably be intact to its lower border and prevent the muscular tissue from falling between the fragments; but muscular action tends to force the capsule in such cases between



Fig. 6.—Shows normal position, relation and line of action of years before. Case 2 of former report.

the fragments, and thus interfere with union quite as much as though the muscular tissue itself occupied the space.

We do not come to you with a single case in the hands of a man of slight experience, but with 25 cases of unquestioned fracture of the femoral neck in the hands mostly of men of large experience. In 22 of these cases union was obtained; useful limbs were secured in persons ranging in age from 10 years to almost the extreme limits of old age, and yet the shortening was no more than one inch in any; and after the most careful measurements no shortening whatever was discoverable in six of the cases.

In one of the cases reported with one-half inch shortening, the physician in charge informed me that he could find no shortening, and that the patient walked without a particle of halt; but one-half inch shortening was claimed in the prosecution of a suit brought against his employers for damages. This man fell thirty feet when the fracture was produced. In some of my own cases I am certain that I did not use heavy enough weights, and in others the treatment was interrupted occasionally by having the weight removed to satisfy some meddlesome attendant, nurse or the patient.

The only failures to secure union were in two cases that absolutely refused to have the treatment carried out. I might cite you many cases of flail-like limbs from this cause, as can be done by most physicians of any considerable practice. Where little or no shortening took place, and the limb was functionally perfect, there can be no doubt that the union was bony.

Whatever may be the opinions in regard to repair of this bone, results that are almost perfect, and make the patient comfortable while repair is taking place, are certainly worthy of our attention, endorsement and most earnest efforts to establish, even though most of the patients are advanced in years. The usefulness of this plan of treatment is not alone limited to fractures of the femoral neck, but is equally applicable to the treatment of hip-joint disease with or without operation in cases confined indoors.

In some of these cases treatment was not begun until several days after the injury, and in some the treatment was interrupted occasionally for a short time. In no case was pain complained of after the first day, if weights were enough to prevent muscular spasmodic disturbance of the fragments.



Fig. 7.—Showing Buck's extension and lateral extension. Foot of limb is also raised to overcome tendency to displacement towards the bed raised; the side of the bed corresponding to the injured the lateral pulley.

By this plan of treatment the patient can be raised, if needs be, to the sitting or semi-sitting posture for the purpose of cleansing. Some of these cases had bedsores, and were lying in their own excrement and suffering severely when the treatment was begun. These were raised daily to the sitting posture, cleansed and the sores healed during the use of the extension treatment.

The patient can be easily handled in the use of the bedpan. The method is easy of application, and only fulfills the indications we require for all other solutions in continuity of bone, viz., securing coaptation of fragments without the possible intervention of the soft parts, overcomes all displacing tendencies of powerful muscular action instead of ignoring the action of more than one-half the muscles and displacing power of the limb's weight (Fig. 7).

The results prove that it is not necessary to allow most of the fractures of the femoral neck in the aged to produce cripples for the rest of their lives, or that they should suffer, except from the confinement, and that could be scarcely less by the plan of treatment proposed than to give the patient every possible liberty during the time required for procuring union. It also proves that the influence of the synovia is nil as a preventive of union. I do not wish to be considered as claiming that perfect results can be confidently expected in all, or in fact any of these and thereby invite prosecution for malpractice in every case of failure. What I do want, however, is to see the day when we will be able to lay aside prejudice and custom, if need be, and use the method that will give the best results. By this plan of treatment considerable freedom of movement can be allowed the upper part of the body as well as the opposite limb; so that the confinement is usually not irksome after the first few days.

DISCUSSION.

DR. C. E. THOMSON, Scranton, Pa.—My patient, an old man, 62 years of age, sustained a fracture in August, 1899. He was a miner by occupation, and the injury was caused by a fall of rock. No diagnosis was made at the time of accident. He was bedridden for three months; at that time he came under my care. A diagnosis of fracture of neck of femur was made and afterwards confirmed by *x*-ray photographs. The operation recommended by Gillette, of St. Paul, was proposed, accepted, and performed on Dec. 12, 1899. It consisted of a horseshoe incision around the trochanter major down to the periosteum. The flap being elevated, a second incision including periosteum and a section of bone (about one-third thickness of shaft) 2½ inches below trochanter was made, liberated with an osteotome, and turned up. This enabled us to get nearer the seat of injury. In this particular case the fracture was found to be comminuted. Several pieces of bone were removed. The fractured ends were then adjusted and a solid silver nail three-sixteenths of an inch in diameter and two and one-half inches long was driven through the neck and into the head of the femur, as the skiagraph shows. We were gratified to find that the nail held the fragments quite firmly together. The wound was closed with catgut suture and the entire leg and body encased in a plaster-of-paris spica, extending from the axilla to tip of toes. Patient had no elevation of temperature. The initial dressing was removed at the end of two weeks. At the end of five weeks the plaster-of-paris spica was removed and patient allowed to move about. He left the hospital on crutches and improvement continued. Seven months after operation he complained of pain, and a few weeks later a sinus appeared at seat of incision, and this was followed later by an accumulation of pus in the gluteal region, which was evacuated under cocain, but a slight sinus persisted. Improvement continued until last month (eighteen months after operation) which was the last time he was seen alive by us, when

he walked into the hospital without cane or crutch. He had 90 degrees of free and painless motion. Last Saturday night he retired as usual, and was found dead in his bed at 5 a. m. The coroner made a diagnosis of "heart trouble." I secured this specimen which is now being passed around. You will see, both by the specimen and the *x*-ray photographs, which



were taken directly on the plate, that the bony union is firm and complete.

DR. D. N. EISENDRATH, Chicago—I think we should discriminate between the different cases of fracture of the neck. The percentage of mortality is still very large and the reason for this is we do not recognize the importance of the fact of getting elderly patients up as soon after the fracture as possible. They die of bed-sores and hypostatic pneumonia; they are people with frail constitutions who can not stand confinement to bed, just as the last speaker showed us. The ideal treatment for these cases is in the use of the Thomas Ridlon hip-splint. It enables those people above the age of 60 and 65 to get up within twenty-four hours after the fracture. We confine these patients for 4 or 6 weeks in bed and then obtain no better results than obtained in ambulatory treatment.

DR. T. J. MAXWELL, Keokuk, Iowa—I had my first case of intracapsular fracture of femur in 1870. The case was a spare woman aged 52. I found the foot everted and leg shortened. I put her in a Day splint and made extension; she suffered pain continuously. At the end of a week there was flattening of the hip and I devised this plan or method that has been presented to you by Dr. Ruth. I put her under lateral extension and she recovered without shortening. Ten years afterwards I had another case—the bone that has been presented to you of an intracapsular fracture. However, this bone may not have been an intracapsular fracture. It might have been an impacted fracture, except for this: There were two inches of shortening, eversion of the foot and crepitation on extension and rotation. Now, the 25 cases presented to you ought to be evidence sufficient of the benefit; where there is no wearing, no pain after extension, the bed-pan can be used. This bone belonged to a man I treated 20 years ago. He was nearly 72 years old at the time of fracture. He had walked on it for twelve years.

DR. W. W. GRANT, Denver—This specimen is a most important one, if the man did have an intracapusular, impacted or non-impacted fracture. In examining it I am forced to express a grave doubt of its having existed. The cancellous tissue of the neck and the compact substance of the under or lower surface do not reveal any evidence of disease or past lesion whatever. The upper surface of the neck, near the trochanter shows a few osteophytes—evidence of old inflammation.

I call attention to the fact that the neck of this bone, from a man 90 years old, is of normal length. If there was an impacted fracture, how could you explain it? If, as stated, there was immediate shortening of two inches or more, with loud crepitus, it would be equally difficult, if not impossible of satisfactory explanation. Fracture of the rim of the acetabulum,



Army Medical Museum.
Rarifying osteitis with interstitial absorption.

with dislocation, would, with the extension treatment used, better explain the condition past and present.

There is a specimen in the Army Medical Museum at Washington which involved the very question at issue. I have examined it repeatedly and carefully. It looks something like this specimen, showing more evidence of the influence of pressure in walking. The neck is shorter and the angle more acute. The man, an old soldier, was treated for a fracture of the neck many years before his death. Dr. B. E. Frayer, a retired army surgeon, now of Kansas City, made the postmortem and sent the specimen to the surgeon-general as an



Army Medical Museum.
Rarifying osteitis. Front view.

illustration of bony union. A Philadelphia surgeon, visiting Washington, examined it. The specimen was sawed lengthwise and disclosed satisfactory evidence that no fracture had existed. It was regarded as evidence of interstitial absorption from traumatism, notwithstanding the doubt entertained by some of such a condition.

Yet, there seems no doubt of a dry form of inflammation, with fatty degeneration, and change of angle of neck, the latter produced or promoted by walking and absorption. Such a condition, with or without injury, seems more rational than the conclusion that the specimen here presented—perfect in coaptation of fragments, bony union and outline—was a complete fracture of the neck.

The condition involves deeply not alone the question of treatment and the interest of the patient, but in a medicolegal sense, the welfare and reputation of the surgeon.

CHAIRMAN—How old and how many years between the fracture, in the Washington specimen, and death of the patient?

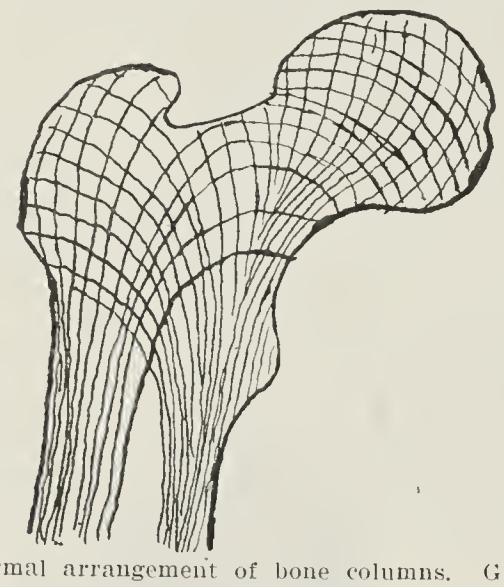
DR. GRANT—He was about 44 at time of injury and he died 10 to 20 years afterwards, I believe.

DR. MAXWELL—How can he account for two inches of shortening with crepitation on extension and rotation.

DR. GRANT—You might have it in the acetabulum without fracture of the neck of the bone and that extension would reduce it and you would have no shortening. I have often seen that crepitation mistaken for fracture of the neck of the bone.

DR. A. C. BERNAYS, St. Louis—When I saw that specimen at the Tri-State meeting four months ago I was skeptical; I thought it was not the bone of a man 90 years old, or a woman. I was inclined to doubt it as has been done by others this morning. Dr. Maxwell showed me the specimen at Keokuk. The thing impressed me so much that I got the superintendent of the poorhouse to let me have the bones of two of the oldest men that died during the month. They were over 80 years of age; I would not state now the exact age. I saw bones there just as solid in texture and as firm as that bone is. I became convinced that the bone is the bone of a man over 90 years of age. I simply want to bring that point out, because it is no more than just to the gentleman who presented it and to Dr. Maxwell.

DR. C. E. RUTH, Keokuk—I thought that this specimen might be questioned, and referred to that fact in my paper



Normal arrangement of bone columns. Gray.

because the result is so nearly perfect. If this fracture had occurred in the hands of a man of slight experience and ability, I might question the diagnosis of a fracture of the neck of the femur with a shortening of two inches and complete eversion of the foot; but Dr. T. J. Maxwell, a man of unquestioned ability and enormous experience, had this case, and now in regard to this specimen twenty years' time has elapsed. The man was vigorous and muscular; that shows by the prominence of the lines, tuberosities and tubercles. Again, I said the line of solution of continuity shows. It does show, but not as pronouncedly as in a case of marked displacement of the fragments; consequently, there is no large callus to mark the line of solution of continuity. I said there was eversion of the foot following the injury until the patient's death. Can you question that fact when I can barely pass this lead pencil between the great trochanter and the head of the femur? Did you ever see a femoral head in a well-developed individual as close to the great trochanter as that in a bone not previously broken? I never did, and I have examined a considerable number. This man walked with eversion of the foot from the time of his recovery from the fracture until his death, when it was removed postmortem. The only point where you can see evidence of solution of continuity externally is on this roughened line on the anterior surface of the neck nearer to the head than to the intertrochanteric line. Did any of you ever see so prominent a roughened line on the front side of the femoral neck between the intertrochanteric line and margin of the cartilage in a femoral neck not previously broken? Not by any means. Why? Because there is no capsule or other tissue requiring a roughened surface for attachment to the anterior part of the femoral neck. Why do we have evidence of solution of continuity on the anterior surface indicated in this roughened line if it does not show on the posterior surface? The reason is, we had an eversion of the foot and there was not so close an approximation of the fragments on the anterior surface as there was on the backside, and then the fracture line ran so close to the base of the neck at the great trochanter that external union is not discoverable. Many of you have seen a union of bone not discoverable by examination of the surface when adjustment was perfect. We have made a longitudinal section to show the condition of the bone inside. You can see the position from this point to behind the center of the bone, the dense compact tissue extending along the line of fracture in a curved direction [illustrating diagrammatically]. Let this represent the head, the great trochanter and the lesser trochanter. Now, here we have the solution of continuity running across about this line [indicating] as we have indicated by the roughened line on the front side. When we section the bone we find that the line does not run through all the thickness in the same position or course. We find here dense, compact tissue extending from the inner side just above the lesser trochanter beyond the center of the neck, where we have the more pronounced projection of compact tissue (callus). This is not the only specimen we may obtain. We



Heavy shading indicates position of compact tissue from callus, broken lines between indicate cancellous tissue devoid of columns; other lines practically normal, save neck has been drawn much too long.

have had twenty-five cases in which the diagnosis was beyond question. There is one case reported by a physician where the fractured leg has a better function than the other, and this patient was 86 years old at the time of the accident and there is no perceptible shortening.

In regard to pinning of the bones, as was mentioned by Dr. Thomson, this beautiful specimen shows bony union. A skiagraph has been taken and it shows three-fourths inch of shortening. This plan was all right if it was necessary. I do not say it is not necessary in every case; it has not been in my experience. It is certainly a good method if we have no better. I do not say we should never use it, but when we can avoid an operation in these cases we should do it, and not add an additional burden to an already serious condition. Unquestionably, fracture of the femoral neck in an aged person is serious. If we can avoid operation complications it is an important matter, and should always be done except in cases of delayed or non-union; then the pinning is certainly good surgery. I have not much experience with the Thomas splint. It would be all right if it held the femur out and forward as well as down. It makes no provision whatever for the tendency of the upper end of the lower fragment to drop behind the normal line when the individual lies on the back, as he will part of the time. It makes no attempt whatever to bring the femur out in its normal position. The trouble has been, in the treatment of these fractures, that we make our extension directly downward, instead of in the line of the neck of

the femur. You would not think of applying this principle of opposing muscular action to any other part of the body as here. We seem to forget that some of the muscles pull inward, while others pull directly upward; so it is absolutely necessary that we apply two forces, and that we overcome the muscular action so that the resultant of the two applied forces shall be in the direction of the neck of the femur and give the result of one acting in the long axis of the body, and the other in an outward direction.

HERPES ZOSTER OPHTHALMICUS WITH BRIEF REPORT OF FIVE CASES.*

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DENVER, COLO.

Herpes zoster ophthalmicus has been well known for the past third of a century. It is an acute inflammatory affection appearing in the course of the first and second branches of the fifth nerve, and is almost invariably unilateral. It occurs in elevated groups of firm oval or circular vesicles, on an edematous base, at the terminal points of the nerve filaments. The groups of vesicles do not all appear at once and their area is limited to the median line, and to filaments of the branches involved in the inflammation.

Herpes zoster ophthalmicus is a neuritis in which the ganglion of Gasser is involved, as has been proven by De Weeker. Charcot and others have demonstrated that in herpes zoster the ganglion of the posterior root of the spinal nerve is inflamed.

The disease is characterized by severe pain, which usually precedes the eruption by a period varying from hours to several days. The pain is generally sharp and shooting, and interferes with sleep and labor, but sometimes the pain is dull and causes less disturbance.

In the ophthalmic type, the first branch is the one most frequently involved, which includes the upper lid, forehead as far as the scalp, and also the nose. The second branch includes the lower lid, superior maxillary region, upper lip, and over the malar bone.

When the nasal branches are involved, the cornea is very likely to suffer, though exceptions to this rule have been observed.

The error of diagnosing herpes zoster ophthalmicus as facial erysipelas has frequently been made. Some of the typical features of the two diseases are as follows:

HERPES ZOSTER OPHTHALMICUS.	ACUTE FACIAL ERYSIPELAS.
1. It develops as a bright red inflammation limited to one side of the face, and appears in clusters of firm vesicles on an edematous base, that does not spread when once developed.	1. It develops as a purplish-red inflammation that spreads over all parts, without regard to the median line; the vesicles, when they appear, are in large blebs.
2. The eruption is preceded for hours or days by severe neuralgic pains, and as a rule no fever or rigors mark the disease.	2. It is ushered in by a chill, and marked elevation of temperature, also a burning sensation in the inflamed tissues. A dull headache may be present.
3. The inflammation being of a neurotic origin, it is limited to tissues where the nerve filaments terminate.	3. The inflammation being due to infection by the streptococcus erysipelatis, spreads through the lymph channels, and when deep invades the lymphatic glands.
4. The inflamed points are exceedingly painful to the touch.	4. The inflamed tissue is moderately tender to the touch.
5. Groups of punched-out scars are invariably left in the wake of the vesicles and remain through life.	5. Seldom is there a trace left after the exfoliation of the skin, though sometimes a thickening of the cellular tissue remains.

The following cases of herpes zoster ophthalmicus have come under my observation:

Case 1.—On Jan. 8, 1891, I saw Mrs. H. C. K., in consultation with Dr. C. Jane Vincent of Alleghany City. Some seventeen days previous to my visit, the patient had developed herpes zoster ophthalmicus of the left frontal and temporal regions. The patient had suffered severe pain in the head and the left eye. The vision was reduced to counting fingers at two feet. She had considerable congestion of the eyeball, and a small central ulcer of the cornea. The iris was free and responded to light and accommodation. One week after my first visit the ocular congestion had subsided, the corneal ulcer had healed and vision so improved that she could see the features of a face a few feet from the eye. No record was made of any vesicles on the nose.

Case 2.—Rev. J. S. T. M., aged 65, consulted me May 5, 1891. He stated that one month previously his left eye had been injured by a bit of steel. His family physician removed the foreign body three days after the accident. He then developed what was diagnosed facial erysipelas, the disease being confined to the left side of the forehead and nose with involvement of the left eye. He gave a history of having had three corneal ulcers and iritis of the left eye. Upon examination I found a moderately congested eyeball and a slight opacity of the cornea marking the location of the ulcers. There were also several pigment deposits on the anterior capsule of the lens, marking the points where the iris had been adherent. On the forehead, the supra-orbital ridge and the nose were the scars where vesicles had existed. Vision of the right eye was 6/12, and that of the left eye 6/18. The patient remained under my care for about a month, during which time his vision improved and the congestion of the eyeball in great part disappeared.

Case 3.—In February, 1896, I was called by Dr. J. W. Higgins to see Mrs. J. W. P. The patient was a delicate woman of 56 years of age. She was suffering with intense neuralgic pains in the left side of the head and face. Her face presented the typical appearance of an aggravated form of herpes zoster ophthalmicus, involving the first and second branches of the trigeminus. The area involved was of a bright-red color with large groups of vesicles on the forehead, nose and cheek. The left eye was moderately congested and painful, but no involvement of the cornea existed. The neuralgic pains were excruciating. Two weeks after I saw the patient she became insane and was taken to an asylum, where she remained for four years, finally dying without regaining her mental balance. Upon inquiry of her husband I learned that she had manifested some evidence of mental disturbance for a month previous to the development of the herpes zoster.

Case 4.—E. A. P., aged 36, a nurse, was referred to me Nov. 30, 1899, by Dr. H. T. Pershing, on account of having some irritation of the left eye. Patient came to Colorado eight weeks previously, owing to some pulmonary disease. Two weeks after reaching Denver he was taken with chills, having three or four daily for a week, with a temperature of 100 to 104. On Oct. 24,

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* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

1899, the left side of his face became of a bright-red color and somewhat swollen. The inflammation extended from the scalp down the median line, including the left half of the upper lip and across the cheek and temple. Patient applied to a hospital and was refused admittance, on the ground that his facial disease was believed to be contagious, but was referred to another hospital where he was admitted as a case of facial erysipelas and there he remained four weeks. Three days after, the face became inflamed, clusters of clear firm vesicles formed on the inflamed area, those on the left side of the nose being as large as the little-finger nail. Crusts appeared later and those on his nose became quite dark in color and the patient states that the crusts were removed about the ninth day after the vesicles appeared, leaving painful ulcers. For the next twenty-four hours he experienced an intense itching and burning sensation over the affected area, and the following day a new crop



Herpes zoster ophthalmicus.

of vesicles appeared and the left eye became very painful, the lids swollen, and of a purplish hue. Some twelve hours later most of the swelling subsided and the color changed to a bright red. The eye remained painful and he was unable to bear the light. Upon examination (five weeks after the first appearance of the disease) vision of the right eye 6/6, left eye 6/30. Marked photophobia existed in the left eye. The lids were somewhat swollen, of a reddish hue and tender to the touch. Partial anesthesia of the upper lid existed. Conjunctiva was slightly congested, the cornea clear and partially anesthetic. Pupil was moderately dilated from atropin. There was hyperemia of the retina, otherwise no fundus changes perceptible. The left side of the nose showed loss of tissue and considerable cicatricial contraction, not unlike the appearance left by smallpox or a burn. In the scalp near the forehead on the line of the parting of the hair was a cluster of depressions marking the seat of a group of ulcers. The depressions on the temple were not very plainly outlined. One clean-cut depression existed on the cheek about an inch to the left of the lower half of the nose. The skin of the left temple was anesthetic on a line with the brow, and partial anesthesia existed over the rest of the temple and forehead to the median line and back into the scalp.

Some error of refraction was manifest in left eye, the correction of which brought the vision up to 6/12. Patient remained under my care for several weeks, during which time the neuralgic pains diminished, the photophobia became less and a slight improvement in the anesthetic areas occurred.

CASE 5.—Miss A., aged 22, came under my notice in November, 1900, through the courtesy of Dr. J. M. Blaine, under whose care the patient was at that time. She was passing through a moderate attack of herpes zoster ophthalmicus of the left side of her face, involving the first two branches of the fifth nerve. Three group of vesicles were present, one on the forehead, one on the temple and one on the lower eyelid. The eye was free from irritation. The patient had a great deal of neuralgic pain for several days previous to the developing of the eruption. After the disease had been properly diagnosed and the patient was improving she met another physician who told her she had facial erysipelas.

Remarks:—The first case was typical in its course and sequelæ. The disease was correctly diagnosed and the indications met by the attending physician. The second case, an intelligent gentleman, had been under the care of an eye surgeon of repute, and yet the disease had been diagnosed facial erysipelas. The sequelæ were typical of herpes zoster ophthalmicus, in the scars on the face and maculæ of the cornea, the latter being with the rule, that is, when the nasal branches are implicated. The third case presented an interesting feature in that the patient manifested some mental disturbance a month previous to the development of the herpes, and two weeks afterwards became so unbalanced mentally as to require close confinement, in which she was kept until she died. However, I am led to believe that the herpes zoster was merely a coincident in the mental disease and not a part of the central nervous affection. The fourth case, a nurse, spent a month in a hospital under the care of a very successful practitioner, and yet the true nature of the disease was overlooked. The affection was an exception to the rule, in that the cornea escaped ulceration, while the inflammation of the nose was very severe, bordering onto the gangrenous type. The fifth case had a moderate attack, neither the nose or the eyeball being involved.

Two of the five cases were males. Four were left-sided. Three of the five were diagnosed cases of facial erysipelas. Two had corneal ulcers. Two had severe nasal involvement without implication of the cornea.

The Medical Balloon-Ascents.—Four balloons were placed at the disposal of certain physicians of Paris who wished to study the effect of high altitudes on the blood, etc., free from the fatigue of mountain climbing. Drs. Tissot, Hallion, Raymond, Jolly and Henri were among those who made the ascent. The tests were made on large dogs or on the physicians themselves. The results harmonized in ever case and showed a marked and rapid increase in the number of red corpuscles in the blood when an altitude of about 9000 feet was reached, but this increase disappeared during the descent. Dr. Gaule had previously reported similar tests on himself, his wife and children, with the same result, the temporary augmentation of the red corpuscles at the high altitudes. The physicians communicated their experiences to the Society of Biology.

CORNEAL LESIONS IN ACQUIRED SYPHILIS.*

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CHICAGO.

The comparative infrequency of lesions of the cornea as manifestations or results of acquired syphilis, and the opinion of many ophthalmologists, among others Mooren, Panas and Perrin (according to Denarié) that corneal lesions are not caused by acquired syphilis, have prompted me to present this subject for the consideration of the Section on Ophthalmology, and to report some cases that have come under my own observation in which the relation of cause and effect seems to be clear.

The relation of inherited syphilis to interstitial keratitis seems to be well established, and the etiology of the disease can usually be fairly demonstrated in a large majority of the cases. But in a considerable number of cases of deep-seated inflammation of the cornea which simulate in many respects the interstitial keratitis of inherited syphilis, no confirmatory evidence of such taint can be shown; and it is in such cases that careful examination should be made for the history and signs of acquired syphilis.

Let me relate briefly the histories of three cases of deep-seated corneal disease in which syphilis seemed to be clearly the cause; in the second case the lesion was very similar to that seen in an ordinary case of interstitial keratitis; in the others the similarity was not very close.

Case 1.—James B., colored, aged 29, came to my clinic at the Illinois Charitable Eye and Ear Infirmary, October, 1895, with trouble of right eye. There was considerable circumcorneal injection; some lachrymation and photophobia. He stated that the inflammation of the eye began about four weeks previously with sensitiveness to light and watering, and that soon after a spot was noticed on the upper part of the clear portion of the eye. It was not improved by the treatment that had been given by some physician.

Examination showed a triangular-shaped area of infiltration in the cornea the apex of which approached nearly to the center of the cornea, and involved a good part of the upper inner quadrant and which at first glance resembled a sclerotizing keratitis seeming to be almost continuous with the sclerotic, that is, there was no clear corneal space at the margin. Closer inspection with a Coddington lens, however, showed this opacity was deep seated, was more dense at the periphery and seemed to be made up of numerous clusters or foci of infiltration which were thicker than the intervening spaces. The corneal epithelium did not appear steamy, and there was an absence of vessels in the opaque patch. The iris responded rather sluggishly to light, but the pupil dilated evenly under atropin. The ciliary injection was more intense near the site of the corneal lesion. The left eye was normal. The patient stated that eleven months previously he had a hard chancre on the penis which got well in about two weeks. He also had a swelling in the groins, not particularly painful. Some two weeks later he had blotches on his face, body and arms, and also sore mouth and sore throat, and rheumatic pains at night. For this infection he had been under treatment at some clinic. At the time I saw him there was quite a number of nodules on the face and arms, the largest about the size of a pea; small patches of deeper pigmentation on the face, breast and arms, which he described as the remains of the old rash. The superficial glands of the body were enlarged; the epitrochlears being distinctly perceptible. The treatment embraced atropin, hot applications, protection of the eye from light and potassium iodid 20 grains t. i. d. For the first week or ten days the case did not seem to improve, but the eye became more irritable and the injection more intense. Then a rapid improvement began, the dose of the iodid being increased to 30 grains t. i. d. and the opacity began to clear up. At the end of four weeks the injection had entirely disappeared and the cornea was nearly of its normal transparency. The magnifying glass still showed some faint areas of cloudiness. The patient had good vision. He passed from my observation and I had no opportunity of seeing him later.

Case 2.—Mrs. J., aged 34, well developed and nourished, and with good family history, was seen by me Jan. 20, 1897. She was married at the age of 24, and had two healthy children, which at the time I first saw her were living, aged 9 and 7 years. Some two years after the birth of her second child, she suffered from rheumatic pains, says her hair fell out a great deal, and that she had a peculiar rash on her face and body, together with sore throat. A little later she aborted at the third month of pregnancy, but still later carried a child nearly to time, but it was born dead. She has not been pregnant since.

About two weeks previous to her first visit to me the left eye became irritable, sensitive to the light and watered somewhat. She thought she had taken cold in it, and used some simple remedies, thinking it would promptly recover. When I first saw her I found the following condition: There was well-marked circumcorneal injection, more intense at the upper part of the cornea. Deep in the substance of the cornea were seen numbers of rather dense grayish spots of opacity between which the corneal structure seemed to be more or less hazy. These spots varied from 1 to 2 mm. in diameter, but were not distinctly outlined, their margins merging imperceptibly into the general haze. The corneal loop showed them to be infiltrations in the deeper layers of the cornea. The epithelium did not seem to be disturbed, and there was none of the steaminess of the cornea that is usually seen in interstitial keratitis. As is usually the case in that disease, the periphery of the cornea was first affected, the central portion being quite clear. The pupil reaction in both eyes was good, and there was no evidence or previous history of iritis. The right eye was normal. R. V. =20/20. L. V. = 20/40; with +0.50 Sph. slight improvement. Ophthalmoscopic examination was negative.

The posterior cervical glands were enlarged and indurated. Treatment was instituted at once, the patient being instructed to use a drop or two of 1 per cent. atropin solution in the affected eye three times daily and to protect the eye from light. She was given also 20 grains of potassium iodid three times daily. The opacity became more dense and invaded the central portion of the cornea so that the vision of the left became reduced to 10/200. Unlike an ordinary case of interstitial keratitis, there was very little vascularization of the cornea, almost none, although a few very minute vessels could be seen pushing in at the periphery. The right eye was not in the least affected. After a few weeks of the

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treatment the condition began to mend, the opacity growing lighter at the margins of the cornea and clearing away toward the center. At the end of two months after she was first seen, the cornea had become quite clear, with only a few indistinct faint nebulæ, seen only by oblique illumination in the upper part of the cornea. The vision of the eye had improved to 20/30.

Case 3.—A man, aged 26 years, was seen by me in November, 1900, in my clinic at the Illinois Eye and Ear Infirmary. He was complaining of some discomfort in the right eye, the vision of which was lowered to 20/60. There was considerable ciliary injection. Five or six yellowish-gray spots of opacity varying in size from 1 to 1.5 mm. were seen in the cornea not far from the upper and outer limbus. The magnifying glass showed these to be infiltrates into the deeper layers of the cornea. Over the two spots nearest the center of the cornea, the epithelium was raised so as to form a distinct little vesicle, the contents of which seemed to be perfectly clear and colorless, when viewed with a lens from the side, although it rested on the yellowish-gray spot of infiltrate in the deeper cornea. The left cornea was normal. This patient stated that he had been infected with syphilis about fifteen months previously, and gave a distinct history of the disease. About five months after the initial lesion he said that he had a severe and painful inflammation of the right eye that had been pronounced iritis. At the time he was first seen the right pupil was irregular, and the use of atropin showed several old posterior synechiæ and pigment spots on the anterior capsule of the lens.

He was immediately given active antisyphilitic treatment and atropin locally, with the result that the opacities disappeared rapidly, and were entirely gone at the end of three weeks. The little vesicles disappeared without ulceration, and no trace of them or of the underlying infiltrations was left. The vision improved to 20/40.

I was inclined to regard this case as similar to the keratitis punctata described by Mauthner. In all of these cases the lesion affected only one eye, and this may be said to be the rule, whereas the keratitis from inherited syphilis is usually symmetrical.

As to the frequency of acquired syphilis of the cornea there is considerable variance of opinion. Hutchinson, in his work on "Syphilis," says: "Keratitis and complete deafness in the acquired disease are almost equally rare, but when they do occur it is in the secondary period."

Roosa, in an editorial interpolation in Schmidt-Rimpler's "Ophthalmology and Ophthalmoscopy," says: "As to acquired syphilis, I think it is very rarely, if ever, the cause of diffuse keratitis." According to Denarié,[1] Mooren, Panas, Perrin and many other French authors deny that acquired syphilis can influence the cornea. In the same article he reports a case of indubitable keratitis interstitialis caused by acquired syphilis, and also a case of gumma of the cornea, relieved by antisyphilitic treatment. The patient died of cerebral gumma, as shown by the autopsy.

Pulcharia Jakolewa,[2] analyzing 63 cases of diffuse interstitial keratitis, found that 10 per cent. of them were in patients older than 21 years. Two cases were distinctly due to acquired syphilis. Werndly,[3] among 15,000 patients, observed 42 cases of keratitis interstitialis, only nine cases of which were unilateral. The average age was 13½ years, the youngest being three months, the oldest 30 years. Acquired syphilis was proved in almost 50 per cent. of the cases. Haltenhoff[4] cites 72 private cases of interstitial keratitis and concludes that more than half were due to hereditary syphilis. Five were due to the acquired disease. The disease in question is certainly a rather rare one, but it may be as Valude says, the small number of cases on record is due to the neglect of observers to examine young patients for the signs of acquired syphilis.

While, naturally, most of the cases occur in individuals in adult life, it might be found in children who had been infected accidentally, and about whom there might be no suspicion of acquired trouble. Most observers who have described cases of keratitis from acquired syphilis have found it develop as a late secondary or as a tertiary manifestation.

Lawford[5] describes one case in which keratitis developed four and a half months after the primary lesion, and another in which eleven months elapsed between the primary sore and the keratitis.

Trousseau[6] has observed 11 such cases, 8 of whom were females, 3 males. The keratitis occurred in the second or third year after the infection, and in most of them only one eye was affected. Hutchinson records a severe case in which the keratitis was simultaneous with the secondary eruption and sore throat.

Lang[7] cites the case of a man who developed interstitial keratitis 12 years after infection. Trousseau and Trantas[8] believe that keratitis from acquired syphilis is not so rare as is commonly supposed, and report a case that occurred thirteen years after the primary disease.

The clinical features of acquired syphilitic keratitis vary. Different writers have described cases of diffuse interstitial keratitis differing in no essential particulars from the lesion as seen in inherited syphilis, except that it is more frequently unilateral, and the degree of vascularization is much less. Iritis may or may not be associated with this form.

More distinctive, however, is the form in which the lesion develops at some point of the corneal circumference as a rather dense grayish infiltration which remains limited to this part of the cornea passing through all its phases with no tendency to ulceration. Sometimes, as illustrated in Case 1, the dense opalescent opacity may extend quite up to the margin of the cornea and appear to be merged in the sclerotic; in other cases there may be a clear space between the site of the lesion and the limbus. In this form of the disease vascularization is not a prominent feature and is absent in most of them. This point is emphasized by Boucheron, Terson, Chevallereau and others. Irido-cyclitis and choroiditis may be associated with this condition, so that this form may be the same as that described by Mauthner[9] and Antonelli[10] under the name of "keratitis interstitialis punctata."

The reports of the cases of most observers do not show that there was much disturbance of the epithelium; on the contrary, many of them dwell upon this point and contrast it with the steamy condition of the cornea as seen in the interstitial keratitis of inherited syphilis.

In the third case reported there were two distinct vesicles on the cornea that were over the spots of infiltra-

1. Lyon Medicale, 1882, vol. xxxi, p. 487.
2. Beiträg. zur Pathologie der Krankh. der Cornea, Inaug. Diss., Zurich, 1872.
3. Calcutta Health Journal, 1892.
4. Bull. de la Soc. Franc d'Ophth., 1888.
5. Brit. Med Jour., Oct. 28, 1899.
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9. Zeissel's Lehrbuch der Syph., p. 278.
10. Annales d'Oculistique, May, 1895.

tion. These probably ruptured, but no ulceration followed. Finally, in very rare cases gumma of the cornea may exist. It seems, therefore, that the following conclusions are justifiable: There is such a lesion as syphilitic keratitis occurring at any time from the early secondary to the late tertiary period of syphilis. The disease is milder and shorter in its course than the keratitis from inherited lues. It usually affects one eye rather than both. It may assume either the diffuse or punctate forms and may or may not be associated with uveitis. Its most characteristic form is that in which there is a large dense infiltration, with little or no vascularization and no tendency to ulceration and no iritic complications.

It causes less injury to the cornea because, being more amenable to treatment, the infiltrate is removed before it forms permanent opacities. Active antisyphilitic treatment is most useful in shortening the course of the disease, whereas in the inherited form such treatment accomplishes little.

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DISCUSSION.

Dr. S. D. Risley, Philadelphia—In my experience corneal disease due to acquired syphilis has been extremely rare. When disease involving the deeper layers of the cornea was observed among the secondary or tertiary manifestations of syphilis is was usually in broken-down patients, and presented much the same characteristics as we are accustomed to witness in ill-nourished and strumous patients. I have seen many examples of serpiginous ulcers involving the limbus of the cornea in colored people the subject of other syphilitic phenomena, but it has not been clear in my own mind whether to ascribe these to the direct influence of the syphilitic poison or to the indirect impairment of the general nutrition of all the tissues. I have seen much more frequently affections of the membrane of Descemet occurring in association with general uveitis in syphilitic people. This is of interest as demonstrating the correctness of those anatomic studies which from the standpoint of embryology regard the lining of the anterior chamber as a modified continuation of the uveal tract. In these cases Kneis has pointed out that the endothelial lining of the cornea suffers a solution of its continuity and the underlying portions of the cornea become involved in the disease. I regard it as quite remarkable that the cornea is not more frequently involved in more obvious manifestations of acquired syphilitic lesions. Since syphilis is so frequent, in the colored race especially, it is always to be borne in mind that in any case of acquired syphilis there may be an hereditary taint also, which might account in some instances at least for the occurrence of the corneal disease.

LACHRYMAL STENOSIS IN INFANTS AND ITS TREATMENT.*

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ATLANTA.

If one will examine the various text-books on ophthalmology, he will be unable to find any reference to the subject of the treatment of lachrymal stenosis in infants. The conclusion therefore derived is, that such a condition in infants is treated in the same manner as in adults. This I consider erroneous teaching. Very grave injury would frequently be done to the lachrymal passages of these tender little individuals if the same ruthless probing and cutting were done as is frequently the case among adults. During the last four years of my practice, I have had six cases of lachrymal stenosis in infants, all of which recovered perfectly without instrumental interference, and one case presented some such striking features, whether as a coincident or as a causal relationship I do not know, that I shall take the liberty of referring to it more in detail. In speaking of lachrymal stenosis in infants we must naturally do so in a very indefinite manner, not knowing whether the stenosis is in the puncta lachrymalia, the canaliculi, lachrymal sac or in the duct proper. This could only be determined by delicate probing or postmortem demonstrations, both of which methods being often impracticable. When we speak of lachrymal stenosis in infants we naturally mean such cases as present the usual accompanying symptoms of excess of tears in the conjunctival sac or even flowing out upon the cheek, some excoriations of the lower lid, and some slight catarrhal condition of the palpebral conjunctiva. There need not have been previously a dacryocystitis either acute or chronic.

The well-known fact that the mucous membrane in infants is so susceptible to swellings and edematous conditions, will in a great measure account for the stenosis occurring in individuals of this age. Yet such pathologic conditions do not constitute the whole etiologic factor in these cases.

For convenience I have made the following groupings of lachrymal stenoses occurring in infants.

1. Stenosis due to Congenital Malformations and non-development in some Portions of the Lachrymal Passages.—Cases of congenital malformation in some portion of the lachrymal passages have been reported by several observers and the presence of such must not be ignored when cases of epiphora in infants are brought to us for treatment. Congenital absence of one or more puncta lachrymalia have been noted by various writers.

Benjamin Travers,[1] as early as 1824, says in his book on "Diseases of the Eye," that he had seen a congenital deficiency of the puncta, but the case was very rare, obliteration being much less so. Schon[2] in 1828 noted the fact that puncta had been observed closed entirely in new-born infants, and cites two or three authors who mention the condition or had seen cases. V. Walther[3] states that congenital atresia of the puncta does not occur except in connection with monopsia or micropsia; and Desmarres[4] states that Seiler, Schoen, Carron and others have noted congenital atresia of the puncta mostly in connection with concomitant absence of the eye. The congenital absence, however, of these puncta have been observed by others who make no mention of any other congenital defect. Mooren.[5] in a statistics of 108,416 patients, gives only one instance of "defectus punctorum lachrymalium."

In our own country, a case has been reported by Burnett[6] where there was congenital absence of both puncta lachrymalia of the left eye and of the lower punctum of the right eye. The case terminated successfully under operation. Theobald[7] has also reported a case of congenital atresia of one lower punctum. Besides these, cases of congenital atresia or absence of puncta have also been reported by Zehender,[8] Vossius,[9] Fieuzal,[10] Emmert,[11] and Blanchet.[13]

Cases have been reported where the puncta were not absent but only closed by a membrane. Le Henoff[14] calls attention to this condition, claiming that it is

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not rare in infants to find a small pellicle covering the opening of the puncta.

A. Rochon-Duvigneaud,[15] in a very exhaustive article, gives the results of his researches on the anatomy and pathology of the lachrymal passages in the adult and the new-born. According to this observer, in the fetus the nasal duct, up to a certain period, is separated from the nasal fossa by a membrane. The duct also exhibits annular diaphragms or valves at various points along its course; these diaphragms were found by the author in the new-born in more than half the cases. Persistence of a nearly imperforate membrane closing the lower end of the nasal duct, or the presence of diaphragms with only a minute passage through them, is a cause of stenosis in infants, especially when from the stagnation and accumulation of the secretions, infection, inflammation and swelling of the mucosa result. Bochdalek,[16] as early as 1866, in a contribution to the anatomy of the lachrymal organs, calls attention to the fact that in extremely rare cases the inferior valvule of the lachrymal sac develops so as to form a nearly imperforate thin membrane closing the canal. He mentions two cases where this condition existed.

The presence of these valves, especially at the junction of the sac with the lachrymal canal, and the junction of this latter with the nasal fossæ, are considered by many to play the most important rôle in the stenosis found in infants. For instance, Beraud[17] in his researches states that a valve at the junction of the nasal duct and nasal fossa, is missing in only 3 or 4 per cent. of cases, and he found complete obliteration of this orifice in 15 per cent. of the cases of lachrymal stenosis. He also states that the so-called valvule of Taillefer, situated about the middle of the nasal canal, is present in about 6 per cent. of cases and may be so developed as to close the canal.

2. Lachrymal Stenosis occurring as the result of Spasmodic Contraction in some Portion of the Passages. —Allow me briefly to relate a case which occurred in my practice more than a year ago: Master B., aged 2 months, was brought to my office for consultation on account of an epiphora of both eyes. On examination I found a slight catarrhal conjunctivitis, while the puncta were freely open. The condition had been noticeable for three weeks past. No discharge could be pressed from the lachrymal sac. A wash was given for the eye, consisting of sulphate of zinc, boric acid and water, to be used three times daily and to be accompanied with pressure over the lachrymal sac. This was continued for three weeks with no very decided improvement in the condition. About this time the father noticed that the infant seemed very fretful and on consulting his family physician it was decided to have the infant circumcised. This was accordingly done and an immediate cessation of the epiphora was noticed which has continued constantly ever since. I then began to look up the literature to see if I could find a similar case. This I have been unable to do. The relationship between the circumcision and the cessation of the lachrymal symptoms was so close that I can not but consider it in the light of cause and effect.

In looking up the literature of the subject, I find that there is some reference to spasmodic constriction of the lachrymal passages as a cause of stenosis. In the Transactions of the French Ophthalmological Society for 1891,[18] Galezowski states that epiphora often occurs from spasmodic or irritative muscular contraction of the lachrymal passages without any organic changes being present. Wicherkiewiz, at the same meeting, corroborated Galezwoski's observation as to the occurrence of spasmodic strictures. Seggel,[19] in quite an elaborate article, calls attention to the presence of muscular tissue around the canaliculi and puncta, and reports a case of stenosis which he said was due to contraction of the spinchter of the punctum. It is the atrophic condition of this sphincter, in my judgment, which is the frequent cause of "watery eyes" seen in the very aged.

R. Schirmer,[20] in "Saemisch. Handbuch," says that spastic constrictions of the canaliculi may occur (as shown by McNamara and Galezwoski) in nervous and anemic persons and in this way produce the same disturbances as other obstructions. McNamara,[21] in his work upon the eye, mentions briefly spasmodic stricture of the canaliculus, which occurs either at the inner or outer opening of the canal. The accompanying watery eye, if long continued, will be of intermittent character.

Fano[22] calls attention to the existence of spasmodic epiphora due to spasmodic constriction of the lachrymal puncta and canaliculi by spasm of the muscles of Horner. The condition occurs only in women of nervous temperament, often in association with neuralgias. Since the occurrence of this case in my own practice, I am firmly convinced that we should look more carefully into conditions which might act as a reflex cause in producing this spasmodic constriction in the lachrymal passages. Observation teaches us that epiphora in infants sometimes disappears in a night, and in such cases may we not attribute this result to a relaxation of a spasmodic constriction?

3. Stenosis, the Result of a Catarrhal Thickening of the Mucous Membrane at some Point in the Lachrymal Passages.—This third and last consideration of stenosis I would place as the most frequent cause of epiphora in infants. In the cases which I have seen there was a slight catarrhal conjunctivitis which was either primary or secondary to a similar condition in the lachrymal passages. In only one instance could secretion be expressed from the lachrymal sac. In two instances there was a marked catarrhal condition of the nasal cavities. This latter organ should always be closely examined in such cases.

A. Peters.[23] of Bonn, has reported seven cases of lachrymal stenosis in infants due to a catarrhal condition of the mucosa of the lachrymal sac. He believes that blennorrhea of the lachrymal sac in new-born infants is caused by the persistence of the fetal membrane closing the lower end of the nasal duct. Fluid accumulates in the sac, the product of cellular disintegration and secretion from the mucosa of the sac, rather than derived as an inflammatory exudate from catarrh of the mucous membrane. The condition is one of atresia and retention and not catarrhal inflammation.

He recommends simple treatment—expression of the contents of the sac by digital pressure and repeated irrigation of the eye without the use of the knife or probe. He quotes Vossius and certain French authorities in favor of gentle treatment. He strongly urges this palliative treatment in preference to any instrumental applications.

In support of Peter's theory, Lange[24] reports a case of blennorrhea of the lachrymal sac in a child five days old. Pressure upon the sac was followed by a discharge of laudable pus from the nasal cavity of the same side, but none came from the lachrymal canals. All symptoms of lachrymal obstruction disappeared in a few days. Heddaeus[25] confirms the observations of

Peters, but differs from him in thinking that the mechanical expression of the contents of the sac is unnecessary. Konigshofer,[26] in discussing the epiphora in children, says that dacryocystitis or dacryostasis neonatorum, according to his observation, is mostly a temporary blocking of the passages by mucus or a persistence of a thin epithelial closure of the nasal end of the duct. All cases observed by him were cured by industrious expression of the lachrymal sac, a passage of the sound being necessary in only one case. Landolt,[27] in treating of obstructions in the lachrymal passages of new-born, has this to say in regard to the treatment; according to his observations it is never necessary to slit the puncta. He dilates the punctum with a conical sound and injects either a bichlorid solution 1 to 5000, or 10 per cent. solution of boric acid into the sac with an Anel's syringe.

Before writing this article and after consulting the various works on ophthalmology to see what the authors had to say in regard to epiphora in infants, I addressed letters to twelve ophthalmologists and asked them to answer the following questions:

1. Have you ever seen any case of stenosis of the lachrymal passages in infants which you thought was due to spasmodic contraction, the result of a reflex irritation?

2. What treatment do you use for lachrymal stenosis in infants?

To these letters I received seven replies, as follows:

Dr. H. Knapp: 1. No. 2. I leave the lachrymal trouble alone, as it commonly rectifies itself by the development of the nose.

Dr. E. Gruening: 1. I can not recall a case of stenosis of the lachrymal passages, either in infants or adults, due to spasmodic contraction. 2. In cases of lachrymal stenosis in children I probe under ether, using Theobald's probes.

Dr. William Cheatham: 1. No. 2. I have seen, I think, as many as five cases of stenosis of the lachrymal duct in infants, all relieved by from one to three probings with Bowman's No. 1, without incision of the punctum.

Dr. Swan Burnett: 1. I have never seen a case of stenosis of the lachrymal passages in an infant which I thought was due to spasmodic contraction. 2. The few cases of dacryocystitis in infants that I have seen, I have treated in the usual way by opening the canals and treating the sac. I don't remember that I ever saw a case of stenosis not due to inflammation.

Dr. Adolph Alt: 1. I do not remember having ever seen a stenosis of the lachrymal passages in infants which I thought was due to reflex contraction. 2. The cases of stoppage in infants, if not due to an infection of the mucous membrane of the drainage apparatus, I have always referred to an epithelial adhesion and this usually gave way to one or two probings.

Dr. George de Schweinitz: I have never seen a case of stenosis of the lachrymal passages in an infant which I thought was due to a spasmodic contraction, the result of reflex irritation. 2. The treatment I use for lachrymal stenosis in infants depends entirely upon the etiology. Many of the cases get well without any treatment except some irrigation of the conjunctival sac and nares; they get well simply because in the development of the nose a pre-existing contraction of the passages disappears. Others, evidently dependent upon a nasal catarrh in the broadest acceptation of the term, get well by nasal treatment. A few with a good deal of purulent secretion are associated with stricture and seem to me to demand the same treatment that a similar condition in adults requires. I very rarely, however, and I have seen a good many cases, have found it necessary to divide the canaliculus and pass probes.

Dr. Samuel Theobald: 1. No. 2. I have met with a good many cases of blennorrhea of the lachrymal sac in infants accompanied with epiphora. In most of these cases there was not an actual stricture of the duct (such as we meet with usually in adults), and they have gotten well without operative interference. My favorite remedy is a collyrium of hydrarg. bichlorid 1/24 gr., sodium chlorid 3 grs. to ounce of water. This to be dropped into the inner corner of the eye three times daily, each application to be preceded by an attempt to empty the lachrymal sac by pressure with the finger tip. Occasionally it happens that no benefit results from this treatment. Then after it has been thoroughly tested for some weeks, I resort to operation, slitting the canaliculus and probing the duct.

In all of my cases a cure was established by the use of an astringent wash to the conjunctiva in conjunction with massage over the lachrymal sac. In no instance was a probe used. I can imagine some cases where it is necessary to dilate the canaliculi with a probe, but never a case where it is necessary to slit the canaliculi and pass probes into the nasal duct. Palliative measures, such as the use of astringent washes, accompanied by massage over the lachrymal sac, will accomplish the necessary result in all but exceptional cases, even if the treatment has to be continued for many weeks. I believe that the canaliculus should never be slit and thus destroying forever the contractile effect of the sphincter around the puncta. At the same time it is necessary to see that there is no blocking of the nasal passages with inspissated mucus. Cleansing of the nasal passages should be as routine as the cleansing of the eye. I am firmly convinced that many cases of epiphora in infants will be relieved if more judicious attention is given to the nasal cavities.

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27. Annales de Gynécologie et d'Obstetrique, Paris, 1897, vol. xxxvii.

Sugar as a Stimulant for Muscular Exertion.—Lop states in the *Gaz. des Hop.*, 120, that the midwives in the south of France have long administered sugar as a means of combating inertia of the uterus.

A STUDY OF A FETAL STOMACH,

WITH SPECIAL REFERENCE TO THE ORIGIN OF ACID SECRETING CELLS.*

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This specimen was examined with a view to determining the origin of the acid cells. It is proper to begin by considering the origin of the hydrochloric acid. We assume that the works of Wesener and others have demonstrated that the acid is derived not from the food, but from the cells of the stomach wall.

Assuming then that it is proven that the acid is secreted, we pass to the question as to whether the acid is in combination with the ferment. A review of the literature convinces us that there is a loose chemical combination between them. Where is this combination effected? Is it in the same cell, or are there different sets of cells—one secreting ferments, another acid. Again, we conclude that there are different cells.

If there is a division of function, which cells are secreting acid, and, as a subsidiary proposition, whence are these cells derived? The method of distinction that we have used are the tinctorial procedures.

It is proper to determine the value of such methods. Ehrlich's holding was that the reaction of the different portions of cell protoplasm could be rather easily distinguished by their staining peculiarities. For example, if chromatin filaments stain with a basic stain, it was proof that those filaments were acid in reaction. The work of Mathews would tend to upset these ideas.

Mathews found that while cytoplasm albumin usually stains with an acid stain, and is therefore alkaline in reaction according to Ehrlich, it will stain with a basic stain, if it is in an alkaline solution, and that in slightly acid or neutral solutions the basic dyes will stain any element of the tissue which contains an organic acid in salt combination with a strong base. The basic dyes in alkaline solution may thus be used for the detection of albumins in the cell and especially of all albumins possessing a phenol or tyrosin group. In no sense are the basic dyes a test for nucleic acid or chromatin. As to the acid stains, he says the acid stains enter into chemical combination with the albumin molecule in protoplasm and probably with an NH_2 group in that molecule.

Silenfeld showed that protoplasm would stain with an acid stain if its nucleic acid was saturated with albumin. If the nucleic acid was not wholly saturated it would stain with a basic dye.

The conclusions that we are entitled to draw are that the question of staining is more complicated than Ehrlich must have thought, and that there is more to the subject than the reaction of tissue and the stain. Nowhere is this seen better illustrated than in the stomach cells.

The labors of Stinzing, Heidenhain and others have shown that free or loosely combined mineral acid in a protoplasm does not cause that protoplasm to stain with a basic stain. If Ehrlich's position were right, then the protoplasm of the acid cells should stain with a basic stain, and we could, therefore, always pick them out with great ease. We are not able to distinguish them with this simplicity and ease. Nevertheless there are stains that pick out what are called acid cells with fair clearness.

The sections examined by us were stained by Stintszing, Ehrlich, Biondi-Heidenhain, hematoxylin-erythrosin-acid fuchsin, Romanowsky's alkaline methylene blue and eosin stain, thionin, polychrome methylene blue, toluidin blue, and hematoxylin-eosin. What seemed a specific tint was given by the hematoxylin-eosin stain, the hematoxylin-erythrosin-acid fuchsin and the polychrome methylene blue.

In these sections we notice that the acid cells appear as large masses of granular protoplasm with several vesicular nuclei. These nuclei have a moderate number of nodal points. The protoplasm of the cells shows no trace of lines of division or incomplete fusion. The protoplasm otherwise shows no evidence of degeneration. The nuclei show no degeneration phenomena. With the Stintzing stain, the yellowish-red color of these cells differs from the tint of any other of the stomach cells. It is just the same shade as that noted by us in the supposed acid cells of the actively secreting stomach of a dog. These cells are frequently between the principal cells and the muscularis mucosa; frequently,



Fig. 1.—*a*, Masses of so-called acid cells; *b*, gland tubes; *c*, inner circular muscle; *d*, outer longitudinal muscle.
Leitz, Eye piece 3, Ob. 4.

however, they are well below the muscularis mucosa, in the submucosa.

Are they derived from the principal cells, from pre-existing acid cells, from the ordinary submucosa cells, or from the special cells in the submucosa?

Neumeister speaks of the "wandered off" cells of the lumen of the glands. We are not certain, yet we think he means that they have wandered from the principal cells to the muscularis mucosa or even underneath. He does not demonstrate the point that he speaks of by any illustration. Carlier refers to the acid cells as oxyntic cells. He does not say where they originate.

Might these cells not be derived from the submucosa? We can not make out any transition cells between the principal cells and these, either as to outline, staining peculiarities, general appearance or location. It is true that glands were just beginning to develop in this organ, but if these are glands we ought to see some evidence of down-growing and indenting of the muscularis mucosa. This is not seen in this specimen. The cells in the underlying tissue are without any indication of a more superficial origin. The possibility that these are epi-

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Pathology and Bacteriology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

thelial cells does not constitute a barrier to their origin in the submucosa. The work of Leo Loeb shows that cells are in some measure transformable; that the old blastic divisions are not unchangeable.

As to the origin of the acid cells I quote the following: "Stintzing believes that acid cells are changed into chief or pepsin cells. Breemner believed that the acid cells were expelled with each digestive act. Heidenhain says that this has been disproven. Herendorfer believed that the parietal cells developed into the principal cells. Edinger believes that the parietal cells develop from the principal cells. Orth agrees with Edinger. Toldt and Storler believe the relation to be just the reverse. Nueikler believes them to be of the same origin." It is well to know, however, that the major part of this work was done in the olden times when the cells were supposed to stick closer to their blastic fellows than we now think; when structural methods were scarcely as complete, and when our knowledge of the cells, usually situated in connective tissue, was not so great as that of to-day.

We have no opinion to offer as to the origin of these



Fig. 2.—*a*, So-called acid cells; *b*, stomach gland. Leitz, Eye piece 3, 1/12 oil.

cells. Whether from the epithelium wandering occasionally into the deeper tissues, or from the mesoblastic elements wandering frequently into the epithelial zones we do not say. We merely call attention to certain cells sometimes in the mucosa and sometimes in the submucosa which contain a single vesicular nucleus, generally centrally placed and with a large amount of cytoplasm, this cytoplasm having coarse granules that stain with acid stains to just the same shade as the acid cells of the stomach tubules.

What proof have we that these border cells are specific, differing from the more universally recognized ferment cells? We note the following points: The location of the cells are sometimes in the deeper epithelial structures, sometimes in the muscularis mucosa, sometimes in the submucosa; the principal cells are always in the one place; the coarse granules stain a peculiar shade with every stain employed, a shade not seen anywhere in the principal cells; the basic third of the principal cells are granular, but their shade is not the same as in the border cells. The nearest approximation to this shade is in the material found adhering to the free surface of the stomach mucosa. Thiohari speaks of the differences in shade, size and distribution of the granules in these two kinds of cells. He says that in the border cells there is an outside zone of coarse staining granules, and that these seemed to form the only cell wall. It was also noted that internal to this the granules seemed to be in small groups of two to five. There were large protoplasmic masses, often triangular in shape and with several oval or spindle or semmel shaped, vesicular, nodal nuclei. This shape in no way resembles the long, narrow, principal cell, with its clear or faintly granular outer third and its basic third with its mixed basic and faintly acid granules.

In our specimen we found no peri-nuclear, clear vacuoles, as described by Hambergher; but we are to remember that Hambergher only observed these after some hours of digestion.

We find these cells most abundant in the cardiac end, and wholly absent in the pyloric end. We find them occasionally quite removed from the principal cells. These were our reasons for believing the two cells to be of a different nature and probably different in function.

Carlier and Thiohari both believe in separate acid cells. Our specimens would not indicate that the hydrochloric acid exists in the oxintic cells as hydrochloric acid. On the contrary, their method of staining would indicate fairly clearly that within the protoplasm the hydrochloric acid is not only satisfied by albumin or some other base, but that that base still had some basic bonds with acid affinities. It must leave the cell as some easily decomposed compound, which, as Carlier outlines, gives its acid to zymogen to form zymin.

NOTES ON THE INTRACELLULAR OCCURRENCE OF DIPLOCOCCUS PNEUMONIÆ IN CEREBROSPINAL MENINGITIS.*

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MINNEAPOLIS.

That the diplococcus pneumoniæ, in common with other micro-organisms, may occasionally be found within leucocytes as the result of phagocytosis in inflammatory processes, has been frequently noted by numerous observers. Its extracellular position, however, in the exudate in cerebrospinal meningitis is so markedly the rule that the point is used as a differential characteristic between the organism and diplococcus intracellularis meningitidis. Consequently, the preponderatingly intracellular position of diplococcus pneumoniæ in the following four cases of cerebrospinal meningitis makes them of sufficient interest to warrant their record.

Case 1.—In June, 1898, a specimen of cerebro-spinal fluid from a case of cerebrospinal meningitis, removed by lumbar puncture during the third week of the disease, showed in direct cover-slip preparations, numerous encapsulated, lanceolate, Gram-staining diplococci, most of which were intracellular. Cultures in broth, on plain and blood agar, and Löffler's blood serum developed, without admixture of other organisms, a diplococcus, which, despite its original intracellular position, was readily identified as diplococcus pneumoniæ. Unfortunately, no animal inoculations were made, since the pressure of other work prevented it until the cultures

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had died out. The patient died two days after the specimen was taken, but no autopsy was obtainable.

CASE 2.—Two months later specimens from this case were obtained. The materials for this examination, consisting of the left frontal and parietal lobes, cerebellum, pons, and medulla of a child, were received in the laboratory Aug. 25, 1898, at 11 a. m. The attending physician, Dr. George D. Head, has kindly furnished the following clinical and autopsy notes:

Baby S., an inmate of the Children's Home, age 7 months, was well from birth, except a few superficial abscesses present some time in June or July. Became sick Aug. 19, 1898. Child was dull, restless and refused food. Passed several foul stools, which were pus-like in appearance, but, which on microscopic examination, showed no pus; these were simply masses of bacteria. Temperature 102. All other symptoms negative. Diagnosed enterocolitis.

August 20: Child is brighter and takes food; moves head from side to side; puts left hand to head as if to wipe away some object; temperature 101; some stupor later in the day; bowels do not move so often as on previous day.

August 21: Temperature 99½; stupor continued; takes food. Stools more normal; peculiar ashen hue about face, which indicates profound infection.

August 22: Temperature 101; no other change.

August 23: Temperature 101; takes some food; duller and very quiet.

August 24: Temperature 102; child restless; diagnosed meningitis.

August 25: Temperature 103; stupor; general condition of child worse.

August 26: Child dead in the morning at 2 a. m.; no convulsions.

An autopsy was held 7 hours after death. A complete examination was made, and all organs except the central nervous system were apparently normal. Over the entire convexity of both cerebrum and cerebellum was a gelatinous exudate, filling the pia and extending, though in smaller quantity, over the base of the brain. Portions of the brain and medulla were placed in a clean jar, which had just been washed out several times with boiled water, and taken immediately to the laboratory.

When the specimens were received in the laboratory, cover-slip preparations were made direct from the exudate and cultures from the same source were sown on serum, glycerin agar and in glucose glycerin broth. Specimens were then divided into small pieces and portions of each placed—nine hours after death—in 96 per cent. alcohol and in 10 per cent. formalin solution.

Direct cover-slip preparations stained by eosin and methylene blue and by Gram-Bismarck brown, showed numerous lanceolate and occasional encapsulated diplococci, sometimes outside of, but more frequently definitely within, polymorphonuclear leucocytes. These diplococci retained Gram's stain with great tenacity.

Cultures on serum and agar, after 24 hours in the incubator, showed few small, pin-point, moist-appearing colonies, which, when examined in stained cover-slip preparations, were found to be composed of diplococci, which retained the stain by Gram's method.

Cover-slip preparations from the broth cultures showed lanceolate diplococci in single pairs and in chains consisting of from two to eight pairs each. These retained the stain by Gram's method. The organism was sown on the following culture media with the results noted: Glucose glycerin broth gave a very faint growth and no precipitate; plain broth, a very faint growth and no precipitate; litmus milk, after two days, faintly acidified and slightly coagulated. Plain agar gave a scant growth, otherwise like glycerin agar (see above). Glycerin agar was characteristic as noted above. Litmus lactose agar, after 24 hours, showed colonies similar to those on glycerin agar, and medium slightly reddened.

Löffler's blood serum was characteristic as noted.

Parallel cultures of diplococcus intracellularis meningitidis were made at the same time and on the same media, the specimen having been isolated two days previously from an acute case of meningitis in a child. The cultures of the two micro-organisms were sufficiently unlike, so that, aside from their morphologic and staining characteristics, there was little difficulty in differentiating them.

The tissues fixed in 96 per cent. alcohol and in 10 per cent. formalin were further hardened, embedded in parrafin and cut five, ten and twenty microns thick and stained with hematoxylin and eosin, Gram-Bismarck brown, eosin-Unna and by Nissl's method. They presented nothing aside from what is ordinarily found in cases of intense, acute meningitis, except those stained by Gram-Bismarck brown and Gram-eosin. Here in the subpial exudate and also scattered in sections of vessels throughout the tissue, are great numbers of Gram-staining lanceolate, frequently encapsulated diplococci. These are most frequently lodged within leucocytes. Many cells contain from one to twelve cocci each. The cells nearest the arachnoid—those best preserved—nearly all contain diplococci. The fibrinous mass nearest the brain substance contains a few intact leucocytes, some of which are literally stuffed with diplococci. Numerous isolated pairs of diplococci are seen in the vacuoles within the brain. None are observed within the nerve cells proper and none are present in the vessels except rarely in leucocytes, apparently within the vessel walls.

3. CASES IN HORSES.—In June, 1899, specimens were collected from two horses, killed, when almost dead, for purpose of autopsy during an outbreak of meningitis near Herman, Minn. These animals had been sick but a few days. At the autopsy very perfect gross lesions of meningitis were present in the brain and cord. The cases presented nothing of unusual interest other than that direct cover-slip preparations and sections showed numerous Gram-staining, lanceolate, frequently encapsulated diplococci, which were more frequently intracellular than extracellular.

Cultures obtained without admixture of other organisms from both cases showed typical diplococcus pneumoniæ of unusually abundant growth. Twenty-four hour colonies on rabbit's blood agar and Löffler's serum occasionally almost equaled in diameter colonies from parallel sowings of diplococcus intracellularis isolated from a case in a young man three days previously. The cultures from these cases of equine meningitis were inoculated alternately subdurally and intravenously, into six rabbits. These animals all died of meningitis in from twenty-four hours to four days with marked symptoms and typical lesions of meningitis.

From the central nervous system of each of the rabbits direct cover-slip preparations showed numerous diplococci, morphologically identical with those in the original preparations and more frequently intracellular than otherwise. The experiments were continued by the inoculation subdurally of a horse with 10 c.c. of an emulsion of a twenty-four hour, plain, broth culture, fourth series from original horse, with five twenty-four hour original serum cultures from the brains of two of the six rabbits mentioned above. Sixty hours after the inoculation the animal died, and an autopsy was made at once, which revealed typical meningitis, very intense in

character. Direct cover-slip preparations, and, later, sections showed enormous numbers of diplococci, morphologically like those in the original material, and in most instances, contained within cells.

It may perhaps be worth noting that in all of the cases, two human beings, three horses naturally infected, six rabbits and one horse inoculated, the organism appeared to be particularly virulent.

These instances serve to show that it is possible occasionally for diplococcus pneumoniæ to occur abundantly within the cells of the exudate in meningitis. This may indicate a closer relation than is ordinarily supposed to exist between diplococcus pneumoniæ and diplococcus intracellularis meningitidis. The point certainly merits further investigation.

The position of the coccus relative to the cell is occasionally of less importance than its shape, arrangement, staining reactions or cultural characteristics. Pathogenesis in all its phases as yet has been insufficiently studied to be of much help in differentiating these microorganisms. It would certainly appear that great care must be exercised in diagnosing, from direct cover-slip preparations of meningeal exudates, between diplococcus pneumoniæ and diplococcus intracellularis meningitidis.

DISCUSSION.

Dr. Hall—I would like to ask Dr. Wilson if he has ever encountered a tendency on the part of the diplococcus pneumoniæ to enter the cells in clinical pneumonia. It seems to me that besides its habit of entering leucocytes in cases of meningitis it also shows the same tendency in organs of a different character like the lungs, etc.

Dr. Wilson—I have observed just this point in cases of pneumonia, though in less degree than in these cases of meningitis. I think the occurrence in pneumonia has been reported previously by a number of other observers.

SMALLPOX AND VACCINATION,

WITH SPECIAL REFERENCE TO GLYCERINATED LYMPH.

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For three years smallpox has existed in the United States to an extent not generally appreciated. The "Public Health Reports" of the Marine-Hospital Service give a total of 12,947 cases in various states and territories from June 28 to Oct. 25, 1901, and this is not a complete report for the whole country. In Michigan, according to Dr. H. B. Baker, there have been more than 3000 cases so far this year, while the prospect for the future is suggested by the fact that new foci are discovered at a rapidly increasing rate. Most of the cases have been mild, and this fact goes far to explain the great spread of the disease. It has often been so mild that it attracted little or no attention, or, if seen by a physician, was thought to be something other than smallpox; hence the numerous and often absurd names given, such as Cuban itch, cedar itch, etc. Similar conditions prevail whenever a disease otherwise rare breaks out with anything but the most schematic features. Often, perhaps most frequently, inadequate steps have been taken to clear up the nature of cases or epidemics. More than once I have known of health officers deciding that certain cases of mild smallpox were chicken-pox, forgetful of the numerous examples of the danger of an offhand decision in a matter so often difficult. One can readily forgive the mistake in diagnosis, for a case of smallpox, when seen only once, may easily be impossible to recognize, and in some cases a positive diagnosis may never be possible. But, as it is well known that some other diseases, such as chicken-pox in the adult, may present a similar difficulty, the only safe way is to take precautions suitable for the more serious disease, whenever the question arises. Failure to take this simple step, and, still worse, fixed belief in a faulty diagnosis based on incomplete examination, have had much to do with the present epidemic.

We must not forget that, even if mild, the epidemic has a very important significance. Though a mortality of 3.2 per cent., as in the four months cited, seems too small for consideration as a smallpox death rate, it assumes another aspect when we realize that it involves the deaths of 416 people. Nor is the mortality uniformly low. Dr. O. J. Porter[1] tells us that in his field of observation in Tennessee all of five or six hemorrhagic cases died, 40 per cent. of confluent cases, and 10 to 15 per cent. of discrete. Moreover, a smallpox epidemic has other evil consequences besides deaths. The general alarm and private worry; the interruption to business, often leading to personal violence or hardship; the quarantining of cities; and last, but not least, the injury from hurried vaccination—all these raise what is often called mild smallpox to the dignity of a serious epidemic. Even if none of these objections existed, the wide extent of such a disease reflects just as severely on our civilization as if we had so much itch or plica Polonica.

Epidemics of smallpox, whether mild or severe, always indicate the concurrence of a number of avoidable causes, the most important of which are lack of general hygiene, failure of special precautions with single cases, and the existence of a large number of unprotected people. The latter may result either from total failure to vaccinate, or from the use of imperfect lymph. Total lack of vaccination is a more important cause, in many places, than we are perhaps aware. Out of a large number of adult patients admitted to the University Hospital from all parts of Michigan, only 60 per cent. had scars from previous vaccination, and a considerable proportion of these were from sores so badly infected as to make the immunity a matter of grave doubt. Many suppose that, although we have not compulsory vaccination, voluntary vaccination is carried to as wide a degree as is necessary. This is evidently a most illusory view.

But I wish at this time to speak of inefficient vaccinating material and its place in the spread of smallpox. In strange contrast to the important object, and regardless of the claims vigorously made and as strenuously denied as to results, the operation of vaccination is often made with a carelessness hard to understand. The preparation of the material is left entirely to private enterprise. That much, perhaps most, of it is reliable speaks strongly for the honor and good faith of the makers, who do not claim to be actuated by other than commercial motives. Yet when we see how narrow a line separates legitimate and dishonest pharmacy, so narrow that often the same roof covers both; when we remember the exploitation of fictitious drugs, of short-weight pills and kindred matters, we can not but realize how easy it must be to put forth any kind of virus, knowing it will find a market if sufficiently advertised.

FAILURE OF MEDICAL SCHOOLS TO TEACH VACCINATION.

Not less remarkable is the almost total failure on the part of medical schools to teach the method of vaccina-

1. Johns Hopkins Hospital Bulletin, September, 1901.

tion and the phenomena of the disease so produced. Students very properly spend hours learning how to close a wound of the intestine, yet they may, and often do, graduate without the opportunity of even seeing a demonstration of vaccination. So we find that the operation is often imperfectly done, with no aseptic precautions, and inevitably giving the impression that anyone could do it as well as the physician.

As there is lack of control of vaccine material, so is there of the results, and the logical outcome is the fact that irregular, but legally qualified, practitioners give certificates of satisfactory vaccination without any operation at all.

GLYCERINATED LYMPH.

The history of glycerinated lymph furnishes striking illustrations of errors that have been observed at times since the beginning of vaccination, and I shall ask your attention to some statements regarding it. After the introduction of glycerinated lymph into the United States, I was very early struck by differences in the action of the American product as compared with that used in Europe, a difference that, on several occasions, I have called to the attention of members of the medical profession. The occurrence of a case of smallpox, about a year ago, led to a very extensive vaccination in Ann Arbor. More than 10,000 parcels of material were used, including several makes of dry points and three different kinds of glycerinated lymph in sealed tubes. One of the latter was very satisfactory, and showed all the features of an effective vaccine. Another was even less potent than the subject of the following remarks, but, not being extensively advertised, does not seem worthy of further mention. The third has been widely advertised, very extensively used, and warmly recommended. My personal experience with it, however, had been entirely unsatisfactory, and some other details seem so important that I shall speak of it at some length.

Many months before our smallpox case occurred my colleagues and myself had failed to get good results with this lymph in the primary vaccination of infants. In answer to our complaints the makers first replaced the tubes with some said to be fresher, and, that failing, sent out an agent, who claimed the failures were probably due to faulty technic. He demonstrated the proper method, without disclosing any details unfamiliar to those concerned, and without producing any improvement in the results. In our general vaccination I therefore advised against this particular lymph. This coming to the ears of the makers, the agent visited us again. He explained the later failures as due to overheating of the lymph in the cars, asserted that our experience was quite unusual, and that from all parts of the country no complaints had been received regarding the vaccine. He also arranged to have me see some patients recently vaccinated by an expert, the public vaccinator in the town where the lymph was made.

There I saw lesions like those I had seen before. Some of the vaccinations were primary, others in children who had been vaccinated from one to eight years before. In these, as in the numerous cases in the University Hospital, and in private practice, I could not find a typical Jennerian vesicle. A few small vesicles resembling the Jennerian type developed, but these did not run a typical course. The majority of the lesions, in healthy infants, as well as in unvaccinated and revaccinated adults, were small and conoidal. Sometimes, when large areas had been inoculated, the lesions were large and flatter, but these were made up of clusters of small conoidal masses. The bases of the lesions were red, the upper parts filled with a reddish, or, sometimes, yellowish serum. Sometimes the lesion was a papule of gelatinous appearance, homogeneous or sometimes crowned by a vesicle the size of a pinhead.

A very important point regarding the lesion was the time of its appearance. There was rarely any sign at all by the eighth day, though in some cases minute papules appeared at that time. More frequently it was the tenth or eleventh day, often two weeks, and in some cases three weeks, before any evidence of a "take" was present. The representative of the firm freely admitted this slow development, though he realized the danger of such a feature in vaccinations performed during epidemics.

In the further course the lesions dried on top, forming pale or dark brown scabs. This process was spoken of by the vaccinator and the agent of the firm as umbilication, but a true umbilication I have rarely seen from this lymph. In many cases the scab was very small, the papulo-vesicle remaining for many days in the same state, or slowly shrinking without undergoing proper involution. An areola was not always present, and this fact was claimed by the makers as an evidence of the safety of the virus; but in a number of cases—including 4 out of 31 in the work of the public vaccinator—in persons perfectly well and carefully vaccinated, there was a large areola, and this was often indurated. In the public vaccinator's group one sore was septically infected, as might have been expected among such material. The scabs from the cases I have described fall off at variable periods, and often without leaving permanent scars. I I have yet to see a typical scar from this particular lymph, though in some cases where the wounds became infected secondarily, scars resulted that were looked upon by those interested as evidence of efficient vaccination.

Evidently such lesions as I have described are not new in the history of vaccination. They are not necessarily the results of the glycerin, nor evidences of its beneficial action, but have often been seen and described under various names, following the use of both humanized and bovine lymph, and have always been looked upon as indicating imperfect vaccination and incomplete protection. The evidence of favor of this view is overwhelming. It forms a most interesting chapter in the history of vaccination, but does not seem necessary to review now.

Yet the makers of the lymph have been able to send out an imposing mass of literature in favor of their product, and the claims made, and the number and character of the endorsers, render the matter one of more than passing interest. The medical profession must ultimately be responsible for the quality of remedies and preventive agents used. Here, as in other cases, two things especially have limited the free expression of opinion. One is the lack of a standard, and this can be improved only by more rational instruction. The other is the indisposition to report unfavorably on any substance extensively lauded in advertisements. In the case of the glycerinated lymph I knew from private information that many practitioners and several hospitals had given it up in favor either of other kinds of glycerinated vaccine, or the old-fashioned points. I have since learned that an army medical service, after extensive use of the material, ordered complete revaccination with other virus. Yet apparently few of the disappointed vaccinators sent in complaints to the makers, and the few were easy to offset by testimonials in favor of the material. Recently, objections are coming to

light, and it appears also that the manufacturers have given up the glycerinated virus and now advocate a dry point. If so, the lesson is all the more instructive, for the quiet abandonment of a much lauded and widely used preparation does not tend to stability in practice, nor to faith in medical art. Moreover, no evidence is given that the virus now on the market is better than the glycerinated make of the same firm.

It is useful to examine some of the reports in favor of the glycerinated lymph. Some of them suggest repetitions of reports on other makes of virus, and not actual experience. On the other hand, those who report results in practice have degrees of success so great as to shatter one's credulity in the very beginning. Five hundred primary vaccinations without a failure, even 700 and 800, all successful, are proclaimed. The explanation begins to appear when another "observer" reports "vaccinia sine eruptione," but inasmuch as constitutional symptoms are claimed to be "so slight as to be scarcely noticed" the reader may wish for some of the signs by which the "take" is recognized. Perhaps the key to the puzzle is to be found in one report, in which we find in italics the statement that the writer "sold 13 tubes to a boy living in the infected district and he reported 13 successful vaccinations by himself." Shall we believe the "boy" was an authority on vaccination, or is it not more likely that both boy and professor were ignorant?

An interesting feature in the literature is that while positive statements in regard to the lymph are published, no real proof of its efficacy is given, nor is any explanation offered for the variation in action as compared with other material. The chief point, reiterated many times, is that with the lymph pyogenic infections are never encountered, and these statements are so worded one might almost come to the conclusion that vaccination without severe septic infection had never been seen before.

To be sure, one instance is reported in which the claim is made that exposure to smallpox was rendered harmless by use of the lymph. But in one case the element of chance is always so large that further testimony, with details, is desirable. The continued spread of smallpox should increase cases of apparent protection, as well as of failure, after vaccination with various lymphs, and these should be carefully observed and reported.

In the meantime it might be interesting and instructive to compare the results with those found in other countries, especially in England, where glycerinated lymph was first made widely available, or in Germany, where it is extensively used. The literature on this is not very extensive, but what there is does not tend to prove that such lymph as I have under consideration is trustworthy. It is true that Copeman, in his Milroy Lectures,[2] says the formation of the vesicle is slower than with ordinary lymph, but he also says the "pearl-like Jennerian vesicle appears on the eighth day," and he gives the photograph of a vesicle on the eighth day that leaves nothing to be desired. It is also noteworthy that in Germany those vaccinated with glycerinated lymph have to be seen between the sixth and eighth days.

During a recent visit to England I spent some time looking into the status of glycerinated lymph, and through the courtesy of Drs. Macfadyean, Blaxall and Green of the Institute of Preventive Medicine, I was convinced that the material supplied by that institute differed from ordinary fresh or dried lymph only in its greater assurance of non-septic results.

2. Lancet, 1898, May 7, 14, 21.

The vesicle on the eighth day is typical in shape, from one-eighth to three-eighths of an inch in diameter, and is usually umbilicated. The areola, which is claimed by the American maker to be due wholly to contamination with non-specific and undesirable germs, is not always present, but is usually so, and often of considerable extent. The operators at the laboratory and at the Government Animal Vaccinating Station in Lambs Conduit street have an enormous experience with all kinds of lymph, and their clear and objective record indicates perfectly normal, but unusually pure material. Such results as have been described above they held to be abortive, and, while admitting they might give protection for a few days, or even for a month, insisted they were not to be depended upon.

Besides the marked differences in the human lesion, I noticed some other differences in the action of the lymph. The vesicles on the heifers were much larger than those I saw on the animals in this country, being like those on the calves formerly used for direct vaccination in certain European cities. The British laboratory men all assert that the lesions on heifers are smaller in summer than in winter, and as it was in winter that I saw the imperfect vesicles in this country, the difference is still more suggestive.

The quantity of lymph in the tube is larger in the English product than in any I have seen in this country. The tubes are guaranteed for one week only, and, while this seems too short for our great distances, the three months' limit here is certainly unnecessarily long.

In conclusion I would submit the following:

1. Glycerinated lymph properly raised and prepared offers less danger of septic infection than any other kind of vaccine virus, and, notwithstanding the disadvantage of slow drying, it is to be preferred to dry points as made at present.

2. The peculiar features of the vaccine vesicle as known since the days of Jenner are due to the specific virus; any marked variation from them must be looked upon as evidence of imperfect protection.

3. Virus that produces an imperfect lesion should not be used, because, though it may induce immunity for a short time, may even prevent the taking of an active lymph inserted soon after it, it is likely to obscure the real condition of the subject and set up an unfounded feeling of security.

4. A knowledge of the natural history of normal vaccinia is very desirable for the physician.

5. The vaccination histories of all cases of smallpox, varioloid and chickenpox should be ascertained and recorded as fully as possible.

6. Makers of vaccine virus should give clear and explicit statements as to the quality of their products. The mere assertion of freedom from pyogenic germs covers only part of the case. Evidences of specific activity, as from use in the human being, should be given. For the makers, the results of variolous inoculations in vaccinated monkeys, as suggested by Copeman, would seem very useful and almost essential to the maintenance of a proper standard.

7. A government station for the making and testing of vaccine virus is highly desirable. This need not interfere with private enterprises, but, properly conducted, would be of great value to the latter.

8. Public vaccinators should be trained for their work, and facilities should be given for others to study the methods and clinical features of vaccination.

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THE VACCINATION QUESTION.

The antivaccination agitation, which has shown surprising strength in England during the past decade or two and more recently in Switzerland and elsewhere, is evidently rapidly gaining followers in this country. Recent events are liable to give impetus to the movement, which thus far has had but little influence here. The fatal cases of tetanus following vaccination in Camden, N. J., and in one or two other cities, will certainly have a tendency to help in this opposition. It is very probable that these deaths were not the result of vaccination at all, at least not from the virus, and it is extremely doubtful if the vaccination wound had anything to do with the fatal disease which developed incidentally afterward. But the antivaccinationists will make all the use possible of these fatalities to help along their propaganda. Like all such enthusiasts, they are not at all particular as to the absolute facts in such cases, if they can use them to advance what they believe to be a righteous cause.

There is another thing that is liable to make this antivaccination cause more popular, and that is the extremely mild type of smallpox that has prevailed the last year or two. The frightful horror of the disease in its more malignant form had a powerful influence in making people willing to submit to an operation that might otherwise be resisted for one reason or another. It was not only the fatal results that were dreaded, but the facial disfigurement that followed the victim through life. A theoretical objection based on possible results quickly vanished when death or lifelong disfigurement threatened. But with the recent and present epidemic it is different. Deaths are so rare that the disease causes practically no anxiety in this regard, and the resulting disfigurement from the pitting is so slight that few dread smallpox on this account. Under the circumstances, there need be no surprise if the antivaccinationists increase in number and influence in this country as they have in England, and succeed in influencing legislation here as they have there.

But there is another phase of the vaccination question to be considered, and one in which we as physicians are especially interested, because of its great importance, as it relates to preventive medicine. We refer to the use of unreliable virus, to which Professor Dock calls attention in our columns this week.[1] There have been hints from various parts of the country of the unreliability of much of the vaccine supplied, not by one firm only, but by several. The question of the reliability of the virus is a most serious and important one, and the time has come when the matter should be thoroughly investigated. At the present time each individual physician is compelled to depend on the virus supplied to him by the various firms that sell it, both as to its purity and efficiency.

Either there is some ground for the charge that certain houses are placing impure or unreliable virus on the market, or there is not. If there is, then steps should be taken to place the blame where it belongs. If there is no ground for complaint, then this should be ascertained for the sake of the accused firms, as well as for the satisfaction of those who have to bear the sole responsibility of using vaccine virus. Attention to the facts brought to notice, for example, by the Chicago Health Department last January would possibly do away with some of the evils complained of, which may be only the result of the use of unripe virus or that which has passed its time-limit of efficiency. It was then pointed out that glycerinated vaccine could be relied upon to be sterile only after a certain period, placed at sixty days, and that its efficiency was certain only for some forty days longer. Its specific property can not be indefinitely preserved. This is a long known fact, but one possibly too often neglected by the makers and users of vaccine virus. What is needed is to have its limitations authoritatively stated to the profession, so that it may govern its conduct accordingly.

But where are we to look for this authority, and who or what body shall conduct the investigation? A few of the city boards of health have investigated for themselves and to their own satisfaction, we are told, but there has been no publication of their findings, except as above mentioned. Further, one or two investigations will not be satisfactory. Smallpox, to a greater or less extent, is prevailing all over the country and the inquiry must, therefore, be national in its scope. The National Government ought to assume this responsibility, but there is no branch of the government as now constituted that is prepared for such a work, or that has the authority to undertake it. Evidently, if it is done, it must be by the profession itself through its national body, the American Medical Association. We believe that the Association as now constituted can conduct such an inquiry through a well-organized committee that shall be national in its scope, fearless in exposing fraud, reliable in its findings, and satisfactory in results accomplished. It is certainly worthy of being considered. If the present mild type of smallpox should gradually, or suddenly, develop into a more malignant form, and it should be discovered too late that many of those supposed to have been vaccinated do not prove to be immune, then not only may we expect frightful results, but vaccination as a preventive measure would suffer.

1. See p. 1677.

We have more than once urged our readers to be prepared for a more serious form of smallpox to develop from the present mild one, and we still believe that this possibility should be recognized. Vaccination, if properly done with reliable material, is a preventive of this disease, and there is no fact in preventive medicine more demonstrable. Accepting these two propositions as true the duty of the profession is plain.

TYPHOID FEVER IN CHILDREN.

Twenty years ago it was generally agreed that typhoid fever rarely developed in children under the age of five years. The reason for this supposed comparative immunity was often discussed and it was generally accepted that even the fact of the simpler diet of such children causing little irritation and consequently providing fewer opportunities for the invasion of the disease, was not of itself sufficient to account for its comparative rarity. The assumption of some special protective factor as specific immunity seemed necessary to explain the infrequency of typhoid fever in young children. From more careful observation and more scientifically exact diagnosis, it has developed that this supposed immunity is only imaginary. Children of any age, except for the protection afforded by their fewer opportunities of infection, are just as liable to contract typhoid as older people.

Eichhorst[1] says that the transmission of typhoid bacilli from the mother to the child *in utero* has been frequently observed. Typhoid bacilli have been demonstrated in the enlarged spleens of dead-born children whose mothers had been sufferers from typhoid. In these cases the ordinary characteristic lesions of typhoid fever—ulcerations of the intestines, infiltration of the follicles and enlargement of the mesenteric glands—were also present. Typhoid bacilli have been found in the placental blood, and in recent years Chantemesse and Widal have experimentally demonstrated the possibility of typhoid bacilli finding their way through the animal placenta. Hence, even the very earliest age is not protected by any special immunization from the invasion of typhoid bacilli.

The false impression that the disease is rare in children is due to the fact that the symptoms in children are apt to be atypical and that they may not point to any involvement of the abdominal organs. In a large series of cases of typhoid fever recently reported[2] to the Section on Pediatrics of the New York Academy of Medicine, some of the patients presented none of the classical symptoms of the disease on admission to the hospital. Typhoid fever was rather common in New York during the latter part of August and September and it was made a routine practice to make a Widal test in every case presenting continued febrile symptoms. In a number of cases apparently of ordinary summer complaint, in some cases of lobular pneumonia and meningitis, the Widal test was positive and subsequent clinical observation seemed to justify the diagnosis of extra-intestinal typhoid fever.

In some of these very atypical cases investigation showed that the little patients had been exposed to possible infection with typhoid bacilli, or cases of typical typhoid fever developed afterwards in the family or neighborhood. The possibility of such anomalous and unsuspected cases proving a center of infection for a family or institution can, as pointed out by Dr. Koplik,[3] scarcely be exaggerated. The lesson of the cases seems to be that, in febrile affections in children, typhoid fever must always be excluded, unless the symptoms evidently point to some definitely recognizable specific type of disease. Children even at an early age are quite as susceptible as at any time in life to typhoid infection. If exposed their low resistive vitality makes them especially liable to become the victims of the disease and they may readily become foci for the dissemination of typhoid bacilli because of the unsuspected nature of their atypical affections.

1. Specielle Pathologie und Therapie.
2. From Mt. Sinai Hospital, New York City.

THE PATHOGENESIS OF EXOPHTHALMIC GOITER.

Views concerning the pathogenesis of exophthalmic goiter have undergone many changes. By some the disorder was considered a dyscrasia, due to impoverishment and deterioration of the blood. By others the symptoms were ascribed to alterations in the heart and the vascular system. Later, derangement of the nervous system—either the cervical sympathetic or the medulla—was held responsible for the condition, while recently the manifestations have been attributed to excessive functional activity of the thyroid gland, and, last of all, disease of certain glandular bodies designated parathyroid, two on each side of the thyroid gland, are accredited with etiologic significance. It appears that some functional relation exists between the thyroid gland and the parathyroid bodies. A number of experimental observations go to show that the removal of the latter gives rise to secretory and histologic changes in the former—consisting in disappearance of the colloid substance and hypertrophy of the gland—and that these can be prevented by administration of parathyroid substance. From existing evidence it is believed that removal of the thyroid gland causes trophic disturbances similar to those of myxedema in man, while removal of the parathyroid bodies causes convulsive disorders and death. The symptoms of exophthalmic goiter are essentially of nervous origin, and it must be inferred that they are brought about by the action of certain substances that find their way into the circulation as a result of the deranged function of the thyroid gland.

At the last meeting of the British Medical Association Mr. Walter Edmunds[1] presented a preliminary communication detailing experiments on dogs, in the course

3. In Discussion, Section on Pediatrics, N. Y. Acad. of Med., Nov. 14, 1901.
1. Brit. Med. Jour., Sept. 21, 1901, p. 773

of which it was demonstrated that removal of the thyroid gland and the parathyroid bodies was attended with changes in the spinal cord and the medulla. These consisted in loss of definition of the Nissl bodies, the substance sometimes appearing as fine dust, the chromophilous elements sometimes seeming fused together and having in fact undergone chromatolysis. In some of the cells the chromophilous substance was absent, only the network within the cells being visible. In some of the cells there was considerable swelling of the nucleus, and of some of the cells the processes were wanting. In fact, cells were found in every stage of degeneration. These changes are similar to those that have been described as a result of some forms of acute poisoning, and it is fair to consider athyroidea as a variety of acute poisoning, affecting the central nervous system. As the symptoms of exophthalmic goiter more nearly resemble those following excision of the parathyroid bodies than does myxedema, which is due to disease of the thyroid gland, it must be concluded that the former disease is due to aparathyroidea, the presence of parathyroid secretion being necessary for the extraction from the blood and the deposition in the cells of the Nissl bodies, which are supposed to constitute nutriment for the cells.

PARTISAN POLITICS AND OUR INSANE ASYLUMS.

The scientific treatment of insanity and care of the insane in public institutions is a matter in which some portions of our country do not shine with special brilliancy. Nor are they likely to, as long as the ideal qualifications for a physician in charge are such as indicated below. The passage is a verbatim quotation, omitting names, etc., for reasons that can be easily appreciated.

> The selection of Dr. ———, of———, as the superintendent of the hospital ———, at ———, by Gov. ——— is to be commended by every citizen of ———, and especially by every Republican in the central portion of the state. Dr. ——— deserves the appointment and is qualified to fill the position. His services to the Republican organization cover many years. As the head of the Republican county organization in 1896 he gave the party splendid service, service given at the expense of his professional practice and by personal sacrifice. Under his leadership the Republicans of ——— approached nearer a state of practical harmony than it has been [sic] before in many years, and, it may be added, has ever been since. It was hoped and was promised later that Dr. ———'s services in this connection would be rewarded by the appointment he has now received, and the promise of Gov. ——— was given and announcement made. But realization of hopes and the salary failed to come.

We have already held that it is perfectly proper for a physician to take an intelligent and active interest in politics. In fact, we hold that if more of them did even at some sacrifice on their part, it would be better for the country as well as for the profession. But we do not advocate this for the sake of spoils; least of all when it implies the bringing of hospitals for the insane into the political fighting lines. If any public or charitable institutions should be neutral politically those for the care of the insane should be, and there is no possible excuse for them being otherwise, except the desires of political corruptionists in all political parties. It is a degradation to humanitarian instincts and a misuse of public funds wrung from the taxpayer on the pretence of their being devoted to the welfare of the helpless insane; it is a steal as much as any of the Tammany performances that have led to the recent New York revolt against its misrule.' The trouble is we have tolerated it so long that we do not realize this fact. Political management of such institutions means mismanagement, as is shown by abundant evidences. There are asylums where public scandals arise as frequently as revolutions in Venezuela, and others that escape only because they are less under the public eye. It is true that some political appointees do well, are good administrators, if not good psychiatrists, but in their case something besides their political services was considered in their appointment. Occasionally, even a man of eminence in the profession may be thus appointed; the pity is that his fitness can not save him if the charge of offensive partisanship is raised by an incoming administration. Each political appointment perpetuates the evil, and so long as partisanship is considered a qualification it will continue. There should be a medical public opinion on this matter to help bring about better things which will be more to our credit as a profession than are the conditions existing. Physicians should not enter politics merely or mainly for the bones that may be cast to them by politicians—who regard public charities as private plums—but for the good they can do; their participation in public affairs should be of a kind that elevates, not degrades, the profession. There is abundant opportunity for this and it will pay best in the end.

THE ACTION OF TOXIC SERUMS ON PERIPHERAL NERVES.

Peripheral neuritis is often associated with autotoxic conditions, as is the case in certain infectious diseases like tuberculosis and diphtheria. As the anatomic changes in the affected nerves are similar in many of these cases it lies near at hand to look for a similar pathogenesis. Reasoning along these lines suggested to Dopter[1] to arrange for a series of experiments in which he brought the blood serums from human patients with various diseases directly into contact with the nerve trunks of guinea-pigs. In each case a control experiment was made in the same way with normal serum; in no case did any changes develop in the nerves in the control animals. In the majority of the other experiments there developed the symptoms and the lesions characteristic of peripheral neuritis. The serums of uremic, diabetic, cancerous and other patients, all caused degenerations similar to those produced by Dopter and Lafforgue with bacterial toxins applied directly to the nerves in another analogous series of experiments.[2] The intensity of the degenerations, more or less purely Wallerian in type, varied with the serum

1. Arch. de Méd. Exp. et d'Anat. Path., 1901, xiii, 779-790.
2. Loc. cit., 507.

employed, and in the case of the same serum its action did not have the same intensity in all animals. From the results of his experiments Dopter is inclined to regard the peripheral neuritis of toxic states as due to the direct action of the toxic products in the circulating blood upon the elementary fibers of the nerve trunks.

LONGEVITY IN IRELAND.

It is said, on the authority of the registrar-general for Ireland, that 20 per cent. of the population of that island die of old age, and it would appear that that is not very rapidly fatal as there were living there in 1900, 212 men and women over 100 years of age. If these are facts it may be a question whether in some points of view they are so much a matter for unmixed satisfaction as might at first appear. Considering life as a blessing in itself, and most normal individuals hold this opinion practically if not theoretically, the showing is eminently satisfactory. Nevertheless a high percentage of deaths from old age must necessarily imply a much larger proportion than one-fifth living past the period of active usefulness, and this by so much lessens proportionately the active and productive part of the population. Taking account of the emigration, of the drafts on the young man for military service, which has always been favored by the Irish, and of this special vitality and longevity. it would seem that Ireland must be a country of old people par excellence. The longevity also indicates that life must be taken easy over there; nothing shortens it more than worry. Possibly the strenuous living Hibernians have come to this country where they can work off their energies in generally getting on in the world. Another corroborative fact as to the general well-being of the Irish and the comparatively small proportion of young and productive individuals is the reduced birth rate, which is a usual accompaniment of thrift and prosperity, and which is said to be lower than in any other portion of the British Isles. Taking all the data together and estimating their significance, it would seem that we ought not to consider Ireland a bad country to live in, but must infer that possibly the green island averages fairly well among the other parts of the earth.

THE OHIO DECISION ON OSTEOPATHY.

It would appear from the newspaper comments that the alleged great victory of osteopathy in the recent Ohio decision,[1] which holds that its practice is comprehended in the statutory definition of the practice of medicine, may prove a boomerang after all. The decision pronounces against discrimination, and therefore none in their special favor can be allowed. As they are not authorized to administer drugs or perform surgical operations, they may be exempted from examination in those departments, but there would be no good excuse for their being relieved from the examination required in other branches. The fact that the Ohio medical practice statute does not specify the number of years that a candidate for license to practice medicine must have attended lectures, leaving that to the board, while this is specified for the osteopaths, is considered as discrimination by the court and therefore void. This does not exempt the osteopaths from examination; it can not create another discrimination in their favor. The law is pruned down, therefore, as regards this point by the decision, and that the individual involved in the case goes free is a matter of no importance. The Ohio State Board is said to be well satisfied with the court's findings; it makes the osteopaths subject to the same rules as all other practitioners, except as regards their special exclusive dogma and practice. The board can compel them to show that they have a satisfactory knowledge of anatomy, physiology, pathology, chemistry "and such other subjects as the board may require." On the whole, the decision seems to have disposed of only a very unimportant feature of the law that was probably introduced only as a blind or for the benefit of the so-called osteopathic colleges which are springing up in various parts, and to have left its essentials untouched. It, moreover, by implication rules out discrimination in favor of any irregular practitioners and that is just what will not suit them. The rejoicing of the osteopaths may be found by them to be a little premature and there will probably be wailing and gnashing of teeth again very soon. It does not appear how they can help themselves, however, when the State Board summons them to undergo examination unless the legal mind finds some other flaw in the law in their favor.

1. See p. 1690.

STRONGYLOIDES INTESTINALIS IN THE UNITED STATES.

In connection with ankylostomiasis attention was called[1] to the importance of careful examination of the feces in cases of anemia and intestinal disturbances. The injunction to examine the feces for these parasites should be extended to other cases as well; for it appears that when this is done instances of intestinal infection with animal parasites are sure to be discovered sooner or later of which the profession of this country now know little or nothing, because they are not supposed to ever occur here. This is illustrated by the reports of Strong[2] and Thayer[3] of cases of diarrhea associated with the presence of strongyloides intestinalis in the Johns Hopkins Hospital. Both of these writers give careful reviews of the literature. In the first case, observed by Strong, the parasite was discovered in a patient with amebic dysentery and abscess of the liver. In Manila Strong had the opportunity of observing four additional cases. Thayer adds two more from Baltimore. As three cases were recognized in three years in one hospital, all of which probably originated in Maryland and Virginia, Thayer suggests that this parasite may be more frequent than has been supposed. There is some doubt as to the pathologic importance of strongyloides intestinalis. Manson, for instance, states that later investigations since its discovery in Cochin China, by Normand in 1876, while clearing up its interesting natural history, have robbed it of any claim to pathologic import. Strong holds that the parasite while not particularly dangerous is not harmless, causing an intermittent diarrhea and intestinal catarrh. But the discovery of strongyloides intestinalis in this country em-

1. JOURNAL, Nov. 30, 1901, p. 1466.
2. Johns Hopkins Hospital Reports, 1901, x, 91-132.
3. Jour. Exp. Med., 1901, vi, 75-105.

phasizes again the possible occurrence to a greater extent than suspected of ankylostomum duodenale (uncinaria duodenalis) because the geographic distribution of the two forms seems to be about co-extensive. In searching the feces for the ova of the ankylostomum, the observer sometimes is astonished "by seeing a small, snake-like animal suddenly rush across the field of the microscope," and on closer examination this animal is found to be the strongyloides. Enough has been said to show the desirability of careful examination of the feces in both hospital and private practice in order to enable the physician to fully control the situation.

Medical News.

CALIFORNIA.

Crusade Against Illegal Practitioners.—On December 6 the State Board of Medical Examiners swore out warrants against 18 illegal practitioners.

Personal.—Dr. Frank D. Walsh, for four years in charge of the hospital of the Hobart Lumber Company, has located in Santa Rosa.——Dr. William C. Hassler has been appointed chief sanitary inspector of San Francisco, to succeed Dr. William P. Chalmers.

Reports of Communicable Diseases.—The city council of Oakland has passed amendments to its ordinance requiring reports of certain diseases, as follows: "Every physician in the City of Oakland shall immediately report to the Health Office, in writing, every patient he shall have sick of typhus or ship fever, yellow fever, Asiatic cholera, smallpox, bubonic plague, diphtheria, scarlet fever or scarlatina, chicken-pox, typhoid fever, malarial fever, or pulmonary tuberculosis accompanied by expectoration; and report to the Health Office every death from any of the said diseases immediately after it shall have occurred. Every householder in the City of Oakland shall immediately report in writing to the Health Office the name of every inmate of his or her house, whom he or she shall have reason to believe sick of typhus or ship fever, yellow fever, Asiatic cholera, smallpox, bubonic plague, diphtheria, scarlet fever or scarlatina, chicken-pox, typhoid fever, malarial fever, or pulmonary tuberculosis accompanied by expectoration, and report every death occurring at his or her house from any of the said diseases."

COLORADO.

Dr. William W. Kenney, formerly house surgeon at St. Francis Hospital, Colorado Springs, has entered the Medical Corps of the Army and has been ordered to Fort McDowell, Cal.

Morbidity.—During November, 130 cases of diphtheria, 315 of scarlet fever and 130 of smallpox were reported to the State Board of Health. Compared with October, November shows an increase of 12 cases of diphtheria, 136 cases of scarlet fever and 76 cases of smallpox. The increase is due to the failure at different places to recognize the first case, and the resulting failure to adopt proper measures.

New Regulations.—The State Board of Health has directed all health officers to notify all physicians practicing in their jurisdiction that on and after Jan. 1, 1902, every case of typhoid fever must be reported; and that on and after Jan. 1, 1902, no dead body can be lawfully disposed of without first securing a burial permit. Blanks for both these purposes will be sent to health officers before January.

FLORIDA.

Personal.—Dr. Theodore Turnbull, Monticello, has moved to Jacksonville.——Dr. Louis S. Oppenheimer, Tampa, who has been seriously ill for several weeks, is now convalescent.

Hospital Burned.—The railway hospital of the Flagler system, at St. Augustine, was destroyed by fire, November 27, entailing a loss of $10,000, covered by insurance. There were twenty-four inmates in the various wards, but they were removed without loss of life.

Health of Florida.—The twelfth annual report of the State Board of Health shows that during 1900 there were 9610 births and 5949 deaths. The population of the State is 528,442, which gives a birth rate of 17.99 and a death rate of 11.24 per 1000. The death rate the previous year was 11.67, while the birth rate was 15.50; hence the figures for 1900 are encouraging as showing an advance in the birth rate and a slight decrease in the number of deaths. The six principal causes of death were: Consumption, 493; malarial fever, 330; pneumonia, 316; nephritis, 143; influenza, 133; and paralysis, 111. Out of the 5949 decedents 176 were from old age, being beyond eighty years; 143 from gunshot wounds, and 203 from other violent causes of death, such as drowning, burns, lightning, etc.

ILLINOIS.

St. Clair County Smallpox Hospital, East St. Louis, was formally opened November 21.

Hospital Enlarged.—The work of enlarging St. Anthony's hospital, Rock Island, is already under way. The addition will cost about $30,000.

Smallpox.—Smallpox is prevalent at Posey, where there are four well-developed cases, and at Mount Pulaski, where the existence of 14 cases has caused the public schools to be closed.

Hospital at Rock Island Arsenal.—One of the items of the estimates submitted to Congress by the Secretary of the Treasury is that of $135,000 for a new hospital building and for moving and reconstructing a storehouse at Rock Island Arsenal.

The Gordons Are Doctors.—The family tree of Dr. James Gordon, who died at Greenville, in 1895, shows that 13 of his descendants are physicians; that 7 are studying medicine, that 5 are destined to be physicians, and that two doctors have married into the family.

Personal.—Dr. William A. Gray, Milledgeville, has moved to Freeport.——Dr. Bert Caldwell, Effingham, has located in East St. Louis.——Dr. Arista D. Lloyd, Meyer, has succeeded to the practice of Dr. Jesse H. McIntosh, De Witt. The latter has moved to Hope.——Dr. Henry Taphorn, assistant county physician of St. Clair County, has resigned.

Decision Regarding Smallpox.—In the case of Granite City against the County of Madison, growing out of an epidemic of smallpox, the expenses of which aggregated $12,000, and in which the county tendered $3800 in gold as its share of the expense, and the Granite City council brought suit to make the county pay all the expenses, the circuit judge held that the county was liable for physicians' bills, necessary food, shelter and nursing. All items incidental to quarantine, such as guards, coal bills, boarding, pesthouse, supplies, etc., were charged to the city in the decision.

Chicago.

Dr. Frank Billings will deliver the Shattuck Lecture at Boston next June. His subject will be on "Changes in the Spinal Cord in Pernicious Anemia."

New Buildings Needed at Dunning.—The president of the County Board estimates that for $500,000 he could replace the present old and inadequate buildings at Dunning by new ones, built in modern style that would be a credit to the county.

Smallpox.—The almost marvelous exemption of the city from smallpox still continues. This is in striking contrast to the conditions in nearly all of the large cities of the country, if not of the world, outside of Germany, in which smallpox has become practically extinct through its efficient vaccination and revaccination system.

Weekly Bulletin.—Public health conditions as indicated by the mortality figures of last week, remain substantially unchanged. There were 18 fewer deaths reported than during the previous week, and the annual death rate was 13.39 per thousand, as against 13.93 for week ended December 7. The death rate among those under 5 years of age is gratifyingly low, and the previous excess among those over 60 was materially decreased last week. Pneumonia headed the list with 77 deaths; consumption was next with 48 deaths.

Influenza and Pneumonia.—There is no abatement, but the contrary, in the spread of influenza, the perniciously active first lieutenant of pneumonia, which, as shown in the March Monthly Bulletin, has, during the last dozen years, displaced consumption as the "captain of the men of death," to apply the phrase of John Bunyan. Both the pneumonia and the influenza germs continue to be found in increasing numbers in the laboratory examinations, and the closing forty-eight hours of the week ending December 7, with the sudden and violent change in temperature, afford the conditions best calculated to

develop these germs into activity in the systems of those in whom they had already lodged.

INDIANA.

Typhoid fever exists in Mount Vernon. The health officer states that 25 cases have been reported to him, mostly of school children.

Smallpox is reported as follows: Francisco, 3 cases; Oakland City, 1 case; Mackey, 1 case; Lincoln City, about 75 cases; Anderson, 1 case; Sidney, 26 cases; Pierceton, 3 cases; Packerton, 5 cases; North Madison, 27 cases; Tennyson, 8 cases; Gentryville, several cases, and Tell City, 5 cases.

Action of State Medical Board.—At a special meeting of the board, December 10, the license of Harry S. Kiskadden, Huntington, was revoked, as he was shown to be a non-resident of the state. The board also refused to recognize the Curtis Physio-Medical Institute, Marion. Two cases were continued. The board will hold an examination for license to practice, January 14. About fifty have already applied.

KANSAS.

Report System.—The Topeka Board of Health use the postal card system for reports.

Dr. Charles Hammond, Topeka, has been arrested for failing to report contagious diseases promptly.

Osteopaths to Be Examined.—It has been decided that the State Board of Registration has a right to examine osteopaths.

Smallpox in the State.—Smallpox is not as prevalent now as at this time last year. The following is the detailed statement of all cases reported during November: Arkansas City, 3; Barton County, 9; Chatauqua County, 4; Douglas County, 14; Fort Scott, 25, with 1 death; Girard, 12; Marysville, 6; Meade, 1; Ness County, 7; Phillips County, 3; Shawnee County, 3; Stafford, 19; Topeka, 8; Wellington, 1; Wichita, 6 cases, with 1 death, and Washington County, 16 cases. Total number of cases, 137, with 2 deaths.

MARYLAND.

Naval Academy Changes.—Passed Assistant Surgeon W. H. Garton has been detached from the Naval Academy at Annapolis and ordered to the New York Navy Yard. Passed Assistant Surgeon J. B. Dennis has been ordered to the Naval Academy.

War on Tuberculosis.—The State Board of Health is actively prosecuting its intention of making war on tuberculosis. The secretary has been directed to have an interview with the governor hoping that the legislature will authorize him to appoint a commission to study the means of dealing with the disease most effectually. A hope is even held out that the state may begin this winter the treatment of incipient cases of consumption in public sanatoria.

Abolition of State Aid to Medical Schools.—It is announced that the Board of State Aid and Charities will recommend to the legislature the abolition of all free scholarships and the withdrawal of all appropriations to medical schools. It is claimed that some of the institutions have been receiving aid for 60 years and that the state appropriation for one scholarship to each county and one to each legislative district in Baltimore is simply a raid on the treasury without due compensation.

Special Tax for Insane.—Dr. J. Clement Clarke, of Springfield Asylum for the Insane, proposes the levying of a special tax in this state for the support of the insane. This would involve an increase in the tax-rate of about 3 cents. The present system provides that each county and Baltimore shall pay $150 per year each for insane patients. Dr. Clarke proposes to collect all the insane from the almshouses and jails at Springfield, where there is plenty of land for building purposes. At present there are 405 patients at Springfield. Both asylums are crowded.

Baltimore.

Dr. Daniel C. Gilman has been made president emeritus of the Johns Hopkins University.

Mayor's Veto Sustained.—In the first branch of the city council the mayor's veto on the Municipal Hospital ordinance was sustained. It is probable that the matter will be taken to the legislature.

Baltimore Mortality.—For the week ended December 7 there were 180 deaths, more than half being colored. Typhoid fever caused 5; diphtheria, 1; consumption, 26; cancer, 7; heart disease, 12; pneumonia, 22, and Bright's disease, 13.

Deaths in Baltimore for the week ended December 13, were 189. Pneumonia caused 25, consumption 22, cancer, heart disease and inanition each 11, Bright's disease 10, accidents 9, paralysis 6, diphtheria and suicide each 3, typhoid fever and homicide each 1.

Veto of Ordinance Against Infections Hospital.—The mayor of Baltimore has vetoed the ordinance removing the Infections Hospital Commission and providing that the hospital shall not be erected on the ground purchased a short time ago by the commission for the purpose. All the schools of medicine joined in urging the great need of such a hospital and in expressing the opinion that there is no danger of infection. The mayor points out the injustice done to leading physicians of the city composing the board, who have given their time and services in selecting a suitable site. The board is bound by contract for $20,000 for the above site.

MICHIGAN.

Illegal Practitioner Convicted.—Robert A. Knight, Center Line, pleaded guilty, December 6, of practicing medicine without having registered, was fined $25 and agreed to leave the county.

Michigan Doctors.—Michigan has 4350 physicians who have received certificates under the law of 1899. The population of the state being 2,188,650, the ratio of physicians to laity is as 1 to 503.

Smallpox.—Manistee now stops all trains outside the city limits and has passengers examined as smallpox suspects.——In Breen Township 3 cases have developed, in one of the Ford River Lumber Company's camps.——In Reed City, 5 cases are reported.——At Muskegon 12 cases have been reported and the charge is made that many light cases are being treated privately.

Mortality in Michigan During November.—There were 2454 deaths returned to the secretary of state for the month of November, corresponding to an annual death rate of 12.5 per 1000 population. This number is 94 less than the number returned for the preceding month and 7 less than the number of deaths recorded for November, 1900. Of the total number of deaths returned to the department, 346 were infants under one year of age, 177 were children aged one to four years, both inclusive, and 659 were deaths of persons aged sixty-five years and over. Important causes of deaths were as follows: Pneumonia, 206; pulmonary tuberculosis, 137; other forms of tuberculosis, 29; typhoid fever, 79; diphtheria and croup, 59; scarlet fever, 27; measles, 6; whooping cough, 8; diarrheal diseases of children under two years of age, 42; influenza, 11; cancer, 127; accidents and violence (exclusive of deaths at Wabash wreck), 188. Two deaths from smallpox and two from anthrax are also reported.

MISSOURI.

Dr. Jackson's Estate.—The estate of the late Dr. J. P. Jackson, Kansas City, who died intestate, is valued at $10,000, and the president of the First National Bank has been appointed administrator.

The Alumni of the Medical Department of Washington University held, on December 10, a symposium on tuberculosis, and special emphasis was made upon the necessity for early diagnosis and limitation of the disease by enforcement of sanitary laws.

City Bacteriologist and Pathologist for St. Louis.—As one of the results of the city's recent antitoxin trouble, a bill creating the office of city bacteriologist and pathologist will soon be introduced into the municipal assembly. The bill will be drawn by the medical members of that body.

Smallpox.—The 12 patients in quarantine at the St. Joseph pest-house, which is a dilapidated shack on the river front with tents as annexes, complain of accommodations and food, and a subscription for their relief has been started by the citizens.——Independence has 16 cases of smallpox.——In Kansas City 3 cases were discovered, December 9, which were said to have been under the care of a prominent physician, who had not reported them.——At Enoch schools have been suspended on account of 3 cases of smallpox.——At Chitwood 15 cases have been reported.

Fumigation Plus Cleansing.—The subject of tuberculosis is receiving a large share of attention in St. Louis. The original bill for registration and fumigation as presented by the Health Department did not pass the Council, because it was deemed oppressive and futile. A new bill has been agreed upon by members of the board of health and representatives of the

St. Louis Medical Society, and will shortly be offered. One of the provisions is that when requested by the attending physician, the Health Department shall cause the apartment occupied by the tuberculous patient to be thoroughly cleaned and not merely fumigated.

State Sanatorium for Tuberculosis.—At a recent meeting of the City Hospital Alumni, Dr. Homan offered the following resolutions, which were adopted:

WHEREAS, The provisions by state government of sanatoriums for the reception and care of tuberculous persons has become an acknowledged necessity for the better protection of the public against tuberculosis in its various forms; and,

WHEREAS, Several states already possess such sanatoriums, while Missouri, although the fifth state in the Union in order of population, has taken no steps toward providing for the establishment of such an institution; therefore, be it,

Resolved, That the Society of the City Hospital Alumni recognize the urgent necessity for an adequate institution designed for the exclusive care and treatment, both hygienic and medical, of tuberculous persons in the State of Missouri, the said institution to be erected and maintained by the state government; and that this Society shall at once, by correspondence and otherwise, seek to enlist the active co-operation of other medical societies and bodies, and of the public press throughout Missouri to the end that a sanatorium, commensurate with the importance of the object sought, be authorized by legislative action, the same to be erected in some suitable location in the mountainous part of the state.

MONTANA.

St. John's Hospital, Helena, will be ready for occupancy, January 1.

Contract Physicians.—The County Commissioners have been awarding contracts for medical services for the county poor to the lowest or to sufficiently low bidders. In Yellowstone County $300 is paid; in Choteau County, $1260; in Custer County, $650; Meagher County, $300, and Beaver Head County, $600.

State Board Sustained.—The action of the State Board of Medical Examiners in refusing to grant William F. Clarkson, Butte, a license to practice medicine in the state was sustained. The case came before the District court on Clarkson's appeal from the action of the State Medical Board in refusing to issue him a license on the ground that his examination was entirely unsatisfactory and the board did not consider him a safe person to be allowed to practice.

NEBRASKA.

Omaha has 52 cases of smallpox under quarantine.

The State Board of Health met at Lincoln, December 6, and issued licenses to five physicians and two osteopaths.

Dr. A. N. Loper, who for the past seven years has been superintendent of the Nebraska Sanitarium, Lincoln, has accepted a similar position in the St. Helena Sanitarium, St. Helena, Cal.

The Smallpox Situation.—The reports to the State Board of Health indicate that the disease is being effectively fought in the various communities where it has broken out. The counties are organizing local boards of health and where they had not already formulated quarantine rules are adopting those recommended by Dr. Towne and the secretary of the state board. The disease is well under control in Long Pine and other places in that section of the state, but the danger is by no means passed. A strict observance of quarantine rules is essential.

NEW JERSEY.

Increase of Cancer.—The State Board of Health's report shows that in the year ended October 31 there were 1001 deaths from cancer, or twice as many as from smallpox, diphtheria, scarlet fever and typhoid fever combined in the state.

Library House-Warming.—The house-warming of the William Pierson Medical Library Association took place in the Stickler Memorial Library building, Orange, December 4. There was a large attendance of prominent physicians from the Oranges, Newark and surrounding towns and cities and other invited guests. Fifty-four members and a large number of applicants attended the meeting. The president, Dr. Thomas W. Harvey, Orange, opened the meeting with an address of welcome, and then introduced Dr. Charles McBurney, New York, who delivered a lecture on "Aseptic Surgery." At the conclusion of the address a collation was served.

Tuberculosis Sanatorium.—The Camden County Medical Society has passed the following resolutions:

WHEREAS, Tuberculosis is a constant factor in the mortality of the state, causing each year more deaths than typhoid fever, scarlet fever, diphtheria, croup, measles, whooping cough and smallpox combined, and amounting to about 11 per cent. of the death-rate, and,

WHEREAS, Tuberculosis is an infectious, contagious disease, communicable through air, food and personal contact; and,

WHEREAS, Science has demonstrated that the disease is preventable, and in a large percentage of incipient cases, curable, and that,

WHEREAS, The plan of segregating tuberculous subjects, the incipient cases in camps or sanatoria and the incurable cases in hospitals, has been tried abroad and in several states and found to offer the best means for the cure and eradication of the malady and the protection of the public health; therefore, be it

Resolved, That this Society recommend to the representatives of Camden County in the Legislature the enactment of a law providing for the establishment of a sanatorium, under State supervision, for the treatment of incipient cases of tuberculosis, which shall afford the best facilities for the personal care of the subject and the cure of the disease;

Resolved, That the authorities of each county be authorized by enactment to establish hospitals for the care and treatment of incurable cases, since the best results can be obtained only from treating the incipient cases apart from the incurable.

NEW YORK.

Onondaga County Hospital.—The hospital at the County house, Syracuse, has been completed, and the patients in the old building transferred to it. It is a model building, and $31,000 has been expended on its construction and equipment.

Medical Course Extended.—The Cornell Faculty of Arts and Sciences met December 11 and decided to extend the course for the A. B. and medical degrees from six to seven years. Hereafter no art student will be allowed to register in the medical course unless in the beginning of the senior year. Two years of the seven will be spent in the New York department and five in Ithaca.

Endorses Vaccination.—The Rochester Pathological Society, at a recent meeting, adopted resolutions declaring that smallpox was more than usually prevalent, publicly affirming its belief in the effectiveness of vaccination as affording protection against smallpox; urging the prompt vaccination of all unvaccinated children, and the revaccination of all persons whose protection has not been tested by revaccination within the last five years.

Consumptives Barred.—The Board of Health of the village of Liberty, fearing that the popularity of that place as a resort for consumptives might interfere with public health, and so with its popularity as a summer resort, has passed an ordinance putting tuberculosis in the same class as smallpox, scarlet fever and diphtheria and imposing heavy fines on any one maintaining a "hospital, pest-house or sanatorium" for consumptives inside the village limits.

The New York County Medical Association and Society.—New York County Medical Association, at its stated meeting on December 16, adopted the following preamble and resolution:

WHEREAS, The following resolution has been received from the Medical Society of the County of New York: "*Resolved*, That the President of the Medical Society of the County of New York appoint a committee of five, of which he shall be chairman, provided a similar committee be named by the New York County Medical Association, to confer with that body with reference to a union of the two organizations; and that this committee be requested to report to the Society at the stated meeting in January, 1902, or sooner, in order that this Society may, if desirable, make a recommendation to the Medical Society of the State of New York at its next annual meeting;" and,

WHEREAS, The subject of union of the medical profession in this state, as expressed in the foregoing resolution as presented by the Medical Society of the County of New York, is wholly a state question; and,

WHEREAS, The published charter and by-laws of the New York State Medical Association do not allow its county associations to act independently on state questions;

Be It Resolved, That we heartily favor a union of the profession in one state medical body, and respectfully suggest that the Medical Society of the County of New York request the Medical Society of the State of New York to appoint a committee to consider this question; and,

Be It Further Resolved, That the New York County Medical Association request the New York State Medical Association to appoint a committee of conference in case the Medical Society of the State of New York shall appoint a similar committee.

Buffalo.

Dr. Arthur W. Hurd, superintendent of the Buffalo State Hospital, has been granted $200 for his examination of Czolgosz.

Dr. G. F. Mills, formerly of the house staff of the Erie County Hospital, has been appointed on the staff of the Manhattan State Hospital, New York City.

State Commissioner in Lunacy.—It is reported that Governor Odell has appointed Hon. Daniel Lockwood as State Commissioner in Lunacy, a position which pays $5000 and $1200 for traveling expenses.

Marine-Hospital for Buffalo.—In his report to Congress, Secretary of the Treasury Gage notes that the Surgeon-General

of the United States Marine-Hospital Service recommends an appropriation for the establishment of a marine-hospital at Buffalo, and approves the recommendation.

Smallpox.—Many stores and factories are still continuing in the compulsory vaccination of their employes. The health authorities made an inspection of all inhabitants on Laepere Street (where most cases are at present) and all those whose vaccination did not take or who had not been vaccinated were compelled to comply. The Street Railway Company has undertaken to fumigate the street cars and all the employes are undergoing vaccination.

New York City.

Dr. William B. Pritchard has been appointed consulting neurologist to the S. R. Smith Hospital, New Brighton, Staten Island.

Dr. Rowland G. Freeman has been elected chairman of the Section on Pediatrics of the Academy of Medicine, and Dr. David Bovaird, Jr., secretary, for the ensuing year.

An epidemic of scarlet fever has broken out in the Hebrew Orphan Asylum, Brooklyn, where 315 boys are housed. Ordinarily 250 of the children attend school in the neighborhood, but this has been stopped and the asylum placed under quarantine.

Dr. James W. Bowden, a physician living at Yonkers, but doing business in New York City as medical examiner for one of the life insurance companies, while engaged in his professional work in this city suddenly lost his identity. He had just made a call upon a private patient, and had insisted upon calling in consultation a surgeon. He left the patient's house saying that he would return with the surgeon in two hours, and when this time had long passed an effort was made to discover his whereabouts. The police were finally notified, and a large force of detectives searched for him, but two nights and two days elapsed from the time of his disappearance before they discovered him. It is reported that when found his mind was almost a complete blank, but that it is expected he will soon recover completely.

Deportation of Consumptives.—The first case to test the constitutionality of the Treasury ruling, that consumptives shall be prevented from landing in this country as immigrants, has just come up. One Thomas Boden, and his family, arrived here on November 9, and relatives from Philadelphia guaranteed that they would not become a public charge. The authorities refused to admit Mr. Boden to the country because the examination made by the Marine-Hospital physicians showed him to be suffering from pulmonary tuberculosis. He was ordered deported, but a lawyer obtained a writ of habeas corpus, and Mr. Boden is now a government patient in the Long Island College Hospital. The act of Congress under which he is detained was intended to exclude idiots, insane, paupers, criminals and "persons suffering from a loathsome or a dangerous contagious disease."

OHIO.

Smallpox at Mingo Junction is said to be under control.

State Board Examination.—The State Medical Board examination was held in Columbus, December 10, 11 and 12. There were 32 applicants.

Massillon State Hospital.—The annual report of the Massillon State Hospital has been filed. The trustees recommend the purchase of 85 acres of land at a price not to exceed $200 per acre, and also ask appropriations for a hospital building, an infirmary and seven cottages. The estimates for 1902 are $321,000 and for 1903, $359,700. The per capita cost, including officers' salaries, was $141.81.

Anti-Tuberculosis Committees.—The president of the Ohio Society for the Prevention of Tuberculosis has announced the following committees: Legislation; auxiliary societies; public institutions; sanatoria; lecture bureau; workshops and factories; publication; animal tuberculosis and sick benefits. He also appointed a special committee to investigate and report on the prevalence of tuberculosis in cities.

PENNSYLVANIA.

Marine-Hospital at Pittsburg.—Congressman Dalzell has introduced a bill in Congress appropriating $100,000 for the purchase of a site and the building of a marine-hospital in Pittsburg.

A physician of Spring City was fined $25 and costs, December 7, for alleged failure to report to the Board of Health a case of smallpox he was treating. He will appeal from the decision of the Burgess.

Want Fees Advanced.—The physicians of Sharpsburg and Etna are making an organized effort to obtain adequate fees. At present the fee-bill is 50 cents for office calls and $1 for visits. These fees should, in their opinion, be doubled.

Smallpox.—An epidemic exists in Schuylkill County; at Auburn there are 25 cases and 6 at Port Clinton, 1 at St. Clair and several at Tamaqua.——Two cases are reported from Rosato, near Bangor.——Near Hoffer, Snyder County, there are six cases.——Plymouth, where the disease has existed for a year, and where there have been 22 deaths, has been quarantined by Wilkesbarre.——Lebanon has 24 cases.

Philadelphia.

Wills Eye Hospital, under control of the Board of City Trusts, is to have a change of management, Superintendent Richard H. Lytle having resigned.

State Medical Board Examinations.—The State Medical Boards of Examiners, regular, eclectic and homeopathic, examined applicants for license to practice medicine this week.

Pathologic Exhibit.—The Philadelphia Pathological Society will hold a special annual exhibition meeting, January 9. Many fine bacteriologic and tissue specimens, both microscopic and gross, will be shown.

New Laboratories.—To help in building medical laboratories for the University of Pennsylvania, Dr. R. V. Mattison recently subscribed $25,000. To make room for the buildings, the Veterinary School is to be moved.

The North Branch of the Philadelphia County Medical Society held a meeting, December 10. The program consisted of a symposium on variola, varicella and vaccinia. Drs. Joseph McFarland, Jay F. Schamberg, William M. Welch and Judson Daland presented different phases of the subject, and the chief medical inspectors, vaccine physicians and other authorities engaged in the discussion.

Contracts Awarded for Blockley.—Dr. John V. Shoemaker, president of the Board of Charities and Correction, announces the award of contracts for Philadelphia Hospital (Blockley) work as follows: A maternity house, to be completed in 125 working days, at $9500; a children's hospital, completion required in 175 days, at $33,275, and a hospital for contagious skin diseases, completion in 175 days, at $33,175.

Vaccination.—The official report of the Camden, N. J., Board of Health, relative to 11 cases of tetanus following vaccination in that city, is gratifying to the profession at large, and should be especially so to the physicians as well as to the laity of Philadelphia at this time of an imperative need for vaccination. The investigation established the fact that all virus used in Camden was free from tetanus, as shown on examination by the state bacteriologist; by tests on rats by Cooper Hospital physicians, and by the fact that in none of the cases did tetanus, which was acute, occur until 3 or 4 weeks after vaccination. In Philadelphia, within the past three months, 700,000 to 800,000 persons have been vaccinated with the same kinds of virus as those used in Camden and not a case of tetanus has occurred. The cases of tetanus are ascribed in the report, to a long period of dry weather, with high winds, and to a lack of proper care on the part of patients to the vaccination wounds.

The Smallpox Situation.—According to the official report more new cases of smallpox developed in the city in the past week than heretofore. In the week ended November 30, the next highest number, 113, occurred; last week 125, as against 72 for the intervening week. Eight deaths occurred the past week. The total number of cases reported since the beginning of the year is 965, deaths 127; cases under treatment at present, 349. To stamp out the disease, under the direction of Dr. W. M. Angney, assistant medical inspector, an extra corps of about 60 physicians has been organized, and they are making a house-to-house canvass. This corps, appointed upon the recommendation of the deans of the medical colleges, is in addition to the 33 permanent regular physicians who vaccinate in their offices only. The extra corps has made, in the week's work, about 11,000 vaccinations. They are paid by the city. In view of some apprehension regarding tetanus, the physicians are directed to use careful technique and to instruct patients in the protection of the wounds. Because of the small capacity of the Municipal Hospital, it is necessary to treat many cases in their homes. Such houses are quarantined and guarded by police or special quarantine officers.

TENNESSEE.

Cornerstone Laid.—The cornerstone of the new laboratory for Meharry Medical College, Nashville, was laid, December 3.

Dr. William D. Haggard, Jr., Nashville, who was operated on for appendicitis last week by Dr. L. S. McMurtry, of Louisville, Ky., is improving satisfactorily.

Doctors Won.—In the suit of M. Cohen against Drs. William B. Rogers and Frank D. Smythe, of Memphis, for $15,000 damages for the loss of an arm, the jury returned a verdict for the defendants, December 10.

Right of Way for Doctors and Ambulances.—An ordinance was passed, December 5, by the Legislative Council of Memphis, and approved by the mayor, which grants "the right of way to all such persons who practice for the cure of the sick and the injured, and all such vehicles which are exclusively used for the transportation of the sick and the injured."

Smallpox.—During November 3 cases were treated in Chattanooga.——There are 4 cases in the Weakley County pesthouse.——Dr. John E. Parks, Somerville, physician of Fayette County, is ill with the disease.——In Johnson's Grove, Crockett County, there are 4 cases and many exposures.——Jackson County has 5 cases; Lauderdale County, 3 cases; Shelby County, 8 cases; and Fayette County, 8 cases.

CANADA.

University Quarantined.—Ottawa University is quarantined owing to two or three cases of smallpox having developed among the student body, which numbers about 600. There have been over 90 cases of smallpox at the capital since the beginning of the outbreak.

Physicians in Lumber Camps.—Dr. Hodgetts, special sanitary inspector to New Ontario, is at the present time in Toronto. He reports that fifty lumber firms and companies have appointed physicians to look after the men in their shanties in the lumbering and mining districts to the north.

Personal.—Dr. G. E. R. McCartney left Toronto on December 7 for New York to assume his duties as house surgeon of the New York City Hospital, a position which he will hold for the next two years.——Dr. James G. Ross, London, Ont., has removed to Chicago to practice.

Appointment.—Prof. J. T. Ronald has been appointed public analyst at Montreal. The work of protecting the public against impure and adulterated foods, drugs, etc., is under the supervision of the Department of Inland Revenue at Ottawa, with a chief analyst in charge. The dominion is divided into districts, and each month officers purchase in the open market samples to be analyzed, and it is thus that offenders under the adulteration act are dealt with.

New Order of Trained Nurses.—For some time there has been considerable opposition on the part of the Roman Catholic church authorities in Montreal to Catholics employing Protestant trained nurses and to obviate this Archbishop Bruchesi has addressed a pastoral letter to the Catholic clergy ordering the establishment of an order of Catholic trained nurses, to be known as the Sisters of Hope, whose duty it shall be to attend the Catholic sick.

Osteopath Convicted.—The case of the Toronto osteopath in whose office a young lady recently died after undergoing treatment for goiter, came up before the police magistrate last week. The Crown had secured the books of the irregular and from these it was ascertained that other than osteopathic diseases were commonly being treated by these "practitioners." The magistrate seemed to have no faith in osteopathy and stated that he would impose a fine of $25 and costs.

Physician Loses Suit.—At a recent sitting of the Division court of an Eastern Ontario town, a physician sued a veterinary surgeon for medical attendance upon his family. The judge gave judgment for the defendant with costs, owing to the fact that the practitioner could not at the time produce a certificate issued by the registrar of the Ontario Medical Council, showing that he was a duly qualified practitioner. This puts a new aspect on the $2 assessment question in the province of Ontario.

University Federation in the Maritime Provinces.—A special meeting of the Governors of King's College, Windsor, N. S., was held on the 12th inst., and the meeting was attended by representatives from New Brunswick, Prince Edward Island and points in Nova Scotia; it had for its object the federation of all the colleges in these three provinces, and the establishment of one great university for all. King's College is the mother university of Canada; and in all the colleges the science departments are sadly neglected. A committee was appointed to open communications with all the colleges concerned.

Dr. Thomas G. Roddick, Dean of McGill.—Dr. T. G. Roddick, M. P., has been chosen by his fellow members of the Faculty of Medicine for the position of Dean rendered vacant through the resignation of Dr. Craik. Dr. Roddick at present holds the Chair of Surgery. He was graduated in 1868 as Holmes gold medallist. He is ex-president of the Montreal Medico-Chirurgical Society, of the Canadian Medical Association and of the British Medical Association. He was elected a Member of the Canadian House of Commons in 1896, since which time he has been prominently identified with the question of inter-provincial registration.

The Toronto Hospitals and Consumptives.—For two years the hospitals of Toronto have refused to admit consumptives to their wards; but the demand of the public press became so strong last week that, coupled with the energetic demands of the Medical Health Officer, they could hold out no longer, and the Toronto General and Grace hospitals offered to take in six patients each who were suffering from pulmonary tuberculosis. It is likely that the Western and St. Michael's will soon follow. The accommodation will extend to such time as the National Sanitarium Association shall require to get their new sanitarium near Toronto completed.

Dr. Lesslie M. Sweetnam, one of Toronto's foremost surgeons, died at Johns Hopkins Hospital on December 11, whither he had gone for treatment for blood-poisoning. Some nine or ten days prior to his journey to Baltimore, he was operating on a man with gangrene of the forearm resulting from a gunshot wound, the patient dying a few days thereafter; and while performing his toilet after the operation the surgeon had the misfortune to prick one of his fingers with the nail-brush, which accident was the starting-point for the subsequent septicemia. Dr. Sweetnam was graduated from Toronto University in 1881 and also from Victoria University. He was 42 years of age and at the time of his death was professor of clinical surgery at Toronto University and surgeon to the Toronto General and St. Michael's hospitals.

LONDON LETTER.

Death of Sir William MacCormac.

The sudden death of Sir William MacCormac, which took place on December 4, has brought to a close a most distinguished career and removed the most prominent social figure in the profession. It is feared that the sad result was due to fatigue and exposure during his service as consulting surgeon to the Army in South Africa. He was attacked with dysentery and ever since his return suffered from lumbar pain, abdominal tenderness and loss of flesh. To escape the London fogs he journeyed to Bath, where he was taking immersion baths, from which he had derived much benefit in former years. At 7:30 a. m., while sitting up in bed and taking a cup of coffee, he suddenly put his hand to his heart with an expression of pain and expired. Sir William MacCormac was born at Belfast in 1836; his father, Dr. Henry MacCormac, was a well-known medical practitioner in the town and one of the pioneers of the open-air treatment of consumption. Young MacCormac studied medicine at Queen's University in Ireland and in 1864 became a fellow of the Royal College of Surgeons in Ireland. He was appointed surgeon to the Royal Belfast Hospital and during six years' tenure made injuries of joints a special study. For many years he was a member of the senate of the Queen's University in Ireland and examiner in surgery. In 1870 he volunteered his services for the aid of the French wounded in the Franco-German war. He joined the Anglo-American ambulance, a body consisting of eight English and eight American doctors, over which Dr. Marion Sims of New York presided. On the latter's return to America MacCormac was appointed surgeon-in-chief. Each day more than 100 major operations were performed. On one day MacCormac himself performed several amputations of the leg, thigh, forearm and arm; he excised the shoulder and elbow joints, and performed partial resections of the upper and lower maxillæ and of nearly the whole ulna, to say nothing of removal of bullets and pieces of shell from various parts of the body. On his return to England he published his experiences in a work entitled, "Recollections of an Ambulance Surgeon," which enjoyed great popularity and was translated into all the European languages and into Japanese. In 1883 he was elected a member of the council, and in 1896 became president. He was re-elected president four times and thus held the office for the unprecedented period of five

years. This was no doubt largely due to his great social success. He was a *persona grata* with the King and in great favor with all ranks of society and with the profession. His presence was most imposing: he was probably the tallest man in the profession, standing 6 feet 3 or 4 inches, and had handsome aquiline features. His genial manners and generous disposition no doubt contributed largely to his social success. He was described as "a big-bodied and big-hearted Irishman." The remarkable success of the centenary celebration of the college last year and the many brilliant ceremonies were largely due to his initiative and influence. Largely through his aid were gathered together the Prince of Wales, the Premier, Earl Roseberry and the most eminent representatives of surgery in the world, who received the honorary fellowship of the college at his hands. In 1881, when the International Medical Congress met in London, he was appointed secretary-general. His services were recognized by the government, which conferred on him knighthood. His twenty years' work at St. Thomas' Hospital was most fruitful and he was a very successful teacher. He was one of the first to perform laparotomy for rupture of the bladder, and was an early and strenuous advocate of Lister's antiseptic system. In 1897 he was made a baronet. In 1898, in consequence of his unique experience of war surgery, the government gladly availed itself of his services as consulting surgeon in the South African war. His most important work was "Surgical Operations," which was beautifully illustrated by drawings from the pencil of his colleague and friend, the late Mr. William Anderson, surgeon to St. Thomas' Hospital. The number of foreign honors conferred on him were very great; he was decorated by almost every European government. His wife survives him, but he leaves no children.

Departure of Mr. Jonathan Hutchinson for South Africa.

Mr. Jonathan Hutchinson, who has performed in a long life the work of many men, is still hale and remains as indefatigable a student and investigator as ever. He has just astonished all his friends by undertaking a journey to South Africa for the purpose of studying leprosy and any other medical or biological phenomena which may come in his way. His principal object to investigate leprosy with reference to his fish hypothesis which, like all his doctrines, he holds with the utmost pertinacity even in the face of almost universal opposition. His opponents instance South Africa as a striking example of the breakdown of the fish theory. They say the Kaffirs abominate fish and yet suffer from leprosy. Mr. Hutchinson will first visit Robbin Island, which is near Cape Town, and is devoted to the segregation of lepers, and will interrogate the lepers himself.

Excision of the Gasserian Ganglion for Neuralgia.

At the Clinical Society Mr. Jonathan Hutchinson, Jr., reported the results of five cases in which he had excised the Gasserian ganglion, four of the patients being shown at the meeting. The operation had been performed in one case four years, in two, three years, and in one case two years previously. In not one had there been the slightest recurrence of the neuralgia. He urged that the temporal route should alone be employed to gain access to the ganglion and quoted one of his cases in which the operation from below by the pterygoid route (Rose's method) had been previously performed by another surgeon. The operation had been carried out in two stages, and it was believed that the ganglion had been at any rate in part removed. The return of the neuralgia worse than before and the imperfect anesthesia had raised doubt as to this, and at the final operation by Krause's method it was proved that the ganglion was quite intact and that the base of the skull had been penetrated outside the foramen ovale. Such a case well illustrated the fallacies attending operation by the pterygoid route. He pointed out that in severe epileptiform neuralgia of the fifth nerve the ophthalmic division was effected in only one-fifth of the cases, that probably in some of these the involvement of the first division was in a sense reflex and would be cured by removal of the second and third divisions with the corresponding part of the ganglion, leaving the ophthalmic trunk untouched. Many cases prove the correctness of this view, and he did not know of a single one in which after this course had been thoroughly carried out the neuralgia had returned in the ophthalmic division. If the latter were spared the eye ran no risk, whilst other complications, such as injury to the oculomotor nerves and the cavenous sinus might be avoided with comparative ease. He instanced one of his cases in which, after complete removal of the ganglion, the corresponding eye had become inflamed and required excision after several months had elapsed. In his later cases he had deliberately avoided cutting the ophthalmic part. As regards the details of the excision it was probably better to use a large trephine and cutting forceps—without subsequent replacement of bone—than to turn down a flap and overlying tissues. It was not always necessary to tie the meningeal artery, especially if the lower part of the ganglion alone were dealt with. Hemorrhage was lessened by keeping the patient during the whole operation in a sitting position. An electric head lamp was essential. The use of the curette to break up the ganglion was strongly deprecated. Intra-dural division of the fifth nerve was far more dangerous than extra-dural excision of the ganglion. Dr. Taffany's statistics of 108 cases, with a mortality of 23 per cent., did not at all represent the actual risk of the Hartley-Krause operation, for amongst them were included cases operated on by many methods, including the dangerous intra-dural one, and such needlessly severe methods as that advocated by Doyen. The latter surgeon had lost two out of three of his cases from the operation. The mortality of the operation by the temporal route in skilled hands was probably under 10 per cent., and so lasting were the results that without doubt in the future most of the operations on the main branches of the fifth nerve for severe neuralgia would be abandoned in its favor. He urged that the victims epileptic from neuralgia should not be left to develop suicidal tendencies or to poison themselves with morphia before being given the chance of a permanent cure by the operation.

Married.

A. S. Yenni, M.D., to Miss Marie A. Lafitte, both of New Orleans, La., November 20.

Horace B. Haddox, M.D., to Miss Mary Lee Waters, both of Gaithersburg, Md., December 3.

Herman Oechsner, M.D., New Orleans, La., to Miss E. Edith Appel, Slidell, La., October 23.

B. A. Terrett, M.D., Natchitoches, La., to Miss Edna Lillian Trist, of New Orleans, La., November 16.

Henry A. Blair, M.D., San Antonia, Texas, to Mrs. Lily C. Edmondson, at St. Louis, Mo., December 4.

Martin L. Mayland, M.D., to Miss Josephine Olivette Sullivan, both of Faribault, Minn., November 30.

U. S. G. Hughes, M.D., Kansas City, Mo., to Miss Dora Elizabeth Brown of Topeka, Kan., December 5.

J. W. Simmons, M.D., Peaster, Texas, to Miss Maude Wilcutt, of Lewisburg, Ky., at Bowling Green, Ky., December 7.

Claude B. Calbreath, M.D., Cleopatra, Mo., to Miss Mollie Boland, of Lucerne, Mo., at Kansas City, Mo., November 27.

Frank N. Freemire, M.D., Chester, Iowa, to Miss Josie Johnson, of Fountain, Minn., at Chester, Iowa, November 27.

Willard L. Matthews, M.D., to Miss Bessie Hendricks, both of Martinsville, Ind., at Lawrenceville, Ill., December 4.

Frank Webster Jay, M.D., Chicago, late major and surgeon, U. S. V., to Miss Harriet Staples, daughter of the late Dr. George M. Staples, of Dubuque, Iowa, December 10.

Deaths and Obituaries.

John H. Sears, M.D. Medical College of the State of South Carolina, Charleston, 1852, a member of the American Medical Association; one of the founders and ex-president of the Texas State Medical Association; one of the founders and several times president of the Waco Medical Association, died at his home in Waco, Texas, after a lingering illness, December 4, aged 75. He was a native of Virginia, and served in the Civil war as surgeon of the Thirty-second Texas Cavalry and later as division surgeon. The medical men of the city met on the day of Dr. Sears' death, and adopted the following resolutions: "We, the medical profession of Waco, are called upon to mourn the loss of one of our beloved profession, whom we have in years of professional association with him learned to love and honor, Dr. J. H. Sears. Therefore, we, the medical profession of Waco, sincerely mourn our loss of both dear friend and worthy brother, whose daily professional courtesies we should all strive to emulate, thereby adding both trust and confidence to our standing with our brethren in the profession and the

public whose sympathies has so sweetened his declining years: Be it Resolved, That we tender our kindest sympathy to his family in their great bereavement, and that we, as a body, show our love and sympathy by attending the funeral in a body."

William J. Van Eman, M.D. Medical College of Ohio, Cincinnati, 1875, prominent as a physician in Kansas, a member of the local, state and the American Medical associations, died at his home in Leavenworth, Kas., December 9, from a septic wound of the hand, after an illness of three weeks, aged 52. In the early part of his career he was an acting assistant surgeon in the Army and served throughout the Sitting Bull campaign with General Miles. In 1880 he settled in Leavenworth, where he afterward resided and practiced.

John E. Beers, M.D. University of Georgetown, Washington, D. C., 1864, prominent as a practitioner of Tompkins County, N. Y., an esteemed citizen, sometime assemblyman, a surgeon during the Civil war, and for many years a member of the Pension Examining Board, died suddenly from apoplexy at his home in Danby, December 5, aged 61. For one hundred and four years, Dr. Beers, his father and his grandfather had practiced in Danby.

Edward B. Zier, M.D. University of Louisville, Ky., 1878, a native of New Albany, Ind., but for more than twenty years a practitioner of Minneapolis, a member of the legislature in 1894, died at his home in Minneapolis, December 9, after an illness of many months, from Bright's disease, aged 44.

William White Harris, M.D. Jefferson Medical College, Philadelphia, one of the most honored citizens of Wilmington, N. C., and a veteran of the Civil war on the Confederate side, died at the residence of his daughter in Wilmington, December 7, from heart failure due to acute indigestion, aged 77.

Josiah W. Pearson, M.D. University of Vermont, Burlington, 1883, a practitioner of Providence, R. I., died at a sanatorium in that city, December 2, after a brief illness from heart failure after an operation for appendicitis, aged 45.

Lesslie M. Sweetnam, M.D. Toronto University, 1881, a resident of Toronto, died December 11, at Johns Hopkins Hospital, Baltimore, from sepsis following an operation several weeks before.

Peter Austin, M.D. Jefferson Medical College, Philadelphia, 1850, who had practiced medicine in Carrollton, Mo., for more than forty years, died at his home in that place, December 7.

Robert McLearn, M.D. New York University, 1880, died at Fredericton, New Brunswick, November 29, after an illness of ten days, from bronchitis and heart trouble, aged 47.

Arthur Watters, M.D. Laval University, Quebec, 1878, a physician of Quebec, and surgeon of the Ninth Regiment, died at his home in Quebec, December 5, after a long illness.

Simeon J. Shaw, M.D. Starling Medical College, Columbus, Ohio, 1879-1880, a practitioner in Great Bend, Kas., died from heart disease at his home in that city, December 10.

Ada Smith, M.D. Woman's Medical College of Georgia, Atlanta, a native of Greenfield, Ind., died from tuberculosis at Phoenix, Ariz., December 8, aged 32.

M. S. Stahl, M.D. Rush Medical College, Chicago, 1865, died at his home in Guthrie, December 7, aged 75.

J. L. Sharp, M.D. Tulane University, New Orleans, La., at Blanchard, La., November 15.

Correspondence.

Passing of Sectarianism in Medicine—The Position of the New York State Medical Association.

NEW YORK CITY, Dec. 10, 1901.

To the Editor:—I was very much interested in an editorial from the St. Paul *Medical Journal*, which appeared in THE JOURNAL, November 16, 1901, entitled "The Passing of Sectarianism in Medicine," and I would like to call the attention of your readers to the advanced position taken by the reorganized New York State Medical Association on this subject. The only requirements for membership in this organization are that a physician shall be legally registered, shall be in good standing, and a resident of the State of New York. These requirements would seem to cover the points made in the editorial to which I have already referred, allowing, as they do, any legally registered physician in this state, *no matter from what school* he may have graduated, to become a member of the Association, provided only that the applicant calls himself simply a physician, without making use of any qualifying adjective, and does not belong to any organization which is avowedly hostile to the general medical profession. To make its position on this point perfectly clear, the Council and Fellows of the New York State Medical Association at its annual meeting held in this city in October last, passed the following resolution:

"WHEREAS, There exists widespread misunderstanding as to the interpretation of Section 1, Art. IX of the by-laws of the New York State Medical Association, it is hereby declared that the words, 'Physicians in good standing,' have been, and are held to mean, under the code of ethics of the American Medical Association, legally registered physicians who make no claim to base their practice upon exclusive dogma, and who maintain no professional relation with organizations or institutions representing such dogma."

Yours truly, FREDERICK HOLMES WIGGIN, M.D.,
Formerly Secretary, the New York State Medical Association.

Miscellany.

The Osteopathy Decision in Ohio.—The following is the substance of the facts regarding the sweeping decision of the Supreme Court in the test case of the State against Henry H. Gravett, of Darke County, as given by our correspondent:

"Doctor" Gravett was indicted for practicing osteopathy without first having complied with the law of Feb. 27, 1896, as amended April 14, 1900. The original act requires all persons who contemplate practicing medicine to submit to an examination before the State Board of Medical Examiners. In a case brought under that section the State argued that the system of rubbing or kneading the body known as osteopathy, is an "agency" within the meaning of the statute, but the court held that the practice of medicine means the administering of a drug or medicine that is intended to produce an effect by its own potency. Two years ago the law was amended and an attempt made to give a broader definition of the term "practice of medicine." Under this act, any "appliance, application, operation, or treatment of whatever nature for the cure or relief of any wound, infirmity," etc., is called the practice of medicine. The amendment excluded from the requirements of the original act requiring examination "any osteopath who holds a diploma from a legally chartered and regularly conducted school of osteopathy . . . . wherein the course of instruction requires at least four terms of five months each in four separate years, provided that such osteopath shall pass an examination satisfactory to the State Board on the subjects of anatomy, physiology, chemistry and physical diagnosis." The Supreme Court, in overruling the exceptions to the decision of the Common Pleas Court, finds that the system of kneading, commonly known as osteopathy, is comprehended within the practice of medicine defined by the amendment of two years ago, and that an osteopath may be required to conform to such reasonable standard respecting qualifications as the General Assembly may prescribe, but an enactment which discriminates against osteopaths by requiring them to hold diplomas from a college which requires four years of study as a condition to their limited certificates which will not permit them to prescribe drugs or perform surgery, while not requiring such time of study from those contemplating the regular practice as a condition to their obtaining unlimited certificates, is, as to such discrimination, null and void. The decision was unanimous.

New Instruments.

A NEW OPTHALMOSCOPE,

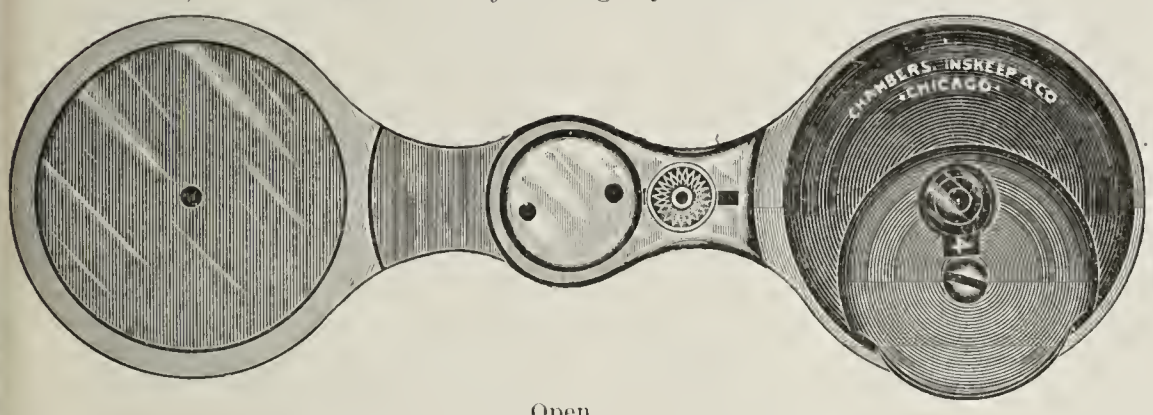
COMBINED WITH WHICH THERE IS A PLANE MIRROR FOR RETINOSCOPY; INTENDED AS A POCKET INSTRUMENT FOR OPHTHALMOLOGISTS AND PRACTITIONERS.

BROWN PUSEY, M.D.

LATE HOUSE SURGEON, NEW YORK EYE AND EAR INFIRMARY.

CHICAGO.

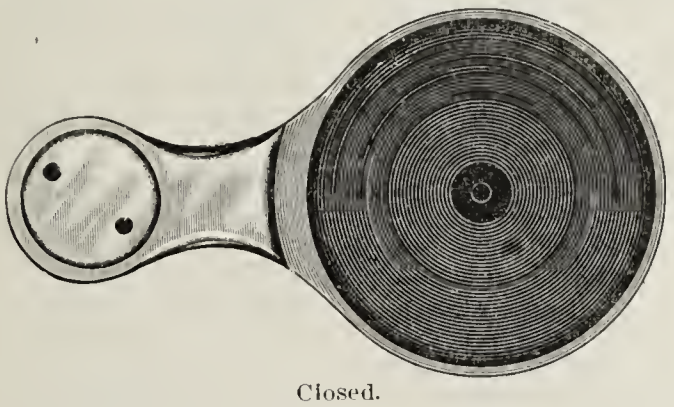
This instrument is offered primarily to meet the demand for an ophthalmoscope that can be carried conveniently in one's pocket without a box or case. It consists of a frame with two arms, which swing on a hinge-joint. The arms carry two mirrors, which are so placed that when the instrument is closed, the mirrors lie face to face, and are thus protected from injury and dirt. When the instrument is open one arm acts as a handle for the other. In the joint there is a spring bolt, which fastens the joint tightly when the mirrors lie



Open.

face to face, and also locks the joint when the instrument is open; this spring bolt is loosened by pressing a little knob. The arms are nickel-plated; on the outside this plating has a high polish, on the inside it has a dull finish, so that this metal part will not reflect light. The parts which form the backs of the mirrors are lacquered black.

The mirrors are circular, with a diameter of 1 3-16 inches; the concave mirror has a focal length of 11 inches. Back of the concave mirror, a wheel is placed in which there are five lenses, a +2 D., a +4 D., for use in making examinations by the indirect method, a +8 D. for use in examining on levels in front of the retina, a —3 D. for the unskilled user, who accommodates when making a direct examination, and a —10 D.



Closed.

for examining myopes; there is also a hole in the wheel. The silvering of the mirrors at the center is removed in a circular space of 3/32 of an inch in diameter; this arrangement was observed particularly because of the advantages offered by such mirrors for retinoscopy.

The completeness of the instrument will suggest itself. It is not a refracting ophthalmoscope with its many combinations of lenses, and, indeed, who in the present day of accurate refraction wants a refracting ophthalmoscope? The instrument is not intended to take the place in the ophthalmologist's office of his Morton. It is so compact that it weighs less than two ounces; it is ¼ inches thick, 2⅜ inches long when closed. It is solid, substantial and of neat finish, and can be sold at a very low price—an advantage which will be particularly considered by students.

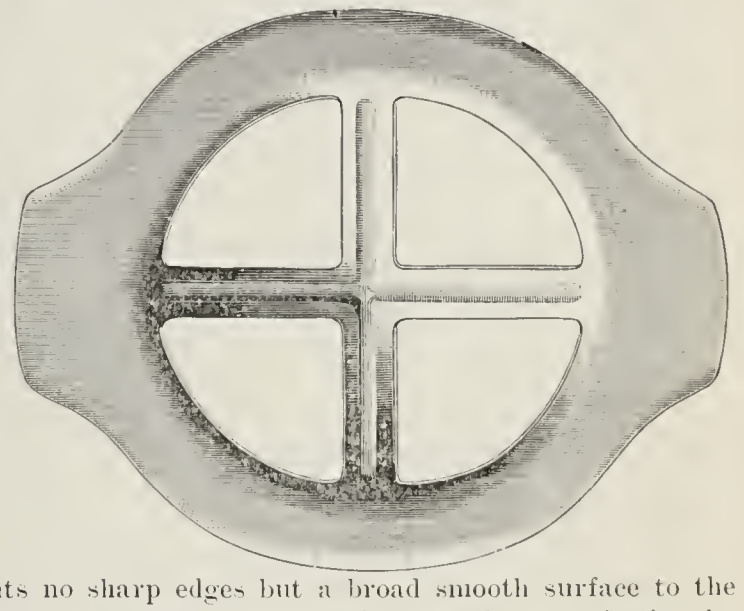
VACCINATION SHIELD.

C. P. FRANKLIN, M.D.

PHILADELPHIA.

After repeated and increasing trouble with irritated, inflamed and infected arms due to the existing forms of vaccination shield, the idea of what a vaccination shield should be has, during the course of the last ten thousand vaccinations, been gradually evolved, until the form described below, and shown in the illustration has been reached, and the writer feels that he has produced a shield which will meet all the conditions properly imposed upon such an important accessory to a perfect vaccination. A shield may be a source of comfort, protection and satisfaction, or it may be productive of distress, irritation and even infection if not suitable. The objections urged against the present forms in use have been obviated in that described below.

The shield is made of aluminum, 6 centimeters in diameter to the outer edge of its flange, which latter is curved so that



it presents no sharp edges but a broad smooth surface to the arm, and is extended at each end into a tab or projection by which it is fastened to the arm with short, narrow strips of plaster. The central part, or dome, is 4.5 centimeters in diameter, and is raised above its base one centimeter, being composed of two ribs, crossing at right angles, each rib being strengthened by a beading or groove, so that it will stand any ordinary pressure. The advantages of this shield are: lightness and durability; adaptability, as being of annealed metal it can be readily curved to fit the contour of the part vaccinated; cleanliness, as it can be washed and sterilized as often as necessary; non-irritating, as, owing to its large openings and air spaces, it does not confine the wound, and is accessible for inspection without disturbing it.

Association News.

The Committee on National Legislation.

The Committee on National Legislation has sent the following communications to the secretaries of the different State Medical Societies and hereby requests any such secretary who fails to receive his notice, to communicate at once with the Committee, through its chairman, H. L. E. Johnson, M.D., Washington, D. C.

WASHINGTON, D. C., Dec. 2, 1901.

My Dear Doctor:—On behalf of the Committee on National Legislation of the American Medical Association, I earnestly request you to send at your earliest opportunity the names and addresses of the delegate and alternate who are to represent your State Medical Society at the Third Annual Conference at Washington, D. C., this winter.

When you furnish me their names, I will notify them and you of the date of the proposed conference. Please refer to the Second Annual Report of this Committee and the minutes of the Second Annual Conference which appear in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of June 8, 1901, on pages 1635 and 1636, respectively.

Please acknowledge the receipt of this communication and thereby facilitate the work of this Committee, and greatly oblige.

Yours very truly, H. L. E. JOHNSON, M.D., Chairman.

WASHINGTON, D. C., Dec. 2, 1901.

My Dear Doctor:—At the meeting of the Second Annual Conference of the Committee of the American Medical Association on National Legislation, with the delegates from the various State

Medical Societies, held at Washington, D. C., February 20 and 21 last, the Conference by unanimous vote directed me to send to the secretary of each State Medical Society in affiliation with the American Medical Association the following:

The American Medical Association has provided in its Constitution for a Committee on National Legislation whose duty it shall be to keep informed on all matters of medical legislation arising in the National Congress, and present to that body the wishes and views of the American Medical Association, and the regular profession, with respect to these various measures proposed. It is the duty of this committee to oppose all medical measures introduced in the House or Senate which are deemed obnoxious or hurtful to the interests or wishes of the medical profession of the United States, and to favor the passage of such medical matters proposed in said Congress which are considered wise, just and proper by your Committee on National Legislation. In order to learn the wishes and views of the general profession on the medical matters proposed, and strengthen the representations of the Committee on National Legislation before Congress and its various Committees, the American Medical Association requests the various State Medical Societies, the Medical Department of the Army, Navy, Marine-Hospital Service and the U. S. Animal Industry, to appoint, each, one delegate and one alternate to meet the Committee on National Legislation in annual conference at Washington, D. C., discuss the various medical matters pending before Congress, and when necessary to appeal to the National Congress as a conference, to pass or defeat medical measures which may be approved or disapproved at the annual conference. The American Medical Association wishes to emphasize before the Congress of the United States and the various State Legislatures, the importance and high standing of the medical profession of the United States, and impress upon these bodies the necessity and propriety of hearing and considering the wishes of the regular profession in matters of pending medical legislation. It is duly appreciated that legislators have been in the habit of hastily passing medical laws and ordinances without consulting the views or opinions of the scientific medical profession. The Legislative Committee with the co-operation of the State Medical Societies, through their delegates in joint conference assembled, annually, at Washington, will unqualifiedly raise the standard of medical views and opinions with respect to State and National medical legislation.

The Committee on National Legislation points with pride to its last annual report to the American Medical Association published in THE JOURNAL of June 8, beginning on page 1635, from which I quote, among other things: "We are pleased to report that as a result of the combined efforts of your Committee, and the delegates to the Annual Conference, the obnoxious Senate Bill No. 34, entitled, 'For the further prevention of cruelty to animals in the District of Columbia,' known as the Antivivisection Bill, has been defeated, and rendered practically impossible of passage in the future. As a result of the Second Annual Conference held at Washington, February 20 and 21, 1901, we have the honor to report the passage of Senate Bill No. 4171, entitled, 'An act granting additional quarantine powers and imposing additional duty upon the Marine-Hospital Service,' and the defeat of Section 150 H. R. Bill No. 13,423 of the codification of postal laws. This section, if it had become a law, would have cost the American Medical Association about $30,000 extra in postage in connection with the distribution of THE JOURNAL to our members and subscribers. We observe with great satisfaction and hope for future National influence of the American Medical Association, and the Committee on National Legislation that the Medical Societies of the several States and Territories are beginning to appreciate the importance of the Annual Conference, and the necessity of State co-operation in matters of medical legislation, both local and National, as evidenced by the increased attendance at the Second Annual Conference which was held at Washington, D. C., in February last, at which conference the delegates in session appointed a standing committee of the Second Annual Conference with full power to represent them and act *ad interim* in all medical matters arising in the Congress of the United States."

The American Medical Association desires to impress upon the several State Medical Societies the great importance, and the National weight of the annual conferences, and to this end urges each State Medical Society to appoint promptly a delegate and alternate to each annual conference. In order to facilitate the labors of the Committee on National Legislation the secretary of each State Society is requested to send to the Chairman of the Committee on National Legislation the names and addresses of their delegate and alternate duly appointed. The Third Annual Conference will be called before the close of the present session of Congress, possibly the latter part of February or the first of March, 1902.

Very truly yours,

H. L. E. JOHNSON, M.D., Chairman,

Committee on National Legislation, American Medical Association.

New Members.

The following is a list of new members for the month of November, 1901:

ALABAMA.

Law, W. L., Montgomery.
McNeill, R. B., Jenison.
Stubbs, G. H., Birmingham.

CALIFORNIA.

Abrams, Albert, San Francisco.
Couey, E. J., Fresno.
Eichler, A., San Francisco.
Fehleisen, F., San Francisco.
Shank, G. A., Benicia.
Morton, A. W., San Francisco.

CONNECTICUT.

Wade, J. A., Danbury.
Judson, W., New Haven.

GEORGIA.

Burford, R. E. L., Brunswick.
Dozier, Jr., R. T., Milledgeville.
Minter, H. G., Jakin.

ILLINOIS.

Barnes, C. L., Chicago.
Miller, J. E., Chicago.
Naughton, M. T., Chicago.
Noble, R. M., Chicago.
Roberts, T. E., Chicago.
Ransom, P. W., Rockford.
Wagner, G. W., Chicago.
Whitfield, G. W., Chicago.
Willard, W. G., Chicago.
Achard, H. J., Roselle.
Campbell, Jas., Elgin.
Daly, V. M., Pontiac.
Denby, J. P., Carlinville.
Diller, F. S., Roberts.
Elion, C. J., Altona.
Fish, W. H., Baylis.
Galbraith, C. M., Carbondale.
Jennings, J. F., Scotland.
Keller, U. S. G., Warren.
Lane, G. H., East St. Louis.
Matheny, Z. E., Pesotum.
Starke, C. V., Rockford.
Watterson, W. H., N. Chicago.
Hughes, Thos., Chicago.
Low, J. R., Chicago.

INDIANA.

Bowen, J. F., Rushville.
Boor, W. F., Newcastle.
DuPuy, C. M., Riley.
Graessle, G. G., Seymour.
Jones, G. B., Rushville.
Loring, D. J., Valparaiso.
Marsh, J. L., Brownsburg.
Bowen, J. F., Rushville.
Day, Albert, Crothersville.
Putnam, W. E., Whiting
Reynolds, F. M., Montpelier.
Rowland, Geo., Covington.
Shafer, J. W., Morocco.
Stork, J. W., Evansville.
Smoot, D. B., Glen Dale.
Smith, I. F., Arlington.
Tucker, F. A., Noblesville.

INDIAN TERRITORY.

Davis, C. Howard, Checotah.
Gardner, D., Lehigh.

IOWA.

Bartine, W. W., Goldfield.
Kemmener, T. W., Iowa City.

LOUISIANA.

Bouvier, J. G., Jeannette.

KENTUCKY.

Cook, J. J., Wedonia.
Owen, W. O., Ft. Thomas.
Price, J. T., Harrodsburg.
Pennington, M., Mt. Vernon.
Young, F. O., Lexington.

MAINE.

Kilbourne, F., Presque Isle.
Meserve, A. K. P., Portland.
O'Connor, J. W., Biddeford.
Webber, W. E., Lewiston.

MASSACHUSETTS.

Allen, F. H., Haverhill.
Benson, C. S., Haverhill.
Collins, W. J., Northampton.
Ferguson, R. H., Boston.
Janes, G. H., Westfield.
Shaw, T. B., Worcester.
Piloner, H. F., Haverhill.

MICHIGAN.

Shipman, G. W., Detroit.
Wallace, J. B., Saline.
Williams, G. S., Pontiac.
King, H. M., Grand Rapids.

MINNESOTA.

Burch, F. E., Glencoe.
Mesker, G. H., Olivia.
Sukeforth, L. A., Carlton.
McCoy, Mary, Duluth.

MISSISSIPPI.

Wadsworth, D. U., Meridian.

MISSOURI.

Hetherington, E. M., Kansas City.
Max, C. O. C., St. Louis.
West, Wm. M., Monett.

MONTANA.

Renick, W. L., Butte.
Schwartz, S. E., Butte.

NEBRASKA.

Woods, Royal, Strickley.
Hogan, D. S., North Loup.
Rich, C. O'Neill, Omaha.

NEW HAMPSHIRE.

Murphy, N. W., Concord.
Petit, A. W., Nashua.

NEW JERSEY.

Baldwin, A. K., Newark.
Disbrow, V. M., Lakewood.
English, D. E., Mill Burn.
Fretz, J. H., Lambertville.
Gaston, W. F., Plainfield.
Ill, C. L., Newark.
Lansing, J. B. W., Tenafly.
Livengood, H. R., Elizabeth.
Mallon, P. S., Morris Plains.
Mitchell, C. H., Trenton.
Norton, H. G., Trenton.
Steadman, E. T., Hoboken.
Sharp, L. L., Medford.
Souder, L. R., Atlantic City.
Haines, J. C., Vincentown.
Mecray, Jas., Cape May.
O'Reilly, H. M., Morristown.
Van Horne, B. G., Englewood.
Schauffler, W. G., Lakewood.

NEW YORK.

Carter, H. W., New York City.
Howard, F. E., Friendship.
Herrick, W. P., New York City.
Humphrey, L. H., Silver Springs.
Loughhead, W. H., Nile.
Leo, J. B., New York City.
Meltzer, S. J., New York City.
Packer, T. G., Smyrna.
Sherman, T. J., Ballston.
Seward, W. M., New York City.
Stuart, Walter, Westfield.
Way, A. C., Perry Center.
Wells, S. W., Liberty.
Yankauer, S., New York City.

NORTH CAROLINA.

Clarke, F. M., Beaufort.
McLean, N. M., Gibson.

OHIO.

Boggs, Jessie, Clevelaud.
Hyde, A. G., Soldiers' Home.
Longstreth, W. E., Comly.
Morrison, R. M., Youngstown.
Yoder, J. A., Lucas.

OKLAHOMA.

Reed, H., Guthrie.

OREGON.

Bruere, G. E., Portland.
French, C. G., Portland.
Giery, A. J., Portlaud.
Lane, Harry, Portland.
Locke, J. K., Portland.
Walker, A. D., Portland.
Wiley, J. O. C., Portland.
Wilson, H. C., Portland.
Wilson, G. F., Portlaud.
Yenney, R. C., Portland.
Sommer, E. A., Oregon City.

PENNSYLVANIA.

Giroin, J. H., Philadelphia.
Keller, J. C., Windgap.
Baird, W. C., McKeesport.
Burleigh, W. T., Pittsburg.
Caldwell, H. E., Morris Run.
Darrack, J., Philadelphia.
Downs, N., Philadelphia.
Faulkner, R. B., Allegheny.
Haig, C. R., Philadelphia.
Pritchard, M. R., Harrison Valley.
Stubbs, A. H., Wakefield.
Spackman, R. V., DuBois.
Schlesman, C. H., Allentown.
Tait, T. W., Philadelphia.
Zeller, A. T., McKeesport.

RHODE ISLAND.

Darby, T. F., Riverpoint.

TENNESSEE.

Tidwell, R. S., Tate Spring.

TEXAS.

Barnhill, P. D., Plantersville.
Burnett, W. R., Denton.
Carleton, J. C., Bonham.
Heaney, A. G., Corpus Christi.
Johnson, R. M., Hereford.
Lipscomb, P., Denton.
McReynolds, S., Denton.
Ralston, J. C., Galveston.
Thomasou, J. W., Huntsville.
Thompson, F. D., Ft. Worth.
Thompson, J. E., Galveston.
Washburn, W. R., Dallas.
Hazlewood, W. R., Briggs.

VERMONT.

Brown, E. M., Sheldon.
Brigham, F. L., Pittsfield.
Lazell, W. E., Barre.
Liddle, F. C., Dorset.
Radike, A. J., Burlington,

VIRGINIA.

Lilliston, A. H., Accomac.
Mason, E. T., Savageville.

WASHINGTON.

Brown, E. M., Tacoma.
Redpath, N. J., Olympia.
Sharpless, C. W., Seattle.

UTAH.

Gowans, E. G., Logan.

WEST VIRGINIA.

Barker, D. H., Reedy Ripple.
Cox, J. A., Morgantown.
Hill, F. W., Montana Mines.
Kelly, W. C., Morgantowu.
Nutter, T. L., Enterprise.
Owen, H. K., Hambleton.
Robins, J. E., Claremont.
Sivey, W. M., Tunnelton.
Smith, G. W., Monongah.

WISCONSIN.

Thomson, Bertha V., Oshkosh.
Gunderson, A., La Crosse.

WYOMING.

Harris, L. A., Sheridan.

Societies.

Montgomery County (Ohio) Medical Society.—At the annual meeting of this Society Dr. John S. Beck, Dayton, was re-elected president and Dr. Horace Bonner, Dayton, secretary.

Summit County (Ohio) Medical Society.—This Society held its annual meeting at Akron, December 3, and elected Dr. Charles E. Held, president; Dr. L. B. Humphrey, vice-president; Dr. Edward A. Montenyohl, secretary, and Dr. Charles E. Norris, treasurer, all of Akron.

St. Louis Academy of Medicine.—At the annual meeting of this Academy the following officers were elected to serve one year, from December 11: Dr. Augustus C. Bernays, president; Dr. J. William Williamson, vice-president; Dr. G. Harry Nicks, second vice-president; Dr. Alfred Roulet, secretary, and Dr. G. Howard Thompson, treasurer.

Crow River Valley Medical Society.—The twenty-first meeting of this Society was held in Litchfield, Minn., December 11. Papers were read by Drs. Harry Morrel, Slayton; Henry E. Cassel, Litchfield; Frank M. Archibald, Atwater, and James W. Robertson, Litchfield. The Society was entertained by Dr. Wiley E. Chapman, Litchfield.

Brazos Valley (Texas) Medical Association.—The twelfth annual convention of this Association was held at Bryan, November 12 and 13. Resolutions were passed on the deaths of Drs. Ernest A. Thompson, Navasota, and R. K. Fountain, Jones Prairie. The usual banquet was held and Marlin selected as the place for the semi-annual meeting in May, 1902.

Butler County (Ohio) Medical Society.—At the annual meeting of this Society held at Middletown, December 4, Dr. James E. Torrence, Oxford, was elected president; Dr. Edward H. French, Hamilton, vice-president; Dr. John R. A. Grafft, Hamilton, secretary, and Dr. Francis M. Fitton, Hamilton, treasurer. Dr. Joseph Eichberg, Cincinnati, made an address on "Latent Endocarditis."

Rock County (Wis.) Medical Society.—The annual meeting of this Society was held December 6, at Janesville. The following officers were elected: Dr. Samuel B. Buckmaster, Janesville, president; Dr. Michael A. Cunningham, Janesville, vice-president; Dr. George W. Fifield, Janesville, secretary; Dr. Ranson W. Edden, Janesville, treasurer, and Dr. Frank B. Farmsworth, Janesville, censor.

Delaware County (Ind.) Medical Society.—At the last meeting of this Society for the year, held at Muncie, "Food and Drug Adulterations" was the subject for discussion. Dr. James N. Hurty, secretary of the State Board of Health, was present. Dr. Henry C. Burcham, Albany, was elected president; Dr. Arthur T. Kemper, Muncie, vice-president, and Dr. Ulysses G. Poland, Muncie, secretary and treasurer.

Calhoun County (Mich.) Medical Association.—The twenty-fifth annual meeting and banquet of this Association was held in Albion, December 3. The following officers were elected: Dr. George C. Hafford, Albion, president; Drs. Louis S. Joy, Marshall, and James H. Reed, Battle Creek, vice-presidents; Dr. William H. Haughey, Battle Creek, secretary, and Dr. Richard M. Olein, Battle Creek, treasurer. The next meeting will be held in Battle Creek, March 4, 1902.

Southeastern Iowa Medical Society.—The thirty-first annual meeting of this Society in Burlington, November 21, was one of the most largely attended and successful in the history of the Society. The election of officers resulted as follows: Dr. Charles F. Wahrer, Fort Madison, president; Drs. George Kinney, Burlington, and William S. McClellan, Morning Sun, vice-president, and Dr. Carl Stutsman, Burlington, secretary-treasurer. The next meeting will be held in November, 1902, in Fairfield.

Buffalo Academy of Medicine.—The last stated meeting of the Medical Section was devoted to clinical reports. A case of Little's disease was reported by Dr. Irving M. Snow; one of Friederich's ataxia, by Dr. Dewitt H. Sherman; one of microcephalus, by Dr. L. W. Schrotten, and one of congenital idiocy, by Dr. Julius Ullman. Dr. Charles H. Frazier of Philadelphia, Pa., addressed the Surgical Section of the Academy on "The Division of the Sensory Root of the Trigeminus for the Relief of Tic Douloureux—An Experimental, Pathological and Clinical Study with a Preliminary Report of One Surgically Successful Case."

Tri-County Medical Society of the State of California.—A number of the physicians of Santa Cruz, San Benito and Monterey Counties, met December 3, in Watsonville, Santa Cruz County, and organized, with seventeen charter members. The following officers were elected: Dr. Thomas C. Edwards, Salinas, Monterey County, president; Drs. Henry C. Whiting, Santa Cruz, Santa Cruz County; Nat. Green, Watsonville, Santa Cruz County; Auburn M. Stafford, Monterey, Monterey County, and James H. Tebbetts, Hollister, San Benito County, vice-presidents, and Dr. Saxton T. Pope, Watsonville, Santa Cruz County, secretary-treasurer. At the close of the meeting the physicians of Watsonville entertained their professional brethren at a banquet.

Northwest Arkansas Medical Society.—The annual meeting of this Society was held in Fayetteville, December 3. The Society is in flourishing condition. The following papers were read: By Dr. William P. Illing, Little Rock, "The Use of Tropa-Cocain in Spinal Anesthesia"; by Dr. L. Kirby, Harrison, "A Case of Ovariotomy"; by Dr. Joseph T. Clegg, Siloam Springs, "Abortion"; by Dr. Charles H. Cargile, Bentonville, "Dysmenorrhea"; by Drs. E. H. Highfill, Hoover, and George W. Cale, Jr., Springfield, Mo., "Case Reports"; by Dr. John B. Bolton, Eureka Springs, "The Profession"; by Dr. James H. Lindsey, Bentonville, "A Case of Compound Dislocation of the Elbow Joint"; by Dr. Asbury J. Vance, Harrison, "A Case of Fracture of the Skull, with Loss of Brain Substance"; by Dr. David C. Summers, Elm Springs, "Syphilis"; by Dr. Rufus S. Rice, Rogers, "Diphtheria and Its Treatment"; by Dr. Herbert Moulton, Fort Smith, "Shot Injuries of the Eye"; Dr. Thomas W. Hurley, Bentonville, "Veratrum Viride," and Dr. William B. Welch, Fayetteville, "Dirt and Its Dangers." Dr. Thomas W. Hurley, Bentonville, was elected president; Dr. Harvey D. Wood, Fayetteville, vice-president; Dr. Frank B. Young, Springdale, secretary; Dr. Rufus S. Rice, Rogers, assistant secretary, and Drs. William B. Welch, J. Young, and Rufus S. Rice, committee on credentials. The next meeting will be held at Rogers, in June next.

Marion County (Ohio) Medical Society.—The annual social session and banquet of this Society, December 10, in Marion, was held in the parlors of the Hotel Reber and the banquet was served in the spacious dining-room of the hotel. Dr. O. W. Weeks was the toastmaster, and in assuming his duties responded to the toast, "The President of the United States." Dr. B. L. Milliken, Cleveland, responded to "The Medical Profession." Dr. H. C. Uhler toasted "Our Guests," and Dr. C. A. L. Reed responded. Dr. J. A. Kimmell, author of the Kimmell Bill to regulate the Practice of Medicine in Ohio, toasted "The Ohio State Medical Society." Dr. C. E. Brush, president of the State Society, and Dr. P. Maxwell Foshay, secretary of the Society, responded.

Dr. C. A. L. Reed, Ex-President of the American Medical Association, closed his address before the social session, on "Currents and Counter-Currents in the Profession," with the following:

> It seems, from evidence that has recently come from within the army itself, that the medical department has not only been degraded, but that it is practically without authority. This was strikingly, indeed, tragically, illustrated during the recent war. A commandant—and I have no hesitancy in saying that I mean General Brooke—was in charge of more than a quarter of the entire army. His command was made up of the flower of American manhood, and was encamped at a health resort. He, however, in violation of the precedent of the usually cultivated and competent gentlemen of the line, but acting under the permission of existing army regulation, not only set aside recommendations of his sanitary officers, but, by personal example, incited his men to violate the most fundamental sanitary laws. The result was what might have been expected. Of the more than 50,000 men in his command, 12,000 were invalided, while nearly 1000 died from preventable causes. If, in an active military operation, General Brooke had ignored the advice of his scouts and had led his command into an ambush, with similar disastrous results—12,000 wounded and 1000 killed—he would have been court-martialed, and, doubtless, dismissed from the service. The regulations, however, I am advised, fix no responsibility for this unparalleled calamity, the enormity of which is only beginning to be understood. It is not surprising that efforts have been made to suppress knowledge of it. I am told that General Brooke himself threatened to court-martial a witness who offered testimony on this point. I am also advised that the Army Investigating Commission, in the interest of public decency, omitted from its public report much testimony on this phase of the conduct of the war. . . . We of America may blush, but the scandal is ours. The voracious historian of military horrors must classify "Brooke's Blunder" with the "Black Hole of Calcutta." The Congress, at the present session, is to be asked to intervene in this matter—a matter that appeals to every soldier, to every home that furnishes a soldier, to every patriot that is proud of the army, to every citizen that is actuated by the ordinary impulses of humanity.

Dr. P. Maxwell Foshay addressed the social session on the importance of all legal practitioners in all states and territories of the Union, of uniting in the organization of medical societies in their respective counties where there was no organiza-

tion, on the plan adopted by the American Medical Association that the barriers between the schools might be broken down and that all practitioners might unite upon the basis of a common cause for the elevation of the science of medicine to a higher standard; also that the profession might receive a higher recognition in the military service of the United States.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, held Nov. 26, 1901.

DR. D. W. MONTGOMERY in the Chair.

Ankylostomiasis.

DR. L. A. KENGLA presented a case of ankylostomiasis as follows: J. A. H., aged 34, male, single, height 5 feet 11 inches, weight 138 pounds, was discharged from the Army in April as well and capable of duty. At age of 18 had scarlet fever, which left him a little deaf, otherwise very healthy until a year after enlistment, which occurred in May, 1898. Was sent to the Philippines in November, 1898, in perfect health, weight 160 pounds; began active service on arrival throughout Northern Luzon; was forced to drink from stagnant pools and of water wherever found. About August, 1900, complained of inability to march; of weakness with fever, which was variable as to time of appearance and intensity. Bowel disturbances with diarrhea became more frequent and severe; symptoms would become intensified and then improve. He continued in the field, growing pale and losing flesh. Diagnosis of malaria was made and treatment given accordingly. There was no improvement, and about Nov. 15, 1900, a severe attack of diarrhea set in with increased weakness, prostration and great pallor. He was sent to the hospital. His evacuations ranged from 6 to 25 in a day, loose and soft, coated with mucus, with no pain and no blood except on March 15, when he had rather a free hemorrhage from bowels and another slight one, May 18. There was an uncomfortable sensation in abdomen of soreness, distention and puffiness. His temperature was variable, reaching 106, and falling rapidly to 99, and seemed to depend upon character and quantity of food; solids caused much distress, uncomfortable feeling in epigastrum and tenderness; increased the frequency of stools and raised the temperature. As a rule the number of passages did not keep pace with variations of temperature. The patient grew weak, greatly depressed and melancholic. Appetite was variable, sometimes ravenous; always had desire for food, but was afraid of the consequences. He had an intense longing for gritty substances, sand, chalk, clay, etc. There was dizziness, dyspnea on exertion and palpitation of heart. During the months of December and January all symptoms increased, especially pallor, weakness and exhaustion. Bowel movements were same in character and consistency; average about same as in November, of brown, gray or ashy color, with no griping or tenesmus. The amount of urine remained about normal, though the color changed with varying conditions. Temperature ran from 99 to 104, pulse 120 or more; sleep during this time was fairly good. Anemia was deep and marked. In January edema of legs appeared; they became badly swollen, and to a less degree also face and hands. All other symptoms slightly increased. He noticed fatty tumors at various parts of body in January. Left Manila February 17, presumably dying. The journey across the Pacific improved his general condition a little; his diarrhea, digestive disturbances and anemia remained nearly the same. He was under treatment for several weeks at the Presidio, and was finally voluntarily discharged. When the author saw him on May 18, his condition was as follows: Patient fairly well nourished; extremely pale; complained of severe diarrhea, 10 movements that day; great weakness and exhaustion; dyspnea; palpitation on exertion; temperature 103; pulse 125; respiration 24. Inspection showed no sign of emaciation; adipose tissue was in good quantity and well distributed; skin was of slightly dull muddy color, tinged perceptible yellow; eye, sclera and conjunctiva were pale; pupils were equal, no dilatation; tongue was coated, flabby and indented; muscles of body were well developed, slight edema at ankles and very slight of face; face was full, rounded, and expression dull, showing distress and uneasiness. Physical examination May 19: Face full; lips, gums, mucous membrane and fauces extremely pale, almost bloodless; chest well developed, no atrophy of muscles, lungs normal; heart normal, unless slightly hypertrophied, sounds normal; slight anemic murmur; impulse not exaggerated; apex-beat in fifth intercostal space; abdominal muscles well developed; no tympanites; no distention; no retraction in epigastric region; extending into right and left hypochondriae and upper portion of umbilical regions were several small nodules, the size of an almond and plaques of two to four inches were found in the subcutaneous tissues, which appeared to be collections of adipose tissue. Several were also found on the legs, arms, forearms and back, though small and well defined. On pressure, marked tenderness was made out in epigastric region and to a less degree over abdomen; no severe pain could be evinced; region of appendix normal; stomach normal in size; spleen normal; liver normal; kidney area free from tenderness; genitals normal; reflexes not tested; sexual desire entirely lost. Patient insisted that many of his regiment suffered from the same symptoms, several of them dying; and that he had passed worms in November and December. No diagnosis was made; other treatment than bismuth, which he had used for the control of bowel movements, was deferred for the day. May 20, condition was very much the same, temperature 101.5 to 104, pulse 125, respiration 24, appetite capricious; evacuations eight. Examination of blood requested to determine possibility of malaria or ameba of tropical dysentery. Iron and arsenic were ordered, also proper dietary. May 24, condition was same; thymol ordered, two grains every two hours in emulsion on empty stomach, to be followed by castor oil. May 25, condition was much the same; temperature 101 to 103; bowels moved 20 times, large soft evacuations, but were not saved as directed. Treatment continued. May 26, condition seemed weak, thymol continued; some nausea, no appetite; temperature 101 to 104; pulse 130, respiration 24; evacuations 12, increased by oil. May 28, he was weak, sweating, distressed from thymol; dose reduced; unable to sit up; bowel movement frequent; appetite poor. May 31, as no adult worms had been found and patient had become so nauseated from thymol, ethereal extract of male fern was substituted, one to two drams a day, followed by oil; otherwise condition was not improved, weak and depressed. June 3, patient's expression was better; complains of insufficiency of liquid diet; pulse stronger, 120; temperature 101 to 102; respiration, 24; evacuations 10; treatment continued. June 5, expression was growing easier, with less distress and uneasiness; pulse 120; temperature 100.5 to 102. Color seemed better, mind clearer, desired food; felt better than for months. June 8, male fern was now given on alternate days, a dram to two drams in four doses. The bowels acted less frequently even after four and six doses of oil. The temperature showed a tendency to remain lower, highest reaching 101. June 10, bowels did not move; increased doses of oil ordered; he took 8 ounces without effect; highest temperature, 101; pulse, 104; respiration 20. June 15, pulse stronger, 96, gaining in fulness; bowels would not move without large doses of oil. Temperature had not risen above 101; respiration, 20. Eye brighter, expression much improved, tongue clearing, pallor of lips and nails improved, little tenderness over the abdomen, muscular power returning, appetite very good, general improvement marked. June 18, temperature for three days was normal in morning, 100 in evening, depending on indiscretion of diet. From this date patient showed rapid and marked improvement. Patient's weight at this time was 168 and he felt perfectly well, though the blood count did not sustain this opinion. Besides the ankylostomum the patient was also infected with the tricocephalus dispar. Since this case had been found it was reported that several cases had come to the Presidio General Hospital from the Philippines and that one case had been found at the County Hospital.

DR. H. A. L. RYFKOGEL, in connection with this case, presented the following report: On May 22, the case just reported was referred for examination of blood and feces. Examination of feces showed large numbers of the characteristic ova of ankylostomum duodenale; a few eggs of tricocephalus hominis, and

oscaris lumbricoides were also found. The stool passed after the first dose of male fern was unfortunately thrown out, and with it probably the majority of the parasites. A few eggs still remained in the feces, and in three subsequent examinations eight female worms were found. In one stool a lumbricoid was also discovered. The eggs of the ankylostomum and lumbricoid disappeared in about two weeks, but those of the tricocephalus were found in the last examination, which was in October. Examination of the blood gave the following result: Red blood cells, 2,130,000; white blood cells, 18,600; hemoglobin, 15 per cent. The differential count showed 9300 neutrophiles, 6138 eosinophiles, large mononuclear, and 2418 lymphocytes; 33 per cent. normoblasts to the cover were present. After the expulsion of the parasites, the red cells and hemoglobin rapidly rose. On July 5, the red cells numbered 3,735,000 and the hemoglobin was 28 per cent. The white cells at this time numbered 10,000; of them, 49 per cent. were eosinophiles, 2900 neutrophiles, 600 large mononuclears and 1600 lymphocytes. Seventeen days later another count was made and the red cells found practically the same; the hemoglobin had risen from 28 to 40 per cent. at this date; notwithstanding the fact that no ova of the uncinaria were found in the stool for a month the leucocytes had increased to 15,340, of which 54 per cent. were eosinophiles and 5000 neutrophiles. Eight days later the leucocytes numbered 24,500, a rise of 9000, although the patient was steadily improving. The differential count showed 14,000 eosinophiles and 5125 neutrophiles. September 21 his total white count had gone down to 13,000, eosinophiles 5148 and neutrophiles 4750. Notice was then called to the fact that although the neutrophiles varied in number they were never very high, 9000 being the result of the first examination. After the expulsion of the worm they dropped to 2900, and were again about normal, or 5000, at which they had since remained. The eosinophiles varied within wide limits, but were always much greater than the maximum normal of 800 per mm. They had dropped from 6100 to 4900 and for some unknown reason rose again to 14,200.

Rapid Healing of Tubercular Bone Cavities.

DR. S. J. HUNKIN, after referring to the metallic and earthy fillings, called attention to a rapid means of closing these cavities by the natural bone growth. The process consisted in filling the cavity after operation with carbolic acid, allowing it to remain two minutes and then follow it with alcohol and pack with alcohol gauze, removing the packing as easily as possible to prevent bleeding. Dressings were repeated every four or five days. No douche was used, the dressings were simple, easily borne, not painful, and the result was a clean wound, with no discharge at any time, and rapid closing of the cavity. This had been in from 5 to 15 dressings in a series of 10 cases. He presented several cases showing the result of this treatment.

Surgical Treatment of Ulcers.

DR. D. D. CROWLEY read this paper and offered a few suggestions. In years past he had had fair success in the treatment of ulcers by freely incising the surface of the ulcer, including the callus. During the past year he had not completely dissected away the callus but had cut the callus margin into small semilunar flaps, with narrow skin attachments and had covered a considerable part of the ulcer surface with the same, making the flap a part of the skin bordering the ulcer with one end slightly attached. An oval incison is made one-fourth to one-half inch in length, which begins at the margin of the ulcer, is carried obliquely through the calloused skin, along the outside of the callus and then gradually inwards toward the margin of the ulcer but not to the ulcer, the narrow neck of skin carrying a sufficient blood supply to the flap. The flap outlined should be next separated from its basic or sub-attachment throughout. These flaps are coaxed as far toward the center of ulcer as their skin attachments permit. The flaps bleed and turn bloodless, but nearly all retain their vitality unless conditions are very perverse. The surface is dressed with aseptic gauze which is held in place respectively by the moderate pressure of adhesive plaster and bandage. The ulcer is subsequently dressed every three or four days as conditions indicate. At the first removal of the dressings following the plastic work, there is an entire absence of callus. The flaps are slightly shrunken, though generally they adhere to the ulcer surface and exhibit signs of vitality. In several instances he had carried on this plastic work in old ulcers where very few granulations were present and in the process of repair following, the small flaps would almost disappear during the repair of the ulcer. The author described this flap work from calloused margin of ulcer because he did not know that methods used by him had been resorted to by others, or mentioned in any of the publications.

Transverse Suprapubic Division of the Skin in Performing Abdominal Sections.

DR. HENRY J. KREUTZMANN had used this form of incision in several cases and recommended it because of, 1, the better view obtained of the organs operated upon; 2, the avoidance in a large proportion of the cases of a visible scar; and 3, the almost entire prevention of a subsequent hernia.

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, Nov. 14, 1901.

Dr. William L. Stowell in the Chair.

Automatic Siphon for Separating Top-Milk of Any Desired Percentage.

DR. HENRY L. COIT, Newark, exhibited a siphon, devised by Mr. Charles A. Meade, of his city, for the ready separation of the top-milk preparatory to the home modification of milk for infant feeding. After dwelling on the many difficulties met with in practice in using siphons for this purpose, he said that this was the first of many siphons that seemed to him to have satisfactorily solved the problem. The siphon is made of three-eighths of an inch glass tubing, and has a funnel-shaped extremity to the longer arm. The siphon is started by filling it through this funnel with water or milk, and then closing the other end of the siphon with the finger while inverting the instrument and placing the longer arm in the milk bottle. On removing the finger the siphon begins to draw off the lower milk, and keeps this up until the level of the milk in the bottle corresponds with the level of the outer or shorter arm of the siphon, when it ceases automatically. By attaching different lengths of glass tubing to the outer arm by means of a rubber coupling it becomes a simple matter to have the action of the siphon cease at any pre-determined level, or, in other words, to leave behind in the milk bottle the desired number of ounces of top-milk.

DR. H. D. CHAPIN said that while this seemed to be a most excellent siphon, he had long ago discarded the use of siphons because of the difficulty of getting nurse-maids to use them properly. In their stead he now used his little tin dipper, and found it simpler and more accurate.

Foreign Bodies.

DR. SARA WELT-KAKELS exhibited a safety-pin which had been removed from the vagina of a child. It had given rise to a long-continued and most obstinate leucorrhea, which had not been cured until the discovery and removal of this foreign body. She also showed a skiagraph of a child from whose esophagus she had removed a penny.

The Value of the Widal Reaction in Children.

DR. MILTON A. GERSHEL presented a carefully prepared paper on this subject, based on observations made for over three years at the Mount Sinai Hospital. He had made use of Dr. E. Libman's method of testing, and had used a dilution of one in twenty and almost always specimens of dried blood. The paper was based on the results of 670 examinations made in 199 cases. Of this number, 84 cases had typhoid and 81 of these gave the Widal reaction. In the 115 other cases of febrile disorders none gave this reaction. The Widal reaction, he said, was of special importance in children because of the frequently atypical character of typhoid in young subjects.

Primary Intestinal Tuberculosis in Children.

DR. DAVID BOVAIRD, JR., said that the percentage of tuberculosis in cattle varied in different abattoirs from 12 to 18 per cent. The tuberculin test had shown in some places from 15 to 30 per cent. The chief danger was from the milk of tuberculous cattle. Ernst had found the tubercle bacillus in 5 per cent. of 114 samples of milk taken from cows in which there were no visible tuberculous lesions of the udder. The proportion of tuberculous cattle having tubercular lesions was quite small, some authorities placing it at 3 per cent. or less. Undoubtedly the action of the digestive fluid is sufficient to protect against tubercle bacilli in milk unless these are present in large number or the digestive organs are in an unhealthy state. He had been able to find only 16 reported cases in which the relation between the development of the intestinal tuberculosis and the infection of the milk with tuberculosis had been clearly shown. A good rule for the guidance of the pathologist in determining the source of a tuberculous infection was that the oldest and most advanced lesions are found in the lymph nodes connected with the tract through which the infection entered. He had collected 236 cases from German writers, with 29 reported cases of primary tuberculosis of the intestine, or 12 per cent. Again, French writers had reported 128 cases with no instance of primary tuberculosis of the intestine. The English report 748 cases with 136 examples of primary tuberculosis of the intestine, or 18 per cent., and there are 369 cases from American writings, with only 5 cases, or 1 per cent., in which the tuberculosis was primary in the intestine. The autopsy records of the New York Foundling Hospital show 250 cases of tuberculosis in children under five years, with only 5 primary in the intestine. This represented 11 per cent. of the autopsies done in that hospital.

DR. W. H. PARK said that the finding of a primary tuberculosis in the intestine was no proof that the infection had come from tuberculous milk; it was just as likely to originate from the ingestion of human tubercle bacilli. The speaker then referred to some animal experiments done during the past summer at the laboratory of the health department. Four calves, proven by the tuberculin test to be healthy, were fed for some time on large quantities of tuberculous sputum from human beings, and a fifth calf was kept as a control. At the end of three months the four calves had all responded to the tuberculin test, but two of these animals had remained apparently in good health. One animal was now emaciating.

DR. R. G. FREEMAN remarked that animal experiments on the introduction of tubercle bacilli into the bowel had shown that the animals develop a respiratory tuberculosis, which soon becomes more marked than the intestinal tuberculosis.

DR. BOVAIRD said that cases in which animals infected through the intestine develop advanced pulmonary lesions are rare, whereas it was the rule when animals are given bovine tuberculous material for the intestine to become infected before the respiratory tract.

DENVER AND ARAPAHOE MEDICAL SOCIETY.

Regular Meeting, held Nov. 12, 1901.

Dr. H. G. Wetherill in the Chair.

Tent Life and Simplicity in Treatment of Phthisis Pulmonalis.

DR. WILLIAM K. ROBINSON said that formerly there was little difficulty in placing tuberculous patients on "ranches," but in the last few years a great dread has been inculcated in the minds of boarding-house and inn keepers so that it is now almost impossible for the invalid to secure a home in the country. This state of affairs suggested to him the necessity for establishing the Tent Colony. The plains were selected in preference to the mountains, because of the uniform temperature and other metereological conditions. The Colony is situated 30 miles from Denver; the soil is sandy; trees are in abundance. It is sufficiently far from the irrigation district to insure freedom from excessive humidity, and also from the city to escape smoke. The tents, arranged around the central building, are connected by canvassed vestibules. In the winter the beds are warmed with hot-water bottles, blankets are used instead of sheets; pajamas are made of heavy flannel with feet and hood. Patients use cheese cloths for expectorations, which are burned. Bedding is exposed to sun daily. The tents have board floors and sides 2 feet high. Bill of fare is composed of milk, eggs, vegetables and meat. They are instructed to spend most of their time exposed to the rays of the sun. They are required to bathe neck and chest with cold water every morning. Change of clothing is regulated according to weather. The ranch is supplied with current literature, games and horses.

The progress of the Colony during the last two years has been satisfactory. During the exceptionally cold weather last winter the patients slept in tents and suffered no inconvenience. Very few drugs have been used. Cod-lived oil, creosote and guaiacol have not been administered. Patients in the active stage of the disease are required to rest. It is better to err on the side of overcaution in prescribing exercise to such patients. Discussions and comparing of notes are discouraged. He recited cases that showed marked improvement, subsidence of the cough, increase in chest expansion, skin losing its paleness, catarrh and hemorrhages arrested; they become less sensitive, more hopeful, etc.

DR. HENRY SEWALL dwelt upon the great benefit derived from tent life, yet he thinks there are many disadvantages which have yet to be overcome. The tents are too hot in summer and too cold in winter. The food furnished in the ranches is in the majority of instances abominable. He is of the opinion that all cases coming under the observation of physicians should be watched for two or three months and the heart carefully and frequently examined. A heart that does not react well in a high altitude should be sent to a lower altitude.

DR. W. C. BANE related his experience of tent life in Glen Park where the system of cottage tents is in operation in which the disadvantages of canvas tents referred to by Dr. Sewall are overcome.

DR. J. A. WILDER ascribed the gratifying results of tent life and sanatoria to the fact that the patients are under the immediate control of the physician.

DR. J. CHASE said that absolute outdoor life is being practiced by thousands of healthy people in Colorado with the result that mortality among such communities is reduced to the minimum, they all enjoy rugged health, and very seldom require the aid of a physician. At one time the National Guard of Colorado camped for several months during a very cold winter, and not a case of pneumonia or bronchitis developed in their midst.

DR. WILLIAM P. MUNN said that several years ago a number of cases of smallpox in Denver could not be accommodated in the Hospital for Contagious Diseases. He had them placed in hastily constructed tents. While there were several deaths among the cases that remained in the Hospital, none died of those who lived in the tents.

Corneal Diseases Due to Smallpox.

DR. EDWARD JACKSON reported a case of a man aged 30 who came under his observation six weeks from the time he was taken with smallpox. Photophobia was intense; right eye was small; zone of pericorneal redness, gray infiltration of upper part of cornea. A few pustules extended into the infiltration. Vision equaled counting fingers at one foot, lids were hyperemic and swollen, left eye was normal. Applications of tannin and glycerin to everted lids and instillation of atrophic sulphate with bathing of the eye in very hot water, and the use of a solution of boric acid and holocain was employed. Within two days, pupil dilated fairly; eye was less sensitive. Two weeks later the vision improved to 4/60, and the eye appeared normal except for an intense haziness of the upper portion of the cornea.

A New Operating Table.

DR. T. M. HOPKINS exhibited a model of an operating table. He claims that what is commonly called surgical shock is in

many instances due to the fact that the patient remains for an hour or longer in contact with the wet and cold table, be it metal, glass or wood; that a physician in ordinary practice would never allow his patient to remain in a cold and wet bed, and that the patients undergoing an operation if conscious would strenuously object to such rough treatment. To overcome these objections he constructed a table the upper slab of which represents a tank which can be filled with hot water, the quantity and temperature being regulated by appropriate contrivances.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

PRESCRIPTION WRITING, VI.

(Continued from page 1630.)

Medicines Administered Combined and Individually.

The synergistic action of medicine must necessarily be borne in mind when one is writing a compound prescription; otherwise the results might prove disastrous to the patient. It should also be remembered that there is no organ of the body which is not subject to the action of more than one drug; a prescription may contain some constituents which act similarly to one another upon one organ and dissimilarly upon others.

In writing a simple prescription, the physician, knowing the physiologic dose and action of the drug, will meet with no difficulty; but by the combination of two or more active ingredients whose physiologic action is directed especially toward one organ, the calculation of the dose of each demands closer scrutiny.

The action of heart tonics, to illustrate more fully, may be referred to in this connection. There are many in this class, those in more common use being digitalis, strychnin, strophanthus and spartein. If the condition of the heart should demand digitalis one would ordinarily prescribe 10 to 15 minims of the tincture at a dose every four or five hours. However, if the combined action of digitalis and strychnin would better serve the purpose, the dose of each should be reduced accordingly. Such combination is commonly of great service, for the simple reason that the same effects are produced through different routes—digitalis acting upon the heart muscle directly and stimulating it, and strychnin producing the same results through the nerve supply.

Purgatives produce much better results and fewer subjective symptoms when a number of them are combined. The reason assigned is that, as different preparations act upon different parts of the intestine, the entire canal is in this way best reached. Catharsis induced by a medicine which irritates the inner lining membrane of the intestine alone is not as satisfactory as when a mild irritation of both the membrane and muscular coat is produced.

Butler gives a good illustration as to the value of the combining of remedies which act similarly upon some organs and dissimilarly upon others, as demonstrated by the effects of chloral and morphin. Chloral produces sleep by its action on the brain, and also has a distinct influence on the heart, but none on the intestinal tract. Morphin acts on the brain and has little influence on the heart, but has a powerful effect on the intestine. The two produce a combined influence on the brain, promoting sleep, with the least possible disturbance of the heart and intestinal tract.

Sometimes a remedy is required, extremely nauseating to the taste, which the patient will refuse to take; if it can be combined with a menstruum, making it a pleasant preparation, the proper results will be obtained. In prescribing for children the preparations should be made pleasant and palatable, otherwise the physician will obtain the ill-will of his patient, which is a great obstacle in the way of a successful management of the case.

The chief object of every practitioner, however, should be to prescribe as few remedies as possible and to avoid the use of any medicine, the physiologic action of which he is not familiar with. It is very desirable to administer some remedies alone. In the treatment of certain stages of syphilis, for example, potassium iodid is of great service, given in gradually increased doses until 90 to 150 drops of the saturated solution, perhaps, are given three times a day; consequently it would not be practicable or convenient to combine this with a menstruum because of the difficulty in graduating the dose. Arsenic is another drug of specific action, and in order to obtain its best physiologic effects, gradually increased doses should be given, in the form of Fowler's solution, which is of 1 per cent. strength; to administer it in any other form would make it difficult to graduate the dose in such a manner that no disturbance of the stomach would follow.

(To be continued.)

Antipyrin in Chorea.

The following combination containing antipyrin is recommended in treatment of chorea:

℞.	Sodii bromidi Potassii bromidi, āā.....3i	4
	Antipyrin .....gr. xxx	2
	Aq. menthæ pip. q. s. ad.....℥i	32

M. Sig.: One teaspoonful three or four times a day according to the age.

As a heart stimulant alternating with the above:

℞.	Tinct. adonis vernalis.....3i-3iii	4-12
	Elixiris simplicis q. s. ad.....℥i	32

M. Sig.: One teaspoonful three or four times a day, according to age.

Treatment of Chilblains.

The following is recommended in the form of a liniment:

℞.	Olei rosmarini Olei camphoratæ Sol. plumbi subacetatis, āā.....℥i	32

M. Sig.: Apply locally to the affected parts.

Morgens recommends the following:

℞.	Tinct. iodi 3ii	8
	Acidi tannici 3i	4
	Collodii 3x	40

M. Sig.: Apply locally.

In chilblains when the skin is broken, the following is recommended by the *Western Druggist:*

℞.	Zinci sozoiodol 3iiss	10
	Vaselini 3v	20
	Ceræ flavæ 3vi	24
	Olei olivæ .....℥i	32
	Terebinthinæ (Venice) .....℥i	32
	Balsami peruvianæ 3i	4

M. Sig: To be applied locally.

Frost Bite.

The following is recommended by Lassar:

℞.	Acidi carbol. 3ss	2
	Ung. plumbi 3x	40
	Lanolini 3x	40
	Olei olivæ 3v	20
	Olei lavendulæ 3ss	2

M. Sig.: As a local application.

The following, containing ichthyol, is of great service in treatment of frost bite:

℞.	Ichthyol Resorcin Acidi tannici, āā.....3iii	12
	Aq. destil. .....℥ii	64

M. Sig.: Shake and apply locally twice daily if the skin remains unbroken.

Treatment of Pertussis.

H. H. Haralson, as stated in the *Monthly Cyclopedia of Pract. Med.*, recommends for a child two years of age, two drops of the tincture of belladonna three or four times daily,

and gr. 1/150 to gr. 1/80 of heroin every four or five hours. The two remedies may be combined in one preseription, as follows:

R.	Heroin hydrochlorid. .....gr. 1/8 to 1/4		008-015
	Tinet. belladonnæ 3ss	2	
	Spts. frumenti .....ʒss	16	
	Syr. simplicis q. s. ad.....ʒii	64	

M. Sig.: One teaspoonful every five or six hours.

Treatment of Arthritic Eczema in Children.

The following is reeommended by Comby as noted in *Amer. Med.*:

R.	Sodii bicarb.		
	Magnesiæ calein., āā.....gr. iii		20
	Pulv. nueis vom. .....gr. 1/8		008

M. Ft. ehartula No. 1. Sig.: One such to be taken before each meal in a teaspoonful of milk.

Local treatment should eonsist in the application of zinc ointment to whieh menthol or salieylic acid has been added in small amount. The following makes a splendid combination:

R.	Aeidi boriei		
	Zinci oxidi, āā.....gr. xxx	2	
	Vaselini		
	Adipis benzoinatis, āā.....3v	20	

M. Sig.: Apply locally.

And the following as a dusting powder:

R.	Aeidi salieylici .....gr. xv	1	
	Pulv. talei		
	Pulv. amyli		
	Lycopodii, āā 3v	20	

M. Sig.: Apply loeally as a dusting powder.

Treatment of Night Sweats in Tuberculosis.

J. Straussberger, in *Ther. Monats.*, states that while atropin has proven to be a powerful medicine in cheeking the night sweats of tuberculosis, yet its action is harmful to the digestive system of the patient. He recommends as a substitute a preparation containing formalin, viz., tannoform, as a harmless powder, which can be intrusted to the patient to apply himself; he states that it does not irritate the skin as pure formalin does and yet acts as well in cheeking the sweats. He prescribes it in the form of a dusting powder as follows:

R.	Tannoform .....ʒss	16	
	Pulv. amyli .....ʒiss	48	

M. Sig.: Apply locally by means of a pad of cotton-wool.

Medicolegal.

Expressions Showing Expectancy of Death.—The Supreme Court of Florida holds, in Clemmons vs. State, 30 Southern Reporter 699, that any expressions of one mortally wounded at the time of making an alleged dying declaration, tending to show that he then believed his death was imminent, are admissible in evidence for the purpose of determining whether the declaration then made was in fact a dying declaration. The dying declarations of a deceased person relating to what was said by him or the accused, and what happened between them at the time of the fatal encounter, it holds, are properly admissible in prosecutions for unlawful homicide.

City Not Liable for Detention of Smallpox Suspects.—The Supreme Court of North Carolina says that it must be admitted that the party suing in the case of Levin vs. the City of Burlington received heroic treatment, and was damaged. According to his allegations, he was a peddler by occupation, and stopped one night at a boarding house in the city, leaving the city in the morning. A police officer followed him some nine miles, and arrested him on a warrant from the mayor. He was taken back to the city and compelled to stay for twenty-one days in the house he had lodged in overnight, because a case of smallpox had been discovered in the house, although he protested that he had not been exposed to the disease, and even offered for his own quarantine elsewhere. Besides, he alleged that he had been forced to undergo vaccination twice during his confinement, and alleged loss in his goods and injury to his horse from its use and bad treatment by the authorities. But, notwithstanding all this, the Supreme Court of North Carolina holds that he had no cause of action for damages against the city. It says that if he was arrested and detained by the officers of the law, under the process of the law, and for the purpose of enforcing the law, he had no right of action, unless he could show malice or improper conduct on the part of the officers in its execution. Then his right of action would be against the party or parties maliciously instituting the proceedings, or the officers for improper conduct in making the arrest and detention. Again, it says that, in this case, the officers seemed to have been acting under the statute, and that it is settled in that state that a municipal corporation can not be held liable for the enforcement of a public law for the public good.

Test of Responsibility for Crime, Defense Insanity.—In the murder case of the State of Maine vs. Knight it was earnestly contended by counsel that an uncontrollable insane impulse to commit a criminal act might co-exist with full knowledge of the wrongfulness of the act, and that the legal test of responsibility for crime afforded by the knowledge of right or wrong, respecting the act committed, had proved to be insufficient and unsatisfactory. It was accordingly insisted that the time had arrived when this criterion of responsibility could be safely modified by incorporating into the rule the element of irresistible impulse. To this the Supreme Judicial Court of Maine replies that it is undoubtedly true that in the progressive development of the medical jurisprudence of insanity more enlightened views have gradually prevailed respecting the functional activity of the mind, and the course of symptoms indicating mental disease, and that just conclusions have more frequently been reached by courts and juries in recent years in regard to the relation of insanity to criminal responsibility. But since the announcement of the decision of this court in State vs. Lawrence, 57 Me. 574, in the year 1870, this abstruse and difficult question has been the subject of exhaustive re-examination and renewed study, in the light of all modern discoveries of scientific truth bearing upon it by the most eminent medical and legal jurists in this country and England, and by courts of the highest authority in both countries; and it is still held by an overwhelming weight of judicial authority that, when the insanity of the accused is pleaded in defense, the test of his responsibility for crime afforded by his capacity to understand the nature and quality of the act he was doing, and his mental power to distinguish between right and wrong with respect to that particular act at the time he committed it, is the only proper legal criterion; and that, when fully developed and explained to the jury, in its application to the special facts and circumstances of different cases, it will always be found adequate to meet the demands of justice and humanity toward the accused, as well as to insure the protection and safety of the public. So, this court still adheres to the old rule, approved in the case above-mentioned. It further says that it is evident that much of the diversity of opinion or difference in modes of expression upon this subject arises from a failure to discriminate between that irresistible impulse produced by an insane delusion or mental disease which had progressed to the extent of dethroning the reason and judgment and destroying the power of the accused to distinguish between right and wrong as to the act committed, and that uncontrollable impulse which is alleged to arise from mental disease, and to coexist with the capacity to comprehend the nature and wrongfulness of the act, but which may, with equal reason and consistency, be attributable to moral depravity and criminal perversity.

Medical Attendance for Employes—On Injured Miners.—The Supreme Court of Montana says, in the case of Spelman vs. the Gold Coin Mining and Milling Company, that the implication of a promise, one the part of one who requests the performance of medical or surgical services for another, to pay for them, does not arise unless the relation of the person making the request to the patient is such as raises a legal obligation on his part to call in a physician and pay for the services.

To make him liable, there must be an express promise or engagement to pay by the one who called in the surgeon or by his authorized agent. This is also true with regard to corporations. In this case, certain employes of the mining company were injured by the explosion of a blast, while working in its mine, and, so far as appeared, without its being in anywise at fault. One of them was the assistant manager and foreman. Being taken with the others to a hospital, he told the surgeon that the company would pay all the expenses incident to their treatment. The general manager also promised that it would pay all expenses for their treatment. But the court holds that the company was not thereby rendered liable. It does not think that the general manager had any implied authority, under the circumstances, to bind the company by employing physicians and surgeons. Besides, it says that while there can be no doubt of the implied power of a corporation of the class to which this one belonged to incur expense on account of injuries received by its employes in the line of their employment, in the absence of any express statutory grant of such power, the law unquestionably is that such a corporation does not owe to its employes any implied legal duty to do so. It would not seriously be asserted that a natural person owes to his servant or employe the legal duty to furnish medical or surgical aid to him, or to nurse him when sick or disabled, or when injured while working for the master or employer. Indeed, the court apprehends the law does not impose such obligation upon him in any event without an agreement by which he assumes such burden. For instance, a servant suffers a bodily injury through the actionable negligence of the master; although the master must answer to the servant in damages for all loss proximately resulting, including physicians' and surgeons' charges, yet the law does not require him to engage their services, or to pay them for performing the services. He may, if he chooses, employ physicians, surgeons and nurses, and promise to pay them, and, of course, he would then be liable directly to those employed. Whether or not, in such a case as the one last suggested, the general manager of a mining company can bind his principal, the court says it was not necessary to decide on this appeal, because, as has been said, there was nothing to indicate that the company was at fault, or that it had agreed with the wounded men to provide surgeons or physicians for them in case of accident. If the directors had met and employed them to attend the men, they would have bound the company; but the directors would not thereby have performed a duty imposed by law upon them or upon the company. Beyond doubt, also, the corporation, through its board of directors—its governing body—possessed the right at any time to delegate the exercise of this power to any officer or person.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), December 7.

1 *A Century of Vaccination. Floyd M. Crandall.
2 The Diagnosis of Smallpox. Jay F. Schamberg.
3 *Tetanus Appearing in the Course of Vaccinia; Report of a Case. Robert N. Willson.
4 *Vaccine Production and Vaccination. George G. Groff.
5 Report of a Case of Compound Comminuted Depressed Fracture of the Skull, Cerebral Abscess, Cerebral Hernia; Operation; Recovery. G. W. Spencer.
6 *Shall Massage of the Stomach Be Recommended? A Study of Six Cases. (Concluded.) Mark I. Knapp.
7 *On the Use of Gärtner's Tonometer. Leroy Crummer.

Philadelphia Medical Journal, December 7.

8 Congenital Defect of the Forearm, Absence of the Radius, Club Hand, etc.: Plastic Operation. Roswell Park.
9 Splanchnoptosis. (Continued.) Byron Robinson.
10 *Statistics of Typhoid Fever at the Philadelphia Hospital from January 1, 1897, to December 31, 1899. Herman B. Allyn.
11 *Hypodermoclysis in Pediatric Practice. W. C. Hollopeter.
12 Amyotrophic Lateral Sclerosis: With Report of a Case. Thomas L. Coley.
13 *A Case of Sterility in the Male, Due to Dead Spermatozoids—Cured by Galvanism. Gustavus M. Blech.

Medical Record (N. Y.), December 7.

14 *Some Observations on the Borderland Between Medicine and Surgery. George Woolsey.
15 The Expectant Treatment. Robert H. Bakewell.
16 *The Psychic Half. J. Allen Gilbert.
17 *Spasmodic Bronchostenosis. Albert Abrams.
18 The Hemorrhagic Diathesis in Relation to Operation on the Nose and Throat. E. Harrison Griffin.
19 The Treatment of Xanthoma of the Eyelids. Fred. J. Levi-seur.

Medical News (N. Y.), December 7.

20 *A Case of Suture of a Stab-Wound of the Heart, with Remarks on, and a Table of, Cases Previously Reported. George T. Vaughan.
21 When and How to Introduce the Stomach-tube. Mark I. Knapp.
22 *The Pathology and Treatment of Bilocular Stomach, with a Report of Two Cases. Charles G. Cumston.
23 *Some Unusual Localizations of Tuberculosis. Frederick A. Baldwin.
24 Nephrectomy for Severe and Prolonged Mononephrous Hemorrhage. Granville MacGowan.

New York Medical Journal, December 7.

25 *Ulceromembranous Angina Associated with the Fusiform Bacillus (Vincent); A Report of Twelve Cases in Children. Jacob Sobel and Charles Herrman.
26 *Appendicitis. John B. Deaver.
27 Report of a Case of Interstitial Pregnancy. R. H. Pierson.
28 The Daily Medical Inspection of Schools. (Continued.) D. S. Lamb.
29 *On a New Principle in Nephropexy. Carl Beck.
30 How Do You Use Quinin for the Prevention and Cure of Malarial Disease, and What Other Treatment Do You Employ? (Concluded.) Christopher C. Beling, P. R. Egan, William C. Griggs.

Boston Medical and Surgical Journal, December 5.

31 *Hernia Epigastrica and Fatty Tumors in the Epigastrium. (Concluded.) Howard A. Lothrop.
32 One's Health in Egypt. (Concluded.) F. Gordon Morrill.
33 *The Similarity of the Early Symptoms of Simple Abdominal Contusion and One Accompanied by Severe Intestinal Injury; the Need of Exploration; Celiotomy as an Early Routine Measure. John T. Bottomley.
34 *The Scope of Vaginal Section in the Treatment of Pus in the Pelvis with a Report of 82 Abdominal Sections Without Mortality; and 18 Vaginal Sections with One Death, Due to Accidental Causes. Edward Reynolds and L. V. Friedman.
35 Prostatic Calculus Removed Through Perineal Section. Charles G. Levison.
36 The Treatment of Piles by the Injection of Carbolic Acid. George W. Gay.

St. Louis Medical Review, December 7.

37 Chloroform in Labor. W. E. Gordon.
38 A Case of Circular Tumor and Hydrocephalus. T. A. Martin.

Cincinnati Lancet-Clinic, December 7.

39 Management of Face Presentations. Magnus A. Tate.
40 Subcutaneous Wounds of the Kidney. P. C. Layne.

Virginia Medical Semi-Monthly (Richmond), November 22.

41 Benefits of Medical Societies; The Value of Papers and Their Discussion; of Pathologic Specimens; of Social Features, Etc. Wm. P. Carr.
42 Hemiplegia. Francis D. Bishop.
43 Brain Softening. Michael Campbell.
44 *Presidential Address. Southern Surgical and Gynecological Association. Manning Simons.

Northwestern Lancet (Minneapolis), December 1.

45 *Some Experimental Surgery of the Intestinal Tract. A. E. Benjamin.
46 *Some Experimental Surgery of the Gastro-intestinal Tract. R. E. Cutts.
47 False Membranes or Air-Passages Complicating Measles. J. F. Corbett.
48 A Visit to London Hospitals. J. H. Rishmiller.

The Medical Age (Detroit, Mich.), November 25.

49 Ship's Surgeon's Infiltration Anesthesia. Hal C. Wyman.
50 A Few Don'ts (Gonorrhea). Frederick W. Robbins.
51 Treatment of the Eye by the General Practitioner. George H. Gorhan.

Medical Fortnightly (St. Louis), November 25.

52 *The Scientific Study of Accidents. J. Howe Adams.
53 A Contribution to the Newer Materia Medica. A. A. Nefe.
54 Massage. F. Savary Pearce.
55 Diseases of the Stomach. J. M. G. Carter.

Interstate Medical Journal (St. Louis), November.

56 Carcinosis of the Internal Genital Organs in the Female. George Gellhorn.

57 *Some Phases of Nephrolithiasis. A. H. Cordier.
58 A Case of Osteoma of the Orbital Plate of the Frontal Bone, Brain Abscess and Thrombosis of the Cavernous Sinus. J. W. Charles and M. B. Clopton.

Illinois Medical Journal (Springfield), December.

59 *Tuberculous Peritonitis in Childhood; Report of a Case. A. C. Cotton.
60 *The Treatment of Fecal Fistula and Inoperable Pathological Conditions of the Intestine by Exclusion of the Same. Carl Beck.
61 Purulent Ophthalmia of the Newborn. Willis O. Nance.
62 The Doctor as an Ethical Leader. Margaret T. Shutt.
63 Rhinoliths. J. Whitefield Smith.

Pennsylvania Medical Journal (Pittsburg), November.

64 Address in Otology. Ernest U. Buckman.
65 *A Few Reasons for Early Operation in Acute Mastoiditis. William H. Dudley.
66 *Gumma of the Ciliary Body. Edward Stiereu.
67 *Treatment of Contagious Diseases of the Eye by the General Practitioner. S. Lewis Ziegler.
68 *Two Cases of Progressive Muscular Dystrophy in Brother and Sister. Augustus A. Eshner.
69 Use of Hydrobromate of Hyoscin in the Treatment of Chorea. W. Brown Ewing.
70 *Prognosis in Neuritis. F. Savary Pearce.
71 *Some Cases of Hysteria. Edward E. Mayer.
72 *Some of the Ocular Affections of Childhood Associated with Impairment of General Nutrition. S. D. Risley.

Transactions of the Chicago Pathological Society, November 11.

73 *Histo-pathology of the Pancreas in Diabetes Mellitus. Maximilian Herzog.
74 Sections of a Glioma of the Retina Stained by Mallory's Neuroglia Stain. Brown Pusey.

Louisville Monthly Journal of Medicine and Surgery, December.

75 Climate and Tuberculosis. A. H. Davidson.
76 Treatment of Nasal Hemorrhage. Adolph O. Pfingst.
77 The Marriage of Syphilitics—A Reply. G. Frank Lydston.
78 A Reply. J. M. Mathews.
79 Pathology of Goiter. James S. Chenoweth.

American Gynecological and Obstetrical Journal (N. Y.), November.

80 Suturing Without Knots, More Particularly in Wounds of the Abdominal Varieties. Richard H. Gibbons.
81 Infections of the Soft Tissues of the Female Pelvis; Diagnosis and Treatment; Report of Cases. J. E. Allaban.
82 *The Mode of Incision in Vaginal Section. J. Clarence Webster.
83 The Treatment of Congenital Talipes Equinovarus. Frank E. Peckham.
84 A Case of Sudden Death After Labor, with Autopsy. J. N. Hall and Alice T. Moore.
85 Simple Stricture of the Bowels and Hydronephrosis Caused by a Blow upon the Abdominal Walls. L. Brannon.
86 Carcinoma of the Female Urethra; Report of Cases. C. Jeff Miller.

Bulletin of the Johns Hopkins Hospital (Baltimore), October.

87 *Carcinoma of the Male Breast. Louis M. Warfield.
88 Report of a Case of Carcinoma Diagnosed by Means of Paracentesis Abdominis, with Some Remarks on the Diagnostic Value of Examinations of Serous Effusions. Walter Ralph Steiner.
89 A Case of Primary Adeno-carcinoma of the Fallopian Tube. Elizabeth Hurdon.
90 *Lipo-myoma of the Uterus. J. H. Mason Knox, Jr.
91 Chorea with Embolism of Central Artery of Retina. Henry Thomas.
92 Volvulus of Meckel's Diverticulum, with Recovery After Operation. William J. Taylor.

Annals of Ophthalmology (St. Louis), October.

93 Observations with the New Electric Ophthalmoscope. Hugo Wolff.
94 The Pathogenetic Eventuations of Chalazial Tumors. M. F. Weymann.
95 *The Treatment of Recent Embolism of the Retinal Arteries by Deep Massage, with Report of Two Cases Cured by This Method. H. V. Würdemann.
96 *Optic Atrophy Following Hematemesis. James D. Barrett.
97 Residual Sensations as a Test for Diplopia with Description of a New Method for Measurement of Ocular Muscle Imbalance. Clinton F. Cooke.

Woman's Medical Journal (Toledo, Ohio), October.

98 Fibroma of the Integument the Cause of Pain, Diagnosed as Articular Rheumatism. Anna M. Lieser.
99 Lacerations of the Pelvic Floor and Their Effects. Sara A. Janson.

Proceedings of the Philadelphia County Medical Society, October.

100 *The Aspect of Disease as Seen in Arctic Alaska. Ernest W. Kelsey.
101 *The Force of the Blood Current as a Cause of Variations in Heart Murmurs, Illustrated by a Case of Cardiac Inhibition, with Loud Cardiac Murmur, and by Fluoroscopic Studies. Roland G. Curtin.
102 A Note on the Treatment of Diphtheria. John W. Swan.
103 Report and Exhibition of a Fibroid Tumor Removed by Supravaginal Hysterectomy. George E. Shoemaker.
104 Removal of Lumbar Glands for Malignant Disease of the Spermatic Cord. John B. Roberts.
105 Triple Ectopic Gestation. Wilmer Krusen.
106 Pertinent Observations Concerning Appendicitis in the Female. Andrew J. Downes.
107 The Treatment of Locomotor Ataxia, with Special Reference to the Treatment by Educational Exercises. John H. W. Rhein.

Toledo Medical and Surgical Reporter, December.

108 Lesions of the Nervous System Due to Syphilis. William Wickham.
109 The Best Alkaline Wash. W. Harpur Sloan.
110 The Mucous Polyp—Its Causation and Cure. Lorenzo B. Lockard.
111 Applied Anatomy of the Vagina. Byron Robinson.
112 Vaginal Fistula—Operation Refused. T. J. Briggs.

Archives of Ophthalmology (N. Y.), November.

113 *Descemetitis a Symptom of Inflammation on Any Portion of the Uvea: Serous Iritis Not a Disease per se. Henry D. Bruns.
114 *A Case of Endothelioma of the Lachrymal Gland (Myxochondo-endothelioma Cylindromatodes), with an Analysis of Previously Reported Cases of Lachrymal Gland Tumors. Aldred S. Warthin.
115 *Anisometropia. Alexander Duane.
116 *On Torticollis in Cases of Vertical Deviation of One Eye. Karl Dallwig.
117 A Case of Homonymous Hemianopsia of Cortical Origin with Peculiar Disturbances in the Remaining Halves of the Fields. Th. Gelpke.
118 On Traumatic Degeneration of the Retina. E. Adamuck.

Colorado Medical Journal (Denver), October.

119 *Mountain Fever, So-called. W. W. Woodring.
120 Symptoms, Diagnosis and Treatment of Chronic Nephritides. H. R. Bull.
121 The Administration of Anesthetics in Renal Diseases. William Dow.
122 Renal Hematuria and Nephrolithiasis. Frank Finney.
123 X-ray in diagnosis of Kidney-disease. George H. Stover.
124 The Kidneys During Pregnancy. T. Mitchell Burns.
125 How I Conduct a Case of Normal Labor. M. D. Gibbs.
126 A Case of Acute Hemorrhagic Pancreatitis, with Diagnosis Confirmed by Autopsy. O. J. Pfeiffer.
127 An Unusual Sequela of Pneumonia. W. T. H. Baker.

Chicago Clinic, November.

128 Guaiacol Treatment of Laryngeal Tuberculosis. J. Homer Coulter.
129 Medical Versus Surgical Treatment of Appendicitis. D. B. Eaton.
130 Nervous Children. Marcus P. Hatfield.

The American Journal of Anatomy (Baltimore), November.

131 Development of the Limbs, Body-Wall and Back in Man. Charles R. Bardeen and Warren H. Lewis.
132 *The Intralobular Framework of the Human Spleen. Preston Kyes.
133 Studies on the Neuroglia. G. Carl Huber.
134 *The Normal Histology of the Human Hemolymph Glands. Aldred Scott Warthin.
135 On the Morphology of the Pineal Region, Based upon Its Development in Acanthias. Charles S. Minot.

Southern California Practitioner (Los Angeles), November.

136 An Unusual Case of Carcinoma of the Kidney, with Some Remarks on Early Diagnosis of Kidney Diseases. P. Newmark.
137 Early Physicians of Los Angeles. H. D. Barrows.
138 Hospitals and Sanatoria Founded, Owned and Controlled by the Medical Profession—A Case in Hand. H. Bert Ellis.

St. Louis Courier of Medicine, November.

139 *Retained Testicle, with the Surgical Features and Microscopic Findings in Three Cases. Willard Bartlett.
140 Cocain Spinal Anesthesia by Lumbar Puncture. C. E. Ruth.
141 *The Right-sided Anatomical Tripod. C. P. Thomas.
142 A Case of Appendicitis with Some Unusual Features. J. G. Moore.
143 *The Requirements of Modern Surgery. J. H. Carstens.
144 Spaying of Cows as a Means of Procuring More and Better Milk. L. F. Abbott.

Medical Times (N. Y.), December.

145 Bullet Wound of the Hand. Ewing Marshall.
146 Retained Placenta in Primaparæ. Thomas S. Bullock.

Charlotte Medical Journal, November.

147 *Asthenopia in Convalescence and Other Conditions of Lowered Vitality. Gaillard S. Tennent.
148 The Great Plagues of History. M. F. Carson.
149 A Government Duty. James Kilbourne.
150 Some Obscure Injuries Following the Toxic Use of Alcohol. T. D. Crothers.
151 A Child One and a Half Years Old, with a Single (4-penny) Nail in Its Windpipe—Some Other Cases of Foreign Bodies in the Trachea and Esophagus Reported. William Lewis Bullard.
152 "The Practical Management of Smallpox." M. K. Allen.
153 Can a Typical Case of Enteric Fever Be Broken Up? G. A. Davis.
154 The Pantherapist and Neurotherapeutics. C. H. Kermott.
155 Scarlet Fever—Its Treatment. James A. Knight.

Texas Medical News (Austin), November.

156 Prevailing Disease Conditions in San Antonio, Texas. M. J. Bliem.
157 Some Hints on Therapeutics. J. C. Anderson.
158 Medical Melange. R. E. B. Bledsoe.
159 Traumatic Tetanus—Report of a Case. S. C. Broadstreet.

Carolina Medical Journal (Charlotte, N. C.), November.

160 Past, Present and Future of Cancer. Stuart McGuire.
161 Report of Three Operations on the Bladder During August. Andrew J. Crowell.
162 Clinical Report of Diphtheria in Salisbury, N. C., During Six Weeks Ending October 1. J. Meigs Flippen.

Detroit Medical Journal, November.

162 Photograhy in Medicine. Heneage Gibbes.

AMERICAN.

1. **Vaccination.**—Crandall gives a historic résumé of the effects of vaccination, showing how variola has been nearly stamped out in Prussia by the operation. He sums up the lessons taught from experience in the following: "1. The first lesson can not be better stated than in the words of the Berlin Board of Health: 'Vaccination in infancy, renewed at the end of childhood, renders an individual practically as safe from death from smallpox as if that disease had been survived in childhood, and almost as safe from attack.' 2. The duration of the immunity conferred by vaccination is variable. In many individuals vaccination in infancy, and revaccination in childhood is sufficient for life protection. In a limited number, immunity is lost in five or six years. It is never possible to know with certainty to which class an individual belongs. In the face of an epidemic, therefore, vaccination of all who have not been vaccinated within five or six years, is giving what the lawyers call the benefit of a reasonable doubt. Every one who has been vaccinated in infancy and childhood, should be vaccinated not less than once in adult life. 3. The immunity conferred by vaccination is in direct proportion to the thoroughness with which it is performed, and this is shown with considerable accuracy by the character and number of the resulting scars. 4. Vaccination in infancy alone is not sufficient to wholly prevent smallpox among the adult population. 5. Optional vaccination has not proved sufficient to protect the community from smallpox. Compulsory vaccination is a measure warranted by more than a century of experience. 6. The mild compulsion enforced in this country, by requiring vaccination or evidence of its recent performance upon admission to the public schools, should have the hearty support of parents and physicians alike."

3. **Tetanus in Vaccination.**—The Camden epidemic is the basis for Willson's paper and he disagrees with the circular sent out by the Camden Board of Health, especially in their statement that tetanus does not develop later than eight to ten days after infection. He reports a case and while he admits that in all the cases of tetanus it must be acknowledged that the incubation period was greatly prolonged, he still thinks that the statement made is incorrect. In his case the child's father was a coachman and another similar one is referred to. He believes the tetanus bacilli were carried from the stable to the child either by the father or someone else and he does not think that the chronic or delayed form has ever shown such a mortality as has occurred in this tetanus epidemic in Camden, N. J. Therefore, he holds that the cause in the several cases was probably subsequent to the original vaccination. The cases point to neglect on the part of physicians, not in the vaccination itself, but in properly watching the cases afterwards. The occurrence of tetanus should not influence careful persons against the only safeguard against smallpox, but should arouse the medical profession and the laity to studying the proceeding and adopting measures that will ensure the proper execution of the vaccination and subsequent supervision of the vaccine sore.

4. **Vaccine Production.**—Groff suggests the appointment of a commission, preferably by the American Medical Association, to investigate and report upon the following points: 1. From what tissue or pathologic product in the vaccinated animal should the virus be taken, and at what time after vaccination. 2. What is a typical vaccine vesicle, stating accurately the appearance on different days, and what is a typical vaccine scar. 3. Means of positive diagnosis of the "mild form of smallpox in which there are no deaths." He has come to the conclusion that when a smallpox epidemic is present the virus supplied physicians is much more attenuated than is the case when such epidemic does not exist. He notes the methods of preparation of different firms and says that in the 800,000 vaccinations made in Porto Rico by the military government under his direction with virus produced on the ground, neither the scab, the lymph from the sore, nor the granulating tissue under the scab were used; only the product containing the virus.

6. **Gastric Massage.**—In the conclusion of Knapp's paper he holds that the effect of gastric massage is more psychical than otherwise and would recommend it simply for its psychic effect. Whatever good there is in massage the stomach is not adapted for it.

7. **Gaertner's Tonometer.**—The tonometer is of use according to Crummer in the following conditions: In diagnosis by eliciting the tension in cases in which the mean blood pressure is symptomatically changed; in prophylaxis in keeping tract of the blood pressure where we desire to have the earliest possible knowledge of lack of compensation found in valvular lesions and in kidney diseases; in prognosis in acute cases, in judging the maintenance of the power of the heart, read directly by means of the instrument; therapeutically as a measure of the effect of drugs or other treatment given for the production of changes of arterial tension.

10.—See abstract in THE JOURNAL of October 19, p. 1058.

11. **Hypodermoclysis.**—Hollopeter has been employing hypodermoclysis in some of the ailments of early life and finds it of great value in specially selected cases. His technique is given as follows: In afebrile cases, such as are found in general atrophy, wasting following infectious disease, etc., the solution should be at least 115 to 120 degrees and delivered to the tissues at 106. This temperature must be kept up throughout the procedure. The injection may be made either by a large hypodermic syringe or by gravity if suitable apparatus is obtainable, but this is slow. He thinks in very young children the old-fashioned large antitoxin syringe holding one to two ounces, after being thoroughly sterilized by boiling, is filled with normal saline solution of the proper temperature, which is injected into the flank or into the inner surface of the thigh above the knee, or preferably near the great trochanter, on the outer aspect of the lower extremities, this being the area of least sensibility and is also free from pressure when the child is lying down. It may be necessary to benumb the skin by the application of pieces of ice for a few minutes or a little atomization with sulphuric ether. It is never necessary to introduce the fluid with a large syringe so rapidly as to produce swelling. When the tissues are wasted or starved by loss of blood they will drink up the fluid much more rapidly than when the body is full of fluid and toxins. Several cases are reported and he says in conclusion that the method offers a very wide field of clinical usefulness. The appearance of a surgical procedure may frighten young children or the family, but in spite of this, he finds it an unusually powerful remedy that has given him far better results than any simple procedure ever

tried. To recapitulate, its chief fields of usefulness are in hemorrhage in the newborn, from the genitals or umbilical cord; in purpura; in cases of general wasting from intestinal disturbances; and especially the toxemias associated with the acute eruptive fevers, scarlet fever and diphtheria claiming an especially high degree of usefulness. In syphilis and in tuberculosis it is a therapeutic measure which aids very materially the uses of other means to effect restoration.

13. **Sterility in the Male.**—Bleeh reports a case where, probably following specific urethritis, there was a condition of sterility accompanied with a few dead spermatozoa in the semen which was cured, contrary to his expectations, by the use of negative galvanic applications to the prostatic urethra, 5 to 12 milliamperes, lasting 5 to 8 minutes. The indifferent pole was placed on the back. He does not attempt to explain this cure after 11 years' diseased condition and blames himself for not having examined or properly treated the urethra in the case.

14. **Borderland Conditions.**—The special borderland conditions between medicine and surgery noticed by Woolsey are carcinoma of the stomach and appendicitis. In regard to the latter he believes in early operation, as diminishing the unnecessary element of mortality. Improvement is needed, he thinks, in medical practice in the line of early diagnosis, especially in the cases of malignant new growths and septic processes. The responsibility rests with the physician to not only make an early diagnosis but to call in the surgeon to apply appropriate treatment.

16. **The Psychic Half.**—Gilbert's article is a protest against the materialistic methods of thought and expression in medical and other literature. Medicine is not justified, he says, in looking at the cases entirely on the physical side. Experimental psychology has promised much more than she has fulfilled or ever can fulfill. He specially criticises the attempt to define consciousness by physical terms, explaining the psychic realities by chemical and other theories.

17. **Bronchostenosis.**—After describing the symptomatology of bronchial spasms Abrams maintains that many cases of bronchitis are merely cases of bronchial spasm which can only be relieved by climatic change, and he emphasizes particularly the value of iodid of potash in this condition. In his experience it is a specific, though it must be given with circumspection. The medium daily dose is about 30 gr., though 60 is not excessive when no idiosyncrasy is shown. We must specially guard against iodism; individuals with defective renal apparatus are especially liable to this. The promotion of diuresis by drinking largely of water or milk may obviate iodism. Belladonna in the form of tincture, 5 drops with each dose of iodid of potassium, will prevent the objectionable coryza. If digestive disturbances occur Fowler's solution may be given and Briquet suggests bicarbonate of sodium, and sulphanilic acid has been given for a similar purpose. He offers the following formula as of value in certain cases of bronchostenosis:

℞. Iodid of potassium 3 5
Tincture of lobelia 3 10
Spirits of glonoin (1 per cent.) .....m. 16
Elixir bromid of potassium q. s. ad.....℥ 4
M. A teaspoonful three times a day after meals. This dose may be gradually increased if necessary.

20. **Stab-Wound of the Heart.**—Vaughan reports a case of stab-wound of the heart sutured some one-half to three-quarters of an hour after reception. The patient died of hemorrhage which was free with each pulsation through the wound. He analyzes the cases that have been reported, including some 26, in which there were 9 recoveries. It appears the ventricles are much more likely to be wounded than the auricles and the left ventricle most frequently. His conclusions are that the time has arrived when a wound of the heart should be operated on with as little hesitation as a wound of the brain, with the expectation of, under proper conditions, getting good results. The mortality will necessarily be high, not from the operation but from the injury, especially if all cases, including desperate ones, be undertaken. Cases that have survived five or more hours after receiving the wound will give a good percentage of recoveries, but such selection is not to be recommended. 2. In all cases of wounds in the region of the heart, with symptoms threatening life, an exploratory operation should be done by making an osteoplastic flap by dividing the fourth and fifth costal cartilages at their attachment to the sternum and ribs, about one inch external to their attachment to the cartilage, somewhat according to the method of Roberts. This flap turned up as a door on a hinge gives a good view of the pericardium and can easily be enlarged upward if more room is required. 3. While early and speedy operation is often essential to success, yet the importance of asepsis can not be too strongly emphasized on account of the great danger of pericarditis and empyema. If there has been much hemorrhage an amount of physiologic salt solution, approximately equal to the blood lost, should be injected into the vein while the surgeon is operating, if it has not been done before.

22. **Bilocular Stomach.**—Cumston's long article contains two cases in detail and covers the whole subject of bilocular stomach. No operation, he says, can be decided on before the abdomen has been opened and the condition therein ascertained. When the surgeon has become perfectly familiar with the anatomical condition present he may select the operation most applicable, which, taking all things into consideration, is usually gastro-anastomosis according to Doyen's and Woelfler's methods. It is, he believes, indicated in all cases of bilocular stomach, especially when the stenosis is long and narrow and where cicatricial atrophy of the cardiac pouch has occurred and there are a large number of adhesions. It is more rapidly performed than resection, and it is a more perfect operation because it re-establishes stomachic digestion in its entirety.

23. **Tuberculosis.**—Baldwin reports cases of tuberculosis of the hypophysis, of the intercostal tissues near the sternum with secondary tuberculosis of the axillary lymph glands, primary tuberculosis of the Fallopian tube with large tubercular veins in the ovary, tuberculosis of the thyroid, tuberculosis of the uvula and a case of tubercular adenomatous polyp of the cervix.

25. **Ulceromembranous Angina.**—Although this condition was previously recognized by French and Russian authors it has only been noticed within the last three years by Germans. Sobel and Herrman describe the localization, which is usually on the tonsil, most frequently on the right, the ulceration varying in size from that of the nail of the little finger to the involvement of the greater part of the tonsil, irregularly circular or oval and chaneroidal in character. The depth varies from one-eighth to half an inch, and sometimes extends throughout the gland. In all the 12 cases examined there was some elevation of rectal temperature, in 4 ranging up to 101 and 103. With two exceptions the submaxillary glands were enlarged on the same side as the lesion and usually remained so for some time after the healing of the ulceration. The symptoms were usually entirely local, the fever rarely being high enough to produce constitutional symptoms. Clinically it differs from diphtheria in that it has an ulcerative process instead of a membranous. From confluent follicular amygdalitis it is distinguished by the absence or mildness of constitutional symptoms. The bacteriology of the condition is discussed at length and the organisms found described. The authors consider that the fusiform bacillus of Vincent is probably the special microbe of the condition on account of its uniform presence in such large numbers or in nearly pure culture, and the gradual disappearance during the process of healing, and its rapid destruction when the ulceration heals; the rarity of other micro-organisms and the fact that in some cases it seems to be transmissible. The prognosis is invariably good, a cure usually occurring within three weeks. The majority of cases were locally treated with silver nitrate, 3 to 5 per cent. In two instances Lugol's solution was used with apparently good results. Brief histories of the cases accompany the paper, with a bibliography.

26. **Appendicitis.**—Deaver maintains that every death from appendicitis is preventable, excepting, of course, the fulminating type, if the operation is performed in due season. The symptoms are not characteristic singly, but the diagnosis should be made by anyone from the three cardinal symptoms, pain, tenderness and rigidity. He maintains that it is unjustifiable to defer operation in any case after the diagnosis has been made. The condition of walled-off abscess is a most unfortunate state of affairs and not a favorable outcome of conservative treatment as is sometimes held.

29. **Nephropexy.**—The new principle announced by Beck consists in suspending the kidney, after having button-holed it on the fibers of the nearest muscle. He briefly reports a case. The principle of the method is similar to that of his modified method of ligamentopexis illustrated in the *American Journal of Obstetrics*, Vol. xlii, No. 8, 1900.

31. **Hernia Epigastrica.**—In the conclusion of his article Lothrop discusses the etiology, pathology, anatomy and symptoms of the condition. It may be due to embryonic defect, to weakness in the abdominal walls and to trauma, and there is evidence of the influence of properitoneal fat and terminal vessels and nerves in its causation. The fatty tumors and epigastric hernia are usually of slow origin and tend to develop at the point where the vessels pass forward through the anterior sheath of the rectus muscle, particularly in the linea alba. The steps of this process are given in the remarks on pathologic anatomy. It is quite possible that these elements may give rise to no disturbance whatever, but in the common type there is more or less gastro-intestinal disturbance with or without local pain. It is a good rule to examine the epigastrium in gastric disturbance to make sure as to this condition. The symptoms referred to the stomach may be nausea, vomiting, increased acidity, eructations and occasionally palpitation where the heart's action becomes embarrassed. The motile power of the stomach may be interfered with. Pain is commonly present. All of these symptoms usually follow a meal, sometimes in proportion to the amount of the ingesta. Tenderness may be present or absent in any case, and in some cases in fat patients the tumor may be difficult to be palpated. Tumors in the region of the epigastrium should suggest this possibility. The prognosis is not bad in cases where there are no symptoms, though it may give rise to symptoms at any time. If it causes any trouble treatment is indicated. Operation, however, is the only means of relief when symptoms are troublesome and it is very important to free the omentum from all adhesions, and recurrence is unusual.

33. **Abdominal Contusions.**—Bottomley has analyzed some 40 cases of abdominal contusions, equal numbers with and without severe intestinal injury, causing severe intestinal trouble, and analyzes symptoms. Pain was present in all the more severe cases, and is the most constant symptom and of no special diagnostic value. It was present in all but one of the simplest and mildest cases. Vomiting occurred both in the mild and severe cases. It was absent in 2 cases of intestinal injury and in 7 cases of simple contusions, and was not mentioned in 8 cases of the former and 3 of the latter class. Shock appeared as an intestinal symptom in 10 cases of intestinal injury and 7 of contusions of the abdominal wall. Muscular spasm was present at entrance in 11 of the intestinal injuries and 10 of simple contusions; it was absent in 2 of the more severe and 4 of the less severe injuries. Other symptoms were distension, tenderness, which is one of the most constant signs, external signs of violence which are not always present; dulness was present in the minority, and variations of the temperature, pulse, etc. Nothing definite was obtained from a study of these special symptoms. Of the 20 cases of injury of the intestine 19 died and 1 recovered; 11 were operated on and 9 treated expectantly. Of the latter all died. In simple contusions of the abdomen, the symptoms disappeared in an average of 4.4 days and the cases were discharged in 8 to 15 days. The general result of the study was that the physical signs respond neither to the amount of violence nor to the amount of injury done, and we have no means of distinguishing between simple abdominal contusions and one complicated by severe injury except by exploratory incision, and this to be of value must be done in a very short time, three to five hours after the injury.

34. **Vaginal Section.**—Reynolds and Friedman have, in their recent practice, abandoned the abdominal method of extirpation of infected tubes and other collections of pus in the abdomen and confined themselves to thorough drainage by the vagina without attempting the removal of the affected viscus, excluding, of course, cases of twisted pedicle, etc. The method of operating consisted in using a wide cut across the posterior fornix and frequently supplemented by continuing the incision in the median line, thus making a T-shaped cut. The first incision only penetrates the vaginal walls, but is always extended on the sides out to the pelvic walls and posteriorly as far as may be necessary; the flaps are dissected back and a similar incision is carried through each succeeding layer until the abscess mass is itself plainly in view; its wall is incised and the incision extended with scissors, or the fingers, until it is as wide as the original incision in the vaginal vault. All edematous inflammatory tissue is torn open with the fingers as far as possible and the cavity then lightly packed without douching. There is usually free venous hemorrhage, but this is due to back pressure on the veins and will cease as soon as the mass is reduced by the escape of its contents. They divide these sections into two classes: 1. Those in which a definite abscess cavity containing liquid pus (a pus-tube or encysted peritonitis) was isolated by a more or less heavy wall of inflammatory exudate. In this class the risk of general peritonitis is greatly diminished by this operation. Excellent drainage may be secured, severe post-operative shock is almost unknown, and vaginal hernia is a rare sequence. In the second class characterized by infiltration and subsequent degeneration of the cellular tissue of the pelvic septa, vaginal section gave no immediate and obvious results, but the result of section was a rapid drop in the temperature and pulse with marked symptomatic relief.

44.—See abstract in The Journal of November 30, p. 1481.

45. **Intestinal Surgery.**—Benjamin concludes that close approximation of the opposing surfaces preventing leakage and peritonitis can be best secured by the use of the Murphy button or the Czerny-Lembert or the Halsted sutures. Maintenance of the lumen, especially in the small intestine, is best secured by the Murphy button. However, where sutures are alone used and are carefully introduced, not allowing puckering to take place at the time, nor turning in too much, a small opening does not follow, as shown by his experiments. Adhesions around the exposed raw surfaces are best avoided by the use of the elastic ligature, though there is little chance of this occurring in Maunsell's operation. Where too many sutures are introduced there may be gangrene from cutting off of the blood supply. This is avoided by the Murphy button, and especially by the elastic ligature. The contents of the bowel are best prevented from infecting the wound by the use of the Murphy clamp or a tie of gauze around the intestine. Traumatism is avoided by using sutures of elastic ligature, but often caused by using the Murphy button. In the matter of time the Murphy button and elastic ligature take the lead. Of sutures the Halsted, which does not penetrate the mucosa and leaves less suture material exposed, is followed by fewer adhesions and makes a close approximation. When used by Connell's method still fewer adhesions result. Cushing's continuous suture is also very satisfactory. The square knot is the most suitable, and should be only firm enough to approximate the membrane. The continuous suture, apparently excepting Cushing's, is not very safe. It is likely to slough out in places unless anchored frequently by a half stitch. When the sutures penetrate the mucosa and are tied on the serous membrane, a peritonitis or infection by capillarity sometimes results. Care should be observed in putting in the mesenteric stitch and all stitches on the concave side of the bowel, to avoid cutting off the blood supply. The external row of sutures or an excess of stitching often causes gangrene. Na-

ture saves many cases by supplying an extra barrier to infection by the omentum plastering itself around the place of danger. This is well to remember as the omentum can easily be stitched around the questionable point.

46. **Gastro-Intestinal Surgery.**—Cutts describes and illustrates McGraw's plan of using the elastic rubber ligature for anastomosis. The technique is as follows: Hold the intestine firmly between thumb and finger; introduce a darning needle into the intestinal wall into the lumen of the bowel, passing the needle on for an inch and a half, again penetrating the wall of the intestine, and bringing the end of the needle out. While an assistant holds the bowel, make traction on both ends of the rubber ligature so as to make it as small as possible, and then draw the needle and ligature through the intestine at the desired amount. Now grasping the other loop of the intestine to be united, pass the needle and ligature through it likewise, but in a reverse direction; then tie a single knot in the rubber ligature, over which have the assistant tie a fine knot to prevent the slipping of the knot. Repeat the knot in the rubber ligature; likewise the silk thread to hold it. The loops of the intestine within the grasp of the ligature are thus greatly folded and massed together, but they straighten out and become perfectly smooth, leaving an opening between the intestinal walls varying in size with the amount of bowel included.

52. **Accidents.**—Adams gives the classification of accident insurance companies as to risks, which is of interest to physicians. Workers in nitroglycerin, soldiers in barracks or field service, professional baseball players, submarine divers, aeronauts, circus riders, and U. S. deputies supervising moonshine districts are excluded absolutely. Brakemen on freight trains, couplers, miners, and trimmers of electric light carbons are limited to $250 in case of death for which they must pay the premium of $30. Next comes the "specially hazardous" class, in which the insured must pay $25 per year and be limited to $1000 in case of death. Among these are cowboys, cattle-tenders, buzzsawyers, hunters, lumbermen, sawmill employes, and employes of furniture and sash, blind and door manufacturers running machinery. The next class is the "extra hazardous," who are compelled to pay $20 and be limited to $1500 in the average insurance company. Among these are railway engineers, firemen, conductors, bridge-builders and bridge-carpenters, sailors, well-diggers, wood-choppers, and employes in iron and steel manufactures. Next come the hazardous occupations who pay at the rate of $15 for $1000, and are generally limited to $1500. It is rather surprising that the farmer and farm laborer are included in this as well as the common laborer, dairymen, coal-heavers, icemen, telegraph linemen, quarrymen and cornice-setters. The blacksmith, butcher, carpenter, professional fisherman, and sea pilot are also included and the captains and mates on vessels. The extra-medium class which pays $12.50 yearly, limited to $1500, includes the bartender, cable and electric road employes, celluloid workers, distillery employes, volunteer city firemen, employes in glass factories and hostlers. Coming down to the ordinary risks entitled "medium," limited to $2000 at the rate of $10 per thousand, it includes most ordinary businesses, as house-painters, boat-builders, book-binders, bottlers, cabinet-makers, chocolate-makers, ferrymen, makers of agricultural implements, makers of bicycles and attendants on the insane. It also includes certain railroad employes, such as car-painters, car-cleaners, airbrake inspectors, truckmen at the stations, etc. It also includes the men who travel habitually on the Pullman cars, such as cooks in dining cars, hotel cars, porters and Pullman conductors who are considered to be less exposed to accident than the ordinary trainmen. The next division is that of the "extraordinary," where the amount is limited to $2000 at the rate of $8.50 per thousand and is rather an exclusive one, and contains such occupations as superintendent of furniture manufactures, who, while not actually running the machines, directs and makes repairs. The "ordinary risks" include such businesses as bartenders in first-class hotels, billposters, bookbinders, boiler inspectors, superintendents of buildings and a large number of trades. The "extra preferred" need pay only $6 per thousand and insure up to $5000, including general superintendents, supervising contractors, supervising proprietors, or manufacturers in the various lines of business. Insurance companies regard the men who supervise the work of their employes personally as not as good risks as if they confine themselves simply to office work. The next two classes, the preferred and the select, pay only $5 and $4 per $1000, and include persons employed in office work, ministers, typewriters, etc. Physicians are better risks than surgeons, and the city physician is better than his brother in the country. The city physician is put in the first class, the select, then the physician and surgeon with city practice only, while the country doctor and surgeon is put down on the ordinary, which is fourth from the top, for which he pays twice as much as his city brother, and is limited to half the amount of indemnity in case of accident or death from accident. This is the cold-blooded view which the accident companies take of the dangers of the country doctor's life.

57.—See abstract in The Journal of September 28, p. 849.

59.—**Tuberculous Peritonitis in Childhood.**—Cotton is dubious as to the necessity of surgical interference in tuberculous peritonitis in children and holds it probable that similar hygienic conditions to the usual post-operative ones might have an equally good effect. Put the affected part at rest as far as compatible with good nutrition. Give concentrated liquid diet to diminish peristalsis, keep the patient in the recumbent position to prevent diffusion of peritonitis and to economize energy. Abundant supply of fresh air and the maintenance of body heat are essential. The stools should be kept liquid without exciting undue peristalsis. Ascitic fluid should be evacuated as frequently as found necessary, and the abdomen, if large, should be supported by a bandage. The well-known action of creosote, guaiacol and iodin upon tuberculosis and the fact that these are eliminated by all the secretions, their presence in ascitic fluids having been demonstrated, suggests a promising field for their exhibition. Iodoform 10 per cent. with lanolin may be applied over the abdomen daily, and its internal administration is claimed to be beneficial. Cod-liver oil should not be forgotten. Protonuclein has found favor with some and should be theoretically indicated. In support of his view he reports a case thus treated, the only surgical operation being aspiration of the abdomen, and asks: If the apparent cure is real, has the improvement been influenced by therapy and would a laparotomy have produced any better results?

60. **Intestinal Exclusion.**—Beck maintains that side-tracking a portion of the bowel is the best method to obtain a palliative cure in an otherwise intractable intestinal fistula or inoperable tumor and may be employed with perfect safety to the patient. He says he speaks with some authority since he had the rare opportunity of performing 8 laparotomies on one individual before he was cured of his intestinal fistula and he gives the case in detail. He also gives other cases illustrating his views and concludes that total exclusion of a portion of the bowel offers excellent means in curing otherwise intractable conditions.

65.—See abstract in The Journal of October 5, p. 929.

66.—Ibid.

67.—Ibid.

68.—Ibid.

70.—Ibid.

71.—Ibid.

72.—Ibid.

73. **Pancreas in Diabetes.**—After first reviewing the literature as regards the specific changes in the Islands of Langerhans in diabetes in the papers of Scobolew, Opie, Weichselbaum and Stangel, Herzog reports the results of his examinations of the pancreas in four cases of diabetes. In only one was the examination sufficiently thorough to warrant conclusions, but the result was well in accord with the observations of previous writers. In all four cases there was a certain

marked increase of connective tissue and thickening of the capsule of these bodies. In one case only a few of them were found with difficulty.

82. **Vaginal Section.**—After mentioning the methods adopted by Orthmann, Mackenrodt and others, Webster describes his own practice. He makes a circular incision of the cervix just below the attachment of the vaginal wall. This is joined by a mesial incision an inch and a half or more in length, dividing the anterior vaginal wall. The cervix being well pulled down, the wall of the vaginal vault is stripped upwards until the anterior peritoneal pouch is reached. The anterior wall is also stripped somewhat from the base of the bladder. The utero-vesical pouch is then opened. The advantages he claims for this method are that the uterus can be pulled down to a greater extent and that more room is obtained for intra-pelvic manipulations. The latter may be sometimes facilitated by a transverse incision through the pouch of Douglas. Occasionally with enlarged uterus or chronic metritis it is advisable to ligature one or both uterine arteries which are easily exposed in the raw surfaces made. When the enlarged uterus can not well be brought down its descent can be assisted if the base of one or both broad ligaments are divided internal to the ligatures. At the end of the operation the uterus is pushed into place and the peritoneum closed and the original vaginal incision closed with chromic catgut. He describes the adaption of this method to cervical amputation and anterior colpotomy.

87.—See abstract in The Journal, xxxvi, p. 756.

90.—Ibid., p. 908.

95. **Embolism of the Central Retinal Arteries.**—The cases reported by Würdemann were deep massaged according to Casey Wood's method and the fortunate results are believed by the writer to be mainly due to dislodgment of the blood clot by means of the renewed blood supply. Starvation of the nerve cells of the retina was absolutely complete in the first case and but partial in the second; the return of the visual function in the former complete and in the latter incomplete. He does not think the drug treatment given at the same time should be credited with the cure.

96. **Optic Atrophy.**—After first reporting his case, Barrett reviews the others in the literature and speculates as to the origin. He is inclined to believe from all the evidence that the explanation will be found in a combination of vascular factors, operating on a terminal arterial system, altered blood, disturbed nutrition of vessels, spasm, and possibly thrombosis of the artery or vein.

100. **Alaskan Diseases.**—Kelsey reports his medical observations in Alaska at St. Michael Island and Andracofsky, respectively. He finds there occurring a severe form of cerebrospinal meningitis, but the chief scourge of the country is scurvy. Typhoid fever also occurs under proper conditions. Rheumatism is neuralgic in type; the inflammatory type is never seen excepting in the summer time. Pneumonia does not occur there during the cold weather; when it does occur in the spring and summer in the damp and warm weather it is more or less afebrile in type. Neuralgias are frequent like other nervous diseases such as neuritis, spastic paraplegias, etc. Alcoholism is frequent. Insanity is often seen. Gastro-intestinal complaints, especially gastritis, constipation, intestinal indigestion and diarrhea due to improper food are mentioned. Among the natives cerebrospinal meningitis and scurvy do not occur, but chronic bronchitis, consumption, pneumonia in the rainy season, smallpox, measles, syphilis, la grippe, etc., are especially severe.

101. **Cardiac Inhibition.**—Curtin reports a case presenting certain peculiar phenomena, especially the murmur which he considers is congenital. Its point of occurrence was neither on the aortic or mitral area and the blood did not pass through the tricuspid orifice with sufficient force to produce murmur. The circulation was at no time impaired and no preceding disease likely to cause endocardial trouble appeared to have existed.

113. **Descemetitis.**—The existence of descemetitis as a special condition is combated by Bruns, who reviews the literature and reports cases. His conclusions are: 1. That there can not be any such disease as serous iritis; it is equally impossible to conceive of a serous cyclitis or choroiditis. "Simple" cyclitis would seem to be a term of evasion. 2. Descemetitis, on which the diagnosis of serous iritis was long made to rest, is a symptom sometimes appearing as an accompaniment of a focus of acute inflammation in the iris, ciliary body, or choroid. 3. It may also appear in cases of uveal disease so slight and evanescent that we are unable to determine the location of the focus, and here the term incipient uveitis more correctly indicates the diagnosis. 4. Descemetitis appears also in certain cases of subacute or chronic uveitis, where the focus can not be determined, but an inability to find it does not justify the diagnosis of simple subacute or chronic cyclitis. 5. Further observation will probably show it to be frequently the principal symptom of an acute plastic choroiditis which has been overlooked because too few cases of iritis or cyclitis are subjected to careful ophthalmoscopic examination after recovery and the complete disappearance of the vitreous opacities. 6. Many cases not to be clinically distinguished from such acute plastic choroiditis show to the ophthalmoscope after clearing of the vitreous no evidence of lesion in the choroid. In this it is reasonable to suppose that the choroidal focus was so peripheral as to be out of the field of observation. 7. Plastic choroiditis often appears under the clinical picture of the so-called serous iritis, but such cases usually are observed after a stage of circumcorneal injection and descemetitis has passed away.

114. **Lachrymal Endothelioma.**—The new growths of the lachrymal glands are discussed with special reference to the occurrence of endothelioma, by Warthin, who sums up his conclusions in the following: "1. The great majority of the lachrymal tumors described in literature under widely differing heads are most probably mixed tumors of endothelial origin similar in structure to those of the parotid and submaxillary glands. These tumors form a type peculiar to the serous glands and differ from the endotheliomata found in other parts of the body in their tendency to form cartilage, hyaline, and myxomatous tissue, and in their relatively slight malignancy. 2. Histogenetically they arise from the flattened endothelium of the lymph-spaces, and hence are called endotheliomata, but their peculiar characteristics warrant the employment of some special designation. The use of the term endotheliomata in itself appears somewhat misleading in view of the fact that endotheliomata elsewhere are of the nature of sarcoma and are for the greater part very malignant. These growths partake more of the nature of mature connective-tissue tumors. The designations, myxochondroma endotheliale, chondroma endotheliale, etc., might be employed as the case warranted to indicate both histogenesis and structural characteristics of the growth in the absence of any specific term for the cells lining the tissue-spaces or the tumors derived from them."

115. **Anisometropia.**—From the cases here presented Duane offers the following conclusions: "1. In the large majority of cases of anisometropia, even those in which the difference in refraction exceeds 2 D., the full correction can be applied with success, provided the patient is warned that it may take him one or two weeks to get accustomed to the glasses, and that during this period he must use them steadily. 2. In many instances temporary discomfort is produced by the glasses, but in the majority of such cases the discomfort soon disappears, if the glasses are steadily worn. The period of time that it takes a patient to get used to the glasses so that they no longer give discomfort, varies from a few hours to one or, it may be, two weeks. 3. After the patient has become accustomed to the glasses, they are not only worn with ease and satisfaction, but also often relieve important symptoms, which glasses not compensating the anisometropia do not relieve. 4. It is especially important to apply the correction when there is a beginning squint, which is evidently due to the anisometropia. Yet it is in these very cases that

we may expect difficulty in the acceptance of the glasses. 5. The causes of temporary or permanent discomfort in using glasses are: (*a*) either the strength of the glasses per se; (*b*) the unequal prismatic action of the unequally strong glasses; this gives rise either to diplopia and confused sight, or to muscular asthenopia due to efforts made in overcoming the prism; (*c*) the presence of a muscular deviation producing diplopia. The glasses in this case, by enhancing the distinctness of the double images, force them more upon the patient's attention, so that they are more difficult to ignore, and hence give more trouble than when seen without the glasses. This I believe to be one of the most frequent causes of a permanent difficulty in using the glasses. 6. The statement that glasses correcting the anisometropia cause trouble by producing retinal images that are of a different size in the right eye and in the left is probably fallacious, trouble not being caused in this way. 7. In anisometropia there is a moderate tendency for the right eye to be the more refractive of the two. In my cases, the right eye was the more refractive in 58 per cent. and, counting only the cases of high anisometropia, was the more refractive in 64 per cent. 8. In anisometropia the proportion of cases in which the right eye is the more ametropic about equals those in which the left eye is the more ametropic. 9. Anisometropia is very frequently conjoined with muscular anomalies, and particularly (in 41 per cent. of my cases) with divergence (exophoria or divergent squint). The divergence may be due either to a convergence insufficiency, or to a divergence excess, the latter condition being comparatively common. In the cases that I examined, convergent deviations were less than half as frequent as the divergent. 10. In anisometropia of low degree there is no special tendency to the development of hyperphoria. In high anisometropia hyperphoria is unduly frequent (occurring twice as often as in low anisometropia). 11. The proportion of cases with squint (especially divergent squint) is high, convergent squint being found in 11 per cent., and divergent squint in 14 per cent. of my cases."

116. **Tortieollis.**—Dallwig reports two cases of torticollis dependent upon a vertical deviation of one eye and the attempt of the patient to overcome the visual disturbance by holding the head obliquely. In neither of his cases did he operate, but in one the ocular condition and the lateral separation of images have decreased and the obliquity with which the head is held has diminished.

119. See abstract in THE JOURNAL of September 28, p. 852.

132. **The Framework of the Human Spleen.**—The summary of Kyes' conclusions is as follows: "1. Within the lobule of the human spleen there is a delicate network of fibrils continuous throughout the pulp cords and the Malpighian follicles. 2. The fibrils of this entire network are retieulum in the sense of Mall. 3. The fibrils encircling the eapillary veins are an integral part of this reticulum network and are not elastic tissue. 4. The so-called specific elastic tissue stains yield a positive reaction with reticulum as well as with elastic fibers."

134. **Hemolymph Glands.**—Warthin describes the hemolymph glands in the human subject, comparing them with those found in certain of the lower animals. He thinks that a study of these broadens our conception of the lymphoid tissue, and he gives a comparative table of the lymph organisms. In regard to the relations between the blood and lymphatic systems the red marrow might be eonsidered the most primitive type of lymphoid structure, and the ordinary lymphatic glands the most developed, the hemolymph glands and spleen occupying intermediate positions.

139. **Retained Testicle.**—This condition is apparently, in Bartlett's opinion, most probably due to a mal-development of the organ. In the three cases reported there was more or less absolute or relative connective tissue increase besides mal-development of the glandular element. The disadvantages to the individual are serious as these organs in their abnormal condition are liable to be the seat of tumor formations and frequently malignant disease. If treated sufficiently before complete maturity an effort must be made to bring down one gland at least, as has been done by Casati and Boyer and others, or spontaneous descent must be favored by a proper transposition of the tissues as Sargi and Trombetta have proposed. If nothing is done until after maturity removal of the organ will do no harm.

141. **Right-Sided Anatomical Tripod.**—This comprises the common symptoms of gallstone, kidney stone and appendicitis, and Thomas points out the ehief distinctions, calling particular attention to the following: 1. Relative to the three distinct locations in which the pain begins. 2. That except a reactionary temperature be observed, no elevation is expected at the beginning of the attack except in appendicitis. 3. The tenderness on pressure corresponding with the different locations of the trouble. 4. The different character of vomit. Most of the other symptoms outlined are sufficiently characteristic and not found in all the conditions discussed.

143. **Modern Surgery.**—The requirements of modern surgery, according to Carstens, are: "1. A patient brought to the highest state of resistance to microbic infection and made as clean as possible. 2. An operating room, preferably in a hospital, where everything has been made thoroughly sterile. This includes anesthetizer, assistants and nurse. 3. A surgeon who has a mechanical hand and has received a thorough and long training."

147. **Asthenopia.**—Tennent goes over rather briefly the general conditions of asthenopia. convalescence, and weakness, and offers the following conclusions: "1. General disease is the aggravating cause in a large proportion of asthenopic cases. 2. Grave diseases, notably typhoid and tuberculosis, give rise to retinal exhaustion and other severe symptoms. 3. Retinal exhaustion is usually found with other neurasthenic symptoms and improves under patient treatment."

FOREIGN.

British Medical Journal, November 30.

A Case of Syphilitic Arterial Disease. WILLIAM R. GOWERS.—Gowers reports a case in a woman aged 25, who had suffered from headache, mental distress, vomiting, loss of power on right side and had had some kind of fit. It was thought she had had syphilis; she was ill-nourished and anemic and unable to account for herself. There was considerable right hemiplegia, weakness of the right side of the face, complete paralysis of the upper arm, but she could move the forearm and hand a little; power of the leg was limited to slight movement of the foot. There was also foot-clonus and impaired sensation; the left side was normal; the discs were also normal. Mercurial inunctions were ordered, followed by some improvement, which soon ceased and potassium iodid treatment was begun, 15 grains per day. She died on the 26th day after admission with sudden paralysis of the left side, having gradually failed most of the period. The postmortem examination revealed a syphilitic arteritis, most intense at the commencement of each middle cerebral artery where the passage of the anterior cerebral from the inner carotid converts the latter into the middle cerebral, diseased growths having entirely surrounded the vessel. In each middle eerebral the disease was continued for about one-half to three-quarters of an inch and spots of disease beyond. The left anterior cerebral was smaller than the other and pale, and the right middle cerebral was occupied by a recent clot, extending from its origin throughout the vessel. This must have been the cause of the final hemiplegia. The left middle cerebral was eompletely closed and contained an old elot occupying the vessel for about a third of an inch. Beyond this thrombus the artery contained fluid blood. The circulation had been maintained in the distal portion by aberrant arteries from the posterior cerebral joining the middle cerebral just before its division, which had prevented the extension of the clot. Another abnormal vessel, a duplieate eommunicating one of the eircle of Willis, kept up the circulation in the anterior cerebral. The occurrence of the limited elot in the left middle cerebral must have caused the onset of hemiplegia. The clot in the anterior cerebral may be assumed

to have caused the onset of the mental symptoms. The cause of the progressive increase of symptoms was the change in the brain substance due to endarteritis of the terminal arterioles showing increasing effect of the diminished blood supply. The severe persistent headache was the result of morbid processes in the vessels which made the symptoms otherwise also simulate those of tumor. Death in this case was inevitable, but the diagnosis of the actual condition during life was impossible. Gowers thinks that while we can not repair the vessels damaged in the way they were, we should give iodids, but not in such large doses as are sometimes given, as it is possible that there may be some truth in the theory that iodids favor the coagulation of the blood. The dose given the patient, 15 grains three times a day, was ample to influence such disease and as much as is wise to give, and the possibility of getting accustomed to the drug should be considered. It is possible that morbid processes might be such as to acclimate the patient to iodids in spite of them. He insists on care that is necessary and desirable in giving the prognosis of cases of such disease of the cerebral arteries and the value of the scientific imagination in many such diagnoses.

Some Cases Illustrating the Necessity for Accurate Observation in the Management of Surgical Cases. William H. Bennett.—The unreliability of pathogenic symptoms is the motive of Bennett's article. We should dismiss from our minds the possibility of single symptoms being evidence of any disease. He illustrates this fact by several cases: one diagnosed strangulated hernia which turned out to be a case of very early extrauterine pregnancy, one of perimetritis which had been operated on for hernial tumor which was not the cause of the trouble. Two other cases are reported showing the danger of depending too much on any one symptom: one of strangulated hernia which gave free impulse on coughing, and another of abdominal contusion with absence of liver dulness due entirely to the wearing of a tight strap or belt, the patient being a laborer. Attention to details in surgical diseases is especially emphasized and the constant appeal to exploratory operations deprecated.

The Lancet, November 30.

The Symptoms and Treatment of Movable Kidney. Henry Morris.—The author first defines movable kidney, describing the varieties, giving those in which it can be readily found and those in which the kidney moves in a "cinder-sifting" manner behind the peritoneum, where the organ slides, so to speak, upon the plane of the posterior parietes, never "dropping" forwards or inwards, and so not properly described by the term nephroptosis. It also sometimes rotates more or less around the vertical and transverse axes. The reasons why opinions as to the frequency of this condition vary, are given by him as due to superficial examinations, the different ideas of movable kidney, some claiming that it is abnormally mobile whenever it is at all felt by palpation during deep inspiration and the fact that physicians at health resorts whose patients are mostly dyspeptic and who systematically employ methods of palpation undoubtedly find larger numbers than those that only treat patients under ordinary conditions. He describes his method of detecting movable kidney, the patient being in the recumbent position, by bimanual palpation and also describes Glenard's and Israel's methods. The symptoms are described; they may be negative, but they also may be serious in certain cases. The most common effect of movable kidney is general impairment of health, with languor, debility, loss of flesh, vertigo, constipation, hypochondriasis, and various neurotic states. The most frequent effect on the kidney is hydronephrosis, either intermittent or persistent. As regards treatment he has little faith in trusses or bandages; while they may keep the kidney in place they do not fix it in its proper place and require to be continuously worn, often to great discomfort. He attaches no value to rest in the recumbent position. His conclusions as to treatment are as follows: "1. When movable kidney is associated with enteroptosis, no operation should be performed on the kidney unless it is evident that the more serious symptoms are due to the movable kidney alone, and not until after the trial of a well-fitting abdominal support and the careful dietetic and medicinal treatment of the gastric and intestinal disorders. Should these means fail and the kidney be evidently most at fault, nephropexy, followed by the wearing of an abdominal belt, should be tried. 2. When a movable kidney is complicated by a movable liver, or when both kidneys move, the same rule should be followed as in general enteroptosis; in the case of both kidneys moving (when both organs have been giving trouble) they should be fixed one after the other at an interval of a week, so that convalescence from both operations may be taking place simultaneously. I have in several instances thus operated on both organs with the most satisfactory results. 3. When the movable kidney occurs in a hysteric or neurasthenic patient, all palliative means should be tried before resorting to an operation, and the patient's friends should be informed of the uncertainty of the result from the operation. The statistics show that a cure may be hoped for by nephropexy in about half of these cases. 4. For uncomplicated movable or floating kidney, in which the principal symptoms are pain and gastro-intestinal troubles, the operation may be confidently advised and carried out without any previous trial of belts or of rest. 5. When renal crises are a feature of the case, nephropexy ought to be strongly urged because of the impossibility of keeping the kidney in its proper place by a belt, and because of the constant risk of hydronephrosis and recurring pain, even if the renal crises can be kept under control. 6. When a movable kidney gives rise to no inconvenience an operation ought not to be thought of and a belt need not be worn.

Twenty-Five Years' Experience of Urinary Surgery in England. G. Buckston Browne.—In his third lecture Browne deals with the subject of stricture. The management of this condition has made great advances and the class he here specially considers is that which can not be readily kept open by the easy and periodical introduction of the bougie. There is constant danger in this condition and he even goes farther than Syme, claiming that there is no case where the instrument can not be passed. The treatment which he believes has come to stay in these cases is internal urethrotomy in all strictures which do not yield to dilatation. Puncture of the bladder in cases of retention is justifiable in naval, military and country practice, but hospital surgeons do not have to be reduced to this necessity. In difficult stricture he maintains that filiform bougies are really dangerous, may break in the bladder and give trouble. He has no confidence in any instruments in these cases except the steel ones. The surgeon in any case should take a convenient time and be deliberate. The instruments required are steel sounds, varying from the No. 2 to No. 17. He uses the No. 7 to No. 16, a little smaller at the point than in the shaft, some blunt-ended English gum bougies from No. 3 to No. 10, a foot rule marked by inches and a No. 11 or No. 12 soft gum catheter, mounted on a stylet for tying in at the close of the operation. The patient is carefully prepared; the limbs are not exposed, but protected against the cold; when the patient is completely anesthetized, the blunt-ended soft bougie is introduced and the exact distance of the stricture carefully ascertained. Then a steel sound well warmed in vaselin should be passed, with the finger in the rectum used to guide it in the middle line. No force must be used, but a steady search made for the orifice of the stricture, and firm but steady pressure be applied when it is found. When the sound is fairly grasped no attempt should be made to pass the instrument, which is one of the smallest, unless it goes forward easily, but it should be withdrawn and the next largest applied and so on. Whence once the No. 6 or No. 7 sound has been fairly passed into the bladder, the surgeon stands on the patient's right side, draws out the sound and slips in the urethrotome. When the bulb is fairly in the bladder the experienced surgeon feels a sensation of looseness and freedom quite characteristic; to be sure that everything is right, when it is in a proper position the instrument is carefully withdrawn until the bulb is one inch from where the stricture is known to begin.

The anesthetist is warned that the patient must be kept perfectly still; the blade is then protruded and a free incision made from behind forwards for a good inch along the floor of the urethra and about half an inch deep. The blade is then sheathed and the instrument withdrawn. A full-sized sound is then passed, No. 12 or No. 13; if it goes in easily, a larger one is also used. Then the soft catheter, mounted on a stylet curved so as to exactly correspond with the curve of the sound, is passed in and the stylet removed, and the catheter is tied in. The urine escaping will show that all is right and if there is any doubt it should be withdrawn and again passed in. On no account should any water be injected through it until there is no doubt that it is fairly in the bladder. When the catheter is tied in, the operation is through. He always tries to have the patient bear with the catheter at least two days. The patient sits up about the eighth day and with the periodic passage of two or three well-warmed and well-oiled steel sounds, the largest usually No. 14 (English), the case is finished. The patient can learn to use these himself. He has had experience with the operation for twenty-seven years and never lost a patient from it. The avoidance of primary manipulation is important and the operation is an excellent one even in many cases where there is no real difficulty in traversing the stricture with instruments, for example, where time is an object, when the stricture is at the urethral orifice or in the penile urethra and in cases where the gentlest interference is followed by rigor and prostration. It is also required where the stricture rapidly recontracts, when the deposit around it is large and dense and when calculus is impacted beyond it, or there is any urethral fistula behind it, and in cases of prostatic hypertrophy where the catheter has to be employed. Although he delays incising the perineum there are four conditions where this is to be advised: 1. Where there is urinary extravasation. 2. Where there is pus requiring an exit. 3. In some cases of prostatic calculi. 4. In some rare cases of urethral calculus. In all cases of periprostatic abscess and of perineal abscess, a free perineal incision must be made at once. He thinks that if the surgeon is prompt in dividing the urethral stricture a true perineal abscess never will communicate with the urethra and the patient will be saved all the trouble of urinary fistula. He does not favor opening the urethra from the outside. It is very difficult sometimes to heal up the incision, and a urethro-perineal fistula is a bad thing. He would consider opening of the urethra in vesical calculus, urethral stricture, perineal abscess and extravasation in peritoneal tissue, or vesical exploration or drainage, as a surgical mistake.

Alkaptonuria. ARCHIBALD E. GARROD.—According to Garrod this urinary abnormality seems to have some connection with consanguinity of parents, and he brings forward certain facts showing the frequency of its occurrence in children of first cousins. This supports the view that alkaptonuria is what may be described as a "freak" of metabolism, a chemical abnormality more or less analogous to structural malformations. There is no evidence of heredity, for there has never been any case of it observed as occurring in two generations. He is able to furnish facts as to the exact appearance of its onset in congenital cases, having had a patient under observation where it occurred the day after birth. He gives observations and tables bearing on the question as to the relation and time of output of homogentisic acid to a proteid meal, which did not bear out Mittelbach's observation of the reducing power of urine showing the maximum excretion two or three hours after the proteid meal, but showed that although such meal is quickly followed by a much increased excretion of homogentisic acid a still larger amount is excreted during the second period of four hours than during the four hours immediately following the meal. In other words, they tend to support the view that the change from tyrosin to homogentisic acid takes place in the tissues after the absorption of the former, rather than the alternative view that the change in question is brought about in the alimentary canal.

"Myxasthenia," With Remarks on Kindred Affections. WALKER OVEREND.—Overend suggests the term myxasthenia for a condition of special dryness and irritability of the mucous membrane. He discusses the condition showing the pathologic states with which it seems to occur, such as certain gastric and bowel troubles, bronchitis, etc., and its relation to gouty and diabetic diatheses.

Annales des Mal. Gen. Urin. (Paris), October.

Successful Perineal Prostatectomy. DEFFIS.—Macias and Gonzalez of Mexico have been treating hypertrophied prostate by perineal prostatectomy for the last ten years. Their experience now includes thirty cases. They incise the raphe of the perineum for 4 or 5 cm. and cut a buttonhole in the urethra, through which they insert an Otis urethrotome into the bladder, withdrawing it open, to dilate the urethra. The lobes of the prostate are then detached in turn with the fingers and taken out with forceps. There is very little hemorrhage. A large, flexible sound is next inserted in the bladder which is rinsed with a 1 to 1000 solution of silver nitrate. The cavity left after the removal of the prostate is packed with iodoform gauze. The permanent sound is changed the second day but is not removed for eight to fifteen days. It is then introduced through the urethra or used intermittently. The bladder is left in complete repose owing to the extensive drainage through the perineum. One patient died from an intercurrent disease and one soon after the operation from progressive debility. The others are all in the best of health so far as the urinary apparatus is concerned. As the prostate is removed from beneath the capsule—from within outward—the operation is simple and causes only slight trauma. The large vessels are all outside the capsule. A portion of the prostate is left above, which keeps the upper wall of the urethra intact, and obviates the danger of a stricture later. There has been no incontinence of urine in any case.

Hematuria of Pregnancy. U. CHIAVENTONE.—Toxemia from insufficiency of liver and kidneys is probably the essential cause of the hematuria which appears in pregnancy, with no hereditary nor personal antecedents, and terminates with the pregnancy. Congestion may be an associated factor. Ordinary measures are ineffectual against this form of hematuria. Only seven such cases are on record and Chiaventone adds an eighth. If the severity of the hematuria requires active intervention, the bag of waters might be punctured to relieve the compression on the ureters and vessels. Premature delivery might be required in certain cases.

Bulletin de l'Academie de Med. de Belgique (Brussels), July 27.

Vascular Lesions in General Paralysis. A. MAHAIN.—An infiltration of the sheaths of the smaller vessels of the cortical layer of the frontal lobe was noted constantly in seventeen cases of progressive paralysis, while it was never found in twenty-two cases of other mental affections with the exception of cerebral syphilis. In the latter no difference could be detected even with the microscope between these lesions in progressive paralysis and in cerebral syphilis.

Revue Gen. d'Ophthalmologie (Paris), October 31.

Dangers From Ligature of the Carotids. SIEGRIST.—Analyzing the 997 cases of ligature of the carotids which Siegrist was able to collect in the literature of the last century, he found that the mortality was 40 to 44 per cent. and that the operation was followed by disturbances in the eye of the same side, in 4.2 per cent. He is convinced, however, that the visual troubles were due to complications of the operation and that the mere interruption of the circulation in the territory of the carotids does not endanger the eye. He has had occasion personally to observe two cases of blindness in the eye on the same side after ligature of a carotid. In the first the internal carotid was ligated during an operation for the removal of a cancer of the base of the tongue. Hemorrhage occurring eight days later rendered it necessary to throw a ligature around the common and the internal carotid. The patient exhibited slight cerebral symptoms the same evening and the next day he found that the eye on that side was blind,

with signs of embolism of the central artery of the retina. The patient died a week later from paralysis of the heart. The autopsy disclosed embolism of the central artery of the retina from the debris of a thrombus which had formed in the external carotid, ligated eight days before. This debris had become detached at the time the common carotid was ligated, and had been swept into the trunk of the arteria centralis retinæ. In the second case, the diagnosis could not be verified by the autopsy, but the facts observed after ligature of the internal and external carotids, undertaken for the purpose of curing a pulsatile exophthalmos, also indicated thrombosis of the arteria centralis retinæ. The mortality in 172 cases collected between 1881 and 1897, was only 20.3 per cent. This number includes 113 cases of ligature of the carotid as a curative measure for pulsatile exophthalmos, with 10 deaths. Excluding the patients who died in consequence of post-operative infection, the figures show 5 deaths attributable to the ligature in 108 operations, that is, a mortality of 4.6 per cent. Siegrist concludes from his comparative study of the data that the age of the patient has no influence on the prognosis, up to 60 or even 70 years, unless he is debilitated from some cause. The prognosis is less favorable at any age when the general condition is poor as in case of malignant tumors, or considerable hemorrhage or vascular lesions, aneurysms, etc. Certain circumstances, such as some cardiac defect or the accidental inclusion of the pneumogastric or sympathetic in the ligature, render ligature of the carotid extremely dangerous in young or old subjects. Before attempting to ligate the artery the heart should be accustomed to the change in the circulation by systematic compression of the artery for some time beforehand, which will also aid in developing a collateral circulation. Infection of the wound may entail septic crumbling of the thrombus with possibly septic, metastatic softening of the brain, cerebral abscess, panophthalmitis and meningitis, not to mention the threatening secondary hemorrhages at the point of the ligature. The artery should be ligated under local anesthesia in order not to interfere with the strength of the heart-action by chloroform anesthesia, as the success of the operation depends on the co-operation of the heart. The operation is contra-indicated, unless under exceptionally urgent conditions, in case of heart disease, valvular defect, anemia or cachexia, especially if the patient is over 40. Digitalis should be administered in such cases before or, at least, immediately after the intervention. In case of post-operative dangerous symptoms, a heart tonic should be given and the heart relieved by venesection, to which the surgeons of old attributed their success in averting the dangers of ligature of the carotid. Full details of Siegrist's cases have been published in *Graefe's Archiv*, L, p. 511.

Beitraege z. Klin. Chirurgie (Tuebingen), August.

Neurofibromatosis. C. Adrian.—The progressive character of neurofibromata distinguishes them from nevi which in other respects they resemble. Neurofibromatosis evidently develops on a congenital foundation and is thus a malformation in the widest sense of the word. It is congenital or develops in youth, and its hereditary character is evident. Among the twelve cases described, three occurred in five children in two inter-related families. It is generally benign, but has a tendency to malignancy.

A Cystadenoma of the Thyroid Gland. F. Smoler.—The peculiarity of the case described was that it was successfully operated again and again and was under observation for twenty-seven years. No recurrence has been noted since the papillary cystadenoma was partially removed for the third time. In the 5 similar cases on record, the survival was only three to five years. No metastasis of this kind of tumor has ever been known. The case described is the only one that perforated through the skin.

Osteoma of the Nasal Cavities. E. Haas.—Among the symptoms of an osteoma of the nasal cavities are itching, hemorrhage, ozena and complications in the lachrymal passages. One case of spontaneous expulsion of the osteoma has been observed. It had induced suppuration and necrosis in the adjacent tissues. Haas has witnessed one case and has been able to find twenty in the literature.

Prostatopexy for Hypertrophied Prostate. E. Goldmann.—An enlarged prostate offering a mechanical obstacle to the flow of urine, is best treated by fastening the bladder to the anterior abdominal wall. The abdomen is incised on the median line, and the anterior wall of the bladder, where it is free from peritoneum, is sutured as high as possible to the abdominal wall. By this means the orifice of the urethra is made to gape without danger of infection. The autopsy of a patient who had been treated in this way but died from progressive myocarditis, demonstrated that the operation had been a perfect success in every way.

Circular Resection of Rectal Strictures. M. Reber.—Two cases of inaccessible stricture of the upper third of the rectum were extirpated after removal of the coccyx and a portion of the sacrum, and a longitudinal incision in the posterior wall of the rectum. The stricture was then removed without opening the peritoneum, and the edges of the longitudinal incision were sutured together horizontally in order to widen the lumen of the intestine.

Berliner Klin. Wochenschrift, November 4.

Improved Colpoceliotomy. A. Duehrssen.—Entering the abdominal cavity through the anterior wall of the vagina is the route long advocated by Duehrssen, who claims that it affords such ample access that the internal genitalia can be photographed with ease. It is possible, by incising the vesico-uterine pouch as extensively as possible, to ablate by this route an ovarian tumor completely filling the abdominal cavity and not projecting into the small pelvis. The tumor can be opened and the contents evacuated, after which the empty shell can easily be drawn down and extirpated. He describes a typical case of this kind, the patient a frail woman of 63, the tumor three times as large as a man's head. She was dismissed cured in two weeks and a week later took a long journey. In order to facilitate still more this vaginal operation, he has lately modified his technique to include the severing of the broad ligament, and the remarkably satisfactory results attained in the ten cases in which he has applied it, have convinced him that by this means it is possible to enter the abdominal cavity with the maximum operating space and the minimum of disturbance. By severing the broad ligament and detaching the uterus from the vagina it is possible to draw the uterus out through the vagina, where it can be inspected at ease without disturbing the appendages or its attachments on the other side. The cut shows the uterus drawn out and laid over on the vulva on one side, while the diseased appendages are drawn out in the same way. The stumps left after the ablation are fastened outside of the peritoneum before being replaced. The cicatrix left after this operation is trifling. The patients recuperate rapidly. The facilities for arresting hemorrhage are far superior to other methods. It would be possible to suture a rupture in the uterus, even in advanced pregnancy, by this method. The adhesions are exclusively sero-serous and stretch readily, not interfering with pregnancy later. If the genitalia are found too much altered to be retained, the radical extirpation is already half accomplished.

Treatment of Gonorrhea. Prowe.—The principles on which Prowe treats gonorrhea were established by observation that infection occurred almost exclusively from women with copious and irritating discharges. He considers their suppression much more important in respect to contagion than the presence or absence of gonococci. He first curettes, then applies aluminum acetate to the cervical canal and in case of proctitis, injects a 2 to 10 per cent. solution of ichthyol. He swabs the urethra with a 2 to 10 per cent. solution of silver nitrate on a cotton-tipped probe. He has been exceptionally successful in preventing contagion by this method of treatment.

Centralblatt f. Bakteriologie (Jena), October 23.

New Hypothesis of Biochemical Antagonism. R. Emmerich and O. Loew.—As a possible explanation of the mechanism of the biologic serum test of specific albumins,

serums, etc., Emmerich and Loew suggest that possibly certain racemic, that is, optically inactive substances, are split into two optic antipodes during the process. For instance, if a levulo-rotatory albumin is used for the injections, it becomes transformed in the organism into a dextro-rotatory, and the precipitation is the result of the formation of a racemic albumin by the combination of the two antipodes. The combination of a dextro- and a levulo-rotatory calcium tartrate causes a precipitate to be thrown down. This phenomenon is naturally more pronounced with the large molecules of the proteins than with the comparatively small molecules hitherto studied in this connection.

Agglutination in Various Infections. S. J. Goldberg.—The most interesting point in the extensive experimental researches reported is that an increase in the agglutinating properties of the blood should be regarded as an early sign of the successful auto-defence of the organism.

Centralblatt f. Kinderheilkunde (Leipsic), June and July.

Acute Mummifying Cutaneous Gangrene. C. Hochsinger.—A large patch of gangrene, which resembled a rubber dress-shield in size and location, developed under the arm of a healthy babe about a week old. The child died the fourteenth day. Only two similar cases are on record. One was published by Stoffregen of St. Louis. No postmortem was allowed in this case, but it is possible that a thrombus might have existed in the long thoracic artery. The axillary artery was intact and the radial pulse was perceptible.

Pemphigus in the Newborn. C. Hochsinger.—When pemphigus develops on a reddened skin in the newborn it has proved malignant, in Hochsinger's experience, while it runs a mild course if it develops on apparently normal skin. He describes one case of each kind. The lack of scab formation differentiates the genuine, infantile contagious pemphigus from contagious impetigo which it otherwise resembles. The latter has also been observed in newborn infants. The babe with malignant pemphigus died in eleven days. The mother contracted the pemphigus in each case.

Multiple Cavernous Angiomatosis. C. Hochsinger.—Only six cases of this affection have been described in the literature according to Hochsinger, and none even remotely approximated the personal case he reports. The child was a vigorous three weeks' babe. When first seen the upper layers of the cutis contained forty to fifty round or oval venous blood sacs, the size of a lentil seed. Eighty could be counted by the end of the third month, but all spontaneously vanished before the child was a year old.

Deutsche Archiv f. Klin. Med. (Leipsic), lxxi, 1 to 3.

Pavlov's Experiences with Dogs Repeated on Man. Schuele.—Pavlov found that dogs secreted gastric juice at the mere sight of appetizing food. Schuele has been repeating his tests on the human subject, siphoning out the stomach contents at various times during the day. He found that this psychic secretion of gastric juice, Pavlov's "appetit saft," does not occur in man. Human beings are trained from childhood to repress greediness, and Schuele found it impossible to induce this psychic secretion at the sight of tempting food. He found on the other hand that the glands in the stomach are stimulated to secretion by reflex action from the food in the mouth, by the purely chemical action of certain substances, by their agreeable taste and lastly, by the action of mastication alone, even when articles were masticated which were not swallowed. His tests also demonstrated that it was impossible to elicit the secretion of gastric juice by mechanical irritation of the stomach walls with the sound or other instrument, similar to Pavlov's experiences with dogs.

Deutsche Med. Wochenschrift (Leipsic), November 28.

Agglutination of Tubercle Bacilli as a New Standard for Treating Tuberculosis. R. Koch.—Efforts to protect man, to immunize him against tuberculosis have been conducted for years, Koch remarks, but they were rendered peculiarly difficult by the lack of a standard to determine what had been accomplished in the line of immunization. He has now simplified the agglutinating test for the tubercle bacilli and announces that it is possible to apply this test as a standard to estimate the actual progress accomplished in immunization. All the former uncertainty has been banished at one stroke, he states. He first established on animals the technique for the administration of the bacilli to obtain the agglutinating reaction as rapidly and intensely as possible. He then applied the results to man, and now reports 74 patients treated according to these principles, with more or less success in all but 9 cases. Four of these were evidently old, healed lesions and the others did not complete the course of treatment. He assumes that the protecting substances in the organism increase parallel with the agglutinating reaction, as pronounced clinical improvement invariably accompanies it. The appetite returned, the patients gained in weight, the night-sweats usually vanished and the expectoration decreased. Most of the patients were in the second or third stage of the disease. The agglutinating reaction was more readily induced in the early stages of the disease and could more easily be kept at a high point. In 14 patients the agglutinating power was brought to 1 to 25; 1 to 50 in 28; 1 to 150 in 6; and 1 to 200, 250 or 300 in 3 patients. Tests on 30 persons without, and 78 with tuberculosis showed that the agglutinating reaction occurred spontaneously in a number of subjects in each group, showing that it has no value for early diagnosis of the disease. Patients in the advanced stages do not exhibit the agglutinating reaction, which confirms Koch's assumption that it is directly connected with the presence of the protective substance in the organism. We know that tuberculosis is not a disease that confers future immunity like smallpox, etc., from the accumulation of the protective substance. There is not enough of the protective substance elaborated in the course of tuberculosis to induce a spontaneous cure and subsequent immunity. But Koch is convinced that this immunization can be artificially accomplished by repeated subcutaneous injections of small amounts of tubercle bacilli dust, controlling the effects on the organism by the agglutinating property acquired by the serum. One part of finely pulverized tubercle bacilli is mixed with 100 parts water and 100 parts glycerin. After standing a few days the fluid is poured off the sediment. One c.c. represents 5 mg. of the pulverized bacilli. It is diluted with .8 per cent. salt solution. A reaction is seldom observed after a first injection of 2.5 mg. The dose is then rapidly increased, repeating the injections every one or two days until a pronounced reaction is obtained, raising the temperature two or three degrees. After such a reaction the injections are suspended for six or eight days, and repeated again as needed to keep the agglutinating power at about the same high point. He injected as much as 20 to 30 mg. in several cases. This is the limit, as larger amounts are not absorbed. After the dose reaches 10 to 20 mg. the intervals between injections average from two to four weeks. In some cases the agglutinating property diminished in spite of the large doses, but he kept it at the desired point by substituting intravenous for subcutaneous injections, reducing the dose. The effect of this method of immunizing patients is most striking in regard to the temperature. Non-febrile patients never exhibited fever after the reaction which could be ascribed to the injection, and in febrile subjects the temperature was favorably influenced by the reaction. At first the temperature dropped only transiently, from the third to the fourth day after the injection; it then remained low for a few days and then gradually began to rise again. If a vigorous reaction was then induced by an injection, the temperature dropped again and lower and more permanently than after the previous injections. By continuing the injections with their reactions it was possible to keep the temperature permanently reduced. In a few cases even high fever of a pronounced hectic type was completely banished by this means. Febrile conditions, therefore, do not contra-indicate this treatment, as in case of tuberculin. Koch excluded only patients with enfeebled heart-action or extreme debility or such extensive destruction of lung tissue that improvement was absolutely impossible. He applied the treatment indiscriminately to all others, and abandoned it only in the few cases in which the weight continued

to decrease, and no agglutinating reaction could be induced. He judges from his present experience that the patients require six months or more of this treatment. After large doses have been reached and the reactions have become less violent, the patients return at intervals of two to four weeks for an injection. They should be continued until the tubercle bacilli have entirely disappeared from the sputum. This immunizing method of treating tuberculosis does not conflict with other methods. He believes that its chief sphere of usefulness will be in the advanced cases, especially for application in sanitariums after other measures have failed. He prepares the bacilli for agglutination by grinding them to a powder with caustic soda in the proportion of 0.2 of the culture to 20 c.c. of the fluid. It is neutralized to a weakly alkaline reaction with diluted hydrochloric acid and diluted with 0.5 carbolic acid and 0.85 per cent. salt solution. The final proportion is 1 part of this preparation to 100 parts of the carbolized salt solution. It is then centrifugalized and diluted with the same fluid to 1 to 1000. It can then be kept on ice for two weeks ready for use.

Muenchener Med. Wochenschrift, November 19.

Influence of Alcoholic Enemata on the Gastric Secretions. R. Spiro.—An hour after an evacuating rectal injection, 7 to 10 c.c. of alcohol in 200 c.c. of salt solution were injected. An hour later the contents of the stomach were siphoned out at half-hour intervals. This procedure was repeated every one or two days until five to eight tests had been made on the various subjects. The results demonstrated that this administration of alcohol or of a fluid containing 7 to 10 per cent. of alcohol, had a marked influence in promoting the secretion of gastric juice, the maximum occurring one hour after the enema. The tests were negative in two subjects with achylia and one with cancer of the stomach.

Practical Significance of Lactation Atrophy of the Uterus. W. Thorn.—According to Thorn, the number of women unable to nurse their children is constantly increasing in Germany. It almost seems, he remarks, that Germany is taking its place beside France, at the head of the procession. Progressing civilization entails this inability to nurse, as exemplified in the history of India, Greece and Rome. Mothers unable to nurse their offspring are less resistant and suffer from various general and local disturbances. The physiologic process—lactation atrophy of the uterus—is interfered with. Under normal conditions, the body of the uterus becomes atrophied during lactation, and normally, is accompanied by amenorrhea, although ovulation continues. Complete regeneration follows after the weaning of the child, or at latest within six weeks. If the cervix or ovaries are involved in the atrophy or if it extend beyond, the amenorrheic nursing woman should be strengthened by abundant nourishment, and the nursing should be interrupted at intervals, to restore the atrophy to its physiologic limits. If this can not be accomplished, the child must be weaned. No woman, especially if amenorrheic, should nurse for more than a year, and eight months should be the average for moderately strong, amenorrheic women unless in special circumstances. No local treatment of the atrophy is necessary, not even for the frequently accompanying retrodisplacement. An acute intercurrent disease does not interfere with regeneration. If the atrophy persists for more than six weeks after weaning, local treatment should be instituted as a supplement to general tonic measures. During the period of atrophy the walls of the uterus are very soft and thin, and consequently no instruments should be inserted, or should be employed only with extreme caution. Women who menstruate more or less regularly during lactation do not present this atrophy of the uterus. The cavity of the uterus in the typical amenorrheic cases becomes reduced to 4.5 cm. and the walls to a few millimeters thick, but the cervix and the ovaries retain their normal size. Frommel has reported that regeneration did not occur in any of the 28 cases he observed, but his material was all gynecologic. All of Thorn's 25 patients returned to normal conditions at the normal time. They were healthy obstetric cases.

Importance of the Pulse in the Puerperium. O. Aichel.—Every surgeon compares the pulse before and after an operation. Aichel proclaims that this should be done also in obstetric cases. The physician should record the patient's pulse at some time during the pregnancy. He will then have a base for comparison with the pulse during the puerperium, and he will find this comparison a most valuable means of determining the course of events, far more reliable than the temperature curve. In several cases he has found that the pulse remained rapid, although the temperature had returned to normal, and invariably some exacerbation or complication later explained the behavior of the pulse. In 5 per cent. of his cases, Aichel found a pulse of 100 during the pregnancy and consequently was not disturbed when the pulse remained at 100 during the puerperium. The pulse is slower when the subject reclines, and therefore the pulse during the puerperium may be expected to be a trifle slower than when taken during the pregnancy unless the subject is reclining.

Cyclic Albuminuria. P. Edel.—The measures that have a favorable influence on albuminuria owe their efficacy, Edel believes, to the fact that they promote the circulation of the blood in the kidneys. The heart should be exercised and trained in cases of albuminuria and nephritis, as systematically as in case of cardiac affections. An energetic walk, in his experience, has always suspended the cyclic albuminuria, if stopped short of fatigue, while a dragging, lounging walk had no influence. Another important element in the treatment of cyclic albuminuria is the food. He ordered more nourishing food, at shorter intervals, with systematic exercise and the albuminuria vanished completely in eight weeks, after it had persisted for eight months unaffected by all kinds of treatment. This experience has been repeated in three patients, and he considers himself justified in proclaiming the importance of this method of treating cyclic albuminuria, evolved from study of the pulse of the patients. Whenever the pulse exhibited the influence of increased resistance to the circulation, albuminuria occurred, but when the pulse was normal, the urine was normal too. By measures to regulate the circulation, the pulse was restored permanently to normal and the albuminuria vanished at the same time.

Therapeutische Monatshefte (Berlin), November.

Internal Disinfection in Infectious Diseases. L. Weill.—Inhalation of the steam from a boiling solution of sublimate, three times a day for four weeks, had a remarkably curative effect in a number of cases of acute tuberculosis. The temperature invariably fell, sometimes as much as two or three degrees, and catarrh of the apices, and glandular affections rapidly healed. Glands with connective tissue formation or in caseous degeneration were not affected. In cases of typhoid fever, the internal disinfection was accomplished by means of rectal injections of a pint of a 1 to 10,000 or 1 to 20,000 solution of sublimate, retained as long as possible. The effect on the temperature was equally pronounced. In a recent typhoid epidemic the cases thus treated were unmistakably shorter and less severe than others which received merely the usual treatment. Another advantage is that the stools are already disinfected before they are evacuated, thus reducing the danger of contagion.

Lecithin in Therapeutics. A. Gilbert.—Consumptives and neurasthenics thrived remarkably on pills containing 0.1 to 0.5 gm. lecithin, or it was administered in subcutaneous injections of 0.05 to 0.15 gm. repeated every second day. The appetite and weight increased, and no evil effects were observed even on prolonged administration of lecithin derived from eggs.

Therapie der Gegenwart (Berlin), November.

Bismuth Treatment of Gastric Ulcer. W. Fleiner.—In the treatment of a gastric ulcer the aim is to induce the stomach to contract to the smallest possible size and keep it in this condition. The slightest relaxation of the tonus of the stomach walls must be combated with ice-bags or hot applications or the thermophore. If the bottom of the ulcer is fibrous and indurated, the edges do not become approximated even when

the stomach is contracted to its minimum. The surface of the ulcer is thus exposed to mechanical and chemical irritation from the contents of the stomach, with consequent irritation, pain, vomiting, etc. It is possible to supply in these cases an artificial covering for the exposed surface of the ulcer by means of bismuth. The patient should drink, an hour before meals, 100 to 200 gm. of water into which 5 to 10 or 20 gm. of bismuth have been stirred. He should then lie down on the affected side. In order to cleanse the stomach, 100 to 150 gm. of hot Carlsbad or Vichy water should be taken an hour before the bismuth. An ulcer will sometimes heal on a milk diet without medicines. The bismuth may be needed only during the transition from fluid to solid food. In case of an old, fibrous ulcer, the bismuth should be immediately preceded by thorough irrigation of the stomach until the water emerges clear. When the ulcer is complicated by stenosis of the pylorus, this treatment will relieve but will seldom cure, and an early gastro-enterostomy will relieve and heal during the time that is wasted on medicinal measures. The bismuth is contra-indicated in case the ulcer has formed in or developed a recess in the stomach wall. In the only case of this kind, in Fleiner's ten years of experience, the morning rinsing of the stomach brought up the bismuth crystals from the day before, not white as usual, but black, showing that the bismuth had undergone the chemical change which otherwise occurs only in the intestines.

Gazzetta Degli Ospedali (Milan), October 27.

Feeding in Febrile States. G. CAVALLERO.—The conclusions of this long study of the subject are that the same rules that regulate the feeding of patients in acute fevers should apply, although less strictly, to chronic febrile conditions. The food should be adapted to compensate for the exaggerated metabolism, which includes an increased destruction of the organic albumin, due partly to the lack of sufficient nourishment and partly to the bacterial intoxication. The products derived from the destruction of albumin, fats and carbohydrates are less completely oxidized than in normal conditions. A febrile patient requires approximately 25 to 30 calories per kilogram of body weight. Of this amount 4 or 5 can be supplied in the form of albumin, 5 or 6 as fats and 16 to 20 as carbohydrates. The chronic febrile patient requires more calories, possibly 35 to the kilogram of weight. He has to combat, besides the fever, some suppurative process in most cases. The depressing influence of the bacterial toxins must be counteracted by stimulants, tea, coffee or alcohol.

November 5.

Typhoid Peritonitis from Propagation. QUEIROLO.—The peritoneum has a wonderful resisting power against infection, but when the organism is under the influence of the typhoid toxins, this defense is broken down and peritonitis may ensue, either from perforation, or by infection from contiguity or propagation. Queirolo has examined cadavers which presented the typical lesions of typhoid peritonitis subsequent to a typical attack of typhoid fever, but the microscope was unable to disclose the slightest trace of a perforation at any point in the intestines. He states that a closed cavity is not necessary to enhance the virulence of the bacilli in the intestines. They may become virulent during typhoid fever at any time, and the rarity of peritonitis is due to the effective defense in spite of the lesions in the intestines, the gaping lymphatics, etc. Peritonitis does not occur without some lesion in the peritoneum. This may occur in the course of typhoid fever as a consequence of the general intoxication, which may possibly have a special predilection for the peritoneum in some cases. Another factor which may co-operate is the paresis of the intestines in typhoid fever. It realizes the two ideals, enhanced virulence of the bacteria and their prolonged sojourn at one spot. Study of typhoid patients has demonstrated that the typhoid process in the mucous membrane of the intestine may become propagated to the peritoneum by means of the veins and perivascular lymph routes without injuring the muscular coat, although traversing it in these vessels. He describes the autopsy findings in a typical case of typhoid propagation of this kind, which confirm his views in every point. He believes that the colon bacillus is the usual causal agent of peritonitis by propagation, although by no means specific. The differentiation of peritonitis from perforation and from propagation is extremely difficult, and yet surgical intervention, which is often the only means of saving life in the former, is contra-indicated in the latter. The symptoms occur in each with the same tempestuous onset. The sudden drop in the temperature which some have mentioned as the invariable accompaniment of a perforation, does not always occur. The behavior of the pulse, the vomiting, the composition of the blood, are about the same in each form of peritonitis. The persistence of the liver and spleen dulness would aid in the differentiation, but can only be utilized too late for practical benefit. The amount of gas escaping through the perforation may be insufficient to mask this dulness, and thus allow its persistence. In this event, however, there would be no intestinal and peritoneal meteorism. Tardy disappearance of the liver and spleen dulness in the course of peritonitis from perforation, is probably due to the rigidity and contraction of the abdominal muscles. The prognosis of peritonitis from propagation is grave. Only about 50 per cent. recover. The treatment should aim to sustain and stimulate the heart, kidneys, innervation, etc., but the main point is to free the intestines from bacteria. This is the doctrine which Queirolo has been proclaiming so long and so urgently. He insists that peritonitis from propagation should not be allowed to develop. The intestines should be managed in such a way in typhoid fever that no favorable conditions for the development of peritonitis from propagation should be allowed to exist. The intestines should be evacuated with calomel and thoroughly disinfected and the feeding should be exclusively rectal, entirely avoiding the gastric route. He finds that ice-bags on the abdomen diminish the natural resisting powers of the peritoneum.

Hydatid Fremitus in Simple Ascites. A. CAVAZZANI.—An extensive and typical hydatid fremitus was observed in the abdomen of a subject with simple ascites from cirrhosis of the liver. Studying the conditions that favored its production they were found to be the combination of extremely thin walls, high tension and the contact of loops of intestine, full of gas and fluids, held against the abdominal wall by the enlarged malarial spleen. Cavazzani reproduced these conditions artificially and was able to produce the hydatid fremitus at will.

November 7.

The Clinical Value of the Diazo-Reaction. A. LAMARI.—Judging from his study of 800 tests for the diazo-reaction, Lamari does not ascribe any absolute diagnostic value to it, but in connection with other signs it may afford very valuable information. He states that the gastric or other organic juices may exhibit the diazo-reaction when it is absent in the urine. It is influenced by the medication, and diminishes as the amount of urine is increased. It appears in certain urines only after they have been boiled down or decolored with lead nitrate. Salol attenuates and naphthalin accentuates the reaction. In one of his patients the reaction became positive in the gastric juice after it had disappeared from the urine.

November 17.

Effects of Tetanus Toxin in Relation to Its Entering Point. G. TIZZONI and M. COLLINA.—There is a great difference between the effects of tetanus toxin when it is injected under the skin or under the dura or directly into the circulation. The two latter methods require much larger doses to prove fatal in rabbits. It seems to be evident that a certain portion of the toxin in these cases is neutralized by the blood or cerebrospinal fluid. In case of subcutaneous injection, the phenomena of exaggerated reflex excitability predominate; injected into the blood the phenomena of muscular rigidity prevail, while the subdural injection, accompanied by a lesion of the surface of the brain, induces the classical picture of cortical irritation. With an endocerebral injection, the symptoms are those of lesions of the centers. The phenomena observed when the toxin is injected into the blood indicate that the element in the toxin which causes the convulsions is neu-

tralized by the blood. If the blood is extremely toxic in a case of tetanus it is probably a sign of an extraordinary production of toxin over and above what the blood can neutralize, and is thus an unfavorable sign. A great difference was observed in the tests between the behavior of Tizzoni's and Behring's tetanus toxin, indicating a different composition, and possibly the presence of accessory toxins. These accessory toxins, impurities in the serum, explain why the experimental successes were not confirmed on man, when purer toxins were used. Only when the serum obtained after inoculation with toxin containing these accessory substances is applied in a case in which these accessory substances also happen to be present, is a cure probable.

Brazil-Medico, October 15.

Intravenous Mercurial Treatment of Werlhof's Disease. A. LUSIGNOLI.—Six cases are described which apparently prove that hemorrhagic diseases are caused by some specific microorganism whose products pass into the blood. Scorbutus, purpura, etc., are all of the same nature, and differ merely in intensity. They can be cured by a daily intravenous injection of 1 to 3 mg. of mercury bichlorid, repeated daily for four to seven days.

Roussky Archiv Pathologii (Moscow), xi and xii.

Mechanical Treatment of Anasarca. A. BROIDE.—Dehio's rubber bandage and funnel for the mechanical treatment of anasarca has been applied in 15 cases with great success. It should not be used as a last resort, but should be applied in the early stages after scarification of the spot.

Typhoid Bacilli in the Urine. W. KLIMENKO.—Sixty-five patients with typhoid fever were carefully investigated to determine the persistence of the bacilli in the urine. They usually disappear by the third to the thirtieth day, but in a few rare cases, persisted a year. By administering a substance that has an antiseptic action on the urine it might be possible to disinfect such patients. Bacteriologic investigation of the urine might clear up obscure cases of typhoid fever.

Queries and Minor Notes.

REQUIREMENTS OF HONOLULU, CUBA AND MEXICO.

MARIONA, VA., Nov. 22, 1901.

To the Editor:—Can you give the law or laws governing the practice of medicine in Honolulu, Cuba and Mexico? Z. U. S.

ANS.—We have no verified copies of the laws of Cuba, Hawaii and Mexico at the present time. In Mexico it appears to be largely a matter of identification; an account of the preliminary requirements, which are very elaborate, was published in THE JOURNAL, Dec. 23, 1899. After all the affidavits, etc., it is said that the examination may or may not be required according to the judgment of the governor of the state in which one chooses to practice. It seems to be required in the City of Mexico, and may be elsewhere. Many foreign physicians practice without any license in Mexico, but this is dangerous.

New Patents.

Patents of interest to physicians, etc., November 19 and 26:

687,112. Uterine curette. Seth D. Bowker, Kansas City, Mo.
687,004. Hot-water bag. Frauk E. Crawford, Lake Mills, Wis.
687,181. Hot-air bath. Frederick C. Dilthey, Rockville Center, N. Y.
687,139. Nasal cup. Wm. J. Evans, New York City.
686,855. Making a disinfectant. Wm. T. Kendrick, Montgomery, Ala.
686,859. Electric generator aud distributor for medical treatment. Edwin L. Madden, Kanawha, Iowa.
686,947. Making carbonate of magnesia. Wm. Marsh, Manchester, Eng.
686,985. Syringe. John M. Miller, Dayton, Wash.
686,831. Invalid bedstead. Wm. A. Nason, Algonquin, Ill.
687,367. Hypodermic syringe. Chester M. Barton, Hatfield, Mass.
687,199. Pill-forming machine. Arthur Colton, Detroit, Mich.
687,617. Mouth illuminator. Edward Ebi, Cedar Rapids, Iowa.
687,376. Inhaler. John Harrison, New York City.
687,243. Massage machine. Francis King, San Francisco, Cal.
687,441. Vaginal syringe. Willis L. Short, Butler, Mo.
687,358. Box for holding pellets, capsules, etc. B. S. Whitehead, Newark, N. J.
687,363. Massage device. Paul E. Wirt, Bloomsburg, Pa.
35,315. Design, ice or hot-water bag. Christian W. Meinecke, Jersey City, N. J.
35,214. Design, blank for speculum blades. Charles J. Pilling, Philadelphia.
35,313. Design, massage device. Paul E. Wirt, Bloomsburg, Pa.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PHOTOTHERAPY: (1) The Chemical Rays of Light and Smallpox. (2) Light as a Stimulant. (3) The Treatment of Lupus Vulgaris by Concentrated Chemical Rays. By Professor Niels R. Finsen, Copenhagen. Translated from the German Edition, with an Appendix on the Light Treatment of Lupus, by James H. Sequeira, M.D. Lond., M.R.C.P., Dermatological Assistant and Medical Officer in Charge of the Light Department at the London Hospital. Cloth. Pp. 79. Price, $1.75. London: Edward Arnold. 1901.

THE PRINCIPLES OF PATHOLOGICAL HISTOLOGY. By Harvey R. Gaylord, M.D., Professor of Surgical Pathology in the University of Buffalo; and Ludwig Aschoff, M.D., Professor and First Assistant in the Pathological Institute of the University of Göttingen, Germany. With an Introductory Note by William H. Welch, M.D., Baltimore. Illustrated with 81 Engravings in the Text and 40 Full-page Plates. Cloth. Pp. 359. Price, $7.50 net. Philadelphia and New York: Lea Brothers & Co. 1901.

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TRANSACTIONS OF THE RHODE ISLAND MEDICAL SOCIETY. Vol. VI. Part II. Paper. Pp. 277. Providence. Snow & Farnham. 1901.

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The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Nov. 28 to Dec. 4, 1901, inclusive:

William B. Banister, major and surgeon, U. S. A., from the Division of the Philippines to San Francisco, Cal., reporting on arrival, by telegraph, to the Adjutant-General of the Army.

Henry P. Birmingham, major and surgeon, U. S. A., relieved from duty in the Division of the Philippines and assigned to Fort Leavenworth, Kan.

James R. Church, lieutenant and asst.-surgeon, U. S. A., leave of absence on certificates of disability from the Department of Cuba is extended two months on account of sickness.

Harry A. Eberle, captain and asst.-surgeon, Vols., former orders so amended as to direct him to report on his arrival at Manila, P. I., to the commanding general for assignment in the Division of the Philippines.

Euclid B. Frick, captain and asst.-surgeon, U. S. A., member of a board at San Juan, P. R., to examine certain persons as to their fitness for appointment as lieutenants in the army.

Henry S. T. Harris, major and surgeon, U. S. A., leave of absence for seven days granted.

Arthur C. Heffenger, contract surgeon, previous orders requiring him to report for duty at Fort Constitution, N. H., revoked.

Merritte W. Ireland, captain and asst.-surgeon, U. S. A., on being relieved from duty as medical supply officer at Manila, P. I., by Major W. O. Owen (see below), to proceed to San Francisco, Cal., and report to the Adjutant-General of the Army for further orders.

James P. Kimball, lieut.-col., deputy surgeon-general, leave of absence on certificates of disability extended four months.

John S. Kulp, captain and asst.-surgeon, U. S. A., leave of absence for fifteen days granted, to take effect about Dec. 20, 1901.

John F. Leeper, contract surgeon, relieved from temporary duty at Jefferson Barracks, Mo.; on the expiry of his present leave of absence he will proceed from Casper, Wyo., to San Francisco, Cal., en route for duty in the Division of the Philippines.

Jose Lugo-Vina, captain and asst.-surgeon, Porto Rico Provisional Regiment of Infantry, member of a board at San Juan, P. R., to examine certain persons as to their fitness for appointment as lieutenants in the army.

William C. LeCompte, captain and asst.-surgeon, Vols., so much of orders of November 14 last as relates to Contract Surgeon William C. Le Compte is amended to read Captain William C. Le Compte, asst.-surgeon, Vols.

John A. Murtagh, lieutenant and asst.-surgeon, U. S. A., former orders so amended as to direct him on the expiration of his present leave of absence to proceed to Fort McPherson, Ga., to accompany a battalion of the 27th Infantry to San Francisco, Cal.

William O. Owen, major and surgeon, U. S. A., previous orders amended so as to direct him on his arrival at Manila, P. I., to report to the commanding general for duty as medical supply officer, relieving Captain Merritte W. Ireland, asst.-surgeon, U. S. A.

Charles Richard, major and surgeon, U. S. A., from Fort Leavenworth, Kan., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended December 7:

P. A. Surgeon H. H. Haas, detached from Norfolk Navy Yard, and to the *Kearsarge*, for duty with the marine detachment.

Asst.-Surgeon F. M. Furlong, when detached from New York Hospital, ordered home on sick leave for two months.

Asst.-Surgeon P. E. McDonald, detached from the *Constellation*, when discharged from Naval Hospital, New York, and ordered home with one month's sick leave.

Asst.-Surgeon W. M. Garton, detached from the Naval Academy and ordered to the Naval Hospital, New York.

Asst.-Surgeon J. B. Dennis, detached from the Naval Hospital, New York, and ordered to the Naval Academy, upon reporting of relief.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the twenty-one days ended Dec. 5, 1901:

Surgeon Eugene Wasdin, granted leave of absence for 21 days from December 19.

Surgeon W. P. McIntosh, to proceed to Illijay, Georgia, for special temporary duty.

P. A. Surgeon H. D. Geddings, detailed to represent the service at a conference of health officers at Ann Arbor, Mich., November 21 and 22. Upon adjournment of said conference to proceed to Detroit, Mich, for special temporary duty.

P. A. Surgeon A. R. Thomas, relieved from duty at Liverpool, Eng., and assigned to duty in the office of the United States Consul-General at Glasgow, Scotland.

Asst.-Surgeon R. H. von Ezdorf, granted leave of absence for two months and fourteen days from November 23.

Asst.-Surgeon J. F. Anderson, relieved from duty at the Immigration Depot, New York City, and assigned to duty in the office of the United States Consul at Liverpool, Eng.

Asst.-Surgeon V. G. Heiser, to proceed to St. Johns, N. B., for duty in the office of the United States Commissioner of Immigration.

Asst.-Surgeon Carroll Fox, relieved from duty at Port Townsend quarantine, and temporary duty at Port Townsend, Wash., and directed to report to Asst.-Surgeon J. F. Anderson for duty in the office of the United States Consul at Liverpool, Eng.

Asst.-Surgeon T. B. McClintic, granted leave of absence for one month from December 11.

A. A. Surgeon Francis Duffy, granted leave of absence for seven days from November 25.

Surgeon W. P. McIntosh, granted leave of absence for three days from November 26.

P. A. Surgeon H. S. Cumming, relieved from duty at South Atlantic Quarantine. Granted leave of absence for seven days from November 29.

Asst.-Surgeon G. M. Corput, directed to assume command of the South Atlantic Quarantine Station, relieving P. A. Surgeon H. S. Cumming.

Asst.-Surgeon J. S. Boggess, granted leave of absence for ten days from December 5, with permission to leave the United States.

A. A. Surgeon Felix Giralt, upon being relieved by A. A. Surgeon S. H. Hodgson, to rejoin station at Havana, Cuba.

A. A. Surgeon E. B. Hallett, granted leave of absence for two days from November 28.

A. A. Surgeon S. H. Hodgson, relieved from duty at Progreso, Mexico, and assigned to duty in the office of the United States Consul at Vera Cruz, Mexico.

A. A. Surgeon J. A. Rowles, granted leave of absence for four days from November 27.

Hospital Steward S. W. Richardson, relieved from special temporary duty at Buffalo, N. Y., and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for temporary duty.

A. A. Surgeon V. B. Gregory, directed to report for duty.

A. A. Surgeon J. S. Hough, relieved from duty at Hong Kong, China, and assigned to duty in the office of the United States Consul-General at Yokohama, Japan.

A. A. Surgeon S. B. Hunter, granted leave of absence for ten days from November 7.

A. A. Surgeon A. P. McConnell granted leave of absence for three days from November 27.

A. A. Surgeon C. L. Moore, relieved from duty at Boston, Mass., and directed to proceed to New York City, and report to Surgeon G. W. Stoner at the Immigration Depot for duty.

Surgeon H. W. Austin, to report at Washington, D. C., for special temporary duty.

Surgeon F. W. Mead, granted leave of absence for one day, December 10.

Surgeon H. R. Carter, detailed as inspector of the port of Solomons, Md.

Surgeon T. B. Perry, relieved from duty at Baltimore, Md., and directed to proceed to New York City, and report to Surgeon G. W. Stoner, Immigration Depot, for duty.

P. A. Surgeon Rupert Blue, relieved from special temporary duty at San Francisco, Cal., and directed to rejoin station at Milwaukee, Wis.

P. A. Surgeon H. S. Cumming, to proceed to San Francisco Quarantine, Cal., and report to Surgeon D. A. Carmichael for duty, reporting at Bureau en route.

Asst.-Surgeon W. C. Hobdy, to proceed to Elberton, Ga., for special temporary duty.

Asst.-Surgeon A. J. McLaughlin, to proceed to Cape Fear Quarantine, and assume temporary command of station during absence of Asst.-Surgeon T. B. McClintic, on leave.

Hospital Steward S. W. Richardson, relieved from temporary duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to Charleston, S. C., and assume charge of the Marine Hospital exhibit at the South Carolina Interstate and West Indian Exposition.

BOARD CONVENED.

Board convened to meet at Washington, D. C., Nov. 18, 1901, for the physical examination of candidates for appointment to the grade of second assistant engineer in the Revenue Cutter Service. Detail for the Board: Surgeon R. H. Woodward, chairman; Assistant-Surgeon B. S. Warren, recorder.

APPOINTMENT.

W. S. Jackson, of Michigan, appointed acting assistant-surgeon, for duty at Houghton, Mich., Nov. 12, 1901.

RESIGNATION.

Hospital Steward W. F. Schlaar resigned, to take effect Nov. 15, 1901.

CASUALTY.

A. A. Surgeon Stuart Eldridge, died at Yokohama, Japan, Nov. 16, 1901.

Health Reports.

SMALLPOX—UNITED STATES.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Dec. 6, 1901:

Alabama: Gilmer County, Nov. 26, 10 cases.
Illinois: Springfield, Nov. 1-30, 30 cases.
Indiana: Evansville, Nov. 23-30, 2 cases.
Kentucky: Lexington, Nov. 23-30, 4 cases.
Louisiana: New Orleans, Nov. 23-30, 2 cases, 1 death.
Maryland: Baltimore, Nov. 23-30, 1 case.
Massachusetts: Boston, Nov. 23-30, 103 cases, 8 deaths; Cambridge, Nov. 23-30, 1 case, 1 death; Lowell, Nov. 23-30, 1 case; Malden, Nov. 23-30, 1 case; Medford, Nov. 23-30, 1 case; New Bedford, Nov. 26-Dec. 2, 2 cases; Newton, Nov. 23-30, 1 death.
Minnesota: Minneapolis, Nov. 22-29, 4 cases; Winona, Nov. 23-30, 2 cases.
Nebraska: Nov. 23-30, Omaha, 4 cases; South Omaha, 16 cases.
New Jersey: Camden, Nov. 23-30, 5 cases; Jersey City, Nov. 24-Dec. 1, 11 cases; Newark, Nov. 23-30, 26 cases, 4 deaths.
New York: Buffalo, Nov. 9-26, 36 cases, 3 deaths; New York, Nov. 23-30, 16 cases, 2 deaths.
Ohio: Cincinnati, Nov. 22-29, 6 cases; Dayton, Nov. 23-30, 1 case; Youngstown, Nov. 16-30, 3 cases.
Pennsylvania: Allegheny City, Nov. 23-30, 3 cases; Lebanon, Nov. 23-Dec. 1, 4 cases; Norristown, Nov. 23-30, 5 cases; Philadelphia, Nov. 23-30, 113 cases, 14 deaths.
Tennessee: Memphis, Nov. 23-30, 2 cases; Nashville, Nov. 23-30, 2 cases.
Utah: Salt Lake City, Nov. 30, 1 case.
Vermont: Burlington, Nov. 23-30, 7 cases.
Washington: Tacoma, Nov. 16-23, 3 cases.
Wisconsin: Green Bay, Nov. 26-Dec. 2, 9 cases.

SMALLPOX—FOREIGN.

Austria: Pragne, Nov. 2-16, 8 cases.
Belgium: Antwerp, Nov. 2-16, 6 cases, 2 deaths; Brussels, Nov. 9-16, 1 death.
Canada: Halifax, Nov. 23-30, 9 cases; Quebec, Nov. 23-30, 27 cases; St. John, Nov. 23-30, 2 deaths; Winnipeg, Nov. 23, 5 cases.
Colombia: Cartagena, Nov. 12-19, 3 cases; Panama, Nov. 18-25, 100 cases.
France: Paris, Nov. 9-16, 3 deaths.
Gibraltar: Nov. 9-17, 1 case.
Great Britain: London, Nov. 9-16, 368 cases, 16 deaths.
India: Calcutta, Oct. 26-Nov. 2, 1 death.
Italy: Naples, Nov. 2-9, 29 cases, 2 deaths.
Mexico: Alvarado, Nov. 24, 1 case.
Russia: Moscow, Nov. 2-9, 9 cases, 4 deaths; Odessa, Nov. 9-16, 2 cases.
Spain: Barcelona, Oct. 19-Nov. 2, 2 deaths; Valencia, Nov. 5-19, 20 deaths.
Straits Settlements: Singapore, Oct. 12-19, 1 case, 1 death.

YELLOW FEVER.

Brazil: Para, Oct. 1-31, 177 cases, 56 deaths.

CHOLERA.

India: Bombay, Oct. 30-Nov. 5, 2 cases: Calcutta, Oct. 26-Nov. 2, 32 deaths; Madras, Oct. 26-Nov. 2, 32 deaths.
Java: Batavia, Oct. 19-26, 19 cases, 15 deaths.
Straits Settlements: Singapore, Oct. 5-26, 15 cases, 15 deaths.

PLAGUE—FOREIGN AND INSULAR.

India: Bombay, Oct. 30-Nov. 5, 173 cases, 173 deaths; Calcutta, Oct. 26-Nov. 2, 24 deaths; Karachi, Oct. 26-Nov. 2, 66 cases, 38 deaths.
Hawaiian Islands: Honolulu, Nov. 13, 1 death.

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Original Articles.

FOOD PRODUCTS FROM DISEASED ANIMALS.*

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BUREAU OF ANIMAL INDUSTRY, DEPARTMENT OF AGRICULTURE.
WASHINGTON, D. C.

What effect may the food products from diseased animals have in disturbing the digestion and in causing more serious diseases in the human consumer? It is a question easily asked, and dismissed by many with the same facility, but who can supply the data that will convince the mind of the earnest student of dietetics?

From my point of view the subject is one which has been sadly neglected. There are few who stop to consider the millions of cattle and sheep, the tens of millions of swine and the hundreds of millions of birds consumed as food in this country every year. To watch the arrival of such animals at one of our great packing centers for a single day, fills one with a feeling of amazement at the enormous development of the stock-raising industry, and at the tremendous amount of animal food which our people require. But what we have seen at any one point is but a small part of what has been done at all of the fifteen or twenty packing centers. And this great flow of live animals from the farm to the abattoirs is constant and is more uniform than the flow of our great rivers. It goes on night and day, with only moderate variations as to quantity, every month, every week, and every day of the year.

Now picture in your minds for a moment the great flow of dairy products—of milk, of butter and of cheese—from the farms and creameries and factories to the consumers; these are produced by more than 16,000,000 cows. If these streams of nutritive material are liable to contamination, how important it is that they should be guarded at all points.

Unfortunately, animals are subject to a large number of diseases, from the simplest functional disorders to the most serious organic changes, and to the most deadly forms of contagion. The great scientific activity of the last quarter of the century just past has served to clear up the pathology of many of these diseases, and the educated veterinarian now knows the nature of the diseases he sees, and can appreciate fairly well the effect of various pathologic conditions upon the products of the affected animals. But outside of the veterinary profession, with comparatively few exceptions, the knowledge of animal pathology is fragmentary; the ideas concerning it are vague, distorted and misleading; the notions as to the details of sanitary precautions are crude, impracticable and insufficient. It is for this reason that I venture to introduce this subject and treat it in an introductory manner.

The federal meat inspection service has been by many misunderstood and misrepresented. It is a sanitary inspection rather than a commercial inspection. It is applied to meats shipped from state to state as well as to foreign countries. The first object of the inspection is to protect the health of the consumer. The one part of this inspection system, which is made primarily for commercial reasons, is the trichina inspection, which is only applied to pork intended for shipment to certain countries which require such an inspection. The trichina inspection is, however, but a small part of the federal meat inspection service and should not be permitted to obscure the efforts made in the general inspection service to protect the health of our own citizens.

The great difficulty in meat inspection is the question as to where to draw the line between meat that shall be passed as fit for food and that which shall be condemned. There are many carcasses with which there is no such question raised—the great majority are unquestionably good or unquestionably bad. But between these extremes there are all shades of gradation. I once saw a health officer condemn a number of fine carcasses of beef, because he discovered in the animals' intestines a few cysts containing cheesy matter, which he thought were actinomycotic, but which were really caused by a minute animal parasite, and which affected the quality of the beef no more than would a wart upon the animal's skin. At the same time there was hanging in a conspicuous place in the slaughter-house a carcass of beef affected with generalized tuberculosis, and literally filled with small tubercles. This was allowed to go upon the market unchallenged. If the man who passed upon these carcasses had been selected because of his knowledge of pathology rather than for his efficiency in politics, he would undoubtedly have condemned the tubercu-lous carcass without interfering with that showing the verminous nodules in the intestines.

But it is not alone ignorance with which we have to contend. Sanitary questions are complicated with questions of fraud. For instance, the flesh of dogs is esteemed by the people of some countries, and, so far as I am aware, it is nutritious and not injurious. An American meat inspector could not allow the sale of dog meat, however, because it is repugnant to our people; it would not be purchased and consumed if its nature were known, and its sale would constitute a fraud. The flesh of horses and mules, which is eaten in civilized countries to a much greater extent than that of dogs, is nevertheless often condemned with us because it is usually sold

* Read at the Fifty-second Annual Meeting of the American Medical Association in the Section on Physiology and Dietetics, and approved for publication by the Executive Committee: Drs. James Weir, Jr., Winfield S. Hall and Elmer Lee.

in a fraudulent manner as the flesh of cattle. The flesh of goats is probably in most cases sold as mutton, but it is not likely that the carcasses are ever condemned for that reason. These examples are mentioned to make clear the arbitrary manner in which the flesh of some species of animals is often condemned, while that of other species, also sold fraudulently, is allowed to go to the consumer without protest. These are questions of habit and custom rather than of sanitation.

Let us go a step further and briefly consider the question of special physiologic condition of the animal at the time of slaughter. The meat of an old boar or a stag (castrated after becoming adult) has a strong, offensive taste and odor and is likely to cause loss of appetite and possibly nausea in the delicate and sensitive consumer. Should such meat be invariably condemned? Probably not, because there are consumers who are neither delicate nor sensitive about such matters, and who prefer to use such meat because it is sold at a lower price, while the odor and taste reveal its nature to those who object to it.

It is by no means infrequent that female animals in an advanced stage of gestation are found in the slaughter-houses. In most countries these are not interfered with by the sanitary authorities, but the United States inspectors are instructed to condemn them and prevent their slaughter for human food. I have often been asked to give my reasons from a sanitary point of view for this course. My justification is twofold: 1, a consumer would not knowingly purchase such meat, and its sale is as much a fraud as is that of horse meat, and 2, while the animal is, strictly speaking, in a physiologic condition, it is not in its usual physiologic condition, nor is the change one which is calculated to improve the quality of the meat. The respiration of the fetus throws a large quantity of waste products into the blood of the mother. In the preparation for parturition the circulation is disturbed; there are material morphologic changes in the reproductive organs and parts connected with them; some of the liquids of the body, as for example the milk, are considerably changed in composition. The flesh of an animal in this condition is, in my opinion, objectionable, although I do not know of any cases in which it has injured the consumer.

It is desirable that the shipment for slaughter of animals advanced in pregnancy should be discouraged, since they are more liable to injury than others, the fetus being often found dead, and frequently more or less decomposed. In such cases there may be considerable inflammation of the uterus, and absorption of septic material. The carcasses of such animals must, of course, be condemned. For these reasons inspectors of the Bureau of Animal Industry are instructed to condemn all animals which are within two weeks of the time of parturition.

Females in which parturition has recently occurred are also condemned as unfit for food. It is astonishing to see how many calves, lambs and pigs are dropped en route or in the stock yards. Sometimes this happens as the animals are on the way to the killing floor. Often parturition is hastened by bruises, crowding in the cars, fright or other causes. In this case there is more disturbance of the mother's health—weakness, retention of the membranes, offensive discharge, feverishness and septic absorption. Such animals are not in the condition to produce a safe and wholesome meat for human consumption. And yet there is always difficulty in drawing the line up to which pregnant animals may be slaughtered, and beyond which they must be condemned; or to which parturient animals must be condemned and beyond which they may be passed as fit for food.

A very large number of animals come to market with bruises and injuries which more or less affect the carcass. Last year for this cause we condemned, in round numbers, carcasses or parts of carcasses, of 4500 cattle, 1000 sheep and 12,300 hogs. In some of these the carcasses were only slightly bruised, in others the injuries were extensive, and in some cases complicated with abscesses, septic infection and gangrene. These are serious conditions which require careful consideration on the part of the inspector in order to determine when a part of a carcass only need be destroyed, or when it is necessary for the protection of the consumer that the whole carcass should be condemned.

There are certain animal parasites encountered which are capable of infesting man, and which may cause slight illness or serious disease. We sometimes find the cysticercus bovis or larval stage of the tenia saginata—not a very dangerous parasite, but one which most people would prefer to avoid. More dangerous than this is the cysticercus cellulosæ, which gives rise to the tenia solium of man. As there are conditions under which the larval stage of this tapeworm may develop in the human subject, causing serious disorders of important organs or even death, it is essential that the parasite should be recognized and infested meat destroyed. The most dangerous of this class of parasites, and one which is apparently becoming more common in this country, is the echinococcus, the cause of hydatid disease. The bladder worm may be found in almost any part of the body of the meat-producing animals, and especially in the lungs and liver of cattle, sheep and swine. Last year it was found in 204 cattle, 46 sheep and 487 hogs—a total of 737 affected animals. The adult tapeworm lives in the dog, and this animal scatters the eggs broadcast to infest other animals. The parasite is not directly transmissible from these animals to man, but the life cycle is completed by dogs eating the affected organs of the meat-producing animals. Man becomes affected from the eggs of the mature worm excreted by the dog. Hence the importance of meat inspection to discover the echinococcus in animals, and to secure their destruction before they can be devoured by dogs. In Iceland and some parts of Germany, statistics show from 2 to 2.5 per cent. of the people affected with the echinococcus disease.

The trichina spiralis is in this country a common parasite of hogs. As the hogs run in the large packing centers, about 2 per cent. are found affected, but in some sections of the country and at some seasons the proportion may be much less. On the other hand, special lots of hogs may be infested in a much greater proportion. Dangerous as is this parasite, it appears next to impossible to protect the consumer by inspection. A microscopic examination reveals most of the cases, but some will escape the closest scrutiny. It appears better, therefore, to rely upon cooking to make swine flesh safe, rather than to trust to microscopic inspection, which at the best lessens without entirely removing the danger.

There are inflammations of all organs and various infectious diseases of animals encountered, which are accompanied by fever, emaciation and organic changes, and which affect the quality and wholesomeness of the flesh. Among these diseases deserving of notice are the scabies of sheep and Texas fever of cattle. Both of these

diseases are under control, but cases are still occasionally found at the slaughter-houses. The most common of all diseases are hog cholera and swine plague. Not less than 32,859 carcasses were condemned last year because affected with these diseases. Actinomycosis is a disease which is also quite frequently seen, 2427 carcasses of beef being condemned in whole or in part last year on account of it.

What is the effect upon the human consumer of eating the flesh of animals affected with an ordinary inflammation, say a pneumonia or a pleurisy? Or, going farther, what is the effect of eating the flesh of animals suffering from infectious diseases not transmissible to man? It appears to me that our knowledge is somewhat deficient in regard to this, but certainly the habits and views of our people, coupled with the known danger from toxins liable to be developed in such diseases, and the more rapid decomposition of the flesh of diseased animals which generally occurs, should be sufficient to justify condemnation. In general, the more pronounced the lesions found in the carcass, the more certain the inspector may be of his diagnosis and of the necessity of withdrawing the flesh from the open market. It is hardly necessary to explain to physicians that where there are over 30,000 carcasses condemned for diseases such as hog cholera and swine plague, there will be many carcasses found in which the lesions are not clear and where there is reason to doubt if they are due to these diseases. It is with such equivocal cases that the conscientious inspector finds his greatest difficulty and embarrassment; for, on the one side it is his duty to protect the public health, and, on the other, it is no less his duty to avoid the needless destruction of property.

The most common diseases found among cattle are tuberculosis and actinomycosis, and, with the exception of hog cholera and swine plague, tuberculosis is the most common disease found in swine. With neither tuberculosis nor actinomycosis is it practicable or desirable to condemn to utter destruction the entire carcass of every affected animal. Both diseases in the early stages are usually localized and circumscribed, and without any effect upon the body as a whole. The lesion may be but a tenth of an inch, a fourth of an inch or half an inch in diameter. In such a case it would be an unjustifiable waste of the general food supply and an unwarrantable destruction of property to destroy the whole carcass, though the affected organ should be in every case condemned.

In Germany the whole of a tuberculosis carcass is condemned only when there is great emaciation or when a number of organs are affected and the location of the lesions indicates that the infection has been carried through the blood stream. With us we condemn the carcass not only when there is emaciation or a generalization of the lesions, but also when the lesions in any organ or organs are of such number and size as to indicate that the system at large may have been affected, either by inflammation, by the mixed infection, by the secretion and absorption of pus or toxic principles, or by interference with the general nutrition of the body.

With swine it is necessary to be even more particular than with cattle, because the disease is of a more acute type and there is a much greater tendency to generalization of the lesions. The increasing prevalence of this disease among swine is most disquieting to the sanitarian and deserves the early and serious consideration of all who are interested in limiting the ravages of this disease.

Turning now to the question of milk from diseased animals, I doubt if anyone who has not been actually engaged in the inspection of dairy stables can quite appreciate the condition in which the cows of some of these are liable to be found. Inflammation of the udder is a very common affection and may subside after a few days or may terminate in an abscess. Very often there is catarrh of the milk ducts, or an abscess opening into these channels, and in either case the secretion passes away with the milk.

In other cases there may be infective inflammations of the udder or tuberculosis of the organ, when, of course, the condition is even more serious. The extent to which tuberculosis may develop in the cow's udder and the tremendous quantity of thin tubercular material which may be mixed with the milk in such cases was demonstrated by the specimens which I exhibited at the meeting of the American Medical Association last summer.

Tubercle bacilli may be present in the milk of tubercular cows, however, when there are no signs of tuberculosis of the udder. The investigation of this subject has been greatly aided by the tuberculin test, which directs our attention to the affected animals. It has been proved that in some countries from 40 to 50 per cent. of all the cows have tuberculosis. In the United States the proportion is very much less, being probably not over 5 per cent. in our worst affected states. Yet, there are many herds here as badly affected as the worst herds of Europe. It is not uncommon to find 85 to 95 per cent. of reacting animals in a large dairy herd. The proportion of these which give infected milk depends upon the extent to which the disease has progressed in the animals. Some investigators have found infection in the milk of only those cows which have tubercular lesions in the udder, say in 1 or 2 per cent. of reacting cows. Others equally competent have found infection in the milk of 12, 15, 33 and even 66 per cent. of the reacting cows which were investigated.

I have not the time, even had I the data and were disposed, to point out the effect upon the human consumer of taking into his digestive canal the meat and milk of diseased animals. This paper is designed to be suggestive. Its aim is to call attention to conditions of more or less seriousness which are constantly found in a certain proportion of the animals shipped to market for human food. Since the federal inspection has been established for meat shipped in the interstate trade, the tendency is to send the known diseased animals to the slaughter-houses which kill for the local trade and have little if any inspection.

Unquestionably, the products of many badly diseased animals get upon the market and are eaten. What effect does this have upon the public health? What proportion of the cases of diarrhea, cholera morbus, etc., are due to such food? What is the extent of the danger from taking large quantities of tubercle bacilli in either rare meat or in uncooked milk? These are dietetic questions which it appears to me might well receive more attention. Without doubt there should be greater efforts than have yet been put forth in this country to secure a pure and wholesome food supply. Those who are working in this direction need the encouragement and aid of the general practitioner of medicine, I might say of the whole medical profession. They need even more than this—the experience and knowledge which are gained

by the men in the active practice of medicine. Would it not be well to have more co-operation and a more frequent exchange of views?

DISCUSSION.

Dr. Charles M. Hazen—I wish Dr. Salmon in closing might say a few words about the disturbances not amounting to pathologic conditions. For instance, the question of venison killed after a long chase and without bleeding being fit for food. Such questions would be interesting in this discussion.

Dr. Winfield S. Hall, Chicago—I think this paper opens up an exceedingly wide field for research. How wide a field do the experiments now being conducted cover and are the questions asked in line for being solved in the Washington laboratories, and especially, how far can tuberculous milk be taken without endangering the health?

Dr. David Paulson, Chicago—I have become acquainted, to a certain extent, with the benefits which are derived from the efficient work that is performed under the direction of the government, as outlined by Dr. Salmon. It is unfortunate that as far as Chicago is concerned it is still possible to dispose of diseased cattle to smaller slaughter houses outside of the regular packing-house district. The fact that animals are being continually killed in these smaller slaughter houses without any suitable examination and their flesh placed upon the market in Chicago, should certainly cause us not to relax our efforts in this direction until some definite provision is secured that fully covers this ground.

Dr. R. Harvey Cook, Oxford, Ohio—I would like to ask Dr. Salmon to give more in detail the reason why an animal during parturition is not good for food, other than from an esthetic idea and also from the fact that an animal is at this time more suspectible to disease.

Dr. Salmon, in reply—I regret to say that there are many questions connected with the subject that I am unable to answer, especially with regard to the effect of exhaustion and fright on the flesh of the animal. The effect on deer chased by dogs is something of the same sort as that which happens to animals shipped long distances to market. We have a Federal law in this country that animals should be unloaded as often as once in 28 hours for feed, water and rest. Like many other statutes, it is honored chiefly by paying no attention to it. I have been for several years sending out men with stock trains and getting evidence against the railroad companies and bringing prosecutions. A number of convictions have been made, but they have not had as much effect as would be supposed. Persons who ship stock to marked want to get it through as soon as possible. There is surprising barbarity exhibited in the shipping of food-producing animals to market. I have seen cases in which animals in hot weather have been kept in stock-cars without food, water or rest for 96 hours. When unloaded in stockyards they distend themselves enormously with water, which puts them in a worse condition than when they were unloaded. I believe that that kind of meat is not in the most wholesome condition for those who consume it. Just what effect it may have on the consumer I do not know. I have no data, but believe that many of the minor troubles which occur are due to such cases. Every physician knows that there are many illnesses for which he can not account. When we consider the amount of meat consumed which is shipped in that way, I think we will agree that there must be a considerable effect on the health of the consumer. There is an opportunity for a great deal of close observation and experimentation to show the importance of correcting such conditions.

In regard to tuberculous milk, I had a paper before another section in which I took up the subject more in detail than I could here. I am a firm believer in the danger of milk from a tuberculous cow. There are a number of udders in the Pathologic Exhibit which show to what extent tuberculosis may invade the mammary glands. This morning the specimens were so solidly frozen that I could not trace the connection of the tubercles with the milk ducts. I have, however, seen cases in which the whole gland was practically a mass of liquid caseous material having free connection with the milk ducts and was passing out in tremendous quantities with the milk. This only happens in a few cases. When we consider that, in large numbers of tests, 20 to 50 per cent. of the animals are found infected and that one to two in every hundred have tuberculosis of the udder we see that in a great many cases the milk must be infected.

There has been some difference of opinion as to whether the milk was infectious when the mammary glands were free from tubercular deposit. A number of experiments have been made showing that a considerable proportion of tuberculous cows give infectious milk even when the udders are apparently healthy. The proportion of cows which have reacted to tuberculin and in which infection has been found in the milk varied from 5 to 66 per cent. When you have herds of cows of a hundred animals with 75 per cent. of them tuberculous, as is often the case, and a third giving infectious milk, there is a tremendous quantity of infection spread through the milk of these herds.

You may be aware that many physicians have denied, with more or less positiveness, the danger of tuberculosis from infected cows, either from the meat or the milk. Postmortem examinations of adults seem to confirm their views so far as they go. However, they are not as complete as we should like to see them. With children the case is otherwise. Statistics show an entirely different condition in the production of tuberculosis of the abdominal organs from that in tuberculosis of the lungs; an indication that as tuberculosis in cattle has increased, tuberculosis in children has also increased.

In regard to the effect of gestation upon the flesh of animals, I believe that the physiologic changes which occur in the last stages of the period of gestation do affect the general health. I think that the waste products from a fetus which are thrown into the circulation of the mother have a certain effect upon the flesh of the animal. I think also that the physiologic preparations for parturition must have great effect. We know the effect upon the composition of the milk and it must have almost equal effect upon the composition of the flesh. Yet, as I have said, we have very little data to show what bad effects the meat has upon the consumer. I would myself rather eat horse or mule flesh than eat the flesh of animals in the last two weeks of the period of gestation, and I think most people would feel as I do. The sale of the meat, therefore, is just as properly prohibited as would be the flesh of other animals not usually used for food.

TUBERCULOSIS IN THE MIDDLE STATES AND ITS CURABILITY.*

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CHICAGO.

When asked to present a paper on this subject I consented willingly, but it was willingness born of ignorance; I had no idea of the task before me. On investigating the literature on the subject of tuberculosis in the Middle States, I found that the mass of information concerning the climatology of these states and the factors which might cause or cure consumption was very meager. The subject soon outran the bounds of a twenty-minute paper. Therefore, I have arbitrarily selected the following states for consideration: Michigan, Ohio, Indiana, Illinois, Kentucky, Wisconsin, Minnesota, Iowa, Missouri, North and South Dakota, Nebraska, and Kansas. They lie between the Appalachian system of mountains on the east and the Rocky

*Read in a Symposium on Tuberculosis at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Hygiene and Sanitary Science, and approved for publication by the Executive Committee of the Section.

mountains on the west, the Mississippi river draining the valley which slopes toward its shores. The altitude of this valley varies from 400 to the highest mountain tops of 3000 feet. But the greater portion of the valley is free from mountains or hills of any great altitude. In order to understand the conditions that might influence the course of disease in tuberculous patients in this region, the following is a brief description of the climates and physical characteristics of the various states:

Michigan, owing to its wide extent of latitude, has a varying climate, being quite mild in the southern part, but cold and rigorous in the winter in the northern part. There is a difference of about seven degrees between the temperature any given day in the northern and southern part, but the climate is healthful and the death-rate low. The upper peninsula of Michigan is rugged and rocky, broken up by hills in the western section which rise to a height of 2000 feet, while the lower peninsula is composed of plains and tablelands, with occasional prairie and considerable timber.

The annual mean temperature of Ohio is from 50 to 54 degrees, the warmest section being the southwest, on the Ohio river. The climate is mild and healthful, although sudden changes are liable to occur. Ohio has no mountains, although the interior of the state is 1200 feet above the sea level. From this elevated region the surface slopes to Lake Erie on the north 565 feet above the sea, and the Ohio river on the south 430 feet above the sea level. The great divide which makes the watershed passes diagonally across the state from the northeast to the west. The soil is fertile and extensive forests of hard wood abound.

Passing west into Indiana we find a variable climate, especially in the winter when the winds prevail from the west and northwest from the lakes. The state, however, is generally healthful, and the death-rate is low. The state has few hills, but is principally composed of level or undulating land, the highest elevation being 540 feet on the Ohio river at the mouth of the Wabash. The country near the lake is sandy.

The climate of upper Illinois is healthful, its proximity to the lake securing purity of the air, and the country is swept by bracing lake breezes. The lower part of the state suffers along the river bottoms and the swamp lands from malaria. The lowest altitude is 340 feet, and the highest 1150 above the Gulf of Mexico, the state being generally level, the soil very rich, especially along the river bottoms where a soil of vegetable mold forty feet in depth is found and heavy crops of corn have been raised many years without rotation or fertilizing. Illinois stands fifth in the list of mortality from consumption, which must be due to the fact that Chicago furnishes so large a number of cases as to increase the state's death-rate.

Kentucky affords a climate which is generally delightful, the mean average being 57 degrees F. The greatest rainfall is in the spring and winter, the summer and fall being usually dry. It has a splendid record for healthfulness. It is a tableland sloping gradually from the southeast to the northwest, the spurs of the Cumberland mountains breaking the southeastern part. None of the summits of this spur reach over 3000 feet altitude. The eastern half of the tableland has an average altitude of 1000 with ridges 500 feet higher.

Going to the extreme north we find Wisconsin, whose climate is tempered by the great lakes. Great changes do not occur suddenly, although a great deal of snow falls in the north. The winters are equable and the climate is bracing. The summers are short and hot, while the autumn is delightful. As a whole the climate is healthy and invigorating. The surface of the state, for the most part, is a great plain, varied only by the cliffs bordering the rivers and lakes, and elevated from 600 to 1500 feet above the sea. The northern part of the state is covered with immense forests of pine and hemlock.

Minnesota's salubrity of climate is well known. The purity of the air and the dryness of the winters has given the state a well-deserved reputation as a resort for pulmonary invalids. If I mistake not, the summers are warm, with breezy nights; the winters are cold, clear and dry, with a light snowfall. The surface of the state is an undulating plain with an average elevation of 1000 feet above the sea, but in the northeast there is a group of low sand hills, which rise about 600 feet higher. One thirty-fifth of the entire area is covered by lakes, which are in the region of heavy forests. That the state is free from influences that tend to develop consumption is proved by the fact that it stands low in the group of states having a large number of deaths from this disease.

Iowa is one of the healthiest states in the union; malarial, endemic and epidemic diseases are rare. The winters are severe on account of the north and northwest winds, but not unhealthful, while the heat of summer is relieved by the breezes. The surface of the state is undulating and beautiful, with alternate prairies and forests, while the rivers are lined by bold bluffs and charming ravines. In the northern portion of the state there are small lakes which form part of the group extending into Minnesota, Dakota and Wisconsin. The highest point of the state is in Dickinson County, 1650 feet above the sea, and there is a gradual slope to the southeast until at the mouth of the Des Moines river the altitude is only 444 feet.

Missouri has the most rigorous climate of all the states in the middle group, as the winters are extremely severe, and the summers hot. The state, however, is healthful, notwithstanding its climate. The northern part of the state as a rule is level and undulating, while the southern part is broken by hills, ranging from 500 to 1000 feet in height, and mountain ranges, the Iron mountains in the southeast, and Ozark mountains in the southwest. The bottom lands of the Mississippi are extensive, having many lakes and lagoons with islands which are never submerged by the severest floods.

North Dakota has a dry and salubrious climate. The winters are cold and there are heavy snowfalls, and the winter is prolonged but not so severely felt as in the same latitude in Minnesota. The summers are hot and dry. The temperature ranges from 20 F. below to 100 above zero during the year. Consumption is almost unknown in the state. The greater portion of North Dakota is a rolling prairie in which are many streams and lakes, but no swamps or marshes. The altitude varies from 670 feet on the eastern line to 1900 on the western line, as at Ft. Buford.

South Dakota has a milder climate, the spring being earlier even than in the states further east. The climate is healthy and salubrious. Like its northern neighbor it is composed principally of prairie, rolling and interspersed with water-courses. In the southwestern portion commence the famous Black Hills, some of whose

peaks reach 7000 feet above the sea. The altitude of the state varies, as is well illustrated when you look on the map and note that Huron has an altitude of 753 feet, Yankton 1222, and Deadwood 4600.

Over the wide prairies of Nebraska sweep the mountain breezes and owing to the splendid drainage, the dry exhilarating atmosphere is untainted by malaria. Along its western boundary are the foothills of the Rocky mountains, and the commencement of the Black Hills, the drainage being toward the Missouri river. North Platte, about the middle of the state, has an altitude of 2841 feet, and the altitude rises as you journey westward.

Passing down into Kansas we find that the winters are comparatively mild, the summers hot but not oppressive, and the atmosphere extraordinarily pure and clear at all seasons. The pure atmosphere offers to persons suffering from pulmonary complaints great relief, and a chance for a continuous outdoor life. It has an elevation of 750 at the mouth of the Kansas river, but slopes upward to an elevation of 3800 feet on the western border. You can find cities where good accommodations can be obtained at various altitudes, as for instance, Wichita, 1366 feet; Hutchinson, 1540 feet; and Garden City, 3000 feet.

In this brief review of the climates found in the middle states we fail to find any reason why tuberculosis should be more prevalent in any of these states than in the older states of the east or along the coasts of the Atlantic and Pacific oceans. In fact, there are many reasons why tuberculosis should be less prevalent, one fact alone being prominent, that is, in this vast region there are only fourteen cities having a population exceeding 100,000, and only fifty-three cities exceeding 25,000 in population. Crowded cities favor the development and spread of tuberculosis, which undoubtedly accounts for the fact that Illinois ranks fifth in the list of mortality.

In the list of states which have the greatest mortality from tuberculosis the following states in the middle region stand in this relation: Ohio third, Illinois fifth, Tennessee sixth, Missouri seventh, Kentucky eighth, Indiana ninth, Michigan thirteenth, Wisconsin eighteenth, Texas nineteenth, Iowa twentieth, Minnesota twenty-first, and Mississippi twenty-fourth. The reason Ohio, Illinois and Indiana rank so high is because they are states which contain large cities; Ohio has four cities of a population exceeding 100,000, and several which approximate this figure; Indiana has several large cities, and Illinois includes Chicago with its population of nearly two millions, and several well-populated cities. The southern states have a high death-rate owing to the prevalence of consumption among the colored people.

The average death-rate from consumption during the year 1890 throughout the United States was 268.81 per 100,000. But the average of the cities about the great lakes was much below this, while the average of the cities in the south was higher for reasons given above.

On account of the fertility of the Mississippi valley the country is rapidly being thickly settled, especially in the north. and this fact alone should increase the prevalence of consumption, but I am confident that the 1900 census will prove that there has been no increase. Therefore, there can be no intrinsic causes in the valley to increase the prevalence of the disease.

If there are no factors to cause the disease, except the increase of population, what are the possibilities for the cure of the disease in the middle states?

The answer to this question must hinge on the experience of observers who have treated consumption in the lowlands and the lower altitudes, and a searching analysis of the value of the higher altitudes in the treatment of the disease, and whether the home treatment of consumption with all the comforts the word home suggests, without the so-called climate, will produce as good results as the desired climate without the home comforts.

As to the results of treatment in the lowlands and lower altitudes we can only take the statistics as furnished by those who have observed the results at resorts situated in the respective levels. The results of treatment demonstrate the curability of consumption in the lower altitudes in percentages varying from 38 to 75, according to the stage of the disease. There are many authorities who claim that these results are not dependent on climate so much as on the supervision of the patient's daily life. If this be true, then there need be no argument that the disease may be cured in this region. The question would be rather, by what method can the cure be effected?

This problem seems to be working its own solution in a practical way, and that is by the establishment of sanatoria. Many of these sanatoria are established at points which do not present so many advantages as many places in the middle states, and yet they are doing good work.

The majority of these sanatoria have been established by private enterprise, individuals, or societies, independent of the various governments. But the good work done in these semi-private institutions has aroused the interest of governments, the crowned heads, and is now arousing a great interest among the legislators of the United States.

The list given by Knopf demonstrates the following facts: There are in Europe 127 sanatoria devoted to the consumptive, 35 in the United States, 2 in Canada, and 2 in Australia and Asia and 3 in Mexico; 15 of the European sanatoria are under municipal or governmental control, and 5 in the United States under municipal, county, state or government control.

The states have been slow to respond to the onward movement until within the last three years, when the states have been waking up to the fact that they should make provision for this large class of dependent patients. The first state to ereet a sanatorium for the consumptive is Massachusetts, which completed a sanatorium in January, 1898. It has been in operation nearly three years with results encouraging to the highest degree.

Cook County has a hospital at Dunning in connection with the infirmary for advanced cases of consumption, and while the percentage of recoveries is necessarily low, there has been an improvement in the condition of many patients, owing to the betterment of their surroundings and appropriate treatment. The institution is doing a great deal of good by removing advanced cases from homes and lodgings where they are sources of contagion.

The sentiment in favor of state institutions is growing throughout the United States. New York will build a state hospital as soon as a site can be selected, to cost $200,000 and to accommodate 200 patients. A movement is also on foot to establish a sanatorium for

working women, married young women and children at Lake Kushaqua in the Adirondack mountains. The Erie County (N. Y.) Almhouse is to build a $50,000 hospital for their consumptive inmates. Bellevue Hospital has established a ward to accommodate 200 patients.

A bill was introduced in the legislature of Massachusetts to establish a second state institution in the mountains, to accommodate the patients who apply for treatment.

A bill was introduced January 2 in the legislature of Minnesota providing $150,000 for the erection and $50,000 for the maintenance of a state sanatorium for consumptives.

California has appointed a committee to investigate the feasibility of establishing a state institution in the southern part of California.

Texas has a farm for consumptives two miles from the Huntville penitentiary. Men who went to the farm in the last stages of the disease are now hearty and stout, and evince no evidence of the disease. The plantation is self-supporting through the labor of the invalids.

Louisiana is to establish a consumptive camp at Covington, 50 acres of land having been procured for that purpose. Michigan is considering a bill for the establishment of a state hospital. New Jersey is urging an appropriation for the same purpose. The Pennsylvania legislature is asked for $60,000 to establish free homes for consumptives near White Haven. Boston has four hospitals for the treatment of consumptives, and is about to erect another to cost $80,000. New Hampshire is about to investigate the question.

The government sanatorium at Fort Stanton, N. M., is a success. It has been in operation 18 months, and has treated 92 patients, 12 of whom were discharged as recovered, 15 improved, and 11 died. The cases received were nearly all advanced.

Look over this list and you will perceive that these proposed institutions will be located in different sections of the country, many of which can lay no claim to advantages as health resorts. Cast your eye over the land between the Appalachian range and the Rocky mountains and you can pick out hundreds of places which present advantageous points for the location of sanatoria. Minnesota has a dry bracing air which sustains its reputation for healing it gained many years ago; the region of the great lakes proves by statistics that consumptives may live there; the pines of Wisconsin offer healing balms to the consumptive, and the Ozark mountains, hitherto neglected, are readily available for the invalids of Chicago, St. Louis, Indianapolis, and other great cities in the Mississippi valley. If you go further south into Kansas, approaching the Rocky mountain chain, you secure the desired altitude, and for the equable sedative climate you go down into Texas.

For one, I would answer the question of the curability of consumption in the middle states in the affirmative; hence, I would urge the physicians who are present from these states to return to their homes and agitate for the erection of state sanatoria, or private sanatoria if the state will not give a helping hand. I am sorry to say my own state, Illinois, which stands fifth in the mortality list, refused to take high rank in providing a state sanatorium. The excuse is, no money, but a glance at the appropriation list will tell where the money went.

THE BIOLOGIC TEST FOR SEMEN.

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CHICAGO.

In this work I have applied to semen the biologic test for blood. This test is based upon the fact that when certain substances, such as bacterial filtrates, peptone, milk, egg albumin, albuminous urine, blood serum, etc., are injected into animals at intervals for a period of time they produce in the blood of the animals substances which form specific precipitates with the substances injected.

Rabbits have been injected intraperitoneally with either semen or testicular emulsions of the dog, bull or man, at intervals of from two to six days and in quantities of from 5 to 10 c.c. at each injection. They received from five to eight injections each. The blood serum for the tests was diluted from twelve to eighty times and the semen or testicular emulsions from four to twenty-five times in physiologic salt solution.

The blood serum of the rabbits injected with dog semen and with emulsion of dog's testicle gives distinct precipitates with clear filtrates of these substances, but no precipitate occurs with human semen or with the emulsion of bull's testicle. Normal rabbit's serum and the emulsion of dog's testicle give no reactions. The amniotic fluid from one of the rabbits gives the same reactions as her blood serum. I have not been able as yet to determine whether the serum of these rabbits gives precipitates with dog's serum; nor have I tested the agglutinating power on dog's spermatozoa of the serum of the treated rabbits.

The serum from a rabbit treated with emulsion of bull's testicle gives a precipitate both with the emulsion used for injection and with a salt solution emulsion of spermatozoa taken from the epididymis. No precipitate occurs with human semen, nor with the emulsion of dog's testicle, nor with an emulsion of goat spermatozoa.

The serum of the rabbit treated with human semen gives a distinct reaction with both recent and old emulsions of human semen in salt solution; also with human semen which had been dried and preserved thirty-four days on filter paper and on cloth, which were soaked in salt solution and the fluid carefully filtered. But with emulsions of bull, of dog and of goat testicles no reaction takes place. With human blood serum, human semen gives no precipitate.

While the experiments should be extended much further and modified in various ways, I think it safe to conclude that blood sera of animals treated with different semens and testicular emulsions contain precipitins, which probably are specific.

That the substance which gives rise to the precipitin is contained in the semen itself and not in the blood serum or its direct derivatives seems probable from the absence of precipitate in human serum to which is added the serum of rabbit treated with human semen. Here there is also room for much further experimentation.

Since dried semen of considerable age (34 days) gives the reaction it would seem that the test may be of practical value for the detection of the nature of suspected seminal spots.

Havana's Sanitary Condition.—During the month of November there were no cases and no deaths from yellow fever. The city has had no such record for any preceding November since 1762.

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THE LARGE amount of space occupied by the Index in this issue necessitates the entire omission of some of the departments, and a reduction in the amount of space devoted to others.

THE INDEX OF AMERICAN MEDICAL LITERATURE.

There is one part of the Index printed in this issue of THE JOURNAL to which we desire to call attention. It has been a feature of the last five volumes, and yet it has been lost to many of our readers, because its nature has not been known. The feature referred to is the Index to American Medical Literature, commencing on page 1756. This is, in truth, an "Index Medicus" of American Medical Literature, covering, as it does, practically all the original articles in all the reputable medical journals of this country and Canada, including those which appeared in THE JOURNAL. Under "Index of Authors" is given the name of every author who has published a paper in the journals during the six months, giving references which include the titles of papers and where published. The Index to the titles is crossed sufficiently to enable one to look up any subject.

This phase of our index takes a large amount of labor and we do not hesitate to call attention to it prominently, believing that this effort on our part needs only to be known to be appreciated. The need of such an index is increasing every year as American medical contributions become more numerous and more valuable. In future years this series of indexes with the volumes of THE JOURNAL will be the readiest and probably the only means of convenient general reference for the student and worker in the medical literature of this country for the period they cover.

The Index of American Medical Literature will be issued separately, and bound, with the titles as these were printed each week in THE JOURNAL. It will make a ready reference to authors, titles and subjects comparatively easy. This will be supplied to members and subscribers at 10 cents, and to others at 25 cents.

ADRENAL DIABETES.

It has long been known that each tissue selects from the blood or serum brought to it the pabulum necessary for its existence and activity, and gives back the products of its metabolic metamorphosis. It is, however, only within quite a recent period that special importance has been attached to the so-called internal secretions, namely, the hypothetic products of the ductless glands, such as the thyroid, the adrenal, the spleen. The question has further arisen whether even organs provided with excretory ducts may not generate internal, in addition to their external, secretions. As a result of the interest that the subject has aroused and the important problems that are bound up with it, its study has naturally received a generous share of attention.

It is currently believed that myxedema is due to the suppression of the internal secretion of the thyroid gland, and that the symptom-complex known as Addison's disease is due to suppression of the internal secretion of the adrenal glands. Further, it has been suggested that in addition to the active and important digestive products secreted by the pancreas, this organ produces an internal secretion, suppression of which gives rise to diabetes.

Quite recently F. Blum[1] has recorded observations that go to show that the adrenal gland may also be in some way related to diabetes. It was found that these glands contain a substance that, introduced into the circulation, caused glycosuria. Administration by the mouth of an extract, or of the substance, of the gland did not materially affect nitrogenous balance, and was never followed by the appearance of sugar in the urine. On the other hand, sugar appeared in the urine almost invariably after introduction subcutaneously of adrenal extract, provided the amounts employed were not too small, even when the food was free from carbohydrates. In these observations, the adrenal gland of the sheep was used principally; in some instances, that of the calf; in one, that of the dog; and in one, that of a human being. The extract was prepared by the addition of 5 c.c. of water to one finely divided gland, and exposure for several hours at a temperature of 0 C. This was rendered sterile by filtration or by heating on successive days. The filtered extract proved the more potent. The extract was injected subcutaneously, in order, among other things, to avoid the marked increase of blood pressure induced by intravenous injection. Twenty-five animals, 22 dogs and 3 hares, were submitted to observation. In each instance, the urine previously had repeatedly been found free from sugar. In two uncontaminated urine could not be obtained after the injection and one animal died; but in all the others sugar appeared in the urine for a varying period of time.

The results recorded are so constant that there would seem to be no doubt of the power of the adrenal gland to cause the presence of sugar in the urine. This, it is thought, is due to a toxic effect upon one or several organs concerned in carbohydrate metabolism. The hypothesis is suggested that the adrenal glands perform an antidotal or antitoxic function, neutralizing or eliminating certain poisonous substances that find their way into the circulation. Loss of this function will result

1. Deutsches Archiv f. Klin. Med., 71 B., 2 und 3. H., p. 146.

in adrenal cachexia or Addison's disease, while its partial performance gives rise to diabetes—in the same way as it is supposed that loss of the function of the thyroid gland is followed by tetany, myxedema, cretinism, etc., and mere insufficiency of the gland is attended with the symptoms of thyroidism and exophthalmic goiter. If the numerous investigations and the accumulated knowledge upon the subject of diabetes teach anything, it is that we have to deal with derangement of a somewhat complex process, the elimination of certain factors of which results in metabolic disturbances manifested by the appearance of sugar in the urine. In this way we may have glycosuria of central, of alimentary, of hepatic, of pancreatic, of adrenal origin, and possibly there may be other types of the disorder.

DERMOID CYSTS AND TERATOMAS OF THE MEDIASTINUM.

Dermoid cysts and teratomas constitute a most interesting subject. Common in the ovary and comparatively infrequent elsewhere, their genesis has always been an inviting problem which has led to the formulation of many theories. The number of cases described in the anterior mediastinum since Gordon's first case, in 1827, is now quite considerable. Thus Mandlebaum[1] collected 37 cases, and more recently Christian[2] brings the number up to 40, each describing a case of his own. Christian submits an analysis of the collected cases. The majority occurred in young adult life. Among other symptoms than those of pressure the coughing up of hair is very noteworthy, being of pathognomonic significance; it occurred in 8 cases. The growth most frequently develops in the upper part of the anterior mediastinum, between the sternum and the great vessels. The size has varied from that of a "pigeon's egg to a tumor larger than a child's head." From their structure the tumors may be divided into, 1, simple dermoids (cysts of ectodermal origin with some tissue from mesoderm); 2, more complicated growths of the class of teratoma proper, and 3, tumors of either of these two kinds that have become the seat of malignant transformation. Mandlebaum's case contained vesicles like those in the thyroid. Only two cases of real teratomas have been described, and three of malignant transformation. Two of eight cases subjected to operative treatment have been cured; of course, this form of treatment is the only one that would seem to offer any hope in the face of a constantly-growing tumor.

Earlier writers attributed dermoids and teratomas to abnormal pregnancies inflicted as punishment. There is a far cry from the period of that notion to the present view that dermoid cysts arise from misplaced fetal tissue. In the neck there is great complexity in the developmental changes which can not but favor misplacement of parts of the germinal layers. In several cases the structure of the growths shows distinct generic relation with the thyroid and the thymus. Hence the tendency is to refer the majority to a branchiogenic origin, downward migration giving the tumor its final position. But some of the dermoids may result from misplacement of the germinal layers during the closure of the anterior chest wall. The teratomas proper may be explained according to the general theories advanced in regard to such formations,[3] or it is possible, as Christian suggests, that they develop from ordinary misplacements including all three germ layers.

1. Am. Jour. Med. Sc., 1900, cxx, 64.
2. Reports Boston City Hospital, 1901, xii, 114.

BLUE URINE.

The normal amber color and transparency of urine may be changed as a result of alteration in concentration, in temperature, and in chemical constitution. The color may, further, be profoundly influenced by the ingestion of certain substances, such as rhubarb, santonin, gamboge and methylene-blue, and from the presence of certain morbid conditions, such as melanotic new growths, pernicious anemia and intestinal obstruction. Indican is by no means a rare constituent of urine, but indigo, in amounts sufficient to give the urine a distinct bluish coloration, is not so often observed. A case of this latter kind has recently been reported by A. McPhedran and William Goldie.[1] The patient was a man, 24 years old, of sedentary habits and sallow complexion, who complained of weakness and heaviness of the lower extremities, palpitation of the heart, dull headache, and an inaptitude for work. He smoked heavily and ate irregularly and rapidly. The bowels were regular. The stomach was displaced slightly downward, but its secretory and motor functions were well performed. The urine, however, was found to be turbid and bluish-green in color, and chemical tests yielded the reactions of indigo. This substance has been observed in the urine in connection with profound intestinal disorder, such as occurs, for instance, in cases of Asiatic cholera and typhoid fever. It is believed to be derived from indol, which is a product of albuminoid putrefaction, and is transformed, principally in the liver, into indoxyl, and this in turn into potassium indoxyl sulphate. The latter, generally after being voided and standing, is converted into indigo, though sometimes the decomposition takes place in the bladder. The almost constant presence of bacteria in the urine under the circumstances under consideration raises the suggestion whether they may not possibly have something to do with the chemical changes that result in the production of the pigment.

3. See The Journal A. M. A., 1901, Nov. 2, p. 1184.
1. British Med. Jour., Oct. 12, 1901, p. 1051.

Fundamental Principles of the Pathogenesis of General Infections.—Omeltchenko publishes in the Russian *Botkine's Gazette*, No. 30, an account of his study of the growth of various microbes on a number of culture media made of macerations of the different organs of the body. He found that certain microbes have an unmistakable special affinity for certain organs and thrive on them to the exclusion of others. It is evident that the infection from these germs must develop along the lines of these affinities. He publishes a set of tables showing the application of this principle to the pathogenesis and course of general infections.

Medical News.

NEW YORK.

Rochester City Hospital Donation.—The Rochester City Hospital expects to receive about $9000, the proceeds of entertainments recently given for its benefit.

Transfer of Insane.—The State Commission in Lunacy has decided to relieve the overcrowded condition at Utica State Hospital by transferring 30 patients to the Hudson River State Hospital, Poughkeepsie, 30 to Willard State Hospital, Seneca Lake, and the remainder to the St. Lawrence State Hospital, Ogdensburg. The transfer has also been ordered of 20 patients from Buffalo to Seneca Lake and of 100 women from Buffalo and 100 from Poughkeepsie Hospital to the Manhattan State Hospital, New York City.

"Polypaths" Raided.—The board of censors of the Erie County Medical Society has caused the arrest of A. J. Wiechers, who ran a "magnetic healing" establishment in Buffalo, known as Wiechers' Polypathic Institute. In his affidavit, a policeman detailed to obtain evidence, states that when he entered the establishment and asked to see the doctor he was approached by the "Boy Wonder," who collected from him a fee of $1. He was then told that he had some pulmonary trouble, to effect a permanent cure of which would cost him $25.

The re-organization of the Pathological Institute of the New York State Hospitals, made necessary by the resignation of the former director. Dr. Ira Van Gieson, early last summer, has been proceeding slowly. The Civil Service Commission, after an examination of prospective candidates held December 7, have certified to the eligibility of Dr. Adolph Meyer, of the State Hospital and Clark University, Worcester, Mass., and he has been appointed by the Lunacy Commission to fill the position of Director of the Institute.

New York City.

German Hospital Annex Dedicated.—The annex to the German Hospital, 77th street and Lexington avenue, was formally dedicated December 7.

Janeway Portrait Presented.—A portrait in oil of Dr. Edward G. Janeway was given to the Academy of Medicine at the annual anniversary meeting of the institution, December 5.

PENNSYLVANIA.

Hospital Moved.—The East End Hospital, Pittsburg, has moved into its new quarters recently purchased for $100,000. The hospital now has accommodation for 28 patients. On the site at Silver Lake Grove, the new hospital will be erected at a cost of $500,000.

Free Hospital for Poor Consumptives.—The institution is now caring for about 75 patients. Of there 55 are distributed among the German, University, St. Agnes', St. Mary's and Rush hospitals, Philadelphia, and the other 20 are in camp near White Haven, Luzerne County, where the patients have made most gratifying progress.

New Hospital Buildings.—Earth has been broken for three new buildings on the grounds of the Philadelphia Hospital, which will cost when completed, $80,000. They are to be known as the Maternity Home, the Children's Hospital and the Hospital for the Treatment of Contagious and Venereal Diseases, and will be ready to receive patients in about three months.

Medical Staff Re-elected.—The medical staff of the Philadelphia Hospital was re-elected by the Board of Charities and Corrections, December 11. Dr. George M. Boyd was appointed to fill the vacancy on the obstetrical staff caused by the resignation of Dr. George I. McKelway. The resignations of Dr. ment, and of Dr. R. D. Burke, outdoor physician, were received.

WISCONSIN.

The Milwaukee Post-Graduate Medical School and Polyclinic has been incorporated with a capital stock of $25,000 by Drs. William H. Earles, Walter H. Neilson and Warren B. Hill.

New Medical Examiners.—The governor has appointed Drs. John R. Currens, Two Rivers; J. V. Stevens, Jefferson, and F. A. Forsbeck, Milwaukee, members of the State Board of Medical Examiners, representing the regular, eclectic and homeopathic schools respectively.

Fire in Sanatorium.—Fire in the barn of St. Mary's sanitorium, Milwaukee, December 8, for a time imperiled the lives of the 28 inmates of that institution. The main building was filled with smoke and the panic-stricken patients were taken out with difficulty by the firemen. All were rescued safely.

Osteopathic Decision.—The case against Miss Belle Phillip, of Chicago, who was arrested at Manitowoc, upon a warrant sworn out by Dr. John R. Currens, president of the State Board of Medical Examiners, for advertising treatment by osteopathy, without a license, was dismissed, December 11. Her attorney moved a dismissal upon the ground that there was no infringement of the law and because the law itself was ineffective in not providing a penalty, the section providing for a penalty relating to the practice of medicine and surgery alone.

Waukesha Springs Sanatorium Burns.—The Waukesha Springs Sanitorium, a new building constructed at a cost of $50,000, of which Dr. James H. McBride was president, was almost destroyed, December 3. At the time of the fire, the building had been practically finished, although some of the contractors', work had not yet been accepted, and the second and third floors were ready for use. It was expected that the patients would be moved to the new building by the first of the new year. The loss will probably be about $45,000. Of this amount $30,000 is covered by insurance.

Smallpox.—The public schools of New Cassel and Campbellsport have been closed on account of the disease.——Lumbermen at Niagara refuse to observe quarantine and a great increase of the disease is feared.——The illness of a telephone operator has caused the quarantine of the exchange at Green Bay.——In Antigo there are 6 cases; in Akley, 1 case; in Neba, 15 cases; in Peck, 8 cases; in Elso, 5 cases, and in Evergreen, 7 cases.——Green Bay has 40 cases.——The disease has appeared in nearly every township of Houston County.——Tomah reports 31 cases.——At Merrill 19 cases have occurred.——Two cases have been discovered in Racine.——Big Spring has 15 cases.——At Fond du Lac a case has occurred in the home of the health commissioner.——The epidemic at Odanah has apparently been stamped out. There were 165 cases with 3 deaths. There are now only 3 cases on the Indian reservation, one at Lac du Flambeau, and two at Floodwood.——At Sturgeon Bay, 16 cases are said to exist, and 26 cases at Sevastopol.——At Kaukauna, 4 families have been quarantined.

Correspondence.

Needle in Rectal Wall.

COCHRANTON, PA., Dec. 10, 1901.

To the Editor:—On the evening of November 20, Mr. T. M. M. came into my office complaining of what he thought was of hemorrhoidal nature, suffering pain and uneasiness in lower part of the rectum. I made an examination and could fine nothing of that character. I treated him for about two days, and being no better, but rather worse, I dilated the anus and could see only a very small ulcerated spot on the wall of the rectum. On further examination with my finger, I found at about one and one-half inches up in the rectum, part of a large sewing needle, with the point down. I could feel the click under my finger nail. I then took a pair of forceps and brought the point through the rectal wall and extracted a large-sized needle. The mischief already done by the needle culminated in a large abscess, which I opened a few days later, externally, about one inch to the left of the anus. I washed out the cavity with antiseptic solution and in a short time the sac was obliterated and there is as yet no appearance of fistula.

I consider myself fortunate to have located the trouble, removed it, and have a favorable termination. The question arises: How did the needle get there, as he had no recollection of any experience with needles? His mother thinks it must have been there from childhood.

Yours respectfully, W. C. BRITTAIN, M.D.

Anesthesia of the Membrana Tympani.

Memphis, Tenn., Dec. 11, 1901.

To the Editor:—In the *Philadelphia Medical Journal* for October 5, 1901, page 574, Dr. Jack of Boston makes the following statement in speaking of acute otitis media: "I have little faith in the anesthetic properties of local applications of eocain on the inflamed ear, nor have I found any drug satisfactory in lessening the pain of an incision."

In The Journal A. M. A., for April 27, 1901, I published a letter on the subject of an anesthetic mixture for use on the drum membrane. Since its publication I have received numerous inquiries concerning the mixture and its use, an evidence that the subject is one of much interest, while favorable reports from some of my colleagues and the continued satisfaction which it has given me have further confirmed me in my opinion as to its value. Dr. Jack's statement leads me to make mention of it again. The mixture is composed of equal parts of cocain hydrochlorate, menthol and carbolic acid. The substances combine to form a slightly turbid liquid of a thin syrupy consistence, permitting its application with a cotton-tipped applicator. If this application is made with due gentleness there is no difficulty in using it on the drum even in little children. The canal should be first rendered aseptic with a warm biehlorid solution, which serves the additional purpose of removing particles of cerumen, desquamated epithelium, etc., which might obstruct the view of the deeper parts. After thoroughly drying the canal with a cotton-wrapped applicator, the anesthetic mixture is applied on another applicator similarly prepared with a very small amount of cotton, so that its contact with the drum can be watched and made to a small area. I usually make two or three applications to the posterior portion of the drum where the incision is to be made. There is a slight whitening of the parts touched, just enough to enable one to tell the extent of the anesthetized area. In a minute or two the drum is completely anesthetized and can be incised without pain. I have used the method a good many times on both inflamed and uninflamed drums, and in not one instance has it failed. Adults have frequently assured me that they felt no pain, and as frequently I have performed the operation in children without their ever knowing that anything had been done except the introduction of an applicator. Sometimes in nervous children who will not permit you to touch the aching ear it is necessary to give a general anesthetic, but this is on account of nervousness and not pain.

This mixture is certainly not so caustic as pure carbolic acid, while probably more anesthetic. I am inclined to believe that the carbolic acid is the most active ingredient and cocain the least active, judging from the action of these drugs under other forms in this locality. I agree with Dr. Jack as to the total absence of effect produced by cocain alone on the drum.

The points I have mentioned are largely those suggested by inquiries made of me concerning the preparation and use of this mixture. This mixture is not original with me, but was first published by Bonain in the *Rev. Hebd. de Laryng.*, June 17, 1899.

The recent report of alarming symptoms from the use of the anilin oil mixture used by English surgeons (A. A. Gray, *The Lancet*, April 21, 1900) for producing anesthesia of the drum, is another reason for my wishing to again call attention to Bonain's mixture, which is free from any deleterious effects.

There is a point in Dr. Jack's paper on which I would like some information. He speaks of emptying the middle ear after paracentesis, and subsequently by inflation. I am under the impression that this is a way productive of mastoid complications, and in several cases I believe I have seen them brought about by this practice. It is a very difficult point to prove, but the development of mastoid symptoms in cases where I was using inflation has somehow so impressed me with the fear that it might have been caused by the procedure, that it has lead me to abandon inflation and rely on aspiration and gauze drainage for emptying the middle ear, even in chronic suppurative cases.

Very truly,

E. C. Ellett, M.D.

Book Notices.

A Manual of the Practice of Medicine. By George Roe Lockwood, M.D., Professor of Practice in Woman's Medical College of New York Infirmary. Second Edition, Revised and Enlarged. With 79 Illustrations and 20 Full-page Plates. Cloth. Pp. 847. Price, $4.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

This volume consists of a thorough revision of the first edition, with many portions rewritten and new subjects added. The descriptions of disease are plain and concise and the student in many cases gets a clearer and more enduring conception, for instance of broncho-pneumonia, than in many of the larger works. The work is well supplied with fever charts.

Chimica Clinica. Dott. Raffaele Supino, Assistente alla Clinica Medical Generale di Pisa. Cloth. Pp. 198. Milano: Ulrico Hoepli, 1902.

This is a very convenient little work on clinical chemistry covering the technique of qualitative analysis more particularly, according to various methods and covering also examinations of the principal fluids and secretions of the body. It also gives tests for various drugs and would be a convenient addition to the library of any practical physician who is acquainted with the language in which it is written.

Induction Coils. How to Make, Use and Repair Them, Including Ruhmkorff, Tesla, and Medical Coils, Roentgen Radiography, Wireless Telegraphy, and Practical Information on Primary and Secondary Battery. By H. S. Norrie, Second Edition, Revised and Much Enlarged. Cloth. Pp. 269. Price, $1.00. New York: Spon and Chamberlain. 1901.

This little work has been enlarged and brought up to the latest American practice in accordance with the increasing interest given to this subject. It has 79 illustrations.

Essentials of Obstetrics. By Charles Jewett, A.M., M.D., Sc.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital. Assisted by Harold F. Jewett, M.D. Second Edition. Illustrated by 80 Woodcuts and 5 Colored Plates. Cloth. Pp. 386. Price, $2.25. New York and Philadelphia: Lea Brothers & Co. 1901.

This volume represents a thorough revision of the first edition. The author has endeavored to make plain to the student the essential facts of obstetrics, and has admirably succeeded in doing so in the chapters on the physiology and mechanism of labor. Several pages are devoted to artificial feeding.

Diseases of the Digestive Organs in Infancy and Childhood, with Chapters on the Diet and General Management of Children, and Massage in Pediatrics. By Louis Starr, M.D., Late Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Third Edition; Rewritten and Enlarged. Illustrated. Cloth. Pp. 448. Price, $3.00. Philadelphia: P. Blakiston's Son & Co. 1901.

The appearance of a new edition of Starr's work on digestive diseases in infancy and childhood will be welcomed by the profession. The author has revised his work to bring it up as nearly as possible to the advances that have been made during the last ten years. The most important additions are the sections on simple atrophy, infantile scurvy, rickets, lithemia, infectious follicular tonsillitis, naso-pharyngeal adenoid hypertrophy, proctitis and appendicitis. The milk modification question, which is so much to the fore at the present time, is also thoroughly treated.

Miscellany.

Physician Wanted.—A recent number of the *New York Herald* devotes half a column to an experience meeting of one of the local organizations which derives a large annual income from its boasted facilities for healing by prayer. The head financier was asked what was the proper course to pursue when a patient under the care of one of his followers died, in order to escape the embarrassment imposed by the Board of Health in refusing to permit burial without a certificate of death. The *Herald* quotes him as follows: "The alliance has always managed to avoid embarrassments of this kind. We must recognize the law of the state. What I advise is, that when a case is critical we should be in touch with a *reasonable, considerate Christian* physician, [italics ours] so that we can call him in to give this needed certificate. Thus we shall be able to respect the law and yet trust the Lord." We do not recall amongst our acquaintance a single physician "reasonable" enough to commit infor-

mal perjury on request, or "considerate" enough to sympathize with an impostor menaced by the recoil of his own imposition. We take it, however, that the christianity specified is of the garden variety, which passes current in such circles, and should be well within the compass of any one qualified in the first two particulars. It has occurred to us, nevertheless. that there may be some physician, though we shall be disappointed if we number him among our regular readers, who has had his lucrative income threatened and his select clientèle scattered by the recent activities of the Committee of Fifteen, and to him we are sure such an appeal will not be made in vain.—*N. Y. State Jour. Med.*

The Study of the History of Medicine.—An International Congress of Historical Sciences is to be held in Rome about the middle of April, 1902. A section has been allotted to the history of medicine and ancillary sciences. The President of the Section is Professor Piero Giacosa, who has issued a circular inviting those interested in such studies to attend "in a numerous and compact body, to justify the honor paid to this branch of study which has been placed on a level with others, and to fraternize with each other and with their colleagues of the other sections." The Section of the History of the Mathematical, Physical, and Natural Sciences, the President of which is Professor V. Cerutti, will hold some meetings in conjunction with the Medico-Historical Section for the discussion of subjects belonging to both fields of research. The German Society for the Study of the History of Medicine and the Natural Sciences which was founded at the time of the annual meeting of the Association of Scientists and Medical Practitioners, held at Hamburg last September, has already a membership of sixty, including Germans, Austrians, Hungarians, and Swiss. The Society has undertaken the issue of a periodical review of all publications on the history of the pure sciences and medicine. The first number of this review will appear in January, 1902. The President of the Society is Dr. Karl Sudhoff, of Düsseldorf, the well-known authority on Paracelsus; the vice-president is Dr. Emil Wohlwill, of Hamburg. Among the members are Professor Kahlbaum, of Basel, and Dr. H. A. Peypers, of Amsterdam, the editor of *Janus*.—*Brit. Med. Journal*, Nov. 30, 1901.

Blood Examination.—The following method for the preparation of specimens for the examination of blood is given by Dr. W. L. Braddon, of the Malay Peninsula: The mounts may be made either between two square cover-glasses, or a square cover-glass and a regular size slide. The covers and slides are first sterilized by a method recommended by Parker and Howard; viz., drop, one by one, into a 10 per cent. solution of chromic acid, contained in an enameled iron dish, and boil for twenty minutes. They are then poured, altogether, into a shallow basin, and washed with ordinary tap water until no trace of the yellow color of chromic acid remains. The water is next poured off, and the slips are covered with rectified spirit. After this they are washed in absolute alcohol, and handled with clean forceps. If two cover-glasses are used for the mount, they are accurately superposed and firmly pressed together. An edging of vaselin, if for temporary purposes, or cement if for permanent purposes, is laid over all the edges, except one, and a very small portion of that edge which is opposite the uncemented one. A drop of blood is touched with the free edge of the paired cover-glasses, whereupon the blood enters between the glasses in an exceedingly thin film, the corpuscles being spread out with beautiful uniformity, and having suffered a minimum amount of change from exposure to air and none at all from handling or pressure. When the blood film has entered, the free edges may be completely closed, and the examination made. If slide and cover-glass are used the latter is placed on the slide in such a position that one of its edges exactly coincides with that of the slide. It is then firmly pressed, and sealed with vaselin or cement, as when two cover-glasses are used, and the subsequent course pursued as with covers. By this method a number of mounts may be made and stored in a suitable air-tight bottle, and thus be always ready for use. Fresh blood keeps well under these circumstances. No special skill is required for the making of first-class blood film. This method has been carefully tested, and it was found necessary to put the smallest possible amount of cement between the covers before edging them outside, otherwise the cement had a tendency to run in.—*Knowledge*.

The County Medical Society.—One of the fundamental principles of the reorganization of the American Medical Association makes the county medical society, or the district medical society where there is no county society, the unit of membership. Membership in the local society is the first requisite for membership in the American Medical Association. This is as it should be, although owing to the local conditions it is likely to cause confusion in some counties where, because of the disaffection of the local profession, there exist rival medical societies in the same county. In order that the great professional machine which is contemplated, may be complete in all its parts, and may work smoothly, two great principles must be recognized in every county; first, there can be but one official society in each county recognized as in affiliation with the Association, and second, every reputable non-sectarian physician can demand as his legal right, membership in that society, unless it can be shown after official investigation, in the course of which the candidate may, if he desires, be represented by counsel, that the physician in question has been guilty of unprofessional conduct and is for that reason unfit for membership in the American Medical Association. In other words, personal feeling, individual likes or dislikes, must have no weight in the elections for membership in the County Society. In certain parts of the country professional jealousies and misunderstandings and personal feuds have interfered with the smooth conduct of the county societies and in not a few counties these have resulted in the division of the local profession into two rival factions, each claiming to be the representative body. This must be done away with and the local conditions readjusted. This will undoubtedly bring about a general clearing of the professional atmosphere and in many cases old misunderstandings will be explained or forgotten and harmony will be brought about. There is no objection to special societies and medical clubs and academies of medicine, which may be as exclusive as they desire so long as the county society stands alone as the one official representative professional body, enrolling in its membership every reputable physician in the county. If the suggestion made by the committee on reorganization is adopted, as it should be, every member of the County Society would become without further action on his part a member of the state society and the dues of the state society will be paid out of the fund of the county societies, which with its largely increased membership would be amply able to pay them. We are happy to state that in Minnesota professional affairs are extremely harmonious. So far as we are aware there are in this state no rival county societies, although there are a number of counties where it will probably be necessary to organize societies. . . . . No one who has given thought to the subject can fail to realize the great benefits to our profession as a whole as well as to its individual members, which are sure to result from the harmonious working out of this grand scheme of professional organization.—*St. Paul Medical Journal*, December.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), December 14.

1 *Optimism vs. Pessimism in the Surgical Treatment of Cancer. Robert Abbe.
2 *An Epitome of the Subject of Rheumatism as Cause and Effect in Inflammation of the Throat. William Cheatham.
3 *Rheumatic Affections, Their Pathogenesis and Treatment. Martin A. H. Thelberg.
4 Municipal Sanatoria. Alfred Meyer.
5 Treatment of Delirium Tremens and Alcoholic Toxemia. T. D. Crothers.

Medical News (N. Y.), December 14.

6 *The Modern Urethroscope. William K. Otis.
7 Clinical Facts and Their Meaning. Joseph M. Aikin.
8 An Epidemic of Smallpox at the Michigan Asylum for the Insane, Kalamazoo. Arthur MacGugan.
9 *Rectocolitis. William M. Beach.

Boston Medical and Surgical Journal, December 12.

10 *Twelve Cases of Pneumonia Treated by Antipneumococcus Serum. George G. Sears.
11 Use of Antistreptococcus Serum in a Case of Septicemia Following Mastoid Operation; Recovery. Mary F. Hobart.
12 A Synopsis of Three Months' Service in the Gynecological Department of the Boston City Hospital. Charles M. Green and Frank A. Higgins.
13 *The Treatment of Tumors of the Breast. John H. Gleason.
14 *Massage and Movements in Hemiplegia. Douglas Graham.

New York Medical Journal, December 14.

15 *Laryngeal Paralyses and Their Importance in General Medicine. J. W. Gleitsmann.

16 *Concerning an International System of Quarantine. Frank W. Foxworthy.
17 *Ethyl Bromide and Chloride, Respectively, as Surgical Anesthetics, with a Description of an Apparatus for the Scientific Administration. S. Ormond Goldan.
18 The Daily Medical Inspection of Schools. (Concluded.) D. S. Lamb.
19 Hysterical Dissociation of Temperature Senses, with Reversal of Sensibility to Cold. G. W. McCaskey.
20 Mycosis of the Tonsil and Base of the Tongue. E. Harrison Griffin.

Philadelphia Medical Journal, December 14.

21 *Penetrating Wounds of the Heart, with Suturing of the Wounds—Report of a Case. H. L. Nietert.
22 *The Divisions of the Sensory Root of the Trigeminus for Relief of Tic Douloureux; an Experimental, Pathological and Clinical Study, with a Preliminary Report of One Surgically Successful Case. William G. Spiller and Charles H. Frazier.
23 The Operative Treatment of Intercostal Neuralgia Occurring in the Deformities of the Chest Following Pott's Disease and Scoliosis. Charles F. Painter.
24 *Splanchnoptosis. (Continued.) Byron Robinson.

American Medicine (Philadelphia), December 14.

25 *The Relation of Appendicitis to Infectious Diseases. J. M. T. Finney and Louis P. Hamburger.
26 *Chancre of the Tonsil, with Report of 35 Cases. John Edwin Rhodes.
27 *Instrumental Perforation of the Uterus. William Krusen.
28 Gunshot Wound of the Spine. F. W. Langdon and D. I. Wolfstein.
29 *Pertinent Observations Concerning Appendicitis in the Female. Andrew J. Downes.
30 The Cardiovascular System in Interstitial Nephritis. W. J. Conklin.
31 What Protection Have the People Against the Dairy? D. M. McMasters.

Cincinnati Lancet-Clinic, December 14.

32 The Pelvic Floor Segment of the Utero-ovarian Artery. Byron Robinson.
33 Paraphimosis in an Octogenarian. J. F. Irvin.

St. Louis Medical Review, December 14.

34 Surgical Progress During the Nineteenth Century. Edward O. Plumbe.
35 A Case of Nephrotomy, with Drainage, for Tuberculosis of the Right Ureter—Secondary Nephrectomy—Apparent Cure. H. McC. Johnson.

Medical Age (Detroit, Mich.), December 10.

36 Meningeal Tumor Involving the Cranial Nerves. D. R. Brower.
37 The French Congress of Surgery and Urinology. Hal C. Wyman.
38 Travel as a Cure for Disease. J. Howe Adams.
39 Ectopic Gestation. Frank B. Tibbals.

Pediatrics (N. Y.), December 1.

40 Intra-uterine Rickets. F. C. Abbott.
41 A Case of Secondary Anemia with Splenic Tumor. John Lovett Morse.

Brooklyn Medical Journal, December.

42 A New Procedure for the Radical Cure of Umbilical Hernia. H. Beeckman Delatour.
43 *The Ovarian Plexus and Its Controlling Influences. W. L. Chapman and Lewis H. Foote.
44 Notes of Some Fatal Cases, and Errors in Diagnosis. L. Grant Baldwin.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), December.

45 A Case of Gangrene in a Newborn Child. Edward Bennet Bronson.
46 *Observations in the Diagnosis and Treatment of Acute Gonorrhea, with Special Reference to the Value of Protargol as a Therapeutic Agent. Abraham L. Wolbarst.
47 *The Action of Condensed Light upon the Skin as a Therapeutic Agent. A. Ravogli.
48 A Contribution to the Therapeutics of Skin Diseases. Thurston G. Lusk.

Medical Fortnightly (St. Louis), December 10.

49 An Object Lesson in Hygiene—The Work of the Sanitary Department of the Provisional Government of the Province of Havana. Charles M. Blackford, Jr.
50 Selection of Food and Drugs, During Pregnancy and Lactation. Irving Newcomer.
51 A Case of Tetanus. Edw. Bowe.
52 Anesthesia. G. P. Haymore.
53 Diseases of the Stomach. (Continued.) J. M. G. Carter.

Journal of the Association of Military Surgeons (Carlisle, Pa.), November.

54 A Manila Military Hospital. John S. Kulp.
55 Some Suggestions with Respect to the Character and Method of Carriage of Medicines Intended for Use in the Field Hospitals. Edward L. Munson.
56 Regulations for the Guidance of Surgeons and Post Surgeons in the Medical Examination of Recruits for the National Guard. J. Francis Calef.

Buffalo Medical Journal, December.

57 *Spasmodic Torticollis and Its Surgical Treatment. C. A. Hamann.
58 *Causes of Death in Strangulated Hernia. William B. Jones.
59 *Carbolic Acid; Its Use and Abuse. George W. Sargent.
60 Consideration of Some of the Functional Signs of Diseases of the Stomach. J. H. Potter.
61 Non-Surgical Treatment of the Commonest Form of Deafness. George F. Cott.
62 The Best Alkaline Wash. W. Harpur Sloan.
63 Extraordinary Results in the Treatment of Diphtheria. Francis E. Fronczak.

St. Paul Medical Journal, December.

64 *Courvoisier's Law. Richard C. Cabot.
65 Placenta Previa. Frederick Leavitt.
66 *Prostatectomy. Archibald MacLaren.
67 History of General Surgical Anesthesia. John T. Rogers.
68 The Eightieth Birthday of Prof. Rudolph Virchow. C. O Thienhaus.

Medical Sentinel (Portland, Ore.), November.

69 *Treatment of Prolapse of the Rectum. A. E. Halstead.
70 Needless Public Expense in the Care of the Insane. Henry Waldo Coe.

Southern Practitioner (Nashville, Tenn.), December.

71 *Observations on Seven Years' Use of Creosote in Pneumonia. I. L. Van Zandt.
72 *Heredity and Acquired Characteristics as Social Questions. R. R. Kime.

Southern Medical Journal (La Grange, N. C.), November.

73 *Easy and Effectual Method in the Treatment of Fracture of the Forearm. Lucien Lofton.
74 Prenatal Influence for the Mother's Benefit. Reginald P. Brock.
75 Cellular Dropsy. R. L. Meek.
76 Foreign Bodies in the Ear. Frank C. Todd.

Texas Medical Journal (Austin), December.

77 *The Treatment of Pneumonia, with Special Reference to Cresote. H. W. Cummings.
78 Malarial Hemoglobinuria. J. H. Paxton.

Memphis Medical Monthly, December.

79 Man—The Product of Two Forces. I. A. McSwain.
80 Address, Tri-State Medical Association of Mississippi, Arkansas and Tennessee. Wm. Britt Burns.
81 *The Administration of Quinin by Hypodermoclysis. James W. Gray, Jr.
82 Three Eye Cases with Clinical Reports. B. D. Woodson.
83 An Unusual Case of Retained Placenta. H. S. Wolff.
84 Suppurative Appendicitis with Perforation of the Bladder in a Boy Aged 10 Years; Early Symptoms Were Those of Morbus Coxarius; Operation; Recovery. H. R. Coston.

AMERICAN.

1. **Surgical Treatment of Cancer.**—Abbe, in his article, holds there is too little attention given to thorough extirpation, giving the widest possible berth to apparent growths in operation. He believes that what we call a skilful operation to extirpate cancer in any part of the body requires all the coolness and courage that a man can bring to bear within the hour or two of concentrated work. A radical cure, he holds, can occasionally be hoped for by extirpation and surgery has so far mitigated suffering and lengthened life that we may consider that we have made a long stride toward its mastery. He reports a number of cases of apparent cures that have been obtained by operation.

2. **Rheumatism and Throat Inflammation.**—The connections between rheumatism and soreness of the throat are reviewed by Cheatham, who summarizes the present state of our knowledge of the relation of tonsillar affections to rheumatism as follows: "1. It is undoubted that a certain number of cases of acute rheumatism are preceded by an angina in a proportion varying from 30 to 80 per cent. 2. Both rheumatism and angina have many etiological points in common—season of year, cold, wet, fatigue, depression, vitiated air, etc. 3. The connection of angina and rheumatism, though undoubted in a number of cases, is not yet clearly established. 4. The tonsil may be the port of entry of the rheumatic virus, al-

though the naked-eye appearance of the throat gives no indication of its being affected. 5. The particular affection of the throat which is associated with rheumatism is not yet established. Apparently it is not peritonsillar abscess (quinsy). 6. Peritonsillar inflammation does not appear to be arrested by the administration of anti-rheumatic remedies. Many cases of parenchymatous and lacunar tonsillitis, on the contrary, are considerably benefited by the administration of salicin or salicylate of sodium. That this action proves the rheumatic nature of the disease can not yet be accepted. The question requires further research in two directions: One in differentiating the various forms of angina, and settling the one which is associated with rheumatism; the other in further research to discover the true nature of rheumatism." He believes that chronic rheumatism causes frequent attacks of inflammation of the tonsils, pharynx and larynx; that acute exacerbations in chronic and acute rheumatism are frequently ushered in or preceded by an acute tonsillitis and that we have following such all the heart, joint and other lesions occurring after any rheumatic affection.

3. **Rheumatism.**—After noticing the theories of the bacteriologic and other origins of rheumatism, Thelberg says the probably correct definition is, that rheumatism is a general disease of bacteriologic origin characterized by special articular and cardiac manifestations and contracted by persons whose blood on account of perverted metabolism is at specially low alkalinity and immunizing power. His treatment has been almost exclusively on the line of digestion and general hygiene, and he has found all rheumatics to be chronic dyspeptics of some form or other. He divides his patients into two classes. The first are spare nervous men, or especially women, who often suffer from headache, lack of appetite, distress after eating, constipation; they are extremely light eaters, but great tea and coffee drinkers; they allow themselves too little exercise and exposure to fresh air and sunlight, rarely if ever cold baths, hot bath almost always in excess or not at all. The second type is the ruddy fat man or woman, with flabby, distended abdomen, sedentary habits, hearty eaters and drinkers, with chronic gastro-intestinal catarrh and a general condition below normal, notwithstanding the deceptive appearance. He treats these largely with dietetic measures; calomel, sponge baths, salines, morphin hypodermically, ice to the affected joints, and if necessary, to the precordia, cold sponging followed if necessary by some antipyretic, together with hygienic and hydrotherapeutic measures generally, have proven effective, and certainly more so than the salicylates.

6. **The Urethroscope.**—Otis describes his most recent modification of this instrument and claims for its advantages, illumination of field such as is not found in any other type. It gives the entire field of the tube used, offers no obstruction to the use of applicators, and at the same time nothing is inserted into the urethra which can not be rendered thoroughly aseptic by boiling. It is simple in construction, strong and inexpensive, and fulfills all the indications of a good, practical, working instrument.

9. **Rectocolitis.**—Beach concludes his article with the following: 1. Rectocolitis is a condition of the rectum and colon of varying degrees of inflammation. 2. A knowledge of the anatomic bearings of the rectum and colon is necessary to understand the symptoms and reflexes. 3. The symptoms are local and systemic. 4. Rectocolitis may be catarrhal or ulcerative. 5. It may be acute or chronic. 6. When dependent upon polypus, hemorrhoids, fistula, etc., the cure depends on their removal. 7. Chronic rectocolitis due to altered secretions, anemia, and congenital narrowing of the sigmoid strait, is difficult to cure.

10. **Pneumonia.**—Twelve cases are reported by Sears in which the antipneumococcus serum was used, and while the author does not maintain that the serum produced distinct benefit there were no ill-effects beyond what might occur from the use of diphtheria antitoxin. Considering the unsatisfactory nature of the cases he believes the facts justify further trial of this form of treatment.

13. **Tumors of the Breast.**—The operation used in early cases by Gleason is what he calls the Banks-Halsted method, differing from the regular Halsted operation in the deep undercutting of the skin and retention of the pectoral muscle and the glands of the posterior triangle, unless the nodes of the axilla are infected. This is the method employed in the early cases. In all advanced cases the operation is much more extensive. With non-operative cases the palliative treatment seems to be the only thing to be relied upon. The three troublesome symptoms are hemorrhage, foul discharge and pain. The use of fluid extract of ergot internally and ergotin hypodermically will control the hemorrhage. Deodorization may be obtained with an aseptic such as carbolic acid 1 to 40, creolin or lysol 2 per cent. Opium in the form of the tincture is far the best remedy for pain, and may be administered by rectum or mouth, even if the dose becomes enormous. It plainly becomes one's duty in these extreme cases to relieve the inevitable pain; he insists on the importance of early diagnosis.

14. **Massage.**—Graham has tried massage in a number of cases of paralyses, and says that in the absence of severe pain, obstinate contraction or tonic spasms, this procedure is useful in improving the circulation, temperature and comfort of the parts affected. In cases of paralysis of cerebral origin, where recovery has followed under manipulation, he had previously supposed that the central disturbance had entirely passed away and that the force of habit was the main factor that continued the external manifestations of inaction; and that massage would have served a useful purpose for diagnosis as well as treatment. The recent experimentation and opinions of Zabludowski and others taught him that it is possible to educate other portions of the brain to take the place of the injured ones controlling the movement of the paralyzed parts, and we need no longer regard paralysis as hopeless as was formerly the case. He reports cases which seem to point out to him this truth.

15. **Laryngeal Paralyses.**—Gleitsmann begins with a description of the anatomy and physiology of the larynx with special reference to abductor paralysis and the tendency to it as pointed out by Semon. The different forms and modes of occurrence of the abductor paralyses are noted. The adductor paralyses are not noticed at such length and their pathologic importance is considered decidedly inferior.

16. **Quarantine.**—Foxworthy in his report shows the faulty methods of quarantine that are used throughout the world and calls attention to the need of a conference of medical men from all civilized nations to consider it. He thinks it would be a great advantage if such a meeting were held in the United States and if some such step is not soon adopted we will have more opera bouffe on the subject and the dangers to commerce will increase, while the bubonic plague will continue to reach out for more countries to conquer.

17.—See abstract in THE JOURNAL of November 9, p. 1267.

21. **Heart Suturing.**—Nietert reports a case of stab-wound of the right ventricle producing pericardial hemorrhage. The wound was sutured, the patient being conscious at the time, but he died thirty-three hours later from shock and pericarditis. The case is the first one operated on in which the pleura was not injured. Several interesting points are noted by the author. The splashing sound in the region of the heart, which he thinks is diagnostic of connection with the pleural cavity, was absent. The whistling sound showing the presence of air in the pericardium was also absent. The knife penetrated on the right side of the sternum and the wound was oblique, both of which facts are of interest. He reviews the literature at length and expresses his belief that operations on the heart for wounds will be more frequent in the future than in the past; statistics show that at least 20 per cent. of the cases can probably be saved by prompt operation.

22. **Division of the Sensory Root of the Trigeminus.**—This article is in two parts, one by Spiller and the other a report of a case with comments by Frazier. Spiller reviews the physiology of the trigeminus and the probabilities of the non-regeneration of its sensory root after its severance. His

article is elaborate and gives experiments on dogs which have been performed by Frazier, and the opinions and statements of others. From the results obtained by Bregman and from his own microscopic studies he concludes that the nerve fibers of the sensory root of the fifth nerve, both the intra- and extracerebral portions, maintain the same relative position throughout the course of the root. This is important because we may conclude that if the nerve fibers of the sensory root do not mingle freely without regard to order, the nerve fibers of the Gasserian ganglion also probably preserve a definite order of arrangement. The nerve fibers passing distally from the ganglion separate into three distinct divisions and Tiffany's suggestion to spare the inner third of the ganglion in order to preserve vision seems, therefore, to have an anatomic basis, though it is not improbable that if this inner third of the ganglion were removed, the relief of pain would not be permanent. The practical importance, of course, of the fact whether degeneration is permanent or not rests in the modification of the operation for neuralgia by dividing the sensory root instead of extirpation of the whole ganglion which is a much more serious procedure. Spiller thinks it possible that the sensory nerve roots in man do not regenerate, and even with partial regeneration of these roots it does not follow that pain would return, and in view of this possibility, the division of the sensory root for tic douloureux is a justifiable procedure. Experiments on dogs have shown that the motor root can be spared, and if this can be done in man to any considerable extent the relief of pain may be possible without paralysis of the muscles of mastication. In the second part of the article Frazier gives details of the operation which was suggested to him by Spiller, and reports a case. His conclusions are summed up as follows: As a substitute for all operations which depend for their success upon removal of all or a part of the ganglion, he recommends an operation which depends for its success solely upon the division of the sensory root of the ganglion. Granting it will effect a radical and permanent cure, the advantages of this operation are the following: 1. It should be attended with a lower mortality. 2. It obviates a number of difficulties. 3. Its execution is, comparatively speaking, simple. 4. It is practically complete when the posterior aspect of the ganglion and its sensory root have been exposed; that is, it is practically complete before the difficulties most serious and troublesome common to other operations have been encountered. 5. The integrity of the cavernous sinus is never in danger. 6. The risk of injuring the sixth nerve is avoided. The patient, in whom both portions of the root were severed, has been greatly relieved, complete anesthesia existing over large portions of the face and scalp.

24. **Splanchnoptosis.**—Robinson finishes his article in this issue, giving a résumé of the subject in detail for which the reader is referred to the original.

25. **Appendicitis and Infectious Disease.**—Finney and Hamburger report several cases of appendicitis associated with arthritis, and maintain that for purposes of treatment appendicitis is rightly regarded as a local disease subject to serious accident readily explained by anatomic and bacteriologic factors. There seems to be an intimate relation between polyarthritis and appendicitis and he uses the analogy of the tonsil and the appendix as an argument.

26. **Chancre of the Tonsil.**—The following are the conclusions of Rhodes' article: 1. Chancre of the tonsil is often unrecognized because hypertrophy and inflammation are so frequent and are so closely simulated by the early symptoms, which often differ little from an ordinary sore throat. 2. An enlarged and indurated tonsil with a superficial ulcer upon its surface, accompanied by enlargement and induration of the contiguous submaxillary gland and which is unchanged by a prolonged course of treatment, renders a diagnosis of chancre probable. 3. The character of the chancre depends upon the original condition of the tonsil as to size, density, the amount of follicular inflammation and the coincidence of a mixed infection. 4. A certain diagnosis can not usually be made until the general eruption of the disease. 5. The explosion of the disease is no more severe than in chancre elsewhere. 6. The disease is contracted by direct contact or by various media, carrying the virus. 7. When we consider the frightful contagiousness of syphilis and the frequency with which it is conveyed to innocent persons, the most careful use of throat and nose, dental and other surgical instruments, clinical thermometers, etc., is necessary. 8. Separate instruments should be used for examination and treatment of known syphilities, but the possibility of contamination before the existence of the lues has been recognized make it imperative that every operator should employ a rapid and efficient disinfection or sterilization of instruments after the examination or treatment of every patient. 9. Most careful instructions should be given patients as to the necessity of efficient isolation, the methods of infection, and the period of danger, and the use of individual household and other utensils should be enjoined.

27. **Instrumental Perforation of the Uterus.**—The form of accidental perforation discussed is that occurring during operative procedure by the physician. Abnormal condition of the uterine muscle may be a cause, and any attempt to explore or curette the puerperal uterus must be made with unusual care. Failure to recognize its position is also a matter of danger, and no man should attempt intra-uterine manipulation unless he is sure of the uterine position and the presence or absence of disease of the appendages. Perforation may occur because of the proximity of the menstrual period when the uterus is much congested and softened, as this may contribute to the possibility. Results of such injury may be infection from unclean instruments, hemorrhage more or less extensive, visceral injury or introduction of toxic matter into the peritoneal cavity when chemical antiseptics are employed. Whenever there is the possibility of uterine injury, irrigation should not be practiced or at least only saline solution should be used. Pelvic peritonitis may occur, but not under ordinary conditions if the technique of the operator has been perfect. The diagnosis is usually easily made. When such aseptic perforation has occurred no operative interference is required, unless there are visceral complications, when celiotomy should be immediately performed. He reports a case of uterine perforation with omental injury and a considerable portion of the omentum following the instrument down to the external os.

29. **Appendicitis in the Female.**—Downes reports 10 cases of operations on women, in some of which a diagnosis of appendicitis was made and not found, and in others where appendicitis existed and was not diagnosed. He calls attention to the necessity of bi-manual examination as a necessary preliminary step in the conduct of the case with symptoms of appendicitis. He also urges incision through the right rectus muscle. It is more often indicated than at present used by surgeons.

42. **Umbilical Hernia.**—The difficulties of radical operation for umbilical hernia have led Delatour to modify the operation as follows: "An elliptical incision is made about the base of the tumor through the skin and subcutaneous tissues down to the sac, the sac is then freed to the ring, an incision is now made through the abdominal wall in the median line, about an inch or an inch and a half below the edge of the ring, and the peritoneum opened. The finger is then introduced and swept around the ring, within the abdomen, to be sure that there are no adhesions and then with a pair of scissors the incision is carried on either side of the fibrous ring to a point in the median line an inch or so above the upper limit of the ring. This removes the sac with its fibrous neck or rings, and its contents, unopened. We have now to deal with these; the ring of hardened tissue forming the neck of the sac may now be incised so as to allow the examination of its contents. The omentum should be separated as far as possible and then ligatured and cut away; the intestine is to be treated according to its condition, if healthy, returned, and if gangrenous, resected, an anastomosis made and the bowel then returned. The closure of the abdominal wall is also important and should be done as follows: First the peritoneum and the posterior sheath of the rectus should be sewn with a continuous catgut suture,

next the edges of the rectus, which were exposed when removing the sac, and its anterior sheath should be united with chromicized catgut and the skin edges by a subcuticular suture of silk." He claims the following advantages for this method: 1. The saving of time in the handling of tissues. 2. Taking away from the abdominal cavity the contents of the sac until they have been inspected so that gangrenous intestine or omentum is not necessarily handled. If the intestine is gangrenous it can be resected without being withdrawn from the sac. The same is true of the omentum. 3. It gives a firm closure to the wound with the tissues approximated in proper layers. He has successfully performed the operation, including a resection of eighteen inches of the intestine.

43. **The Ovarian Plexus.**—From clinical and historical studies Chapman and Foote conclude that the ovarian plexus, which is homologous to the spermatic plexus of the male, is the controlling nerve supply to the ovaries, tubes and uterus, instead of the cervical ganglion of Frankenhauser.

46. **Gonorrhea.**—Wolbarst concludes that early and active treatment is indicated in every case of acute urethritis, especially before the posterior urethra has become involved. The earlier the treatment the less the chance of this occurrence. 2. A narrow caliber of the meatus strongly points to probability of posterior involvement and a severe course of the disease. Early meatotomy may be advisable. The Thompson two-glass test is liable to serious error, and needs corroborative evidence. The typical clinical picture presented by the patient in the acute stage is thoroughly diagnostic, and the presence of gonococci corroborative. For posterior urethritis the irrigation treatment is both rational and effective. With proper technique and gentleness there is a minimum of pain and danger. It is not essential that potassium permanganate be employed; normal salt solution, weak silver nitrate or copper sulphate solution have given equally good results, especially when used alternately. The heat of the fluid and the thorough mechanical flushing of the urethral canal are probably the most effective forces in bringing about the favorable results of this method of treatment. In anterior urethritis protargol in one-half to 1 per cent. solution constitutes the most valuable remedy. It is easily borne, and is not irritant nor painful. It may be safely used from the very beginning of an attack, except in those few cases where the syringe itself is not tolerated. The profuse purulent discharge usually disappears within seven to ten days, after which a muco-purulent or watery discharge may be milked from the urethra, which totally disappears after two to four weeks. The gonococci disappear after two to sixteen days, but may reappear if the protargol solution is stopped before the end of the third week. The posterior urethra is not likely to be attacked if the treatment is begun early enough and properly carried on. The average duration of the anterior cases, including the obstinate ones, is six weeks, though this period is materially shortened in private practice where the solution is employed three times daily. There is little or no pain or discomfort throughout the entire course. The advantages of the method over the older ones are: absence of pain and discomfort; brief duration of the profuse discharge; comparatively shorter duration of the disease; diminished danger of complications; early disappearance of the gonococci. The disadvantages are that the early cessation of discharges induces the patients to suspend treatment before they are entirely cured, thus bringing about recurrence, and the absence of pain and discomfort minimizes the importance of the disease in the eyes of the patient. If the solution be too strong there is a possibility of causing posterior involvement with liability to the usual complications. This is the only real danger in the use of the remedy.

47. **Phototherapy.**—Ravogli reviews Finsen's experience and briefly states some of his own. He obtained a direct result in a case of tubercular ulcer and also has had good results in other cases of lupus erythematosus and enlarged tubercular glands.

57. **Spasmodic Torticollis.**—After noticing first the symptoms, clinical history, etiology, pathology, prognosis and treatment, Hamann gives his own operative experience with neurectomy, excising the posterior divisions of the three upper cervical nerves, also cutting the muscles. He insists on the etiologic importance of frequently repeated muscular contractions in the production of disease, the uselessness of non-surgical measures, at least in advanced cases, the safety of the operation, the absence of impairment of motion after it, and the good chance of cure or improvement. He urges the performance of radical and extensive operations—excision of the nerves and divisions of the muscles.

58. **Strangulated Hernia.**—The dangers of strangulated hernia are noted and the fact is mentioned that when the case goes to operation, especially in cases of resection, there is danger of failure of anastomosis besides the danger of shock and sepsis. No case whether reduced by taxis or operation is safe until we are sure of the return of bowel function. The causes of death are principally as follows: without operation, shock; with or without operation, general peritonitis by continuity from the infected sac and hernia; from leakage of feces, sloughing of the intestines, paresis without sloughing of the portion returned resulting in ileus, septic peritonitis, general septicemia and sometimes fatal hemorrhages; asphyxia in portions of the intestines at a distance from the hernia with necrotic ulcers; also causing systemic infection, ileus, etc. With operation, accidental injury to intestine; soiling of peritoneum from infection; added shock; hemorrhage; anesthesia; intestinal obstruction from post-operative adhesions; failure of anastomosis; artificial anus; operation for closure of artificial anus. Taxis should never be attempted after the first few hours, and Jones says that while it seems ridiculous to warn modern surgeons as regards the diagnosis, in his experience the majority of cases referred to him for operation had been retained for treatment until the bowel was dead, and a large minority had existed unrecognized or neglected for nearly a week.

59. **Carbolic Acid.**—Sargent describes the treatment of poisoning cases, and in conclusion says it is safe to say that alcohol is the most perfect, the most certain, and the most handy antidote to carbolic acid which we possess.

64.—This article has appeared elsewhere. See THE JOURNAL of December 14, ¶18, p. 1635.

66. **Prostatectomy.**—MacLaren criticises the operations of vasectomy and castration as regards their utility in prostatic hypertrophy and thinks that enthusiasm over the operations has led to over-sanguine reports. The method which he considers the best consists in making a wide transverse opening, dissecting the rectum loose from the posterior surface of the prostate, exposing the bulb, then the prostatic urethra, and later, after separating the fibers of the levator ani where it merges into the capsule of the prostate, gives a clear field and makes it possible to remove many of the prostatic enlargements causing obstruction. A longitudinal opening into the prostatic urethra makes it possible to determine whether the growth has all been removed and often assists in removal, and through this opening drainage helps to complete the cure by curing the cystitis which so frequently complicates the distressing cases. He has had good results with suprapubic prostatectomy, but finds it usually necessary to make perineal section to more perfectly drain the tract from which the prostatic tumor has been removed and therefore suggests the wisdom of making the perineal section first and perhaps avoiding the risk of suprapubic opening.

69. **Rectal Prolapse.**—Halstead describes the various methods of treatment of prolapse of the rectum and after a study of the cases and a review of the literature offers the following conclusions: "1. All cases of prolapse of the mucous membrane alone can best be treated by resection of the protruding mucous membrane and suture of the cut end to the skin of the anus, as in Whitehead's operation for hemorrhoids. In mild cases, clamping and cauterizing linear folds of the prolapse are sufficient to effect a cure. 2. In recent reducible prolapse of all coats of the rectum, removal of the cause, if possible, with massage, gymnastics and appropriate internal medication, to

improve the patient's general condition should be first tried. If these fail, amputation or intra-abdominal suspension are indicated. 3. In young children, operative treatment of prolapse is seldom required. The removal of the cause, which usually can be accomplished with rest in the horizontal position, tonics and massage, will, in the great majority of cases, cure the patient. Among the most frequent pathologic conditions which bear a direct causal relation to prolapse in children are: Intestinal catarrh, rachitis, phimosis and stone in the bladder. 4. In old irreducible or in recent strangulated cases, the only treatment is amputation by the method of Mikulicz. 5. In old irreducible prolapse, or in recent cases where a fair trial of palliative remedies has been given, we have the choice of two methods—amputation or intra-abdominal fixation. At the present time no authoritative statement can be made as to the value of colopexy. It possesses the following advantages: It is not dangerous; it is easily performed, and, when it is not successful, it does not leave the patient in any worse condition than before. Inguinal colostomy should never be performed except when some special indication exists, e. g., when prolapse is associated with colitis which does not yield to treatment or when stricture or malignant diseases are present. Simple catarrhal inflammation of the prolapsed rectum does not justify opening the colon. 6. Rectopexy, if employed, should be used only in the lesser degrees of prolapse of the rectum. In invagination of the rectum and colon it is of no value. In any case its disadvantages and dangers outweigh its good points."

71.—**Creosote in Pneumonia.**—Van Zandt recommends the use of creosote for its curative effect on this disease and gives in his article a number of letters from physicians bearing testimony as to its value. His method of giving it is for the adult 7.5 to 10 grs. or minims every three hours, in urgent cases giving the dose even more frequently for a few times. He thinks that some are giving more than is necessary, and better results may perhaps be had by giving smaller doses at shorter intervals. In some cases he has had good results from 1 drop of creosote every three hours. Ordinarily he gives it without other medication. He never uses expectorants or nauseants; occasionally a few doses of some anodyne are given in painful cases and strychnia where indicated.

72.—This article has appeared elsewhere. See The Journal of November 30, ¶143, p. 1494.

73. **Fracture of the Forearm.**—The method here described by Lofton consists in approximating the ends of the bones, keeping them on the stretch and applying a two-ply one-inch adhesive plaster, twelve inches long, to the forearm, extending up the lateral aspect of the extended hand to the knuckle. The same procedure is applied to the outside and inside of the injured member. Then, beginning at the distal extremity of the metacarpal bone, he proceeds to place adhesive strips, one lapped over another, just long enough to reach two-thirds of the way around the fractured extremity, to the point of origin of the long strips. When this process has been repeated this device will have been accomplished. At times it may be necessary to throw around the strips a roller bandage two inches wide, that the plaster may more completely adjust itself. The ulna answers for the splint in the Colles and Barton fractures. No unusual deformity has resulted thus far from this treatment, but he advises scrupulous care and moderate elbow exercise daily. No interosseous union has yet been noted. The fracture plaster thus made can be worn three weeks without inconvenience and may be improved by small perforations at intervals of an inch, which will not weaken it. He likes it because it is simple and easily adjusted, because it permits of free circulation and exercise, because the patients may observe the conditions at will and because the excessive heat which accompanies bandaging is removed. It will not slip when properly applied, and may be removed when necessary by immersing in hot water for twenty minutes.

77. **Creosote in Pneumonia.**—Cummings' article was inspired by hearing Van Zandt's paper before the Central Texas Medical Association and he gives his own experiences with carbonate of creosote. He begins with 10 drops every three hours and increases the dose 5 drops daily until 20 or 25 drops are given, and in all cases uses strychnia as a stimulant, beginning with small doses in the second stage. He finds that this modifies the fever, lessens the severity of the cough and pain and otherwise seems to act beneficially. He has treated 20 cases by this method and has had no deaths.

81. **Quinin by Hypodermoclysis.**—In pernicious cases of malarial fever the administration of quinin by the mouth is often impossible on account of the constant nausea and vomiting. Gray has had good results with a method which he has not seen mentioned in the current literature on the subject, that is, a weak hot solution of one-fourth to one-half of 1 per cent. of quinin in normal salt solution by hypodermoclysis. He knows no better method of combating the tendency to circulatory stasis in these cases than by the use of large quantities of normal salt solution. The addition of a small percentage of quinin in no ways detracts from its value or adds to the irritation, so that two therapeutic indications are at once met. The solution he prefers is 30 grs. of bimuriate of quinin and iron in a pint of normal salt solution injected, with due precautions as to asepsis, into the loose subcutaneous tissue. The injection is not very painful, absorption is rapid, cinchonism prompt, and induration or local necrosis has never been produced.

FOREIGN.

L'Egypte Medicale (Alexandria), November.

Human Bites. Trekaki.—A merchant, 54 years of age, was bitten by a young man in the left ring finger, with a loss of substance of the skin and subcutis 2 by 1.5 cm. in size. The young man had decayed teeth and a buccal abscess had been incised not long before. The bitten finger developed progressive gangrene with osteoperiostitis of the finger and lymphangitis of the entire hand. Thiriar has reported two nearly similar cases and Goebel another. Painblan described in the *Echo Méd.* of August 11, a somewhat analogous experience, two persons coming violently into collision, with a resulting injury in the forehead of one from a tooth of the other individual. Exophthalmus developed on the same side in a few days with general symptoms, coma and death. The autopsy revealed a suppurative meningitis, pyophlebitis of all the veins of the orbit and diffuse purulent infiltration of the cellular tissue in the orbit.

Annales des Mal. des Org. Gen. Urin. (Paris), November.

Acute Staphylococcus Urethritis. A. Malherbe.—Urethritis caused by the staphylococcus albus may simulate gonorrhea, but the discharge is minimal and it is accompanied by permanent pain of a neuralgic character with cutaneous hyperesthesia of the entire genital region and even beyond. It may be as painful an affection as the most painful gonorrhea, and may last five weeks. It is not accompanied by any disturbance in the general health, and ceases spontaneously without special treatment or complications. There seems to be very little danger of infection of the wife. It is very rare in the complete form exhibited by a patient of 50, whose case Malherbe describes in detail and from which he isolated the staphylococcus. It is possible, he observes, that many cases of irritation restricted to the dilatation of the urethra in the glans, without discharge, may be of the same nature, or at least, non-gonorrheal in origin.

Bulletin de l'Academie de Medecine (Paris), November 19.

Treatment of Deafness. Marage.—The hearing is tested by the sounds of a "siren" reproducing the fundamental vibrations of the vowels. With normal hearing the sounds are heard at a constant distance with an atmospheric pressure of 1 mm. A tube is then introduced between the ear and the "siren." A membrane in the tube transmits all the vibrations without introducing or suppressing a harmonic. By this means the ear is massaged by the vibrations which the ear normally receives. This massage never increased the deafness nor caused pain nor buzzing in any of the tests related by Marage. On the other hand, it restored the hearing to normal in a number of cases of extreme deafness. It has proved successful in many cases

in which all other methods had failed. From his experience during the last four years, he is convinced that it is possible to arrest the progress of sclerous otitis by this means.

Improved Writing Apparatus for the Blind. Dussaud.—The apparatus devised by Dussaud enables the stamp making the letters to be applied on the same side on which they are read, which is a great improvement over the present Braille method. The apparatus is light and portable and requires only half the amount of paper.

Competition for the Audifred Prize.—This prize is an income of nearly $5000 a year, derived from an endowment, to be awarded for a cure for tuberculosis. Sixteen communications were received in competition this year. One claimed to cure tuberculosis with oxalic acid, another by a method of breathing through the nose, etc. Ten communications were from medical men, one lauded intratracheal medicinal injections, another formolized chloroform, and another dieting and fresh air. Only one of the communications was based on original experimental research. This described the author's efforts to determine whether the lesser lipase in tubercular affections was specific of the disease, and whether it could be influenced by medication or other measures in man and animals. The conclusions were negative.

Bulletin Medical (Paris), November 23.

Sacral Instead of Lumbar Puncture for Children. E. Cathelin.—When lumbar puncture is difficult for any reason such as ankylosis, exostosis, etc., or the restlessness of the subject, Cathelin recommends to puncture the lower subarachnoid cul-de-sac by way of the sacral canal according to the method which he has recently promulgated for epidural cocainization. The technique is much simpler than for lumbar puncture. The postero-superior opening of the sacral canal is higher in children than in adults and the lateral tubercles are more distinct.

Journal de Med. de Paris, November 24.

Morphin in Heart Troubles and Uremia. Lemoine.—Morphin is a stimulant for the medulla oblongata and consequently of the centers of circulation and respiration. In an affection of the aorta, morphin is the best means to combat syncope if injected at the first symptoms of distress. In infectious diseases, especially la grippe, the heart becomes irregular and weak and morphin can not be too highly recommended. The results are better than from the use of caffein or digitalis. About 3 mg. are enough, repeated three or four times during the twenty-four hours. It can be supplemented by caffein or digitalis. The former is peculiarly useful in case there are symptoms of congestion of the lungs; 20 to 50 cg. of caffein can be injected and four hours afterward 5 mg. of morphin, after which the doses can be so managed as to inject from 25 cg. to 1 gm. of caffein and 1 cg. to 1.5 cg. of morphin in the twenty-four hours. Clinical observation has shown that morphin is harmless even in uremia. It does not produce coma in this case, but merely alleviates the difficulty in breathing.

Revue de Chirurgie (Paris), November.

Survivals After Amputation of the Mamma for Malignant Tumors. Le Dentu.—During thirty years' experience LeDentu has had only 2 patients die as the result of amputation of the mamma. In 53 cases in his private practice, 26 or 49.05 per cent. are still alive after three years and 19 or 35.84 per cent. had no recurrence within at least three years. In 10 or 27.77 per cent. the recurrence was not noted until after three years. The recurrence was local in 13, local and general in 12 and general without local recurrence in 6 cases. Ten patients have survived an average of more than nine years without recurrence. He curettes the axilla in all cases and drains at this point, fastening the arm at an angle of 45 degrees to prevent cicatricial stiffness. He states that the systematic ablation of the sternal fibers of the pectoralis major and sometimes of the pectoralis minor, offers no inconvenience and ensures better results.

Gastro-Enterostomy. F. Terrier.—One death in 15 cases of gastro-enterostomy is Terrier's record. In 7, the operation was performed on account of carcinoma and the survival was four to eleven months, although several of the patients were in advanced stages of cachexia. In the others it was performed on account of gastralgia with hyperchlorhydria, simple dilatation or simple dilatation with pain or hyperchlorhydria, twice for ulcer, once for gastro-succorrhea and once for alcoholic gastritis. In the latter case the patient died from an old heart trouble. Monprofit proclaims that chronic affections of the stomach all indicate surgical intervention. There is no such thing as effective medical treatment. Pantaleoni is an advocate of the Y-gastro-enterostomy for all affections of the stomach not exclusively dependent upon the nervous system. The symptoms attributed to the circulus vitiosus after gastro-enterostomy are often merely the result of slight adhesions between some of the loops of the intestine and the abdominal wall.

Contra-Indications for the Sound in Prostatism. Lavaux.—Several years of observation of subjects with hypertrophied prostate has convinced Lavaux that the sound should never be used when the bladder can be emptied spontaneously or when incomplete retention of urine is not accompanied by insufficiency of the bladder contraction. In case of cystitis with incomplete retention, the bladder should be injected and irrigated without the use of the sound. These rules apply particularly to prostatic patients with peculiarly impressionable nervous systems, hyperesthesia of the mucosa of the lower urinary passages and to workingmen. Incomplete retention, he asserts, has no injurious influence on the upper urinary passages so long as there is no insufficiency of the bladder muscle.

Treatment of Diabetic Gangrene. Cazin.—The diabetic soil is exceptionally propitious for the development of microbian cultures, but the diabetes alone does not produce gangrene. Cazin thinks that an aseptic wound in a diabetic ought to heal the same as in a healthy individual, and consequently he amputates in case of gangrene, and without sacrificing more of the tissues than would be necessary in a non-diabetic patient. He performed last April the Lisfranc disarticulation on a diabetic, 63 years of age, inclined to atheroma. There was no pulsation in the tibialis posticus, but it was perceptible in the popliteal artery. The patient walks well on his half foot and shows no signs of recurrence. Not a drop of blood issued from the plantar flap during the operation. Tedenat has also reported a number of cases in which the external flap did not bleed during amputations in persons with and without diabetes, but results have all been highly satisfactory. Guinard does not have much confidence in a flap that does not bleed, and in such cases he removes the clots obstructing the artery. By this "catheterization of the artery" applied to the femoral in a recent case, the blood flowed freely after removal of the large clots obstructing the lumen.

Rupture of the Uterus. H. Varnier.—With one exception, every case of rupture of the uterus, 11 in number, which Varnier had occasion to observe before 1897, proved rapidly fatal, whether the rupture was complete or incomplete, spontaneous or traumatic. The treatment had been extraction of the fetus by the natural route, etc. Since that date he has operated through the abdomen in every case; 6 patients died before the operation was scarcely begun; in 6 others the operation was successful and 3 of the patients were restored to health. He and Pinard insist on the gravity of every rupture of the uterus, the impossibility of treating it properly by way of the vagina, and consequently, the urgent necessity of laparotomy at the slightest suspicion of rupture after the lesion has been confirmed by manual exploration. Total hysterectomy is not necessary; the ablation by a transverse section of the ruptured portion, leaving the usually intact cervix, is sufficient. It is wise to close the peritoneum above the stump and to suture the latter to the lower angle of the wound, with gauze drainage.

Presse Medicale (Paris), November 13.

Improved Spinal Cocainization. GUINARD.—THE JOURNAL has mentioned Guinard's success in spinal cocainization with the cocain dissolved in the patient's own cerebrospinal fluid. He is convinced that the water is the cause of the symptoms sometimes observed after this method of analgesia, and substitutes the cerebrospinal fluid. He now reports seventy cases thus cocainized without a single post-cocainic accident, headache, vomiting, agitation or anything of the kind.

Semaine Medicale (Paris), November 20.

Diagnosis and Treatment of Tubercular Pleurisy. DIEULAFOY.—Of all the methods for diagnosing the tuberculous nature of an acute serofibrinous pleurisy, Dieulafoy considers cytodiagnosis the most reliable. The fluid in acute pleurisy in a vigorous and otherwise healthy person, is undoubtedly tubercular if it contains numerous lymphocytes with red corpuscles and no patches of endothelium. The cytoscopic examination of the pleuritic fluid is at least as important as bacteriologic investigation of the sputa in pulmonary tuberculosis. The fluid in tuberculous pleurisy has a marked tendency to collect again after evacuation, and the danger from an effusion is not the amount of dyspnea it causes, but the quantity of the fluid. It may collect insidiously, without pain or dyspnea, and yet attain such quantities that the patient dies suddenly at a time when it is supposed that all danger is past and that he is on the road to rapid recovery. When the tuberculous nature of the pleurisy is recognized, the patient should be examined every day even after the acute phase seems to have terminated. The amount of accumulated fluid should be estimated from day to day and evacuated whenever necessary. After recovery the patient should be regarded as predisposed to tuberculosis, and appropriate hygienic measures should be impressed upon him, avoiding overstrain and fatigue, and seeking a higher altitude and open-air life if possible, with cod-liver oil or fat foods, etc. Dieulafoy orders before meals thirty drops of a mixture of equal parts of kola, coca and quinquina in a glass of water or wine. He also injects sodium cacodylate in 5 cg. daily doses for fifteen days each month for several months. The patient should not consider himself safe from tuberculosis until several years have passed.

Radical Treatment of Hernia Without Opening the Peritoneum. POULLET.—The incision in the skin need not be longer than 5 cm. The edges are retracted as far as possible and the hernial sac is reduced without opening it. A wire is then passed through the neck of the sac and back and forth through the lips of the wound, and fastened. This holds the sac against the abdominal wall and has proved a most effective method of treating hernia in 400 cases in Poullet's experience during the last ten years. The patient can get up and urinate at once after the simple operation, and is dismissed cured after four or five days of comparative rest in an easy chair. One of his patients was 84 years old.

November 27.

Prevention and Treatment of Whooping Cough. WEILL and PEHU.—Very careful study of 104 cases of whooping cough has demonstrated that the contagious period was during the bronchial stage, before the appearance of the characteristic spasmodic cough. After this cough appears, the possibility of contagion rapidly diminishes until by the eighth day there is no longer danger of infecting others. Attempts to isolate the specific germ have proved contradictory because after the spasmodic cough appeared, the germs soon disappeared, as evidenced by the lack of contagion. They should be sought in the throats of the brothers and sisters of the whooping child, who are still in the exclusively bronchial phase. In treatment, the necessity of avoiding every strain on the nervous system renders local applications, etc., more injurious than beneficial. Quinin has a favorable action, and is best given in a rectal suppository in these cases. Bromoform is too toxic for general administration. Weill has found the best treatment to be antipyrin by the mouth and inhalation of the fumes of quinolein. Ten to twenty drops of quinolein are added to 100 c.c. of water for each child, and boiled in a room in which the children assemble for twenty minutes three or four times a day. The quinolein disinfects the air passages and prevents bronchial infection. It has an unmistakable effect in reducing the number and the violence of the coughing spasms, as has been established by several years of experience in the Lyons hospitals.

Centralblatt f. Chirurgie (Leipsic), November 30.

Surgical Treatment of Affections of the Lungs. QUINCKE.—Suppurative processes in the lungs are the ones that require surgical intervention, and among them, parenchymatous suppuration indicates it more frequently than bronchiectasia. Quincke distinguishes five classes, acute or chronic, simple or putrid abscesses, those due to foreign bodies and tuberculosis. In the upper lobes, expectoration of the discharge is easier, but cicatrization more difficult. In the lower lobe expectoration is difficult, but conditions are more favorable for contraction of the lung tissue. Even in cases of multiple small cavities and rigid lung tissue, preventing healing, the conditions can be mitigated by an opening outward. Elastic fibers in the sputa speak for the presence of an abscess, as does also the overwhelming predominance of a single coccus, whether the strepto-, staphylo- or pneumococcus; also cases in which the purulent discharge occurs periodically. The classic symptoms of a cavity are often missing, especially when it is situated in the upper lobe. The acute, simple abscess most frequently occurs after croupous pneumonia. If it does not heal spontaneously in three to ten weeks, it should be operated. In case of a putrid focus, the indications for an operation are more urgent on account of the liability of complications. A fresh gangrenous focus without demarcation should be operated. The prognosis is good in case of an acute abscess, less favorable if putrid. Chronic abscesses heal with greater difficulty. They require removal of the wall of the thorax, besides the incision. The entire part of the lung disseminated with cavities may require resection. An abscess caused by a foreign body is nearly always putrid. Even if an exact local diagnosis is impossible, Quincke recommends to make a bronchial fistula beneath the angle of the right scapula to divert the putrid secretions and prevent secondary foci. If a severe affection is restricted to the upper lobe, the attempt to immobilize this portion of the lung by a thoracoplastic operation is well justified.

Centralblatt f. d. Grenzgeb. (Jena), November 26.

Operative Treatment of Pulmonary Tuberculosis. A. BERLINER.—Thirty-two communications have been published since 1895 in regard to operative treatment of tubercular cavities of the lungs. Eleven cases were operated on and followed for several months or years. The cavity was in the front of the right lung in Bier's patient, and the improvement that followed pneumotomy terminated in death the tenth month. Franke's experience was the same in every respect but the survival was eighteen months. In Krecker's patient the cavity was in the lower portion of the right lung, and he died from hemoptysis. In Kurz's patient, the cavity was upper, left, and healed after pneumotomy. The patient died three years later from generalized tuberculosis. Mosler's case, front, left; cavity healed; death one year later from generalized tuberculosis. Neve's case, upper, right; general improvement. Quincke's, upper, right; death after two years from general tuberculosis. Sarfert's, upper, right; death in five months. Sonnenburg's, front, left; improvement; survival for seven years. Spengler's front, left; recovery after a thoracoplastic operation. Turban's, upper, left; in good health two and one-half years after a similar intervention. All the patients are dead except 3. These results are so far from encouraging that Koerte insists that cavities containing bacteria must be excluded from the operation. Quincke demonstrated that a tubercular cavity had no chance to heal whether operated or not, without extensive resection of the ribs over it, which favors the retrogressive processes. Spengler and Turban followed his advice and their results seem to indicate that this is the right way. The technique of

the operation is of much less importance than the selection of the cases. The general health must be fair; degeneration of the heart or kidneys and hectic fever absolutely contra-indicate it. The immediate improvement after the operation was most striking in many cases—the diminished expectoration and fall of the fever. The cavity, if opened, is loosely tamponed with gauze but drains can not be inserted on account of the danger of after hemorrhage from injury of the vessels. If the operated side does not contract as rapidly as anticipated, the process can be hastened by elastic compression, protecting the other lung with a sheet of zinc. Turban's patient was a young man with the entire left lung involved in the tubercular process. He states that surgical intervention is permissible even in such an advanced case if several months of observation have established good resisting powers, a rigid thorax and the unilateral character of the process. The general conclusions of this review of Tuffier's collected 27 cases with only one survival—Sonnenburg's patient—and Koehler's statistics of 25 pneumotomies with 13 speedy deaths, etc., are that in the restricted field of promoting the contraction and healing of the focus by the extensive removal of the ribs over it, surgery has a small but very promising sphere. The patients after any operation on the lungs should be granted the benefits of outdoor life in fourteen days at least.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., December 5 to 11, 1901, inclusive:

Bailey K. Ashford, lieutenant and asst.-surgeon, U. S. A., from duty at Fort Slocum, N. Y., to post duty at Ponce, P. R.

James L. Bevans, lieutenant and asst.-surgeon, U. S. A., recently appointed, to proceed from Decatur, Ill., to Havana, Cuba.

William Donovan, contract surgeon, from duty at Madison Barracks, N. Y., to his home in New York City, for annulment of contract.

Herbert Gunn, captain and asst.-surgeon, Vols., recently appointed and now in San Francisco, Cal., to report to the commanding general, Department of California for transportation to Manila, P. I.

Henry S. T. Harris, major and surgeon, U. S. A., having reported his arrival in New York City, is relieved from further duty in the Division of the Philippines, and assigned to Fort Slocum, N. Y.

Valery Havard, lieut.-col., deputy surgeon-general, from duty as chief surgeon, Department of Cuba, to Fort Monroe, for post duty.

Arthur C. Heffenger, contract surgeon, now at Portsmouth, N. H., to duty at Fort Constitution, N. H., Dec. 7.

Bower E. Himes, contract surgeon, from Fort Keogh, Mont., to duty at Fort Thomas, Ky.

Paul C. Hutton, lieutenant and asst.-surgeon, U. S. A., from Fort Thomas, Ky., to duty at Fort Keogh, Mont.

Dryden H. Lamb, contract surgeon, now in Washington, D. C., to proceed to his home in Owosso, Mich., for annulment of contract.

James V. May, contract surgeon, leave of absence for twenty days granted on the expiration of which he will proceed from Philadelphia, Pa., to Madison Barracks, N. Y., for duty at that post.

James H. McCall, captain and asst.-surgeon, Vols., having tendered his resignation is honorably discharged from the service of the United States to take effect Dec. 31, 1901.

Thomas U. Raymond, captain and asst.-surgeon, U. S. A., is honorably discharged as major and surgeon, Vols., only, to take effect Dec. 31, 1901.

Eugene L. Swift, major and surgeon, U. S. A., retired from active service by reason of disability incident to the service to date from Dec. 9, 1901.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ended December 14:

Asst.-Surgeon J. B. Buchanan, ordered to the *Columbia*.

Surgeon N. H. Drake, ordered to the *Philadelphia*.

Pharmacist J. Cowan, detached from the Boston Navy Yard, ordered home to wait orders.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Dec. 12, 1901:

Surgeon S. D. Brooks, granted leave of absence for one day, December 25.

Surgeon J. H. White, granted leave of absence for sixteen days from December 9.

Surgeon P. M. Carrington, four days' leave of absence from Dec. 9, 1901, under paragraph 179 of the regulations.

Surgeon W. P. McIntosh, to proceed to Athens and Ducktown, Tenn., for special temporary duty.

P. A. Surgeon M. J. Rosenau, to proceed to Mexico, Mexico, for special temporary duty.

P. A. Surgeon, H. W. Wickes, to proceed to Buffalo, N. Y., for special temporary duty, assuming command of station during absence on leave of Surgeon Eugene Wasdin.

Asst.-Surgeon R. H. von Ezdorf, department letter granting Asst.-Surgeon von Ezdorf leave of absence for two months and fourteen days, cancelled.

Asst.-Surgeon M. H. Foster, detailed as inspector of unserviceable property at the port of Port Townsend, Wash.

Asst.-Surgeon L. D. Fricks, to proceed to Chicago, Ill., and report to the medical officer in command for duty and assignment to quarters.

Asst.-Surgeon W. C. Hobdy, granted leave of absence for seven days from December 15.

Asst.-Surgeon J. S. Boggess, granted ten days' extension of leave of absence.

A. A. Surgeon P. N. Barnesby granted leave of absence for fourteen days from November 9.

A. A. Surgeon R. de Socarres, granted leave of absence for one month from December 8.

A. A. Surgeon John Frick, granted leave of absence for one month from January 1, 1902.

A. A. Surgeon W. C. Mason, granted leave of absence for eight days from November 17.

Hospital Steward Henry Gahn, department letter granting Hospital Steward Gahn leave of absence for twenty days from November 11, amended so that said leave shall be from November 18.

Hospital Steward M. R. Mason, granted leave of absence for fifteen days.

Hospital Steward L. C. Spangler, granted leave of absence for fifteen days from December 14.

BOARD CONVENED.

Board convened to meet at Washington, D. C., Dec. 13, 1901, for the purpose of appointing a medical survey officer of the U. S. Coast and Geodetic Survey. Detail for the Board: Surgeon G. T. Vaughan, Chairman; Asst.-Surgeon B. S. Warren, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Dec. 13, 1901:

SMALLPOX—UNITED STATES.

California: Los Angeles, Dec. 3, 1 case.

Illinois: Chicago, Nov. 30-Dec. 7, 2 cases; Peoria, Nov. 1-30, 41 cases.

Indiana: Evansville, Nov. 23-Dec. 7, 5 cases.

Iowa: Ottumwa, Nov. 2-Dec. 9, 63 cases.

Kansas: Wichita, Nov. 30-Dec. 7, 4 cases.

Louisiana: New Orleans, Nov. 30-Dec. 7, 3 cases.

Massachusetts: Boston, Nov. 30- Dec. 7, 59 cases, 14 deaths; Brockton, Nov. 30-Dec. 7, 2 cases; Cambridge, Nov. 30-Dec. 7, 5 cases, 1 death; Chelsea, Nov. 30-Dec. 7, 2 cases; Gloucester, Nov. 30-Dec. 7, 1 case; New Bedford, Nov. 30-Dec. 7, 2 cases; Somerville, Nov. 23-30, 2 cases.

Michigan: Grand Rapids, Nov. 16-30, 3 cases.

Minnesota: Nov. 30-Dec. 7, Minneapolis, 1 case; Winona, 1 case.

Nebraska: Omaha, Nov. 30-Dec. 7, 14 cases.

New Jersey: Nov. 30-Dec. 7, Camden, 6 cases; Newark, 14 cases, 7 deaths.

New York: Buffalo, Nov. 23-Dec. 4, 39 cases; New York, Nov. 30-Dec. 7, 17 cases, 2 deaths.

Ohio: Cincinnati, Nov. 30-Dec. 7, 6 cases.

Pennsylvania: Lebanon, Dec. 2-9, 3 cases; Norristown, Nov. 23-Dec. 7, 11 cases; Philadelphia, Nov. 23-Dec. 7, 185 cases, 22 deaths.

Tennessee: Memphis, Nov. 30-Dec. 7, 2 cases.

Texas: San Antonio, Nov. 1-30, 3 cases.

Vermont: Burlington, Nov. 30-Dec. 7, 3 cases.

Washington: Tacoma, Nov. 19-26, 4 cases.

Wisconsin: Green Bay, Dec. 1-8, 9 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Nov. 16-23, 7 cases.

Brazil: Rio de Janeiro, Oct. 20-Nov. 3, 153 deaths.

Canada: Winnipeg, Man., Nov. 16-23, 5 cases; St. Johns, N. B., Nov. 30-Dec. 7, 17 cases, 2 deaths; Halifax, N. S., Nov. 30-Dec. 7, 8 cases; Windsor, N. S., Nov. 30-Dec. 7, 1 case; Quebec, Que., Nov. 30-Dec. 7, 30 cases.

Colombia: Cartagena, Nov. 18-24, 5 cases; Panama, Nov. 23-Dec. 2, 100 cases.

France: Paris, Nov. 16-23, 9 cases, 9 deaths.

Great Britain: Glasgow, Nov. 22-29, 1 case; London, Nov. 9-23, 764 cases, 44 deaths.

Cuba: Havana, Dec. 4, 1 case from S. S. *Alfonso XIII*.

India: Bombay, Nov. 5-12, 1 death: Calcutta, Nov. 2-9, 2 deaths: Madras, Nov. 2-9, 2 cases.

Italy: Naples, Nov. 16-23, 25 cases, 6 deaths.

Russia: Moscow, Nov. 9-16, 6 cases; St. Petersburg, Nov. 9-16, 6 cases, 1 death; Odessa, Nov. 16-23, 5 cases, 1 death; Warsaw, Nov. 9-30, 3 cases.

Spain: Barcelona, Nov. 16-30, 5 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, Oct. 20-Nov. 10, 3 deaths.

Cuba: Havana, Nov. 20-Dec. 3, 1 case from Br. S. S. *Ardanmohr*; 1 death from Sp. S. S. *Buenos Ayres*.

Mexico: Merida, Nov. 9-16, 3 deaths; Vera Cruz, Nov. 23-Dec. 1, 20 cases, 8 deaths.

CHOLERA.

India: Bombay, Nov. 5-12, 3 deaths; Calcutta, Nov. 2-9, 35 deaths; Madras, Nov. 2-9, 18 deaths.

Japan: Yokohama, Nov. 2-9, 1 death.

PLAGUE—FOREIGN AND INSULAR.

Hawaiian Islands: Honolulu, Nov. 27-Dec. 10, 2cases, 1 death.

Philippine Islands: Manila, Oct. 12, 1 case.

Brazil: Rio de Janeiro, Oct. 20-Nov. 3, 42 deaths.

India: Bombay, Nov. 5-12, 189 deaths; Calcutta, Nov. 2-9, 14 deaths.

GENERAL INDEX.

Use of the index will be facilitated by bearing in mind that subjects are frequently given under two or more headings, e. g., brain, cerebral, tumors, etc.; heart and cardiac; cirrhosis, liver and hepatic; child, children and infant; gland, thyroid, etc. Often, too, writers treat of the eye, ear, nose and throat under one head, etc., and the titles do not always permit of indexing under the several headings. The "General Index" contains only titles of articles, editorials, society reports, abstracts, and miscellaneous matter appearing in The Journal; the book notices, deaths, societies, marriages, authors, and titles of articles mentioned in the "Current Medical Literature" department are indexed and arranged under their separate headings instead of in the body of the "General Index."

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Barueh, S., (84) 346, (2) 1061, (116) 1062
Baskett, N. M., (132) 1275
Bass, H. T., (172) 142
Bassett, V. H., (53) 406
Bates, W. H., (95) 346, (53) 1062
Batten, F. E., (38) 1418
Batten, J. M., (108) 1489
Battle, J. T. J., (174) 142
Baudoux, H. A., (143) 1206
Baum, W. L., *545
Baumfeld, J., (84) 218, (69) 281
Bawden, H. H., (142) 1206
Baxter, W. E., (96) 599
Bayley, E. H., (37) 862
Bayliss, A. W., (78) 281
Beach, W. M., (90) 1139, (123) 1489, (9) 1726
Beachman, A. L., (168) 1275
Beahan, A. L., (79) 1139, (91) 1346
Beates, Jr., H., (55) 469
Beattie, T. J., *493
Beaudoux, H. A., (105) 282
Beahan, A. L., (35) 345
Beek, C., (13) 140, (10) 468, (42) 659, (28) 937, *966, *1180, (72) 1418, (13, 73) 1488, (29) 1699, (10) 1700
Becker, B., (119) 1139
Becker, W., *1674
Beebe, J. E., (77) 62
Beebe, W. L., *299
Behrend, M., (26) 281
Beling, C. C., (30) 1699
Bell, A. N., (54) 598
Bell, C., (164) 142, (132) 218
Bell, J. W., (44) 406, (57) 1274
Bell, S., (131) 1062, (21) 1632
Bellamy, R., (26) 795
Belt, E. O., (87) 469
Benedict, A. L., (122) 142, (41) 406, (25) 598, (123) 1139, (160) 1275, (65) 1632
Benedict, F. G., (28) 62, (25) 141
Benham, E. W., (79) 346
Benjamin, A. E., (45) 1699
Benjamin, M., (15) 345
Bennett, T. J., (119) 1419
Berg, A. A., (21) 141
Bergey, D. H., (55) 531
Bergtold, W. H., (18) 62, (94) 1489
Berkeley, H. J., (91) 862
Bernays, A. C., (99) 406
Bernheim, M. S., (95) 63
Bertolet, J. M., (21) 1418
Beshoar, M., (112) 599
Bettmann, H. W., (90) 346
Betts, J. B., (55) 1000
Betts, W. W., (106) 1489
Betz, I. H., (49) 345
Bevill, C., (118) 346
Beyea, H. D., (1) 937, (3) 1000, (62) 1062, (115) 1274, (81) 1418
Beyer, G. E., (177) 863
Beyer, H. G., (25) 658
Bezzola, D., (93) 862
Bierring, W. L., (46) 406
Biller, J. G., (66) 218, (46) 1062
Billings, F., *483, *577, (130) 863, (1) 1138, (113) 1206, (50) 1418, *1503
Bingham, G. A., (135) 218
Binnie, J. F., (141) 1001
Birchmore, W. H., (28) 1000
Bird, U. S., (27) 1632
Bishop, C. A., (38) 1488
Bishop, F. D., (42) 1699
Bishop, L. F., (11) 1631
Bishop, S. S., *113
Bissell, F. E., (38) 658
Bixbey, E. M., (58) 1062
Bjorkman, G., (104) 1001, (111) 1346, (76) 1632
Black, C. E., (41) 62, (44) 1488
Black, H. A., (110) 1633
Black, M., (144) 1275
Blackford, Jr., C. M., (49) 1727
Blackham, G. E., (107) 1419
Blackmon, J. A., (170) 1275
Blair, W., (112) 1346
Blake, J. B., (3) 345, (20, 57) 862
Blakely, D. N., (25) 405
Blanchard, W., (67) 62
Blank, T., (50) 1139
Blech, G. M., (13) 1699
Bledsoe, R. E. B., (158) 1701
Bleile, A. M., (91) 282
Bliem, M. J., (156) 1701
Blincoe, A. G., (46) 281, (62) 1274
Blitz, A., (68) 659
Bloodgood, J. C., (34) 717, (124) 938
Bloom, I. N., (66) 1274
Blount, E. A., (41) 1559
Bluhm, G. I., (130) 469, (138) 1275
Blumer, G., (70) 531, (51) 598, (71) 1418, (62) 1488
Blumer, G. A., (68) 218
Boek, F. W., (144) 63
Boggess, W. F., (85) 1205
Boice, C. A., (98) 469
Boldt, H. J., (76) 346, (75) 1632
Bolton, B. M., (45) 1559
Bolton, P. R., (49) 659
Bondurant, E. D., (161) 63
Bonney, S. G., (26) 862, (9) 1138
Boody, G., (110) 141
Booker, W. D., (119) 282
Booth, B. S., (57) 1139
Borden, S., (182) 142
Bordley, Jr., J., (146) 1275
Borts, M., (48) 531
Boston, L. N., *685
Bottomley, J. T., (33) 1699
Bourland, R. C., (82) 1489
Bouton, L. G., (136) 282
Bovee, J. W., (35) 141, *254, (25) 281
Bowditch, V. Y., (22) 937
Bowe, E., (51) 1727
Bowen, D. C., (102) 282
Bowen, J. T., (62) 717
Bowman, D. E., (90) 218, (149) 1063
Bowman, J. L., (19) 1138
Bowman, M. H., (4) 598
Boyd, G., (127) 406
Boyd, G. M., (73) 141, (46) 717
Bracken, H. M., *307, (93) 1419
Brackett, A. R., (49) 141
Brackett, E. G., (7) 1345
Bradford, E. H., (17) 140, (33) 217, (17) 717, (140) 863, (19) 1273, (10) 1488
Bradley, A. E., (87) 1274
Brady, E. T., (46) 1274
Brandegee, W. P., (65) 469
Brannon, L., (148) 470, (85) 1700
Brauth, J. H., (27) 530, (30) 1138
Brayshaw, J., (63) 1139
Breisacher, L., *1094
Brick, P. L., (43) 1062
Brickner, W. M., (100) 282
Bridge, N., (105) 1001
Briggs, C. E., (10) 861, (2) 937
Briggs, S. S., (155) 1063
Briggs, T. J., (112) 1700
Briggs, W. A., (87) 1205
Brimi, C. L., (82) 346
Brinton, J. H., (81) 1559
Broad, G. B., (30) 1205
Broadstreet, S. C., (159) 1701
Brobst, C. H., (52) 659
Brock, R. P., (74) 1727
Brockman, D. C., (97) 141, (124) 1560
Brodhead, Dr. (91) 1001
Brodhead, G. L., (68) 1205
Brodnax, B. H., (75) 281, (109) 282
Bronson, E. B., (100) 1139, (45) 1727
Brooks, H., (95) 141, (4) 1418
Broome, G. W., (36) 405
Broter, L., (11) 1488
Brothers, A., (5) 1558, (137) 1633
Brower, D. R., (91) 141, (44) 281, (20) 598, (135) 863, (124) 1062, (36) 1727
Brown, A., (65) 598
Brown, C. N., (43) 141
Brown, E. E., (90) 1419
Brown, E. J., (42) 531
Brown, H. R., (64) 1205
Brown, J. B., (46) 1139
Brown, J. M., *326
Brown, M. R., (68) 1062
Brown, P. K., (39) 1558, (69) 1559
Brown, P. U., (40) 1488
Brown, S., (111) 282, (77, 95) 1001
Brown, T. R., (24, 53) 717, (20) 1205
Brown, W., (82) 62
Browning, C. C., (106) 1001
Brownlee, J. S., (155) 1206
Brownrigg, A. E., (2) 345, (83) 531, (100) 718
Bruce, H. A., (77) 659, (71) 1632
Bruhl, G., (72) 1345
Brummall, J. D., (40) 345, (135) 1275
Bruns, H. D., (113) 1700
Brunson, R., (74) 218
Brush, E. C., (93) 346
Brush, Jr., C. E., (118) 63, (23) 530
Bryan, W. A., (145) 1063
Bryant, D. C., (144) 346, (104) 1274
Bryant, J. D., (2) 1558
Bryson, J. P., (111) 218, (114) 531
Bueh, A. H., (3) 861
Buehanan, J. R., (101) 938
Buchanan, S. A., (99) 63, (88) 531
Buckler, H. W., (107) 531
Buckley, W. C., (76) 281
Buckman, E. U., (64) 1700
Bull, C. S., (114) 142, (1) 717
Bull, H. R., (120) 1700
Bullard, J. W., (105) 1274
Bullard, R. T., (136) 1346
Bullard, W. L., (136) 142, (143) 938, (151) 1701
Bullitt, J. B., *1458
Bullock, T. S., (146) 1700
Bulson, Jr., A. E., (59) 141
Bunn, A. C., (77) 938
Bunts, F. E., (88) 1419, (27) 1558
Burger, H., (119) 1633
Burgess, M. G., (23) 1205
Burgess, T. D., (82) 531
Burnett, C. H., (41) 141, (27) 598, (50) 1345
Burnett, E. C., (113) 938
Burnham, F. R., (136) 1062, (93) 1559
Burns, T. M., (124) 1700
Burns, W. B., (99) 1559, (80) 1727
Burr, B., (168) 63
Burr, C. W., (27) 1345
Burr, T. S., (165) 863
Burrell, H. L., (21, 24) 1000
Burrell, H. R., (108) 1633
Burrows, E. G., (257) 405
Burton, R. C., (32) 1345
Bush, O. B., (146) 938
Butler, G. F., (83) 406
Butler, W. J., (81) 1489
Buxton, B. H., (19) 281, (22) 345, (59) 862
Byers, J. W., (68) 1274
Byers, W. G. M., (78) 1345
Byford, H. T., (68) 406, (147) 1001, (32) 1061, (46) 1418
Byrne, W. D., *1385

Cabot, A. T., (26) 141, (15) 717
Cabot, Jr., F., (54) 1205
Cabot, R. C., (57) 862, (9) 1558, (18) 1632, (64) 1727
Cahall, W. C., (13) 717
Caille, A., (93) 531, (64) 598, (72) 1205
Caille, Dr. (89) 659
Caldwell, C. E., (39) 1274
Calef, J. F., (56) 1727
Calvert, W. J., (131) 63
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Campbell, B. H., (85) 281
Campbell, C. G., (101) 469
Campbell, C. E., (129) 863
Campbell, D. M., (114) 406
Campbell, F. W., (132) 142
Campbell, M., (43) 1699
Campbell, W. A., (86) 1419
Campbell, W. F., (151) 938
Canan, C. W., (45) 345, (121) 346, (44) 468, (85) 531, (11, 157) 938
Candler, G. H., (72) 281, (128) 1560
Cannady, C. G., (40) 937
Cannon, J. H., (61) 281
Cannon, W. B., (26) 530
Capps, J. A., (71) 598
Carhart, J. W., (36) 1345
Carmichael, J., (98) 938
Carpenter, F. D., (144) 1001
Carpenter, G. T., *161
Carpenter, J. G., (40) 141, (34) 531, (102) 1062, (139) 1419, (51) 1559
Carpenter, W. G., (97) 1206
Carr, W., *5
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Carrier, A. E., (79) 141
Carroll, E. D. D., (186) 142
Carroll, F. J., (141) 938
Carroll, J., (1) 217, (26) 1273
Carson, M. F., (133) 1001, (148) 1701
Carson, S. C., (138) 142
Carstens, J. H., (36) 1061, *1172, (140) 1275, (79) 1559, (143) 1700
Carter, H. W., (5) 1418
Carter, J. M. G., (40) 405, (42) 406, (42) 468, (70) 598, (30) 717, (59) 717, (38) 937, (55) 1699, (53) 1727
Cartledge, A. M., (17) 598
Carveth, G. H., (66) 717
Cary, C., (53) 862
Casselberry, W. E., *186, (115) 469, (14) 1138
Cassldy, J. J., (76) 531
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Cattell, H. W., (106) 1206
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Chamberlain, W. P., (12) 1418
Chambers, G., *512
Chambers, T. R., (85) 1346
Chambers, W. H., (150) 1140
Champion, Dr., (139) 348
Chance, B. K., (84) 938
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Chapin, J. B., (10) 1205
Chapman, H. W., (108) 469
Chapman, W. C., (122) 1489
Chapman, W. L., (80) 938, (43) 1727
Chappell, W. F., (115) 1139
Charles, J. W., (58) 1700
Charlton, F. R., (64) 281
Chase, R. H., (24) 1138
Chassaignac, C., (29) 862
Cheatham, A., (176) 142
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Cheesman, W. S., (9) 62
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Cheney, W. F., (5) 795
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Church, B. F., (60) 1000
Churchill, C. H., (56) 1274
Churchill, F. S., (94) 938
Clminger, J. A., (159) 1275
Clppiani, A. G., (95) 469
Claiborne, J. H., (3) 405
Clap, E. W., (21) 281
Clark, C. F., *1090
Clark, E. F., (153) 1419
Clark, E. J., (127) 599
Clark, F. S., (87) 1139
Clark, J. F., (122) 1559
Clark, J. G., *360, (120) 1274
Clarke, A. P., (20) 345, (85) 718, (108) 1559
Clarke, J. R., (48) 937
Clarke, L. H., (136) 346
Claytor, T. A., (3) 140
Cleemann, R. E., (20) 1558
Clegg, J. T., (12) 1631
Clements, J., (82) 281, (99) 938, (88) 1001
Clemons, I. D., (158) 1140
Clendenen, F., (87) 531
Cleveland, J. L., (34) 405
Clevenger, W. F., (122) 469
Clinton, M., (140) 63, (51) 531, (73) 862
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Cobb, J. O., (16) 1345
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Coe, H. W., (110) 1274, (70) 1727
Coffman, J. J., (57) 469
Coggeshall, F., (75) 141
Cohen, B., (115) 142
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Cohn, J., (65) 1345
Coile, H. P., (135) 282, (166) 1275
Cole, C. S., (57) 531
Cole, L. L., (40) 1000
Cole, R. I., (54) 406
Coleman, C., (45) 1632
Coles, Van H., (139) 1001
Coley, T. L., (12) 1699
Coley, W. B., (53) 218, (59) 862
Colins, A. N., (81) 141
Collins, H. O., (16) 1488
Collins, J., (93) 1206
Comstock, A. J., (137) 346
Cone, S. M., (162) 863
Conkey, C. D., (149) 1275
Conklin, W. J., (30) 1727
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Conn, G. P., (93) 1346
Connell, F. G., 952, (109) 1274
Connell, W. T., (112) 1062, (126) 1346
Conway, W. B., (144) 1489
Cook, C. E., (59) 598
Cook, E., (70) 1062
Cook, H. P., (149) 346
Cook, L. B., (64) 1274, (114) 1346, (134) 1633
Cooke, A. B., (102) 531
Cooke, C. F., (97) 1700
Coolidge, E. L., (84) 1205
Coolidge, Jr., A., (75) 1418
Coomes, M. F., (46) 468, (36) 1000
Cooper, St. C., (81) 717
Coover, E. H., (14) 281
Corbett, J. F., (135) 1139, (47) 1699
Cordell, E. F., (157) 863, (105) 1062
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Corlett, W. T., (22) 1558
Cornell, S. S., (16) 658
Corner, E. M., (127) 1206
Cornwell, T. L., (32) 141, (156) 470, (142) 938
Corr, A. C., (43) 1488
Corson, E. R., (136) 1206
Corson, J. M., (46) 345
Cortelyou, P. R., (145) 938
Corwin, R. W., (80) 218, (68) 1001, (107) 1489
Coston, H. R., (84) 1727
Cott, G. F., *185, (61) 1727
Cottam, G. G., (98, 100, 101) 141, (98) 406, (38) 1632
Cotton, A. C., *638, (59) 1700
Cotton, F. J., (7) 1345
Cotton, W. W., (99) 346
Coulter, J. H., (128) 1700
Coulter, S., (8) 1061
Courtenay, J. W., (5) 61
Coveny, M. A., (93) 1062
Coverley, D. K., (83) 1559
Cowan, R. H., (2) 1000
Cowgill, J. E., (96) 218, (102) 406
Cowle, D. M., (87) 1489
Cox, A. E., (107) 63, (149) 1489
Craig, J. T., (72) 1062
Crandall, F. M., (1) 1699
Crandell, A. R., (5) 1061
Crandon, L. R. G. (27) 141
Crane, A. W., (32) 658
Cressy, A. Z. C., (48) 659
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Cross, W. W., (94) 1632
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Crowder, T. R., (98) 1346
Crowell, A. J., (161) 1701
Crummer, L., (95) 406, (7) 1699
Crumrine, H. C., (116) 938
Crutcher, H., (89) 1346
Cullens, F. B., (158) 470
Cummings, H. W., (77) 1727
Cummings, S., (70) 406
Cumston, C. G., (46) 141, (10) 795, (21) 862, (6) 937, (33) 1138, (35) 1205, (117) 1206, (10) 1273, (51) 1345, (8) 1558, (22) 1699
Cunningham, S. R., (176) 863
Currier, A. F., (32) 468
Currier, D. M., (70) 717
Curry, J. J., (114) 863
Curtin, R. G., (101) 1700
Curtin, T. H., (10) 1061
Curtis, B. F., (128) 1206
Curtis, F. C., (79) 1632
Curtis, H. H., (3) 281
Curwen, J., (101) 1206
Cutts, R. E., (61) 598, (46) 1699

Dabney, S. G., (98) 531
Dabney, T. S., (122) 599
DaCosta, J. C., (56) 862
DaCosta, Jr., J. C., (112) 218, (85) 1419
Daggett, B. H., (80) 281, (54) 531
Dahl, S., (99) 1346
Dallwig, K., (116) 1700
Dalton, H. C., (32) 531, (36) 1273
Dalton, W. R. I., (16) 281
Damon, M. B., (50) 141
Dampeer, J. M., (108) 282
Dana, C. L., (1) 405, (84) 1274
Dane, J., (14) 658
Danforth, I. N., (101) 1139, *1298
Darby, F. H., (140) 1206
Darier, J., (15) 1273
Darling, C. G., (169) 863
Darnall, W. E., (74) 141, (70) 281, (12) 1273
Davenport, F. H., (23) 405
Davidsou, A. H., (75) 1700
Davie, J. C., (68) 1632
Davis, A. E., (111) 346, *1167, (145) 1206, *1242
Davis, B. B., (87) 1062
Davis, C. E., (56) 1000
Davis, C. G., (21) 1205
Davis, E. C., (42) 598, (165) 1275
Davis, E. P., (9) 217, (46) 717
Davis, G. A., (39) 862, (153) 1701
Davis, G. E., (4) 1345
Davis, G. G., (67) 1632
Davis, G. W., (90) 1206
Davis, J. E., (83) 141
Davis, L. J., (152) 346
Davis, Jr., N. S., (94) 282, (136) 599, (85) 1062, (18) 1418
Davis, Sr., N. S., *1, (84) 862, (112) 1206
Davis, T. D., (46) 1345
Davis, W., (120) 863
Davis, W. B., (23) 598, (71) 1001
Davis, W. E. B., *1573
Daviss, E. P., (148) 63, (156) 1140
Dawbarn, R. H. M., (103) 469
Daxenberger, F., (175) 1275
Day, E. A., (88) 718
Day, F. K., (110) 1346
Deacon, G., (136) 469
Dean, F. W., (120) 142
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Dedman, J. E., (126) 1633
De Lantsheere, I., (117) 1633
Delatour, H. B., (42) 1727
Delaup, S. P., (142) 1140
DeLee, J. B., (70) 1274, (77) 1488
Demaree, E. W., (70) 469, (134) 1275
Deming, N. L., (106) 1346
Dench, E. B., (17) 217, *247, (4) 1205
Denig, R., (86) 1559
Denison, C., (10) 1418, (14) 1488
Denker, A., (71) 1345
Dennis, F. S., *1013
Dercum, F. X., (76) 62, (56 and 57) 659, (104) 938, (14) 1205
De Schweinitz, G. E., (15) 937
Detweiler, A. J., (37) 405
De Vecchi, B., (14) 1345, (31) 1558
DeVilbiss, A., (154) 470
DeVoe, A., (104) 406, (94) 531, (141) 1489
Dewey, R., (69) 598, *1102
Dewis, J. W., (22) 281
Dexenberger, F., (82) 1001
Dicken, W. E., (137) 1560
Dickerson, L. D., (164) 938
Dickerson, W. L., *1240
Dickey, J. L., (105) 406
Dickey, W. A., (122) 938
Dickinson, G. E., (142) 863
Dickinson, R. L., (71) 345, (69) 406, (1) 795
Dickinson, S. W., (47) 1559
Dickinson, W. L., (39) 1205, (67) 1418
Didama, H. D., (13) 861, (85) 862
Dietz, F. J., (153) 470
Diller, T., (77) 862, (1) 1418, (28) 1558
Dixon, A., (30) 862, (136) 1489
Dock, G., (84) 406, *1677
Dodson, J. M., (4) 658
Doerflinger, C. H., (83) 218
Donaldson, J. B., (89) 1139
Donnellan, P. S., (121) 1062, (3) 1138
Donoghue, F. D. (49) 1559
Doolittle, J. C., (43) 345
Dorsett, W. B., (36) 217, (35) 1000
Doty, A. H., (27) 1273
Douglas, C., *566
Douglas, R., (144) 1063
Douglass, C. F., (61) 937
Douglass, H. B., (54) 62
Dow, W., (116) 346, (121) 1700
Dowd, C. N., (17) 1138
Dowd, J. H., (78) 1139
Downes, A. J., *419, (15) 468, (106) 1700, (29) 1727
Downey, C. W., (148) 1489
Drake, N. A., (139) 1140
Drennan, J. G., (11) 281, (20) 1000
Drenning, F. C., (112) 469
Drewry, W. F., (45) 1274
Drysdale, C. R., (88) 862
Duane, A., (95) 599, (115) 1700
Duckworth, D., (130) 1346
Dudley, A. P., *357
Dudley, W. F., (138) 938
Dudley, W. H., (65) 1700
Duenas, J. L., (78) 1205
Dugan, R. C., (97) 1419
Dugan, W. C., (65) 1274
Duhriug, L. A., (43) 1205
Dukf, J. W., (83) 1062
Dulles, C. W., (1) 281
Duncan, J. T., (120) 938, (127) 1062
Dunham, J. M., (131) 938
Dunham, T., (14) 717
Dunn, D. W., (116) 1206
Dunn, J., (41) 1488
Dunn, J. H., (51) 151, *1081, (52) 1139, (58) 1274
Dunn, J. T., (38) 1000
Dunn, R. M., (153) 63
Dunning, L. H., (78) 599, (107) 1559
Dunton, Jr., W. R., (101) 718
Dupaquier, E. M., (121) 599
Dupuy, H., (120) 469, (83) 1346
Durrent, J. A., (81) 1139
Duryea, J. T. (75) 937
Dwight, T., (58) 406, (7) 598
Dyer, I., (161) 1206, (144) 1419

Earnst, J. G., (140) 407
Earp, S. E., (124 and 146) 142, (95) 1062
Earp, S. W., (97) 531
Eastman, B. D., (42) 1274
Eastman, F. P., (125) 1139
Eastman, J., (83) 469
Eastman, J. R., (81) 469, (17) 1000, *1221, (128) 1274
Eastman, T. B., (81) 862
Eaton, D. B., (129) 1700
Ebright, G. E., (96) 1632
Eckley, W. T., (76) 1001
Edebohls, G. M., (39) 598, (16) 1138
Edes, R. T., (4) 217, (26) 598, (28) 658, (23) 717, (22) 1000
Edgar, J. C., (46) 717
Edsall, D. L., (60) 62
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Edwards, G. P., (85) 599
Egan, P. R., (25) 1488, (30) 1699
Egbert, J. H., (13) 598, (22) 1061
Ehrenfest, H., (116) 218, (118) 531
Elchelberger, A., (91) 1062
Elnhorn, M., (34) 345, (10) 598
Eisendrath, D. N., (25 and 47) 1418, *1453, (6, 21 and 72) 1488, (26) 1558
Eitel, G. G., (36) 862
Eliot, Jr., E., (129) 1206
Ellett, E. C., (119) 531, (66) 659, (147) 938
Elllot, J. W., (38) 1138
Elliott, A. R., (1) 530
Elliott, J. H., (65) 717
Elliott, G., (83) 1139
Ellis, H., (117) 282, (110) 1419
Ellis, H. B., (100) 1206, (138) 1700
Ellis, W. P., (104) 1062
Ellsworth, V. A., (26) 658
Elwood, C. R., (86) 1489
Ely, J. D., (109) 1062
Ely, L. W., (19) 141
Ely, W. B., (93) 406
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Emery, W. H., (123) 938
Emmet, J. D., (78) 141, (149) 470
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Engman, M. F., (31) 598, (139) 863, (99) 1001
Enright, J. B., (47) 1488
Enslee, C. L., (140) 938
Erdmann, C. A., (46) 1000
Erdmann, J. F., (123) 1274
Eshner, A. A., (123) 142, (52) 598, (143) 863, (68) 1700
Eskridge, J. T., (77) 218, (25) 717, (28) 795, (7) 937, (18) 1000
Esmond, H. B., (153) 1063
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Ewing, J., (18) 405, (69) 1139
Ewing, W. B., (69) 1700
Eyster, G. L., (131) 863
Ezell, B. S., (132) 599

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Fairchild, D. S., (163) 142, (37) 468, (74) 598, *629
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Ferguson, R., (85) 1139
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Fisch, C., (33) 531, (45) 1559
Fischer, E., (16) 468, (23) 1138
Fischer, L., *1251, (25) 1632
Fischer, M. H., (8) 1000
Fischkin, E. A., (45) 141, (62) 1139
Fishberg, M., (21) 1345
Fisher, H. C., (142) 142
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Fitch, W. E., (125) 218, (151) 1140, (49) 1274, (138) 1419
Fitzgerald, O. D., (50) 1000, (137) 1346
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Fleming, C. K., (110) 599, (107) 1206
Fleming, H. C., (128) 1001
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Floersheim, S., (21) 1061
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Floyd, B., (42) 1632
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Forchheimer, F., (24) 1061
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Forel, A., (83) 1274
Foshay, P. M., (101) 406, (134) 1346
Forsyth, D., (118) 938
Foster, B., (81) 346, (61) 406, *553, (121) 1206
Foster, E., (138) 407
Foster, H., (117) 469, (133) 1275
Foster, M. L., (87) 938
Foulerton, A. G. R., (28) 1345
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Fowler, H. A., (127) 63
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Foxworthy, F. W., (81) 599, (130) 1139, (16) 1727
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Frederick, M. W., (111) 406
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Fulton, C. M., (147) 470
Fulton, F. T., (71) 218
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Funk, D. S., (17) 1205
Funke, J., (20) 1418, (22) 1488
Fussell, M. H., (15) 530, (95) 531, *1287
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Gardner, F., (8) 468
Gardner, R. W., (75) 717
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Garrett, N. M., (41) 1632
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Gay, Jr., G. W., (42) 141
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Geiger, C. G., (84) 1632
Gellhorn, G., (84) 718, (65) 1062, (35) 1345, (36) 1418, (56) 1699
Gelpke, T., (117) 1700
Genella, L. J. Y., (22) 62, (133) 346
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Gibson, J. D., (130) 1633
Giddings, W. P., (108) 141
Gies, W. J., (8) 1488, (13) 1558
Gifford, H., (115) 406
Gilbert, J. A., (16) 1699
Gilbert, R. B., (42) 1000
Gildersleeve, J. R., (46) 1559
Gillespie, R. L., (67) 659
Gillespie, W., (75) 346, (34) 1061
Gillette, A. J., (77) 346
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Glahn, J., (99) 1062
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Glass, J. H., (29, 30) 1000
Gleason, E. B., (147) 863, (153) 938, (53) 1205
Gleason, J. H., (13) 1726
Gleitsmann, J. W., (2) 1345, (82) 1346, (15) 1726
Glendon, W. P., (131) 1419
Gloninger, A. B., (9) 1631
Gloor, A., (84) 469
Godshaw, C. C., (47) 598
Goelet, A. H., (128) 346, (33) 1273
Goffe, J. R., (29) 217
Goldan, S. O., (29) 345, (127) 1274, (17) 1727
Golden, W. W., (34) 1558
Goldspohn, A., (43) 217, *489, (99) 1206, (103) 1559
Goldstein, M. A., (84) 1346
Goldthwait, J. E., (24) 1000, (15) 1631
Gonzales, Prof., (91) 1632
Good, C., (23) 1488
Goodale, J. L., (83) 62, *192, (27) 405, (19) 1488
Goodfellow, G., (90) 1632
Gordinier, H. C., (91) 1206
Gordon, A., (4) 140, (141) 469
Gordon, O. A., (83) 718
Gordon, S. C., (152) 1275
Gordon, W. E., (37) 1699
Gorgas, W. C., (13) 795
Gorham, F. P., (111) 863
Gorhan, G. H., (51) 1699
Gossett, W. B., (59) 531
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Gould, G. M., (7) 717, (2) 795, *1359
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Gradwohl, R. B. H., (134) 1419
Grafft, J. A., (34) 937
Graham, A. B., (63) 281, (87) 599
Graham, D., (14) 1726
Graham, G. S., (9) 1205
Gramm, C. T., (94) 469
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Grant, W. W., (79) 406, (52) 1345
Graves, M. L., (150) 63
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Gray, E. H., (133) 599
Gray, J. H., (133) 469
Gray, Jr., J. W., (81) 1727
Gray, W. B., (37) 1061
Graybiel, A. G., (68) 1418
Grear, D. W., (163) 938, (108) 1346
Greeff, J. G. W., (82) 218, (63) 598
Greeff, R., (49) 1062
Green, C. H., (12) 1726
Green, Jr., J., (136) 863
Green, J. T., (35) 62
Green, S., (159) 938, (178) 1275
Greene, C. L., (93) 218, (9) 717, *887
Greene, R. H., (57) 281, (51) 1205, *1223
Greenleaf, C. A., (80) 1139
Greenleaf, C. R., (3) 1205
Greenleaf, J. S., (169) 1206
Greeniey, T. B., (37) 1000
Greiss, W. R., (10) 717
Greiwe, J. E., (17) 530
Gremillion, C. J., (119, 120) 599
Griess, W. R., (117) 1062
Griffin, O. A., (89) 1489
Griffin, E. H., (18) 1699, (20) 1727
Griffith, F., (23) 217, (20) 658
Griffith, J. D., (92) 1274
Griffith, J. P. C., (120) 346, *440, (139) 469, (82) 1205, (117) 1274
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Grindon, J., (114) 218, (115) 531, (56) 1418
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Grothan, G., (107) 1274
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Guerrini, G., (31) 1558
Guiteras, J., (11) 1558
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Guth, M. S., (88) 1139
Gwyer, F. W., (43) 659
Gwyn, N. B., (52) 1205

Haag, D. E., (124) 1489
Habermaas, A., (59) 659
Hackett, W. A., (94) 1062
Haggard, W. D., (110) 1001
Hale, A. B., (90) 599, *1380
Hale, J. A., (40) 468, (80) 717
Hale, W. S., (71) 531, (123) 532
Haley, W. A., (30) 1418, (38½) 1488
Hall, C. L., (100) 1346
Hall, E., (94) 1274, (137) 1275
Hall, H. L., (100) 1419
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Hall, J. N., (5) 530, (111) 599, (26) 1418, (84) 1700
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Heald, R. J., (102) 1559
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Heichelheim, S., (132) 1633
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Heineck, A. P., (128) 599, (116) 1001, (150) 1419
Heineman, H. N., (10) 62
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Heitzman, C. W., (15) 598
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Henderson, C. R., (134) 1062
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Henrotin, F., (3) 795
Henry, F. P., (23) 62
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Henry, W. O., (92) 406, (90) 718
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Herter, C. A., (99) 1274
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Mayer, E., (8) 530
Mayer, E. E., (25) 1138, *1601, (71) 1700
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Mayhugh, I., (72) 1001, (128) 1489
Mayne, E. H., (66) 531
Mayo, C. H., (88) 1062
Mayo, W. J., (9) 468, (73) 469, (45) 659, *1019, (94) 1419, (44) 1632
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Miller, C. J., (141) 1419, (86) 1700
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Miller, D. J. M., (96) 531
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Phillips, W. C., (112) 346, (85) 659, (65) 1000, (71) 1205
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Porter, C. B., (46) 659
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Porter, M. F., (157) 142, (129) 532, (4) 795, (80) 1062, (118) 1559, (89) 1632
Porter, R. H., (32) 1000
Porter, T. P., (130) 407
Porter, W., (96) 1001
Porter, W. D., *613, (33) 937
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Potter, T., (34) 658, (175) 863
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Powers, C. A., *674, (13) 1273, (92) 1489
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